From:	Mike Stubblefield
To:	Patterson, Heather, EMNRD
Cc:	"Michael Barrett"; "Jerry Smith"; "Randall Hicks"
Subject:	RE: ASAU #150 Monitor Well
Date:	Tuesday, November 29, 2016 1:57:42 PM

Dear Ms. Heather Patterson,

This week R.T. Hicks Consultants will be traveling to water wells located in the area near the ASAU 150 Trunk Line release. Kristen Pope and myself will measure water levels to collect data on the depth to ground waters and direction of ground water flow. This information is pertinent for our construction and bidding process for the monitor well insulation. Please contact me if further information is required.

Sincerely,

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Mike Stubblefield
RT Hicks Consultants
Cell: 575-365-5034

From: Patterson, Heather, EMNRD [mailto:Heather.Patterson@state.nm.us]
Sent: Tuesday, November 29, 2016 12:46 PM
To: Billings, Bradford, EMNRD; Randall Hicks; Bratcher, Mike, EMNRD
Cc: 'Michael Barrett'; 'Jerry Smith'; 'Steve Forister'; 'Eric Tovar'; mike@rthicksconsult.com; Weaver, Crystal, EMNRD
Subject: RE: ASAU #150 Monitor Well

Do you have a date set for the installation of this monitoring well?

Heather Patterson
Environmental Specialist
NMOCD District II
Office (575)748-1283 ext.101
Cell (575)703-0228

From: Billings, Bradford, EMNRD
Sent: Wednesday, November 09, 2016 8:12 AM
To: Randall Hicks; Bratcher, Mike, EMNRD; Patterson, Heather, EMNRD
Cc: 'Michael Barrett'; 'Jerry Smith'; 'Steve Forister'; 'Eric Tovar'; mike@rthicksconsult.com
Subject: RE: ASAU #150 Monitor Well

Hi all,

We need to talk about this proposed well placement. In general, OCD would like a more traditional monitor well. We lean toward fifteen feet of screen with ten feet of screen in the ground water and five above and then seal the well. Have concerns of potential leakage into the well from the screen. Should look at vapor extraction later. Diagnose the issue first. Also would like sulfate and PAH to be

sampled along with the chloride, BTEX and TDS. Also please indicate laboratory methodologies to be run. And perhaps some other things, but, anyway, give a call and we can talk about it. Sump is okay if you wish. Thanks.

Bradford Billings

From: Randall Hicks [mailto:r@rthicksconsult.com]
Sent: Tuesday, November 8, 2016 2:11 PM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Patterson, Heather, EMNRD <Heather.Patterson@state.nm.us>
Cc: 'Michael Barrett' <mbarrett@limerockresources.com>; 'Jerry Smith' <JSmith@limerockresources.com>; 'Steve Forister' <sforister@limerockresources.com>; 'Eric Tovar' <ETovar@limerockresources.com>; mike@rthicksconsult.com
Subject: : ASAU #150 Monitor Well

Dear Mr. Billings, Ms. Patterson and Mr. Bratcher

At the meeting of 10/15, 2016, OCD staff clearly expressed the requirement to install a monitoring well within the footprint of the above-referenced release. After securing a permit from the OSE (a 5-10 day process), this well will be installed as soon as the driller's schedule allows. We will alert OCD when the schedule is established and at least 48 hours prior to drilling. The well will be installed in a manner consistent with State of NM guidance for monitoring wells (https://www.env.nm.gov/gwb/documents/MonitoringWellGuidelinesFINAL-March2011.pdf). We will modify the construction protocol to allow this well to serve as a soil vapor extraction well in addition to collection of groundwater samples. The well design is:

- Re-enter existing soil boring and clean out slough to 50-feet (TD)
- Advance 8-inch boring to 15-20 feet below the observed water table with soil sampling every 5-feet to top of groundwater, which is expected between 52-60 feet
- Clean out boring and remove no more than 100 gallons of water to drums or other containers
- Measure the water level in the open boring every 5 minutes for at least 30 minutes or when 3 consecutive measurements show a constant, non-rising water level. If the water level is rising very slowly, plot the depth v. time and predict the static water level
- Install Schedule 40 PVC flush-thread pipe and 0.020 slot screen such that
  - A 2-5 foot blank pipe is below the screen to capture any sediment
  - 15 feet of screen lies below the static water table
  - Screen extends above the water table to about 10-feet below ground level
- Use 12/20 silica sand for the filter pack surrounding the screen
- Provide a bentonite hole plug overlain by neat cement grout to about 6-inches below ground surface.
- Cut the blank well casing as required to allow installation of a well vault that is flush with ground surface and a 2-inch Tee and pipe extending beneath the

ground for connection to an SVE blower

- Surface completion will be
  - 2 foot by 2 foot x 4-inch thick concrete pad with rebar
  - 12-inch manhole vault over the well
  - A second temporary vault or cover at the end of the SVE pipe extension

After the well is installed and developed, we will wait at least 5 days before sampling. Upon receipt of laboratory results for BTEX, Chloride and TDS, we will conference with OCD and determine the next steps that will result in a remediation plan under Part 29.

Randall Hicks
R.T. Hicks Consultants
Cell: 505-238-9515
Office: 505-266-5004

From: Michael Barrett [mailto:mbarrett@limerockresources.com]
Sent: Tuesday, November 08, 2016 1:02 PM
To: mike@rthicksconsult.com; Randall Hicks
Cc: Jerry Smith; Steve Forister; Eric Tovar
Subject: FW: ASAU #150 Monitor Well

FYI
Mike, give me a call regarding this please

From: Steven Hunter
Sent: Tuesday, November 08, 2016 1:00 PM
To: Michael Barrett
Cc: Justin Thompson; Jerry Smith; Steve Forister
Subject: Re: ASAU #150 Monitor Well

Advise the OCD that we will agree to install the monitoring well.
Steve

Steven J. Hunter
Production Manager
Lime Rock Resources
Phone: (713) 292-9516
Cell: (832) 330-7313
E-Mail: shunter@limerockresources.com

On Nov 8, 2016, at 2:58 PM, Michael Barrett <mbarrett@limerockresources.com> wrote:

> Steven, just discussed this w/ Justin & he is in agreement that we do not have any option to the monitor well considering the shallow groundwater in this area.

Michael Barrett
Production Superintendant
Lime Rock Resources
t: 575-365-9724
f: 575-365-2496
c: 505-353-2644
e: **mbarrett@limerockresources.com**