From: Bobby McCracken
To: Powell, Brandon, EMNRD; Alex Campbell; Goetze, Phillip, EMNRD
Cc: Brian Egolf; Bradford Moody; Khem Suthiwan; Polak, Tiffany, EMNRD; Chris Longwell; Sean Owens
Subject: RE: [EXTERNAL] Enduring Resources WSW Water Sampling Plan WLU 2309-24N WSW POD 3 SWD conversion (Action ID 142953)
Date: Friday, October 28, 2022 3:20:20 PM
Attachments: WSW Water Sampling Plan_10.28.2022.pdf
WLU WSW Purge Volume_10.28.2022.pdf

Brandon –

Attached is the revised Water Sampling Plan as well as the wellbore volume calculation. Let us know if you have any questions.

We will be ready for your representative on 11/4/2022. How does 10 AM sound as the time for everyone to meet on pad?

Thanks,
Bobby

From: Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>
Sent: Friday, October 28, 2022 11:34 AM
To: Alex Campbell <ACampbell@enduringresources.com>; Goetze, Phillip, EMNRD <phillip.goetze@emnrd.nm.gov>
Cc: Brian Egolf <Brian@brianegolf.com>; Bradford Moody <bmoody@hrkslaw.com>; Khem Suthiwan <KSuthiwan@enduringresources.com>; Bobby McCracken <BMcCracken@enduringresources.com>; Polak, Tiffany, EMNRD <Tiffany.Polak@emnrd.nm.gov>
Subject: RE: [EXTERNAL] Enduring Resources WSW Water Sampling Plan WLU 2309-24N WSW POD 3 SWD conversion (Action ID 142953)

Good morning Alex

As discussed your plan doesn't include a proper purging process attached is a USGS process that may be helpful. In summary you will need to purge 3 well volumes while monitoring the water quality.

Also in addition to the sampling you mentioned the main sample we need is TDS which is typically included in a General Chemistry analysis or a Cation/Anion analysis.

November 4th will work for us if it still works for you after looking at the parameters.

Thank You

Brandon Powell
(505) 320-0200

"He who wishes to gain knowledge is wiser than he who thinks he has knowledge (unknown)"

From: Alex Campbell <ACampbell@enduringresources.com>
Sent: Wednesday, October 26, 2022 2:28 PM
To: Powell, Brandon, EMNRD <Brandon.Powell@emnrd.nm.gov>; phillip.goetz@emnrd.nm.gov
Cc: Brian Egolf <Brian@brianegolf.com>; Bradford Moody <bmoody@hrkslaw.com>; Khem Suthiwan <KSuthiwan@enduringresources.com>; Bobby McCracken <BMcCracken@enduringresources.com>
Subject: [EXTERNAL] Enduring Resources WSW Water Sampling Plan WLU 2309-24N WSW POD 3 SWD conversion (Action ID 142953)
Importance: High

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Gentlemen: As a follow-up to our conversation this morning, attached is a water sampling plan for the captioned well. Our preference to accommodate ongoing operations would be to conduct the test on November 4, 2022. Brandon please have whoever from your team is going to witness the test contact Bobby McKracken in my office. His direct number is 303-350-5115. His email is included in this email chain.

If you have any questions please let me know.
Thank you for your assistance with this.
Sincerely
Alex

Alex B. Campbell
Vice President
Enduring Resources, LLC
6300 South Syracuse Way, Suite #525
Centennial, Colorado 80111

Telephone Number (303) 350-5107
Facsimile Number (303) 573-0461
Cell Phone Number (303) 929-8429

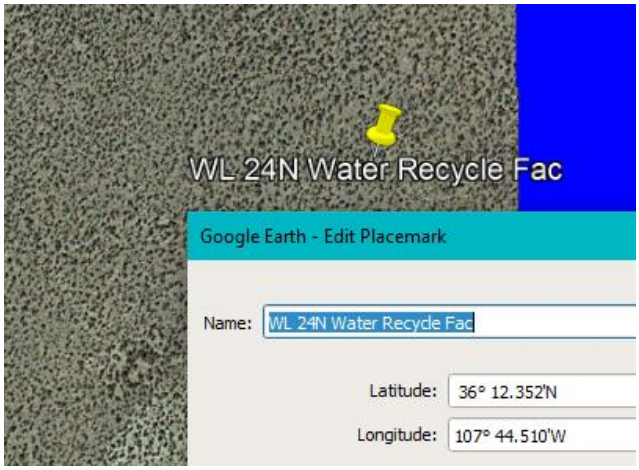
message and any attachment(s). Thank you.

Date: 10/28/2022

WSW Water Sampling Plan

The New Mexico Oil Conservation Department (NMOCD) requests sampling of Enduring Resources' (ERC) existing West Lybrook Water Supply Well. Below is all relevant information for the sampling plan.

Sample Plan

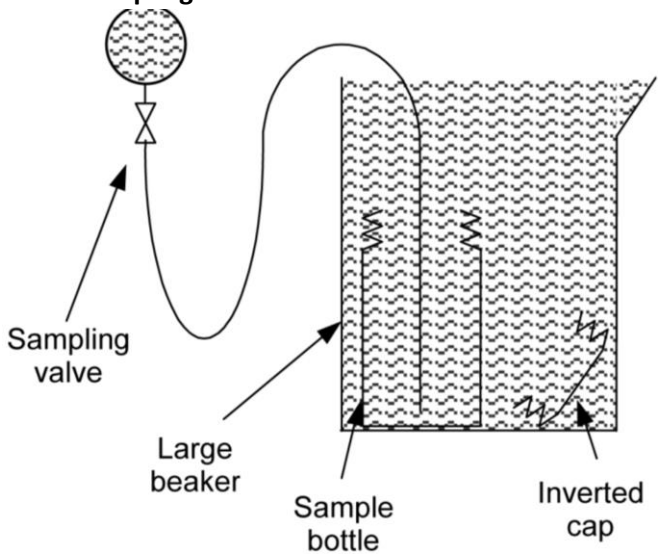
- Enduring Resources (ERC), Creedence Energy (Creedence) and New Mexico Oil Conservation Department (NMOCD) representatives will meet at the West Lybrook Water Recycling Facility (WRF) to gather the water sample – coordinates below.
  - 

- ERC representative will prepare the location and process for the Creedence representative to gather the sample.
  - The WSW wellbore volume equates to 235.5 BBLs. ERC will produce three times the WSW wellbore volume, 706.5 BBLs, and a Creedence representative will gather sample.
  - One (1) sample will be taken from the well.
- Creedence is to complete water sample analyses per typical standards and report the results to ERC and NMOCD – the information below was provided by Creedence as their standard practice:
  - Water Analysis from wellhead
    - A complete water analysis (CWA) will be taken. The CWA will include pH/Bicarbonate, Chloride, sulfate, TDS and many metals including:
    - Al, B, Ba, Ca, Ca, Fe, K, Mn, Mg, Na, P, Pb, Si, S, Sr, Zn.
    - Measurements that will be carried out immediately in the field after sampling the waters:
      - pH
      - Temperature
      - Alkalinity
      - Dissolved oxygen
      - CO_2
      - H_2S
    - To preserve the sample acidification with various acids and refrigeration [ideally 39°F (4°C)], and storage in the dark.

Date: 10/28/2022

- Serial dilution method will be used to test for sulfate reducing bacteria (SRB) and acid producing bacteria (APB)

- Surface sampling
  - Surface sampling is commonly used to obtain a sample of formation water from a sampling valve at the wellhead or another sampling point. A plastic or rubber tube can be used to transfer the sample from the sample valve into the container. **Fig. 1** shows a simple method of excluding air when sampling water in this way. After purging the sample valve and line to remove any foreign material, water is delivered to the bottom of the sample bottle, which is placed in a large, much taller beaker until the water fills the beaker and overflows. Then, the cap is immersed in the beaker and inverted to eliminate air bubbles before removing the delivery tube and closing the sample bottle under water. This technique cannot be used when acid or other preservatives must be added to the sample.
    - **Fig. 1 – Water-sampling method**

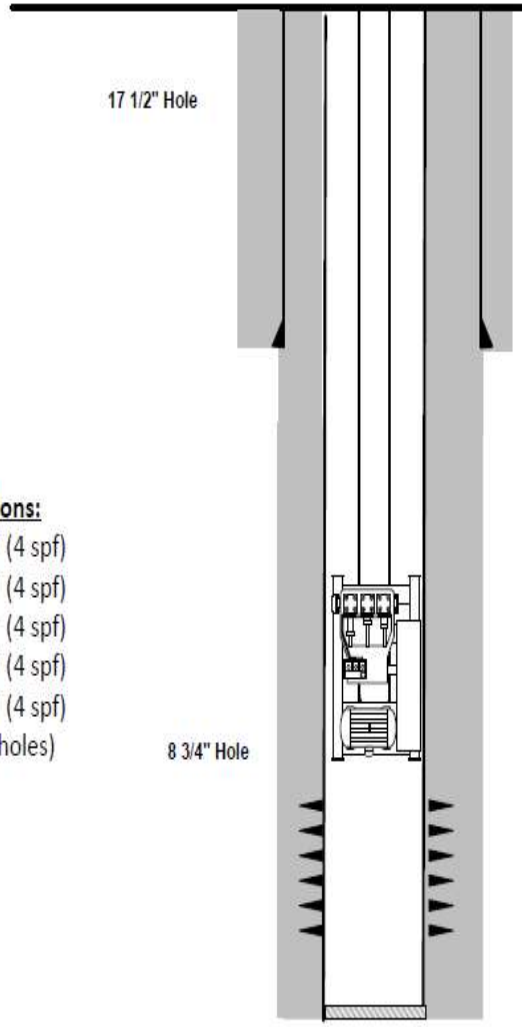


W Lybrook Unit 2309-24N WSW - Current

Spud Date: 01/03/19
Completion Date: 02/07/19

Lat: 36.205932 N Long: 107.741568 W
Entrada
SE/4, SW/4, Section 24, TWP 23N, Rng 09W
County: Sandoval NM
Elevation: 6893' KB

Current Wellbore



13 3/8" Surface 54.5# J55 @ 397'.
Circulated cmt to surface w/ 440 sx
Type G cmt. BURST = 2730 psi.

7" Production 26# L-80 to 7,398' (LT&C).
PBTD = 7,307.6'. Displacement. Burst 7" 26# L-80 LT&C = 7240 psi burst.
Pumped 80 bbls tuned spacer & 184 bbls lead cmt (525 sxs) @ 12.3 PPG, followed by 102 bbls tail cmt @ 13.3 ppg. Dropped plug & disp w/ 279 bbls H2O, bumped plug, circ 52 bbls good cmt to surface. Floats held.

BHA Detail: (9/7/22)
83 jts 4 1/2" 11.6# P110 tbg
132' Electric Submersible Pump
EOT @ 3,543'

Perforations:
6851'-6856' (4 spf)
6895'-6900' (4 spf)
6912'-6917' (4 spf)
6953'-6958' (4 spf)
6985'-6990' (4 spf)
(100 total holes)

Purging Calculations:

Static Fluid Level is 499 feet below surface

4 ½" Volume = (3543'-499')*0.0155bbl/ft = 47.2bbls

4 ½" x 7" Volume = (3543'-499')*0.0186bbl/ft = 56.6bbls

7" Volume = (6990'-3543')*0.0382bbls/ft = 131.7bbls

Wellbore Volume = 235.5 bbls

3 Wellbore Volume Flush = 706.5 bbls

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 346090

CONDITIONS

Operator: NEW MEXICO ENERGY MINERALS & NATURAL RESOURCE 1220 S St Francis Dr Santa Fe , NM 87504	OGRID: 264235
	Action Number: 346090
	Action Type: [IM-SD] Well File Support Doc (ENG) (IM-AWF)

CONDITIONS

Created By	Condition	Condition Date
pgoetze	None	5/20/2024