

From: [Barbara McFarland](#)
To: [Koepsell, Arthur](#)
Subject: Fwd: Pathfinder 14
Date: Wednesday, July 18, 2012 6:52:00 AM

Approval of COA's

----- Forwarded message -----

From: **Ola Akrad** <oakrad@austinexploration.com>
Date: Tue, Jul 17, 2012 at 1:08 PM
Subject: RE: Pathfinder 14
To: Barbara McFarland <barbara@permitco-usa.com>, dhenderson@thomassonpetroleum.com, John Wright <John.Wright@wccoilgas.com>, Bill Minnett <bill.minnett@petersonenergy.com>

Hello Barbra,

The changes and conditions of approvals is fine by Aus-Tex. Please have this email forwarded to the COGCC as an acknowledgment of the COA.

Ola,

From: Barbara McFarland [mailto:barbara@permitco-usa.com]
Sent: Monday, July 16, 2012 2:51 PM
To: Ola Akrad; dhenderson@thomassonpetroleum.com; John Wright; Bill Minnett
Subject: Pathfinder 14

Hi ALL,

The COGCC requests the following changes to the information provided and acknowledgement of conditions of approval prior to passing the Oil and Gas Location Assessment (OGLA).

Water level

Based on a review of the water well data on the COGCC website it appears that the water level surrounding the [proposed location is 98 feet (Receipt #0374892, Permit # 44176 located 1,030 feet north west of the location.) The water level on the 2A should be amended to 98 feet.

Conditions of approval

- Operator must implement site-specific best management practices in accordance with good engineering practices, including, but not limited to, construction of a berm or diversion dike, site grading, or other comparable measures, sufficient to prevent a release of drilling, completion, produced fluids, or chemical products from migrating off the location.
- Only enclosed flares shall be utilized at the location. A Form 4 Sundry Notice is required to be filed with the COGCC stating that flaring will be taking place on the location. The Sundry is required to be submitted and approved prior to initiating flaring. The Sundry shall also include a line drawing of the flare.
- Provide notice to COGCC 48-hours prior to commencement of Hydraulic Fracturing activities via form 42.
- Provide notice to COGCC 48-hours prior to commencement of construction activities via form 42.
- Prior to drilling, operator shall sample the two wells, springs, or surface water features within a one (1) mile radius of the proposed oil and gas location. Testing preference shall be given to water wells and springs over surface water. The sample location shall be surveyed in accordance with Rule 215.
- Initial baseline testing shall include laboratory analysis of pH, total dissolved solids (TDS), specific conductivity (SC), sodium adsorption ratio (SAR) calculation, calcium (Ca), potassium (K), magnesium (Mg), sodium (Na), arsenic (As), boron (B), barium (Ba), cadmium (Cd), chromium (Cr), copper (Cu), iron (Fe), manganese (Mn), lead (Pb), selenium (Se). All metals analyzed for total recoverable; bromide (Br), chloride (Cl), fluoride (F), sulfate (SO₄), alkalinity (total, HCO₃, and CO₃ – all expressed as CaCO₃), benzene, toluene, ethyl benzene, o-xylene, m- + p-xylene (BTEX), dissolved methane, diesel range organics (DRO), gasoline range organics (GRO). Sampling shall be performed by qualified individuals using methods consistent with commonly accepted environmental sampling procedures. Field observations such as pH, temperature, specific conductance, odor, water color, sediment, bubbles, and effervescence shall also be included.

After 90 days, but less than 180 days of completion of the first proposed well a

"post-completion" test shall be performed for the same analytical parameters listed above and repeated one (1), three (3) and six (6) years thereafter.

If free gas or a dissolved methane concentration level greater than one (1) milligrams per liter (mg/l) is detected in a water well, gas compositional analysis and stable isotope analysis of the methane (carbon and deuterium) shall be performed to determine gas type (biogenic or thermogenic). If the methane concentration increases by more than five (5) mg/l between sampling periods, or increases to more than ten (10) mg/l, the operator shall notify the Director and the owner of the water well immediately. If thermogenic methane concentrations increase between sampling periods, the operator shall submit to the Director an action plan to determine the source of the increase.

Copies of all test results described above shall be provided to the Director and the landowner where the water quality testing well is located within three (3) months of collecting the samples used for the test. The analytical data and surveyed sample locations shall also be submitted to the Director in an electronic data deliverable format approved by Director.

If you have any questions or concerns feel free to contact me.

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Barbara McFarland

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