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Colorado

Kubeczko - DNR, Dave <dave.kubeczko@state.co.us>

Black Hills Plateau Production, Homer Deep Unit 9-11 Pad, NWNW Sec 9 T8S R98W, Garfield County, Form 2A (#400356087) and Form 15 (400356093) Review

Kubeczko - DNR, Dave <dave.kubeczko@state.co.us>
To: Dave Kubeczko - DNR <dave.kubeczko@state.co.us>

Tue, Mar 19, 2013 at 3:58 PM

Scan No 2106528 CORRESPONDENCE 2A#400356087

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

From: Kubeczko - DNR, Dave <dave.kubeczko@state.co.us>
Date: Tue, Mar 19, 2013 at 3:23 PM
Subject: Re: Black Hills Plateau Production, Homer Deep Unit 9-11 Pad, NWNW Sec 9 T8S R98W, Garfield County, Form 2A (#400356087) and Form 15 (400356093) Review
To: "Donahue, Jessica" <Jessica.Donahue@blackhillscorp.com>

Jessica,

Whenever you get them from BLM will be great. Thanks.

Dave

On Tue, Mar 19, 2013 at 12:54 PM, Donahue, Jessica <Jessica.Donahue@blackhillscorp.com> wrote:

Dave,

Black Hills can abide by these. I have not yet received our COAs from BLM as of yet. Would you like me to email you a copy when I receive them? BLM is currently anticipating approving the EA around April 5.

Thanks,

Jessica

From: Kubeczko - DNR, Dave [mailto:dave.kubeczko@state.co.us]
Sent: Tuesday, March 19, 2013 12:29 PM
To: Donahue, Jessica
Subject: Black Hills Plateau Production, Homer Deep Unit 9-11 Pad, NWNW Sec 9 T8S R98W, Garfield County, Form 2A (#400356087) and Form 15 (400356093) Review

Jessica,

I have been reviewing the Homer Deep Unit 9-11 Pad **Form 2A** (#400356087) and **Form 15** (#400356093).

COGCC will attach the following conditions of approval (COAs) based on the data Black Hills has submitted on or attached to the Form 2A and Form 15 prior to passing the Oil and Gas Location Assessment (OGLA) review.

General Site: The following conditions of approval (COAs) will apply:

COA 91 - Notify the COGCC 48 hours prior to start of pad construction, rig mobilization, spud, pit liner installation, and start of hydraulic stimulation operations using Form 42 (the appropriate COGCC individuals will automatically be email notified, including the LGD for hydraulic stimulation operations).

COA 5 - Operator must implement best management practices to contain any unintentional release of fluids, including any fluids conveyed via temporary surface or buried pipelines.

COA 44 - The access road will be constructed to prevent sediment migration from the access road to nearby surface water or any drainages leading to other nearby surface waters or wetlands areas.

COA 23 - Operator must ensure secondary containment for any volume of fluids contained at well site during drilling and completion operations (as described and shown on the Construction Layout Drawings attachment); including, but not limited to, construction of a berm or diversion dike, diversion/collection trenches within and/or outside of berms/dikes, site grading, or other comparable measures (i.e., best management practices (BMPs) associated with stormwater management) sufficiently protective of nearby surface water. Any berm constructed at the well pad location will be stabilized, inspected at regular intervals (at least every 14 days), and maintained in good condition.

COA 38 - The moisture content of any freshwater generated cuttings in a cuttings pit, trench, or pile shall be as low as practicable to prevent accumulation of liquids greater than de minimis amounts. At the time of closure, if the drill cuttings are to be left onsite, they must also meet the applicable standards of Table 910-1.

COA 25 - Flowback and stimulation fluids must be sent to tanks, separators, or other containment/filtering equipment before the fluids can be placed into any pipeline, storage vessel, or lined pit located on the well pad; or into tanker trucks for offsite disposal. The flowback and stimulation fluid tanks, separators, or other containment/filtering equipment must be placed on the well pad in an area with additional downgradient perimeter berming. The area where flowback fluids will be stored/reused must be constructed to be sufficiently impervious to contain any spilled or released material.

COA 58 - Berms or other containment devices shall be constructed to be sufficiently impervious (preferably corrugated steel with poly liner) to contain any spilled or released material around crude oil, condensate, and produced water storage tanks.

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Groundwater/Surface Water Baseline Sampling: Based on recent COGCC rule changes, COGCC will attach the following additional condition of approval (COA) to the Form 2A to provide the COGCC with some baseline data for surface water and/or groundwater:

COA 9 - Baseline Water Testing: Prior to drilling, operator shall sample at a minimum two (2) domestic water wells or springs within a one (1) mile radius of the proposed oil and gas location. Testing preference shall be given to domestic water wells and springs over surface water. If possible, the water wells or springs selected should be on opposite sides of the oil and gas location not exceeding a one (1) mile radius. If water wells or springs on opposite sides of the oil and gas location cannot be identified, then the two (2) closest wells or springs within a one (1) mile radius of the oil and gas location shall be sampled. The sample location shall be surveyed in accordance with Rule 215. Sampling and analysis shall be conducted in conformance with an accepted industry standard as described in Rule 910.b.(2).

Initial baseline testing shall include: pH, specific conductance, total dissolved solids (TDS), dissolved gases (methane, ethane, propane), alkalinity (total bicarbonate and carbonate as CaCO₃), major anions (bromide, chloride, fluoride, sulfate, nitrate and nitrite as N, phosphorus), major cations (calcium, iron,

magnesium, manganese, potassium, sodium), other elements (barium, boron, selenium and strontium), presence of bacteria (iron related, sulfate reducing, slime and coliform), total petroleum hydrocarbons (TPH) and BTEX compounds (benzene, toluene, ethylbenzene and xylenes). Hydrogen sulfide shall also be measured using a field test method. Field observations such as pH, temperature, specific conductance, odor, water color, sediment, bubbles, and effervescence shall also be included. COGCC recommends that the latest version of EPA SW 846 analytical methods be used where possible and that analyses of samples be performed by laboratories that maintain state or national accreditation programs.

If free gas or a dissolved methane concentration greater than 1.0 milligram per liter (mg/l) is detected in a water well, gas compositional analysis and stable isotope analysis of the methane (carbon and hydrogen – ^{12}C , ^{13}C , ^1H and ^2H) shall be performed to determine gas type. If test results indicated thermogenic or a mixture of thermogenic and biogenic gas. If the methane concentration increases by more than 5.0 mg/l between sampling periods, or increases to more than 10. mg/l, the operator shall notify the Director and the owner of the water well immediately.

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 once within 60 to 72 months. If the well is a non-producing well, then the 60- to 72-month sample will not be required.

Additional "post-completion" test(s) may be required if changes in water quality are identified during follow-up testing. The Director may require further water well sampling at any time in response to complaints from water well owners.

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 well locations shall also be submitted to the Director in an electronic data deliverable format.

Documented refusal to grant access by well owner or surface owner (for spring sampling) shall not constitute a violation of this COA.

Form 15 Earthen Pit Permit: The following conditions of approval (COAs) will apply to both the Form 2A and the Form 15 Pit Permit:

COA 47 - Per Black Hills Plateau Production's De Beque Exploratory Proposal (which is currently being analyzed by BLM), "It is estimated that initially the flowback fluids (before evaporation) would contain about 3,500 ppm of total dissolved solids (TDS). The concentration of solids in the fluid would increase as water evaporated. **The fluids pit would be double lined, with both liners a minimum of 24 mil thick, and they would be installed in accordance with Colorado Oil and Gas Conservation Commission (COGCC) regulations as well as the BLM GJFO Standard Conditions.** The pit liner would be maintained in good

working condition, with no tears or holes, until the pit was closed."; the **multi-well pit must be double-lined.**

COA 22 - After installation of the uppermost liner and prior to operating the pit, the synthetic liner(s) shall be tested by filling the pit with at least 70 percent of operating capacity of water, measured from the base of the

pit (not to exceed the 2-foot freeboard requirement). The operator shall monitor the pit for leaks for a period of

72 hours prior to either draining the pit or commencing operations. Operator shall notify the COGCC Oil and Gas Location Assessment (OGLA) Specialist for Western Colorado (Dave Kubeczko; email dave.kubeczko@state.co.us) 48 hours prior to start of the hydrotest. Hydrotest monitoring results must be maintained by the operator for the life of the pit and provided to COGCC prior to using the pit.

COA 67 - In lieu of conducting an initial hydrostatic test of the pit, the operator can monitor fluid levels in the pit continuously using a minimum of two pressure transducers located at the upgradient and downgradient ends of the pit (based on the original topographic profile). These pressure transducers should be linked to the operator's SCADA system such that they can be remotely monitored. In addition, the pit liner will be marked at the two foot freeboard depth line so that operations personnel (as well as COGCC inspectors) can easily verify that the required fluid free board is being maintained. The electronically collected water level measurement data shall be used to confirm changes in pit inflow and outflow during operations based on estimates from truck and/or pipeline delivery or removal activities. Any abnormalities that are noticed during operations will be reported to the operator's field supervisor immediately so that any necessary follow-up can be scheduled.

COA 39 - No portion of any pit that will be used to hold liquids shall be constructed on fill material, unless the pit and fill slope are designed and certified by a professional engineer, subject to review and approval by the director prior to construction of the pit. The construction and lining of the pit shall be supervised by a professional engineer or their agent. The entire base of the pit must be in cut.

COA 49 - For pits containing fluids other than freshwater only; the pit must be fenced. If the pit is not drained, or closure has not begun within 30 days after last use for well completion, the pit must be netted. The operator must maintain the fencing and netting until the pit is closed.

COA 23 - Surface water samples (one upgradient and one downgradient from the pit/well pad location) from Dry Fork (if water is present) shall be collected prior to pit use and every 12 months (until pit closure) to evaluate potential impacts from pit operations. At a minimum, the surface water samples will be analyze for the following parameters: major cations/anions (chloride, fluoride, sulfate, sodium); total dissolved solids (TDS); and BTEX/DRO.

COA 24 - The operator shall submit, and receive approval of, a reuse and recycling plan per Rule 907.a. (3), prior to any offsite reuse/recycling of pit fluids.

COA 27 - Pits used exclusively for drilling shall be closed in accordance with the 1000-Series Rules. Any pit(s) used for purposes other than drilling shall be closed in accordance with Rule 905. Closure of Pits, and Buried or Partially Buried Produced Water Vessels; with an approved Site Investigation and Remediation Workplan, Form 27.

COA 28 - Submit additional disposal facilities (wells, pits, etc.), if necessary (i.e., if original disposal option changes), for pit liquid contents to COGCC via a Form 4 Sundry prior to disposal.

COA 81 - At the time of pit closure, operator must submit disposal information for solids, if necessary, via a Form 4 Sundry Notice to the COGCC Location Specialist for Western Colorado (Dave Kubeczko; email dave.kubeczko@state.co.us). The disposal method will need to be approved prior to operator starting pit closure.

COGCC would appreciate your concurrence with attaching these COAs to the Form 2A permit and Form 15 Earthen Pit Permit prior to passing the OGLA review. In addition, could Black Hills provide COGCC with the COAs and wildlife stipulations that BLM has attached to this location. If you have any questions, please do not hesitate to call me at (970) 309-2514 (cell), or email. Thanks.

Dave

David A. Kubeczko, PG

Oil and Gas Location Assessment Specialist

Colorado Oil & Gas Conservation Commission

Northwest Area Office

796 Megan Avenue, Suite 201

Rifle, CO 81650

FAX: (970) 625-5682

Cell: (970) 309-2514

dave.kubeczko@state.co.us



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