

State of Colorado
Oil and Gas Conservation Commission

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OGCC RECEPTION

Document Number:

400396408

EARTHEN PIT REPORT / PERMIT

This form is to be used for both reporting and permitting pits. Rule 903 describes when a Permit with prior approval, or a Report within 30 days is required for pits. Submit required attachments and forms.

Form Type: ☒ PERMIT ☐ REPORT

OGCC PIT NUMBER: 433571

NOTE: Operator to provide OGCC Pit Number only if available on an existing pit for pit report

| | | | |
|-----------------------|----------------------------|---------------|-----------------------------|
| OGCC Operator Number: | 100185 | Contact Name: | Heather Mitchell |
| Name of Operator: | ENCANA OIL & GAS (USA) INC | | |
| Address: | 370 17TH ST STE 1700 | Phone: | (720) 876-3070 |
| City: | DENVER | State: | CO |
| Zip: | 80202-5632 | Email: | heather.mitchell@encana.com |

ATTACHMENTS

Detailed Site Plan

Design/Cross Sec

Topo Map

Calculations

Sensitive Area Info

Mud Program

Form 2A

Form 26

Water Analysis

Pit Location Information

| | | | |
|---|------------------------|---------------------------------|-------------|
| Operator's Pit/Facility Name: | Hunter Mesa Upper Pond | Operator's Pit/Facility Number: | |
| API Number (associated well): | 05-00 | | |
| OGCC Location ID (associated location): | 149011 | Or Form 2A # | 400394003 |
| Pit Location (QtrQtr, Sec, Twp, Rng, Meridian): | NESE-1-7S-93W-6 | | |
| Latitude: | 39.472219 | Longitude: | -107.717734 |
| County: | GARFIELD | | |

Operation Information

| | | | |
|--|--|---|--|
| Pit Use/Type (Check all that apply): | Pit Type: | <input checked="" type="checkbox"/> Lined | <input type="checkbox"/> Unlined |
| <input type="checkbox"/> Drilling: (Ancillary, Completion, Flowback, Reserve Pits) | <input type="checkbox"/> Oil-based Mud; | <input type="checkbox"/> Salt Sections or High Chloride Mud | |
| <input type="checkbox"/> Production: | <input type="checkbox"/> Skimming/Settling; | <input checked="" type="checkbox"/> Produced Water Storage; | <input type="checkbox"/> Percolation; |
| <input type="checkbox"/> Special Purpose: | <input type="checkbox"/> Flare; | <input type="checkbox"/> Emergency; | <input type="checkbox"/> Blowdown; |
| <input checked="" type="checkbox"/> Multi-Well Pit: | <input type="checkbox"/> Workover; | <input type="checkbox"/> Plugging; | <input type="checkbox"/> BS&W/Tank Bottoms |
| Construction Date: | 07/01/2013 | Actual or Planned: | Planned |
| Method of treatment prior to discharge into pit: | Filter at Pad, DAF at facility | | |
| Offsite disposal of pit contents: | <input checked="" type="checkbox"/> Injection; | <input type="checkbox"/> Commercial; | <input checked="" type="checkbox"/> Reuse/Recycle; |
| | <input type="checkbox"/> NPDES; | Permit Number: | |
| Other Information: | | | |

Site Conditions

| | | | | | |
|--|------|-----------------------|----|-------------|------|
| Distance (in feet) to the nearest surface water: | 2040 | Ground Water (depth): | 60 | Water Well: | 1010 |
| Is this location in a Sensitive Area? | No | Existing Location? | | | |

Pit Design and Construction

| | | | | | | | | |
|-------------------------------|---------------------|------------------|------------------|-----------------|--------------|----|---|-------|
| Size of Pit (in feet): | Length: | 750 | Width: | 120 | Depth: | 24 | Calculated Working Volume (in barrels): | 20000 |
| | | | | | | | | 0 |
| Flow Rates (in bbl/day): | Inflow: | 15000 | Outflow: | | Evaporation: | 0 | Percolation: | 0 |
| Primary Liner. Type: | HDPE | Thickness (mil): | 60 | | | | | |
| Secondary Liner (if present): | Type: | HDPE | Thickness (mil): | 60 | | | | |
| Is Pit Fenced? | Yes | Is Pit Netted? | Yes | Leak Detection? | Yes | | | |
| Other Information: | Pit will be covered | | | | | | | |

Operator Comments: This form 15 is part of a modification sundry to the Hunter Mesa Water Facility.

Certification

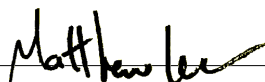
I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed: _____ Print Name: Heather Mitchell

Title: Regulatory Analyst Email: heather.mitchell@encana.com Date: 04/09/2013

Approval

Signed: _____



Title: _____

Director of Cogcc

Date: _____

07/15/2013

BMP

| <u>Type</u> | <u>Comment</u> |
|--------------|--|
| Construction | <p>PRECONSTRUCTION Wattles, Silt Fence, Vegetation Buffers, Slash, Topsoil Windrows (diversions & ROP's), Scheduling, Phased Construction</p> <p>CONSTRUCTION/RECLAMATION (Not all are used all the time) Terminal Containment, Diversions, Run-On Protection, Tracking, Benching, Terracing, ECM (Erosion Control Mulch), ECB (Erosion Control Blanket), Check Dams, Seeding, Mulching, Water Bars, Stabilized Unpaved Surfaces (Gravel), Stormwater & Snow Storage Containment, Scheduling, Phased Construction, Temporary Flumes, Culverts with inlet & outlet protection, Rip Rap, TRM (Turf Reinforcement Mats), Maintenance, Scheduling, Phased Construction, Fueling BMP's, Waste Management BMP's, Materials Handling BMP's</p> <p>POST CONSTRUCTION/RECLAMATION Maintenance Revegetation Monitoring BMP maintenance & monitoring Weed Management</p> |
| Wildlife | <p>Minimize the number, length and footprint of oil & gas development roads Use existing routes where possible Combine utility infrastructure planning (gas, electric & water) when possible with roadway planning to avoid separate utility corridors Coordinate Employee transport when possible</p> |

Total: 2 comment(s)

CONDITIONS OF APPROVAL:**GROUNDWATER SAMPLING COA:**

Baseline Water Testing: Prior to pit operations, operator shall sample at a minimum two (2) domestic water wells or springs within a one (1) mile radius of the proposed pit 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 following four water wells (two upgradient and three downgradient) have been identified as acceptable locations. Operator shall sample one of the upgradient wells and select one of the three downgradient wells. The initial samples shall be collected prior to pit construction. Follow up sampling shall occur yearly during pit operations and continue for three years after pit closure:

UPGRADIENT WELLS:

1) Permit No. 49389-MH-Greenback Produced Water Management; monitoring well; TD - 130' bgs; SWL - 90' bgs; FM - bedrock; located approximately 2067' to the S (upgradient);

2) Permit No. 151561-Benzyl Livestock Company; domestic well; TD ~ 120' bgs; SWL ~ 100' bgs; FM - bedrock; located approximately 3927' to the W (upgradient-crossgradient);

DOWNGRADIENT WATER WELLS:

3) Permit No. 64198-Shaffer, Jane; domestic/stock well; TD - 140' bgs; SWL - 120' bgs; FM - bedrock; located approximately 2657' to the E-NE (downgradient);

4) Permit No. 25471-Barr, Dick; stock well; TD - 41' bgs; SWL - 20' bgs; alluvium/weathered bedrock; located approximately 3728' to the E-NE (downgradient);

5) Permit No. 87658-McGown, Frank O & McGown, Dorothy; domestic well; TD - 70' bgs; SWL - 14' bgs; FM - alluvium/weathered bedrock; located approximately 3729' to the E-NE (downgradient);

Documented refusal to grant access by well owner or surface owner (for water well or spring sampling), or if no water wells or springs are located/identified within one mile, shall not constitute a violation of this COA.

FORM 15 EARTHEN PIT PERMIT COAs:

The multi-well pit must be double-lined. The pit will also require a leak detection system (Rule 904.e).

Delivery and vacuum truck hoses will not be allowed to be placed directly onto the pit liner. Operator will construct a loading/unloading station located next to the pit, to deliver fluids to or remove fluids from the pit by truck. The loading/unloading station shall be designed and utilized to prevent hoses from being dropped into the pits and dragged over the liner, which could lead to liner damage. The loading/unloading station will be the only permitted access for manual fluids transfers to or from the pit. Vehicles will not be allowed to approach the pit any closer than the loading/unloading station. Each station will have a catch basin in case a leak occurs while operations personnel are connecting or disconnecting hoses. Signs clearly marking the truck loading/unloading station shall be provided and maintained by the operator.

Operator must submit a professional engineer (PE) approved/stamped as-built drawing (plan view and cross-sections) of the multi-well pit within 30 calendar days of construction.

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 (via Form 4 Sundry to Dave Kubeczko; email dave.kubeczko@state.co.us) .

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.

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.

The nearby downgradient hillside below the pit location must be periodically monitored for any day-lighting of fluids throughout pit operations.

The multi-well pit must be fenced and netted. The operator must maintain the fencing and netting until the pit is closed.

Surface water samples (one upgradient and one downgradient from the multi-well pit location) from the unnamed intermittent stream located approximately 1250 feet to the northwest of the location (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/TPH.

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.

The multi-well pit 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.

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.

The operator shall submit a Form 27 for COGCC review and approval prior to commencing pit closure activities. The operator shall also submit a Notice of Completion for COGCC review and approval within 30 days of concluding pit closure activities.

GENERAL SITE COAs:

Notify the COGCC 48 hours prior to start of pit pad construction, pit liner installation, start of hydrostatic test, 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).

Operator must implement best management practices to contain any unintentional release of fluids at the pit location, as well as any fluids conveyed via temporary surface or buried permanent pipelines.

Operator must ensure secondary containment for any volume of fluids contained at pit site during operations (as described on the BMP tab); 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 frac pad location will be stabilized, inspected at regular intervals (at least every 14 days), and maintained in good condition.

Strategically apply fugitive dust control measures, including enforcing established speed limits on private roads, to reduce fugitive dust and coating of vegetation and deposition in water sources.

Operator shall stabilize exposed soils and slopes as an interim measure during drilling and completion operations at this well pad.

Flowback and stimulation fluids from the wells/pads being completed using these pits (if applicable) 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 (only if an amended Form 2A has been submitted/approved and a Form 15 Earthen Pit Permitted has been submitted/approved) 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.

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.

Additional containment shall be required where temporary or permanent pumps and other necessary equipment or chemicals are located.

Operator will use adequately sized containment devices for all chemicals and/or hazardous materials stored or used on location.

Operator will implement measures to ensure that adequate separation of hydrocarbons from the influent occurs to prevent accumulation of oil on the surface of stored completions fluids. Operator shall also employ a method for monitoring buildup of phase-separated hydrocarbons on the surface of stored fluids.

No oil is permitted on the surface of completions fluids.

Pits will be operated in accordance with the operations plan submitted and any revisions with the Form 28 for Facility ID #149011.

Operator must implement all operations detailed in the operating plan, pit liner installation specifications, and all other attachments to the Form 15 and Form 28 in accordance with the 900-Series Rules.

TEMPORARY SURFACE PIPELINE COAs:

Operator shall pressure test pipelines in accordance with Rule 1101.e.(1) prior to putting into initial service any temporary surface pipelines and following any reconfiguration of the pipeline network. Operator shall notify the COGCC Oil and Gas Location Assessment (OGLA) Specialist for Western Colorado (Dave Kubeczko; email dave.kubeczko@state.co.us), the COGCC Field Inspection Supervisor for Northwest Colorado (Shaun Kellerby; email shaun.kellerby@state.co.us), and the COGCC Field Inspector for Northwest Colorado (Chuck Browning email chuck.browning@state.co.us) 48 hours prior to testing surface poly pipeline.

Operator must implement best management practices to contain any unintentional release of fluids along all portions of the surface pipeline route where temporary pumps and other necessary equipment are located.

Operator must routinely inspect the entire length of the surface pipeline to ensure integrity. Operator shall conduct daily inspections of surface poly pipeline routes for leaks during active transfer of fluids. Inspections shall be conducted by viewing the length of the pipeline; operator will endeavor to minimize surface disturbance during pipeline monitoring. The operator shall maintain records of inspections, findings and repairs, if necessary, for the life of the pits.

Operator must ensure 110 percent secondary containment for any potential volume of fluids that may be released from the surface pipeline at all sensitive area crossings, including, but not limited to stream, intermittent stream, ditch, and drainage crossings.

Operator will utilize, to the extent practical, all existing access and other public roads, and/or existing pipeline right-of-ways, when placing/routing the surface pipelines. This will reduce surface disturbance and fragmentation of wildlife habitat in the area.