

FORM
2A

Rev
08/13

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:

401393767

Date Received:

09/01/2017

Oil and Gas Location Assessment

New Location Refile Amend Existing Location Location#: _____

This Oil and Gas Location Assessment is to be submitted to the COGCC for approval prior to any ground disturbance activity associated with oil and gas operations. Approval of this Oil and Gas Location Assessment will allow for the construction of the below specified Location; however, it does not supersede any land use rules applied by the local land use authority. Please see the COGCC website at <http://cogcc.state.co.us/> for all accompanying information pertinent this Oil and Gas Location Assessment.

Location ID:

455385

Expiration Date:

06/08/2021

This location assessment is included as part of a permit application.

CONSULTATION

- This location is included in a Comprehensive Drilling Plan. CDP # _____
- This location is in a sensitive wildlife habitat area.
- This location is in a wildlife restricted surface occupancy area.
- This location includes a Rule 306.d.(1)A.ii. variance request.

Operator

Operator Number: 10670
 Name: MALLARD EXPLORATION LLC
 Address: 1821 BLAKE STREET STE 2B
 City: DENVER State: CO Zip: 80202

Contact Information

Name: Erin Mathews
 Phone: (720) 543-7959
 Fax: ()
 email: emathews@mallardexploration.com

RECLAMATION FINANCIAL ASSURANCE

- Plugging and Abandonment Bond Surety ID: 20170115 Gas Facility Surety ID: _____
- Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: Gadwall Number: Pad
 County: WELD
 Quarter: NWNE Section: 30 Township: 8N Range: 60W Meridian: 6 Ground Elevation: 4947

Define a single point as a location reference for the facility location. When the location is to be used as a well site then the point shall be a well location.

Footage at surface: 748 feet FNL from North or South section line
2167 feet FEL from East or West section line

Latitude: 40.638433 Longitude: -104.133186

PDOP Reading: 1.4 Date of Measurement: 08/10/2017

Instrument Operator's Name: Ian Carabajal

RELATED REMOTE LOCATIONS

(Enter as many Related Locations as necessary. Enter the Form 2A document # only if there is no established COGCC Location ID#)

This proposed Oil and Gas Location is:

LOCATION ID # FORM 2A DOC #

FACILITIES

Indicate the number of each type of oil and gas facility planned on location

| | | | | | | | | | |
|-----------------------|---------------|----------------------|---------------|----------------------|---------------|------------------|---------------|-------------------------------|---------------|
| Wells | <u>16</u> | Oil Tanks* | <u>32</u> | Condensate Tanks* | <u> </u> | Water Tanks* | <u>16</u> | Buried Produced Water Vaults* | <u> </u> |
| Drilling Pits | <u> </u> | Production Pits* | <u> </u> | Special Purpose Pits | <u> </u> | Multi-Well Pits* | <u> </u> | Modular Large Volume Tanks | <u>2</u> |
| Pump Jacks | <u>16</u> | Separators* | <u>16</u> | Injection Pumps* | <u> </u> | Cavity Pumps* | <u> </u> | Gas Compressors* | <u>2</u> |
| Gas or Diesel Motors* | <u>16</u> | Electric Motors | <u>16</u> | Electric Generators* | <u>2</u> | Fuel Tanks* | <u> </u> | LACT Unit* | <u>2</u> |
| Dehydrator Units* | <u> </u> | Vapor Recovery Unit* | <u>4</u> | VOC Combustor* | <u>8</u> | Flare* | <u> </u> | Pigging Station* | <u> </u> |

OTHER FACILITIES*

Other Facility Type

Number

Vapor Recovery Tower

2

Those facilities indicated by an asterisk () shall be used to determine the distance from the Production Facility to the nearest cultural feature on the Cultural Setbacks Tab.

Per Rule 303.b.(3)C, description of all oil, gas, and/or water pipelines:

2" welded steel flowlines from wellheads to separators carrying oil, gas and water.
2" welded steel gas supply line from compressors to wellheads.

CONSTRUCTION

Date planned to commence construction: 09/01/2018 Size of disturbed area during construction in acres: 25.20

Estimated date that interim reclamation will begin: 03/01/2019 Size of location after interim reclamation in acres: 17.00

Estimated post-construction ground elevation: 4947

DRILLING PROGRAM

Will a closed loop system be used for drilling fluids: Yes

Is H₂S anticipated? No

Will salt sections be encountered during drilling: No

Will salt based mud (>15,000 ppm Cl) be used? No

Will oil based drilling fluids be used? Yes

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE

Drilling Fluids Disposal Method: Commercial Disposal

Cutting Disposal: OFFSITE

Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Beneficial reuse or land application plan submitted?

Reuse Facility ID: or Document Number:

Centralized E&P Waste Management Facility ID, if applicable:

SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: William Stepanek et. al.

Phone:

Address: 31 Oak Rd

Fax: _____

Address: _____

Email: _____

City: Orinda State: CA Zip: 94563

Surface Owner: Fee State Federal Indian

Check all that apply. The Surface Owner: is the mineral owner
 is committed to an oil and Gas Lease
 has signed the Oil and Gas Lease
 is the applicant

The Mineral Owner beneath this Oil and Gas Location is: Fee State Federal Indian

The Minerals beneath this Oil and Gas Location will be developed from or produced to this Oil and Gas Location: Yes

The right to construct this Oil and Gas Location is granted by: Surface Use Agreement

Surface damage assurance if no agreement is in place: _____ Surface Surety ID: _____

Date of Rule 306 surface owner consultation _____

CURRENT AND FUTURE LAND USE

Current Land Use (Check all that apply):

Crop Land: Irrigated Dry land Improved Pasture Hay Meadow CRP
Non-Crop Land: Rangeland Timber Recreational Other (describe): _____
Subdivided: Industrial Commercial Residential

Future Land Use (Check all that apply):

Crop Land: Irrigated Dry land Improved Pasture Hay Meadow CRP
Non-Crop Land: Rangeland Timber Recreational Other (describe): _____
Subdivided: Industrial Commercial Residential

CULTURAL DISTANCE INFORMATION

Provide the distance to the nearest cultural feature as measured from Wells or Production Facilities onsite.

| | From WELL | From PRODUCTION FACILITY |
|-----------------------------------|------------------|---------------------------------|
| Building: | 4391 Feet | 4383 Feet |
| Building Unit: | 4556 Feet | 4567 Feet |
| High Occupancy Building Unit: | 5280 Feet | 5280 Feet |
| Designated Outside Activity Area: | 5280 Feet | 5280 Feet |
| Public Road: | 734 Feet | 130 Feet |
| Above Ground Utility: | 4533 Feet | 4544 Feet |
| Railroad: | 5280 Feet | 5280 Feet |
| Property Line: | 309 Feet | 88 Feet |

INSTRUCTIONS:

- All measurements shall be provided from center of nearest Well or edge of nearest Production Facility to nearest of each cultural feature as described in Rule 303.b.(3)A.
- Enter 5280 for distance greater than 1 mile.
- Building - nearest building of any type. If nearest Building is a Building Unit, enter same distance for both.
- Building Unit, High Occupancy Building Unit, and Designated Outside Activity Area - as defined in 100-Series Rules.
- For measurement purposes only, Production Facilities should only include those items with an asterisk(*) on the Facilities Tab.

DESIGNATED SETBACK LOCATION INFORMATION

Check all that apply. This location is within a:

- Buffer Zone
- Exception Zone
- Urban Mitigation Area

Pre-application Notifications (required if location is within 1,000 feet of a building unit):

Date of Rule 305.a.(1) Urban Mitigation Area Notification to Local Government: _____

Date of Rule 305.a.(2) Buffer Zone Notification to Building Unit Owners: _____

- Buffer Zone - as described in Rule 604.a.(2), within 1,000' of a Building Unit.
- Exception Zone - as described in Rule 604.a.(1), within 500' of a Building Unit.
- Urban Mitigation Area - as defined in 100-Series Rules.
- Large UMA Facility – as defined in 100-Series Rules.

FOR MULTI-WELL PADS AND PRODUCTION FACILITIES WITHIN DESIGNATED SETBACK LOCATIONS ONLY:

Check this box if this Oil and Gas Location has or will have Production Facilities that serve multiple wells (onl or offsite) and the Production Facilities are proposed to be located less than 1,000 feet from a Building Unit. *(Pursuant to Rule 604.c.(2)E.i., the operator must evaluate alternative locations for the Production Facilities that are farther from the Building Unit, and determine whether those alternative locations were technically feasible and economically practicable for the same proposed development.)*

By checking this box, I certify that no alternative placements for the Production Facilities, farther from the nearest Building Unit, were available based on the analysis conducted pursuant to Rule 604.c.(2)E.i.

In the space below, explain rationale for siting the multi-well Production Facility(ies) that supports your Rule 604.c.(2)E.i determination. Attach documentation that supports your determination to this Form 2A.

SOIL

List all soil map units that occur within the proposed location. attach the National Resource Conservation Service (NRCS) report showing the "Map Unit Description" report listing the soil typical vertical profile. This data is to used when segregating topsoil.

The required information can be obtained from the NRCS web site at <http://soildatamart.nrcs.usda.org/> or from the COGCC web site GIS Online map page found at <http://colorado.gov/cogcc>. Instructions are provided within the COGCC web site help section.

NRCS Map Unit Name: 45 - Olney fine sandy loam, 6 to 9 percent slopes

NRCS Map Unit Name: 54 - Platner loam, 0 to 3 percent slopes

NRCS Map Unit Name: _____

PLANT COMMUNITY:

Complete this section only if any portion of the disturbed area of the location's current land use is on non-crop land.

Are noxious weeds present: Yes No

Plant species from: NRCS or, field observation Date of observation: 08/10/2017

List individual species:

Check all plant communities that exist in the disturbed area.

- Disturbed Grassland (Cactus, Yucca, Cheatgrass, Rye)
- Native Grassland (Bluestem, Grama, Wheatgrass, Buffalograss, Fescue, Oatgrass, Brome)
- Shrub Land (Mahogany, Oak, Sage, Serviceberry, Chokecherry)
- Plains Riparian (Cottonwood, Willow, Aspen, Maple, Poplar, Russian Olive, Tamarisk)
- Mountain Riparian (Cottonwood, Willow, Blue Spruce)
- Forest Land (Spruce, Fir, Ponderosa Pine, Lodgepole Pine, Juniper, Pinyon, Aspen)
- Wetlands Aquatic (Bullrush, Sedge, Cattail, Arrowhead)
- Alpine (above timberline)
- Other (describe):

WATER RESOURCES

Is this a sensitive area: No Yes

Distance to nearest

downgradient surface water feature: 491 Feet

water well: 2735 Feet

Estimated depth to ground water at Oil and Gas Location 30 Feet

Basis for depth to groundwater and sensitive area determination:

Nearest downgradient surface water feature is a wetland.
Nearest water well is CDWR Permit 20993. Depth to groundwater based on CDWR Permit #9617-F

Is the location in a riparian area: No Yes

Was an Army Corps of Engineers Section 404 permit filed No Yes If yes attach permit.

Is the location within a Rule 317B Surface Water Supply Area buffer No zone:

If the location is within a Rule 317B Surface Water Supply Area buffer have all public water supply systems within 15 miles been notified:

Is the Location within a Floodplain? No Yes Floodplain Data Sources Reviewed (check all that apply)

Federal (FEMA)

State

County

Local

Other

GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 609

WILDLIFE

This location is included in a Wildlife Mitigation Plan

This location was subject to a pre-consultation meeting with CPW held on _____

DESIGNATED SETBACK LOCATION EXCEPTIONS

Check all that apply:

- Rule 604.a.(1)A. Exception Zone (within 500' of a Building Unit) and is in an Urban Mitigation Area
- Rule 604.b.(1)A. Exception Location (existing or approved Oil & Gas Location now within a Designated Setback as a result of Rule 604.a.)
- Rule 604.b.(1)B. Exception Location (existing or approved Oil & Gas Location is within a Designated Setback due to Building Unit construction after Location approval)
- Rule 604.b.(2) Exception Location (SUA or site-specific development plan executed on or before August 1, 2013)
- Rule 604.b.(3) Exception Location (Building Units constructed after August 1, 2013 within setback per an SUA or site-specific development plan)

RULE 502.b VARIANCE REQUEST

Rule 502.b. Variance Request from COGCC Rule or Spacing Order Number _____

ALL exceptions and variances require attached Request Letter(s). Refer to applicable rule for additional required attachments (e.g. waivers, certifications, SUAs).

OPERATOR COMMENTS AND SUBMITTAL

Comments Since this location is not in a buffer zone, a Waste Management Plan and Facility Layout was not included.

Manufacturer of MLVT: Hydrologistics
Size and Volume: Up to two (2) 157' diameter/42,000 BBLs
Anticipated time frame on site: 90 days

Mallard Exploration does not anticipate developing this oil and gas location until the completion of a natural gas gathering system and processing plant that will be constructed in the vicinity of the location by a third party. The gathering system and processing plant are anticipated to be operational during the first quarter of 2019. Mallard has entered into a contract with the operator of the gathering system/plant.

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

Signed: _____ Date: 09/01/2017 Email: regulatory@ascentgeomatics.com

Print Name: Ann Feldman Title: Regulatory Manager

Based on the information provided herein, this Application for Permit-to-Drill complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved:  Director of COGCC Date: 6/9/2018

Conditions Of Approval

All representations, stipulations and conditions of approval stated in this Form 2A for this location shall constitute representations, stipulations and conditions of approval for any and all subsequent operations on the location unless this Form 2A is modified by Sundry Notice, Form 4 or an Amended Form 2A.

| COA Type | Description |
|----------|---|
| | Green Completions -Test separators and associated flow lines, sand traps and emission control systems shall be installed on-site to accommodate green completions techniques. When commercial quantities of salable quality gas are achieved at each well, the gas shall be immediately directed to a sales line or shut in and conserved. If a sales line is unavailable or other conditions prevent placing the gas into a sales line, the operator shall not produce the wells without an approved variance per Rule 805.b.(3)C. |
| | Unnecessary or excessive flaring is prohibited. Operator shall direct all salable quality gas to a sales line as soon as practicable or be shut in and conserved per Rule 805.b.(3)B.v. and 912. |

Best Management Practices

| No | <u>BMP/COA Type</u> | <u>Description</u> |
|----|-----------------------------|--|
| 1 | General Housekeeping | <p>804. Visual Impacts: All long term facility structures will be painted a color that enables the facilities to blend in with the natural background color of the landscape, as seen from a viewing distance and location typically used by the public.</p> <p>Maintain appearance with garbage clean-up; a trash bin will be located on site to accumulate waste by the personnel drilling the wells. Site will have unused equipment, trash and junk removed immediately.</p> |
| 2 | Storm Water/Erosion Control | <p>Implement and maintain BMPs to control stormwater runoff in a manner that minimizes erosion, transport of sediment offsite, and site degradation. Co-locate gas and water gathering lines whenever feasible, and mitigate any erosion problems that arise due to the construction of any pipeline(s).</p> |
| 3 | Construction | <p>Operator will have an MLVT Design Package, certified and sealed by a licensed professional engineer, which is on file in their office and available upon request. The site shall be prepared in accordance with the specifications of the design package prior to tank installation; including ensuring that proper compaction requirements have been met.</p> <p>The MLVT will be at least 75 feet from a wellhead, fired vessel, heater-treater, or a compressor with a rating of 200 horsepower or more. It will be placed at least 50 feet from a separator, well test unit, or other non-fired equipment.</p> <p>All liner seams will be welded and tested in accordance with applicable ASTM International standards.</p> <p>Operator will be present during initial filling of the MLVT and the contractor will supervise and inspect the MLVT for leaks during filling.</p> <p>Operator will comply with the testing and re-inspection requirements and associated written standard operating procedures (SOP) listed on the design package.</p> <p>Signs will be posted on the MLVT indicating that the contents are freshwater.</p> <p>The MLVT will be operated with a minimum of 1 foot of freeboard at all times.</p> <p>Access to the MLVT will be limited to operational personnel and authorized regulatory agency personnel.</p> <p>Operator or contractor will conduct daily visual inspections of the exterior wall and surrounding area for integrity deficiencies.</p> <p>Operator will develop a contingency plan/emergency response plan associated with the MLVT and it is on file at their office.</p> <p>A fabric reinforced liner will be utilized. In the event that a tank breach were to occur, the fabric reinforced liner will prevent a “zippering” failure from occurring. The liner will meet the specifications per the design package.</p> <p>Operator acknowledges and will comply with the Colorado Oil & Gas Conservation Commission Policy on the Use of Modular Large Volume Tanks in Colorado dated June 13, 2014.</p> |
| 4 | Emissions mitigation | <p>Operator has contracted with a third party to bring a gas sales lines to the location to send salable quality gas immediately down the sales line. In the event that a sales line connection is not available upon the completion of flowback, operator will follow the policy per the Notice to Operators “Rule 912 Venting or Flaring Produced Natural Gas”. All salable quality gas shall be directed to the sales line as soon as practicable or shut in and conserved.</p> |

| | | |
|---|---------------------|---|
| 5 | Interim Reclamation | Operator shall be responsible for segregating the topsoil, backfilling, re-compacting any backfill, reseeding, and re-contouring the surface of any disturbed area so as not to interfere with Owner's operations and shall reclaim such area to be returned to preexisting conditions as best as possible with control of all noxious weeds. |
|---|---------------------|---|

Total: 5 comment(s)

Attachment Check List

| <u>Att Doc Num</u> | <u>Name</u> |
|--------------------|-------------------------|
| 1696863 | MULTI-WELL PLAN |
| 2473195 | SURFACE AGRMT/SURETY |
| 2478373 | CORRESPONDENCE |
| 2478535 | LOCATION DRAWING |
| 2478536 | ACCESS ROAD MAP |
| 401393767 | FORM 2A SUBMITTED |
| 401393843 | HYDROLOGY MAP |
| 401393853 | REFERENCE AREA MAP |
| 401393854 | REFERENCE AREA PICTURES |
| 401393855 | LOCATION PICTURES |
| 401393871 | NRCS MAP UNIT DESC |
| 401393874 | NRCS MAP UNIT DESC |
| 401394036 | SURFACE AGRMT/SURETY |

Total Attach: 13 Files

General Comments

| <u>User Group</u> | <u>Comment</u> | <u>Comment Date</u> |
|-------------------|---|---------------------|
| Permit | Updated construction and interim reclamation dates with Operator concurrence. Final review complete. | 06/04/2018 |
| OGLA | Operator provided a revised Emissions mitigation BMP. | 05/24/2018 |
| Permit | Status Active - attached SUA map provided by Operator. Permitting review complete. | 05/01/2018 |
| OGLA | Address Green Completions / gas sales line concern. | 04/19/2018 |
| OGLA | Operator provided revised Location Drawing and Access Road Map as the access point to the location changed at the request of Weld County. | 02/12/2018 |
| Permit | Status Pending - Contacted Operator to request a surface lands map; description of lands covered in the SUA is insufficient. | 11/17/2017 |
| Permit | With Operator concurrence, updated Operator Contact and Submitter information. | 11/17/2017 |
| OGLA | OGLA task passed. | 10/02/2017 |
| OGLA | IN PROCESS - Operator revised the estimated depth to groundwater. OGLA review complete. Waiting on Public Comment period. | 09/28/2017 |
| OGLA | ON HOLD - Requested operator revise the estimated depth to groundwater. Due by 10/27/17. | 09/27/2017 |
| Permit | Passed Completeness. | 09/11/2017 |

Total: 11 comment(s)