

State of Colorado
Oil and Gas Conservation Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109

Document Number:

401102534

Date Received:

10/14/2016

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:

448368

Expiration Date:

11/17/2019☒ 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: 10311

Name: SYNERGY RESOURCES CORPORATION

Address: 20203 HIGHWAY 60

City: PLATTEVILLE State: CO Zip: 80651

Contact Information

Name: Erin Ekblad

Phone: (720) 616.4319

Fax: (720) 616.4301

email: eekblad@syrinfo.com

RECLAMATION FINANCIAL ASSURANCE

- ☒ Plugging and Abandonment Bond Surety ID: 20090043 ☐ Gas Facility Surety ID: _____
- ☐ Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: Orr State Number: 40-36 Pad

County: WELD

QuarterQuarter: NESE Section: 36 Township: 6N Range: 67W Meridian: 6 Ground Elevation: 4725

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: 2255 feet FSL from North or South section line

534 feet FEL from East or West section line

Latitude: 40.442473 Longitude: -104.834459

PDOP Reading: 1.4 Date of Measurement: 07/22/2016

Instrument Operator's Name: Darin Zicafoose

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	24	Oil Tanks*	16	Condensate Tanks*		Water Tanks*	2	Buried Produced Water Vaults*	
Drilling Pits		Production Pits*		Special Purpose Pits		Multi-Well Pits*		Modular Large Volume Tanks	1
Pump Jacks		Separators*	24	Injection Pumps*		Cavity Pumps*		Gas Compressors*	2
Gas or Diesel Motors*		Electric Motors		Electric Generators*		Fuel Tanks*		LACT Unit*	2
Dehydrator Units*		Vapor Recovery Unit*	4	VOC Combustor*	6	Flare*		Pigging Station*	

OTHER FACILITIES*

Other Facility Type

Number

Instrument Air	1
Gas Busters	3
Two Phase Separators	4

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:

1 inch, 2 inch, 3 inch, 4 inch, 6 inch, 8 inch, 10 inch, 12 inch, schedule 80 and 160, welded. - water, oil, gas.
3 inch 4 inch poly welded / water or oil
6 inch, 8 inch schedule 10 welded / combustion

CONSTRUCTION

Date planned to commence construction: 12/06/2016 Size of disturbed area during construction in acres: 13.29
Estimated date that interim reclamation will begin: 06/06/2017 Size of location after interim reclamation in acres: 3.77
Estimated post-construction ground elevation: 4725

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? No

Reuse Facility ID: _____ or Document Number: _____

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

SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: Ed Orr and Susie Ann Orr

Phone: _____

Address: 1813 61st Avenue Suite 200

Fax: _____

Address: _____

Email: _____

City: Greeley State: CO Zip: 80634

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 03/16/2016

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:	1585 Feet	1736 Feet
Building Unit:	1770 Feet	1902 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	222 Feet	69 Feet
Above Ground Utility:	209 Feet	61 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	234 Feet	74 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

- 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.

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: _____

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 (on 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 be 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: 41: Nunn Clay Loam 0-1 Percent Slopes

NRCS Map Unit Name: 31: Kim Loam 0-1 Percent Slopes

NRCS Map Unit Name: 32: Kim Loam 0-1 Percent Slopes

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: _____

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: 195 Feet

water well: 84 Feet

Estimated depth to ground water at Oil and Gas Location 17 Feet

Basis for depth to groundwater and sensitive area determination:

Permit # 280592
Martin Marietta Materials Inc.
234' to North for Well Pad Limits
84' to North for Production Facility Limits

254' N from Poudre River

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 318A

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	<p>This is a 24 well pad. Reference well for pad, Orr 36C-32-M.</p> <p>Synergy will coordinate with Noble to P&A the Noble State M #36-9 well prior to drilling operations in late December. However if Noble is unable to P&A prior to the December start, Synergy and Noble will coordinate a window between drilling and completions operations to P&A said well. In this case, during construction and drilling operations, Synergy and Noble will coordinate the shutting in of the said well and place concrete barriers around the wellhead.</p> <p>Surface Use Agreement has waivers for Rule 318A.a & 318A.c. See page 4, Section 9 (a).</p> <p>We will plan on 150 days on location for MLVT. Size of MLVT: 42,000 bbl capacity 12' high x 160' diameter Manufacturer is unknown at this time. Potential: PCI Manufacturing, Pinnacle, Southern Frac, or Big Holdings. Synergy will comply with all MLVT policies and requirements for this pad.</p>
----------	--

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

Signed: _____ Date: 10/14/2016 Email: eekblad@syrginfo.com

Print Name: Erin Ekblad Title: Manager Regulatory Affair

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: 11/18/2016

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

--	--

Best Management Practices

No BMP/COA Type

Description

1	Planning	Planning : 604.c(2)M. Fencing: A permanenet security fence will surround the perimeter of the production facility.
2	Planning	Planning: 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. 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.
3	Planning	Planning: 604.c.(2)N. Control of fire hazards: All material that is considered a fire hazard shall be a minimum of 25' from the wellhead tanks or separators. Electrical equipment shall comply with API IRP 500 and will comply with the current national electrical code.
4	Traffic control	Traffic Control: 604.c.(2)S. Access Roads: The access road will be constructed to accommodate local emergency vehicles. This road will be maintained for access at all times. Traffic will be routed to minimize local interruption. Dust control measures will also be utilized.
5	Traffic control	Traffic Control: RULE 604.c.(2)D: A traffic plan shall be coordinated with the local jurisdiction prior to commencement of move in and rig up. Any subsequent modification to the traffic plan must be coordinated with the local jurisdiction
6	General Housekeeping	General Housekeeping: 604.c.(2)P. Trash Removal: All trash, debris and material not intrinsic to the operation of the oil and gas facility shall be removed and legally disposed of as applicable.

7	Material Handling and Spill Prevention	Material Handling and Spill Prevention: 604.c.(2)F. Leak Detention Plan: Pumper will visit the location daily and visually inspect all tanks and fittings for leaks. Additionally, monthly documented SPCCP inspections are conducted pursuant to 40 CFR 112.
8	Material Handling and Spill Prevention	Material Handling and Spill Prevention 604.c.(2)R Tank Specifications: Tanks will be designed, constructed and maintained in accordance with NFPA Code 30. The tanks are visually inspected once a day for issues, and recorded inspections are conducted once a month.
9	Construction	Construction: 604.c.(3)B. Berm Construction. Tank berms shall be constructed of steel rings with a synthetic or engineered liner and designed to contain 150% of the capacity of the largest tank. All berms will be visually checked periodically to ensure proper working condition. Secondary containment devices shall be sufficiently impervious to contain any spilled or released material. Tertiary containment, such as an earthen berm, will be installed around production facilities.
10	Construction	Construction: 803 Light sources during all phases of operations will be directed downwards and away from occupied structures where possible. Once the drilling and completion rigs leave the site, there will be no permanently installed lighting on site. Lighting shall be mounted at compressor stations on a pole or building and directed downward to illuminate key areas within the facility, while minimizing the amount of light projected outside the facility.
11	Construction	Construction: 604.c.(2).Q. All guy line anchors left buried for future use shall be identified by a marker of bright color not less than four (4) feet in height and not greater than one (1) foot east of the guy line anchor.
12	Construction	Construction: 604.c.(2).E. This will be a multi-well pad.
13	Noise mitigation	Noise mitigation: 604.c.(2)A. Sound walls and/or hay bales will be used where necessary to surround the well site during drilling operations. A permanent sound wall will be installed around the compressor to reduce noise impacts to the Poudre River Trail.
14	Odor mitigation	Odor Mitigation: Rule 805: Oil & gas facilities and equipment shall be operated in such a manner that odors and dust do not constitute a nuisance or hazard to public welfare.
15	Drilling/Completion Operations	Drilling/Completion Operations 604.c.(2).K. Pit level Indicators - For the rig pits (steel tanks) we utilize the Pason PVT (Pit Volume Totalizer) system in conjunction with the EDR (Electronic Depth Recorder) systems on both rigs which incorporate digital recording of pit volumes, settable alarms for gain and loss so we are able to track the pit volumes. These items are standard on a 5K system which is what we are permitting for.
16	Drilling/Completion Operations	Synergy will comply with all MLVT policies and requirements for this pad.
17	Final Reclamation	Final Reclamation: 604.c.(2)T. Within 90 days subsequent to the time of plugging and abandonment of the entire site, superfluous debris and equipment shall be removed from the site. Identification of plugged and abandoned wells will be identified pursuant to 319.a.(5)
18	Final Reclamation	Final Reclamation 604.c.(2).U. Final Reclamation-The operator shall identify the location of the wellbore with a permanent monument as specified in Rule 319.a.(5). The operator shall also inscribe or imbed the well number and date of plugging upon the permanent monument.

Total: 18 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
2478053	DOW CONSULTATION
2478054	LOCATION DRAWING
2478055	OTHER
2478056	CORRESPONDENCE
2478063	CORRESPONDENCE
401102534	FORM 2A SUBMITTED
401126831	WASTE MANAGEMENT PLAN
401126832	SURFACE AGRMT/SURETY
401129882	ACCESS ROAD MAP
401129883	HYDROLOGY MAP
401129893	MULTI-WELL PLAN
401129894	OTHER
401129895	FACILITY LAYOUT DRAWING
401129900	FACILITY LAYOUT DRAWING
401129905	LOCATION PICTURES
401129935	NRCS MAP UNIT DESC
401129938	NRCS MAP UNIT DESC
401129941	NRCS MAP UNIT DESC

Total Attach: 18 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed.	11/17/2016
Permit	Per operator changed Surface owner is not Mineral owner and unchecked all the boxes. Permitting Review Complete.	11/17/2016
Permit	ON HOLD: requesting correction to Surface owner is Mineral owner answers.	11/16/2016
OGLA	IN PROCESS - Operator revised distance from nearest well to Public Road, Above Ground Utility, & Property Line, revised distance from nearest production facility to Building & Building Unit, revised distance to nearest downgradient surface water feature, confirmed distance to nearest water well, changed Sensitive Area to YES, revised Traffic Control BMP, clarified the BMP on pit level indicators, concurred with removing unnecessary Reference Area Map & Pictures attachment, added a BMP certifying compliance with the MLVT Policy, and provided operator comment on the existing Noble well and tank battery. OGLA review complete and task passed.	11/15/2016
OGLA	Operator provided a revised DOW Consultation attachment to revise the Noise mitigation and Visual Impact mitigation BMPs.	11/15/2016
OGLA	ON HOLD - Operator to revise distance from nearest well to Public Road, Above Ground Utility, & Property Line, revise distance from nearest production facility to Building & Building Unit, revise distance to nearest downgradient surface water feature, confirm distance to nearest water well, change Sensitive Area to YES, revise Traffic Control BMP, clarify the BMP on pit level indicators, concur with removing unnecessary Reference Area Map & Pictures attachment, add a BMP certifying compliance with the MLVT Policy, confirm if a permanent wall will be constructed to block view of the production facility area, and provide operator comment on the existing Noble well and tank battery. Due by 12/9/16.	11/09/2016

LGD	<p>This proposed oil and gas facility is located in unincorporated Weld County. As of today's date, November 9, 2016, the Weld County Oil and Gas Liaison/LGD has not been contacted by any nearby resident(s) or governmental jurisdiction(s) regarding this proposed location. The County will respond to legitimate concerns or issues regarding a proposed location and attempt to facilitate a solution with the operator. Weld County Road 25/95th Avenue is maintained by the City of Greeley and the operator should contact Greeley Public Works regarding access. This proposed location is close to an Active Bald Eagle Nest and the 2A has been checked indicating a Sensitive Wildlife Habitat Area. Oil and Gas Exploration and Production activities are currently considered a Use by Right in the Agricultural Zoned District and no land use permitting is required by the County. A building permit is required for the production facilities (tank battery, separators, pump jacks, compressors, etc.) from the Department of Planning Services. The County requested a surveyed map showing the flood plain boundary and the proposed disturbed area to determine if a Flood Hazard Development Permit is required. Troy Swain, Weld Oil/Gas Liaison and LGD (970) 400-3579.</p>	11/09/2016
DOW	<p>Hello, and thank you for allowing CPW to comment on this project. As discussed during the site visit on 8/26/16 and during subsequent conversations, the sound wall should alleviate any construction impacts to the adjacent bald eagle nest. Also, CPW appreciates that the sound wall will be constructed during the first month of initial construction. A property fence is proposed to be short in length, which should not significantly impact big game movement along or perpendicular to the Cache la Poudre River riparian corridor. While an osprey foraging area is mapped nearby, CPW has no concerns. *CPW recommends that this project begin construction immediately, to further alleviate any other indirect impacts on the adjacent bald eagle nest. Should this project significant change scope or schedule, or if the bald eagle decides to nest closer to this site, or if any other sensitive species are observed, please contact CPW. CPW appreciates that Synergy (and its consultants) pro-actively involved CPW, which results in responsible energy development while protecting sensitive resources. Should you have any further questions or comments, please feel free to contact us.</p>	11/03/2016
Permit	Passed completeness.	10/24/2016

Total: 9 comment(s)