Permitting Oil and Gas

The Form 2A and Form 2

May 1, 2018



COLORADO Oil & Gas Conservation Commission

Department of Natural Resources

Form 2A is required for an Oil & Gas Location:
➢ Construct a new location
➢ Modify an existing location

Form 2 is required for an Oil & Gas Well:

- Drill a new well
- Sidetrack an existing well
- Deepen an existing well
- Recomplete an existing well





Form 2A & 2 Workload ♦ Calendar Year 2017:

- Form 2As Received 618, Approved 491
- Form 2s Received 5933, Approved 3,909
- ♦ Each Form 2A and each Form 2 has nearly 300 data fields to review.
- Each Form 2A has at least 8 attachments
- ♦ Each Form 2 has at least 4 attachments



REVIEW PROCESS

- Completeness Permitting and Oil & Gas Location Assessment (OGLA)
- ♦ Minimum 20 day public comment period
 - Extended by LGD or CPW/CDPHE Consultation
- ♦ Staff Review
 - Form 2A: OGLA & Permitting
 - Form 2: Engineering & Permitting
- ♦ OGLA Supervisor Review: Form 2A for Designated Setback Locations
- Final Permitting Review: Cross Check of Form 2A & 2
- ♦ DIRECTOR'S FINAL APPROVAL





Permitting Review - Form 2A

- ♦ Financial Assurance
- ♦ Right to Construct
 - Oil & Gas Lease
 - Surface Use Agreement
 - Surface Bond
- ♦ Lease and mineral ownership
- ♦ Cultural Distances for wells
- ♦ Consistency with Form 2s



Permitting Review – Form 2

- ♦ Financial Assurance
- ♦ Right to Construct
- ♦ Location Data & Deviated Drilling Plan
- ♦ Cultural Feature Distances
- Objective Formation & Spacing: Drilling & Spacing Unit Orders and GWA Wellbore Units
- ♦ Exception Location Requests & Waivers
- ♦ Consistency with Form 2A





Accuracy Compliance with rule requirements Consistency with information on form

Typical Wattenberg Form 2:

Desc		Name	View	Delete
FORM 2 SUBMITTED		LF@4430273 401599150	View	
SURFACE AGRMT/SURETY	:=	LF@4430274 401599867	View	
STIMULATION SETBACK CONSENT	:=	LF@4430275 401600542	View	
OffsetWellEvaluations Data	:=	LF@4430276 401601798	View	
DIRECTIONAL DATA	:=	LF@4430277 401601820	View	
WELL LOCATION PLAT	:=	LF@4430278 401601824	View	
EXCEPTION LOC WAIVERS	:=	LF@4430279 401601827	View	
EXCEPTION LOC REQUEST	:=	LF@4430280 401601829	View	
DEVIATED DRILLING PLAN	:=	LF@4430281 401601830	View	
PROPOSED SPACING UNIT	:=	LF@4430282 401602784	View	



Operator BMPs

Prior to drilling operations, Operator will perform an anti-collision scan of existing offset wells that have the potential of being within close proximity of the proposed well. This anti-collision scan will include definitive MWD or gyro surveys of the offset wells with included error of uncertainty per survey instrument, and compared against the proposed wellpath with its respective error of uncertainty. If current surveys do not exist for the offset wells, Operator may have gyro surveys conducted to verify bottomhole location. The proposed well will only be drilled if the anti-collision scan results indicate that there is not a risk for collision, or harm to people or the environment. For the proposed well, upon conclusion of drilling operations, an as-constructed gyro survey will be submitted to COGCC with the Form 5.

Staff Comments

ON HOLD: Requesting change to water well sampling to Rule 318A, remove the Open Hole Logging Exception request and BMP. Requesting a 30 Day Certification Letter and Proposed Spacing Unit Map of the 40 acres unit for each well and corrected distance to nearest well in the same formation.

Staff Conditions of Approval

1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU for the first well activity with a rig on the pad and provide 48 hour spud notice for each subsequent well drilled on the pad.

2) Comply with Rule 317.j and provide cement coverage from TD to a minimum of 200' above the Niobrara. Verify coverage with cement bond log.

3) Oil-based drilling fluid is to be used only after all aquifers are covered.

Engineering Review

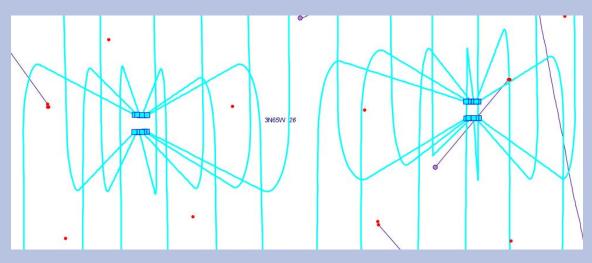
- ♦ Surface casing check
- ♦ Offset well evaluation
- ♦ Casing and cementing design
- Distance to wells operated by another operator
- ♦ Safety considerations (H₂S, BOP)

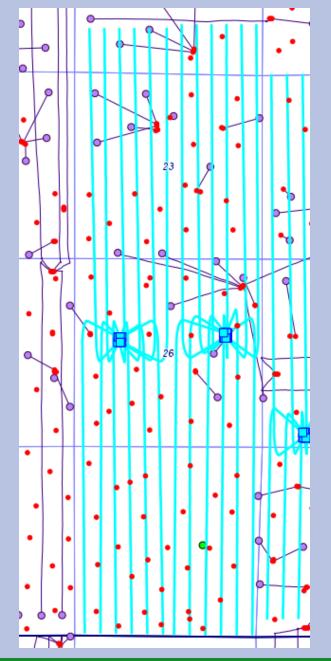




Engineering Example

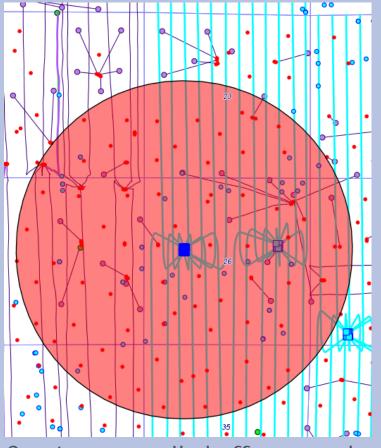
- Wells going North and South from each pad
- 24 Form 2s







Engineering - Surface Casing Check



Bedrock Aquifer Evaluation Determination Tool

Denver Basin Aquifer - Specific Location Determination Tool

Applicant:	Operator Name and Well Pad Name
Reciept No:	
Evaluated By:	DM
Loc ation:	NE 1/4 of SW 1/4 of Sec. 24, T.2N, R.64W. (1440 SSL, 2200 WSL)
Basin Designation:	Location is within the UNKNOWN Designated Ground Water Basin.
Ground Surface Elevation:	4923 Feet Number of Acres: 160

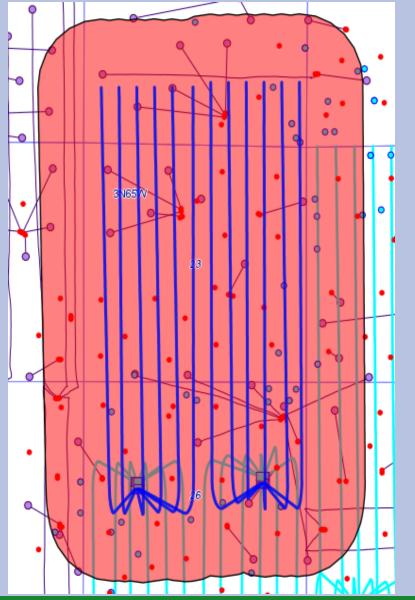
Aquifer	Eleva	tion (ft)	Net Sand	Sand DEPTH (ft)		ANNUAL APRPROP. (A-F)
	Bot	Тор		Bot	Тор	
Upper Davson				-	-	-
Lower Dawson	-			-	-	-
Denver				-	-	-
Upper Arapahoe				-	-	-
Lower Arapahoe	4756	4859	42.4	167	64	11.53
Laramie Fox Hills	4073	4356	131.2	850	567	31.48

Use this aquifer determination tool developed by Division of Water Resources to verify aquifer elevations.

Create a one mile buffer around the surface location of the permits. Review the water well data and oil & gas wells within one mile.



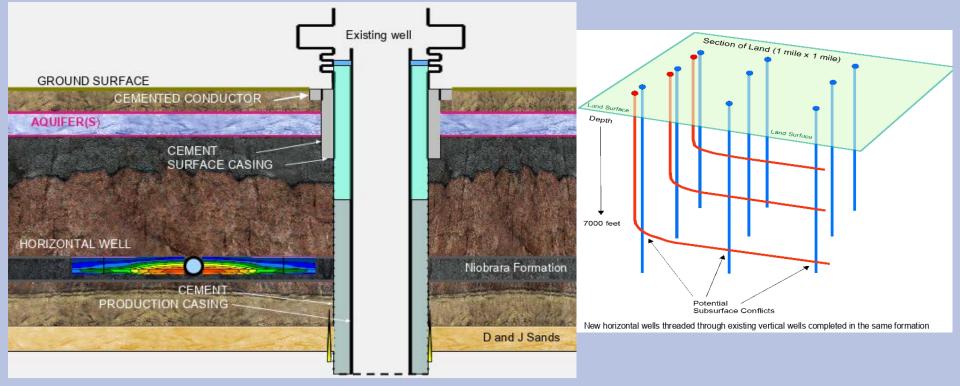
Engineering- Offset Well Evaluation



OLORADO

- Create a 1500' buffer around the proposed wellbores.
- Select the wells within 1500' of the proposed wellbores. Each offset well will be reviewed for adequate aquifer and formation isolation.
- This example has 12 Form
 2s and 104 offset wells
 that must be reviewed.

Engineering- Offset Well Evaluation



Potential outcomes for each offset well:

- 1. All known useable fresh water and hydrocarbon producing zones are isolated behind steel and cement.
- 2. Existing well to remain remediate to isolate known useable fresh water or hydrocarbon zones.
- 3. Existing well to be abandoned plugged to isolate known useable fresh water or hydrocarbon zones.
- 4. Existing abandoned well re-entered to isolate known useable fresh water or hydrocarbons zones.



Oil and Gas Location Assessment Form 2A





Form 2A

- ♦ To implement HB07-1298 and HB07-1341, COGCC engaged in significant rule-making effort in 2008, implemented in 2009.
- Additional Rule makings 2012 for Setbacks Designated Setback Locations (DSL)
- ♦ Governor's Task Force in 2015

Evaluate and minimize adverse impacts from oil and gas operations to the surrounding area.





Rules in the Form 2A

- ♦ 100-Series Definitions
- 300-Series Drilling, Development, Production, and Abandonment – 303.b, 305, and 306
- ♦ 600-Series Safety Regulations 603, 604, and 605
- ♦ 800-Series -Aesthetic and Noise Control Regulations
- 900-Series Exploration and Production (E and P) Waste Management - 901-905, 907, and 912
- ♦ 1000-Series Reclamation Regulation
- 1200-Series Protection of Wildlife Resources



Form 2A – information:

- Location information equipment, timing, waste, potential impacts
- Consultation CPW or CDPHE
- Minimum of 8 attachments
- Cultural Distances determines designated setback - Rule 604 applies
 - Additional attachments
 - additional best management practices
 - Siting rationale
 - Notifications



COGCC OGLA Review

- Cultural items building units, roads, etc
- Lease Agreements/Right to Construct
- Land use
- Waste Management
- Wildlife, wetlands, floodplains, etc.
- Water resources
- Mitigation measures
- Local Jurisdiction and Other Agencies





EXAMPLE

- ♦ Two Locations
- ♦ Three Multi-Well Pads
- ♦ One Production Facility
 - Pre-meeting with Operator regarding LUMA and UMA
 - CDPHE consultation
 - CPW consultation



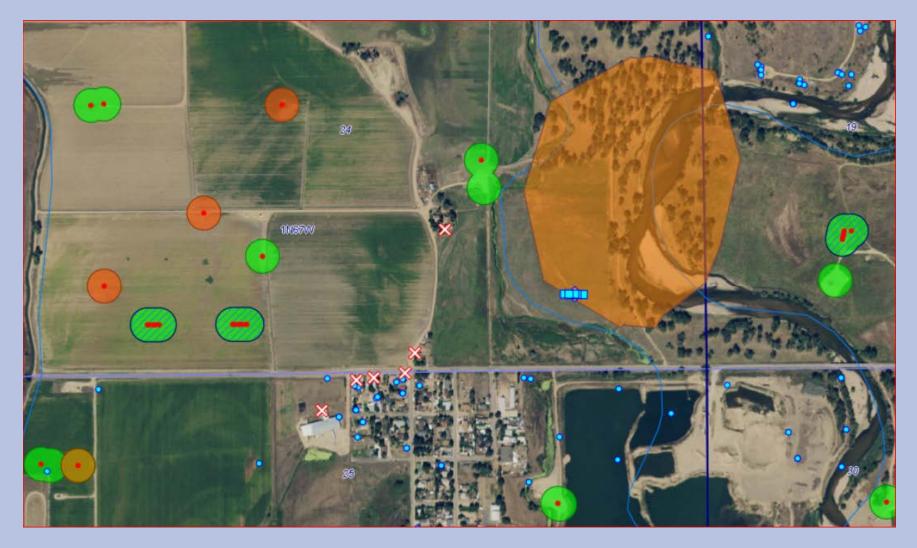


EXAMPLE





COGCC GIS MAPPING





The 2A
-New or
Amended,
-Consultations
-Operator
-Contact
-Location
Identification

FORM	State of Colorado	Document Number:			
2A Rev 08/13	Oil and Gas Conservation Commission 1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303) 894-2100 Fax: (303) 894-2109 401291753				
	Oil and Gas Location Assessment Date Received:				
	w Location Refile Amend Existing Location Location#:	06/26/2017			
activity constru	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 bed with the COGCO which the the construction of the below specified Location; however, it does not supersede any land use rules applied by the local bed with the COGCO which the the COGCO which the the construction of the below specified Location; however, it does not supersede any land use rules applied by the local bed with the COGCO which the the COGCO which are stretched for the construction of the below specified Location.				
	e authority. Please see the COGCC website at http://cogcc.state.co.us/ for all accompanying information nt this Oil and Gas Location Assessment.	Expiration Date:			
X This	location assessment is included as part of a permit application.				
CONS	JLTATION				
	his location is included in a Comprehensive Drilling Plan. CDP # his location is in a sensitive wildlife habitat area. his location is in a wildlife restricted surface occupancy area. his location includes a Rule 306.d.(1)A.ii. variance request.				
Opera	tor Contact Information				
	tor Number: 47120 Name: SHAYELYN MA	RSHALL			
Name	KERR MCGEE OIL & GAS ONSHORE LP Phone: (720) 929 6907				
Addre	ss: P O BOX 173779 Fax: (720) 929 7907				
City:	City: DENVER State: CO Zip: 80217-3779 email: CHERYL.LIGHT@ANADARKO.C OM				
RECLA	MATION FINANCIAL ASSURANCE				
	Image: Waste Management Surety ID: 20010124 Image: Gas Facility Surety ID:				
	QUARTER CIRCLE Number: 24-15HZ				
Quarter	Quarter: Section: 24 Township: 1N Range: 67W Meridian: 6 a single point as a location reference for the facility location. When the location is to be used as a well 6 <	Ground Elevation: 4930			



-CULTURAL FEATURES, -SETBACKS, and -NOTIFICATIONS

	From WELL	From PRODUCTION FACILITY	Production Facility to nearest of each cultural feature as described in Rule 3
Building:	826 Feet	629 Feet	(3)A. - Enter 5280 for distance greater than
Building Unit:	826 Feet	629 Feet	mile.
Date Run: 1/11/2018 Doc [#401313	191]		Page 3
High Occupancy Building Unit:	5280 Feet	5280 Feet	- Building - nearest building of any typ
Designated Outside Activity Area:	5280 Feet	5280 Feet	nearest Building is a Building Unit, en
Public Road:	354 Feet	137 Feet	same distance for both. - Building Unit, High Occupancy Buildi
Above Ground Utility:	339 Feet	122 Feet	Unit, and Designated Outside Activity
Railroad:	5280 Feet	5280 Feet	 - as defined in 100-Series Rules. -For measurement purposes only,
Property Line:	343 Feet	125 Feet	Production Facilities should only inclu
roporty Line.			those items with an asterisk(*) on the Facilities Tab.
DESIGNATED SETBACK LOCATIO	N INFORMATION		
Check all that apply. This location is v	vithin a:		- Buffer Zone - as described in Rule 60 (2), within 1,000' of a Building Unit.
CHECK all that apply. This location is a			- Exception Zone - as described in Rule
			- Exception Zone - as described in Rul
R Buffer Zone			604.a.(1), within 500' of a Building Un
Buffer Zone Exception Zone			604.a.(1), within 500' of a Building Ur - Urban Mitigation Area - as defined in Series Rules.
R Buffer Zone	definition of a Large	e UMA Facility 🔽 Yes 📃	604.a.(1), within 500' of a Building Ur - Urban Mitigation Area - as defined in Series Rules. - Large UMA Facility – as defined in 10
Image: Straight of the straight			604.a.(1), within 500' of a Building Ur - Urban Mitigation Area - as defined in Series Rules. - Large UMA Facility – as defined in 10 Series Rules.
 Relation Zone Exception Zone Urban Mitigation Area Does the UMA Facility meet the 	if location is within	1,000 feet of a building unit):	604.a.(1), within 500' of a Building Ur - Urban Mitigation Area - as defined in Series Rules. - Large UMA Facility – as defined in 10 Series Rules.
 Ruffer Zone Exception Zone Urban Mitigation Area Does the UMA Facility meet the Pre-application Notifications (required 	if location is within igation Area Notifica	1,000 feet of a building unit): ation to Local Government:	604.a.(1), within 500' of a Building Ur - Urban Mitigation Area - as defined in Series Rules. - Large UMA Facility – as defined in 10 Series Rules. 05/12/2017
 Refer Zone Exception Zone Urban Mitigation Area Does the UMA Facility meet the Pre-application Notifications (required Date of Rule 305.a.(1) Urban Mitigation 	if location is within igation Area Notifica ne Notification to Bu	1,000 feet of a building unit): ation to Local Government: ilding Unit Owners: 05/12	604.a.(1), within 500' of a Building Ur - Urban Mitigation Area - as defined in Series Rules. - Large UMA Facility – as defined in 10 Series Rules. 05/12/2017
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 Relation State Relation State Relation Area Does the UMA Facility meet the Pre-application Notifications (required Date of Rule 305.a.(1) Urban Mit Date of Rule 305.a.(2) Buffer Zoo Pre-application Notifications (required 	if location is within igation Area Notifica ne Notification to Bu if location is a Larg e of intent to constru	1,000 feet of a building unit): ation to Local Government: ilding Unit Owners: 05/12 e UMA Facility) ict a Large UMA Facility to Li	604.a.(1), within 500' of a Building Ur - Urban Mitigation Area - as defined in Series Rules. - Large UMA Facility – as defined in 10 Series Rules. 05/12/2017 /2017 0cal Government: <u>12/06/2016</u>

Rule 305A.f.(1)A. Local Government and Operator have reached agreement regarding the siting of the Large UMA Facility (attach certification of Rule 305A compliance)

Rule 305A.f.(1)B. Rule 305A.e exception claimed (if checked then a 305A exception must be checked on the Exceptions Tab)

- Rule 305A.f.(1)C. Local Government waived 305A procedures for this proposed location (attach waiver as evidence of Rule 305A compliance)
- I Rule 305A.f.(1)D. The Local Government did not respond in writing within 30 days of receiving the notice of intent to construct (attach certification of Rule 305A compliance)



CULTURAL FEATURES





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ATTACHMENTS

Desc		Name	View
FORM 2A SUBMITTED		LF@4193631 401291753	View
LOCATION DRAWING	*=	LF@4193632 401293642	View
LOCATION PICTURES	*=	LF@4193633 401293643	View
MULTI-WELL PLAN	*=	LF@4193634 401293644	View
ACCESS ROAD MAP	:=	LF@4193635 401293646	View
NRCS MAP UNIT DESC	:=	LF@4193636 401293647	View
HYDROLOGY MAP	:=	LF@4193638 401312005	View
REFERENCE AREA MAP	:=	LF@4193639 401312006	View
FACILITY LAYOUT DRAWING	:=	LF@4193640 401312151	View
PRE-APPLICATION NOTIFICATION CERTIFICATION	:=	LF@4193641 401312552	View
REFERENCE AREA PICTURES	*=	LF@4193642 401318649	View
WELL LOCATION PLAT	:=	LF@4193643 401318659	View
SURFACE AGRMT/SURETY	*=	LF@4193644 401319001	View
WILDLIFE BMPs	:=	LF@4266144 2316178	View
WASTE MANAGEMENT PLAN	:=	LF@4266145 2316179	View
RULE 306.E. CERTIFICATION	*=	LF@4287319 2316180	View

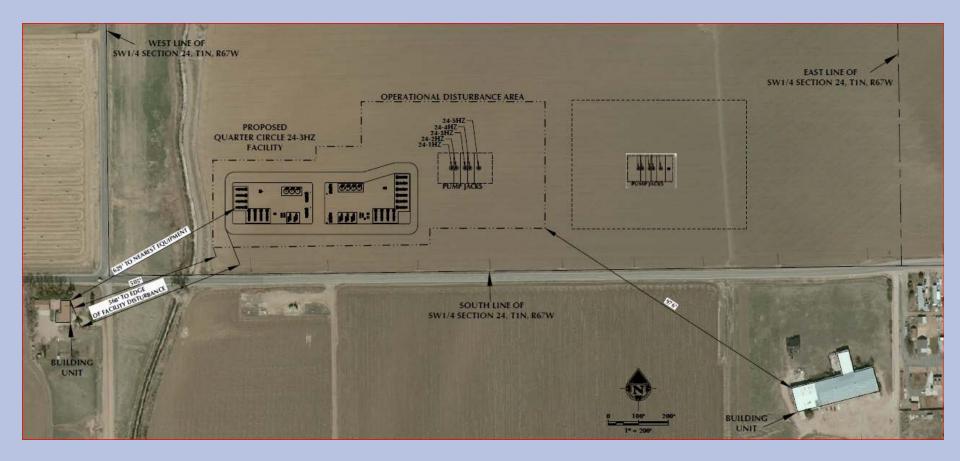


FACILITIES, CONSTRUCTION, WASTE MANAGEMENT

Production Facilities Location serves Well(s)	This proposed Oil and Gas Location is:	LOCATION ID #	FORM 2A DOC #	
Indicate the number of each type of oil and gas facility planned on location Wels 11 Oil Tanks* Condensate Tanks* 2 Water Tanks* 5 Buried Produced Water Vault Drilling Pits Production Pits* Special Purpose Pits Multi-Well Pits* Modular Large Volume Tank Pump Jacks 11 Separators* 23 Injection Pumps* Cavity Pumps* Gas Compresson Gas or Diesel Motors* Electric Motors Electric Generators* Fuel Tanks* LACT Un Dehydrator Units* Vapor Recovery Unit* VOC Combustor* 2 Flare* Pigging Station OTHER FACILITIES* Other Facility Type Number Flow Lines 33 Temp 500 bbl tanks w/optional EC 2 2 Oil Pipeline 1 Gas Pipelines 33 *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: Two 500 barrel skid-mounted frac tanks will be temporarily placed onsite for use of the pre-spud rig only. One tank will store watar and the other will store water-based mud. Pleas	Production Facilities Location serves Well(s)		401291753	
Wels 11 Oil Tanks* Condensate Tanks* 2 Water Tanks* 5 Buried Produced Water Vault Drilling Pits Production Pits* Special Purpose Pits Multi-Well Pits* Modular Large Volume Tank Pump Jacks 11 Separators* 23 Injection Pumps* Cavity Pumps* Gas Compresson Gas or Diesel Motors* Electric Motors Electric Generators* Fuel Tanks* LACT Un Dehydrator Units* Vapor Recovery Unit* VOC Combustor* 2 Flare* Pigging Station OTHER FACILITIES* Number 33 Temp 500 bbl tanks w/optional EC 2 2 Oil Pipeline 11 Gas Pipelines 33 33 33 33 *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: Two 500 barrel skid-mounted frac tanks will be temporarily placed onsite for use of the pre-spud rig only. One tank will store watar due to ther will store water-based mud. Please see Comments section for flow line description. Please see Comments section for flow line description. Please see Comments secti	FACILITIES			
Drilling Pits Production Pits* Special Purpose Pits Multi-Well Pits* Modular Large Volume Tanl Pump Jacks 11 Separators* 23 Injection Pumps* Cavity Pumps* Gas Compresson Gas or Diesel Motors* Electric Motors Electric Generators* Fuel Tanks* LACT Un Dehydrator Units* Vapor Recovery Unit* VOC Combustor* 2 Flare* Pigging Station OTHER FACILITIES* Other Facility Type Number Flow Lines 33 33 33 Oil Pipeline 1 33 33 <	Indicate the number of each type of oil and gas facili	ity planned on location		
Pump Jacks 11 Separators* 23 Injection Pumps* Cavity Pumps* Gas Compresson Gas or Diesel Motors* Electric Motors Electric Generators* Fuel Tanks* LACT Un Dehydrator Units* Vapor Recovery Unit* VOC Combustor* 2 Flare* Pigging Station OTHER FACILITIES* Other Facility Type Number Number Flow Lines 33 33 Temp 500 bbl tanks w/optional EC 2 Q Oil Pipeline 1 Gas Pipelines 33 3 *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: Two 500 barrel skid-mounted frac tanks will be temporarily placed onsite for use of the pre-spud rig only. One tank will store wate and the other will store water-based mud. Please see Comments section for flow line description. Please see Comments section. Description of pipelines and flow lines does not fit in space provided. Please provided.	Wells 11 Oil Tanks*	Condensate Tanks*	2 Water Tanks* 5	Buried Produced Water Vault
Gas or Diesel Motors* Electric Motors Fuel Tanks* LACT Un Dehydrator Units* Vapor Recovery Unit* VOC Combustor* 2 Flare* Pigging Station OTHER FACILITIES* Other Facility Type Number Pigging Station Pigging Station Of Pipeline 33 Temp 500 bbl tanks w/optional EC 2 Q Q Pigging Station *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: Two 500 barrel skid-mounted frac tanks will be temporarily placed onsite for use of the pre-spud rig only. One tank will store water and the other will store water-based mud. Please see Comments section for flow line description. Please see Comments section. Description of pipelines and flow lines does not fit in space provided.	Drilling Pits Production Pits*	Special Purpose Pits	Multi-Well Pits*	Modular Large Volume Tanl
Dehydrator Units* Vapor Recovery Unit* VOC Combustor* 2 Flare* Pigging Station OTHER FACILITIES* Other Facility Type Number Image: Station of the state is the	Pump Jacks 11 Separators* 2	3 Injection Pumps*	Cavity Pumps*	Gas Compressor
OTHER FACILITIES* Other Facility Type Number Flow Lines 33 Temp 500 bbl tanks w/optional EC 2 Oil Pipeline 1 Gas Pipelines 3 *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: Two 500 barrel skid-mounted frac tanks will be temporarily placed onsite for use of the pre-spud rig only. One tank will store wate and the other will store water-based mud. Please see Comments section for flow line description. Please see Comments section. Description of pipelines and flow lines does not fit in space provided.	Gas or Diesel Motors* Electric Motors	Electric Generators*	Fuel Tanks*	LACT Uni
Other Facility Type Number Flow Lines 33 Temp 500 bbl tanks w/optional EC 2 Oil Pipeline 1 Gas Pipelines 3 *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: Two 500 barrel skid-mounted frac tanks will be temporarily placed onsite for use of the pre-spud rig only. One tank will store water and the other will store water-based mud. Please see Comments section for flow line description. Please see Comments section. Description of pipelines and flow lines does not fit in space provided.	Dehydrator Units* Vapor Recovery Unit*	VOC Combustor*	2 Flare*	Pigging Station
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	CONSTRUCTION			
CONSTRUCTION	Date planned to commence construction: 01/2	22/2018 Size	e of disturbed area durir	ng construction in acres:
CONSTRUCTION Date planned to commence construction: 01/22/2018 Size of disturbed area during construction in acres:	Estimated date that interim reclamation will bec	gin: 09/01/2018 Si	ze of location after inter	im reclamation in acres:
Date planned to commence construction: 01/22/2018 Size of disturbed area during construction in acres:	Estimated post-construction ground elevation:	4940		-
Date planned to commence construction: 01/22/2018 Size of disturbed area during construction in acres:				
Date planned to commence construction: 01/22/2018 Size of disturbed area during construction in acres: Estimated date that interim reclamation will begin: 09/01/2018 Size of location after interim reclamation in acres:	DRILLING PROGRAM			
Date planned to commence construction: 01/22/2018 Size of disturbed area during construction in acres: Estimated date that interim reclamation will begin: 09/01/2018 Size of location after interim reclamation in acres: Estimated post-construction ground elevation: 4940		uids: Yes		



FACILITY LAYOUT DRAWING





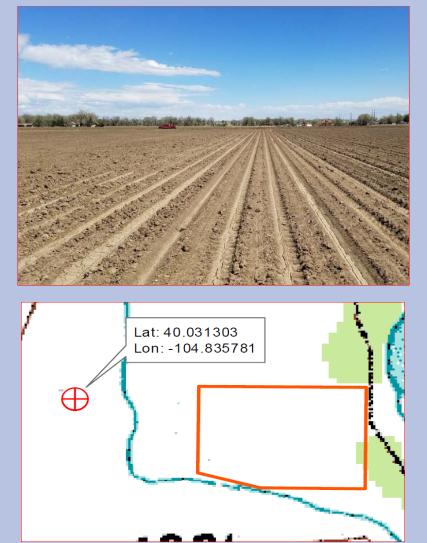
SOIL, VEGETATION, and LAND USE	SOIL List all soil map units that occur within the proposed location. attach the National F report showing the "Map Unit Description" report listing the soil typical vertical prof segregating topsoil. The required information can be obtained from the NRCS web site at http://soildati.COGCC web site GIS Online map page found at http://colorado.gov/cogcc. Instruct web site help section. NRCS Map Unit Name: 1—Altvan loam, 0 to 1 percent slopes NRCS Map Unit Name: 21—Dacono clay loam, 0 to 1 percent slopes NRCS Map Unit Name: PLANT COMMUNITY: Complete this section only if any portion of the disturbed area of the location's curred are noxious weeds present: Yes Plant species from: NRCS or, field observation List individual species:	ile. This data is to used when amart.nrcs.usda.org/ or from the ctions are provided within the COGCC rent land use is on non-crop land. Date of observation: rass, Brome) marisk)
CURRENT AND FUTURE LAND USE		
Current Land Use (Check all that apply): Crop Land: I Irrigated Dry land Non-Crop Land: Rangeland Timber Subdivided: Industrial Commercial	 Improved Pasture Hay Meadow CRP Recreational Other (describe): Residential 	
Non-Crop Land: Rangeland Timber	 Improved Pasture Hay Meadow CRP Recreational Other (describe): Residential 	





CROPLAND PHOTO

RANGELAND PHOTO





REFERENCE AREA MAP

REFERENCE AREA PHOTO



WATER RESOURCES -Surface water -Groundwater -Floodplain -Wetlands/ Riparian -Water sampling

WILDLIFE

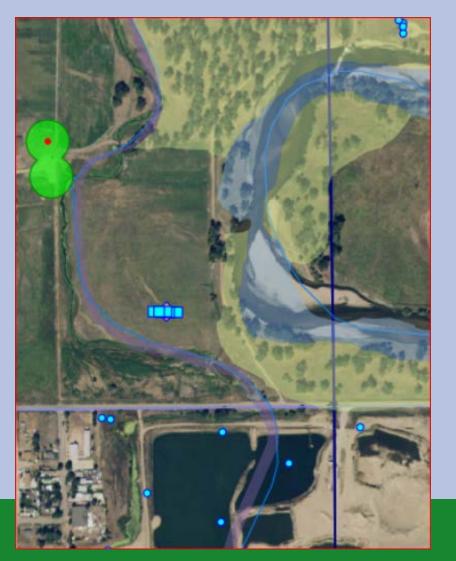
NATER RESOURCES				
s this a sensitive area: 🗌 No 🗵 Yes				
Distance to nearest				
downgradient surface water feature: 10 Feet				
water well: 473 Feet				
Estimated depth to ground water at Oil and Gas Location 2 Feet				
Basis for depth to groundwater and sensitive area determination:				
Ditch: 10' S Elev: 4927' S Platte River: 100' E Elev: 4924' Pond: 500' S Elev: 4926' Loc Elev: 4930' Nearest water wells: 473' SSW, Permit 179406-, depth 10', Static Water Level 4', Elev 4932'				
Location is IN floodplain according to Weld County and FEMA				
s the location in a riparian area: 🗵 No 📋 Yes				
Vas an Army Corps of Engineers Section 404 permit filed 🗵 No 📃 Yes 🛛 If yes attach permit.				
s the location within a Rule 317B Surface Water Supply Area buffer No				
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 INO IN Yes Floodplain Data Sources Reviewed (check all that apply) Floodplain?				
Federal (FEMA)				
State				
⊠ County				
E Local				
Other				
GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING				
Water well sampling required per Rule 318A				
VILDLIFE				
This location is included in a Wildlife Mitigation Plan				
This location was subject to a pre-consultation meeting with CPW held on				
Operator Proposed Wildlife BMPs				
No Target Species BMP Type Description				
1 Bald Eagle Wildlife - Mitigation				
CPW Proposed Wildlife BMPs				





WETLANDS National Wetlands Inventory

FLOODPLAIN FEMA Maps





OPERATOR COMMENTS

OPERATOR COMMENTS AND SUBMITTAL				
Comments	KMG will comply with the Weld County floodplain requirements. A county permit has been submitted for this location.			
	This location is located within sensitive wildlife habitat due to the bald eagle nest within the half-mile buffer. KMG has been and will continue to be in contact with Brandon Marette regarding this pad. KMG has conducted preliminary surveys and has identified potential raptor, burrowing owl and mouse habitats. We will monitor the location prior to construction.			
	Factors that impacted the placement of this well pad: - Ditches, Rivers and Floodplain - Crop land - Drilling restraints (back builds)			
	 Drilling restraints (back builds) Building Units KMG placed the well pad as far south as possible, in between a river and a ditch. There are rivers and ditches surrounding the parcel (river to the NE, ditch on the west side running from the N to the SE). We will be utilizing an existing access road in order to minimize surface disturbance. The area to the west was not a viable option because it is used as crop land. We originally planned four pads on this parcel but shrunk it down to three after technological advancements. The parcel to the south is owned by consolidated water company and there are reservoirs on their parcel. We pushed the pad as far east as possible to stay away from the building units to the south west. We were not able to move the pad north because of drilling limitations. The back builds would be too large if we pushed it any further north. 			
	Drilling fluids disposal: KMG will reuse water-based drilling fluids to the maximum extent possible, at which point they will either be land applied or taken to a licensed, commercial disposal site; the decision will be based upon laboratory analysis of fluids. KMG will reuse oil-based drilling fluids to the maximum extent possible, at which point they will be returned to the fluids manufacturer for reconditioning or disposal at a licensed, commercial disposal site.			
	Cuttings disposal: Water-based cuttings will be disposed of using a Centralized E&P Waste Management facility or a private spread field, depending on what is feasible at the time of drilling. Oil-based cuttings will be disposed of offsite and at a licensed, commercial disposal site.			
	Flow Lines: Seven flow lines will flow to the production facility location. During production, flow direction in the flow lines is from the well head to the production facility. The size of flow lines is typically 2". Flow lines will be constructed from steel pipe, buried, and will equal the distance between the well heads and the tank battery, approximately 2000'.			



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SITE SPECIFIC Best Management Practices (BMP) and Conditions of Approval (COA)

		Best Management Practices
No	BMP/COA Type	Description
1	Planning	604c.(2).E. Multi-Well Pads: In order to reduce surface impact, this application is for a 7-well pad.
2	Planning	604c.(2).Q. Guy Line Anchors: Guy line anchors will not be used. Base Beams will b used to stabilize the rig and removed after drilling.
3	Planning	604c.(2).R. Tank Specifications: Two 500 barrel skid-mounted frac tanks will be temporarily placed on-site for use of the pre-spud rig only. One tank will store water and the other will store water based mud.
4	Planning	604c.(2).S. Access Roads: KMG will utilize a lease access road from CR 6 for drilling completions, and production operations, including maintenance equipment. The road will be properly constructed and maintained to accommodate for local emergency vehicle access.
5	Planning	PRESCRIPTIVE MITIGATION Scenario #1: Nest is vacant; alternate nest is used: - Begin nest monitoring 1/15 to identify/confirm nest building/occupancy and egg presence (NOTE: eagle behavior will serve as an indication of whether egg is presen Contractor monitoring conclusions/determinations will be shared with CPW for concurrence). - If no eggs are present by 3/15, KMG can commence 24 hour operations
		 (construction/drilling/completion) following notification to CPW. Operations would cease by 10/15. Primary BMPs would be utilized. Scenario #2: Nest is occupied, but eggs are not viable: Begin nest monitoring 1/15 to identify/confirm nest building/occupancy and egg presence. (NOTE: eagle behavior will serve as an indication of whether egg is preser Contractor monitoring conclusions/determinations will be shared with CPW for
		 concurrence). If eggs fail to hatch and juveniles fail to materialize by 4/15, KMG can commence 24 hour operations (construction/drilling/completions) following notification to CPW. Primary BMPs would be utilized. Scenario #3: Nest is occupied, juvenile(s) are present: Construction expected to start no earlier than 6/1 using daylight construction hours 24 hour Drilling / Completions expected to start no earlier than 7/1
		- Primary BMPs would be utilized - Additional BMPs: - Additional BMPs: - Additional BMPs:

will be limited to daylight hours (as previously defined) if

for 24 hour drilling and completions activity, if said

en 6/1 and 7/31

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

 Construction
 The Approved Form 2A permit will be posted at the location during construction, drilling, and completions operations.

 Construction
 Flowline Layout Drawing - Operator shall provide a scaled drawing that shows the planned layout of all existing and proposed flowlines between the well pad and production pad and between the production pad. Provide the drawing via Form 4 Sundry - due within 30 days of initiating flowline construction.





COMMENTS AND TRANSPARENCY

OGLA	OGCC, Operator, and CPW met at the proposed location on 8/17/2017 for wildlife consultation. CPW concerns were in regards to active Eagle nest within the half-mile buffer area. CPW did identify the nest to the northeast of the location and will be providing recommendations to the Operator.	08/22/2017
DOW	CPW spoke with the operator on 8/8/17 about the need to develop BMPs to minimize impacts on a nearby active bald eagle nest, bald eagle winter roost, and potential burrowing owl habitat.	08/08/2017
	Operator is currently discussing BMPs internally and will contact CPWs NE Region Energy Liaison (Brandon Marette 303-291-7327) in the weeks to come.	
LGD	This proposed oil and gas facility is located in the Agricultural Zoned District of unincorporated Weld County. A Weld Oil and Gas Location Assessment (WOGLA) is required prior to constructing any improvements related to oil and gas exploration and production and prior to the issuance of building permits. The operator has applied for a WOGLA, which is currently under review. The operator has been issued a Flood Hazard Development Permit (FHDP17-0020) for planned construction in the floodplain. A building permit is required for the production facilities (tank battery, separators, pump jacks, compressors, generators, etc.) from the Department of Planning Services. Access points from County roads require an Access Permit from the Department of Public Works, which includes any necessary traffic control plans and Improvement Agreements. The use of County right-of-way requires a permit from the Department of Public Works. Troy Swain, Weld Oil/Gas Liaison and LGD (970) 400-3579.	07/28/2017
LGD	The City has no concerns on this project, however it is noted that the wells associated with this Form 2A are located within the Flood Impact Zone.	07/21/2017
Permit	Passed Completeness.	07/10/2017
OGLA	Passed Buffer Zone completeness review. Note that wells are required to have remote shut in capabilities per Rule 603.h.(1)	07/05/2017
Permit	Referred to OGLA Supervisor for buffer zone review.	06/27/2017
Total: 16 comment(s)		



QUESTIONS?

