FORM 2B Rev 03/21

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: 402958567

Date Received: 04/15/2022

CUMULATIVE IMPACTS DATA IDENTIFICATION

Per Rule 303, this form and all required components and attachments will be submitted for any Oil and Gas Development Plan.

Form Type: [X] **OGDP** [ ] **Partial 2B - Rule 803.b.(2).A UIC Conversion**

OPERATOR INFORMATION

OGCC Operator Number: 47120
Name of Operator: KERR MCGEE OIL & GAS ONSHORE LP
Address: P O BOX 173779
City: DENVER State: CO Zip: 80217-3779

Contact Name and Telephone:
Name: Tracy Colling
Phone: (720) 9296160
Email: tracy_colling@oxy.com

OIL & GAS DEVELOPMENT PLAN INFORMATION

Oil & Gas Development Plan Name: DEMOCRAT OGDP

Oil & Gas Development Plan Docket #:

Docket Number
220400073

Oil & Gas Development Plan ID #: Data not required

[ ] This OGDP is included in a Comprehensive Area Plan. CAP ID #:

OIL & GAS LOCATION DATA

1 Oil & Gas Location Name: CAMENISCH Number: 10-33HZ Status: Active, built

OIL & GAS LOCATION INFORMATION

Form 2A Doc#: 402958629

Loc ID#: 329899

Oil & Gas Location: QTRQTR: NWSE Sec: 33 Twp: 4N Rng: 67W Meridian: 6

Total number of wells planned: 9

Operations Duration

Estimated total number of weeks to construct this Oil & Gas Location: 4

Estimated total number of weeks to drill all planned wells for this Oil & Gas Location: 7

Number of planned drilling occupations to drill all planned wells for this Oil & Gas Location: 1

Estimated total number of weeks to complete all planned wells for this Oil & Gas Location: 4

Number of planned completions occupations to complete all planned wells for this Oil & Gas Location: 1

Will there be simultaneous drilling and completions operations occurring at this Oil & Gas Location? No

Estimated total number of months the Oil & Gas Location will be active, prior to abandonment and reclamation: 300

Noise Impacts

Provide a qualitative evaluation of the incremental adverse noise impacts to the surrounding receptors during the pre-production activities at this Oil & Gas Location.

An ambient survey will be conducted in order to determine current noise levels in this area. A noise model representing the proposed operations at the Camenish 10-33HZ pad was created to assess the predicted operational noise levels with the COGCC allowable dBA and dBC noise limits. Continuous monitoring will be implemented at the appropriate noise points of compliance from the working pad surface per Rule 423.a(5)A&B. The results of the noise modeling indicate that with mitigation the proposed drilling and completions operations will be in compliance with the COGCC A-weighted and C-weighted noise limits.

Provide a qualitative evaluation of the incremental adverse noise impacts to the surrounding receptors during the production stage of this Oil & Gas Location.

Inclusive of the ambient data obtained prior to pad construction and the noise impact model of the Camenish 10-33HZ production facility KMOG predicts the noise levels during the production stage will meet the COGCC allowable dBA and dBC noise limits. KMOG fully expects to comply with the COGCC A-weighted and C-weighted production noise limits. The use of electricity will minimizes noise at the production stage.

Light Impacts

Provide a qualitative evaluation of the incremental adverse light impacts to the surrounding receptors during the pre-production activities at this Oil & Gas Location.

KMOG will meet all applicable lighting requirements as set forth by Sec. 424 during the construction and pre-production phase operations. During the construction phase, lighting shall be directed downward and inward and shielded to avoid glare on public roads and building units.

Provide a qualitative evaluation of the incremental adverse light impacts to the surrounding receptors during the production stage of this Oil & Gas Location.

KMOG will meet all applicable lighting requirements as set forth by Sec. 424(B) during the production phase operations. Permanent lighting will be installed at the production facility. KMOG will have three types of lights at the production facility including the Lease Automated Custody Transfer (LACT) lights, emergency strobe lights and heat trace lights. The lights above the LACT door are for personnel visiting at night and it will be directed downward to avoid glare on public roads and adjacent building units. These lights are on a switch and will be turned off when personnel leave the location. The strobe lights are also on the LACT building and act as an emergency indicator that will activate if a high level of gas is detected within the LACT building. The heat trace lights are a small red light that acts as a visual indication that the heat trace circuit is powered on. After new lighting is installed at the location, KMOG will certify that the lighting complies with the base allowances and standards set forth in 424 b.c.d.

Odor Impacts

Provide a qualitative evaluation of the incremental adverse odor impacts to the surrounding receptors during the pre-production activities at this Oil & Gas Location.

KMOG has committed to using Zero VOC drilling mud, which eliminates all sources of odor during the drilling phase. A closed loop system will be utilized during completions which will eliminate odor.

Provide a qualitative evaluation of the incremental adverse odor impacts to the surrounding receptors during the production stage of this Oil & Gas Location.

KMOG production facilities are designed as a closed system to reduce exposure to the atmosphere thereby eliminating potential odors. KMOG uses pipelines to transport hydrocarbons from the production facility eliminating odors that could occur during truck loading. Production facilities are inspected regularly by KMOG personnel to make sure the equipment is working property and necessary maintenance is performed, to reduce potential odors. KMOG incorporates Audio, Visual, Olfactory (AVO) observations at production facility inspections.
KMOG will use Best Management Practices to reduce unloading events and to reduce potential odor causing emissions when liquids unloading is necessary (i.e., maintenance activities to remove liquids from existing wells that are inhibiting production).
KMOG remotely monitors production facilities, this reduces traffic onto production facilities which may create odors from truck traffic.

WATER RESOURCES

[X] This Oil & Gas Location is listed as a sensitive area for water resources.

[X] This Oil & Gas Location is within 2,640 feet of a surface Water of the State.

Estimated depth to groundwater: 9

Estimated total planned on-location storage capacity of the Oil & Gas Location for:

	Number of Tanks	Total Volume (bbls)
Oil	0	0
Condensate	1	285
Produced Water	16	7570
Other volumes of stored fluids, hydrocarbons, chemicals, or E&P Waste Fluids	4	11.9

List, with volumes, the “Other” fluids planned to be stored on the Oil & Gas Location, including, but not limited to: hydrocarbons, chemicals, or E&P Waste fluids.

350 GAL - Corrosion/Scale Protection Chemical 8.33 BBL
350 GAL- Corrosion/Bacterial Protection Chemical 8.33 BBL
350 GAL - Methanol 8.33 BBL
500 GAL - Propane 11.9 BBL

Potential Impacted Surface Water Resources

Provide the distance and direction of the contaminant migration pathway from the Oil & Gas Location to the nearest downstream riparian corridors, wetlands, and surface Waters of the State. Also provide an evaluation of the baseline condition of the nearest downstream riparian corridors, wetlands, and surface Waters of the State.
Enter 2,640 for distances greater than 1/2-mile. Distances are measured along the migration pathway, not a straight line from the edge of the Oil & Gas Location.

	Distance	Direction	Evaluation of Baseline Condition
Riparian Corridor	2640	N	N/A
Wetland	193	E	RIVERINE
Surface Waters of the State	153	E	INTERMITTENT DRAINAGE DITCH

Potential Impacts to Public Water Resources
Provide the distance, direction, and evaluation of potential impacts to the nearest Public Water System Intake. Enter 5,280 for distances greater than 1-mile.

	Distance	Direction	Evaluation of Baseline Condition
Public Water System Intake	5280	N	NO POTENTIAL FOR IMPACTS

Estimated Water Usage
Provide the estimated total volumes of the following that are anticipated to be used during the drilling and completions stage of the Oil & Gas Location activity.

Water Source	Volume (bbls)		Volume (bbls)		Volume (bbls)		
Surface Water	1456106	Recycled Water (Produced Water)	9707	Unspecified Source	0	Percentage Recycled Water	0 %
Ground Water	512511	Recycled Water (non-Produced Water)	0	Total Water Usage	1978324		

If an unspecified water source is planned to be used, provide a description of the source.

N/A

Evaluate the measures being taken to reduce freshwater use, including reusing and recycling produced water.

KMOG uses recycled water when possible and receives its surface water from surface non-potable sources. Recycle water amount was less than 1% (.0049%). Webform field will not accept number less than 1.

ECOSYSTEM & WILDLIFE RESOURCES

List High Priority Habitats (HPH) that occur within one mile of the Oil & Gas Location and list the distance from working pad surface. If the location is partially or entirely within a HPH list the distance as '0' and provide the estimated acreage disturbance of that HPH by the location construction.

High Priority Habitat (HPH) Name:	Distance	Estimated Acreage Disturbed
Bald Eagle, active nest, 1/2 mile	4261	0
Bald Eagle, Roost Site	996	0
Aquatic Native Species, Conservation Waters	3900	0
Mule Deer, Severe Winter Range	1967	0
Mule Deer, Migration Corridor	0	9.48

List total size of disturbed acreage and disturbed High Priority Habitat (HPH) area (in acres) during the Oil & Gas Location construction and after interim reclamation.

	Total Acreage (acres)	Total HPH Acreage (acres)
Construction	12.74	9.48
Post-interim Reclamation	3.32	1.72

Provide any further information regarding the location's HPH disturbance.

Mule Deer, Migration Corridor

Provide the acreage of the existing land use types that occur within one mile of the Oil & Gas Location. Note: a circle with a one mile radius is approximately 2010 acres.

		Existing Acreage		Existing Acreage			Existing Acreage		Existing Acreage
Crop Land:	Irrigated	1703.76	Non-Irrigated	0	Conservation Reserve Program(CRP)		0		
Non-Crop Land:	Rangeland	447.45	Forestry	35.58		Recreation	0	Other	222.16
Subdivided:	Industrial	0	Commercial	0		Residential	195.1		

If any land use is industrial, provide a description of the use or operation of the industrial facilities.

N/A

If any land use is “Other”, provide a description of the land use.

Open Water, Developed - Open Space, Developed - Low Intensity, Developed - Medium Intensity, Barren Land, Woody Wetlands, Emergent Herbaceous Wetlands

If any portion of the land use for the proposed oil and gas location includes Rangeland, Forestry, or Recreation, provide a list of the plant community or communities and estimated acreage disturbed for each:

	Estimated Disturbed Acreage		Estimated Disturbed Acreage		Estimated Disturbed Acreage		Estimated Disturbed Acreage
Disturbed Grassland	0	Shrub Land	0	Mountain Riparian	0	Wetland Aquatic	0
Native Grassland	0	Plains Riparian	0	Forest Land	0	Alpine	0

Provide a qualitative evaluation of incremental adverse impacts to ecosystems, including any plant communities, as a result of Oil and Gas Operations associated with the proposed Oil & Gas Location.

N/A

Soil Resources

List all soil map units that occur within the Oil & Gas Location and list the estimated total area (in acres) disturbance of each soil map unit.

NRCS Map Unit Name:	Estimated Disturbed Acreage
38 - Nelson fine sandy loam, 3 to 9 percent slopes	4
82 - Wiley-Colby complex, 1 to 3 percent slopes	8.7

PUBLIC WELFARE

☐ This Oil & Gas Location lies within a Disproportionately Impacted Community as defined in the 100-series rules.

Building Units within 1-mile	0'-2,000'	2,001'-5,280'
Total number of ResidentialBuilding Units:	1	27
Total Number of non-school AND non child care center High Occupancy Building Units:	0	0
Total number of School Facilities:	0	0
Total number of Child Care Centers:	0	0

Recreation and Scenic Value

List all State Parks, State Trust Lands, or State Wildlife Area within 1-mile of the Oil & Gas Location.

NONE

List all Designated Outdoor Activity Areas within 1-mile of the Oil & Gas Location.

NONE

List all mapped trails that support any of the following recreational activities within 1-mile of the Oil & Gas Location: Hiking, Biking, Horseback Riding, Motorcycle Riding, ATV Riding, OHV, Nordic Skiing, Snowmobiling, or Snowshoeing.

NONE

AIR RESOURCES

Pre-Production Emissions

Complete the following chart based on the estimated total equipment emissions (in tons) for the Oil & Gas Location during the pre-production (construction, drilling, completions) stage for Criteria Pollutants by equipment type.

	NOx	CO	VOCs	Methane	Ethane	CO2	N2O
Process Heaters or Boilers	1.1	0.17	0.05	0.01	0.0024	164.24	0.0013
Storage Tanks	0.01	0.04	0.04	0.19	0.07	21.49	0
Venting or Blowdowns	0.01	0.03	0.34	0.44	0.16	15.36	0
Combustion Control Devices	0.0045	0.02	0.03	0.08	0.03	6.3	0
Non-Road Internal Combustion Engines	50.24	54.5	6.88	0.15	0.05	5037.65	0.02
Drill Mud	0.04	0.18	0.35	0.84	0.1	8.62	0
Flowback or Completions	0	0	0	0	0	0	0
Loadout	0	0	0.03	0.14	0.05	0.1	0

Production Emissions
Complete the following chart based on the estimated full facility equipment emissions (in tons) for the Oil & Gas Location once the Oil & Gas Location has entered the production stage, for Criteria Pollutants. The table should be filled out based on ONE year of operation.

	NOx	CO	VOCs	Methane	Ethane	CO2	N2O
Stationary Engines or Turbines	0	0	0	0	0	0	0
Process Heaters or Boilers	1.6	1.35	0.09	0.04	0.05	1925	0.04
Storage Tanks	0.04	0.2	0.34	0.66	0.3	105.91	0.0001
Dehydration Units	0	0	0	0	0	0	0
Pneumatic Pumps	0	0	0	0	0	0	0
Pneumatic Controllers	0	0	0	0	0	0	0
Separators	0	0	0	0	0	0	0
Fugitives			0.31	0.23	0.08	0.02	
Venting or Blowdowns	0	0	3.17	4.09	1.45	0.34	0
Combustion Control Devices	0.0045	0.02	0.03	0.08	0.03	6.3	0
Loadout	0	0	0.41	0.75	0.34	0.8	0
Non-Road Internal Combustion Engines	0.08	0.05	0	0.0004	0	9.74	0.0001
Well Bradenhead	0	0	0.0026	0.0034	0.0012	0.0003	0
Well Maintenance	0	0	1.29	1.66	0.59	0.14	0

Diesel Vehicle Road Miles
Complete the following chart for diesel vehicle road miles during each stage of oil and gas location operations.

During Construction: 20949 During Completions: 32315

During Drilling: 7007 During Interim Reclamation: 10927

During Production: 34216

PUBLIC HEALTH RESOURCES

Pre-Production Emissions
Complete the following chart based on the estimated total equipment emissions (in lbs) for the Oil & Gas Location during the pre-production (construction, drilling, completions) stage for Hazardous Air Pollutants (HAP).

	BEN	TOL	ETH	XYL	NHE	TMP	H2S	FDE	MET	HAP
Process Heaters or Boilers	9.41	23.07	2.36	5.5	64.2	5.85	0	0	0	110.39
Storage Tanks	1.63	1.17	0.05	0.28	0.86	0	0	0	0	3.99
Venting or Blowdowns	7.43	18.22	1.86	4.35	50.7	4.62	0	0	0	87.19
Combustion Control Devices	0.0001	0.0001	0	0.0001	0.0006	0.0001	0	0	0	0.0009
Non-Road Internal Combustion Engines	206.64	506.51	51.71	120.78	1409.33	128.52	0	0	0	2423.49
Drill Mud	0.0038	0.01	0.001	0.0022	0.03	0.0024	0	0	0	0.04
Flowback or Completions	0	0	0	0	0	0	0	0	0	0
Loadout	1.19	0.85	0.04	0.2	0.62	0	0	0	0	2.91

Production Emissions
Complete the following chart based on the estimated total equipment emissions (in lbs) for the Oil & Gas Location once the Oil & Gas Location has entered the production stage, for Hazardous Air Pollutants (HAP). The table should be filled out based on ONE year of operation.

	BEN	TOL	ETH	XYL	NHE	TMP	H2S	FDE	MET	HAP
Stationary Engines or Turbines	0	0	0	0	0	0	0	0	0	0
Process Heaters or Boilers	0.07	0.11	0	0	0	0	0	2.41	0	0
Storage Tanks	23.09	17.07	0.63	4	33.67	0.01	0	0	0	78.47
Dehydration Units	0	0	0	0	0	0	0	0	0	0
Pneumatic Pumps	0	0	0	0	0	0	0	0	0	0
Pneumatic Controllers	0	0	0	0	0	0	0	0	0	0
Separators	0	0	0	0	0	0	0	0	0	0
Fugitives	4.3	8.47	1.34	9.25	27.81	2.64	0	0	0	53.82
Venting or Blowdowns	69.42	170.16	17.37	40.57	473.46	43.17	0	0	0	814.16
Combustion Control Devices	0.15	0.18	0.03	0.12	1.16	0.15	0	0	0	1.79
Non-Road Internal Combustion Engines	0	0	0	0	0	0	0	0	0	0
Loadout	29.44	20.15	0.8	4.73	67.68	0.23	0	0	0	123.03
Well Bradenhead	0.06	0.14	0.01	0.03	0.39	0.04	0	0	0	0.67
Well Maintenance	28.15	69.01	7.04	16.46	192.01	17.51	0	0	0	330.19

Provide a qualitative evaluation of any potential acute or chronic, short- or long-term incremental impacts to public health as a result of the estimated total pre-production hazardous air pollutant emissions.

Air monitoring will be conducted during pre-production activities including production rig and completion operations (hydraulic fracturing, drillout and flowback).
KMOG`s general Air Monitoring Program has been approved by the CDPHE and is attached to this form. A site-specific Air Monitoring Plan for this location will be submitted to the COGCC and CDPHE for approval of air monitor locations prior to operations. The attached general Air Monitoring Program has been used on multiple locations. KMOG has been performing air monitoring around pre-production and production facility operations since 2018. Over 1,200 air samples have been collected and analyzed for benzene and other hazardous air pollutants following EPA methods. Results of all validated samples have been below Health Guidance Values complied by CDPHE. See Section 11 of the attached Air Monitoring Program on how the monitoring results are compared to the HGVs.
The analytical results collected to date are representative of pre-production operations for this pad. In addition to the analytical data, continuous VOC analyzer will be located around the pre-production as described in Sections 9 and 10 of the Air Monitoring Program. These monitors are used to indicate a change in operations. Based on historical monitoring, KMOG has established three (3) investigation levels for the continuous analyzers that correlate to benzene levels well below the HGV. For each investigation level there is an associated investigation response. See Sections 14 and 15 of the Air Monitoring Program for more details investigation levels and responses.

Provide a qualitative evaluation of any potential acute or chronic, short- or long-term incremental impacts to public health as a result of the estimated annual production hazardous air pollutant emissions.

Air monitoring will be conducted during early production facility operations, which is 6 months after the last well is turned over to production. Air monitoring will follow the approved Air Monitoring Program. These production facilities are designed to minimize or eliminate air emissions. See Section 5 of the Air Monitoring Program for more information on the design of the production facility. Some of the air monitoring has been conducted at bulk separator production facilities. Results of all validated samples have been below Health Guidance Values complied by CDPHE. See Section 11 of the attached Air Monitoring Program on how the monitoring results are compared to the HGVs. The analytical results collected to date are representative of production facility operations for this pad. As discussed for the pre-production operations, continuous VOC analyzer will be located around the production facility.

Dust Impacts
The following are the estimated number of truck trips traveling on or off the Oil & Gas Location.

Total	During Construction	During Drilling	During Completions	During Interim Reclamation	During Production
Monthly	5543	2067	5010	3331	51
Annual	5902	5444	7181	3331	606

Estimated total pounds (lbs) of proppant to be used during completions activities. 58023175

Provide the type of proppant(s) that are planned to be used during completions activities.

Silica Proppant

Provide an evaluation of the proposed proppant management system that will be used to minimize dust during completions activities, including the estimated amount of silica dust that will leave the Oil & Gas Location.

KMOG utilizes Sand Containerized Proppant Delivery System that eliminates the use of pneumatic transfer on location. This methodology utilizes a gravity choke feed system that reduces dust significantly from historical practices. The dust levels from this system are minimal and below OSHA's permissible exposure limit which eliminates the need for additional PPE.

EXISTING OIL & GAS

Total number of oil & gas locations within 1-mile of the Oil & Gas Location:

	Total Number of Locations		Total Number of Wells
Active, built	49	Active, built	51
Permitted by COGCC, unbuilt	0	Permitted by COGCC, unbuilt	0
Permitted by Relevant Local Government & not COGCC, unbuilt	0	Proposed	0
Proposed	0	Plugged and Abandoned	26

Total acreage disturbance during construction of the active and proposed oil & gas locations within 1-mile of the proposed Oil & Gas Location: 6.28

Source for acreage total:

- ☐ Field Observation/Measurement
- ☒ COGCC Location Files
- ☒ Aerial PhotosOther
- ☐ Other

If "Other" is selected, please describe the source use to determine the acreage total for construction disturbance of the active and proposed oil & gas locations within 1-mile of the proposed Oil & Gas Location.

Total permitted capacity of on-location storage (in number of pits and tanks) of the active and proposed oil & gas locations within 1-mile of the Oil & Gas Location : NOTE: providing the existing number of pits and tanks on surrounding existing locations is optional.

Source for storage totals:

- ☐ Field Observation/Measurement
- ☒ COGCC Location Files
- ☐ Aerial PhotosOther
- ☐ Other

	Permitted Onsite Storage Capacity	Existing Onsite Storage Capacity
Oil	78	
Condensate	0	
Produced Water	24	
Pits	3	

If "Other" is selected, please describe the source use to determine the tank totals for the active and proposed oil & gas locations within 1-mile of the proposed Oil & Gas Location.

2 Oil & Gas Location Name: SWARTZ Number: 2-4HZ Status: Proposed

OIL & GAS LOCATION INFORMATION

Form 2A Doc#: 402958552

Loc ID#:

Oil & Gas Location: QTRQTR: NWNE Sec: 4 Twp: 3N Rng: 67W Meridian: 6

Total number of wells planned: 16

Operations Duration

Estimated total number of weeks to construct this Oil & Gas Location: 4

Estimated total number of weeks to drill all planned wells for this Oil & Gas Location: 16

Number of planned drilling occupations to drill all planned wells for this Oil & Gas Location: 1

Estimated total number of weeks to complete all planned wells for this Oil & Gas Location: 10

Number of planned completions occupations to complete all planned wells for this Oil & Gas Location: 1

Will there be simultaneous drilling and completions operations occurring at this Oil & Gas Location? No

Estimated total number of months the Oil & Gas Location will be active, prior to abandonment and reclamation: 300

Noise Impacts

Provide a qualitative evaluation of the incremental adverse noise impacts to the surrounding receptors during the pre-production activities at this Oil & Gas Location.

An ambient survey will be conducted in order to determine current noise levels in this area. A noise model representing the proposed operations at the pad was created to assess the predicted operational noise levels with the COGCC allowable dBA and dBC noise limits. Continuous monitoring will be implemented at the appropriate noise points of compliance from the working pad surface per Rule 423.a(5)A&B. The results of the noise modeling indicate that with mitigation the proposed drilling and completions operations will be in compliance with the COGCC A-weighted and C-weighted noise limits.

Provide a qualitative evaluation of the incremental adverse noise impacts to the surrounding receptors during the production stage of this Oil & Gas Location.

Inclusive of the ambient data obtained prior to pad construction and the noise impact model of the production facility KMOG predicts the noise levels during the production stage will meet the COGCC allowable dBA and dBC noise limits. KMOG fully expects to comply with the COGCC A-weighted and C-weighted production noise limits. The use of electricity will minimizes noise at the production stage.

Light Impacts

Provide a qualitative evaluation of the incremental adverse light impacts to the surrounding receptors during the pre-production activities at this Oil & Gas Location.

KMOG will meet all applicable lighting requirements as set forth by Sec. 424 during the construction and pre-production phase operations. During the construction phase, lighting shall be directed downward and inward and shielded to avoid glare on public roads and building units.

Provide a qualitative evaluation of the incremental adverse light impacts to the surrounding receptors during the production stage of this Oil & Gas Location.

KMOG will meet all applicable lighting requirements as set forth by Sec. 424(B) during the production phase operations. Permanent lighting will be installed at the production facility. KMOG will have three types of lights at the production facility including the Lease Automated Custody Transfer (LACT) lights, emergency strobe lights and heat trace lights. The lights above the LACT door are for personnel visiting at night and it will be directed downward to avoid glare on public roads and adjacent building units. These lights are on a switch and will be turned off when personnel leave the location. The strobe lights are also on the LACT building and act as an emergency indicator that will activate if a high level of gas is detected within the LACT building. The heat trace lights are a small red light that acts as a visual indication that the heat trace circuit is powered on. After new lighting is installed at the location, KMOG will certify that the lighting complies with the base allowances and standards set forth in 424 b.c.d.

Odor Impacts

Provide a qualitative evaluation of the incremental adverse odor impacts to the surrounding receptors during the pre-production activities at this Oil & Gas Location.

KMOG has committed to using Zero VOC drilling mud, which eliminates all sources of odor during the drilling phase. A closed loop system will be utilized during completions which will eliminate odor.

Provide a qualitative evaluation of the incremental adverse odor impacts to the surrounding receptors during the production stage of this Oil & Gas Location.

KMOG production facilities are designed as a closed system to reduce exposure to the atmosphere thereby eliminating potential odors.
KMOG uses pipelines to transport hydrocarbons from the production facility eliminating odors that could occur during truck loading.
Production facilities are inspected regularly by KMOG personnel to make sure the equipment is working property and necessary maintenance is performed, to reduce potential odors. KMOG incorporates Audio, Visual, Olfactory (AVO) observations at production facility inspections.
KMOG will use Best Management Practices to reduce unloading events and to reduce potential odor causing emissions when liquids unloading is necessary (i.e., maintenance activities to remove liquids from existing wells that are inhibiting production).
KMOG remotely monitors production facilities, this reduces traffic onto production facilities which may create odors from truck traffic.

WATER RESOURCES

[X] This Oil & Gas Location is listed as a sensitive area for water resources.

[X] This Oil & Gas Location is within 2,640 feet of a surface Water of the State.

Estimated depth to groundwater: 5

Estimated total planned on-location storage capacity of the Oil & Gas Location for:

	Number of Tanks	Total Volume (bbls)
Oil	0	0
Condensate	1	285
Produced Water	36	17140
Other volumes of stored fluids, hydrocarbons, chemicals, or E&P Waste Fluids	4	11.9

List, with volumes, the “Other” fluids planned to be stored on the Oil & Gas Location, including, but not limited to: hydrocarbons, chemicals, or E&P Waste fluids.

350 GAL - Corrosion/Scale Protection Chemical 8.33 BBL
350 GAL- Corrosion/Bacterial Protection Chemical 8.33 BBL
350 GAL - Methanol 8.33 BBL
500 GAL - Propane 11.9 BBL

Potential Impacted Surface Water Resources

Provide the distance and direction of the contaminant migration pathway from the Oil & Gas Location to the nearest downstream riparian corridors, wetlands, and surface Waters of the State. Also provide an evaluation of the baseline condition of the nearest downstream riparian corridors, wetlands, and surface Waters of the State.
Enter 2,640 for distances greater than 1/2-mile. Distances are measured along the migration pathway, not a straight line from the edge of the Oil & Gas Location.

	Distance	Direction	Evaluation of Baseline Condition
Riparian Corridor	43	SW	FORRESTED/SHRUB RIPARIAN
Wetland	75	SW	FRESHWATER POND / MOELLER RESERVOIR
Surface Waters of the State	75	SW	MOELLER RESERVOIR

Potential Impacts to Public Water Resources
Provide the distance, direction, and evaluation of potential impacts to the nearest Public Water System Intake. Enter 5,280 for distances greater than 1-mile.

	Distance	Direction	Evaluation of Baseline Condition
Public Water System Intake	5280	N	N/A

Estimated Water Usage
Provide the estimated total volumes of the following that are anticipated to be used during the drilling and completions stage of the Oil & Gas Location activity.

Water Source	Volume (bbls)		Volume (bbls)		Volume (bbls)		
Surface Water	4198880	Recycled Water (Produced Water)	27993	Unspecified Source	0	Percentage Recycled Water	0 %
Ground Water	1462084	Recycled Water (non-Produced Water)	0	Total Water Usage	5652957		

If an unspecified water source is planned to be used, provide a description of the source.

N/A

Evaluate the measures being taken to reduce freshwater use, including reusing and recycling produced water.

KMOG uses recycled water when possible and receives its surface water from surface non-potable sources. Recycled water amount is less than 1% (actual is .0049%). "Percentage Recycled Water" field will not accept number less than 1

ECOSYSTEM & WILDLIFE RESOURCES

List High Priority Habitats (HPH) that occur within one mile of the Oil & Gas Location and list the distance from working pad surface. If the location is partially or entirely within a HPH list the distance as '0' and provide the estimated acreage disturbance of that HPH by the location construction.

High Priority Habitat (HPH) Name:	Distance	Estimated Acreage Disturbed
Bald Eagle, active nest, 1/4 mile	2152	0
Bald Eagle, active nest, 1/2 mile	832	0
Bald Eagle, Roost Site	0	15.79
Aquatic Native Species, Conservation Waters	1133	0
Mule Deer, Severe Winter Range	0	6.61
Mule Deer, Migration Corridor	0	15.79

List total size of disturbed acreage and disturbed High Priority Habitat (HPH) area (in acres) during the Oil & Gas Location construction and after interim reclamation.

	Total Acreage (acres)	Total HPH Acreage (acres)
Construction	15.79	15.79
Post-interim Reclamation	4.27	4.27

Provide any further information regarding the location's HPH disturbance.

Mule Deer, Severe Winter Range (Partial)
Bald Eagle, Roost Site (All)
Mule Deer, Migration Corridor (All)

Provide the acreage of the existing land use types that occur within one mile of the Oil & Gas Location. Note: a circle with a one mile radius is approximately 2010 acres.

		Existing Acreage		Existing Acreage		Existing Acreage		Existing Acreage
Crop Land:	Irrigated	1299	Non-Irrigated	0	Conservation Reserve Program(CRP)	0		
Non-Crop Land:	Rangeland	752.59	Forestry	26.02	Recreation	0	Other	377.41
Subdivided:	Industrial	0	Commercial	0	Residential	46.07		

If any land use is industrial, provide a description of the use or operation of the industrial facilities.

N/A

If any land use is "Other", provide a description of the land use.

Open Water, Developed - Open Space, Developed - Low Intensity, Barren Land, Woody Wetlands, Emergent Herbaceous Wetlands

If any portion of the land use for the proposed oil and gas location includes Rangeland, Forestry, or Recreation, provide a list of the plant community or communities and estimated acreage disturbed for each:

	Estimated Disturbed Acreage		Estimated Disturbed Acreage		Estimated Disturbed Acreage		Estimated Disturbed Acreage
Disturbed Grassland	0	Shrub Land	0	Mountain Riparian	0	Wetland Aquatic	0
Native Grassland	0	Plains Riparian	0	Forest Land	0	Alpine	0

Provide a qualitative evaluation of incremental adverse impacts to ecosystems, including any plant communities, as a result of Oil and Gas Operations associated with the proposed Oil & Gas Location.

N/A

Soil Resources

List all soil map units that occur within the Oil & Gas Location and list the estimated total area (in acres) disturbance of each soil map unit.

NRCS Map Unit Name:	Estimated Disturbed Acreage
31-Kim loam, 0-1 percent slopes	11.5
54-Paoli loam,0 to 1 percent slopes	4.8

PUBLIC WELFARE

☐ This Oil & Gas Location lies within a Disproportionately Impacted Community as defined in the 100-series rules.

Building Units within 1-mile	0'-2,000'	2,001'-5,280'
Total number of ResidentialBuilding Units:	9	18
Total Number of non-school AND non child care center High Occupancy Building Units:	0	0
Total number of School Facilities:	0	0
Total number of Child Care Centers:	0	0

Recreation and Scenic Value

List all State Parks, State Trust Lands, or State Wildlife Area within 1-mile of the Oil & Gas Location.

N/A

List all Designated Outdoor Activity Areas within 1-mile of the Oil & Gas Location.

N/A

List all mapped trails that support any of the following recreational activities within 1-mile of the Oil & Gas Location: Hiking, Biking, Horseback Riding, Motorcycle Riding, ATV Riding, OHV, Nordic Skiing, Snowmobiling, or Snowshoeing.

N/A

AIR RESOURCES

Pre-Production Emissions

Complete the following chart based on the estimated total equipment emissions (in tons) for the Oil & Gas Location during the pre-production (construction, drilling, completions) stage for Criteria Pollutants by equipment type.

	NOx	CO	VOCs	Methane	Ethane	CO2	N2O
Process Heaters or Boilers	1.1	0.17	0.05	0.01	0.0024	164.24	0.0013
Storage Tanks	0.02	0.09	0.08	0.38	0.13	42.97	0.0001
Venting or Blowdowns	0.01	0.07	0.45	0.58	0.2	30.69	0
Combustion Control Devices	0.01	0.04	0.03	0.08	0.03	6.3	0
Non-Road Internal Combustion Engines	100.49	109	13.75	0.29	0.1	10075.3	0.05
Drill Mud	0.08	0.36	0.7	1.68	0.2	9.37	0
Flowback or Completions	0	0	0	0	0	0	0
Loadout	0	0	0.06	0.28	0.1	0.21	0

Production Emissions

Complete the following chart based on the estimated full facility equipment emissions (in tons) for the Oil & Gas Location once the Oil & Gas Location has entered the production stage, for Criteria Pollutants. The table should be filled out based on ONE year of operation.

	NOx	CO	VOCs	Methane	Ethane	CO2	N2O
Stationary Engines or Turbines	0	0	0	0	0	0	0
Process Heaters or Boilers	3.21	2.69	0.18	0.07	0.1	3850	0.07
Storage Tanks	0.09	0.4	0.69	1.32	0.6	211.82	0.0003
Dehydration Units	0	0	0	0	0	0	0
Pneumatic Pumps	0	0	0	0	0	0	0
Pneumatic Controllers	0	0	0	0	0	0	0
Separators	0	0	0	0	0	0	0
Fugitives			0.55	0.45	0.16	0.04	
Venting or Blowdowns	0	0	6.32	8.16	2.89	0.68	0
Combustion Control Devices	0.01	0.04	0.07	0.17	0.06	6.31	0
Loadout	0	0	0.79	1.49	0.68	1.6	0

Non-Road Internal Combustion Engines	0.16	0.11	0.0001	0.0008	0	19.47	0.0002
Well Bradenhead	0	0	0.0026	0.0034	0.0012	0.0003	0
Well Maintenance	0	0	2.57	3.32	1.18	0.28	0

Diesel Vehicle Road Miles
Complete the following chart for diesel vehicle road miles during each stage of oil and gas location operations.

During Construction: 27523 During Completions: 71393

During Drilling: 14567 During Interim Reclamation: 11231

During Production: 51025

PUBLIC HEALTH RESOURCES

Pre-Production Emissions
Complete the following chart based on the estimated total equipment emissions (in lbs) for the Oil & Gas Location during the pre-production (construction, drilling, completions) stage for Hazardous Air Pollutants (HAP).

	BEN	TOL	ETH	XYL	NHE	TMP	H2S	FDE	MET	HAP
Process Heaters or Boilers	9.41	23.07	2.36	5.5	64.2	5.85	0	0	0	110.39
Storage Tanks	3.27	2.34	0.1	0.56	1.71	0	0	0	0	7.98
Venting or Blowdowns	9.77	23.95	2.44	5.71	66.63	6.08	0	0	0	114.58
Combustion Control Devices	0.0001	0.0001	0	0.0001	0.0006	0.0001	0	0	0	0.0009
Non-Road Internal Combustion Engines	413.29	1013.03	103.42	241.56	2818.66	257.03	0	0	0	4846.97
Drill Mud	0.01	0.02	0.0019	0.0045	0.05	0.0047	0	0	0	0.09
Flowback or Completions	0	0	0	0	0	0	0	0	0	0
Loadout	2.38	1.71	0.07	0.41	1.25	0	0	0	0	5.82

Production Emissions
Complete the following chart based on the estimated total equipment emissions (in lbs) for the Oil & Gas Location once the Oil & Gas Location has entered the production stage, for Hazardous Air Pollutants (HAP). The table should be filled out based on ONE year of operation.

	BEN	TOL	ETH	XYL	NHE	TMP	H2S	FDE	MET	HAP
Stationary Engines or Turbines	0	0	0	0	0	0	0	0	0	0
Process Heaters or Boilers	0.13	0.22	0	0	0	0	0	4.81	0	5.16
Storage Tanks	46.18	34.15	1.26	8.01	67.34	0.01	0	0	0	156.95
Dehydration Units	0	0	0	0	0	0	0	0	0	0
Pneumatic Pumps	0	0	0	0	0	0	0	0	0	0
Pneumatic Controllers	0	0	0	0	0	0	0	0	0	0
Separators	0	0	0	0	0	0	0	0	0	0
Fugitives	7.29	14.21	2.25	15.41	47.43	4.55	0	0	0	91.14
Venting or Blowdowns	138.32	339.03	34.61	80.84	943.33	86.02	0	0	0	1622.16
Combustion Control Devices	0.3	0.36	0.05	0.24	2.32	0.29	0	0	0	3.57
Non-Road Internal Combustion Engines	0	0	0	0	0	0	0	0	0	0
Loadout	55.49	39.4	1.51	9.24	105.65	0.24	0	0	0	211.54
Well Bradenhead	0.06	0.14	0.01	0.03	0.39	0.04	0	0	0	0.67
Well Maintenance	56.31	138.02	14.09	32.91	384.03	35.02	0	0	0	660.37

Provide a qualitative evaluation of any potential acute or chronic, short- or long-term incremental impacts to public health as a result of the estimated total pre-production hazardous air pollutant emissions.

Air monitoring will be conducted during pre-production activities including production rig and completion operations (hydraulic fracturing, drillout and flowback).
KMOG`s general Air Monitoring Program has been approved by the CDPHE and is attached to this form. A site-specific Air Monitoring Plan for this location will be submitted to the COGCC and CDPHE for approval of air monitor locations prior to operations. The attached general Air Monitoring Program has been used on multiple locations. KMOG has been performing air monitoring around pre-production and production facility operations since 2018. Over 1,200 air samples have been collected and analyzed for benzene and other hazardous air pollutants following EPA methods. Results of all validated samples have been below Health Guidance Values complied by CDPHE. See Section 11 of the attached Air Monitoring Program on how the monitoring results are compared to the HGVs.
The analytical results collected to date are representative of pre-production operations for this pad. In addition to the analytical data, continuous VOC analyzer will be located around the pre-production as described in Sections 9 and 10 of the Air Monitoring Program. These monitors are used to indicate a change in operations. Based on historical monitoring, KMOG has established three (3) investigation levels for the continuous analyzers that correlate to benzene levels well below the HGV. For each investigation level there is an associated investigation response. See Sections 14 and 15 of the Air Monitoring Program for more details investigation levels and responses.

Provide a qualitative evaluation of any potential acute or chronic, short- or long-term incremental impacts to public health as a result of the estimated annual production hazardous air pollutant emissions.

Air monitoring will be conducted during early production facility operations, which is 6 months after the last well is turned over to production. Air monitoring will follow the approved Air Monitoring Program. These production facilities are designed to minimize or eliminate air emissions. See Section 5 of the Air Monitoring Program for more information on the design of the production facility. Some of the air monitoring has been conducted at bulk separator production facilities. Results of all validated samples have been below Health Guidance Values complied by CDPHE. See Section 11 of the attached Air Monitoring Program on how the monitoring results are compared to the HGVs. The analytical results collected to date are representative of production facility operations for this pad. As discussed for the pre-production operations, continuous VOC analyzer will be located around the production facility.

Dust Impacts
The following are the estimated number of truck trips traveling on or off the Oil & Gas Location.

Total	During Construction	During Drilling	During Completions	During Interim Reclamation	During Production
Monthly	6769	2114	5010	3398	54
Annual	7227	11204	15865	3398	648

Estimated total pounds (lbs) of proppant to be used during completions activities. 167105267

Provide the type of proppant(s) that are planned to be used during completions activities.

Silica Proppant

Provide an evaluation of the proposed proppant management system that will be used to minimize dust during completions activities, including the estimated amount of silica dust that will leave the Oil & Gas Location.

Utilize Sand Containerized Proppant Delivery System that eliminates the use of pneumatic transfer on location. This methodology utilizes a gravity choke feed system that reduces dust significantly from historical practices. The dust levels from this system are minimal and below OSHA's permissible exposure limit which eliminates the need for additional PPE.

EXISTING OIL & GAS
Total number of oil & gas locations within 1-mile of the Oil & Gas Location:

	Total Number of Locations		Total Number of Wells
Active, built	45	Active, built	41
Permitted by COGCC, unbuilt	0	Permitted by COGCC, unbuilt	0
Permitted by Relevant Local Government & not COGCC, unbuilt	0	Proposed	0
Proposed	0	Plugged and Abandoned	37

Total acreage disturbance during construction of the active and proposed oil & gas locations within 1-mile of the proposed Oil & Gas Location: 7.17

Source for acreage total:

☐ Field Observation/Measurement

☒ COGCC Location Files

☒ Aerial PhotosOther

☐ Other

If "Other" is selected, please describe the source use to determine the acreage total for construction disturbance of the active and proposed oil & gas locations within 1-mile of the proposed Oil & Gas Location.

Total permitted capacity of on-location storage (in number of pits and tanks) of the active and proposed oil & gas locations within 1-mile of the Oil & Gas Location : NOTE: providing the existing number of pits and tanks on surrounding existing locations is optional.

Source for storage totals:

- [ ] Field Observation/Measurement
- [x] COGCC Location Files
- [x] Aerial PhotosOther
- [ ] Other

	Permitted Onsite Storage Capacity	Existing Onsite Storage Capacity
Oil	31	
Condensate	0	
Produced Water	10	
Pits	0	

If "Other" is selected, please describe the source use to determine the tank totals for the active and proposed oil & gas locations within 1-mile of the proposed Oil & Gas Location.

3 Oil & Gas Location Name: BERRY FARMS FACILITY Number: 8-8HZ Status: Active, built

OIL & GAS LOCATION INFORMATION

Form 2A Doc#: 402958562

Loc ID#:

Oil & Gas Location: QTRQTR: NWNE Sec: 8 Twp: 3N Rng: 67W Meridian: 6

Total number of wells planned: 0

Operations Duration

Estimated total number of weeks to construct this Oil & Gas Location: 4

Estimated total number of weeks to drill all planned wells for this Oil & Gas Location: 0

Number of planned drilling occupations to drill all planned wells for this Oil & Gas Location: 0

Estimated total number of weeks to complete all planned wells for this Oil & Gas Location: 0

Number of planned completions occupations to complete all planned wells for this Oil & Gas Location: 0

Will there be simultaneous drilling and completions operations occurring at this Oil & Gas Location? No

Estimated total number of months the Oil & Gas Location will be active, prior to abandonment and reclamation: 300

Noise Impacts

Provide a qualitative evaluation of the incremental adverse noise impacts to the surrounding receptors during the pre-production activities at this Oil & Gas Location.

An ambient survey will be conducted in order to determine current noise levels in this area. A noise model representing the proposed operations at the pad was created to assess the predicted operational noise levels with the COGCC allowable dBA and dBC noise limits. Continuous monitoring will be implemented at the appropriate noise points of compliance from the working pad surface per Rule 423.a(5)A&B. The results of the noise modeling indicate that with mitigation the proposed completions operations will be in compliance with the COGCC A-weighted and C-weighted noise limits.

Provide a qualitative evaluation of the incremental adverse noise impacts to the surrounding receptors during the production stage of this Oil & Gas Location.

Inclusive of the ambient data obtained prior to pad construction and the noise impact model of the production facility KMOG predicts the noise levels during the production stage will meet the COGCC allowable dBA and dBC noise limits. KMOG fully expects to comply with the COGCC A-weighted and C-weighted production noise limits. The use of electricity will minimizes noise at the production stage.

Light Impacts

Provide a qualitative evaluation of the incremental adverse light impacts to the surrounding receptors during the pre-production activities at this Oil & Gas Location.

KMOG will meet all applicable lighting requirements as set forth by Sec. 424 during the construction and pre-production phase operations. During the construction phase, lighting shall be directed downward and inward and shielded to avoid glare on public roads and building units.

Provide a qualitative evaluation of the incremental adverse light impacts to the surrounding receptors during the production stage of this Oil & Gas Location.

KMOG will meet all applicable lighting requirements as set forth by Sec. 424(B) during the production phase operations. Permanent lighting will be installed at the production facility. KMOG will have three types of lights at the production facility including the Lease Automated Custody Transfer (LACT) lights, emergency strobe lights and heat trace lights. The lights above the LACT door are for personnel visiting at night and it will be directed downward to avoid glare on public roads and adjacent building units. These lights are on a switch and will be turned off when personnel leave the location. The strobe lights are also on the LACT building and act as an emergency indicator that will activate if a high level of gas is detected within the LACT building. The heat trace lights are a small red light that acts as a visual indication that the heat trace circuit is powered on. After new lighting is installed at the location, KMOG will certify that the lighting complies with the base allowances and standards set forth in 424 b.c.d.

Odor Impacts

Provide a qualitative evaluation of the incremental adverse odor impacts to the surrounding receptors during the pre-production activities at this Oil & Gas Location.

Perhaps they meant to state there will be no incremental adverse odor impacts during pre-production activities.

Provide a qualitative evaluation of the incremental adverse odor impacts to the surrounding receptors during the production stage of this Oil & Gas Location.

KMOG production facilities are designed as a closed system to reduce exposure to the atmosphere thereby eliminating potential odors.
KMOG uses pipelines to transport hydrocarbons from the production facility eliminating odors that could occur during truck loading.
Production facilities are inspected regularly by KMOG personnel to make sure the equipment is working property and necessary maintenance is performed, to reduce potential odors. KMOG incorporates Audio, Visual, Olfactory (AVO) observations at production facility inspections.
KMOG will use Best Management Practices to reduce unloading events and to reduce potential odor causing emissions when liquids unloading is necessary (i.e., maintenance activities to remove liquids from existing wells that are inhibiting production).
KMOG remotely monitors production facilities, this reduces traffic onto production facilities which may create odors from truck traffic.

WATER RESOURCES

[X] This Oil & Gas Location is listed as a sensitive area for water resources.

[X] This Oil & Gas Location is within 2,640 feet of a surface Water of the State.

Estimated depth to groundwater: 27

Estimated total planned on-location storage capacity of the Oil & Gas Location for:

	Number of Tanks	Total Volume (bbls)
Oil	0	0
Condensate	1	285
Produced Water	19	8555
Other volumes of stored fluids, hydrocarbons, chemicals, or E&P Waste Fluids	3	11.9

List, with volumes, the “Other” fluids planned to be stored on the Oil & Gas Location, including, but not limited to: hydrocarbons, chemicals, or E&P Waste fluids.

350 GAL - Corrosion/Scale Protection Chemical 8.33 BBL
350 GAL- Corrosion/Bacterial Protection Chemical 8.33 BBL
350 GAL - Methanol 8.33 BBL
500 GAL - Propane 11.9 BBL

Potential Impacted Surface Water Resources

Provide the distance and direction of the contaminant migration pathway from the Oil & Gas Location to the nearest downstream riparian corridors, wetlands, and surface Waters of the State. Also provide an evaluation of the baseline condition of the nearest downstream riparian corridors, wetlands, and surface Waters of the State.
Enter 2,640 for distances greater than 1/2-mile. Distances are measured along the migration pathway, not a straight line from the edge of the Oil & Gas Location.

	Distance	Direction

Riparian Corridor	2640	N	N/A
Wetland	460	S	FRESHWATER EMERGENT WETLAND
Surface Waters of the State	528	S	FRESHWATER EMERGENT WETLAND

Potential Impacts to Public Water Resources
Provide the distance, direction, and evaluation of potential impacts to the nearest Public Water System Intake. Enter 5,280 for distances greater than 1-mile.

	Distance	Direction	Evaluation of Baseline Condition
Public Water System Intake	5280	N	N/A

Estimated Water Usage
Provide the estimated total volumes of the following that are anticipated to be used during the drilling and completions stage of the Oil & Gas Location activity.

Water Source	Volume (bbls)		Volume (bbls)		Volume (bbls)		
Surface Water	0	Recycled Water (Produced Water)	0	Unspecified Source	0	Percentage Recycled Water	0 %
Ground Water	9625	Recycled Water (non-Produced Water)	0	Total Water Usage	9625		

If an unspecified water source is planned to be used, provide a description of the source.

N/A

Evaluate the measures being taken to reduce freshwater use, including reusing and recycling produced water.

KMOG uses recycled water when possible and receives its surface water from surface non-potable sources. Recycled water percentage is less than 1% (field above does not allow a number less than 1). Actual is 0.0049%

ECOSYSTEM & WILDLIFE RESOURCES

List High Priority Habitats (HPH) that occur within one mile of the Oil & Gas Location and list the distance from working pad surface. If the location is partially or entirely within a HPH list the distance as '0' and provide the estimated acreage disturbance of that HPH by the location construction.

High Priority Habitat (HPH) Name:	Distance	Estimated Acreage Disturbed
Bald Eagle, active nest, 1/2 mile	3445	0
Bald Eagle, Roost Site	2430	0
Aquatic Native Species, Conservation Waters	4023	0
Mule Deer, Severe Winter Range	3237	0
Mule Deer, Migration Corridor	2701	0
Bald Eagle, active nest, 1/4 mile	4871	0

List total size of disturbed acreage and disturbed High Priority Habitat (HPH) area (in acres) during the Oil & Gas Location construction and after interim reclamation.

	Total Acreage (acres)	Total HPH Acreage (acres)
Construction	6.1	0
Post-interim Reclamation	2.06	0

Provide any further information regarding the location's HPH disturbance.

N/A

Provide the acreage of the existing land use types that occur within one mile of the Oil & Gas Location. Note: a circle with a one mile radius is approximately 2010 acres.

		Existing Acreage		Existing Acreage		Existing Acreage		Existing Acreage
Crop Land:	Irrigated	1726.45	Non-Irrigated	0	Conservation Reserve Program(CRP)	0		
Non-Crop Land:	Rangeland	350.28	Forestry	5.12	Recreation	0	Other	207.05
Subdivided:	Industrial	0	Commercial	0	Residential	24.7		

If any land use is industrial, provide a description of the use or operation of the industrial facilities.

N/A

If any land use is “Other”, provide a description of the land use.

Open Water, Developed - Open Space, Developed - Low Intensity, Developed - Medium Intensity, Developed - High Intensity, Barren Land, Woody Wetlands, Emergent Herbaceous Wetlands

If any portion of the land use for the proposed oil and gas location includes Rangeland, Forestry, or Recreation, provide a list of the plant community or communities and estimated acreage disturbed for each:

	Estimated Disturbed Acreage		Estimated Disturbed Acreage		Estimated Disturbed Acreage		Estimated Disturbed Acreage
Disturbed Grassland	0	Shrub Land	0	Mountain Riparian	0	Wetland Aquatic	0
Native Grassland	4.3	Plains Riparian	0	Forest Land	0	Alpine	0

Provide a qualitative evaluation of incremental adverse impacts to ecosystems, including any plant communities, as a result of Oil and Gas Operations associated with the proposed Oil & Gas Location.

N/A

Soil Resources

List all soil map units that occur within the Oil & Gas Location and list the estimated total area (in acres) disturbance of each soil map unit.

NRCS Map Unit Name:	Estimated Disturbed Acreage
33 - Kim loam, 3 to 5 percent slopes	4.4
82 - Wiley-Colby complex, 1 to 3 percent slopes	1.7

PUBLIC WELFARE

☐ This Oil & Gas Location lies within a Disproportionately Impacted Community as defined in the 100-series rules.

Building Units within 1-mile	0'-2,000'	2,001'-5,280'
Total number of ResidentialBuilding Units:	2	22
Total Number of non-school AND non child care center High Occupancy Building Units:	0	0
Total number of School Facilities:	0	0
Total number of Child Care Centers:	0	0

Recreation and Scenic Value

List all State Parks, State Trust Lands, or State Wildlife Area within 1-mile of the Oil & Gas Location.

N/A

List all Designated Outdoor Activity Areas within 1-mile of the Oil & Gas Location.

N/A

List all mapped trails that support any of the following recreational activities within 1-mile of the Oil & Gas Location: Hiking, Biking, Horseback Riding, Motorcycle Riding, ATV Riding, OHV, Nordic Skiing, Snowmobiling, or Snowshoeing.

N/A

AIR RESOURCES

Pre-Production Emissions

Complete the following chart based on the estimated total equipment emissions (in tons) for the Oil & Gas Location during the pre-production (construction, drilling, completions) stage for Criteria Pollutants by equipment type.

	NOx	CO	VOCs	Methane	Ethane	CO2	N2O
Process Heaters or Boilers	0	0	0	0	0	0	0
Storage Tanks	0	0	0	0	0	0	0
Venting or Blowdowns	0	0	0	0	0	0	0
Combustion Control Devices	0	0	0	0	0	0	0
Non-Road Internal Combustion Engines	0	0	0	0	0	0	0
Drill Mud	0	0	0	0	0	0	0

Flowback or Completions	0	0	0	0	0	0	0
Loadout	0	0	0	0	0	0	0

Production Emissions
Complete the following chart based on the estimated full facility equipment emissions (in tons) for the Oil & Gas Location once the Oil & Gas Location has entered the production stage, for Criteria Pollutants. The table should be filled out based on ONE year of operation.

	NOx	CO	VOCs	Methane	Ethane	CO2	N2O
Stationary Engines or Turbines	0	0	0	0	0	0	0
Process Heaters or Boilers	1.6	1.35	0.09	0.04	0.05	1925	0.04
Storage Tanks	0.04	0.2	0.34	0.66	0.3	105.91	0.0001
Dehydration Units	0	0	0	0	0	0	0
Pneumatic Pumps	0	0	0	0	0	0	0
Pneumatic Controllers	0	0	0	0	0	0	0
Separators	0	0	0	0	0	0	0
Fugitives			0.31	0.23	0.08	0.02	
Venting or Blowdowns	0	0	3.17	4.09	1.45	0.34	0
Combustion Control Devices	0.0045	0.02	0.03	0.08	0.03	6.3	0
Loadout	0	0	0.41	0.75	0.34	0.8	0
Non-Road Internal Combustion Engines	0.08	0.05	0	0.0004	0	9.74	0.0001
Well Bradenhead	0	0	0.0026	0.0034	0.0012	0.0003	0
Well Maintenance	0	0	1.29	1.66	0.59	0.14	0

Diesel Vehicle Road Miles
Complete the following chart for diesel vehicle road miles during each stage of oil and gas location operations.

During Construction: 11168 During Completions: 0

During Drilling: 0 During Interim Reclamation: 5289

During Production: 31468

PUBLIC HEALTH RESOURCES

Pre-Production Emissions
Complete the following chart based on the estimated total equipment emissions (in lbs) for the Oil & Gas Location during the pre-production (construction, drilling, completions) stage for Hazardous Air Pollutants (HAP).

	BEN	TOL	ETH	XYL	NHE	TMP	H2S	FDE	MET	HAP
Process Heaters or Boilers	0	0	0	0	0	0	0	0	0	0
Storage Tanks	0	0	0	0	0	0	0	0	0	0
Venting or Blowdowns	0	0	0	0	0	0	0	0	0	0
Combustion Control Devices	0	0	0	0	0	0	0	0	0	0
Non-Road Internal Combustion Engines	0	0	0	0	0	0	0	0	0	0
Drill Mud	0	0	0	0	0	0	0	0	0	0
Flowback or Completions	0	0	0	0	0	0	0	0	0	0
Loadout	0	0	0	0	0	0	0	0	0	0

Production Emissions
Complete the following chart based on the estimated total equipment emissions (in lbs) for the Oil & Gas Location once the Oil & Gas Location has entered the production stage, for Hazardous Air Pollutants (HAP). The table should be filled out based on ONE year of operation.

	BEN	TOL	ETH	XYL	NHE	TMP	H2S	FDE	MET	HAP
Stationary Engines or Turbines	0	0	0	0	0	0	0	0	0	0
Process Heaters or Boilers	0.07	0.11	0	0	0	0	0	2.41	0	2.58
Storage Tanks	23.09	17.07	0.63	4	33.67	0.01	0	0	0	78.47
Dehydration Units	0	0	0	0	0	0	0	0	0	0
Pneumatic Pumps	0	0	0	0	0	0	0	0	0	0

Pneumatic Controllers	0	0	0	0	0	0	0	0	0	0
Separators	0	0	0	0	0	0	0	0	0	0
Fugitives	4.3	8.47	1.34	9.25	27.81	2.64	0	0	0	53.82
Venting or Blowdowns	69.42	170.16	17.37	40.57	473.46	43.17	0	0	0	814.16
Combustion Control Devices	0.15	0.18	0.03	0.12	1.16	0.15	0	0	0	1.79
Non-Road Internal Combustion Engines	0	0	0	0	0	0	0	0	0	0
Loadout	29.44	20.15	0.8	4.73	67.68	0.23	0	0	0	123.03
Well Bradenhead	0.06	0.14	0.01	0.03	0.39	0.04	0	0	0	0.67
Well Maintenance	28.15	69.01	7.04	16.46	192.01	17.51	0	0	0	330.19

Provide a qualitative evaluation of any potential acute or chronic, short- or long-term incremental impacts to public health as a result of the estimated total pre-production hazardous air pollutant emissions.

Air monitoring will be conducted during pre-production activities including production rig and completion operations (hydraulic fracturing, drillout and flowback).
KMOG`s general Air Monitoring Program has been approved by the CDPHE and is attached to this form. A site-specific Air Monitoring Plan for this location will be submitted to the COGCC and CDPHE for approval of air monitor locations prior to operations. The attached general Air Monitoring Program has been used on multiple locations. KMOG has been performing air monitoring around pre-production and production facility operations since 2018. Over 1,200 air samples have been collected and analyzed for benzene and other hazardous air pollutants following EPA methods. Results of all validated samples have been below Health Guidance Values complied by CDPHE. See Section 11 of the attached Air Monitoring Program on how the monitoring results are compared to the HGVs.
The analytical results collected to date are representative of pre-production operations for this pad. In addition to the analytical data, continuous VOC analyzer will be located around the pre-production as described in Sections 9 and 10 of the Air Monitoring Program. These monitors are used to indicate a change in operations. Based on historical monitoring, KMOG has established three (3) investigation levels for the continuous analyzers that correlate to benzene levels well below the HGV. For each investigation level there is an associated investigation response. See Sections 14 and 15 of the Air Monitoring Program for more details investigation levels and responses.

Provide a qualitative evaluation of any potential acute or chronic, short- or long-term incremental impacts to public health as a result of the estimated annual production hazardous air pollutant emissions.

Air monitoring will be conducted during early production facility operations, which is 6 months after the last well is turned over to production. Air monitoring will follow the approved Air Monitoring Program. These production facilities are designed to minimize or eliminate air emissions. See Section 5 of the Air Monitoring Program for more information on the design of the production facility. Some of the air monitoring has been conducted at bulk separator production facilities. Results of all validated samples have been below Health Guidance Values complied by CDPHE. See Section 11 of the attached Air Monitoring Program on how the monitoring results are compared to the HGVs. The analytical results collected to date are representative of production facility operations for this pad. As discussed for the pre-production operations, continuous VOC analyzer will be located around the production facility.

Dust Impacts

The following are the estimated number of truck trips traveling on or off the Oil & Gas Location.

	Total	During Construction	During Drilling	During Completions	During Interim Reclamation	During Production
Monthly	3103	0	0	1627	46	
Annual	3610	0	0	1627	547	

Estimated total pounds (lbs) of proppant to be used during completions activities. 0

Provide the type of proppant(s) that are planned to be used during completions activities.

N/A

Provide an evaluation of the proposed proppant management system that will be used to minimize dust during completions activities, including the estimated amount of silica dust that will leave the Oil & Gas Location.

N/A

EXISTING OIL & GAS

Total number of oil & gas locations within 1-mile of the Oil & Gas Location:

	Total Number of Locations		Total Number of Wells
Active, built	34	Active, built	35
Permitted by COGCC, unbuilt	0	Permitted by COGCC, unbuilt	25
Permitted by Relevant Local Government & not COGCC, unbuilt	0	Proposed	0
Proposed	0	Plugged and Abandoned	52

Total acreage disturbance during construction of the active and proposed oil & gas locations within 1-mile of the proposed Oil & Gas Location: 14.63

Source for acreage total:

- ☐ Field Observation/Measurement
- ☒ COGCC Location Files
- ☒ Aerial PhotosOther
- ☐ Other

If "Other" is selected, please describe the source use to determine the acreage total for construction disturbance of the active and proposed oil & gas locations within 1-mile of the proposed Oil & Gas Location.

N/A

Total permitted capacity of on-location storage (in number of pits and tanks) of the active and proposed oil & gas locations within 1-mile of the Oil & Gas Location : NOTE: providing the existing number of pits and tanks on surrounding existing locations is optional.

Source for storage totals:

- ☐ Field Observation/Measurement
- ☒ COGCC Location Files
- ☐ Aerial PhotosOther
- ☐ Other

	Permitted Onsite Storage Capacity	Existing Onsite Storage Capacity
Oil	12	
Condensate	3	
Produced Water	11	
Pits	0	

If "Other" is selected, please describe the source use to determine the tank totals for the active and proposed oil & gas locations within 1-mile of the proposed Oil & Gas Location.

N/A

4 Oil & Gas Location Name: BERRY FARMS WELL PAD Number: 8-8HZ Status: Active, built

OIL & GAS LOCATION INFORMATION

Form 2A Doc#: 402958547

Loc ID#:

Oil & Gas Location: QTRQTR: NWNE Sec: 8 Twp: 3N Rng: 67W Meridian: 6

Total number of wells planned: 8

Operations Duration

Estimated total number of weeks to construct this Oil & Gas Location: 4

Estimated total number of weeks to drill all planned wells for this Oil & Gas Location: 8

Number of planned drilling occupations to drill all planned wells for this Oil & Gas Location: 1

Estimated total number of weeks to complete all planned wells for this Oil & Gas Location: 5

Number of planned completions occupations to complete all planned wells for this Oil & Gas Location: 1

Will there be simultaneous drilling and completions operations occurring at this Oil & Gas Location? No

Estimated total number of months the Oil & Gas Location will be active, prior to abandonment and reclamation: 300

Noise Impacts

Provide a qualitative evaluation of the incremental adverse noise impacts to the surrounding receptors during the pre-production activities at this Oil & Gas Location.

An ambient survey will be conducted in order to determine current noise levels in this area. A noise model representing the proposed operations at the pad was created to assess the predicted operational noise levels with the COGCC allowable dBA and dBC noise limits. Continuous monitoring will be implemented at the appropriate noise points of compliance from the working pad surface per Rule 423.a(5)A&B. The results of the noise modeling indicate that with mitigation the proposed drilling and completions operations will be in compliance with the COGCC A-weighted and C-weighted noise limits.

Provide a qualitative evaluation of the incremental adverse noise impacts to the surrounding receptors during the production stage of this Oil & Gas Location.

Inclusive of the ambient data obtained prior to pad construction and the noise impact model of the production facility KMOG predicts the noise levels during the production stage will meet the COGCC allowable dBA and dBC noise limits. KMOG fully expects to comply with the COGCC A-weighted and C-weighted production noise limits. The use of electricity will minimizes noise at the production stage.

Light Impacts

Provide a qualitative evaluation of the incremental adverse light impacts to the surrounding receptors during the pre-production activities at this Oil & Gas Location.

KMOG will meet all applicable lighting requirements as set forth by Sec. 424 during the construction and pre-production phase operations. During the construction phase, lighting shall be directed downward and inward and shielded to avoid glare on public roads and building units.

Provide a qualitative evaluation of the incremental adverse light impacts to the surrounding receptors during the production stage of this Oil & Gas Location.

KMOG will meet all applicable lighting requirements as set forth by Sec. 424(B) during the production phase operations. Permanent lighting will be installed at the production facility. KMOG will have three types of lights at the production facility including the Lease Automated Custody Transfer (LACT) lights, emergency strobe lights and heat trace lights. The lights above the LACT door are for personnel visiting at night and it will be directed downward to avoid glare on public roads and adjacent building units. These lights are on a switch and will be turned off when personnel leave the location. The strobe lights are also on the LACT building and act as an emergency indicator that will activate if a high level of gas is detected within the LACT building. The heat trace lights are a small red light that acts as a visual indication that the heat trace circuit is powered on. After new lighting is installed at the location, KMOG will certify that the lighting complies with the base allowances and standards set forth in 424 b.c.d.

Odor Impacts

Provide a qualitative evaluation of the incremental adverse odor impacts to the surrounding receptors during the pre-production activities at this Oil & Gas Location.

KMOG has committed to using Zero VOC drilling mud, which eliminates all sources of odor during the drilling phase. A closed loop system will be utilized during completions which will eliminate odor.

Provide a qualitative evaluation of the incremental adverse odor impacts to the surrounding receptors during the production stage of this Oil & Gas Location.

KMOG production facilities are designed as a closed system to reduce exposure to the atmosphere thereby eliminating potential odors.
KMOG uses pipelines to transport hydrocarbons from the production facility eliminating odors that could occur during truck loading.
Production facilities are inspected regularly by KMOG personnel to make sure the equipment is working property and necessary maintenance is performed, to reduce potential odors. KMOG incorporates Audio, Visual, Olfactory (AVO) observations at production facility inspections.
KMOG will use Best Management Practices to reduce unloading events and to reduce potential odor causing emissions when liquids unloading is necessary (i.e., maintenance activities to remove liquids from existing wells that are inhibiting production).
KMOG remotely monitors production facilities, this reduces traffic onto production facilities which may create odors from truck traffic.

WATER RESOURCES

[X] This Oil & Gas Location is listed as a sensitive area for water resources.

[X] This Oil & Gas Location is within 2,640 feet of a surface Water of the State.

Estimated depth to groundwater: 20

Estimated total planned on-location storage capacity of the Oil & Gas Location for:

	Number of Tanks	Total Volume (bbls)
Oil	0	0
Condensate	0	0
Produced Water	0	0

Other volumes of stored fluids, hydrocarbons, chemicals, or E&P Waste Fluids	1	8.3

List, with volumes, the “Other” fluids planned to be stored on the Oil & Gas Location, including, but not limited to: hydrocarbons, chemicals, or E&P Waste fluids.

350 GAL - Corrosion/Scale Protection Chemical 8.33 BBL
350 GAL- Corrosion/Bacterial Protection Chemical 8.33 BBL

Potential Impacted Surface Water Resources

Provide the distance and direction of the contaminant migration pathway from the Oil & Gas Location to the nearest downstream riparian corridors, wetlands, and surface Waters of the State. Also provide an evaluation of the baseline condition of the nearest downstream riparian corridors, wetlands, and surface Waters of the State.
Enter 2,640 for distances greater than 1/2-mile. Distances are measured along the migration pathway, not a straight line from the edge of the Oil & Gas Location.

	Distance	Direction	Evaluation of Baseline Condition
Riparian Corridor	2640	N	N/A
Wetland	460	S	FRESHWATER EMERGENT WETLAND
Surface Waters of the State	488	N	IRRIGATION DITCH

Potential Impacts to Public Water Resources
Provide the distance, direction, and evaluation of potential impacts to the nearest Public Water System Intake. Enter 5,280 for distances greater than 1-mile.

	Distance	Direction	Evaluation of Baseline Condition
Public Water System Intake	5280	N	N/A

Estimated Water Usage
Provide the estimated total volumes of the following that are anticipated to be used during the drilling and completions stage of the Oil & Gas Location activity.

Water Source	Volume (bbls)		Volume (bbls)		Volume (bbls)		
Surface Water	2131398	Recycled Water (Produced Water)	14209	Unspecified Source	0	Percentage Recycled Water	0 %
Ground Water	733107	Recycled Water (non-Produced Water)	0	Total Water Usage	2878714		

If an unspecified water source is planned to be used, provide a description of the source.

N/A

Evaluate the measures being taken to reduce freshwater use, including reusing and recycling produced water.

KMOG uses recycled water when possible and receives its surface water from surface non-potable sources

ECOSYSTEM & WILDLIFE RESOURCES

List High Priority Habitats (HPH) that occur within one mile of the Oil & Gas Location and list the distance from working pad surface. If the location is partially or entirely within a HPH list the distance as ‘0’ and provide the estimated acreage disturbance of that HPH by the location construction.

High Priority Habitat (HPH) Name:	Distance	Estimated Acreage Disturbed
Bald Eagle, active nest, 1/2 mile	2627	0
Bald Eagle, Roost Site	1877	0
Aquatic Native Species, Conservation Waters	3147	0
Mule Deer, Severe Winter Range	2401	0
Mule Deer, Migration Corridor	1793	0
Bald Eagle, active nest, 1/4 mile	3976	0

List total size of disturbed acreage and disturbed High Priority Habitat (HPH) area (in acres) during the Oil & Gas Location construction and after interim reclamation.

	Total Acreage (acres)	Total HPH Acreage (acres)
Construction	8.55	0
Post-interim Reclamation	1.02	0

Provide any further information regarding the location's HPH disturbance.

N/A

Provide the acreage of the existing land use types that occur within one mile of the Oil & Gas Location. Note: a circle with a one mile radius is approximately 2010 acres.

		Existing Acreage		Existing Acreage		Existing Acreage		Existing Acreage
Crop Land:	Irrigated	1691.96	Non-Irrigated	0	Conservation Reserve Program(CRP)	0		
Non-Crop Land:	Rangeland	428.4	Forestry	8.05	Recreation	0	Other	260.9
Subdivided:	Industrial	0	Commercial	0	Residential	24.7		

If any land use is industrial, provide a description of the use or operation of the industrial facilities.

N/A

If any land use is "Other", provide a description of the land use.

Open Water, Developed - Open Space, Developed - Low Intensity, Developed - Medium Intensity, Developed - High Intensity, Barren Land, Woody Wetlands, Emergent Herbaceous Wetlands

If any portion of the land use for the proposed oil and gas location includes Rangeland, Forestry, or Recreation, provide a list of the plant community or communities and estimated acreage disturbed for each:

	Estimated Disturbed Acreage		Estimated Disturbed Acreage		Estimated Disturbed Acreage		Estimated Disturbed Acreage
Disturbed Grassland	0	Shrub Land	0	Mountain Riparian	0	Wetland Aquatic	0
Native Grassland	0	Plains Riparian	0	Forest Land	0	Alpine	0

Provide a qualitative evaluation of incremental adverse impacts to ecosystems, including any plant communities, as a result of Oil and Gas Operations associated with the proposed Oil & Gas Location.

N/A

Soil Resources

List all soil map units that occur within the Oil & Gas Location and list the estimated total area (in acres) disturbance of each soil map unit.

NRCS Map Unit Name:	Estimated Disturbed Acreage
33 - Kim loam, 3 to 5 percent slopes	2
28 - Wiley - Colby complex, 1 to 3 percent slopes	6.6

PUBLIC WELFARE

☐ This Oil & Gas Location lies within a Disproportionately Impacted Community as defined in the 100-series rules.

Building Units within 1-mile	0'-2,000'	2,001'-5,280'
Total number of ResidentialBuilding Units:	3	20
Total Number of non-school AND non child care center High Occupancy Building Units:	0	0
Total number of School Facilities:	0	0
Total number of Child Care Centers:	0	0

Recreation and Scenic Value

List all State Parks, State Trust Lands, or State Wildlife Area within 1-mile of the Oil & Gas Location.

None

List all Designated Outdoor Activity Areas within 1-mile of the Oil & Gas Location.

None

List all mapped trails that support any of the following recreational activities within 1-mile of the Oil & Gas Location: Hiking, Biking, Horseback Riding, Motorcycle Riding, ATV Riding, OHV, Nordic Skiing, Snowmobiling, or Snowshoeing.

None

AIR RESOURCES

Pre-Production Emissions

Complete the following chart based on the estimated total equipment emissions (in tons) for the Oil & Gas Location during the pre-production (construction, drilling, completions) stage for Criteria Pollutants by equipment type.

	NOx	CO	VOCs	Methane	Ethane	CO2	N2O
Process Heaters or Boilers	1.1	0.17	0.05	0.01	0.0024	164.24	0.0013
Storage Tanks	0.01	0.04	0.04	0.19	0.07	21.49	0
Venting or Blowdowns	0.01	0.03	0.34	0.44	0.16	15.36	0
Combustion Control Devices	0.0045	0.02	0.03	0.08	0.03	6.3	0
Non-Road Internal Combustion Engines	50.24	54.5	6.88	0.15	0.05	5037.65	0.02
Drill Mud	0.04	0.18	0.35	0.84	0.1	8.62	0
Flowback or Completions	0	0	0	0	0	0	0
Loadout	0	0	0.03	0.14	0.05	0.1	0

Production Emissions

Complete the following chart based on the estimated full facility equipment emissions (in tons) for the Oil & Gas Location once the Oil & Gas Location has entered the production stage, for Criteria Pollutants. The table should be filled out based on ONE year of operation.

	NOx	CO	VOCs	Methane	Ethane	CO2	N2O
Stationary Engines or Turbines	0	0	0	0	0	0	0
Process Heaters or Boilers	0	0	0	0	0	0	0
Storage Tanks	0	0	0	0	0	0	0
Dehydration Units	0	0	0	0	0	0	0
Pneumatic Pumps	0	0	0	0	0	0	0
Pneumatic Controllers	0	0	0	0	0	0	0
Separators	0	0	0	0	0	0	0
Fugitives			0	0	0	0	
Venting or Blowdowns	0	0	0	0	0	0	0
Combustion Control Devices	0	0	0	0	0	0	0
Loadout	0	0	0	0	0	0	0
Non-Road Internal Combustion Engines	0	0	0	0	0	0	0
Well Bradenhead	0	0	0	0	0	0	0
Well Maintenance	0	0	0	0	0	0	0

Diesel Vehicle Road Miles

Complete the following chart for diesel vehicle road miles during each stage of oil and gas location operations.

During Construction: 22336

During Completions: 36072

During Drilling: 7952

During Interim Reclamation: 10579

During Production: 3496

PUBLIC HEALTH RESOURCES

Pre-Production Emissions

Complete the following chart based on the estimated total equipment emissions (in lbs) for the Oil & Gas Location during the pre-production (construction, drilling, completions) stage for Hazardous Air Pollutants (HAP).

	BEN	TOL	ETH	XYL	NHE	TMP	H2S	FDE	MET	HAP
Process Heaters or Boilers	9.41	23.07	2.36	5.5	64.2	5.85	0	0	0	110.39
Storage Tanks	1.63	1.17	0.05	0.28	0.86	0	0	0	0	3.99
Venting or Blowdowns	7.43	18.22	1.86	4.35	50.7	4.62	0	0	0	87.19

Combustion Control Devices	0.0001	0.0001	0	0.0001	0.0006	0.0001	0	0	0	0.0009
Non-Road Internal Combustion Engines	206.64	506.51	51.71	120.78	1409.33	128.52	0	0	0	2423.49
Drill Mud	0.0038	0.01	0.001	0.0022	0.03	0.0024	0	0	0	0.04
Flowback or Completions	0	0	0	0	0	0	0	0	0	0
Loadout	1.19	0.85	0.04	0.2	0.62	0	0	0	0	2.91

Production Emissions
Complete the following chart based on the estimated total equipment emissions (in lbs) for the Oil & Gas Location once the Oil & Gas Location has entered the production stage, for Hazardous Air Pollutants (HAP). The table should be filled out based on ONE year of operation.

	BEN	TOL	ETH	XYL	NHE	TMP	H2S	FDE	MET	HAP
Stationary Engines or Turbines	0	0	0	0	0	0	0	0	0	0
Process Heaters or Boilers	0	0	0	0	0	0	0	0	0	0
Storage Tanks	0	0	0	0	0	0	0	0	0	0
Dehydration Units	0	0	0	0	0	0	0	0	0	0
Pneumatic Pumps	0	0	0	0	0	0	0	0	0	0
Pneumatic Controllers	0	0	0	0	0	0	0	0	0	0
Separators	0	0	0	0	0	0	0	0	0	0
Fugitives	0	0	0	0	0	0	0	0	0	0
Venting or Blowdowns	0	0	0	0	0	0	0	0	0	0
Combustion Control Devices	0	0	0	0	0	0	0	0	0	0
Non-Road Internal Combustion Engines	0	0	0	0	0	0	0	0	0	0
Loadout	0	0	0	0	0	0	0	0	0	0
Well Bradenhead	0	0	0	0	0	0	0	0	0	0
Well Maintenance	0	0	0	0	0	0	0	0	0	0

Provide a qualitative evaluation of any potential acute or chronic, short- or long-term incremental impacts to public health as a result of the estimated total pre-production hazardous air pollutant emissions.

Air monitoring will be conducted during pre-production activities including production rig and completion operations (hydraulic fracturing, drillout and flowback).
KMOG`s general Air Monitoring Program has been approved by the CDPHE and is attached to this form. A site-specific Air Monitoring Plan for this location will be submitted to the COGCC and CDPHE for approval of air monitor locations prior to operations. The attached general Air Monitoring Program has been used on multiple locations. KMOG has been performing air monitoring around pre-production and production facility operations since 2018. Over 1,200 air samples have been collected and analyzed for benzene and other hazardous air pollutants following EPA methods. Results of all validated samples have been below Health Guidance Values complied by CDPHE. See Section 11 of the attached Air Monitoring Program on how the monitoring results are compared to the HGVs.
The analytical results collected to date are representative of pre-production operations for this pad. In addition to the analytical data, continuous VOC analyzer will be located around the pre-production as described in Sections 9 and 10 of the Air Monitoring Program. These monitors are used to indicate a change in operations. Based on historical monitoring, KMOG has established three (3) investigation levels for the continuous analyzers that correlate to benzene levels well below the HGV. For each investigation level there is an associated investigation response. See Sections 14 and 15 of the Air Monitoring Program for more details investigation levels and responses.

Provide a qualitative evaluation of any potential acute or chronic, short- or long-term incremental impacts to public health as a result of the estimated annual production hazardous air pollutant emissions.

Air monitoring will be conducted during early production facility operations, which is 6 months after the last well is turned over to production. Air monitoring will follow the approved Air Monitoring Program. These production facilities are designed to minimize or eliminate air emissions. See Section 5 of the Air Monitoring Program for more information on the design of the production facility. Some of the air monitoring has been conducted at bulk separator production facilities. Results of all validated samples have been below Health Guidance Values complied by CDPHE. See Section 11 of the attached Air Monitoring Program on how the monitoring results are compared to the HGVs. The analytical results collected to date are representative of production facility operations for this pad. As discussed for the pre-production operations, continuous VOC analyzer will be located around the production facility.

Dust Impacts
The following are the estimated number of truck trips traveling on or off the Oil & Gas Location.

Total

Monthly

Annual	During Construction	During Drilling	During Completions	During Interim Reclamation	During Production
	7936	3082	5010	1628	5
	7936	6164	8016	1628	61

Estimated total pounds (lbs) of proppant to be used during completions activities. 84948352

Provide the type of proppant(s) that are planned to be used during completions activities.

Silica Proppant

Provide an evaluation of the proposed proppant management system that will be used to minimize dust during completions activities, including the estimated amount of silica dust that will leave the Oil & Gas Location.

Utilize Sand Containerized Proppant Delivery System that eliminates the use of pneumatic transfer on location. This methodology utilizes a gravity choke feed system that reduces dust significantly from historical practices. The dust levels from this system are minimal and below OSHA's permissible exposure limit which eliminates the need for additional PPE.

EXISTING OIL & GAS

Total number of oil & gas locations within 1-mile of the Oil & Gas Location:

	Total Number of Locations		Total Number of Wells
Active, built	39	Active, built	39
Permitted by COGCC, unbuilt	0	Permitted by COGCC, unbuilt	25
Permitted by Relevant Local Government & not COGCC, unbuilt	0	Proposed	0
Proposed	0	Plugged and Abandoned	55

Total acreage disturbance during construction of the active and proposed oil & gas locations within 1-mile of the proposed Oil & Gas Location: 18.43

Source for acreage total:

- ☐ Field Observation/Measurement
- ☒ COGCC Location Files
- ☒ Aerial PhotosOther
- ☐ Other

If "Other" is selected, please describe the source use to determine the acreage total for construction disturbance of the active and proposed oil & gas locations within 1-mile of the proposed Oil & Gas Location.

N/A

Total permitted capacity of on-location storage (in number of pits and tanks) of the active and proposed oil & gas locations within 1-mile of the Oil & Gas Location : NOTE: providing the existing number of pits and tanks on surrounding existing locations is optional.

Source for storage totals:

- ☐ Field Observation/Measurement
- ☒ COGCC Location Files
- ☐ Aerial PhotosOther
- ☐ Other

	Permitted Onsite Storage Capacity	Existing Onsite Storage Capacity
Oil	12	
Condensate	3	
Produced Water	11	
Pits	0	

If "Other" is selected, please describe the source use to determine the tank totals for the active and proposed oil & gas locations within 1-mile of the proposed Oil & Gas Location.

N/A

OIL & GAS DEVELOPMENT PLAN-SCALE DATA

List High Priority Habitats (HPH) that are estimated be disturbed by the construction of new roads, including access roads, pipelines, and utilities for this OGDP, along with the estimated disturbed acreage of each HPH.

High Priority Habitat (HPH) Name	Estimated Acreage Disturbed
Bald Eagle Roost	11.49
Mule Deer Migratory Corridor	7.69

List the total estimated of disturbed acreage and the total disturbed High Priority Habitat (HPH) area (in acres) during construction and the acreage that will remain disturbed after interim reclamation of the following for the entire OGDP:

	Construction			Post-interim Reclamation	
	Total Acreage (acres)	Total HPH Acreage (acres)		Total Acreage (acres)	Total HPH Acreage (acres)
New roads, including access roads	6.4	2.6	New roads, including access roads	6.4	2.6
Pipelines	19.9	12.8	Pipelines	0	0
Utilities	0.8	0	Utilities	0.13	0.06

Provide any further information regarding the HPH disturbance from the construction of new roads, including access roads, pipelines, and utilities for this OGDP.

KMOG will comply with operations stipulations associated with high priority habitat. KMOG has consulted with and will compensate CPW for direct impacts to wildlife caused by the acreage disturbance

Number of miles of the existing lease road that are planned to be used to access these location(s): 0.28

BENEFICIAL IMPACT INFORMATION

Equipment and Facility Removal

Total number of existing wells that are planned to be plugged and abandoned as part of this OGDP: 76

Total number of existing locations that are planned to be closed and undergo final reclamation as part of this OGDP: 34

Total number of acres that are planned to be reclaimed through the closing of existing locations: 82.5

Total number of existing pits that are planned to be closed and undergo final reclamation as part of this OGDP: 0

Estimated number of vehicle trips that are planned to be prevented from the above mentioned facility closures and equipment upgrades (on an annual basis): 2836

Total number of tanks planned to be removed from existing locations through the approval of this OGDP:

Oil Tanks: 26

Condensate Tanks: 0

Produced Water Tanks: 23

Provide a qualitative evaluation of any incremental beneficial impacts to the surrounding community directly and indirectly from this OGDP.

As a result of plugging 76 wells the surrounding community can expect reduced truck traffic traveling to multiple locations. This will reduce the amount of time that trucks are present in the area. The surrounding community will see reduced noise and dust associated with that traffic. Removing older well heads and tanks will reduce the risk of emissions associated with those locations. The reduction from 34 locations to 4 locations will create a less fragmented area.

Provide a qualitative evaluation of any incremental beneficial impacts to the surrounding wildlife and ecosystems directly and indirectly from this OGDP.

Once the wells associated with this OGDP are on production KMOG will be plugging 76 wells and reclaiming approximately 82.5 acres across multiple locations and disturbing 70.3 acres concentrated in four locations prior to reclamation and 23.3 after interim reclamation. This development will ultimately restore nearly 60 more acres than are disturbed and will be concentrated to two area thereby reducing habitat fragmentation. Limited beneficial impacts to the surrounding wildlife and ecosystems are expected and could include the addition of potential hunting perches for raptors and the elimination of agricultural runoff.

MITIGATION INFORMATION

Item	Impacted Resource	Mitigation Description
1	Water Resources	KMOG intends to use a total of 7,735,752 BBLs of water during drilling and completions activities on these locations. 74% (5,718,902 BBLs) will be sourced from non-potable

surface water and 25.5% (1,978,725 BBLs) will be sourced from groundwater. 38,125 BBLs (0.5%) will be from recycled sources. The estimated depth to groundwater at the Camenisch 10-33HZ location is 9 feet. At the Swartz 2-4HZ location groundwater is present at 5 feet. The estimated depth to groundwater at the Berry Farms 8-8HZ well pad is 20 feet and 27 feet at the Berry Farms 8-8HZ facility pad.
Camenisch 10-33HZ Wetlands and Surface Waters of the State: An unnamed ditch with an ordinary high-water mark (OHWM) is upgradient, located approximately 60 feet north of the Site. The unnamed ditch has connectivity to an intermittent stream located downgradient of the Site, approximately 160 feet to the east. The intermittent stream is mapped on the National Wetland Inventory (NWI) and the National Hydrography Dataset (NHD) and exhibits an OHWM. The unnamed ditch flows east to the intermittent stream, where stream flow continues south. Consistent with Site topography, surface water runoff would be conveyed southeast towards a series of holding ponds located approximately 0.5 mile downgradient. Down gradient is to the south and east of the pad. Two permanent water tanks will be located 493 feet southwest of the OHWM. A permanent maintenance tank will be located 514 feet southwest of the OHWM. Three chemical totes will be located 296 feet southwest of the OHWM. CPW has granted a waiver to Rule 1202.a.(3). For additional information please refer to the Ordinary High Water Mark Exhibit. There are no contamination migration pathways or public water system intakes within one mile of the working pad surface of the Camenisch 10-33HZ Location.
Swartz 2-4HZ Wetlands and Surface Waters of the State: The Swartz 2-4HZ location is east of a riverine wetland. There is a permanent water tank 230 feet and a maintenance condensate tank 258 feet to the northeast of the OHWM associated with the riverine wetland. Three chemical totes will be placed 140 feet northeast of and downgradient to the OHWM. CPW has granted a waiver to Rule 1202.a.(3). There are no contamination migration pathways or public water system intakes within one mile of the working pad surface of the Swartz 2-4HZ Location.
Berry Farms 8-8HZ Well Pad Wetlands and Surface Waters of the State: The proposed Berry Farms 8-8HZ Well Pad working pad surface (WPS) lies approximately 180 feet east of a fresh water emergent wetland. There is an irrigation ditch which is categorized as surface waters of the state that runs through the location, which will be rerouted around the well pad by the surface owner prior to construction. There will be a chemical tote 552 feet east northeast of the OHWM of the fresh water emergent wetland. CPW has granted a waiver to Rule 1202.a.(3). There are no contamination migration pathways or public water system intakes within one mile of the working pad surface of the Berry Farms 8-8HZ Well Pad. Post construction gradient will be down to the south and west.
Berry Farms 8-8HZ Facility Pad Wetlands and Surface Waters of the State: The proposed Berry Farms 8-8HZ Facility Pad WPS lies approximately 417 feet north of a fresh water emergent wetland, which is considered surface waters of the state. There will be three permanent water tanks 509 feet northeast and one maintenance tank 532 feet northeast of the OHWM. CPW has granted a waiver to Rule 1202.a.(3). There are no contamination migration pathways or public water system intakes within one mile of the working pad surface of the Berry Farms 8-8HZ Facility Pad. Post construction gradient will be down to the south and west.
MITIGATION MEASURES:
KMOG protects water resources by carefully choosing the location the pad, utilizing drainage control measures, and proper grading techniques. KMOG segregates topsoil in order to protect soil resources. Enhanced soil compaction minimizes absorption and downward migration of fluids in the event of an incidental spill. Liners are installed under the production facility equipment during the production phase.
KMOG will adhere to rule 309.3.(5).D by containing flowback and Stimulation Fluids in Tanks, constructing lined berms or other lined containment devices pursuant to Rule 603.o around any new crude oil, condensate, and produced water storage tanks, maintaining adequate spill response equipment at the Oil and Gas Location during drilling and completion operations; and not construct or utilize any pits.
Both prior to, and after drilling and completion operations, KMOG contracts with a third-party professional to perform water sampling from water wells near the location. The baseline sampling helps establish existing conditions, and the post-development samples verify KMOG's operations are safe.
To prevent fluid leaks, temporary produced water storage tanks are designed, constructed, and maintained in accordance with the following portions of the National Fire Protection Association (NFPA) Code 30 (2008 version):
• Tanks are built to engineering standards using noncombustible materials, with relief device sizing based on API 2000 standards.
• Tanks are inspected and maintained while in use.
• The only pipes within the containment are related to the temporary tanks (i.e. no external piping is co-located within the containment), and firefighting equipment is,

		likewise, not stored within the containment area. The temporary produced water storage tanks are staged on a geosynthetic liner and surrounded by an earthen berm. The berms enclose an area sufficient to provide secondary containment for 150% of the volume of the largest single tank and are sufficiently impervious to contain spilled or released material. The berms and the liner are inspected at the same time as stormwater inspections. While the site is under construction, site inspections will occur every 14 days. During completions operations, all fluid containing equipment is inspected daily. When the location is on production, site inspections will occur every month. Automation technology will be utilized at these facilities. This technology includes the use of fluid level monitoring for the tanks and produced water sumps, high-level shut offs, and electronic sensors to monitor the interstitial space of double-walled produced water sumps. All automation is monitored by Kerr-McGee's Integrated Operations Center (IOC), which is manned 24 hours per day, 7 days per week.
2	Ecosystem and Wildlife Resources	KMOG is able to avoid impacts to wildlife at the Berry Farms location because it is outside of HPH. KMOG will avoid impacts to wildlife resources at the Camenisch and Swartz locations by operating during stipulated times associated with high priority habitat. The locations were surveyed by a third-party biological contractor prior to permit submittal. The area 2,640 feet from the edge of the disturbance area was surveyed for Migratory Bird Treaty Act (MBTA) species. The biological surveys check for all species and environmental conditions outlined in the COGCC rules using accepted scientific survey practices. Where surface access is granted by the surface owner these surveys are conducted on the ground. If access is not possible, surveys are conducted from public ROW to the best of the contractor's ability. The locations will be surveyed again for nests approximately two weeks prior to construction start. Periodic inspections for nests and of avian protection will occur throughout the life of the project. A consultation with Colorado Parks and Wildlife (CPW) was held on December 8, 2021. The Camenisch 10-33HZ location is within Mule Deer Migration Corridor High Priority Habitat (HPH). 9.48 acres of Mule Deer Migration Corridor High Priority Habitat will be disturbed during pre¬-production activities. The location will permanently disturb 1.72 acres of Mule Deer Migration Corridor HPH. There is a direct line of sight to a bald eagle winter night roost (BEWNR) within 0.5 miles of the Camenisch 10-33HZ Location. A short portion of the access road (approximately 0.05 miles) along Weld County Road 38 is included in the half mile BEWNR buffer. However, due to traffic on CR 38 and construction of the access road scheduled to occur outside of the timing stipulation for BEWNR, no impacts to the BEWNR are expected. The Swartz 2-4HZ location is within Mule Deer Migration Corridor HPH, Mule Deer Severe Winter Range HPH and Bald Eagle Roost. During consultation with CPW, it was determined the mule deer habitat is not accessible by mule deer due to a high fence around the edge of the property. CPW waived the application of mule deer HPH at this location. Only bald eagle roost habitat is being disturbed. ¬ A bald eagle winter night roost with direct line of sight to the location is present within 0.25 miles. KMOG will avoid operations during timing stipulations for bald eagle winter night roost, November 15th to March 15th. The Berry Farms 8-8HZ Well Pad and Facility Pad are not located in HPH. The nearest HPH is a mule deer migration corridor located approximately 0.27 mile west of the Location. A desktop analysis was completed on July 9, 2021. CPW Species Activity Mapping (SAM) data and CPW HPH data were utilized to identify migratory bird and raptor habitat. No bald eagle nests were identified within one mile of the proposed location. A bald eagle winter night roost is located within one mile of the proposed location. No action is necessary at this time because no disturbance would occur within a half mile of the winter night roost. During an on-site assessment on June 17, 2021, suitable nesting habitat for raptors and migratory birds was observed within 0.5 mile of the Location, as a result, Raptor surveys are recommended if the project is constructed between February 15th and July 15th. There is also potentially suitable habitat for non-raptor ground nesting migratory birds protected under the MBTA. Surveys are recommended where surface disturbance activities are anticipated to occur between April 1st and August 31st. No suitable habitat for CPW Tier 1 species was observed within the Site. No HPH is located within the working pad surface. KMOG will reclaim over 82 acres associated with plugging and abandoning nearby wells. The Democrat OGDP & associated roads will be reclaimed to 23.3 acres. The OGDP will reclaim nearly 60 acres more than are disturbed. MITIGATION MEASURES: Camenisch 10-33HZ: KMOG will perform pre-production operations during the seasonal stipulation window associated with BEWNR between March 16th and November 14th at

		the Camenisch 10-33HZ Location. CPW confirmed the Location does not intersect Mule Deer Severe Winter Range, but it is located within Mule Deer Migration Corridor habitat. CPW does not provide a timing stipulation for Mule Deer Migration Corridor. However, as a BMP, KMOG will comply with seasonal timing recommendations provided for mule deer severe winter range (November 15th- March 31st) to reduce potential impacts to high priority habitat. The overall operating window for pre-production operations at the Camenisch Location will be April 1 through November 14th. At the Camenisch 10-33HZ location KMOG will pay a direct mitigation fee of $35,299.85 to offset direct impacts to mule deer migration corridor. This amount has been calculated and determined based on total acreage of the proposed disturbance (12.74 Acres) on site specific conditions. As a result of the Camenisch 10-33HZ site's location within an area that exceeds five active locations per square mile indirect impacts associated with Rule 1203.d do not apply. Swartz 2-4HZ: Based on field determinations, CPW waived timing stipulations for mule deer HPH was waived by CPW, therefore no direct mitigation fees are necessary to offset direct impacts to the mule deer severe winter range and the mule deer migration corridor. Rule 1203.d requirements for indirect impacts do not apply because the Swartz 2-4HZ is in an area exceeding five active locations per square mile. At the Swartz 2-4HZ location KMOG will perform pre¬-production operations during the seasonal stipulation window associated with Bald Eagle Winter Night Roost between March 16th and November 14th. Berry Farms 8-8HZ: As a result of the Berry Farms Location outside of HPH, no direct or indirect mitigation fees or operating stipulations are required. General Mitigation: In addition to providing mitigation fees and complying with seasonal stipulations, KMOG will install sound barriers during drilling and completion operations to reduce noise pollution. Light pollution will be minimized by directing lighting downward and inward and light trespass will also be reduced due to the sound walls. Avian protection will be installed on openings larger than two inches.Approximately two weeks prior to construction start, the approved Locations will be surveyed by third party biological contractor for nests. A site-specific spill prevention, control, and countermeasure plan compliant with EPA rule 40 CFR 112 has been created and submitted with the 2A for these locations. Automated emergency response systems and emergency shutdown systems will be installed. Remote monitoring systems will be utilized at these Locations. Vegetation will be controlled on the active Sites throughout the life of the project. Periodic inspections for nests and of avian protection will occur throughout the life of the project. Training is provided to employees and contractors on wildlife conservation practices, including no harassment, feeding of wildlife, or illegal hunting. KMOG maintains a Standard Operating Procedure (SOP) for water suction hoses and transportation Tanks that meets 1202.a.(2).A requirements with our 3rd party contractors when moving equipment from locations. The contractor will use a CPW-approved disinfectant solution capable of killing whirling disease spores and other aquatic nuisance species defined by CPW. KMOG does not use drilling pits, production pits or any other pits at oil and gas locations in the Denver-Julesburg Basin. Avian protection for openings larger than 2" is utilized throughout all operations. *For further details please refer to the cumulative impacts plan*
3	Public Welfare	ANTICIPATED IMPACTS: During the short-term pre-production activities KMOG anticipates an increase in truck traffic, minimal to no increase in noise and light. There are no anticipated odor impacts. As a result of plugging and reclaiming multiple wells nearby and creating a more consolidated location the scenery in the area will be changed during pre¬production and production phases. Noise: KMOG contracted Urban Solutions Group to measure the ambient noise near the location and build site-specific noise models to predict the future noise impact of the proposed operations and determine what noise mitigation measures, if any, would be required to demonstrate compliance with the COGCC maximum permissible noise levels. Noise modeling results were calculated and include the effects of local topography, buildings, barriers, and ground cover. Both A-weighted (dBA) and C-weighted (dBC) noise levels were measured during the ambient survey on the Camenisch, Berry Farms and Swartz locations. Noise measurements were taken at an approximate height of 5 feet and considered during the noise modeling assessment. The models use the site-specific anticipated drilling rig, quiet completions fleet and production equipment. The results of the noise modeling can be found in the Noise Mitigation and Monitoring Plans. The Democrat OGDP locations KMOG will utilize continuous noise monitors. At the

Camenisch Location the measured ambient sound levels do not exceed the maximum permissible noise thresholds, so there are no adjustments to the permissible levels during Drilling or Completions Operations. At the Berry Farms and Swartz Locations, the measured ambient sound levels already exceed the maximum permissible noise thresholds at one of the three compliance points, therefor the maximum permissible noise levels will be adjusted at that location.
Light: Site specific three-dimensional lighting models were developed for each of the phases of this development to determine their associated lighting impacts. The lighting fixtures used in the models were selected based on currently operated representative sites and research conducted into available vendor lighting systems. All calculated values fall well below the prescribed regulatory limits with all calculated light values falling below 1 lx. This light level is similar to a clear night with a full moon.
Truck Traffic
KMOG anticipates at total of 82,936 (49,028 monthly) truck trips during the pre-production phase. When the locations reach production phase the truck traffic will be drastically reduced to 1,862 annual (156 monthly) trips throughout the anticipated 25-year life of the facility.
MITIGATION MEASURES:
Noise: Sound walls will be installed on the locations during drilling and completions. Although operations are conducted 24/7, at night KMOG aims to minimize all non-essential work. Continuous noise monitoring at 7 locations surrounding the 4 locations will allow KMOG to analyze real time noise data and take appropriate operational actions to address noise should the situation arise.
KMOG has gone to considerable lengths to modify the rigs available to significantly reduce noise by not only using the quietest shale shaker model available, but also installing vibrating pads below shaker mounts. Extreme grade exhaust silencers are used on engines and drawworks traction motor. The generator house is fully enclosed with sound dampening louver boxes. KMOG utilizes quiet completion fleets whose engines are boxed to reduce noise pollution. Testing has shown that this equipment is substantially quieter than traditional models.
KMOG will install 32-foot-tall, engineered sound wall rated STC-32 sound walls at all three OGDP locations. At the Camenisch 10-33HZ Location KMOG will install approximately 720 linear feet of on the south and east sides of the Camenisch location. Prior to drilling and completions activities, KMOG will install approximately 1,560 linear feet of sound wall on the north, east, south and west sides of the Berry Farms 8-8HZ location. KMOG will install approximately 2,040 linear feet of sound wall on all four sides of the Swartz 2-4HZ location. As a result of mitigation techniques all modeled locations will be in compliance with allowable noise levels.
Light:
KMOG uses Light-emitting diode (LED) fixtures to the extent possible that are angled downward and inward toward the location and away from homes and businesses to reduce skyglow. LED lights not only use less energy and last longer, they emit light in a specific direction unlike incandescent and Compact Fluorescent lamps (CFL) bulbs which emit light in all directions. Lights are directed to task areas only and switched off when not needed. Light masts are automatically switched off/on based on lighting sensors. Low power (63W) LED lights are used for the drill rig. Sound barriers are positioned to reduce lighting trespass to surrounding off-site buildings. Lighting within the Production area has been reduced to provide a minimum acceptable value to OSHA for safe operations.
Truck Traffic:
In order to minimize truck traffic, KMOG utilizes a design that eliminates oil storage from location, reduces emissions, reduces the footprint of the pad and the number of truck trips to location. The condensate produced from this location will flow off-site through a pipeline, eliminating the need for trucks to transport oil. This system eliminates approximately 80% of KMOG's post-production traffic. KMOG transports the water used in hydraulic fracturing through the Water-On-Demand pipeline system. Since its inception in 2012, this technology has enabled KMOG to eliminate more than 25 million miles of truck traffic. At these locations this will eliminate 268,400 truck trips. During production, trucks will only visit three locations instead of 76 locations within the area, thereby reducing associated emissions, odors, dust, and noise.
Dust:
Sand boxes are used during hydraulic stimulation to reduce the risk of silica dust. Road dust will be controlled by implementing a strict 10 mph speed limit on the lease roads and 5 mph speed limit on location. If necessary KMOG will spray down the lease road with water. KMOG will attempt to minimize the tracking of mud onto roads. Street sweepers will be utilized if mud tracking becomes an issue. Access roads and Vehicle Tracking Control will receive maintenance as needed throughout operations. KMOG will respond quickly and work with Weld County to address any concerns related to county road

		damages. Odor Although no odor impacts are anticipated, KMOG will suppress odors to the maximum extent possible using closed loop systems and proactively using a group III no VOC drilling mud. KMOG will address any citizen concerns regarding odor within 24 hours. The following measures will be implemented: Viewshed The scenery in the area will be changed both during pre-production and production phases. The plugging of 76 older wells will eliminate 34 facilities locations in the area, older equipment will be removed from those locations, including 23 water tanks and 26 oil tanks.
4	Air Resources	Short-term impacts: During pre-production activities KMOG anticipates the release of 21,300 tons of emissions. KMOG expects 10,341 tons of Hazardous Air Pollutants (HAP) during pre-production. Long-term Impacts: During one year of production KMOG anticipates the release of 8,264 tons of emissions. KMOG expects 5,560 tons of HAP during one year of production. To ensure the wellbeing of those working and living near our operations, KMOG contracts with a third-party environmental air quality expert to perform continuous air monitoring during drilling and completions. KMOG anticipates minimal impact to air resources from its operations. KMOG's continued efforts in facility design and operations create a very low emission footprint for pre-production and production operations. Based on the 2022 Colorado Regulation 7 Emission Inventory, KMOG has the lowest intensity of any oil and gas operator in the State of Colorado. As a result of KMOG's proactive approach to emissions, KMOG has already met the 2030 intensity targets set in the CDPHE's recently adopted Regulation 22. KMOG's calculated 2020 intensity is 1.83 mtCO2e/kBOE and the year 2030 Regulation 22 targets are set at 6.80mtCO2e/kBOE. Although, KMOG is well ahead of the efforts to reduce emissions, KMOG continues to strive to find and apply innovative opportunities for emissions reduction across pre-production and production operations. KMOG has collected over 3400 Benzene air samples within 300 feet of analogous locations, including baseline sampling. All samples are well below CDPHE health guidance values (HGV) and are generally 85% lower than the HGV. KMOG will place continuous VOC and benzene monitors at multiple locations throughout drilling, completions and the first six months of production. These monitors send alerts to the IOC so that the safety of the location is monitored 24 hours per day, seven days per week. During drilling: KMOG uses natural gas engines to power it's rigs rather than diesel generators. This change in fuel type produces 30% less CO2, 75% less Nitrogen Oxide, particulate matter is reduced by 90% and sulfur oxides are reduced by 50%. During Completions: During completions KMOG uses a closed loop system. As a standard practice, KMOG has also implemented the pipelined Water on Demand (WOD) system which will eliminate 268,400 truck trips at the Democrat OGDP Locations during completions activities. During Flowback: Fluids will flow through separation equipment where the gas will be collected through a gas gathering line instead of vented or burned. During Production: KMOG uses production facilities that have been designed to eliminate most emission sources. Oil will not be stored on location where it could cause emissions but will be gathered and sent via pipeline to a stabilization facility. This gathering system also reduces the number of vehicles visiting the location. Additionally, KMOG uses air actuated pneumatic devices rather than natural gas actuated devices. There will be no flaring of associated sales gas. There will be no compressor engines on location. Produced water can contain entrained gas, KMOG equips water storage tanks with combustion devices with a 98% destruction efficiency. If the pilot for the combustor goes out the location will be remotely shut in. There will be maintenance tanks at the Democrat OGDP Locations, that will only be used during maintenance operations. These tanks are identified as "condensate tanks" on the Democrat OGDP Form 2B. The maintenance tanks are not part of normal operation and are only used to manually flow to the tanks for activities such as equipment blowdowns for maintenance or well unloading. In the event the tanks are utilized, it is standard KMOG practice to empty maintenance tanks within 24 hours in order to minimize emissions. The maintenance tanks are equipped with monitoring devices that report data such as temperature, pressure and fluid level and can be monitored from KMOG's IOC in Platteville. The maintenance tanks are attached to the overall tank vapor recovery piping that goes to the Enclosed Combustion Device (ECD). If any vapors are recovered, then they are sent to the ECD and not released into the atmosphere. Maintenance activities

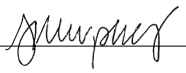
		that send fluids to the maintenance tanks are recorded and emissions are quantified, reported, and permitted according to requirements in CDPHE Regulation 3 and Regulation 7. The maintenance tank is required to safely perform maintenance activities when deemed necessary. These are infrequent and not part of the normal operation of the facility. KMOG will have permanent water storage tanks on the Democrat OGDP locations. The tanks will be controlled with ECDs. Tank emissions monitoring systems will be in place, which means that tank pressures will be continuously recorded, and the location will be shut in if tank pressures start to approach the pressure at which relief devices would vent emissions to the atmosphere. Therefore, the possibility of venting from tanks is eliminated. The tank components and control device will be on preventative maintenance schedules to ensure device integrity and minimize the potential for leaks/failure. The tanks (and entire facility) will have Leak Detection and Repair (LDAR) surveys completed. KMOG has a dedicated emissions team that conducts our LDAR program. This team performs weekly audio visual and olfactory (AVO) inspections to make sure equipment is working per design and in a manner safe for the environment. The entire facility will be inspected to ensure that there are not any leaks that can be detected using hearing, sight, or smell. If a leak is found it is reported to the state, repaired and reinspected with a FLIR camera to confirm the repair has been completed. Facilities will also be inspected for gas leaks at least monthly using an infrared camera. KMOG maintains the IOC where facilities are monitored and can be shut in remotely if a leak is suspected. The IOC allows KMOG to quickly respond without creating any additional traffic. The reduction of 76 wells and 34 facility locations will remove the following potential sources of emissions: 23 water tanks and 26 oil tanks. The omission of 1,418 truck trips to visit those locations will also reduce emissions.
5	Public Health Resources	KMOG does not anticipate any impact to public health by its operations at this location. As a part of the CPRN (Colorado Preparedness Response Network) KMOG will work alongside other operators to facilitate training drills. These drills and the presence of oil and gas operations in the area has the potential to enhance the capabilities and the watchfulness of the emergency responders. The IOC staffed 24 hours per day, seven days per week, will remotely monitor the wells and facility. This enables KMOG to deploy appropriate resources quickly, efficiently, and to collaborate with local emergency response agencies as necessary. This system also helps reduce traffic.

OPERATOR COMMENTS AND SUBMITTAL

Print Name: Tracy Colling Title: Regulatory Advisor

Email: Tracy_Colling@oxy.com Date: 04/15/2022

Based on the information provided herein, this Cumulative Impacts Data Identification Form 2B complies with COGCC Rules and is hereby accepted into the Cumulative Impacts Data Evaluation Repository (CIDER database).
Contact OGLA Staff for consultation.

COGCC Approved:  **Director of COGCC** Date: 9/23/2022

Attachment Check List

Att Doc Num	Name
402958567	Form 02B SUBMITTED

Total Attach: 1 Files

General Comments

User Group	Comment	Comment Date
OGLA	OGDP ID #482251 and this Form are approved by Commission Order Number 407-3373.	09/23/2022
OGLA	The Director has determined this OGDP application is complete. Form pushed to IN PROCESS.	05/31/2022

Total: 2 comment(s)