

State of Colorado Energy & Carbon Management Commission



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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] OGD [] Partial 2B - Rule 803.b.(2).A UIC Conversion

OPERATOR INFORMATION

ECMC Operator Number: 10670 Contact Name and Telephone: Name: Katie Gillen, Phone: (720) 370-5737, Email: kgillen@bisonog.com

OIL & GAS DEVELOPMENT PLAN INFORMATION

Oil & Gas Development Plan Name: Friendly Skies, Oil & Gas Development Plan Docket #: 241100285, Oil & Gas Development Plan ID #: Data not required

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

OIL & GAS LOCATION DATA

1 Oil & Gas Location Name: 747 Number: Pad Status: Proposed

OIL & GAS LOCATION INFORMATION

Form 2A Doc#: 403935924, Loc ID#: _____, Oil & Gas Location: QTRQTR:W2NW Sec: 8 Twp: 3S Rng: 65W Meridian: 6, Total number of wells planned: 18

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: 11, 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: 360

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.

The 747 Pad is wholly located within agricultural land and zoned as an Airport District. There are no RBUs within 5,280 feet of the location. Additionally, there is no HPH within 5,280 feet. Given the distance of these receptors from the proposed location, noise from pre-production activities is not anticipated to have an adverse cumulative effect on people located at the RBUs or wildlife within HPH. Additionally, Bison has planned the orientation of the equipment within the Location to reduce potential noise during pre-production activities. If any noise complaints are received, Bison would implement additional BMPs to address those concerns.

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

The 747 Pad is wholly located within agricultural land and zoned as an Airport District. There are no RBUs within 5,280 feet of the location. Additionally, there is no HPH within 5,280 feet. Given the distance of these receptors from the proposed location and that the production equipment will be electrified, noise from production activities is not anticipated to have an adverse cumulative effect on people located at the RBUs or wildlife within HPH. Bison will site the production equipment in a manner to minimize impacts to the surrounding area. Should the Location receive a noise-related complaint and operations are found to be out of compliance with ECOM Rules, Bison is committed to installing the necessary BMPs.

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.

The 747 Pad is wholly located within agricultural land and zoned as an Airport District. There are no RBUs within 5,280 feet of the location. Temporary impacts from lighting could occur during the drilling and completion phases from rig lighting and vehicle lighting. However, impacts to any receptors would be reduced and/or mitigated through the application of several design features and BMPs including:

- Bison will direct site lighting downward and inward, such that no light shines above a horizontal plane passing through the center point light source.
- Bison will use appropriate technology within fixtures that obscures, blocks, or diffuses the light to reduce light intensity outside the boundaries of the 747 Pad Location.
- Bison will minimize lighting when not needed to minimize light pollution and obtrusive lighting.
- Bison will use full cut-off lighting to minimize light pollution and obtrusive lighting.
- Bison will use lighting colors that reduce light intensity to minimize light pollution and obtrusive lighting.
- Bison will use low-glare or no-glare lighting to minimize light pollution and obtrusive lighting.
- When Bison has active operations involving personnel ongoing the Location, Bison will provide sufficient on-site pre-production lighting to ensure the safety of all persons on or near the site.
- Bison will take all necessary and reasonable precautions to ensure that lighting from the 747 Pad Oil and Gas Facilities do not unnecessarily impact the health, safety, and welfare of motorists on nearby roads.

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

The 747 Pad is wholly located within agricultural land and zoned as an Airport District. There are no RBUs within 5,280 feet. Light impacts to receptors are not expected during production as operational activities would occur during daylight hours. Minimal permanent lighting would not exceed 1.45 lumens per square foot, which is below the State's limits of 2.5 lumens per square feet in Commercial/Agricultural areas. Therefore, no incremental adverse lighting impacts are anticipated to receptors during the production phase at the 747 Pad.

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.

The 747 Pad is wholly located within agricultural land and zoned as an Airport District. There are no RBUs within 5,280 ft. Measures to minimize odor impacts from these sources during pre-production include the following:

- Oil and gas operations shall be in compliance with the CDPHE, Air Quality Control Commission, Regulation No. 2 Odor Emission, 5 C.C.R. 1001-4, Regulation No. 3 (5 C.C.R. 1001-5), and Regulation No. 7 Section XVII.B.1 (a-c) and Section XII.
- Oil and gas facilities and equipment will be operated in such a manner that odors do not constitute a nuisance or hazard to public welfare.
- Bison utilizes a refined distillate derived from petroleum hydrocarbons that is specifically designed for down hole OBM drilling purposes. This product provides a higher aniline point and a lower BTEX than straight diesel, which should reduce the odor associated with the OBM system. The refined distillate is not a diesel nor is it a synthetic mineral oil or an additive/odor neutralizer.
- Aromatics will also be mitigated during completion operations by virtue of the utilization of closed flowback tanks with all water/gas vapors being sent to a temporary ECD during the flowback period.
- Hydrocarbon odors from production facilities are minimized and eliminated by keeping produced fluid hydrocarbons and natural gas contained within pipes, separators, tanks, and combustors.
- All tanks will be sealed with thief hatches and gaskets. Tank vapors are captured with properly sized piping and combustors.
- If drilling mud is to sit stagnant for any lengthy period of time, biocides will be added to prevent the build-up of nuisance odors.
- Bison will utilize appropriate biocide treatments to control bacterial growth and related odors as needed.
- The moisture content of water/bentonite-based mud (WBM) generated cuttings managed onsite must be kept as low as practicable to prevent accumulation of liquids greater than de minimis amounts.
- A closed-loop system is used for both water-based and oil-based mud. All drilling mud and waste will be hauled off for disposal. Oil based mud will only be used in drilling the producing portion of the wellbore.
- All odor-emitting substances are hauled off location as quickly as possible. Cuttings will be hauled off daily when facility is open.
- Any stored mud additives will be contained in sealed sacks or drums prior to removal or use.
- Water-based mud is a gypsum/water clear fluid that typically carries the odor profile of fresh dirt and is not normally susceptible to odor-causing bacterial degradation.

As a result of these minimization measures, incremental odors are not likely to have a long-term, adverse impact on surrounding receptors.

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

The 747 Pad is wholly located within agricultural land and zoned as an Airport District. There are no RBUs within 5,280 of the location. Impacts to nearby receptors from odor would be minimal during production activities as all tanks will be sealed with pressure relief valves, and emissions control devices will be used throughout the Production Phase, thereby reducing the potential for odorous fumes. Additional measures to reduce odors during production include the following:

- Tanks will be gauged using infrared; thief hatches will not be opened for these purposes.
- Vapor recovery systems will be installed on storage tanks.
- Truck loadouts, well unloads, and swabbing will be controlled eliminating high pressure venting or flaring.
- Use of electrified production equipment would reduce emissions and associated odors from gas-powered engines. Emission testing would be conducted on remaining gas-powered engines to ensure the emission control devices are operating properly.

Finally, Bison employees will conduct daily Audio/Visual/Olfactory (AVO) inspections. AVO inspections are intended to identify and correct potential leaks and emission venting, but indirectly result in the cessation of any odors resulting from leaks or unintended venting of emissions. In the event of an odor complaint Bison would determine the source of the odor, and employ mitigation measures accordingly. Based on the above, adverse impacts to receptors from odors during production are not expected.

WATER RESOURCES

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

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

Estimated depth to groundwater: 28

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

	Number of Tanks	Total Volume (bbls)
Oil	<u>0</u>	<u>0</u>
Condensate	<u>0</u>	<u>0</u>
Produced Water	<u>4</u>	<u>3000</u>
Other volumes of stored fluids, hydrocarbons, chemicals, or E&P Waste Fluids	<u>5</u>	<u>2040</u>

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.

Volumes of Other Fluids include: 1, 500-gallon emulsion breaker tank; 1, 550-gallon corrosion inhibitor tank; 3, 330-gallon methanol tanks.

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	<u>2640</u>	<u>NW</u>	The nearest riparian corridor is greater than 2,640 feet NW of the Location.
Wetland	<u>2640</u>	<u>NW</u>	The nearest downstream wetland is greater than 2,640 feet NW of the Location. A site assessment indicated the presence of an upstream wetland approximately 1,267 feet to the east of the proposed 747 project boundary on the altered flow path of the man-made Gopher Gulch stormwater channel.
Surface Waters of the State	<u>750</u>	<u>W</u>	A site assessment indicated the presence of an OHWM along Second Creek approximately 750 feet west of the proposed 747 Pad boundary.

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	<u>5280</u>	<u>NW</u>	There are no public water system intakes within one mile of the proposed 747 Pad.

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)		Percentage	%
Surface Water	0	Recycled Water (Produced Water)	0	Unspecified Source	0	Recycled Water	0	
Ground Water	1345971 2	Recycled Water (non-Produced Water)	0	Total Water Usage	134597 12			

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

No unspecified sources are proposed.

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

The use of fresh water eliminates the potential for introducing foreign untreated water into the environment should a breach in our system occur. Also, our fluid systems for stimulation operations can become incompatible with recycled or reused water causing the use of supplementary additives for chemical stability. Water recycling facilities require large surface footprints and are a potential source of odors and emissions. Furthermore, recycled water from a facility cannot be transferred to location via ditch or temporary or permanent lines. Instead, recycled water would need to be trucked to location causing unnecessary truck trips and source of emissions. Reusing flowback water during development is also problematic. Bison operates in the DJ Basin and develops horizontally from multi-well pads. During flowback, only about 30 percent of the water that was pumped down during hydraulic fracture treatment is returned to surface, leaving about a 70 percent deficiency on what is needed for hydraulic fracturing of another well. In addition, with the nature of horizontal development, it is not always possible for wells on a pad to be on flowback while other wells are being hydraulically fractured. Lastly, to treat and reuse flowback water on a pad that is being hydraulically fractured would require a very large surface disturbance footprint. Storing this flowback water for further hydraulic fracturing would also create a source of emissions and odor, which could potentially create impacts to the surrounding area.

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

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)	Provide any further information regarding the location's HPH disturbance.
Construction	18.24	0	No HPH acreage will be disturbed by the construction and operation of this Location.
Post-interim Reclamation	7.04	0	

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	Existing Acreage
Crop Land: Irrigated	0	Non-Irrigated	991	Conservation Reserve Program(CRP)	0
Non-Crop Land: Rangeland	0	Forestry	0	Recreation	0
Subdivided: Industrial	134.7	Commercial	610.6	Residential	1.5
				Other	272.8

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

The parcels designated with an industrial land type within the 1-mile buffer around the 747 Pad are undeveloped. A list of the property owners is available upon request.

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

Additional land use types included in the 1-mile buffer around the 747 Pad include: Exempt

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.

The proposed 747 Pad is located completely within cultivated cropland, and as such there is no native vegetation directly impacted by the construction of the new location.

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
PIB - Planter loam, 0 to 3 percent slopes (Oil & Gas Location and Access Road)	18.4
WmB - Weld loam, 1 to 3 percent slopes (Access Road)	0.26
WuE - Wiley-Adena-Renohill complex, 3 to 20 percent slopes (Oil & Gas Location and Access Road)	0.5

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 Residential Building Units:	0	0
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.

There are no State Parks, State Trust Lands, or State Wildlife Areas within one mile of the Oil and Gas Location.

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

There are no Designated Outdoor Activity Areas within one mile of the Oil and Gas Location.

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.

There are no mapped trails that support any of the following recreational activities within one mile of the Oil and Gas Location: Hiking, Biking, Horseback Riding, Motorcycle Riding, ATV Riding, OHV, Nordic Skiing, Snowmobiling, or Snowshoeing.

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	0.03	0.01	0.0003	0.01	0	162.71	0.0013
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	187.78	170.01	9.1	1.37	0	33716.1	0.27
Drill Mud	0	0	1.19	2.87	0.35	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	1.42	1.19	0.08	0.03	0.04	1700.47	0
Storage Tanks	0	0	6.23	0.15	0.97	3.94	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			0.51	0.02	0.08	0.01	
Venting or Blowdowns	0	0	3.78	0.84	1.08	0.47	0
Combustion Control Devices	0.77	3.51	0	5.89	119.26	66564.4	0
Loadout	0	0	3.01	4.55	1.54	5.75	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: 343980 During Completions: 3047590
 During Drilling: 530712 During Interim Reclamation: 27300
 During Production: 3985800

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	3E-08
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	330.82	124.28	0	85.62	0	0	0	102.07	0	553.82
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	0.06	0.1	0	0	51.01	0	0	2.13	0	0.03
Storage Tanks	19.62	12.35	1.19	2.9	198.99	0.81	0	0	0	0.12
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	1.73	0.86	0.08	0.19	17.47	0.06	0	0	0	0.01
Venting or Blowdowns	16.41	4.97	0.22	0.44	128.98	0.03	0	0	0	0.08
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	29.65	14.49	0.97	2.24	130.78	0.048	0	0	0	0.089
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.

The 747 Pad Location is wholly located within agricultural land and zoned as an Airport District. There are no RBUs within 5,280 feet of the location.

A Public Health incremental impacts evaluation was conducted as a high-level and conservative screening. This screening method used the total amount of each Hazardous Air Pollutant (HAP) that may be emitted from equipment or activities during pre-production (as reported in the Pre-Production Emission table above) to estimate the steady state air concentration of each HAP within the facility using a box model methodology. The highest potential concentrations of each HAP were then used to evaluate both acute and chronic exposures. Acute exposure comparison was based on the U.S. Environmental Protection Agency (USEPA) Acute Exposure Guideline Levels for Airborne Chemicals (AEGs) for commercial/Industrial exposure. For acute exposure for residential properties, the Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Levels (MRLs) for acute duration exposure were used as a comparison. For chronic exposure, the reference calculations were obtained from the USEPA Regional Screening Level tables. The default exposure values prepared by USEPA were used in the risk evaluation.

Based on the airborne HAP concentrations estimated using HAP emission rates and the box model methodology, no HAP is expected to exceed the target cancer risk or noncancer hazard index for chronic duration exposures within the well pad location during preproduction. Additionally, no HAPs exceed the residential or industrial screening levels for acute duration exposures within the well pad location during pre-production. These results support the conclusion that no mitigation is required to protect public health during the pre-production phase of the 747 Oil and Gas Location beyond the well pad location.

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.

The 747 Pad Location is wholly located within agricultural land and zoned as an Airport District. There are no RBUs within 5,280 feet of the location.

A Public Health incremental impacts evaluation was conducted as a high-level and conservative screening. This screening method used the total amount of each HAP that may be emitted as reported in the Production Emission table above) to estimate the steady state air concentration of each HAP within the facility using a box model methodology. These highest potential concentrations of each HAP were then used to evaluate both acute and chronic exposures. Acute exposure comparison was based on the USEPA AEGs for commercial/Industrial exposure. For acute exposure for residential properties, the ATSDR MRLs for acute duration exposure were used as a comparison. For chronic exposure, the reference calculations were obtained from the USEPA Regional Screening Level tables. The default exposure values prepared by USEPA were used in the risk evaluation.

Based on the airborne HAP concentrations estimated using HAP emission rates and the box model methodology, no HAP is expected to exceed the target cancer risk or noncancer hazard index for chronic duration exposures at within the well pad location during production. Additionally, no HAPs exceed the residential or industrial screening levels for acute duration exposures within the well pad location during production. These results support the conclusion that no mitigation is required to protect public health during the production phase of the 747 Oil and Gas Location beyond the well pad location.

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	1890	810	5910	50	60
Annual	1890	2916	16745	50	720

Estimated total pounds (lbs) of proppant to be used during completions activities. 7458000
00

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

Bison plans to use Local Sand, 100 Mesh, and/or 40/70 mesh Sand, depending on availability, during completions activities.

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.

Bison uses a gravity fed box proppant delivery system that meets OSHA standards, rather than the historic pneumatic trailer proppant transfer system that blows sand out of the trailer into frac sand silos on the location; a method that required supplemental dust control to meet OSHA requirements. With a gravity fed proppant delivery system, the delivery container is also a well pad storage container, eliminating the need for frac sand silos on location. Storing frac sand in containers reduces sand dust during completion operations by dropping sand directly from the container into the blender sand hopper. As a result of the gravity fed box proppant delivery system, Bison does not anticipate any silica dust to migrate off of the Location during completion operations.

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	0	Active, built	0
Permitted by ECMC, unbuilt	0	Permitted by ECMC, unbuilt	0
Permitted by Relevant Local Government & not ECMC, unbuilt	0	Proposed	0
Proposed	0	Plugged and Abandoned	14

Total acreage disturbance during construction of the active and proposed oil & gas locations within 1-mile of the proposed Oil & Gas Location: 0

Source for acreage total:

- Field Observation/Measurement
- ECMC 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.

	Permitted Onsite Storage Capacity	Existing Onsite Storage Capacity
<input type="checkbox"/> Field Observation/Measurement	Oil 0	0
<input checked="" type="checkbox"/> ECMC Location Files	Condensate 0	0
<input checked="" type="checkbox"/> Aerial PhotosOther	Produced Water 0	0
<input type="checkbox"/> Other	Pits 0	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.

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 OGD, along with the estimated disturbed acreage of each HPH.

No HPH Identified

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 OGDG:

	Construction		Post-interim Reclamation		
	Total Acreage (acres)	Total HPH Acreage (acres)	Total Acreage (acres)	Total HPH Acreage (acres)	
New roads, including access roads	0.92	0	New roads, including access roads	0.92	0
Pipelines	0	0	Pipelines	0	0
Utilities	0	0	Utilities	0	0

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

There will be no HPH disturbance from the construction and operation of this Location.

Number of miles of the existing lease road that are planned to be used to access these location(s): 0

BENEFICIAL IMPACT INFORMATION

Equipment and Facility Removal

Total number of existing wells that are planned to be plugged and abandoned as part of this OGDG: 0

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

Total number of acres that are planned to be reclaimed through the closing of existing locations: 0

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

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

Oil Tanks: 0
 Condensate Tanks: 0
 Produced Water Tanks: 0

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

Bison's proposed development of the 747 Pad Location and associated wells will result in direct, socioeconomic benefits to the surrounding community, including the contribution of local employment opportunities, revenues, royalties, and taxes from each well to be distributed to local mineral owners, City of Aurora, Adams County, and the State of Colorado. Sales and use taxes on purchases of taxable goods in the region would also be collected by the City of Aurora and the State. Development and operation of the Location would require development-related goods and services from a variety of local and regional contractors and vendors during both the Pre-Production and Production phases. Expenditures by Bison for these goods and service would generate economic effects for the City of Aurora, Adams County, and for Colorado in the form of taxes collected. Additional socioeconomic benefits will be yielded to the communities surrounding the Location in the forms of personal revenue spent by employees and contractors and hotels, restaurants, and stores.

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

Bison's use of a MLVT and lay flat water lines during completions will eliminate a significant amount of truck traffic. Specifically, by piping water to the Location and storing it in the MLVT for completions, Bison will eliminate more than 67,122 water haul truck trips. Bison is also reducing truck trips during production by using pipeline takeaway for oil production. On average, pipeline takeaway will eliminate more than 47,105 truck trips over the life of the project. This reduction in traffic decreases the potential for wildlife-vehicle collisions.

MITIGATION INFORMATION

Item	Impacted Resource	Mitigation Description
1	Ecosystem and Wildlife Resources	During final reclamation, Bison will re-contour and re-vegetate all roads and the pad to a stable condition to restore natural habitats for wildlife species.

2	Soil Resources	<p>Bison will reseed disturbed areas in the first favorable season following rig demobilization with species consistent with the plant community in the vicinity of the Location.</p> <p>Bison will monitor the sites to identify areas of poor growth or areas that fail to germinate; these areas will be reseeded as needed.</p> <p>Bison will monitor the site for the presence of noxious weeds. If encountered, Bison will employ a third-party consultant knowledgeable in identifying such species and implement weed control measures consistent and in compliance with the Colorado Noxious Weed Act. If necessary, Bison will implement a weed control plan.</p>
3	Soil Resources	<p>Bison would place a sign on each topsoil stockpile designating and preserving that material for reclamation purposes throughout the lifetime of the location.</p>

OPERATOR COMMENTS AND SUBMITTAL

Print Name: Katie Gillen Title: VP Reg. Affairs & EHS
 Email: KGillen@bisonog.com Date: 11/19/2024

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

ECMC Approved: _____ **Director of ECMC** Date: _____

ATTACHMENT LIST

Att Doc Num **Name**

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Total Attach: 0 Files

General Comments

User Group **Comment** **Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)