

HIA Recommendations

To Reduce Impacts from Air Pollution

- Require submission of a quality assurance project plan (also known as a QAPP) to GCPH for review and approval for all monitoring specified in these recommendations to assure monitoring information will be adequate for informing public health decisions.
- Require Antero monitoring results conducted in response to CDPHE consultation be made available to the public in a timely manner to provide accessible information and transparency.
- Require corrective action when odor events occur, including notification of the GCPH and residents to reduce impacts.
- Require adherence to COGCC 805b green completion practices, with no variances, and EPA natural gas STAR program to reduce VOC emissions to the lowest level technically possible.
- Require use of electrically powered generators in place of diesel powered generators for well drilling and fracking operations to reduce VOC, PAH, and PM emissions.
- Require a valid emissions permit from the CDPHE for each well pad, per COGCC rule 805b to establish inspection and monitoring requirements.
- To reduce VOC emission, require pilot lights on production tank combustors remain lit through use of appropriate technology, such as spark igniters.
- Require adherence to dust control measures and traffic measures specified in the Surface Use Agreement.
- Require that Antero establish and implement a plan that ensures all trucks used for its plan within the PUD meet emission standards specified in the Clean Fuel Vehicles (heavy trucks) for the Clean Fuel Fleet Program (CFR Part 88.105-94) to reduce VOC, PAH, and PM emissions.
- Require truck loads of dirt, sand, aggregate materials, drilling cuttings, and similar materials be covered to reduce dust and PM emissions.
- Require pits at the water storage facility to be covered to reduce VOC emissions.
- Require air monitoring of water storage facility for VOC/BTEX and report results to GCPH.

To Reduce Impacts from Water and Soil Pollution

- Require COGCC rules 317B, 603, 904, and 908, including those at the discretion of the director, be applied with no variances or exemptions, to prevent pollution of water and soil.
- Require Antero to develop and implement plans to ensure removal of mud from vehicles leaving the well pads and access roads to prevent tracking of mud onto Battlement Mesa and Garfield County roads.
- Require full disclosure of all chemicals, with their volumes, concentrations, and Material Safety Data Sheets (also known as MSDS), used in natural gas development process to GCPH and Battlement Mesa Residents.
- Require continuation of all baseline and continuing monitoring requirements for groundwater, surface water, and soil and leak detection to prevent pollution of potential domestic water supplies.
- Require the berming of the down gradient well pad perimeters, as well as surface water diversion ditches for each well pad to prevent pollution of water and soil.
- Require monthly inspection of water and gas pipeline for leaks to prevent water and soil pollution.
- Require immediate notification of GCPH (in addition to COGCC) in the event of a spill of five barrels to protect public health.
- Require that drill cuttings be covered during storage on well pads to prevent wind transport and soil pollution.
- Place an inlet protection system, similar to the system in place for Rifle and planned for Parachute, on the two intakes for the Battlement Mesa water treatment plant that would shut off the intakes if contaminants are detected to protect public health.

To Reduce Impacts from Traffic and Transportation

- Require Antero to build water treatment facility and associated pipelines in advance of well development, to immediately remove water hauling traffic from PUD.
- Require Antero to communicate and coordinate with local school district to develop plan for transportation and safety needs of all children going to and from school by car, bus, bicycle and walking during and outside of school zone hours to prevent injury to school children.
- Reduce truck speed limits to 20 mph in areas where there is existing pedestrian traffic that is not buffered from haul routes to prevent accidents and to reduce the severity of injury should an accident occur.

- Consider speed control measures on worker ingress and egress routes (ie decreased speed limits, signage, real time speed measurement signs, photo speed ticket vans, speed bumps or other measures) to prevent workers from speeding.
- Mark pedestrian/bike high use routes and establish safe crossing zones where they intersect Battlement Mesa Parkway or other haul routes to alert drivers of potential pedestrians and bicyclers.
- Install safety measures (ie, signaled cross walks, elevated sidewalks, green space buffers) for pedestrians/bikes where established walking/biking routes overlap/run along haul routes to prevent accidents.
- Request that the Garfield County Sheriff's Department or other qualified entity to review Antero's Traffic Impact Analysis and request feedback on possible safety mitigations and traffic hot spots to ensure the plan has is protective of public health.
- Require safe driver training for workers and implement penalty system for unsafe drivers, to encourage safe driving.
- Require Antero to have a system to identify and remove unsafe drivers to prevent accidents and injuries.
- Provide Sheriff's Auxiliary Unit with authority to log speeding and unsafe driving incidents and complaints within the PUD, which can be provided to Antero, subcontractors and the Sheriff's department so that problems can be resolved, to identify unsafe conditions.

To Reduce Impacts from Noise, Vibration, and Light

- Reduce speed limits for trucks within the PUD to 20 miles per hour to reduce noise and vibration levels.
- Require best available noise reduction technology for heavy equipment, including trucks and truck brakes, to reduce noise levels.
- Require Antero to alert residents of anticipated noise, including time, duration, decibel levels, and machinery to be used to protect public health.
- Require Antero, in cooperation with Battlement Mesa residents and GCPH, to develop and implement a plan that includes a variety of noise control strategies to address the Battlement Mesa resident's noise concerns to protect public health and to prevent long-term nuisance noise levels.
- Provide residents the option of requiring Antero to install permanent/semi-permanent noise mitigation structures (sound walls) along haul routes CR300 and other routes where trucks are anticipated to be passing throughout the development period to reduce noise levels.

- Consider installation of traffic noise barriers near the St. John Elementary School and Grand Valley Middle School to reduce noise levels at schools.

To Reduce Impacts to Community Wellness

- Establish a mechanism to facilitate on-going community engagement between Antero, GCPH officials and residents of Battlement Mesa for early identification of impacts to community wellness.
- Review sexually transmitted infection clinic access, outreach and education, with particular attention to in-migrant workforce to reduce spread of sexually transmitted infections within the community.
- Identify employers that have implemented drug and alcohol free work-place programs and encourage other employers to do so to reduce drug and alcohol abuse. Provide education to employers regarding benefits of such programs.

To Reduce Impacts from Boom and Bust Cycles

- Review local tax structure to ensure that revenue from natural gas development and production are used to mitigate impacts in areas most affected by the industry development in order for the community to realize the economic benefits.
- Continue to consider public health as a high level priority when judging uses of local government revenues derived from the natural gas development and production to maximize protection of public health.
- Engage in long term planning to maintain affordable housing, education, and public services to protect residents from sudden industry downturns (e.g. the bust).
- Consider mechanisms for providing property tax relief for residents on fixed income should home values rise rapidly to reduce negative economic impacts.
- Engage local educational institutions to provide industry related training so that local residents can be employed by the industry.
- Engage local educational institutions to provide retraining for residents employed by the industry so that they can find future employment when industry development is complete and development jobs are no long available locally to reduce impacts from sudden industry downturns.

To Prepare for Impacts to Health Care Infrastructure

- Monitor which companies, including Antero and subcontracting companies, provide health insurance to employees to determine direction of impact.
- Review county tax structure for adequacy of revenues necessary to meet increased county services, including public health services.

To Reduce Impacts from Accidents and Malfunctions

- Require review of evacuation, shelter in place and air intake plans for all locations with high concentrations of persons, such as the schools, the assisted living facility, and recreation center to protect the public health and reduce injury. Allow these entities an opportunity to comment on Antero and community emergency response plans.
- Require emergency responders to review evacuation and shelter in place plans for Battlement Mesa community and Antero emergency response plans to protect public health and reduce injury.
- Periodically test emergency communications systems. Consider siren, reverse 911, or other system of other mass alert to protect the public health and reduce injury.
- Require periodic maintenance review of water and gas gathering lines to highest industry standards to reduce accidents and malfunctions.
- Institute mechanism for reporting safety concerns, near-misses, etc to the appropriate designated county agency or department to reduce accidents and malfunctions. Ensure timely follow up of all concerns.
- Review procedures for utility permissions to dig near line location to reduce accidents and malfunctions.
- Require permanent gas line markers in the field, and other standard practice safety procedures to reduce accidents and malfunctions.
- Review pipeline system for routes that avoid proximity to homes, schools or other areas used by residents to protect the public health and reduce injury.