

SUBSURFACE MINERAL BOUNDARY SETBACKS

- Subsurface Minerals Boundaries
 - Are lease lines and unit boundaries
 - May or may not relate to features on the surface
- Subsurface Mineral Boundary Setbacks
 - Define the minimum distance from the downhole producing part of a well to a mineral boundary
 - Protect mineral owners' rights by preventing encroachment and unauthorized drainage
 - Established by COGCC rules and spacing orders
 - Apply to a specific formation in a defined area (except for statewide Rule 318.a and Rule 318.b)
 - A variety of setback distances due to determination by reservoir characteristics
 - Evaluated in COGCC review of submitted permit for each well
- Statewide Setbacks for Unspaced Lands and Formations
 - 200' from lease lines for wells less than 2500' feet deep (Rule 318.b)
 - 600' from lease lines for wells 2500' feet deep or more (Rule 318.a)
- Yuma/Phillips County Special Well Location Rule
 - 300' from lease lines and unit boundaries (Rule 318B)
- Greater Wattenburg Area Special Well Location Rule
 - 460' from unit boundaries (Rule 318A)
- Spacing Orders
 - 100' to 990' from lease line or unit boundary

EXCERPTS FROM RULES FOR SUBSURFACE MINERAL BOUNDARY SETBACKS

318. LOCATION OF WELLS

All wells drilled for oil or gas to a common source of supply shall have the following setbacks:

- a. **Wells 2,500 feet or greater in depth.** A well to be drilled two thousand five hundred (2,500) feet or greater shall be located not less than six hundred (600) feet from any lease line, and...
- b. **Wells less than 2,500 feet in depth.** A well to be drilled to less than a depth of two thousand five hundred (2,500) feet below the surface shall be located not less than two hundred (200) feet from any lease line, and ...

318B. Yuma/Phillips County Special Well Location Rule

Within the WLR Area, operators may conduct drilling operations to the Niobrara Formation as follows:

(4) Wells shall be located at least three hundred (300) feet from the boundary of said quarter section, and wells located outside any drilling units already established by the Commission in the WLR Area prior to this WLR's effective date (July 30, 2006) shall, in addition, be located at least three hundred (300) feet from any lease line.

318A. GREATER WATTENBERG AREA SPECIAL WELL LOCATION, SPACING AND UNIT DESIGNATION RULE

a. GWA, GWA wells, GWA windows and unit designations.

(4) Unit designations.

A. 400' window. When completing a GWA well in a 400' window to a spaced formation, the operator shall designate drilling and spacing units in accordance with existing spacing orders.

B. 800' window. When completing a GWA well in an 800' window, whether in spaced or unspaced formations, the operator shall: (i) designate drilling and spacing units in accordance with existing spacing orders where units are not smaller than a governmental quarter section; or (ii) form a voluntary drilling and spacing unit consisting of a governmental quarter section; or

C. Unspaced areas and wellbore spacing units. When completing a GWA well to an unspaced formation, the operator shall designate a drilling and spacing unit not smaller than a governmental quarter-quarter section if such well is proposed to be located greater than four hundred sixty (460) feet from the quarter-quarter section boundary in which it is located. If a well is proposed to be located less than four hundred sixty (460) feet from the governmental quarter-quarter section boundary, a wellbore spacing unit ("wellbore spacing unit") for such well shall be comprised of the governmental quarter-quarter sections nearest to the wellbore regardless of section or quarter section lines.

1) Interior infill wells. Additional bottom hole locations for the "J" Sand, Codell and Niobrara Formations are hereby established greater than four hundred sixty (460) feet from the outer boundary of any existing 320-acre drilling and spacing unit ("interior infill wells").

A. If a bottom hole location for an interior infill well is proposed to be located less than four hundred sixty (460) feet from the outer boundary of an existing drilling and spacing unit, a wellbore spacing unit as defined in a.(4)C., above, shall be designated by the operator for such well.

B. If a bottom hole location for an interior infill well is proposed to be located greater than four hundred sixty (460) feet from an existing 80-acre or existing 320-acre drilling and spacing unit, the spacing unit for such well shall conform to the existing 80-acre or existing 320-acre drilling and spacing unit.

2) Boundary wells. Additional bottom hole locations for the "J" Sand, Codell and Niobrara Formations are hereby established less than four hundred sixty (460) feet from the outer boundary of a 320-acre governmental half section or from the outer boundary of any existing 320-acre drilling and spacing unit ("boundary wells"). A wellbore spacing unit as defined in a.(4)C., above, shall be designated by the operator for such well.

SURFACE CULTURAL FEATURE SETBACKS

- Surface Cultural Features
 - Surface Property Lines, Buildings, Roads, Railroads, Utilities
- Surface Cultural Feature Setbacks
 - Define the minimum distance from a wellhead to a cultural feature
 - Prevent encroachment and unauthorized use of surface property
 - Protect public safety by creating a safe distance from oil & gas operations
 - Established by COGCC Rule 603
 - Some distances determined by density of surface development when a well is permitted
 - Evaluated in COGCC review of submitted permit for each well
 - If distance less than 200' rig height discussed with operator
 - If distance less than 200' rig height limited by Condition of Approval placed on permit
- High Density Area Definition (Rule 603.b. and Rule 603.c.)
 - Where 36 or more building units exist within a 1000' radius circle centered at the proposed well location, or
 - Where 18 or more building units exist within a 1000' radius half circle centered at the proposed well location, or
 - Where an educational facility, assembly building, hospital, nursing home, board and care facility, or jail exists within 1000' of the proposed well location
- Property Line
 - 150' in both low and high density areas (Rule 603.a.(2))
- Roads, Railroads, Utilities
 - 150' or one and one-half (1-1/2) times the height of the derrick if greater than 150' in both low and high density areas (Rule 603.a.(1))
- Building Units
 - 150' or one and one-half (1-1/2) times the height of the derrick if greater than 150' (Rule 603.a.(1))
 - High Density Area: 350' (Rule 603.e.(2))

EXCERPTS FROM RULES FOR SURFACE CULTURAL FEATURE SETBACKS

Rule 100 Series: BUILDING UNIT shall mean a building or structure intended for human occupancy. A dwelling unit is equal to one (1) building unit, every guest room in a hotel/motel is equal to one (1) building unit, and every five thousand (5,000) square feet of building floor area in commercial facilities, and every fifteen thousand (15,000) square feet of building floor area in warehouses, or other similar storage facilities, is equal to one (1) building unit. (Rule 100 Series also defines ASSEMBLY BUILDING, EDUCATIONAL FACILITY, JAIL, HOSPITAL, NURSING HOME, and BOARD AND CARE FACILITIES)

603. DRILLING AND WELL SERVICING OPERATIONS AND HIGH DENSITY AREA RULES

a. **Statewide setbacks.** Subparagraph (1) below shall apply to all areas of the state except as provided under subparagraphs b. and e. of this rule. Subparagraph (2) below shall apply to all areas of the state.

(1) At the time of initial drilling of the well, the wellhead shall be located a distance of one hundred fifty (150) feet or one and one-half (1-1/2) times the height of the derrick, whichever is greater, from any building unit, public road, major above ground utility line, or railroad.

(2) A well shall be a minimum distance of one hundred fifty (150) feet from a surface property line. An exception may be granted by the Director if it is not feasible for the operator to meet this minimum distance requirement and a waiver is obtained from the offset surface owner(s). An exception request letter stating the reasons for the exception shall be submitted to the Director and accompanied by a signed waiver(s) from the offset surface owner(s). Such waiver shall be written and filed in the county clerk and recorder's office and with the Director.

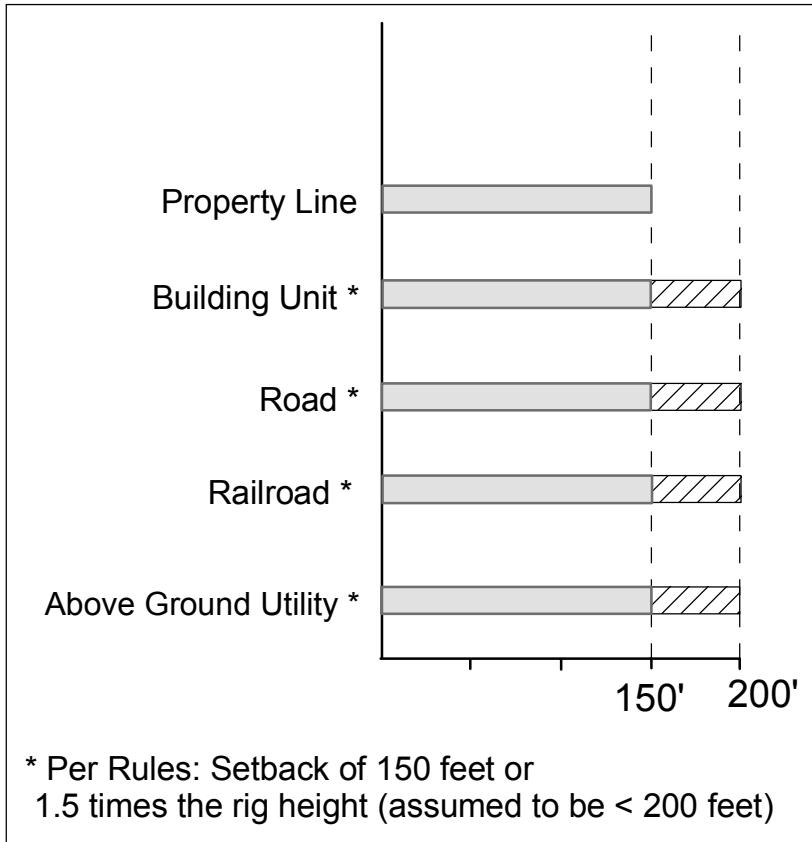
b. **High density area rules for building units.** A high density area shall be determined at the time the well is permitted on a well-by-well basis by calculating the number of building units within the seventy-two (72) acre area defined by a one thousand (1000) foot radius from the wellhead or production facility. If thirty-six (36) or more actual or platted building units (as defined in the 100 Series rules) are within the one thousand (1000) foot radius or eighteen (18) or more building units are within any semi-circle of the one thousand (1000) foot radius (i.e., an average density of one (1) building unit per two (2) acres), it shall be deemed a high density area. If platted building units are used to determine the density, then fifty percent (50%) of said platted units shall have building units under construction or constructed.

c. **High density area rules for other facilities.** If an educational facility, assembly building, hospital, nursing home, board and care facility, or jail is located within one thousand (1000) feet of a wellhead or production facility, high density area rules shall apply.




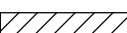
e. The following rules shall apply in high density and designated outside activity areas:

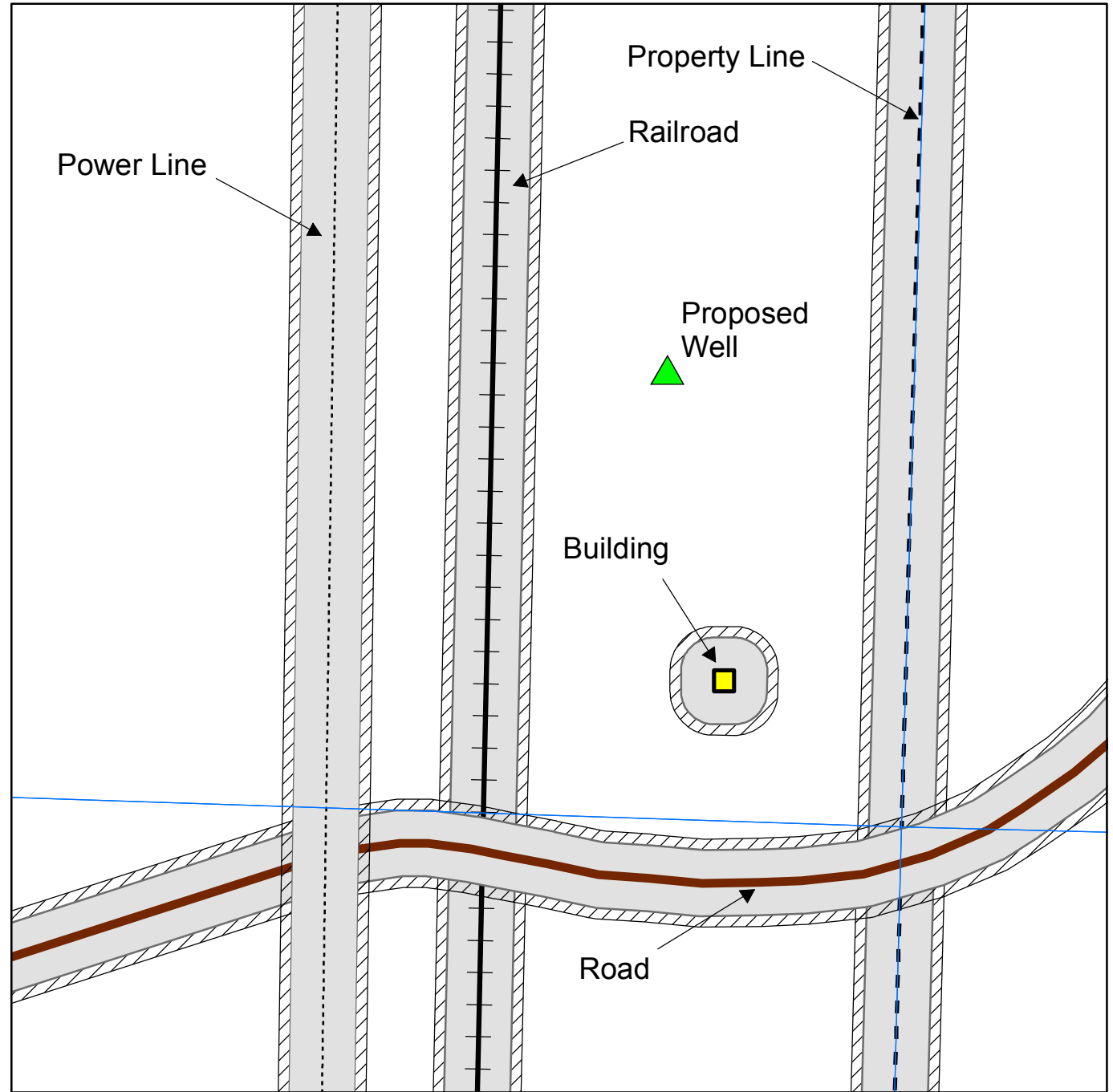
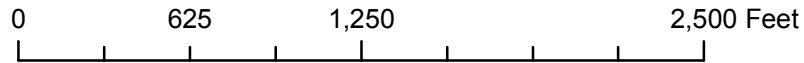
(2) **Setbacks for wellheads.** At the time of initial drilling of the well, the wellhead location shall be not less than three hundred fifty (350) feet from any building unit, educational facility, assembly building, hospital, nursing home, board and care facility, or jail.

Cultural Setback Distance Graph



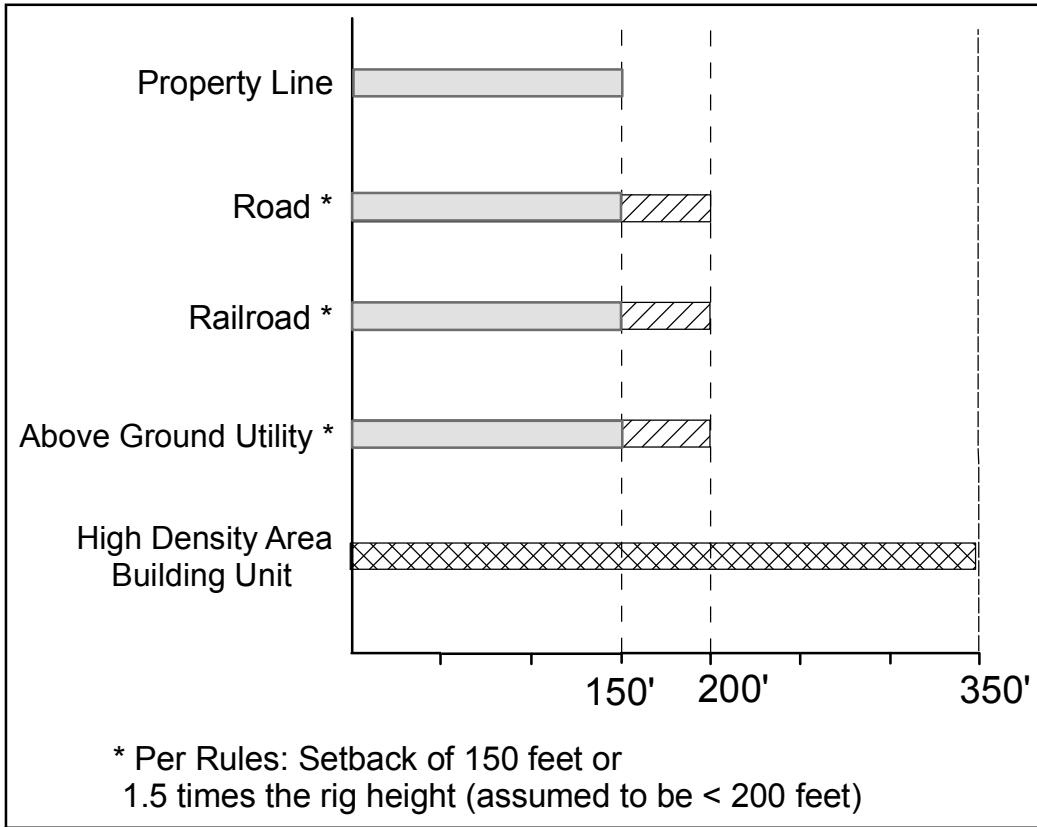
Map Legend

-  Example well location in compliance with setbacks
-  Section Line
-  150' Buffer
-  200' Buffer



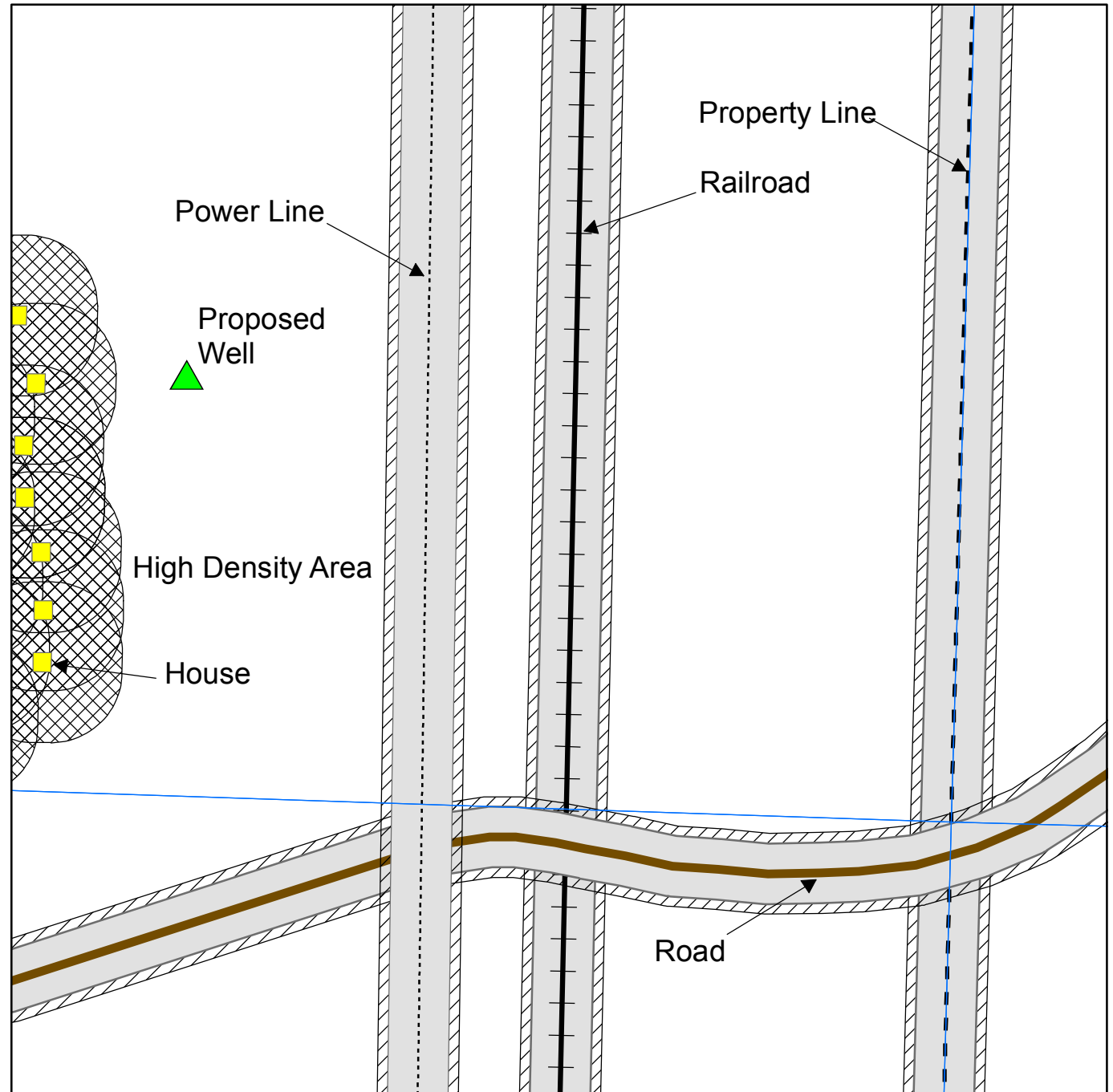
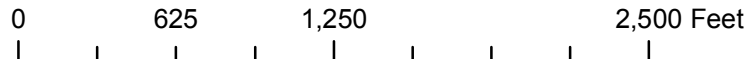
COGCC Cultural Surface Setbacks Map

High Density Cultural Setback Distance Graph



Map Legend

- Example well location in compliance with setbacks
- Section Line
- 150' Buffer
- 200' Buffer
- 350' Buffer



COGCC Cultural Surface Setbacks Map *High Density Area*

Well to Building Setback Review

Well Locations Reviewed Since April 1, 2009

Colorado Oil and Gas Conservation Commission

March 17, 2012

Year	Location	Less 150	150 to 350	350 to 500	500 to 1000	Greater than 1000	Total
2009		4	45	54	158	547	808
	Amended High Density Location		2	2	4		8
	Amended Location	2	31	33	112	232	410
	New High Density Location			1			1
	New Location	2	12	18	42	315	389
2010		1	55	111	357	1594	2118
	Amended High Density Location		2	3	5	1	11
	Amended Location		21	45	182	560	808
	New High Density Location		2	4	2	3	11
	New Location	1	30	59	168	1030	1288
2011		4	60	96	332	1480	1972
	Amended High Density Location		1	1	3		5
	Amended Location	2	23	30	135	328	518
	New High Density Location		2	5	2	1	10
	New Location	2	34	60	192	1151	1439
2012		1	3	9	30	130	173
	Amended Location		1	4	12	38	55
	New High Density Location				1		1
	New Location	1	2	5	17	92	117
Grand Total		10	163	270	877	3751	5071
	Percentage of Total	0.20%	3.21%	5.32%	17.29%	73.97%	

Well to Building Setback Review

Colorado Oil and Gas Conservation Commission

February 22, 2012

Listing of Locations less than 200 feet to Building

Year	Document Number	County	High Density	New Location	Distance	Proximity	Building Description
2011	2587822	CHEYENNE	No	No	58	less 150	Water well house
2009	1691798	WELD	No	No	58	less 150	Vehicle garage
2010	400072164	WELD	No	Yes	69	less 150	Abandoned hog shed
2012	400240957	GUNNISON	No	Yes	90	less 150	Equipment Shed
2009	1758843	WELD	No	Yes	103	less 150	Building to be razed
2011	1636646	WELD	No	No	122	less 150	Storage shed
2009	400011284	LAS ANIMAS	No	Yes	127	less 150	Operator is owner
2009	1786896	PHILLIPS	No	No	132	less 150	Grain Storage
2011	400117702	WELD	No	Yes	143	less 150	Irrigation pump house
2011	400227765	WELD	No	Yes	145	less 150	Storage Barn
2009	1904205	WELD	No	No	154	150 to 350	Livestock Enclosure
2011	400179419	WELD	No	Yes	157	150 to 350	Existing well / storage building
2010	400054716	WELD	No	No	159	150 to 350	Equipment Barn
2011	400188968	WELD	No	Yes	159	150 to 350	Abandoned
2010	400021477	WELD	No	Yes	162	150 to 350	Goat Barn
2009	1758386	WELD	No	Yes	168	150 to 350	Storage Shed
2011	1635946	WELD	No	No	169	150 to 350	Storage shed
2011	400165164	WELD	No	Yes	178	150 to 350	Residence
2011	400188780	WELD	No	Yes	180	150 to 350	Residence
2010	1697620	WELD	No	No	187	150 to 350	Livestock Shed
2009	1758746	WELD	No	No	193	150 to 350	Storage Shed
2011	400154431	WELD	No	Yes	198	150 to 350	Turkey barn
2009	1774783	WELD	No	No	199	150 to 350	cement service building
2011	400118102	YUMA	No	Yes	199	150 to 350	Steel Barn