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Appendix D. 13-Point Surface Use Plan

Bull Mountain Unit
Federal Unit # COC-067120X
Gunnison County, CO

Note: This Surface Use Plan covers direct and indirect federal actions associated with this development project, including the Proposed Action, Alternative 1, and federal actions that are part of the No Action Alternative.

1. Existing Roads

To reach the facilities and well locations in the Bull Mountain Unit from Paonia, travel north on State Highway 133 approximately 15 miles to its intersection with County Road 265. Turn NW on CR 265. Access roads to individual well sites intersect CR 265.

All roads used in conjunction with this project will be maintained in as good or better condition as they were pre-project. Plans for upgrades or maintenance of access roads will be provided in the surface use plans submitted with individual well Applications for Permits to Drill. At a minimum, SG will utilize Gold Book and BLM Best Management Practices when improving or maintaining existing roads (http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html).

Forest System Roads will be maintained as per USDA Forest Service specifications. SG Interests has a Road Use Permit (FSM 7770) in place from the Paonia District Forest Service. If any roadwork is required, a work schedule will be submitted to the Paonia District Ranger before any work is started. The right-of-way width of existing roads will be maintained as they presently exist unless authority to widen is given by the Paonia District Ranger. Any damage to Forest System Roads, resulting from permittee's use will be repaired immediately. The operator will use water for dust control on Forest System Road 849. All conditions of the Road Use Permit will be followed by SG Interests.

Any required road use permits for CR 265 will be obtained from Gunnison County Public Works. Gunnison County will grade and apply magnesium chloride to County Road 265 annually as per the terms of the agreement between SG Interests I, Gunnison Energy Corporation, and Gunnison County (LI # 10-241).

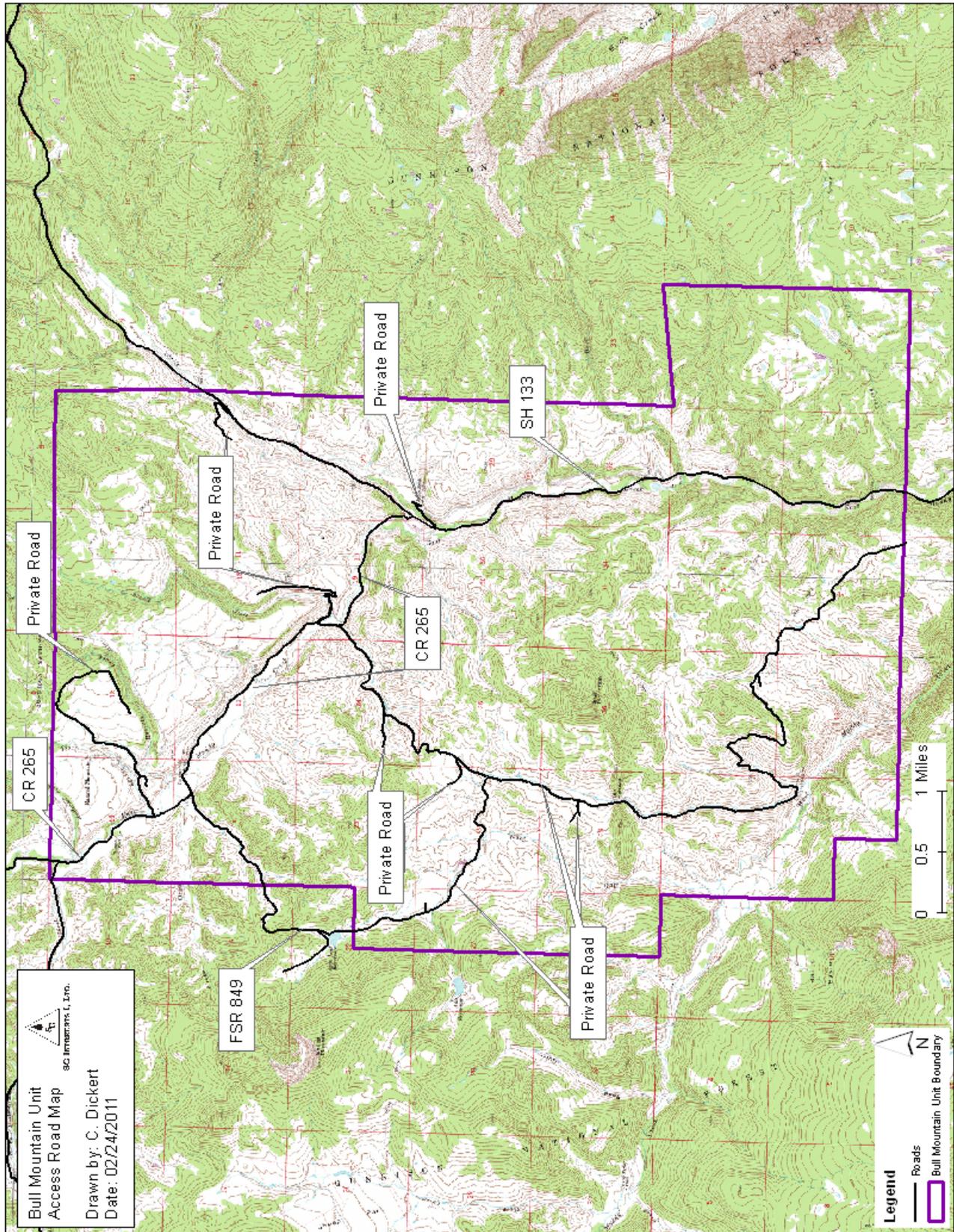
Operations will cease, excepting emergencies, during periods when mud and silt cannot be contained within the road prism, or when construction specification cannot be achieved because of wet or frozen ground conditions. No mud-blading or flat-blading on the access road is anticipated. Vehicles will not be towed through the mud.

The operator will schedule heavy traffic periods, such as moving the rig in or out, to take place during the week if possible and not on weekends or holidays. All construction signage will be in compliance with the Manual of Uniform Traffic Control Devices. The operator will post warning signs on CR 265 to alert the public of heavy truck traffic. The operator will use flagmen as necessary during drilling and related equipment moves on and off the drill site when utilizing public roads.

Existing access roads within the Bull Mountain Unit are depicted in Figure 1 below. A map showing the proposed well site and its access route will be included in each specific APD. This map will show access to the well site from a locatable public access point.

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Figure D-1: Existing roads in the Bull Mountain Unit.



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2. New or Reconstructed Access

Specific temporary and permanent access roads will be identified in individual APDs when they are submitted for processing. Roads that will require reconstruction will be identified on these maps and documents. Any existing road structures that would be impacted by road use or reconstruction as well as any new structures needed for these roads will also be identified at the time of specific well permitting. All road use will be in compliance with the requirements of the surface management agency. When road construction or reconstruction is required, SG will describe the changes as follows:

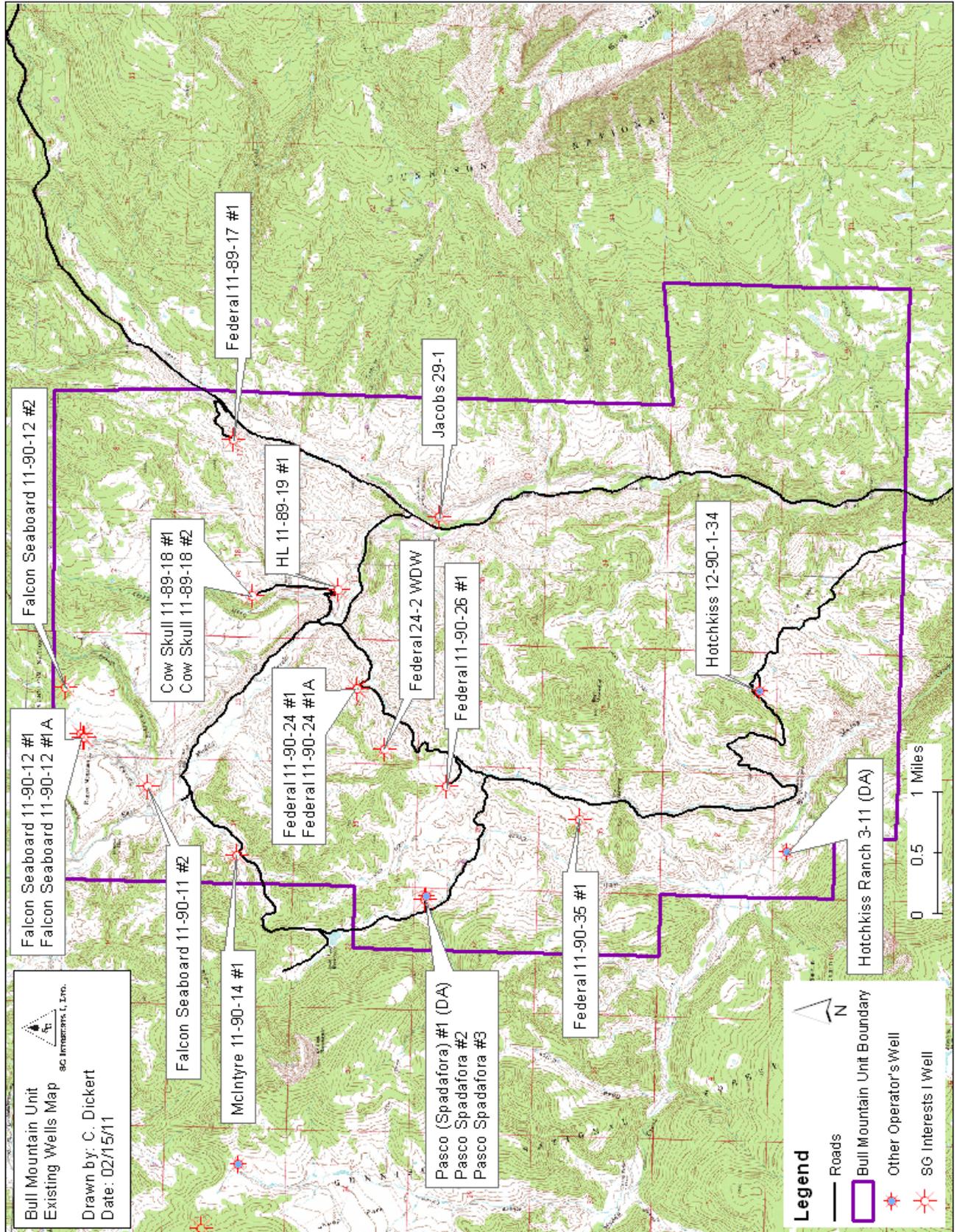
- road width
- maximum grade
- crown design
- any turnouts
- drainage and road ditch design
- erosion control features
- revegetation of disturbed areas
- location and sizes of culverts and/or bridges
- location of fence cuts and/or cattleguards
- description of significant cuts and fills
- source and storage of topsoil
- type of road surfacing materials

3. Locations of Existing Wells

Existing wells within the Bull Mountain Unit are shown in the following map (Figure 2). This map includes all wells that have been drilled in the unit including abandoned wells. Abandoned wells are indicated as “DA” or dry and abandoned. At the time of submittal of an individual APD, SG will include a map of all known wells within one mile of the proposed location.

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Figure D-2. Existing wells in the Bull Mountain Unit.

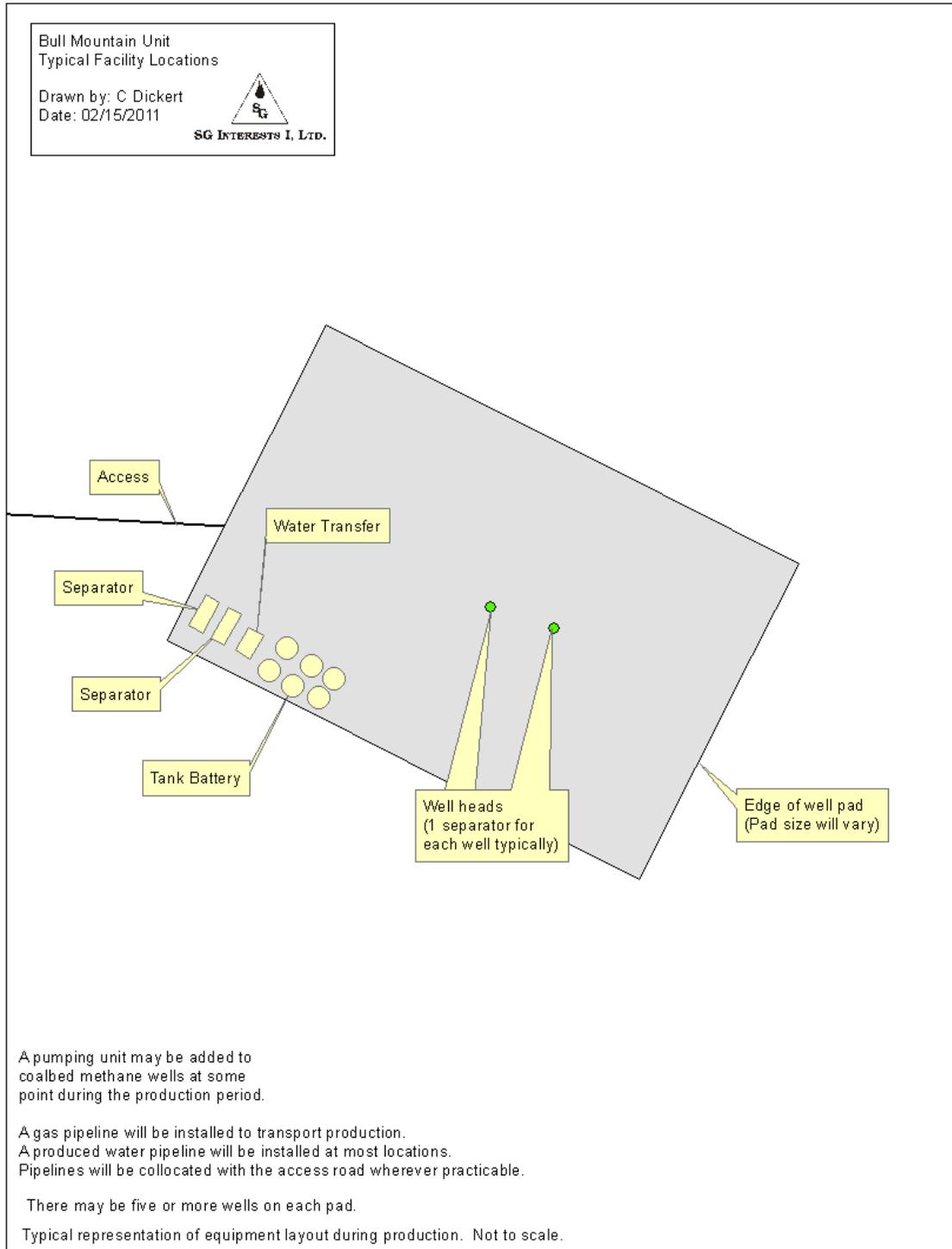


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4. Location of Existing or Proposed Facilities

The following drawing shows the locations of the proposed and existing facilities located on the typical well pad. It may be necessary to add well head compression or a pump jack to one or more wells located at a site. One or more meter houses may be on each well pad. This typical drawing will be updated to include site specific information for each individual proposal.

Figure D-3. Typical well site facilities.



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5. Location and Type of Water Supply

Water to be used during drilling operations will be delivered to the location by water truck. Water to be used in hydraulic fracturing operations will be piped to the well site via either an existing buried water pipeline or a temporary surface poly pipeline. This water will be stored in the McIntyre Flowback Pits located in T11S R90W Sections 23, 24, and 26 until needed. Flowback water from the wells will be piped back to the pits for storage and reuse until it is disposed of in an injection well. Currently, SG Interests has in operation one deep water injection well, the Federal 24-2 WDW.

Fresh water may also be obtained from one or more of the following sources:

- purchased from a landowner
- drawn from free-flowing water sources and augmented from Bainard Reservoir according to the terms of SG's approved Augmentation Plan
- drawn from free-flowing sources when there is no call on this water
- purchased from a permitted commercial supplier

Water, if delivered by truck, will be hauled in 80, 100, or 130-barrel capacity water trucks from the water sources to the well site using the same route as given in the directions to the well. Water could also be transported by buried steel or above-ground and temporary poly pipelines. If new roads are required to access or deliver water, the process described in Section 2 above will be followed. Anticipated water use for drilling and completion operations is approximately one acre-foot per well. Water delivery would be continuous prior to drilling and prior to completion. Specific information on water sources will be included at the time of each proposal.

6. Construction Materials

The types and uses of construction materials will vary according to the specific conditions at an individual well site. Subsequent wells that will be collocated on existing well pads will require less construction materials than those wells that will be first on a new well pad. Wells added to existing well pads may require additional gravel to be added to the road and well pad to support the expected drilling traffic. New locations will also require gravel for the road surface and possibly the level pad area. The type and quantity of gravel used will depend on the surface ownership and that landowner's specifications.

When constructing a new location, SG will primarily make use of soils on site for pad construction. In some instances, fill material may be brought on site from another location. If transport of soil material is needed for a location, proper landowner clearances will be obtained before doing so. If soil is to be transported to build a location, the source of this material will be shown on a map and a written description of these materials will be included in the individual APD.

7. Methods of Handling Waste Materials

The location and access roads will be kept orderly and as clean as practicable at all times. All garbage and trash will be put in a trash container. The container will be periodically emptied at an approved disposal site. A portable latrine will be provided for human wastes, and wastes will be pumped from portable toilets and hauled to an approved sanitation facility. Sewage will not be buried on location.

No unapproved chemicals will be used during drilling or completion operations. Any petroleum product or other spills will be cleaned up immediately and the material will be hauled to an approved facility.

The operator will prevent gasoline, diesel fuel, oil, grease, or any other petroleum products and drilling fluids from migrating off the location or from entering any live stream or riparian area. A spill kit will be available if needed. Fuels and lubricants will be transported by fuels distributors and will be stored in facilities specifically designed for that purpose.

Pits will be lined with an impervious liner. This liner will have a minimum thickness of twenty-four (24) mils. The liner will cover the bottom and interior sides of the pit with the edges secured with at least a

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twelve (12) inch deep anchor trench around the pit perimeter. The anchor trench will be designed to secure and prevent slippage or damage to the liner materials. The area under the pit over which the liner is laid will be free of rocks and other objects that could puncture the liner. A minimum of two feet of free board will be maintained between the maximum fluid/cuttings level and the top of the pits. The pits will be designed to exclude all surface runoff and will be constructed in the cut portion of the well pad. Back slopes will be 2:1 or less, unless otherwise approved through individual APD's. A contour trench or trenches will be constructed during pad construction to divert overland flow away from the pad. A trench will be installed between the toe of the cut and the edge of the reserve/cuttings pit. Trenches will be graded to drain off the location without causing erosion.

The well site cleanup will be concluded once the completion operations have been finished. Trash will be collected and deposited in a trash container. The lined reserve pit or cuttings pit will be fenced on three sides with woven wire during drilling operations and the fourth side fenced immediately after the rig has been moved off location. Fencing will be 6' to 8' in height to prevent deer and elk as well as other wildlife from entering the pit. After the rig has been moved off location, bird netting will be placed over the pit to prevent birds from entering the pit area. The pit will remain fenced until the pit has dried enough to be backfilled. Free water may be hauled to an approved disposal facility to facilitate drying of pits. Cuttings and pit liners will be disposed of at a permitted disposal facility.

Flowback water will be discharged into the existing water pipeline or a temporary surface poly pipeline and returned to the McIntyre Flowback Pits for storage and reuse. Existing buried steel water pipelines would be used whenever they are of large enough diameter to handle the flowback volume. Produced water pipelines are constructed to each well pad to transport formation water produced with natural gas. Some of these pipelines were constructed prior to exploration for shale gas resources and do not have adequate capacity to transport the flowback water volumes associated with these larger fracture processes. In cases where the buried steel pipeline is not of sufficient size, surface poly pipelines will be temporarily set up to handle the flowback water transportation (as per conditions of the COGCC McIntyre Flowback Pits Form 15 COAs). Gas, if present, will be vented to the atmosphere or flared during completion operations.

8. Ancillary Facilities

No camps, air strips, or additional staging areas are planned at this time. If these ancillary facilities are needed in the future, the location of the facility will be shown on a map and the construction method and materials needed for the facility will be described in the individual APD. If special authorization is required, SG will obtain this authorization from the surface management entity.

9. Well Site Layout

For each APD submitted, SG will provide a well site layout drawing. This drawing will be prepared under the supervision of a licensed professional surveyor and will be certified as such. Elements of this drawing will include the location and orientation of the well pad, reserve pit (including cuts and fills), access road entry points, cross sections of the well pad, orientation and proposed location of the drilling rig, any ditches, and topsoil/spoil pile locations. A typical drilling pad layout is shown in Figure 4 below.

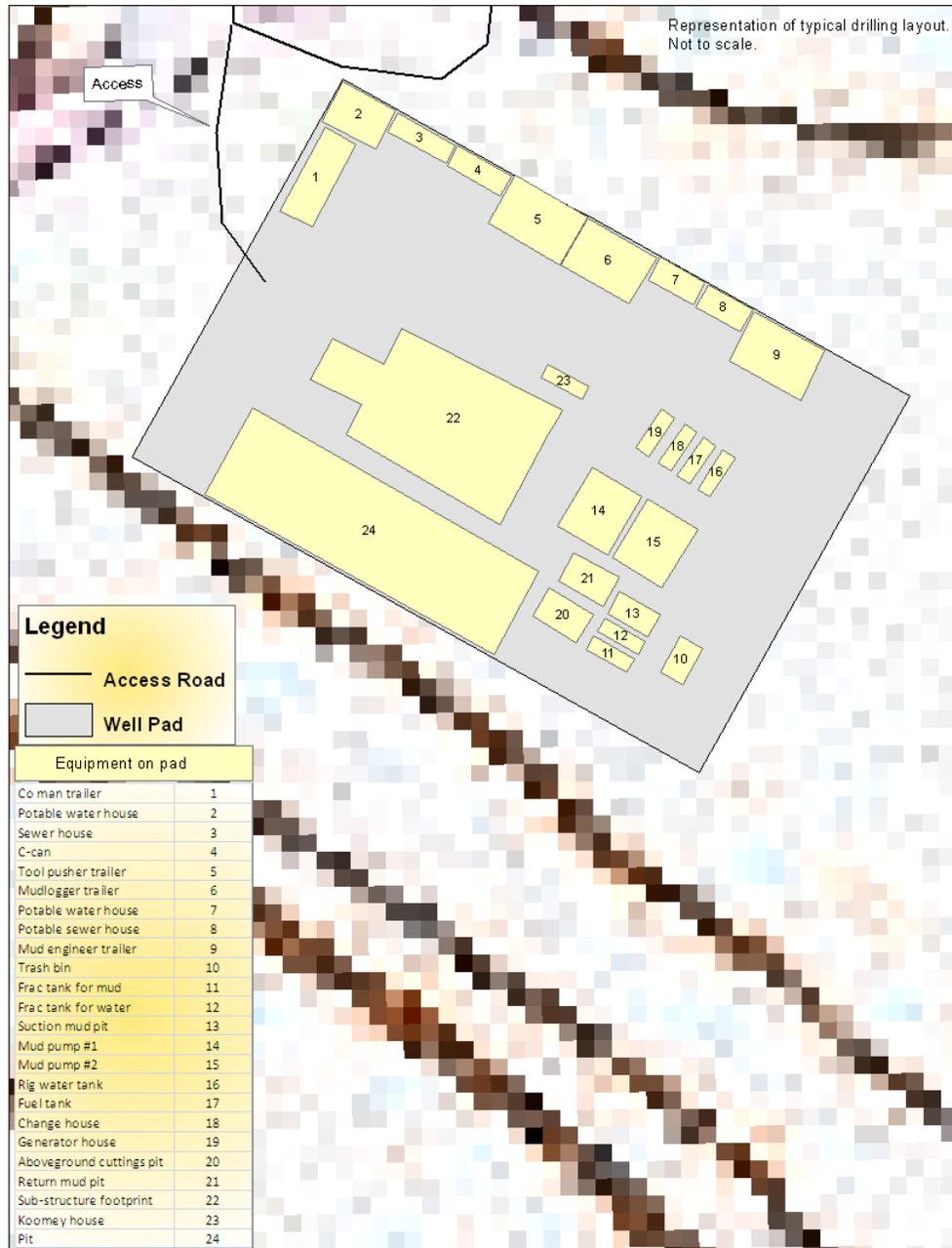
Temporary facilities on the typical well pad may include a total of three trailers during drilling operations for the drilling superintendent, the company representative, and the mud logger and mud engineer. These temporary facilities will be used 24 hours per day during drilling operations. No trailers will be needed during the completion or testing phases as these are daylight operations.

SG Interests will utilize the "flare stacked" method for flaring. SG will run a line to the edge of the pad. This line will be directed straight up 15'-20' from the surface of the pad once it reaches the edge of the pad. The flare will reach 5' to 10' from the end of the line. The flaring of gas does not create sparking and is thus not a fire risk to surrounding vegetation so long as the flare is a reasonable distance from combustible vegetation. Flaring into a pit or side cut is not practical on these locations. Gas must be flared

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at a safe distance from the rig and crew. Flaring horizontally into a pit or side cut near the rig creates the risk of gas accumulations near the crew and equipment, increasing the dangers flaring is intended to mitigate.

Figure D-4. Typical drilling pad layout.



10. Plans for Reclamation of the Surface

For each new well, SG will submit a plan for surface reclamation and stabilization of all disturbed areas. This plan will cover both interim and final reclamation. The following topics may be included in the reclamation plan as appropriate:

- plan for recontouring the disturbed land
- a drainage plan for use during operations

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- plan for separation and storage of topsoil and subsoil
- approximate cut and fill volumes of areas to be reclaimed (inc. pit areas)
- plan for redistribution of topsoil over area to be reclaimed
- any necessary soil treatments or plantings
- planned seed mix
- planned weed control
- plan for reclamation of associated project areas such as pipeline routes and access roads

SG has a Noxious Weed Management Plan for the Bull Mountain Unit (Appendix I to the EA).

Reclamation plans written for specific projects at the time of permitting may be amended at abandonment if site-specific conditions warrant revision.

11. Surface Ownership

Contact information for each landowner (or public agency) directly affected by the project will be provided in the Surface Use Plan of Operations submitted with each APD. Those directly affected by a project are landowners who own property on which a well will be located, an access road will cross, and those over which a pipeline right-of-way will cross. SG will make a good faith effort to provide each landowner a copy of the Surface Use Plan of Operations. SG will certify that this effort was made for each project.

12. Other Information

SG will address any other requests for information contained in relevant orders and notices in this section. Site specific information that may be helpful in processing individual APDs will also be noted here.

13. Certification

SG will certify each Surface Use Plan of Operations by signing where indicated for the following statement. If an agent signs the following certification, a letter from SG will be included that authorizes the agent to act on behalf of SG Interests.

“I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 USC 1001 for the filing of false statements.

Executed this ____ day of _____, _____.”

A signature must be included with the following information for the signer:

- Printed Name and Title
- Address
- Telephone
- Email address
- Field Representative
- Address of Representative (if applicable)
- Telephone of Representative (if applicable)

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