Surface Use Plan of Operations

Introduction

The following surface use plan of operations will be followed and carried out once the APD is approved. No other disturbance will be created other than what was submitted in this surface use plan. If any other surface disturbance is needed after the APD is approved, a BLM approved sundry notice or right of way application will be acquired prior to any new surface disturbance.

Before any surface disturbance is created, stakes or flagging will be installed to mark boundaries of permitted areas of disturbance, including soils storage areas. As necessary, slope, grade, and other construction control stakes will be placed to ensure construction in accordance with the surface use plan. All boundary markers will be maintained in place until final construction cleanup is completed. If disturbance boundary markers are disturbed or knocked down, they will be replaced before construction proceeds.

If terms and conditions are attached to the approved APD and amend any of the proposed actions in this surface use plan, we will adhere to the terms and conditions.

1. Existing Roads

a. No existing oil and gas road will be utilized because our proposed new access road will be 370' north from the well pad to an existing road (Pipeline Road).

2. New or Reconstructed Access Roads

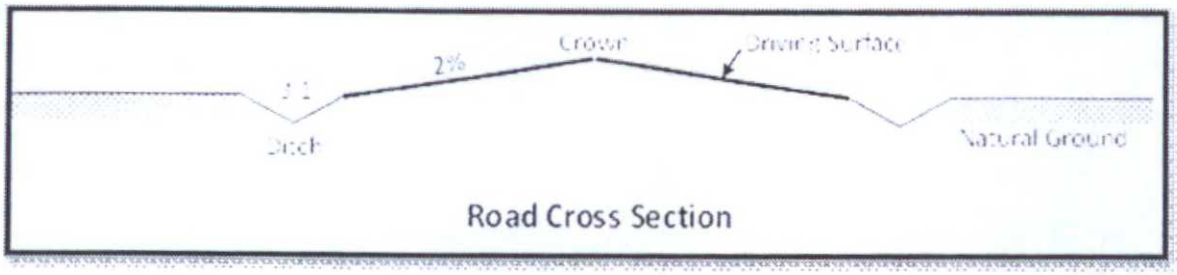
a. An access road will be needed for this proposed project. See the survey plat for the location of the access road.

b. The length of access road needed to be constructed for this proposed project is about 370 feet.

c. The maximum driving width of the access road will be 15 feet. The maximum width of surface disturbance when constructing the access road will not exceed 25 feet. All areas outside of the driving surface will be revegetated.

d. The access road will be constructed with 6 inches of compacted and rolled caliche.

e. When the road travels on fairly level ground, the road will be crowned and ditched with a 2% slope from the tip of the road crown to the edge of the driving surface. The ditches will be 3 feet wide with 3:1 slopes. See Road Cross Section diagram below.



Road Cross Section

f. The access road will be constructed with a ditch on each side of the road.

g. The maximum grade for the access road will be 2 percent.

h. No turnouts will be constructed on the proposed access road.

i. No cattleguards will be installed for this proposed access road.

j. Since the proposed access road crosses lease boundaries, a right-of-way will be required for this access road. A right-of-way grant will be applied for through the BLM. The access road will not be constructed until an approved BLM right-of-way grant is acquired.

k. No culverts will be constructed for this proposed access road.

l. No low water crossings will be constructed for the access road.

m. Since the access road is on level ground, no lead-off ditches will be constructed for the proposed access road.

n. Newly constructed or reconstructed roads, on surface under the jurisdiction of the Bureau of Land Management, will be constructed as outlined in the BLM "Gold Book" and to meet the standards of the anticipated traffic flow and all anticipated weather requirements as needed. Construction will include ditching, draining, crowning and capping or sloping and dipping the roadbed as necessary to provide a well-constructed and safe road.

3. Location of Existing Wells

a. Mesa 8105 JV-P #21H - 1 mi Radius Map of the APD depicts all known wells within a one mile radius of the proposed well.

b. COG Bufflehead 10 Fed #1H 30-025-40423
COG Bufflehead 10 Fed #2H 30-025-40594
COG Pintail 3 Fed SWD #1 30-025-41208

4. Location of Existing and/or Proposed Production Facilities

a. All permanent, lasting more than 6 months, above ground structures including but not limited to pumpjacks, storage tanks, barrels, pipeline risers, meter housing, etc. that are not subject to safety requirements will be painted a non-reflective paint color, Shale Green, from the BLM Standard Environmental Colors chart, unless another color is required in the APD Conditions of Approval.

b. If any type of production facilities are located on the well pad, they will be strategically placed to allow for maximum interim reclamation, recontouring, and revegetation of the well location.

c. A production facility is proposed to be installed off the proposed well location. Production from the well will be processed at this production facility. Mesa 8105 JV-P Central Tank Battery Sec 11 depicts the location of the production facilities.

d. The proposed production facility will have a secondary containment structure that is constructed to hold the capacity of 1-1/2 times the largest tank, plus freeboard to account for percipitation, unless more stringent protective requirements are deemed necessary.

e. Mesa 8105 JV-P Central Production Facility Sec 11 depicts the production facility as well.

f. A pipeline to transport production from the proposed well to the production facility will be installed.

i. We plan to install a 3 inch buried steel pipeline from the proposed well to the offsite production facility. The proposed length of the pipeline will be 1600 feet. The working pressure of the pipeline will be about 2500 psi. A 25 feet wide work area will be needed to install the buried pipeline. In areas where blading is allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.

ii. Mesa 8105 JV-P Proposed Flowlines Map depicts the proposed production pipeline route from the well to the existing production facility.

iii. Since the proposed pipeline crossess lease boundaries, a right of way grant will be acquired prior to installation of the proposed pipeline.

If any plans change regarding the production facility or other infrastructure (pipeline, electric line, etc.), we will submit a sundry notice or right of way (if applicable) prior to installation or construction.

Additional Pipeline(s)

We propose to install 3 additional pipeline(s):

1. Surface produced water pipeline:

   a. We plan to install a 3 inch surface poly pipeline from Mesa 8105 JV-P CTB Sec 11 to Mesa SWD 8105 JV-P #1W. The proposed length of the pipeline will be 1350 feet. The working pressure of the pipeline will be 100 psi or less. The pipeline will transport produced water. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline will be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline will be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

   b. Mesa 8105 JV-P Proposed Flowlines Map depicts the proposed produced water pipeline route.

   c. The proposed pipeline does not cross lease boundaries, so a right of way grant will not need to be acquired from the BLM.

2. Buried produced gas pipeline:

   a. We plan to install a 6 inch buried steel pipeline from the proposed well to existing Regency pipeline. The proposed length of the pipeline will be 160 feet. The working pressure of the pipeline will be about 65 psi. A 25 feet wide work area will be needed to install the buried pipeline. We will need an extra 10 foot wide area near corners to safely install the pipeline. In areas where blading is allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.

   b. Mesa 8105 JV-P #21H Loc Plat depicts the proposed produced gas pipeline route.

   c. Since the proposed pipeline crossess lease boundaries, a right of way grant will be acquired prior to installation of the proposed pipeline.

3. Buried produced oil pipeline:

   a. We plan to install a 3 inch buried steel pipeline from Central Tank Battery Sec 11 to existing Western pipeline. The proposed length of the pipeline will be 1000 feet. The working pressure of the pipeline will be about 2500 psi. A 25 feet wide work area will be needed to install the buried pipeline. We will need an extra 10 foot wide area near corners to safely install the pipeline. In areas where blading is allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.

b. Mesa 8105 JV-P Proposed Flowlines Map - Production Pipeline depicts the proposed produced oil pipeline route.

c. Since the proposed pipeline crossess lease boundaries, a right of way grant will be acquired prior to installation of the proposed pipeline.

Electric Line(s)

a. We plan to install an overhead electric line for the proposed well. The proposed length of the electric line will be 160 feet. Mesa 8105 JV-P #21H Location Plat depicts the location of the proposed electric line route. The electric line will be construction to provide protection from raptor electrocution.

b. Since the proposed electric line crossess lease boundaries, a right of way grant will be acquired prior to installation of the proposed electric line.

5. Location and Types of Water

a. The source and location of the water supply are as follows: Water for drilling and completion operations will either be purchased from commercial water stations in the area and trucked to the well site using the existing and proposed roads or transported from a pre existing water well by plastic temporary "fas line" laid on the surface along side existing roads. No water well be drilled on the location.

b. The operator will use established or constructed oil and gas roads to transport water to the well site. The operator will try to utilize the identified access route in the surface use plan.

6. Construction Material

a. Caliche used for construction of the drilling pad and access road will be obtained from the closest existing caliche pit as designated by the BLM or from prevailing deposits found under the location. If there is not sufficient material available, it will be purchased from the area designated by the BLM.

7. Methods for Handling Waste

a. Drilling fluids and produced oil and water from the well during drilling and completion operations will be stored safely and disposed of properly in an NMOCD approved disposal facility.

b. Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility. All trash on and around the well site will be collected for disposal.

c. Human waste and grey water will be properly contained and disposed of properly at a state approved disposal facility.

d. After drilling and completion operations, trash, chemicals, salts, frac sand and other waste material will be removed and disposed of properly at a state approved disposal facility.

e. The well will be drilled utilizing a closed loop system. Drill cutting will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

8. Ancillary Facilities

a. The location of the proposed ancillary facilities is depicted on Mesa 8105 JV-P #21H Rig Pad Layout.

b. The type of ancillary facility needed is It is possible that a mobile home will be used at the well site during drilling operations.

9. Well Site Layout

a. The following information is presented in the well site survey plat or diagram:

i. reasonable scale (near 1":50')

ii. well pad dimensions

iii. well pad orientation

iv. drilling rig components

v. proposed access road

vi. elevations of all points

vii. topsoil stockpile

viii. reserve pit location/dimensions if applicable

ix. other disturbances needed (flare pit, stinger, frac farm pad, etc.)

x. existing structures within the 600' x 600' archaeoligical surveyed area (pipelines, electric lines, well pads, etc

b. The proposed drilling pad was staked and surveyed by a professional surveyor. The attached survey plat of the well site depicts the drilling pad layout as staked.

c. The submitted survey plat does depict all the necessary information required by Onshore Order No. 1.

d. Topsoil Salvaging

i. Grass, forbs, and small woody vegetation, such as mesquite will be excavated as the topsoil is removed. Large woody vegetation will be stripped and stored separately and respread evenly on the site following topsoil respreading. Topsoil depth is defined as the top layer of soil that contains 80% of the roots. In areas to be heavily disturbed, the top 6 inches of soil material, will be stripped and stockpiled on the perimeter of the well location and along the perimeter of the access road to control run-on and run-off, to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil should include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils. Contaminated soil will not be stockpiled, but properly treated and handled prior to topsoil salvaging.

10. Plans for Surface Reclamation

Reclamation Objectives

i. The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize habitat and forage loss, visual impact, and weed infestation, during the life of the well or facilities.

ii. The long-term objective of final reclamation is to return the land to a condition similar to what existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydrological functioning, and vegetative productivity.

iii. The BLM will be notified at least 3 days prior to commencement of any reclamation procedures.

iv. If circumstances allow, interim reclamation and/or final reclamation actions will be completed no later than 6 months from when the final well on the location has been completed or plugged. We will gain written permission from the BLM if more time is needed.

v. Interim reclamation will be performed on the well site after the well is drilled and completed. Mesa 8105

JV-P #21H Location Plat depicts the location and dimensions of the planned interim reclamation for the well site.

Interim Reclamation Procedures (If performed)

1. Within 30 days of well completion, the well location and surrounding areas will be cleared of, and maintained free of, all materials, trash, and equipment not required for production.

2. In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.

3. The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.

4. Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts & fills. To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.

5. Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area.

6. The interim reclamation will be monitored periodically to ensure that vegetation has reestablished and that erosion is controlled.

Final Reclamation (well pad, buried pipelines, etc.)

1. Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of material, trash, and equipment.

2. All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.

3. All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.

4. After all the disturbed areas have been properly prepared, the areas will be seeded with the proper BLM seed mixture, free of noxious weeds. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.

5. Proper erosion control methods will be used on the entire area to control erosion, runoff and siltation of the surrounding area.

6. All unused equipment and structures including pipelines, electric line poles, tanks, etc. that serviced the well will be removed.

7. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion is controlled.

11. Surface Ownership

a. The surface ownership of the proposed project is USA - BLM, Grazing Lessee Oliver Kiehne, Box 135, Orla, TX 79770-0135.

12. Other Information

a. An MOA will be entered into with the BLM for archaeological needs. CEHMM will prepare the EA, using BLM onsite field records, and furnish directly to the Carlsbad BLM office. BLM Bond Coverage -- NM1195 & NM000849 Frac Pond permitted with Mesa 8105 JV-P #4H.

13. Maps and Diagrams

Mesa 8105 JV-P #21H - 1 mi Radius Map - Wells Within One Mile
Mesa 8105 JV-P Central Tank Battery Sec 11 - Production Facilities Diagram
Mesa 8105 JV-P Central Production Facility Sec 11 - Additional Production Facilities Diagram
Mesa 8105 JV-P Proposed Flowlines Map - Production Pipeline
Mesa 8105 JV-P Proposed Flowlines Map - produced water Pipeline
Mesa 8105 JV-P #21H Loc Plat - produced gas Pipeline
Mesa 8105 JV-P Proposed Flowlines Map - Production Pipeline - produced oil Pipeline
Mesa 8105 JV-P #21H Location Plat - Electric Line
Mesa 8105 JV-P #21H Rig Pad Layout - Ancillary Facilities
Mesa 8105 JV-P #21H Location Plat - Interim Reclamation