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# TOPSOIL PROTECTION PLAN

**Wavetech**  **Helium, Inc.**

**1 Wavetech FPI Burlington Farms 43-2**

Sec. 2 T12S R43W (NE/4 SE/4)

Cheyenne County, Colorado

Surface: Fee

Submitted as an accompaniment to the Form 2A Application, this Topsoil Protection Plan is consistent with the requirements of Rule 1002.c.

November 9, 2022

May 17, 2023

August 3, 2023

# **BNL (Enterprise) Inc. Las Animas County, Colorado**

## **Topsoil Protection Plan**

### **Project Summary:**

Wavetech Helium, Inc.'s ("Wavetech's") proposed 1 Wavetech FPI Burlington Farms 43-2 "Location" is in Sec. 2 T12S R43W in Cheyenne County, Colorado. Wavetech plans to drill and test this conventional well which will produce helium containing natural gas, water and possibly oil. All gas production will go directly to the existing Ladder Creek Pipeline gathering system at the tie-in point in Sec. 2 T12S R43W (SE/4). The Ladder Creek Pipeline is operated by Tumbleweed Midstream. The gas processing facility will be on lands outside of this Oil and Gas Development Plan. This well will be drilled, perforated, and tested. The proposed location is fee surface and fee minerals with a total pad disturbance of  $\pm 3.4$  acres. The graded site elevation is expected to be approximately 4,138'. No federal surface or minerals are involved in this project. All operations would be conducted in compliance with all federal, state, and local applicable laws, rules, and regulations.

### **Plan**

#### **Purpose:**

Topsoil protection and stabilization is key to successful reclamation. The objective of Wavetech's topsoil protection and stabilization is to ensure as much topsoil can remain intact with minimal erosions caused by wind, storm events, traffic, and other activities that might cause topsoil erosion or degradation. Good topsoil protection and stabilization ensures successful reclamation and the restoration of the natural vegetative community, hydrology, and wildlife habitats. Salvaging and reuse of all topsoil in a timely manner will not only maintain viable topsoil but will allow for successful reclamation. Best Management Practices (BMPs), where applicable, mixed with other protection and stabilization measures ensure topsoil is maintained in its best condition to be used for both interim and final reclamation.

In areas that are disturbed by construction, topsoil will be stripped and stockpiled near the site. All brush, limbs, and other woody material will be stockpiled separately from the topsoil. Soil materials will be managed so that erosion and sediment transport are minimized.

#### **1 Wavetech FPI Burlington Farms 43-2:**

Topsoil will be monitored throughout all phases of the helium project, including construction, production, and reclamation. The surrounding topography is relatively flat. As construction progresses, BMPs will be assessed, installed, and/or replaced as needed.

During active construction and drilling the following BMPs will be implemented on the 1 Wavetech FPI Burlington Farms 43-2:

- A diversion ditch will be constructed on the northwestern, northeastern corners, west side and portion of the south corner of the location. The diversion ditch will be utilized to control run-on

(keep off-location sediment from coming on to the pad which is typically very minimal) and to control sediment from running off the location during construction and interim stabilization.

- Earthen berms will be constructed on the southern side and a portion of the southeast and southwest corners of the pad to control sediment migration. No uncontrolled stormwater will be directed off the pad.
- A sediment trap will be constructed on the southeastern corner of the pad. Diversion ditches will be graded to direct stormwater to the sediment trap, where sediment will settle, and water will be allowed to evaporate.
- Silt Fence and Straw Wattles: A silt fence and/or straw wattles may be installed on portions of the location to control run-on to the pad, and any stormwater flow to runoff the pad uncontrolled.
- Mulch/Seed: Topsoil stockpiles that will be exposed for more than six months will be mulched and/or seeded as a stabilization technique to control sediment loss.
- Two (2) culverts will be installed along the access road. No culverts are anticipated at the entrance to the wellpad. If needed, an 18" culvert will be placed at the proposed access road into the wellpad.
- Rock Rip-Rap: Where culverts are installed, rock rip-rap placed on both sides of the culverts to slow/filter any stormwater runoff from the road itself.
- New roads will be minimally constructed until the well is drilled and tested.
  - New access – 8,111' (9.3 acres)
  - Total road for productive well – 8,212' x 50' ROW = 9.4 acres
  - Two (2) culverts will be placed in the road to the pad and will slow/filter any stormwater runoff from the road itself.
- During wellpad construction topsoil should be piled no higher than 3 to 5 feet high and slopes of the stockpiles should not exceed 2:1 (horizontal:vertical) to minimize erosion potential and facilitate interim stabilization. Perimeter control measures such as sediment control logs, rock socks, straw bales, ditch and/or berm with sediment trap(s) or sand bags will be used around the base of unstabilized stockpiles or where there is potential for sediment to come in contact with run off and leave the site.
- The working pad surface area is 300' x 300'. Please see attachments. Topsoil material will be placed on the northeastern and northwestern sides of the cleared pad and will be approximately 1,691 CY.
- Topsoil stockpiled for more than six months will be seeded and mulched with a temporary grass cover or will be stabilized using structural and/or non-structural control measures.
- To negate surface disturbance 12" x 12" test pits will be dug on the northeast side and the northwest corner of the wellpad. The pits will be dug in a manner prior to wellpad construction so that will not require any compaction post construction.
- Training: Those persons responsible for inspections and monitoring will be trained on the contents of the Plan and the requirements herein.
- Minimize Compaction: Wavetech will limit traffic outside of the well pad footprint but within the disturbed area, to the extent possible, to reduce compaction.

- Stockpile Tracking: To prevent erosion, stockpiles will be tracked perpendicular to runoff direction.

### **General Construction Guidelines for Producing Well**

No facilities will be on location until after the well has been drilled and tested. If the well is deemed a “dry hole” the well will be plugged within six months. If the well is favorable for completion and production, the well will be shut in for a period of six to nine months until production facilities have been procured and installed. At this point, the wellpad and road will be fully constructed with gravel to protect the surface and all topsoil. If the well is a dry hole, the access road will be left in its original state and per surface use agreement.

Following the drilling and completion activities, the well pad may be reduced, thus minimizing the area of disturbance for the production life of the well. The pad will be recontoured, topsoil reapplied, and the reduced area stabilized with seed, hydro-seed, bonded fiber matrix, mulch, etc. as deemed appropriate for the site.

- To negate topsoil erosion from storm events, the first site inspection must be completed within seven (7) calendar days of the commencement of construction activities.
- Active construction sites will be inspected at one of the two following frequencies:
  - At least one inspection every 7 calendar days;
  - At least one inspection every 14 calendar days, if post-storm event inspections are conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. Note that post-storm inspections may be used to fulfill the 14-day routine inspection requirement.

Wellpad and access road construction will be performed using conventional cut and fill construction. Wavetech will begin with the clearing of vegetation and removal of available topsoil material to a depth of six inches or maximum available. Basic construction activities conducted during this phase include clearing and grubbing, grading and excavation, compaction, final grading and contouring, and installation of surfacing materials such as gravel or road-base.

To the extent feasible, surface vegetation would be cleared by mowing, raking, and burning in preference to scraping to facilitate topsoil protection and stabilization and reclamation potential. If removed, topsoil will be windrowed on either side of the alignment adjacent to the construction limits as staked. Upon commencement of road construction, the topsoil will be replaced in the borrow ditches. Removed soil and overburden would be stored for reclamation purposes. No removed soil or overburden would be pushed into drainages or stored where transport into drainages could occur.

The wellpad may be recontoured, topsoil reapplied, and the reduced area stabilized with seed, hydro-seed, bonded fiber matrix, mulch, etc. as deemed appropriate for the site. The borrow ditches will be reseeded to promote topsoil stabilization and will reduce the area utilized by this location. All seed mix will be done per surface owner request.

Topsoil would be segregated from cut areas for use in reclamation.

Salvaging and spreading topsoil will not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment. If such equipment creates ruts more than four inches deep, the soil will be deemed too wet.

The wellpad would be constructed of native materials with application of gravel as required to allow all-weather operations. Signs will be placed on the topsoil pile and the pile will be clearly separated. Topsoil not needed for interim reclamation on wellpads with favorable wells will be seeded and crimped with straw to promote vegetative growth until final reclamation. All seed mix will be done per surface owner request.

Test pits for topsoil determination will be hand dug to a depth of one-foot or less. Topsoil in this area is not expected to exceed six-inches. Photos will be submitted via Form 4 prior to construction.

### **NRCS Information**

#### **20 – Keith-Ulysses silt loams, 1-4 percent slopes**

Soils are comprised of 45% of Keith and similar soils, 30% of Ulysses and similar soils, and 25% of minor components.

The Keith complex drainage class is “Well Drained” with a (0.20 to 0.60 in/hr) capacity to transmit water; depth to restrictive feature can be found anywhere from 80” or more in depth.

The Keith predominant plant species include miscellaneous perennial grasses (85%), miscellaneous perennial forbs (10%), and miscellaneous shrubs (5%).

#### **Typical profile/horizon**

- Ap - 0 to 6 inches: silt loam
- Bt1 - 6 to 10 inches: silty clay loam
- Bt2 - 10 to 25 inches: silty clay loam
- C - 25 to 79 inches: silt loam

The Ulysses complex drainage class is “Well Drained” with a (0.60 to 2.0 in/hr) capacity to transmit water; depth to restrictive feature can be found anywhere from 80” or more in depth. Please see NRCS attachment.

The Ulysses predominant plant species include miscellaneous perennial grasses (85%), miscellaneous perennial forbs (10%), and miscellaneous shrubs (5%).

#### **Typical profile/horizon**

- Ap - 0 to 3 inches: silt loam
- Bw - 3 to 8 inches: silt loam
- Bk - 8 to 13 inches: silt loam
- C - 13 to 79 inches: silt loam

**21—Kim loam, 1 to 3 percent slopes, eroded**

Soils are comprised of 85% of Kim and similar soils and 15% of minor components.

The Kim complex drainage class is “Well Drained” with a (0.60 to 2.00 in/hr) capacity to transmit water; depth to restrictive feature can be found anywhere from 80” or more in depth.

The Kim predominant plant species include Western wheatgrass (30%), Green needlegrass (10%), Needleandthread (5%), Sand dropseed (5%), and Blue grama (-).

**Typical profile/horizon**

- Ap - 0 to 6 inches: silt loam
- Bt1 - 6 to 10 inches: silty clay loam
- Bt2 - 10 to 25 inches: silty clay loam
- C - 25 to 79 inches: silt loam

**38—Santana loam, 0 to 3 percent slopes**

Soils are comprised of 90% of Santana and similar soils and 10% of minor components.

The Santana complex drainage class is “Well Drained” with a (0.60 to 2.00 in/hr) capacity to transmit water; depth to restrictive feature can be found anywhere from 80” or more in depth.

The Santana predominant plant species include Western wheatgrass (15%), Needleandthread (10%), Green needlegrass (10%), Prairie Sandreed (5%), Miscellaneous perennial forbs (5%), and Blue grama (-).

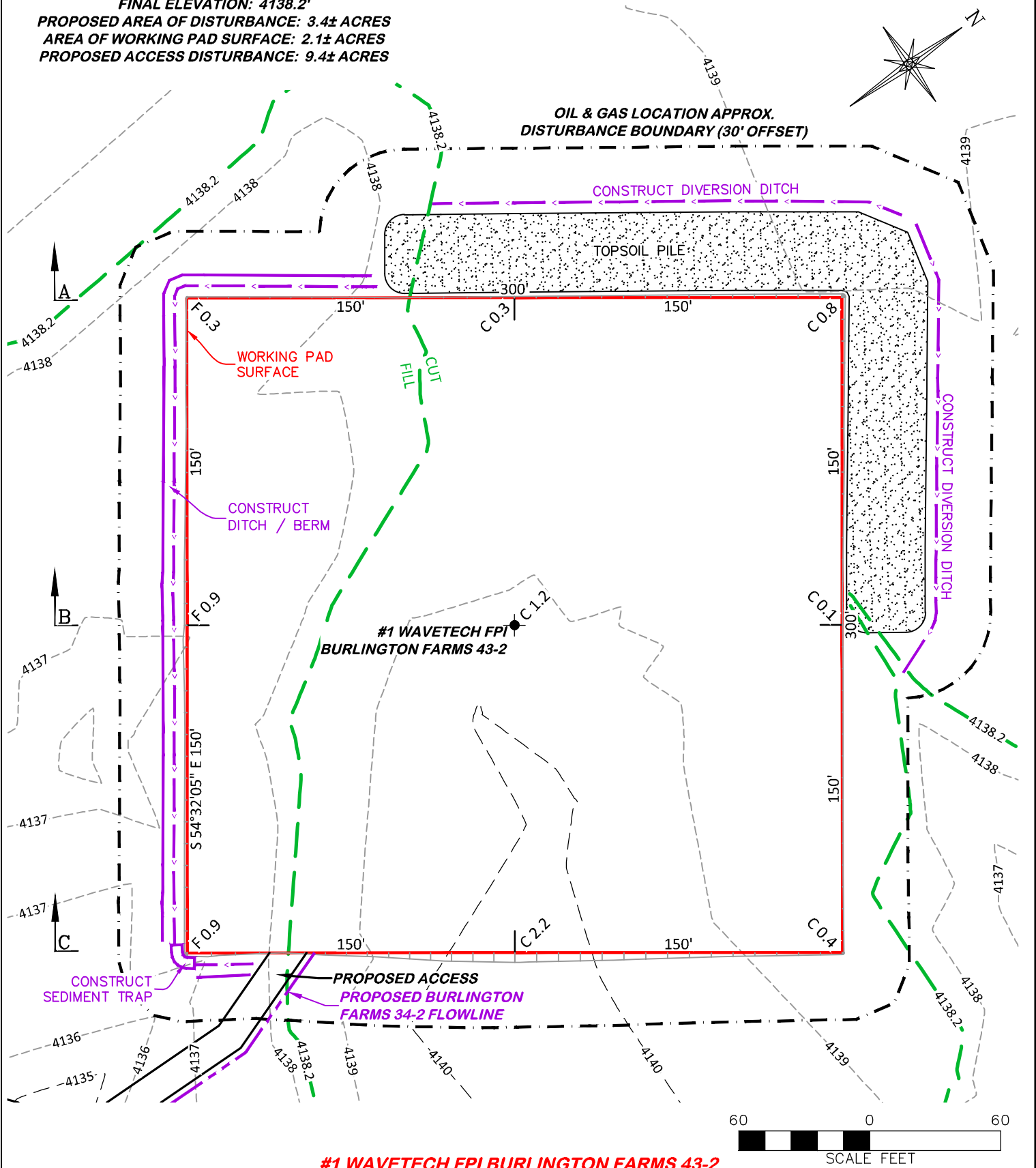
**Typical profile/horizon**

- A - 0 to 8 inches: loam
- Bt - 8 to 16 inches: clay loam
- Bk - 16 to 60 inches: loam

**Additional Best Management Practices that may be used for General Topsoil Protection and Stabilization:**

- Employee Training
- Seeding
- Mulching
- Mulch Tackifier
- Soil Binder
- Construction Phasing/Sequencing
- Rock Sock
- Rolled Erosion Control Products
- Silt Fence
- Stockpile Management
- Erosion Bale
- Grading Techniques
- Surface Roughening
- Berm/Diversion
- Temporary Drainage Swale
- Temporary and Permanent Seeding
- Terracing
- Vegetative Buffer
- Wind Erosion/Dust Control

UNGRADED ELEVATION: 4139.4'  
 FINAL ELEVATION: 4138.2'  
 PROPOSED AREA OF DISTURBANCE: 3.4± ACRES  
 AREA OF WORKING PAD SURFACE: 2.1± ACRES  
 PROPOSED ACCESS DISTURBANCE: 9.4± ACRES



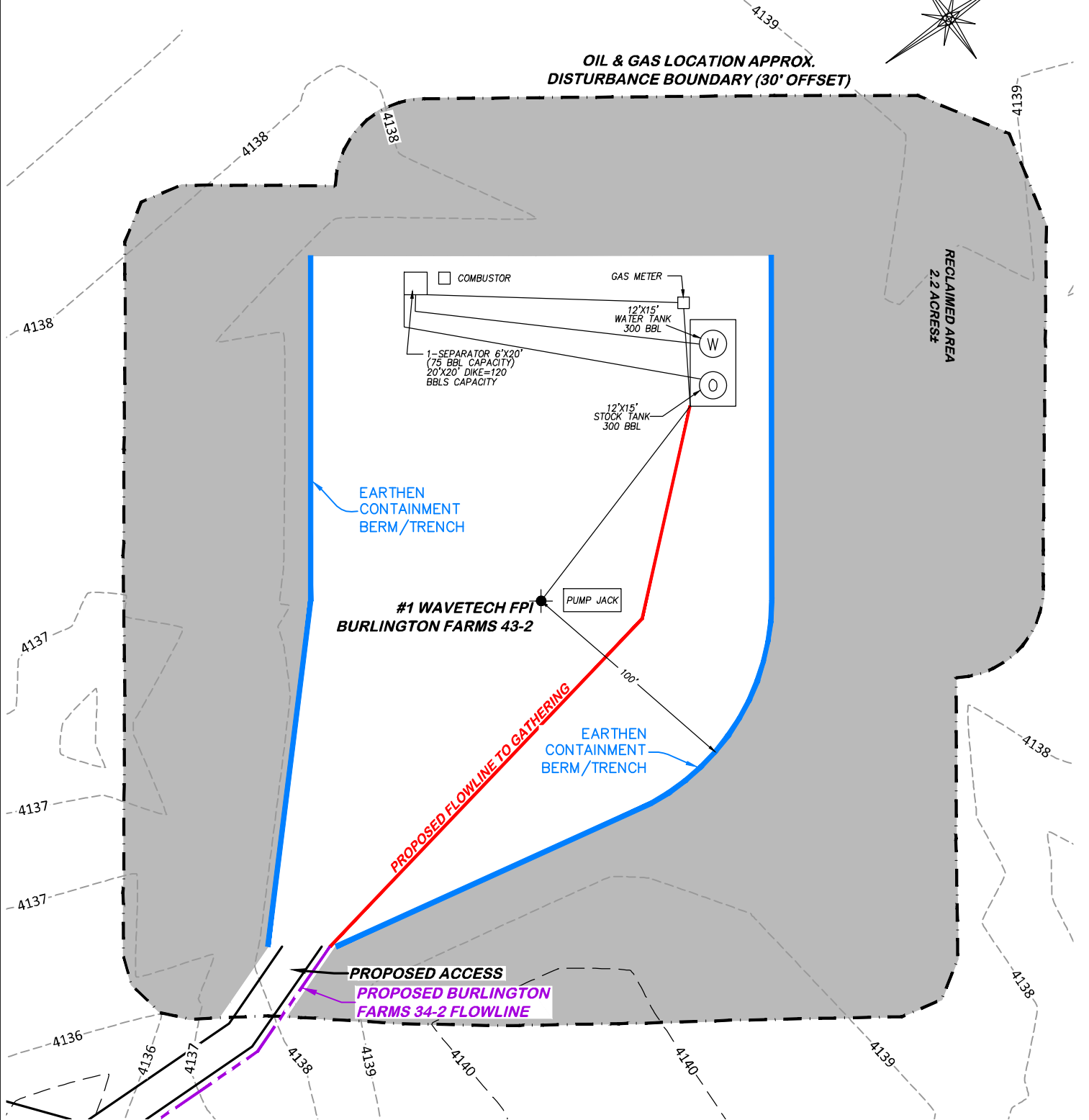
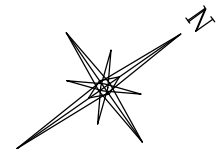
**#1 WAVETECH FPI BURLINGTON FARMS 43-2**

**DRG** RIFFIN & ASSOCIATES, INC.  
 (307) 362-5028 1414 ELK ST., ROCK SPRINGS, WY 82901

DRAWN: 8/4/22 - JMB/DEH	SCALE: 1" = 60'
REVISED: 1/20/23 - JMB	DRG JOB No. 22270
PAD MOVE	304c(15) BMP

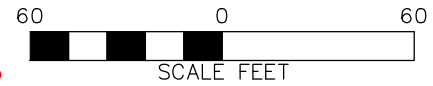
**STORMWATER AND EROSION CONTROL PLAN**  
**WAVETECH HELIUM, INC.**  
**#1 WAVETECH FPI BURLINGTON FARMS 43-2**  
**NESE, SECTION 2, T. 12 S., R. 43 W., 6th P.M.,**  
**CHEYENNE COUNTY, COLORADO**

APPROXIMATE DISTURBANCE AREA 3.4± ACRES  
 PROPOSED RECLAMATION AREA: 2.2± ACRES  
 INTERIM RECLAMATION DISTURBANCE: 1.2± ACRES



NOTE:  
 EXISTING SURFACE USE IS 100%  
 CULTIVATED CROPLAND.

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 (307) 362-5028 1414 ELK ST., ROCK SPRINGS, WY 82901

DRAWN: 8/4/22 - JMB/DEH	SCALE: 1" = 60'
REVISED: 1/20/23 - JMB	DRG JOB No. 22270
PAD MOVE	304c(16) RECLAMATION

**INTERIM RECLAMATION  
 WAVETECH HELIUM, INC.  
 #1 WAVETECH FPI BURLINGTON FARMS 43-2  
 NESE, SECTION 2, T. 12 S., R. 43 W., 6th P.M.,  
 CHEYENNE COUNTY, COLORADO**