Stormwater Management Plan

Sammons Ranch

Helium Gas Wells 315310C

Vecta Oil & Gas Ltd.

August 2021

This Stormwater Management Plan (Plan) has been prepared by Vecta Oil & Gas, Ltd. (Vecta) for its Sammons Ranch helium gas well development in Las Animas County, Colorado. The Plan addresses Colorado Oil & Gas Conservation Commission (COGCC) guidance and requirements at Rule 304.c.(15) to prepare a Stormwater Management Plan consistent with criteria in Rule 1002.f.

1.0 Oil and Gas Location and Construction Site Details

1.1 Proposed Oil and Gas Operations

Vecta is proposing to develop a wildcat helium gas well in Section 10, T31S R53W, in rural Las Animas County. The well will be an estimated 1,400 feet deep. It will be on fee surface and will produce fee minerals. The Oil and Gas Location will occupy approximately 1.1 acres. The Working Pad Surfaces will be approximately 1 acre. After interim reclamation, the production pad will be reduced to an estimated 0.2 acre. The well will be drilled using equipment similar to a water well drill rig.

1.2 Site Description

The Oil and Gas Location is located in rural Las Animas County on private ranchland. The area is disturbed from previous ranching operations and access roads. There is no nearby surface water. The area contains a dry former man-made stock pond and dry drainages impacted by cattle.

1.3 Nature of Construction Activity

The helium gas well will be drilled as a conventional vertical well. It does not require drilling mud or chemical storage. The well is not anticipated to produce hydrocarbons or produced water. There will be no hydrocarbon storage on the location. A temporary freshwater tank will be used during well drilling. A temporary fuel storage tank for drilling equipment will be located inside of integrated secondary containment.

1.4 Sequence of Construction Activities

Site grading will require approximately 1 day to prepare the location for well drilling. Well drilling and completion will require approximately 7 to 10 days. Well productivity testing will require up to approximately 7 to 14 days. Interim reclamation and revegetation will require approximately 1 day.

1.5 Access Road and Flowline Corridor Construction

An existing two-track dirt access road will be used from the nearest public road, Colorado Highway 109. Further two track access will be constructed to the location using minor clearing and blading for a drivable surface for operations and potential for emergency services. After productivity testing, if the well supports production, a 4-inch diameter polyethylene flowline for helium gas will be buried underground from the location to an off-location helium purification unit. The flowline will be buried in the access road corridor. The flowline trench will be an estimated 6 feet wide and approximately 24 inches deep. Flowline corridor construction will require minimal trenching equipment to support the small diameter polyethylene material.

1.6 Location Construction

The Oil and Gas Location area is largely flat. Minimal site clearing and grading is needed to prepare the location for well drilling equipment. Site preparation will consist of limited vegetation removal and cut and fill sufficient to support a water well-sized drill rig, pipe rack, and equipment.

2.0 Supplemental Site Information

2.1 Site Area and Disturbance Area

The Working Pad Surface will be an estimated 1 acre. The area is largely flat, and there is little variation in grade across the Oil and Gas Location. Cut and fill to support the location is estimated to be limited to discrete areas on the working pad surface and is shown on the attached Construction Layout Drawing.

Access road preparation will be limited to the clearing and blading needed for approximately 1,220 feet of new two-track access to the Oil and Gas Location. If supported by productivity testing, a helium gas gathering system will be buried in the access road corridor.

2.2 Soil Description, Data, and Erosion Potential

Soil in the Oil and Gas Location area is WC – Plughat-Villegreen Complex (1 to 4 percent slopes) and WeB – Wiley Silt Loam (0 to 3 percent slopes) according to the Natural Resources Conservation Service Map Unit Descriptions. The typical profile for these soil types is well-drained. WC – Plughat-Villegreen Complex has an A-horizon of 0 to 6 inches of loam and silt loam overlaying 3 to 9 inches of silty clay loam. WeB – Wiley Silt Loam has an A-horizon of 0 to 4 inches of silt loam overlaying 4 to 9 inches of silty clay loam. The combined arid location and minimal grading on portions of the 1-acre Working Pad Surface with minimize erosion potential.

2.3 Vegetation Description

The Oil and Gas Location is arid. It is previously disturbed rangeland with primarily Blue Grama, Buffalo Grass, Western Wheatgrass, Rabbitbrush, Sand Dropseed, and Red Threeawn.

2.4 Pre-disturbance Coverage Estimate

The pre-disturbance coverage is an estimated 80 percent.

2.5 Known Weed Infestations

The Oil and Gas Location has no observable weed infestations or noxious weeds.

2.6 Non-stormwater discharges

The Oil and Gas Location will have no non-stormwater discharges.

2.7 Receiving Waters

The Oil and Gas Location has no nearby surface water or receiving water. The area contains a dry former man-made stock pond and dry drainages impacted by cattle grazing.

3.0 Stormwater Management Control Measures

3.1 Potential Pollution Sources

Potential pollution sources during construction are soils and sediment from disturbed areas and potential fluid leaks from well drilling equipment.

3.2 Locations Listed in Rule 1002.f.(3).A

Locations listed in Rule 1002.f.(3).A are described below. Locations on the Working Pad Surface and areas of cut and fill are shown on Vecta's Construction Layout Drawing.

Transport of Chemicals and Materials

The shallow conventional vertical well will be drilled without mud or chemicals. There will be no chemical storage on site. This results in a low potential for loading and unloading operations to contribute to stormwater discharges.

Fueling
A temporary fuel tank to fuel well drilling equipment will have integrated secondary containment. Vehicles will not be fueled on site.

Storage
Materials will consist predominantly of piping and equipment offloaded at a centralized drill rack and pipe area.

Produced Water and Drilling Fluids
Produced water is not anticipated during well drilling based on historical well log information in this area. The well will be drilled without mud.

Outdoor Processing Activities
No processing will occur at the location.

Significant Dust or Particulate Generating Processes
Exposed soils and drilling have potential to generate dust.

Erosion and Vehicle Tracking
There is not a sufficient elevation change between the Working Pad Surface and surrounding topography to result in significant erosion. The Oil and Gas Location and access ties into existing unpaved access.

Waste Disposal Practices
Waste is limited to drill cuttings temporarily containerized on the working pad surface before the drill cuttings are hauled off site for disposal at a waste facility authorized to accept the waste. Trash will removed from the location throughout well drilling.

Leaks and Spills
The location for the drill rig and other equipment is shown on the Construction Layout Drawing.

Ground Disturbing Maintenance Activities
After construction and interim reclamation, there are no anticipated ground disturbing maintenance activities.

3.3 Pollution Prevention

Erosion Control
There will be minimal elevation change across the 1-acre Working Pad Surface. Only portions of the Working Pad Surface that require vegetation removal, grading to level portions of work area, and parking and laydown will be disturbed. The minimal topsoil removal anticipated will be mounded to avoid loose soils and will be reused after the 7 to 10-day well development is complete.

Secondary Containment
The temporary fuel tank used during well drilling will have integrated secondary containment and will be on location for approximately 7 to 10 days. The fuel tank will be removed after well development is complete. The drill rig and other motors will have liners underneath.

Reclamation
The 1-acre Working Pad Surface will be reduced to approximately 0.2 acre after the 7 to 10-day well development is complete. The remaining area will be revegetated and stabilized during interim reclamation.

3.4 Structural and Non-structural Practices

Structural Practices
The downgradient side of the Oil and Gas Location will have straw wattles or silt fence, where needed. The erosion controls will avoid soils and sediment from leaving the location in the event of a significant storm

event and prior to interim reclamation. After interim reclamation, if vegetation does not provide sufficient armoring, erosion controls will be maintained and inspected to prevent soils and sediment from leaving the location. If there is evidence of ponding or erosion from the location, stormwater diversions will be created to avoid stormwater channelization. The temporary fuel storage tank for drilling equipment will be located inside of integrated secondary containment during well drilling to prevent impacts from leaks or spills. Equipment with motors will have liners underneath.

Non-structural Practices

Disturbances will be limited to the portions of the Oil and Gas Location needed to support well development and production so that vegetation remains in place to stabilize area soils. Disturbed portions of the Working Pad Surface not needed for production will be stabilized and revegetated as part of interim reclamation. Trash will be contained. There will be no liquids storage on the Working Pad Surface during production. Vehicles and equipment will be monitored for leaks during well development. Absorbents will be made available to address inadvertent spills. Ingress, egress, and parking will occur in designated areas. Inspections will be performed daily during well drilling. Inspections will be performed routinely during well production, as described below. The location and stormwater controls will be maintained to prevent deterioration resulting in erosion or transport of soils and sediments off site.

3.5 Erosion Controls

Downgradient erosion controls will be used where needed to prevent movement of sediment and soils from stormwater runoff. Designated vehicle ingress and egress will help to avoid vegetation and soil disturbance resulting in erosion. Interim reclamation and revegetation will occur when well drilling is complete. Seeding will occur during the next favorable growing season. Revegetation will be monitored for growth and a vegetative cover that reflects 80 percent of the reference area condition.

3.6 Vehicle Tracking Control

The location's access road ties into an existing unpaved ranch road. Aggregate will be placed at the apron where the existing road ties into Highway 109 if aggregate is needed to act as a wheel shaker to reduce dirt from being tracked onto the pavement.

3.7 Materials Handling and Spill Prevention

There will be no drilling mud or chemical use for well drilling. Trash will be containerized and transported off site throughout well drilling. Vehicles and equipment used on site will be properly maintained and will be monitored for leakage.

3.8 Management of Waste Material

Drill cuttings from a conventional vertical helium gas well will be uncontaminated and minimal, as described in the Waste Management Plan. After testing, drill cuttings will be hauled off site for disposal at a waste facility authorized to accept the waste. Trash will be secured from blowing and hauled off site using a light duty pickup truck.

4.0 Site-specific Construction and Stormwater/Erosion Control Measure Drawings

In accordance with COGCC guidance, this section refers to the Construction Layout Drawing and Facility Layout Drawing.

5.0 Inspection and Maintenance Procedures

5.1 Trained and Qualified Site Inspections

Stormwater inspections will be conducted by personnel trained on the content of this Stormwater Management Plan. Personnel will be qualified regarding stormwater preventative measures, practices, controls, and maintenance in the field.

5.2 Scope of the Inspection

During stormwater inspections, personnel will review the Oil and Gas Location perimeter; disturbed areas and reclaimed areas; equipment, material, and storage areas; and vehicle access. Inspections will look for evidence of soils or sediment leaving the location. Inspections will review the location for signs of erosion. Stormwater maintenance needs will be identified and addressed with appropriate follow up.

5.3 State and Local Inspection Requirements

The operator will comply with construction stormwater management requirements administered by the Colorado Department of Public Health and Environment (CDPHE) and requirements that may be imposed as a condition of the land use approval issued by the Las Animas County Land Use Department.

5.4 Inspection Procedures and Frequency

The Oil and Gas Location will be monitored daily during the approximately 1 day for site preparation and 7 to 10 days for well development. Evidence of soil or sediment runoff, maintenance needs, and any spills or leaks will be addressed. Following well development, stormwater inspection will occur at a minimum of once every 7 days, consistent with stormwater requirements administered by CDPHE. Inspection frequency may be reduced to once every 30 days after ground disturbance is complete and the site is stabilized with interim reclamation. During inspection, the site operator will look for evidence of erosion, runoff, and stabilization and vegetative success from interim reclamation. Inspections will ensure that erosion and sediment controls identified in this plan are maintained and functioning properly and that there is no evidence of movement of soils, ponding, or erosion.

5.5 Reporting and Recordkeeping Requirements

Recordkeeping will include conformance with recordkeeping requirements administered by CDPHE. During well drilling, stormwater records will be included with drilling operations records. During production, the site operator will record stormwater inspections and maintenance needs as part of the maintenance records for the location. Documentation will be kept in the operator's Denver, Colorado office.

6.0 Site-specific Construction and Stormwater/Erosion Control BMPs

The table below lists site-specific BMPs to control and minimize stormwater and sediment run-on and run-off.

Table 1. Best Management Practices

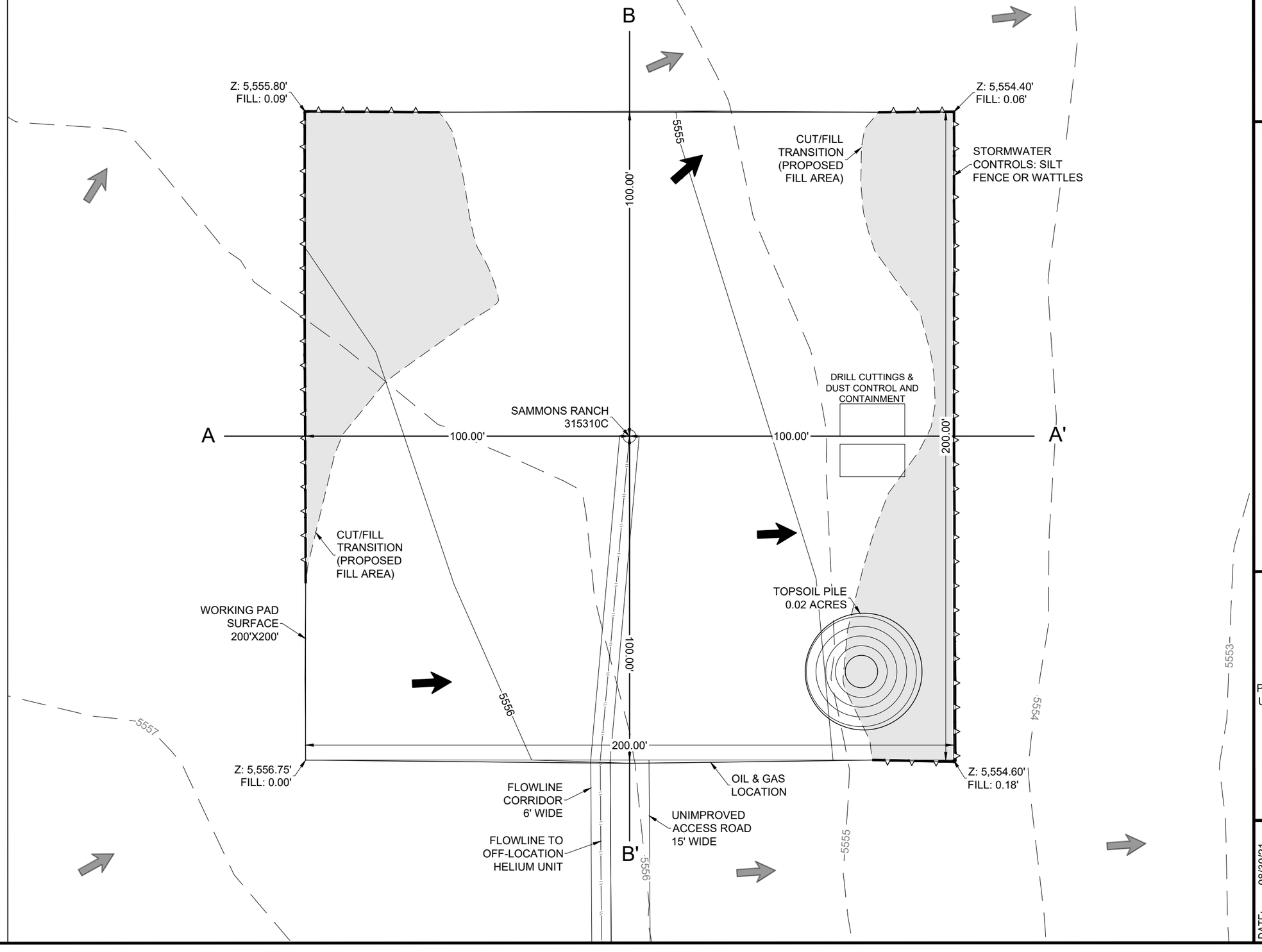
Structural
• Wattles or silt fence will be placed on the downgradient side of the Oil and Gas Location.
• Stormwater diversions will be created when there is evidence of ponding or erosion runnels.
• The temporary fuel tank used for well drilling will have integrated secondary containment. The drill rig and motors will have liners underneath.
Non-Structural
• Waste materials will be bagged or containerized to avoid contact with precipitation.

• The well pad will be inspected for excessive erosion. Where needed, areas will be recompacted.
• Vehicles and equipment will be monitored for leaks during well development.
• Ingress, egress, and parking will occur in designated areas.
• Spill response materials and absorbents will be containerized and available on site.
• The location will be inaccessible to the public to prevent unauthorized access and excessive wear on access roads.
• Stabilization and revegetation will be performed as part of interim reclamation.
• During well development, stormwater monitoring will be performed daily. Areas that require correction for stormwater control will be addressed or repaired promptly.
• During production, an operator will be onsite an estimated 2-3 times per week. Site inspection will identify areas that require maintenance or repair to control stormwater and correct excessive erosion on the well pad or access roads. Stormwater inspection will be performed at least every 7 days during well production and every 30 days after interim reclamation.

Attachments

Layout Drawings

LAS ANIMAS COUNTY
CSW SEC. 10
T31S R53W 6TH P.M.



SCALE: 1" = 30'

0' 15' 30'

- EXISTING 1' CONTOUR
- PROPOSED 1' CONTOUR
- STORMWATER CONTROLS: FENCE OR WATTLES
- CUT/FILL AREA
- WELLHEAD
- PROPOSED DRAINAGE
- EXISTING DRAINAGE

WELLHEAD ELEVATIONS

GRADED ELEVATION:	5,555.75'
UNGRADED ELEVATION:	5,555.75'

EARTHWORK QUANTITIES:

CUT:	145 CY
FILL:	71 CY
TOPSOIL (2"):	74 CY
EXPORT:	0 CY
FILL FACTOR:	1.15
WORKING PAD SURFACE:	±1.00 ACRES
OIL & GAS LOCATION:	±1.10 ACRES
UNIMPROVED ACCESS ROAD:	0.42 ACRES
FLOWLINE DISTURBANCE: (TRENCH LOCATED WITHIN ROAD ALIGNMENT)	0.00 ACRES

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CONSTRUCTION LAYOUT - PLAN VIEW

SAMMONS RANCH 315310C

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SHEET :	1 OF 4

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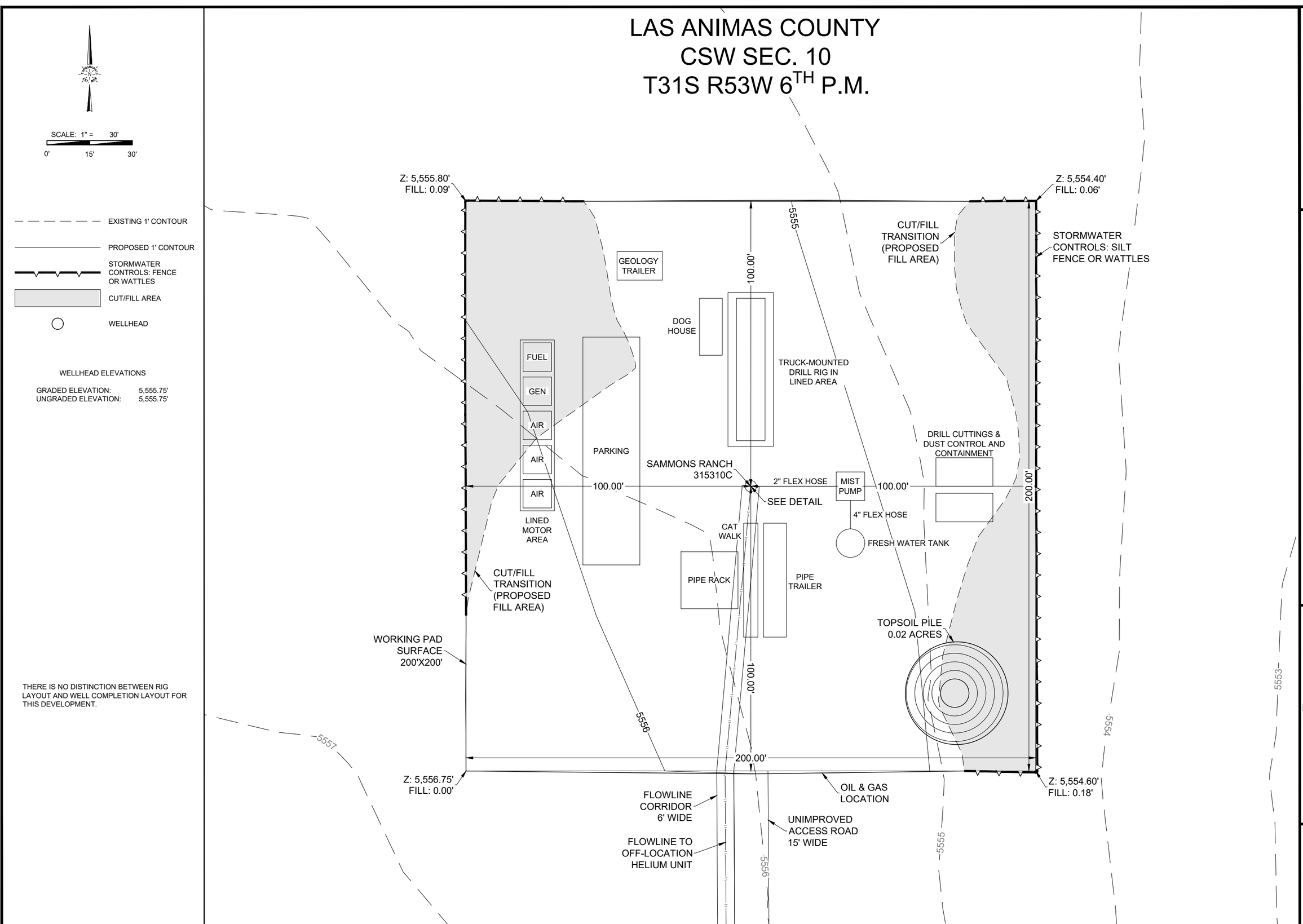

THERE IS NO DISTINCTION BETWEEN RIG LAYOUT AND WELL COMPLETION LAYOUT FOR THIS DEVELOPMENT.

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RIG LAYOUT

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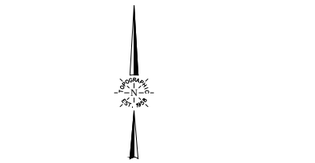


SCALE: 1" = 30'

0' 15' 30'

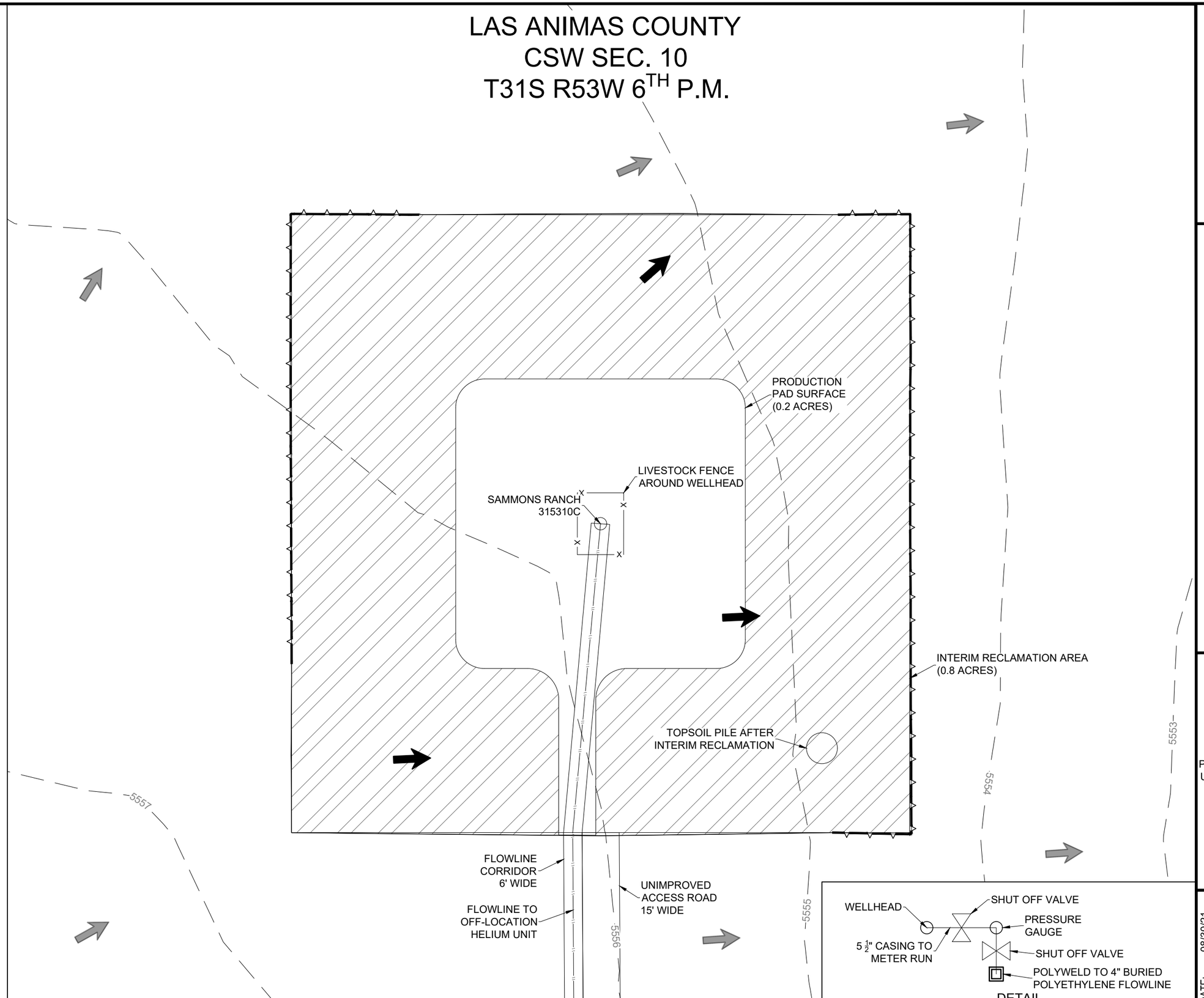
- EXISTING 1' CONTOUR
- STORMWATER CONTROLS: FENCE OR WATTLES
- RECLAMATION AREA
- WELLHEAD
- PROPOSED DRAINAGE
- EXISTING DRAINAGE

WELLHEAD ELEVATIONS

GRADED ELEVATION:	5,555.75'
UNGRADED ELEVATION:	5,555.75'

ACREAGES

PRODUCTION PAD AREA:	0.2 ACRES
INTERIM RECLAMATION AREA:	±0.8 ACRES
AREA BEFORE RECLAMATION:	±1.0 ACRES



DETAIL

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FACILITY LAYOUT

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