



RECLAMATION MONITORING REPORT

**ALOHA MULA #6
LINCOLN COUNTY, COLORADO**

OCTOBER 2018

Prepared for:

**WIEPKING-FULLERTON ENERGY, L.L.C.
8762 East 29th Place
Denver, Colorado 80238**

Prepared by:

**LT ENVIRONMENTAL, INC.
4600 West 60th Avenue
Arvada, Colorado 80003
(303) 433-9788**



LT Environmental, Inc.
Advancing Opportunity



RECLAMATION MONITORING REPORT

ALOHA MULA #6
Project Number: 050117002

Prepared by:

A handwritten signature in blue ink that reads "Hank Raizen".

Hank Raizen
LTE Staff Biologist

October 22, 2018

Date

Reviewed by:

A handwritten signature in blue ink that reads "Chad Powell".

Chad Powell
LTE Senior Air Quality Scientist

October 22, 2018

Date



TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	CONDITIONS OF APPROVAL	2
3.0	RECLAMATION WORK COMPLETED	3
3.1	RECLAMATION METHODS	3
3.1.1	Soil Compact Alleviation	3
3.1.2	Seeding and Fertilizer Amendments	3
3.1.3	Erosion Control, Site Security, and Stormwater Inspections	3
3.1.4	Weed Control	4
4.0	RECLAMATION MONITORING	5
4.1	MONITORING METHODS	5
4.1.1	Qualitative Data	5
4.1.1.1	General Site Conditions	5
4.1.1.2	Photographic Documentation	5
4.1.2	Quantitative Data	5
4.2	MONITORING RESULTS	5
5.0	PLANS FOR CONTINUED OR ADDITIONAL ACTION ITEMS	6
5.1	WEED CONTROL	6
5.2	RESEEDING	6
5.3	RECLAMATION MONITORING AND STORMWATER INSPECTIONS	6
5.4	LAND OWNER ACCEPTANCE	6
5.5	FINAL CLOSURE REQUEST	6

FIGURES

FIGURE 1 SITE LOCATION MAP

APPENDICES

APPENDIX A WORK INVOICES

APPENDIX B STORMWATER MANAGEMENT INSPECTION RECORDS

APPENDIX C RECLAMATION MONITORING REPORTS





1.0 INTRODUCTION

LT Environmental, Inc. (LTE) has been retained by Wiepking-Fullerton Energy, L.L.C. (WFE) to provide this Reclamation Monitoring Report for the Aloha Mula #6 well pad (Site) located in Lincoln County, Colorado. The purpose of this Reclamation Monitoring Report is to achieve compliance with the approved Colorado Oil and Gas Conservation Commission (COGCC) Form 27 (Document Number 2099820, Remediation Number 9514) Conditions of Approval (COA) by providing details regarding the reclamation work completed and conducting reclamation monitoring of the vegetation on the Site.



2.0 CONDITIONS OF APPROVAL

Per COGCC Form 27 (Document Number 2099820), the requirements as stated in the COA to obtain compliance include the following.

- 1) Submit an annual report documenting reclamation work completed and the status of vegetation no later than October 31st of each year to include the following information:
 - a) Total volume of any amendments or fertilizer applied and the application rate per acre;
 - b) Seed mixture applied and application rate;
 - c) Site photographs depicting the work completed including erosion controls and seeding;
 - d) Site photographs depicting the condition of the vegetation during the growing season;
 - e) Copies of the scheduled bi-annual monitoring inspection forms referenced in Section 2.6.5 of the Form 27 Attachment; and
 - f) Future plans for additional amendments and seeding, as needed, based on success of the seeding completed in Spring 2016.
- 2) Comply with COGCC Rule 1002.f. *Stormwater Management* throughout the duration of the project.
 - a) Conduct and document stormwater inspections after any storm event that results in runoff; and
 - b) Verify that stormwater controls are properly maintained or replaced as needed throughout the duration of the project.
- 3) Control noxious weeds throughout the reclamation process. Weed control measures will be conducted in compliance with the Colorado Noxious Weed Act Colorado Revised Statutes (C.R.S.) Section (§) 35-5.5-115.
- 4) If the location is currently used for cattle grazing or will be used during the project, the operator is required to install fencing as needed to protect the reclamation area from damage until vegetation can be established.
- 5) All required work to complete the planned reclamation had to be conducted no later than May 31, 2016.
- 6) The reclamation project will meet closure criteria when all affected areas have a uniform vegetative cover that reflects pre-disturbance area forbs, shrubs, and grasses with total percent plant cover of at least eighty percent (80%) of pre-disturbance levels, excluding noxious weeds.
- 7) The operator will obtain written approval from the land owner accepting final reclamation prior to closure of this project. The written approval will be submitted with the final closure request after closure criteria has been satisfied and all stormwater management controls have been removed.
- 8) COGCC staff will conduct a final inspection to verify that the closure criteria have been satisfied after receiving the closure request.



3.0 RECLAMATION WORK COMPLETED

3.1 RECLAMATION METHODS

Reclamation activities were completed by Halde Sand & Gravel, Inc. on March 8, 2016, per the approved Remediation and Reclamation Workplan submitted with the COGCC Form 27 referenced in Section 1.0 of this report.

3.1.1 Soil Compact Alleviation

Soil compaction was alleviated as required by COGCC Rule 1003.c. via cross-ripping techniques to a depth of 18 inches below ground surface (bgs) using a bulldozer.

3.1.2 Seeding and Fertilizer Amendments

After soil compaction alleviation activities were completed, the top soil was disked using a tractor to prepare the seed bed. The water-based bentonitic drilling fluids and/or associated cuttings were incorporated into native soil during the compaction alleviation and seed bed preparation activities. The Natural Resource Conservation Service (NRCS)-recommended seed mix was applied at the suggested rate of 40 seeds per square foot at a depth of one-quarter to three-quarters of an inch bgs using a tractor equipped with drill seeding equipment. Additionally, an all-terrain vehicle was used to spread potash fertilizer at a rate of 50 pounds per acre over the seeded area as a soil amendment. The Site was reseeded on March 25, 2018 by Halde Sand & Gravel. An invoice for 2018 seeding is included in Appendix A.

3.1.3 Erosion Control, Site Security, and Stormwater Inspections

After the Site was drill seeded in 2016, straw mulch was then spread across the Site at a rate of approximately 2,000 to 4,000 pounds per acre and crimped into the soil to assist in stabilization from potential erosion, and a barbed wire fence was constructed around the area to prevent livestock grazing.

Stormwater inspections were conducted per COGCC Rule 1002.f. to evaluate structural best management practices (BMPs) implemented at the Site and to document repairs made. Over the course of 2018, WFE coordinated with LTE to conduct stormwater inspections at the Site after rain or snow melt events occurred, which had the potential to cause erosion. Erosion was not observed at the Site during any of the post-precipitation event inspections. Since no erosion has been observed at the Site over the course of the past year, the landscape is relatively flat and native vegetation is improving, WFE is requesting that post-precipitation event inspections be removed from the COA moving forward.

Appendix A includes the invoices of the weed control work completed. Completed stormwater inspection forms are attached as Appendix B.



3.1.4 Weed Control

Contractors mowed the Site as a weed control method in July 2018, as recommended by the regional NRCS office. An invoice for the mowing operations is included in Appendix A.



4.0 RECLAMATION MONITORING

Scheduled bi-annual reclamation monitoring was conducted on June 7, 2018, and September 19, 2018. Reclamation monitoring included collecting qualitative and quantitative data for the Site.

4.1 MONITORING METHODS

4.1.1 Qualitative Data

Qualitative data included the visual observations of general site conditions and photographic documentation conducted during reclamation monitoring events.

4.1.1.1 General Site Conditions

Qualitative inspections evaluate the erosion potential, the overall plant community vigor and diversity, and the general conditions of the Site, such as disturbances present or any other notable conditions needing corrections. Plant species on- and off-site were identified.

4.1.1.2 Photographic Documentation

Photographic documentation provides a visual qualitative method for monitoring vegetation changes. Photographs of the groundcover were collected facing the four cardinal directions representing vegetation conditions on and off the Site. The photographs provide information of the Site regarding wildlife habitat, rangeland quality, and plant population conditions. Features like weed invasion, disturbances, plant height, and plant vigor can also be identified in the photographs.

4.1.2 Quantitative Data

Quantitative data were collected using the line-point intercept method at locations that were determined to be representative of the plant communities present at the time of the reclamation inspection. Data were recorded using the line-point intercept method at 1-foot intervals over each 100-foot transect. The transect locations on and off the Site were selected based on the applicable NRCS Ecological Site Description (ESD).

4.2 MONITORING RESULTS

Qualitative and quantitative data were collected on June 7, 2017, and September 19, 2018. The site-specific reclamation inspection forms are presented as Appendix C and include the inspection summaries and photographic logs. Both inspections revealed that the Site has less than 80% vegetative cover with some dense areas of weeds, compared to the reference area. However, desirable vegetation is establishing throughout most of the Site.



5.0 PLANS FOR CONTINUED OR ADDITIONAL ACTION ITEMS

5.1 WEED CONTROL

Weed control will be continued with additional mowing operations prior to seed set in the subsequent growing seasons, as needed. Chemical herbicide controls will be used as needed.

5.2 RESEEDING

Due to failure of native seed germination in certain areas of the reclaimed area, reseeding is recommended, at a minimum, in the bare spots on the Site. WFE will be implementing additional drill seeding of the bare spots and interseeding lightly vegetated areas. Halde Construction will be contracted to conduct the additional seeding and will use a no-till drill seeder to apply the seed mix. Seeding operations will begin in the fall of 2018 and be completed no later than April 1, 2019.

5.3 RECLAMATION MONITORING AND STORMWATER INSPECTIONS

Bi-annual monitoring of the vegetation will occur until the vegetation cover is 80% of the pre-disturbance or reference area and all reclamation objectives have been met. Post-construction stormwater inspections will be conducted pursuant to COGCC Rule 1002.f, and corrective actions related to vegetation as well as stormwater compliance will be implemented, as needed.

5.4 LAND OWNER ACCEPTANCE

When final reclamation of the area has been completed, a letter of acceptance regarding final reclamation will be provided to the land owner prior to closure of the project. The written approval will be submitted with the final closure request.

5.5 FINAL CLOSURE REQUEST

A final closure request will be submitted with the required documentation. COGCC staff will then conduct a final inspection to verify that the closure criteria have been satisfied. At the time of this report, the Site is not ready for final closure.



FIGURES



APPENDIX A: WORK INVOICES

Halde Sand & Gravel Inc.

46321 US Hwy 24
Burlington, CO 80807

Invoice

Invoice Date	Invoice #
4/16/2018	55698

Bill To Wiepking-Fullerton Energy, LLC c/o Linda Boone 8762 East 29th Place Denver, CO 80238

Lease Name #6 Aloha Mula

						Terms
						Net 30
Qty	Item	Description	Rate	Serviced	Ticket #	Amount
1	Miscellaneous	Grass Seed	350.00	3/25/2018		350.00
1	Tractor	Grass-drilled location 3 1/2 acres-16.28 lbs seed per acre	300.00			300.00

Thank you for your business.

Subtotal	\$650.00
Sales Tax (2.9%)	\$10.15
Total	\$660.15

Phone #	Fax #	E-mail
719-346-0352	719-346-8945	haldesand@centurytel.net

Halde Sand & Gravel, Inc.
46321 Hwy 24 • Burlington, CO 80807

COMPANY: _____ DATE: 3-25-18 JOB NO. _____
Wipek, v. Followed LEASE NAME: Alpha Mtn 2
JOB LOCATION: _____

QUANTITY	DESCRIPTION
350.	Grass Seed.
300.	Grass Seed. 11 Location, 3 1/2 AC. 16.88 16 per AC.

Original

Thank You

**ALOHA MULA 6 - 5 ACRE MIX
LOT # : G-180172**

Mixture/Variety :	Purity %	Germ%	Origin:
SAND BLUESTEM. GOLDSTRIKE	39.06%	97.00%	KS
SIDEOATS GRAMA. EL RENO	24.67%	97.00%	KS
BLUE GRAMA. HACHITA	18.53%	86.00%	CO
SWITCHGRASS. BLACKWELL	4.04%	95.00%	KS

Crop: 0.07% Inert: 13.61% Weeds: 0.02% Net Wt. 28.5#

Noxious Weeds: NONE FOUND Tested: 10/17

**CUSTOM MIX FOR HALDE SAND AND GRAVEL
THIS 28.5# BAG COVERS APPROX. 2.5 ACRES**

Buffalo Brand Seed Greeley, CO 80631 (970) 356-4710

**ALOHA MULA 6 - 5 ACRE MIX
LOT # : G-180172**

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**CUSTOM MIX FOR HALDE SAND AND GRAVEL
THIS 28.5# BAG COVERS APPROX. 2.5 ACRES**

Buffalo Brand Seed Greeley, CO 80631 (970) 356-4710

Cole James

27531 County Road T
Karval, CO 80823
Phone 719-892-0378

1058

DATE: August 18, 2018

Bill To:
Halde Sand and Gravel

HALDE PAID

DATE	DESCRIPTION	COST/UNIT	UNITS	AMOUNT
2018 July	Mowing for Wiepking-Fullerton			
	Gaede wells and the Fisher	\$ 85.00	\$ 8.25	\$ 701.25
	The rest of the wells	\$ 85.00	\$ 59.25	\$ 5,036.25
TOTAL				\$ 5,737.50

Please make all checks payable to **Cole James**.

THANK YOU FOR YOUR BUSINESS!

Wiepking-Fullerton mowing

Location	Hours
✓ Gaede 12, 16, 43 and Tank Battery	6.25
✓ Fisher	2
Craig	1.5
Nemesis	2
War Eagle	1
Albatross	1
Raptor 3	0.75
Raptor 4	0.5
Raptor 2	0.5
Napoli 4	0.5
Good Deal	1
Napoli 3	0.75
Napoli 2	0.75
Napoli Roads	0.75
Roads BW CHARGE #2	0.5
State 14	1
Big Wampum 10	1.25
BW 3	0.75
Aloha 1	0.5
Aloha 4	0.75
For 26-24	0.75
MS 3 + Tank Battery	1
MS 4	0.5
MS 2	0.5
MS 8	1
MS 10	1
MS 16	1
MS 12 X 12S	1
MS 14	1
Aloha 16	1
For Ranch 21-30-5 Jetted + Pad	1
Aloha 3	0.75
Mohalo 7	0.75
Mohalo 8	0.75
Mohalo 6	0.75
Mohalo 11	0.75
Mohalo 3	0.75
Mohalo 2	0.75
Mohalo 1	0.75
Aloha 15	0.5
Kerry 1	1
Aloha 10	1
BS 2	1
Kerry 5	0.75
BS 3	1
BS 4	0.75
BS 1	0.75

63.75
42.50

Wiepking-Fullerton mowing

Location	Hours
Napoli 1	0.75
Mahalo 2	0.75
Mahalo 5	0.75
Mahalo 7	0.75
Mahalo 8	1
Kauai 2	0.75
Kauai 4	0.75
State Monk	1
Foristall 36-11-56-02	1
Raptor 6	0.75
Raptor 7	0.75
Raptor 2	0.75
Napoli 8	0.75
Napoli 9	1
Big Wampum 3	1
MS 6	1
Dana 1	1
Conquest 14	2
Surf 3	1.25
Piper Cub	1.25
punkin states	2
	67.5



Stormwater Management Plan Compliance Inspection Form

SiteID/Name: COG-06389 / Aloha Mula 6 COGCC

Inspection Date: 5/16/2018

Location: Sec 19 T10S R55W

Inspector: Tim Herian

Signature: 

Inspection Type: COGCC COA Storm Event

Land Use: Pasture/Grassland/Range

InspectorTitle: Field Inspector

SiteType: Jetted Location

Phase: Interim

Receiving Body of water/Distance/Direction: Big Sandy Creek 1.5 miles NE

Prior Veg Cover (%): 71% Current Weather: 50's sunny

Stormwater Runoff Risk: Low

In the past 24 hours, has there been overland runoff due to a storm event that caused sediment movement? Yes

Best Management Practice (BMP) Checklist

BMP TYPE					
BMP	In Use Y/N	Req'd Y/N	Required Action or Maintenance	Location	Done
Seeding	Yes	Yes			

GENERAL CONDITIONS		
General	Y/N/NA	Comments
Have repairs/additional BMP issues been addressed since last inspection?	NA	
Are there signs of sediment leaving the site?	No	
Are there signs of offsite tracking at access point?	No	
Are surface waters being impacted by site runoff?	No	
Have simple repairs been made today at this site by the Inspector?	NA	
Pad Area Observations	Y/N/NA	Comments
Are tanks and/or drums present?	No	
Are tanks and/or drums placed in secondary containment areas?	NA	
Is pad area stabilized road base material?	No	
Is access road graveled (offsite soil tracking control)?	No	
Vegetation Checklist (Erosion Reduction Control)	Y/N/NA	Comments
Has the site achieved 70% or prior vegetation coverage for stabilization?	Yes	
Is the pad area reseeded?	Yes	
Are there signs of vegetation regrowth?	Yes	
Is reseeding needed?	No	

Comments: Approximately 1/2" of rain on 5/15/18. No erosion observed.

Compliance Status:

If checked Yes, this site is in compliance with the Permit and had no incidents requiring corrective action at the time of the inspection.

Yes No

Certification

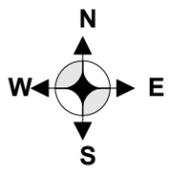
All required corrective actions have been completed, and this site is in compliance with the permit to the best of the signer's knowledge and belief.

Certifier
Signature: 

Date: 5/16/2018

Certified by: Tim Herian

Certifier Title: Field Inspector



Lease/Name: Aloha Mula 6

API: COG-06389

SEC: 19 TWN: 10S RNG: 55W

Land Use: Rangeland

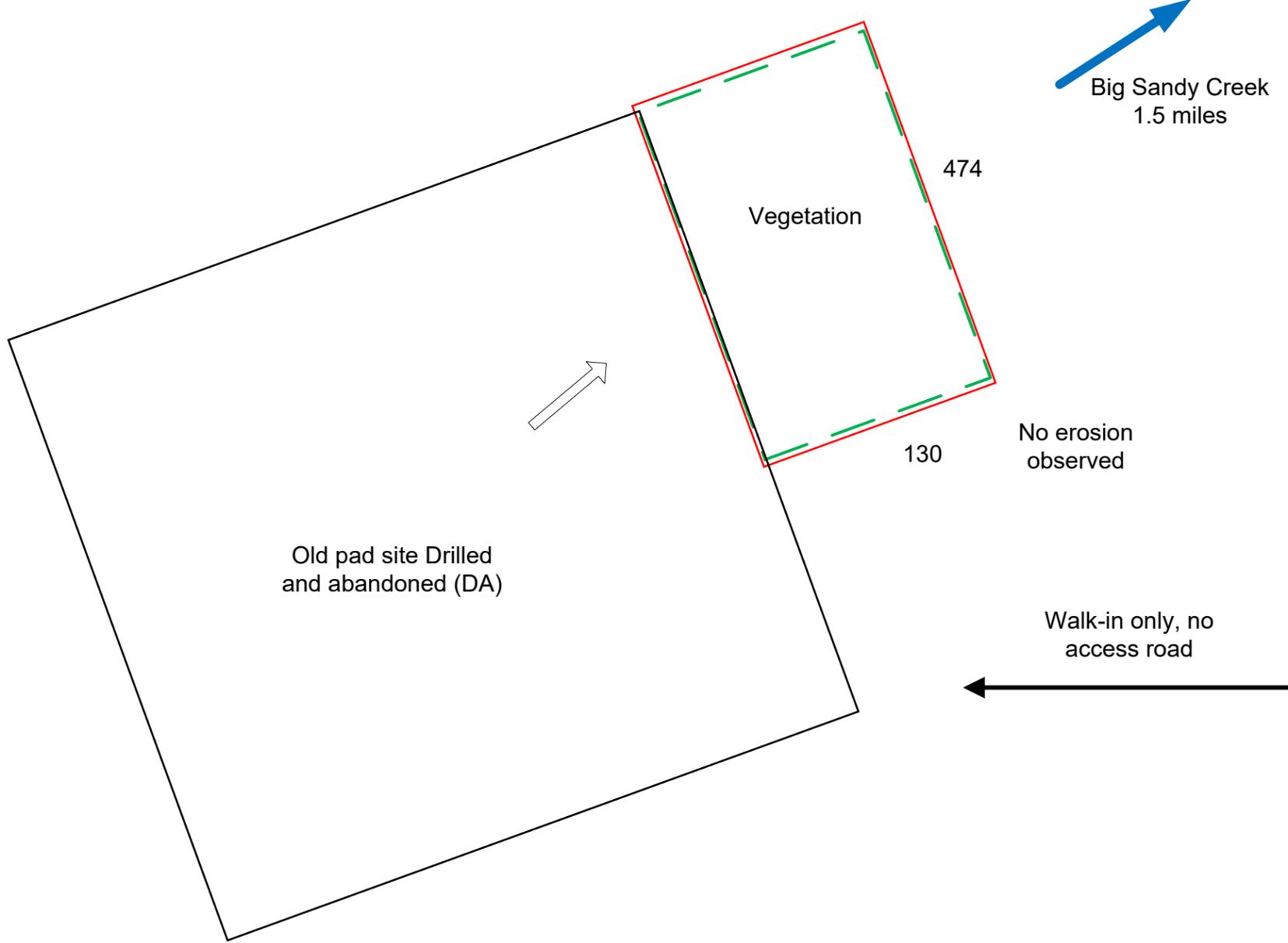
Lat/Long: 39.16595/-103.59198

Runoff Risk: Low

County: Lincoln

Permittee:
Wiepking-Fullerton
Energy, LLC

Inspection Date:
5/16/18



Satellite Map: Courtesy of Google Earth



LEGEND

Construction Boundary	Pad Surface Boundary	Ditch
Disturbance Boundary	Wellhead	Ditch & Berm
Cut/Fill Line	Rig	Erosion Control Blanket
Chemical Storage	Stock Pile	Filter Berm
Port-o-let	Rolloff Frac Tank	Hydro-mulch
Roadbased Surface	Frac Trailer	Mulching
Surface Water	Equipment Storage	Ripping
Paved Road	Trailer	Riprap
Unpaved Road	Surface Flow	Sediment Trap
Meter House	Vehicle Tracking Control	Seeding
Flare	Cattleguard	Silt Fence
AST	Dumpster	Sound Barrier
Water Sump	Berm	Straw Bale
Separator	Check Dam	Soil Roughening
	Culvert	Wattle

Topographic Map: Courtesy of Google Earth



- 1) Construction site boundaries include all ground surface disturbances and approximately 10-15 feet beyond perimeter BMPs. Boundaries are subject to change at any time for pad expansion, maintenance and addition of BMP structures, or new access roads.
- 2) Surrounding conditions include rangeland vegetation with pre-disturbance vegetation density approximately 70%
- 3) Receiving Body of Water:
Big Sandy Creek approximately 1.5 miles Northeast
- 4) Pad will be graded and seeded, if necessary, to as close to pre-existing conditions as practicable once construction is completed.
- 5) Pad dimensions are approximate.



Map Not to Scale

Stormwater Management Plan Compliance Inspection Form

SiteID/Name: COG-06389 / Aloha Mula 6 COGCC

Inspection Date: 6/25/2018

Location: Sec 19 T10S R55W

Inspector: Tim Herian

Signature: 

Inspection Type: COGCC COA Storm Event

Land Use: Pasture/Grassland/Range

InspectorTitle: Field Inspector

SiteType: Jetted Location

Phase: Interim

Receiving Body of water/Distance/Direction: Big Sandy Creek 1.5 miles NE

Prior Veg Cover (%): 71% Current Weather: Sunny and 80

Stormwater Runoff Risk: Low

In the past 24 hours, has there been overland runoff due to a storm event that caused sediment movement? Yes

Best Management Practice (BMP) Checklist

BMP TYPE					
BMP	In Use Y/N	Req'd Y/N	Required Action or Maintenance	Location	Done
Seeding	Yes	Yes			

GENERAL CONDITIONS		
General	Y/N/NA	Comments
Have repairs/additional BMP issues been addressed since last inspection?	NA	
Are there signs of sediment leaving the site?	No	
Are there signs of offsite tracking at access point?	No	
Are surface waters being impacted by site runoff?	No	
Have simple repairs been made today at this site by the Inspector?	NA	
Pad Area Observations	Y/N/NA	Comments
Are tanks and/or drums present?	No	
Are tanks and/or drums placed in secondary containment areas?	NA	
Is pad area stabilized road base material?	No	
Is access road graveled (offsite soil tracking control)?	No	
Vegetation Checklist (Erosion Reduction Control)	Y/N/NA	Comments
Has the site achieved 70% or prior vegetation coverage for stabilization?	Yes	
Is the pad area reseeded?	Yes	
Are there signs of vegetation regrowth?	Yes	
Is reseeding needed?	No	

Comments: Hail and 2" of rain on 6/24/18. No erosion observed.

Compliance Status:

If checked Yes, this site is in compliance with the Permit and had no incidents requiring corrective action at the time of the inspection.

Yes No

Certification

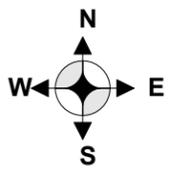
All required corrective actions have been completed, and this site is in compliance with the permit to the best of the signer's knowledge and belief.

Certifier
Signature: 

Date: 6/25/2018

Certified by: Tim Herian

Certifier Title: Field Inspector



Lease/Name: Aloha Mula 6

API: COG-06389

SEC: 19 TWN: 10S RNG: 55W

Land Use: Rangeland

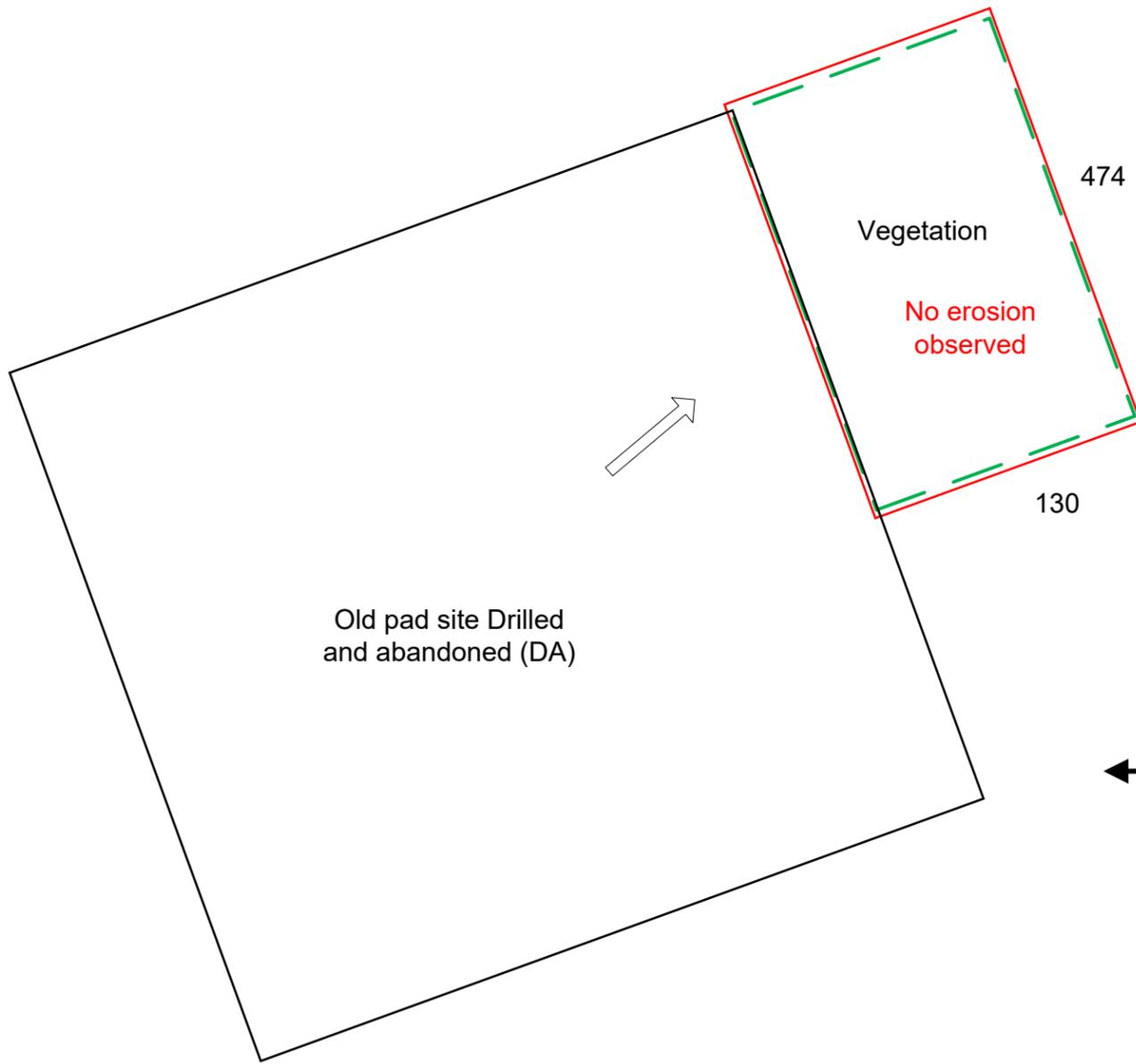
Lat/Long: 39.16595/-103.59198

Runoff Risk: Low

County: Lincoln

Permittee:
Wiepking-Fullerton
Energy, LLC

Inspection Date:
6/25/18



Satellite Map: Courtesy of Google Earth



LEGEND

Construction Boundary	Disturbance Boundary	Cut/Fill Line	Chemical Storage	Port-o-let	Roadbased Surface	Surface Water	Paved Road	Unpaved Road	Meter House	Flare	AST	Water Sump	Separator	Wellhead	Rig	Stock Pile	Rolloff Frac Tank	Frac Trailer	Equipment Storage	Trailer	Surface Flow	Vehicle Tracking Control	Cattleguard	Dumpster	Berm	Check Dam	Culvert	Ditch	Ditch & Berm	Erosion Control Blanket	Filter Berm	Hydro-mulch	Mulching	Ripping	Riprap	Sediment Trap	Seeding	Silt Fence	Sound Barrier	Straw Bale	Soil Roughening	Wattle
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Topographic Map: Courtesy of Google Earth



- 1) Construction site boundaries include all ground surface disturbances and approximately 10-15 feet beyond perimeter BMPs. Boundaries are subject to change at any time for pad expansion, maintenance and addition of BMP structures, or new access roads.
- 2) Surrounding conditions include rangeland vegetation with pre-disturbance vegetation density approximately 70%
- 3) Receiving Body of Water:
Big Sandy Creek approximately 1.5 miles Northeast
- 4) Pad will be graded and seeded, if necessary, to as close to pre-existing conditions as practicable once construction is completed.
- 5) Pad dimensions are approximate.



Map Not to Scale

Stormwater Management Plan Compliance Inspection Form

SiteID/Name: COG-06389 / Aloha Mula 6 COGCC

Inspection Date: 7/24/2018

Location: Sec 19 T10S R55W

Inspector: Tim Herian

Signature: 

Inspection Type: COGCC COA Storm Event

Land Use: Pasture/Grassland/Range

InspectorTitle: Field Inspector

SiteType: Jetted Location

Phase: Interim

Receiving Body of water/Distance/Direction: Big Sandy Creek 1.5 miles NE

Prior Veg Cover (%): 71% Current Weather: 86 and sunny

Stormwater Runoff Risk: Low

In the past 24 hours, has there been overland runoff due to a storm event that caused sediment movement? No

Best Management Practice (BMP) Checklist

BMP TYPE					
BMP	In Use Y/N	Req'd Y/N	Required Action or Maintenance	Location	Done
Seeding	Yes	Yes			

GENERAL CONDITIONS		
General	Y/N/NA	Comments
Have repairs/additional BMP issues been addressed since last inspection?	NA	
Are there signs of sediment leaving the site?	No	
Are there signs of offsite tracking at access point?	No	
Are surface waters being impacted by site runoff?	No	
Have simple repairs been made today at this site by the Inspector?	NA	
Pad Area Observations	Y/N/NA	Comments
Are tanks and/or drums present?	No	
Are tanks and/or drums placed in secondary containment areas?	NA	
Is pad area stabilized road base material?	No	
Is access road graveled (offsite soil tracking control)?	No	
Vegetation Checklist (Erosion Reduction Control)	Y/N/NA	Comments
Has the site achieved 70% or prior vegetation coverage for stabilization?	Yes	
Is the pad area reseeded?	Yes	
Are there signs of vegetation regrowth?	Yes	
Is reseeding needed?	No	

Comments: 0.21 inches of rain on 7/21/2018. No erosion observed. Vegetation improving due to rain.

Compliance Status:

If checked Yes, this site is in compliance with the Permit and had no incidents requiring corrective action at the time of the inspection.

Yes No

Certification

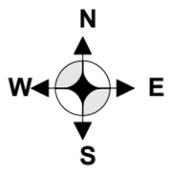
All required corrective actions have been completed, and this site is in compliance with the permit to the best of the signer's knowledge and belief.

Certifier
Signature: 

Date: 7/24/2018

Certified by: Tim Herian

Certifier Title: Field Inspector



Lease/Name: Aloha Mula 6

API: COG-06389

SEC: 19 TWN: 10S RNG: 55W

Land Use: Rangeland

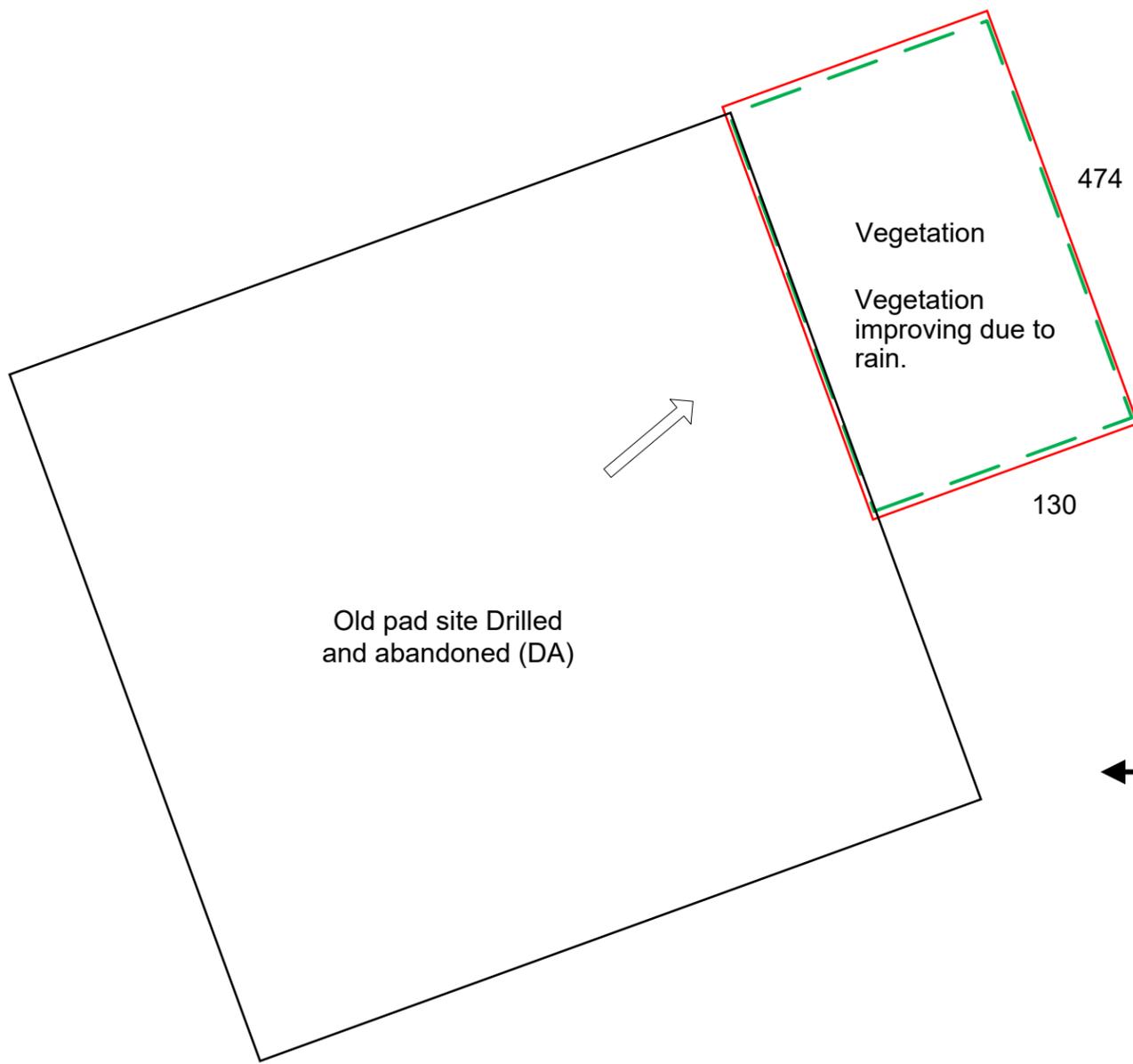
Lat/Long: 39.16595/-103.59198

Runoff Risk: Low

County: Lincoln

Permittee:
Wiepking-Fullerton
Energy, LLC

Inspection Date:
7/24/18



Big Sandy Creek
1.5 miles

Walk-in only, no
access road

Satellite Map: Courtesy of Google Earth



LEGEND

Construction Boundary	Disturbance Boundary	Cut/Fill Line	Chemical Storage	Port-o-let	Roadbased Surface	Surface Water	Paved Road	Unpaved Road	Meter House	Flare	AST	Water Sump	Separator	Wellhead	Rig	Stock Pile	Rolloff Frac Tank	Frac Trailer	Equipment Storage	Trailer	Surface Flow	Vehicle Tracking Control	Cattleguard	Dumpster	Berm	Check Dam	Culvert	Ditch	Ditch & Berm	Erosion Control Blanket	Filter Berm	Hydro-mulch	Mulching	Ripping	Riprap	Sediment Trap	Seeding	Silt Fence	Sound Barrier	Straw Bale	Soil Roughening	Wattle
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Topographic Map: Courtesy of Google Earth



- 1) Construction site boundaries include all ground surface disturbances and approximately 10-15 feet beyond perimeter BMPs. Boundaries are subject to change at any time for pad expansion, maintenance and addition of BMP structures, or new access roads.
- 2) Surrounding conditions include rangeland vegetation with pre-disturbance vegetation density approximately 70%
- 3) Receiving Body of Water:
Big Sandy Creek approximately 1.5 miles Northeast
- 4) Pad will be graded and seeded, if necessary, to as close to pre-existing conditions as practicable once construction is completed.
- 5) Pad dimensions are approximate.



Map Not to Scale

Stormwater Management Plan Compliance Inspection Form

SiteID/Name: COG-06389 / Aloha Mula 6 COGCC
 Location: Sec 19 T10S R55W

Inspection Date: 7/27/2018
 Inspector: Tim Herian
 Signature: 
 InspectorTitle: Field Inspector

Inspection Type: COGCC COA Storm Event
 Land Use: Pasture/Grassland/Range
 SiteType: Jetted Location

Phase: Interim

Receiving Body of water/Distance/Direction: Big Sandy Creek 1.5 miles NE

Prior Veg Cover (%): 71% Current Weather: 82 and sunny

Stormwater Runoff Risk: Low

In the past 24 hours, has there been overland runoff due to a storm event that caused sediment movement? No

Best Management Practice (BMP) Checklist

BMP TYPE					
BMP	In Use Y/N	Req'd Y/N	Required Action or Maintenance	Location	Done
Seeding	Yes	Yes			

GENERAL CONDITIONS		
General	Y/N/NA	Comments
Have repairs/additional BMP issues been addressed since last inspection?	NA	
Are there signs of sediment leaving the site?	No	
Are there signs of offsite tracking at access point?	No	
Are surface waters being impacted by site runoff?	No	
Have simple repairs been made today at this site by the Inspector?	NA	
Pad Area Observations	Y/N/NA	Comments
Are tanks and/or drums present?	No	
Are tanks and/or drums placed in secondary containment areas?	NA	
Is pad area stabilized road base material?	No	
Is access road graveled (offsite soil tracking control)?	No	
Vegetation Checklist (Erosion Reduction Control)	Y/N/NA	Comments
Has the site achieved 70% or prior vegetation coverage for stabilization?	Yes	
Is the pad area reseeded?	Yes	
Are there signs of vegetation regrowth?	Yes	
Is reseeding needed?	No	

Comments: 1.38" of rain on 7/26/2018 and 0.43" rain day of. No erosion observed.

Compliance Status:

If checked Yes, this site is in compliance with the Permit and had no incidents requiring corrective action at the time of the inspection.

Yes No

Certification

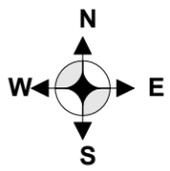
All required corrective actions have been completed, and this site is in compliance with the permit to the best of the signer's knowledge and belief.

Certifier
 Signature: 

Date: 7/27/2018

Certified by: Tim Herian

Certifier Title: Field Inspector



Lease/Name: Aloha Mula 6

API: COG-06389

SEC: 19 TWN: 10S RNG: 55W

Land Use: Rangeland

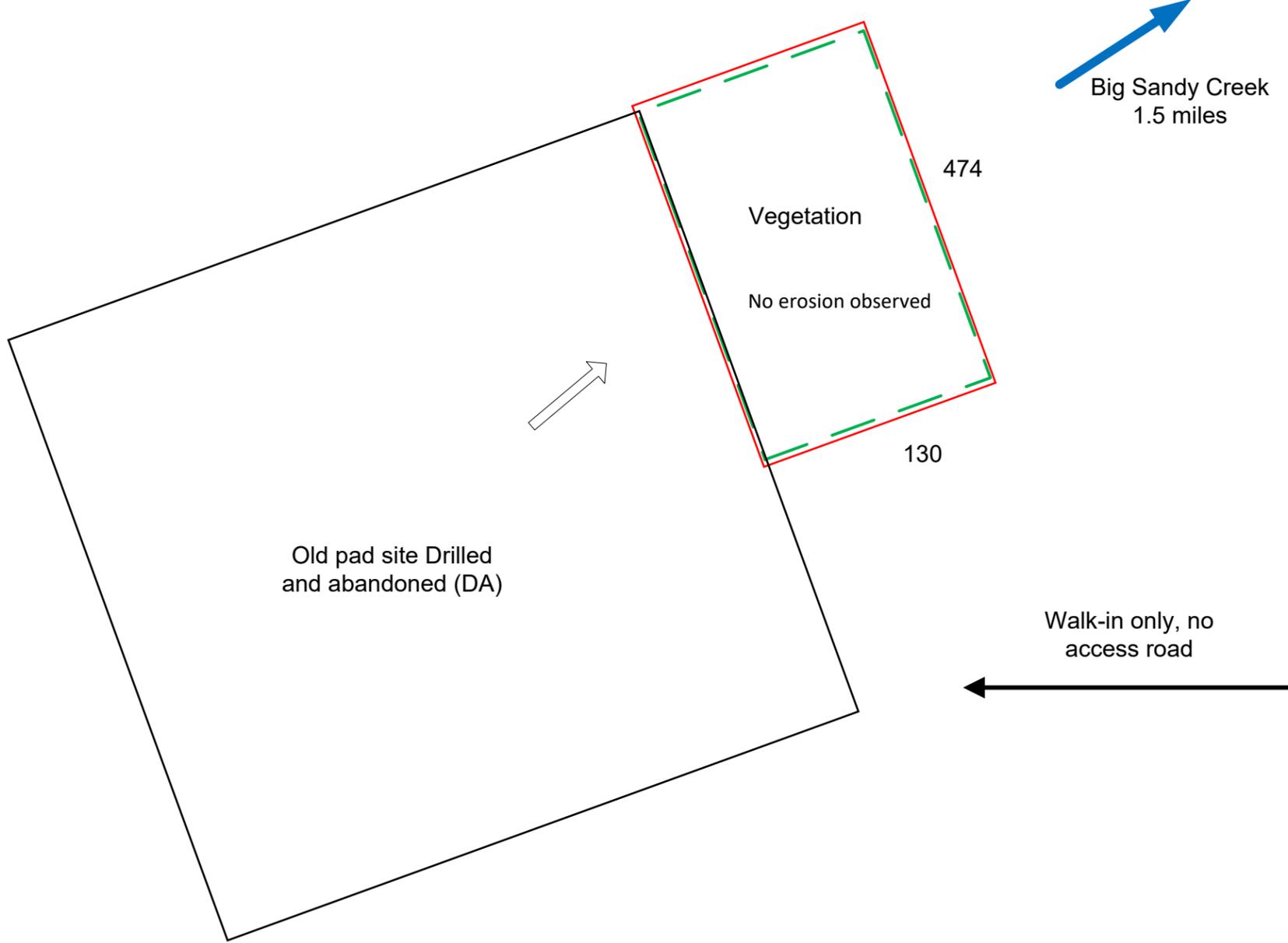
Lat/Long: 39.16595/-103.59198

Runoff Risk: Low

County: Lincoln

Permittee:
Wiepking-Fullerton
Energy, LLC

Inspection Date:
7/27/18



Satellite Map: Courtesy of Google Earth



LEGEND

Construction Boundary	Disturbance Boundary	Cut/Fill Line	Chemical Storage	Port-o-let	Roadbased Surface	Surface Water	Paved Road	Unpaved Road	Meter House	Flare	AST	Water Sump	Separator	Wellhead	Rig	Stock Pile	Rolloff Frac Tank	Frac Trailer	Equipment Storage	Trailer	Surface Flow	Vehicle Tracking Control	Cattleguard	Dumpster	Berm	Check Dam	Culvert	Ditch	Ditch & Berm	Erosion Control Blanket	Filter Berm	Hydro-mulch	Mulching	Ripping	Riprap	Sediment Trap	Seeding	Silt Fence	Sound Barrier	Straw Bale	Soil Roughening	Wattle
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Topographic Map: Courtesy of Google Earth



- 1) Construction site boundaries include all ground surface disturbances and approximately 10-15 feet beyond perimeter BMPs. Boundaries are subject to change at any time for pad expansion, maintenance and addition of BMP structures, or new access roads.
- 2) Surrounding conditions include rangeland vegetation with pre-disturbance vegetation density approximately 70%
- 3) Receiving Body of Water:
Big Sandy Creek approximately 1.5 miles Northeast
- 4) Pad will be graded and seeded, if necessary, to as close to pre-existing conditions as practicable once construction is completed.
- 5) Pad dimensions are approximate.



Map Not to Scale





Final Reclamation Inspection Form

Site: ALOHA MULA 6 JETTED
 Date: 6/7/2018 Inspector: Hank Raizen
 Conditions: 90 sunny

Land Use:: Pasture Access Road in Use: No
 If Crop: _____ If yes, in use by: _____
 If other land use: _____ Located on active pad? No
 Located in interim rec of active pad? No

TB inspected: No TB status: Location Unknown
 TB name and/or #: _____

	Present (Y/N)	Notes
Debris or Trash on Site	No	
Equipment on Site (culverts, pipes, etc.)	No	
Livestock Grazing/Disturbances	No	
Vehicle Disturbances	No	
Wildlife Disturbances	No	
Seed Germination	Yes	
Plants Vigorous	No	Drought stress.
Uniform growth (height and density)	No	SE corner has sparse grass cover.
Undesirable Species (non-noxious weeds)	Yes	Russian thistle dominates in SE corner.
Noxious Weeds	No	
Stormwater Issues (erosion)	No	
Subsidence (depressions, sinking)	No	
Site Re-contoured Properly	Yes	
Road Re-contoured Properly	Yes	
Road base/gravel on site (road or pad)	No	
Compaction (On-Site)	NA	2 in @ 300 psi
Compaction (Off-Site)	NA	2 in @ 300 psi
Reclamation area fenced	Yes	

Plants Observed	On Site	Off Site	Desirable
Russian thistle	Yes	No	No
Needle and thread grass	Yes	Yes	Yes
Sand dropseed	Yes	Yes	Yes
Yucca	Yes	Yes	Yes
Western wheatgrass	Yes	Yes	Yes
Cryptantha	Yes	No	Yes
Prickly poppy	Yes	Yes	Yes
Switchgrass	Yes	Yes	Yes

Recommendations:	
Seeding	Yes
Weed Control	Yes
Erosion Control	No
Compaction Alleviation	No
Other: Mow Russian thistle in early July or 2-3 weeks after significant rain. SE corner of fenced area is dominated by Russian thistle and should be reseeded.	

Other Comments/Observations: Grass is establishing well in most of fenced area, but Russian thistle dominates in SE corner with little grass growing.
% non-weed canopy cover onsite/offsite: 31.4%

Recommended for Final Form 4? No



PHOTOGRAPHIC LOG



Photograph 1: North facing photograph.



Photograph 2: East facing photograph.



Photograph 3: South facing photograph.



Photograph 4: West facing photograph.

PHOTOGRAPHIC LOG



Photograph 5: Overview photograph.

Line-Point Intercept Indicator Calculations

Site **Aloha Mula 6 jetted**

Observer **H. Raizen**

Plot **ONSITE**

Line Length **100** m or ft? **ft**

Direction **W**

Date **06/07/18**
mm/dd/yyyy

Intercept (Point) Spacing Interval **12**

Intercept units **in**
cm or in?

Pt.	Top Canopy
1	S
2	S
3	S
4	S
5	S
6	PASM
7	L
8	BASC5
9	SATR12
10	BASC5
11	PASM
12	PASM
13	SATR12
14	S
15	SATR12
16	SATR12
17	SATR12
18	S
19	S
20	S
21	S
22	S
23	S
24	S
25	SATR12
26	SATR12
27	SATR12
28	S
29	S
30	S
31	SATR12
32	S
33	SATR12
34	S
35	SATR12
36	SATR12
37	L
38	L
39	NAVI4
40	SATR12
41	S
42	S
43	SATR12
44	SATR12
45	SATR12
46	SATR12
47	PASM
48	SATR12
49	SATR12
50	PAVI2

Pt.	Top Canopy
51	PAVI2
52	L
53	SATR12
54	S
55	S
56	S
57	SATR12
58	S
59	SATR12
60	S
61	SATR12
62	SATR12
63	S
64	SATR12
65	SATR12
66	S
67	SATR12
68	SATR12
69	S
70	SATR12
71	S
72	SATR12
73	S
74	S
75	S
76	S
77	SATR12
78	S
79	HECO26
80	SATR12
81	SATR12
82	SATR12
83	S
84	SATR12
85	SATR12
86	SATR12
87	S
88	SATR12
89	SATR12
90	S
91	BODA2
92	BODA2
93	SATR12
94	L
95	HECO26
96	L
97	L
98	L
99	L
100	L

% canopy cover = **53**

% non-weed canopy cover = **11**

% bare ground = **37**

% litter = **10**

Notes: **Compare to Aloha Mula 6 offsite transect**

% non-weed canopy cover onsite/offsite = **31.42857**

Unknown Species Codes:

- AF# = annual forb
- PF# = perennial forb
- AG# = annual graminoid
- PGB# = perennial graminoid bunch
- PGR# = perennial graminoid rhizomatous
- SH# = shrub
- TR# = tree

Line-Point Intercept Indicator Calculations

Site **Aloha Mula 6**

Observer **H. Raizen**

Plot **OFFSITE**

Line Length **100** m or ft? **ft**

Direction **N**

Date **06/07/18**
mm/dd/yyyy

Intercept (Point) Spacing Interval **12**

Intercept units **in**
cm or in?

Pt.	Top Canopy
1	SPCR
2	S
3	L
4	VUOC
5	L
6	VUOC
7	SPCR
8	BOGR2
9	L
10	L
11	SPCR
12	L
13	L
14	SPCR
15	SPCR
16	VUOC
17	L
18	L
19	BOGR2
20	L
21	L
22	L
23	L
24	SPCR
25	L
26	BOGR2
27	BOGR2
28	L
29	L
30	VUOC
31	SPCR
32	SPCR
33	S
34	S
35	SPCR
36	L
37	L
38	L
39	BOGR2
40	S
41	BOGR2
42	S
43	S
44	SATR12
45	L
46	L
47	S
48	BOGR2
49	L
50	S

Pt.	Top Canopy
51	L
52	SPCR
53	SPCR
54	L
55	SATR12
56	L
57	S
58	S
59	BOGR2
60	L
61	S
62	L
63	VUOC
64	VUOC
65	L
66	L
67	L
68	BOGR2
69	L
70	BOGR2
71	L
72	L
73	L
74	S
75	L
76	BOGR2
77	L
78	BOGR2
79	CRYPT
80	L
81	L
82	L
83	L
84	L
85	VUOC
86	L
87	L
88	L
89	S
90	BOGR2
91	VUOC
92	L
93	L
94	L
95	L
96	L
97	L
98	SPCR
99	L
100	VUOC

% canopy cover = **37**

% non-weed canopy cover = **35**

% bare ground = **13**

% litter = **50**

Notes:



Unknown Species Codes:

- AF# = annual forb
- PF# = perennial forb
- AG# = annual graminoid
- PGB# = perennial graminoid bunch
- PGR# = perennial graminoid rhizomatous
- SH# = shrub
- TR# = tree



Final Reclamation Inspection Form

Site: ALOHA MULA 6 JETTED
 Date: 9/19/2018 Inspector: Hank Raizen
 Conditions: 90 sunny

Land Use:: Pasture Access Road in Use: No
 If Crop: _____ If yes, in use by: _____
 If other land use: _____ Located on active pad? No
 Located in interim rec of active pad? No

TB inspected: No TB status: Location Unknown
 TB name and/or #: _____

	Present (Y/N)	Notes
Debris or Trash on Site	No	
Equipment on Site (culverts, pipes, etc.)	No	
Livestock Grazing/Disturbances	No	
Vehicle Disturbances	No	
Wildlife Disturbances	No	
Seed Germination	Yes	
Plants Vigorous	Yes	
Uniform growth (height and density)	No	
Undesirable Species (non-noxious weeds)	Yes	
Noxious Weeds	No	
Stormwater Issues (erosion)	No	
Subsidence (depressions, sinking)	No	
Site Re-contoured Properly	Yes	
Road Re-contoured Properly	Yes	
Road base/gravel on site (road or pad)	No	
Compaction (On-Site)	NA	2 in @ 300 psi
Compaction (Off-Site)	NA	2 in @ 300 psi
Reclamation area fenced	Yes	

Plants Observed	On Site	Off Site	Desirable
Russian thistle	Yes	No	No
Blue grama	Yes	Yes	Yes
Sand dropseed	Yes	Yes	Yes
Yucca	Yes	Yes	Yes
Western wheatgrass	Yes	Yes	Yes
Cryptantha	Yes	No	Yes
Prickly poppy	Yes	Yes	Yes
Switchgrass	Yes	Yes	Yes

Recommendations:	
Seeding	Yes
Weed Control	Yes
Erosion Control	No
Compaction Alleviation	No
Other: SE corner of fenced area is dominated by Russian thistle and should be reseeded.	

Other Comments/Observations: Grass is establishing well in most of fenced area, but Russian thistle dominates in SE corner with little grass growing.
% non-weed canopy cover onsite/offsite: 13.0%

Recommended for Final Form 4? No



PHOTOGRAPHIC LOG



Photograph 1: North facing photograph.



Photograph 2: East facing photograph.



Photograph 3: South facing photograph.



Photograph 4: West facing photograph.

PHOTOGRAPHIC LOG



Photograph 5: Overview photograph.



Line-Point Intercept Indicator Calculations

Site **Aloha Mula 6 jetted**

Observer **H. Raizen**

Plot **ONSITE**

Line Length **100** m or ft? **ft**

Direction **W**

Date **09/19/18**
mm/dd/yyyy

Intercept (Point) Spacing Interval **12**

Intercept units **in**
cm or in?

Pt.	Top Canopy
1	L
2	SATR12
3	SATR12
4	SATR12
5	S
6	S
7	S
8	S
9	S
10	S
11	L
12	S
13	L
14	SATR12
15	SATR12
16	SATR12
17	SATR12
18	SATR12
19	S
20	L
21	L
22	S
23	S
24	L
25	L
26	L
27	L
28	SATR12
29	SATR12
30	SATR12
31	SATR12
32	SATR12
33	SATR12
34	SATR12
35	SATR12
36	L
37	L
38	SATR12
39	SATR12
40	L
41	BOGR2
42	BOGR2
43	SATR12
44	SATR12
45	L
46	SATR12
47	SATR12
48	L
49	S
50	SATR12

Pt.	Top Canopy
51	SPCR
52	L
53	SATR12
54	SATR12
55	SATR12
56	SATR12
57	S
58	L
59	SATR12
60	SATR12
61	S
62	SATR12
63	L
64	L
65	SATR12
66	SATR12
67	L
68	L
69	SATR12
70	L
71	SATR12
72	SATR12
73	S
74	S
75	SATR12
76	SATR12
77	S
78	L
79	S
80	SATR12
81	SATR12
82	L
83	SPCR
84	SPCR
85	S
86	L
87	L
88	SATR12
89	BOGR2
90	L
91	L
92	L
93	L
94	PAVI2
95	L
96	L
97	L
98	L
99	L
100	L

% canopy cover = **47**

% non-weed canopy cover = **7**

% bare ground = **18**

% litter = **35**

Notes:

% non-weed canopy cover onsite/offsite = **12.96296**

Cover Codes:
S=Soil
L=Litter
XXXX=USDA species code

Unknown Species Codes:
AF# = annual forb
PF# = perennial forb
AG# = annual graminoid
PGB# = perennial graminoid bunch
PGR# = perennial graminoid rhizomatous
SH# = shrub
TR# = tree

Line-Point Intercept Indicator Calculations

Site **Aloha Mula 15**

Observer **H. Raizen**

Plot **OFFSITE**

Line Length **100** m or ft? **ft**

Direction **E**

Date **09/18/18**
mm/dd/yyyy

Intercept (Point) Spacing Interval **12**

Intercept units **in**
cm or in?

Pt.	Top Canopy
1	BOGR2
2	BOGR2
3	BOGR2
4	SPCR
5	SPCR
6	SPCR
7	SPCR
8	SPCR
9	SPCR
10	SPCR
11	SPCR
12	BOGR2
13	BOGR2
14	SPCR
15	SPCR
16	BOCU
17	SPCR
18	BOCU
19	BOCU
20	BOCU
21	BOCU
22	BOCU
23	BOGR2
24	SPCR
25	SPCR
26	BOGR2
27	SPCR
28	BOGR2
29	BOGR2
30	BOGR2
31	BOGR2
32	BOGR2
33	BOGR2
34	SPCR
35	BOCU
36	BOGR2
37	BOCU
38	BOGR2
39	BOGR2
40	BOGR2
41	BOGR2
42	BOGR2
43	BOGR2
44	BOGR2
45	SPCR
46	SPCR
47	S
48	BOGR2
49	CELO3
50	S

Pt.	Top Canopy
51	BOGR2
52	BOGR2
53	BOGR2
54	BOGR2
55	BOGR2
56	CELO3
57	CELO3
58	CELO3
59	CELO3
60	CELO3
61	CELO3
62	CELO3
63	CELO3
64	SPCR
65	SPCR
66	BOGR2
67	S
68	SPCR
69	SPCR
70	L
71	L
72	BOGR2
73	BOGR2
74	SPCR
75	SPCR
76	SPCR
77	SPCR
78	SPCR
79	SPCR
80	BOCU
81	BOCU
82	BOCU
83	BOCU
84	BOCU
85	BOCU
86	BOCU
87	BOCU
88	BOCU
89	BOCU
90	BOCU
91	BOCU
92	BOCU
93	SPCR
94	SPCR
95	BOGR2
96	BOGR2
97	BOGR2
98	BOGR2
99	BOGR2
100	BOGR2

% canopy cover = **95**

% non-weed canopy cover = **95**

% bare ground = **3**

% litter = **2**

Notes:

Cover Codes:

S=Soil
L=Litter
XXXX=USDA species code

Unknown Species Codes:

AF# = annual forb
PF# = perennial forb
AG# = annual graminoid
PGB# = perennial graminoid bunch
PGR# = perennial graminoid rhizomatous
SH# = shrub
TR# = tree