



Topsoil Protection Plan

Geothermal Limitless Approach to Drilling Efficiencies (GLADE)

NE ¼ SE ¼, Sec 2, T3N, R66W

Weld County, Colorado

April 2024

TABLE OF CONTENTS

1.0	INTRODUCTION	3
2.0	SITE DESCRIPTION	3
3.0	SITE INVESTIGATION	3
4.0	PROPOSED SEQUENCE OF MAJOR ACTIVITIES	4
4.1.	Topsoil Removal	4
4.2.	Subsoil Horizon Separation	4
4.3.	Stockpile Storage and Stabilization	4
4.4.	Recontouring and Compaction Relief	4
4.5.	Topsoil Redistribution	4
5.0	TOPSOIL STORAGE REQUIREMENTS	4
5.1.	Calculations	4
5.2.	Interim Reclamation	4
5.3.	Topsoil Protection	4
5.4.	Signage and Identification	5
6.0	STORMWATER CONTROLS/BMPS FOR TOPSOIL STOCKPILE	5
6.1	Construction Phase	5
6.2	Drilling Phase	5
6.3	Production Phase	5
7.0	INSPECTION AND MAINTENANCE PROCEDURES	6
7.1.	Inspections	6
7.2.	Maintenance	6
8.0	SUMMARY OF SITE-SPECIFIC TOPSOIL MANAGEMENT PRACTICES FOR CONSTRUCTION, PRODUCTION, AND FINAL RECLAMATION PHASES:	6

APPENDICES

APPENDIX A	NRCS SOIL SURVEY DATA AND SAMPLING LOCATIONS
APPENDIX B	TOPSOIL DEPTH PHOTOLOG
APPENDIX C	SOIL ANALYSIS
APPENDIX D	SITE PLAN
APPENDIX E	SUMMARY OF SITE-SPECIFIC BMPs FOR TOPSOIL MANAGEMENT AND PROTECTION

1.0 INTRODUCTION

OXY USA Inc. (OXY) has developed this site-specific Topsoil Protection Plan to establish proper planning and management of soil during oil and gas location construction, and subsequent surface reclamation of the disturbed area(s). All topsoil management shall be in accordance with the Colorado Energy and Carbon Management Commission (ECMC) Series 1000 Reclamation Rules *1001.a*, *1002.b* and *1002.c* requirements.

2.0 SITE DESCRIPTION

Operator	OXY USA Inc.
Project / Site Name:	GLADE Project
Location:	Sec 2, T3N, R66W, Weld County, Colorado
Total Area of Project:	13.00 acres
Topsoil Depth	Approximately 6"
Estimated Topsoil Salvaged	7,545 Cubic Yards
Estimated Topsoil Stored for Final Rec	7,545 Cubic Yards
Description of Existing Vegetation:	Existing vegetation on the subject property is disturbed grassland, primary use is rangeland / pastureland.
Soil Type(s):	48 – Olney fine sandy loam, 3 to 5 percent slopes, HSG: B 63 – Terry fine sandy loam, 3 to 9 percent slopes, HSG: B
Operator ID:	66561
Reclamation Manager Contact:	Austin Lee, HSE Advisor OXY USA Inc. Office: (970) 515-1058

3.0 SITE INVESTIGATION

National Resources Conservation Service (NRCS) soil survey data has been reviewed to determine sampling intervals and locations to identify topsoil depths, texture, and fertility for development of grading plans, topsoil management, interim reclamation plans, and for final reclamation after plugging and abandonment. Topsoil depth pit excavations and photo reports shall occur twice within each soil map unit within the disturbance area, with additional pits determined by size of unit, topography, land use change or distinct visual surface changes. A minimum of the first 6 inches of depth will be included for analysis on rangeland even if less than 6 inches of topsoil is identified during pre-construction site survey. Refer to Appendices A, B, C, and D for site-specific sampling information.

4.0 PROPOSED SEQUENCE OF MAJOR ACTIVITIES

4.1. Topsoil Removal

Depth of each soil horizon will vary with individual soil units, and determination of depth and proper removal will be monitored during construction by physical characteristics of color, density, and texture change of soil, and as determined during Site Investigation. Topsoil may not be removed during wet soil moisture conditions, as field determined considering soil texture.

4.2. Subsoil Horizon Separation

Lower soil horizons will be stockpiled separately from topsoil where it can be used for contouring during reclamation and preserved in order of original state. Distinctly visible soil horizons or soil types shall be stockpiled separately (i.e., gravel or shale layers). Under no circumstances shall subsoil be mixed with topsoil, nor placed on top of the dedicated topsoil stockpile(s).

4.3. Stockpile Storage and Stabilization

Best management practices will be implemented for all topsoil stockpiles stored on site to mitigate erosion, compaction, and contamination, and to maintain soil microbial activity for later use during redistribution and reclamation activities. Stabilization will be timed to occur immediately following stockpiling efforts during the construction phase, as practicable, and as ground conditions allow.

4.4. Recontouring and Compaction Relief

The first material to backfill will be from excavated subsoil materials, and compacted to avoid subsidence, but not restrictive to root growth of plants. The stockpiled soil horizons will be replaced in order and graded with the adjacent undisturbed land. Ripping/subsoiling will be required prior to topsoil redistribution if soil is overly compacted from vehicle or equipment traffic.

4.5. Topsoil Redistribution

The stockpiled topsoil will be redistributed uniformly and to minimize compaction of soil. Topsoil may not be redistributed during wet soil moisture conditions. Topsoil should be leveled with the adjacent, undisturbed land to match surrounding topography. Special consideration will apply to redistribution and grading of irrigable land to replace designated ditches and channels, and ensure uniform coverage by flood irrigation water.

5.0 TOPSOIL STORAGE REQUIREMENTS

5.1. Calculations

Stored topsoil amounts to facilitate subsequent or final reclamation shall be calculated based off areas remaining for production operations and integrated as part of the reclamation area per ECMC Rule 1003. Total salvageable topsoil is calculated by converting disturbed acreage into square feet, multiplying by the depth of topsoil identified during a pre-construction environmental survey, and converting square feet to cubic yards.

5.2. Interim Reclamation

Placement and distribution will be determined by disturbance area boundaries, surface owner input, land use, and topography.

5.3. Topsoil Protection

Stored topsoil shall be protected from erosion and to maintain soil microbial activity and establish vegetative cover. Management practices include proper design of stockpile depth and contour, seeding, stabilizing with mulch or similar biodegradable product, track walking, perimeter control(s) or any combination. Seeding will occur by broadcast or drill, and will be dependent on mix, soil type, topography, and area of coverage. Seeding will occur during the appropriate season and timed to capitalize on soil

moisture to not compromise germination and establishment. Weeds on stockpiles shall be controlled as to prevent production of weed seed and/or enough biomass that would interfere with redistribution of soil or cause onsite debris.

5.4. Signage and Identification

Stored topsoil locations will be documented per ECMC Rule 407. Form 45, Location Construction Report. Signage identifying topsoil shall be installed, where feasible, based on land use.

6.0 STORMWATER CONTROLS/BMPS FOR TOPSOIL STOCKPILE

Erosion, degradation, sedimentation and topsoil loss from stormwater and snowmelt will be managed by a combination of control measures and best management practices, per phase, and as detailed below.

6.1 Construction Phase

- *Ditch and berm* shall be installed around the perimeter of the location, and subsequently around all topsoil stockpiles, to intercept and divert stormwater run-on/run-off and sediment from precipitation and melt events.
- *Track packing* all topsoil stockpiles will occur to prevent erosion from stormwater and wind, as well as provide temporary stabilization.
- *Seeding and crimped straw mulch* will be applied to prevent erosion and soil loss from stormwater and wind.
- *Vegetation establishment* through seeding efforts will promote soil health and maintain carbon exchange.
- *Weed control* will occur seasonally and as needed to hinder the spread of weeds throughout the topsoil stockpile(s) and help native grass establishment.

6.2 Drilling Phase

- *Ditch and berm* shall be installed around the perimeter of the location, and subsequently around all topsoil stockpiles, to intercept and divert stormwater run-on/run-off and sediment from precipitation and melt events.
- *Track packing* all topsoil stockpiles will occur to prevent erosion from stormwater and wind, as well as provide temporary stabilization.
- *Seeding and crimped straw mulch* will be applied to prevent erosion and soil loss from stormwater and wind.
- *Vegetation establishment* through seeding efforts will promote soil health and maintain carbon exchange.
- *Weed control* will occur seasonally and as needed to hinder the spread of weeds throughout the topsoil stockpile(s) and help native grass establishment.

6.3 Production Phase

- *Vegetation establishment* through seeding efforts will promote soil health and maintain carbon exchange.
- *Weed control* will occur seasonally and as needed to hinder the spread of weeds throughout the topsoil stockpile(s) and help native grass establishment.

Refer to the Site Plan (Appendix D) for additional information on control measures.

7.0 INSPECTION AND MAINTENANCE PROCEDURES

7.1. Inspections

Post-construction stormwater inspections will be conducted in accordance with the ECMC Rules 1002.f and 1003.e, to document the status of the location, maintenance needs, effectiveness of stormwater control measures, to evaluate pollution sources, to document reclamation / final stabilization progress and necessary weed control. Inspections will be managed by the Reclamation Contact and conducted by their designated representative(s). Inspection forms will document current conditions, including evidence of or potential for off-site erosion, weed control, additional control measures that are needed, or repair and maintenance issues.

Findings, inspection records and site maps are documented electronically and available within 24 hours of any inspection.

7.2. Maintenance

For maintenance items discovered, proposed repairs or upgrades to stormwater control measures to ensure topsoil protections will be documented and coordinated with production crews. Timeline for completion of maintenance items is a priority and will depend on scope; but in all cases, shall not be completed until field conditions allow for safe access, and utility clearance has been confirmed for items requiring ground disturbance / earthwork.

8.0 SUMMARY OF SITE-SPECIFIC TOPSOIL MANAGEMENT PRACTICES FOR CONSTRUCTION, PRODUCTION, AND FINAL RECLAMATION PHASES:

8.1. Topsoil will be managed during construction by a combination of site-specific erosion and sediment control measures including:

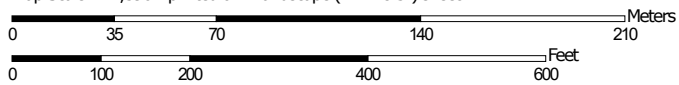
- 8.1.1. A temporary diversion ditch & berm (DD) around the entire location to manage run-on and run-off.
- 8.1.2. Short term management of topsoil will include track packing to prevent wind and water erosion.
- 8.1.3. Long term management will include seeding with a native seed mix and crimping straw mulch for erosion control and water retention.
- 8.1.4. Vegetation establishment on stockpiles and weed control will reduce erosion as well as maintain microbial activity.
- 8.1.5. During the construction phase topsoil will be stockpiled ~6' tall along the southern and western perimeter of the location at a 3 to 1 slope to minimize erosion potential.
- 8.1.6. Topsoil managed during interim and production phases will be maintained with BMPs including seeding with a native seed mix and crimped straw mulch and weed monitoring / management.
- 8.1.7. Long-term topsoil stockpiles will be placed along the southern and western perimeter of the location ~5' tall at a 3 to 1 slope to reduce erosion and maintain microbial activity for an extended time.
- 8.1.8. Inspections will review all control measures / BMPs implemented, their status, and whether repair, replacement, or addition is needed, including weed maintenance when necessary. Maintenance and repair will be completed as soon as practicable, immediately in most cases.

APPENDIX A
NRCS SOIL SURVEY DATA AND SAMPLING LOCATIONS

Soil Map—Weld County, Colorado, Southern Part (DGL_AccessRoad)



Map Scale: 1:2,590 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

2/27/2024
Page 1 of 3



GLADE - Platteville

Topsoil Depth and Composite Soil Sample Locations

Legend

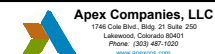
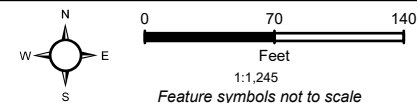
- Topsoil Sample Point
- Olney fine sandy loam, 3 to 5 percent slopes
- Terry fine sandy loam, 3 to 9 percent slopes
- Proposed Location



Inspector: KD, LH
Inspection Date: 3/12/2024

Site Characteristics

Legal Location: NWSE NESE Sec 02, T3N R66W
County: Weld



APPENDIX B
TOPSOIL DEPTH PHOTOLOG



Photograph 1. Topsoil depth pit (CS01) – showing a change in texture and hardness at **7 inches**.



Photograph 2. Topsoil depth pit (CS02) – showing a change in color and composition at **7.5 inches**.



Photograph 3. Topsoil depth pit (CS03) – showing a change in color and lack of roots at **5 inches**.



Photograph 4. Topsoil depth pit (CS04) – showing a change in color and composition at **7.5 inches**.



Photograph 5. Topsoil depth pit (CS05) – showing a change in color and composition at **6 inches**.



Photograph 6. Topsoil depth pit (CS06) – showing a change in color and hardness at **7 inches**.



Photograph 7. Topsoil depth pit (CS07) – showing a change in color and composition at **6 inches**.

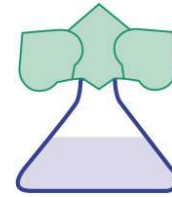
APPENDIX C
SOIL ANALYSIS

American Agricultural Laboratory, Inc.

700 West D Street / PO Box 370 / McCook, Nebraska 69001

Office: 308-345-3670 / FAX: 308-345-7880

www.AmAgLab.com



95029

ORIGINS LABORATORY INC

1725 ELK PLACE

DENVER CO 80211

NAME : ORIGINS LAB

DATE RECEIVED: 03/14/2024

DATE REPORTED: 03/20/2024

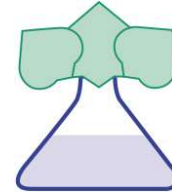
SOIL TEST RESULTS																		
LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH		EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA)		PHOSPHORUS							
				1 : 1 Soil	Buffer Woodruff				ppm	lbs/A	P1 ppm	Bicarb ppm	P2 ppm	M2 ppm	M3 ppm			
4007018	GLADE PSIF Y403363	CS01 Y403363 01	0-8	6.6	7.0	N	0.18	0.4	1.4	3	11							
4007019	GLADE PSIF Y403363	CS02 Y403363 02	0-8	7.4		N	0.38	0.6	1.4	3	11							
4007020	GLADE PSIF Y403363	CS03 Y403363 03	0-8	7.4		N	0.24	0.6	1.5	4	9							
4007021	GLADE PSIF Y403363	CS04 Y403363 04	0-8	7.0		N	0.16	0.5	1.0	2	13							
4007022	GLADE PSIF Y403363	CS05 Y403363 05	0-8	6.3	6.9	N	0.12	0.4	0.7	2	10							
4007023	GLADE PSIF Y403363	CS06 Y403363 06	0-8	7.1		N	0.16	0.6	1.4	3	14							
LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable)				DTPA				BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION						
	K ppm	Ca ppm	Mg ppm	Na ppm	Zn ppm	Fe ppm	Mn ppm	Cu ppm	BASE			H	Ca	Mg	K	Na		
4007018	4	117	550	52	16	0.6	16.3	2.9	0.4	0.4	3.6	100	0	79	12	8	1	
4007019	3	129	780	79	27	0.7	14.0	1.7	0.4	0.3	5.0	100	0	79	13	7	1	
4007020	2	113	950	129	18	1.2	14.6	1.6	0.6	0.4	6.2	100	0	77	17	5	1	
4007021	3	103	680	66	15	0.6	10.0	1.6	0.3	0.4	4.3	100	0	80	13	6	1	
4007022	2	100	580	70	16	0.5	23.7	2.2	0.5	0.3	4.8	79	21	61	12	5	1	
4007023	2	120	780	69	9	0.6	9.6	1.6	0.3	0.3	4.8	100	0	81	12	6	1	
LAB NUMBER	SOLUBLE (SAT. EXT.)			SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS				CHLORIDE		EXCH. NH4-N		ALUMINUM ppm	TOTAL N %		
	Ca me/L	Mg me/L	Na me/L				SAND %	SILT %	CLAY %	SOIL TEXTURE	ppm	lbs/A	ppm	lbs/A				
4007018	0.61	0.23	0.45	0.69	1	0	89	4	7	SAND	3.3	8	0.5	1.2				
4007019	2.60	1.07	0.26	0.19	1	0	89	6	5	SAND	22.0	53	0.5	1.2				
4007020	1.81	0.87	0.25	0.22	1	0	85	6	9	LOAMY SAND	29.4	71	0.4	1.0				
4007021	0.85	0.88	0.24	0.26	1	0	91	4	5	SAND	9.2	22	0.4	1.0				
4007022	0.39	0.31	0.28	0.47	1	0	89	6	5	SAND	5.9	14	0.4	1.0				
4007023	1.01	0.11	0.35	0.47	1	0	91	4	5	SAND	3.4	8	0.5	1.2				
SUGGESTED FERTILIZER RECOMMENDATIONS																	LIME REC 60% ECCE T/A	
LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N	P2O5	K2O	S	Zn	MgO	Fe	Mn	Cu	B	Cl			
4007018	GLADE PSIF Y403363	CS01 Y403363 01																
4007019	GLADE PSIF Y403363	CS02 Y403363 02																
4007020	GLADE PSIF Y403363	CS03 Y403363 03																
4007021	GLADE PSIF Y403363	CS04 Y403363 04																
4007022	GLADE PSIF Y403363	CS05 Y403363 05																
4007023	GLADE PSIF Y403363	CS06 Y403363 06																
Approved By: Kevin Grooms																		Analysis By: American Agricultural Lab
																		Recommendations By: American Agricultural Lab

American Agricultural Laboratory, Inc.

700 West D Street / PO Box 370 / McCook, Nebraska 69001

Office: 308-345-3670 / FAX: 308-345-7880

www.AmAgLab.com



95029

ORIGINS LABORATORY INC

1725 ELK PLACE

DENVER CO 80211

NAME : ORIGINS LAB

DATE RECEIVED: 03/14/2024

DATE REPORTED: 03/20/2024

SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH		EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA)		PHOSPHORUS				
				1 : 1 Soil	Buffer Woodruff				ppm	lbs/A	P1 ppm	Bicarb ppm	P2 ppm	M2 ppm	M3 ppm
4007024	GLADE PSIF Y403363	CS07 Y403363 07	0-8	7.2		N	0.14	0.5	0.8	2		11			

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable)				DTPA				BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION					
		K ppm	Ca ppm	Mg ppm	Na ppm	Zn ppm	Fe ppm	Mn ppm	Cu ppm			BASE	H	Ca	Mg	K	Na
4007024	2	125	650	92	57	0.6	14.6	1.4	0.3	0.3	4.6	100	0	75	17	7	1

LAB NUMBER	SOLUBLE (SAT. EXT.)			SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS				CHLORIDE		EXCH. NH4-N		ALUMINUM ppm	TOTAL N %
	Ca me/L	Mg me/L	Na me/L				SAND %	SILT %	CLAY %	SOIL TEXTURE	ppm	lbs/A	ppm	lbs/A		
4007024	0.48	0.17	0.26	0.46	1	0	91	4	5	SAND	7.9	19	0.6	1.4		

SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N	P2O5	K2O	S	Zn	MgO	Fe	Mn	Cu	B	Cl	LIME REC 60% ECCE T/A
4007024	GLADE PSIF Y403363	CS07 Y403363 07								lbs/A						

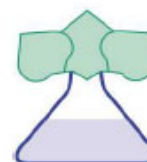
Approved By: Kevin Grooms

Analysis By: American Agricultural Lab

Recommendations By: American Agricultural Lab

American Agricultural Laboratory, Inc.

700 West D Street / PO Box 370 / McCook, Nebraska 69001
Office: 308-345-3670 / FAX: 308-345-7880
www.AmAgLab.com



ORIGINS LABORATORY INC
1725 ELK PLACE
DENVER, CO 80211

ACCOUNT NO: 95029
DATE RECEIVED: 3/15/2024
DATE REPORTED: 3/20/2024

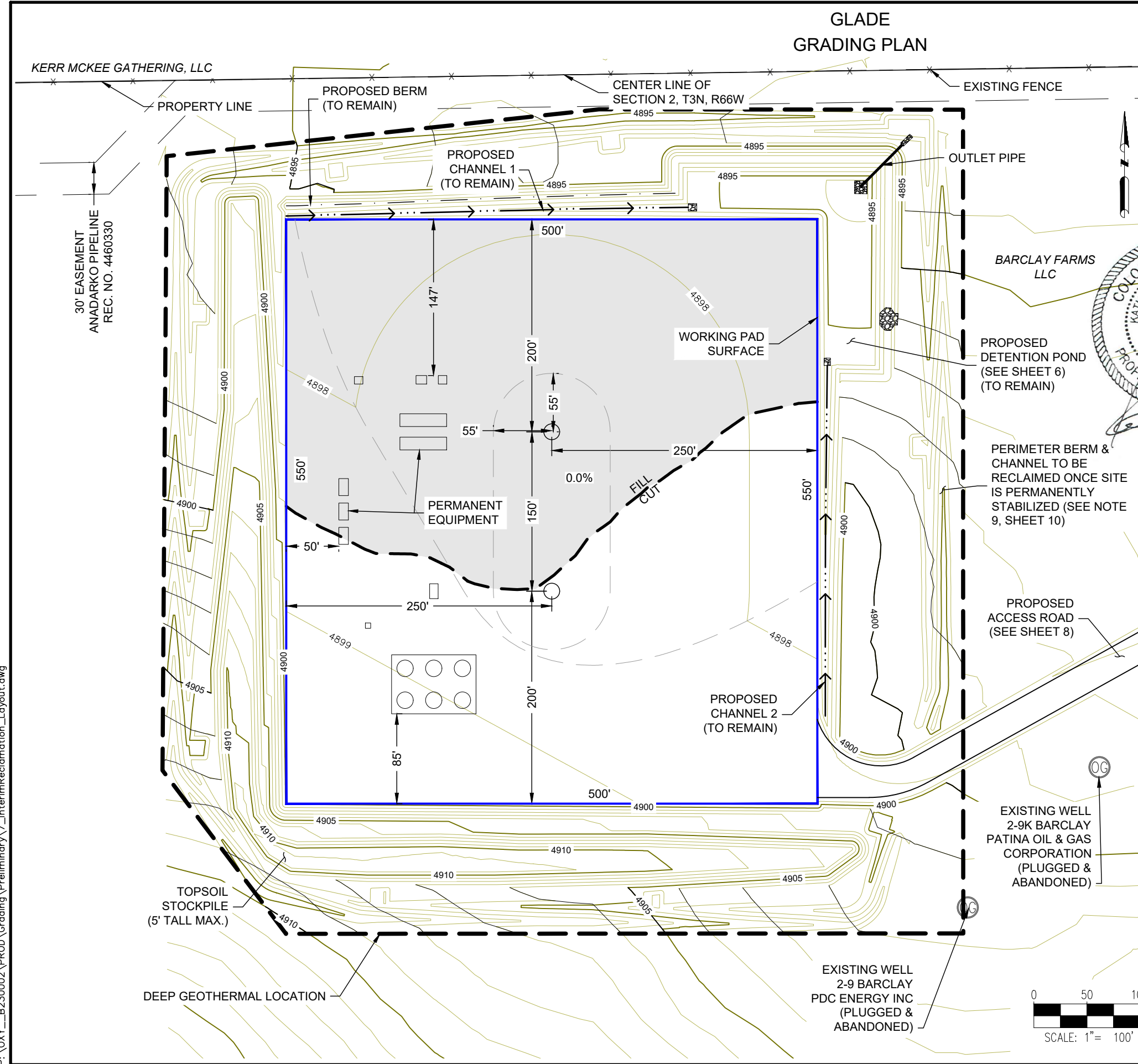
SATURATED PASTE EXTRACT ANALYSIS

Lab No.	Field ID	Sample ID	Depth inches	pH s.u.	Soluble Salts mmhos/cm
4007018	GLADE PSIF Y40363	CS01 Y403363 01	0-8	6.5	0.09
4007019	GLADE PSIF Y40363	CS02 Y403363 02	0-8	7.3	0.21
4007020	GLADE PSIF Y40363	CS03 Y403363 03	0-8	7.4	0.12
4007021	GLADE PSIF Y40363	CS04 Y403363 04	0-8	7.2	0.13
4007022	GLADE PSIF Y40363	CS05 Y403363 05	0-8	3.3	0.09
4007023	GLADE PSIF Y40363	CS06 Y403363 06	0-8	7.2	0.12
4007024	GLADE PSIF Y40363	CS07 Y403363 07	0-8	7.0	0.10

Electronically Approved By: Kevin Grooms

APPENDIX D
SITE PLAN

REV.	REVISION DESCRIPTION	BY	DATE	BY	DATE
0	ISSUED FOR PERMIT	AS	2/1/74	MS	2/1/74
1	ISSUED FOR PERMIT	AS	2/21/74	MS	2/21/74
2	ISSUED FOR PERMIT	AS	2/21/74	MS	2/21/74
3	ISSUED FOR PERMIT	RC	3/1/74	KH	3/1/74



NOTES:

1. ASCENT GEOMATICS SOLUTIONS WAS NOT PROVIDED A TITLE REPORT FOR THIS SITE. ALL RECORDED DOCUMENTS REFERENCED ON THESE PLANS WERE DOWNLOADED FROM RESEARCH VIA THE WELD COUNTY CLERK AND RECORDER. ASCENT GEOMATICS SOLUTIONS MAKES NO GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED, TO THE COMPLETENESS OF ENCUMBRANCES TO THE SUBJECT PROPERTY.

DATA SOURCE:
OIL & GAS WELLS: ECMC

PUBLIC AVAILABLE DATA SOURCES HAVE NOT BEEN INDEPENDENTLY
VERIFIED BY ASCENT.

DISCLAIMER:
THIS PLOT DOES NOT REPRESENT A MONUMENTED LAND SURVEY
AND SHOULD NOT BE RELIED UPON TO DETERMINE BOUNDARY LINES,
PROPERTY OWNERSHIP OR OTHER PROPERTY INTERESTS. PARCEL
LINES, IF DEPICTED HAVE NOT BEEN FIELD VERIFIED AND MAY BE
BASED UPON PUBLICLY AVAILABLE DATA THAT ALSO HAS NOT BEEN
INDEPENDENTLY VERIFIED.