

Topsoil Protection Plan

Archer Field Oil and Gas Development Plan

This Topsoil Protection Plan has been prepared by Chaco Energy Company (Chaco) for its Archer Field Oil and Gas Development Plan (OGDP) in Cheyenne County, Colorado. The Plan addresses the Energy & Carbon Management Commission (ECMC) requirement at Rule 304.c.(14) to prepare a Topsoil Protection Plan consistent with Rule 1002 and ECMC guidance. The Plan addresses the following locations:

Table 1. Locations

Location	Location ID	Qtr Qtr T12S R44W	Lat/Lon
Champlin 360 Amoco A #4	380504 (Re-entry)	NWSE Sec. 29	38.977390, -102.359945
Pelton 41-31 #1	380356 (Re-entry)	NENE Sec. 31	38.969823, -102.373764
Champlin Tank Pad	New	NWSW Sec. 29	38.977813, -102.369827
Pelton Tank Pad	New	NENE Sec. 31	38.970818, -102.372405

1.0 Disturbance Acreage

The extent of the disturbed area at each location is listed on the Form 2As and Construction Layout Drawings submitted with the Form 2As. Estimated disturbance acreages are shown in Tables 2 - 5. Total *new* disturbance by location is shown in Table 6.

Table 2. Champlin 360 Amoco A#4

Disturbance	Land Use	Disturbance (ac)	Description
Oil and Gas Location	Crop	2.07	New Disturbance
Working Pad Surface		1.80	
Production Pad		0.23	
Access	Crop	0.85	New Disturbance
	Rangeland	0.23	Existing Disturbance
Off-location Flowline	Crop	0.12	New Disturbance

Table 3. Pelton 41-31 #1

Disturbance	Land Use	Disturbance (ac)	Description
Oil and Gas Location	Rangeland	2.07	New Disturbance
Working Pad Surface		1.80	
Production Pad		0.23	
Access	Rangeland	0.01	New Disturbance
	Rangeland	0.22	Existing Disturbance
Off-location Flowline	Rangeland	0.01	New Disturbance

Table 4. Champlin Tank Pad

Disturbance	Land Use	Disturbance (ac)	Description
Oil and Gas Location	Rangeland	1.06	New Disturbance
Working Pad Surface		0.87	
Production Pad		0.87	
Access	Rangeland	0.00	New Disturbance
	Rangeland	0.13	Existing Disturbance
Off-location Flowline	None	None	None

Table 5. Pelton Tank Pad

Disturbance	Land Use	Disturbance (ac)	Description
Oil and Gas Location	Rangeland	0.66	New Disturbance
Working Pad Surface		0.52	
Production Pad		0.52	
Access	Rangeland	0.03	New Disturbance
	Rangeland	0.09	Existing Disturbance
Off-location Flowline	None	None	None

Table 6. New Disturbance by Location

Disturbance	Oil and Gas Location (ac)	Access (ac)	Off-location Flowline (ac)	Total (ac)
Champlin 360 Amoco A #4	2.07	0.85	0.12	3.04
Pelton 41-31 #1	2.07	0.01	0.01	2.09
Champlin Tank Pad	1.06	0.00	0.00	1.06
Pelton Tank Pad	0.66	0.03	0.00	0.69

Oil and Gas Location

Chaco will re-enter and complete one previously plugged and abandoned conventional vertical well at each well pad location. The well will be approximately 5,400 feet deep. It will be drilled using a workover rig. There will be no hydraulic fracturing, stimulation, or flowback.

Each well pad will be supported by a separate new tank pad during production.

Access Road

Chaco will use existing and new dirt access roads. Access roads will be approximately 15 feet wide.

Off-Location Flowline

Off-location flowline trenches will be approximately 2 feet wide and 4 feet deep with 3 feet of soil cover for a 3-inch steel flowline.

2.0 Soil Types

The Natural Resource Conservation Service (NRCS) soil type at each Oil and Gas Location is listed in Table 7. NRCS soil unit descriptions and Soil Unit Maps are provided with the Form 2As.

Table 7. Soil Type by Location

Disturbance	Oil and Gas Location	Access	Off-location Flowline
Champlin 360 Amoco A #4	19: Keith-Richfield 54: Wiley Complex	19: Keith-Richfield	19: Keith-Richfield
Pelton 41-31 #1	20: Keith-Ulysses	19: Keith-Richfield 20: Keith-Ulysses 1422: Goshen	20: Keith-Ulysses 1422: Goshen
Champlin Tank Pad	19: Keith-Richfield	19: Keith-Richfield	NA
Pelton Tank Pad	1422: Goshen	19: Keith-Richfield 1422: Goshen	NA

19: Keith-Richfield silt loams, 0 to 2 percent slopes

20: Keith-Ulysses silt loams, 1 to 4 percent slopes

54: Wiley complex, 0 to 3 percent slopes

1422: Goshen silt loam, untitled with respect to slope

3.0 Soil Pit Evaluation

A soil pit evaluation was conducted at each Oil and Gas Location in June 2023. Tables showing results and photographs for each soil pit are attached. Soil pit locations are shown on the Soil Unit Maps provided with the Form 2As.

4.0 Topsoil Stockpile Location

Topsoil stockpile locations are shown on the Construction Layout Drawings provided with the Form 2As.

5.0 Topsoil to be Salvaged

Acreages of Oil and Gas Location disturbance are listed by location in Tables 2 through 5.

Estimated cubic yards of topsoil stockpiles, height, and slope are listed by location in Table 8.

Table 8. Topsoil Salvage by Location

Disturbance	Salvage (cy)	Height (ft)	Slope
Champlin 360 Amoco A #4	1,250	8	2:1
Pelton 41-31 #1	975	8	2:1
Champlin Tank Pad	850	6	2:1
Pelton Tank Pad	715	9	2:1

Topsoil will be segregated based on characteristics, such as color, texture, structure, and consistency. The topsoil will be protected by separating it on the Oil and Gas Location. It will be marked with a labeled surveyor stake to distinguish it from the surrounding area. Chaco will further protect each topsoil stockpile in the following ways:

Contamination

Chaco will keep the area surrounding the stockpile clear of stored materials and vehicle parking.

Compaction

The topsoil stockpile will be placed on the edge of the Working Pad Surface to avoid the risk that equipment will be operated over the stockpile.

Method and Timeline for Seeding and Stabilization

The topsoil stockpile will remain uncompacted in preparation for seeding. Seeding will occur following site development. It will be conducted during the first favorable growing season and concurrent with interim reclamation, which is within 3 months of completion of development on cropland and within 6 months on non-cropland. The

stockpile size allows for seeding to be broadcast manually. The seed mix will be certified weed-free and identified in coordination with the surface owner and, as appropriate, local agricultural extension office, consistent with the Interim Reclamation Plan. Organic material will be blended in to improve the growth medium if germination demonstrates that soil amendment with additional seeding is needed. Likewise, crimped straw mulch will be used where needed to stabilize loose soil. Additional stabilization practices are described below under Wind and Water Erosion.

Wind and Water Erosion

The stockpile will be consolidated and mounded to minimize loose soils. It will be located on a portion of the Working Pad Surface that promotes natural drainage and avoids ponding and stormwater runnels. Surface roughening and seeding will be used to contain loose soils and promote vegetation and soil microbial activity. An erosion control blanket or crimped straw mulch will be used where needed to control erosion and blowing topsoil.

At the well pads, an off-location gas flowline will be buried underground from the wellhead to the associated tank pad. The flowline will be 3-inch steel. The flowline trench will be an estimated 2 feet wide and 4 feet deep with approximately 3 feet of soil cover. Soil removed during flowline trenching will be segregated based on changes in physical characteristics. It will be windrowed along the flowline trench. After flowline installation and integrity testing, the trench will be backfilled. The soil layers will be replaced in the order in which they were removed.

6.0 Best Management Practices

Table 9. Best Management Practices

Short-Term
<ul style="list-style-type: none"> Vegetation removal and soil disturbance on the Oil and Gas Location will be minimized to the area sufficient to site and level equipment.
<ul style="list-style-type: none"> The operator will segregate and salvage topsoil based on soil characteristics of color, texture, structure, and consistency.
<ul style="list-style-type: none"> Salvaged topsoil will be mounded on the Oil and Gas Location to a minimize loose soils.
<ul style="list-style-type: none"> The topsoil stockpile will be seeded within 3 months of completion of development on cropland and within 6 months on non-cropland.
<ul style="list-style-type: none"> Topsoil will be protected from contamination by stockpiling it in a location free from drilling, fuel storage, and parking.
<ul style="list-style-type: none"> Soil removed during flowline trenching will be segregated based on changes in physical characteristics. The soil layers will be windrowed adjacent to the trench.
<ul style="list-style-type: none"> Soils from the flowline trench will be replaced promptly in the order in which they were removed.
Long-Term
<ul style="list-style-type: none"> The topsoil stockpile will be protected from compaction by designating it with surveyor staking and flagging as topsoil for reclamation.
<ul style="list-style-type: none"> The topsoil stockpile will be protected from wind degradation by mounding to prevent loose soils while promoting continued microbial activity.
<ul style="list-style-type: none"> The topsoil stockpile will be protected from erosion by ensuring that stormwater controls and diversions are installed, where needed, to divert stormwater away from the stockpile.
<ul style="list-style-type: none"> Surface roughening, seeding, and an erosion control blanket or crimped straw mulch, if needed, will be used to contain loose soils, while maintaining soil microbial activity.

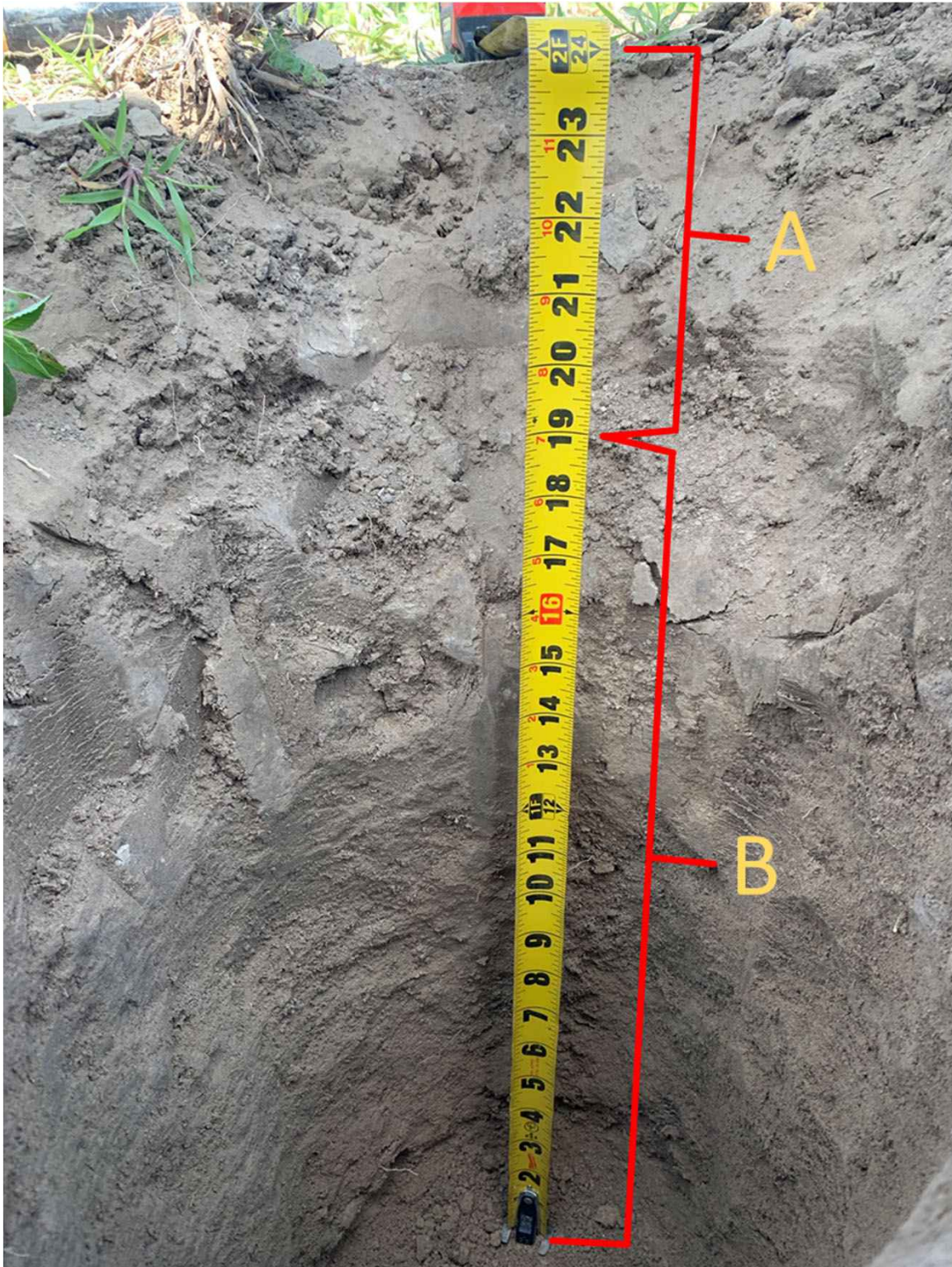
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|---|
| <ul style="list-style-type: none">• Vegetation will be allowed to establish on the topsoil stockpile to stabilize it, outcompete weeds, and promote soil microbial activity. |
| <ul style="list-style-type: none">• The topsoil stockpile will be monitored and managed for weeds during weed management monitoring conducted at the Oil and Gas Location by the site operator. |

Attachments

Soil Pit Evaluations and Photographs

Champlin 360 Amoco A4 Well Pad

Soil Pit 1		
Lat/Long	38.9775516	-102.3602547
Mapped Soil Unit	Keith-Richfield silt loams, 0 to 2 percent slopes	
Topsoil Depth	5-inch	
Soil Profile	A Horizon (0-5 inches)	10YR 5/3 Silt Loam
	B Horizon (5-24 inches)	10YR 4/2 Silty Clay Loam



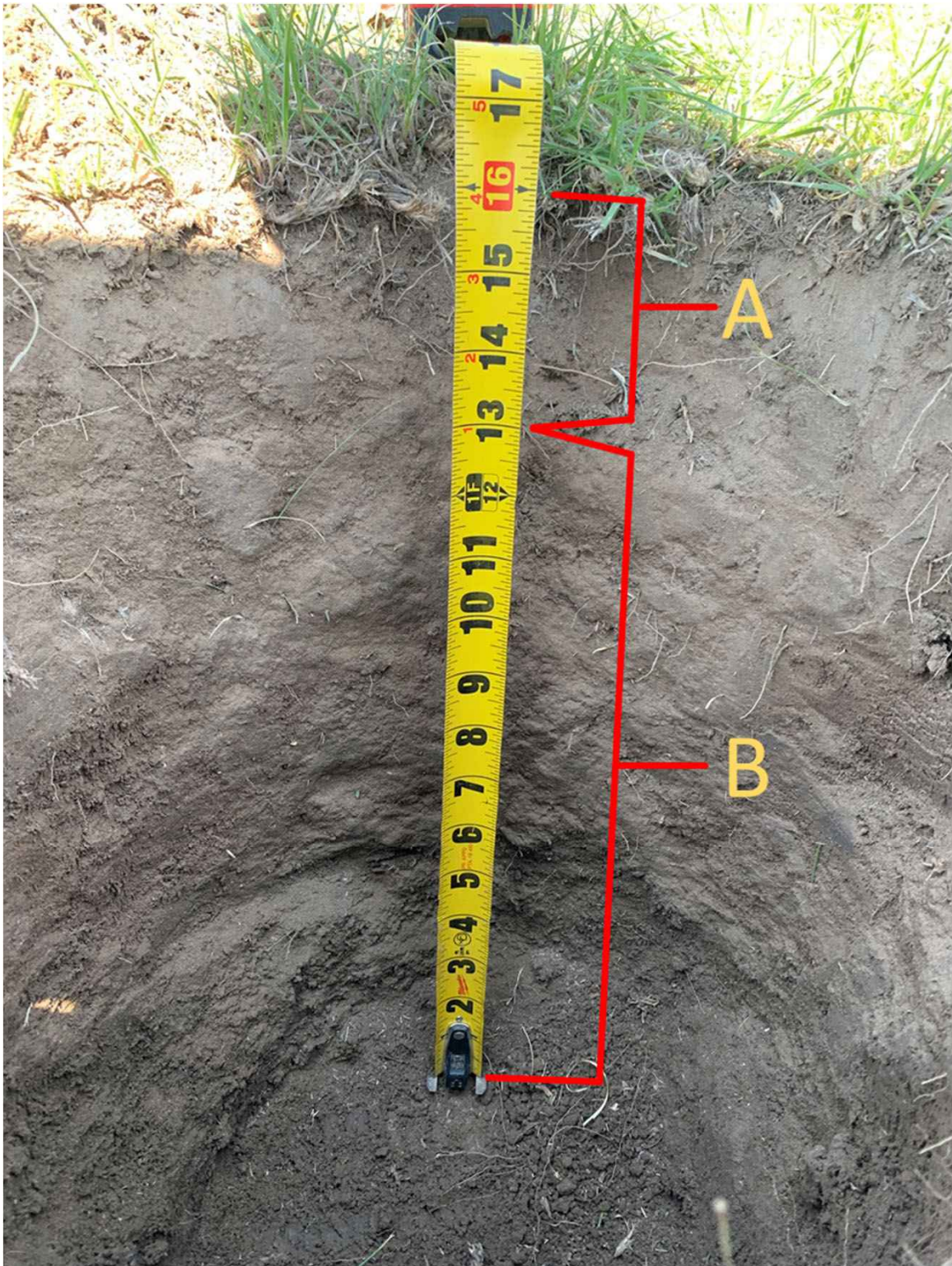
Champlin 360 Amoco A4 Well Pad

Soil Pit 2		
Lat/Long	38.9768997	-102.3594396
Mapped Soil Unit	Wiley complex, 0 to 3 percent slopes, eroded	
Topsoil Depth	4-inch	
Soil Profile	A Horizon (0-4 inches)	10YR 5/3 Silt Loam
	B Horizon (4-17 inches)	10YR 4/3 Silty Clay Loam



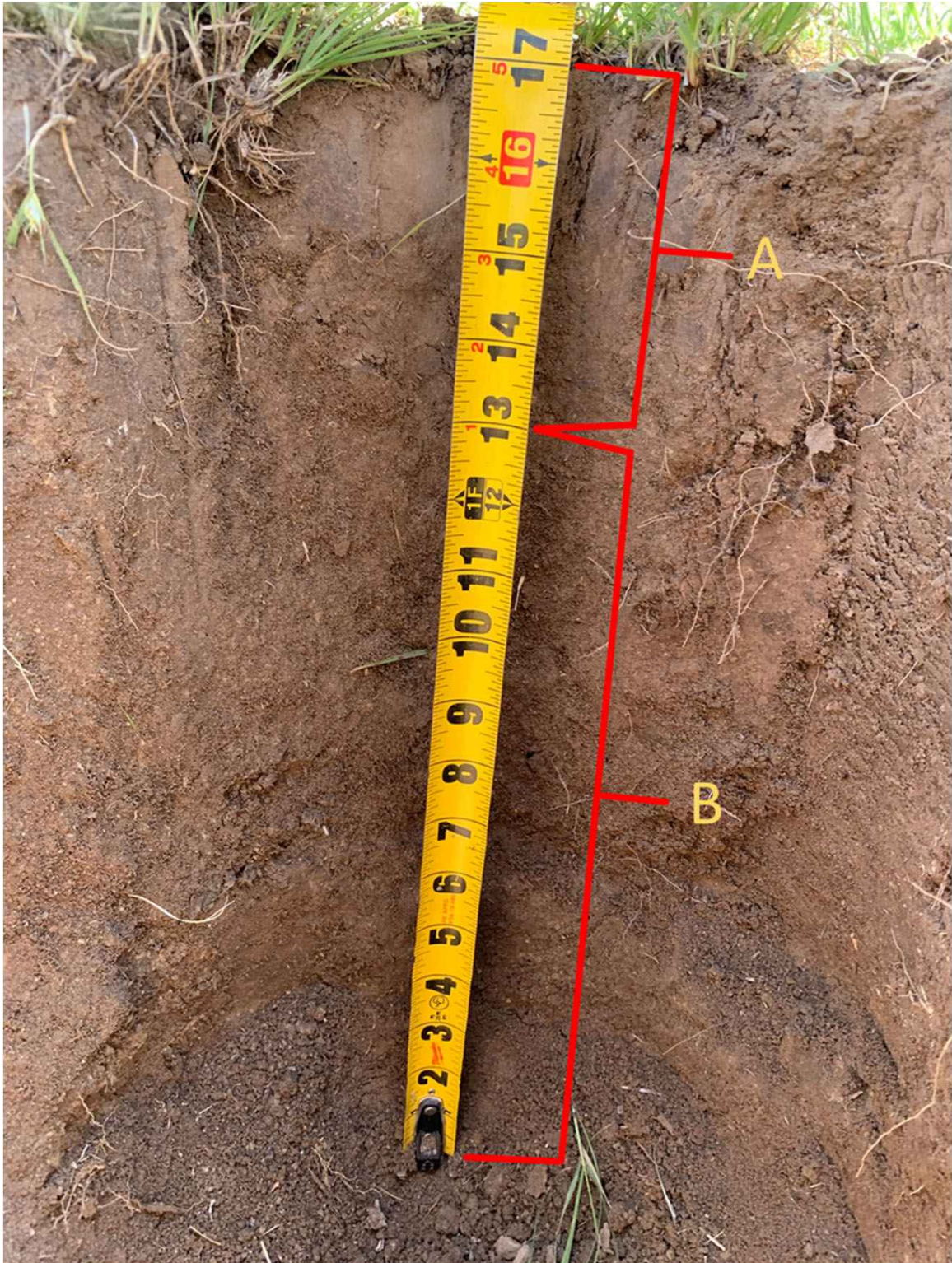
Pelton 41-31 #1 Well Pad

Soil Pit 1		
Lat/Long	38.9695251	-102.3741193
Mapped Soil Unit	Keith-Ulysses silt loams, 1 to 4 percent slopes	
Topsoil Depth	3-inch	
Soil Profile	A Horizon (0-3 inches)	10YR 4/3 Silt Loam
	B Horizon (3-16 inches)	10YR 3/3 Silty Clay Loam



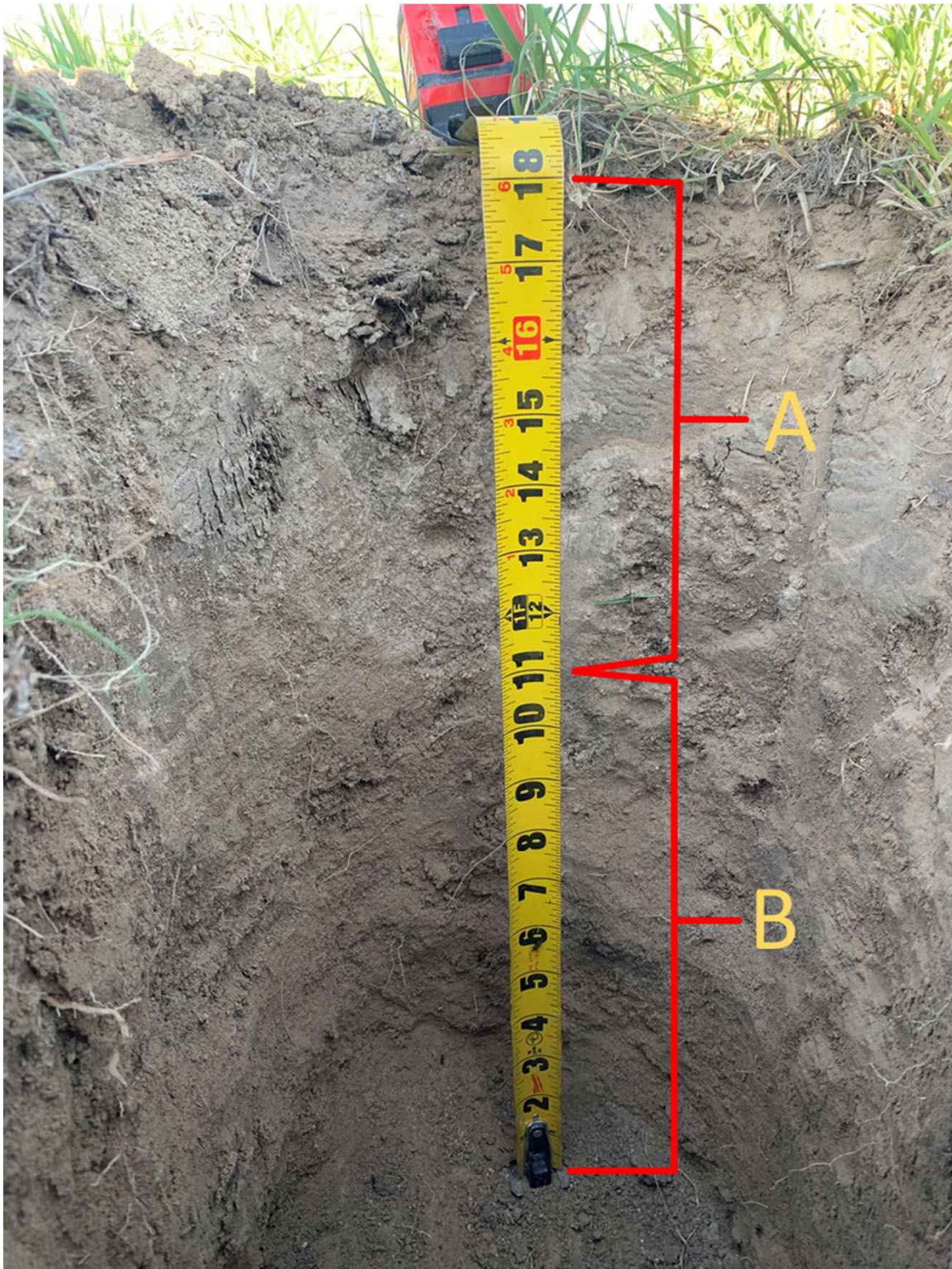
Pelton 41-31 #1 Well Pad

Soil Pit 2		
Lat/Long	38.9700726	-102.3734074
Mapped Soil Unit	Keith-Ulysses silt loams, 1 to 4 percent slopes	
Topsoil Depth	4-inch	
Soil Profile	A Horizon (0-4 inches)	10YR 4/3 Silt Loam
	B Horizon (4-17 inches)	10YR 3/2 Silty Clay Loam



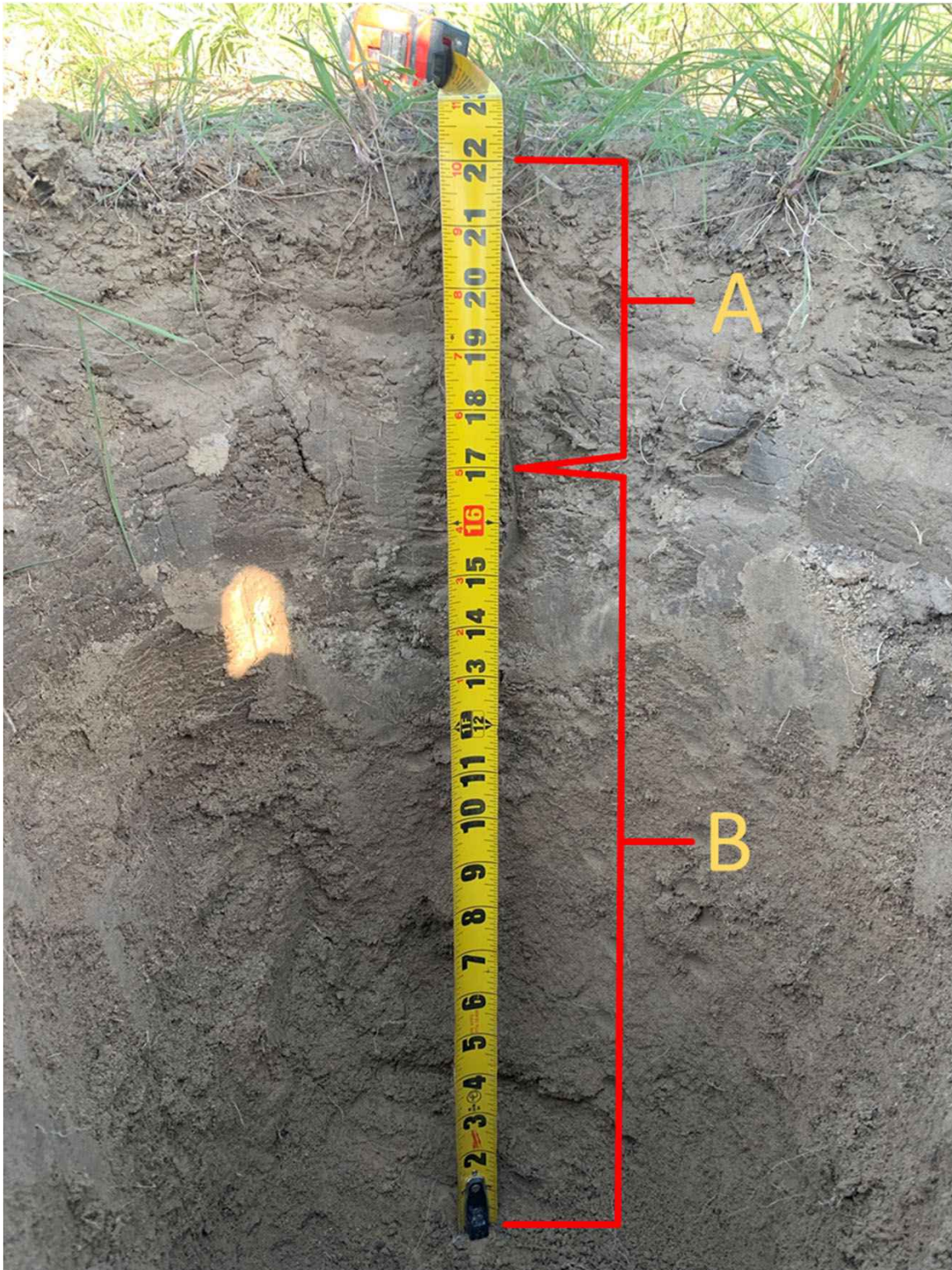
Champlin 360 Amoco A4 Tank Pad

Soil Pit 1		
Lat/Long	38.9778571	-102.370227
Mapped Soil Unit	Keith-Richfield silt loams, 0 to 2 percent slopes	
Topsoil Depth	7-inch	
Soil Profile	A Horizon (0-7 inches)	10YR 5/2 Silt Loam
	B Horizon (7-18 inches)	10YR 4/2 Silty Clay Loam



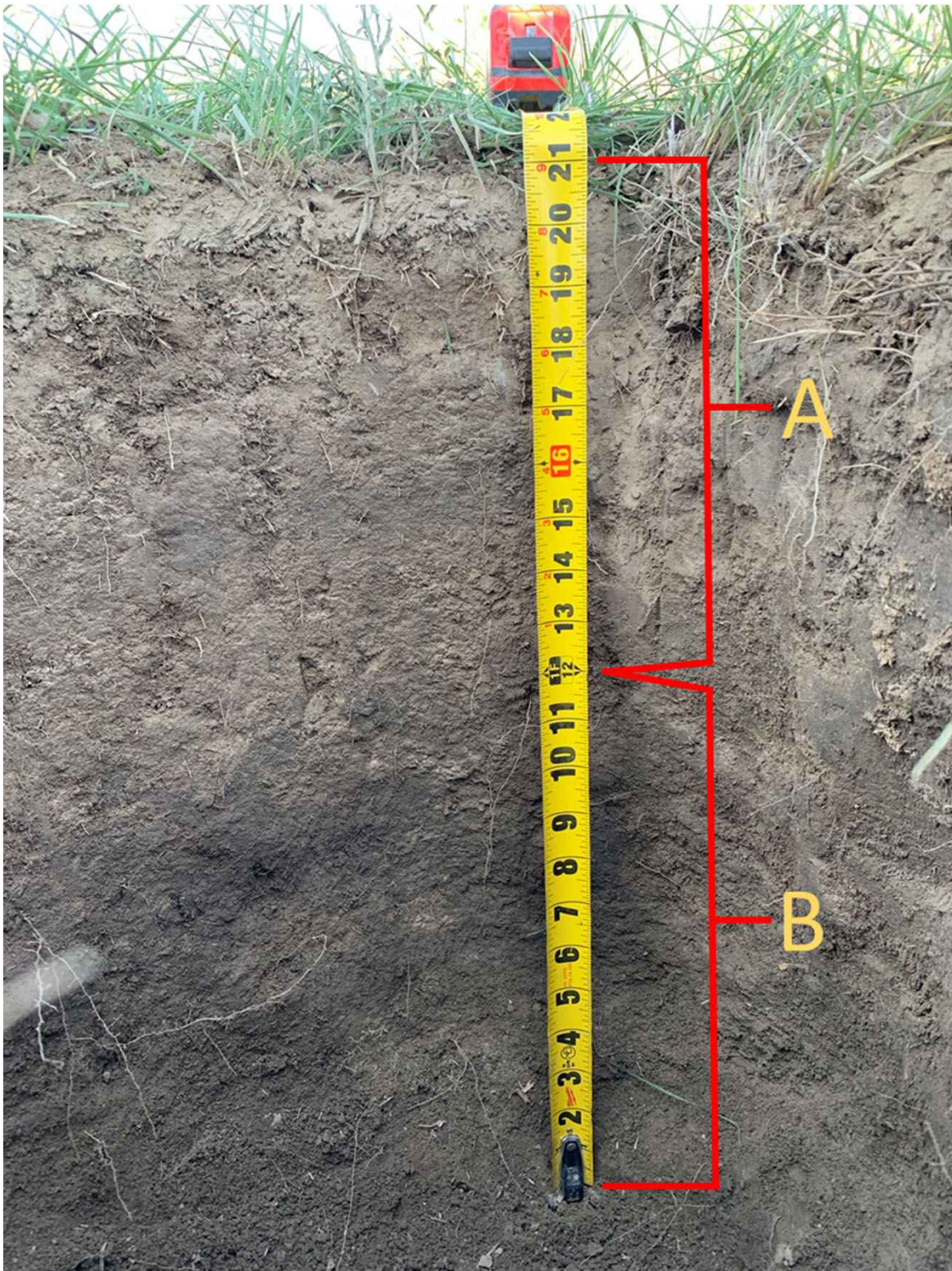
Champlin 360 Amoco A4 Tank Pad

Soil Pit 2		
Lat/Long	38.9775111	-102.3697767
Mapped Soil Unit	Keith-Richfield silt loams, 0 to 2 percent slopes	
Topsoil Depth	5-inch	
Soil Profile	A Horizon (0-5 inches)	10YR 5/3 Silt Loam
	B Horizon (5-22 inches)	10YR 4/2 Silty Clay Loam



Pelton 41-31 #1 Tank Pad

Soil Pit 1		
Lat/Long	38.9706703	-102.3722476
Mapped Soil Unit	Goshen silt loam, rarely flooded	
Topsoil Depth	9-inch	
Soil Profile	A Horizon (0-9 inches)	10YR 5/2 Silt Loam
	B Horizon (9-21 inches)	10YR 3/2 Silty Clay Loam



Pelton 41-31 #1 Tank Pad

Soil Pit 2		
Lat/Long	38.9709778	-102.3725906
Mapped Soil Unit	Goshen silt loam, rarely flooded	
Topsoil Depth	7-inch	
Soil Profile	A Horizon (0-7 inches)	10YR 5/2 Silt Loam
	B Horizon (7-20 inches)	10YR 3/2 Silty Clay Loam

