



Huddleston-Berry
Engineering & Testing, LLC

640 White Avenue
Grand Junction, CO 81501
Phone: 970-255-8005
Fax: 970-255-6818
HuddlestonBerry@bresnan.net
www.HBET-GJ.com

January 14, 2015
Project #01106-0010

WPX Energy Rocky Mountain, LLC
1058 County Road 215
Parachute, Colorado 81635

Attention: Ms. Karolina Blaney

Subject: Infiltration Testing
Starkey Cuttings Trench
Garfield County, Colorado

Dear Ms. Blaney,

At your request, Huddleston-Berry Engineering and Testing, LLC (HBET) conducted infiltration testing at the Starkey Cuttings Trench in Garfield County, Colorado. The purpose of the work was to evaluate the infiltration rate of the bottom of the proposed cuttings trench.

Field infiltration testing was conducted at the site on January 7, 2015. Testing was conducted at six locations as shown on the attached site plan. The testing was completed in sandy lean clay soils that comprise the pad.

The infiltration rate in the clay soils ranged from 0.5 to 1.0-inch per hour. The infiltration testing data is attached.

We are pleased to be of service to your project. Please contact us if you have any questions or comments regarding the contents of this report.

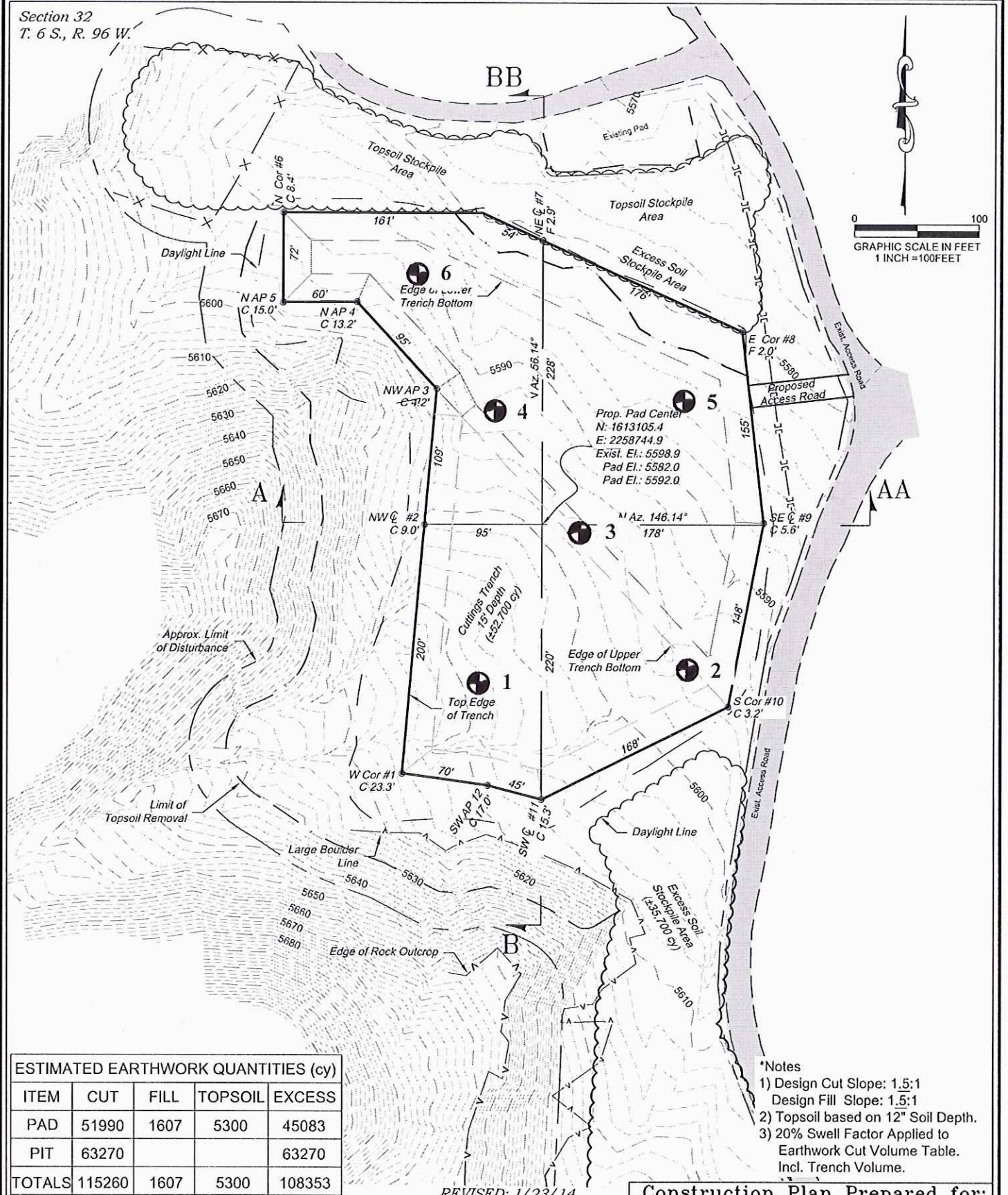
Respectfully Submitted:
Huddleston-Berry Engineering and Testing, LLC



Michael A. Berry, P.E.
Vice President of Engineering

ATTACHMENTS

Section 32
T. 6 S., R. 96 W.



ESTIMATED EARTHWORK QUANTITIES (cy)

ITEM	CUT	FILL	TOPSOIL	EXCESS
PAD	51990	1607	5300	45083
PIT	63270			63270
TOTALS	115260	1607	5300	108353

136 East Third Street
Rifle, Colorado 81650
Ph (970) 625-2720
Fax (970) 625-2773



BOOKCLIFF
Survey Services, Inc.

REVISED: 1/23/14

SCALE: 1" = 100'
DATE: 11/5/13
PLAT: 1 of 2
PROJECT: Valley
DFT: cs

*Notes

- 1) Design Cut Slope: 1.5:1
Design Fill Slope: 1.5:1
- 2) Topsoil based on 12" Soil Depth.
- 3) 20% Swell Factor Applied to Earthwork Cut Volume Table. Incl. Trench Volume.

Construction Plan Prepared for:
WPXENERGY
WPX Energy Rocky Mountain, LLC

Starkey Cuttings Trench
CONSTRUCTION LAYOUT

INFILTRATION TESTING
Starkey Cuttings Trench
1/7/2015

Test Number: 1
 Top Depth: 0 ft
 Diameter: 4 in.
 Hole Depth: 11.5 in.

Time (min.)	Water Depth (in.)	Change (in.)
0	0.875	
10	1	0.125
20	1.25	0.25
30	1.25	0
40	1.375	0.125
50	1.5	0.125
60	1.625	0.125
Rate (in/hour)		0.75

Test Number: 2
 Top Depth: 0 ft
 Diameter: 4 in.
 Hole Depth: 10 in.

Time (min.)	Water Depth (in.)	Change (in.)
0	0.5	
10	0.75	0.25
20	1	0.25
30	1.125	0.125
40	1.25	0.125
50	1.5	0.25
60	1.5	0
Rate (in/hour)		1

Test Number: 3
 Top Depth: 0 ft
 Diameter: 4 in.
 Hole Depth: 8 in.

Time (min.)	Water Depth (in.)	Change (in.)
0	1.25	
10	1.375	0.125
20	1.5	0.125
30	1.75	0.25
40	1.75	0
50	1.875	0.125
60	2	0.125
Rate (in/hour)		0.75

Test Number: 4
 Top Depth: 0 ft
 Diameter: 4 in.
 Hole Depth: 10 in.

Time (min.)	Water Depth (in.)	Change (in.)
0	1	
10	1	0
20	1.125	0.125
30	1.375	0.25
40	1.375	0
50	1.5	0.125
60	1.5	0
Rate (in/hour)		0.5

Test Number: 5
 Top Depth: 0 ft
 Diameter: 4 in.
 Hole Depth: 9 in.

Time (min.)	Water Depth (in.)	Change (in.)
0	1.25	
10	1.25	0
20	1.375	0.125
30	1.5	0.125
40	1.625	0.125
50	1.75	0.125
60	1.875	0.125
Rate (in/hour)		0.625

Test Number: 6
 Top Depth: 0 ft
 Diameter: 4 in.
 Hole Depth: 9 in.

Time (min.)	Water Depth (in.)	Change (in.)
0	1.25	
10	1.25	0
20	1.375	0.125
30	1.5	0.125
40	1.625	0.125
50	1.75	0.125
60	1.75	0
Rate (in/hour)		0.5