





Trace of the Wasatch fault (red) north of Brigham City and location of the Hansen Canyon trench site. Base map: 2006 NAIP aerial photography (USDA, 2008).

## **Description of Stratigraphic Units**

Unit; location (m) <sup>1</sup>	Matrix texture <sup>2</sup>	% matrix/ gravel³	Clasts						Consistence <sup>4</sup>				
			% 0.2–1cm/ 1–3cm/ >3cm	Largest/ avg size (cm)	Clast or matrix support	Sorting	Bedding	Munsell Color dry (moist)	Dry	Wet	Lower boundary⁵	Description of Soil development	Genesis
1; 16.5, 7.9	silty loam	40/60	40/40/20	80/20-40	clast and matrix	poor	very crudely bedded to massive; local boulder lenses	7.5YR4/2 (7.5YR3/2)	lo-so	ss/ps	a-c/s-w	A horizon (0-5 cm depth)	pebble-rich debris flow
2; 15.5, 7.7	loam - sandy loam	25/75	20/30/50	130-140/50- 70	clast and matrix	very poor	massive; slope-parallel clasts	7.5YR4/4 (7.5YR3/3)	SO	so- ss/ps	a/i (tect)	none	fault-scarp colluvium
3A; 19.6, 7.3	loam - silty loam	50/50	25/25/50	200-240/50- 80	clast	poor	massive	10YR5/3 (10YR4/4)	SO	ss/ps-p	c/s	A horizon; ubiquitous organic matter	A horizon on unit 3
3; 21.1, 6.9	silty loam	30/70	10/45/45	80-100/30- 60	clast and matrix	poor	very crudely bedded to massive; boulder lenses in footwall	10YR7/6 (10YR 5/8)	so-sh	ss/p	c/s	none, but carbonate rich matrix	cobble-rich debris flow
4; 21.0, 6.3	silty loam	50/50	30/30/40	150-200/50- 70	matrix	poor	very crudely bedded to massive	10YR7/6 (10YR 5/6)	so-sh	so-ss/ ps-p	ne	none, but carbonate rich matrix	pebble-rich debris flow

<sup>1</sup> Location is horizontal and vertical meter marks corresponding to coordinate system for site. <sup>2</sup> Texture terms follow the U.S. Department of Agriculture (1993) classification system. Textural information may not be representative of entire unit due to vertical and horizontal heterogeneity in units. <sup>3</sup> Percentages of clast-size fractions (based on area) are field estimates. We used a #10 (2 mm) sieve to separate matrix from gravel. <sup>4</sup> Dry consistence: lo – loose, so – soft, sh – slightly hard, h – hard. Wet consistence: so – nonsticky, ss – slightly sticky, s – sticky; po – nonplastic, ps – slightly plastic, p – plastic. <sup>5</sup> Lower boundary. Distinctness: a – abrupt (1mm-2.5 cm), c – clear (2.5-6 cm), g – gradual (6-12.5 cm), i - tectonic (faulted). Topography: s – smooth, w – wavy, i – irregular. ne, base of unit not exposed.

**STRATIGRAPHIC AND STRUCTURAL RELATIONS AT THE HANSEN CANYON** TRENCH SITE, BRIGHAM CITY SEGMENT, WASATCH FAULT ZONE

S	
1	
2	
3A	
3	
4	



	movement; dashed where indistinct a numbered sequentially from east to w
-	Fracture; dashed where indistinct
	Unit description location
	Bulk A-horizon-sediment sample for radiocarbon analysis; age is mean ± two-sigma range (ka)
	Cravel and haulders

							WEST	
3A								7 m
о С.		8						
0.0		0.00 0.00	° °	°°°° °°°			3	6 m
		0,00			Ŷ	• • • •		
	2	°,	<u> </u>	• •			80	
25 M	26 2	27 B	28 38	29 2	30 30	31 m	32 17	

Datum is mean sea level