

Supplementary Document 5

Critical Data for Outflow Ignimbrite Cooling Units in Select Stratigraphic Sections

SUPPLEMENTARY TABLE 5-1. STRATIGRAPHIC SECTION IN CONDOR CANYON 13 KM SOUTHEAST OF PIOCHE IN THE 7.5 MINUTE CONDOR CANYON TOPOGRAPHIC QUADRANGLE AT APPROXIMATELY 37° 51' N, 114° 21' W.

Stratigraphic unit	Sample	PM sample	Thick (m)	Mode (%)	Age (Ma)
Hiko Tuff	CND-1V	8P385	>85	<u>53/20/16/7/3/0/0/<1//30</u>	18.47±0.04
Harmony Hills Tuff	CND-1U, -3	8P377	40	<u>65/6/1/15/7/4/1/2//48</u>	<u>22.56±0.11</u>
Condor Canyon Formation					
Bauers Tuff Member	CND-1T	8P369	65	<u>56/0/35/6/1/0/0/2//15</u>	23.04±0.11
Swett Tuff Member	CND-1R, -1S	7T668	10	<u>83/0/0/12/0/0/0/5//10</u>	<u>24.15±0.10</u>
Leach Canyon Formation	CND-1P		180		<u>24.00±0.06</u>
Table Butte Member		8P361, 8P319		<u>47/24/17/5/3/0/0/3//16*</u>	
Narrows Member		8P353, 8P311		<u>32/29/30/6/1/0/0/2//17*</u>	
Isom Formation					
Hole-in-the-Wall Tuff Member	CND-1N, -8A, -8E	8P303, 1P143	80	<u>83/0/0/0/0/4/4/8//7</u>	24.55±0.12
Hamlight Tuff Member				<u>78/0/0/0/0/7/5/9//6</u>	
Fourth cooling unit	CND-8FU	8P295	~15		24.75±0.13
Second cooling unit	CND-1M, -8G	8P287	~70		24.63±0.17
First cooling unit	CND-1L, -8H	8P279	9		25.10±0.70
					24.91±0.05
Hornblende andesite lava	CND-1K				
Blawn Formation(?)					
Rhyolite tuff member	CND-1J		65		
Latitic lava					
Shingle Pass Formation					
Upper Tuff Member	CND-1G	7T676	45	<u>56/5/28/7/1/1/<1/1//8**</u>	<u>26.38±0.06</u>
Latitic lava	CND-1F				
Isom Formation					
Bald Hills Tuff Member				<u>79/0/0/0/0/7/6/7//10</u>	
Third cooling unit	CND-1E, -8B, -8I	8P327, 8P271	~60		27.25±0.09
Second cooling unit	CND-1D, -8C, -8J	8P263	~30		
First cooling unit	CND-1C, -8D, -8K	8P345, 8P255	~30		27.90±0.09
Lund Formation	CND-1B	7T660, 8P247	230	<u>56/14/6/13/15/0/0/6//40</u>	<u>29.20±0.08</u>
Wah Wah Springs Fm.	CND-1A	7T684	>40	<u>59/5/0/10/19/3/0/4//32</u>	<u>30.06±0.05</u>
Paleozoic rocks					

Notes: See other Supplementary Documents in this article for additional information.

PM sample, paleomagnetic sample; see Gromme and Hudson (this themed issue).

Thick, thickness in meters of the cooling unit at the site.

Mode, modal proportion (volume % of phenocrysts) are listed in the following order:

plag/qtz/sani/biot/hrnbl/cpx/opx/opaq//volume % of total phenocrysts in whole rock; if mode is underlined it is an average for unit; otherwise mode is for sample in this stratigraphic section. Mode includes trace of titanite for Hiko, Leach Canyon, and Lund.

Age, ⁴⁰Ar/³⁹Ar analyses referred to Fish Canyon Tuff sanidine irradiation monitor at 28.20 Ma; see Deino (this themed issue) for details; ± is one sigma; if age is underlined it is weighted mean for unit from Table 1; otherwise age is for the sample from this section.

SUPPLEMENTARY TABLE 5-2. STRATIGRAPHIC SECTION IN WHITE RIVER NARROWS AT APPROXIMATELY 37° 50'N, 115°W ON THE WHITE RIVER NARROWS AND WEEPAH SPRING 7.5 QUADRANGLES. SEE ALSO BEST ET AL. (1989B, P.126-128) AND DU BRAY AND HURTUBISE (1994).

Stratigraphic unit	Sample	PM sample	Thick (m)	Mode (%)	Age (Ma)
Basaltic andesite lavas			0-150		21-18
Hiko Tuff	WHRN-1L	7T796	>27	<u>51/10/26/8/4/0/0/2//40</u>	<u>18.51±0.05</u>
Harmony Hills Tuff			0-6	<u>62/6/2/16/6/5/0/3//45</u>	<u>22.56±0.11</u>
Pahrnagat Formation	WHRN-1J	7T788	11	<u>33/31/30/4/<1/<1/0/1//18</u>	<u>22.93±0.02</u>
Condor Canyon Formation					
Bauers Tuff Member	WHRN-1H	7T772	26	42-61/0/28-46/6-8/0/1/0/3-4/14-17	23.04 ±0.11
		7T780			<u>24.15±0.10</u>
Swett Tuff Member	WHRN-1G	7T764	10	<u>84/0/0/15/tr/tr/0/1//10</u>	<u>24.15±0.10</u>
Leach Canyon Formation			104		
Table Butte Tuff Mbr.	WHRN-1F	7T756		<u>46/24/17/7/2/tr/0/4//20*</u>	24.00±0.06
Narrows Tuff Mbr.	WHRN-1D, -1E	7T748		<u>35/32/33/6/2/1/0/2//20*</u>	
Isom Formation					
Hole-in-the-Wall Tuff Mbr.	WHRN-1C	8P231	5	77/0/5/0/0/4/3/11//6	<u>24.55±0.12</u>
Shingle Pass Formation					
Upper Tuff Member	WHRN-1B	8P222	20	53-71/<1/20-33/3-9/<2/<1/<1/<2//7-10	<u>26.36±0.06</u>
					<u>26.82±0.09</u>
Hancock Tuff Member	WHRN-1A	8P214	12	24/33/38/3/<1/0/0/1//29	<u>26.82±0.09</u>
Isom Formation					
Bald Hills Tuff Mbr.	WHRN-2D, WEEP-1D	8P724	20	<u>83/<1/<1/0/0/4/8/5//13</u>	27.36±0.12
Monotony Tuff	WHRN-2C	8P208	12	52/10/6/19/10/0/0/2//27	<u>27.57±0.04</u>
Petroglyph Cliff Ignimbrite	WHRN-2B	7T732	~20	<u>83/<1/<1/0/0/4/8/5//13</u>	<u>29.1</u>
	WEEP-1C				
Lund Formation	WHRN-2A, WEEP-1B	7T740	~22	<u>56/14/6/13/15/0/0/6//40</u>	<u>29.20±0.08</u>
Wah Wah Springs Fm.	WEEP-1J	1P350, 0P112	~30	<u>59/5/0/10/19/3/0/4//32</u>	<u>30.06±0.05</u>
Paleozoic rocks					

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PM sample, paleomagnetic sample; see Gromme and Hudson (this themed issue).

Thick, thickness in meters of the cooling unit at the site.

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plag/qtz/sani/biot/hrnbl/cpx/opx/opaq//volume % of total phenocrysts in whole rock; if mode is underlined it is an average for unit; otherwise mode is for sample in this stratigraphic section. Mode includes trace of titanite for Hiko, Leach Canyon, and Lund.

Age, ⁴⁰Ar/³⁹Ar analyses referred to Fish Canyon Tuff sanidine irradiation monitor at 28.20 Ma; see Deino (this themed issue) for details; ± is one sigma; if age is underlined it is weighted mean for unit from Table 1; otherwise age is for the sample from this section.

SUPPLEMENTARY TABLE 5-3. STRATIGRAPHIC SECTION AT THE SOUTHERN END OF THE NORTH PAHROC RANGE. A COMPLETE SECTION IS EXPOSED IN THE CENTRAL PAHROC SPRING QUADRANGLE (SCOTT ET AL., 1992) SOUTH OF THE BOULDER WASH ROAD.

Stratigraphic unit	Sample	PM sample	Thick (m)	Mode (%)	Age (Ma)
Hiko Tuff	PAHRC-1R	1P425, 1P430, 1P435	30	<u>51/10/26/8/4/0/0/2//40</u>	18.56±0.04
Harmony Hills Tuff	PAHRC-1Q	1P264	30	<u>62/6/2/16/6/5/0/3//45</u>	<u>22.56±0.11</u>
Pahranagat Formation	PAHRC-1S	1P256	>10	<u>33/31/30/4/<1/<1/0/1//18</u>	<u>22.93±0.02</u>
Condor Canyon Formation					
Bauers Tuff Member	PAHRC-1P	1P248	60	<u>49/0/44/6/0/<1/0/1//15</u>	<u>23.04±0.11</u>
Isom-type tuff of Pahroc Valley	PAHR-1N	1P240	5-10	<u>83/<1/<1/0/0/4/8/5//13</u>	
Condor Canyon Formation					
Swett Tuff Member	PAHRC-1M	1P232	20	<u>84/0/0/15/tr/tr/0/1//10</u>	<u>24.15±0.10</u>
Leach Canyon Formation					<u>24.00±0.06</u>
Table Butte Tuff Mbr.	PAHRC-1L		70	<u>46/24/17/7/2/tr/0/4//20*</u>	
Narrows Tuff Member	PAHRC-1K	1P225	30	<u>35/32/33/6/2/1/0/2//20*</u>	
Isom Formation					
Hole-in-the-Wall Tuff Mbr.	PAHRC-1J	1P216	14	<u>83/<1/<1/0/0/4/8/5//13</u>	<u>24.55±0.12</u>
Hamlight Tuff Mbr., upper	PAHRC-1H	2P123	15	<u>83/<1/<1/0/0/4/8/5//13</u>	<u>24.7</u>
lower	PAHRC-1G	1P200	15	<u>83/<1/<1/0/0/4/8/5//13</u>	
Andesitic lava flows	PAHRC-1F		~45		
Orphan tuff			50	52/25/11/7/4/0/0/1//25	
Shingle Pass Formation					
Upper Tuff Member	PAHRC-1D	1P191	50	54/0/32/9/2/0/0/3//7	<u>26.36±0.06</u>
Hancock Tuff Member	PAHRC-1C		56	25/38/31/4/1/0/0/1//29	<u>26.82±0.09</u>
Lower Tuff Member	PAHRC-1B	1P182	60	31/8/56/<1/0/2/1/1//14	<u>27.16±0.06</u>
Isom Formation					
Bald Hills Tuff Mbr., upper	PAHRC-1A	8P239	18	<u>83/<1/<1/0/0/4/8/5//13</u>	<u>27</u>
Limestone					
Monotony Tuff	PAHRC-2G	2P115	<40	<u>59/13/5/14/4/3/<1/2//34</u>	<u>27.57±0.04</u>
Isom Formation					
Bald Hills Tuff Mbr., lower	PAHRC-2F	2P107	~15	<u>83/<1/<1/0/0/4/8/5//13</u>	<u>27</u>
Limestone					
Isom-type tuff	PAHRC-2E	2P099	30		
Petroglyph Cliff Ignimbrite	PAHRC-2D	2P091	30-60	<u>83/<1/<1/0/0/4/8/5//13</u>	<u>29.1</u>
Limestone and conglomerate of Paleozoic rocks					
Lund Formation	PAHRC-2C	2P083	~105	45-60/10-25/<5/10/10-15/<5/0/2//30-50	<u>29.20±0.08</u>
Limestone and conglomerate of Paleozoic rocks					
Wah Wah Springs Fm.	PAHRC-2B	2P074	>110	<u>59/5/0/10/19/3/0/4//32</u>	<u>30.06±0.05</u>
Limestone and conglomerate of Paleozoic rocks					
Cottonwood Wash Tuff	PAHRC-2A	2P066	30	<u>55.6/11.6/2.6/12.2/12.1/0.8/0/5.1//39.1</u>	<u>31.13±0.09</u>
Limestone and conglomerate of Paleozoic rocks					
Paleozoic rocks					

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Thick, thickness in meters of the cooling unit at the site.

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Age, ⁴⁰Ar/³⁹Ar analyses referred to Fish Canyon Tuff sanidine irradiation monitor at 28.20 Ma; see Deino (this themed issue) for details; ± is one sigma; if age is underlined it is weighted mean for unit from Table 1; otherwise age is for the sample from this section.