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Sediment Magnetic and Paleomagnetic Data from Buck Lake, Oregon

by

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INTRODUCTION

Sediment magnetic and paleomagnetic studies were conducted on a core from Buck Lake, Klamath County, Oregon, that was collected as part of an investigation into the Quaternary climate history of the western United States. This report documents the methods used to obtain paleomagnetic directions, magnetic properties, and ancillary data, and presents these data in tabular form. Adam (1993) and Adam and others (1994) describe the site, the drilling methods, and lithology of the lacustrine sediments. Rosenbaum and others (1994) present preliminary interpretations of the sediment magnetic data and show that variations in magnetic properties closely reflect changes in climate as interpreted from the pollen record.

METHODS

Sampling: Paleomagnetic specimens, 3.2 cm³ in volume, were taken in plastic boxes. Pedestals were cut in the core, boxes were placed over the pedestals, and the sediment in the boxes was then cut from the core and the boxes were sealed. Orientation was maintained with respect to the core axis but the specimens were not azimuthally oriented. Each paleomagnetic specimen was given a unique box number and the depth interval (with respect to the top of the core segment) covered by each box was recorded. Subsequently each specimen was assigned a second unique number, the sample number. These boxed samples were used for measurements of magnetic susceptibility, paleomagnetic directions and magnitudes, laboratory induced magnetizations, and hysteresis properties.

Core material removed from around each paleomagnetic specimen was placed in one or more numbered vials. The depth interval contained in each vial corresponds closely (but not exactly) to the interval sampled by a paleomagnetic specimen. These vials were later assigned sample numbers. Material in these vials was used to determine grain size, and elemental concentrations.

Paleomagnetic Directions: Directions and magnitudes of natural remanent magnetization and of magnetization after alternating-field demagnetization were determined with a cryogenic magnetometer (sensitivity better than 10^{-5} A/m), a low-speed (5 Hz) spinner magnetometer (sensitivity $\approx 10^{-3}$ A/m), or a high-speed (90 Hz) spinner magnetometer (sensitivity better than 10^{-5} A/m). Each specimen was subjected to progressive alternating-field demagnetization to at least 60 mT. Progressive demagnetization occurred in at least five steps (peak inductions of 10, 20, 30, 40 and 60 mT) and many specimens were demagnetized at additional levels. Characteristic directions of magnetization were calculated by fitting lines to demagnetization data (Kirschvink, 1980) which visually appeared to define coherent components when displayed on orthogonal vector diagrams.

Magnetic Susceptibility: A susceptometer (sensitivity better than 10^{-5} volume SI), operating at about 600 Hz or 6000 Hz, was used to measure low frequency (MS_{LF}) and high-frequency (MS_{HF}) magnetic susceptibilities. The frequency dependence of magnetic susceptibility (FD) was calculated as

$$FD = (MS_{LF} - MS_{HF}) / MS_{LF}.$$

Laboratory Induced Magnetizations: A low speed-spinner magnetometer or a high-speed spinner magnetometer was used to measure anhysteretic remanent magnetization (ARM) and isothermal remanent magnetization (IRM). Following AF demagnetization, ARM was imparted to each specimen in a alternating induction of 100 mT and DC bias of 0.1 mT. Subsequently, an impulse magnetizer was used to impart IRMs. First specimens were given an IRM in an induction of 1.2 T ($IRM_{1.2}$), and then they were given an oppositely directed IRM in an induction of 0.3 T ($IRM_{0.3}$). The "hard" isothermal remanent magnetization (HIRM) and the S parameter were calculated as

$$HIRM = (IRM_{1.2} + IRM_{0.3}) / 2,$$

$$\text{and } S = -IRM_{0.3}/IRM_{1.2}$$

as suggested by King and Channel (1991).

Hysteresis Properties: Hysteresis loops were generated for a subset of the paleomagnetic specimens using a vibrating sample magnetometer at the Institute for Rock Magnetism at the University of Minnesota. The maximum induction used was about 1.4 T. For each loop, high field (or paramagnetic) magnetic susceptibility was determined by fitting lines to a portion of the data for inductions above about 0.9 T. The induced magnetization due to this paramagnetic susceptibility was subtracted from the observed magnetizations prior to calculation of hysteresis properties.

Curie Temperatures: Curie temperatures were determined for magnetic minerals separated from bulk sediment that had been placed in bags during sampling. The separations were done by dispersing the sediment in water (with a small amount of surfactant) and pumping the resulting slurry past a magnet using a technique similar to that described by Petersen and others (1986). Magnetization, in an induction of 0.3 T or greater, was measured as a function of temperature using a sensitive balance similar to that described by Larson and others (1975).

Grain Size Analyses: Bulk sediment grain sizes (between 0.2 and 50 μm) were obtained for sediment in 21 vials using an automated particle-size analyzer. These results are summarized here as the percentage of sediment greater than 3.2 μm in size.

Elemental Abundances: Sediment from vials was prepared for energy-dispersive X-ray fluorescence analysis by thorough drying and subsequent pulverization in a shatter box. Analyses were made at the Department of Geological Sciences, University of Colorado. Analyses were made for Ba, Cr, Cu, Fe, La, Mn, Ni, Rb, Ti, V, Zn and Zr. In addition, concentrations of total carbon and carbonate carbon were determined by coulometry (Engleman and others, 1985).

Organic carbon content was determined by taking the difference between total carbon and carbonate carbon.

Acknowledgments:

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TABLE 1. Sample Numbers and Depths

Sample No: A unique sample number assigned regardless of sample type.

Sample Box No: A unique number assigned to paleomagnetic samples that are placed in plastic boxes.

Vial No: A unique number assigned to samples removed from the core and placed in vials.

Slug: Core segment identification. Core runs were numbered consecutively. Subdivisions of a core run were labeled A (upper) and B (lower).

Depth in hole: Depth computed by adding midpoint of depth interval and depth to top of slug.

Grain Size: For the fraction of a sample less than 50 microns in size, the percentage of a sample larger than 3.2 microns.

Table for ancillary data: Column identifies existence of hysteresis data (Table 4), elemental data obtained by X-ray fluorescence (Table 5), and carbon analyses (Table 6).

Sample No.	Sample Box No. (sample volume is 3.2 cc)	Vial No.	Slug	Depth to top of slug (meter)	Depth interval relative to top of slug (cm)	Depth in hole. (meter)	Grain Size Percent >3.2 um	Table No. for ancillary data	Comments
3537	500		9/A	5.26	4.0 - 5.5	5.31		4	
3141		4112	9/A	5.26	3.0 - 4.0	5.30		5	
3540	501		9/A	5.26	14.0 - 15.5	5.41			
3139		4114	9/A	5.26	14.0 - 15.6	5.41		5	
3145	502		9/A	5.26	19.0 - 21.0	5.46			
3148	503		9/A	5.26	24.0 - 26.0	5.51			
3547		4118	9/A	5.26	24.0 - 26.0	5.51		5, 6	
3151	522		9/A	5.26	29.0 - 31.0	5.56			
3165	523		9/A	5.26	34.0 - 36.0	5.61			
3177	524		9/A	5.26	39.0 - 41.0	5.66		4	
3176		4137	9/A	5.26	39.0 - 41.0	5.66		5	
3185	512		9/A	5.26	44.0 - 46.0	5.71			
3588	511		9/A	5.26	48.5 - 50.5	5.76			
3594	510		9/A	5.26	54.0 - 56.0	5.81			
3193		4152	9/A	5.26	54.0 - 56.0	5.81		5, 6	
3200	509		9/A	5.26	59.0 - 61.0	5.86			
3606	508		9/A	5.26	64.0 - 66.0	5.91			
3212	507		9/A	5.26	69.0 - 71.0	5.96			
3611		4162	9/A	5.26	69.0 - 71.0	5.96		5	
3202	506		9/A	5.26	74.5 - 76.0	6.01		4	
3196	505		9/A	5.26	79.5 - 81.0	6.06			
3598		4151	9/A	5.26	79.0 - 81.5	6.06	13		
3175	504		9/A	5.26	84.0 - 86.0	6.11			
3574		4141	9/A	5.26	84.0 - 86.0	6.11		6	
3556	513		9/A	5.26	89.0 - 91.0	6.16			
3563	514		9/A	5.26	94.0 - 96.0	6.21			
3573	515		9/A	5.26	99.0 - 100.0	6.26			
3171		4135	9/A	5.26	99.0 - 100.0	6.26		5	
3208	516		9/A	5.26	104.5 - 106.0	6.31			
3215	517		9/A	5.26	109.5 - 111.0	6.36			
3190	518		9/A	5.26	114.5 - 116.0	6.41		4	
3191		4146	9/A	5.26	114.5 - 116.0	6.41		5, 6	
3180	519		9/A	5.26	120.0 - 121.5	6.47			
3568	520		9/A	5.26	124.5 - 126.0	6.51			
3557	521		9/A	5.26	130.0 - 131.5	6.57			
3558		4123	9/A	5.26	130.0 - 131.5	6.57		5	
3218	525		10/A	6.66	4.0 - 5.5	6.71			
3617		4166	10/A	6.66	4.0 - 5.5	6.71		5, 6	
3223	526		10/A	6.66	10.0 - 11.5	6.77		4	

Sample No.	Sample Box No. (sample volume is 3.2 cc)	Vial No.	Slug	Depth to top of slug (meter)	Depth interval relative to top of slug (cm)	Depth in hole. (meter)	Grain Size Percent >3.2 um	Table No. for ancillary data	Comments
3229	527		10/A	6.66	14.5 - 16.5	6.82			
3230		4174	10/A	6.66	14.5 - 16.5	6.82		5	
3235	528		10/A	6.66	19.5 - 21.5	6.87			
3636		4178	10/A	6.66	19.5 - 21.5	6.87		5, 6	
3241	529		10/A	6.66	24.5 - 26.5	6.92			
3242		4182	10/A	6.66	24.5 - 26.5	6.92		5, 6	
3247	530		10/A	6.66	29.0 - 31.0	6.96			
3253	531		10/A	6.66	38.0 - 40.0	7.05			
3654		4138	10/A	6.66	38.0 - 40.0	7.05		5, 6	
3656	532		10/A	6.66	44.0 - 46.0	7.11			
3258		4192	10/A	6.66	44.0 - 46.0	7.11		5	
3662	533		10/A	6.66	53.0 - 55.0	7.20			
3668	534		10/A	6.66	58.5 - 60.5	7.26			
3669		4200	10/A	6.66	58.5 - 60.5	7.26		5, 6	
3674	535		10/A	6.66	64.5 - 66.0	7.31			
3281	536		10/A	6.66	69.0 - 70.5	7.36			
3686	537		10/A	6.66	74.5 - 76.0	7.41		4	
3288		4212	10/A	6.66	74.5 - 76.0	7.41		5	
3620	538		10/A	6.66	79.5 - 81.0	7.46			
3226	539		10/A	6.66	85.0 - 86.5	7.52			Tc=560 deg. C from 7.50-7.54 m
3227		4172	10/A	6.66	85.0 - 86.5	7.52	15		
3632	540		10/A	6.66	90.0 - 91.5	7.57			
3633		4176	10/A	6.66	90.0 - 91.5	7.57		5	
3238	541		10/A	6.66	95.0 - 96.5	7.62			
3244	542		10/A	6.66	100.5 - 102.0	7.67			
3645		4184	10/A	6.66	100.5 - 102.0	7.67		5, 6	
3250	543		10/A	6.66	104.5 - 106.0	7.71			
3659	544		10/A	6.66	111.0 - 112.5	7.78			Disturbed
3261		4194	10/A	6.66	111.0 - 112.5	7.78		5	
3266	545		10/A	6.66	116.5 - 118.0	7.83			Disturbed
3671	546		10/A	6.66	121.0 - 122.5	7.88			Disturbed
3677	547		10/A	6.66	125.5 - 127.0	7.92		4	Disturbed
3678		4206	10/A	6.66	125.5 - 127.0	7.92		5	
3284	548		10/A	6.66	130.0 - 131.5	7.97			Disturbed
3290	549		10/A	6.66	134.5 - 136.0	8.01			Disturbed
3690		4214	10/A	6.66	134.5 - 136.0	8.01		5, 6	
3293	550		10/A	6.66	140.0 - 141.5	8.07			Disturbed
3296	551		10/A	6.66	146.0 - 147.5	8.13			Disturbed
3697		4219	10/A	6.66	146.0 - 147.5	8.13		5	

Sample No.	Sample Box No. (sample volume is 3.2 cc)	Vial No.	Slug	Depth to top of slug (meter)	Depth interval relative to top of slug (cm)	Depth in hole. (meter)	Grain Size Percent >3.2 um	Table No. for ancillary data	Comments
3715	800		10/B	8.16	3.0 - 5.0	8.20			
3718	802		10/B	8.16	8.0 - 10.0	8.25			
3723	804		10/B	8.16	12.0 - 14.0	8.29			
3722		4721	10/B	8.16	11.5 - 15.0	8.29		5	
3727	806		10/B	8.16	17.0 - 19.0	8.34			
3731	808		10/B	8.16	22.0 - 24.0	8.39			
3735	810		10/B	8.16	27.5 - 29.5	8.45			
3734		4727	10/B	8.16	26.0 - 30.0	8.44		5, 6	
3739	812		10/B	8.16	32.0 - 34.0	8.49		4	
3743	814		10/B	8.16	37.5 - 39.0	8.54			
3747	816		10/B	8.16	42.5 - 44.0	8.59			
3746		4733	10/B	8.16	41.0 - 44.5	8.59		5	
3751	818		10/B	8.16	47.0 - 49.0	8.64			
3755	820		10/B	8.16	52.5 - 54.0	8.69			
3757	821		10/B	8.16	57.5 - 59.0	8.74			
3737	811		10/B	8.16	63.0 - 64.4	8.80			
3741	813		10/B	8.16	69.5 - 71.0	8.86			
3745	815		10/B	8.16	74.0 - 75.5	8.91			
3744		4732	10/B	8.16	73.0 - 76.0	8.91	3		
3749	817		10/B	8.16	79.5 - 81.0	8.96			
3753	819		10/B	8.16	84.5 - 86.0	9.01			Tc=558 deg. C from
3733	809		10/B	8.16	92.5 - 94.0	9.09			8.99-9.03 m
3728	807		10/B	8.16	99.0 - 101.5	9.16			
3725	805		10/B	8.16	104.0 - 105.5	9.21		4	
3721	803		10/B	8.16	110.5 - 112.0	9.27			
3720		4720	10/B	8.16	109.5 - 113.5	9.28		5, 6	
3717	801		10/B	8.16	120.0 - 121.5	9.37			
3759	822		11/A	9.41	5.0 - 7.0	9.47			
3763	824		11/A	9.41	10.0 - 11.5	9.52			Tephra (Loleta)
3737	826		11/A	9.41	15.0 - 17.0	9.57			
3766		4746	11/A	9.41	14.5 - 17.5	9.57		5	
3769	827		11/A	9.41	24.5 - 26.0	9.66			
3773	829		11/A	9.41	29.0 - 31.0	9.71		4	Tc=580 deg. C at 971 m
3775	830		11/A	9.41	34.0 - 36.0	9.76			
3774		4747	11/A	9.41	33.5 - 36.5	9.76		5, 6	
3779	832		11/A	9.41	39.0 - 41.0	9.81			
3778		4749	11/A	9.41	38.5 - 41.5	9.81	19		
3783	834		11/A	9.41	44.0 - 44.5	9.85		4	
3787	836		11/A	9.41	49.5 - 51.0	9.91			

Sample No.	Sample Box No. (sample volume is 3.2 cc)	Vial No.	Slug	Depth to top of slug (meter)	Depth interval relative to top of slug (cm)	Depth in hole. (meter)	Grain Size Percent >3.2 um	Table No. for ancillary data	Comments
3786		4753	11/A	9.41	48.5 - 52.0	9.91		5	
3791	838		11/A	9.41	54.5 - 56.0	9.96			
3790		4755	11/A	9.41	53.0 - 57.0	9.96		5	
3795	840		11/A	9.41	62.5 - 64.0	10.04		4	
3794		4757	11/A	9.41	61.0 - 64.5	10.04		5, 6	
3799	842		11/A	9.41	68.0 - 69.5	10.10			
3798		4759	11/A	9.41	67.0 - 71.0	10.10		5	
3761	823		11/A	9.41	74.5 - 76.0	10.16			
3760		4740	11/A	9.41	73.5 - 76.5	10.16		5, 6	
3765	825		11/A	9.41	79.5 - 81.0	10.21		4	
3764		4742	11/A	9.41	79.0 - 82.0	10.22	26		
3770	828		11/A	9.41	85.0 - 86.5	10.27			Tc=555 deg. C from
3771		4745	11/A	9.41	84.0 - 87.0	10.27		5	1021-1031 m
3777	831		11/A	9.41	90.0 - 91.5	10.32			
3776		4748	11/A	9.41	89.0 - 92.0	10.32		5, 6	
3781	833		11/A	9.41	94.5 - 96.0	10.36			
3780		4750	11/A	9.41	94.0 - 96.5	10.36		5, 6	
3785	835		11/A	9.41	99.5 - 101.0	10.41			
3789	837		11/A	9.41	104.0 - 105.5	10.46		4	
3788		4754	11/A	9.41	103.5 - 106.0	10.46		5	
3793	839		11/A	9.41	109.5 - 111.0	10.51			
3797	841		11/A	9.41	115.0 - 116.5	10.57			
3796		4758	11/A	9.41	114.0 - 117.0	10.57		5, 6	
3801	843		11/A	9.41	119.5 - 121.0	10.61		4	
3800		4760	11/A	9.41	118.5 - 121.5	10.61	43		
3803	844		11/A	9.41	124.5 - 126.0	10.66			
3805	845		11/A	9.41	129.5 - 131.5	10.72			
3804		4762	11/A	9.41	128.0 - 132.0	10.71		5, 6	
3807	846		11/A	9.41	134.5 - 136.0	10.76		4	
3806		4763	11/A	9.41	133.5 - 137.0	10.76		5, 6	
3809	847		11/B	10.76	2.5 - 4.0	10.79			
3808		4764	11/B	10.76	1.5 - 5.5	10.80		5, 6	
3813	849		11/B	10.76	8.0 - 9.5	10.85		4	
3812		4766	11/B	10.76	7.0 - 11.0	10.85		5, 6	
3817	851		11/B	10.76	13.5 - 15.5	10.91			
3816		4768	11/B	10.76	12.5 - 16.5	10.91	40		
3821	853		11/B	10.76	18.5 - 20.0	10.95			Tc=570 deg. C at 10.96 m
3825	855		11/B	10.76	22.5 - 24.5	11.00			
3829	857		11/B	10.76	28.0 - 30.0	11.05			

Sample No.	Sample Box No. (sample volume is 3.2 cc)	Vial No.	Slug	Depth to top of slug (meter)	Depth interval relative to top of slug (cm)	Depth in hole. (meter)	Grain Size Percent >3.2 um	Table No. for ancillary data	Comments
3828		4774	11/B	10.76	28.0 - 30.0	11.05		5, 6	
3833	859		11/B	10.76	33.0 - 35.0	11.10			
3837	861		11/B	10.76	36.5 - 38.5	11.14		4	
3836		4778	11/B	10.76	36.0 - 39.0	11.14		5, 6	
3811	848		11/B	10.76	44.5 - 46.0	11.21			
3815	850		11/B	10.76	49.5 - 51.0	11.26			
3814		4767	11/B	10.76	49.0 - 52.0	11.27		5, 6	
3819	852		11/B	10.76	54.5 - 56.0	11.31		4	
3818		4769	11/B	10.76	54.0 - 56.5	11.31	39		
3823	854		11/B	10.76	59.5 - 61.0	11.36			
3822		4771	11/B	10.76	59.0 - 62.0	11.37		5, 6	
3827	856		11/B	10.76	64.5 - 66.0	11.41			
3831	858		11/B	10.76	72.0 - 73.5	11.49		4	
3830		4775	11/B	10.76	71.0 - 74.0	11.49	25		
3835	860		11/B	10.76	77.0 - 78.5	11.54		4	
3834		4777	11/B	10.76	76.5 - 79.0	11.54		5, 6	
3839	862		11/B	10.76	82.0 - 83.5	11.59			
3841	863		12/A	11.57	1.5 - 3.0	11.59		4	
3840		4780	12/A	11.57	0 - 3.5	11.59	35		
3845	865		12/A	11.57	6.0 - 8.0	11.64			
3844		4782	12/A	11.57	5 - 8.5	11.64		5, 6	
3849	867		12/A	11.57	11.5 - 13.0	11.69			
3853	869		12/A	11.57	16.5 - 18.0	11.74		4	
3852		4786	12/A	11.57	15.5 - 18.5	11.74		5	
3857	871		12/A	11.57	21.5 - 23.0	11.79			
3861	873		12/A	11.57	26.0 - 27.5	11.84			Tc=573 deg. C from
3860		4790	12/A	11.57	25.0 - 28.5	11.84		5, 6	11.82-11.86 m
3865	875		12/A	11.57	31.5 - 33.0	11.89			
3869	877		12/A	11.57	36.0 - 37.5	11.94		4	
3868		4794	12/A	11.57	35.0 - 38.5	11.94		5	
3873	879		12/A	11.57	41.5 - 43.0	11.99			
3877	881		12/A	11.57	45.5 - 47.5	12.04		4	
3876		4798	12/A	11.57	45.0 - 48.5	12.04		5, 6	
3881	883		12/A	11.57	50.0 - 51.5	12.08			
3885	885		12/A	11.57	55.5 - 57.0	12.13			
3889	887		12/A	11.57	61.0 - 62.5	12.19		4	
3888		4804	12/A	11.57	60.0 - 63.0	12.19		5, 6	
3843	864		12/A	11.57	65.5 - 67.0	12.23			Black tephra, Tc=488
3847	866		12/A	11.57	72.0 - 73.5	12.30			deg. C at 12.23 m

Sample No.	Sample Box No. (sample volume is 3.2 cc)	Vial No.	Slug	Depth to top of slug (meter)	Depth interval relative to top of slug (cm)	Depth in hole. (meter)	Grain Size Percent >3.2 um	Table No. for ancillary data	Comments
3851	868		12/A	11.57	77.5 - 79.0	12.35		4	
3850		4785	12/A	11.57	77.0 - 79.5	12.35		5	
3855	870		12/A	11.57	82.0 - 83.5	12.40			
3859	872		12/A	11.57	87.5 - 89.0	12.45			Tc=570 deg. C from
3858		4789	12/A	11.57	87.0 - 89.5	12.45		5, 6	12.43-12.46 m
3863	874		12/A	11.57	92.0 - 93.5	12.50			Tephra
3867	876		12/A	11.57	98.0 - 99.5	12.56			
3871	878		12/A	11.57	103.0 - 104.5	12.61		4	
3875	880		12/A	11.57	108.5 - 110.0	12.66			
3874		4797	12/A	11.57	108.0 - 110.0	12.66		5	
3879	882		12/A	11.57	115.0 - 116.5	12.73		4	
3878		4799	12/A	11.57	114.5 - 117.0	12.73		5, 6	
3883	884		12/A	11.57	120.5 - 122.0	12.78		4	
3882		4801	12/A	11.57	120.0 - 122.5	12.78		5	
3887	886		12/A	11.57	126.0 - 127.5	12.84			
3891	888		12/A	11.57	131.0 - 132.5	12.89		4	
3890		4805	12/A	11.57	130.5 - 133.5	12.89		5, 6	
3893	889		12/A	11.57	136.5 - 138.0	12.94			
3895	890		12/B	12.97	4.0 - 6.0	13.02			
3894		4807	12/B	12.97	3.5 - 6.5	13.02		5	
3901	893		12/B	12.97	9.5 - 11.0	13.07			
3900		4810	12/B	12.97	8.5 - 11.5	13.07		5, 6	
3905	895		12/B	12.97	14.0 - 15.5	13.12			
3909	897		12/B	12.97	19.5 - 21.5	13.18			
3913	899		12/B	12.97	25.0 - 26.5	13.23			
3912		4816	12/B	12.97	24.0 - 27.5	13.23		5	
3917	901		12/B	12.97	29.5 - 31.0	13.27			
3921	903		12/B	12.97	34.5 - 36.0	13.32		4	Tc=566 deg. C from
3925	905		12/B	12.97	39.5 - 41.0	13.37			13.31-13.33m
3924		4822	12/B	12.97	39.0 - 42.0	13.38		5, 6	
3929	907		12/B	12.97	44.5 - 46.0	13.42			
3933	909		12/B	12.97	57.0 - 60.0	13.56			Disturbed, Tephra (?)
3897	891		12/B	12.97	74.5 - 76.0	13.72			
3896		4808	12/B	12.97	73.0 - 76.0	13.72		5	
3899	892		12/B	12.97	79.5 - 81.0	13.77			
3903	894		12/B	12.97	84.5 - 86.0	13.82			
3907	896		12/B	12.97	89.0 - 90.5	13.87		4	
3906		4813	12/B	12.97	89.0 - 91.5	13.87		5, 6	
3911	898		12/B	12.97	94.5 - 96.0	13.92		4	

Sample No.	Sample Box No. (sample volume is 3.2 cc)	Vial No.	Slug	Depth to top of slug (meter)	Depth interval relative to top of slug (cm)	Depth in hole. (meter)	Grain Size Percent >3.2 um	Table No. for ancillary data	Comments
3915	900		12/B	12.97	100.0 - 101.5	13.98		4	
3914		4817	12/B	12.97	99.5 - 102.5	13.98		5, 6	
3919	902		12/B	12.97	105.0 - 106.5	14.03			
3923	904		12/B	12.97	109.5 - 111.0	14.07		4	
3922		4821	12/B	12.97	109.0 - 111.5	14.07		5, 6	
3927	906		12/B	12.97	114.5 - 116.0	14.12			
3926		4823	12/B	12.97	114.0 - 116.5	14.12		5	
3931	908		12/B	12.97	119.5 - 121.0	14.17			
3935	910		12/B	12.97	125.0 - 126.5	14.23		4	
3934		4827	12/B	12.97	124.9 - 127.0	14.23		5, 6	
3937	911		12/B	12.97	130.0 - 131.5	14.28			
3939	912		12/B	12.97	135.5 - 137.0	14.33		4	
3938		4829	12/B	12.97	134.0 - 137.0	14.33		5	
3941	913		13/A	14.37	4.5 - 6.0	14.42			
3940		4830	13/A	14.37	0.0 - 7.5	14.41		5, 6	
3945	915		13/A	14.37	9.0 - 10.5	14.47			
3944		4832	13/A	14.37	7.5 - 11.5	14.47		5	
3949	917		13/A	14.37	14.0 - 15.5	14.52		4	
3953	919		13/A	14.37	19.0 - 20.5	14.57			Tc=548 deg. C at 14.57 m
3952		4836	13/A	14.37	16.5 - 21.5	14.56		5, 6	
3957	921		13/A	14.37	23.0 - 24.5	14.61		4	
3956		4838	13/A	14.37	21.5 - 25.5	14.61		5, 6	
3961	923		13/A	14.37	31.0 - 32.5	14.69			
3965	925		13/A	14.37	35.0 - 36.5	14.73			
3964		4842	13/A	14.37	33.5 - 37.5	14.73		5, 6	
3969	927		13/A	14.37	39.5 - 41.0	14.77			
3973	929		13/A	14.37	44.0 - 46.0	14.82			
3972		4846	13/A	14.37	42.0 - 47.0	14.82		5, 6	
3977	931		13/A	14.37	51.5 - 53.0	14.89			
3943	914		13/A	14.37	56.5 - 58.0	14.94			Disturbed, Tephra
3947	916		13/A	14.37	62.0 - 63.5	15.00			
3951	918		13/A	14.37	67.0 - 68.5	15.05			
3950		4835	13/A	14.37	66.5 - 69.0	15.05		5, 6	
3955	920		13/A	14.37	72.5 - 74.0	15.10			
3954		4837	13/A	14.37	72.0 - 75.0	15.11		5	
3959	922		13/A	14.37	78.0 - 79.5	15.16			
3963	924		13/A	14.37	83.5 - 85.0	15.21			
3962		4841	13/A	14.37	83.5 - 85.0	15.21	15		
3967	926		13/A	14.37	89.0 - 90.5	15.27			

Sample No.	Sample Box No. (sample volume is 3.2 cc)	Vial No.	Slug	Depth to top of slug (meter)	Depth interval relative to top of slug (cm)	Depth in hole. (meter)	Grain Size Percent >3.2 um	Table No. for ancillary data	Comments
3966		4843	13/A	14.37	88.5 - 91.0	15.27		5	
3971	928		13/A	14.37	94.0 - 95.5	15.32			
3975	930		13/A	14.37	99.5 - 101.0	15.37			
3974		4847	13/A	14.37	99.0 - 102.0	15.38		5	
3980	932		13/A	14.37	105.5 - 107.0	15.43			Tephra
3984	933		14/A	15.5	11.0 - 13.0	15.62			Tephra
3990	935		14/A	15.5	19.5 - 21.0	15.70			
3989		4858	14/A	15.5	17.5 - 22.0	15.70		5	
3992	936		14/A	15.5	23.5 - 25.5	15.75			
3994	937		14/A	15.5	28.5 - 30.0	15.79			
3993		4860	14/A	15.5	28.0 - 31.5	15.80		5	
3996	938		14/A	15.5	33.5 - 35.0	15.84			
3998	939		14/A	15.5	39.0 - 41.0	15.90			
3997		4862	14/A	15.5	38.0 - 41.5	15.90		5	
4000	940		14/A	15.5	44.0 - 46.0	15.95			
4004	942		14/A	15.5	49.5 - 51.0	16.00			
4003		4864	14/A	15.5	48.5 - 52.0	16.00		5, 6	
4010	946		14/A	15.5	56.0 - 57.5	16.07			
4009		4866	14/A	15.5	55.0 - 59.0	16.07	18		
3982	934		14/A	15.5	65.5 - 67.0	16.16			
4002	941		14/A	15.5	71.0 - 72.5	16.22			
4001		4853	14/A	15.5	70.5 - 73.5	16.22		5	
4006	943		14/A	15.5	76.5 - 78.0	16.27			
4008	945		14/A	15.5	82.0 - 83.5	16.33			Tc=373 deg. C from
4007		4867	14/A	15.5	81.0 - 84.0	16.33		5	16.31-16,34 m
4012	947		14/A	15.5	88.5 - 90.0	16.39			
4014	948		14/A	15.5	99.0 - 100.5	16.50			
4016	949		14/A	15.5	108.5 - 110.0	16.59			
4018	950		14/A	15.5	126.5 - 128.0	16.77			
4017		4871	14/A	15.5	126.0 - 128.5	16.77	15		
4020	951		14/A	15.5	136.0 - 137.5	16.87			
4019		4872	14/A	15.5	135.5 - 138.0	16.87		5	
4022	952		14/B	17	3.0 - 5.0	17.04			
4021		4873	14/B	17	2.5 - 6.0	17.04		5	
4026	954		14/B	17	8.0 - 8.5	17.08			
4030	956		14/B	17	13.0 - 14.5	17.14			
4029		4877	14/B	17	12.0 - 15.5	17.14		5, 6	
4034	958		14/B	17	19.0 - 20.5	17.20			
4038	960		14/B	17	24.5 - 26.0	17.25			Tc=543 deg. C from

Sample No.	Sample Box No. (sample volume is 3.2 cc)	Vial No.	Slug	Depth to top of slug (meter)	Depth interval relative to top of slug (cm)	Depth in hole. (meter)	Grain Size Percent >3.2 um	Table No. for ancillary data	Comments
4042	962		14/B	17	29.0 - 30.5	17.30			17.23-17.26 m
4041		4883	14/B	17	28.0 - 31.5	17.30		5	
4046	964		14/B	17	35.5 - 37.0	17.36			
4045		4885	14/B	17	34.5 - 38.0	17.36		5	
4050	966		14/B	17	50.5 - 52.0	17.51		4	
4054	968		14/B	17	57.0 - 58.5	17.58			
4053		4889	14/B	17	56.0 - 59.5	17.58		5	
4036	959		14/B	17	70.0 - 71.5	17.71			Disturbed, Tc=570 deg. C
4035		4880	14/B	17	70.0 - 72.0	17.71		5	from 17.71-17.73 m
4032	957		14/B	17	76.0 - 77.5	17.77		4	Disturbed
4031		4878	14/B	17	75.0 - 78.5	17.77		5, 6	
4024	953		14/B	17	82.0 - 83.5	17.83			Disturbed
4028	955		14/B	17	90.5 - 92.0	17.91			Disturbed
4027		4876	14/B	17	90.0 - 92.0	17.91		5	
4040	961		14/B	17	100.5 - 102.0	18.01			
4039		4882	14/B	17	100.0 - 102.0	18.01	34		
4044	963		14/B	17	105.0 - 106.5	18.06			
4043		4884	14/B	17	104.0 - 107.5	18.06		5	
4048	965		14/B	17	110.0 - 111.5	18.11			
4047		4886	14/B	17	109.0 - 112.0	18.11		5	
4052	967		14/B	17	115.5 - 117.0	18.16			
4056	969		14/B	17	120.0 - 120.5	18.20			
4055		4890	14/B	17	119.0 - 122.0	18.21		5	
4058	970		14/B	17	125.0 - 126.5	18.26		4	
4057		4891	14/B	17	124.5 - 127.5	18.26	35		
4060	971		14/B	17	130.0 - 131.5	18.31			
4059		4892	14/B	17	129.5 - 132.0	18.31		5	
4062	972		14/B	17	136.0 - 137.5	18.37		4	
4061		4893	14/B	17	135.5 - 138.0	18.37		5	
4064	973		14/B	17	144.0 - 145.5	18.45			
4063		4894	14/B	17	143.0 - 145.5	18.44	27		
4068	975		15/A	18.55	3.0 - 4.5	18.59		4	
4067		4895	15/A	18.55	2.0 - 5.5	18.59		5	
4072	977		15/A	18.55	8.5 - 10.0	18.64			
4071		4897	15/A	18.55	7.0 - 11.5	18.64	36		
4076	979		15/A	18.55	13.5 - 15.0	18.69			
4075		4899	15/A	18.55	12.0 - 16.0	18.69		5	
4078	981		15/A	18.55	18.5 - 21.0	18.75		4	Tc=562 deg. C from
4077		4901	15/A	18.55	17.5 - 21.5	18.75	50		18.73-18.76 m

Sample No.	Sample Box No. (sample volume is 3.2 cc)	Vial No.	Slug	Depth to top of slug (meter)	Depth interval relative to top of slug (cm)	Depth in hole. (meter)	Grain Size Percent >3.2 um	Table No. for ancillary data	Comments
4080	983		15/A	18.55	23.5 - 25.0	18.79			
4079		4902	15/A	18.55	22.0 - 26.0	18.79		5	
4082	985		15/A	18.55	28.5 - 30.0	18.84			
4081		4904	15/A	18.55	27.5 - 31.0	18.84	25		
4084	986		15/A	18.55	33.0 - 34.5	18.89			
4083		4906	15/A	18.55	32.0 - 35.5	18.89		5	
4086	988		15/A	18.55	39.0 - 40.5	18.95		4	
4085		4908	15/A	18.55	37.5 - 42.0	18.95		5, 6	
4066	974		15/A	18.55	45.0 - 46.5	19.01			
4065		4896	15/A	18.55	44.0 - 47.0	19.01		5	
4070	976		15/A	18.55	50.0 - 51.5	19.06			Tc=548 deg. C at 19.05 m
4069		4898	15/A	18.55	49.5 - 52.0	19.06		5	
4074	978		15/A	18.55	55.0 - 56.5	19.11			
4073		4900	15/A	18.55	54.5 - 57.5	19.11	27		
4088	980		15/A	18.55	60.0 - 61.5	19.16			
4087		4903	15/A	18.55	59.5 - 62.0	19.16	27		
4090	982		15/A	18.55	66.0 - 67.5	19.22		4	
4089		4905	15/A	18.55	65.5 - 68.0	19.22		5	
4092	987		15/A	18.55	72.0 - 73.5	19.28			
4094	989		15/A	18.55	76.5 - 78.0	19.32			
4096	990		15/A	18.55	82.5 - 84.0	19.38			
4095		4910	15/A	18.55	81.5 - 84.0	19.38		5	
3299	552		16/A	19.49	2.0 - 4.5	19.52			Cinders
3703	553		16/A	19.49	6.0 - 8.5	19.56			Cinders
3309	555		16/A	19.49	28.0 - 31.0	19.79			
3710	556		16/A	19.49	34.5 - 36.0	19.84			Tephra (Rockland)
3301	563		16/A	19.49	39.0 - 40.5	19.89			Tephra (Rockland)
3705	554		16/A	19.49	44.0 - 45.5	19.94			Tephra (Rockland)
4105	557		17/A	20.12	5.0 - 7.0	20.18			
4109	558		17/A	20.12	10.0 - 12.0	20.23			
4113	559		17/A	20.12	15.0 - 17.0	20.28			
4117	560		17/A	20.12	20.0 - 22.0	20.33			
4121	561		17/A	20.12	25.0 - 27.0	20.38			
4125	562		17/A	20.12	30.0 - 32.0	20.43			
4129	625		17/A	20.12	37.0 - 39.0	20.50			
4133	564		17/A	20.12	42.0 - 44.0	20.55			
4137	565		17/A	20.12	47.0 - 49.0	20.60			
4141	566		17/A	20.12	52.0 - 54.0	20.65			
4145	567		17/A	20.12	57.0 - 59.0	20.70			

Sample No.	Sample Box No. (sample volume is 3.2 cc)	Vial No.	Slug	Depth to top of slug (meter)	Depth interval relative to top of slug (cm)	Depth in hole. (meter)	Grain Size Percent >3.2 um	Table No. for ancillary data	Comments
4149	568		17/A	20.12	64.0 - 66.0	20.77			Reworked tephra (Dibekulewe)
4153	569		17/A	20.12	75.0 - 77.0	20.88			
4157	570		17/A	20.12	80.0 - 82.0	20.93			
4161	571		17/A	20.12	85.0 - 87.0	20.98			
4165	572		18/A	21.01	5.0 - 7.0	21.07			
4169	573		18/A	21.01	10.0 - 12.0	21.12			
4173	574		18/A	21.01	15.0 - 17.0	21.17			
4177	575		18/A	21.01	20.0 - 22.0	21.22			
4181	576		18/A	21.01	25.0 - 27.0	21.27			
4185	577		18/A	21.01	35.0 - 37.0	21.37			
4189	578		18/A	21.01	40.0 - 42.0	21.42			
4193	579		18/A	21.01	45.0 - 47.0	21.47			
4197	580		18/A	21.01	50.0 - 52.0	21.52			
4201	581		18/A	21.01	55.0 - 57.0	21.57			
4205	582		18/A	21.01	60.0 - 62.0	21.62			
4209	583		18/A	21.01	65.0 - 67.0	21.67			Tc=550 deg. C from 21.66-21.68 m
4213	584		18/A	21.01	71.0 - 73.0	21.73			
4217	585		19/A	21.87	5.0 - 7.0	21.93			
4221	586		19/A	21.87	10.0 - 12.0	21.98			
4225	587		19/A	21.87	15.0 - 17.0	22.03			
4229	588		19/A	21.87	20.0 - 22.0	22.08			
4233	589		19/A	21.87	25.0 - 27.0	22.13			
4237	590		19/A	21.87	30.0 - 32.0	22.18			
4241	591		19/A	21.87	35.0 - 37.0	22.23			
4245	592		19/A	21.87	40.0 - 42.0	22.28			Above Lava Creek B Below Lava Creek B
4249	593		19/A	21.87	50.0 - 52.0	22.38			
4253	594		19/A	21.87	55.0 - 57.0	22.42			
4257	595		19/A	21.87	60.0 - 62.0	22.48			
4261	596		19/A	21.87	75.0 - 77.0	22.63			
4265	597		19/A	21.87	80.0 - 82.0	22.68			
4269	598		19/A	21.87	85.0 - 87.0	22.73			
4273	599		19/A	21.87	90.0 - 92.0	22.78			
4277	600		19/A	21.87	95.0 - 97.0	22.83			
4281	601		19/A	21.87	100.0 - 102.0	22.88			
4285	602		19/A	21.87	105.0 - 107.0	22.93			
4289	603		19/A	21.87	110.0 - 112.0	22.98			
4293	604		19/A	21.87	115.0 - 117.0	23.03			
4297	605		19/B	23.07	5.0 - 7.0	23.13			
4301	606		19/B	23.07	10.0 - 12.0	23.18			

Sample No.	Sample Box No. (sample volume is 3.2 cc)	Vial No.	Slug	Depth to top of slug (meter)	Depth interval relative to top of slug (cm)	Depth in hole. (meter)	Grain Size Percent >3.2 um	Table No. for ancillary data	Comments
4305	607		19/B	23.07	15.0 - 17.0	23.23			
4309	608		19/B	23.07	20.0 - 22.0	23.28			Tc=560 deg. C from 23.27-23.29 m
4313	609		19/B	23.07	25.0 - 27.0	23.33			
4317	610		19/B	23.07	30.0 - 32.0	23.38			
4321	611		19/B	23.07	35.0 - 37.0	23.43			
4325	612		19/B	23.07	40.0 - 42.0	23.48			
4329	613		19/B	23.07	45.0 - 47.0	23.53			
4333	614		19/B	23.07	50.0 - 52.0	23.58			
4337	615		19/B	23.07	55.0 - 57.0	23.63			
4341	616		19/B	23.07	60.0 - 62.0	23.68			
4345	617		19/B	23.07	65.0 - 67.0	23.73			
4349	618		19/B	23.07	70.0 - 72.0	23.78			
4353	619		19/B	23.07	75.0 - 77.0	23.83			
4357	620		19/B	23.07	80.0 - 82.0	23.88			
4361	621		19/B	23.07	85.0 - 87.0	23.93			
4365	622		19/B	23.07	90.0 - 92.0	23.98			
4369	623		19/B	23.07	95.0 - 97.0	24.03			
4373	624		19/B	23.07	100.0 - 102.0	24.08			

TABLE 2. Paleomagnetic Data

Sample Box No: A unique number assigned to paleomagnetic samples that are placed in plastic boxes.

Depth: Depth in hole as in Table 1.

Magnetometer: Magnetometer used to measure remanent magnetization in the USGS Denver rock magnetism laboratory -- S is a 5 hertz spinner magnetometer, C is a cryogenic magnetometer, and J is a 90 hertz spinner magnetometer.

Declination: Declination of the characteristic magnetization. Characteristic directions of magnetization were determined by fitting lines to demagnetization data.

Inclination: Inclination of the characteristic magnetization.

NRM: The magnitude of natural remanent magnetization in Amperes/meter (A/m).

Magnetization removed in demagnetization interval: The difference in magnitude between the magnetizations for the lowest and highest demagnetization steps included in calculating the characteristic magnetization.

Demagnetization interval used for linear fit: The highest and lowest demagnetization steps in milliTesla (mT) used in calculating the characteristic direction.

No. of points used in linear fit: The number of demagnetization steps used in calculating the characteristic direction.

Error angle: The maximum angular deviation for the demagnetization steps used in calculating the characteristic direction.

Subjective quality of demagnetization path: A consensus ranking (A, B, or C) of the linearity of the demagnetization path, after visual inspection of a vector endpoint diagram.

SAMPLE Box No. (sample volume is 3.2cc)	Depth (meter)	Mag neto met	Dec-lina-tion (deg.) Linear fit	Inc-lina-tion (deg.) Linear fit	NRM A/m	Magnet-ization removed in demag-netization interval A/m	Demagnet-ization inter-val used for linear fit (mT)	No. Pts. used in linear fit	Error Angle	Subjec-tive quality of demag-netization path (A=best C=worst)	Comments
Slug 9/A											
500	5.31	S	225.6	54	6.38E-03	3.75E-03	5 - 60	7	6.2	A	
501	5.41	C	24.3	53.1	3.06E-03	1.90E-03	5 - 80	8	6	A	
502	5.46	C	229.5	30.7	2.69E-03	8.53E-04	20 - 60	4	5.3	A	
503	5.51	C	207.9	21	2.85E-03	8.50E-04	20 - 60	4	7.5	B	
522	5.56	C	261.3	58.2	2.74E-03	1.14E-03	10 - 60	5	16.1	B	
523	5.61	C	270.7	37.1	1.77E-03	7.22E-04	20 - 60	4	17.3	B	
524	5.66	C	50.1	42.7	2.28E-03	8.97E-04	10 - 60	5	3.8	A	
512	5.71	C	134.4	37.3	2.96E-03	1.34E-03	10 - 60	5	7.5	A	
511	5.75	C	3.5	63.7	1.14E-03	5.88E-04	10 - 80	7	12.2	B	
510	5.81	S	181.7	63.9	1.60E-03	6.94E-04	3 - 20	5	7.2	C	
509	5.86	C	128.9	58.1	2.75E-03	1.24E-03	10 - 60	5	9.4	A	
508	5.91	C	84.1	53	3.00E-03	1.15E-03	10 - 40	4	9.3	B	
507	5.96	C	344.5	39.6	2.63E-03	5.66E-04	30 - 60	3	7.9	B	
506	6.01	C	83.3	44.2	2.59E-03	1.59E-03	5 - 60	7	7.3	A	
505	6.06	S	22.8	61.4	1.83E-03	1.03E-03	10 - 80	7	14.8	B	
504	6.11	C	243.4	43.5	2.26E-03	1.00E-03	10 - 60	5	10.2	A	
513	6.16	C	134.8	59	2.54E-03	1.04E-03	10 - 60	5	17.8	B	
514	6.21	C	118.2	60.4	3.44E-03	1.42E-03	10 - 60	5	18.9	B	
515	6.25	S	164	55.9	3.41E-03	1.91E-03	5 - 80	8	8.6	A	
516	6.31	C	177.5	42.8	3.13E-03	1.93E-03	3 - 80	9	10	A	
517	6.36	C	89.5	57	2.56E-03	1.33E-03	10 - 60	5	9.7	B	
518	6.41	C	129.8	40.1	2.34E-03	9.06E-04	10 - 40	4	6.5	A	
519	6.47	C	147.5	79.8	2.10E-03	8.56E-04	10 - 60	5	17.1	B	
520	6.51	S	306.1	71.8	2.06E-03	1.37E-03	5 - 80	8	11.3	B	
521	6.57	C	213.5	53.1	2.67E-03	1.30E-03	10 - 80	7	18.7	B	
Slug 10/A											
525	6.71	S	215.8	40	2.47E-03	9.81E-04	10 - 60	7	16.8	B	
526	6.77	C	179.8	39.5	5.53E-03	1.25E-03	15 - 80	6	19.6	C	
527	6.81	C	222.9	34.6	3.75E-03	1.22E-03	10 - 40	4	11.8	B	
528	6.86	C	183.8	32.1	3.19E-03	1.04E-03	10 - 40	4	10.3	A	
529	6.91	C	184.8	46.3	3.02E-03	1.31E-03	10 - 60	5	16.5	C	
530	6.96	S	125.5	49.1	3.78E-03	1.35E-03	5 - 40	6	12.6	B	
531	7.05	C	137.8	65	4.16E-03	1.67E-03	10 - 80	7	13.8	B	
532	7.11	C	52.9	72	4.66E-03	1.94E-03	10 - 60	5	11	A	
533	7.20	C	193.3	51.6	3.50E-03	1.41E-03	10 - 40	4	8.6	A	
534	7.25	C	202	47.1	3.02E-03	1.48E-03	10 - 60	5	12.7	B	
535	7.31	S	198.7	58.5	2.87E-03	1.65E-03	5 - 40	6	8.5	B	
536	7.36	C	220	53.4	3.69E-03	1.18E-03	15 - 80	6	10.6	B	
537	7.41	C	193.6	26.7	5.47E-03	1.68E-03	10 - 60	5	15.9	B	
538	7.46	C	212	43.3	4.63E-03	1.38E-03	10 - 40	4	6.6	A	
539	7.52	C	162.5	42.9	6.69E-03	1.00E-03	20 - 60	4	8.2	B	
540	7.57	S	198.6	51	5.50E-03	2.24E-03	5 - 80	8	11.2	A	
541	7.62	C	192	41.1	2.45E-03	1.40E-03	20 - 80	5	19.2	C	
542	7.67	C	171.4	32.2	3.00E-03	1.50E-03	10 - 60	5	13.7	B	
543	7.71	C	155	50	9.44E-03	1.50E-03	10 - 40	4	9.1	B	
544	7.78	C	34.8	72.9	3.91E-03	1.45E-03	10 - 40	4	9.3	B	Disturbed
545	7.83	S	140.8	66.8	2.65E-03	1.54E-03	205 - 30	6	12	C	Disturbed
546	7.88	C	116.7	79.8	2.62E-03	2.22E-03	5 - 40	6	11.5	B	Disturbed
547	7.92	C	53.8	48.7	1.99E-03	8.62E-04	10 - 40	4	15.4	B	Disturbed
548	7.97	C	107.3	68.7	3.03E-03	1.53E-03	10 - 60	5	17.4	B	Disturbed
549	8.01	C	289.2	76	1.69E-03	3.66E-04	10 - 40	4	12.3	A	Disturbed
550	8.07	S	33.2	80.6	2.45E-03	1.38E-03	5 - 80	8	12.4	B	Disturbed

SAMPLE Box No. (sample volume is 3.2cc)	Depth (meter)	Mag neto met	Dec-lina-tion (deg.) Linear fit	In-c-lina-tion (deg.) Linear fit	NRM A/m	Magnet-ization removed in demag-netization interval A/m	Demagnet-ization inter-val used for linear fit (mT)	No. Pts. used in linear fit	Error Angle	Subjec-tive quality of demag-netization path (A=best C=worst)	Comments
551	8.13	C	221.8	42.7	5.03E-03	9.22E-04	10 - 60	6	13.2	B	Disturbed
Slug 10/B											
800	8.20	C	100.9	8.7	4.69E-03	3.47E-03	5 - 80	8	4.1	A	
802	8.25	C	302.6	53	1.17E-03	6.00E-04	10 - 40	4	18.4	B	
804	8.29	C	92.1	59.4	1.58E-03	9.63E-04	10 - 60	5	9.3	A	
806	8.34	C	240.7	60.7	1.61E-03	7.88E-04	10 - 60	5	14.4	B	
808	8.39	C	199.5	71.4	1.41E-03	5.19E-04	10 - 60	5	22.9	B	
810	8.45	C	9.2	36.8	2.66E-03	1.17E-03	5 - 80	8	21.2	B	
812	8.49	C	58.2	74.6	2.24E-03	5.69E-04	10 - 40	4	10.9	B	
814	8.54	C	7.9	61.1	2.51E-03	8.28E-04	10 - 40	4	15.4	B	
816	8.59	C	57	49.5	2.25E-03	9.75E-04	10 - 60	5	13.6	A	
818	8.64	C	178.2	80.6	1.63E-03	8.78E-04	10 - 60	5	22.1	B	
820	8.69	C	64.5	62.6	2.40E-03	1.23E-03	5 - 60	7	12.9	B	
821	8.74	C	346.1	43.4	2.01E-03	1.38E-03	10 - 60	5	14.1	B	
811	8.80	C	198.9	57.4	2.53E-03	1.01E-03	10 - 60	5	15.7	B	
813	8.86	C	139.8	62.5	1.78E-03	8.38E-04	10 - 60	5	11.4	B	
815	8.91	C	120.8	59.7	2.13E-03	1.25E-03	5 - 60	7	12.7	B	
817	8.96	C	122.6	46.5	1.45E-03	6.16E-04	10 - 40	4	9.9	B	
819	9.01	C	197.7	48.4	1.58E-03	9.44E-04	10 - 60	5	12.1	B	
809	9.09	C	228.2	67.2	1.84E-03	8.34E-04	10 - 60	5	11.3	B	
807	9.16	C	90.8	40.6	1.88E-03	9.72E-04	10 - 60	5	13.7	B	
805	9.21	C	28.7	55.4	2.61E-03	1.19E-03	10 - 60	6	10.2	A	
803	9.27	C	247.5	72.3	1.00E-03	8.94E-04	10 - 60	5	25.3	C	
801	9.37	C	124.5	47.7	2.41E-03	1.19E-03	10 - 60	5	14.3	A	
Slug 11/A											
822	9.47	C	150	38.4	2.88E-03	1.37E-03	10 - 60	5	11.6	B	
824	9.52										Tephra (Loleta)
826	9.57	C	139.3	40.6	2.48E-03	1.03E-03	10 - 60	5	11.1	B	
827	9.66	C	193.9	51.6	2.34E-03	1.20E-03	10 - 60	5	10.7	B	
829	9.71	C	142.3	53	1.99E-03	1.24E-03	10 - 60	5	10.2	A	
830	9.76	C	202.6	42.1	1.08E-03	6.47E-04	5 - 40	6	18.7	C	
832	9.81	C	200.9	47.8	1.33E-03	7.37E-04	10 - 40	4	10.1	B	
834	9.86	C	193.6	47.9	1.77E-03	7.78E-04	10 - 60	5	11.6	B	
836	9.91	C	205.1	36.4	2.27E-03	9.78E-04	10 - 60	5	17.1	B	
838	9.96	C	195.6	51	3.94E-03	1.76E-03	10 - 60	5	12.8	A	
840	10.04	C	206	51.9	5.09E-03	2.70E-03	5 - 60	7	6.4	A	
842	10.10	C	215.5	60.4	6.03E-03	2.36E-03	10 - 60	5	9.9	A	
823	10.16	C	234.2	54.1	7.59E-03	2.56E-03	10 - 60	5	6.5	A	
825	10.21	C	216.8	58.6	8.09E-03	4.16E-03	5 - 60	7	5.4	A	
828	10.27	C	229.4	62.1	9.97E-03	4.31E-03	10 - 60	5	6.5	A	
831	10.32	C	207.5	55	1.63E-02	7.88E-03	10 - 60	5	4.7	A	
833	10.36	C	171.9	58.3	6.38E-03	2.44E-03	10 - 60	5	10.8	B	
835	10.41	C	207.9	61.1	8.94E-03	4.56E-03	5 - 60	7	5.3	A	
837	10.46	C	206.4	59.6	1.01E-02	3.78E-03	10 - 40	4	2.4	A	
839	10.51	C	226	49.2	7.84E-03	3.16E-03	10 - 60	5	5.5	A	
841	10.57	C	210.3	58.7	6.84E-03	3.91E-03	10 - 40	4	6.9	A	
843	10.61	C	124.3	72.7	2.37E-02	1.13E-02	10 - 40	4	2.6	A	
844	10.66	C	71	69.2	1.11E-02	5.91E-03	10 - 60	5	8.8	B	
845	10.71	C	21.9	56.9	3.91E-02	3.05E-02	5 - 80	8	6.1	A	
846	10.76	C	52.1	66.7	1.13E-01	5.88E-02	10 - 40	4	5.4	A	
Slug 11/B											
847	10.79	C	244.2	62.3	5.28E-02	2.66E-02	10 - 60	5	3.5	A	
849	10.84	C	232.4	64	1.59E-02	6.63E-03	10 - 60	5	5.3	B	

SAMPLE Box No. (sample volume is 3.2cc)	Depth (meter)	Mag neto met	Declination (deg.) Linear fit	Inclination (deg.) Linear fit	NRM A/m	Magnetization removed in demagnetization interval A/m	Demagnetization interval used for linear fit (mT)	No. Pts. used in linear fit	Error Angle	Subjective quality of demagnetization path (A=best C=worst)	Comments
851	10.90	C	202.3	39.2	1.16E-01	6.03E-02	10 - 60	5	3.6	A	
853	10.95	C	181.3	55.7	1.06E-01	6.84E-02	10 - 60	5	2.4	A	
855	10.99	C	185.9	48.6	6.63E-02	3.84E-02	10 - 60	6	3.4	A	
857	11.04	C	142.2	46.7	8.00E-02	3.75E-02	10 - 40	4	4.8	A	
859	11.09	C	148.6	54	5.25E-02	2.40E-02	10 - 60	5	6.8	A	
861	11.13	C	115	67.4	7.75E-02	3.59E-02	10 - 60	5	5.7	A	
848	11.21	C	11.3	67.9	1.69E-02	8.56E-03	10 - 60	5	7.9	A	
850	11.26	C	225.3	80.6	1.89E-02	1.24E-02	10 - 80	7	3.8	A	
852	11.31	C	225.4	55.4	1.66E-02	8.25E-03	10 - 60	5	3.9	A	
854	11.36	C	196.5	51.1	1.14E-02	5.25E-03	10 - 60	5	3.7	A	
856	11.41	C	189.6	64.3	1.22E-02	4.53E-03	10 - 40	4	6.1	A	
858	11.48	C	240.4	50.8	2.67E-03	1.12E-03	10 - 60	5	11.5	B	
860	11.53	C	179.1	55	6.88E-03	4.22E-03	5 - 60	7	5.7	A	
862	11.58	C	155.9	66.9	2.07E-02	8.59E-03	10 - 60	5	11.5	B	
Slug 12/A											
863	11.59	C	55.3	84.3	2.32E-02	1.19E-02	10 - 60	5	8	A	
865	11.64	C	75.7	81	3.31E-02	2.44E-02	5 - 60	7	4.4	A	
867	11.69	C	52.7	61.1	2.11E-02	1.11E-02	10 - 60	5	4.6	A	
869	11.74	C	11	81	3.75E-02	2.06E-02	10 - 60	5	7.9	B	
871	11.79	C	11.5	59.8	1.48E-02	8.19E-03	10 - 60	5	4.4	A	
873	11.84	C	30.4	71.9	1.90E-02	1.17E-02	10 - 60	5	7.3	A	
875	11.89	C	242.7	57.8	1.20E-02	8.16E-03	10 - 60	6	4.4	A	
877	11.94	C	98.1	65.1	1.42E-02	6.75E-03	10 - 60	5	5.5	A	
879	11.99	C	68.1	60.4	4.63E-03	2.20E-03	10 - 40	4	5.9	A	
881	12.04	C	52.2	68.3	4.66E-03	2.39E-03	10 - 60	5	7.5	A	
883	12.08	C	186.1	73.1	1.38E-02	8.13E-03	10 - 60	5	4.9	A	
885	12.13	C	181.6	32	8.53E-03	5.66E-03	5 - 40	6	5.5	A	
887	12.19	C	265.2	72.2	3.09E-03	1.79E-03	10 - 60	5	12.3	B	
864	12.23	C	209.9	47	1.58E-01	5.25E-02	10 - 40	4	1.8	A	Black tephra
866	12.30	C	125.3	57.7	1.19E-02	5.66E-03	10 - 60	5	5.4	A	
868	12.35	C	128.4	67.1	1.95E-02	9.38E-03	10 - 60	5	3.8	A	
870	12.40	C	88.2	76	1.14E-02	6.06E-03	10 - 80	7	8.9	A	
872	12.45	C	307.6	63.3	1.08E-02	5.66E-03	10 - 60	5	4.1	A	
874	12.50	C	273.2	70.4	2.05E-02	8.25E-03	10 - 60	5	5.3	A	Tephra
876	12.56	C	184.4	62.8	7.78E-03	3.75E-03	10 - 60	5	5.6	A	
878	12.61	C	181.6	64.1	1.45E-02	7.19E-03	10 - 60	5	4.2	A	
880	12.66	C	171.7	51.9	9.34E-03	6.63E-03	5 - 80	8	4.3	A	
882	12.73	C	169.1	82.6	3.97E-03	1.89E-03	10 - 60	5	11.3	B	
884	12.78	C	107	63.9	2.61E-02	1.46E-02	10 - 60	5	2.9	A	
886	12.84	C	297.4	77.9	2.08E-02	1.40E-02	10 - 60	5	2.8	A	
888	12.89	C	159.8	58.9	5.78E-02	2.87E-02	10 - 60	5	1.2	A	
889	12.94	C	211	63.3	5.25E-02	2.69E-02	10 - 60	5	3.5	A	
Slug 12/B											
890	13.02	C	135.2	55.8	2.85E-02	1.18E-02	10 - 60	6	3.7	A	
893	13.07	C	58.3	81.3	5.44E-02	2.66E-02	10 - 60	5	4.4	B	
895	13.12	C	181.1	61.7	5.19E-02	1.14E-02	20 - 80	5	6.3	A	
897	13.18	C	155	62.6	5.22E-02	5.69E-02	10 - 60	5	1.6	A	
899	13.23	C	146.1	64.5	3.91E-02	2.00E-02	10 - 60	5	5.2	A	
901	13.27	C	111.7	71.5	3.69E-02	1.85E-02	10 - 60	5	3	A	
903	13.32	C	166.6	54	5.59E-02	2.76E-02	10 - 60	5	3.9	A	
905	13.37	C	101.3	62.2	4.62E-02	2.67E-02	10 - 80	7	4.4	A	
907	13.42	C	176.5	43.8	5.16E-02	2.78E-02	10 - 60	5	2.7	A	
909	13.56	C	211	48.8	3.03E-02	1.55E-02	10 - 60	5	10.2	A	Disturbed, Tephra (?)

SAMPLE Box No. (sample volume is 3.2cc)	Depth (meter)	Mag neto met	Dec-lina-tion (deg.) Linear fit	Inc-lina-tion (deg.) Linear fit	NRM A/m	Magnet-ization removed in demag-netization interval A/m	Demagnet-ization inter-val used for linear fit (mT)	No. Pts. used in linear fit	Error Angle	Subjec-tive quality of demag-netization path (A=best C=worst)	Comments
891	13.72	C	183.7	65.4	4.37E-02	1.86E-02	10 - 60	5	3.6	A	
892	13.77	C	307.5	74.8	1.86E-02	1.05E-02	10 - 60	5	4	A	
894	13.82	C	209.7	48.8	3.06E-02	1.57E-02	10 - 60	5	3.4	A	
896	13.87	C	276.2	71.5	3.22E-02	1.77E-02	10 - 60	5	5.3	A	
898	13.92	C	146.3	56.7	1.79E-02	8.06E-03	10 - 60	5	7.7	A	
900	13.98	C	353.4	77.1	1.90E-03	9.97E-04	10 - 60	6	15.2	B	
902	14.03	C	172.8	48.8	1.50E-02	5.88E-03	10 - 60	5	5.1	A	
904	14.07	C	99.9	75.3	4.59E-02	2.19E-02	10 - 60	5	2.6	A	
906	14.12	C	201.1	66.7	8.00E-02	4.56E-02	10 - 60	5	7.1	A	
908	14.17	C	229.2	66.6	1.12E-01	6.28E-02	10 - 60	5	3.2	A	
910	14.23	C	221	76.5	1.40E-01	1.12E-01	5 - 80	8	3.4	A	
911	14.28	C	194.9	44.8	1.08E-01	5.28E-02	10 - 60	5	2.1	A	
912	14.33	C	331.7	87.7	3.53E-03	1.38E-03	10 - 60	5	15.2	A	
Slug 13/A											
913	14.42	C	208.1	58.7	1.16E-02	5.53E-03	10 - 60	5	7.6	B	
915	14.47	C	76.9	74	1.75E-02	8.44E-03	10 - 80	7	6.6	A	
917	14.52	C	258	74.4	3.34E-02	1.55E-02	10 - 60	5	2.9	A	
919	14.57	C	130.8	71.4	5.63E-03	2.13E-03	10 - 60	5	5.7	A	
921	14.61	C	187.5	46.4	2.67E-03	9.53E-04	10 - 40	4	13.8	A	
923	14.69	J	115.3	61.5	3.75E-03	1.91E-03	5 - 40	5	21.3	B	
925	14.73	C	5.4	73	2.51E-03	1.26E-03	5 - 60	7	11.1	B	
927	14.77	J	242.4	64.5	4.70E-03	2.52E-03	5 - 40	5	2.2	A	
929	14.82	J	182.4	54.6	1.87E-03	1.13E-03	5 - 40	5	10.7	A	
931	14.89	J	336.5	84.1	1.17E-03	7.47E-04	5 - 80	7	18.6	B	
914	14.94	C	56	72.4	2.26E-02	1.14E-02	10 - 60	5	9.2	A	Disturbed, Tephra
916	15.00	C	18.7	69.3	1.24E-03	3.25E-04	10 - 30	3	4.8	B	
918	15.05	C	125.4	63.1	1.14E-03	4.34E-04	10 - 60	5	28.4	B	
920	15.10	C	251.8	37.7	1.33E-03	5.81E-04	5 - 30	5	16.3	B	
922	15.16	J	234.4	57.5	1.27E-03	9.16E-04	5 - 60	5	5.2	B	
924	15.21	J	185.9	44.8	1.35E-03	8.66E-04	5 - 40	5	10.5	B	
926	15.27	J	99.4	67.7	1.70E-03	9.53E-04	5 - 60	6	16.7	B	
928	15.32	J	191.5	57.6	1.50E-03	1.22E-03	5 - 60	6	11.5	B	
930	15.37	C	213	35.2	1.13E-03	5.81E-04	5 - 60	7	19.3	B	
932	15.43	J	179.5	38.9	1.27E-03	6.75E-04	10 - 60	5	9.7	B	Tephra
Slug 14/A											
933	15.62	J	111.3	25.4	2.98E-03	1.07E-03	5 - 60	6	48.6	C	Tephra
935	15.70	C	83.8	60.9	2.41E-03	1.32E-03	5 - 60	7	9	A	
936	15.75	J	129.3	67.1	1.07E-03	8.09E-04	5 - 60	7	17.4	B	
937	15.79	J	107	66.5	8.10E-04	4.31E-04	5 - 40	5	8.1	B	
938	15.84	J	54.4	68.5	8.10E-04	4.19E-04	5 - 30	4	9.1	B	
939	15.90	J	58.8	46.9	1.54E-03	1.16E-03	5 - 40	5	16.4	B	
940	15.95	C	31.2	74	1.25E-03	7.37E-04	5 - 80	8	18.8	B	
942	16.00	J	63.6	59.4	1.27E-03	8.34E-04	5 - 60	6	11.5	B	
946	16.07	J	59.2	57.4	1.40E-03	8.03E-04	5 - 40	6	7.4	A	
934	16.16	J	133.7	50.2	9.65E-04	5.66E-04	5 - 40	5	15.8	B	
941	16.22	J	79.6	47.6	8.80E-04	6.16E-04	5 - 60	7	18.9	B	
943	16.27	J	68.4	48.9	8.73E-04	7.81E-04	5 - 60	6	12.6	B	
945	16.33	C	99.2	29.7	2.32E-03	4.78E-04	10 - 80	7	18.1	B	
947	16.39	J	89.3	49	1.63E-03	1.13E-03	5 - 60	6	16.9	B	
948	16.50	J	97.7	-31.1	1.51E-03	1.01E-03	5 - 60	6	9.6	A	
949	16.59	J	123	43.7	1.06E-03	8.47E-04	5 - 60	6	10.8	A	
950	16.77	C	114.2	29	8.53E-04	3.59E-04	5 - 30	5	18.7	B	
951	16.87				6.05E-01						

SAMPLE Box No. (sample volume is 3.2cc)	Depth (meter)	Mag neto met	Dec-lina-tion (deg.) Linear fit	Inc-lina-tion (deg.) Linear fit	NRM A/m	Magnet-ization removed in demag-netization interval A/m	Demagnet-ization inter-val used for linear fit (mT)	No. Pts. used in linear fit	Error Angle	Subjec-tive quality of demag-netization path (A=best C=worst)	Comments
Slug 14/B											
952	17.04	J	173.9	53.8	1.81E-03	1.01E-03	5 - 60	6	15.5	B	
954	17.09	J	239.3	65	2.25E-03	1.70E-03	5 - 60	6	12.7	A	
956	17.14	J	214.2	72.5	4.45E-03	3.66E-03	5 - 60	7	7.3	B	
958	17.20	J	129.2	66.6	7.95E-04	6.41E-04	5 - 60	6	19.2	B	
960	17.25	C	189.6	52.8	7.69E-04	4.63E-04	5 - 40	6	10.6	B	
962	17.30	J	177.5	53.5	8.10E-04	7.34E-04	5 - 60	6	8.1	A	
964	17.36	J	204.5	61.4	1.41E-03	1.03E-03	5 - 60	6	7.9	A	
966	17.51	J	225.1	75.8	2.90E-02	1.62E-02	10 - 80	7	5.8	B	
968	17.58	J	237.3	73.7	8.48E-03	6.56E-03	10 - 60	5	7.8	B	
959											Disturbed
957											Disturbed
953											Disturbed
955	17.91	C	91.5	64.6	1.08E-02	5.16E-03	10 - 60	6	7.8	B	Disturbed
961	18.01	J	177.3	28.5	5.18E-03	4.41E-03	5 - 60	7	12.7	B	
963	18.06	J	190.6	45.1	1.29E-02	7.53E-03	5 - 60	6	6.4	A	
965	18.11	C	192.8	45.1	2.13E-02	1.02E-02	10 - 80	7	4.4	A	
967	18.16	J	190.5	61	1.02E-02	8.00E-03	5 - 60	6	5.6	A	
969	18.20	J	203.7	41.4	2.70E-02	2.24E-02	5 - 60	6	5.3	A	
970	18.26	C	165.5	61.5	5.78E-02	4.09E-02	5 - 60	7	3.4	A	
971	18.31	J	213.8	39.6	1.15E-02	9.84E-03	5 - 80	8	5.7	A	
972	18.37	J	189.2	40.7	3.10E-03	2.83E-03	5 - 60	6	7.9	A	
973	18.45	J	303.2	-12.7	4.43E-03	2.81E-03	5 - 60	6	14.9	A	
Slug 15/A											
975	18.59	C	283.1	82.6	2.36E-02	1.18E-02	10 - 80	7	9	A	
977	18.64	J	26	69.3	4.62E-02	4.09E-02	5 - 60	6	4.3	A	
979	18.69	J	323.2	83.5	6.93E-02	5.81E-02	5 - 60	6	4.4	A	
981	18.75	J	347.8	73.9	1.38E-01	1.30E-01	5 - 60	7	3.6	A	
983	18.79	J	351.1	68.8	1.17E-01	1.13E-01	5 - 60	6	3	A	
985	18.84	C	0.8	59.8	4.53E-02	2.73E-02	10 - 80	7	6.8	A	
986	18.89	J	347.1	76.2	6.63E-02	6.03E-02	5 - 60	7	2	A	
988	18.95	J	298.9	83.6	8.00E-02	6.94E-02	5 - 60	6	3.2	A	
974	19.01	J	28.8	70.1	5.63E-02	5.41E-02	5 - 60	6	4.6	A	
976	19.06	J	14.7	70.1	5.45E-02	4.94E-02	5 - 80	8	4.1	A	
978	19.11	J	1.9	72.3	4.78E-02	4.13E-02	5 - 60	6	3.9	A	
980	19.16	C	322.4	65.1	6.84E-03	4.84E-03	10 - 80	7	8	A	
982	19.22	J	348.7	63.9	1.20E-02	1.05E-02	5 - 60	6	5.3	A	
987	19.28	J	341.4	55.6	6.83E-02	4.94E-02	5 - 60	6	5.7	A	
989	19.32	J	313.4	79.5	4.68E-03	4.78E-03	5 - 60	6	6	A	
990	19.38	C	142.1	47.2	2.76E-03	1.65E-03	5 - 80	8	8.4	A	
Slug 16/A											
552	19.52	C	229.2	65	1.21E-01	5.31E-02	10 - 40	4	3.2	A	Cinders
553	19.56	C	223.1	55.2	7.97E-02	4.94E-02	10 - 60	5	6.3	A	Cinders
555	19.78	S	96.7	44.4	2.81E-03	1.20E-03	5 - 80	8	27.1	C	
556	19.84	C	131.2	65.6	3.31E-02	1.93E-02	3 - 80	9	6.4	A	Tephra (Rockland)
563	19.88	C	51.7	68	6.19E-02	2.56E-02	10 - 60	5	5.9	A	Tephra (Rockland)
554	19.93	C	44.8	75	4.25E-02	7.66E-03	10 - 60	5	18.9	B	Tephra (Rockland)
Slug 17/A											
557	20.18	J	11.4	44.9	4.95E-03	2.60E-03	5 - 60	6	10.1	A	
558	20.23	J	11	73	7.95E-03	4.28E-03	5 - 60	6	5.8	A	
559	20.28	J	331.7	71.4	7.23E-03	4.81E-03	5 - 60	6	8.7	A	
560	20.33	J	35.5	76.7	6.73E-03	5.59E-03	5 - 60	6	6.6	A	
561	20.38	J	308.5	55.6	5.85E-03	5.63E-03	5 - 60	6	5	A	

SAMPLE Box No. (sample volume is 3.2cc)	Depth (meter)	Mag neto met	Dec-lina-tion (deg.) Linear fit	Inc-lina-tion (deg.) Linear fit	NRM A/m	Magnet-ization removed in demagnet-ization interval A/m	Demagnet-ization inter-val used for linear fit (mT)	No. Pts. used in linear fit	Error Angle	Subjec-tive quality of demagnet-ization path (A=best C=worst)	Comments
562	20.43	J	341.7	58.5	1.10E-02	7.81E-03	5 - 60	6	6.8	A	
625	20.50	J	80.3	87.4	4.48E-02	3.28E-02	5 - 60	6	6.5	A	
564	20.55	J	304	63.5	5.60E-03	4.88E-03	5 - 60	6	5.2	A	
565	20.60	J	276.6	73.2	7.03E-03	5.75E-03	5 - 60	6	26.7	B	
566	20.65	J	314.7	71.3	6.15E-03	6.25E-03	5 - 60	6	8.3	A	
567	20.70	J	298.6	63.1	5.78E-03	4.41E-03	5 - 40	5	9.7	A	
568	20.77	J	47.8	62.5	1.73E-03	1.28E-03	5 - 40	5	14.9	B	Reworked tephra (Dibekulewe)
569	20.88	J	283.5	68.8		3.25E-02	10 - 60	5	5.6	A	
570	20.93	J	273.8	63	7.25E-02	5.31E-02	10 - 60	5	7.1	A	
571	20.98	J	290.4	67	9.00E-02	8.34E-02	5 - 60	6	4	A	
Slug 18/A											
572	21.07	J	177.1	46.6	9.70E-02	8.22E-02	5 - 60	6	5.8	A	
573	21.12	J	194.2	10.1	4.33E-03	2.48E-03	5 - 60	6	8.1	A	
574	21.17	J	177	47.3	4.00E-03	1.39E-03	10 - 60	5	14.6	B	
575	21.22	J	132.6	79.4	2.00E-03	1.33E-03	5 - 60	6	9.9	A	
576	21.27	J	178.3	74.3	4.55E-03	3.25E-03	5 - 40	5	19.7	B	
577	21.37	J	313.3	72.7	1.17E-03	9.34E-04	5 - 60	6	18.6	B	
578	21.42	J	144.2	55.2	2.50E-03	2.18E-03	5 - 60	6	7.7	A	
579	21.47	J	155.5	56.4	1.65E-03	1.40E-03	5 - 60	6	12.8	A	
580	21.52	J	149.1	62.7	1.87E-03	1.01E-03	10 - 60	5	22.7	B	
581	21.57	J	151.1	79.1	4.98E-03	4.66E-03	5 - 60	6	7.3	B	
582	21.62	J	231.1	51.9	3.70E-03	2.13E-03	5 - 60	6	14	B	
583	21.67	J	248.3	11.8	8.03E-03	5.78E-03	5 - 60	6	3.7	A	
584	21.73	J	198.8	30	2.53E-03	1.05E-03	5 - 60	5	11.3	B	
Slug 19/A											
585	21.93	J	94.9	-59.1	3.60E-02	3.66E-02	5 - 60	6	3	A	
586	21.98	J	184.5	59.6	2.08E-03	1.35E-03	5 - 60	6	6.5	A	
587	22.03	J	159.7	72.3	1.22E-03	7.19E-04	5 - 40	5	18.3	B	
588	22.08	J	161.1	40	9.30E-04	4.09E-04	10 - 60	5	32.5	B	
589	22.13	J	194	64.6	1.13E-03	7.59E-04	5 - 40	5	11	A	
590	22.18	J	146.3	68.7	1.27E-03	9.44E-04	5 - 60	6	14.7	B	
591	22.23	J	142.1	71.7	3.90E-03	2.70E-03	5 - 60	6	6.8	A	
592	22.28	J	121.5	52.2	3.83E-03	3.22E-03	5 - 60	6	6.4	A	Above Lava Creek B
593	22.38	J	152	64.3	1.78E-02	1.42E-02	5 - 60	6	5.8	A	Below Lava Creek B
594	22.43	J	164.8	57.6	3.08E-02	2.32E-02	5 - 60	6	4.3	A	
595	22.48	J	165.5	54.3	9.30E-03	5.09E-03	5 - 60	6	8.7	B	
596	22.63	J	140.7	50.6	5.65E-03	4.19E-03	5 - 60	6	6.9	A	
597	22.68	J	93.5	62.1	1.15E-02	8.72E-03	5 - 60	6	12.7	B	
598	22.73	J	84.1	72.6	3.20E-02	2.59E-02	5 - 60	6	9.6	B	
599	22.78	J	82.6	70.3	6.60E-03	5.25E-03	5 - 60	6	7.4	B	
600	22.83	J	85.8	55.8	7.90E-03	5.88E-03	10 - 60	5	9.2	B	
601	22.88	J	62.6	55.3	4.78E-03	2.97E-03	10 - 60	5	12.8	B	
602	22.93	J	83.9	67.5	2.46E-02	2.07E-02	5 - 60	6	3.1	A	
603	22.98	J	66.8	66.7	2.06E-02	1.87E-02	5 - 60	6	3.5	A	
604	23.03	J	53.5	65.8	1.42E-02	1.12E-02	5 - 60	6	5.4	A	
Slug 19/B											
605	23.13	J	261.3	59.7	2.09E-02	1.55E-02	5 - 60	6	4.9	A	
606	23.18	J	258.1	64	1.37E-02	8.91E-03	10 - 60	5	4.9	A	
607	23.23	J	237.1	65.4	9.10E-03	7.44E-03	5 - 60	6	11.4	B	
608	23.28	J	280	63.8	2.03E-02	1.58E-02	5 - 60	6	7.9	A	
609	23.33	J	263.9	54.1	9.05E-03	4.28E-03	10 - 60	5	9.3	A	
610	23.38	J	251.8	54	1.53E-02	9.66E-03	10 - 60	5	7.6	A	
611	23.43	J	258.7	55.7	3.63E-02	2.97E-02	5 - 60	6	3.8	A	

SAMPLE Box No. (sample volume is 3.2cc)	Depth (meter)	Mag neto met	Dec-lina-tion (deg.) Linear fit	Inc-lina-tion (deg.) Linear fit	NRM A/m	Magnet-ization removed in demagnetization interval A/m	Demagnet-ization inter-val used for linear fit (mT)	No. Pts. used in linear fit	Error Angle	Subjec-tive quality of demagnetization path (A=best C=worst)	Comments
612	23.48	J	268.3	71.9	3.23E-02	2.48E-02	5 - 60	6	3	A	
613	23.53	J	272.5	66.5	1.27E-02	9.78E-03	5 - 60	6	2.7	A	
614	23.58	J	253.5	69	4.80E-03	3.66E-03	5 - 60	6	8.6	A	
615	23.63	J	246.8	69.1	2.93E-02	2.78E-02	5 - 60	6	2.1	A	
616	23.68	J	254.1	12.7	3.48E-02	1.06E-02	20 - 60	4	6.8	B	
617	23.73	J	250	51.1	1.67E-02	5.13E-03	10 - 60	5	4.2	A	
618	23.78	J	275.1	58.9	1.46E-02	9.47E-03	5 - 60	6	5.2	A	
619	23.83	J	253.9	65.4	2.40E-02	1.38E-02	10 - 60	5	3.2	A	
620	23.88	J	255.1	58.2	1.16E-02	5.53E-03	10 - 60	5	8.3	A	
621	23.93	J	264.2	71.6	1.05E-02	5.78E-03	10 - 60	5	9.4	A	
622	23.98	J	267.8	75.8	3.43E-02	1.70E-02	10 - 60	5	2.6	A	
623	24.03	J	284.9	27.3	8.28E-02	1.46E-02	20 - 60	4	12	B	
624	24.08	J	61.2	70.1	7.08E-02	3.97E-02	10 - 60	5	7.9	A	

TABLE 3. Sediment Magnetic Data

Sample Box No: A unique number assigned to paleomagnetic samples that are placed in plastic boxes.

Depth: Depth in hole as in Table 1.

MS: Magnetic susceptibility (SI volume) measured at about 600 hertz.

FD of MS: Frequency dependence of magnetic susceptibility.

NRM: Magnitude of natural remanent magnetization.

ARM: Magnitude of anhysteretic remanent magnetization.

IRM 1.2T: Isothermal remanent magnetization acquired in an induction of 1.2 T.

IRM -0.3T: Isothermal remanent magnetization after exposure to an induction of 1.2 T followed by exposure to an oppositely directed induction of 0.3 T.

HIRM: "Hard" isothermal remanent magnetization = $(IRM_{1.2T} - IRM_{-0.3T})/2$.

S: The "S-parameter" = $-IRM_{1.2T}/IRM_{-0.3T}$.

Sample Box No.	Depth (meter)	MS vol-SI (low freq.)	FD of MS %	NRM A/m	ARM A/m	IRM 1.2T A/m	IRM -0.3T A/m	HIRM A/m	S	Comments
Slug 9/A										
500	5.31	2.33E-04	7.4	6.38E-03	1.64E-01	5.50E+00	-3.42E+00	1.04E+00	0.62	
501	5.41	1.12E-04	9.4	3.06E-03	7.56E-02	1.99E+00	-1.24E+00	3.78E-01	0.62	
502	5.46	9.58E-05	6.0	2.69E-03	8.84E-02	2.02E+00	-1.20E+00	4.10E-01	0.59	
503	5.51	8.19E-05	7.3	2.85E-03	7.88E-02	1.78E+00	-1.05E+00	3.61E-01	0.59	
522	5.56	7.69E-05	3.4	2.74E-03	7.50E-02	1.76E+00	-1.04E+00	3.63E-01	0.59	
523	5.61	7.43E-05	3.3	1.77E-03	6.78E-02	1.68E+00	-9.88E-01	3.46E-01	0.59	
524	5.66	7.40E-05	3.7	2.28E-03	6.97E-02	1.71E+00	-1.01E+00	3.51E-01	0.59	
512	5.71	7.32E-05	4.8	2.96E-03	6.91E-02	1.67E+00	-9.78E-01	3.47E-01	0.58	
511	5.76	6.90E-05	5.0	1.14E-03	6.88E-02	1.59E+00	-9.15E-01	3.40E-01	0.57	
510	5.81	7.61E-05	5.0	1.60E-03	7.09E-02	1.75E+00	-9.70E-01	3.90E-01	0.55	
509	5.86	8.43E-05	4.7	2.75E-03	7.59E-02	1.93E+00	-1.15E+00	3.89E-01	0.60	
508	5.91	7.77E-05	6.0	3.00E-03	7.31E-02	1.80E+00	-1.07E+00	3.64E-01	0.60	
507	5.96	8.40E-05	6.7	2.63E-03	7.53E-02	1.82E+00	-1.08E+00	3.72E-01	0.59	
506	6.01	8.46E-05	7.1	2.59E-03	7.63E-02	1.87E+00	-1.12E+00	3.78E-01	0.60	
505	6.06	7.89E-05	5.0	1.83E-03	7.13E-02	1.80E+00	-1.03E+00	3.83E-01	0.57	
504	6.11	8.29E-05	7.7	2.26E-03	7.63E-02	1.86E+00	-1.11E+00	3.73E-01	0.60	
513	6.16	9.15E-05	3.8	2.54E-03	8.22E-02	2.07E+00	-1.21E+00	4.30E-01	0.58	
514	6.21	9.68E-05	5.0	3.44E-03	8.75E-02	2.13E+00	-1.25E+00	4.37E-01	0.59	
515	6.26	8.94E-05	5.8	3.41E-03	8.34E-02	1.98E+00	-1.15E+00	4.19E-01	0.58	
516	6.31	9.96E-05	5.2	3.13E-03	9.00E-02	2.23E+00	-1.31E+00	4.60E-01	0.59	
517	6.36	1.03E-04	5.4	2.56E-03	9.34E-02	2.29E+00	-1.36E+00	4.64E-01	0.59	
518	6.41	9.82E-05	5.0	2.34E-03	9.06E-02	2.19E+00	-1.29E+00	4.52E-01	0.59	
519	6.47	9.57E-05	3.5	2.10E-03	8.56E-02	2.11E+00	-1.24E+00	4.33E-01	0.59	
520	6.51	1.05E-04	4.1	2.06E-03	9.22E-02	2.33E+00	-1.37E+00	4.81E-01	0.59	
521	6.57	1.04E-04	4.5	2.67E-03	9.00E-02	2.30E+00	-1.36E+00	4.74E-01	0.59	
Slug 10/A										
525	6.71	2.08E-04	6.6	2.47E-03	9.63E-02	2.54E+00	-1.49E+00	5.25E-01	0.59	
526	6.77	2.17E-04	5.5	5.53E-03	1.03E-01	2.66E+00	-1.56E+00	5.51E-01	0.59	
527	6.82	2.21E-04	5.4	3.75E-03	9.81E-02	2.66E+00	-1.56E+00	5.49E-01	0.59	
528	6.87	1.64E-04	6.4	3.19E-03	1.13E-01	3.02E+00	-1.80E+00	6.11E-01	0.59	
529	6.92	1.45E-04	7.2	3.02E-03	1.08E-01	2.83E+00	-1.68E+00	5.75E-01	0.59	
530	6.96	1.56E-04	6.5	3.78E-03	1.16E-01	3.04E+00	-1.77E+00	6.35E-01	0.58	
531	7.05	1.68E-04	6.0	4.16E-03	1.20E-01	3.12E+00	-1.84E+00	6.44E-01	0.59	
532	7.11	1.97E-04	6.9	4.66E-03	1.16E-01	3.06E+00	-1.81E+00	6.26E-01	0.59	
533	7.20	1.92E-04	6.2	3.50E-03	1.17E-01	2.94E+00	-1.65E+00	6.43E-01	0.56	
534	7.26	2.02E-04	6.1	3.02E-03	1.10E-01	2.94E+00	-1.71E+00	6.14E-01	0.58	
535	7.31	1.96E-04	6.0	2.87E-03	1.08E-01	2.90E+00	-1.70E+00	5.99E-01	0.59	
536	7.36	1.84E-04	5.8	3.69E-03	1.08E-01	2.89E+00	-1.67E+00	6.12E-01	0.58	
537	7.41	1.82E-04	5.5	5.47E-03	1.14E-01	2.98E+00	-1.71E+00	6.36E-01	0.57	
538	7.46	1.67E-04	6.3	4.63E-03	1.11E-01	2.96E+00	-1.77E+00	5.91E-01	0.60	
539	7.52	1.86E-04	6.3	6.69E-03	1.11E-01	3.05E+00	-1.80E+00	6.20E-01	0.59	
540	7.57	1.73E-04	7.0	5.50E-03	1.13E-01	2.98E+00	-1.78E+00	6.04E-01	0.60	
541	7.62	1.84E-04	5.8	2.45E-03	1.15E-01	3.09E+00	-1.85E+00	6.19E-01	0.60	
542	7.67	1.73E-04	5.4	3.00E-03	1.09E-01	2.97E+00	-1.78E+00	5.94E-01	0.60	
543	7.71	1.94E-04	6.1	9.44E-03	1.22E-01	3.23E+00	-1.93E+00	6.50E-01	0.60	
544	7.78	2.91E-04	6.2	3.91E-03	1.53E-01	3.57E+00	-2.32E+00	6.28E-01	0.65	Disturbed
545	7.83	2.27E-04	5.6	2.65E-03	1.22E-01	3.20E+00	-1.87E+00	6.66E-01	0.58	Disturbed
546	7.88	1.94E-04	4.6	2.62E-03	9.66E-02	2.67E+00	-1.77E+00	4.50E-01	0.66	Disturbed
547	7.92	1.83E-04	5.1	1.99E-03	1.16E-01	2.98E+00	-1.80E+00	5.85E-01	0.61	Disturbed
548	7.97	1.88E-04	4.6	3.03E-03	1.03E-01	2.72E+00	-1.62E+00	5.47E-01	0.60	Disturbed
549	8.01	1.89E-04	3.7	1.69E-03	9.63E-02	2.34E+00	-1.36E+00	4.90E-01	0.58	Disturbed
550	8.07	1.79E-04	3.7	2.45E-03	9.50E-02	2.32E+00	-1.34E+00	4.87E-01	0.58	Disturbed
551	8.13	1.41E-04	3.3	5.03E-03	9.03E-02	2.19E+00	-1.28E+00	4.56E-01	0.58	Disturbed

Sample Box No.	Depth (meter)	MS vol-SI (low freq.)	FD of MS %	NRM A/m	ARM A/m	IRM 1.2T A/m	IRM -0.3T A/m	HIRM A/m	S	Comments
Slug 10/B										
800	8.20	9.76E-05	4.0	4.69E-03	9.03E-02	2.15E+00	-1.28E+00	4.34E-01	0.60	
802	8.25	1.01E-04	5.1	1.17E-03	5.37E-02	2.19E+00	-1.21E+00	4.93E-01	0.55	
804	8.29	1.04E-04	5.8	1.58E-03	5.48E-02	2.30E+00	-1.28E+00	5.06E-01	0.56	
806	8.34	9.39E-05	3.4	1.61E-03	5.08E-02	2.09E+00	-1.16E+00	4.67E-01	0.55	
806	8.39	9.76E-05	4.8	1.41E-03	5.32E-02	2.20E+00	-1.23E+00	4.85E-01	0.56	
810	8.45	1.01E-04	4.7	2.66E-03	9.31E-02	2.25E+00	-1.32E+00	4.65E-01	0.59	
812	8.49	1.03E-04	4.4	2.24E-03	5.70E-02	2.35E+00	-1.29E+00	5.29E-01	0.55	
814	8.54	1.04E-04	4.5	2.51E-03	5.88E-02	2.45E+00	-1.36E+00	5.46E-01	0.55	
816	8.59	1.01E-04	4.8	2.25E-03	5.55E-02	2.32E+00	-1.28E+00	5.19E-01	0.55	
818	8.64	1.03E-04	4.3	1.63E-03	5.70E-02	2.39E+00	-1.34E+00	5.25E-01	0.56	
820	8.69	1.11E-04	3.5	2.40E-03	5.88E-02	2.55E+00	-1.45E+00	5.51E-01	0.57	
821	8.74	1.05E-04	4.2	2.01E-03	5.50E-02	2.37E+00	-1.37E+00	4.99E-01	0.58	
811	8.80	1.01E-04	3.5	2.53E-03	5.85E-02	2.32E+00	-1.29E+00	5.15E-01	0.56	
813	8.86	1.01E-04	5.5	1.78E-03	5.58E-02	2.29E+00	-1.30E+00	4.94E-01	0.57	
815	8.91	1.06E-04	2.4	2.13E-03	9.91E-02	2.36E+00	-1.44E+00	4.62E-01	0.61	
817	8.96	9.53E-05	4.8	1.45E-03	5.37E-02	2.11E+00	-1.20E+00	4.56E-01	0.57	
819	9.01	1.06E-04	5.4	1.58E-03	5.50E-02	2.25E+00	-1.37E+00	4.41E-01	0.61	
809	9.09	9.89E-05	6.2	1.84E-03	4.96E-02	2.05E+00	-1.23E+00	4.09E-01	0.60	
807	9.16	1.11E-04	4.9	1.88E-03	5.58E-02	2.34E+00	-1.40E+00	4.73E-01	0.60	
805	9.21	1.02E-04	4.2	2.61E-03	5.23E-02	2.21E+00	-1.31E+00	4.51E-01	0.59	
803	9.27	9.52E-05	7.8	1.00E-03	4.95E-02	2.12E+00	-1.23E+00	4.43E-01	0.58	
801	9.37	9.67E-05	4.1	2.41E-03	5.03E-02	2.07E+00	-1.23E+00	4.22E-01	0.59	
Slug 11/A										
822	9.47	6.23E-05	-4.7	2.88E-03	2.75E-02	1.27E+00	-7.97E-01	2.34E-01	0.63	
824	9.52	8.23E-05	-2.2							Tephra (Loleta)
826	9.57	8.01E-05	1.4	2.48E-03	4.12E-02	1.75E+00	-1.06E+00	3.46E-01	0.60	
827	9.66	8.67E-05	-1.0	2.34E-03	4.04E-02	1.90E+00	-1.20E+00	3.50E-01	0.63	
829	9.71	6.68E-05	1.4	1.99E-03	3.09E-02	1.50E+00	-9.50E-01	2.72E-01	0.64	
830	9.76	5.22E-05	-2.2	1.08E-03	4.50E-02	1.21E+00	-7.80E-01	2.15E-01	0.64	
832	9.81	4.06E-05	-3.2	1.33E-03	2.19E-02	1.00E+00	-6.38E-01	1.81E-01	0.64	
834	9.85	5.45E-05	-1.6	1.77E-03	2.92E-02	1.31E+00	-8.23E-01	2.43E-01	0.63	
836	9.91	6.08E-05	-1.4	2.27E-03	3.07E-02	1.33E+00	-8.13E-01	2.60E-01	0.61	
838	9.96	9.13E-05	1.2	3.94E-03	4.23E-02	1.93E+00	-1.22E+00	3.54E-01	0.63	
840	10.04	1.31E-04	2.6	5.09E-03	6.45E-02	2.75E+00	-1.62E+00	5.69E-01	0.59	
842	10.10	1.49E-04	1.7	6.03E-03	7.75E-02	3.30E+00	-1.87E+00	7.13E-01	0.57	
823	10.16	1.67E-04	0.9	7.59E-03	8.33E-02	3.58E+00	-2.04E+00	7.69E-01	0.57	
825	10.21	1.80E-04	1.3	8.09E-03	1.46E-01	3.74E+00	-2.31E+00	7.15E-01	0.62	
828	10.27	3.29E-04	3.2	9.97E-03	1.11E-01	5.95E+00	-3.85E+00	1.05E+00	0.65	
631	10.32	4.58E-04	5.5	1.63E-02	1.58E-01	6.80E+00	-4.49E+00	1.16E+00	0.66	
833	10.36	2.27E-04	1.9	6.38E-03	9.88E-02	4.36E+00	-2.51E+00	9.25E-01	0.58	
835	10.41	2.78E-04	4.7	8.94E-03	9.98E-02	4.17E+00	-2.45E+00	8.60E-01	0.59	
837	10.46	5.23E-04	7.6	1.01E-02	1.52E-01	5.48E+00	-3.52E+00	9.76E-01	0.64	
839	10.51	3.34E-04	5.3	7.84E-03	1.14E-01	4.49E+00	-2.63E+00	9.34E-01	0.58	
841	10.57	6.08E-04	8.5	6.84E-03	1.95E-01	5.90E+00	-3.90E+00	9.99E-01	0.66	
843	10.61	1.15E-03	9.0	2.37E-02	5.23E-01	1.03E+01	-7.95E+00	1.16E+00	0.77	
844	10.66	6.75E-04	8.1	1.11E-02	2.15E-01	6.47E+00	-4.31E+00	1.08E+00	0.67	
845	10.72	1.70E-03	8.6	3.91E-02	1.00E+00	1.55E+01	-1.32E+01	1.16E+00	0.85	
846	10.76	4.55E-03	6.9	1.13E-01	3.07E+00	5.10E+01	-4.63E+01	1.37E+00	0.95	
Slug 11/B										
847	10.79	1.60E-03	7.0	5.28E-02	1.08E+00	1.88E+01	-1.59E+01	1.41E+00	0.85	
849	10.85	6.60E-04	8.6	1.59E-02	2.32E-01	7.58E+00	-5.15E+00	1.21E+00	0.68	
851	10.91	3.34E-03	6.4	1.16E-01	2.41E+00	3.77E+01	-3.46E+01	1.52E+00	0.92	
853	10.95	3.15E-03	7.3	1.06E-01	2.27E+00	3.58E+01	-3.30E+01	1.41E+00	0.92	

Sample Box No.	Depth (meter)	MS vol-SI (low freq.)	FD of MS %	NRM A/m	ARM A/m	IRM 1.2T A/m	IRM -0.3T A/m	HIRM A/m	S	Comments
855	11.00	2.14E-03	7.9	6.63E-02	1.53E+00	2.17E+01	-1.94E+01	1.13E+00	0.90	
857	11.05	2.43E-03	7.2	8.00E-02	1.63E+00	2.59E+01	-2.32E+01	1.35E+00	0.90	
859	11.10	1.53E-03	7.6	5.25E-02	8.88E-01	1.69E+01	-1.41E+01	1.42E+00	0.83	
861	11.14	2.53E-03	8.3	7.75E-02	1.50E+00	2.33E+01	-2.06E+01	1.34E+00	0.89	
848	11.21	7.52E-04	9.6	1.69E-02	2.80E-01	7.88E+00	-5.35E+00	1.26E+00	0.68	
850	11.26	1.14E-03	9.1	1.89E-02	5.00E-01	1.03E+01	-8.33E+00	1.00E+00	0.81	
852	11.31	9.54E-04	9.3	1.66E-02	3.61E-01	8.73E+00	-6.58E+00	1.08E+00	0.75	
854	11.36	4.85E-04	8.5	1.14E-02	1.62E-01	5.42E+00	-3.79E+00	8.19E-01	0.70	
856	11.41	5.03E-04	9.0	1.22E-02	1.78E-01	5.33E+00	-3.85E+00	7.40E-01	0.72	
858	11.49	1.15E-04	6.8	2.67E-03	4.90E-02	1.90E+00	-1.19E+00	3.56E-01	0.63	
860	11.54	2.89E-04	7.8	6.88E-03	1.02E-01	3.37E+00	-2.28E+00	5.47E-01	0.68	
862	11.59	1.08E-03	8.0	2.07E-02	4.93E-01	1.05E+01	-8.63E+00	9.50E-01	0.82	
Slug 12/A										
863	11.59	1.12E-03	8.1	2.32E-02	4.80E-01	1.08E+01	-8.83E+00	1.01E+00	0.81	
865	11.64	1.39E-03	7.2	3.31E-02	6.40E-01	1.38E+01	-1.18E+01	1.02E+00	0.85	
867	11.69	9.55E-04	7.2	2.11E-02	4.51E-01	1.02E+01	-8.43E+00	8.75E-01	0.83	
869	11.74	1.76E-03	6.9	3.75E-02	1.03E+00	1.90E+01	-1.65E+01	1.25E+00	0.87	
871	11.79	1.05E-03	9.1	1.48E-02	4.15E-01	9.60E+00	-7.55E+00	1.03E+00	0.79	
873	11.84	1.18E-03	6.9	1.90E-02	6.30E-01	1.27E+01	-1.04E+01	1.17E+00	0.82	
875	11.89	8.22E-04	7.4	1.20E-02	3.40E-01	9.78E+00	-7.13E+00	1.32E+00	0.73	
877	11.94	7.36E-04	7.9	1.42E-02	2.58E-01	9.60E+00	-7.03E+00	1.29E+00	0.73	
879	11.99	3.05E-04	7.0	4.63E-03	1.11E-01	4.15E+00	-2.80E+00	6.76E-01	0.67	
881	12.04	2.64E-04	6.0	4.66E-03	9.70E-02	3.60E+00	-2.50E+00	5.51E-01	0.69	
883	12.08	1.08E-03	7.8	1.38E-02	4.94E-01	1.12E+01	-9.00E+00	1.10E+00	0.80	
885	12.13	3.61E-04	7.1	8.53E-03	1.82E-01	4.71E+00	-3.67E+00	5.19E-01	0.78	
887	12.19	1.45E-04	6.0	3.09E-03	6.88E-02	2.24E+00	-1.54E+00	3.50E-01	0.69	
864	12.23	4.94E-03	6.1	1.58E-01	1.62E+00	2.67E+02	-2.24E+02	2.14E+01	0.84	Black tephra
866	12.30	4.84E-04	8.6	1.19E-02	1.68E-01	6.28E+00	-4.16E+00	1.08E+00	0.66	
868	12.35	9.01E-04	8.4	1.95E-02	3.07E-01	8.00E+00	-6.18E+00	9.13E-01	0.77	
870	12.40	5.81E-04	8.3	1.14E-02	1.82E-01	5.95E+00	-4.10E+00	9.26E-01	0.69	
872	12.45	6.56E-04	8.4	1.08E-02	2.97E-01	6.68E+00	-5.20E+00	7.37E-01	0.78	
874	12.50	5.99E-04	7.2	2.05E-02	2.16E-01	8.83E+00	-6.75E+00	1.04E+00	0.76	Tephra
876	12.56	3.53E-04	7.3	7.78E-03	1.35E-01	4.38E+00	-2.98E+00	6.99E-01	0.68	
878	12.61	4.68E-04	7.6	1.45E-02	2.03E-01	5.30E+00	-4.01E+00	6.45E-01	0.76	
880	12.66	3.23E-04	7.0	9.34E-03	1.90E-01	4.24E+00	-3.18E+00	5.34E-01	0.75	
882	12.73	2.83E-04	6.6	3.97E-03	1.19E-01	3.38E+00	-2.43E+00	4.74E-01	0.72	
884	12.78	1.13E-03	7.0	2.61E-02	6.25E-01	1.18E+01	-9.98E+00	9.12E-01	0.85	
886	12.84	1.58E-03	6.3	2.08E-02	9.30E-01	1.69E+01	-1.47E+01	1.09E+00	0.87	
888	12.89	2.25E-03	5.8	5.78E-02	1.52E+00	2.55E+01	-2.37E+01	9.00E-01	0.93	
889	12.94	1.94E-03	5.9	5.25E-02	1.26E+00	2.12E+01	-1.92E+01	1.04E+00	0.90	
Slug 12/B										
890	13.02	1.12E-03	6.7	2.85E-02	6.38E-01	1.17E+01	-9.98E+00	8.62E-01	0.85	
893	13.07	2.51E-03	5.8	5.44E-02	1.66E+00	3.11E+01	-2.83E+01	1.37E+00	0.91	
895	13.12	1.71E-03	5.8	5.19E-02	1.29E+00	2.09E+01	-1.90E+01	9.37E-01	0.91	
897	13.18	1.52E-03	6.4	5.22E-02	9.98E-01	1.86E+01	-1.64E+01	1.10E+00	0.88	
899	13.23	1.29E-03	6.2	3.91E-02	8.73E-01	1.62E+01	-1.40E+01	1.07E+00	0.87	
901	13.27	1.69E-03	6.5	3.69E-02	8.88E-01	1.82E+01	-1.55E+01	1.35E+00	0.85	
903	13.32	1.64E-03	6.2	5.59E-02	1.04E+00	1.94E+01	-1.68E+01	1.29E+00	0.87	
905	13.37	1.34E-03	7.2	4.62E-02	7.78E-01	1.79E+01	-1.47E+01	1.63E+00	0.82	
907	13.42	1.32E-03	7.3	5.16E-02	7.43E-01	1.82E+01	-1.43E+01	1.94E+00	0.79	
909	13.56	1.66E-03	7.6	3.03E-02	9.53E-01	2.61E+01	-2.04E+01	2.85E+00	0.78	Disturbed, Tephra (?)
891	13.72	1.36E-03	6.9	4.37E-02	6.35E-01	1.45E+01	-1.21E+01	1.22E+00	0.83	
892	13.77	7.52E-04	6.7	1.86E-02	4.38E-01	9.38E+00	-7.77E+00	8.00E-01	0.83	
894	13.82	9.67E-04	7.0	3.08E-02	4.36E-01	1.11E+01	-9.05E+00	1.01E+00	0.82	

Sample Box No.	Depth (meter)	MS vol-SI (low freq.)	FD of MS %	NRM A/m	ARM A/m	IRM 1.2T A/m	IRM -0.3T A/m	HIRM A/m	S	Comments
896	13.87	1.60E-03	7.0	3.22E-02	8.43E-01	1.74E+01	-1.49E+01	1.26E+00	0.85	
896	13.92	7.04E-04	7.6	1.79E-02	2.66E-01	8.83E+00	-6.47E+00	1.18E+00	0.73	
900	13.98	1.36E-04	6.2	1.90E-03	9.41E-02	2.02E+00	-1.44E+00	2.94E-01	0.71	
902	14.03	7.18E-04	6.0	1.50E-02	3.45E-01	8.45E+00	-6.90E+00	7.75E-01	0.82	
904	14.07	1.75E-03	7.0	4.59E-02	9.73E-01	1.91E+01	-1.65E+01	1.30E+00	0.86	
906	14.12	4.82E-03	5.2	8.00E-02	2.84E+00	6.10E+01	-5.78E+01	1.82E+00	0.95	
908	14.17	3.69E-03	6.4	1.12E-01	2.35E+00	4.94E+01	-4.63E+01	1.54E+00	0.94	
910	14.23	4.34E-03	6.1	1.40E-01	2.89E+00	5.30E+01	-4.98E+01	1.61E+00	0.94	
911	14.28	3.05E-03	6.9	1.08E-01	1.87E+00	3.78E+01	-3.45E+01	1.67E+00	0.91	
912	14.33	2.65E-04	6.2	3.53E-03	1.03E-01	4.60E+00	-3.21E+00	6.98E-01	0.70	
Slug 13/A										
913	14.42	5.56E-04	8.2	1.16E-02	2.04E-01	6.42E+00	-4.43E+00	1.00E+00	0.69	
915	14.47	9.60E-04	9.4	1.75E-02	4.18E-01	9.38E+00	-6.80E+00	1.29E+00	0.73	
917	14.52	1.17E-03	8.0	3.34E-02	6.75E-01	1.24E+01	-1.01E+01	1.19E+00	0.81	
919	14.57	1.55E-04	4.7	5.63E-03	7.45E-02	3.08E+00	-1.74E+00	6.72E-01	0.56	
921	14.61	9.06E-05	2.7	2.67E-03	4.75E-02	1.96E+00	-1.14E+00	4.11E-01	0.58	
923	14.69	1.53E-04	4.1	3.75E-03	5.30E-02	2.38E+00	-1.53E+00	4.29E-01	0.64	
925	14.73	9.39E-05	3.4	2.51E-03	5.05E-02	2.15E+00	-1.31E+00	4.20E-01	0.61	
927	14.77	9.48E-05	3.9	4.70E-03	5.65E-02	2.30E+00	-1.30E+00	5.01E-01	0.56	
929	14.82	4.75E-05	-0.5	1.87E-03	2.87E-02	1.23E+00	-7.15E-01	2.59E-01	0.58	
931	14.89	5.08E-05	-2.2	1.17E-03	2.87E-02	1.31E+00	-7.40E-01	2.85E-01	0.56	
914	14.94	8.51E-04	5.9	2.26E-02	2.99E-01	1.91E+01	-1.64E+01	1.35E+00	0.86	Disturbed, Tephra
916	15.00	5.23E-05	1.6	1.24E-03	3.23E-02	1.31E+00	-7.55E-01	2.79E-01	0.58	
918	15.05	4.28E-05	1.5	1.14E-03	2.49E-02	1.13E+00	-6.75E-01	2.25E-01	0.60	
920	15.10	4.25E-05	1.1	1.33E-03	4.13E-02	1.10E+00	-6.90E-01	2.06E-01	0.63	
922	15.16	3.81E-05	-2.0	1.27E-03	2.36E-02	1.13E+00	-6.85E-01	2.22E-01	0.61	
924	15.21	3.92E-05	-2.9	1.35E-03	2.56E-02	1.09E+00	-6.38E-01	2.24E-01	0.59	
926	15.27	4.71E-05	0.8	1.70E-03	2.62E-02	1.32E+00	-8.13E-01	2.55E-01	0.61	
928	15.32	4.49E-05	-0.3	1.50E-03	2.82E-02	1.20E+00	-6.85E-01	2.55E-01	0.57	
930	15.37	4.82E-05	-0.6	1.13E-03	3.00E-02	1.22E+00	-6.68E-01	2.75E-01	0.55	
932	15.43	5.54E-05	-0.4	1.27E-03	2.67E-02	1.14E+00	-6.35E-01	2.51E-01	0.56	Tephra
Slug 14/A										
933	15.62	8.25E-05	1.5	2.98E-03	3.53E-02	1.47E+00	-1.00E+00	2.37E-01	0.68	Tephra
935	15.70	7.26E-05	2.8	2.41E-03	4.30E-02	2.01E+00	-1.09E+00	4.59E-01	0.54	
936	15.75	3.63E-05	-1.7	1.07E-03	1.99E-02	9.95E-01	-5.78E-01	2.09E-01	0.58	
937	15.79	2.85E-05	-2.7	8.10E-04	1.70E-02	8.28E-01	-4.86E-01	1.71E-01	0.59	
938	15.84	3.45E-05	-0.9	8.10E-04	2.13E-02	1.01E+00	-5.90E-01	2.09E-01	0.59	
939	15.90	5.28E-05	0.7	1.54E-03	3.04E-02	1.41E+00	-8.08E-01	3.00E-01	0.57	
940	15.95	3.18E-05	-4.2	1.25E-03	1.92E-02	9.40E-01	-5.63E-01	1.89E-01	0.60	
942	16.00	2.92E-05	-3.0	1.27E-03	1.88E-02	8.68E-01	-5.05E-01	1.81E-01	0.58	
946	16.07	4.10E-05	-1.2	1.40E-03	2.63E-02	1.12E+00	-6.48E-01	2.38E-01	0.58	
934	16.16	3.24E-05	-3.6	9.65E-04	2.08E-02	9.58E-01	-5.70E-01	1.94E-01	0.60	
941	16.22	3.04E-05	0.1	8.80E-04	1.99E-02	9.05E-01	-5.47E-01	1.79E-01	0.60	
943	16.27	4.01E-05	-2.1	8.73E-04	2.50E-02	1.09E+00	-6.58E-01	2.19E-01	0.60	
945	16.33	3.73E-05	-2.7	2.32E-03	2.28E-02	1.04E+00	-6.28E-01	2.05E-01	0.60	
947	16.39	5.31E-05	0.8	1.63E-03	3.02E-02	1.30E+00	-7.60E-01	2.70E-01	0.58	
948	16.50	4.68E-05	1.7	1.51E-03	2.38E-02	1.37E+00	-9.50E-01	2.08E-01	0.70	
949	16.59	4.72E-05	2.5	1.06E-03	2.63E-02	1.12E+00	-6.53E-01	2.33E-01	0.58	
950	16.77	3.31E-05	1.0	8.53E-04	2.84E-02	7.48E-01	-4.85E-01	1.31E-01	0.65	
951	16.87	3.55E-05	-11.3	6.05E-04	1.82E-02	7.63E-01	-4.63E-01	1.50E-01	0.61	
Slug 14/B										
952	17.04	7.47E-05	7.9	1.81E-03	3.50E-02	1.54E+00	-9.30E-01	3.05E-01	0.60	
954	17.08	9.63E-05	6.8	2.25E-03	4.25E-02	1.90E+00	-1.15E+00	3.74E-01	0.61	
956	17.14	1.66E-04	7.5	4.45E-03	7.70E-02	3.77E+00	-2.39E+00	6.90E-01	0.63	

Sample Box No.	Depth (meter)	MS vol-SI (low freq.)	FD of MS %	NRM A/m	ARM A/m	IRM 1.2T A/m	IRM -0.3T A/m	HIRM A/m	S	Comments
958	17.20	5.48E-05	5.0	7.95E-04	2.75E-02	1.18E+00	-7.18E-01	2.30E-01	0.61	
960	17.25	4.84E-05	5.6	7.69E-04	2.61E-02	1.13E+00	-6.83E-01	2.24E-01	0.60	
962	17.30	4.07E-05	3.6	8.10E-04	1.99E-02	9.00E-01	-5.63E-01	1.69E-01	0.63	
964	17.36	7.60E-05	4.5	1.41E-03	3.42E-02	1.52E+00	-9.80E-01	2.71E-01	0.64	
966	17.51	1.20E-03	9.9	2.90E-02	6.10E-01	1.06E+01	-8.43E+00	1.09E+00	0.79	
968	17.58	6.94E-04	9.3	8.48E-03	3.33E-01	6.42E+00	-5.00E+00	7.12E-01	0.78	
959	17.71	9.99E-04	8.6							Disturbed
957	17.77	2.11E-04	7.3							Disturbed
953	17.83	3.58E-04	8.8							Disturbed
955	17.91	6.31E-04	6.5	1.08E-02	2.65E-01					Disturbed
961	18.01	3.22E-04	6.7	5.18E-03	1.10E-01	3.80E+00	-2.60E+00	6.01E-01	0.68	
963	18.06	7.30E-04	8.4	1.29E-02	2.54E-01	7.45E+00	-5.12E+00	1.16E+00	0.69	
965	18.11	8.19E-04	6.7	2.13E-02	3.85E-01	8.78E+00	-7.25E+00	7.63E-01	0.83	
967	18.16	5.17E-04	6.2	1.02E-02	2.37E-01	5.40E+00	-4.56E+00	4.23E-01	0.84	
969	18.20	1.29E-03	6.2	2.70E-02	6.95E-01	1.32E+01	-1.15E+01	8.50E-01	0.87	
970	18.26	2.12E-03	5.6	5.78E-02	1.52E+00	2.39E+01	-2.26E+01	6.75E-01	0.94	
971	18.31	4.74E-04	6.7	1.15E-02	1.89E-01	5.15E+00	-4.47E+00	3.39E-01	0.87	
972	18.37	1.75E-04	5.2	3.10E-03	6.38E-02	2.08E+00	-1.58E+00	2.51E-01	0.76	
973	18.45	1.57E-04	5.7	4.43E-03	4.98E-02	1.65E+00	-1.28E+00	1.86E-01	0.77	
Slug 15/A										
975	18.59	1.16E-03	6.0	2.36E-02	5.93E-01	1.31E+01	-1.17E+01	7.13E-01	0.89	
977	18.64	1.54E-03	5.9	4.62E-02	7.75E-01	1.72E+01	-1.57E+01	7.50E-01	0.91	
979	18.69	2.36E-03	5.7	6.93E-02	1.31E+00	2.67E+01	-2.49E+01	8.75E-01	0.93	
981	18.75	3.95E-03	5.4	1.38E-01	2.09E+00	4.83E+01	-4.62E+01	1.06E+00	0.96	
983	18.79	3.48E-03	5.4	1.17E-01	1.89E+00	4.52E+01	-4.28E+01	1.20E+00	0.95	
985	18.84	1.54E-03	5.6	4.53E-02	1.38E+00	2.11E+01	-2.02E+01	4.25E-01	0.96	
966	18.89	1.77E-03	5.6	6.63E-02	1.36E+00	2.12E+01	-2.01E+01	5.62E-01	0.95	
988	18.95	2.47E-03	6.0	8.00E-02	1.54E+00	3.14E+01	-2.94E+01	1.00E+00	0.94	
974	19.01	1.71E-03	5.2	5.63E-02	9.73E-01	2.24E+01	-2.10E+01	7.12E-01	0.94	
976	19.06	1.48E-03	5.2	5.45E-02	7.50E-01	1.85E+01	-1.72E+01	6.25E-01	0.93	
978	19.11	1.31E-03	5.7	4.78E-02	6.80E-01	1.61E+01	-1.49E+01	6.38E-01	0.92	
980	19.16	2.96E-04	6.4	6.84E-03	1.27E-01	4.46E+00	-3.46E+00	4.99E-01	0.78	
982	19.22	4.29E-04	6.9	1.20E-02	1.64E-01	7.23E+00	-5.50E+00	8.62E-01	0.76	
987	19.28	2.14E-03	0.0	6.83E-02	6.28E-01	7.53E+01	-5.53E+01	1.00E+01	0.73	
989	19.32	1.93E-04	6.7	4.68E-03	8.13E-02	3.08E+00	-2.37E+00	3.55E-01	0.77	
990	19.38	6.93E-05	2.2	2.76E-03	4.53E-02	1.31E+00	-9.63E-01	1.75E-01	0.73	
Slug 16/A										
552	19.52	2.36E-03	4.1	1.21E-01	1.58E+00	1.73E+02	-1.45E+02	1.41E+01	0.84	Cinders
553	19.56	1.99E-03	5.9	7.97E-02	1.07E+00	1.09E+02	-9.50E+01	7.12E+00	0.87	Cinders
555	19.79	1.93E-04	5.0	2.81E-03	3.97E-02	1.40E+00	-1.15E+00	1.26E-01	0.82	
556	19.84	3.31E-04	16.7	3.31E-02	5.47E-02	1.98E+00	-1.66E+00	1.61E-01	0.84	Tephra (Rockland)
563	19.89	2.73E-04	15.3	6.19E-02	4.59E-02	1.92E+00	-1.62E+00	1.50E-01	0.84	Tephra (Rockland)
554	19.94	1.54E-03	21.2	4.25E-02	9.31E-02	2.92E+00	-2.64E+00	1.40E-01	0.90	Tephra (Rockland)
Slug 17/A										
557	20.18	1.52E-04	4.8	4.95E-03	7.40E-02	2.78E+00	-1.69E+00	5.47E-01	0.61	
558	20.23	2.29E-04	5.8	7.95E-03	1.03E-01	4.11E+00	-2.61E+00	7.54E-01	0.63	
559	20.28	2.27E-04	5.9	7.23E-03	9.90E-02	3.58E+00	-2.28E+00	6.52E-01	0.64	
560	20.33	2.73E-04	5.6	6.73E-03	1.36E-01	4.26E+00	-3.17E+00	5.43E-01	0.75	
561	20.38	3.56E-04	5.7	5.85E-03	2.02E-01	5.00E+00	-3.89E+00	5.56E-01	0.78	
562	20.43	3.99E-04	5.4	1.10E-02	1.75E-01	5.68E+00	-4.30E+00	6.86E-01	0.76	
625	20.50	2.31E-03	4.8	4.48E-02	7.37E-01	3.51E+01	-3.12E+01	1.91E+00	0.89	
564	20.55	2.50E-04	5.6	5.60E-03	1.26E-01	4.85E+00	-3.09E+00	8.79E-01	0.64	
565	20.60	5.52E-04	6.1	7.03E-03	1.91E-01	1.15E+01	-8.63E+00	1.41E+00	0.75	
566	20.65	4.25E-04	5.8	6.15E-03	1.41E-01	9.30E+00	-6.90E+00	1.20E+00	0.74	

Sample Box No.	Depth (meter)	MS vol-SI (low freq.)	FD of MS %	NRM A/m	ARM A/m	IRM 1.2T A/m	IRM -0.3T A/m	HIRM A/m	S	Comments
567	20.70	3.36E-04	5.3	5.78E-03	1.22E-01	7.25E+00	-5.33E+00	9.63E-01	0.73	
568	20.77	1.27E-04	2.7	1.73E-03	3.48E-02	1.94E+00	-1.51E+00	2.16E-01	0.78	Reworked tephra (Dibekulewe)
569	20.88	3.29E-03	5.0	0.00E+00	1.28E+00	4.21E+01	-3.81E+01	2.05E+00	0.90	
570	20.93	3.00E-03	5.5	7.25E-02	1.56E+00	3.87E+01	-3.49E+01	1.94E+00	0.90	
571	20.98	3.15E-03	5.4	9.00E-02	1.57E+00	4.10E+01	-3.71E+01	1.95E+00	0.90	
Slug 18/A										
572	21.07	3.56E-03	5.3	9.70E-02	1.51E+00	5.60E+01	-4.90E+01	3.50E+00	0.88	
573	21.12	1.09E-04	2.7	4.33E-03	5.43E-02	2.06E+00	-1.25E+00	4.04E-01	0.61	
574	21.17	1.42E-04	3.0	4.00E-03	5.37E-02	2.04E+00	-1.30E+00	3.70E-01	0.64	
575	21.22	1.36E-04	3.8	2.00E-03	5.80E-02	2.25E+00	-1.47E+00	3.86E-01	0.66	
576	21.27	2.00E-04	4.8	4.55E-03	7.93E-02	3.06E+00	-1.92E+00	5.69E-01	0.63	
577	21.37	1.16E-04	2.6	1.17E-03	4.93E-02	1.93E+00	-1.30E+00	3.18E-01	0.67	
578	21.42	2.21E-04	2.4	2.50E-03	4.24E-02	1.91E+00	-1.37E+00	2.71E-01	0.72	
579	21.47	9.05E-05	2.0	1.65E-03	4.35E-02	1.77E+00	-1.13E+00	3.16E-01	0.64	
580	21.52	8.63E-05	2.2	1.87E-03	4.61E-02	1.97E+00	-1.30E+00	3.39E-01	0.66	
581	21.57	2.87E-04	7.6	4.98E-03	1.16E-01	5.25E+00	-3.90E+00	6.78E-01	0.74	
582	21.62	1.99E-04	3.4	3.70E-03	8.20E-02	4.15E+00	-3.00E+00	5.74E-01	0.72	
583	21.67	1.23E-04	4.2	8.03E-03	3.65E-02	1.45E+00	-1.18E+00	1.35E-01	0.81	
584	21.73	1.07E-04	2.2	2.53E-03	3.24E-02	1.19E+00	-9.80E-01	1.12E-01	0.81	
Slug 19/A										
585	21.93	1.23E-04	5.2	3.60E-02	3.79E-02	1.52E+00	-1.22E+00	1.53E-01	0.80	
586	21.98	9.32E-05	2.5	2.08E-03	3.58E-02	1.34E+00	-1.04E+00	1.53E-01	0.77	
587	22.03	6.47E-05	0.0	1.22E-03	2.98E-02	1.12E+00	-8.68E-01	1.26E-01	0.77	
588	22.08	8.01E-05	3.3	9.30E-04	3.09E-02	1.13E+00	-8.78E-01	1.26E-01	0.78	
589	22.13	8.44E-05	4.7	1.13E-03	3.34E-02	1.21E+00	-9.30E-01	1.40E-01	0.77	
590	22.18	7.60E-05	2.5	1.27E-03	2.82E-02	1.08E+00	-8.53E-01	1.15E-01	0.79	
591	22.23	1.04E-04	3.4	3.90E-03	3.81E-02	1.70E+00	-1.31E+00	1.94E-01	0.77	
592	22.28	9.72E-05	3.2	3.63E-03	3.04E-02	1.14E+00	-9.33E-01	1.04E-01	0.82	Above Lava Creek B
593	22.38	5.06E-04	7.1	1.78E-02	1.78E-01	1.28E+01	-9.20E+00	1.79E+00	0.72	Below Lava Creek B
594	22.43	1.31E-03	7.4	3.08E-02	4.12E-01	2.98E+01	-2.25E+01	3.56E+00	0.76	
595	22.48	1.38E-04	2.3	9.30E-03	3.41E-02	2.40E+00	-1.76E+00	3.23E-01	0.73	
596	22.63	2.32E-04	4.2	5.65E-03	1.04E-01	4.95E+00	-3.73E+00	6.11E-01	0.75	
597	22.68	5.92E-04	5.6	1.15E-02	2.51E-01	1.55E+01	-1.23E+01	1.65E+00	0.79	
598	22.73	1.18E-03	6.7	3.20E-02	4.60E-01	3.17E+01	-2.53E+01	3.21E+00	0.80	
599	22.78	3.53E-04	4.8	6.60E-03	1.42E-01	8.08E+00	-6.10E+00	9.87E-01	0.76	
600	22.83	3.36E-04	4.6	7.90E-03	1.35E-01	7.23E+00	-5.30E+00	9.62E-01	0.73	
601	22.88	2.71E-04	4.4	4.78E-03	1.16E-01	5.70E+00	-4.08E+00	8.21E-01	0.71	
602	22.93	8.15E-04	7.2	2.46E-02	2.93E-01	1.55E+01	-1.21E+01	1.72E+00	0.78	
603	22.98	7.40E-04	8.3	2.06E-02	2.73E-01	1.08E+01	-8.05E+00	1.38E+00	0.75	
604	23.03	4.71E-04	6.8	1.42E-02	1.74E-01	7.40E+00	-5.30E+00	1.05E+00	0.72	
605	23.13	5.48E-04	7.3	2.09E-02	1.76E-01	7.05E+00	-4.91E+00	1.07E+00	0.70	
606	23.18	5.47E-04	6.4	1.37E-02	1.80E-01	9.40E+00	-7.00E+00	1.20E+00	0.74	
Slug 19/B										
607	23.23	3.82E-04	7.2	9.10E-03	1.47E-01	6.58E+00	-4.62E+00	9.79E-01	0.70	
608	23.28	7.40E-04	7.7	2.03E-02	2.56E-01	1.23E+01	-9.30E+00	1.51E+00	0.75	
609	23.33	3.32E-04	6.5	9.05E-03	1.31E-01	5.68E+00	-3.70E+00	9.88E-01	0.65	
610	23.38	5.58E-04	7.4	1.53E-02	1.92E-01	9.48E+00	-6.93E+00	1.27E+00	0.73	
611	23.43	9.42E-04	8.4	3.63E-02	4.14E-01	1.15E+01	-9.05E+00	1.22E+00	0.79	
612	23.48	7.18E-04	7.2	3.23E-02	2.61E-01	1.15E+01	-9.30E+00	1.10E+00	0.81	
613	23.53	3.57E-04	7.4	1.27E-02	1.10E-01	5.80E+00	-4.60E+00	6.01E-01	0.79	
614	23.58	1.89E-04	5.5	4.80E-03	9.15E-02	3.82E+00	-2.44E+00	6.90E-01	0.64	
615	23.63	8.87E-04	9.1	2.93E-02	4.55E-01	8.68E+00	-7.43E+00	6.25E-01	0.86	
616	23.68	1.08E-03	7.4	3.48E-02	6.65E-01	1.35E+01	-1.16E+01	9.63E-01	0.86	
617	23.73	4.63E-04	6.2	1.67E-02	2.98E-01	5.70E+00	-4.36E+00	6.71E-01	0.76	

Sample Box No.	Depth (meter)	MS vol-SI (low freq.)	FD of MS %	NRM A/m	ARM A/m	IRM 1.2T A/m	IRM -0.3T A/m	HIRM A/m	S	Comments
618	23.78	4.35E-04	6.6	1.46E-02	3.22E-01	5.68E+00	-4.58E+00	5.50E-01	0.81	
619	23.83	7.32E-04	7.1	2.40E-02	1.95E-01	1.24E+01	-1.06E+01	8.63E-01	0.86	
620	23.88	2.44E-04	6.2	1.16E-02	1.08E-01	4.75E+00	-3.34E+00	7.04E-01	0.70	
621	23.93	3.29E-04	6.1	1.05E-02	1.26E-01	6.42E+00	-4.75E+00	8.40E-01	0.74	
622	23.98	8.95E-04	6.5	3.43E-02	3.38E-01	1.68E+01	-1.33E+01	1.76E+00	0.79	
623	24.03	2.28E-03	5.6	8.28E-02	8.28E-01	3.83E+01	-3.26E+01	2.84E+00	0.85	
624	24.08	2.55E-03	6.5	7.08E-02	1.27E+00	3.53E+01	-3.10E+01	2.16E+00	0.88	

TABLE 4. Hysteresis Parameters

Sample Box No: A unique number assigned to paleomagnetic samples that are placed in plastic boxes.

Depth: Depth in hole as in Table 1.

Paramagnetic MS: Paramagnetic magnetic susceptibility determined from the slope of the hysteresis curve above an induction of 0.9 T.

M_{sat}: Saturation magnetization determined after removal of paramagnetic component.

M_{rs}: Saturation remanent magnetization.

H_c: Coercivity determined after removal of paramagnetic component.

H_{cr}: Coercivity of remanence.

Sample Box No.	Depth (meter)	Paramagnetic MS vol-SI	Msat A/m	Mrs A/m	Hc mT	Hcr mT	Mrs/Msat	Hcr/Hc
500	5.31	5.11E-05	1.55E+01	5.66E+00	28.5	90.2	0.365	3.169
524	5.66	1.10E-05	4.84E+00	1.81E+00	26.4	88.3	0.374	3.339
506	6.01	1.30E-05	5.44E+00	2.02E+00	26.4	89.3	0.371	3.387
518	6.41	1.72E-05	6.19E+00	2.33E+00	26.1	87.7	0.376	3.357
526	6.77	9.82E-05	6.50E+00	2.63E+00	25.6	94.8	0.404	3.698
537	7.41	5.97E-05	9.19E+00	3.31E+00	24.3	90.1	0.361	3.704
547	7.92	5.58E-05	9.75E+00	3.34E+00	22.4	80.9	0.343	3.607
812	8.49	1.81E-05	6.81E+00	2.46E+00	26.3	89.7	0.361	3.406
805	9.21	1.30E-05	6.87E+00	2.37E+00	24.4	84.5	0.345	3.470
829	9.71	3.23E-06	5.50E+00	1.74E+00	21.8	75.3	0.316	3.457
834	9.86	1.66E-06	3.38E+00	1.18E+00	23.8	78.9	0.349	3.317
840	10.04	2.55E-05	9.47E+00	3.38E+00	22.4	78.3	0.356	3.492
825	10.21	3.49E-05	9.56E+00	3.50E+00	23.1	75.1	0.366	3.246
837	10.46	5.22E-05	2.66E+01	5.97E+00	13.2	60.5	0.224	4.591
843	10.61	8.76E-05	5.19E+01	1.02E+01	9.8	36.1	0.196	3.695
846	10.76	1.57E-04	3.53E+02	6.69E+01	10.1	27.4	0.189	2.702
849	10.84	8.05E-05	3.41E+01	8.47E+00	14.0	53.8	0.249	3.853
861	11.13	9.23E-05	1.36E+02	2.39E+01	9.1	28.5	0.175	3.121
852	11.31	6.83E-05	4.59E+01	9.69E+00	10.7	41.4	0.211	3.875
858	11.48	1.31E-05	7.00E+00	2.06E+00	19.0	69.0	0.294	3.640
860	11.53	2.42E-05	1.47E+01	3.50E+00	13.9	54.2	0.238	3.907
863	11.59	7.34E-05	6.62E+01	1.18E+01	10.1	33.8	0.178	3.353
869	11.74	1.01E-04	1.08E+02	2.07E+01	10.3	30.4	0.191	2.955
877	11.94	9.03E-05	3.81E+01	9.69E+00	15.2	49.7	0.254	3.265
881	12.03	5.07E-05	1.32E+01	3.91E+00	16.5	58.7	0.296	3.560
887	12.19	1.12E-05	8.06E+00	2.31E+00	16.2	54.4	0.286	3.357
868	12.35	1.15E-04	4.03E+01	8.59E+00	10.8	39.4	0.213	3.651
878	12.61	3.62E-05	2.38E+01	5.22E+00	12.3	42.0	0.219	3.425
882	12.73	2.12E-05	1.64E+01	3.62E+00	12.4	43.5	0.221	3.506
884	12.78	6.01E-05	6.84E+01	1.26E+01	10.1	31.2	0.184	3.085
888	12.89	9.62E-05	1.56E+02	2.75E+01	10.2	27.8	0.176	2.736
903	13.32	1.94E-04	9.19E+01	1.97E+01	11.2	31.0	0.215	2.764
896	13.87	7.81E-05	9.37E+01	1.78E+01	10.3	31.8	0.190	3.094
898	13.92	6.05E-05	3.94E+01	9.09E+00	13.3	47.2	0.231	3.544
900	13.98	9.15E-06	7.97E+00	2.09E+00	16.6	56.5	0.262	3.412
904	14.07	9.50E-05	1.15E+02	2.03E+01	10.5	31.5	0.176	3.010
910	14.23	1.14E-04	3.08E+02	5.59E+01	10.6	28.0	0.182	2.635
912	14.33	3.77E-05	1.64E+01	4.81E+00	19.1	64.4	0.293	3.367
917	14.52	8.07E-05	7.50E+01	1.49E+01	11.0	34.3	0.199	3.127
921	14.61	9.74E-06	6.09E+00	2.00E+00	22.6	78.5	0.328	3.479
966	17.51	7.70E-05	5.56E+01	1.17E+01	10.2	36.3	0.210	3.558
957	17.77	4.01E-05	1.20E+01	3.97E+00	20.1	67.7	0.331	3.363
970	18.26	5.74E-05	1.53E+02	2.43E+01	9.9	27.5	0.159	2.787

Sample Box No.	Depth (meter)	Paramagnetic MS vol-SI	Msat A/m	Mrs A/m	Hc mT	Hcr mT	Mrs/Msat	Hcr/Hc
972	18.37	4.91E-06	1.00E+01	2.11E+00	11.8	42.2	0.211	3.571
975	18.59	4.71E-05	7.91E+01	1.38E+01	10.1	30.9	0.174	3.053
981	18.75	7.38E-05	3.03E+02	4.97E+01	10.5	28.2	0.164	2.688
988	18.95	3.35E-05	1.82E+02	3.25E+01	10.9	29.4	0.179	2.686
982	19.22	1.35E-05	2.96E+01	7.28E+00	16.2	54.2	0.246	3.337

TABLE 5. Elemental Abundances from X-ray Fluorescence

Vial No: A unique number assigned to samples removed from the core and placed in vials.

Paired Sample Box No: Box number of the closest magnetic specimen.

Depth: Depth in hole as in Table 1.

Vial No.	Paired Sample	Depth in hole (meter)	Ba ppm	Cr ppm	Cu ppm	Fe Wt%	La ppm	Mn ppm	Ni ppm	Rb ppm	Ti WT%	V ppm	Zn ppm	Zr ppm
	Box No.													
4112	500	5.30	768	98	120	4.46	29	297	85	24	0.72	204	95	167
4114	501	5.41	340	77	66	2.77	23	148	55	17	0.45	164	151	100
4118	503	5.51	389	85	57	2.82	16	139	61	19	0.43	186	111	72
4137	524	5.66	417	82	59	2.43	13	150	76	17	0.37	150	83	62
4152	510	5.81	266	99	56	2.30	31	136	74	17	0.36	99	83	80
4162	507	5.96	256	69	63	2.57	50	142	62	21	0.40	120	88	74
4135	515	6.26	441	150	68	2.89	29	137	63	19	0.43	150	93	90
4146	518	6.41	356	63	64	2.87	41	144	62	18	0.44	189	116	81
4123	521	6.57	265	73	73	2.91	27	148	62	17	0.44	114	88	91
4166	525	6.71	319	36	72	7.44	16	-	77	18	0.54	36	89	96
4174	527	6.82	268	72	68	8.11	26	-	80	15	0.56	160	91	76
4178	528	6.87	337	113	72	4.33	19	774	85	16	0.53	95	102	87
4182	529	6.92	331	102	75	3.65	16	337	71	21	0.50	64	91	101
4138	531	7.05	456	136	79	4.18	22	475	67	20	0.56	136	110	106
4192	532	7.11	393	179	78	5.34	49	-	88	18	0.54	179	97	90
4200	534	7.26	346	147	76	6.31	52	-	64	19	0.59	147	97	95
4212	537	7.41	288	145	70	4.92	16	-	84	21	0.55	42	96	109
4176	540	7.57	344	119	73	4.47	38	944	79	23	0.52	87	101	97
4184	542	7.67	379	198	73	4.34	19	712	69	19	0.54	198	99	105
4194	547	7.78	558	108	83	5.17	25	-	93	16	0.64	101	106	158
4206	547	7.92	326	26	76	5.23	11	-	70	23	0.56	26	111	117
4214	549	8.01	408	36	68	7.79	15	-	50	18	0.58	221	97	79
4219	551	8.13	335	239	68	5.53	29	-	72	18	0.53	239	97	101
4721	804	8.29	335	148	68	2.97	32	194	74	17	0.46	148	105	81
4727	810	8.44	378	84	69	3.02	25	169	69	18	0.46	115	107	86
4733	816	8.59	302	103	68	2.88	24	160	76	19	0.44	150	101	84
4720	803	9.28	338	32	67	2.57	23	154	63	18	0.43	32	140	108
4746	826	9.57	225	76	55	1.90	17	128	46	13	0.33	119	63	74
4747	830	9.76	241	72	42	1.56	23	118	40	15	0.27	108	258	56
4753	836	9.91	348	155	59	2.03	33	148	48	19	0.36	155	121	86
4755	838	9.96	295	81	61	2.26	32	176	51	26	0.40	126	83	76
4757	840	10.04	339	102	111	2.86	14	204	67	26	0.53	169	64	111
4759	842	10.10	397	97	96	3.15	24	179	55	27	0.57	82	78	117
4740	823	10.16	650	73	95	3.24	16	193	57	28	0.58	102	102	132
4745	828	10.27	469	112	95	4.07	35	254	58	31	0.65	93	113	156
4748	831	10.32	496	141	103	4.15	34	302	88	30	0.73	74	128	165
4750	833	10.36	476	112	103	3.88	35	221	67	13	0.64	112	122	108
4758	841	10.46	577	130	99	4.53	26	694	73	22	0.66	225	110	131
4758	841	10.57	493	106	101	4.88	28	693	76	28	0.68	106	104	149
4762	845	10.71	516	86	102	6.66	48	923	55	31	0.77	278	107	155
4763	846	10.76	663	122	98	6.12	46	817	102	36	0.76	177	116	159
4764	847	10.80	514	150	106	7.74	25	-	225	30	0.79	83	102	162

Vial No.	Paired Sample	Depth in hole (meter)	Ba ppm	Cr ppm	Cu ppm	Fe Wt%	La ppm	Mn ppm	Ni ppm	Rb ppm	Ti WT%	V ppm	Zn ppm	Zr ppm
	Box No.													
4766	849	10.85	411	177	117	5.72	22	453	57	28	0.77	177	108	145
4774	857	11.05	715	154	105	6.09	39	599	59	30	0.76	93	103	155
4778	861	11.14	659	117	111	5.78	39	616	88	25	0.78	117	110	148
4767	850	11.27	823	138	97	5.30	65	560	71	26	0.73	161	107	146
4771	854	11.37	637	114	99	4.38	48	411	78	26	0.66	196	106	123
4777	860	11.54	315	80	88	3.67	34	294	79	23	0.54	273	87	103
4782	865	11.64	340	83	53	2.56	25	146	70	19	0.38	95	80	71
4786	869	11.74	515	135	115	6.22	45	679	95	24	0.78	226	111	148
4790	873	11.84	542	148	109	7.57	36	914	69	28	0.78	148	113	140
4794	877	11.94	461	131	100	5.50	27	710	86	31	0.71	177	106	156
4798	881	12.04	323	132	93	5.63	26	813	75	22	0.64	172	92	117
4804	887	12.19	354	102	79	2.92	44	236	50	22	0.43	155	77	91
4785	868	12.35	431	142	88	7.60	40	-	85	33	0.73	148	101	149
4789	872	12.45	536	187	91	4.29	29	365	66	34	0.61	187	96	141
4797	880	12.66	406	185	90	3.68	19	275	80	27	0.53	185	105	115
4799	882	12.73	391	108	94	3.63	13	280	72	25	0.50	158	86	99
4801	884	12.78	560	199	105	4.94	16	502	79	28	0.69	199	110	142
4805	888	12.89	519	144	115	7.09	38	945	93	24	0.83	253	111	150
4807	890	13.02	667	157	103	5.40	41	429	54	32	0.73	157	101	148
4810	893	13.07	638	130	117	5.95	51	646	86	30	0.86	273	130	170
4816	899	13.23	536	162	103	7.15	19	849	67	26	0.84	162	115	169
4822	905	13.38	488	219	96	6.99	29	-	99	22	0.76	219	117	163
4808	891	13.72	544	149	91	11.12	38	-	71	26	0.84	92	96	154
4813	896	13.87	598	107	99	5.45	33	442	54	31	0.71	152	106	165
4817	900	13.98	292	81	63	2.77	26	208	51	18	0.35	63	78	78
4821	904	14.07	481	123	94	6.02	13	670	80	23	0.76	213	112	158
14	906	14.12	669	139	104	5.68	38	492	80	29	0.83	192	122	194
4827	910	14.23	-	144	102	5.73	-	535	90	-	0.82	186	119	182
4829	912	14.33	451	100	88	4.14	23	304	76	28	0.59	88	115	136
4830	913	14.41	564	109	84	4.78	28	408	52	26	0.62	198	109	150
4832	915	14.47	730	225	100	5.25	32	460	69	35	0.80	225	125	172
4836	919	14.56	480	75	94	4.13	10	306	55	27	0.66	146	120	135
4838	921	14.61	477	141	85	3.33	20	217	52	23	0.56	141	118	117
4842	925	14.73	804	55	65	2.44	67	210	49	42	0.38	55	98	121
4846	929	14.82	417	107	76	2.52	21	146	56	23	0.45	107	90	90
4835	918	15.05	269	60	59	1.70	11	119	46	14	0.31	120	143	64
4837	920	15.11	-	70	57	1.68	-	115	45	14	0.30	100	92	65
4847	926	15.27	-	49	57	1.82	-	143	48	15	0.36	104	94	58
4847	930	15.38	-	51	57	1.76	-	132	50	18	0.36	121	135	88
4858	935	15.70	-	84	69	2.09	-	135	45	22	0.40	73	105	84
4860	939	15.80	-	29	45	1.40	-	110	37	15	0.22	110	58	49
4862	939	15.90	-	70	60	1.80	-	127	43	20	0.34	165	83	73

Vial No.	Paired	Depth in hole (meter)	Ba ppm	Cr ppm	Cu ppm	Fe Wt%	La ppm	Mn ppm	Ni ppm	Rb ppm	Ti WT%	V ppm	Zn ppm	Zr ppm
	Sample Box No.													
4864	942	16.00	223	43	51	1.43	7	133	43	15	0.27	104	75	60
4853	941	16.22	-	65	50	1.55	-	122	42	18	0.27	94	68	58
4867	945	16.33	-	84	50	1.64	-	127	47	18	0.27	50	87	62
4872	951	16.87	-	73	45	1.74	-	175	59	22	0.30	50	77	84
4873	952	17.04	-	75	54	1.90	-	145	41	23	0.32	43	81	83
4877	956	17.14	315	92	74	2.79	18	224	59	24	0.55	92	95	119
4883	962	17.30	224	185	50	1.69	28	123	44	16	0.27	185	66	61
4885	964	17.36	-	74	62	2.02	-	158	36	20	0.35	168	71	-
4889	968	17.58	-	155	98	4.78	-	398	78	18	0.71	310	108	141
4880	959	17.71	-	107	109	4.71	-	389	128	25	0.70	202	114	137
4878	957	17.77	445	125	88	4.56	53	378	91	22	0.64	211	91	123
4876	955	17.91	-	150	83	6.12	-	796	79	32	0.65	63	104	153
4884	963	18.06	-	137	98	7.80	-	-	61	33	0.86	143	119	154
4886	965	18.11	-	108	85	4.13	-	365	58	24	0.62	218	96	116
4890	969	18.21	-	99	91	5.11	-	576	55	29	0.66	326	111	127
4893	971	18.31	-	77	67	2.80	-	241	48	17	0.41	207	69	76
4893	972	18.37	178	333	48	2.08	19	151	33	13	0.30	333	53	-
4895	975	18.59	-	96	80	4.82	-	492	57	24	0.59	445	97	122
4899	979	18.69	-	126	84	5.34	-	752	58	26	0.60	138	101	133
4902	983	18.79	-	108	89	4.71	-	581	74	30	0.61	181	104	150
4906	986	18.89	-	119	78	3.67	-	300	49	17	0.47	399	80	109
4908	988	18.95	503	119	83	4.00	21	441	64	27	0.53	316	95	124
4896	974	19.01	-	100	86	4.27	-	380	50	21	0.58	393	96	126
4898	976	19.06	-	47	76	3.86	-	351	60	16	0.51	525	82	101
4905	982	19.22	-	112	70	2.55	-	246	43	17	0.38	676	81	90
4910	990	19.38	-	206	71	1.69	-	119	36	14	0.23	-	46	53

TABLE 6. Carbon Abundances

Vial No: A unique number assigned to samples removed from the core and placed in vials.

Paired Sample Box No: Box number of the closest magnetic specimen.

Depth: Depth in hole as in Table 1.

Vial No.	Paired Sample Box No.	Depth in hole (meter)	Total Carbon (percent)	Carbonate Carbon (percent)	Organic Carbon (percent)
4118	503	5.51	3.12	0.00	3.11
4152	510	5.81	2.69	0.00	2.69
4141	504	6.11	2.72	0.00	2.71
4146	518	6.41	2.68	0.00	2.68
4166	525	6.71	3.26	0.67	2.59
4178	528	6.87	2.75	0.14	2.60
4182	529	6.92	2.67	0.05	2.61
4138	531	7.05	2.65	0.09	2.55
4200	534	7.26	2.77	0.43	2.35
4184	542	7.67	2.68	0.16	2.53
4214	549	8.01	3.22	0.56	2.66
4727	810	8.44	3.14	0.00	3.14
4720	803	9.28	3.93	0.00	3.93
4747	830	9.76	4.21	0.00	4.21
4757	840	10.04	2.21	0.00	2.20
4740	823	10.16	1.42	0.00	1.42
4748	831	10.32	0.53	0.00	0.53
4750	833	10.36	1.64	0.00	1.64
4758	841	10.46	1.74	0.09	1.65
4762	845	10.71	1.15	0.24	0.91
4763	846	10.76	0.58	0.12	0.46
4764	847	10.80	1.00	0.33	0.67
4766	849	10.85	1.06	0.08	0.99
4774	857	11.05	0.77	0.14	0.63
4778	861	11.14	0.83	0.12	0.71
4767	850	11.27	1.06	0.11	0.95
4771	854	11.37	1.31	0.05	1.26
4777	860	11.54	2.22	0.02	2.20
4782	865	11.64	1.31	0.13	1.18
4790	873	11.84	0.96	0.21	0.75
4798	881	12.04	2.19	0.19	2.00
4804	887	12.19	2.14	0.02	2.11
4789	872	12.45	1.66	0.07	1.59
4799	882	12.73	2.92	0.02	2.89
4805	888	12.89	1.74	0.25	1.49
4810	893	13.07	0.96	0.15	0.81
4822	905	13.38	1.44	0.35	1.09
4813	896	13.87	0.87	0.06	0.81
4817	900	13.98	4.30	0.00	4.30
4821	904	14.07	0.87	0.12	0.76
4827	910	14.23	0.64	0.09	0.55
4830	913	14.41	1.69	0.06	1.63

Vial No.	Paired Sample Box No.	Depth in hole (meter)	Total Carbon (percent)	Carbonate Carbon (percent)	Organic Carbon (percent)
4836	919	14.56	1.81	0.03	1.77
4838	921	14.61	2.82	0.02	2.80
4842	925	14.73	2.86	0.01	2.85
4846	929	14.82	4.47	0.01	4.46
4835	918	15.05	6.59	0.01	6.58
4864	942	16.00	5.39	0.01	5.39
4877	956	17.14	1.52	0.01	1.52
4878	957	17.77	1.45	0.06	1.38
4908	988	18.95	1.25	0.05	1.20