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Principal facts and density estimates for borehole gravity
stations in exploratory wells Ue4ah, Ue7j, Uelh, Uelq,
Ue2co, and USW-H1 at the Nevada Test Site, Nye County, Nevada

by

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This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature. Any use of trade names is for descriptive purposes only and does not imply endorsement by the USGS.

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PRINCIPAL FACTS AND DENSITY ESTIMATES FOR BOREHOLE GRAVITY
STATIONS IN EXPLORATORY WELLS Ue4ah, Ue7j, Uelh, Uelq,
Ue2co, and USW-H1 AT THE NEVADA TEST SITE, NYE COUNTY, NEVADA

INTRODUCTION

Borehole gravity surveys were conducted in November 1978 and March 1981 by the U.S. Geological Survey (USGS) at the Nevada Test Site. Six wells were logged, five in Yucca Flats and one at the west edge of the Test Site at Yucca Mountain. The primary objectives of these studies were to obtain data for the determination of accurate in-situ formation densities utilizing instruments not significantly affected by casing, borehole rugosity, or other near-borehole conditions, and by comparisons with gamma-gamma logs, to calculate for structure in the vicinity of wells.

The locations of the wells logged are shown in figure 1. Well Ue4ah was logged on November 30, 1978, using LaCoste and Romberg borehole gravity meter G-95 (BH-1) (McCulloh and others, 1967a; McCulloh and others, 1967b). The other five wells in this report were logged in March 1981 using LaCoste and Romberg slim-hole borehole gravity meter (BHGM) BH-6. The BHGM's are primarily density logging tools having a very large radius of investigation compared to conventional logging tools. Therefore, a BHGM survey provides a unique and independent measurement of in-situ bulk density which, when integrated with data from conventional logs and (or) cores, can provide a better understanding of the subsurface rock properties and structure.

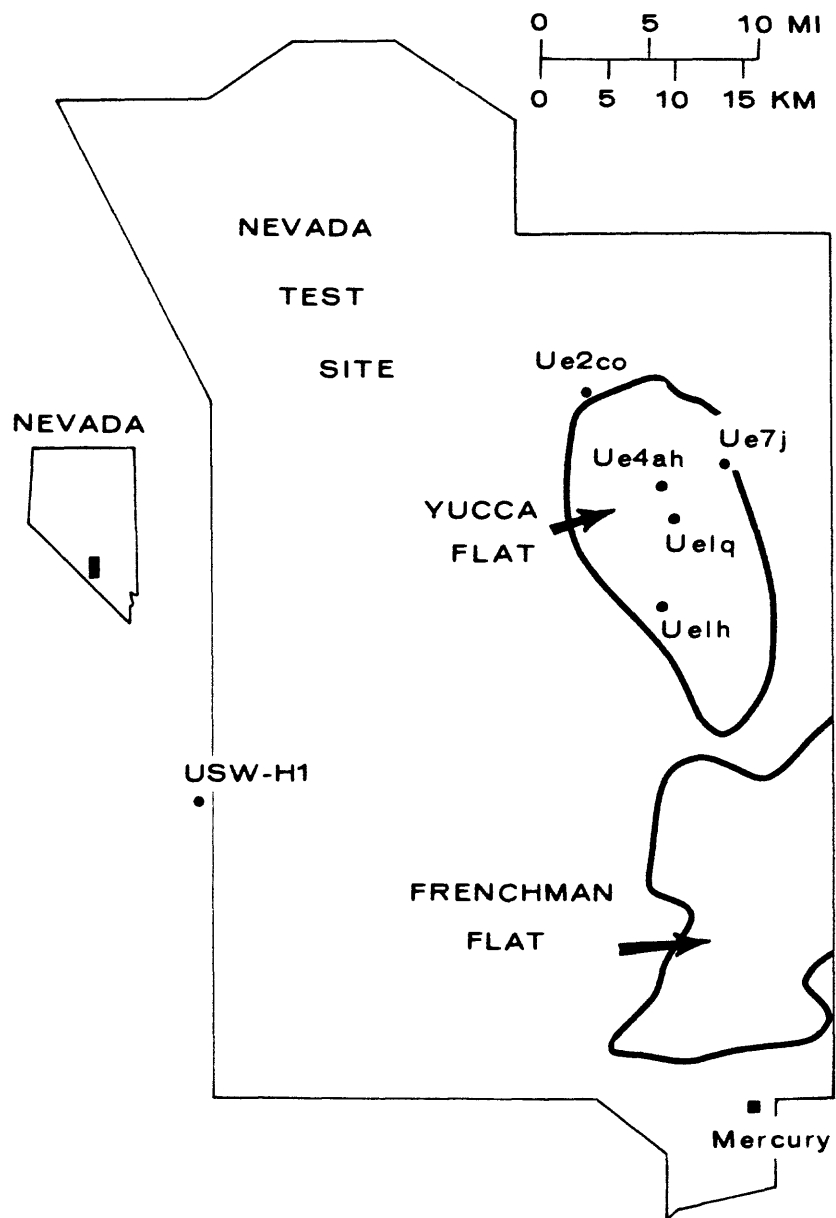


Figure 1. Index map of the Nevada Test Site, showing locations of borehole gravity surveys.

This report contains the principal facts obtained during the surveys of wells Ue4ah, Ue7j, Uelh, Uelq, and Ue2co located in Yucca Flats (fig. 1) and USW-H1 located in area 25 at the west edge of the Test Site, and estimates of in-situ bulk densities from these data.

These data could not have been obtained without the assistance of F. G. Clutsom, R. J. Martinez, and D. L. Smith. Wells Ue4ah and Ue2co were logged in cooperation with Lawrence Livermore Laboratories of California (LLL); Ue7j, Uelh, and Uelq were logged in cooperation with Allen Cogbill and the Los Alamos National Laboratory of New Mexico (LANL); and USW-H1 was logged in cooperation with Special Projects Branch and Water Resources Division of the USGS. Studies at USW-H1 are part of a radioactive waste storage program. This is the third potential radioactive waste storage area to obtain BHGM surveys. The first was in salt deposits near Carlsbad, New Mexico (Schmoker, 1980), and the second was in basalts at the Hanford Site, Washington (Robbins and others, 1979).

There have been a large number (greater than 60) of boreholes that have been logged by gravity meters at the Nevada Test Site. Most of these surveys were run by LLL using a sea-bottom LaCoste and Romberg gravity meter in large diameter (4 to 8 foot) holes. Except for data from four wells that appear in Healey (1970) and for well U8e in Hearst and McKague (1976), none of LLL's surveys have ever been published. The BHGM data from the previous boreholes logged by the USGS using BHGM BH-1 are published in the following reports: Healey (1970), Schmoker and Kososki (1978), and Kososki and others (1978).

BOREHOLE DATA

Tables 1, 3, 5, 7, 9, and 11 present the principal facts for the gravity stations occupied during the BHGM surveys. The column headings for these tables are explained in the following list:

Reading #: The order in which the borehole gravity stations were read.

Depth: Depth of station in feet and meters. Datum is the ground level at the well.

Time: Coordinated Universal Time (CUT) of the mean of each set of gravity slope readings (beam velocities).

Meter Reading: Counter readings of the BHGM's in scale divisions at the stations calculated null position. No corrections have been made.

Tide corr.: Theoretical correction for earth tides in milligals (Darroll Wood, 1968, written commun.).

Drift corr.: Correction for instrument drift in milligals derived from station reoccupations. Figures 2, 3, 4, 5, 6, and 7 show the curves used.

Terr. corr.: Terrain correction in milligals, calculated out to a distance of 72,000 feet (22.9 kilometers), corresponding to zone M of Hammer's terrain correction chart (Hammer, 1939). The corrections for wells Ue4ah, Ue7j, Uelh, Uelq, and Ue2co were made by the Los Alamos National Laboratory where hand-corrections were made for Hammer zones C through G (54.6 to 5,018 feet) (zone D was omitted on wells Ue7j and Uelh), and the outer-zones were made from 30-second digitized terrain by a computer program of theirs. Densities used in these corrections are as follows:

Well Ue4ah---inner zones = 1.85 g/cm³

outer zones = 2.00 g/cm³

Ue7j---inner zones = 2.00 g/cm³

outer zones = 2.00 g/cm³

Uelh---inner zones = 1.70 g/cm³

outer zones = 1.90 g/cm³

Uelq---inner zones = 1.90 g/cm³

outer zones = 1.90 g/cm³

Ue2co---inner zones = 2.00 g/cm³

outer zones = 2.50 g/cm³

The terrain corrections for well USW-H1 were made entirely from hand-determined compartment values and Beyer and Corbato's (1972) computer program using a density of 2.20 g/cm³ for all compartments.

Corr. gravity: Observed gravity in milligals, referenced to an arbitrary base, corrected for tide, drift, and terrain effects.

Error: This value, in microgals, is the error caused by the rounding off of the various reduction corrections (that is, tide, drift, etc.), and by determination of the null position from the slope readings (beam velocities).

Prior to conducting the BHGM surveys, a gamma-ray log was run in each well for stratigraphic control and wireline depth corrections.

BHGM INTERPRETATIONS SUMMARY

References to fundamentals of borehole gravity logging, data interpretation and relationships between subsurface gravity measurements and mass distributions in the Earth can be found in Robbins (1980). In the absence of complicating factors (assuming near-horizontal beds), the in-situ bulk density (in g/cm³) between two points in a borehole is given by:

$$\rho_b = \frac{F - \frac{\Delta G}{\Delta Z}}{0.02556}$$

where F is the free-air gradient of gravity in milligals/feet, and $\frac{\Delta G}{\Delta Z}$ is the measured gradient of gravity between the two stations on a vertical line underground in mgal/ft (Robbins, 1981).

Tables 2, 4, 6, 8, 10, and 12 present the calculated densities, and the column headings for these tables are explained in the following list:

- Station #: Point in well at which BHGM was read one or more times. The points are in descending order and are in feet relative to the ground surface at the well.
- Interval: Vertical distance between the two adjacent station points in the well. Values are given in both feet and meters.
- ΔG : Gravity difference between the two adjacent stations in the well in milligals.
- ρ (.09406): In-situ bulk density in g/cm³ as determined by the above formula using a value of 0.09406 for F.
- ρ (F₁): In-situ bulk density in g/cm³ as determined by the above formula using a value for F that was determined from tower measurements that have been made at many locations through the Test Site by LLL and LANL.

Error: The first value is the sum, from the error column (tables 1, 3, 5, 7, 9,. and 11), of the two adjacent stations in microgals. The second value is the same error but in g/cm^3 after the density has been calculated. The values in this column do not include any error that would be associated with unknowns in the drift curves. Schmoker (1978) found the accuracy of most measurements between two points to be about ± 10 microgals. Because the mean error for the data in this report is ± 6 microgals, it is suggested that 4 microgals needs to be added to the values in the column for a total error.

Tables 13, 14, and 15 are stratigraphic sections and unit depths in each well.

Table 1.--Principal Facts for Well Ue4ah, Yucca Flats,
Nevada Test Site, Nye County, Nevada
[Located at Lat. 37° 5' 1.5" N., Long. 116° 4' 12.5" W.;
ground elevation 4141.9 ft (1262.5 m)].

Reading #	Depth		Time CUT	Meter readings S.D.	Tidal corr. mgal	Drift corr. mgal	Terrain corr. mgal	Corr. gravity mgal
	ft	(m)						
Logged 10-30-78								
1	71.8	21.88	1836	2752.793	+0.041	+0.005	.386	2881.573
2	288.0	87.78	1928	2762.257	+0.038	0	.554	2897.638
3	342.1	104.27	1941	2764.436	+0.035	-.001	.595	2893.956
4	399.0	121.62	1951	2766.673	+0.032	-.002	.638	2896.336
5	454.0	138.38	2002	2768.946	+0.028	-.003	.679	2898.751
6	518.0	157.89	2012	2771.651	+0.024	-.004	.726	2901.624
7	581.0	177.09	2020	2774.346	+0.020	-.003	.772	2904.488
8	640.0	195.07	2028	2776.755	+0.016	-.001	.815	2907.050
9	700.0	213.36	2037	2779.295	+0.012	-.037	.858	2909.712
10	760.0	231.65	2103	2781.772	-.003	+0.006	.901	2912.375
11	700.0	213.36	2116	2779.276	-.011	+0.006	.858	2909.712
12	826.0	251.76	2127	2784.625	-.018	+0.006	.947	2915.392
13	878.0	267.61	2138	2786.852	-.025	+0.006	.984	2917.753
14	930.0	283.46	2147	2789.130	-.031	+0.006	1.020	2920.167
15	983.0	299.62	2156	2791.448	-.036	+0.006	1.057	2922.625
16	1043.0	317.91	2204	2794.071	-.042	+0.009	1.098	2925.409
17	1094.0	333.45	2212	2796.051	-.047	+0.014	1.133	2927.516
18	1146.0	349.30	2220	2798.072	-.052	+0.018	1.168	2929.665
19	1202.0	366.37	2227	2800.198	-.056	+0.023	1.206	2931.929
20	1243.0	378.87	2233	2801.711	-.059	+0.025	1.233	2933.539
21	1286.0	391.97	2240	2803.561	-.063	+0.027	1.262	2935.502
22	1336.0	407.21	2247	2805.485	-.067	+0.029	1.295	2937.547
23	1390.0	423.67	2255	2807.604	-.071	+0.032	1.331	2939.800
24	1452.0	442.57	2302	2809.972	-.075	+0.034	1.371	2942.316
25	1516.1	462.08	2311	2812.709	-.079	+0.037	1.413	2945.222
26	1550.0	472.44	2318	2814.159	-.082	+0.039	1.435	2946.761
27	1594.0	485.85	2327	2815.915	-.086	+0.042	1.464	2948.627
28	1640.0	499.87	2334	2817.739	-.088	+0.038	1.494	2950.560
29	1700.0	518.16	2344	2820.097	-.091	+0.033	1.532	2953.058
30	1764.9	537.94	2353	2822.619	-.093	+0.029	1.574	2955.734
31	1802.0	549.25	2401	2824.106	-.095	+0.026	1.597	2957.308
32	1865.0	568.45	2410	2826.458	-.097	+0.026	1.637	2959.808
33	1900.0	579.12	2417	2827.569	-.097	+0.027	1.659	2960.994
34	1942.0	591.92	2425	2828.820	-.098	+0.027	1.686	2962.329
35	1988.0	605.94	2432	2830.561	-.098	+0.027	1.715	2964.181
36	2040.0	621.79	2442	2832.499	-.097	+0.027	1.747	2966.242
37	2082.0	634.59	2449	2834.038	-.097	+0.026	1.773	2967.878
38	2150.0	655.32	2458	2836.298	-.095	+0.026	1.816	2970.288
39	2200.0	670.56	0105	2838.090	-.094	+0.026	1.847	2972.196
40	2246.0	684.58	0111	2839.770	-.092	+0.023	1.875	2973.981
41	2304.0	702.26	0118	2841.814	-.090	+0.019	1.910	2976.154
42	2340.0	713.23	0125	2843.086	-.088	+0.015	1.932	2977.505
43	2340.0	713.23	0131	2843.086	-.086	+0.013	1.932	2977.505
44	2200.0	670.56	0143	2838.100	-.081	+0.002	1.847	2972.196
45	1988.0	605.94	0158	2830.563	-.073	0	1.715	2964.181
46	1802.0	549.25	0212	2824.099	-.065	+0.003	1.597	2957.308
47	1594.0	485.85	0227	2815.939	-.055	-.014	1.464	2948.627
48	1390.0	423.67	--	--	--	--	--	--
49	1202.0	366.37	0305	2800.185	-.025	+0.005	1.206	2931.929
50	983.0	299.62	0333	2791.345	0	+0.078	1.057	2922.625
51	760.0	231.65	0359	2781.731	+0.024	+0.022	.901	2912.375
52	518.0	157.89	0418	2771.600	+0.040	+0.033	.726	2901.624
53	288.0	87.78	0439	2762.210	+0.057	+0.028	.554	2891.638

Table 2.--Density Estimates for Well Ue4ah,
Yucca Flats, Nevada Test Site, Nye County, Nevada
[Located at Lat. 37° 5' 1.5" N., Long. 116° 4' 12.5" W;
ground elevation 4141.9 ft (1262.5 m)].

Station #	Interval		ΔG mgal	ρ (g/cm ³) for F =	ρ (g/cm ³) for F =
	ft	(m)		.09406 mgal/ft	.09202 mgal/ft
71.8	216.2	65.90	10.065	1.859	1.779
288.0	54.1	16.49	2.318	2.004	1.924
342.1	56.9	17.34	2.380	2.044	1.964
399.0	55.0	16.76	2.415	1.962	1.882
454.0	64.0	19.51	2.873	1.924	1.844
518.0	63.0	19.20	2.864	1.901	1.822
581.0	59.0	17.98	2.562	1.981	1.901
640.0	60.0	18.29	2.662	1.944	1.864
700.0	60.0	18.29	2.663	1.944	1.864
760.0	66.0	20.12	3.017	1.892	1.812
826.0	52.0	15.85	2.361	1.904	1.824
878.0	52.0	15.85	2.414	1.864	1.784
930.0	53.0	16.15	2.458	1.866	1.786
983.0	60.0	18.29	2.784	1.865	1.785
1043.0	51.0	15.54	2.107	2.064	1.984
1094.0	52.0	15.85	2.149	2.063	1.983
1146.0	56.0	17.07	2.264	2.098	2.018
1202.0	41.0	12.50	1.610	2.144	2.064
1243.0	43.0	13.11	1.963	1.894	1.814
1286.0	50.0	15.24	2.045	2.080	2.000
1336.0	54.0	16.46	2.253	2.048	1.968
1390.0	62.0	18.90	2.516	2.092	2.012
1452.0	64.1	19.54	2.906	1.906	1.826
1516.1	33.9	10.33	1.539	1.904	1.824
1550.0	44.0	13.41	1.866	2.021	1.941
1594.0	46.0	14.02	1.933	2.036	1.956
1640.0	60.0	18.29	2.498	2.051	1.971
1700.0	64.9	19.78	2.676	2.067	1.987
1764.9	37.1	11.31	1.574	2.020	1.940
1802.0	63.0	19.20	2.500	2.127	2.048
1865.0	35.0	10.67	1.186	2.354	2.274
1900.0	42.0	12.80	1.335	2.436	2.357
1942.0	46.0	14.02	1.852	2.105	2.025
1988.0	52.0	15.85	2.061	2.129	2.049
2040.0	42.0	12.80	1.636	2.156	2.076
2082.0	68.0	20.73	2.410	2.293	2.213
2150.0	50.0	15.24	1.908	2.187	2.107
2200.0	46.0	14.02	1.785	2.162	2.082
2246.0	58.0	17.68	2.173	2.214	2.134
2304.0	36.0	10.97	1.351	2.212	2.132
2340.0					

Table 3.--Principal Facts for Well Ue71,
Yucca Flats, Nevada Test Site, Nye County, Nevada
[Located at Lat. 37° 5' 54.8" N., Long. 116° 0' 54.6" W.;
ground elevation 4316.2 ft (1315.6 m)].

Reading #	Depth		Time CUT	Meter readings S.D	Tidal corr. mgal	Drift corr. mgal	Terrain corr. mgal	Corr. gravity mgal	Error ±G µgal
	ft	(m)							
Logged 03-12-81									
1	75.5	23.01	1942	0952.693	-.040	0.000	.323	0823.976	±3
2	185.0	56.39	2010	0958.361	-.031	+0.003	.338	0828.901	±3
3	276.1	84.16	2040	0962.846	-.018	+0.006	.358	0832.788	±2
4	0.0	0.0	2055	0948.660	-.012	+0.008	.319	0820.522	±2.5
5	75.5	23.01	3111	0952.639	-.004	+0.011	.323	0823.976	±5
6	276.1	84.16	2127	0962.785	+0.004	+0.011	.358	0832.788	±7
7	345.2	105.22	2141	0966.205	+0.011	+0.004	.376	0835.762	±5
8	388.2	118.32	2153	0968.611	+0.017	+0.001	.389	0837.857	±2
9	442.1	134.75	2204	0972.125	+0.023	-.002	.405	0840.913	±3
10	485.2	147.89	2217	0974.869	+0.029	-.006	.419	0843.301	±3
11	545.1	166.15	2230	0978.879	+0.036	-.011	.439	0846.789	±2.5
12	570.1	173.77	2241	0980.325	+0.041	-.015	.447	0848.047	±4
13	605.1	184.43	2252	0981.832	+0.047	-.019	.460	0849.365	±2.5
14	635.1	193.58	2302	0983.488	+0.051	-.022	.470	0850.807	±3
15	706.1	215.22	2313	0988.096	+0.057	-.026	.496	0854.818	±2.5
16	780.1	237.77	2325	0992.424	+0.062	-.030	.524	0858.587	±2.5
17	276.1	84.16	2351	0962.765	+0.073	-.041	.358	0832.788	±7
18	780.1	237.77	0013	0992.416	+0.080	-.041	.524	0858.587	±2
19	834.1	254.23	0024	0995.851	+0.084	-.035	.544	0861.586	±2.5
20	888.1	270.69	0032	0999.220	+0.086	-.031	.565	0864.525	±2
21	965.1	294.16	0042	1003.501	+0.088	-.026	.595	0868.262	±2.5
22	1026.1	312.76	0051	1006.463	+0.090	-.022	.619	0870.852	±3
23	1087.1	331.35	0101	1009.824	+0.092	-.017	.644	0873.789	±4
24	1196.1	364.57	0111	1015.611	+0.094	-.011	.688	0878.843	±3
25	1278.1	389.56	0122	1020.107	+0.095	-.007	.721	0882.767	±2.5
26	1340.1	408.46	0131	1023.094	+0.096	-.002	.746	0885.379	±3
27	780.1	237.77	0152	0992.351	+0.097	-.002	.524	0858.587	±2.5
28	1340.1	408.46	0216	1023.096	+0.096	-.004	.746	0885.379	±3
29	1340.1	408.46	0407	1023.151	+0.067	-.023	.746	0885.379	±3
30	1435.1	437.42	0419	1028.038	+0.063	-.023	.785	0889.638	±3
31	1490.2	454.21	0427	1031.035	+0.059	-.023	.808	0892.247	±2
32	1582.2	482.25	0439	1036.042	+0.054	-.023	.846	0896.607	±2.5
33	1662.2	506.64	0449	1040.030	+0.049	-.023	.879	0900.082	±4
34	1716.2	523.10	0457	1042.580	+0.046	-.023	.901	0902.305	±3
35	1790.2	545.65	0506	1046.279	+0.042	-.023	.932	0905.529	±2.5
36	1890.2	576.13	0519	1050.848	+0.036	-.023	.973	0909.513	±6
37	1340.1	408.46	0541	1023.197	+0.025	-.020	.746	0885.379	±8
38	1890.2	576.13	0605	1050.844	+0.015	+0.001	.973	0909.513	±2
39	1954.3	595.67	0615	1053.732	+0.010	+0.001	1.000	0912.031	±2
40	2017.2	614.84	0625	1056.668	+0.005	+0.002	1.026	0914.591	±3
41	2080.2	634.04	0633	1059.180	+0.001	+0.002	1.052	0916.784	±4
42	2155.2	656.90	0642	1062.191	-.002	+0.002	1.083	0919.414	±3
43	2212.2	674.28	0653	1064.471	-.007	+0.003	1.106	0921.404	±3
44	2256.2	687.69	0703	1066.138	-.011	+0.003	1.125	0922.860	±2.5
45	2303.2	702.02	0712	1067.833	-.015	+0.004	1.144	0924.341	±2.5
46	2326.2	709.03	0719	1068.612	-.017	+0.004	1.154	0925.022	±3
47	2360.2	719.39	0727	1069.750	-.021	+0.004	1.168	0926.016	±3
48	1890.2	576.13	0747	1050.887	-.026	+0.005	.973	0909.513	±5

Table 4.--Density Estimates for Well Ue7j,
Yucca Flats, Nevada Test Site, Nye County, Nevada
 [Located at Lat. 37° 5' 54.8" N., Long. 116° 0' 54.6" W;
 ground elevation 4316.2 ft (1315.6 m)].

Station #	Interval		ΔG mgal	ρ (g/cm ³)	ρ (g/cm ³)	Error	
	ft	(m)		for F = .09406 mgal/ft	for F = .09147 mgal/ft	G μgal	ρ g/cm ³
0.0	75.5	23.01	3.454	1.890	1.789	±7.5	±.004
75.5	109.5	33.38	4.925	1.920	1.819	±6	±.002
185.0	91.1	27.77	3.888	2.010	1.909	±5	±.002
276.1	69.1	21.06	2.974	1.996	1.895	±12	±.007
345.2	43.0	13.11	2.095	1.774	1.672	±7	±.006
388.2	53.9	16.43	3.056	1.462	1.360	±5	±.004
442.1	43.1	13.14	2.388	1.512	1.411	±6	±.006
485.2	59.9	18.26	3.488	1.402	1.300	±5.5	±.003
545.1	25.0	7.62	1.258	1.711	1.610	±6.5	±.010
570.1	35.0	10.67	1.318	2.207	2.105	±6.5	±.007
605.1	30.0	9.14	1.442	1.799	1.698	±5.5	±.007
635.1	71.0	21.64	4.011	1.470	1.368	±5.5	±.003
706.1	74.0	22.56	3.769	1.687	1.586	±5	±.003
780.1	54.0	16.46	2.999	1.507	1.406	±4.5	±.003
834.1	54.0	16.46	2.939	1.551	1.449	±4.5	±.003
888.1	77.0	23.47	3.737	1.781	1.680	±4.5	±.003
965.1	61.0	18.59	2.590	2.019	1.917	±5.5	±.003
1026.1	61.0	18.59	2.937	1.796	1.695	±7	±.004
1087.1	109.0	33.22	5.054	1.866	1.765	±7	±.002
1196.1	82.0	24.99	3.924	1.808	1.706	±5.5	±.003
1278.1	62.0	18.90	2.612	2.032	1.930	±5.5	±.003
1340.1	95.0	28.96	4.259	1.926	1.825	±6	±.003
1435.1	55.0	16.76	2.609	1.824	1.723	±5	±.004
1490.1	92.1	28.07	4.360	1.828	1.727	±4.5	±.002
1582.2	80.0	24.38	3.475	1.981	1.879	±6.5	±.004
1662.2	54.0	16.46	2.223	2.069	1.968	±7	±.005
1716.2	74.0	22.56	3.224	1.975	1.874	±5.5	±.003
1790.2	100.0	30.48	3.984	2.121	2.020	±8.5	±.003
1890.2	64.1	19.54	2.518	2.143	2.042	±4	±.003
1954.3	62.9	19.17	2.560	2.088	1.986	±5	±.003
2017.2	63.0	19.20	2.193	2.318	2.217	±7	±.004
2080.2	75.0	22.86	2.630	2.308	2.207	±7	±.004
2155.2	57.0	17.37	1.990	2.314	2.213	±6	±.004
2212.2	44.0	13.41	1.456	2.385	2.284	±5.5	±.005
2256.2	47.0	14.33	1.481	2.447	2.346	±5	±.004
2303.2	23.0	7.01	0.681	2.522	2.420	±5.5	±.010
2326.2	34.0	10.36	0.994	2.536	2.435	±6	±.007
2360.2							

Table 5.--Principal Facts for Well Uelh, Yucca Flats,
Nevada Test Site, Nye County, Nevada
[Located at Lat. 37° 0' 4.8" N., Long. 116° 4' 2.6" W.;
ground elevation 3995.1 ft (1217.7 m)].

Reading #	Depth ft (m)		Time CUT	Meter readings S.D.	Tidal corr. mgal	Drift corr. mgal	Terrain corr. mgal	Corr. gravity mgal	Error ±G μgal
Logged 03-14-81									
1	1.7	0.52	1812	0979.432	-.030	+.003	.260	0847.035	±2.5
2	112.7	34.35	1828	0985.959	-.031	+.007	.344	0852.764	±4
3	234.9	71.60	1856	0993.173	-.035	+.014	.429	0859.087	±4
4	409.7	124.88	1912	1003.287	-.037	+.017	.544	0837.944	±3
5	486.8	148.38	1926	1007.173	-.039	+.021	.594	0871.355	±5
6	564.8	172.15	1939	1011.219	-.040	+.024	.644	0874.904	±4
7	1.7	0.52	2005	0979.518	-.043	-.059	.260	0847.035	±3
8	564.8	172.15	2030	1011.321	-.045	-.059	.644	0874.904	±8
9	686.8	209.34	2043	1017.988	-.046	-.059	.722	0880.743	±2
10	737.8	224.88	2051	1020.096	-.046	-.059	.754	0882.597	±2.5
11	776.8	236.77	2101	1021.558	-.046	-.059	.778	0883.885	±4
12	835.8	254.75	2113	1023.663	-.046	-.059	.815	0885.741	±4
13	935.8	285.23	2124	1028.817	-.045	-.059	.578	0890.260	±4
14	1017.7	310.19	2134	1031.844	-.044	-.059	.928	0892.927	±2.5
15	1084.7	330.62	2144	1035.279	-.043	-.059	.970	0895.939	±2
16	564.8	172.15	2208	1011.317	-.039	-.061	.644	0974.904	±3
17	1084.7	330.62	2227	1035.403	-.035	-.174	.970	0895.939	±4
18	1191.7	363.23	2243	1039.770	-.031	-.181	1.035	0899.776	±2.5
19	1415.7	431.51	2257	1048.792	-.026	-.186	1.170	0907.708	±4
20	1530.7	466.56	2309	1054.179	-.022	-.192	1.239	0912.431	±3
21	1581.7	482.10	2317	1056.769	-.019	-.195	1.269	0914.700	±3
22	1650.6	503.10	2327	1060.202	-.015	-.198	1.310	0917.709	±4
23	1084.7	330.62	2356	1035.392	-.002	-.198	.970	0895.939	±4
24	1650.6	503.10	0018	1060.163	+.009	-.188	1.310	0917.709	±2
25	1705.6	519.87	0032	1062.940	+.016	-.201	1.343	0920.137	±4
26	1819.6	554.61	0042	1066.787	+.022	-.022	1.409	0923.713	±3
27	1897.6	578.39	0052	1069.388	+.027	-.021	1.455	0926.013	±5
28	2004.4	610.94	0103	1072.786	+.033	+.137	1.516	0929.175	±3
29	2149.4	655.14	0115	1077.393	+.040	+.147	1.599	0933.257	±2.5
30	2249.4	685.62	0127	1080.621	+.046	+.116	1.656	0936.080	±2.5
31	1650.6	503.10	0152	1059.708	+.060	+.154	1.310	0917.709	±4
32	1819.6	554.64	0206	1066.627	+.067	+.071	1.409	0923.713	±3
33	2004.4	610.94	0220	1072.715	+.074	+.157	1.516	0929.175	±3
34	2249.4	685.62	0236	1080.537	+.082	+.153	1.656	0936.080	±3
35	1650.6	503.10	0300	1059.893	+.091	+.03	1.310	0917.709	±2
36	1650.6	503.10	0432	1059.868	+.109	-.034	1.310	0917.709	±3
37	1705.6	519.87	0442	1062.623	+.109	-.020	1.343	0920.137	±4
38	1819.6	554.61	0453	1066.687	+.108	-.022	1.409	0923.713	±4
39	1897.6	578.39	0502	1069.294	+.107	-.020	1.455	0926.013	±3
40	2249.4	685.62	0523	1080.713	+.103	-.020	1.656	0936.080	±3
41	2296.3	699.91	0532	1082.084	+.101	-.019	1.682	0937.290	±2
42	2347.3	715.46	0540	1083.651	+.099	-.018	1.711	0938.673	±2
43	2461.3	750.20	0552	1087.097	+.095	-.016	1.774	0941.712	±3
44	2558.3	779.77	0605	1089.972	+.090	-.014	1.828	0944.248	±2
45	2629.3	801.41	0621	1092.182	+.083	-.011	1.867	0946.193	±3
46	2644.3	805.98	0631	1092.715	+.078	-.010	1.875	0946.658	±7
47	2690.4	820.03	0641	1094.030	+.073	-.008	1.900	0947.817	±2.5
48	2249.4	685.62	0700	1080.719	+.062	+.016	1.656	0936.080	±4
49	2690.4	820.03	0726	1094.132	+.047	-.070	1.900	0947.817	±5
50	2831.4	863.01	0738	1098.283	+.039	-.111	1.976	0951.432	±3
51	2849.4	868.50	0747	1098.802	+.034	-.078	1.986	0951.918	±3
52	2923.4	891.05	0758	1101.032	+.027	-.128	2.025	0953.828	±2.5
53	3053.4	930.68	0811	1104.885	+.018	-.125	2.094	0957.222	±2
54	3128.4	953.54	0824	1107.013	+.009	-.098	2.133	0959.118	±4
55	3201.4	975.79	0840	1109.213	0	-.111	2.172	0961.037	±2
56	3219.4	981.27	0847	1109.705	-.005	-.121	2.181	0961.457	±4
57	2690.4	820.03	0907	1094.045	-.017	+.069	1.900	0947.817	±2

Table 5.--Continued for Well Uelh.

Reading #	Depth		Time CUT	Meter readings S.D.	Tidal corr. mgal	Drift corr. mgal	Terrain corr. mgal	Corr. gravity mgal	Error ±G μgal
	ft	(m)							
Logged 03-15-81									
58	1650.6	503.10	1926	1060.151	-.022	-.147	1.310	0917.709	±2
59	1897.7	578.42	1940	1069.609	-.025	-.157	1.455	0926.016	±4
60	2004.5	610.97	1950	1073.177	-.028	-.137	1.516	0929.178	±3
61	2149.5	655.17	2006	1077.852	-.031	-.176	1.599	0933.260	±2.5
62	2249.4	685.62	2016	1081.017	-.034	-.146	1.656	0936.080	±3
63	2690.4	820.03	2038	1094.276	-.039	-.114	1.900	0947.817	±4
64	2831.4	863.01	2052	1098.374	-.043	-.114	1.976	0951.432	±4
65	2849.4	868.50	2100	1098.928	-.045	-.114	1.986	0951.918	±2
66	2923.4	891.05	2110	1101.087	-.047	-.106	2.025	0953.828	±3
67	3053.4	930.68	2122	1104.938	-.049	-.108	2.094	0957.222	±2
68	3128.4	953.54	2132	1107.120	-.051	-.135	2.133	0959.118	±2
69	3201.4	975.79	2144	1109.281	-.052	-.122	2.172	0961.037	±3
70	3219.4	981.27	2151	1109.747	-.053	-.113	2.181	0961.457	±2
71	2690.4	820.03	2213	1094.616	-.054	-.393	1.900	0947.817	±3

Table 6.--Density Estimates for Well Uelh,
Yucca Flats, Nevada Test Site, Nye County, Nevada
[Located at Lat. 37° 0' 4.8" N., Long. 116° 4' 2.6" W.;
ground elevation 3995.1 ft (1217.7 m)].

Station #	Interval		ΔG mgal	ρ (g/cm ³) for F =	ρ (g/cm ³) for F =	Error	
	ft	(m)		.09406 mgal/ft	.09397 mgal/ft	G μgal	ρ g/cm ³
1.7	111.0	33.83	5.729	1.661	1.657	±6.5	±.002
112.7	122.2	37.25	6.323	1.656	1.652	±8	±.003
234.9	174.8	53.28	8.857	1.698	1.694	±7	±.001
409.7	77.1	23.50	3.411	1.949	1.946	±8	±.004
486.8	78.0	23.77	3.549	1.900	1.896	±9	±.004
564.8	122.0	37.19	5.839	1.807	1.804	±10	±.003
686.8	51.0	15.54	1.854	2.258	2.254	±4.5	±.003
737.8	39.0	11.89	1.288	2.388	2.384	±6.5	±.007
776.8	59.0	17.98	1.856	2.449	2.446	±8	±.005
835.8	100.0	30.48	4.519	1.912	1.908	±8	±.003
935.8	81.9	24.96	2.667	2.406	2.402	±6.5	±.003
1017.7	67.0	20.42	3.012	1.921	1.918	±4.5	±.002
1084.7	107.0	32.61	3.837	2.277	2.273	±6.5	±.002
1191.7	224.0	68.28	7.932	2.295	2.291	±6.5	±.001
1415.7	115.0	35.05	4.723	2.073	2.070	±7	±.002
1530.7	51.0	15.54	2.269	1.939	1.936	±6	±.005
1581.7	68.9	21.00	3.009	1.971	1.968	±7	±.004
1650.6	55.0	16.76	2.428	1.953	1.949	±6	±.004
1705.6	114.0	34.75	3.576	2.453	2.449	±7	±.003
1819.6	78.0	23.77	2.300	2.526	2.523	±7	±.003
1897.6	106.8	32.55	3.162	2.522	2.518	±7	±.002
2004.4	145.0	44.20	4.082	2.579	2.575	±5.5	±.001
2149.4	100.0	30.48	2.823	2.576	2.572	±5	±.002
2249.4	46.9	14.30	1.210	2.671	2.667	±5	±.004
2296.3	51.0	15.54	1.383	2.619	2.616	±4	±.003
2347.3	114.0	34.75	3.039	2.637	2.633	±5	±.001
2461.3	97.0	29.57	2.536	2.657	2.654	±5	±.002
2558.3	71.0	21.64	1.945	2.608	2.605	±5	±.002
2629.3	15.0	4.51	0.465	2.467	2.464	±10	±.026
2644.3	46.1	14.05	1.159	2.696	2.693	±9.5	±.008
2690.4	141.0	42.98	3.615	2.677	2.673	±8	±.002
2831.4	18.0	5.49	0.486	2.624	2.620	±6	±.013
2849.4	74.0	22.56	1.910	2.670	2.667	±5	±.003
2923.4	130.0	39.62	3.394	2.659	6.655	±4.5	±.001
3053.4	75.0	22.86	1.896	2.691	2.687	±4	±.002
3128.4	73.0	22.25	1.919	2.651	2.648	±5	±.002
3201.4	18.0	5.49	0.420	2.767	2.764	±5	±.019
3219.4							

Table 7.--Principal Facts for Well Uelq, Yucca Flats,
Nevada Test Site, Nye County, Nevada
[Located at Lat. 37° 3' 37.2" N., Long. 116° 3' 30.0" W.;
ground elevation 4077.0 ft (1242.7 m)].

Reading #	Depth		Time	Meter readings	Tidal corr.	Drift corr.	Terrain corr.	Corr. gravity	Error G
	ft	(m)	CUT	S.D.	mgal	mgal	mgal	mgal	mgal
Logged 03-19-81									
1	125.0	38.10	1702	0975.515	+0.001	+0.014	.316	0843.746	±2.5
2	250.2	76.26	1725	0981.999	+0.015	+0.019	.391	0849.446	±4
3	351.2	107.05	1747	0987.075	+0.028	+0.024	.451	0853.911	±2
4	474.2	144.54	1802	0992.952	+0.036	+0.028	.527	0859.079	±2
5	561.2	171.05	1817	0997.253	+0.042	+0.032	.579	0862.858	±2
6	622.1	189.62	1831	1000.136	+0.048	+0.035	.616	0865.396	±2
7	125.0	38.10	1859	0975.425	+0.056	+0.035	.316	0843.746	±12
8	0.2	.06	1912	0968.385	+0.058	+0.034	.250	0837.597	±6
9	622.1	189.62	1940	1000.125	+0.060	+0.033	.616	0865.396	±2
10	708.0	215.80	1954	1004.374	+0.059	+0.028	.668	0869.114	±8
11	825.1	251.49	2010	1010.467	+0.056	+0.022	.737	0874.441	±2
12	896.2	273.16	2025	1014.033	+0.053	+0.017	.778	0877.556	±2.5
13	1020.1	310.93	2040	1019.825	+0.048	+0.013	.851	0882.626	±3
14	1174.2	357.90	2055	1026.140	+0.043	+0.008	.939	0888.162	±2
15	622.1	189.62	2121	1000.189	+0.030	+0.008	.616	0865.396	±3
16	1174.2	357.90	2148	1026.160	+0.015	+0.019	.939	0888.162	±3
17	1174.2	357.90	2306	1026.248	-.034	-.008	.939	0888.162	±2.5
18	1230.2	374.96	2316	1028.813	-.041	-.008	.971	0890.404	±4
19	1275.2	388.68	2323	1031.084	-.046	-.008	.996	0892.387	±2
20	1355.2	413.06	2340	1035.504	-.055	-.008	1.041	0896.243	±2
21	1410.2	429.83	2349	1038.716	-.060	-.008	1.072	0899.046	±4
22	1451.2	442.33	2402	1041.088	-.067	-.008	1.095	0901.112	±6
23	1174.2	357.90	0023	1026.287	-.076	0	.939	0888.162	±2.5
24	1451.2	442.33	0038	1041.084	-.081	+0.010	1.095	0901.112	±2.5
25	1528.2	465.80	0049	1045.263	-.084	+0.010	1.137	0904.763	±2
26	1545.2	470.98	0104	1046.055	-.087	+0.010	1.147	0905.455	±5
27	1568.2	477.99	0116	1047.323	-.089	+0.010	1.159	0906.561	±4
28	1615.2	492.31	0125	1049.321	-.089	+0.010	1.185	0908.314	±3
29	1646.2	501.76	0136	1050.559	-.089	+0.010	1.202	0909.400	±3
30	1672.2	509.69	0147	1051.869	-.088	+0.010	1.216	0910.547	±3
31	1451.2	442.33	0205	1041.026	-.085	+0.064	1.095	0901.112	±2
32	1672.2	509.69	0223	1051.797	-.081	+0.065	1.216	0910.547	±4
33	1758.2	535.90	0234	1056.220	-.077	+0.065	1.263	0914.421	±3
34	1782.2	543.21	0245	1057.211	-.073	+0.066	1.276	0915.296	±2
35	1804.2	549.92	0255	1058.440	-.067	+0.066	1.288	0916.376	±3
36	1904.2	580.40	0307	1063.537	-.062	+0.066	1.342	0920.841	±3
37	1955.2	595.94	0316	1065.910	-.057	+0.067	1.369	0922.925	±3
38	2000.3	609.69	0327	1068.124	-.049	+0.067	1.393	0924.871	±4
39	1672.2	509.69	0345	1051.730	-.037	+0.079	1.216	0910.547	±7
40	2000.3	609.69	0404	1068.082	-.024	+0.079	1.393	0924.871	±4
Logged 03-20-81									
41	2000.3	609.69	1555	1068.171	-.052	+0.030	1.393	0924.871	±2
42	2084.2	635.26	1612	1072.270	-.041	+0.032	1.438	0928.472	±4
43	2116.2	645.02	1624	1073.704	-.033	+0.033	1.455	0929.738	±2
44	2143.2	653.25	1636	1074.993	-.025	+0.035	1.469	0930.876	±7
45	2178.2	663.92	1650	1076.598	-.015	+0.030	1.488	0932.287	±6
46	2233.3	680.71	1700	1079.157	-.008	+0.105	1.516	0934.609	±2.5
47	2260.3	688.94	1710	1080.366	-.002	+0.109	1.531	0935.679	±4
48	2000.3	609.69	1729	1068.005	+0.011	+0.110	1.393	0924.871	±4
49	2143.2	653.25	1749	1074.856	+0.024	+0.104	1.469	0930.876	±3
50	2178.2	663.92	1801	1076.452	+0.032	+0.109	1.488	0932.287	±4
51	2233.3	680.71	1812	1079.093	+0.039	+0.113	1.516	0934.609	±5
52	2260.3	688.94	1821	1080.312	+0.044	+0.110	1.531	0935.679	±4
53	2000.3	609.69	1837	1067.960	+0.051	+0.109	1.393	0924.871	±2

Table 8.--Density Estimates for Well Uelq,
Yucca Flats, Nevada Test Site, Nye County, Nevada
[Located at Lat. 37° 3' 37.2" N., Long. 116° 3' 30.0" W;
ground elevation 4077.0 ft (1242.7 m)].

Station #	Interval		ΔG mgal	ρ (g/cm ³)	ρ (g/cm ³)	Error	
	ft	(m)		for .09406 mgal/ft	for .09205 mgal/ft	G μgal	ρ g/cm ³
0.2	124.8	38.04	6.149	1.752	1.674	±18	±.006
125.0	125.2	38.16	5.700	1.899	1.820	±6.5	±.002
250.0	101.0	30.78	4.465	1.950	1.872	±6	±.002
351.2	123.0	37.49	5.168	2.036	1.958	±4	±.001
474.2	87.0	26.52	3.779	1.981	1.902	±4	±.001
561.2	60.9	18.56	2.538	2.049	1.971	±4	±.002
622.1	85.9	26.18	3.718	1.987	1.908	±10	±.005
708.0	117.1	35.69	5.327	1.900	1.822	±10	±.003
825.1	71.1	21.67	3.115	1.966	1.887	±4.5	±.003
896.2	123.9	37.76	5.070	2.079	2.000	±5.5	±.002
1020.1	154.1	46.97	5.536	2.274	2.196	±5	±.001
1174.2	56.0	17.07	2.242	2.114	2.036	±6.5	±.004
1230.2	45.0	13.72	1.983	1.956	1.877	±6	±.005
1275.2	80.0	24.38	3.856	1.794	1.716	±4	±.002
1355.2	55.0	16.76	2.803	1.686	1.607	±6	±.004
1410.2	41.0	12.50	2.066	1.709	1.630	±10	±.010
1451.2	77.0	23.47	3.651	1.825	1.746	±4.5	±.003
1528.2	17.0	5.18	0.692	2.087	2.009	±7	±.017
1545.2	23.0	7.01	1.106	1.799	1.720	±9	±.015
1568.2	47.0	14.33	1.753	2.221	2.142	±7	±.006
1615.2	31.0	9.45	1.086	2.309	2.231	±6	±.008
1646.2	26.0	7.92	1.147	1.954	1.875	±6	±.009
1672.2	86.0	26.21	3.974	1.918	1.839	±7	±.003
1758.2	24.0	7.32	0.875	2.254	2.175	±5	±.008
1782.2	22.0	6.71	1.080	1.759	1.681	±5	±.009
1804.2	100.0	30.48	4.465	1.933	1.854	±6	±.002
1904.2	51.0	15.54	2.081	2.081	2.003	±6	±.005
1955.2	45.1	13.75	1.946	1.992	1.913	±7	±.006
2000.3	83.9	25.57	3.601	2.001	1.922	±6	±.003
2084.2	32.0	9.75	1.266	2.132	2.054	±6	±.008
2116.2	27.0	8.23	1.138	2.031	1.952	±9	±.013
2143.2	35.0	10.67	1.411	2.103	2.024	±7	±.008
2178.2	55.1	16.79	2.322	2.031	1.953	±8.5	±.006
2233.3	27.0	8.23	1.070	2.130	2.051	±6.5	±.009
2260.3							

Table 9.--Principal Facts for Well Ue2co, Yucca Flats,
Nevada Test Site, Nye County, Nevada
[Located at Lat. 37° 7' 0.1" N., Long. 116° 7' 36.6" W.;
ground elevation 4561.9 ft (1390.5 m)].

Reading #	Depth ft (m)		Time CUT	Meter readings S.D.	Tidal corr. mgal	Drift corr. mgal	Terrain corr. mgal	Corr. gravity mgal	Error G μgal
Logged 03-17-81									
1	82.2	25.05	2216	0943.921	-.048	0	0.980	0817.043	±4
2	3.7	1.13	2232	0940.142	-.055	+.025	0.949	0813.764	±3
3	82.2	25.05	2244	0943.886	-.060	+.042	0.980	0817.043	±3
4	195.1	59.47	2301	0949.085	-.066	+.048	1.098	0821.654	±2.5
5	301.1	91.78	2313	0953.968	-.070	+.053	1.215	0825.992	±2
6	408.1	124.39	2331	0958.769	-.074	+.060	1.331	0830.261	±4
7	522.1	159.14	2347	0963.591	-.077	+.066	1.452	0834.552	±3
8	82.2	25.05	2410	0943.869	-.078	+.075	0.980	0817.043	±2.5
9	522.1	159.14	0034	0963.576	-.077	+.079	1.452	0834.552	±2
10	576.0	175.56	0048	0966.404	-.074	+.076	1.508	0837.054	±3
11	613.0	186.84	0102	0968.232	-.071	+.074	1.547	0838.673	±3
12	650.0	198.12	0115	0970.182	-.067	+.071	1.585	0840.397	±2
13	696.0	212.14	0126	0972.515	-.063	+.069	1.633	0842.463	±3
14	742.0	226.16	0135	0975.065	-.059	+.067	1.680	0844.716	±2.5
15	522.1	159.14	0156	0963.561	-.048	+.062	1.452	0834.552	±2
16	742.0	226.16	0213	0975.051	-.038	+.058	1.680	0844.716	±7
17	820.0	249.94	0225	0979.312	-.030	+.055	1.759	0848.483	±4
18	870.0	265.18	0235	0982.114	-.024	+.053	1.810	0850.959	±2.5
19	910.0	277.37	0244	0984.046	-.016	+.051	1.850	0852.675	±3
20	956.0	291.39	0254	0986.743	-.010	-.037	1.896	0854.970	±3
21	1020.0	310.90	0307	0989.992	0	-.040	1.960	0857.849	±3
22	742.0	226.16	0324	0974.979	+.013	-.048	1.680	0844.716	±2.5
23	910.0	277.37	0344	0984.123	+.030	-.062	1.850	0852.675	±4
24	1020.0	310.90	0401	0989.986	+.042	-.077	1.960	0857.849	±4
Logged 03-18-81									
25	1020.0	310.90	1807	0989.910	+.034	-.003	1.960	0857.849	±2
26	1020.0	310.90	1836	0989.881	+.041	+.015	1.960	0857.849	±3
27	1070.0	326.14	1848	0992.357	+.043	+.012	2.009	0860.037	±2.5
28	1107.0	337.41	1857	0994.209	+.044	+.010	2.046	0861.674	±4
29	1165.0	355.09	1906	0997.454	+.044	+.008	2.102	0864.533	±2.5
30	1209.0	368.50	1916	0999.724	+.044	+.006	2.145	0866.535	±2.5
31	1248.0	380.39	1926	1001.819	+.043	+.004	2.183	0868.381	±3
32	1273.0	388.01	1933	1003.149	+.043	+.003	2.207	0869.554	±3
33	1020.0	310.90	1949	0989.899	+.040	0	1.960	0857.849	±4

Table 10.--Density Estimates for Well Ue2c0,
Yucca Flats, Nevada Test Site, Nye County, Nevada
[Located at Lat. 37° 7' 0.1" N., Long. 116° 7' 36.6" W;
ground elevation 4561.9 ft (1390.5 m)].

Station #	Interval		ΔG mgal	ρ (g/cm ³) for F =	ρ (g/cm ³) for F =	Error	
	ft	(m)		.09406 mgal/ft	.09199 mgal/ft	G μgal	ρ g/cm ³
3.7	78.5	23.93	3.279	2.046	1.965	±6	±.003
82.2	112.9	34.41	4.611	2.082	2.001	±5.5	±.002
195.1	106.0	32.31	4.338	2.079	1.998	±4.5	±.001
301.1	107.0	32.61	4.269	2.119	2.038	±6	±.003
408.1	114.0	34.75	4.291	2.207	2.136	±7	±.003
522.1	53.9	16.43	2.502	1.864	1.783	±5	±.003
576.0	37.0	11.28	1.619	1.968	1.887	±5	±.005
613.0	37.0	11.28	1.724	1.857	1.776	±5	±.006
650.0	46.0	14.02	2.066	1.923	1.842	±5	±.004
696.0	46.0	14.02	2.253	1.764	1.683	±5.5	±.004
742.0	78.0	23.77	3.767	1.790	1.709	±11	±.005
820.0	50.0	15.24	2.476	1.743	1.661	±6.5	±.005
870.0	40.0	12.19	1.716	2.002	1.920	±5.5	±.006
910.0	46.0	14.02	2.295	1.728	1.647	±6	±.005
956.0	64.0	19.51	2.879	1.920	1.839	±6	±.003
1020.0	50.0	15.24	2.188	1.968	1.887	±5.5	±.004
1070.0	37.0	11.28	1.637	1.949	1.868	±6.5	±.007
1107.0	58.0	17.68	2.859	1.751	1.670	±6.5	±.005
1165.0	44.0	13.41	2.002	1.900	1.819	±5	±.005
1209.0	39.0	11.89	1.846	1.828	1.747	±5.5	±.005
1248.0	25.0	7.62	1.173	1.844	1.763	±6	±.009
1273.0							

Table 11.--Principal Facts for Well USW-H1,
Yucca Mountain, Nevada Test Site, Nye County, Nevada
[Located at Lat. 36° 51.98' N., Long. 116° 27.21' W.;
ground elevation 4280 ft (1305 m)].

Reading #	Depth		Time CUT	Meter readings S.D.	Tidal corr. mgal	Drift corr. mgal	Terrain corr. mgal	Corr. gravity mgal	Error G μgal
	ft	m							
Logged 03-22-81									
1	38.2	11.64	1732	0937.190	-.009	0	1.596	0811.881	±3
2	6.9	2.10	1750	0936.015	+.004	+.006	1.432	0810.720	±7
3	38.2	11.64	2114	0937.077	+.088	+.001	1.596	0811.881	±3
4	6.9	2.10	2127	0935.933	+.087	-.006	1.432	0810.720	±2
Logged 03-23-81									
5	38.2	11.64	1557	0937.159	-.069	+.087	1.596	0811.881	±4
6	62.3	18.99	1610	0938.005	-.065	+.096	1.689	0812.718	±3
7	92.0	28.04	1621	0939.514	-.060	+.101	1.783	0814.126	±3
8	114.0	34.75	1631	0940.812	-.056	+.106	1.846	0815.320	±3
9	145.0	44.20	1642	0942.221	-.052	+.112	1.926	0816.628	±4
10	178.1	54.28	1658	0944.083	-.042	+.121	2.005	0818.335	±2
11	246.0	74.98	1714	0948.565	-.032	+.131	2.153	0822.377	±3
12	38.2	11.64	1734	0937.060	-.020	+.024	1.596	0811.881	±7
13	246.0	74.98	1749	0948.546	-.010	+.126	2.153	0822.377	±2
14	262.0	79.86	1758	0949.541	-.004	+.139	2.185	0823.288	±4
15	280.0	85.34	1806	0950.700	+.002	+.119	2.220	0824.311	±6
16	325.0	99.06	1816	0953.610	+.009	+.142	2.302	0826.938	±7
17	395.0	120.40	1833	0856.466	+.020	+.104	2.418	0829.495	±2
18	452.0	137.77	1844	0958.759	+.028	+.190	2.501	0831.654	±3
19	246.0	74.98	1900	0948.416	+.038	+.190	2.153	0822.377	±7
20	38.2	11.64	1917	0936.878	+.048	+.213	1.596	0811.881	±2
21	62.3	18.99	1926	0937.735	+.054	+.210	1.689	0812.718	±5
22	246.0	74.98	1952	0948.959	+.067	+.210	2.153	0822.377	±7
23	262.0	79.86	2020	0949.370	+.079	+.203	2.185	0823.288	±3
24	280.0	85.34	2030	0950.492	+.082	+.219	2.220	0824.311	±3
25	325.0	99.06	2044	0953.454	+.086	+.200	2.302	0826.938	±3
26	395.0	120.40	2100	0956.278	+.089	+.197	2.418	0829.495	±2
27	452.0	137.77	2110	0958.685	+.090	+.192	2.501	0831.654	±3
28	508.0	154.84	2121	0960.865	+.091	+.192	2.575	0833.613	±3
29	618.0	188.37	2141	0966.184	+.091	+.192	2.698	0838.334	±2
30	766.0	233.48	2203	0973.121	+.088	+.192	2.827	0844.455	±2
31	900.0	274.32	2221	0978.618	+.085	+.192	2.914	0849.290	±7
32	940.0	286.51	2237	0980.516	+.080	+.192	2.936	0850.947	±7
33	452.0	137.77	2300	0958.701	+.071	+.197	2.501	0831.654	±2
34	940.0	286.51	2330	0980.465	+.056	+.260	2.936	0850.947	±2
35	940.0	286.51	2344	0980.521	+.049	+.218	2.936	0850.947	±2

Table 11.--Continued for Well USW-H1

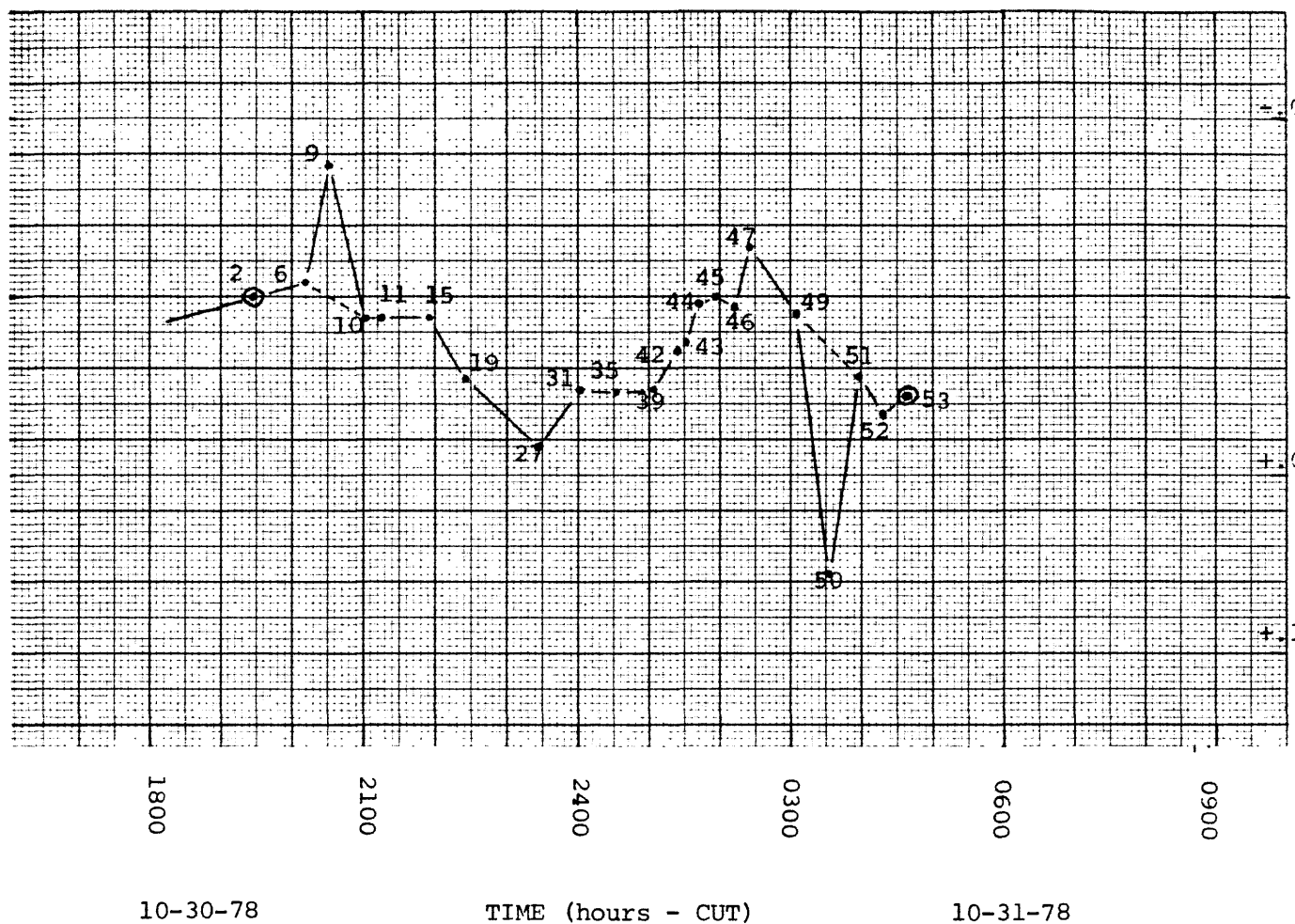
Reading #	Depth		Time CUT	Meter readings S.D.	Tidal corr. mgal	Drift corr. mgal	Terrain corr. mgal	Corr. gravity mgal	Error G μgal
	ft	m							
Logged 03-24-81									
36	940.0	286.51	1615	0980.873	-.065	+.028	2.936	0850.947	±2.5
37	1325.0	403.86	1631	0997.583	-.060	+.033	3.057	0865.520	±3
38	1460.0	445.01	1646	1002.898	-.054	+.038	3.071	0870.139	±3
39	1490.0	454.15	1652	1004.274	-.052	+.040	3.073	0871.334	±5
40	1530.0	466.34	1701	1006.181	-.048	+.106	3.074	0873.053	±7
41	1530.0	466.34	1735	1006.220	-.030	+.054	3.074	0873.053	±7
42	940.0	286.51	1809	0980.727	-.010	+.099	2.936	0850.947	±2
43	940.0	286.51	1817	0980.774	-.005	+.054	2.936	0850.947	±2.5
44	1530.0	466.34	1855	1006.215	+.019	+.009	3.074	0873.053	±2
45	1634.9	498.32	1909	1011.592	+.028	+.022	3.074	0877.722	±2
46	1729.9	527.27	1922	1016.581	+.036	+.006	3.069	0882.021	±2.5
47	1829.9	557.75	1932	1021.599	+.040	+.063	3.059	0886.409	±7
47a	1829.9	557.75	1935	1021.638	+.041	+.028	3.059	0886.409	±4
48	1859.9	566.90	1948	1023.108	+.050	-.061	3.056	0887.596	±8
49	1919.9	585.19	1956	1025.995	+.055	+.002	3.048	0890.152	±4
50	1530.0	466.34	2018	1006.147	+.066	+.021	3.074	0873.053	±4
51	1859.9	566.90	2040	1022.984	+.075	+.021	3.056	0887.596	±2.5
52	1919.9	585.19	2056	1025.944	+.080	+.021	3.048	0890.152	±2
53	1859.9	566.90	2112	1022.930	+.084	+.058	3.056	0887.596	±2
54	1829.9	557.75	2123	1021.641	+.086	-.020	3.059	0886.409	±3
55	1729.9	527.27	2137	1016.524	+.089	+.002	3.069	0882.021	±2
56	1635.9	498.62	2147	1011.562	+.090	-.014	3.074	0877.722	±2.5
57	1530.0	466.34	2200	1006.145	+.090	-.001	3.074	0873.053	±2
58	1919.9	585.19	2220	1025.957	+.089	+.001	3.048	0890.152	±7
59	2054.0	626.06	2232	1031.840	+.088	+.008	3.025	0895.220	±2
60	2280.0	694.94	2250	1043.012	+.085	+.022	2.976	0904.838	±6
61	2340.0	713.23	2301	1045.990	+.082	+.030	2.961	0907.402	±7
62	2421.0	737.92	2313	1049.611	+.079	+.037	2.939	0910.513	±4
63	1919.9	585.19	2339	1025.889	+.070	+.079	3.048	0890.152	±3
64	2421.0	737.92	2414	1049.591	+.054	+.079	2.939	0910.513	±4
65	2534.1	772.39	0028	1054.356	+.047	+.079	2.907	0914.592	±3
66	2644.1	805.92	0044	1058.900	+.039	+.079	2.874	0918.479	±3
67	2693.1	820.86	0056	1061.207	+.032	+.079	2.858	0920.450	±7
68	2741.1	835.49	0107	1063.496	+.026	+.079	2.843	0922.407	±3
69	2823.1	860.48	0121	1067.248	+.018	+.079	2.816	0925.615	±2
70	2867.1	873.89	0135	1069.231	+.011	+.079	2.801	0927.308	±4
71	2421.0	737.92	0201	1049.705	-.003	+.037	2.939	0910.513	±5
72	2867.1	873.89	0222	1069.308	-.013	+.037	2.801	0927.308	±3
73	2987.1	910.47	0233	1074.222	-.018	+.037	2.760	0931.510	±3
74	3080.1	938.81	0245	1077.797	-.024	+.037	2.727	0934.561	±4
75	3218.1	980.88	0308	1083.613	-.033	+.126	2.677	0939.618	±5
76	3284.1	1000.99	0318	1086.185	-.036	+.126	2.653	0941.814	±3
77	3413.1	1040.31	0330	1091.308	-.040	+.126	2.604	0946.189	±2.5
78	2867.1	873.89	0357	1069.243	-.046	+.126	2.801	0927.308	±4
79	3413.1	1040.31	0418	1091.340	-.049	+.107	2.604	0946.189	±2
80	3218.1	980.88	0431	1083.661	-.051	+.103	2.677	0939.618	±2.5

Table 11.--Continued for Well USW-H1

Reading #	Depth		Time CUT	Meter readings S.D.	Tidal corr. mgal	Drift corr. mgal	Terrain corr. mgal	Corr. gravity mgal	Error G μgal
	ft	m							
Logged 03-25-81									
81	3413.1	1040.31	1546	1091.433	-.067	+.045	2.604	0946.189	±2.5
82	3525.4	1074.54	1601	1095.840	-.066	+.045	2.561	0949.956	±2
83	3620.4	1103.50	1612	1099.386	-.065	+.045	2.524	0952.985	±2
84	3666.4	1117.52	1621	1101.175	-.063	+.045	2.507	0954.517	±3
85	3726.2	1135.75	1633	1103.305	-.060	+.131	2.483	0956.423	±2
86	3762.2	1146.72	1644	1104.575	-.058	+.116	2.469	0957.494	±2
87	3413.1	1040.31	1701	1091.334	-.052	+.116	2.604	0946.189	±5
88	3726.2	1135.75	1723	1103.337	-.044	+.087	2.483	0956.423	±4
89	3762.2	1146.72	1732	1104.569	-.040	+.103	2.469	0957.494	±2
90	3827.2	1166.53	1744	1106.810	-.035	+.098	2.443	0959.405	±4
91	3967.3	1209.23	1758	1111.466	-.028	+.094	2.388	0963.378	±2
92	4026.3	1227.22	1809	1113.576	-.023	+.092	2.365	0965.182	±3
93	4047.3	1233.62	1816	1114.202	-.019	+.102	2.356	0965.728	±2
94	4100.3	1249.77	1826	1116.273	-.014	+.099	2.335	0967.499	±3
95	3762.2	1146.72	1858	1104.523	+.004	+.099	2.469	0957.494	±4
96	4026.3	1227.46	1916	1113.516	+.015	+.106	2.365	0965.182	±2
97	4100.3	1249.77	1929	1116.231	+.022	+.099	2.335	0967.499	±3
98	4656.3	1419.24	1958	1138.330	+.038	+.087	2.113	0986.385	±2
99	4921.3	1500.01	2019	1148.312	+.048	+.088	2.008	0994.920	±2
100	4988.3	1520.43	2028	1150.812	+.053	+.089	1.981	0997.060	±2
101	5106.3	1556.40	2041	1155.272	+.059	+.090	1.935	1000.877	±3
102	5194.3	1583.22	2052	1158.548	+.063	+.090	1.900	1003.679	±3
103	5275.4	1607.94	2107	1161.642	+.069	+.092	1.869	1006.331	±4
104	5343.4	1628.67	2126	1164.223	+.075	+.093	1.842	1008.542	±2
105	5421.4	1652.44	2144	1167.161	+.079	+.094	1.812	1011.058	±4
106	5514.4	1680.79	2159	1170.610	+.082	+.100	1.776	1014.013	±4
107	5612.4	1710.66	2212	1174.098	+.084	+.105	1.738	1016.998	±5
108	5680.4	1731.39	2224	1176.487	+.085	+.110	1.712	1019.043	±3
109	5891.4	1795.70	2242	1183.813	+.085	+.118	1.632	1025.308	±2.5
110	5924.4	1805.76	2252	1184.925	+.085	+.122	1.620	1026.259	±2
111	5960.4	1816.73	2301	1186.190	+.085	+.126	1.607	1027.344	±2
112	5421.4	1652.44	2350	1167.102	+.077	+.147	1.812	1011.058	±2
113	4921.3	1500.01	2415	1148.213	+.069	+.153	2.008	0994.920	±3
114	4654.3	1418.63	0036	1138.225	+.062	+.154	2.113	0986.385	±3
115	4100.3	1249.77	0059	1116.147	+.053	+.141	2.335	0967.499	±2

Table 12.--Density Estimates for Well USW-H1,
Yucca Mountain, Nevada Test Site, Nye County, Nevada
[Located at Lat. 36° 51.98' N., Long. 116° 27.21' W;
ground elevation 4280 ft (1305 m)].

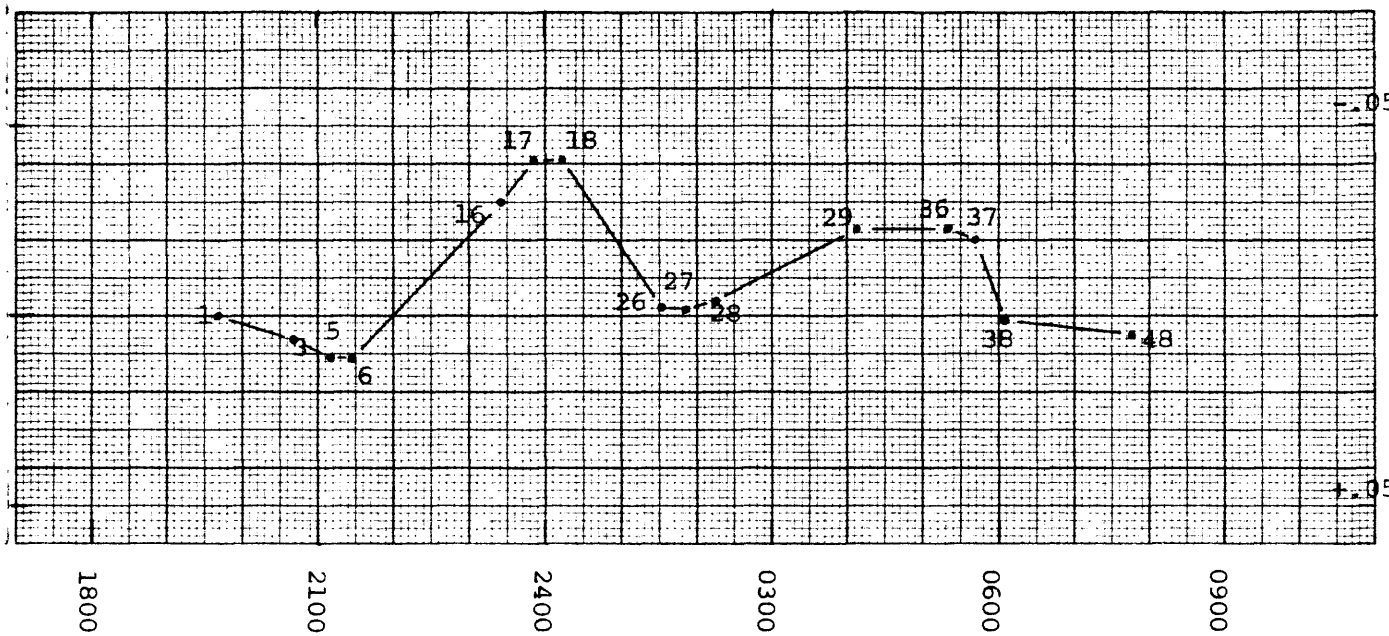
Station #	Interval		AG mgal	ρ (g/cm ³) for F = .09406 mgal/ft	Error	
	ft	(m)			G μgal	ρ g/cm ³
6.9	31.3	9.54	1.161	2.229	±5	±.006
38.2	24.1	7.35	0.837	2.321	±7	±.012
62.3	29.7	9.05	1.408	1.825	±6	±.008
92.0	22.0	6.71	1.194	1.557	±6	±.011
114.0	31.0	9.45	1.308	2.029	±7	±.009
145.0	33.1	10.09	1.707	1.662	±6	±.007
178.1	67.9	20.70	4.042	1.351	±5	±.003
246.0	16.0	4.88	0.911	1.452	±6	±.014
262.0	18.0	5.49	1.023	1.456	±6	±.013
280.0	45.0	13.72	2.627	1.396	±6	±.005
325.0	70.0	21.34	2.557	2.251	±5	±.003
395.0	57.0	17.37	2.159	2.198	±5	±.004
452.0	56.0	17.07	1.959	2.311	±6	±.005
508.0	11.0	33.53	4.721	2.001	±5	±.002
618.0	148.0	45.11	6.121	2.062	±4	±.001
766.0	134.0	40.84	4.835	2.268	±9	±.002
900.0	40.0	12.19	1.657	2.059	±14	±.013
940.0	385.0	117.35	14.573	2.199	±5.5	±.000
1325.0	135.0	41.15	4.619	2.341	±6	±.002
1460.0	30.0	9.14	1.195	2.122	±8	±.010
1490.0	40.0	12.19	1.719	1.999	±12	±.012
1530.0	104.9	31.97	4.669	1.939	±4	±.001
1634.9	95.0	28.96	4.299	1.910	±4.5	±.001
1729.9	100.0	30.48	4.388	1.963	±5	±.002
1829.9	30.0	9.14	1.187	2.132	±5	±.006
1859.9	60.0	18.29	2.556	2.013	±4	±.003
1919.9	134.1	40.87	5.068	2.201	±9	±.003
2054.0	226.0	68.88	9.618	2.015	±8	±.001
2280.0	60.0	18.29	2.564	2.008	±13	±.008
2340.0	81.0	24.69	3.111	2.177	±11	±.006
2421.0	113.1	34.47	4.079	2.269	±7	±.002
2534.1	110.0	33.53	3.887	2.297	±6	±.003
2644.1	49.0	14.94	1.971	2.106	±10	±.008
2693.1	48.0	14.63	1.957	2.085	±10	±.008
2741.1	82.0	24.99	3.208	2.149	±5	±.003
2823.1	44.0	13.41	1.693	2.175	±6	±.006
2867.1	120.0	36.58	4.202	2.310	±6	±.002
2987.1	93.0	28.35	3.051	2.396	±7	±.002
3080.1	138.0	42.06	5.053	2.247	±9	±.002
2318.1	66.0	20.12	2.196	2.378	±8	±.005
3284.1	129.0	39.32	4.375	2.353	±5.5	±.002
3413.1	112.3	34.23	3.767	2.368	±4.5	±.001
3525.4	95.0	28.96	3.029	2.433	±4	±.001
3620.4	46.0	14.02	1.532	2.377	±5	±.004
3666.4	59.8	18.23	1.906	2.433	±5	±.003
3726.2	36.0	10.97	1.071	2.516	±4	±.004
3762.2	65.0	19.81	1.911	2.530	±6	±.004
3827.2	140.1	42.70	3.973	2.570	±6	±.001
3967.3	59.0	17.98	1.804	2.484	±5	±.004
4026.3	21.0	6.40	0.546	2.663	±5	±.009
4047.3	53.0	16.15	1.771	2.373	±5	±.004
4100.3	556.0	169.47	18.886	2.351	±5	±.000
4656.3	265.0	80.77	8.535	2.420	±4	±.000
4921.3	67.0	20.42	2.140	2.430	±4	±.002
4988.3	118.0	35.97	3.817	2.414	±5	±.002
5106.3	88.0	26.82	2.802	2.434	±6	±.002
5194.3	81.1	24.72	2.652	2.401	±7	±.004
5275.4	68.0	20.73	2.211	2.408	±6	±.004
5343.4	78.0	23.77	2.514	2.419	±6	±.003
5421.4	93.0	28.35	2.955	2.437	±8	±.004
5514.4	98.0	29.87	2.985	2.488	±9	±.003
5612.4	68.0	20.73	2.045	2.503	±8	±.004
5680.4	211.0	64.31	6.265	2.518	±5.5	±.001
5891.4	33.0	10.06	0.951	2.552	±4.5	±.005
5924.4	36.0	10.97	1.085	2.501	±4	±.004
5960.4						



- . Drift correction used at particular reading when more than one reading was made at that depth (numbers refer to reading numbers from respective tables).
- ⊙ Base station at 288.0 feet (87.78 m).

Figure 2.--Drift correction curve for BH-1 in well Ue4ah;
 Lat. $37^{\circ}5' 1.5''$ N., Long. $116^{\circ} 4' 12.5''$ W.,
 Nevada Test Site, Nye County, Nevada.

DRIFT CORRECTION (milligals)



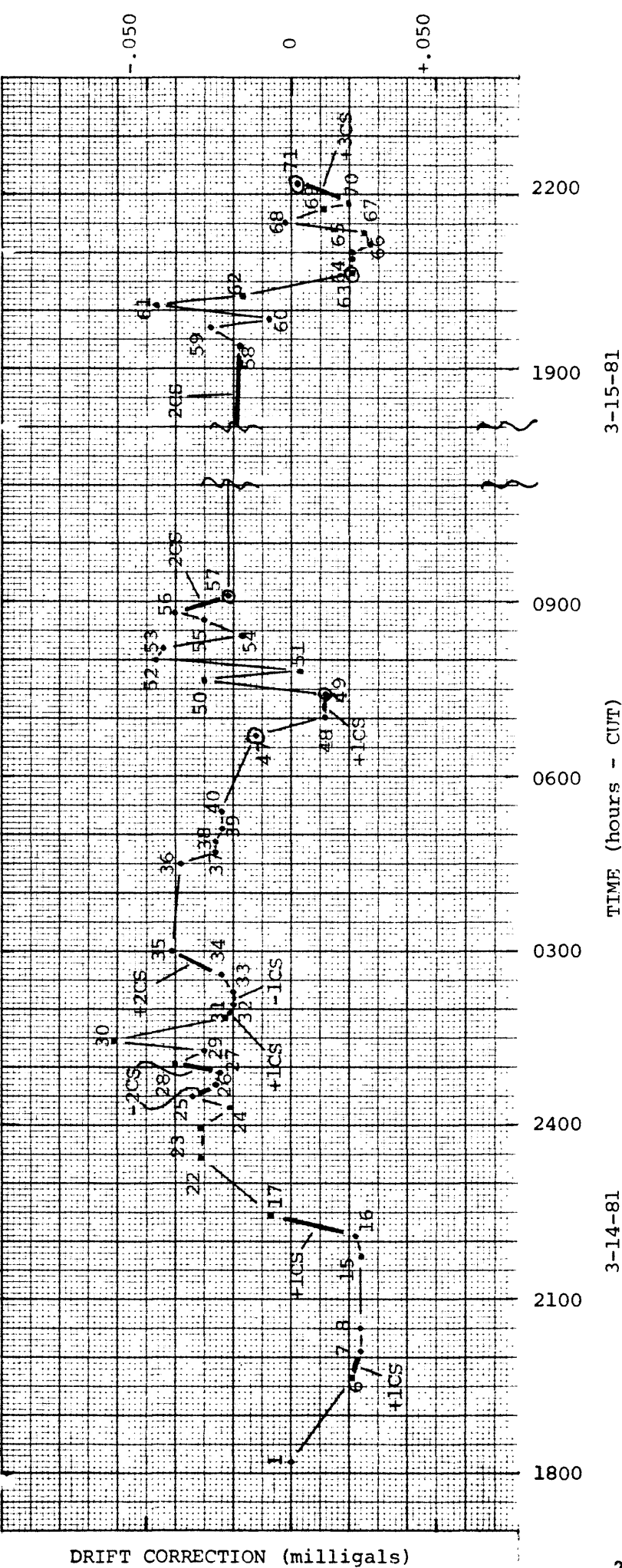
3-12-81

TIME (hours - CUT)

3-13-81

- Drift correction used at particular reading when more than one reading was made at that depth (numbers refer to reading numbers from respective tables).

Figure 3.--Drift correction curve for BH-6 in well Ue7j;
Lat. $37^{\circ} 5' 54.8''$ N., Long. $116^{\circ} 0' 54.6''$ W.,
Nevada Test Site, Nye County, Nevada.



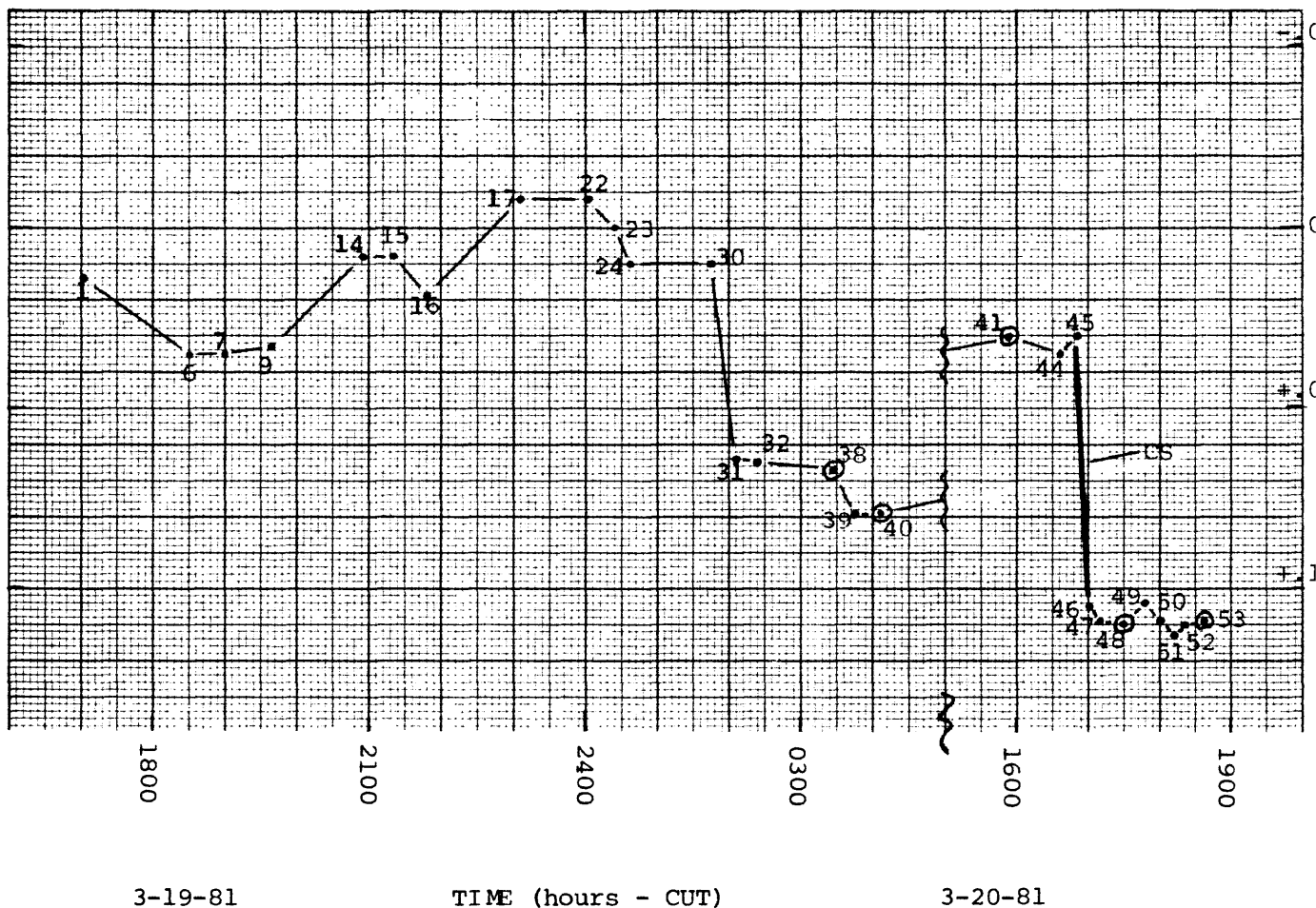
. Drift correction used at particular reading when more than one reading was made at that depth (numbers refer to reading numbers from respective tables).

⊙ Base station at 2690.4 feet (820.03 m)

CS Intervals in which skips occurred in our surface control console.

Figure 4.--Drift correction curve for BH-6 in well Uelh ; Lat. 37° 0' 4.8" N., Long. 116° 4' 2.6" W., Nevada Test Site, Nye County, Nevada.
This curve shows instrumental drift after the counter skips have been removed and therefore does not correspond to the correction values found in table 5.

DRIFT CORRECTION (milligals)

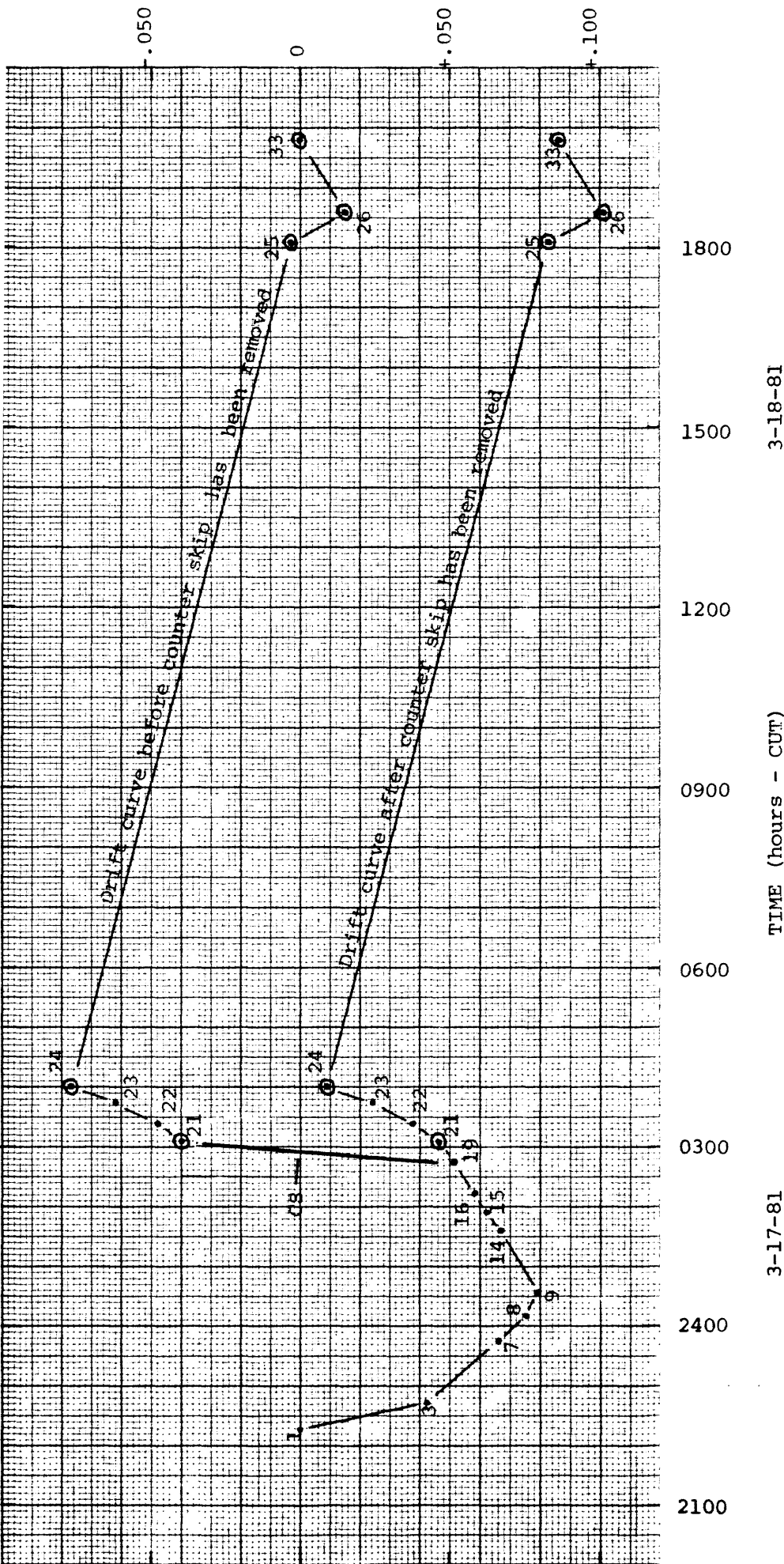


. Drift correction used at particular reading when more than one reading was made at that depth (numbers refer to reading numbers from respective tables).

0 Base station at 2000.3 feet (609.69 m).

CS Intervals in which skip occurred in our surface control console.

Figure 5.--Drift correction curve for BH-6 in well Uelq;
 Lat. $37^{\circ} 3' 37.2''$ N., Long. $116^{\circ} 3' 30.0''$ W.,
 Nevada Test Site, Nye County, Nevada.

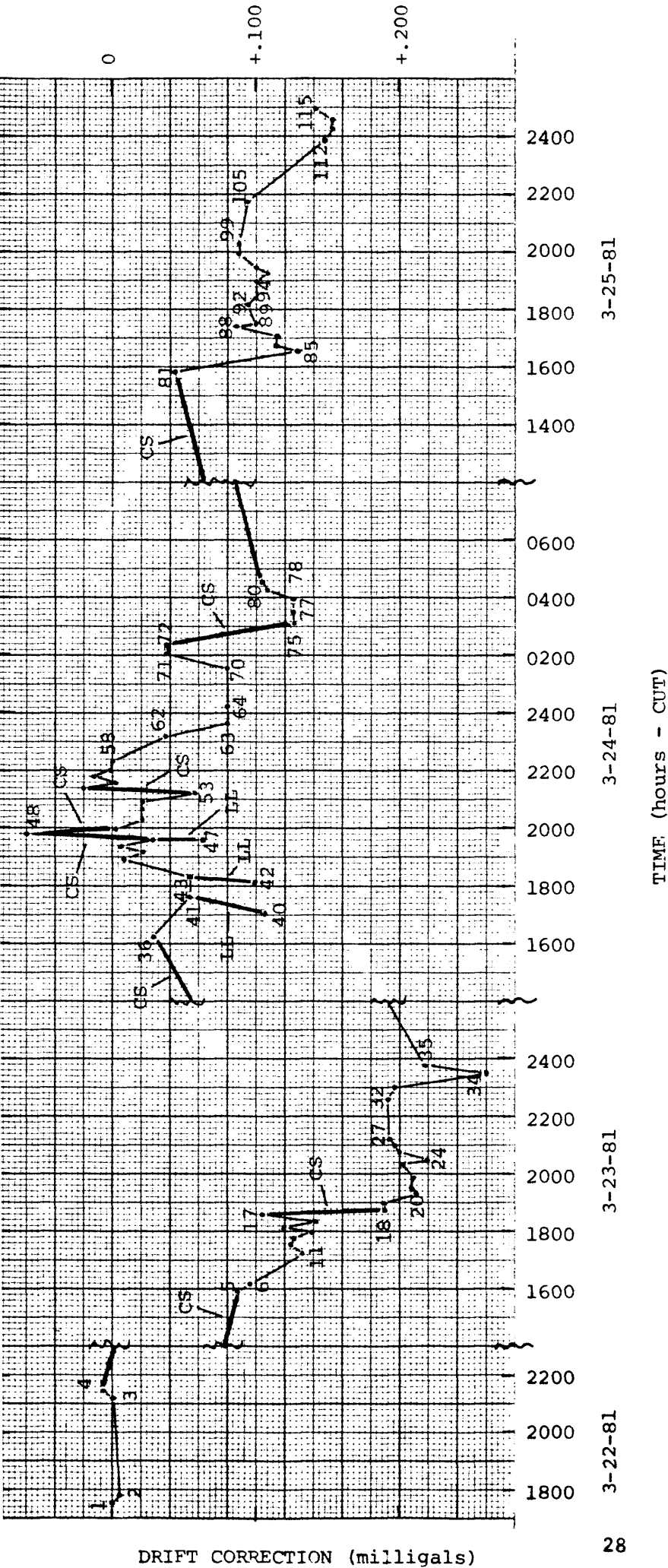


. Drift correction used at particular reading when more than one reading was made at that depth (numbers refer to reading numbers from respective tables).

0 Base station at 1020.0 feet (310.90 m).

CS Interval in which skip occurred in our surface control console.

Figure 6.--Drift correction curve for BH-6 in well Ue2co;
Lat. 37° 7' 0.1" N., Long. 116° 7' 36.6" W.,
Nevada Test Site, Nye County, Nevada.



LL Relevel levels.

- Drift correction used at particular reading when more than one reading was made at that depth (numbers refer to reading numbers from respective tables).

CS Intervals in which skips occurred in our surface control console.

Figure 7.--Drift correction curve for BH-6 in well USW-H1;
Lat. 36° 51.98' N., Long. 116° 27.21' W., Nevada Test Site,
Nye County, Nevada.

Table 13. Stratigraphic section and unit depths in wells Ue7j, Ue1q, and Ue2co
(from Allen Cogbill, 1981, written commun.).
[T.D. = bottom of BHGM survey]
[w.t. = water table]

Stratigraphic Units		Wells and depths			
(Surface)		Ue7j	Ue2co	Ue7ah	Ue1q
Alluvium		388 ft (118 m) —	696 ft (212 m) —	1516 ft (462 m) — ~1640 ft (500 m) w.t.	1275 ft (389 m) —
Timber Mountain Tuff	Ammonia Tanks Member	485 ft (148 m) —	731 ft (223 m) —	1739 ft (530 m) —	1355 ft (413 m) — ~1700 ft (518 m) w.t.
	Rainier Mesa Member	888 ft (271 m) —	870 ft (265 m) —	1959 ft (597 m) —	1758 ft (536 m) —
Paintbrush Tuff		1196 ft (365 m) —	1273 ft (388 m) T.D. 1286 ft (392 m) —	2340 ft (713 m) T.D. 2385 ft (727 m) —	2084 ft (635 m) —
Belted Range Tuff	Grouse Canyon Member	1278 ft (390 m) —			2116 ft (645 m) — 2260 ft (689 m) T.D.
					2329 ft (710 m) —
Tunnel Beds Tuff		1790 ft (546 m) —			
Grater Flat Tuff		2017 ft (615 m) —			
Unit #1 Tunnel beds tuff		2080 ft (634 m) —			
Undifferentiated older tuff		2293 ft (699 m) —			
Paleocolluvium		2303 ft (702 m) —			
Paleozoic quartzite		2360 ft (719 m) T.D.			

Table 14. Stratigraphic section and unit depths in well Uelh
 (from Allen Cogbill, 1981, written commun.).
 [T.D. = bottom of BHGM survey]

Stratigraphic units	Unit depths
	(Surface)
Alluvium	687 ft (209 m)
Tuffaceous sand	738 ft (225 m)
Basalt	1018 ft (310 m)
Tuffaceous sand	1031 ft (314 m)
Reworked tuffaceous sand	1085 ft (331 m)
Alluvium	1706 ft (520 m)
Paleozoic dolomite	3219 ft (981 m) T.D.

Table 15. Stratigraphic section and unit depths in well USW-H1
(David Synder, 1981, written commun.).
[T.D. = bottom of BHGM survey]

Stratigraphic units		Unit Depths
		(Surface)
Paintbrush	Tiva Canyon Member	92 ft (28 m)
	Yucca Mountain Member	178 ft (54 m)
Tuff	Pah Canyon Member	280 ft (85 m)
	Topopah Spring Member	1490 ft (454 m)
Tuffaceous beds of Calico Hills		1860 ft (567 m)
Crater Flat Tuff	Prow Pass Member	2280 ft (695 m)
	Bullfrog Member	2731 ft (832 m)
Tuff of Tram		3666 ft (1117 m)
Flow breccia		4026 ft (1227 m)
Tuff		4047 ft (1234 m)
Lithic-rich tuff		4950 ft (1509 m)
Older ash-flow and bedded tuff		5960 ft (1817 m) T.D.

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