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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DENSITY LOGGING AND DENSITY OF ROCKS IN RAINIER MESA AREA, NEVADA TEST SITE

By

R.D. CARROLL

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ABSTRACT

Density logs from all 35 vertical drill holes in the Rainier Mesa area in which logs were obtained were evaluated and the distribution of densities of units in the geologic section was derived. Densities were obtained in only 10 holes in which calibrated logging tools had been run. The logs from an additional 10 holes were calibrated with core. Densities vary from nearly 1 g/cc in tunnel bed 5 to over 2.8 g/cc in the dolomitic rocks. Log densities were found to agree well with core data in those subunits (chiefly within tunnel beds 3 and 4) where an adequate number of core measurements were available for comparison. Lithologic correlations based on density log signatures were found to extend for more than 8 km in several units and subunits in the area.

Although the volcanic rocks in the Rainier Mesa area are comprised of a wider spectrum of minerals than the petroliferous rocks generally involved in most commercial logging applications, grain density may be estimated with good accuracy with only a knowledge of glass and zeolite content. The variability of the Z/A ratio of the matrix in these volcanic rocks is also negligible compared to the value of 0.5 generally assumed in density logging. However, due to the assumptions made concerning the Z/A of water in deriving the output of commercial density tools, one should be aware of the errors inherent in assuming that recorded log densities are true densities. These errors are normally small, being less than 3 percent for compensated "limestone" tools and 2 percent for tools which output electron density.

Density logs generally exhibit a sharp increase in density at the top of pervasive zeolitization. This density change, considered coincident with the approximate top of the saturated volcanic rocks, is our definition of the "top" of zeolitization based on geophysical evidence. At some locations the top of pervasive zeolitization is overlain by alternating zones of zeolitized and partially zeolitized beds for considerable distances. These locations may bear some relationship to paleotopography.

A comparison of overburden stress obtained from density logs in seven holes with vertical stresses measured in situ at tunnel level, indicates slightly higher stresses derived from logs. The magnitude of the overburden density is related to the thickness of the caprock.

There are limited data addressing the problem of invasion and its effect on log and core densities in the unsaturated zone in the Rainier Mesa area. Comparisons of log and core data suggest that saturation in the tuffs in some of these zones may be closer to 60 percent than the often reported 80-90 percent derived from core measurements. Peculiarities were found on several logs obtained in the unsaturated zone. These logs indicate densities in

friable tuff that apparently exceed densities found in the densely welded caprock, a physically impossible situation if normal scenarios of invasion are applied. These zones may be related to the effects of drilling.

The statistical distribution of density derived from density logs within units and subunits often reflects local geology, an example being the bi-modal density distribution representing the welded and nonwelded portions of the Rainier Mesa Member of the Timber Mountain Tuff.

Future logging in the Rainier Mesa area should utilize density logs with algorithms or calibration blocks sufficient to describe the response of tools in low density tuff. In the low density volcanic rocks (<1.5 - 1.7 g/cc) one should be skeptical of algorithms normally employed by commercial tools.

INTRODUCTION

This is the second report on selected rock properties, derived chiefly from geophysical logs, in the Rainier Mesa-Aqueduct Mesa area at the U.S. Department of Energy's Nevada Test Site (NTS). The first report dealt with the distribution and significant aspects of the seismic velocity of rocks in the area (Carroll and Magner, 1988).

The Rainier Mesa area, located about 90 mi northwest of Las Vegas, Nevada, is the chief location for the testing of nuclear weapons effects by the Defense Nuclear Agency at the Nevada Test Site. Rainier Mesa was the site of the first successfully contained underground nuclear explosion, detonated in 1957. A brief historical summary of nuclear testing in the tunnel complexes in this area was presented in the earlier report on velocity.

This report is the first attempt to evaluate all of the available density logs obtained in the Rainier Mesa area, commencing with the first density log obtained in 1962 and continuing through 1986. This encompasses logs from the 35 vertical drill holes shown on figure 1 and listed in table 1.[1] Fifteen of the geophysical logs obtained in these holes were found to be uninterpretable for the various reasons listed in the table. The logs from 10 holes were interpreted using calibration data provided by the contractor which we believe to be reliable. The logs from an additional 10 holes, in which we believe the tool response represents an accurate reflection of the geology, were interpreted with the aid of core data. Practically all of these holes are 4-in. diameter. Most of the logs were obtained by Birdwell, Inc.

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[1]In addition, we know of at least two attempts to obtain density logs in horizontal holes drilled at underground locations, U12g.10 #1a in G-tunnel and U12e.18 DNRE-1 in E-tunnel. Data from the latter hole, which was drilled into tuff collapsed into the cavity formed by a nuclear explosion, has been reported (U.S. Geological Survey, 1982).

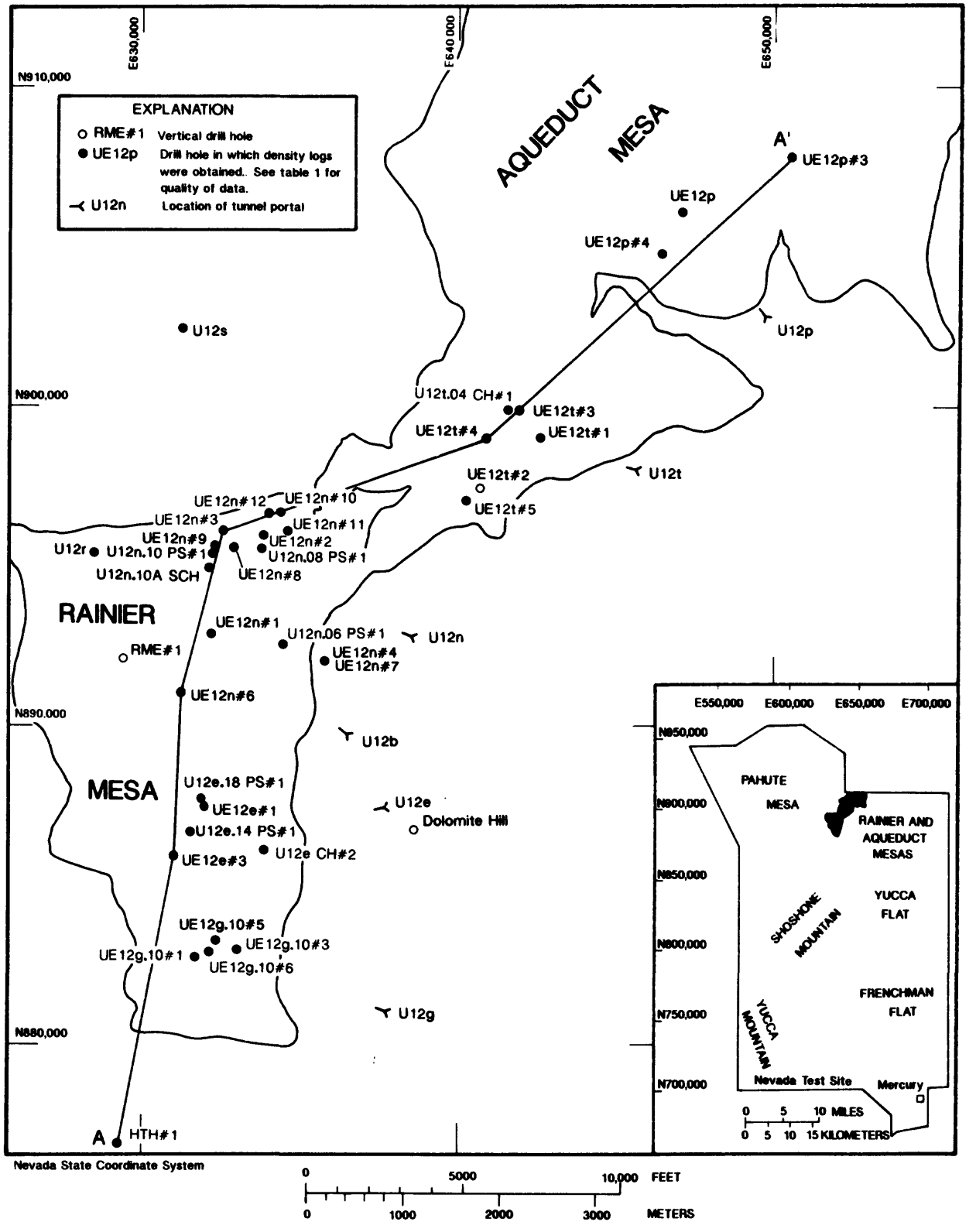

Figure 1.--Locations of selected vertical drill holes in Rainier Mesa area and holes in which density logs are available.

Table 1.--Vertical drill holes in Rainier Mesa area in which density log data are available

[See figure 1 for hole locations]

Hole	Coordinates N. E.	Surface elevation (ft)	Depth (ft)	Completion date	Density[1] coverage (ft)	Remarks
USGS HTH#1 (Stockade Wash)	N. 876,855 E. 629,310	6156	4206	8/62	3832-4200 (18)	Log interpreted using Lane Wells interpretation charts. Data all in carbonate rock.
UE12e#1	N. 887,459 E. 632,001	7431	2000	8/73	22-1998 (9)	2.25-in. diameter tool, 21-in. spacing.
UE12e#3	N. 885,923 E. 631,038	7465	2199	1/74	22-2190 (9)	2.25-in. diameter tool, 24-in. spacing.
U12e.14 PS#1	N. 886,670 E. 631,549	7458	873	7/74	See remarks	No core available below 375 ft. Unreasonably high apparent densities in some sections of Paintbrush Tuff. Not interpreted.
U12e.18 PS#1	N. 887,694 E. 631,893	7430	635	2/77	125- 566 (9)	Proximity tool.
U12e.CH#2	N. 886,092 E. 633,886	7573	1425	5/67	See remarks	Log not interpretable. Proximity excessive.
UE12g.10#1	N. 882,715 E. 631,729	7528	1522	7/68	See remarks	Borehole caving renders interpretation of limited use. Not interpreted.
UE12g.10#3	N. 882,944 E. 633,034	7530	1425	3/74	30- 444 (9) 590-1421	2.25-in. diameter tool, 21-in. spacing.
UE12g.10#5	N. 883,237 E. 632,370	7571	1402	9/76	See remarks	Less than 200 ft of usable data. Not interpreted.
UE12g.10#6	N. 882,870 E. 632,160	7555	1450	10/77	110-1390 (9)	Proximity tool.
UE12n#1	N. 892,867 E. 632,209	7321	2001	3/73	See remarks	Count rate highly insensitive to density variations. Not interpreted.
UE12n#2	N. 895,938 E. 633,839	7344	1779	4/73	22- 95 (10b) 330-1768	2.25-in. diameter tool, 21-in. spacing.
UE12n#3	N. 896,075 E. 632,559	7479	1409	8/73	See remarks	Borehole caving above zeolitization renders interpretation of limited use. Count rate insensitive in fluid. Not interpreted.

Table 1.--Vertical drill holes in Rainier Mesa area in which density log data are available--Continued

Hole	Coordinates N. E.	Surface elevation (ft)	Depth (ft)	Completion date	Density[1] coverage (ft)	Remarks
UE12n#4	N. 892,035 E. 635,753	6894	831	8/73	22- 830 (10a)	Proximity tool. Collared 35 ft from n#7.
UE12n#6	N. 891,000 E. 631,250	7420	2317	11/73	1238-2315 (9)	2.25-in. diameter tool, 27-in. spacing.
UE12n#7	N. 892,004 E. 635,755	6893	832	8/73	See remarks	Count rate lacks sufficient sensitivity to provide reliable density interpretation. See n#4, collared 35 ft away.
UE12n#8	N. 895,550 E. 632,920	7395	1784	12/73	30-1344 (10a)	1.625-in. diameter tool, 20.5-in. spacing.
UE12n#9	N. 895,600 E. 632,309	7383	1550	3/76	4-1524 (10a)	Proximity tool.
UE12n#10	N. 896,655 E. 634,354	7384	1877	2/77	22-1878 (10b)	Proximity tool.
UE12n#11	N. 896,074 E. 634,582	7309	1882	7/78	20-1878 (10b)	Borehole compensated tools, Birdwell and USGS.
UE12n#12	N. 896,600 E. 634,000	7412	1733	8/80	See remarks	Log repeat section does not repeat. Sonde apparently not tracking side of hole correctly. Not interpreted.
U12n.06 PS#1	N. 892,551 E. 634,459	7408	975	12/73	212- 900 (10a)	Proximity tool.
U12n.08 PS#1	N. 895,840 E. 633,790	7349	525	7/76	92- 498 (10b)	Proximity tool. Data reported on 2-ft intervals. USGS ran compensated tool, 80-489 ft.
U12n.10 PS#1	N. 895,393 E. 632,270	7384	544	9/76	94- 540 (10a)	Proximity tool.
U12n.10A (Structures cable hole)	N. 894,932 E. 632,167	7384	1355	11/76	See remarks	Log not considered interpretable. Repeat section does not repeat. Proximity probably inoperable due to mud.

Table 1.--Vertical drill holes in Rainier Mesa area in which density log data are available--Continued

Hole	Coordinates N. E.	Surface elevation (ft)	Depth (ft)	Completion date	Density[1] coverage (ft)	Remarks
UE12p (UE12p.U1)	N. 906,011 E. 646,971	6337	1848	3/67	See remarks	Logs lack sufficient sensitivity to provide reliable density interpretation.
UE12p#3	N. 907,719 E. 650,425	6332	2601	3/70	See remarks	Logs lack sufficient calibration data to permit reliable density interpretation.
UE12p#4	N. 904,748 E. 646,551	6396	1781	10/86	90- 874 (11) 964-1747	2.25-in. diameter tool.
UE12t#1	N. 898,949 E. 642,521	6762	2262	5/67	See remarks	Gravel locator run as experimental density log. Insufficient data on tool parameters to interpret.
UE12t#3	N. 899,833 E. 641,874	6777	2176	2/73	754-2175 (11)	2.25-in. diameter tool, 27-in. spacing.
UE12t#4	N. 898,930 E. 640,840	6924	2290	10/73	974-2288 (11)	2.25-in. diameter tool, 21-in. spacing.
UE12t#5	N. 897,020 E. 640,192	7059	1611	6/74	52- 118 (11) 546-1604	2.25-in. diameter tool, 24-in. spacing.
U12t.04 CH#1	N. 899,876 E. 641,542	6796	1187	6/83	See remarks	Log not interpreted. Proximity excessive. Sonde not riding borehole wall properly.
U12r	N. 895,401 E. 628,500	7514	2504	10/62	See remarks	Lane Wells log lacks sufficient calibration and caliper data to allow reliable density interpretation. Birdwell log run in 1.2 m casing. Not interpreted.
U12s (Gold Meadows Stock)	N. 902,407 E. 631,260	6794	1596	4/68	See remarks	Severe proximity deterioration in 1.8 m hole. Not interpreted.

[1]Numbers indicate interval for which data are included in this report. Interval logged is generally greater. Number in parentheses indicates figure where data are presented.

The first density logs run on the Nevada Test Site (NTS) were run by Lane Wells, and the first holes logged for density in Rainier Mesa (1962) employed the Lane Wells tool (HTH#1 and U12r). Historically, Lane Wells (in conjunction with Stanolind Oil and Gas) and McCullough Tool Company (in conjunction with California Research) are credited with independently developing the density log in 1950 (Johnson, 1962). These tools were first introduced in 1953 and became generally available in the late 1950's. Characteristics of these early tools are discussed by Pickell and Heacock (1958), Baker (1957), and Campbell and Wilson (1958). The Lane Wells tool employed an uncollimated Co^{60} source and was also used to log several holes in Yucca Flat at the NTS. All other density logs obtained in the Rainier Mesa area were obtained by Birdwell (with the exception of logs obtained by the U.S. Geological Survey in the lower part of UE12n#11 and in U12n.08 PS#1). Most logs were obtained in the 1970's.

Density logs have important advantages over the existing data base of laboratory-derived core densities available in the Rainier Mesa area in that they provide much wider geologic sampling, and being continuous measurements, provide much greater detail. Existing core measurements focus chiefly on stratigraphy of interest to the nuclear testing environment near tunnel level. The data base of physical properties of core samples from the Rainier Mesa area is subject to this limitation (Brethauer and others, 1980). Earlier measurements of natural state-density are also restricted to tunnel level rocks (Byers, 1962) The earliest and most extensive physical property measurements on core from the upper stratigraphic section in Rainier Mesa report only dry-bulk rather than natural-state rock density (Keller, 1959).

The greater detail offered by density logs also provides insight into lateral changes in rock properties, regional correlation of units, characteristics of zeolitization, and the possible effect of structural features such as paleotopographic highs on local rock properties. The extent of such features is often not obvious from core measurements and observations.

On the other hand, density logs obtained under certain conditions in the Rainier Mesa area can yield erroneous data unless examined with caution. These instances are chiefly caused by the drilling environment in the unsaturated zone.

To facilitate use of this report, certain terms and the elimination of repetitious text will be employed using the following guidelines:

(a) Repetitive prefixes for drill hole descriptors will be dropped e.g., UE12t#3 will generally be shown as t#3 in the text.
(b) The area encompassed by the drill holes shown on figure 1 will be referred to as the Rainier Mesa area unless specific reference is required. This is in accordance with general usage at NTS. The area in general is that encompassed by the Rainier Mesa Quadrangle Map (Gibbons and others, 1963).
(c) All depth references in this report are in feet in order to facilitate use of these data with other logging and drilling information pertinent to the drill holes discussed. In addition, density tool dimensions will be in English units in accordance with present practices of recording log headings. To convert from feet to meters multiply by 0.3048.

(d) At NTS the term tunnel or tunnel complex is commonly applied to complexes of drifts which are accessed by adits. This common usage of referring to underground workings as tunnels will be retained.

Finally, the reader should note that the focus of this report is directed toward topics we consider of particular interest to the Defense Nuclear Agency's testing program, the funding source for this work. Thus, if we seem to belabor some topics and ignore others, we have provided sufficient basic data for interested individuals to delve further.

Acknowledgments

J.E. Kibler, U.S. Geological Survey, aided in computer compilation of several of the illustrations in this report. Of particular aid was J.E. Magner, U.S. Geological Survey, who provided invaluable assistance in applying his capacity for detail and general knowledge of the Rainier Mesa geotechnical environment to the computer programs involved in deriving many of the illustrations. The aid of the Defense Nuclear Agency, the funding agency for this work is greatly appreciated, particularly that of Barbara Harris-West and J.W. LaComb. D.R. Townsend of Fenix & Scisson provided fruitful discussions on aspects of the geology. Finally, note must be taken of the logging organizations, particularly Birdwell, Inc., without whose efforts no data would be available.

GEOLOGY AND HYDROLOGY

The first detailed mapping of the volcanic rocks at the NTS was done on Rainier Mesa (Gibbons and others, 1963; Sargent and Orkild, 1973). The general stratigraphy of the Rainier Mesa area is shown on figure 2 and a generalized geologic cross section is shown on figure 3. The overwhelming majority of the rocks penetrated in the holes in the region are of volcanic origin, the tuff sections penetrated in RME#1 and HTH#1 being in excess of 3,500 ft thick. Prior to erosion the original volcanic section in the area of the HTH#1 hole is estimated to have been at least 5,000 ft thick.

The Tertiary age volcanic rocks rest unconformably on Paleozoic and Precambrian miogeosynclinal carbonate and clastic rocks. Quartz monzonite of the Gold Meadows Stock is exposed at the surface in the northwest area of figure 1. The U12s hole was collared in the stock, and nearly 500 ft of the stock was penetrated in the bottom of U12r. Limited thicknesses (less than 60 ft) of quartz monzonite have been penetrated overlying pre-Tertiary quartzite in holes RME#1, p#1, and n#10.

Other basement rocks in the area consist of limestone and dolomite (penetrated in UE12p, p#4, t#1, t#2, t#5, and HTH#1) and quartzite (penetrated in p#1, n#2, n#3, n#8, n#9, n#10, RME#1, and Hagestad #1). The non-clastic rocks are overthrust in places by the CP fault which thrusts the older quartzites over the younger limestones and dolomites. The root of this fault is believed to underlie Rainier Mesa.

Era	System	Series	Stratigraphic unit	Map symbol	Age (m.y.)
	Quaternary		Alluvium and colluvium	Qac	
	Tertiary		Timber Mountain Tuff		
		Pliocene	Ammonia Tanks Member	Tma	
			Rainier Mesa Member	Tmr	11.1
			Paintbrush Tuff	Tp	
			Tiva Canyon Member	Tpc	
			Stockade Wash Tuff	Tpw	13.2
			Tuffs of Area 20 and Deadhorse Flat	Trdb	
			Belted Range Tuff		
			Grouse Canyon Member	Tbg	13.6-13.8
			Tunnel bed 5	Tt5	
			Tunnel bed 4	Tt4	
			Subunit 4K	Tt4K	
			Subunit 4J	Tt4J	
CENOZOIC		Miocene	Subunit 4H	Tt4H	
			Subunit 4G	Tt4G	
			Subunit 4F	Tt4F	
			Subunit 4E	Tt4E	
			Subunit 4A-D	Tt4A-D	
			Tunnel bed 3	Tt3	
			Subunit 3D	Tt3D	
			Subunit 3BC	Tt3BC	
			Subunit 3A	Tt3A	
			Belted Range Tuff		
			Tub Spring Member	Tbt	
			Tunnel bed 2	Tt2	
			Tuff of Yucca Flat	Tyf	14.8-15.7
			Tunnel bed 1	Tt1	
			Redrock Valley Tuff	Trv	15.7
			Older tuffs	Tot	
			Fraction Tuff	Tf	16-18
			Older tuffs	Tot	
		Miocene(?)	Paleocolluvium	Tc	
MESOZOIC	Cretaceous		Gold Meadows stock	Kqm	91.8
PALEOZOIC	Devonian Silurian Ordovician		Dolomite and limestone	DSOl	
	Cambrian		Wood Canyon Formation		
PRECAMBRIAN			Stirling Quartzite	GpGw	

Figure 2.--General stratigraphy of Rainier Mesa area.

Figure 2.--General stratigraphy of Rainier Mesa area.

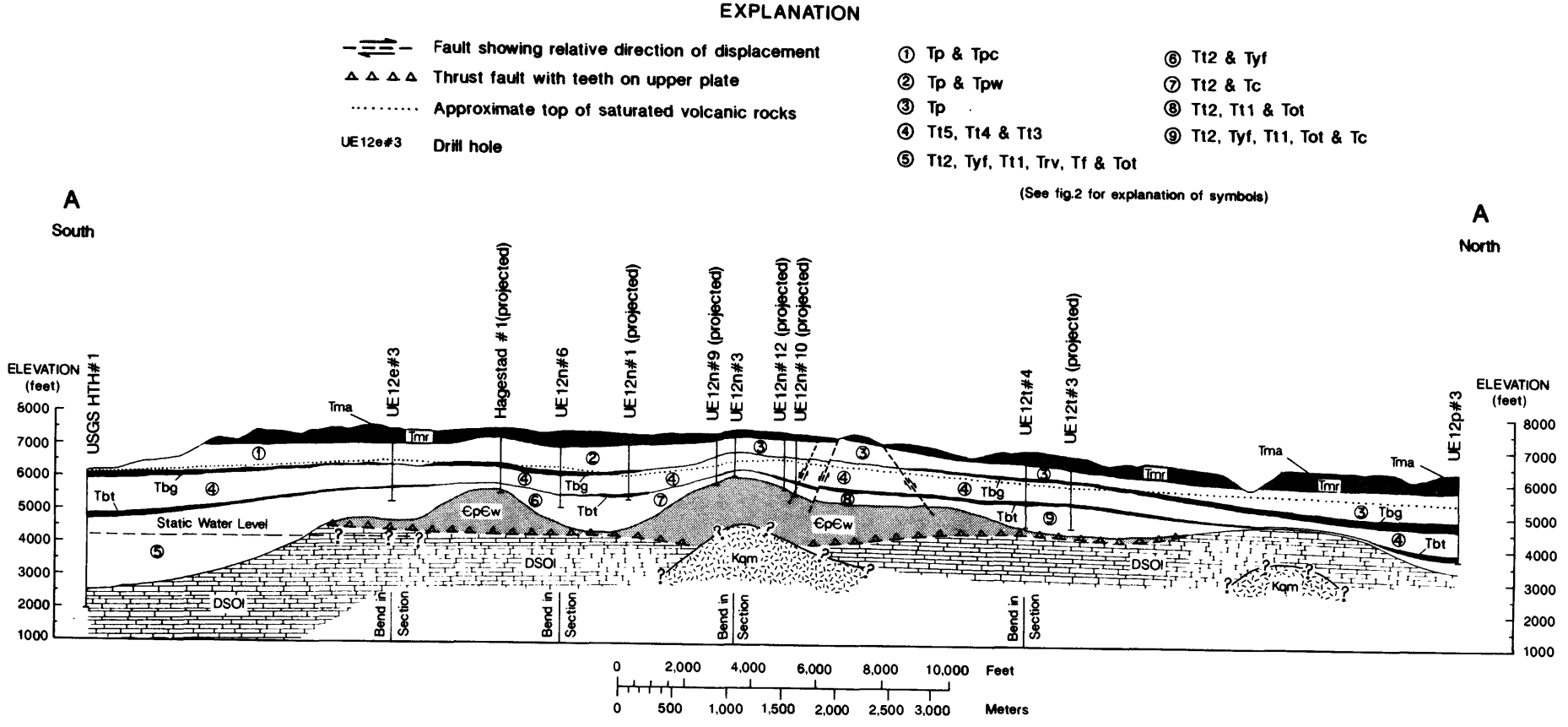

Figure 3.--Generalized north-south cross section through Rainier Mesa area. (See fig. 1 for location of section)

In situ densities of rock in the Rainier Mesa area range from near 1 g/cc to greater than 2.8 g/cc. These are also the extremes of density found at the NTS. Dolomites and some altered volcanics found on Pahute Mesa account for the highest densities in the NTS region. Pumice-rich ashfall tuffs are responsible for the lowest densities both on Rainier Mesa and elsewhere at NTS. The pre-Tertiary basement rocks exhibit the highest densities in the Rainier Mesa region. The rocks in the overlying volcanic section range from densely welded ash-flows to friable, reworked, vitric, and zeolitized ash-fall tuffs. Based on increasing density, the rocks in the section can be broadly divided into unsaturated nonwelded volcanic rocks, zeolitized bedded tuffs, welded tuffs, and basement rocks. A prominent density boundary occurs at the top of the zone of pervasive zeolitization which separates generally less dense unsaturated tuffs from underlying essentially saturated zeolitized ash-fall and ash-flow tuffs.

Distributions of log-derived density within individual lithologic units are presented in detail in the two sections in this report concerning density distribution. For the present, a general guide to density and porosity of major volcanic rock units in the area may be obtained from the core measurements reported by Keller (1959) and listed in table 2. These data were obtained from two vertical holes in the vicinity of B-tunnel. Measurements were made on samples obtained at 3-ft intervals except in the Paintbrush Tuff where there was some core loss. The remarks column contains our estimate of saturation for tuffs located beneath the mesa. These are discussed in the section dealing with the unsaturated zone.

The process of zeolitization in Rainier Mesa has resulted in an increase in induration and water content of the tuff. In the drill holes covered by this report, the top of pervasive zeolitization is often an easily recognizable geologic and physical property boundary, occurring as either a sharp demarcation within a few vertical feet separating vitric from zeolitized tuff, or preceded by a series of zones of alternating partially zeolitized and zeolitized material extending for as much as 180 ft prior to encountering pervasively zeolitized material.[2] The behavior of the top of zeolitization as

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[2]This horizon is our geophysical definition of the "top" of zeolitization. This boundary is believed to be closely coincident with the top of saturated volcanic rock in the perched water zone in the Rainier Mesa area; the onset of the pervasively zeolitized tuff section described in lithologic logs; and the approximate base of the unsaturated or vitric tuff. All of these definitions are interchangeably used in this report, and it is the distinct density and velocity increase often found in the vicinity of this boundary which prompts our definition. Our use of the term "zeolitized" is meant to apply to the saturated tuffs below this boundary.

A broader geologic definition of zeolitized tuff would recognize a transition zone above our "top" extending from the first onset of visible coatings on shards through beds of variable induration and alteration (D.L. Hoover, U.S. Geological Survey, written commun., 1986) Hoover logged close to 700 ft for the thickness of this transition zone in n#6 and n#8.

an acoustic impedance horizon has been discussed in detail (Carroll and Magner, 1988). Zeolitization in the Rainier Mesa area has been discussed by several authors (Hoover, 1968; Claassen and White, 1979; White and others, 1980). Data concerning the relationship of density to the top of zeolitization will be presented in more detail in the section dealing with the top of zeolitization.

Where drilled, the zeolitized rocks range in thickness from more than 3,000 ft in the southern part of the area in HTH#1 to slightly over 500 ft over the paleotopographic high in n#3. The depth to the top of zeolitization is generally about 800 to 1,000 ft below the top of the mesa in these drill holes, although it is over 1,200 ft deep in n#1. Over the paleotopographic high in t#5 the top of zeolitization is only 546 ft beneath the mesa. The shallower depths may bear some relationship to paleotopography. The approximate top of zeolitization (saturation) is shown on figure 3.

Table 2.--Dry-bulk density and porosity of several lithologic units in Rainier Mesa

[Modified from Keller, 1959]

Unit	Number of samples	Dry-bulk density (g/cc)	Porosity	Remarks
[1]Tmr	31	[2]2.18±0.23	0.141±0.089	At least 60 percent saturated
[3]Tp	76	1.50± .35	.355± .138	At least 60 percent saturated
Tbg	4	2.02± .13	.189± .028	At least 60 percent saturated
Tt5	40	1.37± .30	.402± .126	At least 60 percent saturated
Tt4	118	1.49± .16	.390± .070	Essentially saturated when zeolitized
Tt3	53	1.51± .15	.384± .062	Essentially saturated
[4]Tt2	9	1.59± .05	.354± .021	Essentially saturated

[1]Includes only welded caprock samples.
[2]Ranges indicated are for one standard deviation.
[3]Includes samples from non welded base of Tmr.
[4]Probably includes some samples from Tbt.

Where the zeolitization process is due to downward percolating ground water in an open hydrologic system, as it is believed to be in the Rainier Mesa area, alteration progresses upward from permeability barriers such as welded tuffs or clastic rocks (Hoover, 1968). At some locations in the southern Rainier Mesa area, such as in the e#1, e#3, and Hagestad holes, partially zeolitized zones of relatively low density and limited vertical extent occur at the top of tunnel bed 5. This is beneath the welded Grouse Canyon Member of the Belted Range Tuff and at some vertical distance below the onset of generally pervasive zeolitization. An explanation for this phenomenon is that the inherent pumice-rich nature and high permeability of tunnel bed 5, coupled with the bridging effect of the overlying welded Grouse Canyon, renders this unit less subject to induration and (or) complete zeolitization than other tunnel beds.

The reduced permeability in the pervasively zeolitized zone has resulted in the tuffs being essentially saturated in a perched water zone above the basement rocks.[3]

The regional water table is generally deeper than the base of the volcanic section beneath eastern Rainier Mesa in the area of the tunnels, but occurs within the volcanic rocks in HTH#1 and probably within the thicker volcanic sections in western Rainier Mesa. Based on a measurement at an elevation of 4,189 ft in HTH#1 (fig. 3), the regional water table is estimated to be about 1,300 to 2,000 ft beneath the tunnels in the area. Thus, the pre-Tertiary rocks are not saturated immediately below the tunnels, the zeolitic zone acting as an aquitard and permitting drainage to the pre-Tertiary water table through existing fracture systems. The thickening volcanic section to the west and north, however, indicates the presence of volcanic rocks for several hundred feet below an elevation of 4,189 ft. This is evident in RME#1 and in several holes in Aqueduct Mesa. A detailed report on the hydrologic regime in the area has been written by Thordarson (1966).

Two lithologies within the unsaturated zone are densely welded. The Timber Mountain Tuff forms the resistant caprock on the mesas throughout the region, and the welded Grouse Canyon Member of the Belted Range Tuff is present in structural lows.

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[3]Actually partial saturation exists in the perched zone, but the amount of gas voids in the rock is generally less than 2 percent. At two tunnel locations, however, gas voids in excess of 5 percent have been encountered within the pervasively zeolitized zone (Carroll and Cunningham, 1980). Relatively low water saturations have also been observed in samples obtained in the zeolitized zone near tunnel portals (Byers, 1962). Because of the relatively low gas voids, we choose to call this the "saturated" zone, although a strict hydrologic definition requires that pore water be under pressure greater than atmospheric to apply this definition. Although definitive measurements are lacking, evidence such as the presence of both wet and dry fractures at tunnel level, suggests that pore pressures significantly above atmospheric should not be expected in the zeolitized tuff at tunnel level.

In the tunnel areas, the top of pervasive zeolitization is generally found between the lower part of the Paintbrush Tuff and the top of tunnel bed 4. Proceeding southward from the vicinity of n#6, additional ash-flow and ash-fall tuffs are found between the Paintbrush Tuff and the Grouse Canyon Member. This, coupled with a thicker caprock in the area, results in generally higher overburden densities in the section. The welded Grouse Canyon is within the zone of zeolitization in the southern part of the region and is found near tunnel level in the G-tunnel area (fig. 3). North of the T-tunnel drill holes, only one usable density log has been obtained (p#4). The overburden density in p#4 is also high, due chiefly to the presence of a thicker section of welded caprock.

With rare exception, all underground nuclear tests in tunnels in the Rainier Mesa area have been conducted in pervasively zeolitized rock. The main testing media, tunnel beds 3 and 4, consist of pervasively zeolitized, bedded and reworked ash-fall tuffs overlying the Tub Spring Member. Beneath the Tub Spring are a series of zeolitized ash-flow and ash-fall tuffs, the former often exhibiting dense welding with attendant high densities. Densely welded sections are found in the Tuff of Red Rock Valley and the Fraction Tuff. A relatively dense paleocolluvial layer, separating the volcanic and basement rocks, varies greatly in thickness throughout the area. The thickest penetration occurs in the n#11 hole which bottomed in 181 ft of paleocolluvial material. By contrast, the n#3 hole, drilled over a paleotopographic high of quartzite, penetrated only 2 ft of paleocolluvium.

Reports describing the geology encountered in the holes discussed in this report are recommended as an adjunct to the density data presented herein (Maldonado and others, 1979). Geologic contacts in holes lacking core have been obtained from electric log correlations, and some contacts arising from subsequent geologic revision have been used on the figures accompanying this report. Several of these changes have been provided by Fenix & Scisson geologists.

FACTORS AFFECTING ROCK DENSITY IN RAINIER MESA

Density logging in most commercial applications is concerned with solution of the equation

$$D_b = (1-\phi)Dg + Sw\phi Df \qquad (1)$$

to determine porosity. In equation 1, porosity (ϕ), grain and fluid density (Dg,Df), and saturation (Sw) are the unknowns. Formation conditions near the borehole generally allow Sw=1.0 and Df=1.0 to be assumed because of invasion, thus requiring only a knowledge of Dg to obtain porosity. The object is to then determine where Sw <1.0 (indicating possible oil and gas bearing horizons) and to obtain an estimate of Sw using several geophysical logs.

Although these assumptions cannot be applied to the entire section in Rainier Mesa (the borehole annulus in the unsaturated zone is often not sufficiently invaded), it is of interest to examine the extent to which the constants in equation 1 are known in the Rainier Mesa area because these parameters are also of interest in nuclear test siting. The grain density of many petroleum-bearing rocks can often be assumed to be sandstone (2.65 g/cc), limestone (2.71 g/cc), or dolomite (2.85 g/cc). Mixed lithologies, often

involving shale, occur and cross plots of parameters obtained by several logging techniques are used to estimate the applicable grain density.

In the Rainier Mesa area, the pre-Cenozoic rocks are generally dolomite, limestone, and quartzite, with occasional mixtures of the carbonates. Twelve samples of dolomite from a drill hole on Dolomite Hill exhibit an average grain density of 2.85 g/cc (C. Roach, U.S. Geological Survey, written commun., 1959). This is also the grain density assumed for dolomite in most applications. Similarly the average value of 2.72 g/cc reported by Brethauer and others (1980) for 9 samples of limestone from the Rainier Mesa area is typical. Brethauer and others also report a mean grain density for 5 samples obtained in the Stirling Quartzite of 2.70 g/cc. However, an additional 18 samples of quartzite, obtained from the Wood Canyon Formation, exhibit an average grain density of 2.90 g/cc. Many of the latter samples contain heavy minerals resulting from hydrothermal alteration. These alteration products, attributed to the intrusion of the Gold Meadows Stock, account for the high grain densities. In general, however, the grain densities in the pre-Cenozoic rocks at NTS are typical of similar rocks found elsewhere.

On the other hand, the minerals predominantly responsible for the grain density of the volcanic rocks include a wider spectrum of types than do the pre-Tertiary rocks. Grain densities of the minerals comprising the volcanic and pre-Cenozoic rocks are listed in table 3.

For the volcanic rocks in the Rainier Mesa area, the major constituents affecting the grain density are zeolites, glass, feldspar, quartz, and montmorillonite. In the zeolitized zone, zeolites (chiefly clinoptilolite) commonly range from 35 to 55 percent, although values in excess of 70 percent have been reported. Volcanic glass is a major constituent in the ash-fall tuffs in the unsaturated zone. X-ray diffraction analyses can be utilized to yield a fair estimate of the grain densities of these rocks, although X-ray analyses are obviously an uneconomical approach to obtain grain density for geophysical logging purposes.

If one can demonstrate that the grain density can be obtained from a knowledge of one or two mineral constituents, then logging techniques might be developed to derive the relative amounts of these constituents in the rock. In this connection, we postulate that to a good approximation the grain density of the tuff in Rainier Mesa may be derived chiefly from a knowledge of the amount of zeolites in the zeolitized zone, or the amount of glass in the vitric zone, coupled with the assignment of a grain density of 2.65 to all other constituents in the rock. To test this theory we obtained X-ray analyses of samples from the vitric zone in the Paintbrush Tuff in northern Yucca Flat and from the zeolitized zone in tunnel bed 4 in central Yucca Flat where grain density measurements had also been made on the samples. These data are shown in table 4. For the samples from the vitric zone, we assumed a grain density of 2.35 g/cc for zeolite and glass, and for those from the zone of zeolitization a grain density of 2.30 g/cc was assumed for zeolite. A grain density of 2.65 g/cc was assumed for all other constituents. Using a simple mixing formula the grain density of the samples was then calculated. As indicated in table 4, a comparison of the grain density measured on the samples with that calculated, indicates that for this suite of samples the technique appears adequate to represent the grain density within the accuracy available for most geophysical log calculations.

Table 3.--Densities of common minerals found in Rainier Mesa area

[From Hurlblut and Klein, 1977]

Mineral	Density g/cc
Quartz	2.65
Feldspar	
Orthoclase	2.57
Sanidine	2.56 - 2.62
Microcline	2.54 - 2.57
Plagioclase	2.62 - 2.76
Montmorillonite	[1]2.67
Montmorillonite-illite	[2]2.63
Mordenite	2.12 - 2.15
Opal	2.00 - 2.25
Cristobalite	[3]2.32
Clinoptilolite	[3]2.30
Volcanic glass	[4]2.36 - 2.38
Calcite	2.71
Dolomite	2.85

[1]Sample of 90 percent montmorillonite from Tt5 in Yucca Flat measured by Lawrence Livermore Laboratory (N. Howard, written commun., 1974).
[2]Sample of montmorillonite-illite from Tt1 in Rainier Mesa measured by Lawrence Livermore Laboratory (N. Howard, written commun., 1974).
[3]Sample from Pierre Shale measured by Lawrence Livermore Laboratory (N. Howard, written commun., 1973).
[4]Range of five samples from Tt2 in Yucca Flat and Paintbrush Tuff in Rainier Mesa measured by Lawrence Livermore Laboratory (N. Howard, written commun., 1973).

The grain densities were measured by different techniques for the two sample suites listed in the table, and we are unsure of the nature of the sample splits which went into the X-ray and grain density measurements. Regardless, a systematic and careful study of this approach appears warranted if one wishes to simplify the grain density calculation for geophysical logging purposes. If valid, one is then left with devising a geophysical logging or interpretation technique which would allow the amount of glass and zeolite in the tuff to be estimated. This may be a difficult task, and of the two constituents, the determination of the amount of glass appears to be most formidable. On the other hand, there is only a 12 percent spread in the grain densities listed in table 4, and the mean of the data may be adequate for many calculations.

Table 4.--X-ray analyses of vitric and zeolitized tuff samples and comparison of measured and calculated grain densities

[Analysis of U4as samples by G. Pawloski, LLNL. Analyses of U7bv samples by D. Krier, LANL]

	Quartz	Montmoril-lonite	Clinoptil-olite	Cristoba-lite	Feldspar	Calcite	Glass	Horn-blende	Biotite	Grain density (g/cc) Measured	Grain density (g/cc) Calculated	Percent Difference
U4as[1]	18	0	0	0	36	0.6	43	2	0	2.54	2.52	0.8
	17	0	0	0	51	0	32	0	0	2.52	2.55	-0.4
	24	0	0	4	19	0	51	0	1	2.49	2.48	0.4
	13	9	0	0	50	0	21	7	0	2.64	2.59	1.9
	27	0	0	0	55	0	15	3	0	2.58	2.61	-1.1
	15	0	0	6	34	0	45	0	0	2.50	2.50	0.0
	28	7	0	4	34	0	26	1	0	2.54	2.56	-0.7
	12	8	0	2	12	0	64	1	0	2.46	2.45	0.4
	19	0	0	5	29	0	47	0	0	2.49	2.49	0.0
	8	9	0	0	56	0	24	2	0	2.58	2.58	0.0
	0	0	0	0	1	0	99	0	0	2.35	2.35	0.0
U7bv[2]	15	3	40	3	35	0	0	2	2	2.47	2.51	-1.6
	8	3	60	2	25	0	0	0	2	2.40	2.44	-1.7
	10	0	40	2	45	0	0	0	3	2.42	2.51	-3.7
	10	5	50	2	30	0	0	0	3	2.48	2.48	0.0
	10	0	40	2	45	0	0	0	3	2.54	2.51	1.2
	5	5	40	2	40	3	0	0	2	2.51	2.51	0.0
	8	5	35	3	45	2	0	0	3	2.50	2.53	-1.2
	10	5	40	2	40	0	0	0	0	2.52	2.51	0.4
	5	3	45	2	45	0	0	0	0	2.49	2.49	0.0
	2	0	10	3	35	0	50	0	0	2.40	2.44	-1.6
	10	0	75	5	10	0	0	0	0	2.39	2.39	0.0
	10	0	[3]80	0	10	0	0	0	0	2.37	2.37	0.0
	5	0	80	3	10	0	0	2	0	2.37	2.37	0.0
	10	0	[3]80	0	10	0	0	0	0	2.36	2.37	-0.4

[1]U4as samples from Paintbrush Tuff. Last sample from tunnel bed 5.

[2]U7bv samples from tunnel bed 4. First sample from Paintbrush Tuff.

[3]May contain mordenite.

GENERAL ASPECTS OF DENSITY LOGGING IN RAINIER MESA

The density log is the primary geophysical logging technique used in oil exploration to determine the porosity of rock. This arises from the fact that conditions in the rocks penetrated by these holes are generally conducive to two assumptions; the head of drilling fluid and the drilling time are adequate to invade a sufficient depth of formation to present a saturated response to the density tool, and the matrix chemistry of the rocks penetrated is known to a fair degree of accuracy. Where the natural-state density is the property of interest desired from the log, inaccuracies obviously occur where unsaturated rock is invaded by drilling fluid. In such cases, the use of borehole gravimetry is more reliable, however, gravimetry is subject to problems of resolving thin beds, extraneous influences in the presence of nearby geologic structure, and occasional uncertainty in the adequacy of corrections.

Theoretical and practical treatises on density logging abound in the literature. It is our intent to cover only those topics which are pertinent to logging in the Rainier Mesa area, and which should be considered in evaluating any past or future logging data. Detailed treatments on density log theory may be found in texts by Hearst and Nelson (1985) and Tittman (1986). Practical details on log interpretation in sedimentary rock environments may be found in the publications and references supplied by many of the well logging companies (Schlumberger, 1987; Dresser Atlas, 1982). Some of the more important considerations in evaluating densities from logs in the Rainier Mesa area are discussed in the following sections.

Relationship of Density to Electron Density

The basic density recorded by a density log is an electron density which is manipulated through calibration procedures and algorithms to provide a bulk density for the formation of interest. Within the energy ranges of the sources used in density logging, the electron density bears a direct relationship to rock density through the ratio of the atomic number to the atomic weight (Z/A) of the weighted fraction of elements present in the rock. The basis for density logging in the sandstone, limestone, and shale environments of the petroleum industry is the consistency of the Z/A ratio of the rocks and pore fluid. This ratio is nearly 0.5 for most commonly encountered matrix materials in rock, and the electron density (D_e) measured by logging devices is related to the bulk density (D_b) of a rock consisting of a single element by

$$D_e = D_b(2Z/A) \tag{2}$$

For Z/A ratios of near 0.5, it is apparent that the density measured by the logging sonde is effectively the bulk density. We are thus interested in the variations in the Z/A ratio in the volcanic rocks in the Rainier Mesa area and the errors inherent in deviations of this parameter. We will neglect for the moment how we obtain the electron density from the log measurements which are in gamma radiation count rates. First, it is appropriate that we rewrite the standard mixing formula for rock density (D_b)

$$D_b = (1-\phi)D_m + Sw\phi Df \tag{3}$$

where ϕ is porosity, D_m is matrix density, Sw is saturation, and Df is the density of the pore fluid. The density contributions of the pore and matrix materials would result in the following electron density recorded by a properly calibrated density sonde

$$D_e = (1-\phi)D_m\ 2Z/A + Sw\phi Df/A \qquad (4)$$

and it is apparent that for Z/A equivalent to 0.5 the log would yield the desired density. Unfortunately the Z/A ratio of water is 0.555, and thus, some assumptions are needed concerning the relative proportions of the fluid and matrix phases present before an accurate density may be obtained. In addition, given the relatively large assemblage of minerals found in the volcanics, we also need to examine the Z/A variations in these rocks contributing to the matrix term of equation 4.

Sandstone (SiO_2) and limestone ($CaCO_3$) exhibit Z/A ratios of 0.4992 and 0.4995, respectively, and for these rocks, the electron density recorded for either would be within 0.01 g/cc of the true density regardless of which Z/A is assumed for the calibration standard. The volcanic rocks in the Rainier Mesa area are composed of only about 70 percent silica. Therefore, we must be concerned with the consistency of the matrix Z/A ratio, particularly in light of the fact that several of these minerals contain bound water.[4] Table 5 lists the mineral constituents of the three major volcanic rock types in the Rainier Mesa area--welded tuff, zeolitized tuff, and vitric tuff--and their average chemical composition. Data on bound water in vitric tuff were not located; however, several studies suggest a bound water component is found in vitric tuff possibly as large as that in the zeolitized rock (Hoover, 1968; Pawloski, 1981). Further discussion of bound water in NTS zeolitized tuffs may be found in Knowlton and McKague (1976).

Variations in the amount of the individual mineral components between the samples used for the averages in table 5 are quite small. The Z/A ratios are quite similar, and the absence of bound water in the welded tuffs is chiefly responsible for its slightly lower Z/A ratio. Regardless, for the matrix term in equation 4 we may be satisfied that the tuffs may be adequately approximated by the sandstone or limestone Z/A ratio generally assumed in commercial logging algorithms.

Because bound water can be fairly large in some volcanic rocks, neutron logs, which reflect the total water content of the rock, must take this into account where core analyses yielding only free-water contents are the basis for log calibrations. The situation is analogous to the treatment of shales in log interpretation texts.

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[4]For geophysical logging purposes we will define bound water as the water retained by the rock after drying at 105°C. This simplistic definition generally allows geophysical logging data to be equated to the results of standard physical property tests on core. Hydrated minerals, however, can give off water through a large range of temperature. Zeolites can give off water to relatively high temperatures without structural change, clinoptilolite exhibiting this capability to 700°C.

Table 5.--Composition and matrix Z/A of volcanic rocks in Rainier Mesa area

Compound	Z/A	Welded tuff[1] (percent)	Zeolitized tuff[2] (percent)	Zeolitized tuff[3] (percent)	Vitric bedded tuff[4] (percent)
SiO_2	0.4992	72.8	66.7	68.9	69.4
Al_2O_3	.4904	12.8	13.3	12.5	13.7
Fe_2O_3	.4759	2.3	2.1	1.6	1.5
FeO	.4732	.20	.19	.07	.27
MgO	.4960	.30	1.1	.43	.91
CaO	.4993	.73	2.7	1.0	1.4
Na_2O	.4840	3.9	1.8	2.3	2.0
K_2O	.4883	4.9	2.8	4.4	3.8
H_2O+	.5551	.57	4.8	[5]4.2	[5]8.5
TiO_2	.4756	.25	.30	.20	.18
P_2O_5	.4931	.04	.08	.01	.02
MnO	.4652	.11	.08	.06	.11
CO_2	.4999	.06	.02	.05	.05
Effective Z/A		.4965	.4995	.4991	.4987

[1]Average of four samples, two each from Grouse Canyon and Rainier Mesa Members (Wilcox, 1959).
[2]Average of four samples from zeolitized Paintbrush Tuff (Wilcox, 1959).
[3]Average of 30 samples from tunnel beds subunits 4G and 4H (Emerick, 1962).
[4]Average of eight samples from vitric Paintbrush Tuff (Emerick and Houser, 1962).
[5]Bound water estimated as half of reported water.

In a strict sense, the relative constancy of the Z/A ratio throughout most formations logged is not a necessary requirement as long as we have some knowledge of the correct Z/A to apply. The case of Z/A varying considerably from formation to formation in some esoteric geologic environment only increases the number of steps in the reduction process when deriving the correct density from the electron density, if we know the correct Z/A to apply in the intervals of interest. The great universality of Z/A near 0.5 eliminates concerns in most environments where mixtures of minerals are present. Only in rare geologic situations does the electron density differ from the true density by more than a few percent. Barite, for example, exhibits an electron density that is 11 percent less than the bulk density when calculated from equation 1. Of the common minerals, certain evaporites tend to yield the greatest errors.

The major source of difference between equations 3 and 4 in the Rainier Mesa volcanic rocks arises, as it does in most rocks, from the free-water component in the rock or the rightmost term in equation 4. The Z/A of water listed in table 5 indicates that the electron density of water is 11 percent greater than the true density. Because rocks generally contain a matrix

component which exceeds the volume of the free-water component, the error due to the rightmost term in equation 4 will generally be considerably less than 11 percent. The magnitude of this error for the practical cases encountered in Rainier Mesa requires evaluation. These errors are not always the difference between equations 3 and 4, because the assumptions used in applying these equations in reducing density logs in Rainier Mesa differ depending on the type of log.

Three methods were used to obtain densities from logs interpreted in this report. Two methods deal with calibrated logging tools. For these tools the density is either output directly on the log based on assumptions applied to equation 4, or an electron density is obtained from calibration data supplied by the logging contractor. The third approach was used where calibration data were inadequate or nonexistent and core data were used to "calibrate" the log.

The Compensated Density Log

So-called dual detector or compensated density logs generally employ equation 4, after suitable corrections, and list density directly on the log. This type of log was run in two holes in Rainier Mesa (n#11 and n.08 PS#1), but it is significant in that it is the standard output provided today by most commercial logging companies. Because future logging in Rainier Mesa may utilize this method, one should be aware of the pitfalls in accepting such densities as representative of the formation. As previously mentioned, logging in oil lithologies can generally be assumed to be in rock invaded by the drilling fluid to the extent that the density log is reading a saturated density.[5] These tools are generally calibrated in limestone. Inserting the bulk density of limestone (2.71 g/cc, 2Z/A = 0.9991) and water (1.0 g/cc, Z/A = 0.555), and assuming full saturation (Sw = 1.0) in equations 3 and 4 yields

$$D_b = 1.0704\ D_e - 0.1883 \qquad (5)$$

[5]The depths of investigation of the density sondes used in Rainier Mesa are unknown, being a function of tool spacing, source strength, and rock density. Where recorded, the source-detector spacings listed on the logs discussed in this report vary from 19 to 27 inches. The commercial logging companies generally quote a radius of investigation of about 15 cm for the density log. Tittman (1986) quotes 5 to 13 cm for various conditions. (Sonic logs are frequently quoted as having a radius of investigation of a few centimeters and neutron logs about 30 cm.) This should be borne in mind in any future attempts to utilize density and neutron logs in the unsaturated zone. Even where neutron logs are compensated for bound water, the difference in radius of investigation of the two tools may yield conflicting results for water content.

the standard algorithm used to produce the density (D_b) displayed on the log.[6] Commercial logging companies allow for selection of algorithms assuming sandstone, shaley sandstone, and occasionally other sedimentary rock types in equation 5, but the important fact is that the density recorded on the log is assumed to be a saturated density. Any recorded density less than the matrix density of the rock type used in the algorithm is assumed to be due to the presence of water. Although full saturation may generally be assumed in most oil wells, drilling in the Rainier Mesa area invariably results in lost circulation and the inability to maintain a mud column to the top of the hole. The unsaturated zone above pervasive zeolitization is thus not often subject to a mud column after completion of drilling. The extent to which residual invasion still affects the logs in this portion of the hole will be subsequently addressed. For the present discussion it is only of concern to examine the errors involved in accepting the "saturated" limestone density recorded as the actual density of the rock. These errors obviously will be a maximum where gas voids, or unsaturated porosity, are maximum.

The other parameters of interest in equations 3 and 4 are the grain density and volume water. The three volcanic rock types of interest in Rainier Mesa, vitric and friable tuff, zeolitized tuff, and welded tuff generally exhibit grain densities in the range 2.3 to 2.4 g/cc, 2.4 to 2.5 g/cc, and 2.5 to 2.6 g/cc, respectively. Using the values 2.4 and 2.6 g/cc, the errors involved in assuming the density (equation 5) indicated by a compensated log is correct are shown on figure 4 as a function of porosities (ϕ) of 20, 40, and 60 percent, and saturation (Sw) of the tuff. Values of Z/A of 0.4965 and 0.4993 (table 5) were used with the high and low grain densities, respectively.

Figure 4 indicates that relatively large errors can be indicated by the log for the density of the unsaturated zone when the air-filled porosity in the rock become appreciable. However, the region where the error is greatest generally represents unrealistic geologic conditions. Even in the absence of invasion, the natural-state moisture content in the unsaturated zone in Rainier Mesa undoubtably exceeds 50 percent. In addition, core measurements indicate that the existence of porosities greater than 45 percent is also rare (Keller, 1959). Therefore, the maximum error which would be indicated by the limestone algorithm is less than 3 to 4 percent in the lower density portions of the unsaturated zone and less than 1 percent in the zeolitized and welded rocks. The error in all cases is such that the density indicated by the log is less than the true density of the tuff.

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[6]The "rib-and-spine" algorithm used to obtain density from dual detector sondes also includes a borehole standoff correction which we do not discuss here. Details may be found in Wahl and others, 1964. The standoff correction is generally displayed on the log, and as with all density tools when borehole cave or tool standoff becomes excessive, no density can be reliably derived. The caliper log and amount of correction indicated on the density log can generally be used to reject intervals where density is unreliable.

The existence of a small error at total saturation on figure 4 is due to the slight difference in the Z/A of limestone as opposed to tuff. If the tool were "calibrated" in tuff there would be no error at total saturation.

The electron density may be simply derived from the density indicated on the log derived from this tool by a rearrangement of equation 5;

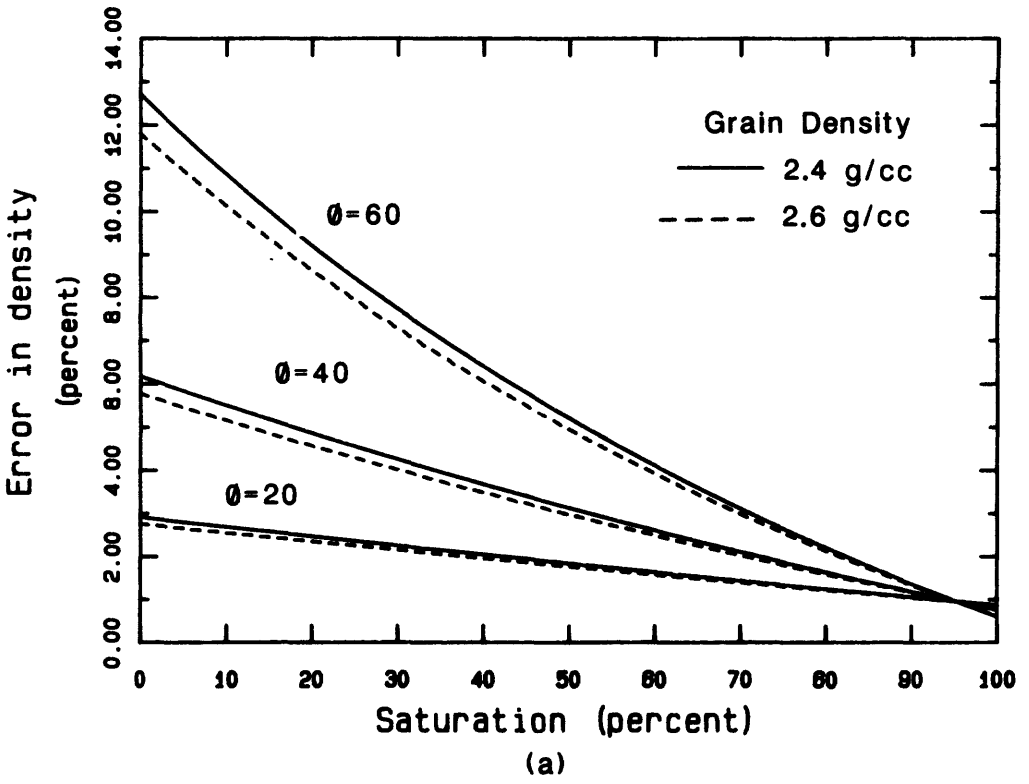
$$D_e = 0.9342\ D_b + 0.1759 \qquad (6)$$

Unfortunately, this equation is not directly usable since the electron density is for a saturated formation. It may be easier, however, to make estimated water corrections to the electron density (discussed in the next section) than the alternative of using figure 4. For reasons discussed in the next section, the electron density is the density we have reported for all calibrated tools interpreted in this report.

The Proximity-Corrected Density Log

The main method of density log reduction used in Rainier Mesa employs the count rate obtained from the sonde, calibration data available on the log, and accessory charts to obtain the electron density. (These are the proximity tools listed in table 1.) This was the method used for logs from 9 of the 10 holes for which calibrated logs were available. This type of reduction yields electron density with no assumption made regarding saturation. The electron density is obtained at the drill site directly from the response of the tool in materials of known electron density. Blocks of magnesium and aluminum are the main materials utilized. The electron density (equation 2) rather than the true density is employed in the calibration, and the electron density (equation 4) is the resulting density output on the log. In this case, errors arise from the fact that the true bulk density of equation 3 again differs from that of equation 4 because of the high Z/A of the pore water or, more specifically, because the 2Z/A of water differs appreciably from unity. The magnitude of this error as a function of the same rock parameters used for the saturated limestone case is shown on figure 5. As opposed to the output of the saturated limestone algorithm, errors in figure 5 are greatest at highest water contents, however, they are noticeably less than those of figure 4. In the saturated tuffs the porosity is seldom in excess of 35-40 percent, and thus the error is less than 2 percent. In the worst case of complete invasion in the higher porosity zones of the unsaturated tuff, the error is generally less than 3 percent. As opposed to the density provided by the limestone sonde, the electron density recorded by the log is greater than the true density for realistic lithologic situations.

The small positive errors in density at low water contents on figure 5 are due to the slight difference of Z/A of the tuff matrix from 0.5.



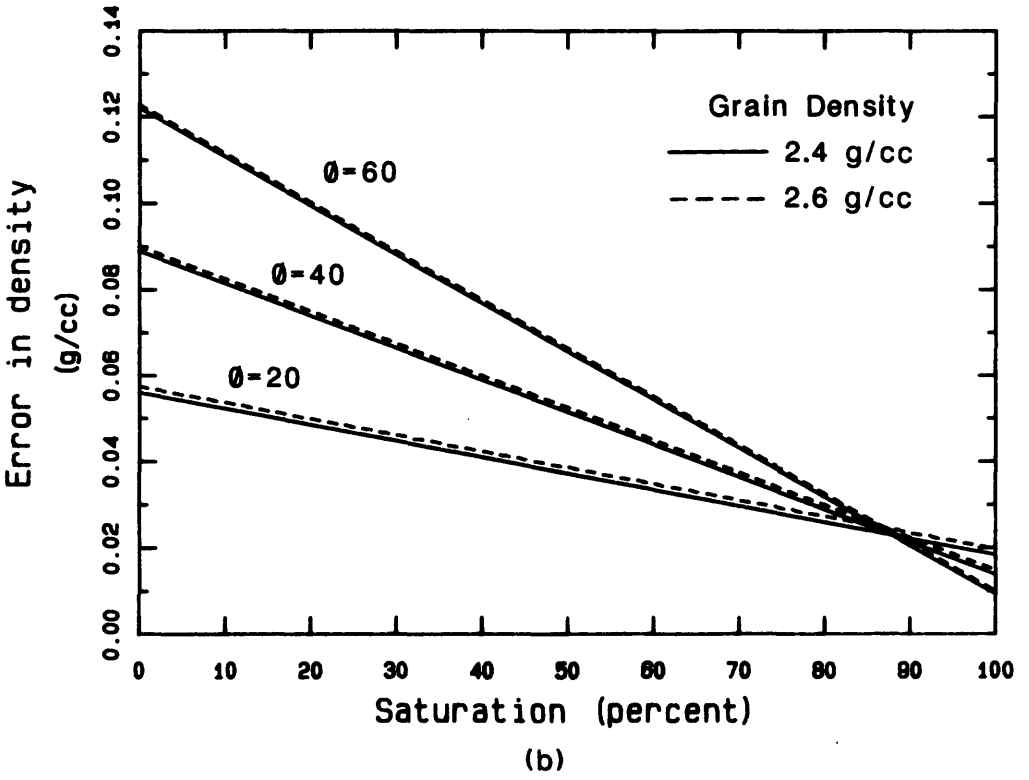
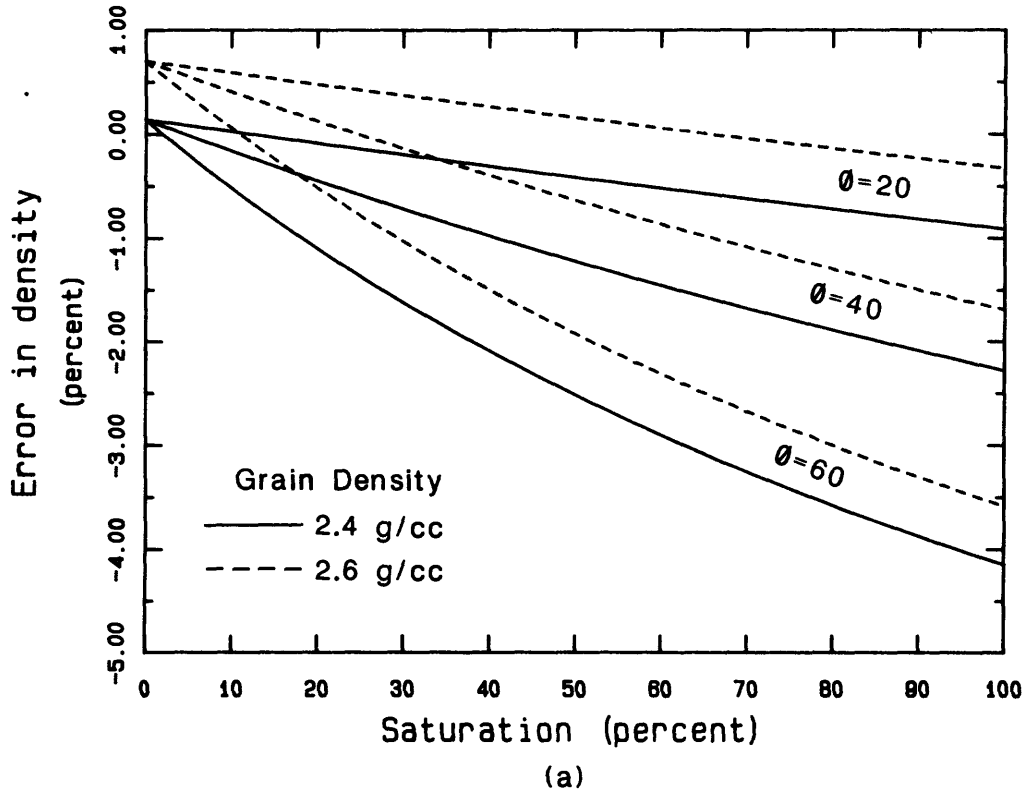
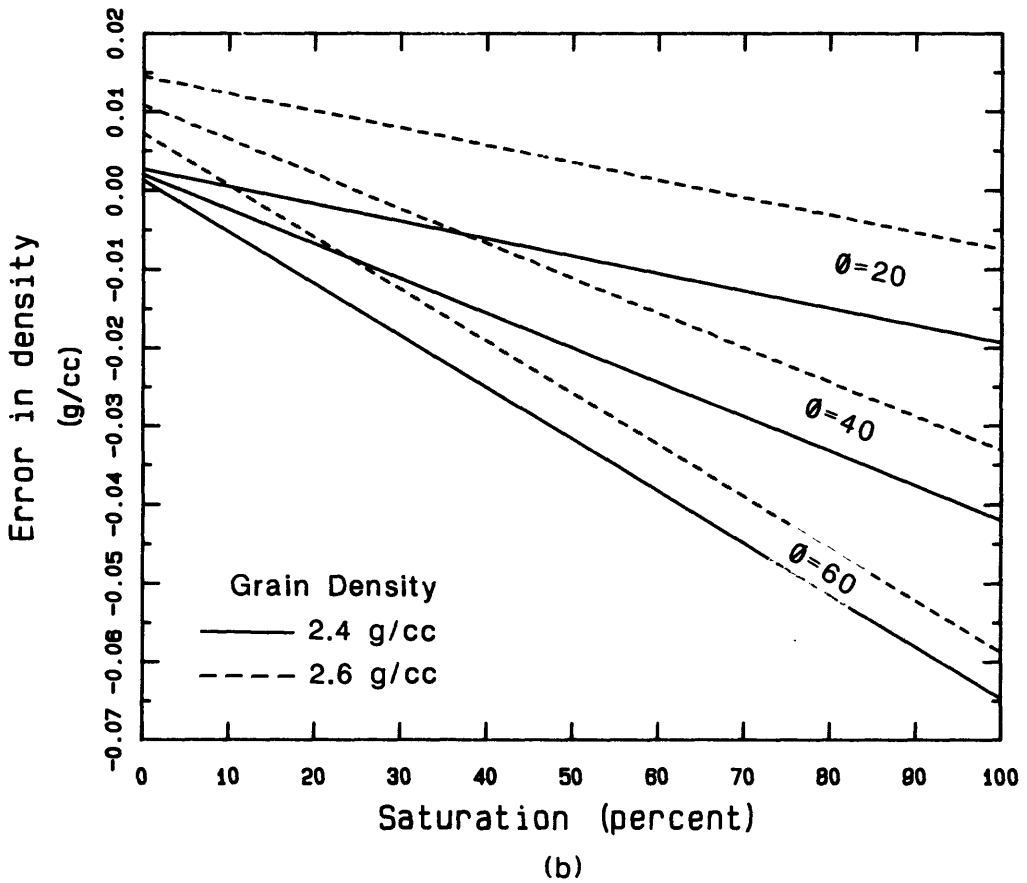


Figure 4.--Errors in density arising from assumption that density from a commercial "limestone" log represents true density of volcanic rocks in Rainier Mesa area.



(a)



(b)

Figure 5.--Errors in density arising from assumption that electron density represents true density of volcanic rocks in Rainier Mesa area.

When properly calibrated the proximity tool gives the user the greatest control over the density derived from the log, although unlike the compensated tool, it requires considerable additional manipulation of the log output to obtain a final density. To the best of our knowledge, this tool is somewhat unique to the NTS and was developed specifically to obtain density in drill holes as much as 3 m in diameter. This type of log is especially useful in new logging environments with extremes of high and low density, because it allows the interpreter to examine all the calibration data, and to evaluate the accuracy of the derived density without relying on the output of a black box algorithm, which may or may not be sufficiently calibrated for the density range of interest. Because the calibration of this log offers both insight with regard to the relationship of density to electron density in log calibration, as well as insight into pitfalls inherent in neglecting important logging parameters, some discussion of its calibration is warranted. The drawback to consistently using this tool in Rainier Mesa has been the availability of only a 3-5/8-in. tool diameter.

Density logging sondes record a count rate based on the gamma-ray backscatter of the radioactive source bombarding the formation. This count rate, for the range of most densities of practical interest in petroleum environments, is related to the electron density of the rock in a log-linear fashion. Thus, calibrations can be obtained by procedures such as shown on figure 6a, which is the log calibration chart from the n#9 hole. With two exceptions, this two-point calibration is typical of all the calibrations shown on the logs obtained in Rainier Mesa with the proximity tool. Blocks of aluminum and magnesium are used at the drill site to obtain the two calibration points, and the log-linear plot provides the relationship between count rate recorded by the log and formation electron density. The count rate used for these two points is recorded directly on the log, both before and after logging, if proper procedures are followed. A number of extremely important details should be in hand before applying these data.

a) Deadtime--The electronics used in counting gamma-ray pulses are not able to count all incoming pulses at high count rates. Thus, a correction is required to obtain the true count rate applicable to the density obtained on the magnesium and aluminum blocks. This is because the effect of deadtime may not generally yield a plot subparallel to the true density/count rate relationship throughout the range of interest. This correction depends on the type of electronics used, and is discussed in detail by Hearst and Nelson, 1985. The electronics employed in the sondes from which density was derived for this report are all reported to be nonparalyzable with a deadtime of 0.8333 microminutes (Robert Smith, Dresser Atlas, oral commun., 1987). A correction of this magnitude is trivial and was ignored in the Rainier Mesa data, however, it is of particular importance in some regions when attempting to calibrate older logs with core data.

b) Z/A correction--The 2Z/A of aluminum is 0.9637 (bulk density = 2.72) and that of magnesium is 0.9868 (bulk density = 1.76). The bulk densities of calibration blocks should not be taken from handbook values, but actually measured, particularly if plastic or some other compound is employed. In addition, one should be fairly confident of the chemical composition (Z/A) of all blocks used to obtain electron density values.

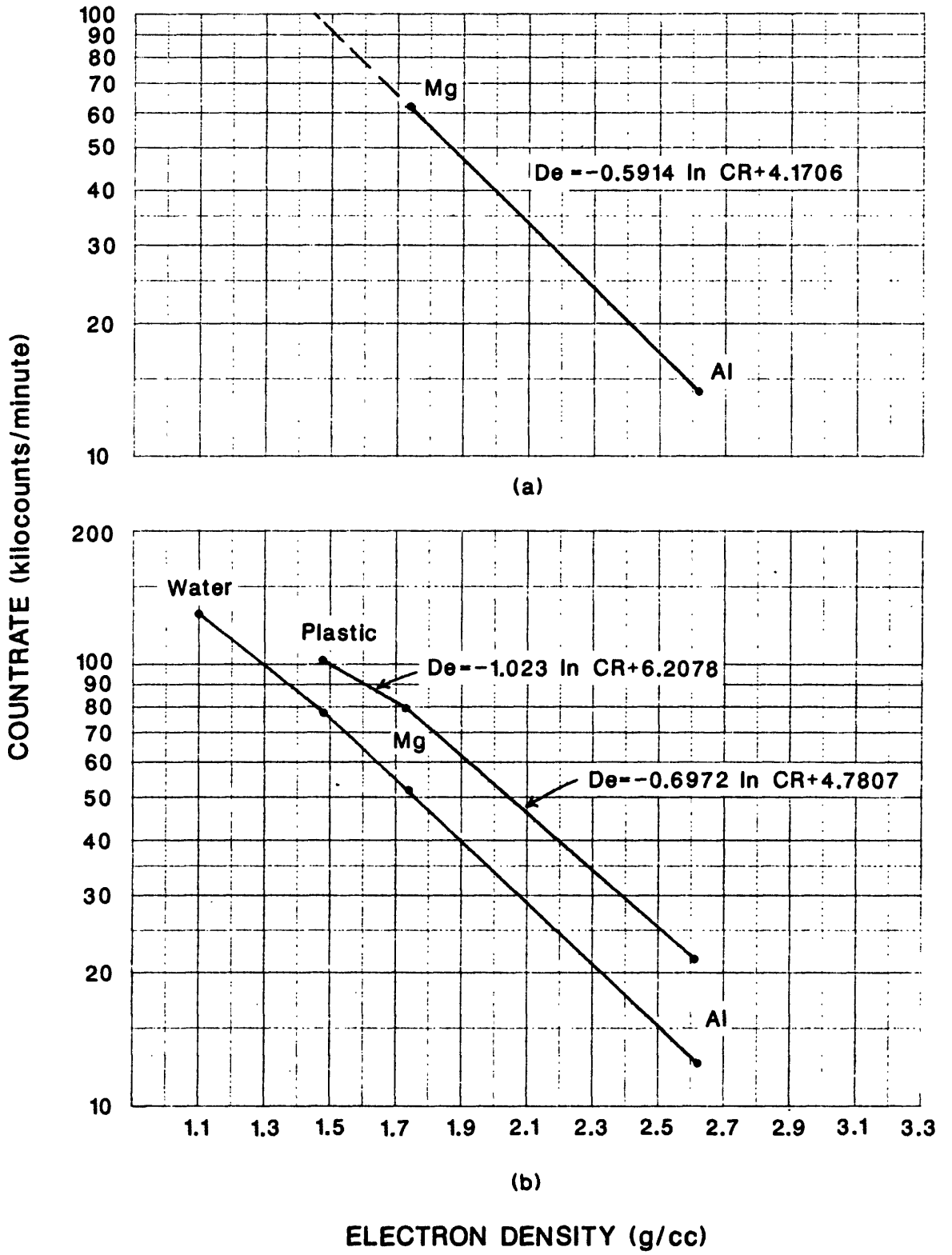


Figure 6.--Calibration charts using (a) two-point, and (b) three- and four-point calibration blocks for tools used in Rainier Mesa. Equations on the plot relate electron density (De) to count rate (CR) for the (a) n#9, and (b) g.10#6 (three-point) and n.10 PS#1 (four-point) holes.

Equation 1 indicates that electron densities of 2.62 and 1.74 should be entered on the calibration chart for aluminum and magnesium, as was done on figure 6a. (This also should be checked on the log as we have seen charts with the actual values of bulk density entered. Count rates entered on the calibration curve should also be checked against the calibration count rates on the log to determine if correct, and whether a deadtime correction has been applied before plotting.)

It should be apparent that the multiplier of 2 in equation 1 is somewhat arbitrary and is convenient in that the 2Z/A of limestone is unity, and thus provides a convenient reference. However if one were concerned, for example, with only barite (2Z/A = 0.8913) in an evaporite logging environment, a multiplier of 2.2439 could be used and the relationship between count rate and density would produce the density of barite directly. The density of other formations would, of course, be in error appropriately, that is, by the ratio of the Z/A of barite to the Z/A of the rock of interest.

c) Borehole environment The inability to totally shield the source and direct all energy into the formation results in a radiation field which differs whether the hole is wet or dry. The resulting difference in tool response is compensated for by using different densities for the calibration blocks in the plot of figure 6. Historically the wet hole data have often not been entered on log headings but have been information contained in the files of the various agencies at NTS interpreting the data. For example, in the g.10#6 hole the equivalent electron densities for the wet and dry hole are 2.61 and 2.54 for aluminum and 1.73 and 1.72 for magnesium. Unfortunately, the absence of a central location for such information renders the interpretation of old logs by future interested parties more and more difficult with time.

The proximity tool is a collimated device, and like all such devices, needs to be restricted to ride the borehole wall. A further correction is required for standoff which is indicated by a 1-in. caliper log attached to the tool. More recent tools utilize two wheels to account for tilt of the tool, however, all logs discussed in this report employed only a single proximity device. Calibration charts for standoff corrections present corrected density as a function of apparent electron density and standoff (fig. 7). These corrections are added to the density obtained from the data on figure 6.

No interpretation was made in intervals where standoff was in excess of 0.25 in. As per the recommendation of Birdwell (R. Clarke, Birdwell, Inc., written commun., 1976), the standoff curves for 5 to 7 in. diameter holes were used to correct for the proximity effect in slim holes in Rainier Mesa. It may be observed on figure 7 that the slope of the standoff curves is a relatively smooth function of standoff. This characteristic, coupled with the fact that the curves pass through a common point, allows the correction to be simply described for computer reduction of digitized logs. On figure 7, for example, the equation

$$Dc = (4D_e - 1.4P)/(4-P) \qquad (7)$$

where Dc is the corrected density, D_e the apparent electron density obtained from the log and figure 6, and P the standoff, represents the data to at least

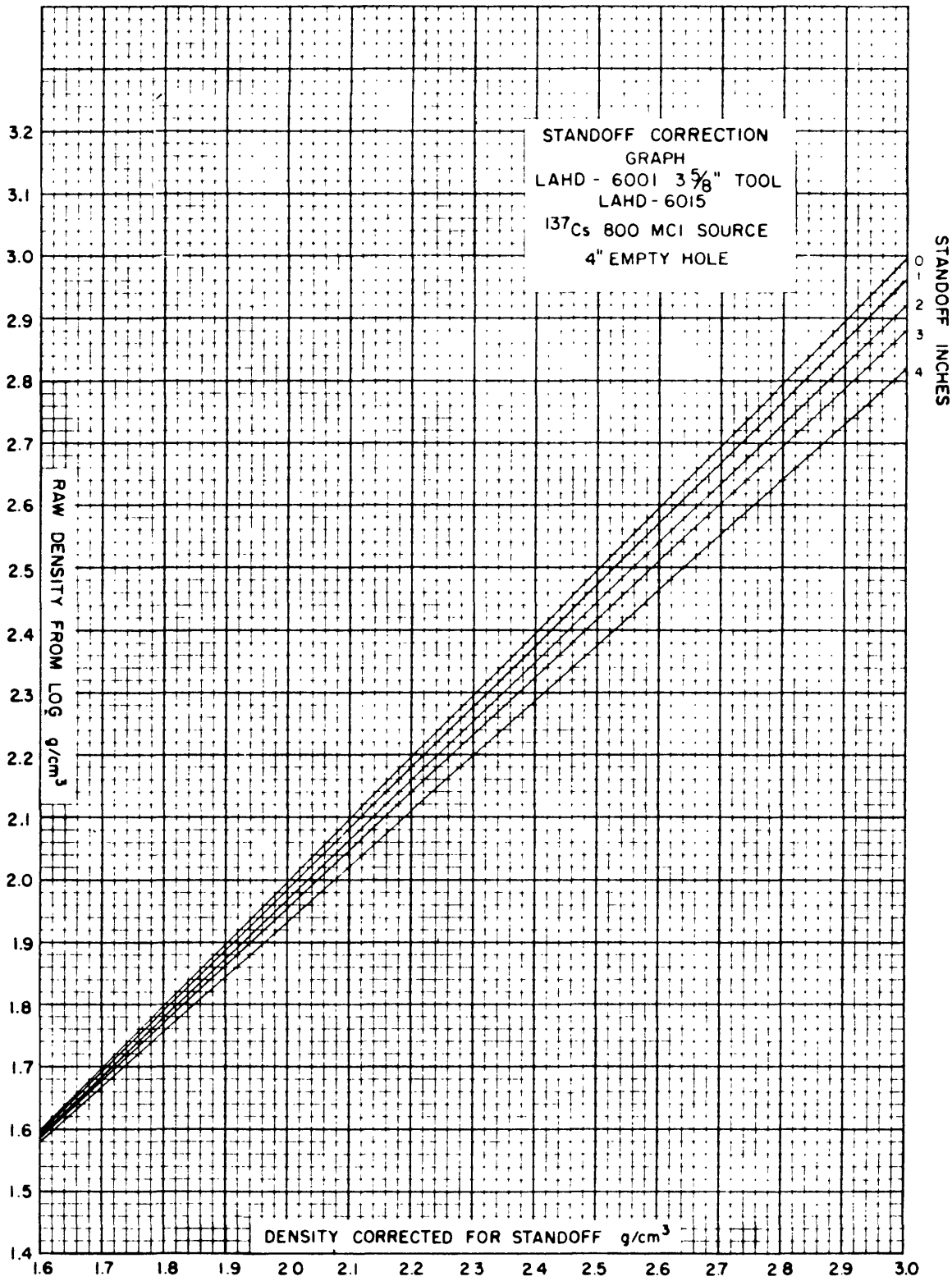


Figure 7.--Typical standoff correction chart for proximity tool (modified from Birdwell, Inc.).

0.3 in. of standoff. With the exception of two holes logged with a Cs^{137} source (g10.#3 and n.06 PS#1), the proximity correction for all slim holes logged with the proximity tool (Co^{60} source) in Rainier Mesa can be described by

$$Dc = (4.8De-1.34P)/(4.8-P) \quad (8)$$

All the density logs used in this study were analog and required digitization for reduction. Combining the equation representing the log-linear calibration plot such as shown on figure 6a, for example, with equation 7 enables the digitized data for that hole to be converted to electron density using

$$D_e = (-2.8387LnCR + 20.019 - 1.34P)/(4.8-P) \quad (9)$$

d) Crossover The simple log-linear relationship of count rate to density indicated in figure 6a, unfortunately, is not applicable for all densities encountered in the Rainier Mesa volcanics. Theory and observation indicate that density sondes deviate from such a relationship depending on tool spacing and design (Tittman, 1986, equation 3.45, p. 110; Hearst and Nelson, 1985, equation 6-30, p. 229 and fig. 6-15). For many commercial density sondes, a log-linear relationship may no longer hold for densities less than about 1.5-1.7 g/cc. Figure 6b is the calibration chart for the electron density of calibration blocks versus count rate for the g10.#6 hole. This is one of two holes in Rainier Mesa (the other being n.10 PS#1) for which a three-point calibration was used by the contractor, and deviation from log-linearity at low density is apparent. The log for the g.10#6 hole (fig. 6b) was interpreted using two log-linear relationships connecting the three calibration points. Because several different sondes were employed in Rainier Mesa, the applicability of the relationship on figure 6b to other logs is uncertain. Where exact data on tool models is available, some Birdwell proximity tools indicate little deviation down to densities near that of water. The four-point calibration shown on figure 6b is an example of one such model. The calibration points on the figure were obtained in the shop for this tool model, which was used in the n.10 PS#1 hole, although at the well head only a two-point calibration was performed. The experimental data indicate that the assumption of a log-linear relationship between count rate and density for this sonde model is accurate down to quite low densities. At the electron density of water the deviation is 5-6 percent.

For the additional tool models we have no data below magnesium density, and in one hole the model of the sonde employed is unknown. A log-linear relationship based on magnesium and aluminum blocks was therefore assumed in our interpretation procedures to extend into the lower density region. Thus, for the vitric tuffs in Rainier Mesa which exhibit densities less than 1.5 g/cc, the absence of a proper calibration point at the lower end of the density scale suggests some of our densities derived in these intervals may be too high.

The measurement of low density rock is probably the main area where most commercial logs are deficient and where the "hands on" calibrations of the proximity tool are valuable, because one may utilize additional blocks to obtain the true relationship. Knowledge of the sonde response becomes even

more remote when accepting the output algorithm of compensated density logs which have been calibrated for ranges of density of interest to petroleum exploration. As a matter of interest, a tool model similar to the Birdwell borehole compensated tool run in n#11 and discussed earlier, begins to deviate from a log-linear relationship at 1.48 g/cc on the near detector and 1.23 g/cc on the far detector (R.L. Carlson, LLNL, written commun., 1987). This is one area where the user should question the logging contractor closely should low density material be of concern. Coal exploration is another area where this situation is of considerable importance.[7]

Water Correction to Electron Density

It is apparent that, in attempting to obtain a true density from either the compensated density tool or the proximity tool, knowledge of the amount of pore water is required. Water correction for the electron density may be obtained by substituting the product of the weight fraction (F) of water in the formation and density (D_b) for its equivalent ($Sw\phi$) in equations 3 and 4 to obtain the true density (D_b) from

$$D_b = D_e / (2Z/A + F(1.11-2Z/A)) \qquad (10)$$

A reasonable average value for F in the saturated tunnel beds is 0.2 (Brethauer and others, 1980). For a matrix Z/A = 0.5 this yields a correction of -0.04 g/cc for an electron density of 2.0 g/cc (D_b = 1.96 g/cc). Note that for a Z/A of less than 0.5, the correction is less. A Z/A of 0.485 (a somewhat unrealistic value geologically) would entail no correction for this case.

No water correction has been made to any of the densities derived from calibrated logs interpreted in this report, and where applicable, all density values listed are electron densities. This derives from the need for various judgments on the exact value of F to apply to various formations, the generally trivial nature of the correction, and the fact that errors inherent in reducing density logs generally tend to result in a lower density, thus possibly gaining some compensation in ignoring the water correction.

Slim-hole Logging Tools Calibrated with Core

The third procedure employed in deriving density from logs discussed in this report involved the calibration of the log using core data. This was required in 10 of the 20 holes reported. This somewhat circular procedure (an objective of a density log is to generally reduce coring requirements) is necessary in the absence of suitable calibrations. This technique also is subject to sampling concerns, and in the unsaturated zone may not be proper in some circumstances. This will be be discussed in connection with invasion.

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[7]Compensated density logs have one significant advantage over proximity tools in that the compensated density tool can measure density in the presence of mud cake.

Under ideal circumstances calibration using core data is equivalent to calibrating the tool in pits with the caveat that, in the absence of deadtime or crossover effects (which are often unknown), the resulting fit to the data is an adequate representation of the count rate versus density relationship. Calibration with core does not permit compensation for proximity or hole size effects. If the logging sonde requires appreciable hole size corrections, the interpretation can only be applied using core obtained in sections of the hole having the same diameter.

Of the logging sondes employed in Rainier Mesa which require core calibration, only two have been run consistently enough to allow us some degree of confidence in our knowledge of tool specifications such that an attempt might be made to calibrate the logs with core. These are a 2.25-in. diameter collimated tool utilizing a Cs^{137} source and a 1.625-in. diameter omni-directional tool. The latter tool was run in several holes without centralizers (R. Smith, Dresser-Atlas, oral commun., 1987), and because this tool is also relatively insensitive to the geology, an interpretation is presented for only one of the holes (n#8) in which this sonde was employed.

The 2.25-in. diameter sonde was run at 21-, 24-, and 27-in. spacings, and no information is available on crossover. Deadtime is similar to the proximity tool. None of these sondes employed proximity devices. Therefore, caliper logs were by necessity implied to be indicative of zero standoff where the borehole was smooth.

Density measurements made on preserved samples immediately after the initial coring operation were first used to attempt to calibrate the logs, however, these required many supplementary measurements because of the absence of samples with a sufficient density range in both the fluid-filled and dry borehole. Limited earlier measurements were available from the unsaturated zone.

Our experience in attempting to calibrate density logs with core densities obtained from standard laboratory measurements indicates that the small size of these samples and the local variability of the tuff requires several sample measurements, with some subject to rejection, before one can have confidence in the correct density/count rate relationship to apply. The use of a density/count rate relationship derived from only two core points can yield highly erroneous results.

The initial measurements of "natural-state" density obtained on core from the majority of holes listed in this report were made by Terra Tek and may be found in Terra Tek and DNA reports. In 1987, approximately 123 additional density measurements were made by the author on core from fluid-filled and dry portions of the applicable drill holes. Densities were measured by water immersion using cores wrapped in aluminum and waxed to preserve their state at the time of initial drilling. No obvious drying of the core was observed when removed from the original protective wrapping. The core were generally damp even though as much as 15 years had elapsed from initial coring. Samples from the unsaturated zone were sprayed with a water repellent silicone to seal the pores prior to immersion. Standard laboratory measurements of density are generally made on small discs obtained from the cored sample. Because the spacing between detector and source in the density sondes employed in Rainier Mesa ranges from 21 to 27 in., the samples we measured were as long as was

compatible with the measurement technique we applied. All samples were cut into lengths of 3 to 4 in. for measurement, and two to four measurements were generally made in each sample interval.

No attempt was made to obtain plug samples to compare with the sample lengths we measured, however, intrasample densities were generally consistent although splits of some samples differed by as much as 0.1 g/cc. We attempted to select samples in zones of extremes in density where the density log generally exhibited a uniform response over 3 m or more. Many zones in the tuff, however, exhibit relatively large vertical excursions in density over short distances, and samples need to be selected with care with regard to size and location.

Comparison of Proximity and 2.25-in. Diameter Tool Densities

A comparison of densities in similar lithologic units obtained with the proximity and slim-hole tool was considered an informative check on possible bias in the data. Figure 8 shows the results of this procedure in the Paintbrush Tuff and tunnel beds 3 and 4, the three lithologic units of appreciable thickness and continuity throughout the area. Given the variations in the geologic setting, the results are considered in agreement. The major discrepancy, occurring in the results obtained in tunnel bed 4, is attributed to the fact that the upper portions of tunnel bed 4 in several holes logged with the proximity tool are not pervasively zeolitized. This results in a greater preponderance of lower density tuff measured by this device. Given this consideration, as well as the variable effects of invasion on logs obtained in the Paintbrush Tuff in the unsaturated zone, the geologic unit considered least subject to these variations in density is tunnel bed 3, and the data from both tools are in best agreement in this unit.

GEOLOGIC IMPLICATIONS FROM DENSITY LOGS OBTAINED IN RAINIER MESA

Densities interpreted from the usable logs from the drill holes located on figure 1 and listed in table 1 are illustrated on figures 9 (central and southern Rainier Mesa), 10a and 10b (northern N-tunnel), and 11 (Aqueduct Mesa; all in pocket). This is the same areal breakdown previously used to report velocity data (Carroll and Magner, 1988). The lithologies indicated on the logs are described in Maldonado and others, 1979. Some contacts referenced in that report have been revised based on recent information provided by Fenix & Scisson geologists. The logs on the figures are plotted with reference to a common elevation, and tunnel levels are also plotted on the logs. The tunnel level elevations used are listed in table 6.

The prominent high density zones due to welding in the caprock, the Grouse Canyon Member, and the Tub Spring Member can be readily observed, although the contrast in density of the latter two formations with the surrounding rock is poor at some locations. The absence of welded Grouse Canyon over the pre-Tertiary highs noted on figure 3 can be noted on these figures. A general increase in density with depth in these holes is also evident.

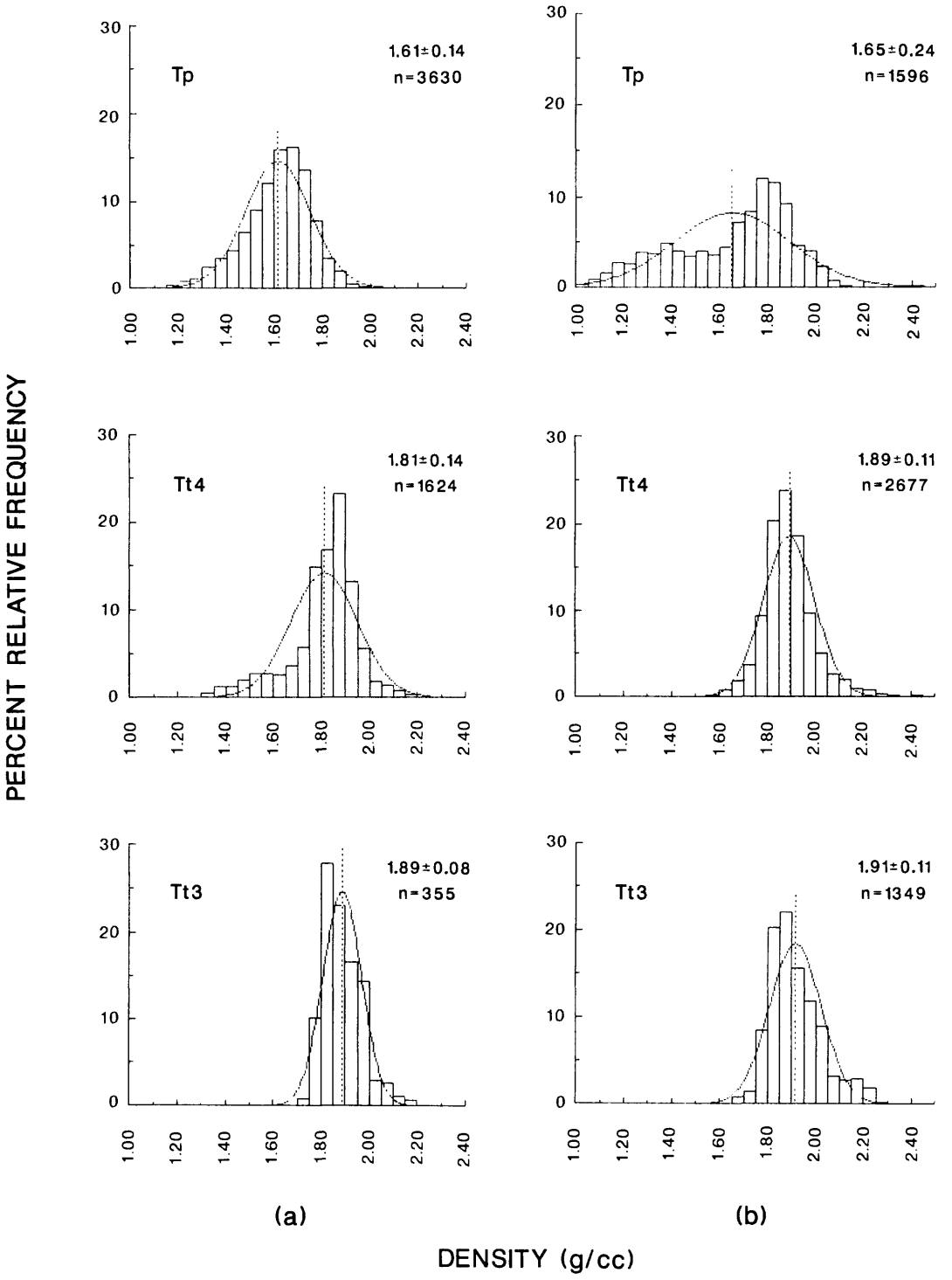

Figure 8.--Histograms of densities obtained in Paintbrush Tuff and tunnel beds 3 and 4 with (a) proximity tool, and (b) 2.25-in. diameter tool. Mean, standard deviation, and number of samples (n) are shown.

Table 6.--References for tunnel level elevations

Tunnel	Elevation (ft)	Reference
E	6168	Average WP[1]
G	6114	Elevation of portal
N	6070	Average WP
P	5493	Elevation of portal
T	5630	Average WP

[1]WP=working point or location of nuclear experiment.

There are gaps in the data in many places chiefly due to excessive borehole caving that negates any interpretation. However in some holes in the unsaturated zone, peculiarities in the data indicate that the log is not representative of the geology and no interpretations were made. These peculiarities will be discussed below.

The density data on figures 9-11 generally represent interpretations of points on the log digitized on 1-ft intervals. These data are listed in the appendix.

Correlation Based on Log Character

Character correlation of specific beds over considerable lateral distances is common on geophysical logs in most lithologic settings. The NTS rocks most readily recognized on all geophysical logs are the low porosity units--the densely welded tuffs and the pre-Tertiary rocks. This is quite evident on figures 9 through 11. There are also several additional units which can be traced across the Rainier Mesa area based on their density log signatures. These are chiefly restricted to those units located between the Grouse Canyon and Tub Spring Members.

One horizon which is consistently recognizable occurs at the base of the tunnel beds at the contact of tunnel bed subunit 3A and the Tub Spring Member. As illustrated on figure 12, this horizon is distinguished by a distinct density increase which occurs at the base of tunnel bed 3A. Where the underlying Tub Spring Member is welded (t#3, p#4), this correlation is even more striking. This horizon typically separates higher density tuffs below tunnel bed 3 from those above. The base of tunnel bed 3A is a massive, red, relatively fine-grained tuff containing relatively little pumice altered to zeolite. A greater abundance of quartz and feldspars in the matrix may account for its higher density. The tuff in the vicinity of the 3A/Tbt contact illustrated on figure 12 is often locally altered to clay, and this horizon generally exhibits a diagnostically low resistivity on electric logs. The distance over which the correlation in figure 12 holds is at least 8 km, however, its behavior on western Rainier Mesa is undocumented.

(p. 37 follows)

Additional correlations are evident on examining the logs on figure 12. Tunnel bed 3BC may often be approximately located based on its relatively uniform lower density immediately above tunnel bed 3A. The base of tunnel bed 3D can often be recognized by the slight density shoulder terminating the top of tunnel bed 3BC.

Another correlation utilizing density logs may be employed to locate the top of the tunnel beds. This consists of two relatively high density zones, the lower marking the base of tunnel bed 4J and the upper occurring within tunnel bed 4K (fig. 13).

Tunnel bed 5 may also be easily recognized on the basis of its low density and low geologic noise level (figs. 9-11).

There are several locations where the process of zeolitization has not proceeded as completely throughout the upper stratigraphic section as at others. These locations, possibly related to paleotopography, can result in deterioration of the correlation signature, particularly near the top of the tunnel beds. This is evident in n#9 and n#10, for example, where incomplete zeolitization is generally responsible for the lower density zones indicated at the top of tunnel bed 4 (figs. 10a, 10b).

Lack of density log control does not allow documentation of the validity of these correlations at the extreme ends of the section shown on figure 3. The nature of volcanic rock emplacement is such that, with the exception of major ash flows, correlations should not be expected to be regionally persistent. However, the existence of correlations on density logs for distances of several kilometers is observable in Rainier Mesa. It is possible that some of the correlatable units are ash flows which have hitherto been identified as ash-fall tuffs (D.R. Townsend, Fenix & Scisson, oral commun., 1987).

The "Top" of Zeolitization

Zeolitization is an alteration process which increases the induration and density of the tuff. Pervasive zeolitization also results in extremely low permeability and high capillarity in the tuffs resulting in essentially saturated rock. As previously discussed, we define the "top" of zeolitization as the impedance horizon observable on density and velocity logs in Rainier Mesa below which the tuff is generally pervasively zeolitized. This horizon is also approximately coincident with the boundary separating the essentially saturated volcanics from the overlying unsaturated zone. The nature and behavior of this horizon with regard to acoustic impedance has been discussed in detail in a previous report (Carroll and Magner, 1988). We repeat some of the major observations of that study in addition to amplifying our earlier observations on zeolitization based on recent observations of core and density logs.

(p. 39 follows)

The top of zeolitization is most frequently observed on density logs because these logs, unlike velocity logs, can be obtained above the top of drilling mud. As mentioned in the referenced velocity report, the behavior of velocity and density logs, where both are available through the top of zeolitization, is generally consistent, indicating a sharp increase in density and velocity. Our interpretation of the location of this horizon, which is also the approximate top of the saturated tuff, is plotted on figures 9-11 and shown regionally on figure 3. The depths and elevations of the top of zeolitization in several holes in the Rainier Mesa area are listed in table 7. The data were generally obtained on the basis of geophysical logs. Some estimates were provided by D.H. Hoover, USGS, and D.R. Townsend, F&S. On figures 9-11, where drill holes did not reach the top of zeolitization, the location was extrapolated from nearby holes. Although the n#3 and n#1 logs were not interpreted, their character was used to pick the zeolitization horizon.

Our top of zeolitization generally agrees with the top of pervasive zeolitization based upon geologic observation of core, however, differences of a few tens of feet are not uncommon (D. Hoover, USGS, written commun., 1987).

Table 7.--Top of zeolitization in holes in Rainier Mesa area

Hole	Top of zeolitization[1,2] (ft)	Elevation (ft)
e#1	795	6636
e#3	885	6580
g.10#1	955	6573
g.10#3	953	6577
g.10#5	955	6616
g.10#6	1020	6535
n#1	1238	6083
n#2	803	6541
n#3	937	6542
n#4	217/230	6677/6664
n#6	959?	6461?
n#8	858/1013	6537/6382
n#9	828/1007	6555/6376
n#10	850/1050	6534/6334
n.10aSCH	1022?	6362?
n#11	948	6361
p#3	922	5410
p#4	790	5606
t#2	562?/649	6446?/6359
t#3	926	5851
t#4	965	5959
t#5	465/546	6594/6513

[1]Two numbers indicate depth of top and bottom of intermittently zeolitized zone.
[2]Queried where uncertain.

The top of zeolitization varies appreciably in elevation in the Rainier Mesa area, although it is most frequently located near an elevation of 6,500 to 6,600 ft within Rainier Mesa itself. The elevation tends to be highest at the edge of the mesa as evidenced by the n#4 hole which was collared off the caprock (fig. 10a). The lowest elevations occur in the Aqueduct Mesa area and decrease toward the north. The elevations of the top of zeolitization appear anomalous in n#1, n#6, n#11, and t#5, when compared to surrounding holes.[8] Tunnel level and surface mapping in the n#11 area does not indicate that faulting is directly responsible for the offset of zeolitization in that hole as compared to n#2 and n#10. The three holes are within a radius of 450 ft.

It is difficult to determine to what extent the present top of zeolitization may be locally controlled by faulting. Faults of large displacement in the Rainier Mesa area are rare, 40 m of displacement being the largest measured in tunnel mapping to date. Thus, the extent of offset of zeolitization across faulting has yet to be firmly documented, although offset has been recorded across major faults elsewhere at NTS.

There is a general stratigraphic restriction of the zeolitization horizon to the top of tunnel bed 4 in northern Rainier and southern Aqueduct Mesas. This horizon occurs in the Paintbrush Tuff as one proceeds to the extreme northern and southern ends of the section on figure 3. The location of this horizon to the west of the tunnel areas is undocumented.

The concept of the top of zeolitization, as we have defined it, does not universally result in the section being pervasively zeolitized below the onset of the first initial major velocity and density horizon. Pervasive zeolitization is certainly evident below the initial onset in many holes, for example, in n#2, n#4, n#11, t#3, t#4, and p#4. An exception is the partial zeolitization at the top of tunnel bed 5 in southern Rainier Mesa (fig. 9). It should be further noted that because of exploration requirements, several of the holes on figures 9-11 represent a rather dense sampling of a specific area. Thus, the data do not necessarily present a balanced regional picture.

In several holes, n#8-n#10 and t#5, there is an erratic density response below the first onset of zeolitization. One's first impression is to assign these responses to excessive borehole caving because they exhibit the typical signature of this condition. As a matter of fact, our earliest conclusion concerning the n#9 density log (figs. 10a, 14) was to reject the log based on this condition, concluding that the proximity caliper was sticking due to the drilling mud. Detailed examination of core, however, indicates that the log response in this and other holes in the area is generally a reflection of the presence of beds of partially zeolitized and vitric tuff intermingled with totally zeolitized layers. This is the cause of oscillations on the density logs in these holes. We have illustrated this zone of intermittent zeolitization on figures 10 and 11 by indicating two horizons on the logs.

[8]The log in n#4 was not interpreted, but the top of zeolitization can be deduced from the log character. The caliper log in t#5 indicates some rugosity, the effect of which we cannot evaluate on the slim-hole density tool. The result of rugosity, when it affects interpreted density, is to yield lower densities than representative of the formation.

The process of zeolitization in Rainier Mesa is not completely explained. There is probably some permeability factor involved in the peculiar zeolitic zoning in these holes. The proximity of these holes to paleotopographic highs (quartzite in the northern N-tunnel area, dolomite in the T-tunnel area) may be a factor. One possibility for the erratic nature of zeolitization may be increased vertical and (or) lateral initial permeability in these regions arising from fracturing or dip.

A major point of interest with regard to zeolitization in Rainier Mesa is that it probably represents the upper boundary of saturated tuff above the tunnels. This is a reasonable assumption, however, a question arises as to the nature of the saturation within intermittent zones such as those in n#9 (fig. 14).

The neutron log on figure 14 provides some evidence. The density signature of the top and bottom of the intermittently zeolitized zone is illustrated along with the neutron log obtained over the same interval. When volume water contents of the formation become excessive, over 40 percent, some commercial neutron tools saturate. That is, they do not respond beyond a certain level of water content in the rock. This appears to be the case below 930 ft in the n#9 hole. The increase in the neutron log response above this depth is interpreted as the effect of gas voids in the tuff, which tend to make the log record a higher count rate than it would if the tuff were saturated. This suggests a saturation level in the tuff near 930 ft or about midway through the intermittently zeolitized zone.

This saturation level might be considered the top of the perched water zone. However, it should be emphasized that some intervals in the tuff above this horizon may be nearly saturated because of the intermittent nature of alteration throughout the geologic column at some locations. Thus it may not be unreasonable, because of the high capillary retention resulting from these alteration processes, to find intervals of high water content at several locations within the unsaturated zone.

Note should also be taken of the possibility that the zeolitization level may be observable on density logs only when the lithologic conditions across the boundary are favorable. This seems to be almost universally true of the stratigraphy in Rainier Mesa where there exists a low density ash-fall tuff above the top of zeolitization. However, in zones where the vitric tuff is more indurated and of higher initial density, the density contrast at the top of zeolitization may be subtle. This is suggested by the density in some of the zones in the Paintbrush Tuff on figures 9-11.

Identifying Gas Voids in the Tuff

Of interest in the Rainier Mesa area are those locations in the zeolitized tuffs wherein excessive gas voids may exist. The importance of this rock parameter in connection with experiments at tunnel level in the Rainier Mesa area has been discussed in a previous report (Carroll and Cunningham, 1980). It is apparent that the low density zones on geophysical logs below the top of zeolitization are good candidates for zones of high gas voids. It should be noted on figures 9-11, however, that at tunnel level the logs indicate low density zones are almost nonexistent. This implies that

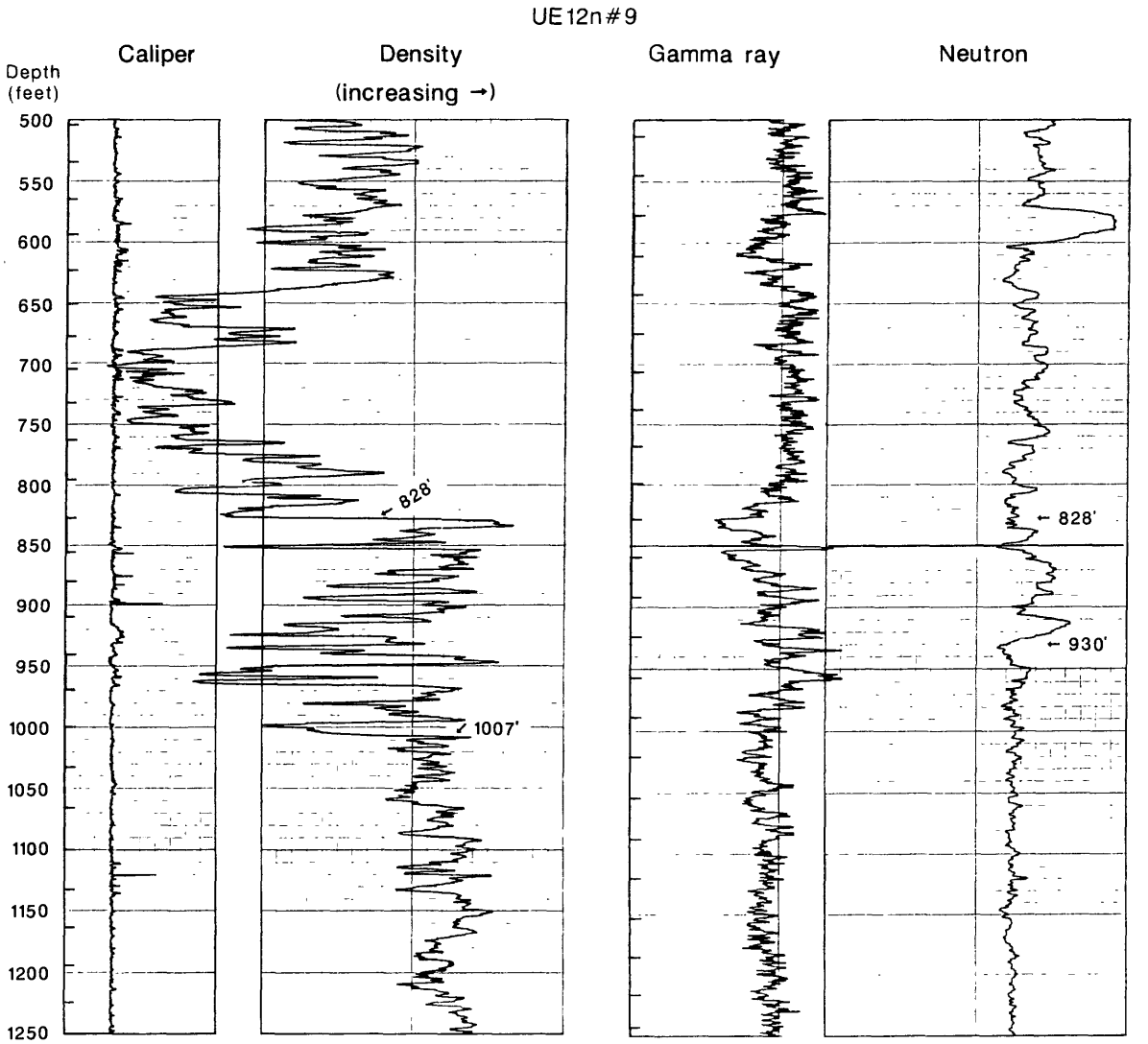

Figure 14.--Neutron and density logs obtained in the n#9 drill hole.

either these zones are so rare (a distinct possibility) that the holes do not penetrate any, that such zones have been invaded by drilling fluid, or that the density exhibited by such zones yields inadequate density contrasts with the adjacent formations. Density logs in future holes should examine the utility of density as a diagnostic in this regard.

Overburden Stress

The overburden density and overburden stress may be calculated from density logs that are fairly continuous from the surface to total depth. This has been done for seven holes and the results depicted on figure 15. The g.10#6 and p#4 holes have been shifted to match the average overburden density of the e#1 and e#3 holes at equivalent depths to compensate for missing logs in the upper parts of these holes. The fact that all these logs are in welded tuff at these depths justifies this procedure. Where gaps exist in the log data, the average density on each side of the gap was used to determine the integrated density value across the gap.

Figure 15 indicates results consistent with the geology in the area. The greater thickness of welded caprock over southern Rainier Mesa and over Aqueduct Mesa result in greater overburden density. The overburden density at any depth may be estimated from the figure by noting that

$$D = 304.8\ r/Z \qquad (11)$$

where D is density (g/cc), r is overburden stress (MPa), and Z is depth (ft). Estimates of rock mass between depths of interest may be made from the integrated density data provided in the appendix.

It is of interest to compare the overburden stress predicted by figure 15 with that obtained from in situ stress measurements. A summary of stresses obtained by the overcore technique has been published (Ellis and Magner, 1980). The vertical stress reported by Ellis and Magner is compared with the stress predicted in figure 15 in table 8. The stress derived from logs appears slightly higher than the measured vertical stress.

The average overburden densities from which the stresses were calculated are listed in table 9. The overburden density in the e#3 hole is slightly higher than the value derived from gravimetry measurements between the surface and tunnel level (D.L. Healey, USGS, personal commun., 1987). This may suggest drilling effects on the log density derived in the unsaturated zone in that hole.

DENSITY AND SATURATION IN THE UNSATURATED ZONE

The problem in the unsaturated zone is the extent to which log or core data are representative of the natural-state density of the tuff in light of invasion by drilling fluid. In the case of calibration with core data, the question also arises as to the extent the two data sets are equivalent, given that the exposure of the formation to fluid at the time of logging and coring are quite different. These concerns have been present since the earliest use of logging at NTS. For exploratory holes in Rainier Mesa and elsewhere the nature and extent of the invasion problem is generally unresolved.

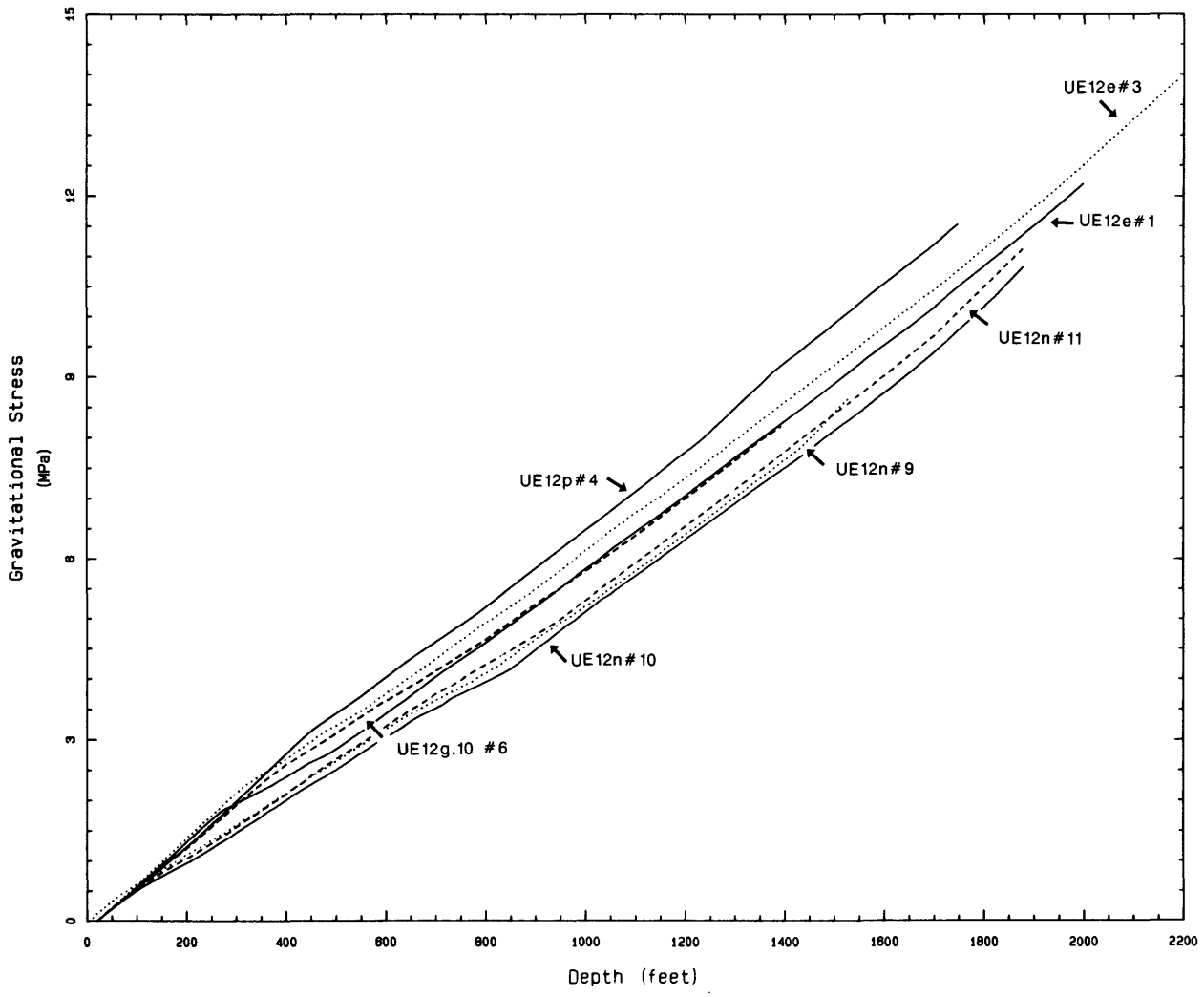

Figure 15.--Overburden stress as a function of depth in seven holes in Rainier Mesa area.

Table 8.--Comparison of overburden stress predicted by density logs with in situ measurements of vertical stress

[Stress data from Ellis and Magner, 1980]

Location	Overburden stress (MPa)	Vertical stress[1] (MPa)
G tunnel	8.5	6.7
E tunnel	7.4 - 8.0	6.1 - 6.2
N tunnel	6.8 - 7.1	5.8 - 7.4
P tunnel	5.9	(2)
T tunnel	(3)	5.6 - 6.6

[1]Average standard deviation of these data is 0.5 MPa.
[2]No stress data available.
[3]Density log coverage in near surface insufficient to obtain reliable value.

Table 9.--Overburden densities at tunnel level for several holes in Rainier Mesa area

Hole	Depth to tunnel level (ft)	Overburden density (g/cc)
e#1	1263	1.79
e#3	1297	1.87
g.10#6	1441	[1]1.79
n#9	1313	1.65
n#10	1314	1.62
n#11	1239	1.67
p#4	903	1.98

[1]Based on deepest density log reading at 1,390 ft.

In (1.2 to 3 m) experiment holes, where most data have been gathered at NTS, the problem is related to the elapsed time since drilling and the drilling technique. In tunnel bed 5, where the porosity in the unzeolitized pumice has been measured in excess of 70 percent on outcrop samples, invasion with big hole drilling can be major because permeability is high. In big hole drilling, vacuum and air-foam techniques generally result in the least invasion, whereas air-water systems appear to result in significant invasion. Formations tend to return somewhat to natural-state conditions with time when the fluid column remains below the zone of interest. In the larger holes, borehole gravimetry can often be used to obtain density in the presence of invasion.

Prior to 1980 exploratory holes in Rainier Mesa were drilled with bentonite mud. After 1980 a polymer mud was used (D. Kuhn, REECO, oral commun., 1987). Drilling in the Rainier Mesa environment also almost universally results in lost circulation. An important consideration then becomes at what level the mud was maintained immediately prior to logging. This is generally unknown. The n#9 hole shown on figure 10a was dry at the time of logging and circulation was not maintained very high in that hole. Consequently, the fluid drive on the unsaturated zone can probably be considered minimum in this hole and invasion may be minimal.

On the other hand, in n#1 the fluid level was at 229 ft at the time of density logging, suggesting the unsaturated zone may have been subject to considerable fluid drive. The invasion conditions may thus vary widely from hole to hole.

Some idea of the extent of invasion is obtained by comparing natural-state core obtained at the time of drilling with calibrated density logs. Unfortunately, only two holes provide adequate data for comparison (fig. 16). The core data plotted comprise almost the entire data base for the unsaturated zone in Rainier Mesa. Both holes were logged with calibrated sondes.

The core data on figure 16a are rather limited. On figure 16b, the obvious bias between the log and core densities above the top of zeolitization (828 ft) does not exist below that depth. This correspondence of the log data with the core in the zeolitized (saturated) zone indicates that the calibration used for this log was adequate. The average difference between 28 core and log densities below zeolitization is less than 0.01 g/cc, which suggests that the differences between the core and the log above that depth are due chiefly to invasion. In this case, however, the core are invaded and the hole appears to have returned to near natural-state conditions in the absence of mud circulation. One concern is the possibility of bias in sample selection in this zone. The friable nature of the tuff may have resulted in more competent samples being selected for core testing, although it does not necessarily follow that more competent core is higher density or more invaded.

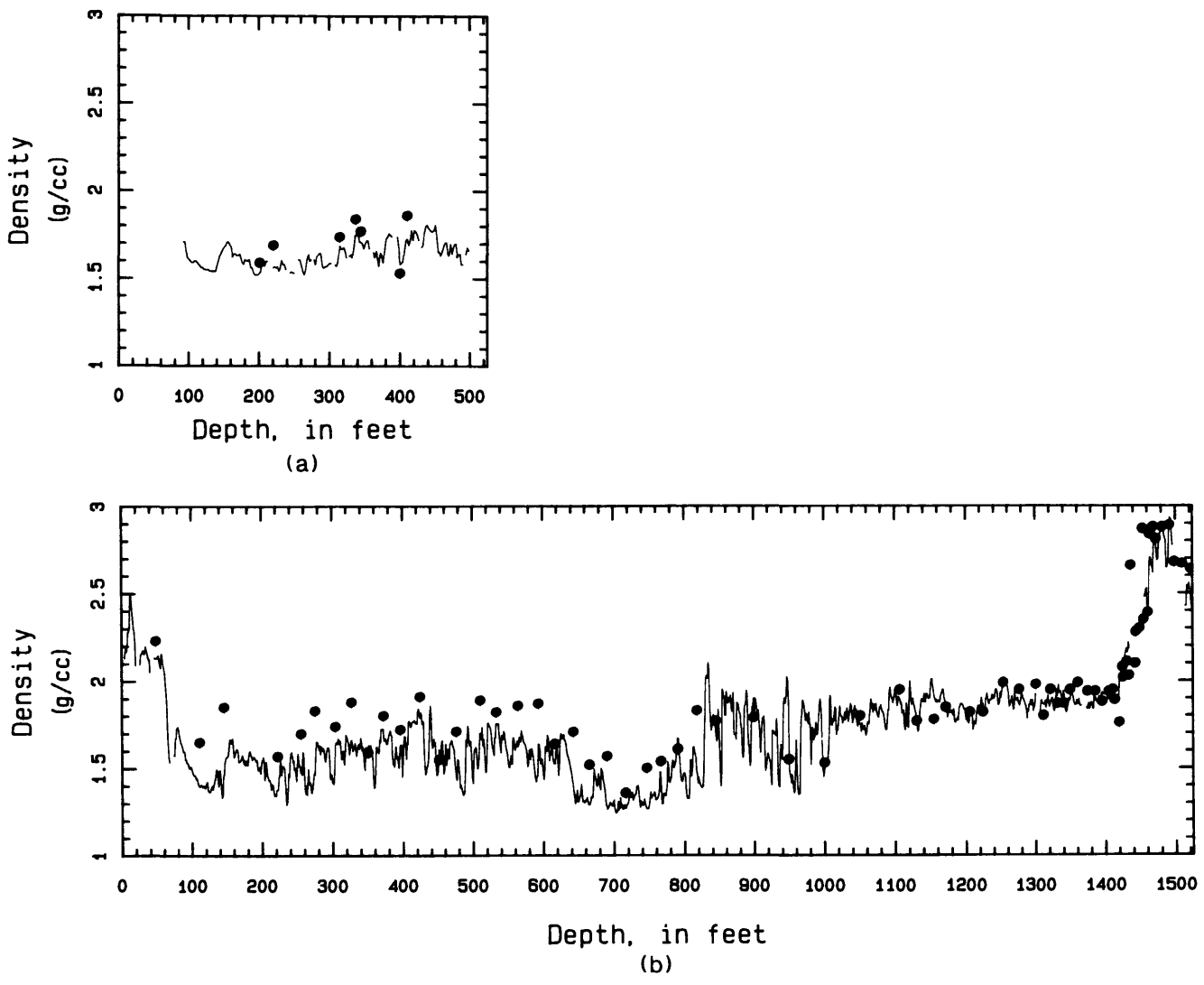

Figure 16.--Comparison of core and density log values obtained in unsaturated tuff in (a) n.08 PS#1, and (b) n#9 holes. Both holes were dry at the time of logging.

Attributing the differences in density between the two data sets on figure 16 to fluid invasion of the core yields the data listed in table 10. The small differences in the n.08 PS#1 hole are close to our error limit. Both data sets result in a major reduction in saturation. The somewhat trivial difference in densities in n.08 PS#1 resulting in a large reduction in saturation is due to the great sensitivity of saturation to changes in density, namely that a change of 0.01 g/cc represents one porosity unit or about two percent in saturation.

The data suggest that saturations determined from core data may be influenced by invasion. The paucity of the data also suggests that some independent method of corroboration is desirable. There are only two additional methods of determining in-situ density in the unsaturated zone. The first is by borehole gravity, however, this technique requires knowledge of the grain density and saturated density of the rock before saturation can be determined. More significantly, present borehole gravimeters cannot be accommodated in most Rainier Mesa hole diameters. The second method is the most direct and consists of the measurement of samples obtained directly from the tunnel face in the vitric zone.

Although many samples were obtained in the unsaturated zone in the early days of exploration in Rainier Mesa, the overwhelming majority of the core measurements do not yield sufficient information to obtain saturation as they consist of dry-bulk density, grain density, and porosity. Frequently, where water contents are reported, no porosity information is available. The most exhaustive systematic suite of sample measurements (106) obtained in the unsaturated bedded tuff to date suffers from these deficiencies (Keller, 1959). A literature search provided only 12 samples listing saturations of natural-state samples obtained at tunnel level from the Paintbrush Tuff in the unsaturated zone (Emerick and Houser, 1962; Houser, 1962; Laraway and Houser, 1962). These samples exhibit an average saturation of 58 percent of the available pore space with a range of 37 to 74 percent. One obtains similar saturations using the average porosity of these 12 samples and calculating the saturation of additional samples for which only natural-state density and weight water were measured.

If the average value of 58 percent saturation is representative, then the limited data on figure 16 also suggest that the density of the unsaturated zone obtained from some density logs can be a fair measure of the true in-situ density. It is difficult to rationalize the low densities seen on figures 9-11 otherwise. Later we shall present evidence that the density obtained from logs in some holes, however, is much higher than the true bulk density of the unsaturated zone.

The data presented are considered insufficient to completely resolve the determination of a representative value for the natural-state saturation of the unsaturated zone.

Table 10.--Comparison of core and log densities in unsaturated bedded tuff in n#9 and n.08 PS#1 drill holes

[N = number of samples]

	n#9 (N=25)		n.08 PS#1 (N=7)	
	Core	Log	Core	Log
Density (g/cc)	1.70±0.15	1.53±0.16	1.72±0.12	1.65±0.09
Porosity	45±7.5		45±5.8	
Saturation	88±8.3	[1]51/58	82±8.6	67

[1]First number is average to top of intermittently zeolitized zone at 828 ft; second number is to base at 1,007 ft (for data to 1,007 ft N=28, log density = 1.56 g/cc)

We close the discussion by presenting an illustration of invasion effects on selected logs obtained in the unsaturated zone in the n#1 hole (fig. 17). This hole is unique for a hole this deep in Rainier Mesa in that the mud column was maintained at a depth of 229 ft during logging. The nonstandard density tool run in this hole, coupled with the somewhat insensitive count rate/density response, negates attempting to quantitatively interpret the log using core. However, the deflections appear to be a relatively correct measure of tuff density. This may be observed in the character of the log at the tunnel bed 3A/Tub Spring contact (1,813 ft), and in the vicinity of the welded Grouse Canyon (1,047-1,111 ft). The top of zeolitization suggested on this log (1,238 ft) differs from various visual geologic estimates (1,165 and 1,190 ft). Other correlations are subtly evident. The increase in density at the transition from subunit 3BC to subunit 3D is barely distinguishable at 1,653 ft. The higher density tuff characteristic of the base of tunnel bed 4J and lower 4K is also subtly observed between 1,384 and 1,295 ft.

The point of note on these logs is the behavior of the neutron log above and below zeolitization. Porosities in the Paintbrush exceed or are equivalent to those below zeolitization. There are several zones above zeolitization where the neutron log exhibits spikes which approach the high count rates observable in the low-porosity welded Grouse Canyon. Because porosities differ widely between the high-porosity Paintbrush Tuff and the Grouse Canyon (probably by a factor of two in places), this is a similar, but more dramatic example of the gas void effect previously noted on the neutron log in n#9 (fig. 14). The neutron log is exhibiting the so-called excavation effect. This is the term used to describe the response of neutron logs in the presence of air-filled porosity. Under these conditions, the log indicates a lower apparent porosity (higher count rate) due to the presence of air in the formation than it would if water-filled porosity were the same but air-filled voids were absent. Thus, the neutron log in n#1 indicates that invasion is not sufficient in many zones to exceed the radius of investigation (unknown)

of this tool. Whether this is also true of the density log response, which normally exhibits a smaller radius of investigation, is somewhat unresolved.

DISTRIBUTION OF DENSITY IN MAJOR LITHOLOGIC UNITS

The densities derived from the density logs interpreted for this report are listed in the appendix, generally on 1-ft intervals. The distribution of these densities within the major lithologic units in the Rainier Mesa stratigraphic column (fig. 2) are shown on figures 18 and 19. The data are separated into three areas as was the case for velocity (Carroll and Magner, 1988); the T-tunnel area, northern N-tunnel, and central and southern Rainier Mesa. Where there are less than 30 data points available, only the statistics are noted on the figure and no histogram is displayed.

The p#4 hole is excluded from these statistics and is shown separately on figure 20. This is because the Paintbrush Tuff in this area does not exhibit an appreciable thickness of low density tuff above zeolitization as it does to the south. In addition, there is a considerable thickening of the densely welded tuffs in this area. Thus, it is probable that p#4 and other holes in northern Aqueduct Mesa should be grouped as a fourth distinct area based on in-situ physical properties. This was also indicated in the data from the only hole (p#3) in this area in which usable velocity data were obtained (Carroll and Magner, 1988).

The core data available for comparison with these results are limited because of the absence of significant sampling in other than the major subunits of concern to testing at tunnel level. With the exception of the unsaturated Paintbrush Tuff samples which have been discussed, the data that are available are in good agreement as indicated in table 11. The core data are from Brethauer and others (1980).

The variations in the densities on figures 19-20 and figures 9-11 are related to the local geologic conditions. Arbitrary use of the data should be tempered with geologic judgment. Variations in structural features on figure 3 which affect the density may be noted on figures 18-20. One example is the increase in density in tunnel bed 5 as it drops below the top of zeolitization at the southern end of the section. The same is true of zeolitization in the Paintbrush Tuff. Notes of interest concerning particular units follow.

Timber Mountain Tuff--The Rainier Mesa Member is a compound cooling unit which forms the caprock in the Rainier Mesa area. This unit exceeds 1,500 ft on outcrop to the southwest of Rainier Mesa near its source (Byers and others, 1976). Thicknesses in the Rainier Mesa area are considerably less. The Rainier Mesa exhibits a bimodal distribution on the histograms on figure 18a,b due to the presence of both densely welded tuff and low density nonwelded tuff at the base of the unit. This is also true of the data obtained in the p#4 hole (fig. 20). The distribution on figure 18a differs because it represents log coverage in only one hole (t#5), which sampled a portion of the densely welded tuff.

(p. 53 follows)

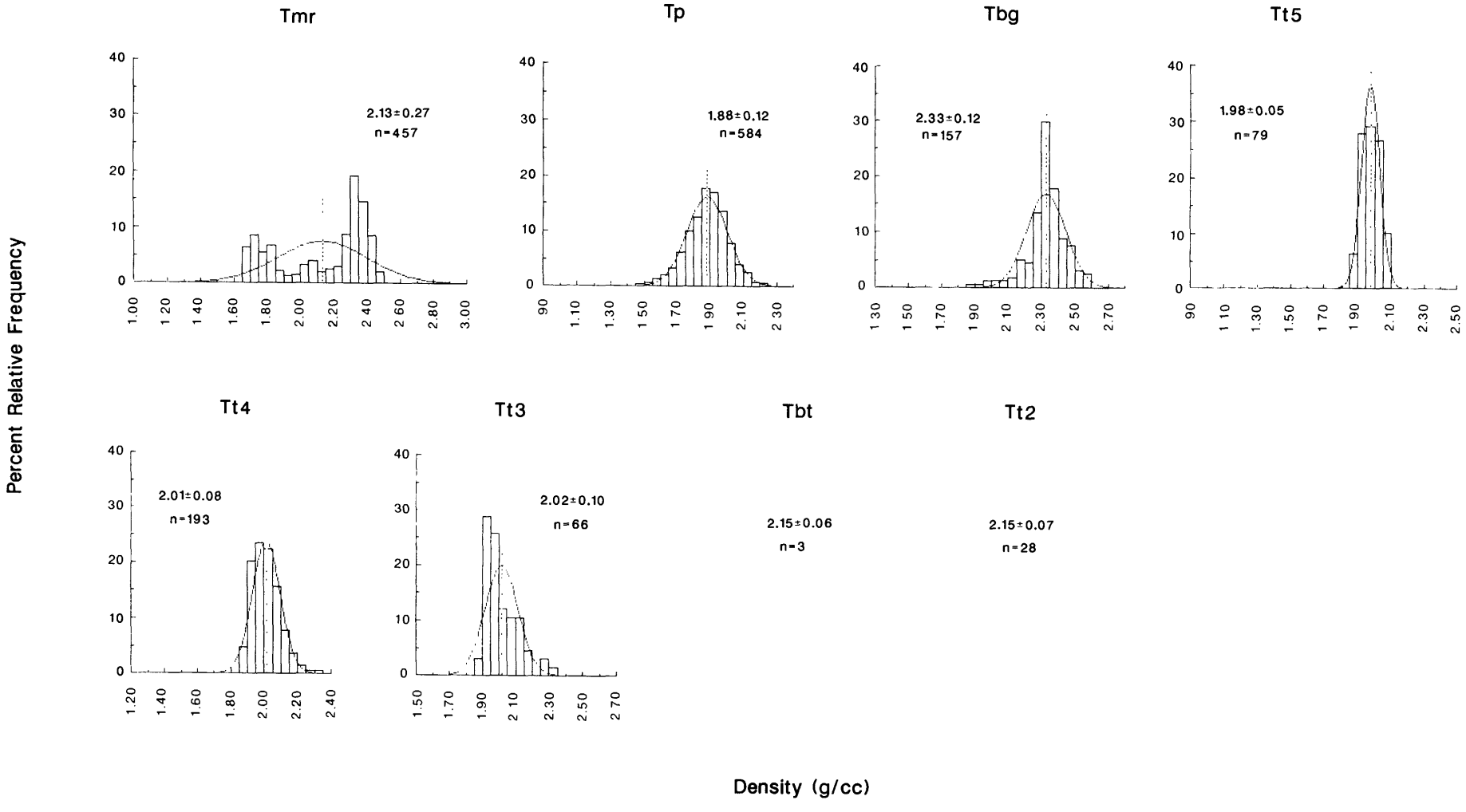

Figure 20.--Histograms of densities obtained from density log within tuff units in p#4 hole. Where data are limited, only mean, standard deviation, and number of samples (n) are shown.

Table 11.--Comparison of density log and core density for three principal areas in Rainier Mesa

[Only units with core sample sizes >30 are listed][1]

Unit	Central and southern Rainier Mesa[2]			Northern Rainier Mesa[3]			T-tunnel area[4]		
	Log (g/cc)	Core (g/cc)	Percent difference	Log (g/cc)	Core (g/cc)	Percent difference	Log (g/cc)	Core (g/cc)	Percent difference
Tp	---	---	---	1.58±0.16(3581)	1.71±0.14 (34)	-8.2	---	---	---
Tt4	1.88±0.09(1269)	1.91±0.09(521)	-1.6	1.84±0.14(2395)	1.89±0.11(453)	-2.7	1.89±0.11(1142)	1.87±0.08(197)	1.1
Tt3	---	---	---	1.88±0.09 (784)	1.90±0.08(472)	-1.1	1.91±0.10 (455)	1.91±0.08 (98)	0.0
Tt2	---	---	---	1.90±0.05 (578)	1.94±0.09 (64)	-2.1	1.92±0.07 (292)	1.96±0.10 (79)	-2.1

[1]Mean, standard deviation, and number of samples (parentheses) are listed. Reference for percent difference is log.

[2]Based on g.10#3, e#1, e#3, and n#6.

[3]Based on n.06 PS#1, n.08 PS#1, n.10 PS#1, n#2, n#4, n#8, n#9, n#10, and n#11.

[4]Based on t#3, t#4, and t#5.

In the N-tunnel area only the lower portion of the Rainier Mesa is preserved, however, the unit elsewhere grades upward into the vapor-phase zone and the vitrophyre both of which are reflected on density logs. This may be noted on the logs from the g.10#3 and g.10#6 holes (fig. 9). Although no core are available, the vitrophyre is believed to be represented by the higher density at about 30 ft in g.10#3, and the excursion just below the casing at 110 ft in g.10#6. A vitrophyre is also indicated on the logs in e#3 at a depth of about 34 ft (fig. 9). A similar zone occurs at the top of the log in the p#4 hole (fig. 11) with the vitrophyre centered at about 150 ft. In most of the holes with density logs interpreted for this report, erosion has removed this feature.

Locally in the Rainier Mesa area the Ammonia Tanks Member, a simple cooling unit, is preserved above the Rainier Mesa Member. The g.10 holes were probably collared in this unit, however, it is nonwelded at that location and is only a few feet thick on outcrop. Northward on Aqueduct Mesa remnants of this unit are preserved in greater thicknesses, are partially welded, and exhibit vapor-phase alteration (Sargent and Orkild, 1973). In the p#4 hole, only 67 ft of Ammonia Tanks was penetrated and no density coverage was obtained, however, the low density material associated with the Rainier Mesa and located near 100 ft on the density log, is associated with the vapor-phase zone (fig. 11). These density data serve to illustrate that the term "caprock" locally requires amplification with regard to physical characteristics. This is probably most critical for seismic wave propagation in the near surface. At one location above G-tunnel the presence of the vapor-phase zone and (or) the Ammonia Tanks Member appears to result in a large near-surface time delay in uphole velocity measurements (Carroll and Magner, 1988).

Paintbrush Tuff--The Paintbrush Tuff encompasses the majority of the low density tuff occurring in the unsaturated zone in Rainier Mesa. The zeolitization at the base of this unit is responsible for the greater mean density seen in the histogram of figure 18c. The term "Paintbrush Tuff" is often used in discussions concerning geology and its relationship to nuclear experiment siting to collectively describe the low density, higher permeability, unsaturated bedded tuff found between the top of zeolitization and the base of the welded caprock. Other units are present within the Paintbrush at the southern and northern ends of the section on figure 3 The Paintbrush Tuff as defined by Byers and others (1976) is restricted to the tuff between the top of the Stockade Wash Tuff and the base of the Rainier Mesa Member, and includes the Tiva Canyon Member. The distributions of density within the Stockade Wash and Tiva Canyon, where identified, are listed on figure 18. The Tiva Canyon does not appear to be within the zeolitized zone, thus accounting for its lower density distribution on figure 18. The higher density Stockade Wash forms the top of zeolitization in two holes in the southern portion of Rainier Mesa (fig. 9). The logs indicate that, except for zeolitization, these ash-flow tuffs do not appear to differ noticeably in density from the adjacent bedded tuffs in this area.

The bedded and ash-flow tuffs of Area 20, and the lava and tuff of Deadhorse Flat described by Maldonado and others (1979) in various drill holes (figs. 9, 11), also do not appear distinguishable in density from surrounding tuffs. Byers and others (1976) consider the tuffs formerly ascribed to lava and tuff of Deadhorse Flat in the vicinity of Rainier Mesa as local bedded tuff.

Based on the density logs on figures 9-11, all the units between the base of the caprock and the Grouse Canyon Member or tunnel bed 5 appear to be reasonably grouped in either the zeolitized or unsaturated zone without violating the physical properties generally associated with these definitions in nuclear testing.

The Paintbrush Tuff is one of the few formations at NTS where, at many locations, 300 to 700 ft of low density unsaturated tuff are present with porosities commonly exceeding 40 percent (K.A. Sargent, U.S. Geological Survey, written commun., 1966).

Tunnel bed 5--Tunnel bed 5, where found above zeolitization, exhibits the lowest density and probably the highest permeability in the Rainier Mesa area. Densities in this unit can approach 1 g/cc, and densities of less than 1 g/cc and porosities approaching 70 percent have been measured on outcrop samples obtained in Yucca Flat (K. Puchlik, LLNL, written commun., 1973). The distinct signature of this unit is evident on the density logs on figures 9-11. The predominant lapilli pumice and high porosity in this unit results in distinctly low density. Below the top of zeolitization in the southern end of Rainier Mesa, this unit is only partially zeolitized just below the Grouse Canyon (fig. 9). Where zeolitization has progressed in this unit, as in g.10#3 for example, it is still characterized by a generally lower density compared to surrounding beds. (The p#4 hole is an exception to this, as is the general absence of lower densities in the Paintbrush Tuff in that hole, fig. 20.) The initial high permeability of this unit may explain its lower density and partial zeolitization. There is an apparent absence of compaction in this unit, even where not overlain by welded Grouse Canyon. Locally in other zeolitized units in Rainier Mesa, such as tunnel bed 4k, pumice altered to zeolite appears to have been compacted and exhibits a pronounced elongate and flowlike appearance.

Tunnel beds 3 and 4--These units comprise the chief media in which nuclear experiments are sited. The subunit densities in these units are discussed in the next section.

Tub Spring Member--The absence of welding in this unit in the drill holes on Rainier Mesa proper is responsible for its lower density compared with the T-tunnel area (fig. 19). The distribution of the densely welded portion of this unit has been discussed in the report on velocity (Carroll and Magner, 1988). Velocity appears to yield more dramatic contrasts due to welding than does density. The presence of densely welded Tub Spring beneath the G-tunnel area is postulated based on its presence in HTH#1. The thickening of the densely welded Tub Spring north of Rainier Mesa is apparent on figure 11.

Older tuffs--The tuffs stratigraphically beneath the Tub Spring exhibit higher average densities than the overlying units as evidenced by the data on figure 19. Individual units in these rocks have not received as much study as have the overlying units, which are more directly involved in experiment siting in Rainier Mesa. The large density contrast between the paleocolluvium and overlying tuff is of note regarding seismic reflection, although log coverage in this unit and in others in the lower part of the section is not extensive.

Pre-Tertiary rocks--Coverage is inadequate in these rocks to place great reliance on the densities indicated on figure 19. The quartz monzonite overlying the quartzite in the n#10 hole is weathered material of only 30 ft thickness and may be rubble. Unweathered quartz monzonite can be expected to exhibit densities in the range 2.6 to 2.7 g/cc. The density of the quartzite is not unreasonable for that rock type. The carbonate rocks in the Rainier Mesa area vary in density. However, core and velocity data from the Dolomite Hill hole indicate that the unweathered rocks are probably higher in density than shown on figure 19. The core densities of 10 samples from that hole range from 2.7 to 2.86 g/cc (C. Roach, U.S. Geological Survey, written commun., 1959). Densities of various pre-Tertiary rock types found at NTS have been reported by McKague (1980) who presents a larger suite of samples than reported here.

DISTRIBUTION OF DENSITY IN SUBUNITS IN TUNNEL BEDS 3 AND 4

Tunnel beds 3 and 4 are the tuffs in Rainier Mesa in which the majority of nuclear testing has been done, and consequently where most core tests have been performed. The density distributions indicated by the density logs for these two units are shown on figures 21 and 22. Maximum densities are found in tunnel bed subunits 3A, 3D, 4E and 4J. Perhaps fortuitously, two of these units (3A and 4J) are marker horizons on density logs, and three (3A, 3D, and 4J) are widely correlated resistivity horizons on electric logs.

The tunnel bed subunits are the only stratigraphy wherein extensive comparisons with core can be made. Because these subunits are chiefly in the zeolitized zone contamination by invasion is not of concern. However, such a comparison is not unbiased because core from these units was used to calibrate several of the logging tools. The comparison of core and density log data in these subunits is shown in table 12. The core data were obtained from Brethauer and others (1980).

The major difference in the comparison is found in tunnel bed 4K in the N-tunnel area. This is due to the inclusion of partially zeolitized tuff from several holes in the density log averages (fig. 10a). The core data, on the other hand, are practically all zeolitized. The absence of data from tunnel bed 3 in the E-tunnel area is because tunnelling for experiment siting is too hugh in the stratigraphic section to encounter these subunits. Consequently, core measurements are rare in this unit.

(p. 59 follows)

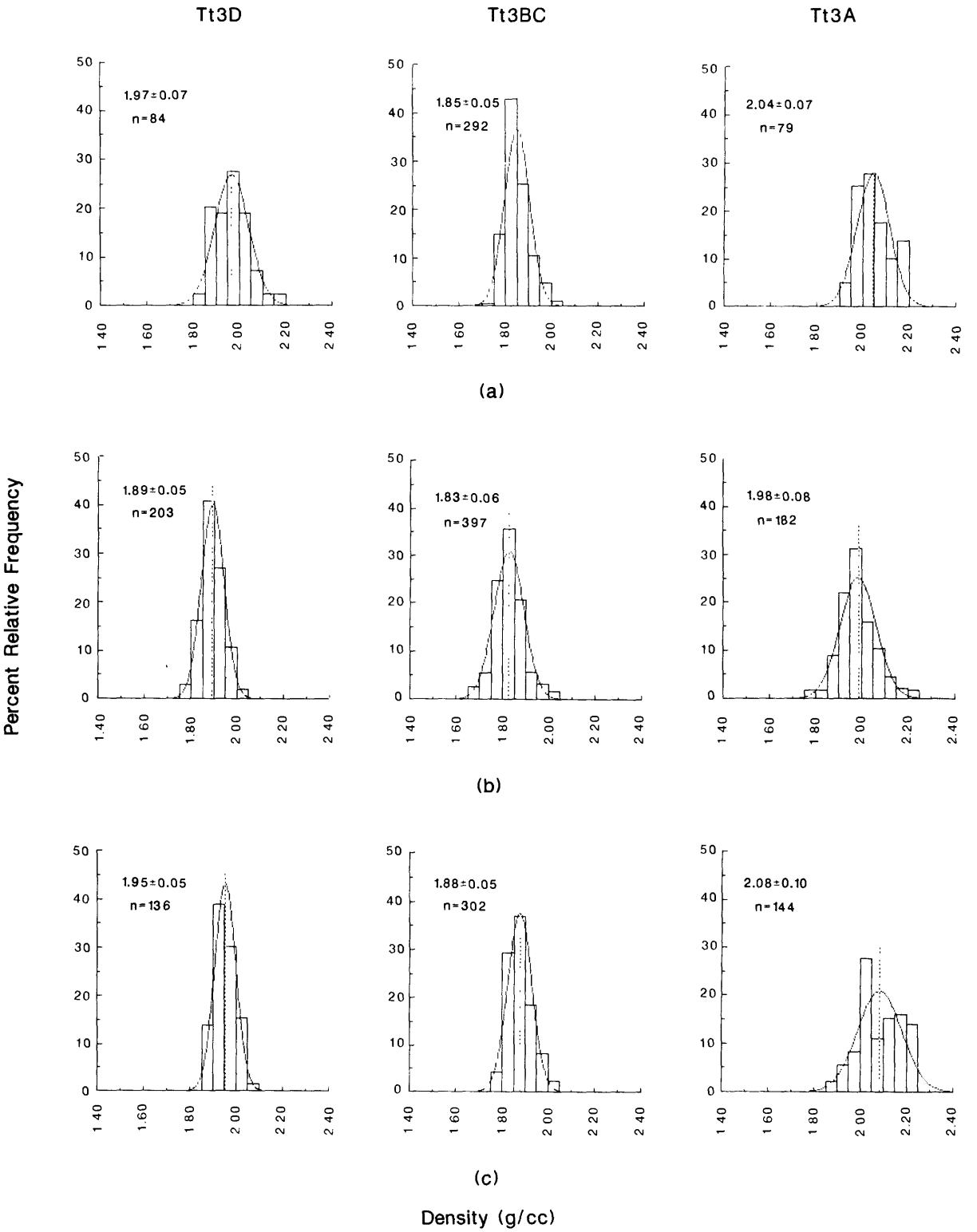

Figure 22.--Histograms of densities obtained from density logs within subunits in tunnel bed 3 showing mean, standard deviation, and number of samples (n). Data are separated into (a) T-tunnel, (b) N-tunnel, and (c) E-tunnel complexes.

Table 12.--Comparison of density log and core densities in geologic subunits in tunnel beds 3 and 4 for three principal tunnel complexes in Rainier Mesa area

[Only subunits with core sample sizes >30 are listed][1]

Subunit	E-tunnel[2]			N-tunnel[3]			T-tunnel[4]		
	Log (g/cc)	Core (g/cc)	Percent difference	Log (g/cc)	Core (g/cc)	Percent difference	Log (g/cc)	Core (g/cc)	Percent difference
4K	1.85±0.11(361)	1.89±0.10(184)	-2.2	1.83±0.17(850)	1.92±0.15 (85)	-4.9	---	---	---
4J	1.92±0.08(122)	1.94±0.08(155)	-1.0	---	---	---	---	---	---
4H	1.83±0.06(121)	1.88±0.08(139)	-2.7	---	---	---	---	---	---
4G	1.85±0.04 (58)	1.86±0.06 (35)	-0.5	1.83±0.13(116)	1.86±0.11 (32)	-1.6	1.85±0.09 (59)	1.85±0.08 (40)	0.0
4F	---	---	---	1.86±0.10(487)	1.84±0.08 (31)	1.1	---	---	---
4E	---	---	---	1.90±0.08(176)	1.91±0.07 (33)	-0.5	---	---	---
4ABCD	---	---	---	1.86±0.07(263)	1.88±0.08 (99)	-1.1	1.87±0.09(127)	1.88±0.09(102)	-0.5
3D	---	---	---	1.89±0.05(230)	1.91±0.05(101)	-1.1	1.97±0.07 (84)	1.92±0.08 (31)	-2.5
3BC	---	---	---	1.83±0.06(397)	1.88±0.08(262)	-2.7	1.85±0.05(292)	1.90±0.08 (59)	-2.6
3A	---	---	---	1.98±0.08(182)	1.93±0.08 (91)	2.5	---	---	---

[1]Mean, standard deviation, and number of samples (parentheses) are listed. Reference for percent difference is log.

[2]Based on e#1, e#3, and n#6.

[3]Based on n#2, n#4, n#8, n#9, n#10, and n#11.

[4]Based on t#3, t#4, and t#5.

There also exists the possibility of sample bias in the data comparison because of the small sample, often no more than a chip, on which many of the laboratory measurements are made. This may account for the general negative differences in the averages (average core density higher than average log density). This difference is opposite to what might be expected if it were due to neglect of a water correction to the electron density. However, the difference is in the proper direction if errors due to unrecognized proximity effects were included in reducing the data obtained with slim-hole tools. Given the overall uncertainties in the reduction techniques, the agreement is considered excellent.

SOME PECULIARITIES NOTED IN INTERPRETING DENSITY LOGS

We have noted peculiarities on several density logs obtained in the Rainier Mesa area. All occur in the unsaturated zone within the Paintbrush Tuff. These observations are considered a valuable guide for future interpretation.

Figure 23 illustrates the appearance of apparently dense layers on two logs obtained within the friable tuff in the unsaturated zone at the location of an obstruction resulting in an undersized hole. There is nothing in the drilling history of the g.10#3 or the t#5 hole to suggest operational reasons for the undergauge portions of the hole. Drilling rates and operations through these intervals were normal, as they were up to the time of logging, and the reason for obstructions at these locations is unclear. These zones, near 475 ft in both holes, exhibit relative densities approaching or exceeding those of the densely welded Rainier Mesa Member. The densities indicated are impossibly high for the lithology involved and are attributed to the interaction of the obstruction with the logging sonde. This interaction has resulted in an abnormally low count rate being detected at the receiver, resulting in high apparent densities unrepresentative of the tuff.

The logs shown on figure 24 are less simply explained. The density logs obtained in these three holes all indicate densities in the friable Paintbrush Tuff which equal or exceed the density of the densely welded portion of the Rainier Mesa Member, a geologically unfeasible condition. These holes were all logged with 2.25-in. diameter sondes and the holes were dry when logged through the portions depicted.

The log in the e.14 PS#1 hole is explained by the contractor as a difference in response due to the decrease in bit size (3.75 to 3.0 in.) occurring at 310 ft. Because of the differences in sonde/borehole wall curvature, this results in the density/count rate relationship applicable in the upper part of the hole being about 0.6 g/cc too high when applied in the smaller diameter section of the hole. The low-density base of the nonwelded Rainier Mesa Member was noted in core near 300 ft in this hole, however, the response of the density sonde to the hole size change occurring at 310 ft is sufficient to bring the count rate to a level suggesting welded tuff in the basal portion of the Rainier Mesa ash flow. No core was recovered in this hole below 375 ft, and thus no attempt was made to interpret the log. It is apparent, however, that when dealing with such small hole sizes with this tool, a hole rigidly in gauge is required before any reasonable density

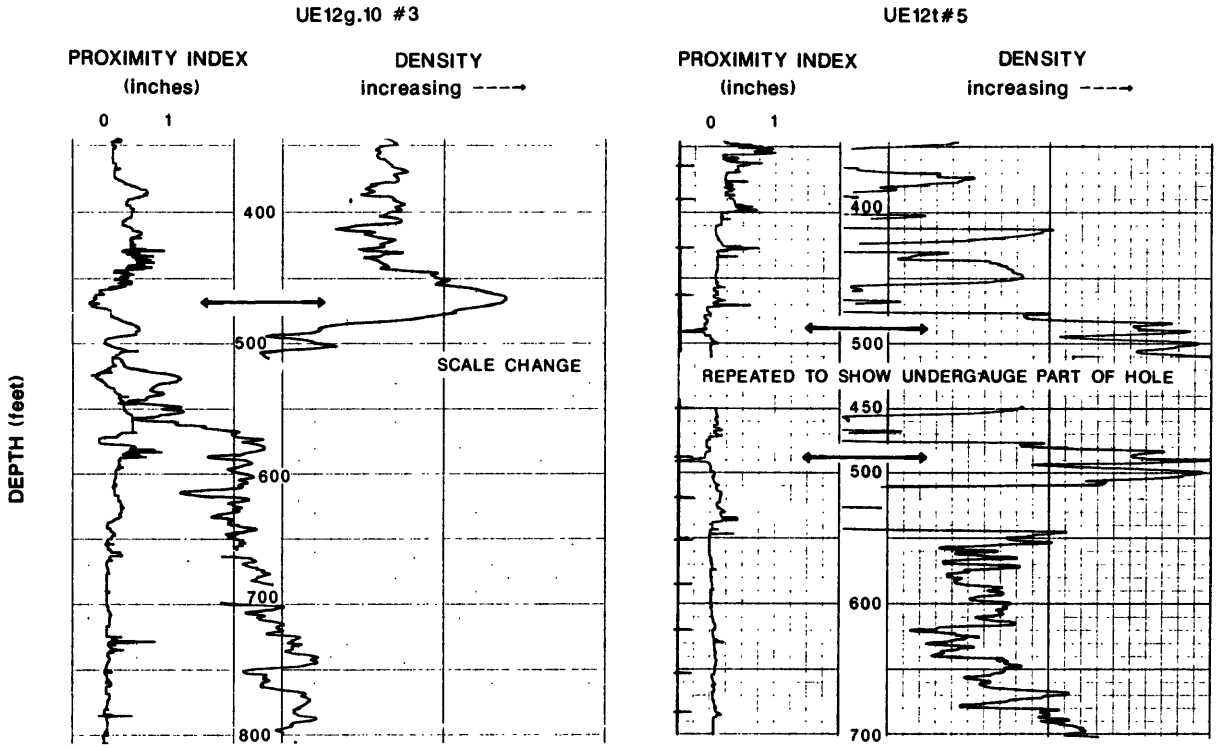

Figure 23.--Density logs exhibiting erroneous high densities caused by undergauge section of hole (arrow). Formation is Paintbrush Tuff. Both holes (4-in. diameter) were logged with 2.25-in. sonde.

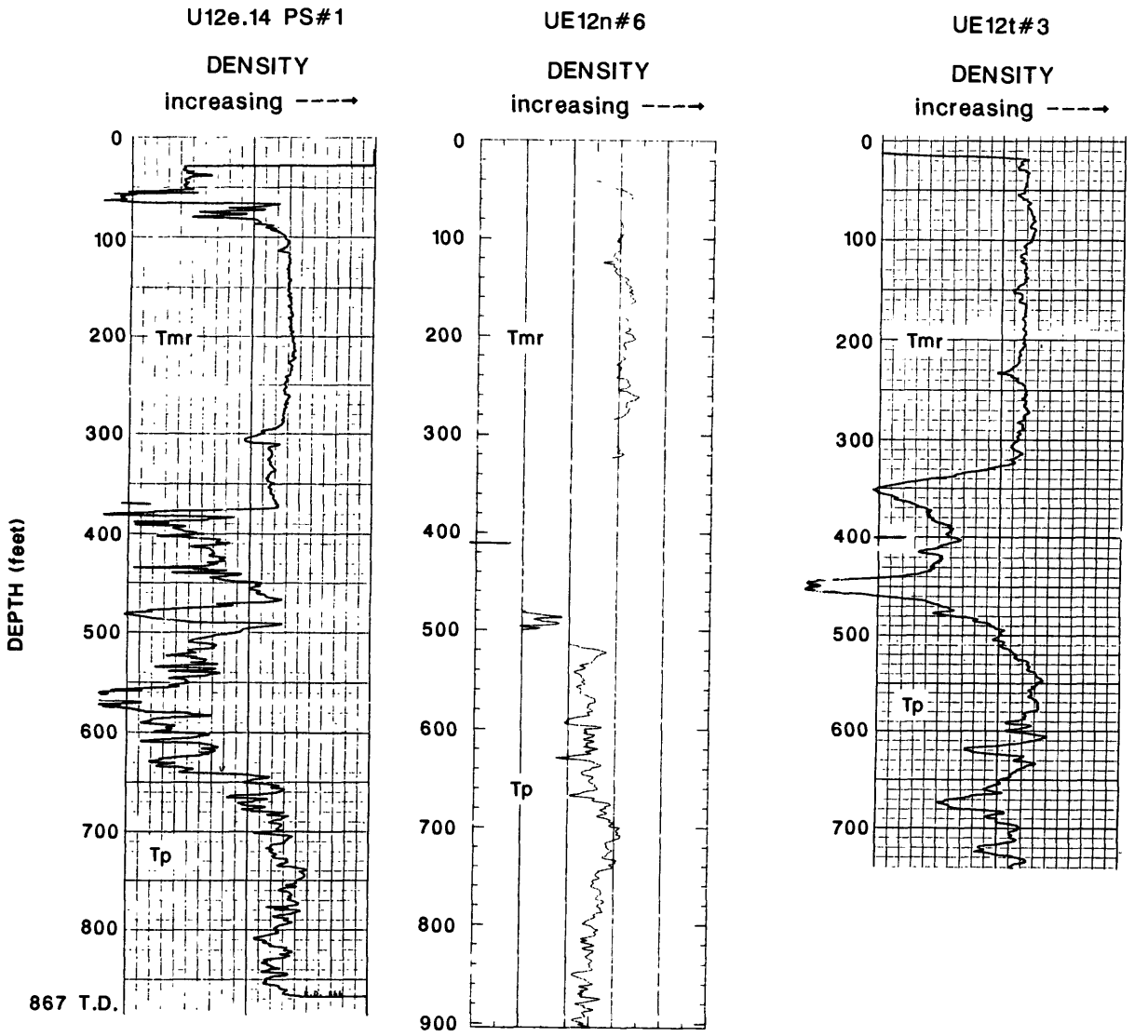

Figure 24.--Density logs from three drill holes in Rainier Mesa exhibiting densities in friable tuff greater than density in densely welded Rainier Mesa Member.

interpretation may be expected, as even small variations in hole diameter result in large changes in tool response.

In the n#6 hole, the equivalence of the apparent density of the Paintbrush Tuff at 700 ft with that of the Rainier Mesa is again not geologically feasible, and caliper effects cannot explain this difference. We again have a friable tuff density equating to that of densely welded tuff. A scale change by the logging operator at 480 ft appears to be consistent with count rates reported on the log. (Only the portion of the log unaffected by borehole cave, which was excessive between 320 and 480 ft, is shown on the figure.) Several possibilities could explain this phenomenon; either there has been operator error in tracking the rapidly oscillating count rates in the low density and caved section in the vicinity of the scale change, the friable tuff has been invaded with particulate matter in the pores as well as fluid, or the tool is not functioning. The density of a waxed welded tuff sample obtained at 233 ft is 2.25 g/cc. A waxed sample obtained in the Paintbrush Tuff at a depth of 760 ft exhibits a density of 1.80 g/cc. This requires an available uninvaded porosity of over 40 percent in the Paintbrush to yield an invaded density equivalent to the Rainier Mesa Member, a geologically unreasonable value. We would expect 20 percent air-filled porosity available for invasion as optimistic for this formation. Some combination of compaction and (or) invasion of slurry with a density greater than 1.0 g/cc is required. This mechanism must sufficiently raise the density within about a 6-in. annulus around the hole to over 0.4 g/cc to produce the indicated density. The drilling history in this hole indicates no problems in this interval although there is mention of a trip at 2,100 ft to "remove cake from the drill rods," suggesting possible mud cake problems. We note in this regard that thin mud cake, consisting of cuttings, is observed on core from this zone. This raises the interesting question when drilling with lost circulation--"where do the cuttings go?" If mud cake exists on the walls of Rainier Mesa area drill holes, it does not result in undergauge signatures on caliper logs. Labo (1986, p. 145) illustrates the significant effect high density mud cake can have in increasing the density observed on logs. The absence of a marked indication of the top of zeolitization in the vicinity of 959(?) ft (not shown on figure 24) might also suggest poor tool response. The matter is unresolved; the density indicated is obviously not representative of the Paintbrush Tuff. However, we believe the tool is responding accurately to what it sees.

In the t#3 hole shown on figure 24, the same situation prevails as in n#6, except that in this hole no scale change occurs on the log. The hole is in gauge except for the interval from about 330 to 480 ft, and the friable tuff again indicates an apparent density on the log easily in excess of the densely welded Rainier Mesa. Examination of the core in the interval 550 to 580 ft indicates a friable, poorly cohesive tuff typical of the Paintbrush Tuff elsewhere. A density measurement on an unwaxed sample in this interval yields a density of 1.68 g/cc. An unwaxed sample of welded tuff from the interval 250 to 270 ft exhibits a density of 2.38 g/cc, again indicating that invasion by fluid alone requires unrealistic values of available gas-filled porosity to explain the high apparent density below 500 ft. The drilling history indicates no abnormalities in drilling before logging, and we are left with the same uncertainties associated with n#6.

If the high observed densities in these two holes are actually the result of a drilling phenomenon, as we believe them to be, then we must expect its presence in instances where we cannot recognize it as easily as in these two cases. This is a problem separate from that of invasion. During invasion the natural-state condition of the formation is altered, but this does not exceed the density limits imposed by equation 3 when assuming a density of 1 g/cc for the invading fluid. In the friable tuff in t#3 and n#6, the material to which the logs are responding is considerably denser.

Interpretations of the logs in t#3 and n#6 were not attempted above the fluid level because of the obvious lack of representation of the formation density by the log. Attempts to correlate the logs with core densities would be fruitless in these intervals because the core obviously would not reflect the densities indicated by the log.

We have also noted in our examinations of density logs in Rainier Mesa that a popular method of checking interpretations of density logs, that is, by equating densities across the fluid boundary above and below the fluid level, appears hazardous unless one is certain of the lithologies involved. Fluid level in many holes in the Rainier Mesa area is near the top of zeolitization, and densities across this contact do not equate. The n#11 hole illustrates this phenomenon (fig. 10a). The break in the log near 780 ft represents the break between two logging runs occasioned by drilling at different periods. The difference in density of the tuff across this horizon is striking, and based on an assumed continuity in density, one might suspect that the calibration of the log is in error in one of the logging runs. However, examination of the logs in n#10 (fluid level at 1,215 ft) and n#2 (fluid level at 1,235 ft) indicates that the lithologic signature at this horizon is reasonable, and the formation densities across the fluid boundary in n#11 are, in fact, significantly different.

The density across the fluid level at 820 ft in the g.10#3 hole also exhibits a shift (fig. 9). However, measurements on three splits from a waxed sample obtained at 778-779 ft yield densities of 1.93-1.94 g/cc. On the other hand, two splits from a waxed sample from the density low at 932 ft exhibit densities of 1.65 and 1.68 g/cc. (This is somewhat tempered by the measurement of densities of 1.70-1.80 g/cc on four splits from two waxed samples from 833 to 836 ft, suggesting invasion problems.)

We offer a final data set illustrating other difficulties encountered in interpreting uncalibrated logs with core from the unsaturated zone. The e#1 and e#3 hole were both calibrated with core (fig. 9). The fluid level in e#1 was 710 ft and in e#3 was 1,012 ft at the time of logging. The fluid level was at 597 ft and 880 ft in the e#1 and e#3 holes, respectively, within an hour prior to running the density logs in these holes, and probably somewhat higher while circulating prior to logging. The break in the density at the fluid level in e#1 shown on figure 9 is not particularly disturbing when comparing the log character with that in the e#3 hole, however, unlike e#3, the plot of core versus count rate in the dry part of this hole was not well correlated (fig. 25).

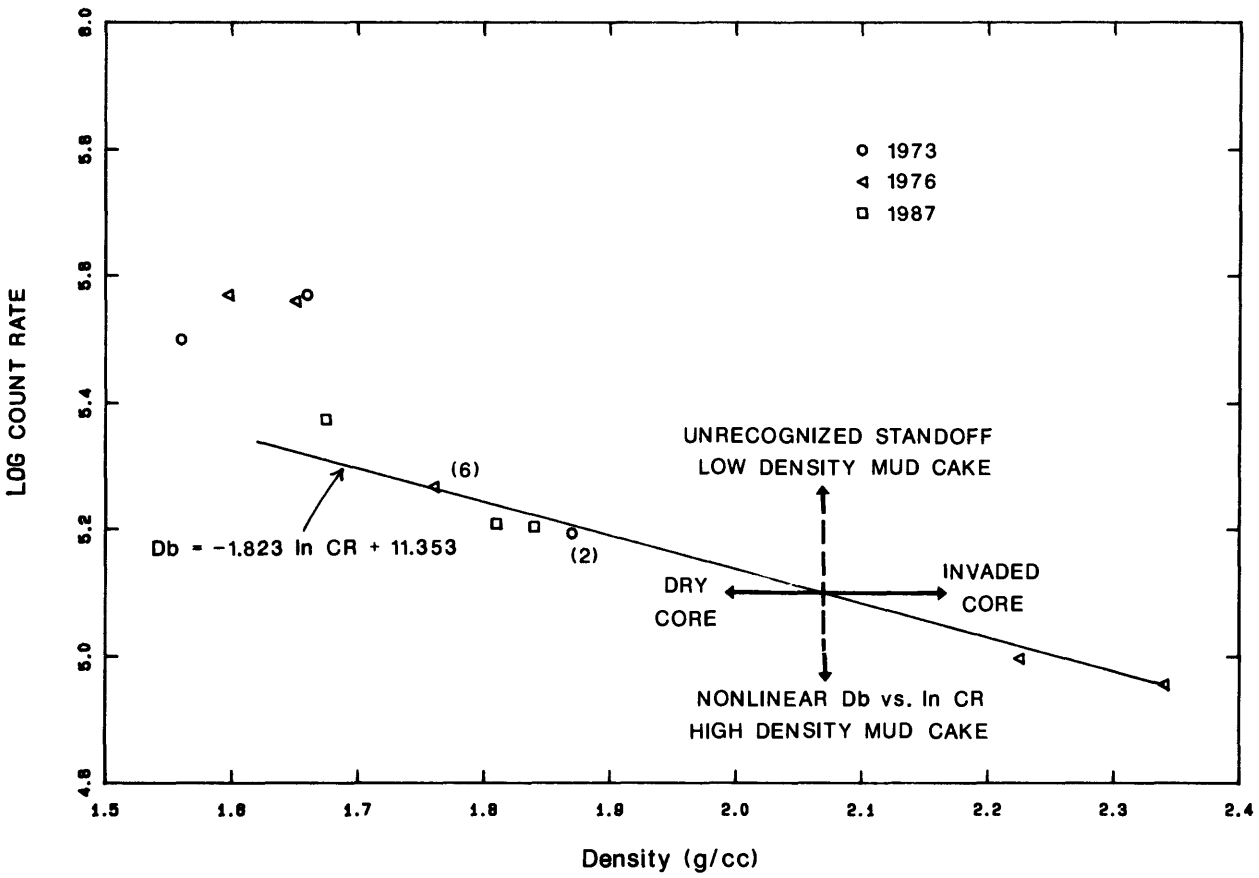

Figure 25.--Log of count rate versus density of samples from dry portion of e#1 hole. Numbers in parentheses are number of samples averaged. Cross indicates direction erroneous data point would deviate from log-linear relationship if (——) core densities in error, or (---) count rate in error.

These holes, like the majority in this report, were drilled using "conventional circulation with mud," a description which probably does not adequately describe the controls and variables in the fluid impacting the unsaturated zone. Preserved core samples from e#1 were measured at several different periods: after the initial drilling in 1973, in 1976 when the logs were first calibrated using core, and during reexamination for this study.[9] The core values suggest that the waxed samples have retained their natural-state condition with time, but the departure of the plot from linearity at low densities on figure 25 yields uncertainty as it did in the 1976 study. The reason for this departure is unclear and cannot be attributed to inherent curvature in the density/count rate relationship at low density, because it is in the direction opposite that to be expected. We consider several explanations possible; the core and not the formation has been invaded (requiring about 20-30 percent air-filled porosity), there are standoff effects in the tool response not evident on the caliper log from this hole, the count rates representing the core in the vicinity of 1.8 g/cc are too low due to effects such as seen in t#3 and n#6, or operator error. (The probability that core densities in the welded tuff (2.34 and 2.23 g/cc) are too high to represent that unit in this hole is not likely, although unrecognized proximity effects could also affect these data points.) The various possibilities for error in deriving the density relationship from core are illustrated on figure 25.[10] The line listed on the plot is our best estimate of the correct count rate/density relationship operable in the dry part of this hole. The poor fit is not generally representative of the core versus count rate plots obtained in most of the holes logged with slim-hole tools and interpreted with core.

These results indicate that the use of core data to calibrate logs may be unjustified in some cases, because uncertainty exists not only with regard to the extent of core and formation invasion, but the relative degree of each. One argument for consistency of results in the unsaturated zone is the degree to which one may obtain linearity in a plot such as shown on figure 25. How far one may extend the argument that such consistency indicates a true representation of the natural-state density is unresolved. The foregoing serve to emphasize, however, the imperative necessity of independently calibrated logging tools as a starting point for any interpretation.

[9]The results of the 1976 study have been reported (U.S. Geological Survey, 1978). Results presented in this report differ from those reported in 1976.

[10]In the interest of what gas voids might be available, the core data (three splits from a waxed sample from the low density zone at 290 ft) plotted at 1.6 g/cc was found to be saturated, whereas the data plotted at 1.65 g/cc (three splits from a waxed sample at 463 ft) was found to contain 8 to 10 percent available gas voids. The six samples represented by the average density at 1.76 g/cc (obtained from 524 to 629 ft) exhibited gas voids from 4 to 14 percent.

SUMMARY AND CONCLUSIONS

Within 35 holes in the Rainier Mesa area, only 10 holes were logged with calibrated tools. Ten additional holes were interpreted by matching log response against core density. The lack of consistent and systematic standards for the logging tools used in Rainier Mesa, which is somewhat due to the time period over which these measurements were taken, leads us to conclude that without a strong knowledge of the geology and the evolution of logging in the area, it would have been difficult to place confidence in our ability to reduce the logs. Hopefully, applications of density logs in the future will be less dependent on institutional memory as a guide to the correctness of results. Given the advancing state of slim-hole logging technology, there is no reason to believe otherwise.

On the other hand, the logs have yielded considerable insight into the regional geologic picture in the Rainier Mesa area and have modified several of our preconceived notions. Several logs which we once felt were malfunctioning, have in fact, proven to be reflecting the true density conditions in the volcanic rocks. This is particularly true with regard to the variability of zeolitization.

With regard to accuracy of the densities derived, we are faced with some uncertainty because of the variables involved in reducing the logs. In the zeolitized tunnel beds below fluid level, accuracies of average densities over tens of feet should be within a few percent, as the comparisons in table 12 confirm. In the unsaturated zone we must rely somewhat on experienced judgment. In the ideal case, with all tools calibrated, our concern would be only with the extent that the densities derived from these tools represent the natural-state density of the tuff in light of possible invasion, or other drilling effects such as illustrated on figure 24. However, given the unknowns of proximity and the low-density response of the tools, uncertainties are amplified when we include the slim-hole tools calibrated with core. We believe in general, however, that the data represent the density in the unsaturated zone to a reasonable degree, particularly because of generally reasonable core/count rate plots. Modifications to the data, if any, can only come with more rigid calibration standards for density tools used in future holes, coupled with greater attention to the effects of the drilling environment on the recorded density.

The following are other items of note derived from this study;

1) The grain density of the volcanic rocks depends on a wider spectrum of minerals than normally found in most logging applications, however, preliminary evaluations suggest that a knowledge of the amount of glass or zeolites in the rock may be adequate to estimate the grain density with a high degree of accuracy. The utility of this observation, or the desirability of refining this observation with more exhaustive correlations of grain densities with X-ray analyses, is dependent on whether geophysical logging procedures can be developed to determine the amount of these two minerals present.

2) Errors in density arising from differences in Z/A of Rainier Mesa rocks, as opposed to values normally assumed in logging, are generally trivial. However, errors based on assumptions used with commercially available compensated density logs could be large for high gas-filled porosity

in the unsaturated zone. Calculations indicate that air-filled porosity of a sufficient amount to render this error significant is not normally present in the tuff. Maximum error is generally less than 3 percent in density if no correction is made to the density recorded by compensated tools.

For density logs yielding output as electron density, errors due to ignoring water content corrections are generally less than 2 percent. These errors are in opposite directions. Uncorrected gas voids effects in compensated tools yield densities less than true density, whereas, uncorrected water contents to densities output by tools yielding electron density produce densities higher than true density.

3) Presently available commercial tools are generally inadequate to obtain accurate densities throughout the range (1.0 to 2.9 g/cc) existing in the Rainier Mesa geologic section. The presence of low density tuffs requires calibrations in the 1 g/cc region, and we feel that tools utilizing calibration blocks, similar to the proximity tool discussed in this report, are highly preferable to compensated density tools, unless algorithms are available for this density region. With the addition of such blocks, slim-hole tools also require either proximity corrections or at least a proximity indicator to allow rejection of intervals exhibiting standoff.

4) When calibrating density logs with core (a last stand procedure), use of standard laboratory sample data requires several points within any particular zone on the log. Within the unsaturated zone, the use of this procedure may be fruitless as several logs suggest the core may not be representative of the log reading or vice versa. The ability to produce a reasonable plot of core versus log data may be a criterion of acceptance of such a procedure. Given such a criterion, the technique cannot be applied without a complete knowledge of tool parameters with regard to deadtime, etc. This uncertainty renders interpretation of old logs by this technique subject to question.

5) There are readily correlatable zones on density logs obtained in the Rainier Mesa area. Marker horizons correlatable over 8 km can be observed on the logs in tunnel bed subunits 3A, 4J, 4K, and tunnel bed 5. Most conspicuous, of course, are some of the welded units. The distributions of densities within individual geologic units when separated into the T-tunnel, northern N-tunnel, and central and southern Rainier Mesa areas reflect the geology of these units locally, particularly the effects of zeolitization in the Paintbrush Tuff and upper tunnel bed 4. The bimodal distribution of the density of the Rainier Mesa Member reflects the welded and nonwelded portions of that unit. The densities in Rainier Mesa volcanic rocks roughly increase with depth, higher and lower densities being grossly separated at the zeolitization level, and within the saturated tuffs at the base of tunnel bed 3. The lowest density unit in the area is tunnel bed 5, which locally can exhibit densities near 1 g/cc. The range of densities of rocks in the area encompass the range generally found elsewhere at NTS.

6) Comparisons of the logs with core in the subunits in tunnel beds 3 and 4 (no statistically significant samples sets are available outside these units) shows agreement within generally less than 2 percent.

7) The density log is highly diagnostic of the top of pervasive zeolitization in the volcanic rocks. Density logs generally exhibit a pronounced increase in density at this horizon, which is considered the probable top of saturation of the perched water in the tuff. This increase in density (often accompanied by an increase in velocity) is one definition of the "top" of zeolitization based upon geophysical evidence. In isolated locales, zeolitization is characterized by a series of intermittently zeolitized horizons which occur above zeolitization for some distance. Examples are found in the n#8-n#10, t#2, and t#5 holes. Zeolitization at these locations may be influenced by the local paleotopography. Zeolitization proceeds higher in the geologic section to the north and south of the Rainier Mesa area in the holes examined. Throughout the region of the drill holes discussed in this report, the elevation contour of the top of zeolitization varies by over 1,000 ft, being highest on Rainier Mesa (6660+ in n#4) and lowest on Aqueduct Mesa (5410 in p#3). In Rainier Mesa proper, the elevation in drill holes varies by over 500 ft.

8) The degree of saturation of the friable tuff in the unsaturated zone remains an open question due to limited data. Results in the only drill hole with extensive core and reliable density logs indicate that the core saturation exceeds that indicated by the log. These data suggest a saturation in the tuff near 60 percent. The agreement of this result with 12 natural-state samples obtained from tunnels in the unsaturated zone suggests saturation in some zones may be closer to 60 percent of the available core space rather than 80->90 percent often reported in core measurements. The question is considered not satisfactorily resolved.

9) Overburden density at tunnel level varies from 1.62 g/cc in the N-tunnel area to 1.98 g/cc in p#4, and appears to be chiefly related to the thickness of the welded caprock on Rainier Mesa (or to the thickness of vitric ash-fall tuff in the section). The degree of agreement of vertical stress measured at tunnel level with that calculated from overburden density is not entirely clear from the available data set, although measured vertical stresses appear lower than those calculated from density logs.

10) There are several logs which exhibit peculiarities in the unsaturated zone indicating apparent densities in the friable Paintbrush Tuff in excess of the welded caprock. Although we believe the drilling environment is the reason, the exact cause cannot be isolated and the densities cannot be explained by ordinary invasion parameters. If the observations are due to a drilling phenomenon, then considerable care will be needed to determine the cause, because such effects may be present in the recorded density and not produce such obvious contradictions on the logs.

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APPENDIX A

Listing of depth, density, and integrated density derived from density logs for drill holes in Rainier Mesa area.

Density data are listed for 20 holes in the Rainier Mesa area. The data from 10 holes were derived from calibrated tools, and the remainder were derived from logs calibrated with core. With the exception of a USGS compensated-density log run in the lower part of UE12n#11, and a Lane Wells log obtained in HTH#1, all of the logs were obtained by Birdwell, Inc.. There are 15 other holes in the Rainier Mesa area in which density logs were obtained, which for the various reasons listed in table 1, are not included in this appendix.

The data are listed, generally on 1-ft intervals, as depth, density, and integrated density. Where density data are missing, integrated densities through these intervals have been determined by interpolating a linear change in density between the end points of the interval. Much of these data have been reported to the Defense Nuclear Agency in technical memoranda, and the data presented here should be in agreement with those earlier interpretations except for minor differences arising from redigitization of the logs for this report. The data in technical memoranda were generally reported on 5 or 10 ft centers, and were often derived using the average count rate observed over these intervals. The log from the UE12e#1 hole is an exception. The density log from that hole was reinterpreted for this report. Notes concerning particular holes follow:

HTH#1--Although the log run in this hole utilized first generation technology, we have no reason to suspect the accuracy of the data. The densities listed are as presented by Lane Wells using their standard calibration procedures and there appear to be no caliper anomalies in the interval reported, which only covered the carbonate section penetrated by the hole.

UE12g.10 #6--The proximity indicator for this log indicates no standoff and was not digitized. The log was interpreted assuming zero standoff.

UE12e.14 PS#1--Hole has oddities as described in text which negate interpretation.

UE12n#6--Log has oddities as described in text which negate interpretation in dry portion of the hole.

UE12n#8--Only hole in which omni-directional tool interpretation is reported. Hole badly caved in many intervals.

UE12n#10--Results from both proximity and slim-hole tools interpreted in this hole.

UE12n#11--A proximity tool (not reported) was run in this hole over the same interval as the Birdwell compensated log. Logs agree in many intervals with the mean density of the compensated device 0.4 g/cc higher than the proximity tool without water correction.

U12n.08 PS#1--Original interpretation of density log from this hole was done on 2-ft intervals. Original data were used in this report.

UE12t#3--Hole has oddities as described in text which negate interpretation in dry portion of hole.

UE12t#4--Caving negates interpretation in dry portion of hole.

UE12e#1

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
22	1.91	0.00	72	2.24	104.37	122	0.00	219.36
23	1.97	1.97	73	2.24	106.61	123	0.00	221.65
24	2.03	4.00	74	2.27	108.88	124	0.00	223.94
25	2.04	6.04	75	2.26	111.14	125	0.00	226.23
26	2.07	8.11	76	2.25	113.39	126	0.00	228.52
27	2.09	10.20	77	2.23	115.62	127	0.00	230.81
28	2.10	12.30	78	2.22	117.84	128	2.29	233.10
29	2.10	14.41	79	2.21	120.05	129	2.32	235.42
30	2.12	16.52	80	2.22	122.26	130	2.31	237.73
31	2.12	18.64	81	2.26	124.52	131	2.28	240.00
32	2.11	20.76	82	2.32	126.85	132	2.30	242.31
33	2.11	22.87	83	2.33	129.18	133	2.34	244.64
34	2.12	24.99	84	2.34	131.52	134	2.33	246.97
35	2.14	27.13	85	2.28	133.80	135	2.36	249.33
36	2.15	29.29	86	2.28	136.08	136	2.36	251.69
37	2.14	31.43	87	2.31	138.39	137	2.33	254.02
38	2.10	33.53	88	2.28	140.67	138	2.30	256.33
39	2.11	35.63	89	2.28	142.95	139	2.27	258.60
40	2.13	37.76	90	2.30	145.25	140	2.28	260.88
41	2.13	39.89	91	2.32	147.57	141	2.26	263.15
42	2.12	42.02	92	2.34	149.92	142	2.30	265.45
43	2.08	44.10	93	2.39	152.31	143	2.28	267.73
44	2.07	46.18	94	2.39	154.70	144	2.30	270.03
45	2.03	48.21	95	2.36	157.06	145	2.33	272.37
46	2.00	50.21	96	2.32	159.37	146	2.31	274.68
47	1.99	52.20	97	2.33	161.70	147	2.28	276.96
48	1.99	54.19	98	2.33	164.02	148	2.28	279.24
49	1.96	56.15	99	2.27	166.30	149	2.36	281.60
50	1.96	58.11	100	2.26	168.56	150	2.33	283.94
51	1.97	60.08	101	2.27	170.83	151	2.30	286.23
52	1.95	62.03	102	2.28	173.12	152	2.29	288.52
53	1.98	64.01	103	2.31	175.42	153	2.30	290.82
54	2.01	66.02	104	2.33	177.75	154	2.31	293.13
55	2.04	68.05	105	2.34	180.10	155	2.32	295.44
56	2.09	70.15	106	2.37	182.46	156	2.31	297.75
57	2.08	72.22	107	2.33	184.80	157	2.30	300.05
58	2.08	74.30	108	2.33	187.13	158	2.32	302.37
59	2.08	76.38	109	2.31	189.44	159	2.31	304.68
60	2.10	78.48	110	2.34	191.78	160	2.28	306.96
61	2.14	80.62	111	2.35	194.13	161	2.26	309.22
62	2.17	82.79	112	2.34	196.47	162	2.22	311.44
63	2.18	84.97	113	2.29	198.76	163	2.23	313.68
64	2.12	87.09	114	0.00	201.05	164	2.26	315.94
65	2.14	89.23	115	0.00	203.34	165	2.27	318.21
66	2.13	91.36	116	0.00	205.63	166	2.29	320.51
67	2.15	93.51	117	0.00	207.92	167	2.29	322.80
68	2.17	95.69	118	0.00	210.21	168	2.28	325.08
69	2.17	97.86	119	0.00	212.50	169	2.24	327.32
70	2.15	100.01	120	0.00	214.79	170	2.23	329.55
71	2.12	102.13	121	0.00	217.08	171	2.24	331.79

UE12e#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
172	2.22	334.01	222	2.30	450.76	272	1.73	560.15
173	2.23	336.24	223	2.30	453.05	273	1.67	561.82
174	2.24	338.48	224	2.30	455.36	274	1.58	563.40
175	2.32	340.79	225	2.32	457.67	275	1.49	564.89
176	2.31	343.10	226	2.28	459.96	276	1.39	566.29
177	2.33	345.42	227	2.32	462.28	277	1.32	567.61
178	2.33	347.75	228	2.28	464.55	278	1.28	568.89
179	2.36	350.11	229	2.25	466.80	279	1.26	570.15
180	2.32	352.43	230	2.26	469.07	280	1.25	571.41
181	2.32	354.75	231	2.23	471.29	281	1.23	572.64
182	2.33	357.08	232	2.21	473.50	282	1.23	573.86
183	2.38	359.46	233	2.19	475.70	283	1.21	575.07
184	2.38	361.84	234	2.25	477.95	284	1.19	576.26
185	2.38	364.22	235	2.27	480.22	285	1.20	577.45
186	2.38	366.59	236	2.27	482.49	286	1.19	578.64
187	2.37	368.96	237	2.23	484.72	287	1.20	579.84
188	2.37	371.33	238	2.23	486.95	288	1.21	581.05
189	2.39	373.73	239	2.25	489.20	289	1.22	582.27
190	2.37	376.10	240	2.25	491.45	290	1.22	583.49
191	2.37	378.47	241	2.26	493.71	291	1.22	584.71
192	2.38	380.85	242	2.27	495.98	292	1.19	585.90
193	2.39	383.25	243	2.31	498.29	293	1.18	587.08
194	2.38	385.63	244	2.28	500.57	294	1.25	588.33
195	2.36	387.99	245	2.24	502.82	295	1.18	589.52
196	2.35	390.34	246	2.24	505.05	296	1.24	590.75
197	2.28	392.62	247	2.25	507.31	297	1.21	591.97
198	2.34	394.96	248	2.21	509.52	298	1.21	593.18
199	2.34	397.30	249	2.20	511.72	299	1.22	594.40
200	2.41	399.71	250	2.20	513.92	300	1.21	595.60
201	2.34	402.05	251	2.20	516.12	301	1.20	596.80
202	2.31	404.37	252	2.22	518.34	302	1.20	598.00
203	2.29	406.65	253	2.21	520.55	303	1.19	599.20
204	2.27	408.92	254	2.24	522.78	304	1.22	600.41
205	2.32	411.24	255	2.25	525.03	305	1.21	601.62
206	2.34	413.58	256	2.22	527.24	306	1.22	602.84
207	2.35	415.94	257	2.21	529.45	307	1.22	604.06
208	2.33	418.27	258	2.18	531.63	308	1.27	605.33
209	2.31	420.57	259	2.20	533.83	309	1.29	606.61
210	2.29	422.86	260	2.21	536.04	310	1.30	607.91
211	2.30	425.17	261	2.23	538.27	311	1.31	609.22
212	2.33	427.49	262	2.21	540.48	312	1.30	610.52
213	2.39	429.89	263	2.12	542.60	313	1.29	611.81
214	2.37	432.26	264	2.12	544.72	314	1.29	613.10
215	2.37	434.63	265	2.09	546.81	315	1.28	614.38
216	2.33	436.96	266	2.06	548.87	316	1.27	615.65
217	2.29	439.26	267	2.02	550.89	317	1.23	616.87
218	2.28	441.53	268	2.00	552.89	318	1.23	618.10
219	2.30	443.83	269	1.91	554.80	319	1.25	619.35
220	2.30	446.14	270	1.84	556.64	320	1.24	620.59
221	2.31	448.45	271	1.78	558.42	321	1.21	621.79

UE12e#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
322	1.21	623.01	372	1.42	688.63	422	1.54	761.41
323	1.22	624.23	373	1.51	690.14	423	1.55	762.96
324	1.27	625.50	374	1.53	691.67	424	1.56	764.52
325	1.26	626.77	375	1.55	693.22	425	1.55	766.07
326	1.30	628.07	376	1.57	694.79	426	1.57	767.64
327	1.30	629.38	377	1.60	696.39	427	1.53	769.17
328	1.30	630.68	378	1.61	698.00	428	1.52	770.69
329	1.30	631.98	379	1.58	699.58	429	1.54	772.23
330	1.32	633.29	380	1.56	701.13	430	1.52	773.75
331	1.32	634.62	381	1.51	702.65	431	1.54	775.29
332	1.33	635.94	382	1.51	704.16	432	1.52	776.80
333	1.34	637.28	383	1.53	705.69	433	1.47	778.27
334	1.32	638.60	384	1.49	707.17	434	1.51	779.77
335	1.30	639.90	385	1.45	708.62	435	1.52	781.29
336	1.32	641.22	386	1.45	710.06	436	1.51	782.80
337	1.31	642.53	387	1.46	711.53	437	1.61	784.41
338	1.34	643.87	388	1.47	712.99	438	1.63	786.04
339	1.36	645.22	389	1.42	714.42	439	1.59	787.62
340	1.35	646.57	390	1.37	715.79	440	1.50	789.13
341	1.36	647.93	391	1.33	717.12	441	1.58	790.70
342	1.37	649.30	392	1.31	718.43	442	1.62	792.32
343	1.36	650.66	393	1.33	719.76	443	1.60	793.92
344	1.34	652.00	394	1.35	721.11	444	1.54	795.46
345	1.32	653.32	395	1.39	722.50	445	1.42	796.88
346	1.23	654.55	396	1.48	723.97	446	1.38	798.26
347	1.22	655.77	397	1.49	725.47	447	1.23	799.49
348	1.23	657.00	398	1.47	726.94	448	1.17	800.66
349	1.25	658.26	399	1.47	728.40	449	1.16	801.82
350	1.27	659.53	400	1.45	729.86	450	1.15	802.97
351	1.29	660.81	401	1.41	731.27	451	1.19	804.15
352	1.35	662.16	402	1.43	732.70	452	1.19	805.35
353	1.32	663.47	403	1.40	734.11	453	1.18	806.53
354	1.32	664.80	404	1.40	735.51	454	1.16	807.69
355	1.33	666.13	405	1.40	736.91	455	1.18	808.87
356	1.32	667.44	406	1.41	738.32	456	1.17	810.04
357	1.34	668.79	407	1.40	739.72	457	1.18	811.22
358	1.34	670.13	408	1.36	741.09	458	1.20	812.42
359	1.35	671.48	409	1.35	742.43	459	1.27	813.68
360	1.41	672.88	410	1.33	743.76	460	1.24	814.92
361	1.41	674.29	411	1.33	745.10	461	1.22	816.13
362	1.38	675.68	412	1.37	746.46	462	1.23	817.37
363	1.36	677.04	413	1.39	747.85	463	1.22	818.59
364	1.33	678.38	414	1.42	749.27	464	1.20	819.79
365	1.33	679.71	415	1.43	750.70	465	1.19	820.98
366	1.31	681.02	416	1.42	752.12	466	1.18	822.16
367	1.28	682.30	417	1.48	753.60	467	1.16	823.32
368	1.22	683.52	418	1.54	755.14	468	1.16	824.48
369	1.18	684.70	419	1.57	756.72	469	1.15	825.63
370	1.18	685.88	420	1.58	758.30	470	1.14	826.77
371	1.33	687.21	421	1.56	759.86	471	1.20	827.98

UE12e#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
472	1.21	829.19	522	1.79	906.86	572	1.65	994.60
473	1.23	830.42	523	1.76	908.61	573	1.61	996.22
474	1.24	831.65	524	1.76	910.37	574	1.75	997.96
475	1.24	832.90	525	1.78	912.16	575	1.84	999.81
476	1.24	834.14	526	1.83	913.99	576	1.87	1001.68
477	1.24	835.38	527	1.82	915.81	577	1.87	1003.55
478	1.24	836.62	528	1.80	917.61	578	1.87	1005.42
479	1.28	837.91	529	1.82	919.43	579	1.86	1007.28
480	1.29	839.20	530	1.87	921.30	580	1.83	1009.11
481	1.34	840.54	531	1.84	923.14	581	1.82	1010.93
482	1.37	841.91	532	1.84	924.98	582	1.81	1012.74
483	1.38	843.30	533	1.75	926.73	583	1.84	1014.58
484	1.39	844.69	534	1.69	928.42	584	1.87	1016.45
485	1.42	846.10	535	1.63	930.05	585	1.88	1018.33
486	1.43	847.53	536	1.56	931.61	586	1.86	1020.19
487	1.39	848.92	537	1.56	933.17	587	1.81	1022.00
488	1.35	850.28	538	1.60	934.77	588	1.78	1023.78
489	1.31	851.59	539	1.66	936.43	589	1.73	1025.51
490	1.31	852.90	540	1.81	938.25	590	1.77	1027.28
491	1.36	854.25	541	1.84	940.09	591	1.79	1029.07
492	1.41	855.66	542	1.78	941.87	592	1.86	1030.93
493	1.44	857.10	543	1.83	943.70	593	1.86	1032.79
494	1.73	858.84	544	1.85	945.54	594	1.76	1034.55
495	1.74	860.58	545	1.78	947.32	595	1.78	1036.33
496	1.67	862.25	546	1.74	949.06	596	1.90	1038.23
497	1.66	863.91	547	1.76	950.82	597	1.92	1040.15
498	1.62	865.53	548	1.79	952.61	598	1.91	1042.06
499	1.73	867.26	549	1.77	954.37	599	1.90	1043.96
500	1.72	868.98	550	1.73	956.11	600	1.92	1045.88
501	1.71	870.69	551	1.73	957.84	601	1.88	1047.76
502	1.67	872.36	552	1.78	959.62	602	1.86	1049.62
503	1.63	873.99	553	1.77	961.39	603	1.83	1051.45
504	1.60	875.59	554	1.76	963.15	604	1.79	1053.24
505	1.53	877.12	555	1.71	964.86	605	1.77	1055.01
506	1.54	878.66	556	1.66	966.51	606	1.79	1056.80
507	1.64	880.30	557	1.72	968.24	607	1.81	1058.61
508	1.69	881.99	558	1.74	969.98	608	1.79	1060.40
509	1.66	883.65	559	1.69	971.67	609	1.82	1062.22
510	1.75	885.40	560	1.74	973.41	610	1.79	1064.01
511	1.75	887.15	561	1.73	975.14	611	1.78	1065.79
512	1.72	888.86	562	1.69	976.83	612	1.76	1067.55
513	1.77	890.64	563	1.71	978.55	613	1.74	1069.29
514	1.85	892.48	564	1.79	980.34	614	1.74	1071.03
515	1.82	894.31	565	1.88	982.22	615	1.77	1072.80
516	1.77	896.07	566	1.91	984.13	616	1.75	1074.55
517	1.77	897.84	567	1.83	985.96	617	1.74	1076.29
518	1.81	899.65	568	1.82	987.78	618	1.74	1078.03
519	1.80	901.45	569	1.75	989.53	619	1.71	1079.74
520	1.80	903.25	570	1.73	991.26	620	1.73	1081.47
521	1.81	905.06	571	1.70	992.95	621	1.74	1083.21

UE12e#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
622	1.74	1084.95	672	1.90	1178.23	722	1.69	1271.02
623	1.77	1086.72	673	1.87	1180.10	723	1.71	1272.73
624	1.77	1088.49	674	1.91	1182.01	724	1.70	1274.43
625	1.75	1090.24	675	1.91	1183.92	725	1.69	1276.12
626	1.68	1091.92	676	1.89	1185.81	726	1.68	1277.80
627	1.74	1093.66	677	1.92	1187.73	727	1.66	1279.46
628	1.76	1095.42	678	1.95	1189.68	728	1.66	1281.12
629	1.64	1097.06	679	1.98	1191.66	729	1.68	1282.80
630	1.60	1098.66	680	2.01	1193.67	730	1.69	1284.49
631	1.57	1100.23	681	1.99	1195.66	731	1.67	1286.16
632	1.72	1101.95	682	1.97	1197.63	732	1.66	1287.82
633	1.77	1103.72	683	1.95	1199.58	733	1.67	1289.49
634	1.72	1105.44	684	1.91	1201.49	734	1.68	1291.17
635	1.75	1107.19	685	1.91	1203.40	735	1.68	1292.85
636	1.82	1109.01	686	1.88	1205.28	736	1.70	1294.55
637	1.87	1110.88	687	1.85	1207.13	737	1.73	1296.28
638	1.81	1112.69	688	1.82	1208.95	738	1.71	1297.99
639	1.79	1114.48	689	1.84	1210.79	739	1.70	1299.69
640	1.92	1116.40	690	1.88	1212.67	740	1.68	1301.37
641	1.98	1118.38	691	1.88	1214.55	741	1.67	1303.04
642	1.96	1120.34	692	1.86	1216.41	742	1.65	1304.69
643	1.95	1122.29	693	1.85	1218.26	743	1.62	1306.31
644	1.97	1124.26	694	1.81	1220.07	744	1.64	1307.95
645	1.95	1126.21	695	1.77	1221.84	745	1.61	1309.56
646	1.94	1128.15	696	1.78	1223.62	746	1.61	1311.17
647	1.96	1130.11	697	1.84	1225.46	747	1.67	1312.84
648	1.98	1132.09	698	1.85	1227.31	748	1.66	1314.50
649	2.00	1134.09	699	1.85	1229.16	749	1.66	1316.16
650	2.02	1136.11	700	1.89	1231.05	750	1.64	1317.80
651	2.06	1138.17	701	1.89	1232.94	751	1.64	1319.44
652	2.05	1140.22	702	1.88	1234.82	752	1.66	1321.10
653	2.07	1142.29	703	1.89	1236.71	753	1.72	1322.82
654	2.04	1144.33	704	1.89	1238.60	754	1.71	1324.53
655	2.01	1146.34	705	1.90	1240.50	755	1.70	1326.23
656	1.82	1148.16	706	1.90	1242.40	756	1.70	1327.93
657	1.77	1149.93	707	1.92	1244.32	757	1.68	1329.61
658	1.76	1151.69	708	1.94	1246.26	758	1.66	1331.27
659	1.75	1153.44	709	1.97	1248.23	759	1.65	1332.92
660	1.76	1155.20	710	0.00	1250.11	760	1.64	1334.56
661	1.78	1156.98	711	0.00	1251.99	761	1.65	1336.21
662	1.82	1158.80	712	1.79	1253.87	762	1.68	1337.89
663	1.90	1160.70	713	1.75	1255.62	763	1.69	1339.58
664	1.96	1162.66	714	1.73	1257.35	764	1.71	1341.29
665	1.99	1164.65	715	1.73	1259.08	765	1.71	1343.00
666	1.99	1166.64	716	1.72	1260.80	766	1.72	1344.72
667	1.98	1168.62	717	1.72	1262.52	767	1.74	1346.46
668	1.98	1170.60	718	1.71	1264.23	768	1.74	1348.20
669	1.94	1172.54	719	1.70	1265.93	769	1.74	1349.94
670	1.88	1174.42	720	1.71	1267.64	770	1.71	1351.65
671	1.91	1176.33	721	1.69	1269.33	771	1.68	1353.33

UE12e#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
772	1.66	1354.99	822	1.84	1443.68	872	1.78	1535.31
773	1.64	1356.63	823	1.84	1445.52	873	1.79	1537.10
774	1.65	1358.28	824	1.86	1447.38	874	1.80	1538.90
775	1.66	1359.94	825	1.85	1449.23	875	1.79	1540.69
776	1.65	1361.59	826	1.84	1451.07	876	1.78	1542.47
777	1.66	1363.25	827	1.85	1452.92	877	1.77	1544.24
778	1.66	1364.91	828	1.86	1454.78	878	1.74	1545.98
779	1.66	1366.57	829	1.85	1456.63	879	1.73	1547.71
780	1.67	1368.24	830	1.84	1458.47	880	1.73	1549.44
781	1.68	1369.92	831	1.83	1460.30	881	1.77	1551.21
782	1.68	1371.60	832	1.81	1462.11	882	1.78	1552.99
783	1.68	1373.28	833	1.80	1463.91	883	1.80	1554.79
784	1.67	1374.95	834	1.82	1465.73	884	1.83	1556.62
785	1.66	1376.61	835	1.86	1467.59	885	1.86	1558.48
786	1.67	1378.28	836	1.85	1469.44	886	1.89	1560.37
787	1.68	1379.96	837	1.83	1471.27	887	1.86	1562.23
788	1.68	1381.64	838	1.81	1473.08	888	1.84	1564.07
789	1.65	1383.29	839	1.79	1474.87	889	1.86	1565.93
790	1.66	1384.95	840	1.82	1476.69	890	1.87	1567.80
791	1.71	1386.66	841	1.81	1478.50	891	1.88	1569.68
792	1.72	1388.38	842	1.82	1480.32	892	1.87	1571.55
793	1.71	1390.09	843	1.86	1482.18	893	1.87	1573.42
794	1.74	1391.83	844	1.87	1484.05	894	1.84	1575.26
795	1.78	1393.61	845	1.83	1485.88	895	1.83	1577.09
796	1.81	1395.42	846	1.82	1487.70	896	1.82	1578.91
797	1.82	1397.24	847	1.80	1489.50	897	1.81	1580.72
798	1.81	1399.05	848	1.79	1491.29	898	1.82	1582.54
799	1.83	1400.88	849	1.79	1493.08	899	1.82	1584.36
800	1.86	1402.74	850	1.79	1494.87	900	1.81	1586.17
801	1.87	1404.61	851	1.79	1496.66	901	1.83	1588.00
802	1.87	1406.48	852	1.79	1498.45	902	1.86	1589.86
803	1.87	1408.35	853	1.79	1500.24	903	1.86	1591.72
804	1.87	1410.22	854	1.81	1502.05	904	1.87	1593.59
805	1.86	1412.08	855	1.81	1503.86	905	1.88	1595.47
806	1.82	1413.90	856	1.84	1505.70	906	1.88	1597.35
807	1.81	1415.71	857	1.87	1507.57	907	1.91	1599.26
808	1.80	1417.51	858	1.90	1509.47	908	1.92	1601.18
809	1.80	1419.31	859	1.92	1511.39	909	1.90	1603.08
810	1.82	1421.13	860	1.94	1513.33	910	1.91	1604.99
811	1.84	1422.97	861	1.91	1515.24	911	1.91	1606.90
812	1.86	1424.83	862	1.86	1517.10	912	1.89	1608.79
813	1.86	1426.69	863	1.83	1518.93	913	1.87	1610.66
814	1.87	1428.56	864	1.82	1520.75	914	1.86	1612.52
815	1.88	1430.44	865	1.84	1522.59	915	1.86	1614.38
816	1.87	1432.31	866	1.88	1524.47	916	1.86	1616.24
817	1.92	1434.23	867	1.85	1526.32	917	1.86	1618.10
818	1.93	1436.16	868	1.82	1528.14	918	1.83	1619.93
819	1.93	1438.09	869	1.81	1529.95	919	1.83	1621.76
820	1.89	1439.98	870	1.80	1531.75	920	1.85	1623.61
821	1.86	1441.84	871	1.78	1533.53	921	1.86	1625.47

UE12e#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
922	1.87	1627.34	972	2.00	1723.21	1022	1.89	1815.77
923	1.87	1629.21	973	1.98	1725.19	1023	1.91	1817.68
924	1.86	1631.07	974	1.98	1727.17	1024	1.92	1819.60
925	1.85	1632.92	975	1.97	1729.14	1025	1.95	1821.55
926	1.83	1634.75	976	1.98	1731.12	1026	1.96	1823.51
927	1.81	1636.56	977	1.99	1733.11	1027	2.00	1825.51
928	1.81	1638.37	978	1.98	1735.09	1028	2.01	1827.52
929	1.83	1640.20	979	2.00	1737.09	1029	2.02	1829.54
930	1.83	1642.03	980	2.01	1739.10	1030	2.04	1831.58
931	1.83	1643.86	981	2.01	1741.11	1031	2.03	1833.61
932	1.80	1645.66	982	1.98	1743.09	1032	2.02	1835.63
933	1.76	1647.42	983	1.95	1745.04	1033	2.02	1837.65
934	1.77	1649.19	984	1.93	1746.97	1034	2.01	1839.66
935	1.83	1651.02	985	1.90	1748.87	1035	2.01	1841.67
936	1.92	1652.94	986	1.88	1750.75	1036	2.01	1843.68
937	1.95	1654.89	987	1.85	1752.60	1037	2.01	1845.69
938	1.94	1656.83	988	1.83	1754.43	1038	2.00	1847.69
939	1.92	1658.75	989	1.80	1756.23	1039	2.01	1849.70
940	1.91	1660.66	990	1.80	1758.03	1040	2.01	1851.71
941	1.93	1662.59	991	1.80	1759.83	1041	2.01	1853.72
942	1.95	1664.54	992	1.80	1761.63	1042	2.00	1855.72
943	1.93	1666.47	993	1.81	1763.44	1043	1.98	1857.70
944	1.91	1668.38	994	1.81	1765.25	1044	1.97	1859.67
945	1.89	1670.27	995	1.81	1767.06	1045	1.95	1861.62
946	1.88	1672.15	996	1.80	1768.86	1046	1.93	1863.55
947	1.89	1674.04	997	1.79	1770.65	1047	1.98	1865.53
948	1.94	1675.98	998	1.78	1772.43	1048	2.04	1867.57
949	1.95	1677.93	999	1.81	1774.24	1049	2.10	1869.67
950	1.96	1679.89	1000	1.81	1776.05	1050	2.18	1871.85
951	1.99	1681.88	1001	1.79	1777.84	1051	2.23	1874.08
952	1.99	1683.87	1002	1.78	1779.62	1052	2.23	1876.31
953	1.98	1685.85	1003	1.78	1781.40	1053	2.22	1878.53
954	1.98	1687.83	1004	1.77	1783.17	1054	2.17	1880.70
955	1.99	1689.82	1005	1.78	1784.95	1055	2.10	1882.80
956	1.99	1691.81	1006	1.80	1786.75	1056	2.05	1884.85
957	2.00	1693.81	1007	1.80	1788.55	1057	2.03	1886.88
958	2.02	1695.83	1008	1.77	1790.32	1058	2.01	1888.89
959	2.03	1697.86	1009	1.74	1792.06	1059	1.93	1890.82
960	2.00	1699.86	1010	1.73	1793.79	1060	1.87	1892.69
961	1.98	1701.84	1011	1.72	1795.51	1061	1.82	1894.51
962	1.98	1703.82	1012	1.73	1797.24	1062	1.75	1896.26
963	1.97	1705.79	1013	1.76	1799.00	1063	1.60	1897.86
964	1.96	1707.75	1014	1.78	1800.78	1064	1.59	1899.45
965	1.95	1709.70	1015	1.82	1802.60	1065	1.59	1901.04
966	1.94	1711.64	1016	1.89	1804.49	1066	1.61	1902.65
967	1.91	1713.55	1017	1.88	1806.37	1067	1.65	1904.30
968	1.90	1715.45	1018	1.87	1808.24	1068	1.69	1905.99
969	1.89	1717.34	1019	1.87	1810.11	1069	1.78	1907.77
970	1.90	1719.24	1020	1.88	1811.99	1070	1.83	1909.60
971	1.97	1721.21	1021	1.89	1813.88	1071	1.87	1911.47

UE12e#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1072	1.91	1913.38	1122	1.79	2004.10	1172	1.81	2093.04
1073	1.92	1915.30	1123	1.78	2005.88	1173	1.81	2094.85
1074	1.91	1917.21	1124	1.76	2007.64	1174	1.79	2096.64
1075	1.86	1919.07	1125	1.75	2009.39	1175	1.78	2098.42
1076	1.83	1920.90	1126	1.74	2011.13	1176	1.78	2100.20
1077	1.82	1922.72	1127	1.73	2012.86	1177	1.80	2102.00
1078	1.81	1924.53	1128	1.73	2014.59	1178	1.83	2103.83
1079	1.83	1926.36	1129	1.74	2016.33	1179	1.85	2105.68
1080	1.84	1928.20	1130	1.74	2018.07	1180	1.86	2107.54
1081	1.80	1930.00	1131	1.75	2019.82	1181	1.86	2109.40
1082	1.81	1931.81	1132	1.76	2021.58	1182	1.86	2111.26
1083	1.84	1933.65	1133	1.76	2023.34	1183	1.86	2113.12
1084	1.85	1935.50	1134	1.74	2025.08	1184	1.83	2114.95
1085	1.83	1937.33	1135	1.73	2026.81	1185	1.86	2116.81
1086	1.83	1939.16	1136	1.74	2028.55	1186	1.89	2118.70
1087	1.81	1940.97	1137	1.77	2030.32	1187	1.96	2120.66
1088	1.79	1942.76	1138	1.76	2032.08	1188	2.01	2122.67
1089	1.80	1944.56	1139	1.75	2033.83	1189	2.00	2124.67
1090	1.80	1946.36	1140	1.77	2035.60	1190	1.98	2126.65
1091	1.80	1948.16	1141	1.77	2037.37	1191	1.94	2128.59
1092	1.82	1949.98	1142	1.76	2039.13	1192	1.94	2130.53
1093	1.85	1951.83	1143	1.76	2040.89	1193	1.98	2132.51
1094	1.82	1953.65	1144	1.76	2042.65	1194	1.98	2134.49
1095	1.82	1955.47	1145	1.80	2044.45	1195	1.98	2136.47
1096	1.82	1957.29	1146	1.82	2046.27	1196	1.92	2138.39
1097	1.85	1959.14	1147	1.80	2048.07	1197	1.89	2140.28
1098	1.83	1960.97	1148	1.77	2049.84	1198	1.86	2142.14
1099	1.84	1962.81	1149	1.78	2051.62	1199	1.85	2143.99
1100	1.86	1964.67	1150	1.76	2053.38	1200	1.84	2145.83
1101	1.81	1966.48	1151	1.77	2055.15	1201	1.83	2147.66
1102	1.79	1968.27	1152	1.79	2056.94	1202	1.82	2149.48
1103	1.79	1970.06	1153	1.77	2058.71	1203	1.87	2151.35
1104	1.79	1971.85	1154	1.77	2060.48	1204	1.90	2153.25
1105	1.76	1973.61	1155	1.78	2062.26	1205	1.95	2155.20
1106	1.76	1975.37	1156	1.78	2064.04	1206	1.99	2157.19
1107	1.77	1977.14	1157	1.80	2065.84	1207	1.98	2159.17
1108	1.77	1978.91	1158	1.79	2067.63	1208	1.96	2161.13
1109	1.77	1980.68	1159	1.78	2069.41	1209	1.94	2163.07
1110	1.79	1982.47	1160	1.79	2071.20	1210	1.92	2164.99
1111	1.82	1984.29	1161	1.79	2072.99	1211	1.92	2166.91
1112	1.82	1986.11	1162	1.83	2074.82	1212	1.93	2168.84
1113	1.80	1987.91	1163	1.86	2076.68	1213	1.97	2170.81
1114	1.79	1989.70	1164	1.82	2078.50	1214	1.98	2172.79
1115	1.79	1991.49	1165	1.83	2080.33	1215	1.96	2174.75
1116	1.80	1993.29	1166	1.84	2082.17	1216	1.94	2176.69
1117	1.80	1995.09	1167	1.81	2083.98	1217	1.94	2178.63
1118	1.80	1996.89	1168	1.81	2085.79	1218	1.94	2180.57
1119	1.80	1998.69	1169	1.82	2087.61	1219	1.95	2182.52
1120	1.81	2000.50	1170	1.81	2089.42	1220	1.97	2184.49
1121	1.81	2002.31	1171	1.81	2091.23	1221	1.98	2186.47

UE12e#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1222	1.96	2188.43	1272	1.95	2284.06	1322	1.85	2378.74
1223	1.95	2190.38	1273	1.95	2286.01	1323	1.84	2380.58
1224	1.93	2192.31	1274	1.94	2287.95	1324	1.82	2382.40
1225	1.93	2194.24	1275	1.92	2289.87	1325	1.80	2384.20
1226	1.95	2196.19	1276	1.91	2291.78	1326	1.82	2386.02
1227	1.93	2198.12	1277	1.90	2293.68	1327	1.82	2387.84
1228	1.93	2200.05	1278	1.89	2295.57	1328	1.83	2389.67
1229	1.95	2202.00	1279	1.89	2297.46	1329	1.82	2391.49
1230	1.93	2203.93	1280	1.91	2299.37	1330	1.81	2393.30
1231	1.92	2205.85	1281	1.93	2301.30	1331	1.76	2395.06
1232	1.90	2207.75	1282	1.97	2303.27	1332	1.82	2396.88
1233	1.90	2209.65	1283	1.95	2305.22	1333	1.87	2398.75
1234	1.92	2211.57	1284	1.95	2307.17	1334	1.87	2400.62
1235	1.92	2213.49	1285	1.96	2309.13	1335	1.85	2402.47
1236	1.90	2215.39	1286	1.98	2311.11	1336	1.83	2404.30
1237	1.89	2217.28	1287	1.97	2313.08	1337	1.82	2406.12
1238	1.91	2219.19	1288	1.97	2315.05	1338	1.79	2407.91
1239	1.91	2221.10	1289	2.01	2317.06	1339	1.79	2409.70
1240	1.91	2223.01	1290	2.02	2319.08	1340	1.81	2411.51
1241	1.91	2224.92	1291	2.04	2321.12	1341	1.83	2413.34
1242	1.91	2226.83	1292	2.04	2323.16	1342	1.85	2415.19
1243	1.91	2228.74	1293	2.04	2325.20	1343	1.85	2417.04
1244	1.90	2230.64	1294	2.02	2327.22	1344	1.84	2418.88
1245	1.88	2232.52	1295	1.99	2329.21	1345	1.85	2420.73
1246	1.90	2234.42	1296	1.99	2331.20	1346	1.85	2422.58
1247	1.93	2236.35	1297	1.97	2333.17	1347	1.85	2424.43
1248	1.92	2238.27	1298	1.95	2335.12	1348	1.85	2426.28
1249	1.91	2240.18	1299	1.92	2337.04	1349	1.88	2428.16
1250	1.90	2242.08	1300	1.90	2338.94	1350	1.87	2430.03
1251	1.88	2243.96	1301	1.87	2340.81	1351	1.85	2431.88
1252	1.90	2245.86	1302	1.86	2342.67	1352	1.83	2433.71
1253	1.88	2247.74	1303	1.83	2344.50	1353	1.82	2435.53
1254	1.87	2249.61	1304	1.81	2346.31	1354	1.81	2437.34
1255	1.85	2251.46	1305	1.81	2348.12	1355	1.82	2439.16
1256	1.85	2253.31	1306	1.81	2349.93	1356	1.81	2440.97
1257	1.85	2255.16	1307	1.81	2351.74	1357	1.81	2442.78
1258	1.84	2257.00	1308	1.80	2353.54	1358	1.81	2444.59
1259	1.87	2258.87	1309	1.78	2355.32	1359	1.81	2446.40
1260	1.94	2260.81	1310	1.77	2357.09	1360	1.80	2448.20
1261	1.96	2262.77	1311	1.78	2358.87	1361	1.81	2450.01
1262	1.97	2264.74	1312	1.79	2360.66	1362	1.83	2451.84
1263	1.94	2266.68	1313	1.78	2362.44	1363	1.86	2453.70
1264	1.92	2268.60	1314	1.76	2364.20	1364	1.87	2455.57
1265	1.92	2270.52	1315	1.78	2365.98	1365	1.86	2457.43
1266	1.92	2272.44	1316	1.79	2367.77	1366	1.85	2459.28
1267	1.94	2274.38	1317	1.80	2369.57	1367	1.86	2461.14
1268	1.94	2276.32	1318	1.83	2371.40	1368	1.87	2463.01
1269	1.93	2278.25	1319	1.83	2373.23	1369	1.86	2464.87
1270	1.93	2280.18	1320	1.83	2375.06	1370	1.86	2466.73
1271	1.93	2282.11	1321	1.83	2376.89	1371	1.85	2468.58

UE12e#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1372	1.82	2470.40	1422	1.79	2563.49	1472	1.94	2655.65
1373	1.81	2472.21	1423	1.78	2565.27	1473	1.95	2657.60
1374	1.81	2474.02	1424	1.76	2567.03	1474	1.95	2659.55
1375	1.81	2475.83	1425	1.78	2568.81	1475	1.95	2661.50
1376	1.81	2477.64	1426	1.80	2570.61	1476	1.95	2663.45
1377	1.81	2479.45	1427	1.84	2572.45	1477	1.96	2665.41
1378	1.81	2481.26	1428	1.84	2574.29	1478	1.96	2667.37
1379	1.79	2483.05	1429	1.79	2576.08	1479	1.96	2669.33
1380	1.79	2484.84	1430	1.79	2577.87	1480	1.98	2671.31
1381	1.79	2486.63	1431	1.81	2579.68	1481	1.99	2673.30
1382	1.79	2488.42	1432	1.85	2581.53	1482	1.99	2675.29
1383	1.80	2490.22	1433	1.85	2583.38	1483	1.98	2677.27
1384	1.81	2492.03	1434	1.84	2585.22	1484	1.97	2679.24
1385	1.82	2493.85	1435	1.83	2587.05	1485	1.95	2681.19
1386	1.83	2495.68	1436	1.82	2588.87	1486	1.95	2683.14
1387	1.85	2497.53	1437	1.82	2590.69	1487	1.96	2685.10
1388	1.85	2499.38	1438	1.84	2592.53	1488	1.93	2687.03
1389	1.85	2501.23	1439	1.83	2594.36	1489	1.91	2688.94
1390	1.85	2503.08	1440	1.83	2596.19	1490	1.89	2690.83
1391	1.83	2504.91	1441	1.88	2598.07	1491	1.86	2692.69
1392	1.81	2506.72	1442	1.89	2599.96	1492	1.85	2694.54
1393	1.81	2508.53	1443	1.87	2601.83	1493	1.85	2696.39
1394	1.83	2510.36	1444	1.86	2603.69	1494	1.86	2698.25
1395	1.85	2512.21	1445	1.85	2605.54	1495	1.86	2700.11
1396	1.87	2514.08	1446	1.84	2607.38	1496	1.85	2701.96
1397	1.91	2515.99	1447	1.82	2609.20	1497	1.85	2703.81
1398	1.95	2517.94	1448	1.81	2611.01	1498	1.84	2705.65
1399	1.93	2519.87	1449	1.82	2612.83	1499	1.86	2707.51
1400	1.92	2521.79	1450	1.82	2614.65	1500	1.89	2709.40
1401	1.92	2523.71	1451	1.86	2616.51	1501	1.94	2711.34
1402	1.91	2525.62	1452	1.86	2618.37	1502	1.98	2713.32
1403	1.89	2527.51	1453	1.85	2620.22	1503	2.00	2715.32
1404	1.87	2529.38	1454	1.82	2622.04	1504	2.00	2717.32
1405	1.86	2531.24	1455	1.83	2623.87	1505	2.00	2719.32
1406	1.85	2533.09	1456	1.82	2625.69	1506	1.97	2721.29
1407	1.84	2534.93	1457	1.79	2627.48	1507	1.94	2723.23
1408	1.85	2536.78	1458	1.75	2629.23	1508	1.91	2725.14
1409	1.86	2538.64	1459	1.73	2630.96	1509	1.92	2727.06
1410	1.89	2540.53	1460	1.73	2632.69	1510	1.93	2728.99
1411	1.94	2542.47	1461	1.75	2634.44	1511	1.96	2730.95
1412	1.98	2544.45	1462	1.84	2636.28	1512	1.99	2732.94
1413	2.01	2546.46	1463	1.93	2638.21	1513	1.99	2734.93
1414	2.09	2548.55	1464	1.95	2640.16	1514	2.03	2736.96
1415	2.04	2550.59	1465	1.97	2642.13	1515	2.00	2738.96
1416	1.96	2552.55	1466	1.96	2644.09	1516	1.97	2740.93
1417	1.89	2554.44	1467	1.94	2646.03	1517	1.94	2742.87
1418	1.83	2556.27	1468	1.93	2647.96	1518	1.94	2744.81
1419	1.82	2558.09	1469	1.93	2649.89	1519	1.97	2746.78
1420	1.81	2559.90	1470	1.91	2651.80	1520	1.96	2748.74
1421	1.80	2561.70	1471	1.91	2653.71	1521	1.93	2750.67

UE12e#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1522	1.96	2752.63	1572	1.86	2850.82	1622	1.86	2943.50
1523	1.94	2754.57	1573	1.88	2852.70	1623	1.88	2945.38
1524	1.93	2756.50	1574	1.89	2854.59	1624	1.87	2947.25
1525	1.92	2758.42	1575	1.89	2856.48	1625	1.88	2949.13
1526	1.91	2760.33	1576	1.90	2858.38	1626	1.89	2951.02
1527	1.91	2762.24	1577	1.87	2860.25	1627	1.89	2952.91
1528	1.92	2764.16	1578	1.84	2862.09	1628	1.89	2954.80
1529	1.94	2766.10	1579	1.86	2863.95	1629	1.87	2956.67
1530	1.96	2768.06	1580	1.88	2865.83	1630	1.84	2958.51
1531	1.99	2770.05	1581	1.87	2867.70	1631	1.83	2960.34
1532	2.05	2772.10	1582	1.87	2869.57	1632	1.82	2962.16
1533	2.06	2774.16	1583	1.87	2871.44	1633	1.83	2963.99
1534	2.04	2776.20	1584	1.88	2873.32	1634	1.84	2965.83
1535	2.04	2778.24	1585	1.87	2875.19	1635	1.84	2967.67
1536	2.03	2780.27	1586	1.86	2877.05	1636	1.86	2969.53
1537	2.00	2782.27	1587	1.86	2878.91	1637	1.90	2971.43
1538	1.99	2784.26	1588	1.86	2880.77	1638	1.91	2973.34
1539	2.01	2786.27	1589	1.86	2882.63	1639	1.92	2975.26
1540	2.00	2788.27	1590	1.85	2884.48	1640	1.93	2977.19
1541	1.96	2790.23	1591	1.88	2886.36	1641	1.94	2979.13
1542	1.94	2792.17	1592	1.88	2888.24	1642	1.91	2981.04
1543	1.92	2794.09	1593	1.88	2890.12	1643	1.90	2982.94
1544	1.92	2796.01	1594	1.83	2891.95	1644	1.90	2984.84
1545	1.95	2797.96	1595	1.82	2893.77	1645	1.91	2986.75
1546	1.98	2799.94	1596	1.83	2895.60	1646	1.93	2988.68
1547	1.94	2801.88	1597	1.86	2897.46	1647	1.95	2990.63
1548	1.94	2803.82	1598	1.86	2899.32	1648	1.94	2992.57
1549	1.95	2805.77	1599	1.83	2901.15	1649	1.92	2994.49
1550	1.97	2807.74	1600	1.82	2902.97	1650	1.93	2996.42
1551	1.99	2809.73	1601	1.84	2904.81	1651	1.91	2998.33
1552	2.00	2811.73	1602	1.84	2906.65	1652	1.90	3000.23
1553	1.95	2813.68	1603	1.84	2908.49	1653	1.92	3002.15
1554	1.93	2815.61	1604	1.83	2910.32	1654	1.92	3004.07
1555	1.91	2817.52	1605	1.85	2912.17	1655	1.93	3006.00
1556	1.91	2819.43	1606	1.85	2914.02	1656	1.96	3007.96
1557	1.93	2821.36	1607	1.87	2915.89	1657	1.95	3009.91
1558	1.98	2823.34	1608	1.86	2917.75	1658	1.94	3011.85
1559	1.98	2825.32	1609	1.86	2919.61	1659	1.95	3013.80
1560	1.99	2827.31	1610	1.84	2921.45	1660	1.98	3015.78
1561	2.01	2829.32	1611	1.82	2923.27	1661	1.98	3017.76
1562	2.01	2831.33	1612	1.82	2925.09	1662	1.96	3019.72
1563	1.99	2833.32	1613	1.83	2926.92	1663	1.96	3021.68
1564	1.97	2835.29	1614	1.84	2928.76	1664	1.95	3023.63
1565	1.97	2837.26	1615	1.85	2930.61	1665	1.95	3025.58
1566	1.97	2839.23	1616	1.85	2932.46	1666	1.95	3027.53
1567	1.99	2841.22	1617	1.84	2934.30	1667	1.95	3029.48
1568	1.98	2843.20	1618	1.83	2936.13	1668	1.95	3031.43
1569	1.97	2845.17	1619	1.83	2937.96	1669	1.96	3033.39
1570	1.92	2847.09	1620	1.83	2939.79	1670	1.96	3035.35
1571	1.87	2848.96	1621	1.85	2941.64	1671	1.94	3037.29

UE12e#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1672	1.93	3039.22	1722	2.19	3144.07	1772	2.01	3247.00
1673	1.94	3041.16	1723	2.19	3146.26	1773	2.00	3249.00
1674	1.94	3043.10	1724	2.20	3148.46	1774	1.99	3250.99
1675	1.97	3045.07	1725	2.18	3150.64	1775	1.96	3252.95
1676	1.99	3047.06	1726	2.17	3152.81	1776	1.98	3254.93
1677	2.01	3049.07	1727	2.16	3154.97	1777	2.00	3256.93
1678	2.02	3051.09	1728	2.13	3157.10	1778	2.00	3258.93
1679	2.02	3053.11	1729	2.13	3159.23	1779	1.99	3260.92
1680	2.01	3055.12	1730	2.09	3161.32	1780	2.04	3262.96
1681	2.01	3057.13	1731	2.09	3163.41	1781	2.12	3265.08
1682	2.04	3059.17	1732	2.11	3165.52	1782	2.08	3267.16
1683	2.02	3061.19	1733	2.09	3167.61	1783	2.03	3269.19
1684	2.02	3063.21	1734	2.08	3169.69	1784	2.00	3271.19
1685	2.03	3065.24	1735	2.07	3171.76	1785	1.99	3273.18
1686	2.04	3067.28	1736	2.05	3173.81	1786	1.99	3275.17
1687	2.03	3069.31	1737	2.03	3175.84	1787	1.99	3277.16
1688	2.03	3071.34	1738	2.03	3177.87	1788	2.00	3279.16
1689	2.06	3073.40	1739	2.05	3179.92	1789	2.00	3281.16
1690	2.05	3075.45	1740	2.06	3181.98	1790	1.99	3283.15
1691	2.01	3077.46	1741	2.03	3184.01	1791	2.00	3285.15
1692	2.01	3079.47	1742	2.02	3186.03	1792	2.02	3287.17
1693	2.03	3081.50	1743	2.02	3188.05	1793	2.06	3289.23
1694	2.04	3083.54	1744	2.05	3190.10	1794	2.04	3291.27
1695	2.08	3085.62	1745	2.09	3192.19	1795	2.03	3293.30
1696	2.12	3087.74	1746	2.11	3194.30	1796	2.03	3295.33
1697	2.12	3089.86	1747	2.11	3196.41	1797	2.01	3297.34
1698	2.11	3091.97	1748	2.11	3198.52	1798	2.00	3299.34
1699	2.11	3094.08	1749	2.09	3200.61	1799	1.98	3301.32
1700	2.11	3096.19	1750	2.08	3202.69	1800	2.00	3303.32
1701	2.11	3098.30	1751	2.07	3204.76	1801	2.03	3305.35
1702	2.11	3100.41	1752	2.07	3206.83	1802	2.01	3307.36
1703	2.12	3102.53	1753	2.07	3208.90	1803	2.01	3309.37
1704	2.18	3104.71	1754	2.05	3210.95	1804	2.03	3311.40
1705	2.20	3106.91	1755	2.02	3212.97	1805	2.03	3313.43
1706	2.22	3109.13	1756	2.00	3214.97	1806	1.99	3315.42
1707	2.21	3111.34	1757	2.01	3216.98	1807	2.00	3317.42
1708	2.20	3113.54	1758	1.98	3218.96	1808	2.06	3319.48
1709	2.21	3115.75	1759	1.99	3220.95	1809	2.12	3321.60
1710	2.20	3117.95	1760	1.95	3222.90	1810	2.14	3323.74
1711	2.21	3120.16	1761	1.96	3224.86	1811	2.09	3325.83
1712	2.20	3122.36	1762	2.01	3226.87	1812	2.05	3327.88
1713	2.19	3124.55	1763	2.03	3228.90	1813	2.03	3329.91
1714	2.20	3126.75	1764	2.02	3230.92	1814	2.00	3331.91
1715	2.18	3128.93	1765	1.99	3232.91	1815	2.01	3333.92
1716	2.17	3131.10	1766	2.05	3234.96	1816	2.01	3335.93
1717	2.15	3133.25	1767	2.04	3237.00	1817	2.02	3337.95
1718	2.14	3135.39	1768	2.03	3239.03	1818	2.01	3339.96
1719	2.16	3137.55	1769	1.98	3241.01	1819	2.00	3341.96
1720	2.16	3139.71	1770	1.96	3242.97	1820	2.02	3343.98
1721	2.17	3141.88	1771	2.02	3244.99	1821	2.04	3346.02

UE12e#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1822	2.03	3348.05	1872	2.01	3449.39	1922	2.18	3554.30
1823	2.00	3350.05	1873	2.00	3451.39	1923	2.16	3556.46
1824	1.99	3352.04	1874	2.02	3453.41	1924	2.17	3558.63
1825	2.00	3354.04	1875	2.03	3455.44	1925	2.16	3560.79
1826	2.01	3356.05	1876	2.15	3457.59	1926	2.15	3562.94
1827	2.01	3358.06	1877	2.20	3459.79	1927	2.13	3565.07
1828	2.00	3360.06	1878	2.26	3462.05	1928	2.14	3567.21
1829	2.00	3362.06	1879	2.33	3464.38	1929	2.16	3569.37
1830	2.01	3364.07	1880	2.34	3466.72	1930	2.16	3571.53
1831	2.02	3366.09	1881	2.30	3469.02	1931	2.15	3573.68
1832	2.02	3368.11	1882	2.23	3471.25	1932	2.13	3575.81
1833	2.01	3370.12	1883	2.12	3473.37	1933	2.14	3577.95
1834	2.03	3372.15	1884	2.06	3475.43	1934	2.15	3580.10
1835	2.07	3374.22	1885	2.05	3477.48	1935	2.17	3582.27
1836	2.10	3376.32	1886	2.05	3479.53	1936	2.17	3584.44
1837	2.11	3378.43	1887	2.04	3481.57	1937	2.17	3586.61
1838	2.13	3380.56	1888	2.04	3483.61	1938	2.17	3588.78
1839	2.16	3382.72	1889	2.05	3485.66	1939	2.17	3590.95
1840	2.13	3384.85	1890	2.01	3487.67	1940	2.18	3593.13
1841	2.08	3386.93	1891	1.99	3489.66	1941	2.18	3595.31
1842	2.06	3388.99	1892	2.00	3491.66	1942	2.18	3597.49
1843	2.04	3391.03	1893	2.02	3493.68	1943	2.18	3599.67
1844	2.07	3393.10	1894	2.02	3495.70	1944	2.19	3601.86
1845	2.09	3395.19	1895	2.01	3497.71	1945	2.17	3604.03
1846	2.08	3397.27	1896	2.01	3499.72	1946	2.18	3606.21
1847	2.06	3399.33	1897	2.01	3501.73	1947	2.21	3608.42
1848	2.02	3401.35	1898	2.01	3503.74	1948	2.21	3610.63
1849	2.02	3403.37	1899	2.02	3505.76	1949	2.17	3612.80
1850	2.02	3405.39	1900	2.03	3507.79	1950	2.14	3614.94
1851	2.01	3407.40	1901	2.02	3509.81	1951	2.10	3617.04
1852	2.02	3409.42	1902	2.05	3511.86	1952	2.11	3619.15
1853	1.99	3411.41	1903	2.07	3513.93	1953	2.13	3621.28
1854	1.96	3413.37	1904	2.10	3516.03	1954	2.16	3623.44
1855	1.96	3415.33	1905	2.10	3518.13	1955	2.16	3625.60
1856	1.98	3417.31	1906	2.12	3520.25	1956	2.17	3627.77
1857	1.97	3419.28	1907	2.12	3522.37	1957	2.19	3629.96
1858	1.99	3421.27	1908	2.12	3524.49	1958	2.20	3632.16
1859	2.01	3423.28	1909	2.13	3526.62	1959	2.17	3634.33
1860	2.00	3425.28	1910	2.11	3528.73	1960	2.16	3636.49
1861	2.01	3427.29	1911	2.11	3530.84	1961	2.17	3638.66
1862	2.00	3429.29	1912	2.12	3532.96	1962	2.19	3640.85
1863	1.96	3431.25	1913	2.10	3535.06	1963	2.18	3643.03
1864	1.97	3433.22	1914	2.09	3537.15	1964	2.17	3645.20
1865	2.04	3435.26	1915	2.07	3539.22	1965	2.16	3647.36
1866	2.05	3437.31	1916	2.08	3541.30	1966	2.14	3649.50
1867	2.05	3439.36	1917	2.13	3543.43	1967	2.12	3651.62
1868	2.03	3441.39	1918	2.16	3545.59	1968	2.08	3653.70
1869	2.01	3443.40	1919	2.17	3547.76	1969	2.06	3655.76
1870	1.99	3445.39	1920	2.17	3549.93	1970	2.08	3657.84
1871	1.99	3447.38	1921	2.19	3552.12	1971	2.09	3659.93

UE12e#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1972	2.12	3662.05						
1973	2.16	3664.21						
1974	2.18	3666.39						
1975	2.19	3668.58						
1976	2.17	3670.75						
1977	2.16	3672.91						
1978	2.16	3675.07						
1979	2.18	3677.25						
1980	2.23	3679.48						
1981	2.27	3681.75						
1982	2.24	3683.99						
1983	2.23	3686.22						
1984	2.25	3688.47						
1985	2.24	3690.71						
1986	2.25	3692.96						
1987	2.25	3695.21						
1988	2.21	3697.42						
1989	2.19	3699.61						
1990	2.14	3701.75						
1991	2.12	3703.87						
1992	2.14	3706.01						
1993	2.18	3708.19						
1994	2.20	3710.39						
1995	2.21	3712.60						
1996	2.21	3714.81						
1997	2.23	3717.04						
1998	2.22	3719.26						

UE12e#3

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
22	2.27	0.00	72	2.30	117.58	122	2.32	232.39
23	2.32	2.32	73	2.29	119.87	123	2.40	234.79
24	2.39	4.70	74	2.28	122.15	124	2.40	237.19
25	2.38	7.08	75	2.27	124.43	125	2.40	239.59
26	2.38	9.47	76	2.27	126.70	126	2.41	242.00
27	2.39	11.86	77	2.24	128.94	127	2.40	244.40
28	2.42	14.28	78	2.22	131.16	128	2.36	246.77
29	2.35	16.63	79	2.20	133.35	129	2.34	249.10
30	2.34	18.97	80	2.22	135.57	130	2.32	251.42
31	2.49	21.46	81	2.20	137.77	131	2.29	253.72
32	2.55	24.01	82	2.21	139.98	132	2.31	256.03
33	2.57	26.58	83	2.22	142.20	133	2.39	258.42
34	2.59	29.17	84	2.21	144.41	134	2.39	260.81
35	2.57	31.75	85	2.19	146.60	135	2.42	263.23
36	2.49	34.23	86	2.18	148.77	136	2.42	265.65
37	2.46	36.70	87	2.19	150.96	137	2.43	268.07
38	2.41	39.10	88	2.22	153.18	138	2.43	270.51
39	2.44	41.54	89	2.19	155.37	139	2.41	272.91
40	2.45	43.99	90	2.17	157.55	140	2.39	275.31
41	2.34	46.34	91	2.19	159.74	141	2.39	277.70
42	2.30	48.64	92	2.21	161.95	142	2.42	280.12
43	2.27	50.91	93	2.20	164.15	143	2.47	282.59
44	2.16	53.07	94	2.21	166.35	144	2.45	285.04
45	2.16	55.23	95	2.26	168.61	145	2.44	287.48
46	2.30	57.54	96	2.27	170.88	146	2.45	289.94
47	2.34	59.88	97	2.28	173.16	147	2.44	292.38
48	2.38	62.26	98	2.31	175.47	148	2.43	294.81
49	2.40	64.67	99	2.31	177.77	149	2.41	297.22
50	2.33	67.00	100	2.33	180.10	150	2.40	299.62
51	2.30	69.30	101	2.33	182.44	151	2.42	302.03
52	2.30	71.60	102	2.31	184.75	152	2.42	304.46
53	2.30	73.90	103	2.29	187.04	153	2.41	306.87
54	2.30	76.20	104	2.28	189.32	154	2.39	309.26
55	2.30	78.50	105	2.31	191.63	155	2.43	311.70
56	2.33	80.83	106	2.31	193.94	156	2.41	314.11
57	2.33	83.16	107	2.34	196.29	157	2.39	316.50
58	2.30	85.46	108	2.37	198.66	158	2.42	318.91
59	2.30	87.76	109	2.39	201.05	159	2.42	321.33
60	2.30	90.06	110	2.44	203.49	160	2.42	323.74
61	2.29	92.35	111	2.41	205.90	161	2.42	326.16
62	2.26	94.61	112	2.43	208.33	162	2.40	328.56
63	2.26	96.87	113	2.42	210.75	163	2.37	330.93
64	2.29	99.16	114	2.42	213.17	164	2.36	333.29
65	2.30	101.46	115	2.44	215.62	165	2.39	335.68
66	2.32	103.78	116	2.48	218.09	166	2.37	338.05
67	2.32	106.10	117	2.43	220.52	167	2.37	340.42
68	2.30	108.41	118	2.40	222.93	168	2.40	342.82
69	2.30	110.71	119	2.40	225.33	169	2.37	345.20
70	2.28	112.99	120	2.40	227.73	170	2.41	347.61
71	2.29	115.28	121	2.34	230.07	171	2.39	350.00

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
172	2.39	352.39	222	2.34	470.29	272	2.26	586.47
173	2.38	354.77	223	2.32	472.61	273	2.26	588.73
174	2.40	357.17	224	2.39	475.00	274	2.25	590.98
175	2.39	359.56	225	2.39	477.39	275	2.29	593.27
176	2.36	361.92	226	2.39	479.78	276	2.27	595.53
177	2.36	364.28	227	2.41	482.20	277	2.25	597.78
178	2.35	366.63	228	2.42	484.62	278	2.25	600.03
179	2.35	368.98	229	2.43	487.05	279	2.26	602.29
180	2.37	371.35	230	2.40	489.45	280	2.28	604.57
181	2.36	373.71	231	2.39	491.84	281	2.26	606.83
182	2.35	376.06	232	2.40	494.24	282	2.25	609.09
183	2.36	378.42	233	2.39	496.63	283	2.24	611.33
184	2.37	380.79	234	2.36	498.99	284	2.24	613.57
185	2.38	383.17	235	2.35	501.34	285	2.21	615.78
186	2.41	385.57	236	2.37	503.72	286	2.23	618.01
187	2.42	387.99	237	2.39	506.10	287	2.20	620.21
188	2.41	390.40	238	2.38	508.48	288	2.15	622.36
189	2.35	392.75	239	2.38	510.86	289	2.14	624.50
190	2.34	395.09	240	2.43	513.29	290	2.12	626.62
191	2.32	397.41	241	2.41	515.70	291	2.15	628.77
192	2.33	399.74	242	2.43	518.13	292	2.18	630.96
193	2.42	402.16	243	2.38	520.51	293	2.18	633.14
194	2.40	404.56	244	2.38	522.88	294	2.16	635.29
195	2.39	406.95	245	2.38	525.26	295	2.17	637.46
196	2.38	409.33	246	2.36	527.62	296	2.16	639.62
197	2.37	411.70	247	2.35	529.97	297	2.17	641.79
198	2.37	414.08	248	2.35	532.32	298	2.20	643.99
199	2.39	416.46	249	2.34	534.66	299	2.22	646.22
200	2.47	418.93	250	2.31	536.97	300	2.19	648.41
201	2.43	421.36	251	2.27	539.24	301	2.21	650.62
202	2.41	423.77	252	2.26	541.51	302	2.21	652.83
203	2.37	426.14	253	2.24	543.75	303	2.21	655.04
204	2.37	428.52	254	2.24	545.99	304	2.22	657.26
205	2.36	430.88	255	2.25	548.24	305	2.19	659.45
206	2.30	433.18	256	2.23	550.47	306	2.15	661.60
207	2.27	435.46	257	2.23	552.70	307	2.15	663.75
208	2.27	437.73	258	2.21	554.90	308	2.14	665.89
209	2.26	439.99	259	2.20	557.11	309	2.12	668.01
210	2.24	442.23	260	2.25	559.36	310	2.14	670.14
211	2.23	444.46	261	2.30	561.66	311	2.13	672.27
212	2.30	446.76	262	2.29	563.94	312	2.08	674.35
213	2.32	449.09	263	2.26	566.21	313	2.06	676.41
214	2.35	451.43	264	2.24	568.45	314	2.03	678.44
215	2.29	453.72	265	2.25	570.70	315	2.00	680.44
216	2.34	456.06	266	2.24	572.95	316	1.98	682.42
217	2.39	458.45	267	2.25	575.20	317	1.94	684.36
218	2.39	460.85	268	2.24	577.44	318	1.89	686.25
219	2.36	463.21	269	2.22	579.66	319	1.86	688.11
220	2.37	465.58	270	2.26	581.93	320	1.82	689.93
221	2.38	467.95	271	2.28	584.21	321	1.79	691.72

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
322	1.75	693.47	372	1.57	774.01	422	1.67	857.56
323	1.72	695.19	373	1.56	775.56	423	1.62	859.18
324	1.68	696.87	374	1.56	777.12	424	1.61	860.79
325	1.65	698.52	375	1.57	778.69	425	1.64	862.44
326	1.60	700.12	376	1.58	780.28	426	1.81	864.25
327	1.56	701.69	377	1.59	781.86	427	1.83	866.08
328	1.54	703.23	378	1.59	783.46	428	1.81	867.89
329	1.55	704.78	379	1.59	785.05	429	1.79	869.68
330	1.57	706.35	380	1.59	786.64	430	1.77	871.45
331	1.58	707.93	381	1.60	788.24	431	1.78	873.23
332	1.61	709.54	382	1.62	789.86	432	1.79	875.02
333	1.63	711.16	383	1.63	791.49	433	1.78	876.80
334	1.61	712.77	384	1.64	793.12	434	1.79	878.59
335	1.61	714.39	385	1.66	794.78	435	1.84	880.43
336	1.63	716.02	386	1.66	796.44	436	1.84	882.27
337	1.64	717.66	387	1.64	798.08	437	1.85	884.13
338	1.66	719.32	388	1.64	799.72	438	1.84	885.97
339	1.67	720.99	389	1.66	801.38	439	1.82	887.79
340	1.67	722.66	390	1.67	803.06	440	1.81	889.60
341	1.66	724.32	391	1.67	804.73	441	1.82	891.42
342	1.63	725.96	392	1.66	806.39	442	1.84	893.26
343	1.62	727.58	393	1.68	808.08	443	1.84	895.10
344	1.61	729.19	394	1.69	809.77	444	1.84	896.95
345	1.60	730.79	395	1.69	811.46	445	1.82	898.76
346	1.59	732.37	396	1.66	813.12	446	1.78	900.55
347	1.57	733.95	397	1.64	814.76	447	1.77	902.32
348	1.57	735.52	398	1.66	816.42	448	1.78	904.10
349	1.57	737.09	399	1.66	818.09	449	1.86	905.96
350	1.58	738.67	400	1.66	819.74	450	1.87	907.83
351	1.59	740.26	401	1.69	821.44	451	1.83	909.66
352	1.60	741.86	402	1.71	823.15	452	1.80	911.45
353	1.61	743.47	403	1.76	824.91	453	1.83	913.28
354	1.60	745.07	404	1.77	826.68	454	1.85	915.13
355	1.60	746.67	405	1.76	828.44	455	1.85	916.97
356	1.62	748.28	406	1.73	830.17	456	1.83	918.80
357	1.65	749.93	407	1.75	831.92	457	1.84	920.65
358	1.64	751.57	408	1.70	833.62	458	1.86	922.51
359	1.63	753.20	409	1.67	835.29	459	1.88	924.39
360	1.64	754.84	410	1.65	836.94	460	1.87	926.26
361	1.63	756.47	411	1.62	838.56	461	1.87	928.13
362	1.63	758.10	412	1.62	840.18	462	1.88	930.02
363	1.64	759.74	413	1.68	841.86	463	1.89	931.90
364	1.63	761.37	414	1.70	843.55	464	1.86	933.76
365	1.61	762.98	415	1.73	845.28	465	1.83	935.59
366	1.60	764.58	416	1.77	847.05	466	1.80	937.39
367	1.59	766.17	417	1.79	848.84	467	1.77	939.16
368	1.57	767.74	418	1.80	850.64	468	1.77	940.94
369	1.56	769.31	419	1.78	852.42	469	1.75	942.69
370	1.57	770.87	420	1.76	854.18	470	1.75	944.44
371	1.57	772.44	421	1.71	855.89	471	1.77	946.21

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
472	1.71	947.93	522	1.55	1019.63	572	1.84	1097.52
473	1.67	949.60	523	1.55	1021.18	573	1.84	1099.36
474	1.62	951.22	524	1.52	1022.70	574	1.84	1101.20
475	1.60	952.82	525	1.51	1024.21	575	1.85	1103.05
476	1.57	954.38	526	1.49	1025.70	576	1.86	1104.91
477	1.56	955.94	527	1.47	1027.17	577	1.86	1106.77
478	1.55	957.49	528	1.47	1028.64	578	1.86	1108.63
479	1.49	958.98	529	1.47	1030.11	579	1.85	1110.48
480	1.36	960.34	530	1.44	1031.55	580	1.84	1112.32
481	1.33	961.68	531	1.39	1032.94	581	1.83	1114.15
482	1.31	962.98	532	1.37	1034.31	582	1.83	1115.98
483	1.29	964.28	533	1.34	1035.65	583	1.82	1117.80
484	1.29	965.56	534	1.35	1037.00	584	1.81	1119.61
485	1.29	966.85	535	1.37	1038.37	585	1.79	1121.40
486	1.28	968.13	536	1.39	1039.76	586	1.77	1123.17
487	1.28	969.42	537	1.41	1041.17	587	1.76	1124.93
488	1.28	970.69	538	1.43	1042.60	588	1.74	1126.67
489	1.28	971.97	539	1.43	1044.03	589	1.74	1128.41
490	1.29	973.27	540	1.45	1045.48	590	1.75	1130.16
491	1.29	974.56	541	1.46	1046.94	591	1.76	1131.92
492	1.29	975.85	542	1.45	1048.39	592	1.75	1133.67
493	1.29	977.14	543	1.45	1049.84	593	1.75	1135.42
494	1.29	978.44	544	1.43	1051.27	594	1.75	1137.17
495	1.29	979.73	545	1.40	1052.67	595	1.75	1138.92
496	1.29	981.02	546	1.40	1054.07	596	1.75	1140.67
497	1.41	982.43	547	1.44	1055.51	597	1.77	1142.44
498	1.40	983.83	548	1.45	1056.96	598	1.78	1144.22
499	1.40	985.24	549	1.48	1058.44	599	1.77	1145.99
500	1.41	986.64	550	1.53	1059.97	600	1.77	1147.76
501	1.40	988.05	551	1.63	1061.60	601	1.75	1149.51
502	1.40	989.45	552	1.65	1063.25	602	1.74	1151.25
503	1.39	990.84	553	1.73	1064.98	603	1.70	1152.95
504	1.38	992.22	554	1.68	1066.66	604	1.68	1154.63
505	1.38	993.60	555	1.66	1068.32	605	1.68	1156.31
506	1.39	994.99	556	1.66	1069.98	606	1.66	1157.97
507	1.40	996.39	557	1.67	1071.65	607	1.63	1159.60
508	1.42	997.81	558	1.67	1073.32	608	1.62	1161.22
509	1.46	999.27	559	1.67	1074.99	609	1.61	1162.83
510	1.51	1000.78	560	1.64	1076.63	610	1.63	1164.46
511	1.53	1002.31	561	1.62	1078.25	611	1.65	1166.11
512	1.55	1003.86	562	1.60	1079.85	612	1.68	1167.79
513	1.58	1005.44	563	1.64	1081.49	613	1.69	1169.48
514	1.61	1007.05	564	1.72	1083.21	614	1.69	1171.17
515	1.61	1008.66	565	1.74	1084.95	615	1.69	1172.86
516	1.59	1010.25	566	1.71	1086.66	616	1.65	1174.51
517	1.57	1011.82	567	1.75	1088.41	617	1.59	1176.10
518	1.57	1013.39	568	1.80	1090.21	618	1.55	1177.65
519	1.57	1014.96	569	1.81	1092.02	619	1.55	1179.20
520	1.56	1016.52	570	1.82	1093.84	620	1.58	1180.78
521	1.56	1018.08	571	1.84	1095.68	621	1.61	1182.39

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
622	1.67	1184.06	672	1.81	1271.61	722	2.00	1362.78
623	1.75	1185.81	673	1.82	1273.43	723	2.04	1364.82
624	1.79	1187.60	674	1.79	1275.22	724	2.10	1366.92
625	1.74	1189.34	675	1.77	1276.99	725	2.11	1369.03
626	1.73	1191.07	676	1.75	1278.74	726	2.08	1371.11
627	1.73	1192.80	677	1.76	1280.50	727	2.03	1373.14
628	1.74	1194.54	678	1.76	1282.26	728	2.01	1375.15
629	1.74	1196.28	679	1.76	1284.02	729	1.97	1377.12
630	1.75	1198.03	680	1.79	1285.81	730	1.96	1379.08
631	1.76	1199.79	681	1.79	1287.60	731	1.94	1381.02
632	1.75	1201.54	682	1.76	1289.36	732	1.90	1382.92
633	1.72	1203.26	683	1.71	1291.07	733	1.86	1384.78
634	1.70	1204.96	684	1.69	1292.76	734	1.86	1386.64
635	1.71	1206.67	685	1.70	1294.46	735	1.84	1388.48
636	1.73	1208.40	686	1.73	1296.19	736	1.82	1390.30
637	1.75	1210.15	687	1.76	1297.95	737	1.78	1392.08
638	1.72	1211.87	688	1.74	1299.69	738	1.78	1393.86
639	1.70	1213.57	689	1.75	1301.44	739	1.78	1395.64
640	1.70	1215.27	690	1.76	1303.20	740	1.78	1397.42
641	1.73	1217.00	691	1.75	1304.95	741	1.79	1399.21
642	1.74	1218.74	692	1.70	1306.65	742	1.81	1401.02
643	1.75	1220.49	693	1.70	1308.35	743	1.82	1402.84
644	1.77	1222.26	694	1.71	1310.06	744	1.83	1404.67
645	1.77	1224.03	695	1.75	1311.81	745	1.83	1406.50
646	1.73	1225.76	696	1.80	1313.61	746	1.82	1408.32
647	1.72	1227.48	697	1.81	1315.42	747	1.82	1410.14
648	1.77	1229.25	698	1.79	1317.21	748	1.82	1411.96
649	1.80	1231.05	699	1.80	1319.01	749	1.81	1413.77
650	1.80	1232.85	700	1.84	1320.85	750	1.79	1415.56
651	1.79	1234.64	701	1.86	1322.71	751	1.78	1417.34
652	1.76	1236.40	702	1.87	1324.58	752	1.78	1419.12
653	1.75	1238.15	703	1.88	1326.46	753	1.79	1420.91
654	1.73	1239.88	704	1.92	1328.38	754	1.78	1422.69
655	1.69	1241.57	705	1.91	1330.29	755	1.77	1424.46
656	1.69	1243.26	706	1.87	1332.16	756	1.78	1426.24
657	1.69	1244.95	707	1.83	1333.99	757	1.81	1428.05
658	1.70	1246.65	708	1.82	1335.81	758	1.79	1429.84
659	1.74	1248.39	709	1.83	1337.64	759	1.78	1431.62
660	1.76	1250.15	710	1.84	1339.48	760	1.76	1433.38
661	1.78	1251.93	711	1.87	1341.35	761	1.79	1435.17
662	1.78	1253.71	712	1.88	1343.23	762	1.80	1436.97
663	1.78	1255.49	713	1.89	1345.12	763	1.81	1438.78
664	1.78	1257.27	714	1.92	1347.04	764	1.79	1440.57
665	1.80	1259.07	715	1.93	1348.97	765	1.76	1442.33
666	1.78	1260.85	716	1.92	1350.89	766	1.76	1444.09
667	1.77	1262.62	717	1.93	1352.82	767	1.76	1445.85
668	1.78	1264.40	718	1.97	1354.79	768	1.76	1447.61
669	1.80	1266.20	719	1.99	1356.78	769	1.74	1449.35
670	1.80	1268.00	720	2.01	1358.79	770	1.73	1451.08
671	1.80	1269.80	721	1.99	1360.78	771	1.77	1452.85

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
772	1.79	1454.64	822	1.66	1540.49	872	1.62	1626.47
773	1.82	1456.46	823	1.66	1542.15	873	1.62	1628.09
774	1.88	1458.34	824	1.66	1543.81	874	1.62	1629.71
775	1.86	1460.20	825	1.67	1545.48	875	1.61	1631.32
776	1.83	1462.03	826	1.70	1547.18	876	1.60	1632.92
777	1.82	1463.85	827	1.72	1548.90	877	1.59	1634.51
778	1.81	1465.66	828	1.77	1550.67	878	1.58	1636.09
779	1.85	1467.51	829	1.79	1552.46	879	1.60	1637.69
780	1.84	1469.35	830	1.78	1554.24	880	1.61	1639.30
781	1.85	1471.20	831	1.77	1556.01	881	1.61	1640.91
782	1.88	1473.08	832	1.76	1557.77	882	1.64	1642.55
783	1.86	1474.94	833	1.73	1559.50	883	1.64	1644.19
784	1.85	1476.79	834	1.69	1561.19	884	1.65	1645.84
785	1.84	1478.63	835	1.65	1562.84	885	1.69	1647.53
786	1.80	1480.43	836	1.67	1564.51	886	1.72	1649.25
787	1.79	1482.22	837	1.67	1566.18	887	1.82	1651.07
788	1.78	1484.00	838	1.67	1567.85	888	1.86	1652.93
789	1.76	1485.76	839	1.70	1569.55	889	1.84	1654.77
790	1.76	1487.52	840	1.71	1571.26	890	1.85	1656.62
791	1.75	1489.27	841	1.72	1572.98	891	1.91	1658.53
792	1.74	1491.01	842	1.73	1574.71	892	1.92	1660.45
793	1.71	1492.72	843	1.76	1576.47	893	1.98	1662.43
794	1.70	1494.42	844	1.77	1578.24	894	1.99	1664.42
795	1.71	1496.13	845	1.76	1580.00	895	1.95	1666.37
796	1.69	1497.82	846	1.75	1581.75	896	1.94	1668.31
797	1.68	1499.50	847	1.73	1583.48	897	1.93	1670.24
798	1.69	1501.19	848	1.70	1585.18	898	1.91	1672.15
799	1.68	1502.87	849	1.71	1586.89	899	1.89	1674.04
800	1.66	1504.53	850	1.71	1588.60	900	1.87	1675.91
801	1.63	1506.16	851	1.69	1590.29	901	1.86	1677.77
802	1.62	1507.78	852	1.69	1591.98	902	1.85	1679.62
803	1.63	1509.41	853	1.72	1593.70	903	1.83	1681.45
804	1.64	1511.05	854	1.79	1595.49	904	1.81	1683.26
805	1.65	1512.70	855	1.77	1597.26	905	1.84	1685.10
806	1.64	1514.34	856	1.76	1599.02	906	1.84	1686.94
807	1.64	1515.98	857	1.79	1600.81	907	1.85	1688.79
808	1.67	1517.65	858	1.85	1602.66	908	1.89	1690.68
809	1.66	1519.31	859	1.87	1604.53	909	1.92	1692.60
810	1.62	1520.93	860	1.87	1606.40	910	1.94	1694.54
811	1.58	1522.51	861	1.86	1608.26	911	1.96	1696.50
812	1.57	1524.08	862	1.84	1610.10	912	1.92	1698.42
813	1.58	1525.66	863	1.79	1611.89	913	1.89	1700.31
814	1.58	1527.24	864	1.71	1613.60	914	1.85	1702.16
815	1.62	1528.86	865	1.61	1615.21	915	1.87	1704.03
816	1.64	1530.50	866	1.64	1616.85	916	1.88	1705.91
817	1.64	1532.14	867	1.61	1618.46	917	1.89	1707.80
818	1.67	1533.81	868	1.60	1620.06	918	1.90	1709.70
819	1.69	1535.50	869	1.59	1621.65	919	1.89	1711.59
820	1.67	1537.17	870	1.58	1623.23	920	1.85	1713.44
821	1.66	1538.83	871	1.62	1624.85	921	1.85	1715.29

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
922	1.83	1717.12	972	1.98	1814.54	1022	2.06	1913.53
923	1.83	1718.95	973	1.97	1816.51	1023	2.05	1915.58
924	1.86	1720.81	974	1.98	1818.49	1024	2.05	1917.63
925	1.88	1722.69	975	1.99	1820.48	1025	2.02	1919.65
926	1.89	1724.58	976	2.01	1822.49	1026	1.99	1921.64
927	1.87	1726.45	977	2.00	1824.49	1027	2.00	1923.64
928	1.88	1728.33	978	1.97	1826.46	1028	2.01	1925.65
929	1.86	1730.19	979	1.97	1828.43	1029	1.98	1927.63
930	1.84	1732.03	980	1.97	1830.40	1030	1.92	1929.55
931	1.81	1733.84	981	1.97	1832.37	1031	1.91	1931.46
932	1.82	1735.66	982	1.97	1834.34	1032	1.91	1933.37
933	1.82	1737.48	983	1.97	1836.31	1033	1.89	1935.26
934	1.83	1739.31	984	1.96	1838.27	1034	1.91	1937.17
935	1.84	1741.15	985	1.97	1840.24	1035	1.93	1939.10
936	1.85	1743.00	986	1.97	1842.21	1036	1.98	1941.08
937	1.89	1744.89	987	1.95	1844.16	1037	2.04	1943.12
938	1.90	1746.79	988	1.95	1846.11	1038	2.05	1945.17
939	1.88	1748.67	989	1.97	1848.08	1039	2.01	1947.18
940	1.90	1750.57	990	1.96	1850.04	1040	1.99	1949.17
941	1.92	1752.49	991	1.98	1852.02	1041	1.99	1951.16
942	1.92	1754.41	992	1.98	1854.00	1042	2.02	1953.18
943	1.96	1756.37	993	1.99	1855.99	1043	2.02	1955.20
944	1.98	1758.35	994	2.00	1857.99	1044	1.99	1957.19
945	1.95	1760.30	995	1.99	1859.98	1045	1.98	1959.17
946	1.95	1762.25	996	1.99	1861.97	1046	1.96	1961.13
947	1.96	1764.21	997	1.98	1863.95	1047	1.94	1963.07
948	1.97	1766.18	998	1.98	1865.93	1048	1.91	1964.98
949	1.99	1768.17	999	1.96	1867.89	1049	1.89	1966.87
950	1.97	1770.14	1000	1.91	1869.80	1050	1.85	1968.72
951	1.97	1772.11	1001	1.90	1871.70	1051	1.81	1970.53
952	1.97	1774.08	1002	1.94	1873.64	1052	1.81	1972.34
953	1.98	1776.06	1003	1.96	1875.60	1053	1.81	1974.15
954	2.00	1778.06	1004	1.99	1877.59	1054	1.86	1976.01
955	2.03	1780.09	1005	2.03	1879.62	1055	1.88	1977.89
956	2.04	1782.13	1006	2.04	1881.66	1056	1.86	1979.75
957	2.02	1784.15	1007	2.04	1883.70	1057	1.83	1981.58
958	2.01	1786.16	1008	2.01	1885.71	1058	1.86	1983.44
959	1.98	1788.14	1009	2.02	1887.73	1059	1.86	1985.30
960	1.98	1790.12	1010	0.00	1889.70	1060	1.83	1987.13
961	2.00	1792.12	1011	0.00	1891.67	1061	1.79	1988.92
962	2.01	1794.13	1012	0.00	1893.64	1062	1.79	1990.71
963	2.01	1796.14	1013	0.00	1895.61	1063	1.84	1992.55
964	2.07	1798.21	1014	1.91	1897.58	1064	1.87	1994.42
965	2.07	1800.28	1015	1.92	1899.50	1065	1.87	1996.29
966	2.08	1802.36	1016	1.94	1901.44	1066	1.85	1998.14
967	2.08	1804.44	1017	1.96	1903.40	1067	1.82	1999.96
968	2.06	1806.50	1018	2.01	1905.41	1068	1.78	2001.74
969	2.06	1808.56	1019	2.01	1907.42	1069	1.74	2003.48
970	2.01	1810.57	1020	2.02	1909.44	1070	1.73	2005.21
971	1.99	1812.56	1021	2.03	1911.47	1071	1.78	2006.99

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1072	1.83	2008.82	1122	1.82	2096.25	1172	1.75	2183.85
1073	1.87	2010.69	1123	1.81	2098.06	1173	1.78	2185.63
1074	1.83	2012.52	1124	1.80	2099.86	1174	1.80	2187.43
1075	1.82	2014.34	1125	1.77	2101.63	1175	1.82	2189.25
1076	1.85	2016.19	1126	1.76	2103.39	1176	1.79	2191.04
1077	1.87	2018.06	1127	1.78	2105.17	1177	1.77	2192.81
1078	1.88	2019.94	1128	1.74	2106.91	1178	1.74	2194.55
1079	1.90	2021.84	1129	1.73	2108.64	1179	1.71	2196.26
1080	1.93	2023.77	1130	1.75	2110.39	1180	1.71	2197.97
1081	1.95	2025.72	1131	1.74	2112.13	1181	1.74	2199.71
1082	2.00	2027.72	1132	1.71	2113.84	1182	1.77	2201.48
1083	2.02	2029.74	1133	1.72	2115.56	1183	1.78	2203.26
1084	2.00	2031.74	1134	1.73	2117.29	1184	1.77	2205.03
1085	2.00	2033.74	1135	1.77	2119.06	1185	1.75	2206.78
1086	2.05	2035.79	1136	1.78	2120.84	1186	1.76	2208.54
1087	2.07	2037.86	1137	1.76	2122.60	1187	1.80	2210.34
1088	2.03	2039.89	1138	1.76	2124.36	1188	1.83	2212.17
1089	1.99	2041.88	1139	1.77	2126.13	1189	1.83	2214.00
1090	1.96	2043.84	1140	1.75	2127.88	1190	1.83	2215.83
1091	1.90	2045.74	1141	1.70	2129.58	1191	1.82	2217.65
1092	1.85	2047.59	1142	1.71	2131.29	1192	1.79	2219.44
1093	1.86	2049.45	1143	1.73	2133.02	1193	1.80	2221.24
1094	1.88	2051.33	1144	1.74	2134.76	1194	1.82	2223.06
1095	1.83	2053.16	1145	1.76	2136.52	1195	1.82	2224.88
1096	1.77	2054.93	1146	1.77	2138.29	1196	1.81	2226.69
1097	1.65	2056.58	1147	1.79	2140.08	1197	1.84	2228.53
1098	1.52	2058.10	1148	1.79	2141.87	1198	1.83	2230.36
1099	1.46	2059.56	1149	1.77	2143.64	1199	1.86	2232.22
1100	1.45	2061.01	1150	1.76	2145.40	1200	1.84	2234.06
1101	1.46	2062.47	1151	1.74	2147.14	1201	1.84	2235.90
1102	1.46	2063.93	1152	1.77	2148.91	1202	1.86	2237.76
1103	1.48	2065.41	1153	1.76	2150.67	1203	1.82	2239.58
1104	1.46	2066.87	1154	1.74	2152.41	1204	1.80	2241.38
1105	1.48	2068.35	1155	1.75	2154.16	1205	1.80	2243.18
1106	1.46	2069.81	1156	1.76	2155.92	1206	1.79	2244.97
1107	1.47	2071.28	1157	1.79	2157.71	1207	1.77	2246.74
1108	1.48	2072.76	1158	1.77	2159.48	1208	1.75	2248.49
1109	1.50	2074.26	1159	1.75	2161.23	1209	1.76	2250.25
1110	1.49	2075.75	1160	1.75	2162.98	1210	1.78	2252.03
1111	1.48	2077.23	1161	1.75	2164.73	1211	1.76	2253.79
1112	1.49	2078.72	1162	1.75	2166.48	1212	1.73	2255.52
1113	1.52	2080.24	1163	1.74	2168.22	1213	1.76	2257.28
1114	1.53	2081.77	1164	1.75	2169.97	1214	1.76	2259.04
1115	1.67	2083.44	1165	1.74	2171.71	1215	1.77	2260.81
1116	1.85	2085.29	1166	1.72	2173.43	1216	1.79	2262.60
1117	1.83	2087.12	1167	1.73	2175.16	1217	1.82	2264.42
1118	1.84	2088.96	1168	1.72	2176.88	1218	1.84	2266.26
1119	1.84	2090.80	1169	1.73	2178.61	1219	1.87	2268.13
1120	1.82	2092.62	1170	1.75	2180.36	1220	1.88	2270.01
1121	1.81	2094.43	1171	1.74	2182.10	1221	1.87	2271.88

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1222	1.87	2273.75	1272	1.91	2371.23	1322	1.92	2467.84
1223	1.89	2275.64	1273	1.96	2373.19	1323	1.92	2469.76
1224	1.90	2277.54	1274	1.97	2375.16	1324	1.93	2471.69
1225	1.93	2279.47	1275	1.96	2377.12	1325	1.95	2473.64
1226	1.93	2281.40	1276	1.95	2379.07	1326	1.95	2475.59
1227	1.95	2283.35	1277	1.95	2381.02	1327	1.95	2477.54
1228	1.97	2285.32	1278	1.94	2382.96	1328	1.94	2479.48
1229	2.00	2287.32	1279	1.94	2384.90	1329	1.92	2481.40
1230	2.06	2289.38	1280	1.98	2386.88	1330	1.94	2483.34
1231	2.04	2291.42	1281	1.98	2388.86	1331	1.95	2485.29
1232	2.03	2293.45	1282	2.00	2390.86	1332	1.97	2487.26
1233	2.03	2295.48	1283	2.01	2392.87	1333	1.99	2489.25
1234	2.04	2297.52	1284	2.00	2394.87	1334	2.00	2491.25
1235	2.04	2299.56	1285	2.00	2396.87	1335	1.99	2493.24
1236	2.02	2301.58	1286	2.01	2398.88	1336	1.99	2495.23
1237	2.00	2303.58	1287	1.99	2400.87	1337	1.98	2497.21
1238	1.98	2305.56	1288	1.97	2402.84	1338	1.95	2499.16
1239	1.92	2307.48	1289	1.96	2404.80	1339	1.94	2501.10
1240	1.89	2309.37	1290	1.94	2406.74	1340	1.92	2503.02
1241	1.88	2311.25	1291	1.92	2408.66	1341	1.89	2504.91
1242	1.88	2313.13	1292	1.91	2410.57	1342	1.89	2506.80
1243	1.89	2315.02	1293	1.92	2412.49	1343	1.90	2508.70
1244	1.92	2316.94	1294	1.93	2414.42	1344	1.94	2510.64
1245	1.94	2318.88	1295	1.96	2416.38	1345	1.99	2512.63
1246	1.95	2320.83	1296	1.96	2418.34	1346	1.97	2514.60
1247	1.96	2322.79	1297	1.96	2420.30	1347	1.98	2516.58
1248	1.98	2324.77	1298	1.97	2422.27	1348	2.01	2518.59
1249	2.01	2326.78	1299	1.96	2424.23	1349	2.02	2520.61
1250	2.01	2328.79	1300	1.94	2426.17	1350	2.01	2522.62
1251	2.01	2330.80	1301	1.91	2428.08	1351	2.02	2524.64
1252	1.99	2332.79	1302	1.91	2429.99	1352	2.06	2526.70
1253	1.99	2334.78	1303	1.92	2431.91	1353	2.10	2528.80
1254	1.99	2336.77	1304	1.91	2433.82	1354	2.10	2530.90
1255	1.98	2338.75	1305	1.90	2435.72	1355	2.07	2532.97
1256	1.95	2340.70	1306	1.89	2437.61	1356	2.04	2535.01
1257	1.92	2342.62	1307	1.89	2439.50	1357	2.03	2537.04
1258	1.89	2344.51	1308	1.88	2441.38	1358	2.03	2539.07
1259	1.89	2346.40	1309	1.87	2443.25	1359	1.99	2541.06
1260	1.90	2348.30	1310	1.86	2445.11	1360	1.94	2543.00
1261	1.91	2350.21	1311	1.88	2446.99	1361	1.91	2544.91
1262	1.93	2352.14	1312	1.91	2448.90	1362	1.90	2546.81
1263	1.95	2354.09	1313	1.90	2450.80	1363	1.88	2548.69
1264	1.95	2356.04	1314	1.86	2452.66	1364	1.86	2550.55
1265	1.93	2357.97	1315	1.86	2454.52	1365	1.84	2552.39
1266	1.90	2359.87	1316	1.86	2456.38	1366	1.84	2554.23
1267	1.90	2361.77	1317	1.87	2458.25	1367	1.83	2556.06
1268	1.88	2363.65	1318	1.90	2460.15	1368	1.83	2557.89
1269	1.88	2365.53	1319	1.93	2462.08	1369	1.82	2559.71
1270	1.89	2367.42	1320	1.92	2464.00	1370	1.82	2561.53
1271	1.90	2369.32	1321	1.92	2465.92	1371	1.82	2563.35

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1372	1.81	2565.16	1422	1.82	2658.59	1472	1.88	2751.87
1373	1.81	2566.97	1423	1.83	2660.42	1473	1.89	2753.76
1374	1.84	2568.81	1424	1.83	2662.25	1474	1.91	2755.67
1375	1.87	2570.68	1425	1.84	2664.09	1475	1.93	2757.60
1376	1.87	2572.55	1426	1.85	2665.94	1476	1.89	2759.49
1377	1.87	2574.42	1427	1.83	2667.77	1477	1.87	2761.36
1378	1.88	2576.30	1428	1.84	2669.61	1478	1.86	2763.22
1379	1.88	2578.18	1429	1.83	2671.44	1479	1.84	2765.06
1380	1.88	2580.06	1430	1.87	2673.31	1480	1.83	2766.89
1381	1.90	2581.96	1431	1.90	2675.21	1481	1.80	2768.69
1382	1.92	2583.88	1432	1.89	2677.10	1482	1.79	2770.48
1383	1.89	2585.77	1433	1.88	2678.98	1483	1.76	2772.24
1384	1.88	2587.65	1434	1.84	2680.82	1484	1.76	2774.00
1385	1.87	2589.52	1435	1.80	2682.62	1485	1.76	2775.76
1386	1.87	2591.39	1436	1.81	2684.43	1486	1.76	2777.52
1387	1.87	2593.26	1437	1.81	2686.24	1487	1.76	2779.28
1388	1.86	2595.12	1438	1.81	2688.05	1488	1.77	2781.05
1389	1.86	2596.98	1439	1.79	2689.84	1489	1.78	2782.83
1390	1.85	2598.83	1440	1.81	2691.65	1490	1.80	2784.63
1391	1.85	2600.68	1441	1.82	2693.47	1491	1.82	2786.45
1392	1.84	2602.52	1442	1.83	2695.30	1492	1.82	2788.27
1393	1.83	2604.35	1443	1.85	2697.15	1493	1.80	2790.07
1394	1.84	2606.19	1444	1.85	2699.00	1494	1.81	2791.88
1395	1.91	2608.10	1445	1.84	2700.84	1495	1.83	2793.71
1396	1.93	2610.03	1446	1.84	2702.68	1496	1.84	2795.55
1397	1.90	2611.93	1447	1.85	2704.53	1497	1.84	2797.39
1398	1.88	2613.81	1448	1.84	2706.37	1498	1.84	2799.23
1399	1.87	2615.68	1449	1.83	2708.20	1499	1.83	2801.06
1400	1.88	2617.56	1450	1.82	2710.02	1500	1.82	2802.88
1401	1.90	2619.46	1451	1.81	2711.83	1501	1.83	2804.71
1402	1.90	2621.36	1452	1.79	2713.62	1502	1.84	2806.55
1403	1.88	2623.24	1453	1.79	2715.41	1503	1.86	2808.41
1404	1.86	2625.10	1454	1.84	2717.25	1504	1.87	2810.28
1405	1.86	2626.96	1455	1.90	2719.15	1505	1.90	2812.18
1406	1.90	2628.86	1456	1.95	2721.10	1506	1.90	2814.08
1407	1.90	2630.76	1457	1.94	2723.04	1507	1.88	2815.96
1408	1.90	2632.66	1458	1.95	2724.99	1508	1.88	2817.84
1409	1.92	2634.58	1459	1.97	2726.96	1509	1.89	2819.73
1410	1.93	2636.51	1460	1.98	2728.94	1510	1.88	2821.61
1411	1.90	2638.41	1461	1.97	2730.91	1511	1.89	2823.50
1412	1.88	2640.29	1462	1.93	2732.84	1512	1.87	2825.37
1413	1.86	2642.15	1463	1.93	2734.77	1513	1.85	2827.22
1414	1.83	2643.98	1464	1.93	2736.70	1514	1.85	2829.07
1415	1.83	2645.81	1465	1.90	2738.60	1515	1.83	2830.90
1416	1.84	2647.65	1466	1.89	2740.49	1516	1.82	2832.72
1417	1.84	2649.49	1467	1.91	2742.40	1517	1.81	2834.53
1418	1.83	2651.32	1468	1.93	2744.33	1518	1.82	2836.35
1419	1.82	2653.14	1469	1.90	2746.23	1519	1.82	2838.17
1420	1.81	2654.95	1470	1.90	2748.13	1520	1.82	2839.99
1421	1.82	2656.77	1471	1.86	2749.99	1521	1.80	2841.79

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1522	1.80	2843.59	1572	1.93	2940.48	1622	1.91	3038.87
1523	1.80	2845.39	1573	1.95	2942.43	1623	1.90	3040.77
1524	1.82	2847.21	1574	1.96	2944.39	1624	1.90	3042.67
1525	1.86	2849.07	1575	1.98	2946.37	1625	1.95	3044.62
1526	1.92	2850.99	1576	1.95	2948.32	1626	1.94	3046.56
1527	1.95	2852.94	1577	1.93	2950.25	1627	1.94	3048.50
1528	1.97	2854.91	1578	1.90	2952.15	1628	1.93	3050.43
1529	1.99	2856.90	1579	1.92	2954.07	1629	1.91	3052.34
1530	2.00	2858.90	1580	1.94	2956.01	1630	1.94	3054.28
1531	1.97	2860.87	1581	1.94	2957.95	1631	1.96	3056.24
1532	1.98	2862.85	1582	1.94	2959.89	1632	1.99	3058.23
1533	1.98	2864.83	1583	1.94	2961.83	1633	2.03	3060.26
1534	1.99	2866.82	1584	1.93	2963.76	1634	2.04	3062.30
1535	1.99	2868.81	1585	1.93	2965.69	1635	2.05	3064.35
1536	2.00	2870.81	1586	1.93	2967.62	1636	2.05	3066.40
1537	1.99	2872.80	1587	1.93	2969.55	1637	2.01	3068.41
1538	1.99	2874.79	1588	1.95	2971.50	1638	1.96	3070.37
1539	2.02	2876.81	1589	1.96	2973.46	1639	1.94	3072.31
1540	1.99	2878.80	1590	1.99	2975.45	1640	1.91	3074.22
1541	1.99	2880.79	1591	2.01	2977.46	1641	1.89	3076.11
1542	2.00	2882.79	1592	2.05	2979.51	1642	1.88	3077.99
1543	2.01	2884.80	1593	2.09	2981.60	1643	1.89	3079.88
1544	1.97	2886.77	1594	2.13	2983.73	1644	1.93	3081.81
1545	1.94	2888.71	1595	2.11	2985.84	1645	1.91	3083.72
1546	1.95	2890.66	1596	2.09	2987.93	1646	1.89	3085.61
1547	1.92	2892.58	1597	2.07	2990.00	1647	1.91	3087.52
1548	1.92	2894.50	1598	2.06	2992.06	1648	1.88	3089.40
1549	1.93	2896.43	1599	2.04	2994.10	1649	1.89	3091.29
1550	1.89	2898.32	1600	2.01	2996.11	1650	1.91	3093.20
1551	1.88	2900.20	1601	1.99	2998.10	1651	1.91	3095.11
1552	1.86	2902.06	1602	1.98	3000.08	1652	1.92	3097.03
1553	1.84	2903.90	1603	1.93	3002.01	1653	1.89	3098.92
1554	1.84	2905.74	1604	1.89	3003.90	1654	1.87	3100.79
1555	1.84	2907.58	1605	1.89	3005.79	1655	1.89	3102.68
1556	1.86	2909.44	1606	1.90	3007.69	1656	1.87	3104.55
1557	1.87	2911.31	1607	1.91	3009.60	1657	1.85	3106.40
1558	1.87	2913.18	1608	1.91	3011.51	1658	1.84	3108.24
1559	1.88	2915.06	1609	1.93	3013.44	1659	1.84	3110.08
1560	1.91	2916.97	1610	1.93	3015.37	1660	1.86	3111.94
1561	1.92	2918.89	1611	1.94	3017.31	1661	1.87	3113.81
1562	1.97	2920.86	1612	1.92	3019.23	1662	1.87	3115.68
1563	2.00	2922.86	1613	1.92	3021.15	1663	1.91	3117.59
1564	2.05	2924.91	1614	1.93	3023.08	1664	1.89	3119.48
1565	2.00	2926.91	1615	1.95	3025.03	1665	1.86	3121.34
1566	1.99	2928.90	1616	1.98	3027.01	1666	1.85	3123.19
1567	1.95	2930.85	1617	2.01	3029.02	1667	1.87	3125.06
1568	1.93	2932.78	1618	2.00	3031.02	1668	1.84	3126.90
1569	1.91	2934.69	1619	2.00	3033.02	1669	1.86	3128.76
1570	1.94	2936.63	1620	1.98	3035.00	1670	1.88	3130.64
1571	1.92	2938.55	1621	1.96	3036.96	1671	1.85	3132.49

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1672	1.87	3134.36	1722	1.95	3228.68	1772	2.24	3332.11
1673	1.87	3136.23	1723	1.94	3230.62	1773	2.24	3334.35
1674	1.85	3138.08	1724	1.91	3232.53	1774	2.24	3336.59
1675	1.84	3139.92	1725	1.92	3234.45	1775	2.22	3338.81
1676	1.84	3141.76	1726	1.94	3236.39	1776	2.18	3340.99
1677	1.85	3143.61	1727	1.98	3238.37	1777	2.17	3343.16
1678	1.86	3145.47	1728	2.01	3240.38	1778	2.15	3345.31
1679	1.87	3147.34	1729	2.03	3242.41	1779	2.10	3347.41
1680	1.87	3149.21	1730	2.04	3244.45	1780	2.08	3349.49
1681	1.86	3151.07	1731	2.03	3246.48	1781	2.10	3351.59
1682	1.85	3152.92	1732	2.00	3248.48	1782	2.12	3353.71
1683	1.85	3154.77	1733	1.99	3250.47	1783	2.12	3355.83
1684	1.86	3156.63	1734	2.02	3252.49	1784	2.16	3357.99
1685	1.87	3158.50	1735	2.02	3254.51	1785	2.16	3360.15
1686	1.90	3160.40	1736	2.01	3256.52	1786	2.15	3362.30
1687	1.84	3162.24	1737	1.98	3258.50	1787	2.09	3364.39
1688	1.83	3164.07	1738	1.99	3260.49	1788	2.09	3366.48
1689	1.82	3165.89	1739	2.01	3262.50	1789	2.09	3368.57
1690	1.83	3167.72	1740	2.00	3264.50	1790	2.07	3370.64
1691	1.83	3169.55	1741	2.01	3266.51	1791	2.08	3372.72
1692	1.84	3171.39	1742	2.00	3268.51	1792	2.08	3374.80
1693	1.82	3173.21	1743	2.02	3270.53	1793	2.06	3376.86
1694	1.83	3175.04	1744	2.03	3272.56	1794	2.04	3378.90
1695	1.86	3176.90	1745	2.00	3274.56	1795	2.03	3380.93
1696	1.88	3178.78	1746	2.00	3276.56	1796	2.02	3382.95
1697	1.89	3180.67	1747	2.04	3278.60	1797	2.01	3384.96
1698	1.88	3182.55	1748	2.04	3280.64	1798	2.06	3387.02
1699	1.84	3184.39	1749	2.06	3282.70	1799	2.14	3389.16
1700	1.86	3186.25	1750	2.05	3284.75	1800	2.18	3391.34
1701	1.91	3188.16	1751	2.03	3286.78	1801	2.18	3393.52
1702	1.91	3190.07	1752	2.01	3288.79	1802	2.18	3395.70
1703	1.88	3191.95	1753	2.05	3290.84	1803	2.16	3397.86
1704	1.86	3193.81	1754	2.06	3292.90	1804	2.14	3400.00
1705	1.87	3195.68	1755	2.07	3294.97	1805	2.13	3402.13
1706	1.88	3197.56	1756	2.07	3297.04	1806	2.11	3404.24
1707	1.92	3199.48	1757	2.07	3299.11	1807	2.09	3406.33
1708	1.92	3201.40	1758	2.09	3301.20	1808	2.07	3408.40
1709	1.94	3203.34	1759	2.12	3303.32	1809	2.05	3410.45
1710	1.95	3205.29	1760	2.12	3305.44	1810	2.04	3412.49
1711	1.96	3207.25	1761	2.13	3307.57	1811	2.03	3414.52
1712	1.94	3209.19	1762	2.19	3309.76	1812	2.03	3416.55
1713	1.94	3211.13	1763	2.23	3311.99	1813	2.03	3418.58
1714	1.95	3213.08	1764	2.23	3314.22	1814	2.04	3420.62
1715	1.94	3215.02	1765	2.24	3316.46	1815	2.07	3422.69
1716	1.92	3216.94	1766	2.25	3318.71	1816	2.08	3424.77
1717	1.93	3218.87	1767	2.24	3320.95	1817	2.07	3426.84
1718	1.93	3220.80	1768	2.23	3323.18	1818	2.10	3428.94
1719	1.96	3222.76	1769	2.22	3325.40	1819	2.11	3431.05
1720	1.99	3224.75	1770	2.23	3327.63	1820	2.12	3433.17
1721	1.98	3226.73	1771	2.24	3329.87	1821	2.05	3435.22

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1822	2.04	3437.26	1872	2.06	3542.90	1922	2.03	3647.61
1823	2.06	3439.32	1873	2.08	3544.98	1923	1.99	3649.60
1824	2.07	3441.39	1874	2.10	3547.08	1924	1.98	3651.58
1825	2.05	3443.44	1875	2.07	3549.15	1925	1.99	3653.57
1826	2.04	3445.48	1876	2.03	3551.18	1926	2.02	3655.59
1827	2.02	3447.50	1877	2.08	3553.26	1927	2.10	3657.69
1828	2.02	3449.52	1878	2.08	3555.34	1928	2.12	3659.81
1829	2.06	3451.58	1879	2.09	3557.43	1929	2.16	3661.97
1830	2.11	3453.69	1880	2.11	3559.54	1930	2.14	3664.11
1831	2.13	3455.82	1881	2.09	3561.63	1931	2.12	3666.23
1832	2.09	3457.91	1882	2.07	3563.70	1932	2.11	3668.34
1833	2.14	3460.05	1883	2.06	3565.76	1933	2.10	3670.44
1834	2.12	3462.17	1884	2.08	3567.84	1934	2.10	3672.54
1835	2.12	3464.29	1885	2.09	3569.93	1935	2.12	3674.66
1836	2.09	3466.38	1886	2.11	3572.04	1936	2.12	3676.78
1837	2.08	3468.46	1887	2.11	3574.15	1937	2.13	3678.91
1838	2.07	3470.53	1888	2.14	3576.29	1938	2.10	3681.01
1839	2.04	3472.57	1889	2.15	3578.44	1939	2.09	3683.10
1840	2.04	3474.61	1890	2.19	3580.63	1940	2.09	3685.19
1841	2.06	3476.67	1891	2.20	3582.83	1941	2.10	3687.29
1842	2.11	3478.78	1892	2.20	3585.03	1942	2.09	3689.38
1843	2.11	3480.89	1893	2.22	3587.25	1943	2.11	3691.49
1844	2.10	3482.99	1894	2.21	3589.46	1944	2.10	3693.59
1845	2.10	3485.09	1895	2.16	3591.62	1945	2.10	3695.69
1846	2.10	3487.19	1896	2.13	3593.75	1946	2.11	3697.80
1847	2.11	3489.30	1897	2.14	3595.89	1947	2.14	3699.94
1848	2.11	3491.41	1898	2.15	3598.04	1948	2.19	3702.13
1849	2.14	3493.55	1899	2.15	3600.19	1949	2.19	3704.32
1850	2.16	3495.71	1900	2.14	3602.33	1950	2.19	3706.51
1851	2.11	3497.82	1901	2.12	3604.45	1951	2.17	3708.68
1852	2.10	3499.92	1902	2.11	3606.56	1952	2.16	3710.84
1853	2.12	3502.04	1903	2.08	3608.64	1953	2.17	3713.01
1854	2.15	3504.19	1904	2.09	3610.73	1954	2.17	3715.18
1855	2.19	3506.38	1905	2.07	3612.80	1955	2.16	3717.34
1856	2.19	3508.57	1906	2.07	3614.87	1956	2.17	3719.51
1857	2.15	3510.72	1907	2.03	3616.90	1957	2.18	3721.69
1858	2.18	3512.90	1908	2.03	3618.93	1958	2.16	3723.85
1859	2.20	3515.10	1909	2.03	3620.96	1959	2.17	3726.02
1860	2.22	3517.32	1910	2.03	3622.99	1960	2.17	3728.19
1861	2.21	3519.53	1911	2.07	3625.06	1961	2.18	3730.37
1862	2.20	3521.73	1912	2.07	3627.13	1962	2.23	3732.60
1863	2.17	3523.90	1913	2.07	3629.20	1963	2.25	3734.85
1864	2.16	3526.06	1914	2.03	3631.23	1964	2.27	3737.12
1865	2.13	3528.19	1915	2.04	3633.27	1965	2.28	3739.40
1866	2.11	3530.30	1916	2.06	3635.33	1966	2.26	3741.66
1867	2.13	3532.43	1917	2.06	3637.39	1967	2.25	3743.91
1868	2.15	3534.58	1918	2.04	3639.43	1968	2.25	3746.16
1869	2.11	3536.69	1919	2.03	3641.46	1969	2.24	3748.40
1870	2.09	3538.78	1920	2.06	3643.52	1970	2.23	3750.63
1871	2.06	3540.84	1921	2.06	3645.58	1971	2.22	3752.85

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1972	2.19	3755.04	2022	2.24	3866.67	2072	2.30	3980.55
1973	2.17	3757.21	2023	2.25	3868.92	2073	2.31	3982.86
1974	2.17	3759.38	2024	2.25	3871.17	2074	2.34	3985.20
1975	2.19	3761.57	2025	2.26	3873.43	2075	2.37	3987.57
1976	2.21	3763.78	2026	2.26	3875.69	2076	2.38	3989.95
1977	2.20	3765.98	2027	2.25	3877.94	2077	2.38	3992.33
1978	2.20	3768.18	2028	2.22	3880.16	2078	2.35	3994.68
1979	2.22	3770.40	2029	2.23	3882.39	2079	2.32	3997.00
1980	2.23	3772.63	2030	2.24	3884.63	2080	2.31	3999.31
1981	2.21	3774.84	2031	2.25	3886.88	2081	2.32	4001.63
1982	2.20	3777.04	2032	2.27	3889.15	2082	2.32	4003.95
1983	2.18	3779.22	2033	2.28	3891.43	2083	2.32	4006.27
1984	2.17	3781.39	2034	2.30	3893.73	2084	2.30	4008.57
1985	2.20	3783.59	2035	2.33	3896.06	2085	2.30	4010.87
1986	2.24	3785.83	2036	2.29	3898.35	2086	2.28	4013.15
1987	2.24	3788.07	2037	2.28	3900.63	2087	2.25	4015.40
1988	2.23	3790.30	2038	2.29	3902.92	2088	2.23	4017.63
1989	2.24	3792.54	2039	2.28	3905.20	2089	2.25	4019.88
1990	2.25	3794.79	2040	2.29	3907.49	2090	2.23	4022.11
1991	2.24	3797.03	2041	2.31	3909.80	2091	2.20	4024.31
1992	2.24	3799.27	2042	2.32	3912.12	2092	2.24	4026.55
1993	2.24	3801.51	2043	2.29	3914.41	2093	2.25	4028.80
1994	2.25	3803.76	2044	2.30	3916.71	2094	2.27	4031.07
1995	2.27	3806.03	2045	2.31	3919.02	2095	2.28	4033.35
1996	2.25	3808.28	2046	2.34	3921.36	2096	2.29	4035.64
1997	2.26	3810.54	2047	2.33	3923.69	2097	2.27	4037.91
1998	2.27	3812.81	2048	2.29	3925.98	2098	2.22	4040.13
1999	2.27	3815.08	2049	2.28	3928.26	2099	2.19	4042.32
2000	2.27	3817.35	2050	2.28	3930.54	2100	2.21	4044.53
2001	2.27	3819.62	2051	2.25	3932.79	2101	2.24	4046.77
2002	2.28	3821.90	2052	2.25	3935.04	2102	2.24	4049.01
2003	2.27	3824.17	2053	2.24	3937.28	2103	2.24	4051.25
2004	2.28	3826.45	2054	2.25	3939.53	2104	2.23	4053.48
2005	2.25	3828.70	2055	2.26	3941.79	2105	2.26	4055.74
2006	2.27	3830.97	2056	2.27	3944.06	2106	2.26	4058.00
2007	2.23	3833.20	2057	2.30	3946.36	2107	2.25	4060.25
2008	2.23	3835.43	2058	2.32	3948.68	2108	2.23	4062.48
2009	2.26	3837.69	2059	2.32	3951.00	2109	2.23	4064.71
2010	2.27	3839.96	2060	2.32	3953.32	2110	2.25	4066.96
2011	2.27	3842.23	2061	2.30	3955.62	2111	2.28	4069.24
2012	2.27	3844.50	2062	2.27	3957.89	2112	2.26	4071.50
2013	2.21	3846.71	2063	2.24	3960.13	2113	2.22	4073.72
2014	2.22	3848.93	2064	2.25	3962.38	2114	2.21	4075.93
2015	2.24	3851.17	2065	2.26	3964.64	2115	2.22	4078.15
2016	2.23	3853.40	2066	2.26	3966.90	2116	2.23	4080.38
2017	2.20	3855.60	2067	2.26	3969.16	2117	2.18	4082.56
2018	2.18	3857.78	2068	2.27	3971.43	2118	2.18	4084.74
2019	2.20	3859.98	2069	2.26	3973.69	2119	2.20	4086.94
2020	2.22	3862.20	2070	2.28	3975.97	2120	2.23	4089.17
2021	2.23	3864.43	2071	2.28	3978.25	2121	2.26	4091.43

UE12e#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
2122	2.26	4093.69	2172	2.26	4206.33			
2123	2.29	4095.98	2173	2.25	4208.58			
2124	2.27	4098.25	2174	2.25	4210.83			
2125	2.28	4100.53	2175	2.24	4213.07			
2126	2.27	4102.80	2176	2.25	4215.32			
2127	2.22	4105.02	2177	2.26	4217.58			
2128	2.28	4107.30	2178	2.21	4219.79			
2129	2.25	4109.55	2179	2.21	4222.00			
2130	2.25	4111.80	2180	2.24	4224.24			
2131	2.26	4114.06	2181	2.28	4226.52			
2132	2.28	4116.34	2182	2.30	4228.82			
2133	2.29	4118.63	2183	2.27	4231.09			
2134	2.26	4120.89	2184	2.27	4233.36			
2135	2.26	4123.15	2185	2.34	4235.70			
2136	2.29	4125.44	2186	2.34	4238.04			
2137	2.26	4127.70	2187	2.30	4240.34			
2138	2.27	4129.97	2188	2.32	4242.66			
2139	2.27	4132.24	2189	2.35	4245.01			
2140	2.27	4134.51	2190	2.39	4247.40			
2140	2.27	4134.51						
2141	2.26	4136.77						
2142	2.25	4139.02						
2143	2.28	4141.30						
2144	2.30	4143.60						
2145	2.30	4145.90						
2146	2.27	4148.17						
2147	2.22	4150.39						
2148	2.21	4152.60						
2149	2.26	4154.86						
2150	2.24	4157.10						
2151	2.24	4159.34						
2152	2.24	4161.58						
2153	2.24	4163.82						
2154	2.23	4166.05						
2155	2.22	4168.27						
2156	2.24	4170.51						
2157	2.29	4172.80						
2158	2.25	4175.05						
2159	2.23	4177.28						
2160	2.22	4179.50						
2161	2.20	4181.70						
2162	2.22	4183.92						
2163	2.19	4186.11						
2164	2.21	4188.32						
2165	2.25	4190.57						
2166	2.24	4192.81						
2167	2.24	4195.05						
2168	2.25	4197.30						
2169	2.25	4199.55						
2170	2.26	4201.81						
2171	2.26	4204.07						

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Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
125	2.30	0.00	175	2.27	115.79	225	2.26	231.48
126	2.31	2.31	176	2.28	118.07	226	2.26	233.73
127	2.30	4.61	177	2.26	120.33	227	2.24	235.98
128	2.29	6.90	178	2.26	122.60	228	2.23	238.21
129	2.32	9.22	179	2.27	124.87	229	2.22	240.43
130	2.32	11.54	180	2.25	127.12	230	2.24	242.67
131	2.31	13.85	181	2.26	129.38	231	2.23	244.90
132	2.30	16.15	182	2.22	131.60	232	2.22	247.12
133	2.32	18.48	183	2.22	133.82	233	2.23	249.35
134	2.32	20.80	184	2.27	136.08	234	2.23	251.58
135	2.32	23.12	185	2.25	138.34	235	2.23	253.81
136	2.33	25.45	186	2.24	140.58	236	2.23	256.04
137	2.32	27.77	187	2.29	142.87	237	2.21	258.25
138	2.30	30.07	188	2.31	145.17	238	2.19	260.44
139	2.30	32.37	189	2.33	147.50	239	2.20	262.64
140	2.33	34.70	190	2.38	149.88	240	2.19	264.82
141	2.33	37.03	191	2.39	152.27	241	2.19	267.02
142	2.32	39.35	192	2.42	154.69	242	2.21	269.22
143	2.31	41.66	193	2.39	157.08	243	2.22	271.44
144	2.32	43.98	194	2.37	159.44	244	2.24	273.68
145	2.32	46.30	195	2.35	161.79	245	2.25	275.92
146	2.34	48.64	196	2.33	164.12	246	2.23	278.16
147	2.34	50.98	197	2.35	166.48	247	2.20	280.36
148	2.34	53.32	198	2.37	168.85	248	2.18	282.54
149	2.38	55.70	199	2.36	171.21	249	2.18	284.72
150	2.38	58.07	200	2.34	173.55	250	2.18	286.91
151	2.33	60.40	201	2.34	175.88	251	2.20	289.10
152	2.33	62.73	202	2.34	178.23	252	2.24	291.35
153	2.32	65.05	203	2.37	180.60	253	2.25	293.60
154	2.32	67.38	204	2.36	182.96	254	2.23	295.83
155	2.33	69.70	205	2.34	185.30	255	2.20	298.03
156	2.35	72.05	206	2.32	187.62	256	2.21	300.24
157	2.34	74.39	207	2.30	189.92	257	2.22	302.46
158	2.33	76.72	208	2.31	192.23	258	2.22	304.68
159	2.32	79.03	209	2.33	194.56	259	2.21	306.89
160	2.34	81.37	210	2.35	196.91	260	2.21	309.10
161	2.35	83.72	211	2.33	199.24	261	2.18	311.28
162	2.34	86.05	212	2.36	201.60	262	2.11	313.38
163	2.35	88.40	213	2.35	203.94	263	2.14	315.52
164	2.33	90.73	214	2.37	206.31	264	2.20	317.72
165	2.33	93.06	215	2.38	208.69	265	2.15	319.87
166	2.33	95.39	216	2.37	211.06	266	2.12	321.98
167	2.32	97.70	217	2.33	213.39	267	2.08	324.06
168	2.30	100.00	218	2.28	215.67	268	2.17	326.23
169	2.28	102.28	219	2.26	217.93	269	2.18	328.40
170	2.26	104.53	220	2.27	220.20	270	2.18	330.58
171	2.25	106.78	221	2.29	222.49	271	2.07	332.65
172	2.24	109.02	222	2.25	224.73	272	2.08	334.73
173	2.24	111.25	223	2.23	226.97	273	2.11	336.83
174	2.27	113.52	224	2.25	229.22	274	2.11	338.94

U12e.18 PS#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
275	2.10	341.04	325	1.60	426.04	375	1.75	507.49
276	2.07	343.11	326	1.61	427.65	376	1.74	509.22
277	2.05	345.16	327	1.62	429.27	377	1.75	510.97
278	2.04	347.20	328	1.61	430.88	378	1.75	512.72
279	2.01	349.22	329	1.61	432.49	379	1.75	514.47
280	1.99	351.21	330	1.60	434.09	380	1.75	516.23
281	1.95	353.16	331	1.60	435.69	381	1.72	517.95
282	1.91	355.08	332	1.59	437.27	382	1.70	519.65
283	1.86	356.94	333	1.59	438.87	383	1.67	521.32
284	1.84	358.78	334	1.60	440.47	384	1.68	523.01
285	1.82	360.60	335	1.60	442.07	385	1.74	524.75
286	1.79	362.39	336	1.61	443.68	386	1.81	526.56
287	1.75	364.13	337	1.61	445.28	387	1.82	528.38
288	1.73	365.86	338	1.60	446.89	388	1.81	530.19
289	1.71	367.57	339	1.60	448.49	389	1.87	532.06
290	1.69	369.26	340	1.63	450.11	390	1.85	533.90
291	1.69	370.95	341	1.61	451.72	391	1.82	535.72
292	1.68	372.64	342	1.60	453.32	392	1.80	537.52
293	1.67	374.30	343	1.60	454.92	393	1.82	539.35
294	1.66	375.96	344	1.61	456.54	394	1.80	541.15
295	1.66	377.62	345	1.61	458.15	395	1.79	542.93
296	1.65	379.28	346	1.61	459.76	396	1.77	544.70
297	1.64	380.92	347	1.62	461.38	397	1.76	546.46
298	1.63	382.55	348	1.62	463.00	398	1.79	548.25
299	1.63	384.18	349	1.63	464.64	399	1.80	550.05
300	1.63	385.82	350	1.65	466.29	400	1.81	551.86
301	1.63	387.45	351	1.63	467.92	401	1.80	553.66
302	1.64	389.09	352	1.64	469.56	402	1.77	555.43
303	1.63	390.72	353	1.64	471.21	403	1.74	557.17
304	1.63	392.35	354	1.64	472.84	404	1.74	558.91
305	1.62	393.97	355	1.61	474.46	405	1.73	560.64
306	1.62	395.59	356	1.57	476.03	406	1.74	562.38
307	1.62	397.21	357	1.54	477.57	407	1.76	564.14
308	1.61	398.82	358	1.56	479.13	408	1.77	565.91
309	1.60	400.42	359	1.56	480.69	409	1.78	567.70
310	1.58	402.01	360	1.58	482.27	410	1.78	569.47
311	1.59	403.60	361	1.57	483.84	411	1.74	571.21
312	1.60	405.20	362	1.59	485.43	412	1.72	572.93
313	1.61	406.81	363	1.64	487.07	413	1.68	574.61
314	1.61	408.42	364	1.68	488.75	414	1.68	576.29
315	1.62	410.04	365	1.68	490.42	415	1.69	577.98
316	1.61	411.65	366	1.66	492.08	416	1.72	579.70
317	1.61	413.26	367	1.71	493.79	417	1.73	581.43
318	1.60	414.86	368	1.72	495.51	418	1.70	583.13
319	1.60	416.46	369	1.73	497.24	419	1.67	584.80
320	1.61	418.07	370	1.72	498.96	420	1.67	586.48
321	1.60	419.67	371	1.70	500.65	421	1.72	588.20
322	1.60	421.27	372	1.67	502.32	422	1.73	589.93
323	1.59	422.86	373	1.69	504.01	423	1.71	591.64
324	1.59	424.45	374	1.73	505.74	424	1.71	593.34

U12e.18 PS#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
425	1.72	595.06	475	1.36	670.05	525	1.60	743.50
426	1.74	596.80	476	1.36	671.41	526	1.53	745.03
427	1.74	598.54	477	1.36	672.77	527	1.56	746.59
428	1.77	600.31	478	1.36	674.14	528	1.71	748.30
429	1.78	602.09	479	1.35	675.49	529	1.72	750.03
430	1.78	603.87	480	1.37	676.87	530	1.69	751.71
431	1.76	605.62	481	1.38	678.25	531	1.67	753.38
432	1.77	607.39	482	1.39	679.64	532	1.68	755.06
433	1.78	609.17	483	1.39	681.04	533	1.71	756.76
434	1.77	610.95	484	1.39	682.43	534	1.72	758.48
435	1.77	612.71	485	1.40	683.83	535	1.71	760.19
436	1.70	614.41	486	1.40	685.23	536	1.70	761.89
437	1.67	616.08	487	1.41	686.64	537	1.67	763.56
438	1.63	617.70	488	1.42	688.07	538	1.63	765.19
439	1.61	619.31	489	1.43	689.50	539	1.60	766.79
440	1.56	620.88	490	1.44	690.94	540	1.61	768.40
441	1.52	622.40	491	1.45	692.38	541	1.68	770.08
442	1.47	623.87	492	1.45	693.83	542	1.68	771.76
443	1.40	625.27	493	1.46	695.29	543	1.63	773.39
444	1.38	626.65	494	1.43	696.73	544	1.61	775.00
445	1.40	628.05	495	1.43	698.16	545	1.57	776.58
446	1.45	629.50	496	1.46	699.62	546	1.54	778.11
447	1.46	630.96	497	1.49	701.10	547	1.53	779.64
448	1.45	632.41	498	1.61	702.71	548	1.55	781.19
449	1.41	633.82	499	1.60	704.31	549	1.58	782.77
450	1.41	635.23	500	1.52	705.83	550	1.69	784.46
451	1.42	636.65	501	1.48	707.31	551	1.70	786.16
452	1.42	638.06	502	1.51	708.82	552	1.70	787.86
453	1.42	639.48	503	1.48	710.30	553	1.69	789.55
454	1.41	640.89	504	1.46	711.77	554	1.64	791.19
455	1.42	642.31	505	1.45	713.22	555	1.64	792.83
456	1.41	643.72	506	1.47	714.69	556	1.64	794.47
457	1.40	645.12	507	1.53	716.22	557	1.66	796.13
458	1.41	646.53	508	1.48	717.70	558	1.70	797.82
459	1.41	647.94	509	1.50	719.20	559	1.68	799.51
460	1.39	649.33	510	1.41	720.61	560	1.65	801.16
461	1.39	650.72	511	1.36	721.97	561	1.61	802.77
462	1.39	652.11	512	1.39	723.36	562	1.60	804.37
463	1.41	653.52	513	1.43	724.79	563	1.59	805.97
464	1.40	654.93	514	1.48	726.27	564	1.68	807.64
465	1.39	656.32	515	1.52	727.79	565	1.70	809.34
466	1.38	657.70	516	1.57	729.36	566	1.63	810.97
466	1.38	657.70	516	1.57	729.36			
467	1.37	659.08	517	1.60	730.95			
468	1.36	660.44	518	1.63	732.58			
469	1.37	661.81	519	1.62	734.20			
470	1.37	663.18	520	1.55	735.75			
471	1.37	664.55	521	1.50	737.26			
472	1.37	665.93	522	1.52	738.77			
473	1.38	667.31	523	1.56	740.33			
474	1.38	668.69	524	1.57	741.90			

UE12g.10 #3

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
30	2.32	0.00	80	2.07	110.15	130	2.29	217.52
31	2.35	2.35	81	2.06	112.22	131	2.29	219.82
32	2.38	4.72	82	2.06	114.28	132	2.32	222.13
33	2.40	7.12	83	2.05	116.33	133	2.33	224.46
34	2.40	9.53	84	2.04	118.37	134	2.33	226.79
35	2.40	11.92	85	2.04	120.41	135	2.30	229.10
36	2.38	14.30	86	2.06	122.48	136	2.30	231.40
37	2.36	16.66	87	2.05	124.53	137	2.30	233.70
38	2.33	19.00	88	2.04	126.57	138	2.29	235.98
39	2.31	21.31	89	2.04	128.61	139	2.30	238.28
40	2.31	23.62	90	2.03	130.64	140	2.29	240.58
41	2.30	25.92	91	2.02	132.67	141	2.29	242.87
42	2.28	28.20	92	2.04	134.70	142	2.30	245.17
43	2.28	30.48	93	2.03	136.74	143	2.31	247.48
44	2.26	32.74	94	2.03	138.76	144	2.31	249.79
45	2.26	35.00	95	2.03	140.79	145	2.32	252.11
46	2.24	37.24	96	0.00	142.84	146	2.32	254.43
47	2.24	39.48	97	0.00	144.88	147	2.32	256.75
48	2.23	41.71	98	0.00	146.93	148	2.33	259.08
49	2.20	43.91	99	0.00	148.98	149	2.34	261.42
50	2.19	46.10	100	2.07	151.02	150	2.34	263.76
51	2.19	48.29	101	2.08	153.11	151	2.36	266.12
52	2.19	50.48	102	2.10	155.21	152	2.37	268.49
53	2.17	52.65	103	2.11	157.32	153	2.35	270.84
54	2.18	54.83	104	2.12	159.44	154	2.34	273.18
55	2.18	57.00	105	2.13	161.56	155	2.32	275.50
56	2.16	59.17	106	2.14	163.71	156	2.33	277.83
57	2.16	61.32	107	2.15	165.86	157	2.34	280.17
58	2.16	63.48	108	2.15	168.01	158	2.33	282.51
59	2.15	65.63	109	2.16	170.17	159	2.33	284.83
60	2.15	67.77	110	2.17	172.34	160	2.31	287.14
61	2.14	69.91	111	2.17	174.50	161	2.29	289.44
62	2.13	72.04	112	2.18	176.69	162	2.29	291.73
63	2.14	74.18	113	2.21	178.90	163	2.30	294.03
64	2.14	76.32	114	2.22	181.12	164	2.28	296.32
65	2.14	78.47	115	2.26	183.38	165	2.28	298.60
66	2.14	80.61	116	2.26	185.64	166	2.28	300.88
67	2.13	82.74	117	2.26	187.90	167	2.30	303.18
68	2.15	84.89	118	2.26	190.16	168	2.30	305.48
69	2.14	87.03	119	2.28	192.44	169	2.30	307.78
70	2.13	89.16	120	2.27	194.71	170	2.31	310.09
71	2.14	91.30	121	2.27	196.98	171	2.32	312.41
72	2.14	93.43	122	2.28	199.26	172	2.32	314.74
73	2.13	95.56	123	2.29	201.55	173	2.32	317.06
74	2.12	97.68	124	2.28	203.83	174	2.31	319.37
75	2.10	99.78	125	2.29	206.12	175	2.30	321.67
76	2.08	101.86	126	2.28	208.40	176	2.30	323.97
77	2.07	103.92	127	2.28	210.68	177	2.31	326.28
78	2.08	106.00	128	2.28	212.95	178	2.31	328.59
79	2.07	108.08	129	2.28	215.23	179	2.31	330.90

UE12g.10 #3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
180	2.33	333.24	230	2.26	448.91	280	2.23	561.45
181	2.33	335.56	231	2.25	451.17	281	2.23	563.68
182	2.32	337.89	232	2.25	453.41	282	2.22	565.90
183	2.33	340.22	233	2.25	455.66	283	2.24	568.14
184	2.33	342.56	234	2.25	457.91	284	2.24	570.38
185	2.32	344.88	235	2.25	460.17	285	2.24	572.62
186	2.31	347.19	236	2.26	462.43	286	2.23	574.85
187	2.32	349.51	237	2.26	464.68	287	2.23	577.08
188	2.32	351.83	238	2.26	466.94	288	2.24	579.32
189	2.30	354.13	239	2.26	469.20	289	2.24	581.56
190	2.30	356.43	240	2.27	471.47	290	2.23	583.79
191	2.31	358.74	241	2.26	473.73	291	2.22	586.01
192	2.30	361.04	242	2.26	475.99	292	2.22	588.23
193	2.29	363.33	243	2.26	478.25	293	2.21	590.44
194	2.30	365.63	244	2.25	480.50	294	2.17	592.61
195	2.31	367.94	245	2.24	482.74	295	2.14	594.75
196	2.31	370.25	246	2.24	484.99	296	2.12	596.87
197	2.31	372.56	247	2.24	487.23	297	2.11	598.98
198	2.32	374.88	248	2.24	489.47	298	2.09	601.07
199	2.31	377.19	249	2.22	491.69	299	2.08	603.16
200	2.31	379.50	250	0.00	493.92	300	2.07	605.23
201	2.31	381.81	251	0.00	496.15	301	2.06	607.29
202	2.30	384.11	252	0.00	498.37	302	2.05	609.34
203	2.30	386.41	253	0.00	500.60	303	2.04	611.38
204	2.31	388.72	254	0.00	502.83	304	2.03	613.42
205	2.32	391.04	255	0.00	505.06	305	2.02	615.44
206	2.33	393.37	256	2.24	507.29	306	2.00	617.44
207	2.33	395.70	257	2.24	509.53	307	1.98	619.42
208	2.32	398.02	258	2.26	511.79	308	1.95	621.37
209	2.34	400.36	259	2.26	514.05	309	1.92	623.29
210	2.34	402.70	260	2.27	516.32	310	1.88	625.17
211	2.34	405.04	261	2.27	518.59	311	1.84	627.01
212	2.34	407.38	262	2.27	520.86	312	1.81	628.82
213	2.33	409.71	263	2.27	523.13	313	1.78	630.60
214	2.34	412.05	264	2.27	525.40	314	1.73	632.33
215	2.34	414.40	265	2.27	527.67	315	1.71	634.03
216	2.33	416.73	266	2.27	529.94	316	1.69	635.72
217	2.33	419.06	267	2.27	532.21	317	1.65	637.37
218	2.33	421.38	268	2.26	534.47	318	1.62	638.99
219	2.34	423.72	269	2.25	536.73	319	1.60	640.59
220	2.33	426.05	270	2.27	538.99	320	1.59	642.18
221	2.33	428.38	271	2.27	541.26	321	1.56	643.74
222	2.33	430.71	272	2.27	543.52	322	1.55	645.29
223	2.32	433.02	273	2.26	545.78	323	1.54	646.83
224	2.29	435.32	274	2.24	548.03	324	1.54	648.37
225	2.29	437.61	275	2.24	550.26	325	1.54	649.91
226	2.29	439.89	276	2.23	552.50	326	1.56	651.47
227	2.25	442.14	277	2.24	554.73	327	1.58	653.04
228	2.25	444.40	278	2.24	556.98	328	1.60	654.65
229	2.26	446.65	279	2.25	559.23	329	1.65	656.29

UE12g.10 #3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
330	1.65	657.95	380	1.66	743.03	430	1.64	827.21
331	1.66	659.60	381	1.65	744.69	431	1.70	828.91
332	1.66	661.26	382	1.65	746.34	432	1.74	830.65
333	1.66	662.92	383	1.64	747.98	433	1.69	832.34
334	1.69	664.61	384	1.63	749.61	434	1.68	834.02
335	1.70	666.30	385	1.66	751.28	435	1.63	835.65
336	1.71	668.01	386	1.65	752.93	436	1.64	837.29
337	1.71	669.72	387	1.64	754.57	437	1.66	838.95
338	1.72	671.44	388	1.62	756.19	438	1.68	840.63
339	1.72	673.16	389	1.67	757.86	439	1.68	842.31
340	1.72	674.88	390	1.71	759.58	440	1.69	844.00
341	1.71	676.59	391	1.72	761.30	441	1.69	845.69
342	1.70	678.29	392	1.72	763.02	442	1.69	847.38
343	1.69	679.98	393	1.73	764.74	443	1.70	849.08
344	1.63	681.61	394	1.74	766.49	444	1.70	850.78
345	1.65	683.26	395	1.76	768.24	445	0.00	852.49
346	1.71	684.97	396	1.75	769.99	446	0.00	854.20
347	1.71	686.68	397	1.72	771.72	447	0.00	855.90
348	1.72	688.40	398	1.72	773.44	448	0.00	857.61
349	1.73	690.13	399	1.75	775.19	449	0.00	859.32
350	1.73	691.85	400	1.74	776.93	450	0.00	861.03
351	1.72	693.57	401	1.72	778.65	451	0.00	862.74
352	1.69	695.26	402	1.70	780.35	452	0.00	864.45
353	1.68	696.94	403	1.69	782.05	453	0.00	866.16
354	1.67	698.61	404	1.68	783.73	454	0.00	867.87
355	1.67	700.27	405	1.69	785.42	455	0.00	869.58
356	1.68	701.95	406	1.73	787.15	456	0.00	871.29
357	1.68	703.63	407	1.75	788.90	457	0.00	872.99
358	1.67	705.29	408	1.75	790.64	458	0.00	874.70
359	1.67	706.96	409	1.74	792.38	459	0.00	876.41
360	1.67	708.63	410	1.70	794.08	460	0.00	878.12
361	1.68	710.30	411	1.64	795.73	461	0.00	879.83
362	1.69	712.00	412	1.61	797.33	462	0.00	881.54
363	1.70	713.70	413	1.55	798.88	463	0.00	883.25
364	1.70	715.40	414	1.57	800.46	464	0.00	884.96
365	1.70	717.10	415	1.62	802.08	465	0.00	886.67
366	1.71	718.81	416	1.66	803.74	466	0.00	888.38
367	1.71	720.52	417	1.65	805.39	467	0.00	890.08
368	1.72	722.25	418	1.64	807.03	468	0.00	891.79
369	1.75	723.99	419	1.66	808.69	469	0.00	893.50
370	1.76	725.75	420	1.69	810.38	470	0.00	895.21
371	1.77	727.52	421	1.71	812.09	471	0.00	896.92
372	1.75	729.27	422	1.72	813.81	472	0.00	898.63
373	1.74	731.01	423	1.72	815.53	473	0.00	900.34
374	1.72	732.73	424	1.70	817.24	474	0.00	902.05
375	1.73	734.46	425	1.69	818.92	475	0.00	903.76
376	1.73	736.19	426	1.69	820.61	476	0.00	905.47
377	1.73	737.93	427	1.69	822.31	477	0.00	907.17
378	1.73	739.66	428	1.65	823.96	478	0.00	908.88
379	1.71	741.37	429	1.61	825.57	479	0.00	910.59

UE12g.10 #3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
480	0.00	912.30	530	0.00	997.75	580	0.00	1083.25
481	0.00	914.01	531	0.00	999.46	581	0.00	1084.96
482	0.00	915.72	532	0.00	1001.17	582	0.00	1086.67
483	0.00	917.43	533	0.00	1002.88	583	0.00	1088.38
484	0.00	919.14	534	0.00	1004.59	584	0.00	1090.09
485	0.00	920.85	535	0.00	1006.30	585	0.00	1091.80
486	0.00	922.56	536	0.00	1008.01	586	0.00	1093.51
487	0.00	924.26	537	0.00	1009.72	587	0.00	1095.22
488	0.00	925.97	538	0.00	1011.43	588	0.00	1096.93
489	0.00	927.68	539	0.00	1013.14	589	0.00	1098.64
490	0.00	929.39	540	0.00	1014.85	590	1.72	1100.35
491	0.00	931.10	541	0.00	1016.56	591	1.77	1102.12
492	0.00	932.81	542	0.00	1018.27	592	1.78	1103.90
493	0.00	934.52	543	0.00	1019.98	593	1.78	1105.68
494	0.00	936.23	544	0.00	1021.69	594	1.78	1107.46
495	0.00	937.94	545	0.00	1023.40	595	1.75	1109.21
496	0.00	939.65	546	0.00	1025.11	596	1.74	1110.95
497	0.00	941.35	547	0.00	1026.82	597	1.71	1112.66
498	0.00	943.06	548	0.00	1028.53	598	1.71	1114.37
499	0.00	944.77	549	0.00	1030.24	599	1.73	1116.10
500	0.00	946.48	550	0.00	1031.95	600	1.74	1117.84
501	0.00	948.19	551	0.00	1033.66	601	1.74	1119.58
502	0.00	949.90	552	0.00	1035.37	602	1.78	1121.36
503	0.00	951.61	553	0.00	1037.08	603	1.79	1123.15
504	0.00	953.32	554	0.00	1038.79	604	1.78	1124.93
505	0.00	955.03	555	0.00	1040.50	605	1.76	1126.69
506	0.00	956.74	556	0.00	1042.21	606	1.74	1128.43
507	0.00	958.44	557	0.00	1043.92	607	1.77	1130.20
508	0.00	960.15	558	0.00	1045.63	608	1.77	1131.97
509	0.00	961.86	559	0.00	1047.34	609	1.75	1133.72
510	0.00	963.57	560	0.00	1049.05	610	1.74	1135.46
511	0.00	965.28	561	0.00	1050.76	611	1.75	1137.21
512	0.00	966.99	562	0.00	1052.47	612	1.73	1138.94
513	0.00	968.70	563	0.00	1054.18	613	1.68	1140.62
514	0.00	970.41	564	0.00	1055.89	614	1.62	1142.24
515	0.00	972.12	565	0.00	1057.60	615	1.57	1143.81
516	0.00	973.83	566	0.00	1059.31	616	1.57	1145.38
517	0.00	975.53	567	0.00	1061.02	617	1.61	1146.99
518	0.00	977.24	568	0.00	1062.73	618	1.65	1148.64
519	0.00	978.95	569	0.00	1064.44	619	1.72	1150.36
520	0.00	980.66	570	0.00	1066.15	620	1.76	1152.12
521	0.00	982.37	571	0.00	1067.86	621	1.77	1153.89
522	0.00	984.08	572	0.00	1069.57	622	1.77	1155.66
523	0.00	985.79	573	0.00	1071.28	623	1.73	1157.39
524	0.00	987.50	574	0.00	1072.99	624	1.72	1159.11
525	0.00	989.21	575	0.00	1074.70	625	1.72	1160.83
526	0.00	990.92	576	0.00	1076.41	626	1.74	1162.57
527	0.00	992.62	577	0.00	1078.12	627	1.75	1164.32
528	0.00	994.33	578	0.00	1079.83	628	1.73	1166.05
529	0.00	996.04	579	0.00	1081.54	629	1.74	1167.79

UE12g.10 #3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
630	1.73	1169.52	680	1.82	1256.43	730	1.93	1348.41
631	1.71	1171.23	681	1.81	1258.24	731	1.92	1350.33
632	1.69	1172.92	682	1.80	1260.04	732	1.97	1352.30
633	1.67	1174.59	683	1.78	1261.82	733	1.95	1354.25
634	1.66	1176.25	684	1.79	1263.61	734	1.94	1356.19
635	1.68	1177.93	685	1.83	1265.44	735	1.94	1358.13
636	1.72	1179.65	686	1.86	1267.30	736	1.92	1360.05
637	1.72	1181.37	687	1.87	1269.17	737	1.91	1361.96
638	1.71	1183.08	688	1.88	1271.05	738	1.92	1363.88
639	1.71	1184.79	689	1.87	1272.92	739	1.94	1365.82
640	1.72	1186.51	690	1.83	1274.75	740	1.97	1367.79
641	1.75	1188.26	691	1.78	1276.53	741	2.02	1369.81
642	1.76	1190.02	692	1.81	1278.34	742	2.03	1371.84
643	1.80	1191.82	693	1.85	1280.19	743	2.02	1373.86
644	1.79	1193.61	694	1.85	1282.04	744	2.01	1375.87
645	1.78	1195.39	695	1.81	1283.85	745	2.02	1377.89
646	1.75	1197.14	696	1.80	1285.65	746	2.02	1379.91
647	1.73	1198.87	697	1.76	1287.41	747	2.01	1381.92
648	1.72	1200.59	698	1.67	1289.08	748	1.99	1383.91
649	1.65	1202.24	699	1.66	1290.74	749	1.95	1385.86
650	1.72	1203.96	700	1.69	1292.43	750	1.93	1387.79
651	1.75	1205.71	701	1.74	1294.17	751	1.78	1389.57
652	1.76	1207.47	702	1.80	1295.97	752	1.76	1391.33
653	1.78	1209.25	703	1.90	1297.87	753	1.77	1393.10
654	1.75	1211.00	704	1.89	1299.76	754	1.78	1394.88
655	1.75	1212.75	705	1.88	1301.64	755	1.84	1396.72
656	1.74	1214.49	706	1.83	1303.47	756	1.83	1398.55
657	1.73	1216.22	707	1.77	1305.24	757	1.84	1400.39
658	1.74	1217.96	708	1.78	1307.02	758	1.83	1402.22
659	1.71	1219.67	709	1.81	1308.83	759	1.84	1404.06
660	1.62	1221.29	710	1.84	1310.67	760	1.85	1405.91
661	1.57	1222.86	711	1.81	1312.48	761	1.83	1407.74
662	1.55	1224.41	712	1.82	1314.30	762	1.83	1409.57
663	1.56	1225.97	713	1.84	1316.14	763	1.82	1411.39
664	1.63	1227.60	714	1.87	1318.01	764	1.82	1413.21
665	1.71	1229.31	715	1.89	1319.90	765	1.83	1415.04
666	1.78	1231.09	716	1.90	1321.80	766	1.86	1416.90
667	1.79	1232.88	717	1.89	1323.69	767	1.88	1418.78
668	1.80	1234.68	718	1.88	1325.57	768	1.92	1420.70
669	1.80	1236.48	719	1.88	1327.45	769	1.95	1422.65
670	1.78	1238.26	720	1.89	1329.34	770	1.98	1424.63
671	1.77	1240.03	721	1.89	1331.23	771	1.98	1426.61
672	1.78	1241.81	722	1.88	1333.11	772	1.97	1428.58
673	1.80	1243.61	723	1.85	1334.96	773	1.98	1430.56
674	1.81	1245.42	724	1.85	1336.81	774	1.99	1432.55
675	1.82	1247.24	725	1.89	1338.70	775	2.00	1434.55
676	1.84	1249.08	726	1.94	1340.64	776	1.99	1436.54
677	1.83	1250.91	727	1.96	1342.60	777	1.98	1438.52
678	1.86	1252.77	728	1.94	1344.54	778	1.98	1440.50
679	1.84	1254.61	729	1.94	1346.48	779	1.97	1442.47

UE12g.10 #3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
780	1.96	1444.43	830	1.67	1539.23	880	1.61	1617.74
781	1.96	1446.39	831	1.64	1540.87	881	1.62	1619.36
782	1.94	1448.33	832	1.62	1542.49	882	1.67	1621.03
783	1.94	1450.27	833	1.60	1544.09	883	1.71	1622.74
784	1.94	1452.21	834	1.59	1545.68	884	1.73	1624.47
785	1.94	1454.15	835	1.54	1547.22	885	1.77	1626.24
786	1.95	1456.10	836	1.50	1548.72	886	1.72	1627.96
787	1.96	1458.06	837	1.48	1550.20	887	1.67	1629.63
788	2.01	1460.07	838	1.49	1551.69	888	1.68	1631.31
789	2.02	1462.09	839	1.52	1553.21	889	1.69	1633.00
790	2.02	1464.11	840	1.54	1554.75	890	1.63	1634.63
791	2.00	1466.11	841	1.53	1556.28	891	1.57	1636.20
792	1.97	1468.08	842	1.57	1557.85	892	1.51	1637.71
793	1.94	1470.02	843	1.59	1559.44	893	1.52	1639.23
794	1.93	1471.95	844	1.62	1561.06	894	1.66	1640.89
795	1.93	1473.88	845	1.61	1562.67	895	1.65	1642.54
796	1.92	1475.80	846	1.57	1564.24	896	1.61	1644.15
797	1.89	1477.69	847	1.52	1565.76	897	1.67	1645.82
798	1.87	1479.56	848	1.49	1567.25	898	1.69	1647.51
799	1.89	1481.45	849	1.49	1568.74	899	1.67	1649.18
800	1.90	1483.35	850	1.47	1570.21	900	1.67	1650.85
801	1.89	1485.24	851	1.46	1571.67	901	1.70	1652.55
802	1.91	1487.15	852	1.48	1573.15	902	1.68	1654.23
803	1.94	1489.09	853	1.57	1574.72	903	1.68	1655.91
804	1.94	1491.03	854	1.64	1576.36	904	1.72	1657.63
805	1.95	1492.98	855	1.65	1578.01	905	1.73	1659.36
806	1.96	1494.94	856	1.65	1579.66	906	1.74	1661.10
807	1.96	1496.90	857	1.62	1581.28	907	1.66	1662.76
808	1.95	1498.85	858	1.62	1582.90	908	1.63	1664.39
809	1.92	1500.77	859	1.65	1584.55	909	1.64	1666.03
810	1.94	1502.71	860	1.65	1586.20	910	1.61	1667.64
811	1.98	1504.69	861	1.63	1587.83	911	1.59	1669.23
812	1.98	1506.67	862	1.63	1589.46	912	1.59	1670.82
813	1.97	1508.64	863	1.57	1591.03	913	1.60	1672.42
814	1.97	1510.61	864	1.50	1592.53	914	1.63	1674.05
815	1.97	1512.58	865	1.48	1594.01	915	1.65	1675.70
816	1.98	1514.56	866	1.46	1595.47	916	1.72	1677.42
817	0.00	1516.38	867	1.48	1596.95	917	1.84	1679.26
818	0.00	1518.20	868	1.58	1598.53	918	1.90	1681.16
819	0.00	1520.02	869	1.65	1600.18	919	1.81	1682.97
820	0.00	1521.84	870	1.64	1601.82	920	1.74	1684.71
821	0.00	1523.66	871	1.57	1603.39	921	1.71	1686.42
822	0.00	1525.48	872	1.56	1604.95	922	1.71	1688.13
823	0.00	1527.30	873	1.56	1606.51	923	1.74	1689.87
824	1.66	1529.12	874	1.60	1608.11	924	1.76	1691.63
825	1.69	1530.81	875	1.63	1609.74	925	1.80	1693.43
826	1.69	1532.50	876	1.64	1611.38	926	1.83	1695.26
827	1.69	1534.19	877	1.59	1612.97	927	1.84	1697.10
828	1.69	1535.88	878	1.57	1614.54	928	1.89	1698.99
829	1.68	1537.56	879	1.59	1616.13	929	1.89	1700.88

UE12g.10 #3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
930	1.80	1702.68	980	1.93	1792.17	1030	1.84	1883.73
931	1.69	1704.37	981	1.91	1794.08	1031	1.83	1885.56
932	1.61	1705.98	982	1.86	1795.94	1032	1.82	1887.38
933	1.59	1707.57	983	1.91	1797.85	1033	1.82	1889.20
934	1.55	1709.12	984	1.87	1799.72	1034	1.84	1891.04
935	1.55	1710.67	985	1.84	1801.56	1035	1.85	1892.89
936	1.58	1712.25	986	1.84	1803.40	1036	1.88	1894.77
937	1.59	1713.84	987	1.84	1805.24	1037	1.91	1896.68
938	1.61	1715.45	988	1.82	1807.06	1038	1.93	1898.61
939	1.63	1717.08	989	1.79	1808.85	1039	1.93	1900.54
940	1.63	1718.71	990	1.78	1810.63	1040	1.92	1902.46
941	1.64	1720.35	991	1.78	1812.41	1041	1.90	1904.36
942	1.63	1721.98	992	1.79	1814.20	1042	1.87	1906.23
943	1.63	1723.61	993	1.79	1815.99	1043	1.86	1908.09
944	1.62	1725.23	994	1.79	1817.78	1044	1.86	1909.95
945	1.63	1726.86	995	1.80	1819.58	1045	1.87	1911.82
946	1.64	1728.50	996	1.81	1821.39	1046	1.87	1913.69
947	1.65	1730.15	997	1.81	1823.20	1047	1.87	1915.56
948	1.67	1731.82	998	1.78	1824.98	1048	1.89	1917.45
949	1.69	1733.51	999	1.78	1826.76	1049	1.88	1919.33
950	1.70	1735.21	1000	1.82	1828.58	1050	1.86	1921.19
951	1.71	1736.92	1001	1.84	1830.42	1051	1.83	1923.02
952	1.75	1738.67	1002	1.82	1832.24	1052	1.79	1924.81
953	1.77	1740.44	1003	1.82	1834.06	1053	1.82	1926.63
954	1.83	1742.27	1004	1.83	1835.89	1054	1.81	1928.44
955	1.84	1744.11	1005	1.82	1837.71	1055	1.79	1930.23
956	1.86	1745.97	1006	1.80	1839.51	1056	1.79	1932.02
957	1.88	1747.85	1007	1.80	1841.31	1057	1.80	1933.82
958	1.89	1749.74	1008	1.80	1843.11	1058	1.83	1935.65
959	1.91	1751.65	1009	1.80	1844.91	1059	1.87	1937.52
960	1.91	1753.56	1010	1.80	1846.71	1060	1.84	1939.36
961	1.92	1755.48	1011	1.82	1848.53	1061	1.81	1941.17
962	1.90	1757.38	1012	1.81	1850.34	1062	1.77	1942.94
963	1.90	1759.28	1013	1.79	1852.13	1063	1.74	1944.68
964	1.90	1761.18	1014	1.80	1853.93	1064	1.72	1946.40
965	1.88	1763.06	1015	1.83	1855.76	1065	1.73	1948.13
966	1.94	1765.00	1016	1.82	1857.58	1066	1.77	1949.90
967	1.99	1766.99	1017	1.81	1859.39	1067	1.77	1951.67
968	1.98	1768.97	1018	1.84	1861.23	1068	1.77	1953.44
969	1.94	1770.91	1019	1.85	1863.08	1069	1.78	1955.22
970	1.93	1772.84	1020	1.87	1864.95	1070	1.79	1957.01
971	1.92	1774.76	1021	1.88	1866.83	1071	1.80	1958.81
972	1.92	1776.68	1022	1.89	1868.72	1072	1.80	1960.61
973	1.92	1778.60	1023	1.87	1870.59	1073	1.81	1962.42
974	1.90	1780.50	1024	1.89	1872.48	1074	1.83	1964.25
975	1.95	1782.45	1025	1.90	1874.38	1075	1.85	1966.10
976	1.95	1784.40	1026	1.90	1876.28	1076	1.85	1967.95
977	1.95	1786.35	1027	1.88	1878.16	1077	1.84	1969.79
978	1.96	1788.31	1028	1.87	1880.03	1078	1.83	1971.62
979	1.93	1790.24	1029	1.86	1881.89	1079	1.82	1973.44

UE12g.10 #3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1080	1.81	1975.25	1130	1.93	2069.25	1180	2.13	2166.29
1081	1.80	1977.05	1131	1.96	2071.21	1181	2.11	2168.40
1082	1.81	1978.86	1132	2.00	2073.21	1182	2.08	2170.48
1083	1.80	1980.66	1133	2.00	2075.21	1183	2.01	2172.49
1084	1.79	1982.45	1134	2.01	2077.22	1184	1.98	2174.47
1085	1.77	1984.22	1135	2.01	2079.23	1185	1.97	2176.44
1086	1.78	1986.00	1136	2.01	2081.24	1186	1.98	2178.42
1087	1.81	1987.81	1137	2.01	2083.25	1187	2.00	2180.42
1088	1.81	1989.62	1138	2.00	2085.25	1188	2.01	2182.43
1089	1.80	1991.42	1139	1.97	2087.22	1189	1.98	2184.41
1090	1.79	1993.21	1140	1.95	2089.17	1190	1.92	2186.33
1091	1.77	1994.98	1141	1.93	2091.10	1191	1.88	2188.21
1092	1.75	1996.73	1142	1.89	2092.99	1192	1.83	2190.04
1093	1.75	1998.48	1143	1.86	2094.85	1193	1.81	2191.85
1094	1.76	2000.24	1144	1.85	2096.70	1194	1.78	2193.63
1095	1.78	2002.02	1145	1.84	2098.54	1195	1.77	2195.40
1096	1.76	2003.78	1146	1.84	2100.38	1196	1.77	2197.17
1097	1.74	2005.52	1147	1.82	2102.20	1197	1.74	2198.91
1098	1.76	2007.28	1148	1.84	2104.04	1198	1.69	2200.60
1099	1.85	2009.13	1149	1.83	2105.87	1199	1.66	2202.26
1100	1.89	2011.02	1150	1.79	2107.66	1200	1.66	2203.92
1101	1.91	2012.93	1151	1.79	2109.45	1201	1.65	2205.57
1102	1.90	2014.83	1152	1.82	2111.27	1202	1.64	2207.21
1103	1.86	2016.69	1153	1.85	2113.12	1203	1.63	2208.84
1104	1.83	2018.52	1154	1.81	2114.93	1204	1.63	2210.47
1105	1.84	2020.36	1155	1.76	2116.69	1205	1.63	2212.10
1106	1.88	2022.24	1156	1.74	2118.43	1206	1.64	2213.74
1107	1.92	2024.16	1157	1.74	2120.17	1207	1.65	2215.39
1108	1.90	2026.06	1158	1.79	2121.96	1208	1.65	2217.04
1109	1.87	2027.93	1159	1.87	2123.83	1209	1.63	2218.67
1110	1.85	2029.78	1160	1.88	2125.71	1210	1.63	2220.30
1111	1.90	2031.68	1161	1.87	2127.58	1211	1.65	2221.95
1112	1.93	2033.61	1162	1.86	2129.44	1212	1.69	2223.64
1113	1.95	2035.56	1163	1.87	2131.31	1213	1.66	2225.30
1114	1.97	2037.53	1164	1.88	2133.19	1214	1.67	2226.97
1115	1.99	2039.52	1165	1.90	2135.09	1215	1.73	2228.70
1116	1.99	2041.51	1166	1.92	2137.01	1216	1.78	2230.48
1117	1.99	2043.50	1167	1.96	2138.97	1217	1.80	2232.28
1118	1.99	2045.49	1168	1.98	2140.95	1218	1.81	2234.09
1119	1.99	2047.48	1169	1.99	2142.94	1219	1.74	2235.83
1120	1.99	2049.47	1170	2.02	2144.96	1220	1.74	2237.57
1121	1.98	2051.45	1171	2.07	2147.03	1221	1.69	2239.26
1122	2.01	2053.46	1172	2.13	2149.16	1222	1.70	2240.96
1123	2.02	2055.48	1173	2.13	2151.29	1223	1.72	2242.68
1124	2.02	2057.50	1174	2.11	2153.40	1224	1.75	2244.43
1125	2.00	2059.50	1175	2.12	2155.52	1225	1.77	2246.20
1126	1.99	2061.49	1176	2.18	2157.70	1226	1.75	2247.95
1127	1.96	2063.45	1177	2.18	2159.88	1227	1.72	2249.67
1128	1.94	2065.39	1178	2.14	2162.02	1228	1.70	2251.37
1129	1.93	2067.32	1179	2.14	2164.16	1229	1.68	2253.05

UE12g.10 #3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1230	1.64	2254.69	1280	1.85	2343.02	1330	1.95	2439.13
1231	1.66	2256.35	1281	1.84	2344.86	1331	1.91	2441.04
1232	1.68	2258.03	1282	1.83	2346.69	1332	1.85	2442.89
1233	1.72	2259.75	1283	1.82	2348.51	1333	1.82	2444.71
1234	1.76	2261.51	1284	1.83	2350.34	1334	1.79	2446.50
1235	1.89	2263.40	1285	1.84	2352.18	1335	1.79	2448.29
1236	1.91	2265.31	1286	1.84	2354.02	1336	1.84	2450.13
1237	1.93	2267.24	1287	1.83	2355.85	1337	1.87	2452.00
1238	1.90	2269.14	1288	1.83	2357.68	1338	1.89	2453.89
1239	1.85	2270.99	1289	1.81	2359.49	1339	1.89	2455.78
1240	1.72	2272.71	1290	1.80	2361.29	1340	1.90	2457.68
1241	1.66	2274.37	1291	1.79	2363.08	1341	1.88	2459.56
1242	1.63	2276.00	1292	1.81	2364.89	1342	1.88	2461.44
1243	1.74	2277.74	1293	1.84	2366.73	1343	1.88	2463.32
1244	1.86	2279.60	1294	1.83	2368.56	1344	1.88	2465.20
1245	1.89	2281.49	1295	1.85	2370.41	1345	1.86	2467.06
1246	1.91	2283.40	1296	1.89	2372.30	1346	1.91	2468.97
1247	1.93	2285.33	1297	1.91	2374.21	1347	1.94	2470.91
1248	1.92	2287.25	1298	1.91	2376.12	1348	1.94	2472.85
1249	1.89	2289.14	1299	1.90	2378.02	1349	1.93	2474.78
1250	1.86	2291.00	1300	1.89	2379.91	1350	1.93	2476.71
1251	1.86	2292.86	1301	1.88	2381.79	1351	1.93	2478.64
1252	1.90	2294.76	1302	1.89	2383.68	1352	1.93	2480.57
1253	1.86	2296.62	1303	1.90	2385.58	1353	1.93	2482.50
1254	1.79	2298.41	1304	1.91	2387.49	1354	1.95	2484.45
1255	1.76	2300.17	1305	1.91	2389.40	1355	1.95	2486.40
1256	1.72	2301.89	1306	1.93	2391.33	1356	1.93	2488.33
1257	1.72	2303.61	1307	1.99	2393.32	1357	1.93	2490.26
1258	1.68	2305.29	1308	2.11	2395.43	1358	1.93	2492.19
1259	1.65	2306.94	1309	2.10	2397.53	1359	1.93	2494.12
1260	1.61	2308.55	1310	2.08	2399.61	1360	1.92	2496.04
1261	1.60	2310.15	1311	2.08	2401.69	1361	1.93	2497.97
1262	1.59	2311.74	1312	2.06	2403.75	1362	1.93	2499.90
1263	1.60	2313.34	1313	2.04	2405.79	1363	1.92	2501.82
1264	1.67	2315.01	1314	2.00	2407.79	1364	1.91	2503.73
1265	1.73	2316.74	1315	1.99	2409.78	1365	1.94	2505.67
1266	1.76	2318.50	1316	1.93	2411.71	1366	1.92	2507.59
1267	1.73	2320.23	1317	1.91	2413.62	1367	1.90	2509.49
1268	1.71	2321.94	1318	1.91	2415.53	1368	1.89	2511.38
1269	1.68	2323.62	1319	1.95	2417.48	1369	1.87	2513.25
1270	1.66	2325.28	1320	1.95	2419.43	1370	1.91	2515.16
1271	1.65	2326.93	1321	1.97	2421.40	1371	1.92	2517.08
1272	1.76	2328.69	1322	1.96	2423.36	1372	1.91	2518.99
1273	1.75	2330.44	1323	1.96	2425.32	1373	1.93	2520.92
1274	1.71	2332.15	1324	1.98	2427.30	1374	1.94	2522.86
1275	1.74	2333.89	1325	1.99	2429.29	1375	1.96	2524.82
1276	1.77	2335.66	1326	1.98	2431.27	1376	1.92	2526.74
1277	1.83	2337.49	1327	1.98	2433.25	1377	1.88	2528.62
1278	1.85	2339.34	1328	1.97	2435.22	1378	1.87	2530.49
1279	1.83	2341.17	1329	1.96	2437.18	1379	1.87	2532.36

UE12g.10 #3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1380	1.87	2534.23						
1381	1.88	2536.11						
1382	1.89	2538.00						
1383	1.90	2539.90						
1384	1.88	2541.78						
1385	1.87	2543.65						
1386	1.86	2545.51						
1387	1.85	2547.36						
1388	1.84	2549.20						
1389	1.83	2551.03						
1390	1.83	2552.86						
1391	1.85	2554.71						
1392	1.88	2556.59						
1393	1.86	2558.45						
1394	1.86	2560.31						
1395	1.86	2562.17						
1396	1.88	2564.05						
1397	1.91	2565.96						
1398	1.97	2567.93						
1399	1.98	2569.91						
1400	1.99	2571.90						
1401	1.97	2573.87						
1402	1.97	2575.84						
1403	1.98	2577.82						
1404	1.99	2579.81						
1405	1.99	2581.80						
1406	1.99	2583.79						
1407	1.98	2585.77						
1408	1.97	2587.74						
1409	1.93	2589.67						
1410	1.92	2591.59						
1411	1.91	2593.50						
1412	1.89	2595.39						
1413	1.89	2597.28						
1414	1.90	2599.18						
1415	1.93	2601.11						
1416	1.99	2603.10						
1417	2.03	2605.13						
1418	2.01	2607.14						
1419	1.99	2609.13						
1420	2.01	2611.14						
1421	2.02	2613.16						

UE12g.10 #6

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
110	2.42	0.00	160	1.86	98.26	210	2.17	193.46
111	2.40	2.40	161	1.84	100.10	211	2.18	195.64
112	2.34	4.75	162	1.80	101.90	212	2.17	197.81
113	2.27	7.02	163	1.79	103.69	213	2.16	199.97
114	2.20	9.21	164	1.80	105.49	214	2.14	202.11
115	2.16	11.38	165	1.78	107.27	215	2.13	204.24
116	2.17	13.55	166	1.80	109.06	216	2.16	206.40
117	2.14	15.69	167	1.81	110.88	217	2.18	208.58
118	2.13	17.82	168	1.82	112.69	218	2.18	210.76
119	2.10	19.92	169	1.81	114.50	219	2.20	212.96
120	2.07	21.99	170	1.80	116.30	220	2.21	215.17
121	2.03	24.03	171	1.79	118.09	221	2.21	217.38
122	1.99	26.02	172	1.79	119.88	222	2.21	219.58
123	1.97	27.99	173	1.76	121.64	223	2.21	221.79
124	1.95	29.95	174	1.74	123.38	224	2.21	224.00
125	1.95	31.89	175	1.76	125.14	225	2.21	226.21
126	2.00	33.89	176	1.81	126.95	226	2.21	228.41
127	2.03	35.92	177	1.82	128.77	227	2.21	230.62
128	2.01	37.93	178	1.82	130.59	228	2.21	232.83
129	2.00	39.93	179	1.83	132.42	229	2.21	235.04
130	1.99	41.92	180	1.82	134.24	230	2.20	237.24
131	1.97	43.88	181	1.82	136.07	231	2.20	239.44
132	1.96	45.84	182	1.82	137.89	232	2.20	241.64
133	1.93	47.77	183	1.81	139.70	233	2.19	243.83
134	1.86	49.64	184	1.81	141.51	234	2.19	246.02
135	1.80	51.43	185	1.82	143.33	235	2.20	248.22
136	1.83	53.26	186	1.81	145.14	236	2.22	250.44
137	1.86	55.12	187	1.80	146.94	237	2.23	252.67
138	1.85	56.97	188	1.79	148.73	238	2.23	254.90
139	1.84	58.82	189	1.81	150.54	239	2.22	257.12
140	1.81	60.63	190	1.86	152.40	240	2.22	259.35
141	1.81	62.44	191	1.90	154.30	241	2.23	261.57
142	1.86	64.30	192	1.94	156.24	242	2.22	263.79
143	1.86	66.16	193	1.96	158.20	243	2.21	266.00
144	1.85	68.01	194	1.99	160.19	244	2.20	268.20
145	1.86	69.88	195	2.01	162.20	245	2.20	270.40
146	1.88	71.76	196	2.03	164.23	246	2.19	272.59
147	1.89	73.64	197	2.06	166.29	247	2.18	274.76
148	1.89	75.54	198	2.07	168.36	248	2.15	276.92
149	1.90	77.44	199	2.09	170.44	249	2.18	279.10
150	1.90	79.34	200	2.08	172.52	250	2.20	281.30
151	1.90	81.25	201	2.06	174.57	251	2.22	283.52
152	1.91	83.16	202	2.04	176.61	252	2.23	285.75
153	1.90	85.06	203	2.04	178.65	253	2.23	287.98
154	1.87	86.93	204	2.05	180.70	254	2.22	290.20
155	1.88	88.81	205	2.07	182.77	255	2.21	292.40
156	1.90	90.71	206	2.10	184.87	256	2.21	294.62
157	1.91	92.62	207	2.12	186.99	257	2.22	296.83
158	1.91	94.52	208	2.15	189.13	258	2.20	299.04
159	1.88	96.40	209	2.16	191.29	259	2.20	301.23

UE12g.10 #6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
260	2.22	303.46	310	2.19	412.67	360	2.04	519.00
261	2.23	305.68	311	2.20	414.87	361	2.04	521.04
262	2.22	307.90	312	2.19	417.06	362	2.03	523.08
263	2.21	310.12	313	2.19	419.25	363	1.99	525.06
264	2.20	312.31	314	2.19	421.44	364	1.96	527.02
265	2.17	314.48	315	2.19	423.63	365	0.00	528.95
266	2.15	316.63	316	2.19	425.82	366	0.00	530.88
267	2.17	318.80	317	2.18	427.99	367	0.00	532.81
268	2.20	321.00	318	2.16	430.16	368	0.00	534.74
269	2.20	323.20	319	2.15	432.30	369	0.00	536.67
270	2.19	325.38	320	2.14	434.44	370	0.00	538.60
271	2.18	327.57	321	2.14	436.58	371	0.00	540.53
272	2.17	329.74	322	2.14	438.73	372	0.00	542.46
273	2.16	331.90	323	2.14	440.87	373	0.00	544.39
274	2.19	334.09	324	2.13	443.00	374	1.90	546.32
275	2.19	336.28	325	2.13	445.13	375	1.91	548.23
276	2.18	338.46	326	2.13	447.26	376	1.93	550.16
277	2.16	340.62	327	2.12	449.38	377	1.99	552.15
278	2.14	342.77	328	2.12	451.50	378	1.98	554.13
279	2.13	344.90	329	2.13	453.63	379	1.99	556.12
280	2.14	347.04	330	2.14	455.77	380	1.99	558.10
281	2.14	349.19	331	2.15	457.92	381	1.98	560.09
282	2.15	351.34	332	2.15	460.07	382	1.97	562.06
283	2.17	353.50	333	2.15	462.21	383	1.96	564.02
284	2.18	355.68	334	2.14	464.35	384	1.94	565.96
285	2.16	357.84	335	2.13	466.48	385	1.92	567.88
286	2.12	359.96	336	2.13	468.61	386	1.92	569.80
287	2.08	362.04	337	2.12	470.73	387	1.91	571.71
288	2.15	364.19	338	2.10	472.83	388	1.91	573.62
289	2.22	366.41	339	2.11	474.93	389	1.90	575.52
290	2.21	368.62	340	2.13	477.06	390	1.89	577.41
291	2.21	370.82	341	2.12	479.19	391	1.87	579.28
292	2.21	373.03	342	2.11	481.29	392	1.85	581.12
293	2.24	375.27	343	2.11	483.41	393	1.83	582.95
294	2.26	377.53	344	2.12	485.53	394	1.81	584.76
295	2.26	379.79	345	2.12	487.65	395	1.79	586.54
296	2.25	382.04	346	2.12	489.78	396	1.77	588.31
297	2.24	384.27	347	2.12	491.90	397	1.74	590.05
298	2.22	386.49	348	2.11	494.01	398	1.72	591.77
299	2.19	388.68	349	2.10	496.12	399	1.69	593.46
300	2.14	390.82	350	2.11	498.23	400	1.66	595.13
301	2.12	392.93	351	2.12	500.35	401	1.64	596.77
302	2.15	395.08	352	2.10	502.45	402	1.60	598.37
303	2.20	397.28	353	2.11	504.56	403	1.58	599.94
304	2.21	399.49	354	2.10	506.66	404	1.56	601.51
305	2.22	401.71	355	2.08	508.74	405	1.54	603.05
306	2.20	403.91	356	2.07	510.81	406	1.53	604.58
307	2.19	406.10	357	2.06	512.87	407	1.52	606.10
308	2.19	408.29	358	2.04	514.91	408	1.51	607.61
309	2.19	410.48	359	2.04	516.96	409	1.52	609.13

UE12g.10 #6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
410	1.52	610.64	460	1.57	687.45	510	1.57	768.46
411	1.51	612.16	461	1.58	689.03	511	1.68	770.14
412	1.51	613.67	462	1.58	690.61	512	1.73	771.86
413	1.51	615.18	463	1.58	692.18	513	1.72	773.59
414	1.52	616.70	464	1.57	693.76	514	1.72	775.31
415	1.52	618.22	465	1.57	695.33	515	1.72	777.02
416	1.52	619.73	466	1.58	696.91	516	1.75	778.77
417	1.52	621.26	467	1.59	698.50	517	1.75	780.52
418	1.53	622.78	468	1.59	700.09	518	1.75	782.27
419	1.52	624.30	469	1.60	701.69	519	1.76	784.03
420	1.52	625.83	470	1.61	703.30	520	1.78	785.81
421	1.52	627.34	471	1.61	704.91	521	1.79	787.60
422	1.52	628.86	472	1.58	706.49	522	1.78	789.38
423	1.53	630.39	473	1.54	708.04	523	1.74	791.13
424	1.54	631.93	474	1.54	709.57	524	1.76	792.89
425	1.54	633.47	475	1.57	711.14	525	1.75	794.64
426	1.53	635.00	476	1.58	712.72	526	1.75	796.39
427	1.53	636.53	477	1.61	714.32	527	1.75	798.14
428	1.53	638.06	478	1.62	715.95	528	1.82	799.96
429	1.53	639.59	479	1.70	717.65	529	1.80	801.76
430	1.53	641.12	480	1.72	719.37	530	1.79	803.55
431	1.53	642.65	481	1.71	721.07	531	1.76	805.32
432	1.52	644.18	482	1.69	722.76	532	1.75	807.06
433	1.52	645.69	483	1.68	724.43	533	1.69	808.76
434	1.52	647.22	484	1.67	726.10	534	1.68	810.43
435	1.52	648.74	485	1.67	727.77	535	1.70	812.13
436	1.52	650.26	486	1.67	729.44	536	1.73	813.87
437	1.52	651.78	487	1.67	731.11	537	1.74	815.61
438	1.54	653.33	488	1.67	732.77	538	1.74	817.34
439	1.54	654.87	489	1.66	734.44	539	1.69	819.04
440	1.54	656.41	490	1.67	736.11	540	1.68	820.71
441	1.54	657.95	491	1.69	737.80	541	1.67	822.38
442	1.54	659.50	492	1.67	739.47	542	1.65	824.04
443	1.54	661.04	493	1.60	741.07	543	1.65	825.69
444	1.55	662.59	494	1.59	742.65	544	1.65	827.34
445	1.54	664.13	495	1.60	744.26	545	1.66	829.00
446	1.54	665.67	496	1.63	745.88	546	1.66	830.66
447	1.53	667.20	497	1.69	747.57	547	1.65	832.31
448	1.54	668.74	498	1.69	749.27	548	1.63	833.94
449	1.54	670.28	499	1.69	750.96	549	1.64	835.58
450	1.54	671.82	500	1.68	752.64	550	1.63	837.21
451	1.55	673.37	501	1.68	754.32	551	1.62	838.83
452	1.55	674.92	502	1.68	756.00	552	1.62	840.44
453	1.56	676.48	503	1.65	757.65	553	1.60	842.04
454	1.56	678.04	504	1.63	759.28	554	1.59	843.63
455	1.56	679.61	505	1.58	760.87	555	1.58	845.21
456	1.56	681.17	506	1.57	762.43	556	1.57	846.79
457	1.56	682.74	507	1.49	763.92	557	1.55	848.34
458	1.57	684.30	508	1.47	765.39	558	1.58	849.92
459	1.57	685.88	509	1.50	766.89	559	1.60	851.52

UE12g.10 #6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
560	1.64	853.16	610	1.41	927.00	660	1.56	1002.52
561	1.67	854.84	611	1.42	928.42	661	1.57	1004.09
562	1.66	856.50	612	1.43	929.85	662	1.59	1005.68
563	1.63	858.12	613	1.43	931.28	663	1.58	1007.26
564	1.62	859.75	614	1.43	932.71	664	1.59	1008.85
565	1.61	861.35	615	1.43	934.14	665	1.64	1010.49
566	1.60	862.95	616	1.43	935.57	666	1.63	1012.12
567	1.59	864.54	617	1.43	937.00	667	1.61	1013.73
568	1.58	866.11	618	1.44	938.45	668	1.60	1015.33
569	1.59	867.70	619	1.45	939.90	669	1.58	1016.91
570	1.60	869.30	620	1.45	941.35	670	1.53	1018.44
571	1.58	870.88	621	1.47	942.82	671	1.49	1019.93
572	1.59	872.48	622	1.47	944.29	672	1.48	1021.41
573	1.60	874.08	623	1.48	945.77	673	1.47	1022.88
574	1.62	875.70	624	1.48	947.26	674	1.47	1024.35
575	1.61	877.31	625	1.50	948.76	675	1.50	1025.85
576	1.58	878.89	626	1.55	950.31	676	1.55	1027.40
577	1.58	880.46	627	1.57	951.89	677	1.59	1028.99
578	1.58	882.05	628	1.57	953.46	678	1.60	1030.59
579	1.57	883.61	629	1.50	954.95	679	1.57	1032.16
580	1.54	885.15	630	1.47	956.43	680	1.55	1033.71
581	1.51	886.66	631	1.53	957.95	681	1.56	1035.27
582	1.41	888.08	632	1.54	959.49	682	1.58	1036.85
583	1.38	889.46	633	1.55	961.04	683	1.59	1038.44
584	1.36	890.82	634	1.56	962.59	684	1.58	1040.02
585	1.37	892.19	635	1.54	964.14	685	1.60	1041.62
586	1.40	893.59	636	1.55	965.69	686	1.60	1043.22
587	1.41	895.00	637	1.56	967.25	687	1.57	1044.79
588	1.40	896.40	638	1.58	968.83	688	1.55	1046.34
589	1.39	897.79	639	1.60	970.43	689	1.55	1047.89
590	1.37	899.16	640	1.58	972.01	690	1.56	1049.45
591	1.37	900.53	641	1.52	973.53	691	1.63	1051.08
592	1.36	901.88	642	1.51	975.04	692	1.68	1052.76
593	1.35	903.24	643	1.49	976.53	693	1.66	1054.42
594	1.36	904.60	644	1.47	978.00	694	1.64	1056.06
595	1.36	905.96	645	1.43	979.44	695	1.63	1057.69
596	1.37	907.33	646	1.42	980.85	696	1.62	1059.31
597	1.42	908.75	647	1.45	982.30	697	1.62	1060.93
598	1.42	910.16	648	1.47	983.77	698	1.63	1062.56
599	1.41	911.58	649	1.50	985.27	699	1.61	1064.17
600	1.41	912.98	650	1.51	986.78	700	1.57	1065.74
601	1.41	914.39	651	1.56	988.33	701	1.54	1067.28
602	1.40	915.79	652	1.57	989.90	702	1.55	1068.83
603	1.40	917.19	653	1.54	991.45	703	1.57	1070.40
604	1.39	918.58	654	1.55	993.00	704	1.56	1071.96
605	1.40	919.98	655	1.58	994.58	705	1.54	1073.50
606	1.40	921.38	656	1.62	996.20	706	1.52	1075.02
607	1.40	922.78	657	1.62	997.82	707	1.51	1076.53
608	1.40	924.19	658	1.57	999.39	708	1.51	1078.04
609	1.40	925.59	659	1.56	1000.96	709	1.51	1079.55

UE12g.10 #6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
710	1.52	1081.07	760	1.63	1159.32	810	1.92	1240.71
711	1.51	1082.58	761	1.64	1160.96	811	1.91	1242.62
712	1.50	1084.08	762	1.63	1162.59	812	1.90	1244.52
713	1.50	1085.58	763	1.61	1164.20	813	1.90	1246.42
714	1.50	1087.08	764	1.57	1165.77	814	1.92	1248.34
715	1.51	1088.59	765	1.56	1167.33	815	1.92	1250.26
716	1.51	1090.10	766	1.54	1168.87	816	1.89	1252.15
717	1.51	1091.61	767	1.54	1170.41	817	1.88	1254.03
718	1.50	1093.11	768	1.55	1171.96	818	1.86	1255.89
719	1.49	1094.60	769	1.55	1173.51	819	1.84	1257.73
720	1.49	1096.09	770	1.56	1175.07	820	1.83	1259.56
721	1.49	1097.58	771	1.56	1176.63	821	1.83	1261.39
722	1.49	1099.07	772	1.55	1178.18	822	1.87	1263.26
723	1.50	1100.57	773	1.55	1179.73	823	1.88	1265.14
724	1.50	1102.07	774	1.55	1181.28	824	1.89	1267.03
725	1.50	1103.57	775	1.55	1182.83	825	1.89	1268.92
726	1.51	1105.08	776	1.56	1184.39	826	1.86	1270.78
727	1.52	1106.60	777	1.56	1185.95	827	1.84	1272.62
728	1.51	1108.11	778	1.55	1187.50	828	1.81	1274.43
729	1.51	1109.62	779	1.55	1189.05	829	1.79	1276.22
730	1.49	1111.11	780	1.54	1190.59	830	1.80	1278.02
731	1.47	1112.58	781	1.54	1192.13	831	1.80	1279.82
732	1.47	1114.05	782	1.54	1193.67	832	1.89	1281.71
733	1.49	1115.54	783	1.54	1195.21	833	1.87	1283.58
734	1.57	1117.11	784	1.56	1196.77	834	1.64	1285.22
735	1.64	1118.75	785	1.56	1198.33	835	1.50	1286.72
736	1.69	1120.44	786	1.59	1199.92	836	1.46	1288.18
737	1.68	1122.12	787	1.59	1201.51	837	1.47	1289.65
738	1.67	1123.79	788	1.61	1203.12	838	1.48	1291.13
739	1.64	1125.43	789	1.64	1204.76	839	1.48	1292.61
740	1.62	1127.05	790	1.64	1206.40	840	1.50	1294.11
741	1.55	1128.60	791	1.63	1208.03	841	1.53	1295.64
742	1.57	1130.17	792	1.63	1209.66	842	1.60	1297.24
743	1.59	1131.76	793	1.64	1211.30	843	1.73	1298.97
744	1.64	1133.40	794	1.65	1212.95	844	1.77	1300.74
745	1.66	1135.06	795	1.65	1214.60	845	1.74	1302.48
746	1.64	1136.70	796	1.65	1216.25	846	1.72	1304.20
747	1.61	1138.31	797	1.65	1217.90	847	1.69	1305.89
748	1.58	1139.89	798	1.64	1219.54	848	1.73	1307.62
749	1.53	1141.42	799	1.64	1221.18	849	1.74	1309.36
750	1.54	1142.96	800	1.66	1222.84	850	1.75	1311.11
751	1.64	1144.60	801	1.67	1224.51	851	1.78	1312.89
752	1.63	1146.23	802	1.70	1226.21	852	1.79	1314.68
753	1.57	1147.80	803	1.72	1227.93	853	1.81	1316.49
754	1.56	1149.36	804	1.75	1229.68	854	1.84	1318.33
755	1.62	1150.98	805	1.77	1231.45	855	1.87	1320.20
756	1.69	1152.67	806	1.79	1233.24	856	1.86	1322.06
757	1.69	1154.36	807	1.82	1235.06	857	1.86	1323.92
758	1.68	1156.04	808	1.84	1236.90	858	1.86	1325.78
759	1.65	1157.69	809	1.89	1238.79	859	1.85	1327.63

UE12g.10 #6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
860	1.85	1329.48	910	1.72	1419.16	960	1.66	1500.62
861	1.87	1331.35	911	1.71	1420.87	961	1.67	1502.29
862	1.94	1333.29	912	1.70	1422.57	962	1.70	1503.99
863	1.94	1335.23	913	1.71	1424.28	963	1.72	1505.71
864	2.00	1337.23	914	1.72	1426.00	964	1.74	1507.45
865	1.99	1339.22	915	1.68	1427.68	965	1.76	1509.21
866	1.96	1341.18	916	1.64	1429.32	966	1.78	1510.99
867	1.95	1343.13	917	1.60	1430.92	967	1.77	1512.76
868	1.93	1345.06	918	1.57	1432.49	968	1.79	1514.55
869	1.94	1347.00	919	1.55	1434.04	969	1.79	1516.34
870	1.95	1348.95	920	1.52	1435.56	970	1.77	1518.11
871	1.94	1350.89	921	1.56	1437.12	971	1.74	1519.85
872	1.90	1352.79	922	1.56	1438.68	972	1.65	1521.50
873	1.85	1354.64	923	1.50	1440.18	973	1.61	1523.11
874	1.83	1356.47	924	1.47	1441.65	974	1.59	1524.70
875	1.81	1358.28	925	1.50	1443.15	975	1.68	1526.38
876	1.80	1360.08	926	1.51	1444.66	976	1.73	1528.11
877	1.79	1361.87	927	1.53	1446.19	977	1.71	1529.82
878	1.77	1363.64	928	1.57	1447.76	978	1.74	1531.56
879	1.80	1365.44	929	1.60	1449.36	979	1.82	1533.38
880	1.83	1367.27	930	1.64	1451.00	980	1.87	1535.25
881	1.90	1369.17	931	1.71	1452.71	981	1.87	1537.12
882	1.90	1371.07	932	1.68	1454.39	982	1.84	1538.96
883	1.79	1372.86	933	1.57	1455.96	983	1.79	1540.75
884	1.76	1374.62	934	1.57	1457.53	984	1.75	1542.50
885	1.76	1376.38	935	1.57	1459.10	985	1.68	1544.18
886	1.76	1378.14	936	1.69	1460.79	986	1.64	1545.82
887	1.75	1379.89	937	1.69	1462.48	987	1.63	1547.45
888	1.73	1381.62	938	1.69	1464.17	988	1.63	1549.08
889	1.72	1383.34	939	1.67	1465.84	989	1.61	1550.69
890	1.71	1385.05	940	1.69	1467.53	990	1.62	1552.31
891	1.71	1386.76	941	1.68	1469.21	991	1.65	1553.96
892	1.71	1388.47	942	1.70	1470.91	992	1.68	1555.64
893	1.71	1390.18	943	1.70	1472.61	993	1.70	1557.34
894	1.71	1391.89	944	1.69	1474.30	994	1.70	1559.04
895	1.73	1393.62	945	1.60	1475.90	995	1.71	1560.75
896	1.69	1395.31	946	1.58	1477.48	996	1.74	1562.49
897	1.68	1396.99	947	1.57	1479.05	997	1.77	1564.26
898	1.69	1398.68	948	1.54	1480.59	998	1.77	1566.03
899	1.69	1400.37	949	1.62	1482.21	999	1.76	1567.79
900	1.70	1402.07	950	1.68	1483.89	1000	1.76	1569.55
901	1.70	1403.77	951	1.69	1485.58	1001	1.67	1571.22
902	1.69	1405.46	952	1.66	1487.24	1002	1.63	1572.85
903	1.69	1407.15	953	1.64	1488.88	1003	1.60	1574.45
904	1.69	1408.84	954	1.60	1490.48	1004	1.62	1576.07
905	1.70	1410.54	955	1.65	1492.13	1005	1.64	1577.71
906	1.71	1412.25	956	1.70	1493.83	1006	1.64	1579.35
907	1.73	1413.98	957	1.73	1495.56	1007	1.64	1580.99
908	1.73	1415.71	958	1.71	1497.27	1008	1.64	1582.63
909	1.73	1417.44	959	1.69	1498.96	1009	1.65	1584.28

UE12g.10 #6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1010	1.67	1585.95	1060	1.80	1676.64	1110	1.85	1767.57
1011	1.69	1587.64	1061	1.80	1678.44	1111	1.83	1769.40
1012	1.70	1589.34	1062	1.81	1680.25	1112	1.85	1771.25
1013	1.70	1591.04	1063	1.81	1682.06	1113	1.84	1773.09
1014	1.70	1592.74	1064	1.80	1683.86	1114	1.84	1774.93
1015	1.74	1594.48	1065	1.80	1685.66	1115	1.84	1776.77
1016	1.74	1596.22	1066	1.79	1687.45	1116	1.86	1778.63
1017	1.74	1597.96	1067	1.79	1689.24	1117	1.88	1780.51
1018	1.74	1599.70	1068	1.80	1691.04	1118	1.88	1782.39
1019	1.75	1601.45	1069	1.80	1692.84	1119	1.90	1784.29
1020	1.77	1603.22	1070	1.79	1694.63	1120	1.89	1786.18
1021	1.79	1605.01	1071	1.79	1696.42	1121	1.88	1788.06
1022	1.85	1606.86	1072	1.78	1698.20	1122	1.86	1789.92
1023	1.91	1608.77	1073	1.79	1699.99	1123	1.85	1791.77
1024	1.95	1610.72	1074	1.81	1701.80	1124	1.85	1793.62
1025	1.90	1612.62	1075	1.79	1703.59	1125	1.87	1795.49
1026	1.84	1614.46	1076	1.78	1705.37	1126	1.91	1797.40
1027	1.83	1616.29	1077	1.77	1707.14	1127	1.92	1799.32
1028	1.82	1618.11	1078	1.76	1708.90	1128	1.93	1801.25
1029	1.82	1619.93	1079	1.76	1710.66	1129	1.93	1803.18
1030	1.86	1621.79	1080	1.76	1712.42	1130	1.92	1805.10
1031	1.93	1623.72	1081	1.77	1714.19	1131	1.93	1807.03
1032	1.91	1625.63	1082	1.80	1715.99	1132	1.93	1808.96
1033	1.85	1627.48	1083	1.81	1717.80	1133	1.92	1810.88
1034	1.88	1629.36	1084	1.82	1719.62	1134	1.90	1812.78
1035	1.92	1631.28	1085	1.85	1721.47	1135	1.90	1814.68
1036	1.90	1633.18	1086	1.86	1723.33	1136	1.89	1816.57
1037	1.87	1635.05	1087	1.82	1725.15	1137	1.92	1818.49
1038	1.85	1636.90	1088	1.74	1726.89	1138	1.92	1820.41
1039	1.84	1638.74	1089	1.69	1728.58	1139	1.92	1822.33
1040	1.85	1640.59	1090	1.75	1730.33	1140	1.94	1824.27
1041	1.85	1642.44	1091	1.83	1732.16	1141	1.95	1826.22
1042	1.85	1644.29	1092	1.92	1734.08	1142	1.94	1828.16
1043	1.78	1646.07	1093	1.92	1736.00	1143	1.92	1830.08
1044	1.74	1647.81	1094	1.90	1737.90	1144	1.92	1832.00
1045	1.78	1649.59	1095	1.88	1739.78	1145	1.92	1833.92
1046	1.82	1651.41	1096	1.89	1741.67	1146	1.91	1835.83
1047	1.76	1653.17	1097	1.88	1743.55	1147	1.88	1837.71
1048	1.75	1654.92	1098	1.85	1745.40	1148	1.86	1839.57
1049	1.80	1656.72	1099	1.83	1747.23	1149	1.89	1841.46
1050	1.81	1658.53	1100	1.82	1749.05	1150	1.89	1843.35
1051	1.81	1660.34	1101	1.86	1750.91	1151	1.89	1845.24
1052	1.82	1662.16	1102	1.85	1752.76	1152	1.88	1847.12
1053	1.82	1663.98	1103	1.87	1754.63	1153	1.92	1849.04
1054	1.80	1665.78	1104	1.86	1756.49	1154	1.94	1850.98
1055	1.81	1667.59	1105	1.82	1758.31	1155	1.95	1852.93
1056	1.82	1669.41	1106	1.83	1760.14	1156	1.96	1854.89
1057	1.82	1671.23	1107	1.84	1761.98	1157	1.93	1856.82
1058	1.81	1673.04	1108	1.86	1763.84	1158	1.91	1858.73
1059	1.80	1674.84	1109	1.88	1765.72	1159	1.89	1860.62

UE12g.10 #6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1160	1.91	1862.53	1210	1.80	1955.24	1260	1.99	2051.29
1161	1.91	1864.44	1211	1.79	1957.03	1261	1.99	2053.28
1162	1.90	1866.34	1212	1.78	1958.81	1262	2.02	2055.30
1163	1.86	1868.20	1213	1.77	1960.58	1263	2.02	2057.32
1164	1.88	1870.08	1214	1.77	1962.35	1264	2.01	2059.33
1165	1.88	1871.96	1215	1.84	1964.19	1265	2.01	2061.34
1166	1.87	1873.83	1216	1.89	1966.08	1266	2.00	2063.34
1167	1.87	1875.70	1217	1.89	1967.97	1267	1.97	2065.31
1168	1.87	1877.57	1218	1.89	1969.86	1268	1.94	2067.25
1169	1.85	1879.42	1219	1.87	1971.73	1269	1.91	2069.16
1170	1.84	1881.26	1220	1.86	1973.59	1270	1.90	2071.06
1171	1.86	1883.12	1221	1.92	1975.51	1271	1.87	2072.93
1172	1.87	1884.99	1222	1.91	1977.42	1272	1.83	2074.76
1173	1.89	1886.88	1223	1.90	1979.32	1273	1.81	2076.57
1174	1.89	1888.77	1224	1.87	1981.19	1274	1.79	2078.36
1175	1.86	1890.63	1225	1.85	1983.04	1275	1.83	2080.19
1176	1.85	1892.48	1226	1.87	1984.91	1276	1.86	2082.05
1177	1.82	1894.30	1227	1.95	1986.86	1277	1.87	2083.92
1178	1.83	1896.13	1228	1.93	1988.79	1278	1.80	2085.72
1179	1.86	1897.99	1229	1.91	1990.70	1279	1.81	2087.53
1180	1.84	1899.83	1230	1.93	1992.63	1280	1.83	2089.36
1181	1.82	1901.65	1231	1.95	1994.58	1281	1.86	2091.22
1182	1.80	1903.45	1232	1.96	1996.54	1282	1.86	2093.08
1183	1.79	1905.24	1233	1.95	1998.49	1283	1.80	2094.88
1184	1.82	1907.06	1234	1.93	2000.42	1284	1.78	2096.66
1185	1.84	1908.90	1235	1.90	2002.32	1285	1.77	2098.43
1186	1.86	1910.76	1236	1.94	2004.26	1286	1.78	2100.21
1187	1.86	1912.62	1237	1.96	2006.22	1287	1.82	2102.03
1188	1.84	1914.46	1238	1.98	2008.20	1288	1.86	2103.89
1189	1.87	1916.33	1239	2.00	2010.20	1289	1.86	2105.75
1190	1.88	1918.21	1240	1.96	2012.16	1290	1.85	2107.60
1191	1.90	1920.11	1241	1.98	2014.14	1291	1.86	2109.46
1192	1.89	1922.00	1242	2.00	2016.14	1292	1.87	2111.33
1193	1.89	1923.89	1243	2.00	2018.14	1293	1.87	2113.20
1194	1.89	1925.78	1244	1.94	2020.08	1294	1.88	2115.08
1195	1.86	1927.64	1245	1.93	2022.01	1295	1.93	2117.01
1196	1.86	1929.50	1246	1.94	2023.95	1296	2.00	2119.01
1197	1.86	1931.36	1247	1.96	2025.91	1297	1.97	2120.98
1198	1.84	1933.20	1248	1.95	2027.86	1298	1.93	2122.91
1199	1.83	1935.03	1249	1.94	2029.80	1299	1.93	2124.84
1200	1.83	1936.86	1250	1.91	2031.71	1300	1.92	2126.76
1201	1.84	1938.70	1251	1.91	2033.62	1301	1.88	2128.64
1202	1.85	1940.55	1252	1.90	2035.52	1302	1.87	2130.51
1203	1.86	1942.41	1253	1.90	2037.42	1303	1.81	2132.32
1204	1.86	1944.27	1254	1.91	2039.33	1304	1.98	2134.30
1205	1.86	1946.13	1255	1.94	2041.27	1305	1.98	2136.28
1206	1.85	1947.98	1256	1.98	2043.25	1306	2.04	2138.32
1207	1.83	1949.81	1257	2.02	2045.27	1307	2.05	2140.37
1208	1.82	1951.63	1258	2.02	2047.29	1308	2.00	2142.37
1209	1.81	1953.44	1259	2.01	2049.30	1309	1.90	2144.27

UE12g.10 #6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1310	1.88	2146.15	1360	1.65	2243.86			
1311	1.86	2148.01	1361	1.65	2245.51			
1312	1.84	2149.85	1362	1.65	2247.16			
1313	1.81	2151.66	1363	1.66	2248.82			
1314	1.80	2153.46	1364	1.68	2250.50			
1315	1.80	2155.26	1365	1.70	2252.20			
1316	1.80	2157.06	1366	1.72	2253.92			
1317	1.81	2158.87	1367	1.68	2255.60			
1318	1.90	2160.77	1368	1.69	2257.29			
1319	1.96	2162.73	1369	1.66	2258.95			
1320	2.01	2164.74	1370	1.67	2260.62			
1321	2.15	2166.89	1371	1.69	2262.31			
1322	2.18	2169.07	1372	1.67	2263.98			
1323	2.20	2171.27	1373	1.68	2265.66			
1324	2.19	2173.46	1374	1.71	2267.37			
1325	2.20	2175.66	1375	1.67	2269.04			
1326	2.21	2177.87	1376	1.66	2270.70			
1327	2.22	2180.09	1377	1.67	2272.37			
1328	2.21	2182.30	1378	1.68	2274.05			
1329	2.20	2184.50	1379	1.70	2275.75			
1330	2.19	2186.69	1380	1.70	2277.45			
1331	2.19	2188.88	1381	1.73	2279.18			
1332	2.17	2191.05	1382	1.74	2280.92			
1333	2.19	2193.24	1383	1.72	2282.64			
1334	2.18	2195.42	1384	1.72	2284.36			
1335	2.17	2197.59	1385	1.72	2286.08			
1336	2.17	2199.76	1386	1.73	2287.81			
1337	2.14	2201.90	1387	1.73	2289.54			
1338	2.08	2203.98	1388	1.73	2291.27			
1339	2.06	2206.04	1389	1.74	2293.01			
1340	2.04	2208.08	1390	1.73	2294.74			
1340	2.04	2208.08						
1341	1.99	2210.07						
1342	1.94	2212.01						
1343	1.94	2213.95						
1344	1.96	2215.91						
1345	1.98	2217.89						
1346	1.96	2219.85						
1347	1.90	2221.75						
1348	1.85	2223.60						
1349	1.82	2225.42						
1350	1.77	2227.19						
1351	1.71	2228.90						
1352	1.69	2230.59						
1353	1.67	2232.26						
1354	1.65	2233.91						
1355	1.66	2235.57						
1356	1.66	2237.23						
1357	1.67	2238.90						
1358	1.66	2240.56						
1359	1.65	2242.21						

UE12n#2

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
22	2.09	0.00	75	1.58	103.02	249	0.00	164.09
23	2.10	2.10	76	1.54	104.56	250	0.00	165.18
24	2.09	4.18	77	1.54	106.10	251	0.00	166.27
25	2.10	6.28	78	1.58	107.69	252	0.00	167.36
26	2.15	8.43	79	1.60	109.28	253	0.00	168.45
27	2.16	10.59	80	1.61	110.89	254	0.00	169.54
28	2.17	12.76	81	1.60	112.49	255	0.00	170.63
29	2.19	14.95	82	1.56	114.05	256	0.00	171.72
30	2.22	17.17	83	1.52	115.56	257	0.00	172.81
31	2.27	19.44	84	1.48	117.05	258	0.00	173.90
32	2.27	21.71	85	1.47	118.51	259	0.00	174.99
33	2.30	24.01	86	1.43	119.95	260	0.00	176.08
34	2.30	26.31	87	1.41	121.36	261	0.00	177.17
35	2.32	28.63	88	1.38	122.74	262	0.00	178.26
36	2.31	30.94	89	1.35	124.08	263	0.00	179.35
37	2.35	33.29	90	1.30	125.39	264	0.00	180.44
38	2.37	35.66	91	1.28	126.66	265	0.00	181.53
39	2.38	38.04	92	1.23	127.90	266	0.00	182.62
40	2.37	40.42	93	1.19	129.08	267	0.00	183.71
41	2.36	42.77	94	1.17	130.25	268	0.00	184.80
42	2.38	45.15	95	1.14	131.39	269	0.00	185.89
43	2.38	47.52	220	0.00	132.48	270	0.00	186.98
44	2.37	49.89	221	0.00	133.57	271	0.00	188.07
45	2.38	52.27	222	0.00	134.66	272	0.00	189.16
46	2.36	54.63	223	0.00	135.75	273	0.00	190.25
47	2.42	57.05	224	0.00	136.84	274	0.00	191.34
48	2.46	59.51	225	0.00	137.93	275	0.00	192.43
49	2.41	61.92	226	0.00	139.02	276	0.00	193.52
50	2.26	64.18	227	0.00	140.11	277	0.00	194.61
51	2.22	66.40	228	0.00	141.20	278	0.00	195.70
52	2.00	68.40	229	0.00	142.29	279	0.00	196.79
55	0.00	70.30	230	0.00	143.38	280	0.00	197.88
57	1.79	72.19	231	0.00	144.47	281	0.00	198.97
58	1.78	73.97	232	0.00	145.56	282	0.00	200.06
59	1.84	75.81	233	0.00	146.65	283	0.00	201.15
60	1.80	77.61	234	0.00	147.74	284	0.00	202.24
61	1.76	79.37	235	0.00	148.83	285	0.00	203.33
62	1.71	81.08	236	0.00	149.92	286	0.00	204.42
63	1.66	82.74	237	0.00	151.01	287	0.00	205.51
64	1.70	84.44	238	0.00	152.10	288	0.00	206.60
65	1.68	86.12	239	0.00	153.19	289	0.00	207.69
66	1.66	87.78	240	0.00	154.28	290	0.00	208.78
67	1.69	89.47	241	0.00	155.37	330	1.04	209.87
68	1.74	91.21	242	0.00	156.46	331	1.05	210.92
69	1.75	92.96	243	0.00	157.55	332	1.05	211.97
70	1.77	94.74	244	0.00	158.64	333	1.06	213.03
71	1.76	96.49	245	0.00	159.73	334	1.05	214.08
72	1.68	98.18	246	0.00	160.82	335	1.07	215.15
73	1.64	99.82	247	0.00	161.91	336	1.07	216.22
74	1.61	101.44	248	0.00	163.00	337	1.10	217.32

UE12n#2--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
338	1.11	218.43	388	1.36	278.40	456	1.20	344.07
339	1.12	219.55	389	1.39	279.79	457	1.13	345.20
340	1.10	220.65	390	1.41	281.20	458	1.15	346.34
341	1.09	221.74	391	1.39	282.59	459	1.19	347.54
342	1.06	222.80	392	1.35	283.94	460	1.23	348.77
343	1.12	223.93	393	1.35	285.29	461	1.18	349.95
344	1.12	225.04	394	1.37	286.66	462	1.17	351.12
345	1.08	226.12	395	1.36	288.03	463	1.19	352.31
346	1.05	227.17	396	1.40	289.42	464	1.19	353.50
347	1.08	228.26	397	1.42	290.85	465	1.22	354.72
348	1.13	229.39	398	1.44	292.28	466	1.21	355.93
349	1.13	230.52	399	1.43	293.72	467	1.21	357.14
350	1.10	231.62	400	1.43	295.15	468	1.20	358.34
351	1.08	232.70	401	1.37	296.51	469	1.25	359.59
352	1.05	233.75	402	1.36	297.88	470	1.33	360.92
353	1.07	234.82	403	1.28	299.15	471	1.40	362.32
354	1.11	235.93	404	1.24	300.40	472	1.41	363.73
355	1.12	237.06	405	1.26	301.66	473	1.38	365.11
356	1.20	238.26	406	1.25	302.91	474	1.35	366.45
357	1.20	239.46	407	1.29	304.20	475	1.32	367.77
358	1.17	240.63	408	1.30	305.49	476	1.34	369.11
359	1.18	241.81	409	1.31	306.81	477	1.31	370.43
360	1.20	243.01	410	1.32	308.13	478	1.29	371.72
361	1.20	244.21	411	1.36	309.49	479	1.29	373.01
362	1.23	245.44	412	1.39	310.88	480	1.27	374.27
363	1.23	246.67	413	1.36	312.24	481	1.26	375.53
364	1.22	247.88	414	1.37	313.61	482	1.26	376.80
365	1.24	249.12	415	1.32	314.93	483	1.26	378.06
366	1.27	250.39	416	1.36	316.29	484	1.30	379.35
367	1.27	251.66	417	1.40	317.69	485	1.40	380.75
368	1.30	252.97	418	1.38	319.07	486	1.52	382.27
369	1.34	254.31	419	1.38	320.45	487	1.54	383.81
370	1.32	255.63	420	1.38	321.83	488	1.58	385.40
371	1.34	256.97	421	1.38	323.21	489	1.63	387.03
372	1.32	258.28	422	1.36	324.57	490	1.65	388.68
373	1.26	259.55	423	1.34	325.91	491	1.66	390.34
374	1.18	260.73	424	1.31	327.22	492	1.63	391.97
375	1.16	261.89	425	1.32	328.54	493	1.57	393.54
376	1.14	263.03	426	1.29	329.83	494	1.49	395.03
377	1.17	264.20	427	1.27	331.10	495	1.38	396.41
378	1.19	265.40	428	1.26	332.36	496	1.38	397.80
379	1.23	266.63	429	1.22	333.58	497	1.36	399.16
380	1.23	267.86	430	1.19	334.77	498	1.39	400.55
381	1.28	269.14	440	0.00	335.91	499	1.35	401.90
382	1.32	270.47	450	1.09	337.05	500	1.31	403.21
383	1.32	271.79	451	1.09	338.15	501	1.25	404.46
384	1.31	273.10	452	1.18	339.32	502	1.18	405.64
385	1.30	274.40	453	1.16	340.49	503	1.20	406.84
386	1.31	275.71	454	1.18	341.67	504	1.22	408.06
387	1.34	277.04	455	1.21	342.87	505	1.22	409.28

UE12n#2--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
506	1.40	410.68	556	1.47	483.87	606	1.58	552.70
507	1.40	412.07	557	1.50	485.37	607	1.59	554.29
508	1.43	413.50	558	1.52	486.88	608	1.57	555.87
509	1.43	414.93	559	1.51	488.39	609	1.58	557.45
510	1.39	416.32	560	1.52	489.91	610	1.60	559.05
511	1.36	417.68	561	1.50	491.41	611	1.61	560.67
512	1.29	418.97	562	1.52	492.93	612	1.62	562.28
513	1.25	420.22	563	1.52	494.45	613	1.62	563.90
514	1.25	421.47	564	1.53	495.98	614	1.57	565.47
515	1.30	422.77	565	1.54	497.53	615	1.52	566.99
516	1.41	424.18	566	1.55	499.08	616	1.50	568.50
517	1.42	425.60	567	1.52	500.60	617	1.48	569.98
518	1.45	427.05	568	1.52	502.12	618	1.46	571.44
519	1.47	428.52	569	1.48	503.60	619	1.41	572.85
520	1.50	430.01	570	1.45	505.05	620	1.47	574.32
521	1.49	431.51	571	1.47	506.52	621	1.56	575.88
522	1.48	432.98	572	1.40	507.92	622	1.56	577.45
523	1.49	434.47	573	1.30	509.22	623	1.52	578.96
524	1.48	435.95	574	1.22	510.45	624	1.48	580.44
525	1.46	437.41	575	1.26	511.71	625	1.46	581.90
526	1.48	438.89	576	1.26	512.97	626	1.43	583.34
527	1.49	440.38	577	1.26	514.23	627	1.51	584.85
528	1.49	441.86	578	1.29	515.52	628	1.59	586.44
529	1.49	443.35	579	1.28	516.80	629	1.63	588.07
530	1.54	444.89	580	1.27	518.07	630	1.62	589.69
531	1.51	446.40	581	1.27	519.35	631	1.59	591.28
532	1.49	447.89	582	1.30	520.65	632	1.62	592.89
533	1.47	449.36	583	1.29	521.94	633	1.65	594.54
534	1.44	450.80	584	1.30	523.24	634	1.67	596.21
535	1.41	452.21	585	1.23	524.47	635	1.69	597.90
536	1.39	453.60	586	1.16	525.63	636	1.68	599.58
537	1.38	454.97	587	1.11	526.74	637	1.65	601.23
538	1.43	456.40	588	1.13	527.87	638	1.63	602.86
539	1.45	457.85	589	1.17	529.03	639	1.63	604.49
540	1.46	459.31	590	1.20	530.23	640	1.64	606.13
541	1.50	460.81	591	1.27	531.50	641	1.65	607.78
542	1.56	462.37	592	1.35	532.85	642	1.65	609.42
543	1.54	463.91	593	1.41	534.27	643	1.61	611.04
544	1.56	465.47	594	1.39	535.66	644	1.59	612.63
545	1.59	467.07	595	1.37	537.03	645	1.60	614.23
546	1.58	468.65	596	1.38	538.41	646	1.57	615.80
547	1.56	470.21	597	1.38	539.79	647	1.54	617.34
548	1.52	471.74	598	1.35	541.14	648	1.51	618.85
549	1.52	473.26	599	1.33	542.47	649	1.48	620.34
550	1.53	474.79	600	1.33	543.79	650	1.42	621.76
551	1.53	476.32	601	1.36	545.15	651	1.36	623.12
552	1.49	477.82	602	1.42	546.57	652	1.31	624.43
553	1.55	479.37	603	1.52	548.09	653	1.31	625.73
554	1.52	480.89	604	1.51	549.61	654	1.31	627.04
555	1.50	482.39	605	1.51	551.12	655	1.32	628.36

UE12n#2--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
656	1.28	629.64	706	1.65	696.31	756	1.26	757.07
657	1.27	630.91	707	1.53	697.84	757	1.27	758.33
658	1.26	632.17	708	1.42	699.27	758	1.32	759.66
659	1.24	633.41	709	1.36	700.63	759	1.28	760.94
660	1.29	634.70	710	1.36	701.99	760	1.24	762.19
661	1.38	636.08	711	1.38	703.37	761	1.22	763.40
662	1.36	637.44	712	1.38	704.75	762	1.24	764.65
663	1.38	638.83	713	1.34	706.08	763	1.29	765.93
664	1.37	640.20	714	1.29	707.37	764	1.33	767.26
665	1.42	641.62	715	1.31	708.68	765	1.33	768.59
666	1.46	643.08	716	1.32	710.00	766	1.32	769.91
667	1.46	644.54	717	1.35	711.35	767	1.31	771.22
668	1.38	645.92	718	1.33	712.68	768	1.29	772.51
669	1.29	647.21	719	1.30	713.99	769	1.26	773.77
670	1.29	648.50	720	1.29	715.27	770	1.28	775.05
671	1.31	649.81	721	1.28	716.55	771	1.30	776.35
672	1.22	651.03	722	1.24	717.80	772	1.33	777.67
673	1.13	652.15	723	1.18	718.98	773	1.31	778.98
674	1.13	653.28	724	1.17	720.14	774	1.31	780.29
675	1.14	654.42	725	1.16	721.31	775	1.28	781.57
676	1.12	655.54	726	1.16	722.46	776	1.30	782.87
677	1.14	656.68	727	1.13	723.59	777	1.30	784.17
678	1.15	657.83	728	1.08	724.67	778	1.29	785.47
679	1.13	658.95	729	1.07	725.74	779	1.28	786.75
680	1.14	660.09	730	1.07	726.81	780	1.29	788.04
681	1.16	661.26	731	1.09	727.90	781	1.27	789.30
682	1.17	662.43	732	1.10	728.99	782	1.26	790.56
683	1.19	663.61	733	1.13	730.13	783	1.26	791.82
684	1.20	664.81	734	1.18	731.31	784	1.25	793.08
685	1.26	666.07	735	1.16	732.47	785	1.24	794.31
686	1.29	667.36	736	1.14	733.61	786	1.23	795.54
687	1.37	668.73	737	1.10	734.71	787	1.23	796.77
688	1.39	670.11	738	1.09	735.80	788	1.25	798.02
689	1.50	671.61	739	1.10	736.90	789	1.29	799.31
690	1.49	673.10	740	1.15	738.05	790	1.33	800.64
691	1.46	674.56	741	1.15	739.20	791	1.27	801.91
692	1.44	676.00	742	1.17	740.37	792	1.27	803.19
693	1.41	677.41	743	1.22	741.59	793	1.28	804.46
694	1.39	678.80	744	1.23	742.82	794	1.31	805.77
695	1.32	680.12	745	1.15	743.97	795	1.32	807.09
696	1.34	681.46	746	1.15	745.11	796	1.34	808.43
697	1.35	682.81	747	1.16	746.27	797	1.35	809.78
698	1.31	684.11	748	1.17	747.44	798	1.27	811.05
699	1.27	685.39	749	1.17	748.60	799	1.29	812.34
700	1.31	686.70	750	1.19	749.79	800	1.29	813.63
701	1.47	688.17	751	1.17	750.97	801	1.34	814.97
702	1.58	689.75	752	1.17	752.14	802	1.42	816.39
703	1.58	691.33	753	1.21	753.35	803	1.58	817.98
704	1.65	692.98	754	1.22	754.57	804	1.57	819.54
705	1.69	694.66	755	1.23	755.80	805	1.63	821.17

UE12n#2--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
806	1.59	822.76	856	1.79	913.30	906	1.84	1002.23
807	1.62	824.39	857	1.78	915.07	907	1.82	1004.05
808	1.71	826.10	858	1.76	916.83	908	1.82	1005.87
809	1.81	827.91	859	1.77	918.60	909	1.86	1007.73
810	1.73	829.64	860	1.77	920.36	910	1.87	1009.60
811	1.61	831.25	861	1.77	922.13	911	1.89	1011.49
812	1.69	832.95	862	1.75	923.88	912	1.92	1013.41
813	1.89	834.83	863	1.76	925.64	913	1.93	1015.34
814	1.86	836.69	864	1.75	927.39	914	1.93	1017.27
815	1.84	838.53	865	1.75	929.14	915	1.91	1019.18
816	1.86	840.39	866	1.74	930.88	916	1.91	1021.09
817	1.83	842.22	867	1.72	932.60	917	1.91	1023.00
818	1.86	844.07	868	1.72	934.32	918	1.88	1024.88
819	1.88	845.96	869	1.76	936.08	919	1.86	1026.74
820	1.87	847.83	870	1.83	937.92	920	1.85	1028.59
821	1.87	849.70	871	1.90	939.82	921	1.81	1030.40
822	1.87	851.58	872	1.91	941.73	922	1.81	1032.21
823	1.88	853.46	873	1.86	943.59	923	1.81	1034.02
824	1.89	855.35	874	1.86	945.44	924	1.84	1035.86
825	1.89	857.24	875	1.89	947.33	925	1.86	1037.72
826	1.88	859.12	876	1.86	949.19	926	1.85	1039.57
827	1.85	860.97	877	1.87	951.07	927	1.94	1041.51
828	1.85	862.83	878	1.85	952.92	928	1.94	1043.45
829	1.84	864.67	879	1.83	954.75	929	1.94	1045.39
830	1.86	866.52	880	1.85	956.60	930	1.92	1047.31
831	1.85	868.37	881	1.86	958.46	931	1.94	1049.25
832	1.88	870.25	882	1.87	960.33	932	1.91	1051.16
833	1.86	872.11	883	1.89	962.22	933	1.83	1052.99
834	1.84	873.95	884	1.91	964.13	934	1.75	1054.74
835	1.84	875.79	885	1.89	966.02	935	1.73	1056.47
836	1.87	877.66	886	1.86	967.87	936	1.77	1058.24
837	1.87	879.53	887	1.81	969.68	937	1.93	1060.17
838	1.87	881.40	888	1.77	971.45	938	1.97	1062.14
839	1.85	883.25	889	1.75	973.20	939	1.95	1064.09
840	1.85	885.10	890	1.74	974.94	940	1.93	1066.02
841	1.83	886.93	891	1.71	976.65	941	1.93	1067.95
842	1.83	888.75	892	1.69	978.35	942	1.91	1069.86
843	1.80	890.55	893	1.66	980.01	943	1.89	1071.75
844	1.80	892.34	894	1.62	981.63	944	1.85	1073.60
845	1.78	894.12	895	1.61	983.23	945	1.88	1075.48
846	1.80	895.92	896	1.60	984.83	946	1.91	1077.39
847	1.76	897.68	897	1.63	986.47	947	1.88	1079.27
848	1.72	899.41	898	1.65	988.12	948	1.88	1081.15
849	1.68	901.09	899	1.65	989.76	949	1.85	1083.00
850	1.68	902.77	900	1.64	991.40	950	1.84	1084.84
851	1.71	904.48	901	1.68	993.08	951	1.86	1086.70
852	1.77	906.25	902	1.75	994.83	952	1.86	1088.56
853	1.75	908.00	903	1.86	996.69	953	1.87	1090.43
854	1.75	909.75	904	1.85	998.54	954	1.91	1092.34
855	1.76	911.51	905	1.85	1000.39	955	1.91	1094.25

UE12n#2--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
956	1.92	1096.17	1006	1.85	1189.16	1056	2.06	1285.38
957	1.90	1098.07	1007	1.88	1191.04	1057	2.08	1287.46
958	1.88	1099.95	1008	1.92	1192.96	1058	2.05	1289.51
959	1.86	1101.81	1009	1.89	1194.85	1059	2.05	1291.56
960	1.84	1103.65	1010	1.89	1196.74	1060	2.04	1293.60
961	1.87	1105.52	1011	1.94	1198.68	1061	2.06	1295.66
962	1.85	1107.37	1012	1.92	1200.60	1062	2.04	1297.70
963	1.85	1109.22	1013	1.92	1202.52	1063	2.02	1299.72
964	1.88	1111.10	1014	1.90	1204.42	1064	1.93	1301.65
965	1.84	1112.94	1015	1.92	1206.34	1065	1.89	1303.54
966	1.90	1114.84	1016	1.92	1208.26	1066	1.95	1305.49
967	1.94	1116.78	1017	1.90	1210.16	1067	1.89	1307.38
968	1.96	1118.74	1018	1.89	1212.05	1068	1.92	1309.30
969	1.95	1120.69	1019	1.86	1213.91	1069	1.87	1311.17
970	1.93	1122.62	1020	1.90	1215.81	1070	1.87	1313.04
971	1.93	1124.55	1021	1.89	1217.70	1071	1.85	1314.89
972	1.93	1126.48	1022	1.87	1219.57	1072	1.87	1316.76
973	1.93	1128.41	1023	1.83	1221.40	1073	1.90	1318.66
974	1.90	1130.31	1024	1.83	1223.23	1074	1.95	1320.61
975	1.90	1132.21	1025	1.86	1225.09	1075	1.93	1322.54
976	1.87	1134.08	1026	1.95	1227.04	1076	1.95	1324.49
977	1.84	1135.92	1027	1.94	1228.98	1077	1.92	1326.41
978	1.86	1137.78	1028	1.92	1230.90	1078	1.93	1328.34
979	1.90	1139.68	1029	1.91	1232.81	1079	1.93	1330.27
980	1.88	1141.56	1030	1.91	1234.72	1080	1.89	1332.16
981	1.84	1143.40	1031	1.86	1236.58	1081	1.85	1334.01
982	1.83	1145.23	1032	1.91	1238.49	1082	1.90	1335.91
983	1.88	1147.11	1033	2.00	1240.49	1083	1.87	1337.78
984	1.92	1149.03	1034	2.00	1242.49	1084	1.90	1339.68
985	1.91	1150.94	1035	2.02	1244.51	1085	1.87	1341.55
986	1.95	1152.89	1036	2.03	1246.54	1086	1.89	1343.44
987	1.97	1154.86	1037	2.03	1248.57	1087	1.87	1345.31
988	1.99	1156.85	1038	2.03	1250.60	1088	1.85	1347.16
989	2.01	1158.86	1039	2.07	1252.67	1089	1.92	1349.08
990	1.98	1160.84	1040	2.06	1254.73	1090	1.90	1350.98
991	1.94	1162.78	1041	1.96	1256.69	1091	1.94	1352.92
992	1.91	1164.69	1042	1.95	1258.64	1092	1.97	1354.89
993	1.87	1166.56	1043	1.92	1260.56	1093	1.99	1356.88
994	1.79	1168.35	1044	1.88	1262.44	1094	2.01	1358.89
995	1.70	1170.05	1045	1.84	1264.28	1095	2.02	1360.91
996	1.62	1171.67	1046	1.84	1266.12	1096	1.99	1362.90
997	1.57	1173.24	1047	1.83	1267.95	1097	2.03	1364.93
998	1.59	1174.83	1048	1.83	1269.78	1098	2.08	1367.01
999	1.57	1176.40	1049	1.86	1271.64	1099	2.03	1369.04
1000	1.56	1177.96	1050	1.88	1273.52	1100	2.01	1371.05
1001	1.71	1179.67	1051	1.88	1275.40	1101	1.99	1373.04
1002	1.91	1181.58	1052	1.95	1277.35	1102	1.94	1374.98
1003	1.93	1183.51	1053	1.95	1279.30	1103	1.86	1376.84
1004	1.88	1185.39	1054	2.00	1281.30	1104	1.80	1378.64
1005	1.92	1187.31	1055	2.02	1283.32	1105	1.83	1380.47

UE12n#2--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1106	1.85	1382.32	1156	1.96	1477.00	1206	1.85	1572.30
1107	1.85	1384.17	1157	1.98	1478.98	1207	1.82	1574.12
1108	1.86	1386.03	1158	1.94	1480.92	1208	1.85	1575.97
1109	1.84	1387.87	1159	1.90	1482.82	1209	1.87	1577.84
1110	1.82	1389.69	1160	1.90	1484.72	1210	1.89	1579.73
1111	1.79	1391.48	1161	1.93	1486.65	1211	1.87	1581.60
1112	1.82	1393.30	1162	1.92	1488.57	1212	1.85	1583.45
1113	1.86	1395.16	1163	1.93	1490.50	1213	1.85	1585.30
1114	1.93	1397.09	1164	1.95	1492.45	1214	1.84	1587.14
1115	1.93	1399.02	1165	1.96	1494.41	1215	1.85	1588.99
1116	1.90	1400.92	1166	1.96	1496.37	1216	1.87	1590.86
1117	1.95	1402.87	1167	1.94	1498.31	1217	1.88	1592.74
1118	1.90	1404.77	1168	1.95	1500.26	1218	1.90	1594.64
1119	1.84	1406.61	1169	1.90	1502.16	1219	1.90	1596.54
1120	1.80	1408.41	1170	1.86	1504.02	1220	1.93	1598.47
1121	1.84	1410.25	1171	1.85	1505.87	1221	1.96	1600.43
1122	1.87	1412.12	1172	1.80	1507.67	1222	1.96	1602.39
1123	1.94	1414.06	1173	1.79	1509.46	1223	1.95	1604.34
1124	1.93	1415.99	1174	1.84	1511.30	1224	1.96	1606.30
1125	1.98	1417.97	1175	1.86	1513.16	1225	1.96	1608.26
1126	1.95	1419.92	1176	1.93	1515.09	1226	1.96	1610.22
1127	1.95	1421.87	1177	1.90	1516.99	1227	1.98	1612.20
1128	1.95	1423.82	1178	1.94	1518.93	1228	1.94	1614.14
1129	1.95	1425.77	1179	1.98	1520.91	1229	1.92	1616.06
1130	1.98	1427.75	1180	2.02	1522.93	1230	1.90	1617.96
1131	1.95	1429.70	1181	1.97	1524.90	1231	1.86	1619.82
1132	1.90	1431.60	1182	1.93	1526.83	1232	1.85	1621.67
1133	1.90	1433.50	1183	1.93	1528.76	1233	1.84	1623.51
1134	1.89	1435.39	1184	1.91	1530.67	1234	1.84	1625.35
1135	1.87	1437.26	1185	1.93	1532.60	1235	1.83	1627.18
1136	1.84	1439.10	1186	1.93	1534.53	1236	1.84	1629.02
1137	1.90	1441.00	1187	1.92	1536.45	1237	1.87	1630.89
1138	1.88	1442.88	1188	1.93	1538.38	1238	1.89	1632.78
1139	1.90	1444.78	1189	1.91	1540.29	1239	1.90	1634.68
1140	1.88	1446.66	1190	1.93	1542.22	1240	1.90	1636.58
1141	1.87	1448.53	1191	1.92	1544.14	1241	1.89	1638.47
1142	1.89	1450.42	1192	1.87	1546.01	1242	1.90	1640.37
1143	1.88	1452.30	1193	1.83	1547.84	1243	1.90	1642.27
1144	1.86	1454.16	1194	1.85	1549.69	1244	1.88	1644.15
1145	1.85	1456.01	1195	1.85	1551.54	1245	1.88	1646.03
1146	1.87	1457.88	1196	1.84	1553.38	1246	1.88	1647.91
1147	1.92	1459.80	1197	1.88	1555.26	1247	1.84	1649.75
1148	1.96	1461.76	1198	1.92	1557.18	1248	1.80	1651.55
1149	1.94	1463.70	1199	1.89	1559.07	1249	1.81	1653.36
1150	1.95	1465.65	1200	1.91	1560.98	1250	1.83	1655.19
1151	1.92	1467.57	1201	1.88	1562.86	1251	1.82	1657.01
1152	1.89	1469.46	1202	1.91	1564.77	1252	1.84	1658.85
1153	1.83	1471.29	1203	1.90	1566.67	1255	0.00	1660.76
1154	1.84	1473.13	1204	1.92	1568.59	1258	1.97	1662.67
1155	1.91	1475.04	1205	1.86	1570.45	1259	1.97	1664.64

UE12n#2--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1260	1.96	1666.60	1310	1.83	1760.07	1360	1.93	1856.65
1261	1.94	1668.54	1311	1.84	1761.91	1361	1.94	1858.59
1262	1.94	1670.48	1312	1.86	1763.77	1362	1.95	1860.54
1263	1.91	1672.39	1313	1.84	1765.61	1363	1.92	1862.46
1264	1.90	1674.29	1314	1.81	1767.42	1364	1.89	1864.35
1265	1.90	1676.19	1315	1.81	1769.23	1365	1.87	1866.22
1266	1.90	1678.09	1316	1.83	1771.06	1366	1.91	1868.13
1267	1.93	1680.02	1317	1.83	1772.89	1367	1.97	1870.10
1268	1.95	1681.97	1318	1.84	1774.73	1368	1.98	1872.08
1269	1.97	1683.94	1319	1.84	1776.57	1369	1.98	1874.06
1270	1.96	1685.90	1320	1.86	1778.43	1370	1.99	1876.05
1271	1.94	1687.84	1321	1.85	1780.28	1371	1.96	1878.01
1272	1.92	1689.76	1322	1.87	1782.15	1372	1.95	1879.96
1273	1.88	1691.64	1323	1.87	1784.02	1373	1.93	1881.89
1274	1.86	1693.50	1324	1.87	1785.89	1374	1.91	1883.80
1275	1.85	1695.35	1325	1.86	1787.75	1375	1.94	1885.74
1276	1.84	1697.19	1326	1.85	1789.60	1376	1.98	1887.72
1277	1.82	1699.01	1327	1.86	1791.46	1377	1.99	1889.71
1278	1.82	1700.83	1328	1.85	1793.31	1378	1.99	1891.70
1279	1.83	1702.66	1329	1.85	1795.16	1379	2.00	1893.70
1280	1.84	1704.50	1330	1.85	1797.01	1380	1.98	1895.68
1281	1.85	1706.35	1331	1.88	1798.89	1381	1.99	1897.67
1282	1.83	1708.18	1332	1.88	1800.77	1382	1.96	1899.63
1283	1.82	1710.00	1333	1.89	1802.66	1383	1.97	1901.60
1284	1.83	1711.83	1334	1.89	1804.55	1384	1.96	1903.56
1285	1.84	1713.67	1335	1.91	1806.46	1385	1.95	1905.51
1286	1.83	1715.50	1336	1.92	1808.38	1386	1.90	1907.41
1287	1.83	1717.33	1337	1.93	1810.31	1387	1.91	1909.32
1288	1.85	1719.18	1338	1.95	1812.26	1388	1.90	1911.22
1289	1.86	1721.04	1339	1.94	1814.20	1389	1.89	1913.11
1290	1.87	1722.91	1340	1.95	1816.15	1390	1.89	1915.00
1291	1.85	1724.76	1341	1.95	1818.10	1391	1.91	1916.91
1292	1.86	1726.62	1342	1.98	1820.08	1392	1.92	1918.83
1293	1.87	1728.49	1343	2.01	1822.09	1393	1.93	1920.76
1294	1.88	1730.37	1344	2.01	1824.10	1394	1.92	1922.68
1295	1.88	1732.25	1345	2.01	1826.11	1395	1.90	1924.58
1296	1.89	1734.14	1346	2.01	1828.12	1396	1.89	1926.47
1297	1.88	1736.02	1347	2.00	1830.12	1397	1.90	1928.37
1298	1.87	1737.89	1348	1.99	1832.11	1398	1.90	1930.27
1299	1.87	1739.76	1349	2.01	1834.12	1399	1.91	1932.18
1300	1.86	1741.62	1350	2.02	1836.14	1400	1.91	1934.09
1301	1.85	1743.47	1351	2.01	1838.15	1401	1.91	1936.00
1302	1.83	1745.30	1352	2.02	1840.17	1402	1.89	1937.89
1303	1.85	1747.15	1353	2.02	1842.19	1403	1.86	1939.75
1304	1.85	1749.00	1354	2.06	1844.25	1404	1.86	1941.61
1305	1.85	1750.85	1355	2.05	1846.30	1405	1.89	1943.50
1306	1.85	1752.70	1356	2.11	1848.41	1106	1.90	1945.40
1307	1.85	1754.55	1357	2.16	1850.57	1407	1.90	1947.30
1308	1.85	1756.40	1358	2.12	1852.69	1408	1.90	1949.20
1309	1.84	1758.24	1359	2.03	1854.72	1409	1.90	1951.10

UE12n#2--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1410	1.91	1953.01	1460	1.88	2047.96	1510	1.87	2142.57
1411	1.90	1954.91	1461	1.87	2049.83	1511	1.87	2144.44
1412	1.90	1956.81	1462	1.86	2051.69	1512	1.89	2146.33
1413	1.90	1958.71	1463	1.86	2053.55	1513	1.89	2148.22
1414	1.90	1960.61	1464	1.86	2055.41	1514	1.90	2150.12
1415	1.92	1962.53	1465	1.88	2057.29	1515	1.90	2152.02
1416	1.94	1964.47	1466	1.88	2059.17	1516	1.91	2153.93
1417	1.98	1966.45	1467	1.90	2061.07	1517	1.90	2155.83
1418	1.98	1968.43	1468	1.92	2062.99	1518	1.88	2157.71
1419	1.96	1970.39	1469	1.92	2064.91	1519	1.88	2159.59
1420	1.94	1972.33	1470	1.91	2066.82	1520	1.88	2161.47
1421	1.92	1974.25	1471	1.90	2068.72	1521	1.89	2163.36
1422	1.89	1976.14	1472	1.92	2070.64	1522	1.89	2165.25
1423	1.88	1978.02	1473	1.94	2072.58	1523	1.89	2167.14
1424	1.88	1979.90	1474	1.95	2074.53	1524	1.88	2169.02
1425	1.88	1981.78	1475	1.94	2076.47	1525	1.87	2170.89
1426	1.87	1983.65	1476	1.92	2078.39	1526	1.89	2172.78
1427	1.88	1985.53	1477	1.90	2080.29	1527	1.90	2174.68
1428	1.89	1987.42	1478	1.88	2082.17	1528	1.91	2176.59
1429	1.90	1989.32	1479	1.86	2084.03	1529	1.91	2178.50
1430	1.89	1991.21	1480	1.86	2085.89	1530	1.91	2180.41
1431	1.91	1993.12	1481	1.88	2087.77	1531	1.90	2182.31
1432	1.89	1995.01	1482	1.87	2089.64	1532	1.91	2184.22
1433	1.88	1996.89	1483	1.89	2091.53	1533	1.90	2186.12
1434	1.90	1998.79	1484	1.90	2093.43	1534	1.91	2188.03
1435	1.91	2000.70	1485	1.90	2095.33	1535	1.92	2189.95
1436	1.93	2002.63	1486	1.90	2097.23	1536	1.91	2191.86
1437	1.94	2004.57	1487	1.89	2099.12	1537	1.91	2193.77
1438	1.94	2006.51	1488	1.89	2101.01	1538	1.91	2195.68
1439	1.93	2008.44	1489	1.90	2102.91	1539	1.91	2197.59
1440	1.93	2010.37	1490	1.91	2104.82	1540	1.93	2199.52
1441	1.89	2012.26	1491	1.90	2106.72	1541	1.93	2201.45
1442	1.88	2014.14	1492	1.90	2108.62	1542	1.93	2203.38
1443	1.88	2016.02	1493	1.90	2110.52	1543	1.94	2205.32
1444	1.87	2017.89	1494	1.91	2112.43	1544	1.95	2207.27
1445	1.87	2019.76	1495	1.89	2114.32	1545	1.96	2209.23
1446	1.87	2021.63	1496	1.87	2116.19	1546	1.96	2211.19
1447	1.87	2023.50	1497	1.89	2118.08	1547	1.92	2213.11
1448	1.89	2025.39	1498	1.90	2119.98	1548	1.93	2215.04
1449	1.89	2027.28	1499	1.90	2121.88	1549	1.93	2216.97
1450	1.88	2029.16	1500	1.88	2123.76	1550	1.94	2218.91
1451	1.89	2031.05	1501	1.89	2125.65	1551	1.95	2220.86
1452	1.90	2032.95	1502	1.90	2127.55	1552	1.95	2222.81
1453	1.93	2034.88	1503	1.90	2129.45	1553	1.96	2224.77
1454	1.90	2036.78	1504	1.88	2131.33	1554	1.95	2226.72
1455	1.88	2038.66	1505	1.86	2133.19	1555	1.95	2228.67
1456	1.89	2040.55	1506	1.88	2135.07	1556	1.95	2230.62
1457	1.86	2042.41	1507	1.86	2136.93	1557	1.98	2232.60
1458	1.82	2044.23	1508	1.88	2138.81	1558	1.99	2234.59
1459	1.85	2046.08	1509	1.89	2140.70	1559	1.98	2236.57

UE12n#2--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1560	1.97	2238.54	1610	2.07	2339.39	1660	2.35	2452.12
1561	1.98	2240.52	1611	2.11	2341.50	1661	2.37	2454.49
1562	1.98	2242.50	1612	2.10	2343.60	1662	2.37	2456.86
1563	2.00	2244.50	1613	2.10	2345.70	1663	2.38	2459.24
1564	1.99	2246.49	1614	2.10	2347.80	1664	2.37	2461.61
1565	1.98	2248.47	1615	2.10	2349.90	1665	2.36	2463.97
1566	1.96	2250.43	1616	2.11	2352.01	1666	2.34	2466.31
1567	1.94	2252.37	1617	2.13	2354.14	1667	2.34	2468.65
1568	1.95	2254.32	1618	2.18	2356.32	1668	2.37	2471.02
1569	1.95	2256.27	1619	2.23	2358.55	1669	2.40	2473.42
1570	1.94	2258.21	1620	2.26	2360.81	1670	2.40	2475.82
1571	1.97	2260.18	1621	2.25	2363.06	1671	2.41	2478.23
1572	2.00	2262.18	1622	2.26	2365.32	1672	2.43	2480.66
1573	1.99	2264.17	1623	2.22	2367.54	1673	2.40	2483.06
1574	1.99	2266.16	1624	2.18	2369.72	1674	2.40	2485.46
1575	2.01	2268.17	1625	2.16	2371.88	1675	2.39	2487.85
1576	2.02	2270.19	1626	2.14	2374.02	1676	2.40	2490.25
1577	2.01	2272.20	1627	2.11	2376.13	1677	2.38	2492.63
1578	2.00	2274.20	1628	2.09	2378.22	1678	2.40	2495.03
1579	2.00	2276.20	1629	2.07	2380.29	1679	2.40	2497.43
1580	2.00	2278.20	1630	2.04	2382.33	1680	2.44	2499.87
1581	2.01	2280.21	1631	2.03	2384.36	1681	2.40	2502.27
1582	1.97	2282.18	1632	2.01	2386.37	1682	2.38	2504.65
1583	1.97	2284.15	1633	2.07	2388.44	1683	2.39	2507.04
1584	1.99	2286.14	1634	2.10	2390.54	1684	2.40	2509.44
1585	1.98	2288.12	1635	2.13	2392.67	1685	2.37	2511.81
1586	1.97	2290.09	1636	2.16	2394.83	1686	2.41	2514.22
1587	1.98	2292.07	1637	2.23	2397.06	1687	2.39	2516.61
1588	1.98	2294.05	1638	2.39	2399.45	1688	2.38	2518.99
1589	1.99	2296.04	1639	2.39	2401.84	1689	2.38	2521.37
1590	2.00	2298.04	1640	2.45	2404.29	1690	2.38	2523.75
1591	2.00	2300.04	1641	2.44	2406.73	1691	2.34	2526.09
1592	2.01	2302.05	1642	2.45	2409.18	1692	2.32	2528.41
1593	2.03	2304.08	1643	2.45	2411.63	1693	2.36	2530.77
1594	2.02	2306.10	1644	2.45	2414.08	1694	2.39	2533.16
1595	2.03	2308.13	1645	2.41	2416.49	1695	2.42	2535.58
1596	2.02	2310.15	1646	2.39	2418.88	1696	2.44	2538.02
1597	2.02	2312.17	1647	2.39	2421.27	1697	2.41	2540.43
1598	2.05	2314.22	1648	2.38	2423.65	1698	2.42	2542.85
1599	2.04	2316.26	1649	2.37	2426.02	1699	2.40	2545.25
1600	2.05	2318.31	1650	2.36	2428.38	1700	2.39	2547.64
1601	2.06	2320.37	1651	2.39	2430.77	1701	2.38	2550.02
1602	2.10	2322.47	1652	2.37	2433.14	1702	2.40	2552.42
1603	2.13	2324.60	1653	2.35	2435.49	1703	2.38	2554.80
1604	2.12	2326.72	1654	2.38	2437.87	1704	2.35	2557.15
1605	2.11	2328.83	1655	2.38	2440.25	1705	2.33	2559.48
1606	2.13	2330.96	1656	2.39	2442.64	1706	2.37	2561.85
1607	2.15	2333.11	1657	2.38	2445.02	1707	2.42	2564.27
1608	2.13	2335.24	1658	2.37	2447.39	1708	2.39	2566.66
1609	2.08	2337.32	1659	2.38	2449.77	1709	2.38	2569.04

UE12n#2--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)
1710	2.38	2571.42
1711	2.37	2573.79
1712	2.37	2576.16
1713	2.42	2578.58
1714	2.39	2580.97
1715	2.43	2583.40
1716	2.37	2585.77
1717	2.35	2588.12
1718	2.35	2590.47
1718	2.35	2590.47
1719	2.32	2592.79
1720	2.29	2595.08
1721	2.38	2597.46
1722	2.42	2599.88
1723	2.42	2602.30
1724	2.43	2604.73
1725	2.42	2607.15
1726	2.39	2609.54
1727	2.39	2611.93
1728	2.41	2614.34
1729	2.39	2616.73
1730	2.41	2619.14
1731	2.42	2621.56
1732	2.41	2623.97
1733	2.39	2626.36
1734	2.36	2628.72
1735	2.36	2631.08
1736	2.34	2633.42
1737	2.30	2635.72
1738	2.27	2637.99
1739	2.27	2640.26
1740	2.29	2642.55
1741	2.34	2644.89
1742	2.37	2647.26
1743	2.36	2649.62
1744	2.39	2652.01
1745	2.38	2654.39
1746	2.38	2656.77
1747	2.34	2659.11
1748	2.31	2661.42
1749	2.32	2663.74
1750	2.32	2666.06
1751	2.31	2668.37
1752	2.31	2670.68
1753	2.33	2673.01
1754	2.33	2675.34
1755	2.31	2677.65
1756	2.33	2679.98
1757	2.38	2682.36
1758	2.37	2684.73
1759	2.36	2687.09
1760	2.34	2689.43
1761	2.34	2691.77
1762	2.36	2694.13
1763	2.37	2696.50
1764	2.40	2698.90
1765	2.50	2701.40
1766	2.59	2703.99
1767	2.63	2706.62
1768	2.63	2709.25

Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)

UE12n#4

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
22	1.48	0.00	72	1.54	77.78	122	1.61	155.34
23	1.56	1.56	73	0.00	79.33	123	1.61	156.95
24	1.52	3.07	74	0.00	80.87	124	1.62	158.57
25	1.54	4.61	75	0.00	82.42	125	1.62	160.19
26	1.53	6.14	76	0.00	83.96	126	1.59	161.78
27	1.51	7.65	77	0.00	85.51	127	0.00	163.37
28	1.47	9.11	78	1.55	87.05	128	0.00	164.97
29	0.00	10.65	79	1.57	88.62	129	0.00	166.56
30	0.00	12.18	80	1.57	90.19	130	1.60	168.16
31	0.00	13.71	81	1.57	91.76	131	1.54	169.70
32	0.00	15.24	82	1.58	93.34	132	1.55	171.25
33	0.00	16.77	83	1.58	94.91	133	1.55	172.80
34	1.59	18.30	84	1.63	96.55	134	1.55	174.35
35	1.60	19.90	85	1.64	98.19	135	1.55	175.90
36	1.61	21.50	86	1.66	99.84	136	1.53	177.43
37	1.60	23.11	87	1.69	101.53	137	1.53	178.96
38	1.63	24.73	88	1.65	103.19	138	1.53	180.48
39	1.67	26.40	89	1.60	104.79	139	1.53	182.02
40	1.66	28.06	90	1.62	106.40	140	1.56	183.58
41	1.64	29.71	91	1.56	107.96	141	1.57	185.15
42	1.63	31.33	92	1.53	109.49	142	1.56	186.71
43	1.61	32.94	93	1.52	111.01	143	1.55	188.26
44	1.61	34.56	94	1.52	112.53	144	1.56	189.82
45	1.59	36.15	95	1.49	114.01	145	1.54	191.35
46	1.62	37.77	96	1.44	115.46	146	1.54	192.89
47	1.61	39.38	97	1.45	116.91	147	1.54	194.43
48	1.56	40.94	98	1.46	118.37	148	1.55	195.98
49	1.58	42.52	99	1.46	119.84	149	1.56	197.54
50	1.58	44.10	100	1.46	121.30	150	1.55	199.09
51	1.59	45.69	101	1.48	122.78	151	1.55	200.64
52	1.56	47.25	102	1.51	124.29	152	1.56	202.21
53	1.52	48.76	103	1.56	125.85	153	1.57	203.78
54	1.47	50.23	104	1.53	127.38	154	1.59	205.37
55	1.43	51.66	105	1.50	128.88	155	1.59	206.97
56	0.00	53.10	106	1.50	130.38	156	1.59	208.56
57	1.44	54.53	107	1.49	131.87	157	1.58	210.14
58	1.44	55.97	108	1.49	133.36	158	1.59	211.72
59	1.45	57.41	109	1.49	134.85	159	1.59	213.31
60	1.47	58.88	110	1.50	136.35	160	1.58	214.89
61	1.53	60.41	111	1.50	137.85	161	1.57	216.46
62	1.60	62.01	112	1.51	139.36	162	1.57	218.03
63	1.56	63.57	113	1.53	140.89	163	1.54	219.57
64	1.53	65.10	114	1.55	142.44	164	0.00	221.11
65	1.53	66.63	115	1.62	144.06	165	0.00	222.65
66	1.55	68.18	116	1.61	145.68	166	1.54	224.20
67	1.59	69.78	117	1.61	147.28	167	1.54	225.74
68	1.56	71.34	118	1.60	148.89	168	1.54	227.28
69	1.61	72.95	119	1.60	150.49	169	1.58	228.86
70	1.68	74.63	120	1.62	152.11	170	1.58	230.45
71	1.62	76.25	121	1.62	153.73	171	1.52	231.97

UE12n#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
172	1.53	233.50	222	1.60	312.17	272	1.93	401.78
173	1.55	235.05	223	1.71	313.87	273	1.91	403.69
174	1.55	236.60	224	1.78	315.65	274	1.91	405.60
175	1.54	238.14	225	1.72	317.37	275	1.91	407.51
176	1.54	239.68	226	1.67	319.04	276	1.89	409.41
177	1.55	241.22	227	1.69	320.73	277	1.86	411.26
178	1.55	242.77	228	1.65	322.38	278	1.84	413.11
179	1.54	244.31	229	1.62	323.99	279	1.83	414.94
180	1.54	245.86	230	1.65	325.65	280	1.83	416.77
181	1.54	247.40	231	1.76	327.41	281	1.84	418.61
182	1.55	248.95	232	1.81	329.21	282	1.87	420.47
183	1.57	250.51	233	1.75	330.97	283	1.89	422.37
184	1.56	252.08	234	1.71	332.68	284	1.93	424.30
185	1.55	253.63	235	1.74	334.42	285	1.96	426.26
186	1.54	255.17	236	1.86	336.27	286	2.00	428.26
187	1.55	256.72	237	1.85	338.12	287	2.01	430.27
188	1.56	258.28	238	1.84	339.97	288	1.98	432.25
189	1.56	259.84	239	1.82	341.79	289	1.96	434.21
190	1.56	261.40	240	1.81	343.60	290	1.91	436.12
191	1.56	262.96	241	1.79	345.39	291	1.88	438.01
192	1.57	264.53	242	1.78	347.17	292	1.87	439.87
193	1.57	266.09	243	1.79	348.96	293	1.83	441.71
194	1.57	267.67	244	1.79	350.75	294	1.79	443.50
195	1.57	269.24	245	1.76	352.50	295	1.76	445.26
196	1.58	270.81	246	1.76	354.26	296	1.76	447.01
197	1.58	272.40	247	1.75	356.02	297	1.77	448.78
198	1.58	273.98	248	1.80	357.82	298	1.79	450.57
199	1.57	275.55	249	1.77	359.59	299	1.82	452.38
200	1.57	277.11	250	1.77	361.36	300	1.90	454.28
201	1.57	278.68	251	1.76	363.12	301	1.88	456.16
202	1.56	280.24	252	1.77	364.89	302	1.86	458.02
203	1.54	281.78	253	1.77	366.67	303	1.84	459.86
204	1.54	283.32	254	1.78	368.44	304	1.84	461.71
205	1.54	284.86	255	1.79	370.24	305	1.85	463.56
206	1.53	286.39	256	1.79	372.03	306	1.85	465.41
207	1.54	287.93	257	1.79	373.82	307	1.84	467.25
208	1.55	289.48	258	1.79	375.61	308	1.85	469.10
209	1.57	291.06	259	1.80	377.41	309	1.88	470.98
210	1.56	292.62	260	1.83	379.24	310	1.90	472.88
211	1.57	294.19	261	1.85	381.10	311	1.89	474.78
212	1.57	295.76	262	1.86	382.95	312	1.90	476.67
213	1.58	297.34	263	1.87	384.83	313	1.92	478.59
214	1.56	298.91	264	1.87	386.69	314	1.97	480.56
215	1.57	300.48	265	1.83	388.53	315	1.99	482.55
216	1.61	302.09	266	1.82	390.35	316	1.97	484.53
217	1.71	303.80	267	1.83	392.18	317	1.97	486.50
218	1.71	305.51	268	1.85	394.03	318	1.95	488.45
219	1.77	307.28	269	1.93	395.96	319	1.93	490.38
220	1.70	308.98	270	1.96	397.92	320	1.91	492.29
221	1.58	310.56	271	1.94	399.86	321	1.89	494.18

UE12n#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
322	1.87	496.05	372	1.92	587.79	422	1.86	680.72
323	1.87	497.93	373	1.93	589.72	423	1.86	682.58
324	1.89	499.82	374	1.90	591.62	424	1.87	684.45
325	1.94	501.76	375	1.88	593.50	425	1.88	686.33
326	1.97	503.73	376	1.86	595.36	426	1.90	688.23
327	1.91	505.64	377	1.85	597.22	427	1.93	690.16
328	1.91	507.55	378	1.85	599.07	428	1.92	692.08
329	1.92	509.47	379	1.86	600.93	429	1.90	693.98
330	1.95	511.42	380	1.88	602.81	430	1.87	695.85
331	1.93	513.34	381	1.93	604.74	431	1.87	697.72
332	1.91	515.25	382	1.96	606.70	432	1.84	699.56
333	1.89	517.13	383	1.97	608.67	433	1.83	701.39
334	1.89	519.02	384	1.93	610.60	434	1.82	703.21
335	1.94	520.96	385	0.00	612.46	435	1.80	705.02
336	1.88	522.84	386	0.00	614.32	436	1.78	706.79
337	1.74	524.57	387	0.00	616.18	437	1.76	708.55
338	1.62	526.20	388	1.79	618.04	438	1.76	710.31
339	1.64	527.84	389	1.85	619.89	439	1.79	712.10
340	1.68	529.52	390	1.87	621.76	440	1.79	713.89
341	1.73	531.25	391	1.78	623.54	441	1.81	715.71
342	1.93	533.17	392	1.68	625.22	442	1.83	717.54
343	1.90	535.07	393	1.68	626.91	443	1.84	719.38
344	1.85	536.92	394	1.72	628.63	444	1.84	721.22
345	1.84	538.77	395	1.75	630.38	445	1.87	723.09
346	1.84	540.61	396	1.80	632.18	446	1.89	724.98
347	1.83	542.43	397	1.89	634.07	447	1.92	726.90
348	1.81	544.24	398	1.89	635.96	448	1.91	728.81
349	1.79	546.03	399	1.87	637.83	449	1.86	730.66
350	1.78	547.81	400	1.86	639.70	450	1.81	732.47
351	1.76	549.57	401	1.89	641.59	451	1.81	734.28
352	1.75	551.32	402	1.90	643.49	452	1.81	736.09
353	1.75	553.07	403	1.89	645.38	453	0.00	737.90
354	1.77	554.85	404	1.88	647.27	454	0.00	739.71
355	1.79	556.64	405	1.86	649.12	455	0.00	741.52
356	1.78	558.42	406	1.86	650.98	456	1.81	743.33
357	1.74	560.17	407	1.83	652.81	457	1.79	745.12
358	1.75	561.92	408	1.81	654.62	458	1.78	746.89
359	1.77	563.68	409	1.81	656.43	459	1.75	748.64
360	1.80	565.48	410	1.83	658.25	460	1.75	750.39
361	1.84	567.32	411	1.84	660.10	461	1.77	752.16
362	1.85	569.16	412	1.89	661.99	462	1.78	753.95
363	1.85	571.02	413	1.88	663.87	463	1.77	755.71
364	1.86	572.87	414	1.85	665.71	464	1.76	757.48
365	1.85	574.73	415	1.87	667.58	465	1.77	759.25
366	1.85	576.58	416	1.89	669.47	466	1.76	761.01
367	1.86	578.44	417	1.91	671.37	467	1.76	762.77
368	1.85	580.29	418	1.88	673.25	468	1.78	764.55
369	1.84	582.14	419	0.00	675.12	469	1.78	766.33
370	1.85	583.99	420	0.00	676.98	470	1.77	768.10
371	1.88	585.87	421	0.00	678.85	471	1.78	769.88

UE12n#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
472	1.81	771.69	522	1.77	859.77	572	1.81	949.54
473	1.82	773.51	523	1.76	861.53	573	1.82	951.37
474	1.80	775.30	524	1.75	863.28	574	1.82	953.19
475	1.78	777.09	525	1.75	865.03	575	1.82	955.01
476	1.76	778.85	526	1.75	866.77	576	1.81	956.82
477	1.76	780.62	527	1.74	868.52	577	1.80	958.62
478	1.76	782.38	528	1.74	870.25	578	1.79	960.41
479	1.76	784.14	529	1.75	872.00	579	1.78	962.19
480	1.80	785.94	530	1.76	873.76	580	1.78	963.97
481	1.83	787.77	531	1.75	875.51	581	1.78	965.76
482	1.84	789.61	532	1.76	877.27	582	1.78	967.54
483	1.85	791.46	533	1.76	879.02	583	1.78	969.32
484	1.86	793.32	534	1.75	880.77	584	1.76	971.08
485	1.87	795.18	535	1.76	882.53	585	1.74	972.82
486	1.85	797.03	536	1.76	884.29	586	1.72	974.54
487	1.79	798.82	537	1.77	886.06	587	1.72	976.26
488	1.76	800.58	538	1.78	887.85	588	1.73	977.99
489	1.76	802.34	539	1.77	889.62	589	1.73	979.72
490	1.75	804.09	540	1.78	891.40	590	1.76	981.48
491	1.72	805.81	541	1.80	893.21	591	1.80	983.27
492	1.72	807.53	542	1.81	895.02	592	1.80	985.08
493	1.69	809.22	543	1.82	896.84	593	1.82	986.90
494	1.68	810.90	544	1.82	898.67	594	1.84	988.74
495	1.70	812.61	545	1.82	900.48	595	1.87	990.61
496	1.69	814.30	546	1.82	902.30	596	1.91	992.52
497	1.67	815.97	547	1.84	904.14	597	1.86	994.38
498	1.68	817.65	548	1.86	906.00	598	1.82	996.20
499	1.70	819.34	549	1.85	907.84	599	1.82	998.02
500	1.76	821.11	550	1.85	909.69	600	1.82	999.84
501	1.75	822.85	551	1.88	911.57	601	1.80	1001.64
502	1.73	824.58	552	1.85	913.42	602	1.82	1003.46
503	1.74	826.32	553	1.84	915.26	603	1.90	1005.36
504	1.78	828.10	554	1.82	917.08	604	1.90	1007.26
505	1.75	829.86	555	1.82	918.90	605	1.87	1009.13
506	1.73	831.59	556	1.83	920.73	606	1.86	1010.99
507	1.74	833.32	557	1.84	922.57	607	1.84	1012.83
508	1.75	835.07	558	1.85	924.42	608	1.83	1014.66
509	1.76	836.83	559	1.82	926.24	609	1.84	1016.50
510	1.77	838.60	560	1.81	928.06	610	1.84	1018.34
511	1.79	840.39	561	1.79	929.85	611	1.83	1020.17
512	1.79	842.18	562	1.78	931.63	612	1.82	1021.99
513	1.79	843.97	563	1.78	933.41	613	1.81	1023.80
514	1.78	845.75	564	1.77	935.18	614	1.80	1025.60
515	1.77	847.52	565	1.77	936.95	615	1.79	1027.39
516	1.75	849.27	566	1.80	938.75	616	1.77	1029.16
517	1.75	851.02	567	1.80	940.54	617	1.77	1030.93
518	1.74	852.76	568	1.79	942.34	618	1.81	1032.74
519	1.74	854.50	569	1.79	944.13	619	1.82	1034.56
520	1.74	856.24	570	1.80	945.92	620	1.82	1036.38
521	1.76	858.00	571	1.80	947.73	621	1.86	1038.24

UE12n#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
622	1.90	1040.14	672	1.82	1134.06	722	1.83	1224.36
623	1.93	1042.07	673	1.81	1135.87	723	1.83	1226.19
624	1.95	1044.02	674	1.79	1137.66	724	1.85	1228.04
625	1.99	1046.01	675	1.80	1139.46	725	1.85	1229.89
626	2.00	1048.01	676	1.81	1141.27	726	1.84	1231.73
627	2.00	1050.01	677	1.81	1143.08	727	1.86	1233.59
628	1.99	1052.00	678	1.81	1144.89	728	1.85	1235.44
629	1.95	1053.95	679	1.81	1146.70	729	1.85	1237.29
630	1.92	1055.87	680	1.81	1148.51	730	1.85	1239.14
631	1.89	1057.76	681	1.82	1150.33	731	1.84	1240.98
632	1.88	1059.64	682	1.83	1152.16	732	1.83	1242.81
633	1.87	1061.51	683	1.82	1153.98	733	1.83	1244.64
634	1.86	1063.37	684	1.81	1155.79	734	1.83	1246.47
635	1.87	1065.24	685	1.81	1157.60	735	1.85	1248.32
636	1.87	1067.11	686	1.82	1159.42	736	1.85	1250.17
637	1.88	1068.99	687	1.82	1161.24	737	1.83	1252.00
638	1.87	1070.86	688	1.82	1163.06	738	1.83	1253.83
639	1.86	1072.72	689	1.81	1164.87	739	1.83	1255.66
640	1.84	1074.56	690	1.80	1166.67	740	1.83	1257.49
641	1.84	1076.40	691	1.80	1168.47	741	1.83	1259.32
642	1.85	1078.25	692	1.80	1170.27	742	1.82	1261.14
643	1.86	1080.11	693	1.79	1172.06	743	1.83	1262.97
644	1.88	1081.99	694	1.78	1173.84	744	1.84	1264.81
645	1.88	1083.87	695	1.79	1175.63	745	1.85	1266.66
646	1.87	1085.74	696	1.80	1177.43	746	1.84	1268.50
647	1.87	1087.61	697	1.81	1179.24	747	1.84	1270.34
648	1.88	1089.49	698	1.81	1181.05	748	1.85	1272.19
649	1.89	1091.38	699	1.82	1182.87	749	1.87	1274.06
650	1.92	1093.30	700	1.82	1184.69	750	1.90	1275.96
651	1.94	1095.24	701	1.79	1186.48	751	1.92	1277.88
652	1.94	1097.18	702	1.77	1188.25	752	1.92	1279.80
653	1.92	1099.10	703	1.78	1190.03	753	1.93	1281.73
654	1.91	1101.01	704	1.82	1191.85	754	1.94	1283.67
655	1.92	1102.93	705	1.82	1193.67	755	1.94	1285.61
656	1.92	1104.85	706	1.79	1195.46	756	1.94	1287.55
657	1.91	1106.76	707	1.77	1197.23	757	1.95	1289.50
658	1.89	1108.65	708	1.78	1199.01	758	1.95	1291.45
659	1.87	1110.52	709	1.79	1200.80	759	1.95	1293.40
660	1.84	1112.36	710	1.79	1202.59	760	1.96	1295.36
661	1.83	1114.19	711	1.78	1204.37	761	1.97	1297.33
662	1.81	1116.00	712	1.78	1206.15	762	1.98	1299.31
663	1.80	1117.80	713	1.78	1207.93	763	1.98	1301.29
664	1.79	1119.59	714	1.80	1209.73	764	1.96	1303.25
665	1.79	1121.38	715	1.83	1211.56	765	1.96	1305.21
666	1.80	1123.18	716	1.82	1213.38	766	1.97	1307.18
667	1.81	1124.99	717	1.81	1215.19	767	1.96	1309.14
668	1.81	1126.80	718	1.82	1217.01	768	1.96	1311.10
669	1.82	1128.62	719	1.84	1218.85	769	1.97	1313.07
670	1.81	1130.43	720	1.85	1220.70	770	1.98	1315.05
671	1.81	1132.24	721	1.83	1222.53	771	1.99	1317.04

UE12n#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)
772	2.04	1319.08
773	2.11	1321.19
774	2.15	1323.34
775	2.16	1325.50
776	2.16	1327.66
777	2.14	1329.80
778	2.10	1331.90
779	2.08	1333.98
780	2.04	1336.02
780	2.04	1336.02
781	2.03	1338.05
782	2.06	1340.11
783	2.05	1342.16
784	2.02	1344.18
785	1.99	1346.17
786	1.95	1348.12
787	1.90	1350.02
788	1.88	1351.90
789	1.89	1353.79
790	1.91	1355.70
791	1.91	1357.61
792	1.89	1359.50
793	1.89	1361.39
794	1.91	1363.30
795	1.90	1365.20
796	1.87	1367.07
797	1.87	1368.94
798	1.88	1370.82
799	1.86	1372.68
800	1.84	1374.52
801	1.82	1376.34
802	1.82	1378.16
803	1.86	1380.02
804	1.89	1381.91
805	1.93	1383.84
806	1.95	1385.79
807	1.96	1387.75
808	1.98	1389.73
809	1.96	1391.69
810	1.96	1393.65
811	1.95	1395.60
812	1.93	1397.53
813	1.91	1399.44
814	1.91	1401.35
815	1.91	1403.26
816	1.91	1405.17
817	1.88	1407.05
818	1.87	1408.92
819	1.88	1410.80
820	1.87	1412.67
821	1.88	1414.55
822	1.89	1416.44
823	1.87	1418.31
824	1.83	1420.14
825	1.80	1421.94
826	1.83	1423.77
827	1.84	1425.61
828	1.91	1427.52
829	1.98	1429.50
830	1.98	1431.48

Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)

UE12n#6

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1238	2.14	0.00	1288	2.16	107.81	1338	1.73	207.91
1239	2.11	2.11	1289	2.16	109.97	1339	1.74	209.65
1240	2.14	4.25	1290	2.20	112.17	1340	1.76	211.40
1241	2.17	6.42	1291	2.15	114.32	1341	1.74	213.14
1242	2.18	8.60	1292	2.15	116.48	1342	1.71	214.86
1243	2.22	10.82	1293	2.14	118.62	1343	1.69	216.55
1244	2.23	13.05	1294	2.12	120.73	1344	1.68	218.22
1245	2.22	15.27	1295	0.00	122.85	1345	1.71	219.94
1246	2.17	17.44	1296	0.00	124.97	1346	1.72	221.66
1247	2.18	19.62	1297	0.00	127.08	1347	1.72	223.38
1248	2.21	21.82	1298	0.00	129.20	1348	1.68	225.06
1249	2.23	24.05	1299	0.00	131.32	1349	1.66	226.72
1250	2.17	26.22	1300	0.00	133.43	1350	1.67	228.38
1251	2.20	28.42	1301	0.00	135.55	1351	1.70	230.09
1252	2.22	30.64	1302	0.00	137.67	1352	1.67	231.76
1253	2.24	32.88	1303	0.00	139.78	1353	1.68	233.45
1254	2.21	35.10	1304	0.00	141.90	1354	1.72	235.16
1255	2.18	37.28	1305	0.00	144.02	1355	1.72	236.88
1256	2.18	39.46	1306	0.00	146.14	1356	1.71	238.59
1257	2.22	41.68	1307	0.00	148.25	1357	1.75	240.34
1258	2.17	43.85	1308	2.12	150.37	1358	1.71	242.06
1259	2.17	46.02	1309	2.14	152.51	1359	1.71	243.76
1260	2.16	48.18	1310	2.12	154.63	1360	1.70	245.46
1261	2.14	50.32	1311	2.11	156.73	1361	1.72	247.18
1262	2.13	52.45	1312	2.19	158.93	1362	1.77	248.95
1263	2.09	54.54	1313	2.17	161.10	1363	1.80	250.75
1264	2.06	56.60	1314	2.14	163.24	1364	1.75	252.49
1265	2.11	58.71	1315	2.11	165.35	1365	1.73	254.23
1266	2.11	60.83	1316	2.13	167.47	1366	1.72	255.95
1267	2.10	62.93	1317	2.11	169.59	1367	1.72	257.67
1268	2.09	65.02	1318	2.14	171.72	1368	1.73	259.40
1269	2.07	67.09	1319	2.11	173.83	1369	1.77	261.17
1270	2.05	69.14	1320	2.02	175.85	1370	1.76	262.93
1271	2.16	71.30	1321	1.95	177.80	1371	1.75	264.69
1272	2.15	73.45	1322	1.93	179.73	1372	1.75	266.43
1273	2.12	75.57	1323	1.90	181.64	1373	1.70	268.14
1274	2.18	77.76	1324	1.90	183.54	1374	1.68	269.81
1275	2.14	79.90	1325	1.83	185.37	1375	1.68	271.49
1276	2.17	82.06	1326	1.79	187.16	1376	1.71	273.20
1277	2.16	84.22	1327	1.65	188.80	1377	1.70	274.90
1278	2.14	86.36	1328	1.67	190.48	1378	1.68	276.58
1279	2.13	88.49	1329	1.71	192.19	1379	1.67	278.25
1280	2.19	90.68	1330	1.75	193.94	1380	1.70	279.95
1281	2.16	92.84	1331	1.77	195.71	1381	1.74	281.69
1282	2.12	94.96	1332	1.78	197.50	1382	1.76	283.44
1283	2.10	97.05	1333	1.75	199.25	1383	1.73	285.18
1284	2.11	99.17	1334	1.72	200.97	1384	1.71	286.89
1285	2.12	101.28	1335	1.74	202.71	1385	1.71	288.59
1286	2.16	103.45	1336	1.74	204.46	1386	1.72	290.31
1287	2.21	105.65	1337	1.72	206.18	1387	1.72	292.04

UE12n#6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1388	1.72	293.76	1438	1.72	378.72	1488	2.14	466.55
1389	1.70	295.46	1439	1.68	380.40	1489	2.07	468.62
1390	1.71	297.17	1440	1.67	382.08	1490	2.05	470.67
1391	1.72	298.90	1441	1.69	383.76	1491	2.01	472.68
1392	1.71	300.61	1442	1.77	385.54	1492	1.99	474.66
1393	1.70	302.31	1443	1.82	387.36	1493	1.95	476.61
1394	1.69	304.00	1444	1.83	389.19	1494	1.89	478.50
1395	1.71	305.70	1445	1.81	390.99	1495	1.86	480.36
1396	1.69	307.39	1446	1.75	392.74	1496	1.83	482.19
1397	1.69	309.09	1447	1.69	394.43	1497	1.81	484.01
1398	1.68	310.77	1448	1.68	396.11	1498	1.80	485.80
1399	1.68	312.45	1449	1.71	397.82	1499	1.79	487.59
1400	1.70	314.15	1450	1.76	399.57	1500	1.78	489.37
1401	1.70	315.85	1451	1.68	401.25	1501	1.90	491.27
1402	1.66	317.51	1452	1.64	402.90	1502	1.97	493.24
1403	1.66	319.16	1453	1.68	404.58	1503	1.87	495.11
1404	1.67	320.84	1454	1.72	406.30	1504	1.80	496.91
1405	1.71	322.55	1455	1.69	407.99	1505	1.77	498.68
1406	1.64	324.19	1456	1.68	409.67	1506	1.77	500.45
1407	1.66	325.85	1457	1.69	411.37	1507	1.81	502.26
1408	1.74	327.59	1458	1.67	413.04	1508	1.71	503.97
1409	1.73	329.32	1459	1.71	414.75	1509	1.73	505.69
1410	1.71	331.03	1460	1.71	416.46	1510	1.76	507.45
1411	1.70	332.72	1461	1.66	418.12	1511	1.75	509.20
1412	1.75	334.47	1462	1.61	419.73	1512	1.78	510.99
1413	1.72	336.19	1463	1.59	421.32	1513	1.91	512.90
1414	1.69	337.88	1464	1.60	422.91	1514	1.93	514.83
1415	1.66	339.55	1465	1.61	424.53	1515	1.95	516.78
1416	1.64	341.19	1466	1.62	426.15	1516	1.95	518.73
1417	1.61	342.80	1467	1.65	427.80	1517	1.93	520.67
1418	1.63	344.43	1468	1.68	429.48	1518	1.90	522.56
1419	1.68	346.11	1469	1.70	431.18	1519	1.87	524.43
1420	1.75	347.86	1470	1.72	432.90	1520	1.87	526.29
1421	1.72	349.58	1471	1.75	434.66	1521	1.83	528.12
1422	1.71	351.29	1472	1.76	436.42	1522	1.81	529.93
1423	1.67	352.96	1473	1.76	438.19	1523	1.81	531.74
1424	1.65	354.61	1474	1.77	439.95	1524	1.87	533.62
1425	1.67	356.28	1475	1.74	441.70	1525	1.88	535.50
1426	1.70	357.98	1476	1.76	443.45	1526	1.90	537.40
1427	1.74	359.72	1477	1.80	445.25	1527	1.95	539.35
1428	1.78	361.50	1478	1.86	447.12	1528	1.90	541.25
1429	1.77	363.27	1479	1.87	448.99	1529	1.92	543.18
1430	1.75	365.02	1480	1.83	450.82	1530	1.88	545.05
1431	1.72	366.73	1481	1.83	452.65	1531	1.78	546.83
1432	1.75	368.48	1482	1.83	454.48	1532	1.78	548.61
1433	1.72	370.21	1483	1.84	456.33	1533	1.75	550.35
1434	1.70	371.91	1484	1.87	458.20	1534	1.70	552.05
1435	1.68	373.59	1485	1.98	460.18	1535	1.69	553.74
1436	1.68	375.27	1486	2.08	462.26	1536	1.68	555.42
1437	1.73	377.00	1487	2.15	464.41	1537	1.66	557.09

UE12n#6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1538	1.60	558.69	1588	1.90	650.38	1638	1.79	745.13
1539	1.66	560.35	1589	1.92	652.30	1639	1.79	746.92
1540	1.71	562.06	1590	1.94	654.23	1640	1.76	748.68
1541	1.74	563.80	1591	1.94	656.17	1641	1.75	750.43
1542	1.73	565.53	1592	1.94	658.11	1642	1.78	752.21
1543	1.70	567.23	1593	1.94	660.05	1643	1.81	754.02
1544	1.72	568.94	1594	1.94	661.99	1644	1.80	755.82
1545	1.74	570.69	1595	1.91	663.90	1645	1.78	757.60
1546	1.79	572.48	1596	1.89	665.79	1646	1.80	759.40
1547	1.80	574.27	1597	1.88	667.67	1647	1.81	761.21
1548	1.78	576.05	1598	1.88	669.55	1648	1.80	763.02
1549	1.79	577.84	1599	1.88	671.44	1649	1.83	764.85
1550	1.82	579.67	1600	1.86	673.30	1650	1.84	766.69
1551	1.84	581.51	1601	1.84	675.14	1651	1.84	768.54
1552	1.86	583.37	1602	1.85	676.99	1652	1.88	770.42
1553	1.83	585.20	1603	1.83	678.82	1653	1.83	772.26
1554	1.83	587.02	1604	1.83	680.65	1654	1.81	774.07
1555	1.81	588.84	1605	1.86	682.51	1655	1.81	775.88
1556	1.79	590.63	1606	1.87	684.38	1656	1.82	777.70
1557	1.80	592.43	1607	1.89	686.27	1657	1.86	779.55
1558	1.85	594.28	1608	1.91	688.18	1658	1.89	781.44
1559	1.84	596.12	1609	1.91	690.08	1659	1.81	783.25
1560	1.80	597.92	1610	1.92	692.00	1660	1.86	785.10
1561	1.77	599.69	1611	1.89	693.89	1661	1.91	787.02
1562	1.90	601.58	1612	1.85	695.74	1662	1.91	788.93
1563	1.88	603.46	1613	1.83	697.57	1663	1.90	790.83
1564	1.85	605.32	1614	1.85	699.41	1664	1.87	792.70
1565	1.82	607.14	1615	1.85	701.26	1665	1.86	794.56
1566	1.82	608.96	1616	1.90	703.16	1666	1.85	796.41
1567	1.83	610.79	1617	1.91	705.07	1667	1.87	798.28
1568	1.82	612.61	1618	1.91	706.98	1668	1.89	800.17
1569	1.84	614.45	1619	1.87	708.85	1669	1.89	802.06
1570	1.85	616.31	1620	1.89	710.74	1670	1.89	803.96
1571	1.85	618.16	1621	1.96	712.70	1671	1.85	805.81
1572	1.94	620.11	1622	1.91	714.61	1672	1.82	807.63
1573	1.96	622.07	1623	1.91	716.53	1673	1.87	809.49
1574	1.96	624.02	1624	1.97	718.49	1674	1.84	811.33
1575	1.96	625.99	1625	1.99	720.48	1675	1.81	813.14
1576	1.96	627.95	1626	1.99	722.47	1676	1.79	814.93
1577	1.93	629.88	1627	1.95	724.42	1677	1.82	816.75
1578	1.93	631.81	1628	1.89	726.31	1678	1.90	818.64
1579	1.93	633.74	1629	1.89	728.20	1679	1.98	820.62
1580	1.91	635.65	1630	1.91	730.11	1680	2.05	822.67
1581	1.85	637.50	1631	1.95	732.06	1681	2.01	824.68
1582	1.81	639.30	1632	1.90	733.96	1682	1.97	826.64
1583	1.81	641.12	1633	1.91	735.87	1683	1.97	828.61
1584	1.83	642.95	1634	1.91	737.78	1684	2.00	830.61
1585	1.80	644.75	1635	1.88	739.65	1685	2.00	832.62
1586	1.82	646.57	1636	1.86	741.51	1686	2.02	834.63
1587	1.90	648.47	1637	1.82	743.34	1687	2.02	836.65

UE12n#6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1688	2.01	838.66	1738	1.99	935.44	1788	1.85	1031.60
1689	1.99	840.65	1739	2.04	937.48	1789	1.88	1033.48
1690	2.00	842.65	1740	1.98	939.46	1790	1.88	1035.36
1691	1.99	844.64	1741	1.95	941.41	1791	1.88	1037.24
1692	1.96	846.59	1742	1.94	943.35	1792	1.85	1039.09
1693	1.95	848.54	1743	1.91	945.26	1793	1.81	1040.90
1694	1.95	850.49	1744	1.86	947.12	1794	1.81	1042.71
1695	1.88	852.37	1745	1.86	948.98	1795	1.81	1044.52
1696	1.89	854.26	1746	1.87	950.85	1796	1.79	1046.31
1697	1.86	856.11	1747	1.88	952.73	1797	1.80	1048.11
1698	1.85	857.96	1748	1.90	954.62	1798	1.85	1049.96
1699	1.85	859.81	1749	1.89	956.51	1799	1.86	1051.82
1700	1.81	861.62	1750	1.94	958.46	1800	1.85	1053.67
1701	1.80	863.42	1751	1.92	960.37	1801	1.85	1055.52
1702	1.85	865.27	1752	1.94	962.31	1802	1.80	1057.32
1703	1.95	867.22	1753	1.91	964.22	1803	1.84	1059.16
1704	1.90	869.12	1754	1.93	966.15	1804	1.86	1061.02
1705	1.87	871.00	1755	1.95	968.09	1805	1.86	1062.88
1706	1.94	872.94	1756	1.99	970.09	1806	1.86	1064.74
1707	2.02	874.96	1757	2.01	972.10	1807	1.87	1066.61
1708	1.99	876.95	1758	1.97	974.07	1808	1.90	1068.51
1709	1.95	878.91	1759	1.96	976.04	1809	1.91	1070.42
1710	1.94	880.85	1760	1.95	977.99	1810	1.88	1072.30
1711	1.94	882.79	1761	1.94	979.93	1811	1.89	1074.19
1712	1.93	884.72	1762	1.95	981.87	1812	1.91	1076.10
1713	1.90	886.62	1763	1.92	983.80	1813	1.87	1077.97
1714	1.88	888.50	1764	1.88	985.67	1814	1.83	1079.80
1715	1.97	890.47	1765	1.90	987.57	1815	1.82	1081.62
1716	2.01	892.49	1766	1.93	989.50	1816	1.81	1083.43
1717	1.95	894.44	1767	1.92	991.42	1817	1.81	1085.24
1718	1.91	896.34	1768	1.93	993.35	1818	1.82	1087.06
1719	1.91	898.25	1769	1.93	995.28	1819	1.84	1088.90
1720	1.99	900.24	1770	1.95	997.23	1820	1.84	1090.74
1721	2.00	902.24	1771	1.96	999.19	1821	1.85	1092.59
1722	2.00	904.24	1772	1.99	1001.17	1822	1.84	1094.43
1723	1.97	906.21	1773	1.99	1003.16	1823	1.82	1096.25
1724	1.95	908.15	1774	2.00	1005.16	1824	1.82	1098.07
1725	1.94	910.09	1775	1.98	1007.14	1825	1.81	1099.88
1726	1.92	912.01	1776	1.90	1009.04	1826	1.81	1101.69
1727	1.93	913.95	1777	1.96	1011.00	1827	1.81	1103.50
1728	1.91	915.85	1778	1.92	1012.92	1828	1.81	1105.31
1729	1.90	917.75	1779	1.89	1014.81	1829	1.82	1107.13
1730	1.88	919.63	1780	1.91	1016.72	1830	1.86	1108.99
1731	1.88	921.51	1781	1.93	1018.65	1831	1.84	1110.83
1732	1.93	923.43	1782	1.88	1020.53	1832	1.83	1112.66
1733	1.97	925.40	1783	1.88	1022.41	1833	1.82	1114.48
1734	1.99	927.40	1784	1.89	1024.30	1834	1.81	1116.29
1735	2.03	929.43	1785	1.86	1026.16	1835	1.85	1118.14
1736	2.02	931.46	1786	1.79	1027.95	1836	1.85	1119.99
1737	2.00	933.45	1787	1.80	1029.75	1837	1.82	1121.81

UE12n#6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1838	1.79	1123.60	1888	1.91	1216.18	1938	0.00	1316.99
1839	1.79	1125.39	1889	1.96	1218.14	1939	0.00	1318.94
1840	1.82	1127.21	1890	1.98	1220.12	1940	1.98	1320.89
1841	1.81	1129.02	1891	1.98	1222.10	1941	1.99	1322.88
1842	1.80	1130.82	1892	1.91	1224.01	1942	2.01	1324.89
1843	1.81	1132.63	1893	1.91	1225.92	1943	2.02	1326.91
1844	1.82	1134.45	1894	1.95	1227.87	1944	1.99	1328.90
1845	1.81	1136.26	1895	1.92	1229.79	1945	2.05	1330.95
1846	1.86	1138.12	1896	1.95	1231.74	1946	2.08	1333.03
1847	1.80	1139.92	1897	2.00	1233.74	1947	1.98	1335.01
1848	1.76	1141.68	1898	2.00	1235.74	1948	1.97	1336.98
1849	1.81	1143.49	1899	2.06	1237.80	1949	2.02	1339.00
1850	1.81	1145.30	1900	2.01	1239.81	1950	2.03	1341.03
1851	1.80	1147.10	1901	2.00	1241.81	1951	1.98	1343.01
1852	1.83	1148.93	1902	2.00	1243.81	1952	1.98	1344.99
1853	1.81	1150.74	1903	2.09	1245.90	1953	1.98	1346.97
1854	1.77	1152.51	1904	2.15	1248.05	1954	1.98	1348.95
1855	1.79	1154.30	1905	2.20	1250.25	1955	1.99	1350.94
1856	1.77	1156.07	1906	2.20	1252.45	1956	2.00	1352.94
1857	1.77	1157.84	1907	2.18	1254.63	1957	2.00	1354.94
1858	1.79	1159.63	1908	2.14	1256.77	1958	2.00	1356.94
1859	1.82	1161.45	1909	2.11	1258.88	1959	2.01	1358.95
1860	1.87	1163.32	1910	2.03	1260.91	1960	1.99	1360.94
1861	1.85	1165.17	1911	2.03	1262.94	1961	1.97	1362.91
1862	1.85	1167.02	1912	2.03	1264.97	1962	1.97	1364.88
1863	1.89	1168.91	1913	2.04	1267.01	1963	1.96	1366.84
1864	1.89	1170.80	1914	2.13	1269.14	1964	1.98	1368.82
1865	1.87	1172.67	1915	2.13	1271.27	1965	2.02	1370.84
1866	1.81	1174.48	1916	2.12	1273.39	1966	2.03	1372.87
1867	1.82	1176.30	1917	2.12	1275.51	1967	1.97	1374.84
1868	1.84	1178.14	1918	2.07	1277.58	1968	1.95	1376.79
1869	1.87	1180.01	1919	2.07	1279.65	1969	1.93	1378.72
1870	1.87	1181.88	1920	2.11	1281.76	1970	1.97	1380.69
1871	1.86	1183.74	1921	2.08	1283.84	1971	2.00	1382.69
1872	1.89	1185.63	1922	2.02	1285.86	1972	2.01	1384.70
1873	1.91	1187.54	1923	1.96	1287.82	1973	2.03	1386.73
1874	1.91	1189.45	1924	1.93	1289.75	1974	2.03	1388.76
1875	1.90	1191.35	1925	1.91	1291.66	1975	2.04	1390.80
1876	1.90	1193.25	1926	1.93	1293.59	1976	2.04	1392.84
1877	1.89	1195.14	1927	0.00	1295.54	1977	2.06	1394.90
1878	1.84	1196.98	1928	0.00	1297.49	1978	2.06	1396.96
1879	1.87	1198.85	1929	0.00	1299.44	1979	2.06	1399.02
1880	1.89	1200.74	1930	0.00	1301.39	1980	2.06	1401.08
1881	1.89	1202.63	1931	0.00	1303.34	1981	2.04	1403.12
1882	1.90	1204.53	1932	0.00	1305.29	1982	2.00	1405.12
1883	1.91	1206.44	1933	0.00	1307.24	1983	2.01	1407.13
1884	1.97	1208.41	1934	0.00	1309.19	1984	1.99	1409.12
1885	1.93	1210.34	1935	0.00	1311.14	1985	1.98	1411.10
1886	1.98	1212.32	1936	0.00	1313.09	1986	1.97	1413.07
1887	1.95	1214.27	1937	0.00	1315.04	1987	1.96	1415.03

UE12n#6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1988	1.99	1417.02	2038	1.97	1516.75	2088	2.13	1616.56
1989	2.01	1419.03	2039	1.97	1518.72	2089	2.09	1618.65
1990	2.03	1421.06	2040	1.95	1520.67	2090	2.05	1620.70
1991	2.04	1423.10	2041	1.99	1522.66	2091	2.04	1622.74
1992	2.02	1425.12	2042	1.99	1524.65	2092	2.04	1624.78
1993	1.99	1427.11	2043	2.04	1526.69	2093	2.04	1626.82
1994	2.03	1429.14	2044	2.03	1528.72	2094	2.13	1628.95
1995	2.04	1431.18	2045	1.99	1530.71	2095	2.10	1631.05
1996	2.05	1433.23	2046	1.98	1532.69	2096	2.07	1633.12
1997	2.07	1435.30	2047	1.98	1534.67	2097	2.04	1635.16
1998	2.09	1437.39	2048	2.03	1536.70	2098	2.02	1637.18
1999	2.03	1439.42	2049	2.03	1538.73	2099	2.04	1639.22
2000	1.99	1441.41	2050	2.01	1540.74	2100	2.05	1641.27
2001	1.91	1443.32	2051	1.97	1542.71	2101	2.08	1643.35
2002	1.95	1445.27	2052	2.01	1544.72	2102	2.14	1645.49
2003	1.98	1447.25	2053	2.07	1546.79	2103	2.11	1647.60
2004	2.03	1449.28	2054	2.07	1548.86	2104	2.09	1649.69
2005	2.09	1451.37	2055	1.98	1550.84	2105	2.09	1651.78
2006	2.05	1453.42	2056	1.96	1552.80	2106	2.08	1653.86
2007	1.99	1455.41	2057	2.01	1554.81	2107	2.08	1655.94
2008	1.91	1457.32	2058	2.01	1556.82	2108	2.11	1658.05
2009	1.92	1459.24	2059	2.00	1558.82	2109	2.15	1660.20
2010	1.96	1461.20	2060	1.97	1560.79	2110	2.14	1662.34
2011	1.95	1463.15	2061	1.96	1562.75	2111	2.13	1664.47
2012	1.94	1465.09	2062	1.96	1564.71	2112	2.11	1666.58
2013	1.95	1467.04	2063	1.98	1566.69	2113	2.12	1668.70
2014	1.94	1468.98	2064	2.01	1568.70	2114	2.12	1670.82
2015	1.96	1470.94	2065	2.02	1570.72	2115	2.09	1672.91
2016	1.99	1472.93	2066	2.02	1572.74	2116	2.10	1675.01
2017	2.01	1474.94	2067	1.98	1574.72	2117	2.15	1677.16
2018	2.02	1476.96	2068	1.98	1576.70	2118	2.19	1679.35
2019	2.02	1478.98	2069	1.99	1578.69	2119	2.21	1681.56
2020	2.02	1481.00	2070	1.98	1580.67	2120	2.16	1683.72
2021	2.03	1483.03	2071	1.98	1582.65	2121	2.19	1685.91
2022	2.05	1485.08	2072	2.01	1584.66	2122	2.24	1688.15
2023	2.04	1487.12	2073	1.93	1586.59	2123	2.17	1690.32
2024	1.97	1489.09	2074	1.91	1588.50	2124	2.16	1692.48
2025	1.95	1491.04	2075	1.92	1590.42	2125	2.17	1694.65
2026	1.95	1492.99	2076	1.93	1592.35	2126	2.20	1696.85
2027	1.95	1494.94	2077	1.94	1594.29	2127	2.17	1699.02
2028	1.96	1496.90	2078	1.89	1596.18	2128	2.15	1701.17
2029	1.98	1498.88	2079	1.90	1598.08	2129	2.17	1703.34
2030	2.00	1500.88	2080	1.93	1600.01	2130	2.18	1705.52
2031	1.98	1502.86	2081	2.02	1602.03	2131	2.22	1707.74
2032	1.98	1504.84	2082	2.02	1604.05	2132	2.17	1709.91
2033	2.00	1506.84	2083	1.99	1606.04	2133	2.16	1712.07
2034	2.01	1508.85	2084	2.00	1608.04	2134	2.16	1714.23
2035	2.00	1510.85	2085	2.09	1610.13	2135	2.18	1716.41
2036	1.99	1512.84	2086	2.15	1612.28	2136	2.18	1718.59
2037	1.94	1514.78	2087	2.15	1614.43	2137	2.14	1720.73

UE12n#6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
2138	2.10	1722.83	2188	2.19	1832.55	2238	2.19	1941.74
2139	2.10	1724.93	2189	2.19	1834.74	2239	2.19	1943.93
2140	2.13	1727.06	2190	2.17	1836.91	2240	2.18	1946.11
2141	2.17	1729.23	2191	2.14	1839.05	2241	2.18	1948.29
2142	2.20	1731.43	2192	2.18	1841.23	2242	2.17	1950.46
2143	2.21	1733.64	2193	2.21	1843.44	2243	2.17	1952.63
2144	2.20	1735.84	2194	2.21	1845.65	2244	2.23	1954.86
2145	2.22	1738.06	2195	2.19	1847.84	2245	2.21	1957.07
2146	2.21	1740.27	2196	2.19	1850.03	2246	2.17	1959.24
2147	2.15	1742.42	2197	2.21	1852.24	2247	2.16	1961.40
2148	2.13	1744.55	2198	2.18	1854.42	2248	2.15	1963.55
2149	2.15	1746.70	2199	2.17	1856.59	2249	2.13	1965.68
2150	2.18	1748.88	2200	2.19	1858.78	2250	2.13	1967.81
2151	2.19	1751.07	2201	2.17	1860.95	2251	2.13	1969.94
2152	2.18	1753.25	2202	2.17	1863.12	2252	2.17	1972.11
2153	2.21	1755.46	2203	2.20	1865.32	2253	2.16	1974.27
2154	2.21	1757.67	2204	2.18	1867.50	2254	2.16	1976.43
2155	2.15	1759.82	2205	2.23	1869.73	2255	2.16	1978.59
2156	2.18	1762.00	2206	2.24	1871.97	2256	2.16	1980.75
2157	2.23	1764.23	2207	2.22	1874.19	2257	2.15	1982.90
2158	2.25	1766.48	2208	2.19	1876.38	2258	2.15	1985.05
2159	2.21	1768.69	2209	2.18	1878.56	2259	2.16	1987.21
2160	2.21	1770.90	2210	2.19	1880.75	2260	2.13	1989.34
2161	2.21	1773.11	2211	2.21	1882.96	2261	2.12	1991.46
2162	2.23	1775.34	2212	2.20	1885.16	2262	2.13	1993.59
2163	2.25	1777.59	2213	2.19	1887.35	2263	2.14	1995.73
2164	2.21	1779.80	2214	2.19	1889.54	2264	2.14	1997.87
2165	2.19	1781.99	2215	2.21	1891.75	2265	2.13	2000.00
2166	2.20	1784.19	2216	2.20	1893.95	2266	2.09	2002.09
2167	2.25	1786.44	2217	2.23	1896.18	2267	2.08	2004.17
2168	2.27	1788.71	2218	2.23	1898.41	2268	2.10	2006.27
2169	2.22	1790.93	2219	2.20	1900.61	2269	2.15	2008.42
2170	2.19	1793.12	2220	2.17	1902.78	2270	2.17	2010.59
2171	2.21	1795.33	2221	2.16	1904.94	2271	2.12	2012.71
2172	2.18	1797.51	2222	2.12	1907.06	2272	2.17	2014.88
2173	2.16	1799.67	2223	2.12	1909.18	2273	2.18	2017.06
2174	2.18	1801.85	2224	2.14	1911.32	2274	2.17	2019.23
2175	2.19	1804.04	2225	2.18	1913.50	2275	2.15	2021.38
2176	2.22	1806.26	2226	2.18	1915.68	2276	2.11	2023.49
2177	2.20	1808.46	2227	2.18	1917.86	2277	2.10	2025.59
2178	2.19	1810.65	2228	2.16	1920.02	2278	2.12	2027.71
2179	2.17	1812.82	2229	2.15	1922.17	2279	2.13	2029.84
2180	2.16	1814.98	2230	2.18	1924.35	2280	2.13	2031.97
2181	2.17	1817.15	2231	2.17	1926.52	2281	2.14	2034.11
2182	2.18	1819.33	2232	2.19	1928.71	2282	2.15	2036.26
2183	2.17	1821.50	2233	2.19	1930.90	2283	2.16	2038.42
2184	2.21	1823.71	2234	2.17	1933.07	2284	2.17	2040.59
2185	2.24	1825.95	2235	2.16	1935.23	2285	2.22	2042.81
2186	2.22	1828.17	2236	2.13	1937.36	2286	2.24	2045.05
2187	2.19	1830.36	2237	2.19	1939.55	2287	2.20	2047.25

UE12n#6--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
2288	2.17	2049.42						
2289	2.17	2051.59						
2290	2.19	2053.78						
2291	2.21	2055.99						
2292	2.22	2058.21						
2293	2.19	2060.40						
2294	2.18	2062.58						
2295	2.20	2064.78						
2296	2.23	2067.01						
2297	2.21	2069.22						
2298	2.19	2071.41						
2299	2.17	2073.58						
2300	2.15	2075.73						
2301	2.15	2077.88						
2302	2.15	2080.03						
2303	2.15	2082.18						
2304	2.15	2084.33						
2305	2.16	2086.49						
2306	2.16	2088.65						
2307	2.15	2090.80						
2308	2.21	2093.01						
2309	2.16	2095.17						
2310	2.21	2097.38						
2311	2.26	2099.64						
2312	2.26	2101.90						
2313	2.26	2104.16						
2314	2.37	2106.53						
2315	2.39	2108.92						

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Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
30	2.41	0.00	80	0.00	113.49	130	0.00	205.69
31	2.42	2.42	81	0.00	115.33	131	0.00	207.53
32	2.45	4.86	82	0.00	117.18	132	0.00	209.38
33	2.51	7.38	83	0.00	119.02	133	0.00	211.22
34	2.43	9.80	84	0.00	120.87	134	0.00	213.07
35	2.43	12.23	85	0.00	122.71	135	0.00	214.91
36	2.43	14.65	86	0.00	124.55	136	0.00	216.75
37	2.39	17.05	87	0.00	126.40	137	0.00	218.60
38	2.39	19.44	88	0.00	128.24	138	0.00	220.44
39	2.42	21.86	89	0.00	130.09	139	0.00	222.29
40	2.44	24.30	90	0.00	131.93	140	0.00	224.13
41	2.45	26.75	91	0.00	133.77	141	0.00	225.97
42	2.46	29.21	92	0.00	135.62	142	0.00	227.82
43	2.43	31.64	93	0.00	137.46	143	0.00	229.66
44	2.43	34.07	94	0.00	139.31	144	0.00	231.51
45	2.45	36.52	95	0.00	141.15	145	0.00	233.35
46	2.44	38.96	96	0.00	142.99	146	0.00	235.19
47	2.46	41.41	97	0.00	144.84	147	0.00	237.04
48	2.46	43.87	98	0.00	146.68	148	0.00	238.88
49	2.45	46.32	99	0.00	148.53	149	0.00	240.73
50	2.39	48.71	100	0.00	150.37	150	0.00	242.57
51	2.40	51.11	101	0.00	152.21	151	0.00	244.41
52	2.40	53.51	102	0.00	154.06	152	0.00	246.26
53	2.39	55.90	103	0.00	155.90	153	0.00	248.10
54	2.38	58.28	104	0.00	157.75	154	0.00	249.95
55	2.38	60.66	105	0.00	159.59	155	0.00	251.79
56	2.37	63.02	106	0.00	161.43	156	0.00	253.63
57	2.36	65.39	107	0.00	163.28	157	0.00	255.48
58	2.36	67.75	108	0.00	165.12	158	0.00	257.32
59	2.36	70.11	109	0.00	166.97	159	0.00	259.17
60	2.33	72.44	110	0.00	168.81	160	0.00	261.01
61	2.27	74.71	111	0.00	170.65	161	0.00	262.85
62	2.22	76.93	112	0.00	172.50	162	0.00	264.70
63	2.20	79.13	113	0.00	174.34	163	0.00	266.54
64	2.12	81.25	114	0.00	176.19	164	0.00	268.39
65	2.11	83.36	115	0.00	178.03	165	0.00	270.23
66	2.17	85.53	116	0.00	179.87	166	0.00	272.07
67	2.23	87.76	117	0.00	181.72	167	0.00	273.92
68	2.28	90.04	118	0.00	183.56	168	0.00	275.76
69	2.25	92.29	119	0.00	185.41	169	0.00	277.61
70	2.20	94.50	120	0.00	187.25	170	0.00	279.45
71	2.14	96.64	121	0.00	189.09	171	0.00	281.29
72	2.10	98.74	122	0.00	190.94	172	0.00	283.14
73	0.00	100.58	123	0.00	192.78	173	0.00	284.98
74	0.00	102.43	124	0.00	194.63	174	0.00	286.83
75	0.00	104.27	125	0.00	196.47	175	0.00	288.67
76	0.00	106.11	126	0.00	198.31	176	0.00	290.51
77	0.00	107.96	127	0.00	200.16	177	0.00	292.36
78	0.00	109.80	128	0.00	202.00	178	0.00	294.20
79	0.00	111.65	129	0.00	203.85	179	0.00	296.05

UE12n#8--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
180	0.00	297.89	230	0.00	378.98	280	1.57	457.60
181	0.00	299.73	231	0.00	380.50	281	1.62	459.22
182	0.00	301.58	232	0.00	382.01	282	1.61	460.83
183	0.00	303.42	233	1.54	383.52	283	1.59	462.42
184	0.00	305.27	234	1.59	385.12	284	1.67	464.09
185	0.00	307.11	235	1.61	386.72	285	1.64	465.72
186	0.00	308.95	236	1.62	388.34	286	1.60	467.33
187	0.00	310.80	237	1.71	390.05	287	1.57	468.90
188	0.00	312.64	238	1.64	391.69	288	1.60	470.49
189	0.00	314.49	239	1.67	393.36	289	1.68	472.17
190	0.00	316.33	240	1.68	395.04	290	1.69	473.86
191	0.00	318.17	241	1.64	396.68	291	1.64	475.50
192	0.00	320.02	242	1.67	398.35	292	1.61	477.11
193	0.00	321.86	243	0.00	399.94	293	1.60	478.71
194	1.59	323.71	244	0.00	401.53	294	1.59	480.30
195	1.58	325.29	245	0.00	403.13	295	1.57	481.87
196	1.60	326.89	246	0.00	404.72	296	1.56	483.44
197	1.68	328.56	247	0.00	406.31	297	1.56	484.99
198	1.72	330.28	248	0.00	407.91	298	1.55	486.54
199	1.67	331.95	249	0.00	409.50	299	0.00	488.05
200	1.62	333.57	250	0.00	411.09	300	0.00	489.55
201	1.58	335.15	251	0.00	412.69	301	0.00	491.06
202	1.54	336.69	252	0.00	414.28	302	0.00	492.57
203	1.53	338.22	253	0.00	415.87	303	0.00	494.07
204	1.55	339.76	254	0.00	417.46	304	0.00	495.58
205	1.55	341.32	255	0.00	419.06	305	0.00	497.08
206	1.55	342.87	256	0.00	420.65	306	0.00	498.59
207	1.52	344.39	257	0.00	422.24	307	0.00	500.10
208	1.49	345.88	258	0.00	423.84	308	0.00	501.60
209	1.44	347.32	259	0.00	425.43	309	0.00	503.11
210	1.46	348.78	260	0.00	427.02	310	0.00	504.61
211	1.48	350.27	261	0.00	428.62	311	0.00	506.12
212	1.48	351.75	262	0.00	430.21	312	0.00	507.63
213	0.00	353.26	263	0.00	431.80	313	0.00	509.13
214	0.00	354.78	264	1.51	433.39	314	1.46	510.64
215	0.00	356.29	265	1.53	434.93	315	1.48	512.12
216	0.00	357.80	266	1.60	436.52	316	1.50	513.62
217	0.00	359.31	267	1.61	438.13	317	1.50	515.12
218	0.00	360.83	268	1.62	439.76	318	1.51	516.63
219	0.00	362.34	269	1.55	441.31	319	1.51	518.14
220	0.00	363.85	270	1.50	442.81	320	1.55	519.69
221	0.00	365.37	271	1.47	444.28	321	1.54	521.23
222	0.00	366.88	272	1.40	445.68	322	1.56	522.79
223	0.00	368.39	273	1.41	447.09	323	0.00	524.41
224	0.00	369.91	274	1.43	448.51	324	0.00	526.02
225	0.00	371.42	275	1.43	449.94	325	0.00	527.63
226	0.00	372.93	276	1.45	451.39	326	0.00	529.24
227	0.00	374.44	277	1.48	452.87	327	0.00	530.85
228	0.00	375.96	278	1.57	454.44	328	0.00	532.47
229	0.00	377.47	279	1.60	456.04	329	0.00	534.08

UE12n#8--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
330	0.00	535.69	380	1.76	618.27	430	1.61	701.30
331	0.00	537.30	381	1.71	619.98	431	1.61	702.91
332	0.00	538.91	382	1.70	621.68	432	1.62	704.54
333	0.00	540.53	383	1.75	623.43	433	1.47	706.01
334	0.00	542.14	384	1.72	625.15	434	1.32	707.33
335	0.00	543.75	385	1.65	626.80	435	1.34	708.67
336	0.00	545.36	386	1.56	628.36	436	1.36	710.03
337	0.00	546.97	387	1.49	629.85	437	1.41	711.44
338	0.00	548.59	388	1.47	631.32	438	1.44	712.87
339	0.00	550.20	389	1.46	632.78	439	1.48	714.35
340	0.00	551.81	390	1.48	634.27	440	1.55	715.90
341	0.00	553.42	391	1.50	635.77	441	1.69	717.59
342	0.00	555.03	392	1.54	637.30	442	1.76	719.35
343	0.00	556.65	393	1.53	638.83	443	1.77	721.12
344	0.00	558.26	394	1.51	640.34	444	1.75	722.87
345	0.00	559.87	395	0.00	642.02	445	1.68	724.55
346	0.00	561.48	396	0.00	643.70	446	1.64	726.19
347	0.00	563.09	397	0.00	645.38	447	0.00	727.80
348	0.00	564.71	398	0.00	647.06	448	0.00	729.40
349	0.00	566.32	399	0.00	648.74	449	0.00	731.00
350	0.00	567.93	400	0.00	650.42	450	0.00	732.60
351	0.00	569.54	401	0.00	652.10	451	0.00	734.20
352	0.00	571.15	402	0.00	653.78	452	0.00	735.81
353	0.00	572.77	403	0.00	655.46	453	0.00	737.41
354	0.00	574.38	404	0.00	657.14	454	0.00	739.01
355	0.00	575.99	405	0.00	658.82	455	0.00	740.61
356	0.00	577.60	406	0.00	660.50	456	0.00	742.21
357	0.00	579.21	407	0.00	662.18	457	0.00	743.82
358	0.00	580.83	408	0.00	663.86	458	0.00	745.42
359	0.00	582.44	409	0.00	665.54	459	0.00	747.02
360	0.00	584.05	410	0.00	667.22	460	0.00	748.62
361	0.00	585.66	411	0.00	668.90	461	0.00	750.22
362	0.00	587.27	412	0.00	670.58	462	0.00	751.83
363	0.00	588.89	413	0.00	672.26	463	0.00	753.43
364	0.00	590.50	414	1.85	673.94	464	0.00	755.03
365	0.00	592.11	415	1.90	675.84	465	0.00	756.63
366	0.00	593.72	416	1.88	677.71	466	0.00	758.23
367	0.00	595.33	417	1.84	679.56	467	0.00	759.84
368	0.00	596.95	418	1.83	681.38	468	0.00	761.44
369	0.00	598.56	419	1.78	683.17	469	0.00	763.04
370	1.66	600.17	420	1.70	684.86	470	0.00	764.64
371	1.69	601.86	421	1.73	686.60	471	0.00	766.24
372	1.74	603.60	422	1.70	688.30	472	0.00	767.85
373	1.83	605.43	423	1.69	690.00	473	0.00	769.45
374	1.90	607.33	424	1.67	691.67	474	0.00	771.05
375	1.92	609.25	425	1.66	693.33	475	0.00	772.65
376	1.88	611.13	426	1.61	694.94	476	0.00	774.25
377	1.83	612.96	427	1.60	696.54	477	0.00	775.86
378	1.78	614.74	428	1.58	698.12	478	0.00	777.46
379	1.77	616.51	429	1.58	699.70	479	0.00	779.06

UE12n#8--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
480	0.00	780.66	530	1.30	858.26	580	1.83	946.05
481	0.00	782.26	531	1.33	859.59	581	1.81	947.86
482	0.00	783.87	532	1.41	861.00	582	1.82	949.68
483	0.00	785.47	533	1.47	862.47	583	1.85	951.53
484	1.56	787.07	534	1.63	864.10	584	1.87	953.40
485	1.61	788.68	535	1.79	865.89	585	1.85	955.25
486	1.59	790.28	536	1.84	867.74	586	1.91	957.16
487	1.55	791.83	537	1.87	869.60	587	1.86	959.01
488	1.50	793.32	538	1.81	871.42	588	1.82	960.84
489	1.53	794.85	539	1.81	873.23	589	1.80	962.64
490	1.49	796.35	540	1.78	875.01	590	1.76	964.40
491	1.56	797.91	541	1.62	876.63	591	1.69	966.09
492	0.00	799.49	542	1.62	878.25	592	1.67	967.77
493	0.00	801.07	543	1.63	879.88	593	1.64	969.41
494	0.00	802.65	544	1.58	881.46	594	1.67	971.08
495	0.00	804.24	545	0.00	883.15	595	1.69	972.77
496	0.00	805.82	546	0.00	884.84	596	1.70	974.47
497	1.60	807.40	547	0.00	886.53	597	1.71	976.18
498	1.60	809.00	548	0.00	888.22	598	1.73	977.91
499	1.63	810.63	549	0.00	889.91	599	1.73	979.64
500	1.60	812.23	550	0.00	891.59	600	1.78	981.42
501	1.56	813.80	551	0.00	893.28	601	1.76	983.18
502	1.49	815.28	552	1.79	894.97	602	1.77	984.95
503	1.52	816.80	553	1.82	896.79	603	1.74	986.70
504	1.48	818.28	554	1.82	898.61	604	1.82	988.51
505	1.61	819.89	555	1.75	900.36	605	1.79	990.30
506	1.56	821.45	556	1.72	902.08	606	1.78	992.08
507	0.00	823.03	557	1.62	903.71	607	1.84	993.92
508	0.00	824.60	558	1.62	905.33	608	1.86	995.78
509	0.00	826.18	559	1.63	906.96	609	1.90	997.68
510	0.00	827.76	560	1.66	908.62	610	1.89	999.57
511	0.00	829.34	561	1.77	910.38	611	1.83	1001.40
512	0.00	830.92	562	1.80	912.19	612	1.82	1003.22
513	0.00	832.49	563	1.85	914.04	613	1.80	1005.02
514	0.00	834.07	564	1.87	915.91	614	1.78	1006.80
515	0.00	835.65	565	1.89	917.80	615	1.74	1008.54
516	0.00	837.23	566	1.87	919.66	616	1.68	1010.22
517	1.60	838.81	567	1.85	921.51	617	1.64	1011.86
518	1.68	840.48	568	1.86	923.37	618	1.63	1013.49
519	1.67	842.15	569	1.84	925.21	619	1.59	1015.08
520	1.62	843.77	570	1.83	927.04	620	1.53	1016.61
521	1.62	845.39	571	1.81	928.85	621	1.59	1018.20
522	1.58	846.97	572	1.81	930.66	622	1.65	1019.85
523	1.53	848.50	573	1.81	932.47	623	1.67	1021.52
524	1.50	849.99	574	1.91	934.38	624	1.67	1023.19
525	1.46	851.46	575	1.98	936.36	625	1.60	1024.79
526	1.43	852.89	576	1.98	938.34	626	1.48	1026.27
527	1.40	854.28	577	1.99	940.33	627	1.46	1027.73
528	1.35	855.63	578	1.96	942.30	628	1.45	1029.18
529	1.33	856.96	579	1.92	944.22	629	1.40	1030.58

UE12n#8--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
630	1.33	1031.91	680	1.71	1109.92	730	1.37	1171.68
631	1.22	1033.13	681	1.64	1111.56	731	1.56	1173.24
632	1.16	1034.29	682	1.62	1113.18	732	1.55	1174.79
633	1.13	1035.42	683	1.57	1114.75	733	1.55	1176.34
634	1.17	1036.59	684	1.53	1116.28	734	1.52	1177.86
635	1.23	1037.82	685	0.00	1117.63	735	1.38	1179.24
636	1.31	1039.13	686	0.00	1118.98	736	1.32	1180.56
637	1.53	1040.66	687	0.00	1120.33	737	1.19	1181.75
638	1.63	1042.29	688	0.00	1121.68	738	1.12	1182.87
639	1.59	1043.88	689	0.00	1123.03	739	1.12	1183.99
640	1.53	1045.41	690	0.00	1124.38	740	1.10	1185.09
641	1.48	1046.89	691	0.00	1125.73	741	1.13	1186.22
642	1.48	1048.37	692	0.00	1127.08	742	1.15	1187.37
643	1.45	1049.82	693	0.00	1128.43	743	1.16	1188.53
644	1.35	1051.17	694	1.18	1129.78	744	1.13	1189.66
645	1.25	1052.42	695	1.31	1131.09	745	1.11	1190.77
646	1.30	1053.72	696	1.31	1132.40	746	1.15	1191.92
647	1.37	1055.09	697	1.24	1133.64	747	1.16	1193.08
648	1.47	1056.56	698	1.19	1134.83	748	1.16	1194.24
649	1.56	1058.12	699	1.20	1136.03	749	1.15	1195.39
650	1.52	1059.64	700	1.21	1137.24	750	1.07	1196.46
651	1.66	1061.30	701	1.21	1138.45	751	1.06	1197.52
652	1.75	1063.05	702	1.18	1139.63	752	1.08	1198.60
653	1.70	1064.75	703	1.13	1140.76	753	1.06	1199.66
654	1.68	1066.43	704	1.16	1141.92	754	1.13	1200.79
655	1.67	1068.10	705	1.16	1143.08	755	1.18	1201.97
656	1.66	1069.76	706	1.11	1144.19	756	1.16	1203.13
657	1.69	1071.45	707	1.10	1145.29	757	1.10	1204.23
658	1.66	1073.11	708	1.08	1146.37	758	1.06	1205.29
659	1.59	1074.70	709	1.03	1147.40	759	1.07	1206.36
660	1.54	1076.24	710	.98	1148.38	760	1.09	1207.45
661	0.00	1077.88	711	0.00	1149.49	761	1.13	1208.58
662	0.00	1079.52	712	0.00	1150.60	762	1.11	1209.69
663	0.00	1081.16	713	0.00	1151.71	763	1.09	1210.78
664	0.00	1082.80	714	0.00	1152.82	764	1.10	1211.88
665	0.00	1084.44	715	0.00	1153.93	765	1.13	1213.01
666	0.00	1086.08	716	0.00	1155.04	766	1.06	1214.07
667	0.00	1087.72	717	0.00	1156.15	767	1.07	1215.14
668	0.00	1089.36	718	0.00	1157.26	768	1.07	1216.21
669	0.00	1091.00	719	0.00	1158.37	769	1.11	1217.32
670	0.00	1092.64	720	0.00	1159.48	770	1.11	1218.43
671	0.00	1094.28	721	0.00	1160.59	771	1.09	1219.52
672	0.00	1095.92	722	0.00	1161.70	772	1.09	1220.61
673	1.74	1097.56	723	0.00	1162.81	773	1.10	1221.71
674	1.75	1099.31	724	1.23	1163.92	774	1.10	1222.81
675	1.81	1101.12	725	1.21	1165.13	775	1.07	1223.88
676	1.80	1102.92	726	1.23	1'66.36	776	1.12	1225.00
677	1.78	1104.70	727	1.32	1167.68	777	1.15	1226.15
678	1.77	1106.47	728	1.31	1168.99	778	1.15	1227.30
679	1.74	1108.21	729	1.32	1170.31	779	1.13	1228.43

UE12n#8--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
780	1.11	1229.54	830	1.64	1297.74	880	2.19	1383.79
781	1.10	1230.64	831	1.63	1299.37	881	2.19	1385.98
782	1.10	1231.74	832	1.54	1300.91	882	2.19	1388.17
783	1.14	1232.88	833	1.52	1302.43	883	2.14	1390.31
784	1.19	1234.07	834	1.52	1303.95	884	2.10	1392.41
785	1.23	1235.30	835	1.53	1305.48	885	2.00	1394.41
786	1.23	1236.53	836	1.53	1307.01	886	1.89	1396.30
787	1.21	1237.74	837	1.50	1308.51	887	1.88	1398.18
788	1.17	1238.91	838	1.42	1309.93	888	1.90	1400.08
789	1.20	1240.11	839	1.44	1311.37	889	1.93	1402.01
790	1.24	1241.35	840	1.48	1312.85	890	1.98	1403.99
791	1.26	1242.61	841	1.48	1314.33	891	2.02	1406.01
792	1.28	1243.89	842	1.52	1315.85	892	2.20	1408.21
793	1.25	1245.14	843	1.56	1317.41	893	2.31	1410.52
794	1.21	1246.35	844	1.60	1319.01	894	2.34	1412.86
795	1.22	1247.57	845	1.59	1320.60	895	2.40	1415.26
796	0.00	1248.94	846	1.59	1322.19	896	2.35	1417.61
797	0.00	1250.31	847	1.56	1323.75	897	2.26	1419.87
798	0.00	1251.68	848	1.58	1325.33	898	2.20	1422.07
799	0.00	1253.05	849	1.62	1326.95	899	2.13	1424.20
800	0.00	1254.42	850	1.69	1328.64	900	2.10	1426.30
801	0.00	1255.79	851	1.71	1330.35	901	2.08	1428.38
802	0.00	1257.16	852	1.66	1332.01	902	2.07	1430.45
803	0.00	1258.53	853	1.64	1333.65	903	2.05	1432.50
804	0.00	1259.90	854	1.62	1335.27	904	2.03	1434.53
805	0.00	1261.27	855	1.62	1336.89	905	2.01	1436.54
806	0.00	1262.64	856	1.62	1338.51	906	1.95	1438.49
807	0.00	1264.01	857	1.69	1340.20	907	1.90	1440.39
808	0.00	1265.38	858	1.71	1341.91	908	1.95	1442.34
809	0.00	1266.75	859	1.86	1343.77	909	1.99	1444.33
810	0.00	1268.12	860	2.03	1345.80	910	1.99	1446.32
811	0.00	1269.49	861	2.01	1347.81	911	1.99	1448.31
812	0.00	1270.86	862	1.98	1349.79	912	1.94	1450.25
813	0.00	1272.23	863	1.83	1351.62	913	1.94	1452.19
814	0.00	1273.60	864	1.68	1353.30	914	1.97	1454.16
815	0.00	1274.97	865	1.63	1354.93	915	2.01	1456.17
816	0.00	1276.34	866	1.68	1356.61	916	2.16	1458.33
817	0.00	1277.71	867	1.72	1358.33	917	2.14	1460.47
818	1.51	1279.08	868	1.77	1360.10	918	2.08	1462.55
819	1.53	1280.61	869	1.79	1361.89	919	2.06	1464.61
820	1.56	1282.17	870	1.78	1363.67	920	2.03	1466.64
821	1.56	1283.73	871	1.77	1365.44	921	2.06	1468.70
822	1.55	1285.28	872	1.79	1367.23	922	2.09	1470.79
823	1.53	1286.81	873	1.81	1369.04	923	2.12	1472.91
824	1.55	1288.36	874	1.92	1370.96	924	2.07	1474.98
825	1.55	1289.91	875	1.96	1372.92	925	2.06	1477.04
826	1.54	1291.45	876	2.14	1375.06	926	2.01	1479.05
827	1.55	1293.00	877	2.21	1377.27	927	1.99	1481.04
828	1.54	1294.54	878	2.16	1379.43	928	1.95	1482.99
829	1.56	1296.10	879	2.17	1381.60	929	1.93	1484.92

UE12n#8--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
930	1.92	1486.84	980	1.75	1583.05	1030	1.94	1674.27
931	1.92	1488.76	981	1.74	1584.79	1031	1.93	1676.20
932	1.92	1490.68	982	1.74	1586.53	1032	1.93	1678.13
933	1.93	1492.61	983	1.76	1588.29	1033	1.89	1680.02
934	1.93	1494.54	984	1.82	1590.11	1034	1.89	1681.91
935	1.99	1496.53	985	1.91	1592.02	1035	1.92	1683.83
936	2.00	1498.53	986	1.91	1593.93	1036	1.92	1685.75
937	2.00	1500.53	987	1.91	1595.84	1037	1.94	1687.69
938	1.98	1502.51	988	1.85	1597.69	1038	1.94	1689.63
939	1.91	1504.42	989	1.81	1599.50	1039	1.92	1691.55
940	1.90	1506.32	990	1.77	1601.27	1040	1.91	1693.46
941	1.91	1508.23	991	1.71	1602.98	1041	1.91	1695.37
942	1.90	1510.13	992	1.69	1604.67	1042	1.91	1697.28
943	1.89	1512.02	993	1.67	1606.34	1043	1.91	1699.19
944	1.88	1513.90	994	1.70	1608.04	1044	1.92	1701.11
945	1.90	1515.80	995	1.79	1609.83	1045	1.91	1703.02
946	1.96	1517.76	996	1.78	1611.61	1046	1.92	1704.94
947	1.95	1519.71	997	1.82	1613.43	1047	1.93	1706.87
948	1.97	1521.68	998	1.90	1615.33	1048	1.93	1708.80
949	1.99	1523.67	999	1.90	1617.23	1049	1.92	1710.72
950	1.96	1525.63	1000	1.86	1619.09	1050	1.93	1712.65
951	1.89	1527.52	1001	1.82	1620.91	1051	1.91	1714.56
952	1.79	1529.31	1002	1.81	1622.72	1052	1.89	1716.45
953	1.81	1531.12	1003	1.77	1624.49	1053	1.90	1718.35
954	1.83	1532.95	1004	1.72	1626.21	1054	1.89	1720.24
955	2.00	1534.95	1005	1.68	1627.89	1055	1.86	1722.10
956	2.04	1536.99	1006	1.67	1629.56	1056	1.84	1723.94
957	2.03	1539.02	1007	1.64	1631.20	1057	1.87	1725.81
958	1.97	1540.99	1008	1.62	1632.82	1058	1.88	1727.69
959	1.90	1542.89	1009	1.61	1634.43	1059	1.91	1729.60
960	1.92	1544.81	1010	1.61	1636.04	1060	1.91	1731.51
961	1.99	1546.80	1011	1.60	1637.64	1061	1.93	1733.44
962	1.99	1548.79	1012	1.65	1639.29	1062	1.96	1735.40
963	2.01	1550.80	1013	1.80	1641.09	1063	1.97	1737.37
964	2.02	1552.82	1014	1.82	1642.91	1064	1.99	1739.36
965	2.00	1554.82	1015	1.98	1644.89	1065	2.00	1741.36
966	1.97	1556.79	1016	1.98	1646.87	1066	1.98	1743.34
967	1.95	1558.74	1017	1.95	1648.82	1067	1.98	1745.32
968	1.92	1560.66	1018	1.95	1650.77	1068	1.98	1747.30
969	1.92	1562.58	1019	1.98	1652.75	1069	1.98	1749.28
970	1.92	1564.50	1020	1.98	1654.73	1070	1.97	1751.25
971	1.95	1566.45	1021	1.98	1656.71	1071	1.94	1753.19
972	1.95	1568.40	1022	1.99	1658.70	1072	1.93	1755.12
973	1.94	1570.34	1023	2.00	1660.70	1073	1.93	1757.05
974	1.93	1572.27	1024	1.99	1662.69	1074	1.92	1758.97
975	1.88	1574.15	1025	1.93	1664.62	1075	1.91	1760.88
976	1.83	1575.98	1026	1.92	1666.54	1076	1.95	1762.83
977	1.79	1577.77	1027	1.92	1668.46	1077	1.97	1764.80
978	1.77	1579.54	1028	1.93	1670.39	1078	1.96	1766.76
979	1.76	1581.30	1029	1.94	1672.33	1079	1.99	1768.75

UE12n#8--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1080	2.00	1770.75	1130	2.00	1871.99	1180	1.97	1970.70
1081	2.01	1772.76	1131	2.00	1873.99	1181	1.98	1972.68
1082	2.02	1774.78	1132	2.04	1876.03	1182	2.03	1974.71
1083	2.04	1776.82	1133	2.05	1878.08	1183	2.02	1976.73
1084	2.03	1778.85	1134	2.03	1880.11	1184	2.01	1978.74
1085	2.02	1780.87	1135	2.01	1882.12	1185	1.98	1980.72
1086	2.02	1782.89	1136	1.97	1884.09	1186	1.95	1982.67
1087	2.02	1784.91	1137	1.96	1886.05	1187	1.98	1984.65
1088	2.01	1786.92	1138	2.01	1888.06	1188	2.00	1986.65
1089	2.09	1789.01	1139	2.00	1890.06	1189	2.02	1988.67
1090	2.15	1791.16	1140	1.99	1892.05	1190	1.97	1990.64
1091	2.14	1793.30	1141	1.96	1894.01	1191	1.94	1992.58
1092	2.14	1795.44	1142	1.94	1895.95	1192	1.93	1994.51
1093	2.13	1797.57	1143	1.92	1897.87	1193	1.89	1996.40
1094	2.11	1799.68	1144	1.91	1899.78	1194	1.89	1998.29
1095	2.08	1801.76	1145	1.87	1901.65	1195	1.91	2000.20
1096	2.07	1803.83	1146	1.86	1903.51	1196	1.93	2002.13
1097	2.09	1805.92	1147	1.86	1905.37	1197	1.93	2004.06
1098	2.06	1807.98	1148	1.90	1907.27	1198	1.92	2005.98
1099	2.01	1809.99	1149	1.93	1909.20	1199	1.96	2007.94
1100	1.99	1811.98	1150	2.00	1911.20	1200	1.94	2009.88
1101	1.97	1813.95	1151	2.04	1913.24	1201	1.93	2011.81
1102	1.96	1815.91	1152	2.08	1915.32	1202	1.93	2013.74
1103	1.94	1817.85	1153	2.10	1917.42	1203	1.94	2015.68
1104	1.91	1819.76	1154	2.08	1919.50	1204	1.93	2017.61
1105	1.88	1821.64	1155	2.05	1921.55	1205	1.93	2019.54
1106	1.93	1823.57	1156	2.05	1923.60	1206	1.94	2021.48
1107	1.97	1825.54	1157	2.04	1925.64	1207	1.95	2023.43
1108	2.00	1827.54	1158	2.01	1927.65	1208	1.96	2025.39
1109	2.00	1829.54	1159	1.99	1929.64	1209	1.94	2027.33
1110	2.00	1831.54	1160	2.00	1931.64	1210	1.94	2029.27
1111	2.00	1833.54	1161	2.07	1933.71	1211	1.94	2031.21
1112	2.00	1835.54	1162	2.08	1935.79	1212	1.95	2033.16
1113	2.00	1837.54	1163	2.08	1937.87	1213	1.94	2035.10
1114	1.99	1839.53	1164	2.09	1939.96	1214	1.95	2037.05
1115	1.96	1841.49	1165	2.07	1942.03	1215	1.95	2039.00
1116	2.00	1843.49	1166	1.99	1944.02	1216	1.97	2040.97
1117	2.00	1845.49	1167	1.92	1945.94	1217	2.00	2042.97
1118	2.03	1847.52	1168	1.90	1947.84	1218	1.98	2044.95
1119	2.02	1849.54	1169	1.88	1949.72	1219	1.97	2046.92
1120	2.02	1851.56	1170	1.88	1951.60	1220	1.96	2048.88
1121	2.00	1853.56	1171	1.87	1953.47	1221	1.93	2050.81
1122	2.00	1855.56	1172	1.86	1955.33	1222	1.93	2052.74
1123	2.05	1857.61	1173	1.87	1957.20	1223	1.94	2054.68
1124	2.07	1859.68	1174	1.88	1959.08	1224	1.93	2056.61
1125	2.07	1861.75	1175	1.88	1960.96	1225	1.93	2058.54
1126	2.07	1863.82	1176	1.89	1962.85	1226	1.91	2060.45
1127	2.07	1865.89	1177	1.92	1964.77	1227	1.92	2062.37
1128	2.07	1867.96	1178	1.99	1966.76	1228	1.93	2064.30
1129	2.03	1869.99	1179	1.97	1968.73	1229	1.93	2066.23

UE12n#8--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1230	1.93	2068.16	1280	1.76	2160.13	1330	2.10	2258.58
1231	1.93	2070.09	1281	1.79	2161.92	1331	2.07	2260.65
1232	1.90	2071.99	1282	1.84	2163.76	1332	2.05	2262.70
1233	1.86	2073.85	1283	1.92	2165.68	1333	2.05	2264.75
1234	1.82	2075.67	1284	1.89	2167.57	1334	2.05	2266.80
1235	1.80	2077.47	1285	1.87	2169.44	1335	2.04	2268.84
1236	1.77	2079.24	1286	1.93	2171.37	1336	2.03	2270.87
1237	1.81	2081.05	1287	1.93	2173.30	1337	2.01	2272.88
1238	1.79	2082.84	1288	1.99	2175.29	1338	1.99	2274.87
1239	1.79	2084.63	1289	1.98	2177.27	1339	1.98	2276.85
1240	1.82	2086.45	1290	1.98	2179.25	1340	1.99	2278.84
1241	1.85	2088.30	1291	1.97	2181.22	1341	1.98	2280.82
1242	1.86	2090.16	1292	1.95	2183.17	1342	2.04	2282.86
1243	1.89	2092.05	1293	1.93	2185.10	1343	1.97	2284.83
1244	1.91	2093.96	1294	1.96	2187.06	1344	1.97	2286.80
1244	1.91	2093.96	1294	1.96	2187.06			
1245	1.89	2095.85	1295	2.01	2189.07			
1246	1.85	2097.70	1296	2.03	2191.10			
1247	1.84	2099.54	1297	2.05	2193.15			
1248	1.82	2101.36	1298	2.05	2195.20			
1249	1.82	2103.18	1299	2.04	2197.24			
1250	1.84	2105.02	1300	2.05	2199.29			
1251	1.87	2106.89	1301	2.03	2201.32			
1252	1.89	2108.78	1302	1.97	2203.29			
1253	1.87	2110.65	1303	1.96	2205.25			
1254	1.90	2112.55	1304	1.94	2207.19			
1255	1.91	2114.46	1305	1.93	2209.12			
1256	1.90	2116.36	1306	1.92	2211.04			
1257	1.87	2118.23	1307	1.90	2212.94			
1258	1.85	2120.08	1308	1.88	2214.82			
1259	1.83	2121.91	1309	1.91	2216.73			
1260	1.81	2123.72	1310	1.92	2218.65			
1261	1.82	2125.54	1311	1.95	2220.60			
1262	1.85	2127.39	1312	1.96	2222.56			
1263	1.87	2129.26	1313	1.96	2224.52			
1264	1.87	2131.13	1314	1.96	2226.48			
1265	1.87	2133.00	1315	1.95	2228.43			
1266	1.87	2134.87	1316	1.95	2230.38			
1267	1.89	2136.76	1317	1.94	2232.32			
1268	1.87	2138.63	1318	1.93	2234.25			
1269	1.87	2140.50	1319	1.93	2236.18			
1270	1.84	2142.34	1320	1.95	2238.13			
1271	1.84	2144.18	1321	1.98	2240.11			
1272	1.85	2146.03	1322	1.99	2242.10			
1273	1.80	2147.83	1323	2.02	2244.12			
1274	1.77	2149.60	1324	2.04	2246.16			
1275	1.76	2151.36	1325	2.03	2248.19			
1276	1.75	2153.11	1326	2.05	2250.24			
1277	1.75	2154.86	1327	2.07	2252.31			
1278	1.75	2156.61	1328	2.08	2254.39			
1279	1.76	2158.37	1329	2.09	2256.48			

UE12n#9

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
4	2.13	0.00	54	2.09	108.97	104	1.46	192.85
5	2.17	2.17	55	2.08	111.04	105	1.46	194.31
6	2.20	4.38	56	2.16	113.20	106	1.44	195.75
7	2.17	6.55	57	2.16	115.36	107	1.45	197.20
8	2.20	8.75	58	2.12	117.48	108	1.43	198.63
9	2.28	11.03	59	2.08	119.57	109	1.41	200.04
10	2.29	13.31	60	2.07	121.64	110	1.40	201.45
11	2.31	15.62	61	2.04	123.68	111	1.40	202.84
12	2.48	18.11	62	1.98	125.67	112	1.41	204.25
13	2.51	20.61	63	1.93	127.60	113	1.41	205.66
14	2.44	23.06	64	1.88	129.48	114	1.40	207.06
15	2.39	25.45	65	1.71	131.19	115	1.39	208.46
16	2.35	27.80	66	1.61	132.80	116	1.40	209.86
17	2.30	30.10	67	1.56	134.36	117	1.40	211.26
18	2.28	32.38	68	1.54	135.89	118	1.39	212.65
19	2.23	34.61	69	0.00	137.45	119	1.39	214.04
20	2.09	36.70	70	0.00	139.01	120	1.40	215.45
21	0.00	38.79	71	0.00	140.56	121	1.42	216.87
22	0.00	40.88	72	0.00	142.12	122	1.42	218.29
23	0.00	42.98	73	0.00	143.68	123	1.37	219.67
24	0.00	45.07	74	1.58	145.24	124	1.37	221.04
25	0.00	47.16	75	1.58	146.81	125	1.37	222.41
26	2.10	49.26	76	1.68	148.49	126	1.37	223.77
27	2.15	51.41	77	1.68	150.16	127	1.39	225.16
28	2.16	53.57	78	1.73	151.90	128	1.40	226.55
29	2.17	55.74	79	1.74	153.64	129	1.40	227.96
30	2.18	57.91	80	1.74	155.38	130	1.38	229.34
31	2.16	60.08	81	1.72	157.10	131	1.41	230.74
32	2.16	62.23	82	1.69	158.79	132	1.42	232.17
33	2.18	64.41	83	1.67	160.45	133	1.44	233.60
34	2.20	66.61	84	1.65	162.10	134	1.46	235.07
35	2.17	68.79	85	1.64	163.75	135	1.50	236.56
36	2.16	70.94	86	1.63	165.38	136	1.49	238.05
37	2.14	73.08	87	1.61	166.99	137	1.45	239.50
38	2.12	75.20	88	1.60	168.58	138	1.40	240.90
39	2.13	77.33	89	1.60	170.18	139	1.49	242.38
40	2.05	79.38	90	1.59	171.78	140	1.49	243.88
41	0.00	81.47	91	1.55	173.33	141	1.44	245.32
42	0.00	83.57	92	1.55	174.88	142	1.38	246.70
43	0.00	85.66	93	1.53	176.41	143	1.33	248.04
44	0.00	87.75	94	1.53	177.94	144	1.35	249.38
45	0.00	89.85	95	1.52	179.47	145	1.45	250.84
46	2.14	91.94	96	1.51	180.97	146	1.47	252.30
47	2.13	94.07	97	1.50	182.47	147	1.53	253.84
48	2.13	96.21	98	1.51	183.99	148	1.56	255.40
49	2.13	98.34	99	1.51	185.50	149	1.57	256.97
50	2.13	100.47	100	1.49	186.99	150	1.57	258.54
51	2.15	102.62	101	1.48	188.47	151	1.57	260.11
52	2.15	104.76	102	1.47	189.93	152	1.59	261.70
53	2.11	106.88	103	1.46	191.39	153	1.63	263.33

UE12n#9--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
154	1.67	264.99	204	1.43	343.01	254	1.52	416.06
155	1.67	266.66	205	1.47	344.48	255	1.48	417.53
156	1.65	268.31	206	1.54	346.02	256	1.49	419.02
157	1.66	269.97	207	1.50	347.52	257	1.46	420.49
158	1.68	271.64	208	1.46	348.98	258	1.60	422.09
159	1.63	273.27	209	1.45	350.43	259	1.59	423.67
160	1.56	274.84	210	1.43	351.86	260	1.50	425.17
161	1.57	276.41	211	1.44	353.29	261	1.38	426.55
162	1.59	278.00	212	1.41	354.71	262	1.36	427.91
163	1.61	279.62	213	1.38	356.09	263	1.41	429.32
164	1.61	281.23	214	1.41	357.50	264	1.35	430.67
165	1.61	282.84	215	1.41	358.91	265	1.42	432.09
166	1.58	284.42	216	1.40	360.30	266	1.50	433.59
167	1.54	285.96	217	1.36	361.66	267	1.41	435.00
168	1.54	287.50	218	1.34	363.01	268	1.42	436.43
169	1.54	289.04	219	1.35	364.36	269	1.42	437.84
170	1.55	290.59	220	1.34	365.70	270	1.36	439.21
171	1.56	292.15	221	1.38	367.08	271	1.36	440.57
172	1.58	293.73	222	1.38	368.46	272	1.39	441.96
173	1.55	295.29	223	1.38	369.84	273	1.44	443.40
174	1.53	296.82	224	1.45	371.29	274	1.48	444.87
175	1.55	298.37	225	1.46	372.75	275	1.47	446.34
176	1.52	299.89	226	1.56	374.31	276	1.57	447.91
177	1.54	301.42	227	1.52	375.83	277	1.65	449.56
178	1.55	302.97	228	1.46	377.30	278	1.66	451.22
179	1.52	304.49	229	1.52	378.81	279	1.65	452.87
180	1.52	306.01	230	1.52	380.33	280	1.63	454.50
181	1.58	307.59	231	1.51	381.84	281	1.61	456.11
182	1.60	309.18	232	1.50	383.34	282	1.63	457.74
183	1.60	310.79	233	1.43	384.78	283	1.58	459.32
184	1.58	312.37	234	1.38	386.16	284	1.63	460.95
185	1.57	313.94	235	1.29	387.45	285	1.62	462.57
186	1.55	315.49	236	1.32	388.77	286	1.60	464.17
187	1.56	317.05	237	1.38	390.15	287	1.62	465.79
188	1.57	318.62	238	1.47	391.62	288	1.60	467.39
189	1.57	320.19	239	1.45	393.07	289	1.56	468.96
190	1.55	321.74	240	1.57	394.64	290	1.54	470.49
191	1.55	323.29	241	1.59	396.23	291	1.57	472.06
192	1.54	324.83	242	1.60	397.83	292	1.61	473.67
193	1.55	326.38	243	1.57	399.40	293	1.62	475.29
194	1.50	327.88	244	1.54	400.94	294	1.62	476.91
195	1.49	329.37	245	1.55	402.49	295	1.61	478.53
196	1.50	330.87	246	1.49	403.98	296	1.55	480.08
197	1.51	332.38	247	1.51	405.49	297	1.44	481.52
198	1.47	333.85	248	1.47	406.96	298	1.47	482.99
199	1.52	335.37	249	1.43	408.38	299	1.46	484.45
200	1.55	336.92	250	1.51	409.90	300	1.42	485.87
201	1.55	338.47	251	1.59	411.49	301	1.43	487.29
202	1.57	340.04	252	1.54	413.03	302	1.41	488.70
203	1.54	341.58	253	1.51	414.54	303	1.47	490.18

UE12n#9--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
304	1.64	491.81	354	1.64	572.77	404	1.64	653.23
305	1.65	493.46	355	1.61	574.39	405	1.55	654.78
306	1.65	495.11	356	1.58	575.97	406	1.64	656.42
307	1.64	496.75	357	1.56	577.53	407	1.64	658.07
308	1.67	498.43	358	1.46	578.99	408	1.77	659.84
309	1.67	500.09	359	1.39	580.38	409	1.77	661.61
310	1.64	501.74	360	1.40	581.77	410	1.76	663.37
311	1.66	503.40	361	1.47	583.24	411	1.74	665.10
312	1.60	504.99	362	1.63	584.87	412	1.75	666.85
313	1.55	506.55	363	1.63	586.49	413	1.77	668.62
314	1.56	508.11	364	1.60	588.09	414	1.77	670.39
315	1.60	509.71	365	1.59	589.69	415	1.77	672.16
316	1.56	511.27	366	1.59	591.27	416	1.78	673.94
317	1.52	512.79	367	1.67	592.94	417	1.77	675.71
318	1.60	514.39	368	1.65	594.59	418	1.76	677.47
319	1.69	516.09	369	1.73	596.32	419	1.76	679.22
320	1.69	517.77	370	1.73	598.04	420	1.76	680.98
321	1.67	519.44	371	1.72	599.77	421	1.83	682.81
322	1.65	521.10	372	1.73	601.50	422	1.84	684.65
323	1.64	522.73	373	1.66	603.16	423	1.82	686.47
324	1.58	524.31	374	1.66	604.82	424	1.79	688.26
325	1.61	525.92	375	1.67	606.49	425	1.82	690.08
326	1.66	527.58	376	1.65	608.15	426	1.81	691.89
327	1.67	529.24	377	1.64	609.78	427	1.75	693.64
328	1.64	530.89	378	1.65	611.43	428	1.77	695.41
329	1.60	532.48	379	1.67	613.10	429	1.76	697.18
330	1.63	534.11	380	1.70	614.80	430	1.61	698.79
331	1.61	535.72	381	1.71	616.51	431	1.51	700.30
332	1.65	537.37	382	1.72	618.23	432	1.46	701.77
333	1.62	538.99	383	1.69	619.92	433	1.48	703.25
334	1.57	540.56	384	1.69	621.61	434	1.51	704.76
335	1.60	542.16	385	1.57	623.18	435	1.52	706.28
336	1.63	543.80	386	1.53	624.71	436	1.56	707.84
337	1.64	545.44	387	1.52	626.23	437	1.66	709.50
338	1.61	547.05	388	1.51	627.74	438	1.81	711.31
339	1.62	548.68	389	1.59	629.33	439	1.86	713.17
340	1.68	550.36	390	1.63	630.96	440	1.81	714.98
341	1.64	552.00	391	1.56	632.52	441	1.66	716.63
342	1.60	553.60	392	1.57	634.08	442	1.62	718.25
343	1.63	555.23	393	1.55	635.63	443	1.64	719.89
344	1.60	556.83	394	1.50	637.13	444	1.67	721.56
345	1.53	558.36	395	1.56	638.70	445	1.64	723.20
346	1.49	559.85	396	1.63	640.33	446	1.65	724.85
347	1.62	561.47	397	1.64	641.96	447	1.52	726.37
348	1.62	563.09	398	1.63	643.60	448	1.46	727.83
349	1.62	564.71	399	1.45	645.05	449	1.47	729.30
350	1.61	566.32	400	1.54	646.58	450	1.49	730.79
351	1.63	567.95	401	1.64	648.22	451	1.61	732.40
352	1.58	569.53	402	1.68	649.91	452	1.58	733.98
353	1.61	571.14	403	1.68	651.59	453	1.54	735.52

UE12n#9--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
454	1.61	737.13	504	1.62	814.64	554	1.57	896.63
455	1.65	738.78	505	1.61	816.26	555	1.56	898.19
456	1.66	740.44	506	1.52	817.78	556	1.53	899.71
457	1.57	742.01	507	1.50	819.28	557	1.68	901.39
458	1.47	743.48	508	1.52	820.80	558	1.68	903.06
459	1.48	744.97	509	1.59	822.40	559	1.64	904.70
460	1.56	746.53	510	1.70	824.10	560	1.60	906.30
461	1.64	748.17	511	1.70	825.80	561	1.63	907.93
462	1.52	749.69	512	1.67	827.47	562	1.64	909.57
463	1.56	751.24	513	1.74	829.21	563	1.66	911.23
464	1.61	752.86	514	1.63	830.84	564	1.62	912.85
465	1.58	754.44	515	1.67	832.51	565	1.64	914.49
466	1.56	756.00	516	1.63	834.13	566	1.68	916.17
467	1.64	757.64	517	1.56	835.69	567	1.67	917.84
468	1.65	759.28	518	1.48	837.17	568	1.65	919.49
469	1.66	760.94	519	1.48	838.65	569	1.72	921.21
470	1.66	762.61	520	1.59	840.24	570	1.69	922.90
471	1.63	764.24	521	1.76	842.00	571	1.68	924.58
472	1.62	765.86	522	1.76	843.77	572	1.65	926.23
473	1.60	767.46	523	1.75	845.51	573	1.64	927.87
474	1.54	769.00	524	1.74	847.25	574	1.64	929.51
475	1.50	770.51	525	1.73	848.98	575	1.62	931.13
476	1.45	771.96	526	1.70	850.68	576	1.60	932.73
477	1.43	773.39	527	1.65	852.32	577	1.56	934.29
478	1.55	774.95	528	1.62	853.94	578	1.51	935.80
479	1.55	776.49	529	1.60	855.54	579	1.53	937.33
480	1.50	777.99	530	1.57	857.11	580	1.61	938.94
481	1.46	779.45	531	1.68	858.79	581	1.61	940.54
482	1.39	780.84	532	1.68	860.46	582	1.55	942.09
483	1.40	782.24	533	1.76	862.22	583	1.61	943.71
484	1.38	783.63	534	1.75	863.98	584	1.62	945.32
485	1.37	785.00	535	1.76	865.73	585	1.58	946.91
486	1.35	786.34	536	1.76	867.49	586	1.56	948.46
487	1.36	787.70	537	1.70	869.19	587	1.51	949.97
488	1.37	789.06	538	1.67	870.85	588	1.47	951.45
489	1.48	790.54	539	1.62	872.47	589	1.44	952.89
490	1.67	792.21	540	1.59	874.06	590	1.42	954.31
491	1.63	793.84	541	1.69	875.75	591	1.45	955.76
492	1.70	795.53	542	1.66	877.41	592	1.46	957.22
493	1.75	797.28	543	1.67	879.08	593	1.64	958.86
494	1.68	798.96	544	1.71	880.80	594	1.64	960.50
495	1.63	800.59	545	1.70	882.50	595	1.61	962.11
496	1.63	802.22	546	1.67	884.16	596	1.53	963.64
497	1.66	803.88	547	1.62	885.79	597	1.53	965.16
498	1.55	805.42	548	1.60	887.39	598	1.55	966.72
499	1.45	806.87	549	1.58	888.97	599	1.51	968.23
500	1.42	808.29	550	1.54	890.52	600	1.47	969.70
501	1.53	809.81	551	1.51	892.03	601	1.44	971.13
502	1.61	811.42	552	1.50	893.53	602	1.50	972.63
503	1.60	813.02	553	1.53	895.05	603	1.62	974.25

UE12n#9--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
604	1.63	975.88	654	1.41	1052.27	704	1.25	1119.57
605	1.60	977.48	655	1.35	1053.62	705	1.26	1120.83
606	1.69	979.17	656	1.31	1054.93	706	1.31	1122.14
607	1.68	980.84	657	1.31	1056.24	707	1.26	1123.40
608	1.64	982.48	658	1.30	1057.54	708	1.27	1124.67
609	1.54	984.02	659	1.30	1058.84	709	1.33	1126.00
610	1.58	985.61	660	1.32	1060.16	710	1.28	1127.28
611	1.58	987.19	661	1.32	1061.48	711	1.30	1128.58
612	1.65	988.84	662	1.34	1062.82	712	1.27	1129.85
613	1.59	990.44	663	1.31	1064.13	713	1.27	1131.12
614	1.55	991.98	664	1.29	1065.42	714	1.29	1132.41
615	1.53	993.51	665	1.30	1066.72	715	1.29	1133.70
616	1.54	995.05	666	1.29	1068.01	716	1.27	1134.97
617	1.53	996.58	667	1.31	1069.32	717	1.27	1136.24
618	1.60	998.18	668	1.34	1070.66	718	1.29	1137.53
619	1.62	999.80	669	1.33	1071.99	719	1.30	1138.83
620	1.62	1001.42	670	1.34	1073.33	720	1.31	1140.14
621	1.53	1002.95	671	1.39	1074.72	721	1.32	1141.46
622	1.46	1004.41	672	1.50	1076.22	722	1.36	1142.82
623	1.54	1005.95	673	1.46	1077.68	723	1.36	1144.18
624	1.67	1007.62	674	1.44	1079.12	724	1.33	1145.51
625	1.70	1009.32	675	1.41	1080.53	725	1.36	1146.87
626	1.69	1011.01	676	1.40	1081.93	726	1.36	1148.23
627	1.67	1012.68	677	1.42	1083.35	727	1.32	1149.55
628	1.69	1014.37	678	1.47	1084.82	728	1.33	1150.88
629	1.69	1016.06	679	1.44	1086.26	729	1.34	1152.22
630	1.66	1017.72	680	1.39	1087.65	730	1.35	1153.57
631	1.66	1019.38	681	1.38	1089.03	731	1.36	1154.93
632	1.64	1021.02	682	1.50	1090.53	732	1.40	1156.33
633	1.60	1022.62	683	1.49	1092.02	733	1.39	1157.72
634	1.57	1024.19	684	1.48	1093.50	734	1.40	1159.12
635	1.57	1025.76	685	1.43	1094.93	735	1.36	1160.48
636	1.55	1027.31	686	1.41	1096.34	736	1.31	1161.79
637	1.53	1028.84	687	1.38	1097.72	737	1.28	1163.07
638	1.51	1030.35	688	1.33	1099.05	738	1.32	1164.39
639	1.48	1031.83	689	1.29	1100.34	739	1.30	1165.69
640	1.47	1033.30	690	1.28	1101.62	740	1.29	1166.98
641	1.43	1034.73	691	1.27	1102.89	741	1.29	1168.27
642	1.41	1036.14	692	1.28	1104.17	742	1.30	1169.57
643	1.37	1037.51	693	1.28	1105.45	743	1.33	1170.90
644	1.35	1038.86	694	1.30	1106.75	744	1.30	1172.20
645	1.30	1040.16	695	1.31	1108.06	745	1.28	1173.48
646	1.31	1041.47	696	1.29	1109.35	746	1.27	1174.75
647	1.34	1042.81	697	1.29	1110.64	747	1.27	1176.02
648	1.38	1044.19	698	1.28	1111.92	748	1.27	1177.29
649	1.31	1045.50	699	1.31	1113.23	749	1.27	1178.56
650	1.31	1046.81	700	1.32	1114.55	750	1.30	1179.86
651	1.34	1048.15	701	1.27	1115.82	751	1.34	1181.20
652	1.34	1049.49	702	1.26	1117.08	752	1.37	1182.57
653	1.37	1050.86	703	1.24	1118.32	753	1.33	1183.90

UE12n#9--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
754	1.35	1185.25	804	1.33	1257.11	854	1.96	1339.04
755	1.35	1186.60	805	1.32	1258.43	855	1.94	1340.98
756	1.35	1187.95	806	1.33	1259.76	856	1.90	1342.88
757	1.37	1189.32	807	1.37	1261.13	857	1.91	1344.79
758	1.36	1190.68	808	1.55	1262.68	858	1.80	1346.59
759	1.32	1192.00	809	1.55	1264.23	859	1.80	1348.39
760	1.32	1193.32	810	1.46	1265.69	860	1.94	1350.33
761	1.33	1194.65	811	1.51	1267.20	861	1.90	1352.23
762	1.34	1195.99	812	1.62	1268.82	862	1.87	1354.10
763	1.35	1197.34	813	1.62	1270.44	863	1.88	1355.98
764	1.37	1198.71	814	1.59	1272.03	864	1.90	1357.88
765	1.48	1200.19	815	1.58	1273.61	865	1.88	1359.76
766	1.47	1201.66	816	1.56	1275.17	866	1.92	1361.68
767	1.38	1203.04	817	1.49	1276.66	867	1.85	1363.53
768	1.30	1204.34	818	1.46	1278.12	868	1.82	1365.35
769	1.30	1205.64	819	1.41	1279.53	869	1.86	1367.21
770	1.35	1206.99	820	1.45	1280.98	870	1.93	1369.14
771	1.36	1208.35	821	1.42	1282.40	871	1.69	1370.83
772	1.35	1209.70	822	1.41	1283.81	872	1.69	1372.52
773	1.34	1211.04	823	1.40	1285.21	873	1.69	1374.21
774	1.38	1212.42	824	1.39	1286.60	874	1.66	1375.87
775	1.40	1213.82	825	1.39	1287.99	875	1.88	1377.75
776	1.54	1215.36	826	1.40	1289.39	876	1.87	1379.62
777	1.51	1216.87	827	1.46	1290.85	877	1.86	1381.48
778	1.43	1218.30	828	1.67	1292.52	878	1.83	1383.31
779	1.42	1219.72	829	1.78	1294.30	879	1.81	1385.12
780	1.44	1221.16	830	2.01	1296.31	880	1.81	1386.93
781	1.45	1222.61	831	2.03	1298.34	881	1.75	1388.68
782	1.51	1224.12	832	2.02	1300.36	882	1.72	1390.40
783	1.55	1225.67	833	2.02	1302.38	883	1.60	1392.00
784	1.53	1227.20	834	2.10	1304.48	884	1.56	1393.56
785	1.50	1228.70	835	2.06	1306.54	885	1.60	1395.16
786	1.53	1230.23	836	1.84	1308.38	886	1.85	1397.01
787	1.54	1231.77	837	1.77	1310.15	887	1.86	1398.87
788	1.57	1233.34	838	1.72	1311.87	888	1.88	1400.75
789	1.62	1234.96	839	1.74	1313.61	889	1.95	1402.70
790	1.67	1236.63	840	1.79	1315.40	890	1.92	1404.62
791	1.67	1238.30	841	1.81	1317.21	891	1.70	1406.32
792	1.58	1239.88	842	1.78	1318.99	892	1.63	1407.95
793	1.55	1241.43	843	1.76	1320.75	893	1.60	1409.55
794	1.48	1242.91	844	1.74	1322.49	894	1.51	1411.06
795	1.44	1244.35	845	1.69	1324.18	895	1.54	1412.60
796	1.42	1245.77	846	1.65	1325.83	896	1.74	1414.34
797	1.43	1247.20	847	1.69	1327.52	897	1.85	1416.19
798	1.47	1248.67	848	1.84	1329.36	898	1.85	1418.04
799	1.47	1250.14	849	1.75	1331.11	899	1.90	1419.94
800	1.47	1251.61	850	1.62	1332.73	900	1.77	1421.71
801	1.45	1253.06	851	1.48	1334.21	901	1.90	1423.61
802	1.38	1254.44	852	1.40	1335.61	902	1.90	1425.51
803	1.34	1255.78	853	1.47	1337.08	903	1.86	1427.37

UE12n#9--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
904	1.82	1429.19	954	1.46	1512.13	1004	1.54	1594.64
905	1.83	1431.02	955	1.43	1513.56	1005	1.56	1596.20
906	1.83	1432.85	956	1.38	1514.94	1006	1.61	1597.81
907	1.76	1434.61	957	1.36	1516.30	1007	1.70	1599.51
908	1.71	1436.32	958	1.38	1517.68	1008	1.92	1601.43
909	1.59	1437.91	959	1.53	1519.21	1009	1.91	1603.34
910	1.66	1439.57	960	1.66	1520.87	1010	1.75	1605.09
911	1.75	1441.32	961	1.49	1522.36	1011	1.74	1606.83
912	1.79	1443.11	962	1.38	1523.74	1012	1.78	1608.61
913	1.78	1444.89	963	1.35	1525.09	1013	1.77	1610.38
914	1.80	1446.69	964	1.36	1526.45	1014	1.80	1612.18
915	1.64	1448.33	965	1.36	1527.81	1015	1.85	1614.03
916	1.48	1449.81	966	1.58	1529.39	1016	1.84	1615.87
917	1.50	1451.31	967	1.78	1531.17	1017	1.69	1617.56
918	1.53	1452.84	968	1.81	1532.98	1018	1.73	1619.29
919	1.58	1454.42	969	1.89	1534.87	1019	1.72	1621.01
920	1.59	1456.01	970	1.88	1536.75	1020	1.76	1622.77
921	1.56	1457.57	971	1.86	1538.61	1021	1.81	1624.58
922	1.55	1459.12	972	1.83	1540.44	1022	1.86	1626.44
923	1.52	1460.64	973	1.77	1542.21	1023	1.80	1628.24
924	1.46	1462.10	974	1.81	1544.02	1024	1.80	1630.04
925	1.40	1463.50	975	1.80	1545.82	1025	1.79	1631.83
926	1.72	1465.22	976	1.77	1547.59	1026	1.76	1633.59
927	1.71	1466.93	977	1.75	1549.34	1027	1.77	1635.36
928	1.71	1468.64	978	1.82	1551.16	1028	1.78	1637.14
929	1.70	1470.34	979	1.75	1552.91	1029	1.82	1638.96
930	1.69	1472.03	980	1.74	1554.65	1030	1.77	1640.73
931	1.69	1473.72	981	1.52	1556.17	1031	1.81	1642.54
932	1.78	1475.50	982	1.63	1557.80	1032	1.85	1644.39
933	1.70	1477.20	983	1.73	1559.53	1033	1.81	1646.20
934	1.47	1478.67	984	1.72	1561.25	1034	1.76	1647.96
935	1.39	1480.06	985	1.66	1562.91	1035	1.80	1649.76
936	1.39	1481.45	986	1.68	1564.59	1036	1.84	1651.60
937	1.58	1483.03	987	1.72	1566.31	1037	1.87	1653.47
938	1.64	1484.67	988	1.76	1568.07	1038	1.86	1655.33
939	1.61	1486.28	989	1.69	1569.76	1039	1.81	1657.14
940	1.55	1487.83	990	1.69	1571.45	1040	1.76	1658.90
941	1.65	1489.48	991	1.73	1573.18	1041	1.78	1660.68
942	1.88	1491.36	992	1.80	1574.98	1042	1.83	1662.51
943	1.90	1493.26	993	1.86	1576.84	1043	1.86	1664.37
944	1.87	1495.13	994	1.90	1578.74	1044	1.84	1666.21
945	1.88	1497.01	995	1.87	1580.61	1045	1.83	1668.04
946	1.93	1498.94	996	1.80	1582.41	1046	1.77	1669.81
947	2.03	1500.97	997	1.64	1584.05	1047	1.74	1671.55
948	2.00	1502.97	998	1.50	1585.55	1048	1.77	1673.32
949	1.88	1504.85	999	1.45	1587.00	1049	1.76	1675.08
950	1.49	1506.34	1000	1.49	1588.49	1050	1.75	1676.83
951	1.46	1507.80	1001	1.53	1590.02	1051	1.75	1678.58
952	1.45	1509.25	1002	1.54	1591.56	1052	1.71	1680.29
953	1.42	1510.67	1003	1.54	1593.10	1053	1.76	1682.05

UE12n#9--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1054	1.74	1683.79	1104	1.89	1775.10	1154	1.94	1868.34
1055	1.72	1685.51	1105	1.91	1777.01	1155	1.91	1870.25
1056	1.73	1687.24	1106	1.90	1778.91	1156	1.90	1872.15
1057	1.74	1688.98	1107	1.89	1780.80	1157	1.88	1874.03
1058	1.70	1690.68	1108	1.87	1782.67	1158	1.89	1875.92
1059	1.69	1692.37	1109	1.88	1784.55	1159	1.87	1877.79
1060	1.70	1694.07	1110	1.81	1786.36	1160	1.89	1879.68
1061	1.76	1695.83	1111	1.83	1788.19	1161	1.88	1881.56
1062	1.76	1697.59	1112	1.83	1790.02	1162	1.88	1883.44
1063	1.75	1699.34	1113	1.75	1791.77	1163	1.88	1885.32
1064	1.81	1701.15	1114	1.72	1793.49	1164	1.92	1887.24
1065	1.85	1703.00	1115	1.74	1795.23	1165	1.93	1889.17
1066	1.90	1704.90	1116	1.87	1797.10	1166	1.94	1891.11
1067	1.87	1706.77	1117	1.83	1798.93	1167	1.95	1893.06
1068	1.84	1708.61	1118	1.73	1800.66	1168	1.95	1895.01
1069	1.82	1710.43	1119	1.73	1802.39	1169	1.91	1896.92
1070	1.87	1712.30	1120	1.92	1804.31	1170	1.89	1898.81
1071	1.85	1714.15	1121	2.00	1806.31	1171	1.87	1900.68
1072	1.83	1715.98	1122	1.93	1808.24	1172	1.85	1902.53
1073	1.87	1717.85	1123	1.86	1810.10	1173	1.83	1904.36
1074	1.82	1719.67	1124	1.88	1811.98	1174	1.79	1906.15
1075	1.81	1721.48	1125	1.90	1813.88	1175	1.81	1907.96
1076	1.79	1723.27	1126	1.87	1815.75	1176	1.82	1909.78
1077	1.79	1725.06	1127	1.85	1817.60	1177	1.83	1911.61
1078	1.85	1726.91	1128	1.83	1819.43	1178	1.82	1913.43
1079	1.84	1728.75	1129	1.81	1821.24	1179	1.83	1915.26
1080	1.86	1730.61	1130	1.78	1823.02	1180	1.83	1917.09
1081	1.84	1732.45	1131	1.76	1824.78	1181	1.81	1918.90
1082	1.82	1734.27	1132	1.71	1826.49	1182	1.80	1920.70
1083	1.82	1736.09	1133	1.72	1828.21	1183	1.84	1922.54
1084	1.80	1737.89	1134	1.76	1829.97	1184	1.77	1924.31
1085	1.78	1739.67	1135	1.82	1831.79	1185	1.76	1926.07
1086	1.73	1741.40	1136	1.86	1833.65	1186	1.78	1927.85
1087	1.72	1743.12	1137	1.90	1835.55	1187	1.77	1929.62
1088	1.72	1744.84	1138	1.90	1837.45	1188	1.79	1931.41
1089	1.77	1746.61	1139	1.89	1839.34	1189	1.77	1933.18
1090	1.83	1748.44	1140	1.88	1841.22	1190	1.84	1935.02
1091	1.83	1750.27	1141	1.93	1843.15	1191	1.85	1936.87
1092	1.95	1752.22	1142	1.90	1845.05	1192	1.87	1938.74
1093	1.97	1754.19	1143	1.88	1846.93	1193	1.86	1940.60
1094	1.92	1756.11	1144	1.93	1848.86	1194	1.87	1942.47
1095	1.90	1758.01	1145	1.93	1850.79	1195	1.86	1944.33
1096	1.90	1759.91	1146	1.92	1852.71	1196	1.85	1946.18
1097	1.87	1761.78	1147	1.90	1854.61	1197	1.84	1948.02
1098	1.90	1763.68	1148	1.91	1856.52	1198	1.84	1949.86
1099	1.92	1765.60	1149	1.90	1858.42	1199	1.82	1951.68
1100	1.94	1767.54	1150	1.99	1860.41	1200	1.78	1953.46
1101	1.91	1769.45	1151	2.01	1862.42	1201	1.80	1955.26
1102	1.91	1771.36	1152	2.01	1864.43	1202	1.77	1957.03
1103	1.85	1773.21	1153	1.97	1866.40	1203	1.80	1958.83

UE12n#9--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1204	1.75	1960.58	1254	1.98	2054.02	1304	0.00	2148.31
1205	1.80	1962.38	1255	1.98	2056.00	1305	0.00	2150.17
1206	1.84	1964.22	1256	1.99	2057.99	1306	1.80	2152.03
1207	1.80	1966.02	1257	2.00	2059.99	1307	1.83	2153.86
1208	1.84	1967.86	1258	2.00	2061.99	1308	1.89	2155.75
1209	1.82	1969.68	1259	1.98	2063.97	1309	1.89	2157.64
1210	1.72	1971.40	1260	1.95	2065.92	1310	1.87	2159.51
1211	1.74	1973.14	1261	1.93	2067.85	1311	1.86	2161.37
1212	1.77	1974.91	1262	1.85	2069.70	1312	1.86	2163.23
1213	1.77	1976.68	1263	1.86	2071.56	1313	1.87	2165.10
1214	1.75	1978.43	1264	1.88	2073.44	1314	1.89	2166.99
1215	1.81	1980.24	1265	1.89	2075.33	1315	1.84	2168.83
1216	1.83	1982.07	1266	1.91	2077.24	1316	1.87	2170.70
1217	1.86	1983.93	1267	1.86	2079.10	1317	1.89	2172.59
1218	1.86	1985.79	1268	1.83	2080.93	1318	1.92	2174.51
1219	1.83	1987.62	1269	1.84	2082.77	1319	1.88	2176.39
1220	1.81	1989.43	1270	1.95	2084.72	1320	1.85	2178.24
1221	1.86	1991.29	1271	1.89	2086.61	1321	1.86	2180.10
1222	1.91	1993.20	1272	1.89	2088.50	1322	1.88	2181.98
1223	1.88	1995.08	1273	1.88	2090.38	1323	1.90	2183.88
1224	1.87	1996.95	1274	1.90	2092.28	1324	1.90	2185.78
1225	1.81	1998.76	1275	1.89	2094.17	1325	1.86	2187.64
1226	1.81	2000.57	1276	1.86	2096.03	1326	1.83	2189.47
1227	1.80	2002.37	1277	1.86	2097.89	1327	1.82	2191.29
1228	1.90	2004.27	1278	1.88	2099.77	1328	1.86	2193.15
1229	1.91	2006.18	1279	1.90	2101.67	1329	1.89	2195.04
1230	1.93	2008.11	1280	1.92	2103.59	1330	1.95	2196.99
1231	1.90	2010.01	1281	1.92	2105.51	1331	1.91	2198.90
1232	1.87	2011.88	1282	1.90	2107.41	1332	1.94	2200.84
1233	1.86	2013.74	1283	1.89	2109.30	1333	1.98	2202.82
1234	1.89	2015.63	1284	1.88	2111.18	1334	1.93	2204.75
1235	1.89	2017.52	1285	1.87	2113.05	1335	1.93	2206.68
1236	1.89	2019.41	1286	1.85	2114.90	1336	1.94	2208.62
1237	1.92	2021.33	1287	1.83	2116.73	1337	1.91	2210.53
1238	1.90	2023.23	1288	1.78	2118.51	1338	1.89	2212.42
1239	1.92	2025.15	1289	1.83	2120.34	1339	1.85	2214.27
1240	1.90	2027.05	1290	1.82	2122.16	1340	1.94	2216.21
1241	1.91	2028.96	1291	1.86	2124.02	1341	1.92	2218.13
1242	1.95	2030.91	1292	1.86	2125.88	1342	1.89	2220.02
1243	1.95	2032.86	1293	1.89	2127.77	1343	1.83	2221.85
1244	1.94	2034.80	1294	1.86	2129.63	1344	1.82	2223.67
1245	1.92	2036.72	1295	1.89	2131.52	1345	1.83	2225.50
1246	1.86	2038.58	1296	1.89	2133.41	1346	1.86	2227.36
1247	1.86	2040.44	1297	1.82	2135.23	1347	1.90	2229.26
1248	1.88	2042.32	1298	1.85	2137.08	1348	1.89	2231.15
1249	1.94	2044.26	1299	1.86	2138.94	1349	1.89	2233.04
1250	1.90	2046.16	1300	1.93	2140.87	1350	1.92	2234.96
1251	1.94	2048.10	1301	0.00	2142.73	1351	1.93	2236.89
1252	1.96	2050.06	1302	0.00	2144.59	1352	1.94	2238.83
1253	1.98	2052.04	1303	0.00	2146.45	1353	1.92	2240.75

UE12n#9--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1354	1.90	2242.65	1404	1.89	2336.68	1454	0.00	2443.67
1355	1.87	2244.52	1405	1.90	2338.58	1455	0.00	2446.00
1356	1.86	2246.38	1406	1.91	2340.49	1456	2.48	2448.33
1357	1.86	2248.24	1407	1.92	2342.41	1457	2.49	2450.82
1358	1.86	2250.10	1408	1.94	2344.35	1458	2.52	2453.34
1359	1.89	2251.99	1409	1.95	2346.30	1459	2.53	2455.87
1360	1.87	2253.86	1410	1.95	2348.25	1460	2.40	2458.27
1361	1.86	2255.72	1411	1.93	2350.18	1461	2.40	2460.67
1362	1.90	2257.62	1412	1.92	2352.10	1462	2.50	2463.17
1363	1.86	2259.48	1413	1.93	2354.03	1463	2.68	2465.85
1364	1.85	2261.33	1414	1.90	2355.93	1464	2.71	2468.56
1365	1.86	2263.19	1415	1.88	2357.81	1465	2.70	2471.26
1366	0.00	2265.04	1416	1.90	2359.71	1466	2.65	2473.91
1367	0.00	2266.89	1417	1.90	2361.61	1467	2.66	2476.57
1368	0.00	2268.74	1418	1.88	2363.49	1468	2.61	2479.18
1369	0.00	2270.59	1419	1.90	2365.39	1469	2.76	2481.94
1370	0.00	2272.44	1420	2.00	2367.39	1470	2.86	2484.80
1371	0.00	2274.29	1421	2.02	2369.41	1471	2.84	2487.64
1372	0.00	2276.14	1422	2.03	2371.44	1472	2.79	2490.43
1373	1.84	2277.99	1423	2.05	2373.49	1473	2.74	2493.17
1374	1.84	2279.83	1424	2.06	2375.55	1474	2.69	2495.86
1375	1.86	2281.69	1425	2.07	2377.62	1475	2.69	2498.55
1376	1.87	2283.56	1426	2.08	2379.70	1476	2.76	2501.31
1377	1.84	2285.40	1427	2.13	2381.83	1477	2.82	2504.13
1378	1.85	2287.25	1428	2.15	2383.98	1478	2.82	2506.95
1379	1.87	2289.12	1429	2.17	2386.15	1479	2.87	2509.82
1380	1.88	2291.00	1430	2.18	2388.33	1480	2.85	2512.67
1381	1.87	2292.87	1431	2.16	2390.49	1481	2.89	2515.56
1382	1.84	2294.71	1432	2.17	2392.66	1482	2.91	2518.47
1383	1.84	2296.55	1433	2.22	2394.88	1483	2.90	2521.37
1384	1.92	2298.47	1434	2.19	2397.07	1484	2.83	2524.20
1385	1.89	2300.36	1435	0.00	2399.40	1485	2.82	2527.02
1386	1.90	2302.26	1436	0.00	2401.73	1486	2.80	2529.82
1387	1.88	2304.14	1437	0.00	2404.06	1487	2.64	2532.46
1388	1.88	2306.02	1438	0.00	2406.39	1488	2.65	2535.11
1389	1.88	2307.90	1439	0.00	2408.72	1489	2.67	2537.78
1390	1.90	2309.80	1440	0.00	2411.05	1490	2.72	2540.50
1391	1.91	2311.71	1441	0.00	2413.38	1491	2.86	2543.36
1392	1.91	2313.62	1442	0.00	2415.71	1492	2.94	2546.30
1393	1.90	2315.52	1443	0.00	2418.04	1493	2.93	2549.23
1394	1.91	2317.43	1444	0.00	2420.37	1494	2.92	2552.15
1395	1.93	2319.36	1445	0.00	2422.70	1495	2.82	2554.97
1396	1.93	2321.29	1446	0.00	2425.03	1496	2.77	2557.74
1397	1.92	2323.21	1447	0.00	2427.36	1497	0.00	2560.34
1398	1.92	2325.13	1448	0.00	2429.69	1498	0.00	2562.94
1399	1.95	2327.08	1449	0.00	2432.02	1499	0.00	2565.54
1400	1.96	2329.04	1450	0.00	2434.35	1500	0.00	2568.14
1401	1.92	2330.96	1451	0.00	2436.68	1501	0.00	2570.74
1402	1.92	2332.88	1452	0.00	2439.01	1502	0.00	2573.34
1403	1.91	2334.79	1453	0.00	2441.34	1503	0.00	2575.94

UE12n#9--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1504	0.00	2578.54						
1505	0.00	2581.14						
1506	0.00	2583.74						
1507	0.00	2586.34						
1508	0.00	2588.94						
1509	0.00	2591.54						
1510	0.00	2594.14						
1511	0.00	2596.74						
1512	0.00	2599.34						
1513	0.00	2601.94						
1514	2.43	2604.54						
1515	2.43	2606.97						
1516	2.55	2609.52						
1517	2.51	2612.03						
1518	2.54	2614.57						
1519	2.56	2617.13						
1520	2.53	2619.66						
1521	2.52	2622.18						
1522	2.44	2624.62						
1523	2.42	2627.04						
1524	2.36	2629.40						

UE12n#10

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
22	1.90	0.00	72	2.06	102.08	122	1.48	185.26
23	1.95	1.95	73	1.92	104.00	123	1.47	186.73
24	1.95	3.90	74	1.76	105.76	124	1.40	188.13
25	1.96	5.86	75	0.00	107.46	125	1.39	189.52
26	2.00	7.86	76	0.00	109.16	126	1.37	190.89
27	2.02	9.88	77	0.00	110.85	127	1.35	192.24
28	2.04	11.92	78	0.00	112.55	128	1.34	193.57
29	2.06	13.98	79	0.00	114.25	129	1.34	194.91
30	2.12	16.10	80	0.00	115.95	130	1.35	196.26
31	2.13	18.23	81	0.00	117.65	131	1.34	197.60
32	2.13	20.36	82	0.00	119.34	132	1.33	198.93
33	2.13	22.49	83	0.00	121.04	133	1.32	200.26
34	2.11	24.60	84	1.64	122.74	134	1.29	201.55
35	2.11	26.71	85	1.88	124.62	135	1.29	202.83
36	2.11	28.82	86	1.88	126.50	136	1.31	204.15
37	2.10	30.92	87	1.94	128.45	137	1.31	205.46
38	2.09	33.01	88	2.05	130.49	138	1.29	206.75
39	2.07	35.07	89	2.03	132.52	139	1.30	208.05
40	1.99	37.07	90	1.95	134.47	140	1.30	209.34
41	0.00	39.07	91	1.86	136.33	141	1.28	210.63
42	0.00	41.07	92	1.79	138.12	142	1.27	211.90
43	0.00	43.07	93	1.73	139.84	143	1.28	213.17
44	0.00	45.08	94	1.66	141.50	144	1.33	214.50
45	0.00	47.08	95	1.70	143.20	145	1.35	215.85
46	0.00	49.08	96	1.78	144.98	146	1.37	217.22
47	0.00	51.09	97	1.73	146.71	147	1.41	218.63
48	0.00	53.09	98	1.72	148.43	148	1.39	220.02
49	0.00	55.09	99	1.71	150.15	149	1.43	221.45
50	0.00	57.09	100	1.69	151.83	150	1.42	222.87
51	0.00	59.10	101	1.64	153.48	151	1.39	224.26
52	0.00	61.10	102	1.62	155.09	152	1.37	225.63
53	0.00	63.10	103	1.59	156.68	153	1.36	226.99
54	0.00	65.11	104	1.59	158.27	154	1.33	228.33
55	0.00	67.11	105	1.60	159.87	155	1.32	229.64
56	0.00	69.11	106	1.58	161.45	156	1.35	230.99
57	0.00	71.11	107	1.57	163.03	157	1.37	232.36
58	2.01	73.12	108	1.55	164.58	158	1.47	233.83
59	2.01	75.12	109	1.53	166.12	159	1.46	235.29
60	1.99	77.11	110	1.51	167.63	160	1.46	236.75
61	1.90	79.01	111	1.50	169.13	161	1.46	238.21
62	1.92	80.93	112	1.49	170.62	162	1.45	239.65
63	2.01	82.95	113	1.48	172.10	163	1.41	241.06
64	2.01	84.96	114	1.48	173.59	164	1.33	242.39
65	2.03	86.98	115	1.48	175.06	165	1.28	243.67
66	2.06	89.04	116	1.48	176.54	166	1.17	244.85
67	2.20	91.23	117	1.43	177.97	167	1.18	246.03
68	2.24	93.47	118	1.43	179.41	168	1.27	247.30
69	2.23	95.70	119	1.44	180.85	169	1.36	248.66
70	2.18	97.88	120	1.46	182.31	170	1.37	250.03
71	2.14	100.02	121	1.47	183.78	171	1.44	251.47

UE12n#10--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
172	1.43	252.90	222	1.40	322.14	272	1.49	400.05
173	1.40	254.29	223	1.36	323.50	273	1.48	401.54
174	1.37	255.66	224	1.35	324.84	274	1.49	403.03
175	1.38	257.05	225	1.36	326.20	275	1.54	404.57
176	1.31	258.35	226	1.41	327.61	276	1.54	406.11
177	1.31	259.67	227	1.53	329.14	277	1.51	407.62
178	1.33	261.00	228	1.57	330.71	278	1.55	409.18
179	1.32	262.32	229	1.54	332.26	279	1.60	410.78
180	1.48	263.80	230	1.54	333.79	280	1.56	412.34
181	1.46	265.26	231	1.46	335.25	281	1.57	413.90
182	1.40	266.66	232	1.45	336.70	282	1.51	415.42
183	1.34	268.01	233	1.49	338.19	283	1.48	416.90
184	0.00	269.30	234	1.63	339.82	284	1.33	418.22
185	0.00	270.60	235	1.63	341.45	285	1.32	419.55
186	0.00	271.89	236	1.57	343.02	286	1.29	420.84
187	1.25	273.19	237	1.54	344.56	287	1.39	422.22
188	1.24	274.43	238	1.49	346.05	288	1.57	423.79
189	1.20	275.63	239	1.51	347.56	289	1.73	425.52
190	1.17	276.79	240	1.58	349.14	290	1.72	427.25
191	1.21	278.00	241	1.53	350.66	291	1.73	428.98
192	1.33	279.33	242	1.52	352.18	292	1.73	430.70
193	1.37	280.70	243	1.53	353.71	293	1.71	432.41
194	1.44	282.14	244	1.54	355.25	294	1.72	434.13
195	0.00	283.52	245	1.54	356.79	295	1.72	435.85
196	0.00	284.89	246	1.51	358.30	296	1.72	437.57
197	0.00	286.27	247	1.55	359.84	297	1.69	439.26
198	0.00	287.65	248	1.68	361.53	298	1.68	440.94
199	1.31	289.03	249	1.69	363.21	299	1.70	442.65
200	1.29	290.32	250	1.66	364.88	300	1.69	444.34
201	1.27	291.59	251	1.63	366.50	301	1.68	446.02
202	1.26	292.85	252	1.58	368.08	302	1.67	447.70
203	1.21	294.06	253	1.66	369.74	303	1.66	449.36
204	1.23	295.29	254	1.71	371.44	304	1.64	451.00
205	1.28	296.57	255	1.71	373.15	305	1.60	452.60
206	1.31	297.88	256	1.71	374.86	306	1.58	454.17
207	1.35	299.23	257	1.72	376.59	307	1.56	455.73
208	1.38	300.60	258	1.72	378.31	308	1.55	457.29
209	1.46	302.06	259	1.70	380.01	309	0.00	458.86
210	1.58	303.64	260	1.68	381.69	310	1.60	460.44
211	1.55	305.19	261	1.65	383.35	311	1.61	462.05
212	1.58	306.77	262	1.61	384.96	312	1.57	463.62
213	1.60	308.37	263	1.56	386.52	313	1.60	465.22
214	1.62	309.99	264	1.51	388.03	314	1.61	466.83
215	1.61	311.61	265	1.50	389.54	315	0.00	468.44
216	1.60	313.21	266	1.52	391.05	316	1.60	470.05
217	1.60	314.81	267	1.52	392.58	317	1.63	471.68
218	1.58	316.39	268	1.52	394.10	318	1.64	473.32
219	1.56	317.95	269	1.49	395.59	319	1.71	475.03
220	1.39	319.34	270	1.48	397.07	320	1.69	476.72
221	1.40	320.74	271	1.50	398.57	321	1.67	478.39

UE12n#10--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
322	1.61	480.01	372	1.35	562.93	422	1.52	644.01
323	1.63	481.64	373	1.36	564.29	423	1.65	645.66
324	1.65	483.29	374	1.41	565.70	424	1.68	647.34
325	1.66	484.95	375	1.46	567.16	425	1.67	649.01
326	1.66	486.61	376	1.56	568.72	426	1.63	650.64
327	1.60	488.21	377	1.63	570.34	427	1.57	652.21
328	1.55	489.76	378	1.68	572.03	428	1.63	653.84
329	1.50	491.26	379	1.67	573.70	429	1.64	655.48
330	1.50	492.76	380	1.68	575.38	430	1.66	657.14
331	1.55	494.30	381	1.68	577.06	431	1.66	658.80
332	1.58	495.89	382	1.66	578.72	432	1.66	660.46
333	1.61	497.49	383	1.62	580.34	433	1.67	662.13
334	1.58	499.07	384	1.60	581.93	434	1.68	663.82
335	1.51	500.58	385	1.60	583.53	435	1.68	665.50
336	1.48	502.06	386	1.62	585.15	436	1.66	667.16
337	1.53	503.59	387	1.69	586.84	437	1.54	668.70
338	1.64	505.23	388	1.70	588.54	438	1.43	670.13
339	1.61	506.84	389	1.67	590.21	439	1.37	671.49
340	1.57	508.41	390	1.64	591.85	440	1.34	672.83
341	1.47	509.87	391	1.63	593.49	441	1.43	674.26
342	1.56	511.43	392	1.61	595.09	442	1.52	675.78
343	1.64	513.07	393	1.61	596.70	443	1.46	677.24
344	1.55	514.63	394	1.63	598.32	444	1.45	678.68
345	1.50	516.13	395	1.67	599.99	445	1.51	680.19
346	1.48	517.60	396	1.73	601.72	446	1.47	681.66
347	1.55	519.15	397	1.73	603.45	447	1.40	683.06
348	1.69	520.84	398	1.71	605.16	448	1.35	684.41
349	1.78	522.63	399	1.71	606.87	449	1.36	685.77
350	1.83	524.46	400	1.65	608.53	450	1.51	687.28
351	1.87	526.33	401	1.62	610.15	451	1.52	688.80
352	1.90	528.23	402	1.65	611.80	452	1.45	690.25
353	1.94	530.18	403	1.78	613.58	453	1.52	691.77
354	1.92	532.10	404	1.78	615.36	454	1.51	693.28
355	1.88	533.98	405	1.75	617.11	455	1.50	694.78
356	1.87	535.85	406	1.71	618.82	456	1.48	696.26
357	1.86	537.71	407	1.70	620.52	457	1.46	697.72
358	1.87	539.58	408	1.66	622.17	458	1.63	699.35
359	1.89	541.47	409	1.60	623.77	459	1.61	700.96
360	1.87	543.34	410	1.55	625.32	460	1.53	702.49
361	1.86	545.20	411	1.52	626.84	461	1.46	703.95
362	1.86	547.06	412	1.49	628.33	462	1.41	705.36
363	1.88	548.94	413	1.47	629.80	463	1.45	706.81
364	1.86	550.80	414	1.53	631.33	464	1.43	708.24
365	1.82	552.62	415	1.64	632.97	465	1.32	709.56
366	1.77	554.39	416	1.66	634.63	466	1.33	710.89
367	1.65	556.04	417	1.67	636.30	467	1.42	712.31
368	1.46	557.50	418	1.65	637.95	468	1.42	713.72
369	1.40	558.90	419	1.56	639.51	469	1.40	715.12
370	1.33	560.24	420	1.47	640.98	470	1.38	716.50
371	1.34	561.58	421	1.51	642.49	471	1.36	717.86

UE12n#10--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
472	1.34	719.20	522	1.74	797.63	572	1.64	882.52
473	1.31	720.52	523	1.70	799.33	573	1.62	884.15
474	1.29	721.80	524	1.69	801.02	574	1.57	885.72
475	1.27	723.08	525	1.69	802.71	575	1.48	887.21
476	1.27	724.34	526	1.86	804.58	576	1.43	888.63
477	1.29	725.63	527	1.85	806.43	577	1.41	890.04
478	1.36	726.99	528	1.83	808.26	578	1.45	891.49
479	1.45	728.45	529	1.78	810.05	579	1.53	893.02
480	1.70	730.15	530	1.76	811.81	580	1.57	894.60
481	1.70	731.85	531	1.73	813.54	581	1.62	896.22
482	1.73	733.57	532	1.71	815.24	582	1.62	897.84
483	1.72	735.29	533	1.72	816.97	583	1.57	899.41
484	1.66	736.96	534	1.78	818.74	584	1.57	900.97
485	1.63	738.59	535	1.83	820.57	585	1.58	902.55
486	1.60	740.19	536	1.82	822.39	586	1.53	904.08
487	1.59	741.78	537	1.80	824.19	587	1.48	905.56
488	1.55	743.32	538	1.78	825.97	588	1.33	906.89
489	1.45	744.78	539	1.78	827.76	589	1.25	908.14
490	1.39	746.17	540	1.78	829.53	590	1.20	909.34
491	1.45	747.62	541	1.77	831.30	591	1.17	910.51
492	1.56	749.18	542	1.75	833.05	592	1.19	911.70
493	1.54	750.72	543	1.71	834.76	593	1.23	912.92
494	1.49	752.22	544	1.66	836.42	594	1.32	914.24
495	1.48	753.69	545	1.65	838.07	595	1.41	915.65
496	1.42	755.11	546	1.57	839.64	596	1.63	917.28
497	1.39	756.50	547	1.47	841.11	597	1.56	918.83
498	1.41	757.91	548	1.47	842.58	598	1.53	920.36
499	1.43	759.34	549	1.51	844.09	599	1.46	921.82
500	1.59	760.93	550	1.51	845.60	600	1.44	923.26
501	1.66	762.59	551	1.55	847.16	601	1.40	924.66
502	1.64	764.22	552	1.59	848.74	602	1.35	926.01
503	1.72	765.94	553	1.60	850.34	603	1.31	927.32
504	1.70	767.64	554	1.59	851.93	604	1.35	928.67
505	1.68	769.32	555	1.67	853.60	605	1.47	930.14
506	1.71	771.03	556	1.66	855.25	606	1.52	931.66
507	1.65	772.67	557	1.58	856.84	607	1.50	933.17
508	1.58	774.25	558	1.57	858.41	608	1.44	934.61
509	1.51	775.76	559	1.58	859.99	609	1.53	936.14
510	1.54	777.30	560	1.67	861.66	610	1.71	937.85
511	1.60	778.90	561	1.68	863.34	611	1.67	939.52
512	1.74	780.64	562	1.66	865.00	612	1.62	941.13
513	1.78	782.42	563	1.75	866.75	613	1.57	942.71
514	1.77	784.19	564	1.81	868.56	614	1.57	944.28
515	1.73	785.92	565	1.78	870.34	615	1.64	945.91
516	1.71	787.64	566	1.80	872.13	616	1.71	947.62
517	1.69	789.33	567	1.81	873.95	617	1.70	949.32
518	1.64	790.97	568	1.82	875.76	618	1.66	950.98
519	1.63	792.60	569	1.73	877.50	619	1.61	952.59
520	1.62	794.22	570	1.71	879.20	620	1.56	954.15
521	1.67	795.89	571	1.68	880.88	621	1.55	955.70

UE12n#10--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
622	1.52	957.22	672	1.23	1036.20	722	1.98	1102.53
623	1.46	958.68	673	1.17	1037.37	723	1.93	1104.46
624	1.47	960.15	674	1.13	1038.50	724	1.86	1106.32
625	1.55	961.71	675	1.14	1039.64	725	1.80	1108.12
626	1.71	963.41	676	1.15	1040.79	726	1.83	1109.95
627	1.65	965.06	677	1.21	1042.00	727	1.82	1111.77
628	1.64	966.70	678	1.28	1043.28	728	1.81	1113.58
629	1.63	968.33	679	1.38	1044.66	729	1.73	1115.31
630	1.60	969.92	680	1.32	1045.98	730	1.64	1116.95
631	1.56	971.48	681	1.21	1047.19	731	1.55	1118.50
632	1.52	973.00	682	1.19	1048.38	732	1.47	1119.97
633	1.55	974.55	683	0.00	1049.56	733	1.34	1121.31
634	1.79	976.34	684	0.00	1050.74	734	1.30	1122.61
635	1.79	978.13	685	0.00	1051.92	735	1.28	1123.89
636	1.78	979.91	686	0.00	1053.10	736	1.28	1125.17
637	1.76	981.67	687	0.00	1054.28	737	1.27	1126.44
638	1.75	983.43	688	0.00	1055.46	738	1.26	1127.70
639	1.81	985.24	689	0.00	1056.64	739	1.21	1128.91
640	1.83	987.07	690	0.00	1057.82	740	1.21	1130.12
641	1.80	988.87	691	0.00	1059.00	741	1.24	1131.36
642	1.79	990.66	692	0.00	1060.18	742	1.22	1132.58
643	1.78	992.44	693	0.00	1061.36	743	0.00	1133.77
644	1.78	994.22	694	0.00	1062.54	744	0.00	1134.96
645	1.77	996.00	695	0.00	1063.72	745	0.00	1136.15
646	1.76	997.76	696	0.00	1064.90	746	0.00	1137.34
647	1.76	999.52	697	0.00	1066.08	747	0.00	1138.53
648	1.74	1001.25	698	0.00	1067.26	748	0.00	1139.72
649	1.73	1002.98	699	1.16	1068.44	749	0.00	1140.91
650	1.71	1004.69	700	1.22	1069.66	750	0.00	1142.10
651	1.69	1006.38	701	1.35	1071.01	751	1.16	1143.29
652	1.66	1008.04	702	1.39	1072.40	752	1.19	1144.48
653	1.62	1009.66	703	1.37	1073.77	753	1.18	1145.66
654	1.61	1011.27	704	1.34	1075.11	754	1.19	1146.85
655	1.61	1012.88	705	1.32	1076.43	755	1.21	1148.06
656	1.58	1014.46	706	1.30	1077.73	756	1.21	1149.27
657	1.55	1016.01	707	1.29	1079.02	757	1.20	1150.47
658	1.52	1017.53	708	1.30	1080.32	758	1.19	1151.66
659	1.48	1019.01	709	1.36	1081.68	759	1.19	1152.85
660	1.44	1020.45	710	1.40	1083.08	760	1.19	1154.04
661	1.41	1021.86	711	1.34	1084.42	761	1.20	1155.24
662	1.39	1023.25	712	1.31	1085.73	762	1.21	1156.45
663	1.37	1024.62	713	1.28	1087.01	763	1.20	1157.65
664	1.37	1025.99	714	1.29	1088.30	764	1.20	1158.85
665	1.37	1027.36	715	1.40	1089.70	765	1.20	1160.05
666	1.36	1028.72	716	1.55	1091.25	766	1.19	1161.24
667	1.32	1030.04	717	1.62	1092.87	767	1.19	1162.43
668	1.30	1031.34	718	1.76	1094.63	768	1.20	1163.63
669	1.21	1032.55	719	1.92	1096.55	769	1.20	1164.83
670	1.19	1033.74	720	2.00	1098.55	770	1.21	1166.04
671	1.23	1034.97	721	2.00	1100.55	771	1.21	1167.25

UE12n#10--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
772	1.20	1168.45	822	1.32	1229.74	872	1.95	1307.73
773	1.17	1169.62	823	1.36	1231.10	873	1.91	1309.64
774	1.16	1170.78	824	1.31	1232.41	874	1.90	1311.54
775	1.17	1171.95	825	1.25	1233.66	875	1.89	1313.43
776	1.18	1173.13	826	1.21	1234.87	876	1.90	1315.33
777	1.20	1174.33	827	1.16	1236.03	877	1.92	1317.25
778	1.16	1175.49	828	1.18	1237.21	878	1.95	1319.20
779	0.00	1176.65	829	1.20	1238.41	879	1.91	1321.11
780	0.00	1177.81	830	1.23	1239.64	880	1.92	1323.03
781	0.00	1178.97	831	1.32	1240.96	881	1.97	1325.00
782	0.00	1180.13	832	1.36	1242.32	882	2.01	1327.01
783	0.00	1181.29	833	1.40	1243.72	883	1.97	1328.98
784	0.00	1182.45	834	1.41	1245.13	884	1.91	1330.89
785	0.00	1183.61	835	1.38	1246.51	885	1.86	1332.75
786	0.00	1184.77	836	1.34	1247.85	886	1.90	1334.65
787	1.16	1185.93	837	1.32	1249.17	887	1.99	1336.64
788	1.20	1187.13	838	1.34	1250.51	888	2.14	1338.78
789	1.26	1188.39	839	1.42	1251.93	889	2.21	1340.99
790	1.22	1189.61	840	1.46	1253.39	890	2.14	1343.13
791	1.20	1190.81	841	1.42	1254.81	891	2.11	1345.24
792	1.21	1192.02	842	1.39	1256.20	892	2.07	1347.31
793	1.22	1193.24	843	1.43	1257.63	893	2.10	1349.41
794	1.24	1194.48	844	1.45	1259.08	894	2.08	1351.49
795	1.26	1195.74	845	1.41	1260.49	895	2.07	1353.56
796	1.26	1197.00	846	1.38	1261.87	896	2.05	1355.61
797	1.24	1198.24	847	1.41	1263.28	897	2.03	1357.64
798	1.21	1199.45	848	1.49	1264.77	898	2.04	1359.68
799	1.20	1200.65	849	1.58	1266.35	899	2.04	1361.72
800	1.20	1201.85	850	1.72	1268.07	900	2.06	1363.78
801	1.20	1203.05	851	1.94	1270.01	901	2.11	1365.89
802	1.20	1204.25	852	1.95	1271.96	902	2.12	1368.01
803	1.22	1205.47	853	1.93	1273.89	903	2.12	1370.13
804	1.28	1206.75	854	1.88	1275.77	904	2.12	1372.25
805	1.28	1208.03	855	1.85	1277.62	905	2.12	1374.37
806	1.26	1209.29	856	1.76	1279.38	906	2.02	1376.39
807	1.22	1210.51	857	1.58	1280.96	907	2.00	1378.39
808	1.22	1211.73	858	1.56	1282.52	908	1.96	1380.35
809	1.22	1212.95	859	1.64	1284.16	909	1.92	1382.27
810	1.23	1214.18	860	1.82	1285.98	910	1.88	1384.15
811	1.24	1215.42	861	1.86	1287.84	911	1.85	1386.00
812	1.22	1216.64	862	1.69	1289.53	912	1.79	1387.79
813	1.19	1217.83	863	1.59	1291.12	913	1.77	1389.56
814	1.20	1219.03	864	1.58	1292.70	914	1.76	1391.32
815	1.28	1220.31	865	1.69	1294.39	915	1.71	1393.03
816	1.35	1221.66	866	1.71	1296.10	916	1.70	1394.73
817	1.44	1223.10	867	1.89	1297.99	917	1.67	1396.40
818	1.39	1224.49	868	1.95	1299.94	918	1.49	1397.89
819	1.34	1225.83	869	1.94	1301.88	919	1.49	1399.38
820	1.29	1227.12	870	1.95	1303.83	920	1.68	1401.06
821	1.30	1228.42	871	1.95	1305.78	921	1.83	1402.89

UE12n#10--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
922	1.95	1404.84	972	1.87	1502.60	1022	2.05	1597.95
923	2.06	1406.90	973	1.77	1504.37	1023	2.07	1600.02
924	2.02	1408.92	974	1.73	1506.10	1024	2.13	1602.15
925	2.01	1410.93	975	1.88	1507.98	1025	2.17	1604.32
926	2.00	1412.93	976	1.86	1509.84	1026	2.17	1606.49
927	2.00	1414.93	977	1.78	1511.62	1027	2.17	1608.66
928	2.02	1416.95	978	1.61	1513.23	1028	2.16	1610.82
929	2.05	1419.00	979	1.54	1514.77	1029	2.05	1612.87
930	2.04	1421.04	980	1.65	1516.42	1030	1.97	1614.84
931	2.09	1423.13	981	1.71	1518.13	1031	1.74	1616.58
932	2.08	1425.21	982	1.72	1519.85	1032	1.65	1618.23
933	2.06	1427.27	983	1.93	1521.78	1033	1.64	1619.87
934	2.04	1429.31	984	1.88	1523.66	1034	1.57	1621.44
935	2.06	1431.37	985	1.87	1525.53	1035	1.46	1622.90
936	2.06	1433.43	986	1.90	1527.43	1036	1.44	1624.34
937	2.07	1435.50	987	1.92	1529.35	1037	1.43	1625.77
938	2.08	1437.58	988	1.98	1531.33	1038	1.45	1627.22
939	2.12	1439.70	989	1.98	1533.31	1039	1.41	1628.63
940	2.10	1441.80	990	1.98	1535.29	1040	1.35	1629.98
941	2.04	1443.84	991	1.94	1537.23	1041	1.33	1631.31
942	1.96	1445.80	992	1.88	1539.11	1042	1.39	1632.70
943	1.94	1447.74	993	1.84	1540.95	1043	1.63	1634.33
944	1.96	1449.70	994	1.84	1542.79	1044	1.85	1636.18
945	2.02	1451.72	995	1.88	1544.67	1045	1.83	1638.01
946	1.97	1453.69	996	1.90	1546.57	1046	1.76	1639.77
947	1.95	1455.64	997	1.89	1548.46	1047	1.45	1641.22
948	1.95	1457.59	998	1.89	1550.35	1048	1.39	1642.61
949	1.96	1459.55	999	1.90	1552.25	1049	1.55	1644.16
950	1.97	1461.52	1000	1.91	1554.16	1050	1.72	1645.88
951	1.93	1463.45	1001	1.93	1556.09	1051	1.95	1647.83
952	1.92	1465.37	1002	1.95	1558.04	1052	1.91	1649.74
953	1.92	1467.29	1003	2.02	1560.06	1053	1.90	1651.64
954	1.93	1469.22	1004	2.06	1562.12	1054	1.97	1653.61
955	1.97	1471.19	1005	2.06	1564.18	1055	1.97	1655.58
956	2.15	1473.34	1006	2.05	1566.23	1056	1.95	1657.53
957	2.12	1475.46	1007	2.03	1568.26	1057	1.96	1659.49
958	2.09	1477.55	1008	1.98	1570.24	1058	1.94	1661.43
959	2.07	1479.62	1009	1.97	1572.21	1059	1.86	1663.29
960	2.04	1481.66	1010	1.97	1574.18	1060	1.79	1665.08
961	1.97	1483.63	1011	1.97	1576.15	1061	1.82	1666.90
962	1.95	1485.58	1012	1.96	1578.11	1062	1.87	1668.77
963	1.74	1487.32	1013	1.96	1580.07	1063	1.81	1670.58
964	1.65	1488.97	1014	1.98	1582.05	1064	1.76	1672.34
965	1.59	1490.56	1015	1.97	1584.02	1065	1.77	1674.11
966	1.54	1492.10	1016	1.94	1585.96	1066	1.79	1675.90
967	1.52	1493.62	1017	1.92	1587.88	1067	1.85	1677.75
968	1.50	1495.12	1018	1.92	1589.80	1068	1.85	1679.60
969	1.68	1496.80	1019	2.02	1591.82	1069	1.83	1681.43
970	1.97	1498.77	1020	2.04	1593.86	1070	1.83	1683.26
971	1.96	1500.73	1021	2.04	1595.90	1071	1.87	1685.13

UE12n#10--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1072	1.97	1687.10	1122	1.88	1777.41	1172	1.72	1869.52
1073	1.95	1689.05	1123	1.92	1779.33	1173	1.68	1871.20
1074	1.91	1690.96	1124	1.92	1781.25	1174	1.64	1872.84
1075	1.89	1692.85	1125	1.93	1783.18	1175	1.55	1874.39
1076	1.87	1694.72	1126	1.89	1785.07	1176	1.56	1875.95
1077	1.86	1696.58	1127	1.88	1786.95	1177	1.59	1877.54
1078	1.84	1698.42	1128	1.88	1788.83	1178	1.62	1879.16
1079	1.85	1700.27	1129	1.87	1790.70	1179	1.70	1880.86
1080	1.87	1702.14	1130	1.87	1792.57	1180	1.84	1882.70
1081	1.88	1704.02	1131	1.86	1794.43	1181	1.92	1884.62
1082	1.88	1705.90	1132	1.86	1796.29	1182	1.94	1886.56
1083	1.85	1707.75	1133	1.86	1798.15	1183	1.97	1888.53
1084	1.85	1709.60	1134	1.85	1800.00	1184	1.96	1890.49
1085	1.88	1711.48	1135	1.86	1801.86	1185	1.94	1892.43
1086	1.88	1713.36	1136	1.86	1803.72	1186	1.91	1894.34
1087	1.85	1715.21	1137	1.82	1805.54	1187	1.89	1896.23
1088	1.83	1717.04	1138	1.80	1807.34	1188	1.86	1898.09
1089	1.80	1718.84	1139	1.80	1809.14	1189	1.85	1899.94
1090	1.78	1720.62	1140	1.82	1810.96	1190	1.98	1901.92
1091	1.76	1722.38	1141	1.86	1812.82	1191	1.98	1903.90
1092	1.71	1724.09	1142	1.83	1814.65	1192	1.98	1905.88
1093	1.70	1725.79	1143	1.82	1816.47	1193	1.95	1907.83
1094	1.70	1727.49	1144	1.82	1818.29	1194	1.97	1909.80
1095	1.68	1729.17	1145	1.82	1820.11	1195	1.98	1911.78
1096	1.65	1730.82	1146	1.80	1821.91	1196	1.96	1913.74
1097	1.65	1732.47	1147	1.78	1823.69	1197	1.97	1915.71
1098	1.64	1734.11	1148	1.75	1825.44	1198	1.98	1917.69
1099	1.64	1735.75	1149	1.79	1827.23	1199	1.99	1919.68
1100	1.66	1737.41	1150	1.84	1829.07	1200	1.97	1921.65
1101	1.70	1739.11	1151	1.88	1830.95	1201	1.95	1923.60
1102	1.77	1740.88	1152	1.91	1832.86	1202	1.94	1925.54
1103	1.80	1742.68	1153	1.86	1834.72	1203	1.94	1927.48
1104	1.81	1744.49	1154	1.83	1836.55	1204	1.94	1929.42
1105	1.81	1746.30	1155	1.80	1838.35	1205	1.94	1931.36
1106	1.81	1748.11	1156	1.78	1840.13	1206	1.95	1933.31
1107	1.83	1749.94	1157	1.89	1842.02	1207	1.95	1935.26
1108	1.88	1751.82	1158	1.88	1843.90	1208	1.95	1937.21
1109	1.88	1753.70	1159	1.88	1845.78	1209	1.86	1939.07
1110	1.86	1755.56	1160	1.88	1847.66	1210	1.80	1940.87
1111	1.86	1757.42	1161	1.88	1849.54	1211	1.80	1942.67
1112	1.82	1759.24	1162	1.89	1851.43	1212	1.82	1944.49
1113	1.80	1761.04	1163	1.91	1853.34	1213	1.78	1946.27
1114	1.82	1762.86	1164	1.88	1855.22	1214	1.75	1948.02
1115	1.83	1764.69	1165	1.84	1857.06	1215	1.76	1949.78
1116	1.83	1766.52	1166	1.79	1858.85	1216	1.76	1951.54
1117	1.80	1768.32	1167	1.79	1860.64	1217	1.83	1953.37
1118	1.79	1770.11	1168	1.79	1862.43	1218	1.82	1955.19
1119	1.79	1771.90	1169	1.81	1864.24	1219	1.81	1957.00
1120	1.80	1773.70	1170	1.79	1866.03	1220	1.84	1958.84
1121	1.83	1775.53	1171	1.77	1867.80	1221	1.90	1960.74

UE12n#10--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1222	1.92	1962.66	1272	0.00	2053.90	1322	1.81	2145.90
1223	1.94	1964.60	1273	0.00	2055.71	1323	1.87	2147.77
1224	1.93	1966.53	1274	0.00	2057.52	1324	1.87	2149.64
1225	1.91	1968.44	1275	0.00	2059.33	1325	1.89	2151.53
1226	1.87	1970.31	1276	0.00	2061.14	1326	1.89	2153.42
1227	1.79	1972.10	1277	0.00	2062.95	1327	1.89	2155.31
1228	1.78	1973.88	1278	0.00	2064.76	1328	1.90	2157.21
1229	1.78	1975.66	1279	0.00	2066.57	1329	1.89	2159.10
1230	1.79	1977.45	1280	0.00	2068.38	1330	1.88	2160.98
1231	1.79	1979.24	1281	0.00	2070.19	1331	1.88	2162.86
1232	1.77	1981.01	1282	0.00	2072.00	1332	1.87	2164.73
1233	1.77	1982.78	1283	0.00	2073.81	1333	1.84	2166.57
1234	1.82	1984.60	1284	0.00	2075.62	1334	1.81	2168.38
1235	1.90	1986.50	1285	0.00	2077.43	1335	1.76	2170.14
1236	1.96	1988.46	1286	0.00	2079.24	1336	1.75	2171.89
1237	1.96	1990.42	1287	0.00	2081.05	1337	1.73	2173.62
1238	1.96	1992.38	1288	0.00	2082.86	1338	1.72	2175.34
1239	1.90	1994.28	1289	0.00	2084.67	1339	1.77	2177.11
1240	1.82	1996.10	1290	0.00	2086.48	1340	1.78	2178.89
1241	1.78	1997.88	1291	0.00	2088.29	1341	1.82	2180.71
1242	1.77	1999.65	1292	0.00	2090.10	1342	1.82	2182.53
1243	1.76	2001.41	1293	0.00	2091.91	1343	1.80	2184.33
1244	0.00	2003.22	1294	0.00	2093.72	1344	1.80	2186.13
1245	0.00	2005.03	1295	0.00	2095.53	1345	1.79	2187.92
1246	0.00	2006.84	1296	0.00	2097.34	1346	1.79	2189.71
1247	0.00	2008.65	1297	0.00	2099.15	1347	1.76	2191.47
1248	0.00	2010.46	1298	0.00	2100.96	1348	1.76	2193.23
1249	0.00	2012.27	1299	0.00	2102.77	1349	1.79	2195.02
1250	0.00	2014.08	1300	1.85	2104.58	1350	1.84	2196.86
1251	0.00	2015.89	1301	1.87	2106.45	1351	1.82	2198.68
1252	0.00	2017.70	1302	1.89	2108.34	1352	1.79	2200.47
1253	0.00	2019.51	1303	1.89	2110.23	1353	1.78	2202.25
1254	0.00	2021.32	1304	1.89	2112.12	1354	1.79	2204.04
1255	0.00	2023.13	1305	1.87	2113.99	1355	1.77	2205.81
1256	0.00	2024.94	1306	1.87	2115.86	1356	1.77	2207.58
1257	0.00	2026.75	1307	1.89	2117.75	1357	1.75	2209.33
1258	0.00	2028.56	1308	1.90	2119.65	1358	1.77	2211.10
1259	0.00	2030.37	1309	1.92	2121.57	1359	1.78	2212.88
1260	0.00	2032.18	1310	1.93	2123.50	1360	1.75	2214.63
1261	0.00	2033.99	1311	1.92	2125.42	1361	1.73	2216.36
1262	0.00	2035.80	1312	1.90	2127.32	1362	1.75	2218.11
1263	0.00	2037.61	1313	1.89	2129.21	1363	1.76	2219.87
1264	0.00	2039.42	1314	1.89	2131.10	1364	1.76	2221.63
1265	0.00	2041.23	1315	1.89	2132.99	1365	1.76	2223.39
1266	0.00	2043.04	1316	1.89	2134.88	1366	1.78	2225.17
1267	0.00	2044.85	1317	1.88	2136.76	1367	1.78	2226.95
1268	0.00	2046.66	1318	1.86	2138.62	1368	1.78	2228.73
1269	0.00	2048.47	1319	1.84	2140.46	1369	1.77	2230.50
1270	0.00	2050.28	1320	1.82	2142.28	1370	1.76	2232.26
1271	0.00	2052.09	1321	1.81	2144.09	1371	1.72	2233.98

UE12n#10--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1372	1.74	2235.72	1422	1.78	2323.27	1472	2.10	2419.14
1373	1.71	2237.43	1423	1.79	2325.06	1473	2.09	2421.23
1374	1.68	2239.11	1424	1.79	2326.85	1474	2.08	2423.31
1375	1.72	2240.83	1425	1.80	2328.65	1475	2.04	2425.35
1376	1.74	2242.57	1426	1.81	2330.46	1476	2.00	2427.35
1377	1.69	2244.26	1427	1.80	2332.26	1477	1.93	2429.28
1378	1.69	2245.95	1428	1.80	2334.06	1478	1.90	2431.18
1379	1.73	2247.68	1429	1.79	2335.85	1479	1.85	2433.03
1380	1.76	2249.44	1430	1.77	2337.62	1480	1.80	2434.83
1381	1.72	2251.16	1431	1.76	2339.38	1481	1.76	2436.59
1382	1.71	2252.87	1432	1.78	2341.16	1482	1.76	2438.35
1383	1.76	2254.63	1433	1.76	2342.92	1483	1.76	2440.11
1384	1.77	2256.40	1434	1.80	2344.72	1484	1.79	2441.90
1385	1.78	2258.18	1435	1.80	2346.52	1485	1.78	2443.68
1386	1.77	2259.95	1436	1.80	2348.32	1486	1.80	2445.48
1387	1.76	2261.71	1437	1.79	2350.11	1487	1.84	2447.32
1388	1.75	2263.46	1438	1.79	2351.90	1488	1.88	2449.20
1389	1.69	2265.15	1439	1.79	2353.69	1489	1.89	2451.09
1390	1.69	2266.84	1440	1.84	2355.53	1490	1.89	2452.98
1391	1.71	2268.55	1441	1.86	2357.39	1491	1.89	2454.87
1392	1.75	2270.30	1442	1.87	2359.26	1492	1.88	2456.75
1393	1.75	2272.05	1443	1.89	2361.15	1493	1.86	2458.61
1394	1.76	2273.81	1444	1.89	2363.04	1494	1.84	2460.45
1395	1.75	2275.56	1445	1.91	2364.95	1495	1.87	2462.32
1396	1.75	2277.31	1446	1.91	2366.86	1496	1.89	2464.21
1397	1.77	2279.08	1447	1.90	2368.76	1497	1.92	2466.13
1398	1.74	2280.82	1448	1.89	2370.65	1498	1.89	2468.02
1399	1.70	2282.52	1449	1.89	2372.54	1499	1.86	2469.88
1400	1.67	2284.19	1450	1.93	2374.47	1500	1.85	2471.73
1401	1.69	2285.88	1451	1.96	2376.43	1501	1.85	2473.58
1402	1.76	2287.64	1452	1.96	2378.39	1502	1.85	2475.43
1403	1.75	2289.39	1453	1.95	2380.34	1503	1.83	2477.26
1404	1.76	2291.15	1454	1.96	2382.30	1504	1.81	2479.07
1405	1.73	2292.88	1455	1.96	2384.26	1505	1.84	2480.91
1406	1.69	2294.57	1456	1.96	2386.22	1506	1.85	2482.76
1407	1.68	2296.25	1457	1.94	2388.16	1507	1.84	2484.60
1408	1.75	2298.00	1458	1.93	2390.09	1508	1.82	2486.42
1409	1.82	2299.82	1459	1.95	2392.04	1509	1.82	2488.24
1410	1.82	2301.64	1460	1.98	2394.02	1510	1.85	2490.09
1411	1.81	2303.45	1461	1.99	2396.01	1511	1.88	2491.97
1412	1.78	2305.23	1462	2.00	2398.01	1512	1.88	2493.85
1413	1.78	2307.01	1463	1.99	2400.00	1513	1.90	2495.75
1414	1.76	2308.77	1464	1.98	2401.98	1514	1.91	2497.66
1415	1.76	2310.53	1465	2.02	2404.00	1515	1.92	2499.58
1416	1.81	2312.34	1466	2.07	2406.07	1516	1.91	2501.49
1417	1.82	2314.16	1467	2.15	2408.22	1517	1.89	2503.38
1418	1.84	2316.00	1468	2.24	2410.46	1518	1.84	2505.22
1419	1.86	2317.86	1469	2.23	2412.69	1519	1.81	2507.03
1420	1.84	2319.70	1470	2.22	2414.91	1520	1.78	2508.81
1421	1.79	2321.49	1471	2.13	2417.04	1521	1.74	2510.55

UE12n#10--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1522	0.00	2512.28	1572	1.98	2606.26	1622	1.97	2703.34
1523	0.00	2514.01	1573	1.97	2608.23	1623	1.97	2705.31
1524	0.00	2515.74	1574	1.97	2610.20	1624	1.96	2707.27
1525	0.00	2517.47	1575	1.94	2612.14	1625	1.96	2709.23
1526	0.00	2519.20	1576	1.94	2614.08	1626	1.96	2711.19
1527	0.00	2520.93	1577	1.94	2616.02	1627	1.99	2713.18
1528	0.00	2522.66	1578	1.93	2617.95	1628	1.98	2715.16
1529	0.00	2524.39	1579	1.92	2619.87	1629	1.96	2717.12
1530	1.72	2526.12	1580	1.93	2621.80	1630	1.95	2719.07
1531	1.71	2527.83	1581	1.95	2623.75	1631	1.97	2721.04
1532	1.81	2529.64	1582	1.94	2625.69	1632	1.97	2723.01
1533	1.87	2531.51	1583	1.94	2627.63	1633	1.98	2724.99
1534	1.87	2533.38	1584	1.95	2629.58	1634	1.98	2726.97
1535	1.87	2535.25	1585	1.96	2631.54	1635	1.97	2728.94
1536	1.87	2537.12	1586	1.98	2633.52	1636	2.02	2730.96
1537	1.87	2538.99	1587	1.96	2635.48	1637	2.02	2732.98
1538	1.89	2540.88	1588	1.90	2637.38	1638	2.03	2735.01
1539	1.91	2542.79	1589	1.88	2639.26	1639	1.99	2737.00
1540	1.89	2544.68	1590	1.86	2641.12	1640	1.96	2738.96
1541	1.91	2546.59	1591	1.85	2642.97	1641	1.98	2740.94
1542	1.92	2548.51	1592	1.85	2644.82	1642	2.00	2742.94
1543	1.89	2550.40	1593	1.85	2646.67	1643	1.95	2744.89
1544	1.86	2552.26	1594	1.85	2648.52	1644	1.93	2746.82
1545	1.83	2554.09	1595	1.88	2650.40	1645	1.96	2748.78
1546	1.80	2555.89	1596	1.89	2652.29	1646	1.96	2750.74
1547	1.83	2557.72	1597	1.89	2654.18	1647	1.97	2752.71
1548	1.86	2559.58	1598	1.90	2656.08	1648	1.97	2754.68
1549	1.82	2561.40	1599	1.94	2658.02	1649	1.94	2756.62
1550	1.76	2563.16	1600	1.94	2659.96	1650	1.94	2758.56
1551	1.76	2564.92	1601	1.93	2661.89	1651	2.00	2760.56
1552	1.79	2566.71	1602	1.94	2663.83	1652	2.05	2762.61
1553	1.82	2568.53	1603	1.95	2665.78	1653	2.02	2764.63
1554	1.84	2570.37	1604	1.96	2667.74	1654	2.01	2766.64
1555	1.88	2572.25	1605	1.98	2669.72	1655	2.01	2768.65
1556	1.93	2574.18	1606	1.95	2671.67	1656	2.04	2770.69
1557	1.96	2576.14	1607	1.94	2673.61	1657	2.06	2772.75
1558	1.95	2578.09	1608	1.94	2675.55	1658	2.09	2774.84
1559	2.00	2580.09	1609	1.93	2677.48	1659	2.08	2776.92
1560	2.02	2582.11	1610	1.94	2679.42	1660	2.03	2778.95
1561	2.04	2584.15	1611	1.97	2681.39	1661	2.05	2781.00
1562	2.04	2586.19	1612	1.97	2683.36	1662	2.06	2783.06
1563	2.02	2588.21	1613	1.94	2685.30	1663	2.20	2785.26
1564	2.03	2590.24	1614	1.99	2687.29	1664	2.16	2787.42
1565	2.03	2592.27	1615	2.02	2689.31	1665	2.16	2789.58
1566	2.03	2594.30	1616	2.07	2691.38	1666	2.15	2791.73
1567	2.03	2596.33	1617	2.05	2693.43	1667	2.11	2793.84
1568	2.02	2598.35	1618	2.02	2695.45	1668	2.10	2795.94
1569	1.99	2600.34	1619	2.00	2697.45	1669	2.07	2798.01
1570	1.96	2602.30	1620	1.95	2699.40	1670	2.06	2800.07
1571	1.98	2604.28	1621	1.97	2701.37	1671	2.07	2802.14

UE12n#10--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1672	2.06	2804.20	1722	2.26	2911.92	1772	2.22	3027.16
1673	2.07	2806.27	1723	2.20	2914.12	1773	2.19	3029.35
1674	2.07	2808.34	1724	2.17	2916.29	1774	2.40	3031.75
1675	2.07	2810.41	1725	2.26	2918.55	1775	2.53	3034.28
1676	2.11	2812.52	1726	2.28	2920.83	1776	2.63	3036.91
1677	2.06	2814.58	1727	2.34	2923.17	1777	2.62	3039.53
1678	2.03	2816.61	1728	2.41	2925.58	1778	2.55	3042.08
1679	1.98	2818.59	1729	2.49	2928.07	1779	2.49	3044.57
1680	2.02	2820.61	1730	2.36	2930.43	1780	2.46	3047.03
1681	2.14	2822.75	1731	2.22	2932.65	1781	2.45	3049.48
1682	2.17	2824.92	1732	2.26	2934.91	1782	2.25	3051.73
1683	2.15	2827.07	1733	2.35	2937.26	1783	2.32	3054.05
1684	2.16	2829.23	1734	2.46	2939.72	1784	2.50	3056.55
1685	2.16	2831.39	1735	2.44	2942.16	1785	2.56	3059.11
1686	2.16	2833.55	1736	2.45	2944.61	1786	2.47	3061.58
1687	2.17	2835.72	1737	2.44	2947.05	1787	2.40	3063.98
1688	2.15	2837.87	1738	2.46	2949.51	1788	2.41	3066.39
1689	2.10	2839.97	1739	2.48	2951.99	1789	2.38	3068.77
1690	2.01	2841.98	1740	2.47	2954.46	1790	2.37	3071.14
1691	2.23	2844.21	1741	2.47	2956.93	1791	2.41	3073.55
1692	2.22	2846.43	1742	2.46	2959.39	1792	2.39	3075.94
1693	2.20	2848.63	1743	2.40	2961.79	1793	2.38	3078.32
1694	2.20	2850.83	1744	2.40	2964.19	1794	2.37	3080.69
1695	2.20	2853.03	1745	2.40	2966.59	1795	2.36	3083.05
1696	2.20	2855.23	1746	2.38	2968.97	1796	2.36	3085.41
1697	2.18	2857.41	1747	2.36	2971.33	1797	2.36	3087.77
1698	2.18	2859.59	1748	2.31	2973.64	1798	2.33	3090.10
1699	2.18	2861.77	1749	2.22	2975.86	1799	2.39	3092.49
1700	2.37	2864.14	1750	2.24	2978.10	1800	2.37	3094.86
1701	2.33	2866.47	1751	0.00	2980.33	1801	2.41	3097.27
1702	2.30	2868.77	1752	0.00	2982.56	1802	2.44	3099.71
1703	2.25	2871.02	1753	0.00	2984.79	1803	2.44	3102.15
1704	2.26	2873.28	1754	0.00	2987.02	1804	2.48	3104.63
1705	2.26	2875.54	1755	0.00	2989.25	1805	2.44	3107.07
1706	2.24	2877.78	1756	0.00	2991.48	1806	2.37	3109.44
1707	2.19	2879.97	1757	0.00	2993.71	1807	2.35	3111.79
1708	2.13	2882.10	1758	0.00	2995.94	1808	2.35	3114.14
1709	2.12	2884.22	1759	0.00	2998.17	1809	2.37	3116.51
1710	2.13	2886.35	1760	0.00	3000.40	1810	2.33	3118.84
1711	2.07	2888.42	1761	0.00	3002.63	1811	2.26	3121.10
1712	2.12	2890.54	1762	0.00	3004.86	1812	2.21	3123.31
1713	2.15	2892.69	1763	0.00	3007.09	1813	2.29	3125.60
1714	2.11	2894.80	1764	0.00	3009.32	1814	2.32	3127.92
1715	2.07	2896.87	1765	0.00	3011.55	1815	2.41	3130.33
1716	2.10	2898.97	1766	0.00	3013.78	1816	2.40	3132.73
1717	2.13	2901.10	1767	0.00	3016.01	1817	2.38	3135.11
1718	2.10	2903.20	1768	0.00	3018.24	1818	2.30	3137.41
1719	2.08	2905.28	1769	0.00	3020.47	1819	2.26	3139.67
1720	2.16	2907.44	1770	0.00	3022.70	1820	2.37	3142.04
1721	2.22	2909.66	1771	0.00	3024.93	1821	2.59	3144.63

UE12n#10--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1822	2.56	3147.19	1872	2.63	3279.96			
1823	2.61	3149.80	1873	2.63	3282.59			
1824	2.64	3152.44	1874	2.65	3285.24			
1825	2.65	3155.09	1875	2.66	3287.90			
1826	2.62	3157.71	1876	2.70	3290.60			
1827	2.61	3160.32	1877	2.73	3293.33			
1828	2.60	3162.92	1878	2.72	3296.05			
1828	2.60	3162.92						
1829	2.61	3165.53						
1830	2.66	3168.19						
1831	2.65	3170.84						
1832	2.65	3173.49						
1833	2.66	3176.15						
1834	2.66	3178.81						
1835	2.65	3181.46						
1836	2.61	3184.07						
1837	2.62	3186.69						
1838	2.66	3189.35						
1839	2.74	3192.09						
1840	2.78	3194.87						
1841	2.78	3197.65						
1842	2.78	3200.43						
1843	2.70	3203.13						
1844	2.69	3205.82						
1845	2.69	3208.51						
1846	2.69	3211.20						
1847	2.63	3213.83						
1848	2.60	3216.43						
1849	2.59	3219.02						
1850	2.64	3221.66						
1851	2.62	3224.28						
1852	2.61	3226.89						
1853	2.55	3229.44						
1854	2.58	3232.02						
1855	2.60	3234.62						
1856	2.68	3237.30						
1857	2.73	3240.03						
1858	2.71	3242.74						
1859	2.68	3245.42						
1860	2.70	3248.12						
1861	2.67	3250.79						
1862	2.65	3253.44						
1863	2.64	3256.08						
1864	2.64	3258.72						
1865	2.64	3261.36						
1866	2.64	3264.00						
1867	2.65	3266.65						
1868	2.66	3269.31						
1869	2.65	3271.96						
1870	2.68	3274.64						
1871	2.69	3277.33						

UE12n#11

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
20	2.18	0.00	70	2.11	109.56	120	1.50	195.33
21	2.19	2.19	71	2.10	111.66	121	1.48	196.82
22	2.16	4.35	72	2.10	113.76	122	1.48	198.30
23	2.24	6.58	73	2.10	115.86	123	1.46	199.75
24	2.24	8.83	74	2.05	117.91	124	1.46	201.21
25	2.24	11.07	75	1.97	119.88	125	1.48	202.70
26	2.23	13.30	76	1.87	121.75	126	1.54	204.24
27	2.23	15.54	77	1.83	123.58	127	1.58	205.82
28	2.22	17.76	78	1.80	125.38	128	1.61	207.43
29	2.20	19.96	79	1.84	127.21	129	1.66	209.09
30	0.00	22.15	80	1.81	129.02	130	1.67	210.76
31	0.00	24.35	81	1.83	130.85	131	1.68	212.45
32	0.00	26.54	82	1.80	132.65	132	1.63	214.08
33	0.00	28.73	83	1.78	134.43	133	1.61	215.69
34	0.00	30.93	84	1.77	136.21	134	1.62	217.31
35	0.00	33.12	85	1.77	137.97	135	1.70	219.01
36	0.00	35.31	86	1.77	139.74	136	1.71	220.73
37	0.00	37.51	87	1.78	141.52	137	1.69	222.42
38	0.00	39.70	88	1.78	143.30	138	1.61	224.03
39	0.00	41.89	89	1.77	145.07	139	1.61	225.64
40	0.00	44.09	90	1.75	146.83	140	1.75	227.39
41	2.18	46.28	91	1.74	148.56	141	1.72	229.11
42	2.18	48.46	92	1.74	150.30	142	1.72	230.83
43	2.14	50.60	93	1.73	152.03	143	1.74	232.57
44	2.09	52.69	94	1.70	153.73	144	1.75	234.32
45	2.11	54.80	95	1.68	155.40	145	1.76	236.08
46	2.12	56.92	96	1.67	157.07	146	1.75	237.83
47	2.15	59.07	97	1.65	158.72	147	1.75	239.58
48	2.25	61.32	98	1.64	160.36	148	1.70	241.28
49	2.21	63.53	99	1.65	162.00	149	1.66	242.95
50	2.20	65.73	100	1.65	163.66	150	1.63	244.57
51	2.24	67.97	101	1.65	165.31	151	1.60	246.17
52	2.21	70.17	102	1.64	166.95	152	1.60	247.77
53	2.22	72.40	103	1.63	168.58	153	1.63	249.40
54	2.23	74.63	104	1.62	170.19	154	1.65	251.05
55	2.25	76.88	105	1.61	171.80	155	1.64	252.68
56	2.25	79.13	106	1.60	173.40	156	1.59	254.27
57	2.26	81.39	107	1.60	175.00	157	1.49	255.76
58	2.26	83.66	108	1.60	176.60	158	1.45	257.22
59	2.26	85.92	109	1.62	178.21	159	1.55	258.77
60	2.24	88.16	110	1.63	179.84	160	1.55	260.31
61	2.22	90.37	111	1.61	181.45	161	1.54	261.86
62	2.20	92.58	112	1.60	183.05	162	1.54	263.39
63	2.19	94.77	113	1.58	184.63	163	1.52	264.91
64	2.14	96.91	114	1.56	186.19	164	1.45	266.37
65	2.10	99.00	115	1.55	187.74	165	1.37	267.74
66	2.08	101.09	116	1.54	189.27	166	1.36	269.10
67	2.09	103.18	117	1.52	190.80	167	1.58	270.68
68	2.14	105.32	118	1.52	192.32	168	1.55	272.23
69	2.13	107.45	119	1.51	193.83	169	1.49	273.72

UE12n#11--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
170	1.47	275.18	220	1.68	347.31	270	1.63	426.99
171	1.43	276.61	221	1.71	349.02	271	1.63	428.61
172	1.36	277.97	222	1.70	350.73	272	1.60	430.21
173	1.33	279.31	223	1.70	352.43	273	1.52	431.74
174	1.29	280.60	224	1.59	354.02	274	1.46	433.20
175	1.24	281.84	225	1.56	355.58	275	1.39	434.59
176	1.28	283.11	226	1.49	357.07	276	1.31	435.90
177	1.51	284.62	227	1.48	358.55	277	1.33	437.23
178	1.53	286.15	228	1.42	359.97	278	1.40	438.63
179	1.55	287.70	229	1.42	361.39	279	1.49	440.12
180	1.55	289.24	230	1.40	362.79	280	1.59	441.72
181	1.52	290.76	231	1.42	364.21	281	1.65	443.36
182	1.52	292.28	232	1.51	365.72	282	1.66	445.03
183	1.54	293.82	233	1.57	367.29	283	1.68	446.70
184	1.47	295.29	234	1.57	368.86	284	1.70	448.40
185	1.46	296.75	235	1.59	370.45	285	1.73	450.13
186	1.45	298.20	236	1.60	372.05	286	1.76	451.89
187	1.54	299.75	237	1.55	373.60	287	1.78	453.67
188	1.53	301.28	238	1.55	375.15	288	1.77	455.44
189	1.50	302.78	239	1.61	376.76	289	1.77	457.21
190	1.48	304.26	240	1.66	378.42	290	1.72	458.93
191	1.47	305.73	241	1.60	380.02	291	1.72	460.66
192	1.46	307.18	242	1.53	381.55	292	1.77	462.42
193	1.45	308.63	243	1.52	383.07	293	1.77	464.19
194	1.46	310.09	244	1.59	384.66	294	1.76	465.95
195	1.35	311.44	245	1.60	386.26	295	1.74	467.69
196	1.27	312.72	246	1.59	387.86	296	1.69	469.37
197	1.21	313.93	247	1.57	389.43	297	1.68	471.06
198	1.18	315.11	248	1.58	391.01	298	1.70	472.75
199	1.23	316.34	249	1.55	392.56	299	1.70	474.46
200	1.27	317.61	250	1.51	394.07	300	1.70	476.15
201	1.34	318.95	251	1.52	395.58	301	1.68	477.83
202	1.35	320.30	252	1.58	397.16	302	1.67	479.50
203	1.35	321.65	253	1.65	398.82	303	1.67	481.17
204	1.44	323.08	254	1.63	400.45	304	1.66	482.84
205	1.51	324.59	255	1.60	402.05	305	1.66	484.50
206	1.51	326.10	256	1.57	403.62	306	1.67	486.17
207	1.48	327.58	257	1.63	405.25	307	1.66	487.83
208	1.38	328.96	258	1.69	406.94	308	1.66	489.49
209	1.35	330.32	259	1.69	408.63	309	1.66	491.16
210	1.39	331.71	260	1.68	410.32	310	1.66	492.82
211	1.42	333.12	261	1.69	412.00	311	1.66	494.48
212	1.45	334.58	262	1.67	413.68	312	1.66	496.14
213	1.47	336.04	263	1.66	415.34	313	1.69	497.82
214	1.50	337.54	264	1.66	417.00	314	1.69	499.51
215	1.62	339.16	265	1.68	418.69	315	1.67	501.18
216	1.60	340.77	266	1.67	420.36	316	1.69	502.86
217	1.59	342.36	267	1.69	422.04	317	1.70	504.56
218	1.63	343.99	268	1.67	423.71	318	1.70	506.26
219	1.64	345.63	269	1.64	425.36	319	1.70	507.96

UE12n#11--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
320	1.68	509.64	370	1.72	592.99	420	1.85	679.18
321	1.67	511.31	371	1.72	594.71	421	1.84	681.01
322	1.66	512.96	372	1.68	596.39	422	1.84	682.85
323	1.64	514.61	373	1.63	598.02	423	1.85	684.70
324	1.64	516.25	374	1.55	599.57	424	1.86	686.56
325	1.63	517.88	375	1.54	601.11	425	1.86	688.42
326	1.62	519.50	376	1.60	602.70	426	1.79	690.21
327	1.63	521.12	377	1.56	604.26	427	1.78	691.99
328	1.64	522.76	378	1.50	605.76	428	1.81	693.80
329	1.62	524.38	379	1.54	607.30	429	1.81	695.60
330	1.61	525.99	380	1.61	608.91	430	1.77	697.37
331	1.59	527.59	381	1.76	610.67	431	1.80	699.17
332	1.61	529.20	382	1.76	612.43	432	1.84	701.01
333	1.65	530.84	383	1.77	614.20	433	1.86	702.87
334	1.67	532.51	384	1.83	616.03	434	1.89	704.77
335	1.68	534.19	385	1.84	617.88	435	1.89	706.65
336	1.68	535.87	386	1.84	619.71	436	1.89	708.55
337	1.65	537.53	387	1.85	621.56	437	1.89	710.43
338	1.56	539.09	388	1.87	623.43	438	1.86	712.29
339	1.57	540.66	389	1.86	625.29	439	1.83	714.11
340	1.58	542.25	390	1.86	627.15	440	1.82	715.94
341	1.57	543.81	391	1.86	629.00	441	1.82	717.76
342	1.59	545.41	392	1.87	630.87	442	1.82	719.58
343	1.71	547.11	393	1.86	632.73	443	1.82	721.40
344	1.71	548.82	394	1.86	634.59	444	1.81	723.21
345	1.72	550.55	395	1.86	636.45	445	1.81	725.02
346	1.78	552.33	396	1.86	638.31	446	1.78	726.80
347	1.82	554.15	397	1.85	640.17	447	1.81	728.62
348	1.81	555.96	398	1.83	642.00	448	1.83	730.45
349	1.79	557.76	399	1.81	643.80	449	1.82	732.27
350	1.82	559.58	400	1.82	645.62	450	1.83	734.10
351	1.81	561.39	401	1.86	647.48	451	1.83	735.93
352	1.75	563.15	402	1.84	649.31	452	1.84	737.77
353	1.67	564.81	403	1.81	651.12	453	1.83	739.60
354	1.67	566.49	404	1.79	652.91	454	1.81	741.41
355	1.78	568.27	405	1.69	654.60	455	1.79	743.20
356	1.80	570.06	406	1.49	656.09	456	1.78	744.98
357	1.76	571.82	407	1.43	657.51	457	1.78	746.76
358	1.73	573.56	408	1.41	658.93	458	1.77	748.52
359	1.69	575.25	409	1.43	660.36	459	1.76	750.29
360	1.63	576.88	410	1.47	661.83	460	1.77	752.06
361	1.57	578.46	411	1.49	663.31	461	1.76	753.82
362	1.53	579.99	412	1.52	664.83	462	1.75	755.57
363	1.54	581.52	413	1.61	666.44	463	1.73	757.30
364	1.66	583.18	414	1.79	668.23	464	1.72	759.02
365	1.69	584.88	415	1.86	670.08	465	1.71	760.73
366	1.68	586.55	416	1.81	671.89	466	1.68	762.41
367	1.61	588.16	417	1.78	673.67	467	1.65	764.06
368	1.56	589.72	418	1.80	675.47	468	1.58	765.64
369	1.54	591.26	419	1.85	677.32	469	1.55	767.19

UE12n#11--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
470	1.55	768.74	520	1.53	850.82	570	1.62	930.59
471	1.56	770.30	521	1.53	852.35	571	1.65	932.24
472	1.55	771.85	522	1.51	853.86	572	1.79	934.03
473	1.51	773.36	523	1.50	855.36	573	1.88	935.90
474	1.52	774.88	524	1.63	856.99	574	1.88	937.78
475	1.57	776.44	525	1.66	858.65	575	1.86	939.64
476	1.67	778.11	526	1.60	860.26	576	1.83	941.47
477	1.70	779.81	527	1.59	861.84	577	1.80	943.27
478	1.72	781.53	528	1.61	863.46	578	1.73	945.00
479	1.74	783.27	529	1.60	865.06	579	1.71	946.71
480	1.74	785.01	530	1.57	866.63	580	1.69	948.40
481	1.75	786.76	531	1.55	868.18	581	1.70	950.10
482	1.77	788.53	532	1.58	869.76	582	1.77	951.88
483	1.74	790.26	533	1.58	871.34	583	1.73	953.60
484	1.71	791.97	534	1.56	872.91	584	1.68	955.28
485	1.69	793.66	535	1.50	874.41	585	1.71	957.00
486	1.63	795.29	536	1.47	875.88	586	1.86	958.86
487	1.60	796.90	537	1.41	877.29	587	1.89	960.75
488	1.58	798.48	538	1.38	878.66	588	1.84	962.59
489	1.64	800.11	539	1.34	880.01	589	1.80	964.39
490	1.70	801.81	540	1.32	881.33	590	1.75	966.13
491	1.72	803.53	541	1.32	882.65	591	1.71	967.84
492	1.72	805.26	542	1.33	883.98	592	1.72	969.56
493	1.72	806.98	543	1.53	885.51	593	1.77	971.33
494	1.70	808.68	544	1.73	887.24	594	1.77	973.11
495	1.66	810.34	545	1.75	888.99	595	1.76	974.86
496	1.64	811.98	546	1.77	890.75	596	1.74	976.60
497	1.69	813.67	547	1.81	892.57	597	1.73	978.34
498	1.73	815.40	548	1.80	894.36	598	1.74	980.07
499	1.73	817.13	549	1.75	896.11	599	1.72	981.79
500	1.72	818.86	550	1.75	897.86	600	1.70	983.49
501	1.73	820.58	551	1.68	899.54	601	1.67	985.16
502	1.73	822.31	552	1.59	901.13	602	1.66	986.82
503	1.72	824.04	553	1.50	902.63	603	1.62	988.44
504	1.72	825.75	554	1.56	904.19	604	1.57	990.01
505	1.59	827.34	555	1.63	905.83	605	1.56	991.56
506	1.49	828.83	556	1.65	907.47	606	1.56	993.12
507	1.49	830.32	557	1.65	909.12	607	1.58	994.70
508	1.58	831.90	558	1.58	910.70	608	1.59	996.29
509	1.65	833.55	559	1.50	912.20	609	1.58	997.87
510	1.64	835.19	560	1.49	913.69	610	1.66	999.52
511	1.61	836.80	561	1.53	915.21	611	1.69	1001.21
512	1.59	838.39	562	1.60	916.82	612	1.66	1002.87
513	1.65	840.04	563	1.75	918.56	613	1.61	1004.48
514	1.66	841.70	564	1.72	920.29	614	1.62	1006.10
515	1.59	843.29	565	1.72	922.00	615	1.70	1007.80
516	1.49	844.78	566	1.75	923.75	616	1.75	1009.55
517	1.44	846.21	567	1.77	925.52	617	1.75	1011.30
518	1.54	847.75	568	1.76	927.27	618	1.75	1013.05
519	1.54	849.29	569	1.70	928.97	619	1.78	1014.83

UE12n#11--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
620	1.81	1016.64	670	1.69	1095.43	720	1.28	1171.63
621	1.81	1018.45	671	1.63	1097.06	721	1.28	1172.91
622	1.79	1020.24	672	1.54	1098.60	722	1.26	1174.17
623	1.80	1022.04	673	1.49	1100.09	723	1.23	1175.40
624	1.79	1023.83	674	1.33	1101.42	724	1.21	1176.61
625	1.76	1025.59	675	1.39	1102.81	725	1.20	1177.81
626	1.74	1027.33	676	1.66	1104.47	726	1.20	1179.01
627	1.71	1029.04	677	1.69	1106.16	727	1.22	1180.23
628	1.67	1030.71	678	1.64	1107.80	728	1.27	1181.50
629	1.70	1032.41	679	1.55	1109.35	729	1.24	1182.74
630	1.62	1034.03	680	1.42	1110.77	730	1.21	1183.95
631	1.58	1035.61	681	1.40	1112.17	731	1.22	1185.17
632	1.49	1037.10	682	1.45	1113.62	732	1.24	1186.41
633	1.52	1038.62	683	1.75	1115.37	733	1.27	1187.68
634	1.57	1040.19	684	1.77	1117.14	734	1.34	1189.02
635	1.57	1041.76	685	1.77	1118.91	735	1.40	1190.42
636	1.65	1043.41	686	1.80	1120.71	736	1.56	1191.98
637	1.65	1045.06	687	1.84	1122.55	737	1.52	1193.50
638	1.60	1046.66	688	1.86	1124.41	738	1.50	1195.00
639	1.57	1048.23	689	1.84	1126.25	739	1.49	1196.49
640	1.55	1049.78	690	1.82	1128.07	740	1.49	1197.98
641	1.51	1051.29	691	1.77	1129.84	741	1.46	1199.44
642	1.37	1052.66	692	1.74	1131.58	742	1.44	1200.88
643	1.32	1053.98	693	1.71	1133.29	743	1.51	1202.39
644	1.25	1055.23	694	1.68	1134.97	744	1.46	1203.85
645	1.25	1056.48	695	1.67	1136.64	745	1.38	1205.23
646	1.26	1057.74	696	1.62	1138.26	746	1.42	1206.65
647	1.35	1059.09	697	1.62	1139.88	747	1.47	1208.12
648	1.51	1060.60	698	1.59	1141.47	748	1.74	1209.86
649	1.67	1062.27	699	1.54	1143.01	749	1.81	1211.67
650	1.59	1063.86	700	1.50	1144.51	750	1.86	1213.53
651	1.56	1065.42	701	1.50	1146.01	751	1.87	1215.40
652	1.52	1066.94	702	1.49	1147.50	752	1.85	1217.25
653	1.45	1068.39	703	1.49	1148.99	753	1.81	1219.06
654	1.35	1069.74	704	1.48	1150.47	754	1.75	1220.81
655	1.31	1071.05	705	1.44	1151.91	755	1.59	1222.40
656	1.31	1072.36	706	1.33	1153.24	756	1.59	1223.99
657	1.38	1073.74	707	1.30	1154.54	757	1.62	1225.61
658	1.49	1075.23	708	1.31	1155.85	758	1.63	1227.24
659	1.62	1076.85	709	1.34	1157.19	759	1.65	1228.89
660	1.51	1078.36	710	1.32	1158.51	760	1.64	1230.53
661	1.54	1079.90	711	1.26	1159.77	761	1.59	1232.12
662	1.69	1081.59	712	1.22	1160.99	762	1.54	1233.66
663	1.77	1083.36	713	1.24	1162.23	763	1.54	1235.20
664	1.76	1085.12	714	1.30	1163.53	764	1.55	1236.75
665	1.67	1086.79	715	1.39	1164.92	765	1.62	1238.37
666	1.69	1088.48	716	1.46	1166.38	766	1.67	1240.04
667	1.73	1090.21	717	1.36	1167.74	767	1.73	1241.77
668	1.77	1091.98	718	1.31	1169.05	768	1.79	1243.56
669	1.76	1093.74	719	1.30	1170.35	769	1.79	1245.35

UE12n#11--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
770	1.76	1247.11	820	1.48	1320.82	870	1.57	1394.53
771	1.75	1248.86	821	1.49	1322.31	871	1.56	1396.09
772	0.00	1250.43	822	1.48	1323.79	872	1.53	1397.62
773	0.00	1252.00	823	1.47	1325.26	873	1.53	1399.15
774	0.00	1253.57	824	1.49	1326.75	874	1.55	1400.70
775	0.00	1255.14	825	1.51	1328.26	875	1.56	1402.26
776	0.00	1256.71	826	1.44	1329.70	876	1.55	1403.81
777	0.00	1258.28	827	1.43	1331.13	877	1.53	1405.34
778	0.00	1259.85	828	1.43	1332.56	878	1.51	1406.85
779	0.00	1261.42	829	1.44	1334.00	879	1.49	1408.34
780	0.00	1262.99	830	1.45	1335.45	880	1.49	1409.83
781	0.00	1264.56	831	1.44	1336.89	881	1.49	1411.32
782	0.00	1266.13	832	1.43	1338.32	882	1.51	1412.83
783	0.00	1267.70	833	1.45	1339.77	883	1.53	1414.36
784	0.00	1269.27	834	1.47	1341.24	884	1.53	1415.89
785	1.40	1270.84	835	1.48	1342.72	885	1.53	1417.42
786	1.40	1272.24	836	1.51	1344.23	886	1.53	1418.95
787	1.42	1273.66	837	1.54	1345.77	887	1.53	1420.48
788	1.43	1275.09	838	1.55	1347.32	888	1.53	1422.01
789	1.41	1276.50	839	1.54	1348.86	889	1.54	1423.55
790	1.39	1277.89	840	1.54	1350.40	890	1.53	1425.08
791	1.40	1279.29	841	1.53	1351.93	891	1.51	1426.59
792	1.39	1280.68	842	1.52	1353.45	892	1.52	1428.11
793	1.38	1282.06	843	1.51	1354.96	893	1.54	1429.65
794	1.37	1283.43	844	1.50	1356.46	894	1.56	1431.21
795	1.39	1284.82	845	1.49	1357.95	895	1.60	1432.81
796	1.40	1286.22	846	1.49	1359.44	896	1.57	1434.38
797	1.41	1287.63	847	1.48	1360.92	897	1.55	1435.93
798	1.42	1289.05	848	1.45	1362.37	898	1.53	1437.46
799	1.43	1290.48	849	1.45	1363.82	899	1.52	1438.98
800	1.45	1291.93	850	1.45	1365.27	900	1.54	1440.52
801	1.45	1293.38	851	1.46	1366.73	901	1.54	1442.06
802	1.45	1294.83	852	1.47	1368.20	902	1.57	1443.63
803	1.44	1296.27	853	1.48	1369.68	903	1.58	1445.21
804	1.41	1297.68	854	1.47	1371.15	904	1.51	1446.72
805	1.42	1299.10	855	1.45	1372.60	905	1.49	1448.21
806	1.43	1300.53	856	1.45	1374.05	906	1.47	1449.68
807	1.44	1301.97	857	1.46	1375.51	907	1.47	1451.15
808	1.45	1303.42	858	1.46	1376.97	908	1.49	1452.64
809	1.44	1304.86	859	1.45	1378.42	909	1.52	1454.16
810	1.43	1306.29	860	1.44	1379.86	910	1.59	1455.75
811	1.43	1307.72	861	1.44	1381.30	911	1.58	1457.33
812	1.43	1309.15	862	1.44	1382.74	912	1.58	1458.91
813	1.43	1310.58	863	1.44	1384.18	913	1.58	1460.49
814	1.45	1312.03	864	1.44	1385.62	914	1.56	1462.05
815	1.47	1313.50	865	1.44	1387.06	915	1.57	1463.62
816	1.47	1314.97	866	1.44	1388.50	916	1.58	1465.20
817	1.46	1316.43	867	1.45	1389.95	917	1.63	1466.83
818	1.45	1317.88	868	1.48	1391.43	918	1.62	1468.45
819	1.46	1319.34	869	1.53	1392.96	919	1.62	1470.07

UE12n#11--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
920	1.62	1471.69	970	1.95	1559.99	1020	1.93	1656.11
921	1.63	1473.32	971	1.94	1561.93	1021	1.92	1658.03
922	1.61	1474.93	972	1.93	1563.86	1022	1.91	1659.94
923	1.58	1476.51	973	1.92	1565.78	1023	1.88	1661.82
924	1.58	1478.09	974	1.92	1567.70	1024	1.87	1663.69
925	1.59	1479.68	975	1.94	1569.64	1025	1.87	1665.56
926	1.62	1481.30	976	1.95	1571.59	1026	1.91	1667.47
927	1.65	1482.95	977	1.96	1573.55	1027	1.91	1669.38
928	1.69	1484.64	978	1.96	1575.51	1028	1.91	1671.29
929	1.69	1486.33	979	1.96	1577.47	1029	1.90	1673.19
930	1.68	1488.01	980	1.97	1579.44	1030	1.90	1675.09
931	1.66	1489.67	981	1.97	1581.41	1031	1.88	1676.97
932	1.63	1491.30	982	1.97	1583.38	1032	1.88	1678.85
933	1.62	1492.92	983	1.97	1585.35	1033	1.87	1680.72
934	1.62	1494.54	984	1.97	1587.32	1034	1.88	1682.60
935	1.63	1496.17	985	1.96	1589.28	1035	1.88	1684.48
936	1.64	1497.81	986	1.95	1591.23	1036	1.88	1686.36
937	1.66	1499.47	987	1.94	1593.17	1037	1.91	1688.27
938	1.68	1501.15	988	1.93	1595.10	1038	1.93	1690.20
939	1.68	1502.83	989	1.93	1597.03	1039	1.91	1692.11
940	1.67	1504.50	990	1.93	1598.96	1040	1.90	1694.01
941	1.67	1506.17	991	1.93	1600.89	1041	1.90	1695.91
942	1.67	1507.84	992	1.93	1602.82	1042	1.89	1697.80
943	1.69	1509.53	993	1.91	1604.73	1043	1.88	1699.68
944	1.69	1511.22	994	1.91	1606.64	1044	1.86	1701.54
945	1.71	1512.93	995	1.89	1608.53	1045	1.86	1703.40
946	1.74	1514.67	996	1.89	1610.42	1046	1.83	1705.23
947	1.78	1516.45	997	1.87	1612.29	1047	1.82	1707.05
948	1.81	1518.26	998	1.85	1614.14	1048	1.80	1708.85
949	1.85	1520.11	999	1.79	1615.93	1049	1.86	1710.71
950	1.87	1521.98	1000	1.75	1617.68	1050	1.90	1712.61
951	1.86	1523.84	1001	1.76	1619.44	1051	1.90	1714.51
952	1.86	1525.70	1002	1.77	1621.21	1052	1.89	1716.40
953	1.87	1527.57	1003	1.95	1623.16	1053	1.88	1718.28
954	1.87	1529.44	1004	1.94	1625.10	1054	1.87	1720.15
955	1.86	1531.30	1005	1.93	1627.03	1055	1.90	1722.05
956	1.85	1533.15	1006	1.94	1628.97	1056	1.91	1723.96
957	1.85	1535.00	1007	1.92	1630.89	1057	1.89	1725.85
958	1.84	1536.84	1008	1.91	1632.80	1058	1.87	1727.72
959	1.84	1538.68	1009	1.92	1634.72	1059	1.87	1729.59
960	1.85	1540.53	1010	1.95	1636.67	1060	1.86	1731.45
961	1.86	1542.39	1011	1.96	1638.63	1061	1.86	1733.31
962	1.89	1544.28	1012	1.95	1640.58	1062	1.84	1735.15
963	1.93	1546.21	1013	1.95	1642.53	1063	1.84	1736.99
964	1.98	1548.19	1014	1.94	1644.47	1064	1.85	1738.84
965	2.00	1550.19	1015	1.94	1646.41	1065	1.86	1740.70
966	1.97	1552.16	1016	1.94	1648.35	1066	1.89	1742.59
967	1.96	1554.12	1017	1.94	1650.29	1067	1.89	1744.48
968	1.97	1556.09	1018	1.95	1652.24	1068	1.90	1746.38
969	1.95	1558.04	1019	1.94	1654.18	1069	1.89	1748.27

UE12n#11--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1070	1.88	1750.15	1120	1.81	1843.70	1170	1.85	1936.22
1071	1.86	1752.01	1121	1.84	1845.54	1171	1.86	1938.08
1072	1.85	1753.86	1122	1.85	1847.39	1172	1.86	1939.94
1073	1.85	1755.71	1123	1.89	1849.28	1173	1.85	1941.79
1074	1.87	1757.58	1124	1.88	1851.16	1174	1.86	1943.65
1075	1.87	1759.45	1125	1.89	1853.05	1175	1.86	1945.51
1076	1.87	1761.32	1126	1.90	1854.95	1176	1.86	1947.37
1077	1.88	1763.20	1127	1.91	1856.86	1177	1.85	1949.22
1078	1.88	1765.08	1128	1.88	1858.74	1178	1.84	1951.06
1079	1.89	1766.97	1129	1.87	1860.61	1179	1.84	1952.90
1080	1.89	1768.86	1130	1.86	1862.47	1180	1.84	1954.74
1081	1.90	1770.76	1131	1.87	1864.34	1181	1.83	1956.57
1082	1.91	1772.67	1132	1.87	1866.21	1182	1.82	1958.39
1083	1.91	1774.58	1133	1.86	1868.07	1183	1.82	1960.21
1084	1.90	1776.48	1134	1.86	1869.93	1184	1.82	1962.03
1085	1.90	1778.38	1135	1.88	1871.81	1185	1.84	1963.87
1086	1.89	1780.27	1136	1.88	1873.69	1186	1.85	1965.72
1087	1.89	1782.16	1137	1.87	1875.56	1187	1.88	1967.60
1088	1.87	1784.03	1138	1.86	1877.42	1188	1.89	1969.49
1089	1.87	1785.90	1139	1.86	1879.28	1189	1.88	1971.37
1090	1.87	1787.77	1140	1.88	1881.16	1190	1.88	1973.25
1091	1.86	1789.63	1141	1.89	1883.05	1191	1.87	1975.12
1092	1.87	1791.50	1142	1.88	1884.93	1192	1.86	1976.98
1093	1.90	1793.40	1143	1.88	1886.81	1193	1.86	1978.84
1094	1.90	1795.30	1144	1.87	1888.68	1194	1.84	1980.68
1095	1.89	1797.19	1145	1.86	1890.54	1195	1.84	1982.52
1096	1.87	1799.06	1146	1.85	1892.39	1196	1.85	1984.37
1097	1.87	1800.93	1147	1.84	1894.23	1197	1.86	1986.23
1098	1.90	1802.83	1148	1.85	1896.08	1198	1.86	1988.09
1099	1.92	1804.75	1149	1.85	1897.93	1199	1.88	1989.97
1100	1.91	1806.66	1150	1.86	1899.79	1200	1.91	1991.88
1101	1.90	1808.56	1151	1.86	1901.65	1201	1.91	1993.79
1102	1.91	1810.47	1152	1.86	1903.51	1202	1.93	1995.72
1103	1.92	1812.39	1153	1.87	1905.38	1203	1.91	1997.63
1104	1.93	1814.32	1154	1.87	1907.25	1204	1.91	1999.54
1105	1.91	1816.23	1155	1.85	1909.10	1205	1.92	2001.46
1106	1.89	1818.12	1156	1.84	1910.94	1206	1.92	2003.38
1107	1.88	1820.00	1157	1.83	1912.77	1207	1.92	2005.30
1108	1.85	1821.85	1158	1.82	1914.59	1208	1.91	2007.21
1109	1.83	1823.68	1159	1.79	1916.38	1209	1.88	2009.09
1110	1.82	1825.50	1160	1.79	1918.17	1210	1.87	2010.96
1111	1.81	1827.31	1161	1.78	1919.95	1211	1.86	2012.82
1112	1.81	1829.12	1162	1.78	1921.73	1212	1.81	2014.63
1113	1.80	1830.92	1163	1.78	1923.51	1213	1.77	2016.40
1114	1.80	1832.72	1164	1.79	1925.30	1214	1.79	2018.19
1115	1.81	1834.53	1165	1.79	1927.09	1215	1.80	2019.99
1116	1.84	1836.37	1166	1.80	1928.89	1216	1.79	2021.78
1117	1.86	1838.23	1167	1.81	1930.70	1217	1.76	2023.54
1118	1.84	1840.07	1168	1.83	1932.53	1218	1.74	2025.28
1119	1.82	1841.89	1169	1.84	1934.37	1219	1.75	2027.03

UE12n#11--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1220	1.75	2028.78	1270	1.90	2122.30	1320	1.88	2215.39
1221	1.75	2030.53	1271	1.90	2124.20	1321	1.88	2217.27
1222	1.76	2032.29	1272	1.89	2126.09	1322	1.89	2219.16
1223	1.77	2034.06	1273	1.89	2127.98	1323	1.89	2221.05
1224	1.78	2035.84	1274	1.90	2129.88	1324	1.88	2222.93
1225	1.84	2037.68	1275	1.91	2131.79	1325	1.89	2224.82
1226	1.88	2039.56	1276	1.90	2133.69	1326	1.88	2226.70
1227	1.89	2041.45	1277	1.89	2135.58	1327	1.87	2228.57
1228	1.89	2043.34	1278	1.89	2137.47	1328	1.87	2230.44
1229	1.90	2045.24	1279	1.90	2139.37	1329	1.87	2232.31
1230	1.91	2047.15	1280	1.90	2141.27	1330	1.87	2234.18
1231	1.93	2049.08	1281	1.90	2143.17	1331	1.87	2236.05
1232	1.91	2050.99	1282	1.91	2145.08	1332	1.87	2237.92
1233	1.91	2052.90	1283	1.89	2146.97	1333	1.87	2239.79
1234	1.93	2054.83	1284	1.89	2148.86	1334	1.89	2241.68
1235	1.90	2056.73	1285	1.87	2150.73	1335	1.91	2243.59
1236	1.91	2058.64	1286	1.86	2152.59	1336	1.93	2245.52
1237	1.89	2060.53	1287	1.87	2154.46	1337	1.94	2247.46
1238	1.89	2062.42	1288	1.86	2156.32	1338	1.97	2249.43
1239	1.89	2064.31	1289	1.85	2158.17	1339	1.97	2251.40
1240	1.89	2066.20	1290	1.85	2160.02	1340	1.98	2253.38
1241	1.89	2068.09	1291	1.84	2161.86	1341	2.00	2255.38
1242	1.89	2069.98	1292	1.83	2163.69	1342	2.00	2257.38
1243	1.91	2071.89	1293	1.82	2165.51	1343	1.98	2259.36
1244	1.91	2073.80	1294	1.81	2167.32	1344	1.94	2261.30
1245	1.88	2075.68	1295	1.81	2169.13	1345	1.93	2263.23
1246	1.87	2077.55	1296	1.81	2170.94	1346	1.91	2265.14
1247	1.87	2079.42	1297	1.84	2172.78	1347	1.90	2267.04
1248	1.85	2081.27	1298	1.85	2174.63	1348	1.89	2268.93
1249	1.84	2083.11	1299	1.84	2176.47	1349	1.89	2270.82
1250	1.83	2084.94	1300	1.83	2178.30	1350	1.89	2272.71
1251	1.82	2086.76	1301	1.82	2180.12	1351	1.89	2274.60
1252	1.80	2088.56	1302	1.82	2181.94	1352	1.88	2276.48
1253	1.79	2090.35	1303	1.84	2183.78	1353	1.87	2278.35
1254	1.79	2092.14	1304	1.84	2185.62	1354	1.86	2280.21
1255	1.80	2093.94	1305	1.84	2187.46	1355	1.85	2282.06
1256	1.81	2095.75	1306	1.84	2189.30	1356	1.83	2283.89
1257	1.82	2097.57	1307	1.83	2191.13	1357	1.82	2285.71
1258	1.86	2099.43	1308	1.84	2192.97	1358	1.81	2287.52
1259	1.90	2101.33	1309	1.85	2194.82	1359	1.82	2289.34
1260	1.91	2103.24	1310	1.87	2196.69	1360	1.81	2291.15
1261	1.92	2105.16	1311	1.86	2198.55	1361	1.79	2292.94
1262	1.92	2107.08	1312	1.85	2200.40	1362	1.78	2294.72
1263	1.90	2108.98	1313	1.84	2202.24	1363	1.82	2296.54
1264	1.91	2110.89	1314	1.86	2204.10	1364	1.84	2298.38
1265	1.90	2112.79	1315	1.88	2205.98	1365	1.87	2300.25
1266	1.90	2114.69	1316	1.89	2207.87	1366	1.88	2302.13
1267	1.90	2116.59	1317	1.88	2209.75	1367	1.90	2304.03
1268	1.90	2118.49	1318	1.88	2211.63	1368	1.90	2305.93
1269	1.91	2120.40	1319	1.88	2213.51	1369	1.90	2307.83

UE12n#11--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1370	1.90	2309.73	1420	1.99	2408.30	1470	1.88	2502.44
1371	1.90	2311.63	1421	1.96	2410.26	1471	1.88	2504.32
1372	1.87	2313.50	1422	1.95	2412.21	1472	1.88	2506.20
1373	1.87	2315.37	1423	1.91	2414.12	1473	1.88	2508.08
1374	1.88	2317.25	1424	1.89	2416.01	1474	1.87	2509.95
1375	1.89	2319.14	1425	1.88	2417.89	1475	1.87	2511.82
1376	1.93	2321.07	1426	1.86	2419.75	1476	1.87	2513.69
1377	1.96	2323.03	1427	1.86	2421.61	1477	1.88	2515.57
1378	1.99	2325.02	1428	1.86	2423.47	1478	1.89	2517.46
1379	1.97	2326.99	1429	1.86	2425.33	1479	1.90	2519.36
1380	1.95	2328.94	1430	1.86	2427.19	1480	1.88	2521.24
1381	1.93	2330.87	1431	1.86	2429.05	1481	1.88	2523.12
1382	1.90	2332.77	1432	1.85	2430.90	1482	1.88	2525.00
1383	1.91	2334.68	1433	1.85	2432.75	1483	1.88	2526.88
1384	1.93	2336.61	1434	1.85	2434.60	1484	1.88	2528.76
1385	1.93	2338.54	1435	1.86	2436.46	1485	1.89	2530.65
1386	1.94	2340.48	1436	1.87	2438.33	1486	1.90	2532.55
1387	1.94	2342.42	1437	1.87	2440.20	1487	1.90	2534.45
1388	1.95	2344.37	1438	1.88	2442.08	1488	1.91	2536.36
1389	1.95	2346.32	1439	1.89	2443.97	1489	1.91	2538.27
1390	1.95	2348.27	1440	1.89	2445.86	1490	1.91	2540.18
1391	1.97	2350.24	1441	1.90	2447.76	1491	1.89	2542.07
1392	1.97	2352.21	1442	1.90	2449.66	1492	1.89	2543.96
1393	1.97	2354.18	1443	1.89	2451.55	1493	1.89	2545.85
1394	1.97	2356.15	1444	1.89	2453.44	1494	1.89	2547.74
1395	1.98	2358.13	1445	1.89	2455.33	1495	1.88	2549.62
1396	1.98	2360.11	1446	1.90	2457.23	1496	1.87	2551.49
1397	1.99	2362.10	1447	1.91	2459.14	1497	1.87	2553.36
1398	1.99	2364.09	1448	1.93	2461.07	1498	1.88	2555.24
1399	1.99	2366.08	1449	1.94	2463.01	1499	1.89	2557.13
1400	2.00	2368.08	1450	1.93	2464.94	1500	1.89	2559.02
1401	2.00	2370.08	1451	1.91	2466.85	1501	1.89	2560.91
1402	2.00	2372.08	1452	1.90	2468.75	1502	1.88	2562.79
1403	2.00	2374.08	1453	1.90	2470.65	1503	1.89	2564.68
1404	1.98	2376.06	1454	1.90	2472.55	1504	1.89	2566.57
1405	1.95	2378.01	1455	1.89	2474.44	1505	1.90	2568.47
1406	1.93	2379.94	1456	1.88	2476.32	1506	1.90	2570.37
1407	1.88	2381.82	1457	1.87	2478.19	1507	1.91	2572.28
1408	1.88	2383.70	1458	1.86	2480.05	1508	1.91	2574.19
1409	2.01	2385.71	1459	1.87	2481.92	1509	1.91	2576.10
1410	2.05	2387.76	1460	1.87	2483.79	1510	1.91	2578.01
1411	2.08	2389.84	1461	1.87	2485.66	1511	1.90	2579.91
1412	2.09	2391.93	1462	1.86	2487.52	1512	1.87	2581.78
1413	2.07	2394.00	1463	1.86	2489.38	1513	1.86	2583.64
1414	2.05	2396.05	1464	1.86	2491.24	1514	1.86	2585.50
1415	2.07	2398.12	1465	1.86	2493.10	1515	1.86	2587.36
1416	2.07	2400.19	1466	1.85	2494.95	1516	1.87	2589.23
1417	2.05	2402.24	1467	1.86	2496.81	1517	1.87	2591.10
1418	2.04	2404.28	1468	1.87	2498.68	1518	1.89	2592.99
1419	2.03	2406.31	1469	1.88	2500.56	1519	1.89	2594.88

UE12n#11--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1520	1.89	2596.77	1570	1.89	2691.41	1620	2.00	2788.60
1521	1.89	2598.66	1571	1.89	2693.30	1621	1.99	2790.59
1522	1.90	2600.56	1572	1.90	2695.20	1622	1.99	2792.58
1523	1.90	2602.46	1573	1.90	2697.10	1623	1.99	2794.57
1524	1.90	2604.36	1574	1.90	2699.00	1624	2.00	2796.57
1525	1.89	2606.25	1575	1.89	2700.89	1625	2.00	2798.57
1526	1.87	2608.12	1576	1.89	2702.78	1626	2.01	2800.58
1527	1.87	2609.99	1577	1.90	2704.68	1627	2.01	2802.59
1528	1.87	2611.86	1578	1.91	2706.59	1628	2.01	2804.60
1529	1.88	2613.74	1579	1.91	2708.50	1629	2.01	2806.61
1530	1.89	2615.63	1580	1.91	2710.41	1630	2.01	2808.62
1531	1.90	2617.53	1581	1.91	2712.32	1631	2.01	2810.63
1532	1.90	2619.43	1582	1.91	2714.23	1632	2.03	2812.66
1533	1.90	2621.33	1583	1.91	2716.14	1633	2.03	2814.69
1534	1.88	2623.21	1584	1.91	2718.05	1634	2.04	2816.73
1535	1.88	2625.09	1585	1.92	2719.97	1635	2.04	2818.77
1536	1.88	2626.97	1586	1.91	2721.88	1636	2.04	2820.81
1537	1.89	2628.86	1587	1.91	2723.79	1637	2.04	2822.85
1538	1.90	2630.76	1588	1.91	2725.70	1638	2.04	2824.89
1539	1.91	2632.67	1589	1.91	2727.61	1639	2.04	2826.93
1540	1.91	2634.58	1590	1.91	2729.52	1640	2.04	2828.97
1541	1.90	2636.48	1591	1.92	2731.44	1641	2.04	2831.01
1542	1.90	2638.38	1592	1.93	2733.37	1642	2.03	2833.04
1543	1.91	2640.29	1593	1.94	2735.31	1643	2.04	2835.08
1544	1.92	2642.21	1594	1.93	2737.24	1644	2.04	2837.12
1545	1.92	2644.13	1595	1.93	2739.17	1645	2.04	2839.16
1546	1.91	2646.04	1596	1.93	2741.10	1646	2.04	2841.20
1547	1.90	2647.94	1597	1.94	2743.04	1647	2.04	2843.24
1548	1.89	2649.83	1598	1.94	2744.98	1648	2.05	2845.29
1549	1.88	2651.71	1599	1.94	2746.92	1649	2.04	2847.33
1550	1.88	2653.59	1600	1.94	2748.86	1650	2.04	2849.37
1551	1.88	2655.47	1601	1.94	2750.80	1651	2.05	2851.42
1552	1.88	2657.35	1602	1.93	2752.73	1652	2.05	2853.47
1553	1.89	2659.24	1603	1.94	2754.67	1653	2.05	2855.52
1554	1.89	2661.13	1604	1.95	2756.62	1654	2.05	2857.57
1555	1.89	2663.02	1605	1.95	2758.57	1655	2.05	2859.62
1556	1.89	2664.91	1606	1.96	2760.53	1656	2.04	2861.66
1557	1.89	2666.80	1607	1.96	2762.49	1657	2.04	2863.70
1558	1.89	2668.69	1608	1.96	2764.45	1658	2.04	2865.74
1559	1.89	2670.58	1609	1.95	2766.40	1659	2.03	2867.77
1560	1.88	2672.46	1610	1.95	2768.35	1660	2.02	2869.79
1561	1.88	2674.34	1611	1.98	2770.33	1661	2.01	2871.80
1562	1.89	2676.23	1612	1.99	2772.32	1662	2.00	2873.80
1563	1.90	2678.13	1613	2.00	2774.32	1663	2.00	2875.80
1564	1.90	2680.03	1614	2.04	2776.36	1664	2.00	2877.80
1565	1.90	2681.93	1615	2.04	2778.40	1665	2.00	2879.80
1566	1.90	2683.83	1616	2.04	2780.44	1666	2.00	2881.80
1567	1.90	2685.73	1617	2.05	2782.49	1667	1.98	2883.78
1568	1.90	2687.63	1618	2.07	2784.56	1668	1.99	2885.77
1569	1.89	2689.52	1619	2.04	2786.60	1669	1.99	2887.76

UE12n#11--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1670	1.99	2889.75	1720	2.58	3001.89	1770	2.41	3124.30
1671	1.99	2891.74	1721	2.50	3004.39	1771	2.44	3126.74
1672	2.00	2893.74	1722	2.55	3006.94	1772	2.44	3129.18
1673	2.02	2895.76	1723	2.53	3009.47	1773	2.47	3131.65
1674	2.01	2897.77	1724	2.50	3011.97	1774	2.51	3134.16
1675	2.01	2899.78	1725	2.49	3014.46	1775	2.48	3136.64
1676	2.03	2901.81	1726	2.44	3016.90	1776	2.46	3139.10
1677	2.04	2903.85	1727	2.34	3019.24	1777	2.48	3141.58
1678	2.03	2905.88	1728	2.25	3021.49	1778	2.48	3144.06
1679	2.05	2907.93	1729	2.17	3023.66	1779	2.50	3146.56
1680	2.07	2910.00	1730	2.11	3025.77	1780	2.47	3149.03
1681	2.08	2912.08	1731	2.26	3028.03	1781	2.46	3151.49
1682	2.09	2914.17	1732	2.53	3030.56	1782	2.46	3153.95
1683	2.09	2916.26	1733	2.55	3033.11	1783	2.46	3156.41
1684	2.09	2918.35	1734	2.56	3035.67	1784	2.46	3158.87
1685	2.10	2920.45	1735	2.56	3038.23	1785	2.40	3161.27
1686	2.10	2922.55	1736	2.54	3040.77	1786	2.35	3163.62
1687	2.11	2924.66	1737	2.50	3043.27	1787	2.38	3166.00
1688	2.10	2926.76	1738	2.52	3045.79	1788	2.35	3168.35
1689	2.10	2928.86	1739	2.54	3048.33	1789	2.38	3170.73
1690	2.10	2930.96	1740	2.57	3050.90	1790	2.55	3173.28
1691	2.09	2933.05	1741	2.58	3053.48	1791	2.51	3175.79
1692	2.07	2935.12	1742	2.61	3056.09	1792	2.46	3178.25
1693	2.08	2937.20	1743	2.59	3058.68	1793	2.49	3180.74
1694	2.11	2939.31	1744	2.56	3061.24	1794	2.53	3183.27
1695	2.11	2941.42	1745	2.54	3063.78	1795	2.52	3185.79
1696	2.11	2943.53	1746	2.53	3066.31	1796	2.51	3188.30
1697	2.11	2945.64	1747	2.51	3068.82	1797	2.41	3190.71
1698	2.11	2947.75	1748	2.50	3071.32	1798	2.40	3193.11
1699	2.12	2949.87	1749	2.49	3073.81	1799	2.47	3195.58
1700	2.14	2952.01	1750	2.48	3076.29	1800	2.58	3198.16
1701	2.17	2954.18	1751	2.43	3078.72	1801	2.58	3200.74
1702	2.19	2956.37	1752	2.40	3081.12	1802	2.48	3203.22
1703	2.23	2958.60	1753	2.51	3083.63	1803	2.46	3205.68
1704	2.25	2960.85	1754	2.41	3086.04	1804	2.46	3208.14
1705	2.29	2963.14	1755	2.40	3088.44	1805	2.45	3210.59
1706	2.41	2965.55	1756	2.40	3090.84	1806	2.46	3213.05
1707	2.50	2968.05	1757	2.40	3093.24	1807	2.48	3215.53
1708	2.59	2970.64	1758	2.40	3095.64	1808	2.47	3218.00
1709	2.57	2973.21	1759	2.40	3098.04	1809	2.51	3220.51
1710	2.56	2975.77	1760	2.40	3100.44	1810	2.54	3223.05
1711	2.57	2978.34	1761	2.41	3102.85	1811	2.54	3225.59
1712	2.59	2980.93	1762	2.46	3105.31	1812	2.50	3228.09
1713	2.60	2983.53	1763	2.45	3107.76	1813	2.45	3230.54
1714	2.61	2986.14	1764	2.47	3110.23	1814	2.41	3232.95
1715	2.61	2988.75	1765	2.41	3112.64	1815	2.41	3235.36
1716	2.66	2991.41	1766	2.37	3115.01	1816	2.41	3237.77
1717	2.67	2994.08	1767	2.31	3117.32	1817	2.45	3240.22
1718	2.63	2996.71	1768	2.27	3119.59	1818	2.47	3242.69
1719	2.60	2999.31	1769	2.30	3121.89	1819	2.51	3245.20

UE12n#11--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1820	2.52	3247.72	1870	2.45	3372.46			
1821	2.51	3250.23	1871	2.43	3374.89			
1822	2.48	3252.71	1872	2.38	3377.27			
1823	2.44	3255.15	1873	2.42	3379.69			
1824	2.56	3257.71	1874	2.42	3382.11			
1825	2.59	3260.30	1875	2.40	3384.51			
1826	2.54	3262.84	1876	2.37	3386.88			
1827	2.54	3265.38	1877	2.36	3389.24			
1828	2.53	3267.91	1878	2.38	3391.62			
1828	2.53	3267.91						
1829	2.52	3270.43						
1830	2.51	3272.94						
1831	2.52	3275.46						
1832	2.52	3277.98						
1833	2.50	3280.48						
1834	2.47	3282.95						
1835	2.42	3285.37						
1836	2.40	3287.77						
1837	2.38	3290.15						
1838	2.44	3292.59						
1839	2.49	3295.08						
1840	2.50	3297.58						
1841	2.51	3300.09						
1842	2.52	3302.61						
1843	2.50	3305.11						
1844	2.49	3307.60						
1845	2.49	3310.09						
1846	2.50	3312.59						
1847	2.51	3315.10						
1848	2.53	3317.63						
1849	2.55	3320.18						
1850	2.51	3322.69						
1851	2.51	3325.20						
1852	2.54	3327.74						
1853	2.53	3330.27						
1854	2.49	3332.76						
1855	2.49	3335.25						
1856	2.49	3337.74						
1857	2.50	3340.24						
1858	2.46	3342.70						
1859	2.47	3345.17						
1860	2.47	3347.64						
1861	2.48	3350.12						
1862	2.49	3352.61						
1863	2.46	3355.07						
1864	2.46	3357.53						
1865	2.47	3360.00						
1866	2.47	3362.47						
1867	2.51	3364.98						
1868	2.55	3367.53						
1869	2.48	3370.01						

U12n.06 PS#1

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
212	2.10	0.00	262	1.54	90.35	312	1.71	171.11
213	2.13	2.13	263	1.55	91.90	313	1.69	172.80
214	2.17	4.30	264	1.54	93.44	314	1.68	174.48
215	2.13	6.44	265	1.54	94.98	315	1.67	176.15
216	2.14	8.58	266	1.53	96.51	316	1.66	177.81
217	2.13	10.70	267	1.53	98.04	317	1.66	179.48
218	2.11	12.81	268	1.53	99.57	318	1.64	181.11
219	2.10	14.91	269	1.54	101.11	319	1.62	182.73
220	2.10	17.02	270	1.54	102.65	320	1.61	184.34
221	2.09	19.11	271	1.53	104.18	321	1.67	186.01
222	2.08	21.18	272	1.54	105.72	322	1.75	187.76
223	2.09	23.27	273	1.55	107.27	323	1.77	189.53
224	2.10	25.37	274	1.58	108.86	324	1.79	191.32
225	2.09	27.46	275	1.60	110.46	325	1.82	193.14
226	2.03	29.49	276	1.62	112.07	326	1.79	194.93
227	1.99	31.48	277	1.61	113.69	327	1.78	196.71
228	1.92	33.40	278	1.61	115.29	328	1.75	198.46
229	0.00	35.33	279	1.60	116.90	329	1.71	200.17
230	1.94	37.26	280	1.61	118.51	330	1.70	201.88
231	1.95	39.21	281	1.60	120.11	331	1.68	203.56
232	1.94	41.14	282	1.60	121.71	332	1.68	205.24
233	1.84	42.98	283	1.63	123.34	333	1.70	206.94
234	1.76	44.75	284	1.66	125.00	334	1.69	208.62
235	1.74	46.48	285	1.65	126.65	335	1.69	210.32
236	1.77	48.25	286	1.65	128.30	336	1.69	212.01
237	1.80	50.05	287	1.65	129.95	337	1.68	213.68
238	1.79	51.84	288	1.65	131.59	338	1.66	215.35
239	1.76	53.60	289	1.65	133.24	339	1.65	216.99
240	1.72	55.32	290	1.64	134.88	340	1.62	218.62
241	1.66	56.98	291	1.64	136.52	341	1.60	220.21
242	1.62	58.60	292	1.62	138.14	342	1.56	221.77
243	1.58	60.18	293	1.61	139.76	343	1.53	223.30
244	1.57	61.75	294	1.61	141.36	344	1.49	224.79
245	1.58	63.32	295	1.60	142.97	345	1.47	226.27
246	1.64	64.96	296	1.60	144.57	346	1.43	227.69
247	1.64	66.60	297	1.58	146.16	347	1.41	229.10
248	1.64	68.25	298	1.59	147.74	348	1.41	230.51
249	1.64	69.89	299	1.59	149.33	349	1.42	231.93
250	1.62	71.51	300	1.59	150.92	350	1.43	233.36
251	1.61	73.11	301	1.60	152.52	351	1.44	234.80
252	1.59	74.71	302	1.63	154.15	352	1.46	236.26
253	1.58	76.29	303	1.68	155.83	353	1.46	237.72
254	1.59	77.87	304	1.69	157.51	354	1.45	239.17
255	1.58	79.45	305	1.69	159.21	355	1.47	240.64
256	1.58	81.03	306	1.70	160.90	356	1.47	242.11
257	1.57	82.60	307	1.70	162.61	357	1.49	243.60
258	1.56	84.16	308	1.70	164.30	358	0.00	245.11
259	1.56	85.72	309	1.70	166.01	359	1.53	246.62
260	1.55	87.27	310	1.70	167.70	360	1.54	248.16
261	1.54	88.81	311	1.70	169.40	361	1.52	249.69

U12n.06 PS#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
362	1.50	251.18	412	1.60	327.34	462	1.71	409.09
363	1.49	252.67	413	1.61	328.95	463	1.67	410.76
364	1.44	254.11	414	1.61	330.55	464	1.67	412.43
365	1.39	255.51	415	1.58	332.13	465	1.68	414.11
366	1.34	256.85	416	1.54	333.67	466	1.67	415.78
367	0.00	258.22	417	1.53	335.21	467	1.70	417.49
368	0.00	259.59	418	1.52	336.73	468	1.75	419.24
369	0.00	260.96	419	1.50	338.23	469	1.77	421.01
370	1.40	262.33	420	1.48	339.72	470	1.76	422.77
371	1.43	263.76	421	1.53	341.25	471	1.76	424.53
372	1.49	265.25	422	1.54	342.78	472	1.76	426.28
373	1.49	266.74	423	1.54	344.32	473	1.74	428.03
374	1.50	268.23	424	1.55	345.87	474	1.73	429.76
375	1.53	269.77	425	1.62	347.49	475	1.69	431.44
376	1.54	271.31	426	1.68	349.17	476	1.67	433.11
377	1.52	272.83	427	1.70	350.88	477	1.65	434.76
378	1.52	274.35	428	1.69	352.57	478	1.59	436.35
379	1.52	275.87	429	1.69	354.26	479	1.57	437.92
380	1.52	277.40	430	1.71	355.97	480	1.60	439.52
381	1.52	278.92	431	1.71	357.68	481	1.69	441.21
382	1.55	280.47	432	1.72	359.40	482	1.70	442.91
383	1.54	282.00	433	1.73	361.13	483	1.69	444.60
384	1.55	283.55	434	1.73	362.86	484	1.67	446.26
385	1.64	285.19	435	1.74	364.61	485	1.64	447.91
386	1.66	286.84	436	1.72	366.33	486	1.61	449.52
387	1.65	288.49	437	1.69	368.02	487	1.60	451.12
388	1.68	290.17	438	1.67	369.69	488	1.59	452.70
389	1.66	291.83	439	1.65	371.34	489	1.57	454.27
390	1.65	293.47	440	1.61	372.95	490	1.57	455.85
391	1.63	295.10	441	1.56	374.51	491	1.58	457.42
392	1.62	296.72	442	1.55	376.07	492	1.58	459.00
393	1.56	298.28	443	1.53	377.60	493	1.58	460.58
394	1.54	299.82	444	1.53	379.13	494	1.59	462.17
395	1.53	301.35	445	1.53	380.66	495	1.60	463.76
396	1.50	302.85	446	1.59	382.25	496	1.60	465.36
397	1.43	304.28	447	1.68	383.93	497	1.60	466.97
398	1.45	305.73	448	1.67	385.60	498	1.59	468.56
399	1.55	307.27	449	1.65	387.24	499	1.59	470.15
400	1.56	308.84	450	1.64	388.89	500	1.58	471.73
401	1.57	310.41	451	1.68	390.57	501	1.58	473.31
402	1.59	312.00	452	1.69	392.26	502	1.58	474.89
403	1.57	313.57	453	1.66	393.93	503	1.60	476.49
404	1.55	315.12	454	1.69	395.62	504	1.62	478.11
405	1.52	316.64	455	1.72	397.34	505	1.67	479.77
406	1.50	318.14	456	1.69	399.04	506	1.68	481.45
407	1.49	319.63	457	1.66	400.70	507	1.70	483.15
408	1.49	321.12	458	1.65	402.34	508	1.71	484.86
409	1.50	322.62	459	1.65	403.99	509	1.71	486.57
410	1.54	324.16	460	1.66	405.66	510	1.75	488.31
411	1.58	325.74	461	1.72	407.38	511	1.78	490.10

U12n.06 PS#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
512	1.76	491.86	562	1.84	578.39	612	1.74	665.80
513	1.74	493.60	563	1.86	580.25	613	1.74	667.54
514	1.73	495.33	564	1.89	582.14	614	1.72	669.26
515	1.72	497.05	565	1.85	583.99	615	1.70	670.96
516	1.71	498.75	566	1.81	585.80	616	1.66	672.62
517	1.70	500.45	567	1.76	587.56	617	1.66	674.27
518	1.74	502.19	568	1.71	589.27	618	1.66	675.93
519	1.76	503.94	569	1.66	590.93	619	1.68	677.61
520	1.76	505.71	570	1.67	592.59	620	1.71	679.32
521	1.75	507.45	571	1.68	594.27	621	1.69	681.02
522	1.73	509.19	572	1.69	595.96	622	1.67	682.68
523	1.71	510.89	573	1.72	597.68	623	1.68	684.37
524	1.68	512.57	574	1.76	599.44	624	1.69	686.05
525	1.64	514.21	575	1.85	601.28	625	1.67	687.73
526	1.65	515.86	576	1.83	603.12	626	1.63	689.35
527	1.67	517.53	577	1.84	604.95	627	1.58	690.93
528	1.67	519.20	578	1.85	606.80	628	1.59	692.52
529	1.67	520.87	579	1.83	608.64	629	1.61	694.13
530	1.66	522.53	580	1.81	610.45	630	1.61	695.74
531	1.63	524.16	581	1.78	612.23	631	1.59	697.33
532	1.59	525.76	582	1.78	614.02	632	1.63	698.96
533	1.61	527.37	583	1.80	615.82	633	1.64	700.60
534	1.63	529.00	584	1.81	617.63	634	1.63	702.24
535	1.66	530.66	585	1.81	619.43	635	1.70	703.93
536	1.65	532.31	586	1.80	621.23	636	1.73	705.66
537	1.66	533.97	587	1.76	623.00	637	1.70	707.35
538	1.71	535.68	588	1.72	624.72	638	1.68	709.03
539	1.74	537.42	589	1.71	626.43	639	1.64	710.67
540	1.74	539.17	590	1.74	628.17	640	1.62	712.29
541	1.73	540.90	591	1.74	629.91	641	1.64	713.93
542	1.74	542.63	592	1.75	631.66	642	1.67	715.60
543	1.73	544.36	593	1.75	633.41	643	1.64	717.24
544	1.73	546.09	594	1.74	635.15	644	1.62	718.86
545	1.75	547.85	595	1.73	636.88	645	1.59	720.46
546	1.75	549.60	596	1.69	638.57	646	1.58	722.03
547	1.78	551.38	597	1.66	640.23	647	1.57	723.60
548	1.78	553.16	598	1.66	641.89	648	1.53	725.13
549	0.00	554.93	599	1.65	643.54	649	1.52	726.65
550	0.00	556.70	600	1.69	645.22	650	1.52	728.17
551	1.76	558.47	601	1.71	646.94	651	1.61	729.77
552	1.75	560.21	602	1.69	648.63	652	1.67	731.44
553	1.75	561.96	603	1.69	650.32	653	1.72	733.16
554	1.77	563.74	604	1.73	652.04	654	1.71	734.87
555	0.00	565.55	605	1.72	653.77	655	1.71	736.58
556	0.00	567.36	606	1.70	655.47	656	1.75	738.33
557	0.00	569.17	607	1.70	657.17	657	1.74	740.07
558	1.85	570.98	608	1.71	658.88	658	1.74	741.81
559	1.88	572.86	609	1.72	660.60	659	1.72	743.53
560	1.85	574.71	610	1.73	662.33	660	1.72	745.25
561	1.84	576.55	611	1.74	664.06	661	1.72	746.98

U12n.06 PS#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
662	1.70	748.68	712	1.74	835.87	762	1.58	919.91
663	1.68	750.36	713	1.71	837.58	763	1.64	921.55
664	1.66	752.03	714	1.71	839.30	764	1.65	923.20
665	1.66	753.69	715	1.69	840.99	765	1.62	924.82
666	1.70	755.38	716	1.68	842.67	766	1.58	926.39
667	1.70	757.08	717	1.68	844.35	767	1.58	927.98
668	1.69	758.77	718	1.68	846.03	768	1.60	929.58
669	1.71	760.48	719	1.68	847.71	769	1.58	931.17
670	1.69	762.17	720	1.68	849.39	770	1.53	932.70
671	1.68	763.85	721	1.68	851.07	771	1.52	934.22
672	1.69	765.55	722	1.68	852.75	772	1.53	935.75
673	1.71	767.26	723	1.70	854.46	773	1.58	937.32
674	1.75	769.01	724	1.72	856.18	774	1.62	938.94
675	1.74	770.75	725	1.71	857.89	775	1.58	940.52
676	1.74	772.49	726	1.72	859.61	776	1.60	942.12
677	1.74	774.23	727	1.72	861.33	777	1.71	943.83
678	1.72	775.95	728	1.71	863.03	778	1.74	945.57
679	1.73	777.68	729	1.73	864.76	779	1.74	947.31
680	1.74	779.42	730	1.73	866.49	780	1.73	949.03
681	1.71	781.13	731	1.72	868.21	781	1.72	950.75
682	1.71	782.84	732	1.73	869.94	782	1.70	952.45
683	1.72	784.56	733	1.75	871.69	783	1.70	954.15
684	1.74	786.30	734	1.73	873.42	784	1.71	955.86
685	1.78	788.07	735	1.76	875.18	785	1.72	957.58
686	1.78	789.85	736	1.78	876.96	786	1.68	959.26
687	1.79	791.64	737	1.78	878.74	787	1.65	960.91
688	1.80	793.43	738	1.77	880.51	788	1.65	962.56
689	1.79	795.22	739	1.76	882.28	789	1.64	964.20
690	1.77	796.99	740	1.76	884.03	790	1.65	965.85
691	1.75	798.75	741	1.75	885.79	791	1.62	967.48
692	1.74	800.49	742	1.74	887.53	792	1.62	969.10
693	1.75	802.24	743	1.72	889.24	793	1.65	970.75
694	1.75	803.99	744	1.72	890.97	794	1.65	972.40
695	1.75	805.75	745	1.71	892.67	795	1.65	974.05
696	1.74	807.49	746	1.67	894.34	796	1.61	975.66
697	1.75	809.24	747	1.64	895.98	797	1.60	977.26
698	1.77	811.01	748	1.62	897.60	798	1.59	978.85
699	1.78	812.79	749	1.69	899.28	799	1.65	980.50
700	1.81	814.60	750	1.71	900.99	800	1.72	982.23
701	1.83	816.43	751	1.68	902.67	801	1.72	983.95
702	1.84	818.27	752	1.65	904.32	802	1.73	985.67
703	1.79	820.06	753	1.62	905.94	803	1.75	987.42
704	1.78	821.84	754	1.61	907.55	804	1.78	989.20
705	1.74	823.57	755	1.60	909.15	805	1.80	991.00
706	1.71	825.29	756	1.58	910.73	806	1.79	992.80
707	1.72	827.00	757	1.55	912.28	807	1.79	994.59
708	1.79	828.80	758	1.52	913.80	808	1.78	996.37
709	1.79	830.59	759	1.49	915.29	809	1.75	998.12
710	1.77	832.36	760	1.50	916.80	810	1.74	999.86
711	1.76	834.12	761	1.53	918.32	811	1.68	1001.54

U12n.06 PS#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
812	1.63	1003.17	862	1.81	1077.88			
813	1.59	1004.76	863	0.00	1079.71			
814	1.57	1006.33	864	0.00	1081.54			
815	1.56	1007.89	865	0.00	1083.37			
816	1.57	1009.46	866	0.00	1085.20			
817	1.55	1011.01	867	0.00	1087.03			
818	1.54	1012.55	868	0.00	1088.86			
819	1.51	1014.06	869	0.00	1090.69			
820	1.49	1015.55	870	0.00	1092.52			
821	1.44	1016.99	871	0.00	1094.35			
822	1.40	1018.39	872	0.00	1096.18			
823	1.36	1019.75	873	0.00	1098.01			
824	1.39	1021.14	874	0.00	1099.84			
825	1.42	1022.56	875	0.00	1101.67			
826	1.45	1024.01	876	1.85	1103.50			
827	1.41	1025.42	877	1.85	1105.35			
828	1.41	1026.83	878	1.89	1107.24			
829	1.44	1028.27	879	1.87	1109.11			
830	1.44	1029.71	880	1.81	1110.92			
831	1.47	1031.18	881	1.67	1112.59			
832	1.44	1032.62	882	1.65	1114.24			
833	1.40	1034.02	883	1.51	1115.75			
834	1.36	1035.38	884	1.45	1117.20			
835	1.38	1036.76	885	1.43	1118.63			
836	1.38	1038.14	886	1.42	1120.05			
837	1.39	1039.53	887	1.42	1121.47			
838	1.39	1040.92	888	1.41	1122.88			
839	1.39	1042.31	889	1.39	1124.27			
840	1.40	1043.71	890	1.38	1125.65			
841	1.38	1045.09	891	1.37	1127.02			
842	1.37	1046.46	892	1.36	1128.38			
843	1.35	1047.81	893	1.37	1129.75			
844	1.37	1049.18	894	1.39	1131.14			
845	1.40	1050.58	895	1.38	1132.52			
846	1.51	1052.09	896	1.39	1133.91			
847	1.49	1053.58	897	1.43	1135.34			
848	1.47	1055.05	898	1.45	1136.79			
849	1.45	1056.50	899	1.47	1138.26			
850	1.46	1057.96	900	1.49	1139.75			
850	1.46	1057.96						
851	1.53	1059.49						
852	1.54	1061.03						
853	1.55	1062.58						
854	1.58	1064.16						
855	1.61	1065.77						
856	1.64	1067.41						
857	1.70	1069.11						
858	1.71	1070.82						
859	1.72	1072.54						
860	1.75	1074.29						
861	1.78	1076.07						

U12n.08 PS#1

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
92	1.71	0.00	192	1.53	80.27	292	1.56	158.96
94	1.71	1.71	194	1.52	81.79	294	1.57	160.53
96	1.65	3.36	196	1.52	83.31	296	1.57	162.10
98	1.62	4.98	198	1.52	84.83	298	1.58	163.68
100	1.61	6.59	200	1.53	86.36	300	1.59	165.27
102	1.60	8.19	202	1.54	87.90	302	1.59	166.86
104	1.59	9.78	204	1.60	89.50	304	0.00	168.45
106	1.59	11.37	206	1.58	91.08	306	0.00	170.03
108	1.60	12.97	208	1.57	92.65	308	1.58	171.62
110	1.60	14.57	210	1.60	94.25	310	1.57	173.19
112	1.59	16.16	212	1.60	95.85	312	1.60	174.79
114	1.58	17.74	214	0.00	97.43	314	1.69	176.48
116	1.57	19.31	216	0.00	99.01	316	1.67	178.15
118	1.56	20.87	218	0.00	100.59	318	1.67	179.82
120	1.56	22.43	220	1.56	102.17	320	1.68	181.50
122	1.55	23.98	222	1.57	103.74	322	1.65	183.15
124	1.55	25.53	224	1.56	105.30	324	1.62	184.77
126	1.55	27.08	226	1.57	106.87	326	0.00	186.39
128	1.55	28.63	228	1.54	108.41	328	1.63	188.02
130	1.54	30.17	230	1.56	109.97	330	1.64	189.66
132	1.54	31.71	232	1.61	111.58	332	1.62	191.28
134	1.54	33.25	234	1.58	113.16	334	1.67	192.95
136	1.54	34.79	236	1.58	114.74	336	1.75	194.70
138	1.54	36.33	238	1.55	116.29	338	1.75	196.45
140	1.57	37.90	240	0.00	117.83	340	1.76	198.21
142	1.60	39.50	242	0.00	119.37	342	1.71	199.92
144	1.63	41.13	244	1.53	120.91	344	1.71	201.63
146	1.65	42.78	246	1.54	122.45	346	1.70	203.33
148	1.67	44.45	248	1.53	123.98	348	1.67	205.00
150	1.68	46.13	250	1.53	125.51	350	1.70	206.70
152	1.69	47.82	252	0.00	127.08	352	1.72	208.42
154	1.71	49.53	254	0.00	128.65	354	1.72	210.14
156	1.71	51.24	256	1.61	130.22	356	1.67	211.81
158	1.69	52.93	258	1.61	131.83	358	0.00	213.47
160	1.68	54.61	260	1.58	133.41	360	0.00	215.13
162	1.62	56.23	262	1.54	134.95	362	1.65	216.79
164	1.64	57.87	264	1.52	136.47	364	1.62	218.41
166	1.64	59.51	266	1.55	138.02	366	1.66	220.07
168	1.63	61.14	268	1.61	139.63	368	1.62	221.69
170	1.63	62.77	270	1.64	141.27	370	1.57	223.26
172	1.64	64.41	272	1.60	142.87	372	1.65	224.91
174	1.62	66.03	274	1.61	144.48	374	1.63	226.54
176	1.59	67.62	276	0.00	146.09	376	1.59	228.13
178	1.58	69.20	278	1.61	147.70	378	1.67	229.80
180	1.61	70.81	280	1.58	149.28	380	1.73	231.53
182	1.60	72.41	282	1.63	150.91	382	1.74	233.27
184	1.60	74.01	284	1.64	152.55	384	1.76	235.03
186	1.61	75.62	286	1.65	154.20	386	1.75	236.78
188	1.56	77.18	288	1.63	155.83	388	1.74	238.52
190	1.56	78.74	290	1.57	157.40	390	0.00	240.27

U12n.08 PS#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
392	1.76	242.02	492	0.00	326.96			
394	0.00	243.77	494	1.64	328.57			
396	1.74	245.52	496	1.68	330.25			
398	1.67	247.19	498	1.66	331.91			
398	1.67	247.19						
400	1.58	248.77						
402	1.59	250.36						
404	1.60	251.96						
406	1.66	253.62						
408	1.72	255.34						
410	1.73	257.07						
412	1.69	258.76						
414	1.72	260.48						
416	1.78	262.26						
418	1.72	263.98						
420	1.78	265.76						
422	1.77	267.53						
424	1.75	269.28						
426	1.72	271.00						
428	0.00	272.70						
430	1.68	274.40						
432	1.69	276.09						
434	1.76	277.85						
436	1.80	279.65						
438	1.81	281.46						
440	1.79	283.25						
442	1.78	285.03						
444	1.77	286.80						
446	1.77	288.57						
448	1.78	290.35						
450	1.81	292.16						
452	1.74	293.90						
454	1.65	295.55						
456	1.65	297.20						
458	1.63	298.83						
460	1.66	300.49						
462	1.69	302.18						
464	1.71	303.89						
466	1.71	305.60						
468	1.64	307.24						
470	1.63	308.87						
472	1.70	310.57						
474	1.64	312.21						
476	1.68	313.89						
478	1.70	315.59						
480	1.70	317.29						
482	1.62	318.91						
484	1.64	320.55						
486	1.64	322.19						
488	1.58	323.77						
490	1.58	325.35						

U12n.10 PS#1

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
94	1.75	0.00	144	1.68	81.92	194	1.71	166.49
95	1.74	1.74	145	1.69	83.61	195	1.71	168.19
96	1.75	3.49	146	1.70	85.31	196	1.70	169.89
97	1.74	5.23	147	1.66	86.98	197	1.71	171.60
98	1.73	6.96	148	1.64	88.62	198	1.71	173.31
99	1.72	8.67	149	1.69	90.31	199	1.71	175.02
100	1.73	10.40	150	1.67	91.98	200	1.71	176.73
101	1.72	12.11	151	1.68	93.65	201	1.70	178.44
102	1.70	13.81	152	1.69	95.35	202	1.72	180.16
103	1.69	15.51	153	1.70	97.05	203	1.74	181.90
104	1.68	17.19	154	1.69	98.74	204	1.76	183.66
105	1.68	18.87	155	1.68	100.41	205	1.76	185.42
106	1.67	20.53	156	1.65	102.06	206	1.69	187.10
107	1.65	22.18	157	1.62	103.69	207	1.70	188.81
108	1.64	23.82	158	1.67	105.35	208	1.71	190.52
109	1.64	25.45	159	1.69	107.05	209	1.73	192.25
110	1.63	27.08	160	1.69	108.74	210	1.73	193.97
111	1.64	28.72	161	1.64	110.38	211	1.71	195.68
112	1.64	30.36	162	1.61	111.99	212	1.69	197.37
113	1.63	31.99	163	1.60	113.58	213	1.68	199.04
114	1.62	33.61	164	1.60	115.19	214	1.68	200.72
115	1.62	35.23	165	1.64	116.82	215	1.70	202.42
116	1.61	36.84	166	1.66	118.48	216	1.71	204.14
117	1.60	38.44	167	1.71	120.19	217	1.70	205.83
118	1.60	40.04	168	1.72	121.91	218	1.64	207.47
119	1.61	41.65	169	1.71	123.62	219	1.63	209.10
120	1.61	43.27	170	1.73	125.35	220	1.62	210.72
121	1.60	44.87	171	1.74	127.09	221	1.63	212.35
122	1.60	46.47	172	1.73	128.82	222	1.64	213.99
123	1.60	48.07	173	1.73	130.55	223	1.61	215.60
124	1.60	49.67	174	1.74	132.29	224	1.61	217.22
125	1.59	51.27	175	1.73	134.02	225	1.61	218.82
126	1.60	52.87	176	1.75	135.77	226	1.60	220.42
127	1.61	54.48	177	1.75	137.52	227	1.59	222.02
128	1.60	56.08	178	1.74	139.27	228	1.61	223.63
129	1.61	57.68	179	1.73	141.00	229	1.62	225.24
130	1.61	59.29	180	1.73	142.72	230	1.60	226.85
131	1.60	60.89	181	1.72	144.45	231	1.60	228.45
132	1.61	62.50	182	1.71	146.16	232	1.61	230.06
133	1.61	64.10	183	1.68	147.84	233	1.61	231.67
134	1.61	65.72	184	1.64	149.48	234	1.60	233.27
135	1.61	67.32	185	1.61	151.10	235	1.61	234.88
136	1.60	68.92	186	1.64	152.74	236	1.66	236.54
137	1.60	70.52	187	1.69	154.43	237	1.66	238.20
138	1.61	72.13	188	1.70	156.13	238	1.66	239.86
139	1.61	73.74	189	1.73	157.86	239	1.62	241.49
140	1.61	75.35	190	1.73	159.59	240	1.64	243.13
141	1.62	76.97	191	1.71	161.30	241	1.65	244.78
142	1.63	78.60	192	1.76	163.07	242	1.64	246.42
143	1.65	80.25	193	1.71	164.78	243	1.64	248.06

U12n.10 PS#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
244	1.62	249.68	294	1.66	332.31	344	1.68	416.97
245	1.61	251.29	295	1.73	334.03	345	1.64	418.61
246	1.62	252.91	296	1.73	335.76	346	1.63	420.24
247	1.62	254.53	297	1.72	337.48	347	1.66	421.90
248	1.65	256.18	298	1.70	339.18	348	1.69	423.59
249	1.65	257.83	299	1.71	340.90	349	1.71	425.31
250	1.62	259.45	300	1.67	342.56	350	1.73	427.04
251	1.68	261.13	301	1.71	344.28	351	1.72	428.76
252	1.67	262.80	302	1.72	346.00	352	1.71	430.47
253	1.65	264.45	303	1.75	347.75	353	1.66	432.14
254	1.67	266.12	304	1.76	349.51	354	1.65	433.79
255	1.68	267.80	305	1.77	351.28	355	1.69	435.48
256	1.63	269.43	306	1.76	353.04	356	1.68	437.16
257	1.65	271.08	307	1.73	354.77	357	1.64	438.80
258	1.63	272.71	308	1.75	356.52	358	1.62	440.41
259	1.66	274.37	309	1.74	358.26	359	1.64	442.06
260	1.71	276.08	310	1.73	360.00	360	1.66	443.71
261	1.70	277.78	311	1.67	361.66	361	1.65	445.37
262	1.66	279.44	312	1.64	363.30	362	1.66	447.03
263	1.68	281.13	313	1.62	364.92	363	1.65	448.68
264	1.65	282.77	314	1.61	366.53	364	1.63	450.30
265	1.61	284.39	315	1.61	368.14	365	1.61	451.92
266	1.60	285.99	316	1.61	369.75	366	1.60	453.52
267	1.63	287.62	317	1.61	371.36	367	1.61	455.13
268	1.66	289.28	318	1.67	373.02	368	1.60	456.73
269	1.68	290.97	319	1.72	374.74	369	1.60	458.33
270	1.61	292.58	320	1.71	376.45	370	1.60	459.94
271	1.61	294.19	321	1.70	378.15	371	1.62	461.55
272	1.62	295.80	322	1.70	379.85	372	1.64	463.19
273	1.60	297.41	323	1.71	381.56	373	1.68	464.88
274	1.61	299.02	324	1.72	383.29	374	1.69	466.57
275	1.60	300.62	325	1.73	385.02	375	1.66	468.23
276	1.60	302.22	326	1.70	386.72	376	1.68	469.91
277	1.63	303.85	327	1.67	388.39	377	1.70	471.61
278	1.67	305.52	328	1.67	390.05	378	1.69	473.30
279	1.71	307.23	329	1.69	391.74	379	1.68	474.98
280	1.72	308.95	330	1.69	393.43	380	1.71	476.69
281	1.72	310.67	331	1.66	395.09	381	1.71	478.40
282	1.71	312.38	332	1.66	396.75	382	1.68	480.08
283	1.71	314.09	333	1.72	398.47	383	1.67	481.75
284	1.72	315.80	334	1.71	400.18	384	1.65	483.41
285	1.72	317.53	335	1.69	401.87	385	1.63	485.04
286	1.68	319.21	336	1.67	403.54	386	1.61	486.65
287	1.66	320.87	337	1.66	405.20	387	1.60	488.25
288	1.65	322.52	338	1.65	406.85	388	1.62	489.87
289	1.63	324.15	339	1.69	408.55	389	1.60	491.47
290	1.62	325.77	340	1.69	410.24	390	1.66	493.12
291	1.62	327.39	341	1.68	411.92	391	1.71	494.84
292	1.63	329.02	342	1.68	413.59	392	1.71	496.54
293	1.63	330.65	343	1.69	415.29	393	1.71	498.25

U12n.10 PS#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
394	1.70	499.96	444	1.75	586.05	494	1.73	671.80
395	1.71	501.67	445	1.71	587.76	495	0.00	673.52
396	1.73	503.40	446	1.67	589.43	496	0.00	675.24
397	1.75	505.15	447	1.62	591.05	497	0.00	676.96
398	1.75	506.90	448	1.62	592.67	498	0.00	678.67
399	1.73	508.63	449	1.62	594.28	499	0.00	680.39
400	1.70	510.33	450	1.62	595.90	500	1.71	682.11
401	1.72	512.05	451	1.61	597.51	501	1.71	683.82
402	1.71	513.76	452	1.61	599.12	502	1.76	685.58
403	1.69	515.45	453	1.67	600.79	503	1.78	687.36
404	1.69	517.14	454	1.71	602.50	504	1.79	689.15
405	1.71	518.85	455	1.62	604.12	505	1.79	690.94
406	1.73	520.59	456	1.66	605.78	506	1.78	692.72
407	1.73	522.31	457	1.70	607.48	507	1.76	694.48
408	1.74	524.06	458	1.70	609.18	508	1.73	696.21
409	1.74	525.80	459	1.70	610.88	509	1.74	697.95
410	1.68	527.47	460	1.67	612.55	510	1.74	699.70
411	0.00	529.12	461	1.65	614.20	511	1.76	701.45
412	0.00	530.78	462	0.00	615.90	512	1.73	703.18
413	0.00	532.43	463	0.00	617.60	513	1.70	704.88
414	0.00	534.08	464	1.75	619.30	514	1.69	706.57
415	1.63	535.73	465	1.73	621.03	515	1.69	708.26
416	1.67	537.41	466	1.77	622.79	516	1.67	709.93
417	1.75	539.15	467	1.75	624.55	517	1.66	711.59
418	1.74	540.89	468	0.00	626.28	518	1.64	713.23
419	1.71	542.61	469	1.71	628.01	519	0.00	714.89
420	1.61	544.22	470	1.74	629.76	520	0.00	716.54
421	1.68	545.90	471	1.73	631.48	521	0.00	718.19
422	1.73	547.62	472	1.75	633.24	522	0.00	719.84
423	1.72	549.34	473	1.77	635.01	523	1.66	721.50
424	1.70	551.04	474	1.74	636.74	524	1.61	723.11
425	1.67	552.71	475	1.70	638.45	525	0.00	724.73
426	1.64	554.35	476	1.66	640.11	526	1.63	726.35
427	1.62	555.98	477	1.65	641.76	527	1.62	727.97
428	1.70	557.68	478	1.79	643.55	528	1.60	729.57
429	1.76	559.44	479	1.79	645.34	529	1.60	731.17
430	1.74	561.18	480	1.79	647.14	530	1.60	732.78
431	1.80	562.98	481	1.79	648.92	531	1.63	734.41
432	1.79	564.77	482	1.72	650.64	532	1.65	736.06
433	1.75	566.52	483	1.72	652.37	533	1.64	737.71
434	1.77	568.28	484	1.77	654.14	534	1.68	739.38
435	1.78	570.06	485	1.79	655.93	535	1.70	741.08
436	1.80	571.87	486	1.79	657.71	536	1.68	742.76
437	1.75	573.62	487	0.00	659.47	537	1.69	744.46
438	1.79	575.41	488	1.72	661.22	538	1.71	746.17
439	1.81	577.21	489	1.76	662.98	539	1.74	747.91
440	1.79	579.00	490	1.74	664.73	540	1.75	749.66
440	1.79	579.00	490	1.74	664.73			
441	1.76	580.77	491	1.79	666.51			
442	1.76	582.53	492	1.79	668.30			
443	1.77	584.30	493	1.77	670.07			

UE12p#4

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
90	1.68	0.00	140	2.09	91.88	190	2.11	200.16
91	1.67	1.67	141	2.16	94.04	191	2.15	202.31
92	1.68	3.35	142	2.15	96.19	192	2.13	204.44
93	1.75	5.10	143	2.20	98.39	193	2.12	206.55
94	1.75	6.85	144	2.25	100.65	194	2.07	208.62
95	1.75	8.59	145	2.27	102.92	195	2.09	210.72
96	1.74	10.33	146	2.29	105.21	196	2.10	212.82
97	1.76	12.10	147	2.33	107.53	197	2.09	214.90
98	1.77	13.87	148	2.28	109.82	198	2.08	216.99
99	1.78	15.65	149	2.29	112.11	199	2.08	219.06
100	1.76	17.40	150	2.33	114.44	200	2.12	221.18
101	1.74	19.15	151	2.36	116.80	201	2.16	223.34
102	1.74	20.88	152	2.39	119.19	202	2.17	225.51
103	1.80	22.68	153	2.41	121.60	203	2.16	227.67
104	1.82	24.50	154	2.39	123.98	204	2.18	229.84
105	1.80	26.30	155	2.37	126.35	205	2.19	232.03
106	1.78	28.08	156	2.33	128.68	206	2.19	234.22
107	1.76	29.84	157	2.30	130.98	207	2.18	236.41
108	1.80	31.63	158	2.25	133.23	208	2.20	238.60
109	1.83	33.47	159	2.25	135.48	209	2.21	240.82
110	1.86	35.32	160	2.28	137.76	210	2.22	243.04
111	1.90	37.22	161	2.31	140.07	211	2.24	245.28
112	1.85	39.07	162	2.30	142.37	212	2.24	247.52
113	1.87	40.95	163	2.30	144.67	213	2.25	249.77
114	1.89	42.83	164	2.29	146.97	214	2.26	252.03
115	1.84	44.67	165	2.21	149.17	215	2.24	254.27
116	1.81	46.49	166	2.11	151.28	216	2.23	256.50
117	1.82	48.31	167	2.09	153.37	217	2.24	258.74
118	1.81	50.12	168	2.05	155.43	218	2.26	261.00
119	1.79	51.92	169	2.03	157.46	219	2.27	263.27
120	1.77	53.69	170	1.99	159.45	220	2.28	265.55
121	1.81	55.50	171	2.02	161.48	221	2.28	267.84
122	1.83	57.33	172	2.06	163.54	222	2.28	270.11
123	1.83	59.16	173	2.06	165.60	223	2.26	272.38
124	1.83	60.99	174	2.05	167.65	224	2.27	274.65
125	1.82	62.81	175	2.03	169.68	225	2.26	276.90
126	1.82	64.63	176	2.02	171.70	226	2.28	279.19
127	1.85	66.48	177	1.99	173.69	227	2.32	281.50
128	1.86	68.34	178	1.96	175.65	228	2.32	283.83
129	1.89	70.23	179	1.94	177.58	229	2.32	286.15
130	1.91	72.13	180	2.04	179.62	230	2.34	288.48
131	1.89	74.02	181	2.04	181.66	231	2.34	290.82
132	1.91	75.93	182	2.04	183.69	232	2.31	293.13
133	1.92	77.85	183	2.02	185.71	233	2.28	295.41
134	1.94	79.79	184	2.03	187.75	234	2.29	297.70
135	1.98	81.77	185	2.07	189.82	235	2.35	300.05
136	2.00	83.77	186	2.06	191.88	236	2.35	302.41
137	2.01	85.77	187	2.04	193.93	237	2.36	304.77
138	2.00	87.77	188	2.04	195.97	238	2.38	307.14
139	2.02	89.79	189	2.08	198.05	239	2.37	309.51

UE12p#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
240	2.35	311.86	290	2.36	428.58	340	2.39	547.18
241	2.36	314.22	291	2.38	430.96	341	2.39	549.57
242	2.36	316.58	292	2.37	433.33	342	2.42	551.99
243	2.34	318.93	293	2.37	435.70	343	2.43	554.42
244	2.37	321.30	294	2.31	438.01	344	2.41	556.83
245	2.37	323.67	295	2.36	440.37	345	2.43	559.26
246	2.32	325.99	296	2.39	442.76	346	2.42	561.68
247	2.32	328.31	297	2.40	445.16	347	2.40	564.07
248	2.30	330.60	298	2.39	447.55	348	2.42	566.49
249	2.28	332.89	299	2.38	449.93	349	2.42	568.92
250	2.29	335.18	300	2.32	452.25	350	2.43	571.34
251	2.29	337.47	301	2.30	454.55	351	2.42	573.76
252	2.30	339.77	302	2.38	456.93	352	2.42	576.18
253	2.31	342.07	303	2.40	459.33	353	2.44	578.62
254	2.33	344.40	304	2.36	461.69	354	2.46	581.08
255	2.30	346.70	305	2.35	464.03	355	2.47	583.56
256	2.27	348.98	306	2.34	466.38	356	2.45	586.01
257	2.30	351.27	307	2.35	468.73	357	2.46	588.47
258	2.32	353.60	308	2.32	471.04	358	2.46	590.93
259	2.32	355.92	309	2.30	473.34	359	2.43	593.36
260	2.32	358.24	310	2.31	475.65	360	2.42	595.78
261	2.32	360.56	311	2.32	477.97	361	2.42	598.20
262	2.31	362.86	312	2.39	480.36	362	2.42	600.62
263	2.33	365.19	313	2.39	482.75	363	2.42	603.04
264	2.35	367.55	314	2.36	485.11	364	2.44	605.48
265	2.34	369.89	315	2.37	487.48	365	2.49	607.97
266	2.32	372.21	316	2.41	489.89	366	2.48	610.45
267	2.32	374.54	317	2.40	492.29	367	2.45	612.90
268	2.33	376.87	318	2.36	494.65	368	2.43	615.33
269	2.33	379.20	319	2.34	496.99	369	2.41	617.75
270	2.32	381.53	320	2.38	499.37	370	2.39	620.14
271	2.33	383.85	321	2.38	501.75	371	2.40	622.54
272	2.38	386.23	322	2.36	504.11	372	2.42	624.96
273	2.38	388.61	323	2.35	506.46	373	2.43	627.39
274	2.33	390.94	324	2.36	508.82	374	2.43	629.82
275	2.37	393.31	325	2.38	511.20	375	2.44	632.26
276	2.37	395.68	326	2.40	513.60	376	2.44	634.70
277	2.34	398.01	327	2.40	516.00	377	2.44	637.14
278	2.31	400.32	328	2.40	518.40	378	2.44	639.59
279	2.36	402.68	329	2.34	520.74	379	2.45	642.03
280	2.39	405.07	330	2.38	523.12	380	2.45	644.49
281	2.39	407.47	331	2.43	525.55	381	2.43	646.91
282	2.37	409.84	332	2.43	527.99	382	2.41	649.32
283	2.35	412.19	333	2.41	530.39	383	2.39	651.72
284	2.35	414.54	334	2.39	532.78	384	2.36	654.07
285	2.35	416.89	335	2.37	535.15	385	2.32	656.40
286	2.36	419.25	336	2.38	537.53	386	2.33	658.73
287	2.33	421.58	337	2.40	539.94	387	2.32	661.06
288	2.31	423.90	338	2.43	542.37	388	2.35	663.41
289	2.32	426.21	339	2.42	544.79	389	2.38	665.79

UE12p#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
390	2.40	668.19	440	2.26	783.81	490	1.70	876.90
391	2.38	670.57	441	2.24	786.06	491	1.70	878.60
392	2.35	672.92	442	0.00	788.27	492	1.69	880.29
393	2.32	675.24	443	0.00	790.48	493	1.68	881.97
394	2.30	677.55	444	2.17	792.69	494	1.67	883.64
395	2.31	679.86	445	2.17	794.86	495	1.67	885.31
396	2.32	682.18	446	2.15	797.01	496	1.67	886.98
397	2.33	684.51	447	2.10	799.11	497	1.68	888.66
398	2.33	686.85	448	2.09	801.19	498	1.68	890.33
399	2.32	689.17	449	2.07	803.26	499	1.65	891.99
400	2.33	691.50	450	2.07	805.33	500	1.68	893.67
401	2.33	693.83	451	2.05	807.39	501	1.69	895.35
402	2.32	696.15	452	2.00	809.39	502	1.70	897.05
403	2.31	698.47	453	1.99	811.37	503	1.71	898.76
404	2.31	700.78	454	1.97	813.34	504	1.70	900.45
405	2.34	703.11	455	1.92	815.26	505	1.68	902.13
406	2.37	705.48	456	1.88	817.14	506	1.67	903.80
407	2.37	707.85	457	1.85	818.99	507	1.68	905.48
408	2.35	710.20	458	1.83	820.82	508	1.71	907.19
409	2.33	712.52	459	1.82	822.64	509	1.72	908.91
410	2.34	714.86	460	1.83	824.47	510	1.71	910.62
411	2.34	717.20	461	1.83	826.30	511	1.73	912.35
412	2.32	719.52	462	1.81	828.11	512	1.72	914.08
413	2.31	721.82	463	1.77	829.88	513	1.73	915.80
414	2.31	724.13	464	1.79	831.67	514	1.74	917.54
415	2.31	726.45	465	1.82	833.50	515	1.74	919.28
416	2.32	728.77	466	1.86	835.35	516	1.72	921.00
417	2.32	731.10	467	1.82	837.17	517	1.68	922.69
418	2.32	733.42	468	1.80	838.98	518	1.70	924.39
419	2.33	735.75	469	1.79	840.77	519	1.71	926.10
420	2.34	738.08	470	1.74	842.51	520	1.67	927.76
421	2.34	740.42	471	1.72	844.23	521	1.68	929.44
422	2.34	742.76	472	1.73	845.97	522	1.74	931.18
423	2.32	745.07	473	1.72	847.69	523	1.76	932.94
424	2.29	747.37	474	1.73	849.42	524	1.73	934.67
425	2.30	749.67	475	1.77	851.19	525	1.73	936.40
426	2.32	751.99	476	1.79	852.97	526	1.72	938.13
427	2.31	754.30	477	1.75	854.72	527	1.70	939.82
428	2.30	756.60	478	1.73	856.46	528	1.69	941.51
429	2.29	758.89	479	1.72	858.18	529	1.69	943.20
430	2.29	761.18	480	1.71	859.89	530	1.70	944.91
431	2.28	763.46	481	1.70	861.60	531	1.72	946.62
432	2.26	765.73	482	1.72	863.31	532	1.79	948.42
433	2.30	768.02	483	1.71	865.03	533	1.81	950.22
434	2.29	770.31	484	1.70	866.73	534	1.80	952.02
435	2.26	772.57	485	1.69	868.42	535	1.81	953.83
436	2.23	774.80	486	1.70	870.12	536	1.82	955.65
437	2.24	777.04	487	1.70	871.81	537	1.83	957.48
438	2.25	779.29	488	1.69	873.50	538	1.83	959.31
439	2.26	781.55	489	1.69	875.19	539	1.81	961.12

UE12p#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
540	1.76	962.88	590	1.85	1056.27	640	1.83	1150.60
541	1.75	964.63	591	1.82	1058.09	641	1.82	1152.42
542	1.76	966.39	592	1.82	1059.91	642	1.80	1154.22
543	1.76	968.14	593	1.85	1061.76	643	1.78	1156.00
544	1.77	969.91	594	1.88	1063.64	644	1.75	1157.75
545	1.78	971.69	595	1.83	1065.47	645	1.77	1159.52
546	1.80	973.49	596	1.83	1067.30	646	1.78	1161.30
547	1.85	975.34	597	1.86	1069.16	647	1.79	1163.09
548	1.82	977.16	598	1.93	1071.09	648	1.79	1164.88
549	1.82	978.97	599	1.96	1073.05	649	1.85	1166.73
550	1.82	980.79	600	2.00	1075.05	650	1.89	1168.62
551	1.82	982.61	601	1.92	1076.97	651	1.85	1170.47
552	1.79	984.40	602	1.92	1078.89	652	1.76	1172.23
553	1.77	986.17	603	1.88	1080.77	653	1.71	1173.94
554	1.82	987.99	604	1.88	1082.65	654	1.78	1175.72
555	1.89	989.88	605	1.90	1084.55	655	1.84	1177.56
556	1.89	991.78	606	1.90	1086.45	656	1.82	1179.38
557	1.91	993.69	607	1.90	1088.35	657	1.77	1181.15
558	1.91	995.60	608	1.91	1090.26	658	1.75	1182.90
559	1.90	997.50	609	1.90	1092.16	659	1.75	1184.65
560	1.90	999.40	610	1.88	1094.04	660	1.77	1186.42
561	1.90	1001.30	611	1.89	1095.93	661	1.78	1188.20
562	1.92	1003.22	612	1.92	1097.85	662	1.69	1189.89
563	1.98	1005.20	613	1.95	1099.80	663	1.59	1191.48
564	2.00	1007.20	614	1.94	1101.74	664	1.69	1193.17
565	1.99	1009.19	615	1.90	1103.64	665	1.73	1194.90
566	1.91	1011.10	616	1.89	1105.53	666	1.73	1196.63
567	1.78	1012.88	617	1.87	1107.40	667	1.72	1198.35
568	1.84	1014.72	618	1.91	1109.31	668	1.74	1200.09
569	1.91	1016.63	619	1.93	1111.24	669	1.75	1201.84
570	1.92	1018.55	620	1.90	1113.14	670	1.75	1203.59
571	1.88	1020.43	621	1.87	1115.01	671	1.73	1205.32
572	1.76	1022.19	622	1.92	1116.93	672	1.71	1207.03
573	1.80	1023.99	623	1.94	1118.87	673	1.70	1208.73
574	1.89	1025.88	624	1.92	1120.79	674	1.66	1210.39
575	1.91	1027.79	625	1.90	1122.69	675	1.62	1212.01
576	1.93	1029.72	626	1.87	1124.56	676	1.73	1213.74
577	1.93	1031.65	627	1.87	1126.43	677	1.77	1215.51
578	1.93	1033.58	628	1.91	1128.34	678	1.77	1217.28
579	1.92	1035.50	629	1.89	1130.23	679	1.69	1218.97
580	1.90	1037.40	630	1.88	1132.11	680	1.64	1220.61
581	1.90	1039.30	631	1.88	1133.99	681	1.56	1222.17
582	1.89	1041.19	632	1.87	1135.86	682	1.63	1223.80
583	1.88	1043.07	633	1.82	1137.68	683	1.55	1225.35
584	1.85	1044.92	634	1.79	1139.47	684	1.50	1226.85
585	1.84	1046.76	635	1.86	1141.33	685	1.56	1228.41
586	1.85	1048.61	636	1.88	1143.21	686	1.56	1229.97
587	1.90	1050.51	637	1.89	1145.10	687	1.60	1231.57
588	1.96	1052.47	638	1.84	1146.94	688	1.62	1233.19
589	1.95	1054.42	639	1.83	1148.77	689	1.75	1234.94

UE12p#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
690	1.78	1236.72	740	1.74	1322.76	790	1.91	1411.05
691	1.72	1238.44	741	1.78	1324.54	791	1.91	1412.96
692	1.69	1240.13	742	1.79	1326.33	792	1.96	1414.92
693	1.67	1241.80	743	1.75	1328.08	793	1.98	1416.90
694	1.65	1243.45	744	1.72	1329.80	794	1.98	1418.88
695	1.70	1245.15	745	1.65	1331.45	795	1.98	1420.86
696	1.77	1246.92	746	1.53	1332.98	796	1.95	1422.81
697	1.80	1248.72	747	1.49	1334.47	797	1.93	1424.74
698	1.81	1250.53	748	1.51	1335.98	798	1.96	1426.70
699	1.79	1252.32	749	1.63	1337.61	799	1.99	1428.69
700	1.78	1254.10	750	1.76	1339.37	800	2.02	1430.71
701	1.80	1255.90	751	1.79	1341.16	801	2.03	1432.74
702	1.77	1257.67	752	1.77	1342.93	802	2.01	1434.75
703	1.79	1259.46	753	1.74	1344.67	803	2.05	1436.80
704	1.84	1261.30	754	1.77	1346.44	804	2.12	1438.92
705	1.85	1263.15	755	1.78	1348.22	805	2.20	1441.12
706	1.82	1264.97	756	1.78	1350.00	806	2.06	1443.18
707	1.74	1266.71	757	1.75	1351.75	807	1.86	1445.04
708	1.68	1268.39	758	1.83	1353.58	808	1.82	1446.86
709	1.58	1269.97	759	1.84	1355.42	809	1.85	1448.71
710	1.56	1271.53	760	1.81	1357.23	810	1.89	1450.60
711	1.57	1273.10	761	1.81	1359.04	811	1.89	1452.49
712	1.61	1274.71	762	1.83	1360.87	812	1.91	1454.40
713	1.68	1276.39	763	1.77	1362.64	813	1.89	1456.29
714	1.69	1278.08	764	1.71	1364.35	814	1.82	1458.11
715	1.72	1279.80	765	1.68	1366.03	815	1.85	1459.96
716	1.75	1281.55	766	1.71	1367.74	816	1.91	1461.87
717	1.74	1283.29	767	1.75	1369.49	817	1.95	1463.82
718	1.62	1284.91	768	1.77	1371.26	818	2.08	1465.90
719	1.70	1286.61	769	1.72	1372.98	819	2.04	1467.94
720	1.73	1288.34	770	1.71	1374.69	820	2.02	1469.96
721	1.70	1290.04	771	1.79	1376.48	821	2.06	1472.02
722	1.70	1291.74	772	1.81	1378.29	822	2.03	1474.05
723	1.68	1293.42	773	1.72	1380.01	823	2.05	1476.10
724	1.68	1295.10	774	1.69	1381.70	824	2.10	1478.20
725	1.71	1296.81	775	1.72	1383.42	825	2.15	1480.35
726	1.73	1298.54	776	1.80	1385.22	826	2.13	1482.48
727	1.74	1300.28	777	1.87	1387.09	827	2.11	1484.59
728	1.65	1301.93	778	1.85	1388.94	828	2.09	1486.68
729	1.63	1303.56	779	1.81	1390.75	829	2.06	1488.74
730	1.66	1305.22	780	1.73	1392.48	830	2.01	1490.75
731	1.80	1307.02	781	1.66	1394.14	831	1.97	1492.72
732	1.79	1308.81	782	1.84	1395.98	832	1.99	1494.71
733	1.75	1310.56	783	1.91	1397.89	833	1.96	1496.67
734	1.75	1312.31	784	1.87	1399.76	834	1.95	1498.62
735	1.75	1314.06	785	1.86	1401.62	835	1.95	1500.57
736	1.75	1315.81	786	1.87	1403.49	836	1.94	1502.51
737	1.77	1317.58	787	1.87	1405.36	837	1.91	1504.42
738	1.73	1319.31	788	1.88	1407.24	838	1.88	1506.30
739	1.71	1321.02	789	1.90	1409.14	839	1.90	1508.20

UE12p#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
840	1.93	1510.13	890	0.00	1607.75	940	0.00	1705.75
841	1.97	1512.10	891	0.00	1609.71	941	0.00	1707.71
842	1.99	1514.09	892	0.00	1611.67	942	0.00	1709.67
843	2.00	1516.09	893	0.00	1613.63	943	0.00	1711.63
844	2.00	1518.09	894	0.00	1615.59	944	0.00	1713.59
845	1.98	1520.07	895	0.00	1617.55	945	0.00	1715.55
846	1.97	1522.04	896	0.00	1619.51	946	0.00	1717.51
847	1.99	1524.03	897	0.00	1621.47	947	0.00	1719.47
848	2.03	1526.06	898	0.00	1623.43	948	0.00	1721.43
849	2.05	1528.11	899	0.00	1625.39	949	0.00	1723.39
850	2.04	1530.15	900	0.00	1627.35	950	0.00	1725.35
851	1.97	1532.12	901	0.00	1629.31	951	0.00	1727.31
852	1.94	1534.06	902	0.00	1631.27	952	0.00	1729.27
853	1.93	1535.99	903	0.00	1633.23	953	0.00	1731.23
854	1.97	1537.96	904	0.00	1635.19	954	0.00	1733.19
855	2.01	1539.97	905	0.00	1637.15	955	0.00	1735.15
856	2.02	1541.99	906	0.00	1639.11	956	0.00	1737.11
857	2.00	1543.99	907	0.00	1641.07	957	0.00	1739.07
858	1.95	1545.94	908	0.00	1643.03	958	0.00	1741.03
859	1.89	1547.83	909	0.00	1644.99	959	0.00	1742.99
860	1.89	1549.72	910	0.00	1646.95	960	0.00	1744.95
861	1.89	1551.61	911	0.00	1648.91	961	0.00	1746.91
862	1.88	1553.49	912	0.00	1650.87	962	0.00	1748.87
863	1.87	1555.36	913	0.00	1652.83	963	0.00	1750.83
864	1.90	1557.26	914	0.00	1654.79	964	1.98	1752.79
865	1.90	1559.16	915	0.00	1656.75	965	1.97	1754.76
866	1.83	1560.99	916	0.00	1658.71	966	1.93	1756.69
867	1.82	1562.81	917	0.00	1660.67	967	1.91	1758.60
868	1.82	1564.63	918	0.00	1662.63	968	1.95	1760.55
869	1.95	1566.58	919	0.00	1664.59	969	1.95	1762.50
870	2.00	1568.58	920	0.00	1666.55	970	1.91	1764.41
871	1.95	1570.53	921	0.00	1668.51	971	1.89	1766.30
872	1.95	1572.48	922	0.00	1670.47	972	1.83	1768.13
873	1.96	1574.44	923	0.00	1672.43	973	1.83	1769.96
874	1.95	1576.39	924	0.00	1674.39	974	1.89	1771.85
875	0.00	1578.35	925	0.00	1676.35	975	1.90	1773.75
876	0.00	1580.31	926	0.00	1678.31	976	1.89	1775.64
877	0.00	1582.27	927	0.00	1680.27	977	1.88	1777.52
878	0.00	1584.23	928	0.00	1682.23	978	1.84	1779.36
879	0.00	1586.19	929	0.00	1684.19	979	1.83	1781.19
880	0.00	1588.15	930	0.00	1686.15	980	1.83	1783.02
881	0.00	1590.11	931	0.00	1688.11	981	1.83	1784.85
882	0.00	1592.07	932	0.00	1690.07	982	1.82	1786.67
883	0.00	1594.03	933	0.00	1692.03	983	1.81	1788.48
884	0.00	1595.99	934	0.00	1693.99	984	1.83	1790.31
885	0.00	1597.95	935	0.00	1695.95	985	1.86	1792.17
886	0.00	1599.91	936	0.00	1697.91	986	1.88	1794.05
887	0.00	1601.87	937	0.00	1699.87	987	1.87	1795.92
888	0.00	1603.83	938	0.00	1701.83	988	1.87	1797.79
889	0.00	1605.79	939	0.00	1703.79	989	1.86	1799.65

UE12p#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
990	1.86	1801.51	1040	1.90	1896.68	1090	1.91	1994.59
991	1.84	1803.35	1041	1.89	1898.57	1091	1.91	1996.50
992	1.81	1805.16	1042	1.89	1900.46	1092	1.94	1998.44
993	1.84	1807.00	1043	1.96	1902.42	1093	2.01	2000.45
994	1.89	1808.89	1044	2.00	1904.42	1094	1.97	2002.42
995	1.85	1810.74	1045	2.02	1906.44	1095	1.92	2004.34
996	1.82	1812.56	1046	2.00	1908.44	1096	1.90	2006.24
997	1.86	1814.42	1047	1.97	1910.41	1097	1.92	2008.16
998	1.89	1816.31	1048	2.01	1912.42	1098	1.91	2010.07
999	1.89	1818.20	1049	1.99	1914.41	1099	1.93	2012.00
1000	1.92	1820.12	1050	2.00	1916.41	1100	1.92	2013.92
1001	1.99	1822.11	1051	2.02	1918.43	1101	1.90	2015.82
1002	2.02	1824.13	1052	1.98	1920.41	1102	1.84	2017.66
1003	1.99	1826.12	1053	1.99	1922.40	1103	1.87	2019.53
1004	1.93	1828.05	1054	1.97	1924.37	1104	1.85	2021.38
1005	1.92	1829.97	1055	1.95	1926.32	1105	1.85	2023.23
1006	1.94	1831.91	1056	1.96	1928.28	1106	1.87	2025.10
1007	1.87	1833.78	1057	2.00	1930.28	1107	1.94	2027.04
1008	1.85	1835.63	1058	2.00	1932.28	1108	1.98	2029.02
1009	1.90	1837.53	1059	1.99	1934.27	1109	1.95	2030.97
1010	1.93	1839.46	1060	1.96	1936.23	1110	1.92	2032.89
1011	1.94	1841.40	1061	1.98	1938.21	1111	1.90	2034.79
1012	1.94	1843.34	1062	1.97	1940.18	1112	1.93	2036.72
1013	1.95	1845.29	1063	1.94	1942.12	1113	1.98	2038.70
1014	1.90	1847.19	1064	1.93	1944.05	1114	1.85	2040.55
1015	1.87	1849.06	1065	1.94	1945.99	1115	1.73	2042.28
1016	1.90	1850.96	1066	1.97	1947.96	1116	1.86	2044.14
1017	1.88	1852.84	1067	1.95	1949.91	1117	2.01	2046.15
1018	1.84	1854.68	1068	1.94	1951.85	1118	2.02	2048.17
1019	1.83	1856.51	1069	1.98	1953.83	1119	1.99	2050.16
1020	1.85	1858.36	1070	2.00	1955.83	1120	1.96	2052.12
1021	1.84	1860.20	1071	2.01	1957.84	1121	1.90	2054.02
1022	1.81	1862.01	1072	1.99	1959.83	1122	1.90	2055.92
1023	1.86	1863.87	1073	2.01	1961.84	1123	2.04	2057.96
1024	1.85	1865.72	1074	1.99	1963.83	1124	2.09	2060.05
1025	1.86	1867.58	1075	1.95	1965.78	1125	2.07	2062.12
1026	1.86	1869.44	1076	1.96	1967.74	1126	2.12	2064.24
1027	1.90	1871.34	1077	2.00	1969.74	1127	2.12	2066.36
1028	1.94	1873.28	1078	2.01	1971.75	1128	2.10	2068.46
1029	1.96	1875.24	1079	1.96	1973.71	1129	2.08	2070.54
1030	1.98	1877.22	1080	1.87	1975.58	1130	2.08	2072.62
1031	2.02	1879.24	1081	1.92	1977.50	1131	2.08	2074.70
1032	2.01	1881.25	1082	1.86	1979.36	1132	2.04	2076.74
1033	1.98	1883.23	1083	1.90	1981.26	1133	2.07	2078.81
1034	1.95	1885.18	1084	1.90	1983.16	1134	2.09	2080.90
1035	1.92	1887.10	1085	1.91	1985.07	1135	2.12	2083.02
1036	1.90	1889.00	1086	1.91	1986.98	1136	2.07	2085.09
1037	1.92	1890.92	1087	1.89	1988.87	1137	2.09	2087.18
1038	1.95	1892.87	1088	1.91	1990.78	1138	2.12	2089.30
1039	1.91	1894.78	1089	1.90	1992.68	1139	2.14	2091.44

UE12p#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1140	2.19	2093.63	1190	1.78	2192.41	1240	2.35	2291.82
1141	2.09	2095.72	1191	1.75	2194.16	1241	2.34	2294.16
1142	2.08	2097.80	1192	1.77	2195.93	1242	2.33	2296.49
1143	2.17	2099.97	1193	1.78	2197.71	1243	2.35	2298.84
1144	2.21	2102.18	1194	1.81	2199.52	1244	2.32	2301.16
1145	2.24	2104.42	1195	1.90	2201.42	1245	2.31	2303.47
1146	2.14	2106.56	1196	1.97	2203.39	1246	2.32	2305.79
1147	2.08	2108.64	1197	2.02	2205.41	1247	2.32	2308.11
1148	2.01	2110.65	1198	2.04	2207.45	1248	2.31	2310.42
1149	1.93	2112.58	1199	1.97	2209.42	1249	2.30	2312.72
1150	1.89	2114.47	1200	1.88	2211.30	1250	2.32	2315.04
1151	1.85	2116.32	1201	1.83	2213.13	1251	2.35	2317.39
1152	1.86	2118.18	1202	1.82	2214.95	1252	2.34	2319.73
1153	1.86	2120.04	1203	1.80	2216.75	1253	2.34	2322.07
1154	1.88	2121.92	1204	1.85	2218.60	1254	2.34	2324.41
1155	1.90	2123.82	1205	1.89	2220.49	1255	2.34	2326.75
1156	1.88	2125.70	1206	1.83	2222.32	1256	2.36	2329.11
1157	1.88	2127.58	1207	1.80	2224.12	1257	2.37	2331.48
1158	1.92	2129.50	1208	1.88	2226.00	1258	2.39	2333.87
1159	1.98	2131.48	1209	1.84	2227.84	1259	2.36	2336.23
1160	2.07	2133.55	1210	1.77	2229.61	1260	2.30	2338.53
1161	2.04	2135.59	1211	1.82	2231.43	1261	2.29	2340.82
1162	2.02	2137.61	1212	1.86	2233.29	1262	2.32	2343.14
1163	2.00	2139.61	1213	1.93	2235.22	1263	2.31	2345.45
1164	1.99	2141.60	1214	1.92	2237.14	1264	2.33	2347.78
1165	1.98	2143.58	1215	1.93	2239.07	1265	2.32	2350.10
1166	1.99	2145.57	1216	1.97	2241.04	1266	2.30	2352.40
1167	2.00	2147.57	1217	2.16	2243.20	1267	2.28	2354.68
1168	1.98	2149.55	1218	2.19	2245.39	1268	2.29	2356.97
1169	2.03	2151.58	1219	2.13	2247.52	1269	2.27	2359.24
1170	2.09	2153.67	1220	1.95	2249.47	1270	2.34	2361.58
1171	2.08	2155.75	1221	1.98	2251.45	1271	2.34	2363.92
1172	2.09	2157.84	1222	1.93	2253.38	1272	2.33	2366.25
1173	2.10	2159.94	1223	1.95	2255.33	1273	2.34	2368.59
1174	2.13	2162.07	1224	1.88	2257.21	1274	2.37	2370.96
1175	2.12	2164.19	1225	1.97	2259.18	1275	2.37	2373.33
1176	2.03	2166.22	1226	2.01	2261.19	1276	2.37	2375.70
1177	1.97	2168.19	1227	2.03	2263.22	1277	2.36	2378.06
1178	2.01	2170.20	1228	2.07	2265.29	1278	2.37	2380.43
1179	2.00	2172.20	1229	2.15	2267.44	1279	2.40	2382.83
1180	1.94	2174.14	1230	2.16	2269.60	1280	2.39	2385.22
1181	1.88	2176.02	1231	2.13	2271.73	1281	2.37	2387.59
1182	1.89	2177.91	1232	2.12	2273.85	1282	2.36	2389.95
1183	1.86	2179.77	1233	2.09	2275.94	1283	2.34	2392.29
1184	1.85	2181.62	1234	2.20	2278.14	1284	2.34	2394.63
1185	1.83	2183.45	1235	2.17	2280.31	1285	2.39	2397.02
1186	1.81	2185.26	1236	2.19	2282.50	1286	2.39	2399.41
1187	1.80	2187.06	1237	2.28	2284.78	1287	2.38	2401.79
1188	1.79	2188.85	1238	2.35	2287.13	1288	2.39	2404.18
1189	1.78	2190.63	1239	2.34	2289.47	1289	2.44	2406.62

UE12p#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1290	2.44	2409.06	1340	2.23	2527.23	1390	1.97	2641.03
1291	2.44	2411.50	1341	2.23	2529.46	1391	2.00	2643.03
1292	2.44	2413.94	1342	2.23	2531.69	1392	2.01	2645.04
1293	2.41	2416.35	1343	2.24	2533.93	1393	2.02	2647.06
1294	2.41	2418.76	1344	2.27	2536.20	1394	2.05	2649.11
1295	2.46	2421.22	1345	2.29	2538.49	1395	2.04	2651.15
1296	2.45	2423.67	1346	2.32	2540.81	1396	2.03	2653.18
1297	2.44	2426.11	1347	2.32	2543.13	1397	2.00	2655.18
1298	2.45	2428.56	1348	2.28	2545.41	1398	2.00	2657.18
1299	2.48	2431.04	1349	2.29	2547.70	1399	2.02	2659.20
1300	2.50	2433.54	1350	2.31	2550.01	1400	2.03	2661.23
1301	2.50	2436.04	1351	2.32	2552.33	1401	2.01	2663.24
1302	2.46	2438.50	1352	2.33	2554.66	1402	1.97	2665.21
1303	2.49	2440.99	1353	2.38	2557.04	1403	1.97	2667.18
1304	2.52	2443.51	1354	2.36	2559.40	1404	1.98	2669.16
1305	2.47	2445.98	1355	2.44	2561.84	1405	2.02	2671.18
1306	2.46	2448.44	1356	2.54	2564.38	1406	2.02	2673.20
1307	2.51	2450.95	1357	2.56	2566.94	1407	1.98	2675.18
1308	2.50	2453.45	1358	2.57	2569.51	1408	1.91	2677.09
1309	2.41	2455.86	1359	2.57	2572.08	1409	1.92	2679.01
1310	2.33	2458.19	1360	2.55	2574.63	1410	1.94	2680.95
1311	2.33	2460.52	1361	2.49	2577.12	1411	1.92	2682.87
1312	2.32	2462.84	1362	2.49	2579.61	1412	1.85	2684.72
1313	2.31	2465.15	1363	2.49	2582.10	1413	1.88	2686.60
1314	2.30	2467.45	1364	2.43	2584.53	1414	1.89	2688.49
1315	2.28	2469.73	1365	2.44	2586.97	1415	1.88	2690.37
1316	2.28	2472.01	1366	2.42	2589.39	1416	1.90	2692.27
1317	2.26	2474.27	1367	2.38	2591.77	1417	1.94	2694.21
1318	2.24	2476.51	1368	2.37	2594.14	1418	1.94	2696.15
1319	2.23	2478.74	1369	2.40	2596.54	1419	1.93	2698.08
1320	2.28	2481.02	1370	2.42	2598.96	1420	1.93	2700.01
1321	2.32	2483.34	1371	2.37	2601.33	1421	1.94	2701.95
1322	2.34	2485.68	1372	2.39	2603.72	1422	1.92	2703.87
1323	2.30	2487.98	1373	2.32	2606.04	1423	1.89	2705.76
1324	2.29	2490.27	1374	2.26	2608.30	1424	1.91	2707.67
1325	2.29	2492.56	1375	2.20	2610.50	1425	1.96	2709.63
1326	2.32	2494.88	1376	2.18	2612.68	1426	1.97	2711.60
1327	2.33	2497.21	1377	2.17	2614.85	1427	1.95	2713.55
1328	2.31	2499.52	1378	2.13	2616.98	1428	1.93	2715.48
1329	2.31	2501.83	1379	2.09	2619.07	1429	1.96	2717.44
1330	2.35	2504.18	1380	2.09	2621.16	1430	2.00	2719.44
1331	2.36	2506.54	1381	2.05	2623.21	1431	2.02	2721.46
1332	2.33	2508.87	1382	2.03	2625.24	1432	2.08	2723.54
1333	2.32	2511.19	1383	2.03	2627.27	1433	2.07	2725.61
1334	2.36	2513.55	1384	1.99	2629.26	1434	1.97	2727.58
1335	2.32	2515.87	1385	1.97	2631.23	1435	1.95	2729.53
1336	2.32	2518.19	1386	1.95	2633.18	1436	1.95	2731.48
1337	2.28	2520.47	1387	1.95	2635.13	1437	2.04	2733.52
1338	2.29	2522.76	1388	1.97	2637.10	1438	2.03	2735.55
1339	2.24	2525.00	1389	1.96	2639.06	1439	1.94	2737.49

UE12p#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1440	1.92	2739.41	1490	2.31	2838.85	1540	2.03	2942.52
1441	1.98	2741.39	1491	2.28	2841.13	1541	2.02	2944.54
1442	2.03	2743.42	1492	2.20	2843.33	1542	2.19	2946.73
1443	1.96	2745.38	1493	2.19	2845.52	1543	2.19	2948.92
1444	1.93	2747.31	1494	2.17	2847.69	1544	2.18	2951.10
1445	1.94	2749.25	1495	2.07	2849.76	1545	2.14	2953.24
1446	1.94	2751.19	1496	2.08	2851.84	1546	2.15	2955.39
1447	1.92	2753.11	1497	2.12	2853.96	1547	2.13	2957.52
1448	1.95	2755.06	1498	2.12	2856.08	1548	2.08	2959.60
1449	2.07	2757.13	1499	2.06	2858.14	1549	2.13	2961.73
1450	2.06	2759.19	1500	2.05	2860.19	1550	2.09	2963.82
1451	1.96	2761.15	1501	2.02	2862.21	1551	2.04	2965.86
1452	1.91	2763.06	1502	2.02	2864.23	1552	1.98	2967.84
1453	1.93	2764.99	1503	2.06	2866.29	1553	1.93	2969.77
1454	2.03	2767.02	1504	2.08	2868.37	1554	1.96	2971.73
1455	2.07	2769.09	1505	2.08	2870.45	1555	1.95	2973.68
1456	2.03	2771.12	1506	2.05	2872.50	1556	1.91	2975.59
1457	1.97	2773.09	1507	2.00	2874.50	1557	1.92	2977.51
1458	1.95	2775.04	1508	2.04	2876.54	1558	1.96	2979.47
1459	1.97	2777.01	1509	2.06	2878.60	1559	1.99	2981.46
1460	1.97	2778.98	1510	2.05	2880.65	1560	1.96	2983.42
1461	1.91	2780.89	1511	2.07	2882.72	1561	1.91	2985.33
1462	1.88	2782.77	1512	2.05	2884.77	1562	1.91	2987.24
1463	1.90	2784.67	1513	2.02	2886.79	1563	2.01	2989.25
1464	1.96	2786.63	1514	2.05	2888.84	1564	2.05	2991.30
1465	1.96	2788.59	1515	2.11	2890.95	1565	2.07	2993.37
1466	2.02	2790.61	1516	2.23	2893.18	1566	2.08	2995.45
1467	2.05	2792.66	1517	2.23	2895.41	1567	2.09	2997.54
1468	1.99	2794.65	1518	2.02	2897.43	1568	2.10	2999.64
1469	1.94	2796.59	1519	2.09	2899.52	1569	2.10	3001.74
1470	1.90	2798.49	1520	2.14	2901.66	1570	2.10	3003.84
1471	1.88	2800.37	1521	2.10	2903.76	1571	2.07	3005.91
1472	1.87	2802.24	1522	1.99	2905.75	1572	2.05	3007.96
1473	1.90	2804.14	1523	1.98	2907.73	1573	2.04	3010.00
1474	1.91	2806.05	1524	1.98	2909.71	1574	2.03	3012.03
1475	1.92	2807.97	1525	2.09	2911.80	1575	2.00	3014.03
1476	1.93	2809.90	1526	2.12	2913.92	1576	1.97	3016.00
1477	1.97	2811.87	1527	2.08	2916.00	1577	1.94	3017.94
1478	2.00	2813.87	1528	2.02	2918.02	1578	1.99	3019.93
1479	1.95	2815.82	1529	2.02	2920.04	1579	2.02	3021.95
1480	1.95	2817.77	1530	2.02	2922.06	1580	1.99	3023.94
1481	2.03	2819.80	1531	2.02	2924.08	1581	1.96	3025.90
1482	2.09	2821.89	1532	2.00	2926.08	1582	1.95	3027.85
1483	2.11	2824.00	1533	1.95	2928.03	1583	1.95	3029.80
1484	2.10	2826.10	1534	2.01	2930.04	1584	1.92	3031.72
1485	2.03	2828.13	1535	2.00	2932.04	1585	1.90	3033.62
1486	2.01	2830.14	1536	2.06	2934.10	1586	1.88	3035.50
1487	2.02	2832.16	1537	2.12	2936.22	1587	1.89	3037.39
1488	2.13	2834.29	1538	2.15	2938.37	1588	1.96	3039.35
1489	2.25	2836.54	1539	2.12	2940.49	1589	2.00	3041.35

UE12p#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1590	1.98	3043.33	1640	2.00	3142.22	1690	2.00	3239.74
1591	2.00	3045.33	1641	1.96	3144.18	1691	2.02	3241.76
1592	1.98	3047.31	1642	1.93	3146.11	1692	2.13	3243.89
1593	2.00	3049.31	1643	1.94	3148.05	1693	2.20	3246.09
1594	2.00	3051.31	1644	1.95	3150.00	1694	2.19	3248.28
1595	1.93	3053.24	1645	1.95	3151.95	1695	2.11	3250.39
1596	1.90	3055.14	1646	1.94	3153.89	1696	2.02	3252.41
1597	1.89	3057.03	1647	1.93	3155.82	1697	1.97	3254.38
1598	1.90	3058.93	1648	1.94	3157.76	1698	2.00	3256.38
1599	1.91	3060.84	1649	1.92	3159.68	1699	2.03	3258.41
1600	1.91	3062.75	1650	1.93	3161.61	1700	2.03	3260.44
1601	1.91	3064.66	1651	1.94	3163.55	1701	2.02	3262.46
1602	1.91	3066.57	1652	1.96	3165.51	1702	2.06	3264.52
1603	1.94	3068.51	1653	1.94	3167.45	1703	2.09	3266.61
1604	1.88	3070.39	1654	1.96	3169.41	1704	2.09	3268.70
1605	1.90	3072.29	1655	2.07	3171.48	1705	2.09	3270.79
1606	1.96	3074.25	1656	2.05	3173.53	1706	2.09	3272.88
1607	2.00	3076.25	1657	1.98	3175.51	1707	2.09	3274.97
1608	2.01	3078.26	1658	1.94	3177.45	1708	2.11	3277.08
1609	2.00	3080.26	1659	1.93	3179.38	1709	2.10	3279.18
1610	1.99	3082.25	1660	1.97	3181.35	1710	2.14	3281.32
1611	1.96	3084.21	1661	1.99	3183.34	1711	2.13	3283.45
1612	1.95	3086.16	1662	1.97	3185.31	1712	2.13	3285.58
1613	1.94	3088.10	1663	1.93	3187.24	1713	2.19	3287.77
1614	1.96	3090.06	1664	1.93	3189.17	1714	2.27	3290.04
1615	1.97	3092.03	1665	1.92	3191.09	1715	2.32	3292.36
1616	1.99	3094.02	1666	1.94	3193.03	1716	2.30	3294.66
1617	1.95	3095.97	1667	1.94	3194.97	1717	2.21	3296.87
1618	2.00	3097.97	1668	1.95	3196.92	1718	2.12	3298.99
1619	2.02	3099.99	1669	1.96	3198.88	1719	2.10	3301.09
1620	2.01	3102.00	1670	1.97	3200.85	1720	2.09	3303.18
1621	1.94	3103.94	1671	1.98	3202.83	1721	2.10	3305.28
1622	1.98	3105.92	1672	1.96	3204.79	1722	2.11	3307.39
1623	2.00	3107.92	1673	1.94	3206.73	1723	2.11	3309.50
1624	1.98	3109.90	1674	1.91	3208.64	1724	2.11	3311.61
1625	1.97	3111.87	1675	1.90	3210.54	1725	2.16	3313.77
1626	2.00	3113.87	1676	1.88	3212.42	1726	2.15	3315.92
1627	2.03	3115.90	1677	1.92	3214.34	1727	2.15	3318.07
1628	2.04	3117.94	1678	1.94	3216.28	1728	2.20	3320.27
1629	2.01	3119.95	1679	1.91	3218.19	1729	2.23	3322.50
1630	2.02	3121.97	1680	1.92	3220.11	1730	2.23	3324.73
1631	2.05	3124.02	1681	1.92	3222.03	1731	2.15	3326.88
1632	2.09	3126.11	1682	1.94	3223.97	1732	2.22	3329.10
1633	2.12	3128.23	1683	1.95	3225.92	1733	2.18	3331.28
1634	2.10	3130.33	1684	1.94	3227.86	1734	2.19	3333.47
1635	2.02	3132.35	1685	1.99	3229.85	1735	2.23	3335.70
1636	1.94	3134.29	1686	1.99	3231.84	1736	2.26	3337.96
1637	1.96	3136.25	1687	1.96	3233.80	1737	2.19	3340.15
1638	1.97	3138.22	1688	1.96	3235.76	1738	2.17	3342.32
1639	2.00	3140.22	1689	1.98	3237.74	1739	2.14	3344.46

UE12p#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1740	2.06	3346.52						
1741	2.01	3348.53						
1742	1.95	3350.48						
1743	2.00	3352.48						
1744	2.20	3354.68						
1745	2.19	3356.87						
1746	2.17	3359.04						
1747	2.15	3361.19						

UE12t#3

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
754	2.24	0.00	804	1.00	75.77	854	1.28	130.88
755	2.25	2.25	805	1.01	76.78	855	1.27	132.16
756	2.24	4.49	806	1.02	77.80	856	1.25	133.41
757	2.22	6.71	807	1.02	78.82	857	1.26	134.67
758	2.20	8.91	808	1.05	79.87	858	1.27	135.94
759	2.19	11.10	809	1.08	80.96	859	1.30	137.24
760	2.15	13.25	810	1.10	82.05	860	1.31	138.54
761	2.13	15.38	811	1.12	83.17	861	1.33	139.87
762	2.16	17.54	812	1.13	84.30	862	1.33	141.20
763	2.15	19.68	813	1.11	85.41	863	1.33	142.53
764	2.16	21.85	814	1.10	86.51	864	1.35	143.87
765	2.21	24.05	815	1.09	87.60	865	1.38	145.26
766	2.22	26.27	816	1.11	88.72	866	1.38	146.63
767	2.22	28.49	817	1.15	89.86	867	1.37	148.01
768	2.21	30.70	818	1.15	91.01	868	1.37	149.38
769	2.19	32.89	819	1.10	92.11	869	1.38	150.76
770	2.17	35.06	820	1.09	93.20	870	1.41	152.17
771	2.16	37.22	821	1.11	94.31	871	1.46	153.63
772	2.13	39.35	822	1.11	95.42	872	1.46	155.09
773	2.06	41.41	823	1.06	96.49	873	1.45	156.54
774	1.98	43.39	824	1.07	97.56	874	1.43	157.97
775	1.86	45.25	825	1.10	98.66	875	1.42	159.40
776	1.79	47.04	826	1.11	99.77	876	1.43	160.82
777	1.48	48.53	827	1.08	100.85	877	1.44	162.26
778	1.33	49.86	828	1.00	101.85	878	1.40	163.66
779	1.18	51.04	829	.96	102.80	879	1.40	165.06
780	1.10	52.14	830	.96	103.76	880	1.45	166.51
781	1.06	53.21	831	.97	104.73	881	1.50	168.01
782	1.04	54.25	832	.98	105.71	882	1.47	169.47
783	1.01	55.26	833	1.00	106.71	883	1.46	170.93
784	.97	56.23	834	1.02	107.73	884	1.43	172.36
785	.95	57.17	835	1.05	108.78	885	1.40	173.76
786	.96	58.14	836	1.10	109.88	886	1.41	175.18
787	.94	59.08	837	1.12	111.00	887	1.42	176.60
788	.94	60.01	838	1.13	112.13	888	1.43	178.02
789	.95	60.97	839	1.07	113.20	889	1.36	179.38
790	.97	61.93	840	1.07	114.27	890	1.32	180.70
791	.97	62.90	841	1.07	115.33	891	1.31	182.02
792	.97	63.87	842	1.07	116.41	892	1.31	183.32
793	.97	64.84	843	1.09	117.49	893	1.30	184.62
794	.97	65.81	844	1.12	118.61	894	1.31	185.93
795	.96	66.77	845	1.14	119.75	895	1.32	187.25
796	.96	67.73	846	1.16	120.91	896	1.38	188.63
797	.99	68.72	847	1.18	122.10	897	1.43	190.06
798	1.02	69.74	848	1.20	123.30	898	1.47	191.53
799	1.02	70.76	849	1.21	124.51	899	1.47	193.00
800	1.03	71.79	850	1.24	125.75	900	1.45	194.45
801	.99	72.79	851	1.28	127.04	901	1.42	195.87
802	.99	73.78	852	1.29	128.32	902	1.43	197.29
803	.99	74.77	853	1.28	129.60	903	1.45	198.74

UE12t#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
904	1.49	200.23	954	2.14	283.61	1004	1.82	379.45
905	1.46	201.69	955	2.18	285.79	1005	1.83	381.28
906	1.44	203.13	956	2.15	287.94	1006	1.86	383.14
907	1.41	204.54	957	2.14	290.08	1007	1.88	385.02
908	1.39	205.93	958	2.16	292.24	1008	1.87	386.89
909	1.35	207.28	959	2.12	294.36	1009	1.81	388.70
910	1.33	208.61	960	2.09	296.45	1010	1.74	390.44
911	1.33	209.94	961	2.09	298.54	1011	1.75	392.19
912	1.36	211.30	962	2.07	300.61	1012	1.78	393.97
913	1.36	212.66	963	2.06	302.68	1013	1.80	395.77
914	1.40	214.06	964	2.05	304.73	1014	1.82	397.59
915	1.46	215.53	965	2.00	306.73	1015	1.84	399.43
916	1.52	217.04	966	1.97	308.69	1016	1.85	401.28
917	1.59	218.63	967	2.02	310.72	1017	1.83	403.11
918	1.58	220.21	968	2.05	312.76	1018	1.82	404.93
919	1.46	221.67	969	2.02	314.78	1019	1.81	406.74
920	1.42	223.09	970	1.98	316.76	1020	1.81	408.55
921	1.43	224.53	971	1.91	318.67	1021	1.77	410.32
922	1.48	226.01	972	1.90	320.57	1022	1.78	412.11
923	1.48	227.49	973	1.94	322.51	1023	1.83	413.93
924	1.45	228.94	974	1.95	324.45	1024	1.92	415.85
925	1.44	230.39	975	1.96	326.41	1025	1.94	417.79
926	1.48	231.87	976	1.92	328.33	1026	1.95	419.74
927	1.67	233.54	977	1.89	330.23	1027	1.93	421.67
928	1.75	235.30	978	1.89	332.11	1028	1.92	423.59
929	1.83	237.13	979	1.85	333.96	1029	1.95	425.55
930	1.89	239.02	980	1.85	335.81	1030	1.97	427.52
931	1.87	240.89	981	1.84	337.65	1031	1.93	429.45
932	1.91	242.80	982	1.88	339.53	1032	1.87	431.32
933	1.82	244.62	983	1.85	341.39	1033	1.79	433.11
934	1.79	246.41	984	1.79	343.18	1034	1.81	434.92
935	1.75	248.16	985	1.77	344.95	1035	1.85	436.77
936	1.77	249.93	986	1.76	346.71	1036	1.92	438.69
937	1.77	251.70	987	1.76	348.47	1037	1.92	440.61
938	1.76	253.46	988	1.80	350.27	1038	1.87	442.48
939	1.76	255.22	989	1.84	352.12	1039	1.88	444.36
940	1.78	256.99	990	1.86	353.98	1040	1.93	446.29
941	1.83	258.82	991	1.88	355.86	1041	2.02	448.31
942	1.82	260.64	992	1.89	357.75	1042	2.01	450.31
943	1.78	262.42	993	1.91	359.66	1043	1.98	452.30
944	1.76	264.18	994	1.91	361.57	1044	2.03	454.33
945	1.75	265.93	995	1.91	363.48	1045	2.12	456.45
946	1.76	267.69	996	1.89	365.37	1046	2.10	458.56
947	1.84	269.53	997	1.76	367.14	1047	2.09	460.64
948	1.88	271.40	998	1.74	368.88	1048	2.08	462.72
949	1.96	273.37	999	1.73	370.61	1049	2.07	464.80
950	2.05	275.42	1000	1.71	372.32	1050	2.09	466.88
951	2.02	277.44	1001	1.73	374.06	1051	2.11	468.99
952	1.98	279.42	1002	1.76	375.82	1052	2.10	471.09
953	2.05	281.47	1003	1.81	377.63	1053	2.09	473.19

UE12t#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1054	2.07	475.25	1104	1.84	567.25	1154	1.89	658.83
1055	2.04	477.30	1105	1.87	569.12	1155	1.85	660.68
1056	2.00	479.30	1106	1.87	570.98	1156	1.85	662.53
1057	2.01	481.31	1107	1.87	572.85	1157	1.87	664.41
1058	2.02	483.33	1108	1.87	574.71	1158	1.87	666.28
1059	2.01	485.34	1109	1.87	576.58	1159	1.88	668.16
1060	1.95	487.29	1110	1.83	578.41	1160	1.90	670.05
1061	1.93	489.22	1111	1.83	580.25	1161	1.92	671.97
1062	1.89	491.11	1112	1.85	582.09	1162	1.86	673.83
1063	1.90	493.01	1113	1.84	583.93	1163	1.79	675.62
1064	1.91	494.92	1114	1.84	585.77	1164	1.82	677.44
1065	1.91	496.83	1115	1.87	587.64	1165	1.86	679.30
1066	1.86	498.69	1116	1.88	589.52	1166	1.86	681.16
1067	1.85	500.55	1117	1.87	591.39	1167	1.88	683.04
1068	1.86	502.40	1118	1.87	593.26	1168	1.86	684.90
1069	1.83	504.23	1119	1.82	595.08	1169	1.85	686.75
1070	1.78	506.01	1120	1.81	596.89	1170	1.84	688.59
1071	1.76	507.78	1121	1.82	598.71	1171	1.81	690.39
1072	1.77	509.55	1122	1.84	600.56	1172	1.81	692.20
1073	1.72	511.27	1123	1.86	602.41	1173	1.83	694.03
1074	1.70	512.97	1124	1.87	604.28	1174	1.91	695.94
1075	1.67	514.64	1125	1.87	606.15	1175	1.90	697.85
1076	1.65	516.30	1126	1.86	608.01	1176	1.93	699.77
1077	1.70	517.99	1127	1.85	609.86	1177	1.98	701.76
1078	1.71	519.70	1128	1.84	611.70	1178	2.01	703.77
1079	1.77	521.48	1129	1.83	613.53	1179	2.04	705.81
1080	1.80	523.28	1130	1.79	615.32	1180	2.00	707.81
1081	1.82	525.10	1131	1.74	617.06	1181	1.95	709.76
1082	1.79	526.89	1132	1.74	618.80	1182	1.95	711.71
1083	1.86	528.75	1133	1.76	620.56	1183	1.97	713.68
1084	1.87	530.63	1134	1.78	622.34	1184	1.97	715.65
1085	1.88	532.50	1135	1.75	624.08	1185	1.92	717.57
1086	1.88	534.38	1136	1.77	625.86	1186	1.91	719.48
1087	1.85	536.23	1137	1.76	627.62	1187	1.91	721.39
1088	1.86	538.09	1138	1.75	629.37	1188	1.92	723.31
1089	1.88	539.97	1139	1.79	631.16	1189	1.94	725.25
1090	1.84	541.82	1140	1.82	632.98	1190	1.95	727.20
1091	1.83	543.65	1141	1.85	634.83	1191	1.93	729.13
1092	1.81	545.46	1142	1.87	636.70	1192	1.92	731.05
1093	1.81	547.27	1143	1.85	638.54	1193	1.93	732.98
1094	1.83	549.10	1144	1.85	640.39	1194	1.94	734.91
1095	1.82	550.92	1145	1.82	642.20	1195	1.92	736.84
1096	1.82	552.74	1146	1.84	644.04	1196	1.90	738.74
1097	1.84	554.58	1147	1.88	645.93	1197	1.88	740.61
1098	1.80	556.38	1148	1.83	647.76	1198	1.88	742.49
1099	1.81	558.19	1149	1.79	649.55	1199	1.88	744.37
1100	1.82	560.01	1150	1.81	651.36	1200	1.87	746.24
1101	1.79	561.80	1151	1.86	653.22	1201	1.88	748.12
1102	1.80	563.61	1152	1.85	655.08	1202	1.90	750.03
1103	1.81	565.42	1153	1.86	656.94	1203	1.92	751.94

UE12t#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1204	1.86	753.81	1254	1.95	851.26	1304	1.99	946.72
1205	1.81	755.62	1255	1.83	853.10	1305	1.96	948.68
1206	1.84	757.45	1256	1.78	854.88	1306	1.94	950.63
1207	1.89	759.35	1257	1.79	856.67	1307	1.94	952.57
1208	1.97	761.31	1258	1.74	858.42	1308	1.93	954.49
1209	2.00	763.31	1259	1.70	860.12	1309	1.94	956.43
1210	2.01	765.32	1260	1.68	861.79	1310	1.94	958.38
1211	2.00	767.32	1261	1.68	863.47	1311	1.91	960.28
1212	1.97	769.30	1262	1.71	865.18	1312	1.89	962.18
1213	1.95	771.25	1263	1.75	866.93	1313	1.89	964.06
1214	1.95	773.19	1264	1.85	868.78	1314	1.85	965.92
1215	1.96	775.16	1265	1.91	870.69	1315	1.84	967.76
1216	2.01	777.17	1266	1.92	872.61	1316	1.84	969.59
1217	2.03	779.19	1267	1.87	874.49	1317	1.81	971.41
1218	2.04	781.23	1268	1.93	876.41	1318	1.80	973.21
1219	2.08	783.31	1269	1.92	878.33	1319	1.79	975.00
1220	2.08	785.39	1270	1.90	880.23	1320	1.77	976.77
1221	1.97	787.37	1271	1.88	882.11	1321	1.78	978.55
1222	1.96	789.33	1272	1.89	883.99	1322	1.81	980.36
1223	1.96	791.29	1273	1.91	885.90	1323	1.80	982.16
1224	1.99	793.28	1274	1.90	887.81	1324	1.78	983.94
1225	1.96	795.25	1275	1.89	889.70	1325	1.77	985.71
1226	1.92	797.17	1276	1.87	891.57	1326	1.75	987.46
1227	1.92	799.10	1277	1.86	893.43	1327	1.76	989.22
1228	1.93	801.02	1278	1.89	895.32	1328	1.81	991.03
1229	1.92	802.94	1279	1.86	897.18	1329	1.84	992.87
1230	1.91	804.85	1280	1.91	899.09	1330	1.83	994.70
1231	1.89	806.74	1281	1.93	901.02	1331	1.82	996.52
1232	1.89	808.63	1282	1.91	902.92	1332	1.82	998.34
1233	1.86	810.49	1283	1.94	904.86	1333	1.81	1000.15
1234	1.86	812.35	1284	2.03	906.89	1334	1.79	1001.94
1235	1.88	814.23	1285	2.01	908.89	1335	1.77	1003.71
1236	1.90	816.13	1286	2.00	910.90	1336	1.81	1005.52
1237	1.90	818.03	1287	1.98	912.88	1337	1.81	1007.33
1238	1.92	819.95	1288	2.00	914.87	1338	1.81	1009.14
1239	1.99	821.94	1289	2.02	916.90	1339	1.82	1010.96
1240	2.02	823.96	1290	1.98	918.88	1340	1.82	1012.78
1241	2.01	825.97	1291	2.01	920.89	1341	1.81	1014.59
1242	1.98	827.95	1292	2.05	922.94	1342	1.81	1016.40
1243	1.97	829.93	1293	2.06	925.00	1343	1.82	1018.22
1244	1.98	831.91	1294	2.05	927.05	1344	1.83	1020.05
1245	1.99	833.89	1295	2.02	929.07	1345	1.82	1021.87
1246	1.99	835.88	1296	1.96	931.03	1346	1.81	1023.68
1247	1.99	837.87	1297	1.96	932.99	1347	1.82	1025.50
1248	1.95	839.82	1298	1.92	934.91	1348	1.84	1027.34
1249	1.89	841.71	1299	1.95	936.85	1349	1.88	1029.22
1250	1.86	843.57	1300	1.94	938.80	1350	1.92	1031.14
1251	1.87	845.43	1301	1.95	940.74	1351	1.94	1033.08
1252	1.93	847.37	1302	1.98	942.73	1352	1.91	1034.99
1253	1.95	849.32	1303	2.00	944.73	1353	1.86	1036.85

UE12t#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1354	1.84	1038.69	1404	1.97	1132.42	1454	2.11	1234.80
1355	1.83	1040.52	1405	2.00	1134.42	1455	2.14	1236.94
1356	1.86	1042.38	1406	1.99	1136.41	1456	2.18	1239.12
1357	1.86	1044.24	1407	1.98	1138.39	1457	2.22	1241.34
1358	1.85	1046.09	1408	1.98	1140.37	1458	2.28	1243.62
1359	1.82	1047.91	1409	2.01	1142.38	1459	2.25	1245.87
1360	1.82	1049.73	1410	2.01	1144.39	1460	2.31	1248.18
1361	1.81	1051.54	1411	2.06	1146.45	1461	2.27	1250.45
1362	1.81	1053.35	1412	2.08	1148.53	1462	2.21	1252.66
1363	1.82	1055.17	1413	2.05	1150.58	1463	2.20	1254.86
1364	1.84	1057.01	1414	2.05	1152.63	1464	2.23	1257.09
1365	1.85	1058.86	1415	2.04	1154.67	1465	2.30	1259.39
1366	1.87	1060.73	1416	2.01	1156.68	1466	2.31	1261.70
1367	1.88	1062.61	1417	2.02	1158.70	1467	2.29	1263.99
1368	1.89	1064.50	1418	2.05	1160.75	1468	2.31	1266.30
1369	1.88	1066.38	1419	2.09	1162.84	1469	2.29	1268.59
1370	1.85	1068.23	1420	2.08	1164.92	1470	2.31	1270.90
1371	1.90	1070.13	1421	1.99	1166.91	1471	2.31	1273.21
1372	1.93	1072.06	1422	1.97	1168.88	1472	2.34	1275.55
1373	1.93	1073.99	1423	0.00	1170.89	1473	2.37	1277.92
1374	1.87	1075.86	1424	0.00	1172.90	1474	2.37	1280.29
1375	1.87	1077.73	1425	0.00	1174.91	1475	2.36	1282.65
1376	1.87	1079.60	1426	0.00	1176.92	1476	2.31	1284.96
1377	1.87	1081.47	1427	0.00	1178.93	1477	2.31	1287.27
1378	1.86	1083.33	1428	2.05	1180.94	1478	2.30	1289.57
1379	1.88	1085.21	1429	2.07	1183.01	1479	2.29	1291.86
1380	1.87	1087.08	1430	2.09	1185.10	1480	2.29	1294.15
1381	1.85	1088.93	1431	2.04	1187.14	1481	2.28	1296.43
1382	1.85	1090.78	1432	2.02	1189.16	1482	2.24	1298.67
1383	1.86	1092.64	1433	2.08	1191.24	1483	2.21	1300.88
1384	1.90	1094.54	1434	2.05	1193.29	1484	2.20	1303.08
1385	1.88	1096.42	1435	2.05	1195.34	1485	2.23	1305.31
1386	1.88	1098.30	1436	2.05	1197.39	1486	2.24	1307.55
1387	1.88	1100.18	1437	2.03	1199.42	1487	2.23	1309.78
1388	1.83	1102.01	1438	2.03	1201.45	1488	2.22	1312.00
1389	1.79	1103.80	1439	2.04	1203.49	1489	2.23	1314.23
1390	1.80	1105.60	1440	2.04	1205.53	1490	2.20	1316.43
1391	1.86	1107.46	1441	2.06	1207.59	1491	2.13	1318.56
1392	1.84	1109.30	1442	2.04	1209.63	1492	2.11	1320.67
1393	1.85	1111.15	1443	0.00	1211.68	1493	2.09	1322.76
1394	1.85	1113.00	1444	0.00	1213.73	1494	2.06	1324.82
1395	1.88	1114.88	1445	0.00	1215.78	1495	2.10	1326.92
1396	1.91	1116.79	1446	0.00	1217.83	1496	2.07	1328.99
1397	1.94	1118.73	1447	0.00	1219.88	1497	2.04	1331.03
1398	1.93	1120.66	1448	2.06	1221.93	1498	2.00	1333.03
1399	1.92	1122.58	1449	2.09	1224.02	1499	1.99	1335.02
1400	1.95	1124.53	1450	2.15	1226.17	1500	1.98	1337.00
1401	1.97	1126.50	1451	2.17	1228.34	1501	1.95	1338.95
1402	1.98	1128.48	1452	2.20	1230.54	1502	1.93	1340.88
1403	1.97	1130.45	1453	2.15	1232.69	1503	2.01	1342.89

UE12t#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1504	2.04	1344.93	1554	1.81	1441.01	1604	1.78	1534.14
1505	2.01	1346.94	1555	1.80	1442.81	1605	1.83	1535.97
1506	1.99	1348.93	1556	1.85	1444.66	1606	1.84	1537.81
1507	1.94	1350.87	1557	1.87	1446.53	1607	1.89	1539.70
1508	1.95	1352.82	1558	1.88	1448.41	1608	1.89	1541.59
1509	1.98	1354.80	1559	1.88	1450.29	1609	1.87	1543.46
1510	2.00	1356.80	1560	1.91	1452.20	1610	1.86	1545.32
1511	2.00	1358.80	1561	1.89	1454.09	1611	1.86	1547.18
1512	2.00	1360.80	1562	1.85	1455.94	1612	1.88	1549.06
1513	1.98	1362.78	1563	1.87	1457.81	1613	1.90	1550.96
1514	1.97	1364.75	1564	1.90	1459.71	1614	1.90	1552.86
1515	1.98	1366.73	1565	1.94	1461.65	1615	1.93	1554.79
1516	1.98	1368.71	1566	1.91	1463.56	1616	1.96	1556.75
1517	1.95	1370.66	1567	1.90	1465.46	1617	1.99	1558.74
1518	1.96	1372.62	1568	1.89	1467.35	1618	1.99	1560.73
1519	1.99	1374.61	1569	1.87	1469.22	1619	1.97	1562.70
1520	2.00	1376.61	1570	1.85	1471.07	1620	1.95	1564.65
1521	1.97	1378.58	1571	1.86	1472.93	1621	1.86	1566.51
1522	1.96	1380.54	1572	1.86	1474.79	1622	1.87	1568.38
1523	1.93	1382.47	1573	1.85	1476.64	1623	1.93	1570.31
1524	1.90	1384.37	1574	1.87	1478.51	1624	1.92	1572.23
1525	1.89	1386.26	1575	1.86	1480.37	1625	1.90	1574.13
1526	1.89	1388.15	1576	1.83	1482.20	1626	1.89	1576.02
1527	1.89	1390.04	1577	1.87	1484.07	1627	1.89	1577.91
1528	1.88	1391.92	1578	1.87	1485.94	1628	1.87	1579.78
1529	1.88	1393.80	1579	1.88	1487.82	1629	1.87	1581.65
1530	1.88	1395.68	1580	1.90	1489.72	1630	1.84	1583.49
1531	1.94	1397.62	1581	1.90	1491.62	1631	1.92	1585.41
1532	1.97	1399.59	1582	1.89	1493.51	1632	1.90	1587.31
1533	1.97	1401.56	1583	1.89	1495.40	1633	1.93	1589.24
1534	1.97	1403.53	1584	1.87	1497.27	1634	1.90	1591.14
1535	1.98	1405.51	1585	1.88	1499.15	1635	1.88	1593.02
1536	1.96	1407.47	1586	1.88	1501.03	1636	1.86	1594.88
1537	1.92	1409.39	1587	1.96	1502.99	1637	1.86	1596.74
1538	1.89	1411.28	1588	1.98	1504.97	1638	1.86	1598.60
1539	1.84	1413.12	1589	1.93	1506.90	1639	1.92	1600.52
1540	1.87	1414.99	1590	1.86	1508.76	1640	1.93	1602.45
1541	1.89	1416.88	1591	1.85	1510.61	1641	1.89	1604.34
1542	1.89	1418.77	1592	1.81	1512.42	1642	1.87	1606.21
1543	1.87	1420.64	1593	1.80	1514.22	1643	1.88	1608.09
1544	1.85	1422.49	1594	1.80	1516.02	1644	1.92	1610.01
1545	1.84	1424.33	1595	1.82	1517.84	1645	1.94	1611.95
1546	1.80	1426.13	1596	1.82	1519.66	1646	1.98	1613.93
1547	1.81	1427.94	1597	1.81	1521.47	1647	2.00	1615.93
1548	1.85	1429.79	1598	1.88	1523.35	1648	2.00	1617.93
1549	1.88	1431.67	1599	1.83	1525.18	1649	1.96	1619.89
1550	1.93	1433.60	1600	1.81	1526.99	1650	1.94	1621.83
1551	1.89	1435.49	1601	1.81	1528.80	1651	1.92	1623.75
1552	1.87	1437.36	1602	1.80	1530.60	1652	1.94	1625.69
1553	1.84	1439.20	1603	1.76	1532.36	1653	1.93	1627.62

UE12t#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1654	1.94	1629.56	1704	1.80	1726.96	1754	1.89	1818.97
1655	1.94	1631.50	1705	1.80	1728.76	1755	1.86	1820.83
1656	1.94	1633.44	1706	1.79	1730.55	1756	1.84	1822.67
1657	1.95	1635.39	1707	1.78	1732.33	1757	1.83	1824.50
1658	1.95	1637.34	1708	1.78	1734.11	1758	1.82	1826.32
1659	1.96	1639.30	1709	1.78	1735.89	1759	1.82	1828.14
1660	1.96	1641.26	1710	1.79	1737.68	1760	1.89	1830.03
1661	1.97	1643.23	1711	1.80	1739.48	1761	1.88	1831.91
1662	2.01	1645.24	1712	1.84	1741.32	1762	1.88	1833.79
1663	1.96	1647.20	1713	1.81	1743.13	1763	1.87	1835.66
1664	1.94	1649.14	1714	1.81	1744.94	1764	1.87	1837.53
1665	1.95	1651.09	1715	1.83	1746.77	1765	1.81	1839.34
1666	1.92	1653.01	1716	1.83	1748.60	1766	1.78	1841.12
1667	1.94	1654.95	1717	1.84	1750.44	1767	1.76	1842.88
1668	2.00	1656.95	1718	1.85	1752.29	1768	1.79	1844.67
1669	2.01	1658.96	1719	1.84	1754.13	1769	1.83	1846.50
1670	2.00	1660.96	1720	1.83	1755.96	1770	1.85	1848.35
1671	1.99	1662.95	1721	1.83	1757.79	1771	1.91	1850.26
1672	1.99	1664.94	1722	1.85	1759.64	1772	1.90	1852.16
1673	1.98	1666.92	1723	1.88	1761.52	1773	1.85	1854.01
1674	1.97	1668.89	1724	1.89	1763.41	1774	1.85	1855.86
1675	2.00	1670.89	1725	1.82	1765.23	1775	1.89	1857.75
1676	2.04	1672.93	1726	1.83	1767.06	1776	1.85	1859.60
1677	2.06	1674.99	1727	1.84	1768.90	1777	1.82	1861.42
1678	2.00	1676.99	1728	1.84	1770.74	1778	1.84	1863.26
1679	1.99	1678.98	1729	1.84	1772.58	1779	1.86	1865.12
1680	2.03	1681.01	1730	1.84	1774.42	1780	1.80	1866.92
1681	2.06	1683.07	1731	1.82	1776.24	1781	1.78	1868.70
1682	2.09	1685.16	1732	1.82	1778.06	1782	1.77	1870.47
1683	2.07	1687.23	1733	1.82	1779.88	1783	1.75	1872.22
1684	2.06	1689.29	1734	1.82	1781.70	1784	1.72	1873.94
1685	2.00	1691.29	1735	1.84	1783.54	1785	1.72	1875.66
1686	1.95	1693.24	1736	1.85	1785.39	1786	1.73	1877.39
1687	1.93	1695.17	1737	1.87	1787.26	1787	1.71	1879.10
1688	1.94	1697.11	1738	1.85	1789.11	1788	1.69	1880.79
1689	1.94	1699.05	1739	1.83	1790.94	1789	1.70	1882.49
1690	1.90	1700.95	1740	1.84	1792.78	1790	1.73	1884.22
1691	1.89	1702.84	1741	1.82	1794.60	1791	1.74	1885.96
1692	1.94	1704.78	1742	1.81	1796.41	1792	1.71	1887.67
1693	1.93	1706.71	1743	1.81	1798.22	1793	1.73	1889.40
1694	1.90	1708.61	1744	1.81	1800.03	1794	1.73	1891.13
1695	1.88	1710.49	1745	1.83	1801.86	1795	1.74	1892.87
1696	1.86	1712.35	1746	1.85	1803.71	1796	1.74	1894.61
1697	1.82	1714.17	1747	1.89	1805.60	1797	1.75	1896.36
1698	1.82	1715.99	1748	1.92	1807.52	1798	1.74	1898.10
1699	1.85	1717.84	1749	1.90	1809.42	1799	1.75	1899.85
1700	1.85	1719.69	1750	1.92	1811.34	1800	1.78	1901.63
1701	1.83	1721.52	1751	1.92	1813.26	1801	1.77	1903.40
1702	1.82	1723.34	1752	1.90	1815.16	1802	1.76	1905.16
1703	1.82	1725.16	1753	1.92	1817.08	1803	1.76	1906.92

UE12t#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1804	1.77	1908.69	1854	1.73	1997.12	1904	1.84	2084.38
1805	1.80	1910.49	1855	1.70	1998.82	1905	1.88	2086.26
1806	1.83	1912.32	1856	1.68	2000.50	1906	1.93	2088.19
1807	1.82	1914.14	1857	1.67	2002.17	1907	1.97	2090.16
1808	1.82	1915.96	1858	1.66	2003.83	1908	2.00	2092.16
1809	1.76	1917.72	1859	1.66	2005.49	1909	1.99	2094.15
1810	1.76	1919.48	1860	1.64	2007.13	1910	1.98	2096.13
1811	1.71	1921.19	1861	1.65	2008.78	1911	1.98	2098.11
1812	1.72	1922.91	1862	1.73	2010.51	1912	2.00	2100.11
1813	1.73	1924.64	1863	1.77	2012.28	1913	2.02	2102.13
1814	1.75	1926.39	1864	1.73	2014.01	1914	2.01	2104.14
1815	1.76	1928.15	1865	1.69	2015.70	1915	1.99	2106.13
1816	1.74	1929.89	1866	1.66	2017.36	1916	1.97	2108.10
1817	1.73	1931.62	1867	1.62	2018.98	1917	1.99	2110.09
1818	1.71	1933.33	1868	1.61	2020.59	1918	1.97	2112.06
1819	1.69	1935.02	1869	1.65	2022.24	1919	1.95	2114.01
1820	1.68	1936.70	1870	1.66	2023.90	1920	2.00	2116.01
1821	1.71	1938.41	1871	1.65	2025.55	1921	2.03	2118.04
1822	1.75	1940.16	1872	1.63	2027.18	1922	2.10	2120.14
1823	1.75	1941.91	1873	1.62	2028.80	1923	2.07	2122.21
1824	1.73	1943.64	1874	1.64	2030.44	1924	2.09	2124.30
1825	1.75	1945.39	1875	1.66	2032.10	1925	2.14	2126.44
1826	1.74	1947.13	1876	1.66	2033.76	1926	2.16	2128.60
1827	1.75	1948.88	1877	1.67	2035.43	1927	2.15	2130.75
1828	1.75	1950.63	1878	1.71	2037.14	1928	2.13	2132.88
1829	1.76	1952.39	1879	1.76	2038.90	1929	2.10	2134.98
1830	1.78	1954.17	1880	1.77	2040.67	1930	2.11	2137.09
1831	1.78	1955.95	1881	1.79	2042.46	1931	2.16	2139.25
1832	1.77	1957.72	1882	1.86	2044.32	1932	2.19	2141.44
1833	1.76	1959.48	1883	1.90	2046.22	1933	2.14	2143.58
1834	1.74	1961.22	1884	1.92	2048.14	1934	2.12	2145.70
1835	1.73	1962.95	1885	1.88	2050.02	1935	2.12	2147.82
1836	1.71	1964.66	1886	1.84	2051.86	1936	2.13	2149.95
1837	1.70	1966.36	1887	1.84	2053.70	1937	2.15	2152.10
1838	1.74	1968.10	1888	1.82	2055.52	1938	2.09	2154.19
1839	1.79	1969.89	1889	1.78	2057.30	1939	2.06	2156.25
1840	1.82	1971.71	1890	1.75	2059.05	1940	2.09	2158.34
1841	1.82	1973.53	1891	1.73	2060.78	1941	2.09	2160.43
1842	1.84	1975.37	1892	1.73	2062.51	1942	2.11	2162.54
1843	1.89	1977.26	1893	1.74	2064.25	1943	2.16	2164.70
1844	1.96	1979.22	1894	1.79	2066.04	1944	2.14	2166.84
1845	1.96	1981.18	1895	1.85	2067.89	1945	2.06	2168.90
1846	1.93	1983.11	1896	1.86	2069.75	1946	2.07	2170.97
1847	1.86	1984.97	1897	1.84	2071.59	1947	2.11	2173.08
1848	1.81	1986.78	1898	1.83	2073.42	1948	2.11	2175.19
1849	1.77	1988.55	1899	1.80	2075.22	1949	2.14	2177.33
1850	1.66	1990.21	1900	1.81	2077.03	1950	2.16	2179.49
1851	1.70	1991.91	1901	1.82	2078.85	1951	2.21	2181.70
1852	1.74	1993.65	1902	1.84	2080.69	1952	2.20	2183.90
1853	1.74	1995.39	1903	1.85	2082.54	1953	2.16	2186.06

UE12t#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1954	2.12	2188.18	2004	2.07	2296.04	2054	2.05	2395.55
1955	2.08	2190.26	2005	2.02	2298.06	2055	2.00	2397.55
1956	2.04	2192.30	2006	2.06	2300.12	2056	2.00	2399.55
1957	2.04	2194.34	2007	2.05	2302.17	2057	2.00	2401.55
1958	2.06	2196.40	2008	2.10	2304.27	2058	1.99	2403.54
1959	2.12	2198.52	2009	2.07	2306.34	2059	1.97	2405.51
1960	2.27	2200.79	2010	2.04	2308.38	2060	1.96	2407.47
1961	2.18	2202.97	2011	2.01	2310.39	2061	1.95	2409.42
1962	2.17	2205.14	2012	2.01	2312.40	2062	1.93	2411.35
1963	2.14	2207.28	2013	1.99	2314.39	2063	1.91	2413.26
1964	2.12	2209.40	2014	1.98	2316.37	2064	1.90	2415.16
1965	2.14	2211.54	2015	2.01	2318.38	2065	1.99	2417.15
1966	2.14	2213.68	2016	1.99	2320.37	2066	1.99	2419.14
1967	2.14	2215.82	2017	1.97	2322.34	2067	2.03	2421.17
1968	2.15	2217.97	2018	1.99	2324.33	2068	2.05	2423.22
1969	2.18	2220.15	2019	1.97	2326.30	2069	2.02	2425.24
1970	2.24	2222.39	2020	1.96	2328.26	2070	2.00	2427.24
1971	2.25	2224.64	2021	1.96	2330.22	2071	1.99	2429.23
1972	2.23	2226.87	2022	1.99	2332.21	2072	1.98	2431.21
1973	2.19	2229.06	2023	1.99	2334.20	2073	2.02	2433.23
1974	2.20	2231.26	2024	1.97	2336.17	2074	2.04	2435.27
1975	2.18	2233.44	2025	1.97	2338.14	2075	2.07	2437.34
1976	2.19	2235.63	2026	1.94	2340.08	2076	2.09	2439.43
1977	2.16	2237.79	2027	1.91	2341.99	2077	2.01	2441.44
1978	2.16	2239.95	2028	1.94	2343.93	2078	2.03	2443.47
1979	2.18	2242.13	2029	1.97	2345.90	2079	2.04	2445.51
1980	2.21	2244.34	2030	1.98	2347.88	2080	2.05	2447.56
1981	2.21	2246.55	2031	1.98	2349.86	2081	2.06	2449.62
1982	2.20	2248.75	2032	1.98	2351.84	2082	2.10	2451.72
1983	2.22	2250.97	2033	1.99	2353.83	2083	2.17	2453.89
1984	2.17	2253.14	2034	1.99	2355.82	2084	2.18	2456.07
1985	2.15	2255.29	2035	1.97	2357.79	2085	2.20	2458.27
1986	2.20	2257.49	2036	1.98	2359.77	2086	2.16	2460.43
1987	2.29	2259.78	2037	1.97	2361.74	2087	2.14	2462.57
1988	2.30	2262.08	2038	1.99	2363.73	2088	2.14	2464.71
1989	2.24	2264.32	2039	2.01	2365.74	2089	2.13	2466.84
1990	2.20	2266.52	2040	1.99	2367.73	2090	2.10	2468.94
1991	2.15	2268.67	2041	1.92	2369.65	2091	2.08	2471.02
1992	2.14	2270.81	2042	1.94	2371.59	2092	2.13	2473.15
1993	2.14	2272.95	2043	1.94	2373.53	2093	2.15	2475.30
1994	2.11	2275.06	2044	1.95	2375.48	2094	2.16	2477.46
1995	2.11	2277.17	2045	1.97	2377.45	2095	2.16	2479.62
1996	2.10	2279.27	2046	1.99	2379.44	2096	2.13	2481.75
1997	2.10	2281.37	2047	1.99	2381.43	2097	2.12	2483.87
1998	2.14	2283.51	2048	2.02	2383.45	2098	2.16	2486.03
1999	2.11	2285.62	2049	2.02	2385.47	2099	2.19	2488.22
2000	2.10	2287.72	2050	2.01	2387.48	2100	2.20	2490.42
2001	2.09	2289.81	2051	2.02	2389.50	2101	2.20	2492.62
2002	2.08	2291.89	2052	1.99	2391.49	2102	2.19	2494.81
2003	2.08	2293.97	2053	2.01	2393.50	2103	2.17	2496.98

UE12t#3--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
2104	2.16	2499.14	2154	2.23	2608.04			
2105	2.17	2501.31	2155	2.24	2610.28			
2106	2.20	2503.51	2156	2.22	2612.50			
2107	2.20	2505.71	2157	2.23	2614.73			
2108	2.21	2507.92	2158	2.29	2617.02			
2109	2.21	2510.13	2159	2.25	2619.27			
2110	2.22	2512.35	2160	2.28	2621.55			
2111	2.22	2514.57	2161	2.32	2623.87			
2112	2.17	2516.74	2162	2.31	2626.18			
2113	2.17	2518.91	2163	2.29	2628.47			
2114	2.16	2521.07	2164	2.33	2630.80			
2115	2.14	2523.21	2165	2.35	2633.15			
2116	2.15	2525.36	2166	2.33	2635.48			
2117	2.14	2527.50	2167	2.24	2637.72			
2118	2.11	2529.61	2168	2.21	2639.93			
2119	2.08	2531.69	2169	2.18	2642.11			
2120	2.10	2533.79	2170	2.16	2644.27			
2121	2.08	2535.87	2171	2.15	2646.42			
2122	2.06	2537.93	2172	2.12	2648.54			
2123	2.11	2540.04	2173	2.18	2650.72			
2124	2.19	2542.23	2174	2.20	2652.92			
2125	2.18	2544.41	2175	2.19	2655.11			
2125	2.18	2544.41						
2126	2.15	2546.56						
2127	2.16	2548.72						
2128	2.16	2550.88						
2129	2.15	2553.03						
2130	2.16	2555.19						
2131	2.15	2557.34						
2132	2.18	2559.52						
2133	2.23	2561.75						
2134	2.28	2564.03						
2135	2.28	2566.31						
2136	2.28	2568.59						
2137	2.23	2570.82						
2138	2.15	2572.97						
2139	2.13	2575.10						
2140	2.12	2577.22						
2141	2.12	2579.34						
2142	2.13	2581.47						
2143	2.24	2583.71						
2144	2.18	2585.89						
2145	2.14	2588.03						
2146	2.19	2590.22						
2147	2.26	2592.48						
2148	2.28	2594.76						
2149	2.24	2597.00						
2150	2.17	2599.17						
2151	2.19	2601.36						
2152	2.23	2603.59						
2153	2.22	2605.81						

UE12t#4

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
974	1.91	0.00	1024	1.88	95.89	1074	1.76	187.49
975	1.89	1.89	1025	1.89	97.78	1075	1.79	189.29
976	1.93	3.82	1026	1.89	99.67	1076	1.83	191.12
977	1.94	5.76	1027	1.86	101.53	1077	1.84	192.96
978	1.92	7.68	1028	1.84	103.38	1078	1.84	194.80
979	1.95	9.63	1029	1.85	105.23	1079	1.80	196.61
980	1.97	11.60	1030	1.87	107.10	1080	1.79	198.40
981	2.00	13.60	1031	1.86	108.96	1081	1.80	200.20
982	2.00	15.60	1032	1.85	110.82	1082	1.81	202.01
983	2.00	17.60	1033	1.84	112.66	1083	1.84	203.85
984	2.04	19.64	1034	1.82	114.48	1084	1.88	205.73
985	2.02	21.66	1035	1.82	116.30	1085	1.89	207.63
986	2.00	23.66	1036	1.81	118.11	1086	1.86	209.49
987	1.95	25.61	1037	1.80	119.91	1087	1.85	211.34
988	1.93	27.53	1038	1.81	121.72	1088	1.83	213.17
989	1.91	29.45	1039	1.83	123.55	1089	1.82	214.99
990	1.90	31.34	1040	1.81	125.37	1090	1.81	216.80
991	1.87	33.22	1041	1.84	127.21	1091	1.81	218.62
992	1.86	35.08	1042	1.86	129.07	1092	1.84	220.46
993	1.88	36.96	1043	1.85	130.92	1093	1.83	222.29
994	1.90	38.86	1044	1.83	132.75	1094	1.89	224.18
995	1.92	40.78	1045	1.82	134.57	1095	1.93	226.11
996	1.92	42.70	1046	1.81	136.39	1096	1.95	228.06
997	1.90	44.60	1047	1.79	138.18	1097	1.99	230.05
998	1.90	46.50	1048	1.79	139.97	1098	2.01	232.07
999	1.90	48.40	1049	1.81	141.78	1099	2.01	234.08
1000	1.89	50.28	1050	1.79	143.57	1100	2.01	236.08
1001	1.87	52.16	1051	1.81	145.38	1101	2.01	238.09
1002	1.87	54.03	1052	1.86	147.25	1102	2.04	240.13
1003	1.89	55.92	1053	1.91	149.16	1103	2.07	242.19
1004	1.92	57.84	1054	1.95	151.10	1104	2.07	244.26
1005	1.92	59.76	1055	1.95	153.05	1105	2.04	246.30
1006	1.90	61.66	1056	1.88	154.93	1106	2.00	248.30
1007	1.88	63.54	1057	1.86	156.78	1107	1.98	250.28
1008	1.85	65.39	1058	1.85	158.63	1108	1.96	252.24
1009	1.85	67.24	1059	1.84	160.47	1109	1.95	254.19
1010	1.89	69.13	1060	1.82	162.29	1110	1.98	256.17
1011	1.93	71.06	1061	1.80	164.09	1111	1.96	258.13
1012	1.91	72.97	1062	1.78	165.87	1112	1.97	260.10
1013	1.88	74.85	1063	1.77	167.65	1113	1.94	262.04
1014	1.91	76.75	1064	1.77	169.42	1114	1.90	263.94
1015	1.94	78.69	1065	1.80	171.22	1115	1.88	265.82
1016	1.94	80.64	1066	1.81	173.02	1116	1.89	267.71
1017	1.93	82.57	1067	1.81	174.83	1117	1.88	269.59
1018	1.92	84.49	1068	1.82	176.65	1118	1.89	271.47
1019	1.92	86.41	1069	1.85	178.50	1119	1.88	273.36
1020	1.91	88.32	1070	1.87	180.37	1120	1.87	275.22
1021	1.89	90.21	1071	1.84	182.21	1121	1.86	277.09
1022	1.89	92.10	1072	1.78	183.99	1122	1.84	278.93
1023	1.91	94.01	1073	1.75	185.74	1123	1.83	280.76

UE12t#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1124	1.80	282.56	1174	1.87	374.82	1224	1.84	466.61
1125	1.83	284.39	1175	1.83	376.65	1225	1.85	468.46
1126	1.87	286.26	1176	1.82	378.47	1226	1.84	470.30
1127	1.88	288.14	1177	1.82	380.29	1227	1.86	472.16
1128	1.88	290.02	1178	1.83	382.12	1228	1.89	474.06
1129	1.88	291.90	1179	1.82	383.93	1229	1.90	475.96
1130	1.87	293.77	1180	1.82	385.75	1230	1.87	477.83
1131	1.85	295.62	1181	1.86	387.61	1231	1.85	479.68
1132	1.86	297.48	1182	1.87	389.48	1232	1.85	481.53
1133	1.88	299.36	1183	1.84	391.32	1233	1.86	483.39
1134	1.88	301.24	1184	1.83	393.15	1234	1.88	485.26
1135	1.90	303.14	1185	1.84	395.00	1235	1.90	487.16
1136	1.90	305.04	1186	1.85	396.84	1236	1.90	489.06
1137	1.87	306.91	1187	1.84	398.69	1237	1.87	490.92
1138	1.86	308.77	1188	1.86	400.55	1238	1.87	492.79
1139	1.89	310.66	1189	1.85	402.39	1239	1.86	494.66
1140	1.88	312.54	1190	1.82	404.21	1240	1.86	496.51
1141	1.87	314.40	1191	1.81	406.02	1241	1.84	498.36
1142	1.86	316.26	1192	1.81	407.83	1242	1.84	500.20
1143	1.90	318.16	1193	1.80	409.63	1243	1.86	502.07
1144	1.88	320.04	1194	1.84	411.47	1244	1.88	503.94
1145	1.87	321.92	1195	1.89	413.36	1245	1.89	505.83
1146	1.86	323.78	1196	1.94	415.31	1246	1.89	507.72
1147	1.86	325.64	1197	1.94	417.25	1247	1.89	509.61
1148	1.85	327.48	1198	1.92	419.17	1248	1.90	511.51
1149	1.82	329.31	1199	1.90	421.07	1249	1.89	513.40
1150	1.83	331.14	1200	1.82	422.89	1250	1.90	515.30
1151	1.86	333.00	1201	1.80	424.70	1251	1.91	517.21
1152	1.85	334.85	1202	1.80	426.49	1252	1.91	519.11
1153	1.86	336.71	1203	1.83	428.32	1253	1.91	521.02
1154	1.86	338.58	1204	1.88	430.20	1254	1.91	522.93
1155	1.85	340.43	1205	1.92	432.12	1255	1.92	524.85
1156	1.84	342.27	1206	1.95	434.07	1256	1.94	526.79
1157	1.82	344.08	1207	1.86	435.93	1257	1.97	528.76
1158	1.80	345.88	1208	1.90	437.83	1258	1.96	530.72
1159	1.78	347.66	1209	1.83	439.66	1259	1.94	532.67
1160	1.77	349.43	1210	1.80	441.46	1260	1.91	534.58
1161	1.78	351.21	1211	1.81	443.27	1261	1.90	536.48
1162	1.79	353.00	1212	1.82	445.09	1262	1.89	538.37
1163	1.77	354.76	1213	1.81	446.89	1263	1.89	540.26
1164	1.74	356.51	1214	1.79	448.68	1264	1.92	542.18
1165	1.76	358.26	1215	1.77	450.45	1265	1.94	544.11
1166	1.81	360.07	1216	1.77	452.22	1266	1.93	546.05
1167	1.84	361.91	1217	1.77	454.00	1267	1.95	548.00
1168	1.84	363.75	1218	1.75	455.75	1268	1.98	549.98
1169	1.83	365.58	1219	1.74	457.49	1269	1.94	551.92
1170	1.82	367.41	1220	1.76	459.25	1270	1.92	553.84
1171	1.83	369.23	1221	1.82	461.08	1271	1.92	555.75
1172	1.85	371.08	1222	1.85	462.92	1272	1.97	557.73
1173	1.87	372.95	1223	1.84	464.77	1273	1.96	559.68

UE12t#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1274	1.93	561.61	1324	1.88	655.32	1374	1.89	751.05
1275	1.91	563.52	1325	1.84	657.16	1375	1.89	752.94
1276	1.88	565.40	1326	1.82	658.98	1376	1.90	754.84
1277	1.87	567.28	1327	1.87	660.85	1377	1.90	756.74
1278	1.87	569.14	1328	1.92	662.78	1378	1.88	758.62
1279	1.88	571.03	1329	1.92	664.69	1379	1.90	760.52
1280	1.88	572.91	1330	1.92	666.62	1380	1.92	762.44
1281	1.87	574.77	1331	1.97	668.58	1381	1.91	764.34
1282	1.86	576.63	1332	1.98	670.56	1382	1.89	766.24
1283	1.87	578.50	1333	2.00	672.56	1383	1.93	768.17
1284	1.87	580.37	1334	2.03	674.59	1384	1.94	770.11
1285	1.85	582.22	1335	2.02	676.61	1385	1.94	772.05
1286	1.85	584.07	1336	2.00	678.60	1386	1.88	773.93
1287	1.88	585.95	1337	1.96	680.56	1387	1.86	775.79
1288	1.90	587.84	1338	1.93	682.49	1388	1.85	777.63
1289	1.92	589.76	1339	1.90	684.39	1389	1.83	779.46
1290	1.97	591.73	1340	1.88	686.28	1390	1.83	781.29
1291	1.96	593.69	1341	1.88	688.16	1391	1.84	783.13
1292	1.91	595.61	1342	1.87	690.03	1392	1.85	784.98
1293	1.90	597.50	1343	1.86	691.89	1393	1.84	786.82
1294	1.89	599.39	1344	1.87	693.76	1394	1.83	788.65
1295	1.84	601.23	1345	1.85	695.62	1395	1.84	790.49
1296	1.81	603.04	1346	1.88	697.50	1396	1.84	792.33
1297	1.81	604.85	1347	1.95	699.45	1397	1.85	794.18
1298	1.81	606.66	1348	1.99	701.44	1398	1.84	796.02
1299	1.79	608.45	1349	2.01	703.44	1399	1.84	797.86
1300	1.82	610.27	1350	1.97	705.42	1400	1.83	799.70
1301	1.85	612.12	1351	1.97	707.39	1401	1.83	801.53
1302	1.92	614.03	1352	1.99	709.38	1402	1.83	803.36
1303	1.89	615.93	1353	1.98	711.36	1403	1.83	805.19
1304	1.91	617.83	1354	1.97	713.33	1404	1.83	807.03
1305	1.90	619.74	1355	1.97	715.30	1405	1.84	808.87
1306	1.87	621.60	1356	1.99	717.29	1406	1.84	810.71
1307	1.85	623.45	1357	2.00	719.29	1407	1.84	812.55
1308	1.80	625.25	1358	2.00	721.29	1408	1.84	814.39
1309	1.77	627.02	1359	1.95	723.25	1409	1.83	816.22
1310	1.79	628.81	1360	1.92	725.16	1410	1.84	818.07
1311	1.86	630.67	1361	1.84	727.00	1411	1.85	819.92
1312	1.89	632.56	1362	1.81	728.82	1412	1.87	821.79
1313	1.91	634.47	1363	1.86	730.68	1413	1.88	823.67
1314	1.88	636.35	1364	1.85	732.53	1414	1.90	825.57
1315	1.89	638.24	1365	1.83	734.35	1415	1.89	827.46
1316	1.91	640.15	1366	1.84	736.20	1416	1.87	829.33
1317	1.92	642.06	1367	1.84	738.03	1417	1.85	831.18
1318	1.93	643.99	1368	1.83	739.86	1418	1.84	833.02
1319	1.91	645.90	1369	1.84	741.71	1419	1.84	834.85
1320	1.89	647.80	1370	1.84	743.55	1420	1.84	836.69
1321	1.88	649.68	1371	1.85	745.39	1421	1.82	838.51
1322	1.87	651.55	1372	1.86	747.26	1422	1.83	840.35
1323	1.90	653.45	1373	1.89	749.15	1423	1.82	842.16

UE12t#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1424	1.81	843.97	1474	1.91	936.58	1524	2.08	1039.70
1425	1.80	845.77	1475	1.94	938.52	1525	2.09	1041.79
1426	1.82	847.59	1476	1.98	940.50	1526	2.07	1043.86
1427	1.81	849.40	1477	1.99	942.49	1527	0.00	1046.00
1428	1.81	851.21	1478	1.99	944.48	1528	0.00	1048.14
1429	1.81	853.02	1479	1.97	946.45	1529	0.00	1050.28
1430	1.81	854.84	1480	1.99	948.43	1530	0.00	1052.42
1431	1.79	856.63	1481	2.00	950.43	1531	0.00	1054.56
1432	1.77	858.40	1482	1.98	952.41	1532	2.20	1056.70
1433	1.80	860.20	1483	1.99	954.40	1533	2.19	1058.89
1434	1.81	862.01	1484	2.03	956.43	1534	2.19	1061.08
1435	1.80	863.81	1485	2.03	958.46	1535	2.17	1063.25
1436	1.80	865.61	1486	2.02	960.47	1536	2.11	1065.36
1437	1.81	867.41	1487	2.00	962.47	1537	2.07	1067.43
1438	1.84	869.25	1488	1.98	964.45	1538	2.02	1069.45
1439	1.81	871.06	1489	2.00	966.45	1539	2.14	1071.59
1440	1.82	872.88	1490	2.03	968.48	1540	2.07	1073.66
1441	1.86	874.74	1491	2.07	970.55	1541	2.30	1075.96
1442	1.82	876.56	1492	2.07	972.62	1542	2.35	1078.31
1443	1.80	878.36	1493	2.05	974.67	1543	2.37	1080.68
1444	1.79	880.15	1494	2.06	976.74	1544	2.39	1083.07
1445	1.80	881.95	1495	2.13	978.87	1545	2.42	1085.49
1446	1.83	883.78	1496	2.11	980.98	1546	2.48	1087.97
1447	1.84	885.62	1497	2.11	983.09	1547	2.48	1090.45
1448	1.84	887.46	1498	2.12	985.20	1548	2.42	1092.87
1449	1.85	889.31	1499	2.11	987.31	1549	2.37	1095.24
1450	1.87	891.18	1500	2.11	989.42	1550	2.40	1097.64
1451	1.85	893.02	1501	2.08	991.50	1551	2.44	1100.08
1452	1.85	894.87	1502	2.08	993.58	1552	2.47	1102.55
1453	1.85	896.72	1503	2.06	995.64	1553	2.50	1105.05
1454	1.87	898.58	1504	2.03	997.67	1554	2.50	1107.55
1455	1.89	900.48	1505	2.01	999.68	1555	2.47	1110.02
1456	1.92	902.39	1506	1.98	1001.66	1556	2.47	1112.49
1457	1.90	904.29	1507	1.98	1003.64	1557	2.48	1114.97
1458	1.86	906.15	1508	2.11	1005.75	1558	2.45	1117.42
1459	1.80	907.95	1509	2.11	1007.86	1559	2.45	1119.87
1460	1.86	909.81	1510	2.10	1009.96	1560	2.45	1122.32
1461	1.90	911.71	1511	2.15	1012.11	1561	2.41	1124.73
1462	1.93	913.64	1512	2.15	1014.26	1562	2.46	1127.19
1463	1.93	915.57	1513	2.12	1016.38	1563	2.46	1129.65
1464	1.91	917.47	1514	2.17	1018.55	1564	2.43	1132.08
1465	1.90	919.37	1515	2.20	1020.75	1565	2.43	1134.51
1466	1.88	921.25	1516	2.15	1022.90	1566	2.50	1137.01
1467	1.88	923.13	1517	2.13	1025.03	1567	2.50	1139.51
1468	1.91	925.04	1518	2.10	1027.13	1568	2.49	1142.00
1469	1.90	926.94	1519	2.10	1029.23	1569	2.48	1144.48
1470	1.90	928.84	1520	2.11	1031.34	1570	2.43	1146.91
1471	1.92	930.77	1521	2.09	1033.43	1571	2.44	1149.35
1472	1.96	932.72	1522	2.10	1035.53	1572	2.51	1151.86
1473	1.95	934.67	1523	2.09	1037.62	1573	2.48	1154.34

UE12t#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1574	2.46	1156.80	1624	2.02	1272.12	1674	1.99	1368.42
1575	2.44	1159.24	1625	2.00	1274.12	1675	2.00	1370.42
1576	2.42	1161.66	1626	1.99	1276.11	1676	1.98	1372.40
1577	2.44	1164.10	1627	2.02	1278.13	1677	1.98	1374.38
1578	2.50	1166.60	1628	2.00	1280.13	1678	1.95	1376.33
1579	2.48	1169.08	1629	1.98	1282.11	1679	1.97	1378.30
1580	2.48	1171.56	1630	2.00	1284.11	1680	1.99	1380.29
1581	2.46	1174.02	1631	1.94	1286.05	1681	2.00	1382.29
1582	2.44	1176.46	1632	1.90	1287.95	1682	1.99	1384.28
1583	2.40	1178.86	1633	1.88	1289.83	1683	1.98	1386.26
1584	2.43	1181.29	1634	1.85	1291.68	1684	1.97	1388.23
1585	2.45	1183.74	1635	1.82	1293.50	1685	1.96	1390.19
1586	2.52	1186.26	1636	1.80	1295.30	1686	1.97	1392.16
1587	2.49	1188.75	1637	1.80	1297.10	1687	1.96	1394.12
1588	2.43	1191.18	1638	1.81	1298.91	1688	1.97	1396.09
1589	2.40	1193.58	1639	1.82	1300.73	1689	2.00	1398.09
1590	2.37	1195.95	1640	1.83	1302.56	1690	2.02	1400.11
1591	2.36	1198.31	1641	1.87	1304.43	1691	2.06	1402.17
1592	2.36	1200.67	1642	1.91	1306.34	1692	2.12	1404.29
1593	2.36	1203.03	1643	1.94	1308.28	1693	2.07	1406.36
1594	2.35	1205.38	1644	2.02	1310.30	1694	1.99	1408.35
1595	2.38	1207.76	1645	2.00	1312.30	1695	1.96	1410.31
1596	2.36	1210.12	1646	1.99	1314.29	1696	1.92	1412.23
1597	2.35	1212.47	1647	1.96	1316.25	1697	1.91	1414.14
1598	2.35	1214.82	1648	1.97	1318.22	1698	1.90	1416.04
1599	2.36	1217.18	1649	1.97	1320.19	1699	1.90	1417.94
1600	2.38	1219.56	1650	2.01	1322.20	1700	1.92	1419.86
1601	0.00	1221.81	1651	2.03	1324.23	1701	1.93	1421.79
1602	0.00	1224.06	1652	1.95	1326.18	1702	1.93	1423.72
1603	0.00	1226.31	1653	1.91	1328.09	1703	1.93	1425.65
1604	0.00	1228.56	1654	1.88	1329.97	1704	1.93	1427.58
1605	0.00	1230.81	1655	1.88	1331.85	1705	1.91	1429.49
1606	0.00	1233.06	1656	1.91	1333.76	1706	1.93	1431.42
1607	0.00	1235.31	1657	1.87	1335.63	1707	1.92	1433.34
1608	0.00	1237.56	1658	1.86	1337.49	1708	1.92	1435.26
1609	0.00	1239.81	1659	1.90	1339.39	1709	1.91	1437.17
1610	0.00	1242.06	1660	1.87	1341.26	1710	1.88	1439.05
1611	0.00	1244.31	1661	1.85	1343.11	1711	1.90	1440.95
1612	0.00	1246.56	1662	1.84	1344.95	1712	1.96	1442.91
1613	0.00	1248.81	1663	1.86	1346.81	1713	2.00	1444.91
1614	0.00	1251.06	1664	1.91	1348.72	1714	2.04	1446.95
1615	0.00	1253.31	1665	1.90	1350.62	1715	2.07	1449.02
1616	2.12	1255.56	1666	1.93	1352.55	1716	2.09	1451.11
1617	2.11	1257.67	1667	1.97	1354.52	1717	2.11	1453.22
1618	2.09	1259.76	1668	1.96	1356.48	1718	2.13	1455.35
1619	2.07	1261.83	1669	2.01	1358.49	1719	2.16	1457.51
1620	2.09	1263.92	1670	1.99	1360.48	1720	2.26	1459.77
1621	2.08	1266.00	1671	1.99	1362.47	1721	2.15	1461.92
1622	2.06	1268.06	1672	1.98	1364.45	1722	2.06	1463.98
1623	2.04	1270.10	1673	1.98	1366.43	1723	1.98	1465.96

UE12t#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1724	1.97	1467.93	1774	1.92	1563.50	1824	1.89	1659.05
1725	1.98	1469.91	1775	1.91	1565.41	1825	1.88	1660.93
1726	1.98	1471.89	1776	1.90	1567.31	1826	1.88	1662.81
1727	1.97	1473.86	1777	1.91	1569.22	1827	1.90	1664.71
1728	1.96	1475.82	1778	1.93	1571.15	1828	1.88	1666.59
1729	1.94	1477.76	1779	1.93	1573.08	1829	1.86	1668.45
1730	1.92	1479.68	1780	1.92	1575.00	1830	1.86	1670.31
1731	1.95	1481.63	1781	1.92	1576.92	1831	1.87	1672.18
1732	1.94	1483.57	1782	1.92	1578.84	1832	1.89	1674.07
1733	1.92	1485.49	1783	1.91	1580.75	1833	1.89	1675.96
1734	1.90	1487.39	1784	1.89	1582.64	1834	1.87	1677.83
1735	1.88	1489.27	1785	1.90	1584.54	1835	1.86	1679.69
1736	1.90	1491.17	1786	1.90	1586.44	1836	1.86	1681.55
1737	1.90	1493.07	1787	1.89	1588.33	1837	1.90	1683.45
1738	1.89	1494.96	1788	1.89	1590.22	1838	1.86	1685.31
1739	1.88	1496.84	1789	1.88	1592.10	1839	1.85	1687.16
1740	1.89	1498.73	1790	1.89	1593.99	1840	1.85	1689.01
1741	1.90	1500.63	1791	1.92	1595.91	1841	1.83	1690.84
1742	1.88	1502.51	1792	1.89	1597.80	1842	1.84	1692.68
1743	1.87	1504.38	1793	1.88	1599.68	1843	1.84	1694.52
1744	1.87	1506.25	1794	1.89	1601.57	1844	1.85	1696.37
1745	1.90	1508.15	1795	1.92	1603.49	1845	1.85	1698.22
1746	1.92	1510.07	1796	1.90	1605.39	1846	1.85	1700.07
1747	1.92	1511.99	1797	1.93	1607.32	1847	1.85	1701.92
1748	1.91	1513.90	1798	1.97	1609.29	1848	1.84	1703.76
1749	1.90	1515.80	1799	1.93	1611.22	1849	1.85	1705.61
1750	1.92	1517.72	1800	1.93	1613.15	1850	1.86	1707.47
1751	1.91	1519.63	1801	1.93	1615.08	1851	1.86	1709.33
1752	1.90	1521.53	1802	1.94	1617.02	1852	1.87	1711.20
1753	1.90	1523.43	1803	1.94	1618.96	1853	1.88	1713.08
1754	1.90	1525.33	1804	1.94	1620.90	1854	1.88	1714.96
1755	1.89	1527.22	1805	1.94	1622.84	1855	1.87	1716.83
1756	1.89	1529.11	1806	1.94	1624.78	1856	1.87	1718.70
1757	1.91	1531.02	1807	1.94	1626.72	1857	1.86	1720.56
1758	1.90	1532.92	1808	1.94	1628.66	1858	1.85	1722.41
1759	1.88	1534.80	1809	1.93	1630.59	1859	1.86	1724.27
1760	1.91	1536.71	1810	1.92	1632.51	1860	1.86	1726.13
1761	1.92	1538.63	1811	1.91	1634.42	1861	1.85	1727.98
1762	1.92	1540.55	1812	1.93	1636.35	1862	1.86	1729.84
1763	1.91	1542.46	1813	1.93	1638.28	1863	1.86	1731.70
1764	1.92	1544.38	1814	1.92	1640.20	1864	1.85	1733.55
1765	1.91	1546.29	1815	1.92	1642.12	1865	1.84	1735.39
1766	1.93	1548.22	1816	1.92	1644.04	1866	1.84	1737.23
1767	1.93	1550.15	1817	1.89	1645.93	1867	1.86	1739.09
1768	1.92	1552.07	1818	1.87	1647.80	1868	1.87	1740.96
1769	1.92	1553.99	1819	1.86	1649.66	1869	1.89	1742.85
1770	1.90	1555.89	1820	1.86	1651.52	1870	1.89	1744.74
1771	1.88	1557.77	1821	1.87	1653.39	1871	1.88	1746.62
1772	1.89	1559.66	1822	1.89	1655.28	1872	1.87	1748.49
1773	1.92	1561.58	1823	1.88	1657.16	1873	1.87	1750.36

UE12t#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1874	1.89	1752.25	1924	2.02	1851.58	1974	2.21	1958.16
1875	1.89	1754.14	1925	2.03	1853.61	1975	2.25	1960.41
1876	1.90	1756.04	1926	2.04	1855.65	1976	2.25	1962.66
1877	1.90	1757.94	1927	2.06	1857.71	1977	2.23	1964.89
1878	1.89	1759.83	1928	2.03	1859.74	1978	2.23	1967.12
1879	1.89	1761.72	1929	2.03	1861.77	1979	2.26	1969.38
1880	1.91	1763.63	1930	2.03	1863.80	1980	2.27	1971.65
1881	1.90	1765.53	1931	2.03	1865.83	1981	2.26	1973.91
1882	1.90	1767.43	1932	2.06	1867.89	1982	2.24	1976.15
1883	1.89	1769.32	1933	2.07	1869.96	1983	2.26	1978.41
1884	1.90	1771.22	1934	2.07	1872.03	1984	2.28	1980.69
1885	1.92	1773.14	1935	2.04	1874.07	1985	2.30	1982.99
1886	1.93	1775.07	1936	2.03	1876.10	1986	2.30	1985.29
1887	1.91	1776.98	1937	2.01	1878.11	1987	2.27	1987.56
1888	1.90	1778.88	1938	2.07	1880.18	1988	2.25	1989.81
1889	1.91	1780.79	1939	2.10	1882.28	1989	2.26	1992.07
1890	1.95	1782.74	1940	2.16	1884.44	1990	2.25	1994.32
1891	1.97	1784.71	1941	2.19	1886.63	1991	2.26	1996.58
1892	1.96	1786.67	1942	2.20	1888.83	1992	2.29	1998.87
1893	1.98	1788.65	1943	2.20	1891.03	1993	2.32	2001.19
1894	1.97	1790.62	1944	2.15	1893.18	1994	2.32	2003.51
1895	1.96	1792.58	1945	2.14	1895.32	1995	2.32	2005.83
1896	1.96	1794.54	1946	2.17	1897.49	1996	2.32	2008.15
1897	1.97	1796.51	1947	2.13	1899.62	1997	2.30	2010.45
1898	2.01	1798.52	1948	2.10	1901.72	1998	2.28	2012.73
1899	1.99	1800.51	1949	2.09	1903.81	1999	2.25	2014.98
1900	1.98	1802.49	1950	2.11	1905.92	2000	2.28	2017.26
1901	2.00	1804.49	1951	2.12	1908.04	2001	2.28	2019.54
1902	2.02	1806.51	1952	2.08	1910.12	2002	2.28	2021.82
1903	2.06	1808.57	1953	2.12	1912.24	2003	2.27	2024.09
1904	2.07	1810.64	1954	2.17	1914.41	2004	2.25	2026.34
1905	2.05	1812.69	1955	2.20	1916.61	2005	2.26	2028.60
1906	2.03	1814.72	1956	2.18	1918.79	2006	2.30	2030.90
1907	2.04	1816.76	1957	2.16	1920.95	2007	2.27	2033.17
1908	2.04	1818.80	1958	2.13	1923.08	2008	2.25	2035.42
1909	2.07	1820.87	1959	2.19	1925.27	2009	2.22	2037.64
1910	2.08	1822.95	1960	2.20	1927.47	2010	2.18	2039.82
1911	2.08	1825.03	1961	2.19	1929.66	2011	2.16	2041.98
1912	2.07	1827.10	1962	2.20	1931.86	2012	2.24	2044.22
1913	2.07	1829.17	1963	2.18	1934.04	2013	2.33	2046.55
1914	2.07	1831.24	1964	2.17	1936.21	2014	2.30	2048.85
1915	2.07	1833.31	1965	2.12	1938.33	2015	2.25	2051.10
1916	2.05	1835.36	1966	2.16	1940.49	2016	2.24	2053.34
1917	2.03	1837.39	1967	2.20	1942.69	2017	2.23	2055.57
1918	1.98	1839.37	1968	2.21	1944.90	2018	2.24	2057.81
1919	1.97	1841.34	1969	2.19	1947.09	2019	2.26	2060.07
1920	2.02	1843.36	1970	2.21	1949.30	2020	2.27	2062.34
1921	2.08	1845.44	1971	2.23	1951.53	2021	2.26	2064.60
1922	2.07	1847.51	1972	2.21	1953.74	2022	2.24	2066.84
1923	2.05	1849.56	1973	2.21	1955.95	2023	2.20	2069.04

UE12t#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
2024	2.23	2071.27	2074	2.20	2184.91	2124	2.07	2294.12
2025	2.25	2073.52	2075	2.25	2187.16	2125	2.10	2296.22
2026	2.32	2075.84	2076	2.26	2189.42	2126	2.12	2298.34
2027	2.28	2078.12	2077	2.23	2191.65	2127	2.13	2300.47
2028	2.26	2080.38	2078	2.23	2193.88	2128	2.13	2302.60
2029	2.24	2082.62	2079	2.27	2196.15	2129	2.14	2304.74
2030	2.26	2084.88	2080	2.23	2198.38	2130	2.14	2306.88
2031	2.26	2087.14	2081	2.18	2200.56	2131	2.14	2309.02
2032	2.23	2089.37	2082	2.17	2202.73	2132	2.13	2311.15
2033	2.27	2091.64	2083	2.24	2204.97	2133	2.13	2313.28
2034	2.31	2093.95	2084	2.20	2207.17	2134	2.17	2315.45
2035	2.30	2096.25	2085	2.22	2209.39	2135	2.19	2317.64
2036	2.29	2098.54	2086	2.22	2211.61	2136	2.19	2319.83
2037	2.29	2100.83	2087	2.23	2213.84	2137	2.18	2322.01
2038	2.29	2103.12	2088	2.25	2216.09	2138	2.15	2324.16
2039	2.32	2105.44	2089	2.24	2218.33	2139	2.15	2326.31
2040	2.38	2107.82	2090	2.23	2220.56	2140	2.18	2328.49
2041	2.35	2110.17	2091	2.23	2222.79	2141	2.22	2330.71
2042	2.32	2112.49	2092	2.24	2225.03	2142	2.22	2332.93
2043	2.29	2114.78	2093	2.26	2227.29	2143	2.22	2335.15
2044	2.32	2117.10	2094	2.27	2229.56	2144	2.20	2337.35
2045	2.30	2119.40	2095	2.26	2231.82	2145	2.18	2339.53
2046	2.28	2121.68	2096	2.26	2234.08	2146	2.19	2341.72
2047	2.29	2123.97	2097	2.24	2236.32	2147	2.22	2343.94
2048	2.35	2126.32	2098	2.23	2238.55	2148	2.23	2346.17
2049	2.30	2128.62	2099	2.22	2240.77	2149	2.19	2348.36
2050	2.30	2130.92	2100	2.24	2243.01	2150	2.20	2350.56
2051	2.34	2133.26	2101	2.26	2245.27	2151	2.22	2352.78
2052	2.38	2135.64	2102	2.21	2247.48	2152	2.22	2355.00
2053	2.34	2137.98	2103	2.17	2249.65	2153	2.20	2357.20
2054	2.31	2140.29	2104	2.12	2251.77	2154	2.21	2359.41
2055	2.34	2142.63	2105	2.11	2253.88	2155	2.22	2361.63
2056	2.38	2145.01	2106	2.12	2256.00	2156	2.23	2363.86
2057	2.33	2147.34	2107	2.13	2258.13	2157	2.23	2366.09
2058	2.38	2149.72	2108	2.11	2260.24	2158	2.22	2368.31
2059	2.34	2152.06	2109	2.09	2262.33	2159	2.24	2370.55
2060	2.28	2154.34	2110	2.09	2264.42	2160	2.22	2372.77
2061	2.26	2156.60	2111	2.11	2266.53	2161	2.19	2374.96
2062	2.18	2158.78	2112	2.12	2268.65	2162	2.21	2377.17
2063	2.20	2160.98	2113	2.11	2270.76	2163	2.21	2379.38
2064	2.18	2163.16	2114	2.08	2272.84	2164	2.20	2381.58
2065	2.18	2165.34	2115	2.07	2274.91	2165	2.21	2383.79
2066	2.16	2167.50	2116	2.13	2277.04	2166	2.23	2386.02
2067	2.14	2169.64	2117	2.12	2279.16	2167	2.23	2388.25
2068	2.18	2171.82	2118	2.13	2281.29	2168	2.21	2390.46
2069	2.16	2173.98	2119	2.15	2283.44	2169	2.19	2392.65
2070	2.18	2176.16	2120	2.18	2285.62	2170	2.20	2394.85
2071	2.18	2178.34	2121	2.16	2287.78	2171	2.22	2397.07
2072	2.18	2180.52	2122	2.16	2289.94	2172	2.25	2399.32
2073	2.19	2182.71	2123	2.11	2292.05	2173	2.24	2401.56

UE12t#4--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
2174	2.23	2403.79	2224	2.31	2517.51	2274	2.40	2634.12
2175	2.25	2406.04	2225	2.27	2519.78	2275	2.42	2636.54
2176	2.27	2408.31	2226	2.26	2522.04	2276	2.44	2638.98
2177	2.28	2410.59	2227	2.27	2524.31	2277	2.42	2641.40
2178	2.27	2412.86	2228	2.30	2526.61	2278	2.41	2643.81
2179	2.30	2415.16	2229	2.32	2528.93	2279	2.42	2646.23
2180	2.32	2417.48	2230	2.30	2531.23	2280	2.43	2648.66
2181	2.30	2419.78	2231	2.31	2533.54	2281	2.59	2651.25
2182	2.28	2422.06	2232	2.33	2535.87	2282	2.67	2653.92
2183	2.28	2424.34	2233	2.32	2538.19	2283	2.72	2656.64
2184	2.31	2426.65	2234	2.35	2540.54	2284	2.74	2659.38
2185	2.28	2428.93	2235	2.32	2542.86	2285	2.72	2662.10
2186	2.28	2431.21	2236	2.32	2545.18	2286	2.78	2664.88
2187	2.24	2433.45	2237	2.35	2547.53	2287	2.93	2667.81
2188	2.23	2435.68	2238	2.35	2549.88	2288	3.33	2671.14
2188	2.23	2435.68	2238	2.35	2549.88			
2189	2.26	2437.94	2239	2.36	2552.24			
2190	2.26	2440.20	2240	2.36	2554.60			
2191	2.25	2442.45	2241	2.31	2556.91			
2192	2.27	2444.72	2242	2.32	2559.23			
2193	2.23	2446.95	2243	2.29	2561.52			
2194	2.26	2449.21	2244	2.29	2563.81			
2195	2.35	2451.56	2245	2.26	2566.07			
2196	2.30	2453.86	2246	2.24	2568.31			
2197	2.28	2456.14	2247	2.30	2570.61			
2198	2.22	2458.36	2248	2.34	2572.95			
2199	2.19	2460.55	2249	2.34	2575.29			
2200	2.20	2462.75	2250	2.35	2577.64			
2201	2.25	2465.00	2251	2.34	2579.98			
2202	2.23	2467.23	2252	2.35	2582.33			
2203	2.20	2469.43	2253	2.33	2584.66			
2204	2.26	2471.69	2254	2.33	2586.99			
2205	2.27	2473.96	2255	2.34	2589.33			
2206	2.25	2476.21	2256	2.37	2591.70			
2207	2.29	2478.50	2257	2.32	2594.02			
2208	2.30	2480.80	2258	2.28	2596.30			
2209	2.28	2483.08	2259	2.25	2598.55			
2210	2.28	2485.36	2260	2.23	2600.78			
2211	2.27	2487.63	2261	2.25	2603.03			
2212	2.24	2489.87	2262	2.30	2605.33			
2213	2.27	2492.14	2263	2.33	2607.66			
2214	2.32	2494.46	2264	2.39	2610.05			
2215	2.29	2496.75	2265	2.38	2612.43			
2216	2.27	2499.02	2266	2.35	2614.78			
2217	2.31	2501.33	2267	2.36	2617.14			
2218	2.30	2503.63	2268	2.42	2619.56			
2219	2.33	2505.96	2269	2.42	2621.98			
2220	2.31	2508.27	2270	2.47	2624.45			
2221	2.29	2510.56	2271	2.41	2626.86			
2222	2.31	2512.87	2272	2.44	2629.30			
2223	2.33	2515.20	2273	2.42	2631.72			

UE12t#5

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
52	2.49	0.00	102	2.46	120.27	152	0.00	227.40
53	2.49	2.49	103	2.46	122.73	153	0.00	229.47
54	2.49	4.98	104	2.44	125.17	154	0.00	231.53
55	2.47	7.45	105	2.39	127.56	155	0.00	233.60
56	2.47	9.92	106	2.39	129.94	156	0.00	235.66
57	2.46	12.38	107	2.38	132.32	157	0.00	237.73
58	2.44	14.82	108	2.37	134.69	158	0.00	239.80
59	2.43	17.24	109	2.36	137.05	159	0.00	241.86
60	2.43	19.67	110	2.34	139.40	160	0.00	243.93
61	2.42	22.10	111	2.34	141.73	161	0.00	245.99
62	2.42	24.51	112	2.32	144.05	162	0.00	248.06
63	2.40	26.91	113	2.28	146.33	163	0.00	250.13
64	2.39	29.30	114	2.24	148.57	164	0.00	252.19
65	2.33	31.63	115	2.18	150.75	165	0.00	254.26
66	2.32	33.95	116	2.16	152.91	166	0.00	256.32
67	2.33	36.28	117	2.13	155.04	167	0.00	258.39
68	2.34	38.62	118	2.12	157.16	168	0.00	260.46
69	2.37	40.99	119	0.00	159.22	169	0.00	262.52
70	2.40	43.39	120	0.00	161.29	170	0.00	264.59
71	2.40	45.79	121	0.00	163.35	171	0.00	266.65
72	2.39	48.18	122	0.00	165.42	172	0.00	268.72
73	2.37	50.55	123	0.00	167.49	173	0.00	270.79
74	2.36	52.91	124	0.00	169.55	174	0.00	272.85
75	2.34	55.25	125	0.00	171.62	175	0.00	274.92
76	2.31	57.56	126	0.00	173.68	176	0.00	276.98
77	2.31	59.87	127	0.00	175.75	177	0.00	279.05
78	2.35	62.22	128	0.00	177.82	178	0.00	281.12
79	2.37	64.59	129	0.00	179.88	179	0.00	283.18
80	2.41	67.01	130	0.00	181.95	180	0.00	285.25
81	2.44	69.44	131	0.00	184.01	181	0.00	287.31
82	2.43	71.88	132	0.00	186.08	182	0.00	289.38
83	2.43	74.31	133	0.00	188.15	183	0.00	291.45
84	2.43	76.74	134	0.00	190.21	184	0.00	293.51
85	2.44	79.18	135	0.00	192.28	185	0.00	295.58
86	2.44	81.62	136	0.00	194.34	186	0.00	297.64
87	2.43	84.04	137	0.00	196.41	187	0.00	299.71
88	2.40	86.44	138	0.00	198.48	188	0.00	301.78
89	2.39	88.83	139	0.00	200.54	189	0.00	303.84
90	2.38	91.21	140	0.00	202.61	190	0.00	305.91
91	2.36	93.57	141	0.00	204.67	191	0.00	307.97
92	2.37	95.94	142	0.00	206.74	192	0.00	310.04
93	2.39	98.33	143	0.00	208.81	193	0.00	312.11
94	2.39	100.73	144	0.00	210.87	194	0.00	314.17
95	2.44	103.17	145	0.00	212.94	195	0.00	316.24
96	2.44	105.62	146	0.00	215.00	196	0.00	318.30
97	2.44	108.06	147	0.00	217.07	197	0.00	320.37
98	2.43	110.49	148	0.00	219.14	198	0.00	322.44
99	2.43	112.93	149	0.00	221.20	199	0.00	324.50
100	2.44	115.36	150	0.00	223.27	200	0.00	326.57
101	2.44	117.81	151	0.00	225.33	201	0.00	328.63

UE12t#5--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
202	0.00	330.70	252	0.00	434.00	302	0.00	537.30
203	0.00	332.77	253	0.00	436.07	303	0.00	539.37
204	0.00	334.83	254	0.00	438.13	304	0.00	541.43
205	0.00	336.90	255	0.00	440.20	305	0.00	543.50
206	0.00	338.96	256	0.00	442.26	306	0.00	545.56
207	0.00	341.03	257	0.00	444.33	307	0.00	547.63
208	0.00	343.10	258	0.00	446.40	308	0.00	549.70
209	0.00	345.16	259	0.00	448.46	309	0.00	551.76
210	0.00	347.23	260	0.00	450.53	310	0.00	553.83
211	0.00	349.29	261	0.00	452.59	311	0.00	555.89
212	0.00	351.36	262	0.00	454.66	312	0.00	557.96
213	0.00	353.43	263	0.00	456.73	313	0.00	560.03
214	0.00	355.49	264	0.00	458.79	314	0.00	562.09
215	0.00	357.56	265	0.00	460.86	315	0.00	564.16
216	0.00	359.62	266	0.00	462.92	316	0.00	566.22
217	0.00	361.69	267	0.00	464.99	317	0.00	568.29
218	0.00	363.76	268	0.00	467.06	318	0.00	570.36
219	0.00	365.82	269	0.00	469.12	319	0.00	572.42
220	0.00	367.89	270	0.00	471.19	320	0.00	574.49
221	0.00	369.95	271	0.00	473.25	321	0.00	576.55
222	0.00	372.02	272	0.00	475.32	322	0.00	578.62
223	0.00	374.09	273	0.00	477.39	323	0.00	580.69
224	0.00	376.15	274	0.00	479.45	324	0.00	582.75
225	0.00	378.22	275	0.00	481.52	325	0.00	584.82
226	0.00	380.28	276	0.00	483.58	326	0.00	586.88
227	0.00	382.35	277	0.00	485.65	327	0.00	588.95
228	0.00	384.42	278	0.00	487.72	328	0.00	591.02
229	0.00	386.48	279	0.00	489.78	329	0.00	593.08
230	0.00	388.55	280	0.00	491.85	330	0.00	595.15
231	0.00	390.61	281	0.00	493.91	331	0.00	597.21
232	0.00	392.68	282	0.00	495.98	332	0.00	599.28
233	0.00	394.75	283	0.00	498.05	333	0.00	601.35
234	0.00	396.81	284	0.00	500.11	334	0.00	603.41
235	0.00	398.88	285	0.00	502.18	335	0.00	605.48
236	0.00	400.94	286	0.00	504.24	336	0.00	607.54
237	0.00	403.01	287	0.00	506.31	337	0.00	609.61
238	0.00	405.08	288	0.00	508.38	338	0.00	611.68
239	0.00	407.14	289	0.00	510.44	339	0.00	613.74
240	0.00	409.21	290	0.00	512.51	340	0.00	615.81
241	0.00	411.27	291	0.00	514.57	341	0.00	617.87
242	0.00	413.34	292	0.00	516.64	342	0.00	619.94
243	0.00	415.41	293	0.00	518.71	343	0.00	622.01
244	0.00	417.47	294	0.00	520.77	344	0.00	624.07
245	0.00	419.54	295	0.00	522.84	345	0.00	626.14
246	0.00	421.60	296	0.00	524.90	346	0.00	628.20
247	0.00	423.67	297	0.00	526.97	347	0.00	630.27
248	0.00	425.74	298	0.00	529.04	348	0.00	632.34
249	0.00	427.80	299	0.00	531.10	349	0.00	634.40
250	0.00	429.87	300	0.00	533.17	350	0.00	636.47
251	0.00	431.93	301	0.00	535.23	351	0.00	638.53

UE12t#5--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
352	0.00	640.60	402	0.00	743.90	452	0.00	847.20
353	0.00	642.67	403	0.00	745.97	453	0.00	849.27
354	0.00	644.73	404	0.00	748.03	454	0.00	851.33
355	0.00	646.80	405	0.00	750.10	455	0.00	853.40
356	0.00	648.86	406	0.00	752.16	456	0.00	855.46
357	0.00	650.93	407	0.00	754.23	457	0.00	857.53
358	0.00	653.00	408	0.00	756.30	458	0.00	859.60
359	0.00	655.06	409	0.00	758.36	459	0.00	861.66
360	0.00	657.13	410	0.00	760.43	460	0.00	863.73
361	0.00	659.19	411	0.00	762.49	461	0.00	865.79
362	0.00	661.26	412	0.00	764.56	462	0.00	867.86
363	0.00	663.33	413	0.00	766.63	463	0.00	869.93
364	0.00	665.39	414	0.00	768.69	464	0.00	871.99
365	0.00	667.46	415	0.00	770.76	465	0.00	874.06
366	0.00	669.52	416	0.00	772.82	466	0.00	876.12
367	0.00	671.59	417	0.00	774.89	467	0.00	878.19
368	0.00	673.66	418	0.00	776.96	468	0.00	880.26
369	0.00	675.72	419	0.00	779.02	469	0.00	882.32
370	0.00	677.79	420	0.00	781.09	470	0.00	884.39
371	0.00	679.85	421	0.00	783.15	471	0.00	886.45
372	0.00	681.92	422	0.00	785.22	472	0.00	888.52
373	0.00	683.99	423	0.00	787.29	473	0.00	890.59
374	0.00	686.05	424	0.00	789.35	474	0.00	892.65
375	0.00	688.12	425	0.00	791.42	475	0.00	894.72
376	0.00	690.18	426	0.00	793.48	476	0.00	896.78
377	0.00	692.25	427	0.00	795.55	477	0.00	898.85
378	0.00	694.32	428	0.00	797.62	478	0.00	900.92
379	0.00	696.38	429	0.00	799.68	479	0.00	902.98
380	0.00	698.45	430	0.00	801.75	480	0.00	905.05
381	0.00	700.51	431	0.00	803.81	481	0.00	907.11
382	0.00	702.58	432	0.00	805.88	482	0.00	909.18
383	0.00	704.65	433	0.00	807.95	483	0.00	911.25
384	0.00	706.71	434	0.00	810.01	484	0.00	913.31
385	0.00	708.78	435	0.00	812.08	485	0.00	915.38
386	0.00	710.84	436	0.00	814.14	486	0.00	917.44
387	0.00	712.91	437	0.00	816.21	487	0.00	919.51
388	0.00	714.98	438	0.00	818.28	488	0.00	921.58
389	0.00	717.04	439	0.00	820.34	489	0.00	923.64
390	0.00	719.11	440	0.00	822.41	490	0.00	925.71
391	0.00	721.17	441	0.00	824.47	491	0.00	927.77
392	0.00	723.24	442	0.00	826.54	492	0.00	929.84
393	0.00	725.31	443	0.00	828.61	493	0.00	931.91
394	0.00	727.37	444	0.00	830.67	494	0.00	933.97
395	0.00	729.44	445	0.00	832.74	495	0.00	936.04
396	0.00	731.50	446	0.00	834.80	496	0.00	938.10
397	0.00	733.57	447	0.00	836.87	497	0.00	940.17
398	0.00	735.64	448	0.00	838.94	498	0.00	942.24
399	0.00	737.70	449	0.00	841.00	499	0.00	944.30
400	0.00	739.77	450	0.00	843.07	500	0.00	946.37
401	0.00	741.83	451	0.00	845.13	501	0.00	948.43

UE12t#5--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
502	0.00	950.50	552	1.92	1053.02	602	1.87	1142.97
503	0.00	952.57	553	1.98	1055.00	603	1.86	1144.83
504	0.00	954.63	554	2.00	1057.00	604	1.86	1146.69
505	0.00	956.70	555	1.90	1058.90	605	1.86	1148.55
506	0.00	958.76	556	1.79	1060.69	606	1.83	1150.38
507	0.00	960.83	557	1.70	1062.39	607	1.85	1152.23
508	0.00	962.90	558	1.68	1064.07	608	1.86	1154.09
509	0.00	964.96	559	1.72	1065.79	609	1.85	1155.94
510	0.00	967.03	560	1.84	1067.63	610	1.79	1157.73
511	0.00	969.09	561	1.79	1069.42	611	1.78	1159.51
512	0.00	971.16	562	1.72	1071.14	612	1.80	1161.31
513	0.00	973.23	563	1.77	1072.91	613	1.84	1163.15
514	0.00	975.29	564	1.88	1074.79	614	1.87	1165.02
515	0.00	977.36	565	1.90	1076.69	615	1.89	1166.91
516	0.00	979.42	566	1.90	1078.59	616	1.88	1168.79
517	0.00	981.49	567	1.78	1080.37	617	1.82	1170.61
518	0.00	983.56	568	1.70	1082.07	618	1.76	1172.37
519	0.00	985.62	569	1.69	1083.76	619	1.67	1174.04
520	0.00	987.69	570	1.75	1085.51	620	1.61	1175.65
521	0.00	989.75	571	1.85	1087.36	621	1.61	1177.26
522	0.00	991.82	572	1.91	1089.27	622	1.64	1178.90
523	0.00	993.89	573	1.90	1091.17	623	1.72	1180.62
524	0.00	995.95	574	1.87	1093.04	624	1.73	1182.35
525	0.00	998.02	575	1.76	1094.80	625	1.79	1184.14
526	0.00	1000.08	576	1.75	1096.55	626	1.76	1185.90
527	0.00	1002.15	577	1.75	1098.30	627	1.75	1187.65
528	0.00	1004.22	578	1.70	1100.00	628	1.73	1189.38
529	0.00	1006.29	579	1.70	1101.70	629	1.71	1191.09
530	0.00	1008.36	580	1.72	1103.42	630	1.69	1192.78
531	0.00	1010.43	581	1.73	1105.15	631	1.64	1194.42
532	0.00	1012.50	582	1.73	1106.88	632	1.68	1196.10
533	0.00	1014.57	583	1.72	1108.60	633	1.74	1197.84
534	0.00	1016.64	584	1.72	1110.32	634	1.77	1199.61
535	0.00	1018.71	585	1.72	1112.04	635	1.74	1201.35
536	0.00	1020.78	586	1.73	1113.77	636	1.72	1203.07
537	0.00	1022.85	587	1.75	1115.52	637	1.69	1204.76
538	0.00	1024.92	588	1.84	1117.36	638	1.69	1206.45
539	0.00	1026.99	589	1.84	1119.20	639	1.68	1208.13
540	0.00	1029.06	590	1.82	1121.02	640	1.66	1209.79
541	0.00	1031.13	591	1.84	1122.86	641	1.72	1211.51
542	0.00	1033.20	592	1.85	1124.71	642	1.85	1213.36
543	0.00	1035.27	593	1.85	1126.56	643	1.84	1215.20
544	0.00	1037.34	594	1.85	1128.41	644	1.87	1217.07
545	0.00	1039.41	595	1.81	1130.22	645	1.86	1218.93
546	2.01	1041.48	596	1.78	1132.00	646	1.87	1220.80
547	1.99	1043.47	597	1.76	1133.76	647	1.90	1222.70
548	1.95	1045.42	598	1.77	1135.53	648	1.91	1224.61
549	1.94	1047.36	599	1.83	1137.36	649	1.87	1226.48
550	1.86	1049.22	600	1.87	1139.23	650	1.86	1228.34
551	1.88	1051.10	601	1.87	1141.10	651	1.86	1230.20

UE12t#5--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
652	1.86	1232.06	702	2.06	1328.94	752	2.11	1429.00
653	1.86	1233.92	703	2.16	1331.10	753	2.17	1431.17
654	1.83	1235.75	704	2.16	1333.26	754	2.17	1433.34
655	1.82	1237.57	705	2.07	1335.33	755	2.18	1435.52
656	1.75	1239.32	706	2.04	1337.37	756	2.36	1437.88
657	1.75	1241.07	707	2.00	1339.37	757	2.35	1440.23
658	1.78	1242.85	708	1.92	1341.29	758	2.27	1442.50
659	1.80	1244.65	709	1.93	1343.22	759	2.22	1444.72
660	1.82	1246.47	710	1.96	1345.18	760	2.18	1446.90
661	1.80	1248.27	711	1.93	1347.11	761	2.15	1449.05
662	1.79	1250.06	712	1.87	1348.98	762	2.11	1451.16
663	1.81	1251.87	713	1.87	1350.85	763	2.17	1453.33
664	1.82	1253.69	714	1.94	1352.79	764	2.30	1455.63
665	1.86	1255.55	715	2.09	1354.88	765	2.30	1457.93
666	1.92	1257.47	716	2.09	1356.97	766	2.12	1460.05
667	1.99	1259.46	717	2.06	1359.03	767	2.06	1462.11
668	2.04	1261.50	718	1.99	1361.02	768	2.06	1464.17
669	2.06	1263.56	719	1.94	1362.96	769	2.09	1466.26
670	2.04	1265.60	720	1.91	1364.87	770	2.11	1468.37
671	1.98	1267.58	721	2.02	1366.89	771	2.19	1470.56
672	1.98	1269.56	722	1.99	1368.88	772	2.18	1472.74
673	1.94	1271.50	723	1.99	1370.87	773	2.06	1474.80
674	1.88	1273.38	724	2.06	1372.93	774	2.05	1476.85
675	1.86	1275.24	725	2.03	1374.96	775	1.92	1478.77
676	1.84	1277.08	726	1.96	1376.92	776	1.93	1480.70
677	1.77	1278.85	727	1.94	1378.86	777	1.93	1482.63
678	1.74	1280.59	728	1.91	1380.77	778	2.03	1484.66
679	1.80	1282.39	729	1.85	1382.62	779	2.06	1486.72
680	1.83	1284.22	730	1.85	1384.47	780	2.03	1488.75
681	1.92	1286.14	731	1.80	1386.27	781	2.02	1490.77
682	2.02	1288.16	732	1.84	1388.11	782	2.07	1492.84
683	1.97	1290.13	733	2.01	1390.12	783	1.98	1494.82
684	1.98	1292.11	734	2.03	1392.15	784	1.95	1496.77
685	1.99	1294.10	735	2.04	1394.19	785	2.03	1498.80
686	1.99	1296.09	736	2.09	1396.28	786	2.04	1500.84
687	1.97	1298.06	737	2.13	1398.41	787	2.05	1502.89
688	2.01	1300.07	738	2.02	1400.43	788	2.05	1504.94
689	2.06	1302.13	739	1.89	1402.32	789	2.07	1507.01
690	1.97	1304.10	740	1.88	1404.20	790	2.07	1509.08
691	2.01	1306.11	741	1.93	1406.13	791	1.98	1511.06
692	2.03	1308.14	742	1.97	1408.10	792	2.02	1513.08
693	2.05	1310.19	743	2.01	1410.11	793	2.07	1515.15
694	2.05	1312.24	744	2.12	1412.23	794	2.08	1517.23
695	2.09	1314.33	745	2.14	1414.37	795	2.06	1519.29
696	2.11	1316.44	746	2.12	1416.49	796	2.05	1521.34
697	2.10	1318.54	747	2.06	1418.55	797	2.06	1523.40
698	2.11	1320.65	748	2.06	1420.61	798	2.09	1525.49
699	2.12	1322.77	749	2.11	1422.72	799	2.11	1527.60
700	2.06	1324.83	750	2.11	1424.83	800	2.10	1529.70
701	2.05	1326.88	751	2.06	1426.89	801	2.01	1531.71

UE12t#5--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
802	1.98	1533.69	852	1.93	1631.81	902	1.81	1725.79
803	2.04	1535.73	853	1.99	1633.80	903	1.81	1727.60
804	2.10	1537.83	854	1.98	1635.78	904	1.82	1729.42
805	2.08	1539.91	855	1.98	1637.76	905	1.83	1731.25
806	2.10	1542.01	856	1.99	1639.75	906	1.84	1733.09
807	2.11	1544.12	857	2.00	1641.75	907	1.90	1734.99
808	2.10	1546.22	858	2.00	1643.75	908	1.90	1736.89
809	2.12	1548.34	859	1.98	1645.73	909	1.88	1738.77
810	2.14	1550.48	860	1.97	1647.70	910	1.87	1740.64
811	2.19	1552.67	861	1.94	1649.64	911	1.85	1742.49
812	2.24	1554.91	862	1.93	1651.57	912	1.85	1744.34
813	2.30	1557.21	863	1.92	1653.49	913	1.81	1746.15
814	2.28	1559.49	864	1.90	1655.39	914	1.82	1747.97
815	2.25	1561.74	865	1.90	1657.29	915	1.87	1749.84
816	2.04	1563.78	866	1.90	1659.19	916	1.87	1751.71
817	2.03	1565.81	867	1.89	1661.08	917	1.87	1753.58
818	2.01	1567.82	868	1.89	1662.97	918	1.89	1755.47
819	1.97	1569.79	869	1.89	1664.86	919	1.90	1757.37
820	1.95	1571.74	870	1.85	1666.71	920	1.90	1759.27
821	1.93	1573.67	871	1.90	1668.61	921	1.90	1761.17
822	1.92	1575.59	872	1.95	1670.56	922	1.89	1763.06
823	1.92	1577.51	873	1.96	1672.52	923	1.86	1764.92
824	1.95	1579.46	874	1.96	1674.48	924	1.90	1766.82
825	1.96	1581.42	875	2.08	1676.56	925	1.91	1768.73
826	1.97	1583.39	876	2.07	1678.63	926	1.91	1770.64
827	1.96	1585.35	877	2.04	1680.67	927	1.87	1772.51
828	1.96	1587.31	878	2.03	1682.70	928	1.83	1774.34
829	1.91	1589.22	879	2.00	1684.70	929	1.83	1776.17
830	1.91	1591.13	880	1.87	1686.57	930	1.83	1778.00
831	1.88	1593.01	881	1.86	1688.43	931	1.82	1779.82
832	1.83	1594.84	882	1.81	1690.24	932	1.80	1781.62
833	1.81	1596.65	883	1.82	1692.06	933	1.79	1783.41
834	1.84	1598.49	884	1.83	1693.89	934	1.77	1785.18
835	1.87	1600.36	885	1.83	1695.72	935	1.75	1786.93
836	1.86	1602.22	886	1.80	1697.52	936	1.75	1788.68
837	1.84	1604.06	887	1.79	1699.31	937	1.76	1790.44
838	1.83	1605.89	888	1.78	1701.09	938	1.76	1792.20
839	1.83	1607.72	889	1.76	1702.85	939	1.78	1793.98
840	1.85	1609.57	890	1.76	1704.61	940	1.79	1795.77
841	1.85	1611.42	891	1.74	1706.35	941	1.79	1797.56
842	1.82	1613.24	892	1.72	1708.07	942	1.78	1799.34
843	1.83	1615.07	893	1.72	1709.79	943	1.78	1801.12
844	1.85	1616.92	894	1.72	1711.51	944	1.80	1802.92
845	1.86	1618.78	895	1.77	1713.28	945	1.83	1804.75
846	1.89	1620.67	896	1.81	1715.09	946	1.96	1806.71
847	1.86	1622.53	897	1.83	1716.92	947	2.00	1808.71
848	1.84	1624.37	898	1.77	1718.69	948	2.00	1810.71
849	1.82	1626.19	899	1.74	1720.43	949	1.99	1812.70
850	1.85	1628.04	900	1.76	1722.19	950	2.01	1814.71
851	1.84	1629.88	901	1.79	1723.98	951	2.03	1816.74

UE12t#5--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
952	2.01	1818.75	1002	1.72	1908.62	1052	2.12	2000.81
953	2.02	1820.77	1003	1.76	1910.38	1053	2.10	2002.91
954	2.02	1822.79	1004	1.84	1912.22	1054	2.09	2005.00
955	2.00	1824.79	1005	1.88	1914.10	1055	2.05	2007.05
956	1.96	1826.75	1006	1.85	1915.95	1056	2.02	2009.07
957	1.94	1828.69	1007	1.85	1917.80	1057	1.94	2011.01
958	1.91	1830.60	1008	1.82	1919.62	1058	1.86	2012.87
959	1.83	1832.43	1009	1.80	1921.42	1059	1.75	2014.62
960	1.77	1834.20	1010	1.79	1923.21	1060	1.74	2016.36
961	1.76	1835.96	1011	1.85	1925.06	1061	1.76	2018.12
962	1.74	1837.70	1012	1.86	1926.92	1062	1.81	2019.93
963	1.77	1839.47	1013	1.84	1928.76	1063	1.87	2021.80
964	1.79	1841.26	1014	1.82	1930.58	1064	1.85	2023.65
965	1.77	1843.03	1015	1.78	1932.36	1065	1.85	2025.50
966	1.77	1844.80	1016	1.80	1934.16	1066	1.85	2027.35
967	1.80	1846.60	1017	1.81	1935.97	1067	1.81	2029.16
968	1.82	1848.42	1018	1.84	1937.81	1068	1.82	2030.98
969	1.81	1850.23	1019	1.93	1939.74	1069	1.82	2032.80
970	1.77	1852.00	1020	1.90	1941.64	1070	1.83	2034.63
971	1.81	1853.81	1021	1.88	1943.52	1071	1.83	2036.46
972	1.83	1855.64	1022	1.87	1945.39	1072	1.83	2038.29
973	1.81	1857.45	1023	1.86	1947.25	1073	1.81	2040.10
974	1.83	1859.28	1024	1.85	1949.10	1074	1.82	2041.92
975	1.85	1861.13	1025	1.86	1950.96	1075	1.81	2043.73
976	1.84	1862.97	1026	1.85	1952.81	1076	1.80	2045.53
977	1.86	1864.83	1027	1.81	1954.62	1077	1.76	2047.29
978	1.86	1866.69	1028	1.78	1956.40	1078	1.72	2049.01
979	1.87	1868.56	1029	1.77	1958.17	1079	1.72	2050.73
980	1.85	1870.41	1030	1.77	1959.94	1080	1.74	2052.47
981	1.84	1872.25	1031	1.73	1961.67	1081	1.74	2054.21
982	1.80	1874.05	1032	1.72	1963.39	1082	1.81	2056.02
983	1.77	1875.82	1033	1.70	1965.09	1083	2.03	2058.05
984	1.76	1877.58	1034	1.77	1966.86	1084	2.01	2060.06
985	1.71	1879.29	1035	1.79	1968.65	1085	2.08	2062.14
986	1.70	1880.99	1036	1.80	1970.45	1086	2.06	2064.20
987	1.73	1882.72	1037	1.85	1972.30	1087	2.08	2066.28
988	1.74	1884.46	1038	1.92	1974.22	1088	2.05	2068.33
989	1.75	1886.21	1039	1.94	1976.16	1089	2.03	2070.36
990	1.75	1887.96	1040	1.91	1978.07	1090	2.01	2072.37
991	1.74	1889.70	1041	1.91	1979.98	1091	1.97	2074.34
992	1.75	1891.45	1042	1.88	1981.86	1092	1.94	2076.28
993	1.77	1893.22	1043	1.86	1983.72	1093	1.94	2078.22
994	1.77	1894.99	1044	1.82	1985.54	1094	1.98	2080.20
995	1.77	1896.76	1045	1.73	1987.27	1095	1.98	2082.18
996	1.73	1898.49	1046	1.75	1989.02	1096	2.01	2084.19
997	1.71	1900.20	1047	1.82	1990.84	1097	2.07	2086.26
998	1.70	1901.90	1048	1.88	1992.72	1098	2.15	2088.41
999	1.67	1903.57	1049	1.91	1994.63	1099	2.16	2090.57
1000	1.66	1905.23	1050	1.94	1996.57	1100	2.15	2092.72
1001	1.67	1906.90	1051	2.12	1998.69	1101	2.12	2094.84

UE12t#5--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1102	2.09	2096.93	1152	1.80	2188.60	1202	1.96	2281.51
1103	2.04	2098.97	1153	1.87	2190.47	1203	1.96	2283.47
1104	2.01	2100.98	1154	1.88	2192.35	1204	1.95	2285.42
1105	1.93	2102.91	1155	1.86	2194.21	1205	1.97	2287.39
1106	1.90	2104.81	1156	1.80	2196.01	1206	1.99	2289.38
1107	1.89	2106.70	1157	1.80	2197.81	1207	2.00	2291.38
1108	1.89	2108.59	1158	1.79	2199.60	1208	2.04	2293.42
1109	1.86	2110.45	1159	1.78	2201.38	1209	2.03	2295.45
1110	1.85	2112.30	1160	1.79	2203.17	1210	2.02	2297.47
1111	1.82	2114.12	1161	1.77	2204.94	1211	2.02	2299.49
1112	1.84	2115.96	1162	1.76	2206.70	1212	2.02	2301.51
1113	1.88	2117.84	1163	1.75	2208.45	1213	2.04	2303.55
1114	1.86	2119.70	1164	1.77	2210.22	1214	2.04	2305.59
1115	1.86	2121.56	1165	1.79	2212.01	1215	2.09	2307.68
1116	1.87	2123.43	1166	1.81	2213.82	1216	2.17	2309.85
1117	1.87	2125.30	1167	1.82	2215.64	1217	2.18	2312.03
1118	1.88	2127.18	1168	1.82	2217.46	1218	2.17	2314.20
1119	1.89	2129.07	1169	1.81	2219.27	1219	2.17	2316.37
1120	1.90	2130.97	1170	1.83	2221.10	1220	2.17	2318.54
1121	1.85	2132.82	1171	1.89	2222.99	1221	2.16	2320.70
1122	1.81	2134.63	1172	1.88	2224.87	1222	2.16	2322.86
1123	1.79	2136.42	1173	1.87	2226.74	1223	2.15	2325.01
1124	1.78	2138.20	1174	1.84	2228.58	1224	2.16	2327.17
1125	1.79	2139.99	1175	1.85	2230.43	1225	2.15	2329.32
1126	1.79	2141.78	1176	1.83	2232.26	1226	2.15	2331.47
1127	1.77	2143.55	1177	1.85	2234.11	1227	2.15	2333.62
1128	1.76	2145.31	1178	1.86	2235.97	1228	2.13	2335.75
1129	1.76	2147.07	1179	0.00	2237.83	1229	2.10	2337.85
1130	1.78	2148.85	1180	0.00	2239.69	1230	2.05	2339.90
1131	1.78	2150.63	1181	0.00	2241.55	1231	2.02	2341.92
1132	1.78	2152.41	1182	1.86	2243.41	1232	1.97	2343.89
1133	1.77	2154.18	1183	1.86	2245.27	1233	2.01	2345.90
1134	1.79	2155.97	1184	1.83	2247.10	1234	2.05	2347.95
1135	1.82	2157.79	1185	1.81	2248.91	1235	2.09	2350.04
1136	1.82	2159.61	1186	1.81	2250.72	1236	2.12	2352.16
1137	1.84	2161.45	1187	1.82	2252.54	1237	2.13	2354.29
1138	1.87	2163.32	1188	1.83	2254.37	1238	2.13	2356.42
1139	1.86	2165.18	1189	1.87	2256.24	1239	2.10	2358.52
1140	1.84	2167.02	1190	1.88	2258.12	1240	2.07	2360.59
1141	1.83	2168.85	1191	1.94	2260.06	1241	2.01	2362.60
1142	1.83	2170.68	1192	1.96	2262.02	1242	1.96	2364.56
1143	1.84	2172.52	1193	1.95	2263.97	1243	1.94	2366.50
1144	1.83	2174.35	1194	1.95	2265.92	1244	1.95	2368.45
1145	1.80	2176.15	1195	1.95	2267.87	1245	1.99	2370.44
1146	1.77	2177.92	1196	1.95	2269.82	1246	1.98	2372.42
1147	1.76	2179.68	1197	1.96	2271.78	1247	2.01	2374.43
1148	1.77	2181.45	1198	1.94	2273.72	1248	2.02	2376.45
1149	1.79	2183.24	1199	1.94	2275.66	1249	2.01	2378.46
1150	1.78	2185.02	1200	1.94	2277.60	1250	1.99	2380.45
1151	1.78	2186.80	1201	1.95	2279.53	1251	1.99	2382.44

UE12t#5--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1252	1.99	2384.43	1302	1.87	2478.12	1352	1.83	2572.65
1253	1.95	2386.38	1303	1.92	2480.04	1353	1.84	2574.49
1254	1.93	2388.31	1304	1.93	2481.97	1354	1.85	2576.34
1255	1.90	2390.21	1305	1.93	2483.90	1355	1.86	2578.20
1256	1.89	2392.10	1306	1.96	2485.86	1356	1.88	2580.08
1257	1.89	2393.99	1307	1.94	2487.80	1357	1.92	2582.00
1258	1.88	2395.87	1308	1.94	2489.74	1358	1.99	2583.99
1259	1.86	2397.73	1309	1.89	2491.63	1359	2.02	2586.01
1260	1.85	2399.58	1310	1.87	2493.50	1360	2.01	2588.02
1261	1.85	2401.43	1311	1.89	2495.39	1361	1.93	2589.95
1262	1.85	2403.28	1312	1.93	2497.32	1362	1.88	2591.83
1263	1.85	2405.13	1313	1.97	2499.29	1363	1.88	2593.71
1264	1.88	2407.01	1314	1.97	2501.26	1364	1.88	2595.59
1265	1.89	2408.90	1315	1.95	2503.21	1365	1.86	2597.45
1266	1.90	2410.80	1316	1.93	2505.14	1366	1.87	2599.32
1267	1.89	2412.69	1317	1.88	2507.02	1367	1.86	2601.18
1268	1.85	2414.54	1318	1.87	2508.89	1368	1.85	2603.03
1269	1.83	2416.37	1319	1.87	2510.76	1369	1.84	2604.87
1270	1.77	2418.14	1320	1.90	2512.66	1370	1.83	2606.70
1271	1.76	2419.90	1321	1.88	2514.54	1371	1.83	2608.53
1272	1.78	2421.68	1322	1.89	2516.43	1372	1.85	2610.38
1273	1.78	2423.46	1323	1.90	2518.33	1373	1.85	2612.23
1274	1.78	2425.24	1324	1.91	2520.24	1374	1.89	2614.12
1275	1.79	2427.03	1325	1.91	2522.15	1375	1.88	2616.00
1276	1.83	2428.86	1326	1.91	2524.06	1376	1.88	2617.88
1277	1.86	2430.72	1327	1.91	2525.97	1377	1.86	2619.74
1278	1.85	2432.57	1328	1.91	2527.88	1378	1.85	2621.59
1279	1.78	2434.35	1329	1.92	2529.80	1379	1.87	2623.46
1280	1.78	2436.13	1330	1.91	2531.71	1380	1.90	2625.36
1281	1.78	2437.91	1331	1.87	2533.58	1381	1.94	2627.30
1282	1.78	2439.69	1332	1.85	2535.43	1382	1.92	2629.22
1283	1.80	2441.49	1333	1.85	2537.28	1383	1.93	2631.15
1284	1.81	2443.30	1334	1.86	2539.14	1384	1.94	2633.09
1285	1.85	2445.15	1335	1.84	2540.98	1385	1.92	2635.01
1286	1.87	2447.02	1336	1.81	2542.79	1386	1.89	2636.90
1287	1.91	2448.93	1337	1.82	2544.61	1387	1.84	2638.74
1288	1.95	2450.88	1338	1.83	2546.44	1388	1.84	2640.58
1289	1.95	2452.83	1339	1.88	2548.32	1389	1.87	2642.45
1290	1.94	2454.77	1340	1.89	2550.21	1390	1.88	2644.33
1291	1.96	2456.73	1341	1.90	2552.11	1391	1.88	2646.21
1292	1.98	2458.71	1342	1.92	2554.03	1392	1.88	2648.09
1293	1.99	2460.70	1343	1.93	2555.96	1393	1.89	2649.98
1294	1.97	2462.67	1344	1.93	2557.89	1394	1.92	2651.90
1295	1.96	2464.63	1345	1.91	2559.80	1395	1.91	2653.81
1296	1.94	2466.57	1346	1.89	2561.69	1396	1.90	2655.71
1297	1.93	2468.50	1347	1.83	2563.52	1397	1.91	2657.62
1298	1.99	2470.49	1348	1.82	2565.34	1398	1.93	2659.55
1299	1.98	2472.47	1349	1.82	2567.16	1399	1.94	2661.49
1300	1.90	2474.37	1350	1.82	2568.98	1400	1.93	2663.42
1301	1.88	2476.25	1351	1.84	2570.82	1401	1.95	2665.37

UE12t#5--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1402	1.97	2667.34	1452	2.08	2770.15	1502	2.17	2878.16
1403	1.98	2669.32	1453	2.09	2772.24	1503	2.16	2880.32
1404	1.99	2671.31	1454	2.10	2774.34	1504	2.14	2882.46
1405	2.01	2673.32	1455	2.12	2776.46	1505	2.15	2884.61
1406	2.01	2675.33	1456	2.13	2778.59	1506	2.17	2886.78
1407	2.01	2677.34	1457	2.14	2780.73	1507	2.21	2888.99
1408	2.01	2679.35	1458	2.15	2782.88	1508	2.22	2891.21
1409	2.00	2681.35	1459	2.15	2785.03	1509	2.24	2893.45
1410	1.98	2683.33	1460	2.14	2787.17	1510	2.27	2895.72
1411	1.99	2685.32	1461	2.11	2789.28	1511	2.37	2898.09
1412	1.99	2687.31	1462	2.10	2791.38	1512	2.46	2900.55
1413	2.01	2689.32	1463	2.15	2793.53	1513	2.48	2903.03
1414	1.99	2691.31	1464	2.15	2795.68	1514	2.51	2905.54
1415	1.98	2693.29	1465	2.15	2797.83	1515	2.51	2908.05
1416	2.01	2695.30	1466	2.13	2799.96	1516	2.52	2910.57
1417	2.05	2697.35	1467	2.09	2802.05	1517	2.53	2913.10
1418	2.09	2699.44	1468	2.08	2804.13	1518	2.54	2915.64
1419	2.10	2701.54	1469	2.11	2806.24	1519	2.53	2918.17
1420	2.10	2703.64	1470	2.17	2808.41	1520	2.52	2920.69
1421	2.09	2705.73	1471	2.17	2810.58	1521	2.51	2923.20
1422	2.07	2707.80	1472	2.17	2812.75	1522	2.50	2925.70
1423	2.05	2709.85	1473	2.16	2814.91	1523	2.52	2928.22
1424	2.10	2711.95	1474	2.16	2817.07	1524	2.53	2930.75
1425	2.11	2714.06	1475	2.20	2819.27	1525	2.54	2933.29
1426	2.09	2716.15	1476	2.18	2821.45	1526	2.55	2935.84
1427	2.08	2718.23	1477	2.17	2823.62	1527	2.55	2938.39
1428	2.06	2720.29	1478	2.17	2825.79	1528	2.56	2940.95
1429	2.06	2722.35	1479	2.17	2827.96	1529	2.55	2943.50
1430	2.08	2724.43	1480	2.16	2830.12	1530	2.55	2946.05
1431	2.08	2726.51	1481	2.15	2832.27	1531	2.58	2948.63
1432	2.07	2728.58	1482	2.13	2834.40	1532	2.58	2951.21
1433	2.08	2730.66	1483	2.14	2836.54	1533	2.58	2953.79
1434	2.08	2732.74	1484	2.14	2838.68	1534	2.52	2956.31
1435	2.08	2734.82	1485	2.17	2840.85	1535	2.49	2958.80
1436	2.08	2736.90	1486	2.16	2843.01	1536	2.47	2961.27
1437	2.13	2739.03	1487	2.15	2845.16	1537	2.48	2963.75
1438	2.13	2741.16	1488	2.15	2847.31	1538	2.50	2966.25
1439	2.10	2743.26	1489	2.17	2849.48	1539	2.56	2968.81
1440	2.09	2745.35	1490	2.18	2851.66	1540	2.56	2971.37
1441	2.07	2747.42	1491	2.21	2853.87	1541	2.56	2973.93
1442	2.05	2749.47	1492	2.21	2856.08	1542	2.57	2976.50
1443	2.03	2751.50	1493	2.21	2858.29	1543	2.58	2979.08
1444	2.02	2753.52	1494	2.20	2860.49	1544	2.57	2981.65
1445	2.05	2755.57	1495	2.20	2862.69	1545	2.58	2984.23
1446	2.10	2757.67	1496	2.21	2864.90	1546	2.55	2986.78
1447	2.11	2759.78	1497	2.25	2867.15	1547	2.56	2989.34
1448	2.08	2761.86	1498	2.25	2869.40	1548	2.56	2991.90
1449	2.06	2763.92	1499	2.22	2871.62	1549	2.57	2994.47
1450	2.06	2765.98	1500	2.19	2873.81	1550	2.62	2997.09
1451	2.09	2768.07	1501	2.18	2875.99	1551	2.63	2999.72

UE12t#5--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
1552	2.60	3002.32	1602	2.45	3129.33			
1553	2.57	3004.89	1603	2.55	3131.88			
1554	2.57	3007.46	1604	2.55	3134.43			
1554	2.57	3007.46						
1555	2.55	3010.01						
1556	2.55	3012.56						
1557	2.56	3015.12						
1558	2.59	3017.71						
1559	2.59	3020.30						
1560	2.59	3022.89						
1561	2.59	3025.48						
1562	2.60	3028.08						
1563	2.60	3030.68						
1564	2.61	3033.29						
1565	2.60	3035.89						
1566	2.59	3038.48						
1567	2.59	3041.07						
1568	2.59	3043.66						
1569	2.59	3046.25						
1570	2.57	3048.82						
1571	2.57	3051.39						
1572	2.57	3053.96						
1573	2.56	3056.52						
1574	2.56	3059.08						
1575	2.55	3061.63						
1576	2.54	3064.17						
1577	2.55	3066.72						
1578	2.55	3069.27						
1579	2.56	3071.83						
1580	2.56	3074.39						
1581	2.58	3076.97						
1582	2.58	3079.55						
1583	2.58	3082.13						
1584	2.56	3084.69						
1585	2.57	3087.26						
1586	2.56	3089.82						
1587	2.55	3092.37						
1588	2.53	3094.90						
1589	2.51	3097.41						
1590	2.48	3099.89						
1591	2.45	3102.34						
1592	2.47	3104.81						
1593	2.47	3107.28						
1594	2.46	3109.74						
1595	2.45	3112.19						
1596	2.45	3114.64						
1597	2.46	3117.10						
1598	2.46	3119.56						
1599	2.43	3121.99						
1600	2.44	3124.43						
1601	2.45	3126.88						

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
3832	2.54	0.00	3882	2.48	129.58	3932	2.54	258.08
3833	2.54	2.54	3883	2.36	131.93	3933	2.52	260.60
3834	2.56	5.10	3884	2.42	134.35	3934	2.51	263.11
3835	2.59	7.70	3885	2.57	136.92	3935	2.47	265.58
3836	2.60	10.29	3886	2.59	139.52	3936	2.45	268.03
3837	2.62	12.91	3887	2.61	142.13	3937	2.38	270.41
3838	2.62	15.53	3888	2.60	144.73	3938	2.37	272.78
3839	2.62	18.15	3889	2.60	147.33	3939	2.39	275.17
3840	2.63	20.78	3890	2.61	149.94	3940	2.41	277.58
3841	2.63	23.41	3891	2.61	152.55	3941	2.41	279.99
3842	2.64	26.05	3892	2.61	155.16	3942	2.41	282.40
3843	2.64	28.69	3893	2.61	157.77	3943	2.43	284.83
3844	2.63	31.32	3894	2.60	160.37	3944	2.48	287.31
3845	2.63	33.95	3895	2.60	162.97	3945	2.47	289.79
3846	2.63	36.58	3896	2.60	165.57	3946	2.46	292.25
3847	2.63	39.21	3897	2.60	168.17	3947	2.46	294.71
3848	2.63	41.83	3898	2.60	170.77	3948	2.47	297.18
3849	2.62	44.45	3899	2.59	173.36	3949	2.46	299.64
3850	2.60	47.05	3900	2.57	175.92	3950	2.46	302.09
3851	2.58	49.63	3901	2.54	178.47	3951	2.47	304.57
3852	2.55	52.18	3902	2.50	180.97	3952	2.46	307.03
3853	2.56	54.75	3903	2.51	183.47	3953	2.45	309.48
3854	2.58	57.33	3904	2.55	186.02	3954	2.42	311.90
3855	2.60	59.93	3905	2.58	188.60	3955	2.37	314.26
3856	2.61	62.53	3906	2.58	191.18	3956	2.37	316.63
3857	2.62	65.15	3907	2.59	193.77	3957	2.35	318.98
3858	2.63	67.78	3908	2.60	196.37	3958	2.27	321.25
3859	2.62	70.40	3909	2.59	198.96	3959	2.25	323.50
3860	2.62	73.02	3910	2.60	201.56	3960	2.31	325.81
3861	2.60	75.62	3911	2.61	204.17	3961	2.39	328.20
3862	2.58	78.21	3912	2.60	206.77	3962	2.39	330.59
3863	2.56	80.76	3913	2.59	209.36	3963	2.39	332.98
3864	2.50	83.27	3914	2.58	211.94	3964	2.46	335.45
3865	2.50	85.77	3915	2.57	214.51	3965	2.47	337.92
3866	2.53	88.29	3916	2.55	217.06	3966	2.51	340.43
3867	2.59	90.88	3917	2.56	219.62	3967	2.50	342.93
3868	2.60	93.49	3918	2.56	222.18	3968	2.46	345.39
3869	2.58	96.07	3919	2.52	224.70	3969	2.48	347.87
3870	2.60	98.67	3920	2.52	227.23	3970	2.45	350.32
3871	2.62	101.29	3921	2.55	229.78	3971	2.43	352.75
3872	2.63	103.92	3922	2.56	232.35	3972	2.40	355.15
3873	2.63	106.54	3923	2.56	234.91	3973	2.40	357.55
3874	2.61	109.15	3924	2.56	237.47	3974	2.41	359.96
3875	2.61	111.75	3925	2.56	240.03	3975	2.42	362.38
3876	2.62	114.37	3926	2.58	242.60	3976	2.42	364.80
3877	2.60	116.97	3927	2.59	245.20	3977	2.42	367.22
3878	2.56	119.53	3928	2.60	247.80	3978	2.43	369.65
3879	2.55	122.08	3929	2.59	250.39	3979	2.45	372.10
3880	2.52	124.60	3930	2.58	252.97	3980	2.47	374.57
3881	2.50	127.10	3931	2.57	255.53	3981	2.47	377.04

HTH#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
3982	2.46	379.50	4032	2.47	503.88	4082	2.59	626.47
3983	2.44	381.94	4033	2.56	506.44	4083	2.59	629.06
3984	2.41	384.35	4034	2.59	509.03	4084	2.56	631.62
3985	2.37	386.72	4035	2.59	511.62	4085	2.54	634.16
3986	2.35	389.07	4036	2.57	514.19	4086	2.53	636.69
3987	2.38	391.45	4037	2.56	516.75	4087	2.53	639.22
3988	2.39	393.84	4038	2.56	519.30	4088	2.53	641.75
3989	2.41	396.24	4039	2.57	521.87	4089	2.51	644.26
3990	2.42	398.66	4040	2.57	524.45	4090	2.49	646.74
3991	2.41	401.07	4041	2.57	527.02	4091	2.50	649.24
3992	2.38	403.45	4042	2.56	529.58	4092	2.54	651.78
3993	2.36	405.81	4043	2.56	532.14	4093	2.57	654.35
3994	2.40	408.21	4044	2.54	534.68	4094	2.57	656.92
3995	2.40	410.61	4045	2.54	537.22	4095	2.55	659.47
3996	2.42	413.02	4046	2.54	539.75	4096	2.53	662.00
3997	2.46	415.48	4047	2.53	542.28	4097	2.50	664.51
3998	2.48	417.96	4048	2.51	544.79	4098	2.49	666.99
3999	2.51	420.47	4049	2.49	547.29	4099	2.52	669.51
4000	2.53	423.00	4050	2.49	549.77	4100	2.57	672.08
4001	2.56	425.56	4051	2.49	552.26	4101	2.61	674.70
4002	2.49	428.05	4052	2.49	554.76	4102	2.63	677.32
4003	2.47	430.52	4053	2.51	557.27	4103	2.62	679.95
4004	2.47	433.00	4054	2.51	559.78	4104	2.63	682.58
4005	2.46	435.46	4055	2.47	562.25	4105	2.64	685.22
4006	2.49	437.95	4056	2.44	564.69	4106	2.64	687.86
4007	2.52	440.47	4057	2.42	567.11	4107	2.63	690.49
4008	2.55	443.02	4058	2.39	569.50	4108	2.63	693.11
4009	2.57	445.59	4059	2.28	571.78	4109	2.61	695.72
4010	2.60	448.19	4060	2.26	574.04	4110	2.60	698.32
4011	2.61	450.79	4061	2.28	576.32	4111	2.60	700.93
4012	2.61	453.41	4062	2.31	578.63	4112	2.60	703.52
4013	2.61	456.02	4063	2.31	580.95	4113	2.59	706.11
4014	2.61	458.63	4064	2.27	583.21	4114	2.57	708.68
4015	2.59	461.22	4065	0.00	585.50	4115	2.57	711.25
4016	2.56	463.78	4066	2.32	587.80	4116	2.57	713.82
4017	2.55	466.33	4067	2.36	590.16	4117	2.58	716.41
4018	2.54	468.86	4068	2.42	592.58	4118	2.59	718.99
4019	2.56	471.42	4069	2.40	594.98	4119	2.59	721.58
4020	2.56	473.98	4070	2.40	597.38	4120	2.59	724.17
4021	2.56	476.54	4071	2.40	599.78	4121	2.60	726.77
4022	2.55	479.10	4072	2.39	602.17	4122	2.59	729.37
4023	2.54	481.64	4073	2.37	604.54	4123	2.58	731.94
4024	2.52	484.16	4074	2.36	606.90	4124	2.57	734.51
4025	2.49	486.65	4075	2.36	609.26	4125	2.59	737.11
4026	2.49	489.13	4076	2.36	611.63	4126	2.60	739.71
4027	2.47	491.60	4077	0.00	614.06	4127	2.60	742.31
4028	2.47	494.07	4078	0.00	616.49	4128	2.60	744.91
4029	2.48	496.55	4079	0.00	618.92	4129	2.60	747.51
4030	2.45	499.00	4080	2.50	621.36	4130	2.60	750.12
4031	2.41	501.41	4081	2.52	623.88	4131	2.60	752.72

HTH#1--Continued

Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density (g/cc)	Integrated density (g/cc/foot)	Depth (feet)	Density g/cc)	Integrated density (g/cc/foot)
4132	2.58	755.30	4182	2.32	880.78			
4133	2.57	757.87	4183	2.41	883.19			
4134	2.57	760.44	4184	2.41	885.60			
4135	2.57	763.01	4185	2.40	888.00			
4136	2.55	765.56	4186	2.40	890.40			
4137	2.52	768.07	4187	2.42	892.82			
4138	2.46	770.54	4188	2.44	895.26			
4139	2.39	772.93	4189	2.44	897.70			
4140	2.28	775.21	4190	2.44	900.14			
4141	2.24	777.45	4191	2.45	902.59			
4142	2.27	779.72	4192	2.44	905.03			
4143	2.33	782.04	4193	2.43	907.46			
4144	2.44	784.48	4194	2.43	909.89			
4145	2.55	787.03	4195	2.44	912.33			
4146	2.55	789.58	4196	2.45	914.78			
4147	2.53	792.11	4197	2.45	917.23			
4148	2.53	794.64	4198	2.45	919.67			
4149	2.55	797.19	4199	2.45	922.12			
4150	2.57	799.76	4200	2.45	924.58			
4150	2.57	799.76						
4151	2.56	802.32						
4152	2.58	804.90						
4153	2.58	807.48						
4154	2.58	810.07						
4155	2.57	812.64						
4156	2.55	815.18						
4157	2.53	817.72						
4158	2.53	820.24						
4159	2.53	822.77						
4160	2.58	825.35						
4161	2.61	827.97						
4162	2.60	830.57						
4163	2.61	833.18						
4164	2.62	835.79						
4165	2.61	838.40						
4166	2.60	841.00						
4167	2.59	843.59						
4168	2.58	846.17						
4169	2.56	848.73						
4170	2.55	851.28						
4171	2.54	853.82						
4172	2.54	856.37						
4173	2.53	858.90						
4174	2.53	861.42						
4175	2.52	863.94						
4176	2.50	866.44						
4177	2.47	868.91						
4178	2.44	871.36						
4179	2.39	873.75						
4180	2.36	876.11						
4181	2.35	878.46						

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