LA-9558-HDR

Dr. 1087

I. 7181

Los Alamos National Laboratory is operated by the University of California for the United States Department of Energy under contract W-7405-ENG-36.

DO NOT MICROFILM
COVER

Geothermal Investigations in West Virginia

Los Alamos Los Alamos National Laboratory
Los Alamos, New Mexico 87545

MASTER

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

This work was supported by the US Department of Energy, Division of Geothermal and Hydropower Technologies.

Edited by Glenda Ponder, Group ESS-Division

DO NOT MICROFILM
COVER

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. References herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

LA-9558-HDR

UC-66a

Issued: November 1982

LA--9558-HDR

DE83 004480

Geothermal Investigations in West Virginia

Robert Hendry*
Kenneth Hilfiker*
Dennis Hodge*
Paul Morgan**
Chandler Swanberg***
Spencer S. Shannon, Jr.

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

*Department of Geology, State University of New York/Buffalo, Amherst, NY 14226.

**Lunar and Planetary Institute, National Aeronautics and Space Administration, Houston, TX 77058.

***Department of Geology, New Mexico State University, Las Cruces, NM 88003.

Los Alamos Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

GEOHERMAL INVESTIGATIONS IN WEST VIRGINIA

by

Robert Hendry, Kenneth Hilfiker, Dennis Hodge, Paul Morgan, Chandler
Swanberg, and Spencer S. Shannon, Jr.

ABSTRACT

Deep sedimentary basins and warm-spring systems in West Virginia are potential geothermal resources. A temperature gradient map based on 800 bottom-hole temperatures for West Virginia shows that variations of temperature gradient trend northeasterly, parallel to regional structure. Highest temperature gradient values of about 28°C/km occur in east-central West Virginia, and the lowest gradients (18°C/km) are found over the Rome Trough. Results from ground-water geochemistry indicate that the warm waters circulate in very shallow aquifers and are subject to seasonal temperature fluctuations. Silica heat-flow data in West Virginia vary from about 0.89 to 1.4 HFU and generally increase towards the west. Bouguer, magnetic, and temperature gradient profiles suggest that an ancient rift transects the state and is the site of several deep sedimentary basins.

I. INTRODUCTION

Geothermal resources in eastern United States include (1) warm-spring systems, (2) radioactive granite plutons beneath thick sedimentary cover, and (3) deep sedimentary basins having normal temperature gradients. The Appalachian basin in West Virginia contains sedimentary rocks that are greater than 20 000 ft deep; thick sections of shale and sandstone occur in these regions. These deep basins are potentially attractive geothermal resources if higher-than-normal temperature gradients are identified. Numerous warm springs in eastern West Virginia suggest that deep circulation of ground waters along faults may locally elevate wall rock temperatures in the Appalachian basin. This is a preliminary study of the potential geothermal

resources and provides an analysis of the subsurface temperatures and heat flow of West Virginia.

II. REGIONAL GEOLOGY

For the most part, central West Virginia is located in the plateau region and is part of the Allegheny Synclinorium. The rocks in the plateau region are not folded as much as the sedimentary rocks in the Valley and Ridge province to the east. Folding and thrust faulting are generally restricted to the "thin skinned" sedimentary rocks. Geothermal signatures from basement rocks indicate that some structures may be rejuvenated older faults.

King and Zietz (1978) describe a prominent northeast-trending magnetic lineament nearly 1300 km long that is marked by a series of linear magnetic gradients that separate areas of contrasting magnetic rocks in the basement. The trend of this anomaly, called the New York-Alabama lineament, is sub-parallel to a major basement discontinuity which forms the eastern boundary of the Rome Trough in West Virginia. This magnetic lineament intersects a structural lineament, the 38th parallel lineament, in West Virginia near the Rome Trough. The New York-Alabama lineament delineates a major discontinuity in the crystalline basement that may be the result of intra-continental collision between the stable cratons of the continental interior and the more mobile Appalachian block of the continental margin during Grenville time (King and Zietz 1978). Sedimentary rocks in the Rome Trough thicken from approximately 7500 ft (2300 m) on the flanks to 20 000 ft (6000 m) in the trough of this feature (Kulander and Dean 1978). Ammerman and Keller (1979) suggest that the trough in Kentucky may have formed during periods of rifting in Avalonian time.

Major Appalachian deformation that is evident at the surface occurred from the middle Permian through the Triassic period and produced faulting and low-angle thrusting throughout the central plateau province and eastern West Virginia. Kulander and Dean (1978) suggest that reactivation of a major displacement in the crystalline basement took place during the Early Paleozoic era and continued into the Appalachian orogeny. Kulander and Dean (1978) noted that sedimentary lithologic facies change over short distances toward the margin of the Rome Trough and that normal faulting may have developed during Early Cambrian time.

The basement rocks throughout central West Virginia vary in lithology and are thought to be of Grenville age. Sample compositions from well cores range

from granodiorite to anorthosite. Bass (1959) found granodiorite, tonalite, and bands of syenite, monzonite, and granite in basement core from Wood County, West Virginia. The basement rock from a well in Mingo County, West Virginia is anorthosite.

III. TEMPERATURE GRADIENT MAP OF WEST VIRGINIA

Hodge et al. (1979) demonstrated in New York that bottom-hole temperatures from electric logs can describe lateral variation in geothermal gradients if statistical smoothing procedures are applied. To eliminate bottom-hole temperatures that may have been disturbed by Pleistocene and annual variations in temperature or by shallow circulation of ground water, 792 wells (Appendix A) having depths greater than 500 m were used in geothermal-gradient calculations. Average surface temperatures at the National Oceanic and Atmospheric Administration (NOAA) recording stations for the surrounding eight states were used to develop the mathematical estimate of surface temperatures at sea level throughout West Virginia. Temperatures at elevations of each well were calculated using a lapse rate of $9.8^{\circ}\text{C}/\text{km}$. Geothermal gradients were then calculated by subtracting surface temperatures from bottom-hole temperatures and dividing by the depths. No corrections for drilling disturbance have been applied to these data. In this statistical contouring approach, randomly scattered data having geothermal gradients of 6.7 to $61.2^{\circ}\text{C}/\text{km}$ are replaced by a regularly spaced grid matrix having gradients of 11.9 to $37.1^{\circ}\text{C}/\text{km}$. Subsequently, these data were smoothed resulting in gradients between 16.4 and $33.3^{\circ}\text{C}/\text{km}$.

The geothermal gradient map of West Virginia (Fig. 1) has a relatively smooth pattern with the temperature gradients trending northeasterly. The highest values are in the east-central part of the state, and a prominent low coincides with the Rome Trough in the south-central area.

IV. GEOCHEMISTRY

Ground-water geochemistry, which is the primary source of information for this phase of the investigation, can be used to determine regional heat flow and to delineate specific areas having high-geothermal potential. Similar studies in New York have been useful in delineating potential hot, dry rock geothermal resources (Hilfiker et al. 1980). This report emphasizes three aspects of geochemical reconnaissance:

Fig. 1.
Geothermal gradient map of West Virginia. The small circles are bottom-hole temperature locations, and the contour interval is $2^{\circ}\text{C}/\text{km}$. The gradients have not been corrected for drilling disturbance.

1. By using routine chemical analyses of hot-spring waters and by applying the silica and NaKCa geothermometers (Fournier and Rowe 1966; Fournier and Truesdell 1973), one can determine if these waters originated within an active geothermal system and can estimate the temperatures within the geothermal reservoir.
2. The same geothermometers can be applied to chemical analyses of nonthermal ground water (Swanberg and Alexander 1979). Although waters which originated in geothermal reservoirs may cool during circulation before arriving at a surface discharge point, they maintain chemical characteristics compatible with their thermal origin. Thus waters of thermal origin can be detected even though they discharge as cold springs or are collected from cold wells.
3. Based on the observed empirical relation between temperatures estimated by the silica geothermometer and regional heat flow (Swanberg and Morgan 1978/1979; 1980), the silica content of ground waters can be used quantitatively to estimate regional heat flow and thereby predict the thermal regime for any geologic environment for which ground-water silica data are available.

The evaluation of approximately 500 chemical analyses is described in the following sections.

Hot Springs Study. Most of the 30 hot springs in West Virginia (Waring 1965) are in the Valley and Ridge province in the eastern part of the state. Perry and Costain (1979) report the following mechanism for the origin of near-by hot springs in the Valley and Ridge province in Virginia: Meteoric waters enter near-vertical sedimentary beds at relatively high topographic elevations and move downward along permeable bedding planes and fractures. This moderately deep circulation intersects vertical, transverse linear fracture zones through which the water rises to the surface. Furthermore, warm springs are adjacent to topographic gaps which have developed along zones of weakness associated with the fracture zones. A similar mechanism could explain the origin of hot springs in the Valley and Ridge province in West Virginia. Geochemical data support this model for the Virginia hot springs, but not for the West Virginia ones.

About two-thirds of the hot springs catalogued by Waring (1965) were sampled in this study. In addition, data from Berkeley and Minnehaha Springs were taken from Hobba et al. (1977). Most temperatures we measured (7 to

15°C, Table I) are significantly lower than the temperatures reported by Waring (1965; 16 to 23°C). Either we failed to locate the true spring, or we may not have tested the actual discharge point. However, a few reliable temperatures were obtained from exactly the same discharge points reported by Waring (1965); these springs simply are not thermal. Thus many "hot" springs in West Virginia seem to circulate in shallow aquifers, possibly reaching the surface where they undergo large seasonal temperature fluctuations. This conclusion is supported by the chemical geothermometers. The average temperature estimated by the silica geothermometer for the "hot" springs is 30.8°C, which is lower than the average temperature for West Virginia ground waters (41.5°C) and is, in fact, closer to the mean value for surface waters (23.4°C). Using the NaKCa geothermometer, most "hot" springs have negative temperatures which indicate that the waters' residence time in the ground has been too short to reach chemical equilibrium with the host rock.

The above conclusions do not apply to the Berkeley or Minnehaha Springs in West Virginia, which are hotter and yield realistic temperature estimates from use of the silica and NaKCa geothermometers. Thus the deep circulation model of Perry and Costain (1979) may well apply to these few springs.

Heat Flow. The silica heat-flow technique of Swanberg and Morgan (1978/1979; 1980) is designed to convert ground-water silica data to regional heat flow. This method can be used to supplement traditional heat-flow data by more precisely determining heat-flow trends, specific heat-flow anomalies, and other features that relate to the location and evaluation of hot, dry rock geothermal resources. In this study, we have used about 500 ground-water silica analyses from the US Geological Survey WATSTORE file and the published literature. Also, 44 additional samples were collected and analyzed for silica to fill gaps in the published data. The analyses are listed in Tables II and III. The ground-water data have been converted to heat-flow values by using the equations of Swanberg and Morgan (1980).

The silica heat-flow data have been grouped geographically in several ways to correlate silica heat flow with other geological and geophysical data. Silica heat flow tends to increase westward. The lowest values are to the east in the Valley and Ridge province where the mean silica heat flow is 0.95 heat-flow units (HFU). Four traditional heat-flow values reported by Perry and Costain (1979) for the Valley and Ridge-Blue Ridge province of nearby Virginia average 1.06 HFU, which is in good agreement with the silica data.

TABLE I
WEST VIRGINIA DATA
SIT, CHT, and CCHT are temperatures estimated by the silica, NaKCa,
and MaKCa Mg geothermometers, respectively.

Sample No.	Name	Location		Temp. °C	SIT °C	CHT °C	CCHT °C
		Lat.	Long.				
1	Piercy's Cave Spring	37°50.8'	80°34.8'	9.0	28.5	-5.8	-5.8
2	Piercy's Cave Spring	37°51.0'	80°34.5'	6.0	28.9	18.1	18.1
3	Piercy's Cave Spring	37°50.0'	80°34.9'	10.0	28.9	-5.5	-5.5
4	Sweet Calybeate Spring	37°38.8'	80°14.2'	22.0	51.3	53.1	53.1
5	Old Sweet Springs	37°37.6'	80°14.0'	7.0	27.6	-19.2	-19.2
6	Boiling Spring	37°41.8'	80°06.1'	11.0	28.5	-8.8	-8.8
7	Salt Sulphur Spring	37°33.9'	80°34.1'	-	56.0	3.1	3.1
8	Iodine Spring	37°34.1'	80°34.0'	-	32.5	4.3	4.3
9	Ewing Run Cold Spring	37°31.4'	80°18.1'	7.0	22.4	-22.2	-22.2
10	Hot Springs	38°00.1'	79°50.1'	32.0	56.0	56.2	56.2
11	Warm Spring	38°03.0'	79°47.8'	36.0	68.7	37.6	37.6
12	Ruckman Run	38°12.3'	79°57.1'	10.0	19.8	-18.6	-18.6
13	Guy Run Springs	38°13.3'	79°55.9'	-	13.9	-13.4	-13.4
14	Mill Run Spring	38°14.3'	79°55.0'	13.0	30.6	-12.4	-12.4
15	Dunmore Drinking Spring	38°21.5'	79°52.5'	15.0	36.2	-5.5	-5.5
16	S.P. Curry Spring	38°11.1'	80°01.0'	8.0	22.9	-29.7	-29.7
17	White Sulphur Spring	37°47.8'	80°17.9'	12.0	52.8	-1.6	-1.6
18	Cress Spring	38°37.5'	79°19.9'	8.0	19.8	-15.7	-15.7
19	Roaring Spring at Circleville	38°40.8'	79°28.9'	4.0	15.1	7.3	7.3
20	Big Spring	38°55.6'	79°31.2'	8.0	19.8	-17.0	-17.0
21		38°56.9'	79°17.5'	10.0	18.1	-7.3	-7.3
22	Shannondale Spring	39°13.0'	77°48.8'	-	50.3	37.2	37.2
23	Mountain Mission	39°17.3'	77°46.2'	11.0	42.7	22.1	22.1
24	Swan Pond Spring	39°28.0'	77°58.2'	-	49.3	-4.1	-4.1
25	Cold Stream Run	39°20.0'	78°27.1'	11.0	30.1	-16.2	-16.2
26	Capon Springs	39°08.2'	78°28.9'	-	36.9	-16.0	-16.0
28	Warm (Boiling) Spring	39°01.7'	78°36.5'	14.0	36.9	-12.3	-12.3
29	Terra Alta	39°25.1'	79°33.1'	11.0	22.4	28.2	28.2
145		38°40.8'	80°52.9'	-	40.2	33.6	33.6
146		38°34.8'	80°55.9'	-	47.8	29.2	29.2
147		38°50.3'	80°59.0'	-	33.3	62.6	62.6
148		38°46.1'	81°06.4'	-	44.7	15.4	15.4
149		38°40.2'	81°05.0'	-	41.5	48.8	48.8
150		38°33.1'	81°01.5'	-	33.7	72.8	47.0
151		38°29.1'	81°09.1'	-	36.6	31.8	31.8
152		38°29.1'	81°09.1'	-	43.3	44.5	44.5
153		38°32.5'	81°20.8'	-	43.6	38.8	38.8
154		38°37.9'	81°23.6'	-	49.3	7.3	7.3
155		38°38.5'	81°21.2'	13.0	37.2	51.1	51.1

TABLE I (cont.)

Sample No.	Name	Location		Temp. °C	SIT °C	CHT °C	CCHT °C
		Lat.	Long.				
156		38°43.4'	81°23.9'	14.0	35.1	10.9	10.9
157		38°48.0'	81°24.5'	-	41.2	53.0	53.0
158		38°44.0'	81°17.1'	-	63.1	-11.4	-11.4
159		38°37.3'	81°13.1'	-	36.9	60.7	60.7
160		38°24.5'	81°06.9'	-	48.3	26.8	26.8
161		38°19.3'	81°10.2'	-	32.5	32.0	32.0
162		39°03.0'	80°32.0'	-	34.4	48.7	48.7
163		39°02.6'	80°37.3'	-	37.2	61.5	61.5
164		39°02.6'	80°37.3'	19.0	32.9	10.3	10.3
165		39°00.8'	80°43.6'	-	44.4	42.4	42.4
166		39°02.8'	80°49.5'	-	46.1	21.6	21.6
167		39°02.8'	80°57.5'	-	56.6	12.0	12.0
168		39°05.0'	81°08.2'	-	51.3	26.8	26.8
169		39°08.6'	81°02.9'	-	36.6	73.5	73.5
170		39°15.2'	81°02.9'	-	38.9	20.9	20.9
171		39°16.5'	80°55.2'	-	50.8	47.1	47.1
172		39°17.5'	80°47.6'	-	56.6	17.6	17.6
173		39°16.9'	80°48.3'	-	37.2	50.6	50.6
174		39°16.8'	80°41.5'	-	53.7	-	-
175		39°16.1'	80°32.4'	-	45.0	51.3	51.3
176		39°11.9'	80°32.4'	-	45.0	51.3	51.3
177		39°11.2'	80°38.6'	-	55.3	9.5	9.5
178		39°11.9'	80°43.1'	-	52.3	31.4	31.4
179		39°22.7'	80°52.5'	-	40.2	65.5	65.5
180		39°27.5'	80°49.8'	-	68.0	1.5	1.5
181		39°31.3'	80°53.7'	-	39.2	22.8	22.8
182		39°34.7'	80°44.2'	-	55.3	9.6	9.6
183		39°30.4'	80°34.8'	-	38.3	2.3	2.3
184		39°23.8'	80°29.6'	-	22.9	22.0	22.0
185		39°35.5'	80°22.4'	-	55.1	25.3	25.3
186		39°38.0'	80°33.6'	-	34.8	24.4	24.4
187		39°40.5'	80°27.8'	-	46.1	21.0	21.0
188		39°36.5'	80°39.6'	-	40.5	31.1	31.1
189		39°43.0'	80°32.1	-	45.0	18.5	18.5
190		39°48.0'	80°33.3'	-	42.1	18.6	18.6
301	Berkeley Springs	39°37.6'	78°13.8'	22.2	37.9	-3.9	-3.9
401	Minnehaha Spring	38°-09.8'	79°58.5'	20.1	34.0	-10.1	-10.1

TABLE II
CHEMICAL ANALYSIS OF SPRINGS AND WELLS IN WEST VIRGINIA, mg/l

Sample No.	Ca	Mg	Na	K	Cl	CO ₃	HCO ₃	SO ₄	Fe	B	SiO ₂	F
1	40.3	0.2	1.4	1.2	5.7	0	125.7	5.8	0.10	0.09	7.00	0.20
2	9.4	1.7	2.5	1.2	3.5	0	35.4	6.7	0.10	0.01	7.10	0.20
3	39.3	0.2	1.4	1.2	5.7	0	124.5	7.2	0.10	0.02	7.10	0.20
4	313.6	1.2	19.8	25.4	20.6	0	306.3	527.8	0.32	0.11	14.20	0.83
5	47.5	0.1	0.7	0.8	3.5	0	137.9	9.1	0.10	0.01	6.80	0.20
6	22.4	2.7	0.9	0.8	8.5	0	64.7	10.1	0.10	0.01	7.00	0.20
7	260.3	1.3	96.3	1.6	37.9	0	288.0	575.9	0.45	0.28	16.25	0.56
8	132.9	0.5	71.9	1.2	27.6	0	331.3	109.0	0.10	0.08	8.00	0.24
9	118.6	0.1	0.5	0.4	6.7	0	45.8	5.8	0.10	0.01	5.70	0.20
10	138.5	0.7	30.6	14.1	5.3	0	363.7	122.0	0.10	0.05	16.25	0.98
11	115.8	0.5	22.1	7.0	5.3	0	213.6	164.7	0.10	0.02	22.75	1.30
12	38.3	0.1	0.5	0.8	3.5	0	114.7	5.8	0.10	0.02	5.25	0.20
13	28.8	0.1	0.7	0.8	3.5	0	103.1	4.8	0.10	0.01	4.20	0.20
14	30.3	0.6	7.3	0.4	3.5	0	109.8	3.8	0.10	0.01	7.50	0.20
15	42.1	0.4	1.6	1.2	3.5	0	89.1	50.0	0.10	0.01	9.05	0.20
16	37.3	0.1	0.5	0.4	3.5	0	124.5	5.8	0.10	0.01	5.75	0.20
17	427.1	2.5	17.7	3.1	27.6	0	245.3	891.9	0.10	0.17	14.85	1.75
18	35.3	0.2	0.7	0.8	3.5	0	104.3	10.1	0.10	0.01	5.15	0.20
19	16.0	0.1	1.6	1.2	3.5	0	48.2	10.1	0.10	0.01	4.35	0.20
20	59.5	0.2	1.6	0.8	3.5	0	183.0	10.1	0.10	0.01	5.15	0.20
21	24.8	0.2	1.4	0.8	3.5	0	73.2	10.1	0.10	0.01	4.90	0.20
22	8.2	3.3	3.0	2.3	5.3	0	46.4	2.9	0.10	0.05	13.80	0.20
23	3.6	1.2	2.1	0.8	3.5	0	17.1	4.8	0.10	0.01	11.00	0.20
24	101.2	0.2	2.5	2.0	6.4	0	308.7	12.0	0.10	0.01	13.45	0.20
25	55.7	5.3	1.6	0.8	5.3	0	194.0	5.3	0.10	0.01	7.35	0.20
27	45.3	3.9	1.1	0.8	3.5	0	153.8	8.1	0.10	0.01	9.15	0.20
28	29.8	2.8	0.9	0.8	3.5	0	97.6	8.1	0.10	0.02	9.20	0.20
29	1.6	1.1	0.9	0.8	3.5	0	15.2	2.9	0.10	0.01	5.70	0.20
145	35.5	9.7	22.5	2.7	0.7	0	229.4	2.4	-	-	10.24	-
146	27.0	2.2	36.3	1.6	7.4	0	159.9	13.9	-	-	12.78	-
147	2.8	0.5	132.9	0.8	5.0	0	339.2	16.8	-	-	8.20	-
148	41.5	4.9	14.2	1.6	2.8	0	181.8	13.9	-	-	11.71	-
149	26.6	4.9	72.9	2.7	38.3	0	233.1	2.4	-	-	10.63	-
150	9.4	5.1	48.5	3.5	87.9	0	17.7	5.3	-	-	8.29	-
151	3.6	1.4	0.9	1.6	5.0	0	11.0	5.3	-	-	9.07	-
152	21.0	5.5	12.9	3.5	9.9	0	115.9		-	-	11.32	-
153	30.4	6.2	30.6	2.7	7.8	0	183.0	9.1	-	-	11.32	-
154	63.1	9.2	10.6	1.6	2.1	0	191.6	63.4	-	-	13.37	-
155	12.6	1.7	239.8	1.2	169.5	9.6	342.9	13.9	-	-	9.27	-
156	33.7	9.7	12.0	1.2	2.1	0	148.9	20.2	-	-	8.68	-
157	1.6	0.2	128.0	0.4	6.7	19.2	259.9	11.5	-	-	10.54	-

TABLE II (cont.)

Sample No.	Ca	Mg	Na	K	Cl	CO ₃	HCO ₃	SO ₄	Fe	B	SiO ₂	F
158	106.4	17.5	13.3	0.8	148.2	0	147.7	28.8	-	-	19.71	-
159	5.2	1.4	112.0	1.2	11.0	28.8	219.7	16.8	-	-	9.17	-
160	13.6	4.2	6.9	1.6	1.4	0	81.8	2.4	-	-	12.98	-
161	9.4	5.1	2.1	2.3	9.9	0	40.3	5.3	-	-	8.00	-
162	1.2	0.2	210.3	0.4	21.6	40.8	430.8	9.1	-	-	8.49	-
163	6.0	1.2	162.1	1.2	57.4	0	361.2	5.3	-	-	9.27	-
164	15.4	4.0	2.3	1.2	1.8	0	45.1	26.9	-	-	8.10	-
165	11.0	2.3	69.0	1.2	17.7	0	173.3	9.1	-	-	11.61	-
166	51.3	10.2	25.5	2.0	29.4	0	220.9	16.8	-	-	12.20	-
167	70.9	23.8	13.3	2.0	26.2	0	324.6	11.5	-	-	16.50	-
168	13.6	3.0	54.9	3.0	0.8	0	155.0	9.1	-	-	14.50	-
169	1.2	1.4	167.8	0.8	72.7	0	289.2	23.0	-	-	9.07	-
170	3.2	0.5	91.0	0.2	30.1	0	168.4	23.0	-	-	9.76	-
171	11.0	1.8	118.2	1.2	35.8	0	279.4	23.0	-	-	13.95	-
172	47.3	7.5	25.0	1.6	36.5	0	184.3	13.9	-	-	16.50	-
173	2.0	0.2	154.7	0.4	14.5	34.8	286.8	16.8	-	-	9.27	-
174	64.3	27.3	30.1	2.0	7.1	0	384.4	33.6	-	-	15.20	-
175	68.5	17.5	7.8	1.2	7.1	0	273.3	25.0	-	-	11.00	-
176	7.2	1.8	80.2	1.2	3.9	0	217.2	11.5	-	-	11.80	-
177	76.0	9.5	21.1	1.6	7.1	0	272.1	46.6	-	-	15.90	-
178	29.7	4.5	58.2	1.6	3.2	0	244.1	23.0	-	-	14.60	-
179	15.2	4.1	20.2	5.1	2.5	0	59.8	48.5	-	-	10.25	-
180	26.2	5.2	6.2	0.8	1.8	0	103.7	13.9	-	-	22.45	-
181	16.0	6.9	5.7	1.6	8.5	0	64.7	13.9	-	-	9.90	-
182	77.7	21.5	53.1	1.2	12.0	30.0	350.2	44.2	-	-	15.90	-
183	6.4	1.0	213.3	0.1	181.5	0	238.0	16.8	-	-	9.61	-
184	33.9	9.1	23.0	1.6	2.5	0	191.6	13.9	-	-	5.80	-
185	32.5	4.6	32.2	1.6	6.7	0	184.3	16.8	-	-	15.80	-
186	28.0	4.9	11.0	2.0	3.2	0	89.1	39.9	-	-	8.59	-
187	48.7	8.0	41.4	1.6	38.6	0	208.7	28.8	-	-	12.20	-
188	26.8	6.0	45.5	1.6	31.2	0	150.1	23.0	-	-	10.30	-
189	69.3	20.2	30.8	2.0	11.7	0	351.4	37.5	-	-	11.85	-
190	93.2	32.0	37.2	2.3	152.4	0	235.5	50.4	-	-	10.80	-

TABLE III
CHEMICAL ANALYSES OF SPRINGS AND WELLS IN WEST VIRGINIA, meg/l

Sample No.	mmhos/cm EC	pH	Ca	Na	K	Mg	Total Cation	Cl	CO ₃	HCO ₃	SO ₄	Total Anion
1	0.236	7.41	2.01	0.06	0.03	0.02	2.12	0.16	0	2.06	0.12	2.34
2	0.083	7.41	0.47	0.11	0.03	0.14	0.75	0.10	0	0.58	0.14	0.72
3	0.244	7.27	1.96	0.06	0.03	0.02	2.07	0.16	0	2.04	0.15	2.35
4	1.590	6.66	15.65	0.86	0.65	0.10	17.26	0.58	0	5.02	10.99	16.81
5	0.247	7.33	2.37	0.03	0.02	0.01	2.42	0.10	0	2.26	0.19	2.45
6	0.144	7.51	1.12	0.04	0.02	0.22	1.40	0.24	0	1.06	0.21	1.51
7	1.590	7.09	12.99	4.10	0.04	0.11	17.33	1.07	0	4.72	11.99	17.78
8	0.898	7.28	6.63	3.13	0.03	0.04	9.83	0.78	0	5.43	2.27	9.48
9	0.102	7.35	0.93	0.02	0.01	0.01	0.97	0.19	0	0.75	0.12	1.06
10	0.846	7.65	6.91	1.33	0.36	0.06	8.66	0.15	0	5.96	2.54	8.65
11	0.698	7.57	5.78	0.96	0.18	0.04	6.96	0.15	0	3.50	3.43	7.18
12	0.198	7.69	1.91	0.02	0.02	0.01	1.96	0.10	0	1.88	0.12	2.00
13	0.150	7.58	1.44	0.03	0.02	0.01	1.50	0.10	0	1.69	0.10	1.79
14	0.194	7.85	1.51	0.32	0.01	0.05	1.89	0.10	0	1.80	0.08	1.88
15	0.263	7.75	2.10	0.07	0.03	0.03	2.23	0.10	0	1.46	1.04	2.50
16	0.189	7.22	1.86	0.02	0.01	0.01	1.90	0.10	0	2.04	0.12	2.16
17	2.030	7.50	21.31	0.77	0.08	0.21	22.37	0.78	0	4.02	18.57	23.37
18	0.203	7.59	1.76	0.03	0.02	0.02	1.83	0.10	0	1.71	0.21	1.92
19	0.110	7.10	0.80	0.07	0.03	0.01	0.91	0.10	0	0.79	0.21	1.00
20	0.310	7.84	2.97	0.07	0.02	0.02	3.08	0.10	0	3.00	0.21	3.21
21	0.157	7.35	1.24	0.06	0.02	0.02	1.34	0.10	0	1.20	0.21	1.41
22	0.101	6.04	0.41	0.13	0.06	0.27	0.87	0.15	0	0.76	0.06	0.97
23	0.037	5.48	0.18	0.09	0.02	0.10	0.39	0.10	0	0.28	0.10	0.38
24	0.511	7.30	5.05	0.11	0.05	0.02	5.23	0.18	0	5.06	0.25	5.49
25	0.336	7.47	2.78	0.07	0.02	0.44	3.31	0.15	0	3.18	0.11	3.44
27	0.259	7.43	2.26	0.05	0.02	0.32	2.55	0.10	0	2.52	0.17	2.69
28	0.179	7.38	1.49	0.04	0.02	0.09	1.78	0.10	0	1.60	0.17	1.77
29	0.028	5.60	0.08	0.04	0.02	0.09	0.23	0.10	0	0.25	0.06	0.25
145	0.314	8.12	1.77	0.98	0.07	0.80	3.62	0.02	0	3.76	0.05	3.83
146	0.285	8.00	1.35	1.58	0.04	0.18	3.15	0.21	0	2.62	0.29	3.18
147	0.533	8.33	0.14	5.78	0.02	0.04	5.98	0.14	0	5.56	0.35	6.05
148	0.284	8.18	2.07	0.62	0.04	0.40	3.13	0.08	0	2.98	0.29	3.35
149	0.446	7.96	1.33	3.17	0.07	0.40	4.97	1.08	0	3.82	0.05	4.95
150	0.344	6.73	0.47	2.11	0.09	0.42	3.09	2.48	0	0.29	0.11	2.88
151	0.045	6.72	0.18	0.04	0.04	0.12	0.38	0.14	0	0.18	0.11	0.43
152	0.207	8.12	1.05	0.56	0.09	0.45	2.15	0.28	0	1.90	0.11	2.29
153	0.307	8.32	1.54	1.33	0.07	0.51	3.45	0.22	0	3.00	0.19	3.41
154	0.404	8.34	3.15	0.46	0.04	0.76	4.41	0.06	0	3.14	1.32	4.52
155	1.030	8.46	0.63	10.43	0.03	0.14	11.23	4.78	0.32	5.62	0.29	11.01
156	0.274	8.33	1.68	0.52	0.03	0.80	3.03	0.06	0	2.44	0.42	2.93
157	0.461	8.50	0.08	5.57	0.01	0.02	5.68	0.19	0.64	4.26	0.24	5.33

TABLE III (cont.)

Sample No.	mmhos/cm EC	pH	Ca	Na	K	Mg	Total Cation	Cl	CO ₃	HCO ₃	SO ₄	Total Anion
158	0.788	7.92	5.31	0.58	0.02	1.44	7.35	4.18	0	2.42	0.60	7.20
159	0.469	8.87	0.26	4.87	0.03	0.12	5.28	0.31	0.96	3.60	0.35	5.22
160	0.135	7.66	0.68	0.30	0.04	0.35	1.37	0.04	0	1.34	0.05	1.43
161	0.124	7.09	0.47	0.09	0.06	0.42	1.04	0.28	0	0.66	0.11	1.05
162	0.772	8.93	0.06	9.15	0.01	0.02	9.24	0.61	1.36	7.06	0.19	9.22
163	0.695	8.27	0.30	7.05	0.03	0.10	7.48	1.62	0	5.92	0.11	7.68
164	0.132	7.59	0.77	0.10	0.03	0.33	1.23	0.05	0	0.74	0.56	1.35
165	0.327	8.12	0.55	3.00	0.03	0.19	3.77	0.50	0	2.84	0.19	3.53
166	0.440	8.25	2.56	1.11	0.05	0.84	4.56	0.83	0	3.62	0.35	4.80
167	0.573	7.93	3.54	0.58	0.05	1.96	6.13	0.74	0	5.32	0.24	6.30
168	0.289	8.30	0.68	2.39	0.02	0.25	3.34	0.46	0	2.54	0.19	3.19
169	0.656	8.27	0.06	7.30	0.02	0.12	7.50	2.05	0	4.74	0.48	7.27
170	0.378	8.24	0.16	3.96	0.01	0.04	4.17	0.85	0	2.76	0.48	4.09
171	0.520	8.23	0.55	5.14	0.03	0.15	5.87	1.01	0	4.58	0.48	6.07
172	0.407	8.08	2.36	1.09	0.04	0.62	4.11	1.03	0	3.02	0.29	4.34
173	0.569	8.78	0.10	6.73	0.01	0.02	6.86	0.41	1.16	4.70	0.35	6.62
174	0.578	8.13	3.21	1.31	0.05	2.25	6.82	0.20	0	6.30	0.70	7.20
175	0.489	8.36	3.42	0.34	0.03	1.44	5.23	0.20	0	4.48	0.52	5.20
176	0.342	8.33	0.36	3.49	0.03	0.15	4.03	0.11	0	3.56	0.24	3.91
177	0.498	8.08	3.79	0.92	0.04	0.78	5.53	0.20	0	4.4	0.97	5.63
178	0.370	8.30	1.48	2.53	0.04	0.37	4.59	0.09	0	4.00	0.48	4.57
179	0.221	7.55	0.76	0.88	0.13	0.34	2.11	0.07	0	0.98	1.01	2.06
180	0.190	8.24	1.31	0.27	0.02	0.43	2.03	0.05	0	1.70	0.29	2.04
181	0.180	7.50	0.80	0.25	0.04	0.57	1.66	0.24	0	1.06	0.29	1.54
182	0.647	8.53	3.88	2.31	0.03	1.77	7.99	0.34	1.00	5.74	0.92	8.00
183	0.921	8.29	0.32	9.28	0.03	0.08	9.71	5.21	0	3.90	0.35	9.37
184	0.310	8.26	1.69	1.00	0.04	0.75	3.48	0.07	0	3.14	0.29	3.50
185	0.310	8.32	1.62	1.40	0.04	0.38	3.44	0.19	0	3.02	0.35	3.56
186	0.231	7.92	1.40	0.48	0.05	0.40	2.33	0.09	0	1.46	0.83	2.30
187	0.472	7.93	2.43	1.80	0.04	0.66	4.93	1.09	0	3.42	0.60	5.11
188	0.359	8.12	1.34	1.98	0.04	0.49	3.85	0.88	0	2.46	0.48	3.82
189	0.573	8.07	3.46	1.34	0.05	1.66	6.51	0.33	0	5.76	0.78	6.87
190	0.882	8.18	4.65	1.62	0.06	2.63	8.96	4.30	0	3.86	1.05	9.21

In addition, Sass et al. (1976) show a zone of low heat flow (<1.0 HFU) in extreme eastern West Virginia and adjacent portions of Virginia. Both the silica heat flow and the traditional heat flow (Perry and Costain 1979) have higher values to the west of the Valley and Ridge province in the Allegheny Plateau. The excellent correlation between silica heat flow and traditional heat flow for the Allegheny Plateau in northern West Virginia is noteworthy.

Silica heat-flow values were averaged over the regions of high-temperature gradients as determined by analyses of bottom-hole temperatures from oil and gas wells (AAPG 1976). Areas of high silica heat flow and areas of high bottom-hole temperature gradients do not correlate in West Virginia.

The temperature gradient map of Guffanti and Natheson (1980), updated from the AAPG (1976) map, shows a more extensive area of elevated temperature gradients including an area in western West Virginia which has high silica heat flow. However, the high-temperature gradients in central West Virginia are not shown by the silica geothermometric data.

The silica heat flow has been studied within the main ground-water basins of West Virginia for which abundant geochemical data are available. The same persistent trend is observed in this grouping whereby the lowest heat-flow values are in the east and the higher ones are in the west.

Site Specific Anomalies. Geothermal evaluation of the geochemical data can be used in the search for specific geothermal anomalies as described by Swanberg and Alexander (1979). Histograms of the silica and NaKCa geothermometers were prepared and the mean and standard deviation for each geothermometer were calculated. Values in excess of one standard deviation above the mean were assumed to be of potential geothermal origin. These potential geothermal waters were plotted against the remainder of the data to determine trends. If the anomalously high values for both geothermometers tended to cluster in a particular area, a true geothermal prospect was indicated and further geophysical studies were warranted. Also, the anomalously high values may have reflected geologic structures such as faults, ground-water discharge points, basin constrictions, or other features which control the flow of geothermal fluids. In the present data set, the anomalously high values tend to be dispersed with the more normal values. Further, the two geothermometers do not correlate well. Thus the geochemical data do not indicate any major geothermal anomalies in West Virginia.

V. BOUGUER ANOMALIES OF WEST VIRGINIA

The Bouguer anomalies throughout West Virginia, tabulated in Appendix B and shown in Fig. 2, are caused by crustal thickness variations, basement relief, and lateral density contrasts in the Paleozoic strata (Kulander and Dean 1978). Along a west-east profile, Bouguer anomaly values are generally about -50 mgals at the Ohio border, rise over the west-central area, and decrease to -80 mgals near the Virginia border. The central gravity ridge which is shown as the pattern in Fig. 2 reaches values as high as -46 mgals and seems asymmetric. The crest of this positive anomaly centers over the Rome Trough, trends N30-35°E, and parallels structural axes. This positive gravity feature is positioned over the deepest sedimentary basin in West Virginia. Other positive Bouguer anomalies throughout the state trend northeast to north.

A two-dimensional gravity model indicates a high-density body occurs near the basement interface on the eastern flank of the Rome Trough. The model also indicates that a positive density contrast near the crust-mantle interface may explain the broad gravity high in central West Virginia. Kulander and Dean (1978) suggest that the eastern flank of the Rome Trough is bounded by a major displacement in the basement, where the basement is downthrown approximately 6000 ft (1800 m). This region shows a correlation of gravity, magnetic, and temperature gradients. The Rome Trough may be the site of an incipient rift in Early Cambrian (Avalonian) time that subsequently was filled with sedimentary rocks to form the thick sedimentary basins.

ACKNOWLEDGMENTS

A. C. Waters critically reviewed the manuscript.

Fig. 2.
Bouguer anomaly map (2 mgal contour) of West Virginia. The shaded area encloses values greater than -50 mgal.

REFERENCES

- AAPG-USGS Subsurface temperature of North America, 1976, U.S. Geol. Survey.
- Ammerman, M. L. and Keller, G. R., 1979, Delineation of Rome Trough in Eastern Kentucky by gravity and deep drilling data, AAPG, v. 63, 341-353.
- Bass, M. N., 1959, Basement rocks from the Sandhill well, Wood County, West Virginia, West Virginia Geol. Surv. Rpt. Invest. 18, p. 145-168.
- Fournier, R. O. and Rowe, J. J., 1966, Estimation of underground temperature from the silica content of water from hot springs and wet steam wells, Am. Jour. Sci., v. 264, no. 9, 685-697.
- Fournier, R. O. and Truesdell, A. N., 1973, An empirical Na-K-Ca geothermometer for natural waters, Geochim. et Cosmoch. Acta, v. 37, no. 5, p. 1255-1275.
- Guffanti, M. and Nathenson, M., 1980, Preliminary map of temperature gradients in the conterminous United States, Geotherm. Resour. Coun. Trans., v. 4, 53-56.
- Hilifiker, K., Hanley, C., Hodge, D., Morgan, P., Maxwell, J., and Swanberg, C. A., 1980, Geothermal Resources Council, Transactions, v. 4, p. 209-212.
- Hobba, W. A. Jr., Chemerys, J. C., Fisher, D. W., and Pearson, F. J. Jr., 1977, Geochemical and hydrological data for wells and springs in thermal spring areas of the Appalachians, U.S. Geol. Survey, Water-Resources Invest. 77-25, p. 1-36.
- Hodge, D. S., Hilfiker, K., Morgan, P., and Swanberg, C. A., 1979, Preliminary geothermal investigations in New York State, Geotherm. Resour. Coun. Trans., v. 3, p. 317-320.
- King, E. R. and I. Zietz, 1978, The New York-Alabama lineament: Geophysical evidence for a major crustal break in the basement beneath the Appalachian Basin, Geology, v. 6, p. 312-318.
- Kulander, B. R. and S. L. Dean, 1978, Gravity magnetics, and structure, Allegheny Plateau/Western Valley and Ridge in West Virginia and adjacent states: Rpt. Invest. 27, West Virginia Geological and Economic Survey, 91 p.
- Perry, L. D. and Costain, J. K., 1979, Heat flow in western Virginia and a model for the origin of thermal springs in the folded Appalachians, J. Geophys. Res., v. 84, p. 6875-6883.
- Sass, J. H., Diment, W. H., Lachenbruch, A. H., Marshall, B. V., Munroe, R. J., Moses, T. H. Jr., and Urban, T. C., 1976, A new heat flow contour map of the conterminous United States, U.S. Geol. Survey, Open-File Rpt. 76-756, 24 p.

- Swanberg, C. A. and Alexander, S., 1979, The use of the water quality file WATSTORE in geothermal exploration: An example from the Imperial Valley, California, *Geology*, v. 7, 108-111.
- Swanberg, C. A. and Morgan, P., 1978/1979, The linear relation between temperatures based on the silica content of groundwater and regional heat flow. A new heat flow map of the U.S., *Pure and Applied Geophysics*, v. 117(1/2), 227-241.
- Swanberg, C. A. and Morgan, P., 1980, The silica heat flow interpretation technique: Assumptions and applications, *J. Geophys. Res.*, v. 85, p. 7206-7214.
- Waring, G. A., 1965, Thermal springs of the United States and other countries of the world--a summary, *U.S. Geol. Survey Prof. Paper* 492, 383 p.

APPENDIX A
BOTTOM-HOLE TEMPERATURE DATA FOR WELLS IN WEST VIRGINIA

D. S. Hodge
State University of New York at Buffalo Geological Sciences

Barbour County

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
646	5 27 73	39.1048	80.1044	511.5	514.8	1325.6	39.4	9.7	22.4	9.6	29.7
647	6 16 73	39.2434	79.9939	465.7	469.1	1271.6	37.2	10.0	21.4	9.3	28.7
648	6 7 73	39.2440	80.0067	456.3	460.2	1318.6	47.8	10.1	28.6	9.6	35.8
650	7 16 73	39.0691	80.0576	549.6	553.8	1201.2	41.7	9.4	26.9	8.8	34.2
651	7 7 73	39.1442	80.0248	550.5	553.8	1288.7	38.9	9.3	23.0	9.4	30.2
655	12 2 73	39.1241	80.1023	473.4	476.4	1362.2	40.6	10.1	22.4	9.9	29.6
657	11 20 73	39.1911	80.0886	454.8	458.1	1403.9	38.3	10.2	20.1	10.2	27.3
658	11 10 73	39.1835	80.0894	438.9	442.3	1385.3	38.3	10.3	20.2	10.0	27.5
659	12 11 73	39.1035	80.0690	452.6	455.7	1177.1	36.7	10.3	22.4	8.6	29.7
660	11 20 73	39.1200	80.1062	430.4	433.1	1300.3	37.8	10.5	21.0	9.5	28.3
673	5 2 74	39.0751	80.1459	464.8	469.4	1316.4	40.6	10.2	23.1	9.6	30.3
681	8 6 74	39.1368	80.0587	406.6	409.7	1183.8	36.1	10.7	21.5	8.6	28.8
801	3 15 77	39.2361	80.0163	449.6	453.2	1317.7	40.0	10.2	22.6	9.6	29.9
802	10 28 76	39.1123	80.0564	506.0	509.6	1274.4	36.1	9.7	20.7	9.3	28.0
804	11 17 76	39.1881	80.0831	503.2	506.3	1432.0	35.0	9.7	17.7	10.4	24.9
814	12 13 76	39.0262	79.9799	656.2	659.0	1283.5	38.9	8.4	23.8	9.3	31.1
822	12 30 76	39.1417	80.1370	437.7	440.1	1387.8	40.0	10.4	21.3	10.1	28.6
826	2 6 77	39.2322	80.0443	385.3	387.7	1277.7	39.4	10.8	22.4	9.3	29.7
862	6 30 77	39.2096	80.0135	498.3	500.8	1278.9	38.9	9.7	22.8	9.3	30.1
865	12 1 77	39.1059	80.0140	480.1	483.1	1479.2	43.3	10.0	22.5	10.7	29.7
866	7 17 77	39.0987	80.0722	460.9	463.3	1176.2	37.8	10.2	23.4	8.6	30.7
900	11 20 77	39.2114	79.9870	393.8	396.8	1162.8	38.9	10.7	24.2	8.5	31.5
956	6 27 78	39.2066	80.0445	427.6	432.2	1327.1	37.2	10.4	20.2	9.6	27.5
958	4 1 78	39.2292	80.0897	394.7	397.8	616.6	29.4	10.7	30.4	4.4	37.4
967	7 16 78	39.2231	80.0736	448.1	451.1	1381.0	41.1	10.2	22.4	10.0	29.6

Boone County

913	8 31 60	37.9863	81.6754	327.4	327.4	903.7	32.2	12.9	21.4	6.6	28.7
915	5 13 69	37.9819	81.5888	489.8	489.8	999.7	28.9	11.3	17.6	7.3	24.9
920	8 28 61	38.0000	81.6667	356.3	356.3	935.4	35.6	12.6	24.6	6.8	31.9
928	8 29 61	38.0677	81.6036	273.1	273.1	654.1	30.0	13.3	25.5	4.7	32.7
929	1 25 62	37.9491	81.5783	495.3	495.9	1018.0	33.3	11.3	21.7	7.4	29.0
932	4 10 62	37.9703	81.6060	503.2	503.8	736.7	20.0	11.2	12.0	5.3	19.2
933	7 28 69	37.9861	81.6460	494.1	497.1	1026.0	29.4	11.2	17.8	7.5	25.1
936	1 16 63	38.2047	81.6644	253.0	254.8	1545.3	35.6	13.3	14.4	11.1	21.6
950	2 16 63	37.9863	81.6182	500.2	501.4	1030.2	34.4	11.2	22.6	7.5	29.9
955	4 1 63	37.9437	81.5820	593.8	595.3	1103.7	37.8	10.3	24.9	8.1	32.2
956	5 21 63	37.9813	81.5368	314.9	317.3	839.7	29.4	13.0	19.6	6.1	26.9
977	4 19 65	37.9945	81.6874	338.3	338.9	922.0	28.9	12.7	17.5	6.7	24.8
986	11 16 65	38.0581	81.5171	309.4	311.8	815.0	27.8	12.9	18.2	5.9	25.5
992	3 20 66	38.0498	81.5321	274.3	278.0	792.8	24.4	13.3	14.1	5.7	21.3
996	6 6 66	38.0575	81.4965	375.8	379.2	949.8	27.2	12.3	15.7	6.9	23.0

Boone County (cont)

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
1000	1 15 67	38.1443	81.6608	224.9	226.8	1625.5	57.2	13.7	26.8	11.6	34.0
1001	9 9 67	38.0012	81.6837	433.7	436.2	973.2	29.4	11.8	18.1	7.1	25.4
1003	9 30 67	37.9960	81.6056	424.6	424.6	973.5	33.3	11.9	22.0	7.1	29.3
1004	2 15 68	38.0890	81.5508	308.8	312.4	848.9	33.3	12.9	24.1	6.2	31.3
1016	3 1 71	37.9946	81.6795	389.8	390.4	936.0	31.7	12.2	20.8	6.8	28.0
1017	6 30 71	37.9989	81.6469	392.0	395.9	1997.4	60.6	12.2	24.2	13.8	31.1
1018	6 4 71	38.0480	81.4956	365.8	368.2	880.0	28.3	12.4	18.1	6.4	25.4
1034	11 20 72	37.9813	81.5523	328.9	331.9	926.3	33.3	12.8	22.1	6.7	29.4
1037	4 30 73	38.0065	81.6304	466.6	469.7	1010.7	33.3	11.5	21.6	7.4	28.9
1038	4 9 73	37.9558	81.6161	540.4	542.8	1086.3	28.3	10.8	16.1	7.9	23.4
1045	6 14 73	37.9898	81.5477	493.8	497.4	1041.8	29.4	11.2	17.5	7.6	24.8
1046	6 30 73	38.0010	81.5889	530.4	534.3	1078.7	23.9	10.8	12.1	7.9	19.4
1047	11 11 73	37.9951	81.5917	534.6	537.7	1072.3	32.2	10.8	20.0	7.8	27.3
1049	7 11 74	37.9863	81.5976	590.4	593.8	1125.9	26.7	10.3	14.6	8.2	21.9
1056	5 18 76	37.9632	81.7939	326.4	329.2	1642.9	52.2	12.9	23.9	11.7	31.1
1057	7 1 76	37.9982	81.4979	573.6	575.8	1091.5	27.8	10.4	15.9	8.0	23.2
1058	7 14 76	38.0754	81.5846	362.1	364.2	887.3	29.4	12.4	19.2	6.5	26.5
1059	6 13 76	38.0626	81.8633	317.3	317.3	1354.5	48.9	12.9	26.6	9.8	33.9
1061	3 6 77	37.8244	81.6854	662.6	665.4	1268.6	32.2	9.8	17.7	9.2	25.0
1071	3 14 78	37.9712	81.8191	274.9	278.0	1222.2	36.1	13.4	18.6	8.9	25.9
1074	3 31 78	38.0203	81.8521	297.2	300.2	654.7	28.3	13.1	23.3	4.7	30.4
1076	10 18 78	37.8311	81.7037	526.1	530.0	1144.2	36.7	11.1	22.4	8.3	29.6
1248	9 14 78	37.8309	81.6249	520.0	522.4	1070.5	36.7	11.2	23.8	7.8	31.1

Braxton County

1	8 22 66	38.8480	80.6367	232.0	232.0	581.9	25.0	12.8	21.0	4.1	28.0
2	11 10 66	38.8511	80.6387	281.6	281.6	667.8	27.2	12.3	22.4	4.8	29.5
3	9 5 67	38.8394	80.6374	354.2	355.1	679.4	26.1	11.6	21.4	4.9	28.5
9	1 11 71	38.8189	80.6927	258.8	259.4	608.7	21.7	12.5	15.0	4.3	22.1
435	10 20 60	38.8333	80.6667	334.4	335.3	672.1	26.1	11.8	21.3	4.8	28.5
440	2 3 61	38.8333	80.6667	299.6	300.8	648.6	31.1	12.1	29.3	4.6	36.4
447	11 21 61	38.8333	80.5000	268.5	269.7	2096.4	72.8	12.4	28.8	14.4	35.6
498	12 12 61	38.7500	80.6667	355.7	356.3	675.1	30.0	11.7	27.1	4.8	34.3
503	2 21 61	38.8333	80.7500	256.6	257.6	623.3	27.8	12.5	24.4	4.4	31.5
515	6 1 62	38.8333	80.6667	295.0	295.7	621.2	27.2	12.2	24.2	4.4	31.3
518	9 17 62	38.7500	81.0000	301.8	302.4	613.6	23.3	12.2	18.1	4.3	25.2
549	5 10 63	38.8333	80.5000	238.0	239.0	1206.4	43.3	12.7	25.4	8.8	32.7
552	10 9 63	38.8460	80.7358	270.4	271.0	588.3	29.4	12.4	29.0	4.1	36.0
565	9 21 64	38.6783	81.0155	374.9	375.2	633.4	22.8	11.6	17.7	4.5	24.8
722	8 2 68	38.8265	80.5035	317.0	320.3	699.2	22.8	11.9	15.5	5.0	22.7
734	7 18 68	38.8333	80.5000	332.2	335.6	825.7	22.2	11.8	12.7	6.0	19.9
935	10 10 70	38.8296	80.6482	345.0	346.6	652.9	25.0	11.7	20.4	4.7	27.5
978	5 23 71	38.8192	80.6505	432.5	434.3	753.2	26.7	10.8	21.0	5.4	28.2
991	7 3 71	38.8354	80.5377	279.5	281.3	626.7	24.4	12.3	19.4	4.4	26.5
1005	6 7 72	38.8399	80.4889	329.8	329.8	652.3	24.4	11.8	19.3	4.6	26.5
1008	6 20 72	38.8329	80.6556	333.5	335.0	648.6	23.9	11.8	18.7	4.6	25.8
1068	7 28 73	38.7869	80.6521	317.0	319.7	1407.9	40.0	12.0	19.9	10.2	27.1
1069	7 21 73	38.7875	80.6392	303.3	306.0	1364.3	39.4	12.1	20.0	9.9	27.3
1073	8 6 73	38.7876	80.6063	353.6	356.3	1429.2	40.6	11.6	20.2	10.3	27.5
1074	8 13 73	38.7779	80.5879	285.0	287.1	1328.9	43.3	12.3	23.3	9.7	30.6
1126	9 17 75	38.7072	80.8276	445.6	449.0	2064.7	72.2	10.8	29.7	14.2	36.6
1134	11 9 75	38.7923	80.6373	275.5	278.3	839.7	34.4	12.4	26.3	6.1	33.5
1135	12 10 75	38.5710	80.7388	577.0	580.6	574.5	25.6	9.7	27.6	4.0	34.7
1166	10 15 76	38.5946	80.7424	365.5	368.5	654.1	26.7	11.7	22.8	4.7	30.0
1167	10 21 76	38.5603	80.7267	373.1	376.1	640.1	26.7	11.7	23.4	4.6	30.5

Cabell County

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
532	11 24 68	38.4337	82.3236	218.5	221.9	1430.7	47.2	13.3	23.7	10.3	30.9
543	1 5 69	38.2878	82.2443	267.3	270.4	1480.1	38.9	13.0	17.5	10.7	24.7

Calhoun County

7	12 29 66	38.9396	81.1151	332.8	332.8	389.5	22.8	11.7	28.5	2.6	35.1
13	10 9 69	38.9062	81.1310	269.7	270.4	588.9	23.3	12.3	18.7	4.2	25.7
14	11 20 69	38.6745	81.1041	242.3	242.9	572.4	22.8	12.9	17.3	4.0	24.3
15	8 28 69	38.8546	81.1404	335.6	336.2	669.6	29.4	11.8	26.4	4.8	33.6
29	8 25 70	38.9098	81.1045	303.0	303.6	607.8	27.2	12.0	25.0	4.3	32.1
30	1 13 70	38.8968	81.1313	236.8	237.7	673.9	33.9	12.7	31.5	4.8	38.6
33	1 25 71	38.8876	81.1198	263.7	264.0	584.0	27.2	12.4	25.3	4.1	32.4
34	1 26 71	38.8646	81.1232	303.9	304.2	643.1	28.3	12.1	25.3	4.6	32.4
38	10 26 71	38.8708	81.1221	270.1	270.7	603.2	26.1	12.4	22.8	4.3	29.8
41	2 25 72	38.9077	81.0794	224.3	224.9	547.4	24.4	12.8	21.3	3.8	28.3
42	4 4 72	38.7922	81.0921	241.1	241.7	614.2	21.7	12.7	14.5	4.3	21.6
43	4 14 72	38.8629	81.1450	326.7	327.4	648.6	22.8	11.8	16.9	4.6	24.0
47	4 3 73	38.6830	81.0552	347.5	348.1	630.6	23.3	11.8	18.2	4.5	25.3
48	5 24 73	38.7449	81.0869	303.3	303.9	576.7	22.2	12.2	17.4	4.1	24.4
49	3 13 73	38.8598	81.1071	271.3	271.9	628.2	25.6	12.4	21.0	4.5	28.1
50	5 24 73	39.0225	81.1257	279.2	280.1	618.4	22.2	12.1	16.3	4.4	23.4
51	1 29 71	38.9191	81.1949	274.9	275.5	600.8	27.8	12.3	25.8	4.2	32.9
53	5 8 73	38.9410	81.1317	257.6	258.2	586.7	20.0	12.4	12.9	4.1	20.0
414	6 13 72	38.8550	81.1267	339.5	340.2	689.5	23.9	11.7	17.7	4.9	24.8
471	1 13 70	38.8672	81.1489	313.3	314.9	635.2	27.8	11.9	24.9	4.5	32.0
540	7 12 71	39.0408	81.1477	295.4	296.0	626.1	28.9	11.9	27.1	4.4	34.2
746	3 30 72	38.9087	81.1172	309.1	309.4	588.3	24.4	12.0	21.2	4.1	28.3
753	1 26 71	38.8918	81.1227	294.4	294.4	608.4	27.8	12.1	25.7	4.3	32.8
757	6 26 72	38.8543	81.1087	324.3	324.9	689.5	22.8	11.9	15.8	4.9	23.0
807	6 20 72	38.9198	81.1468	325.2	325.8	673.9	23.9	11.8	18.0	4.8	25.1
818	10 4 64	38.7179	81.0287	324.9	325.5	594.4	17.8	12.0	9.7	4.2	16.8
948	11 6 64	38.6940	81.0800	259.1	260.3	534.0	26.7	12.7	26.2	3.7	33.2
1035	1 15 70	38.7587	81.1002	237.1	237.4	612.3	27.2	12.8	23.5	4.3	30.6
1180	4 7 60	38.8333	81.0833	242.6	242.6	585.2	31.1	12.7	31.5	4.1	38.5
1927	11 4 61	39.0833	81.0833	231.6	232.6	613.6	27.2	12.5	24.0	4.3	31.0
1938	7 11 62	38.8333	81.0000	316.1	316.4	658.4	31.7	12.0	29.9	4.7	37.0
2009	8 7 63	38.6667	81.0833	339.5	340.5	654.7	31.7	11.9	30.2	4.7	37.3
2011	11 15 63	38.9511	81.0632	295.4	296.0	619.0	22.8	12.0	17.3	4.4	24.4
2064	10 29 64	38.6667	81.0000	275.8	276.1	585.5	22.2	12.6	16.5	4.1	23.6
2129	9 6 64	38.8325	81.0883	272.8	273.4	660.8	26.1	12.4	20.8	4.7	27.9
2131	11 12 64	38.7055	81.0844	304.8	305.7	575.2	22.2	12.2	17.4	4.0	24.4
2253	10 18 65	38.8373	81.0638	295.7	296.3	659.9	26.7	12.2	22.0	4.7	29.1
2294	7 1 66	39.0010	81.1340	288.0	288.6	564.5	28.3	12.1	28.8	4.0	35.8
2316	10 15 66	38.9116	81.2221	321.3	322.2	791.6	33.9	11.8	27.9	5.7	35.1
2327	1 13 67	38.9940	81.1300	352.0	352.7	695.2	24.4	11.4	18.7	5.0	25.9
2359	11 22 67	38.8870	81.1613	341.7	342.3	1406.3	23.9	11.7	8.7	10.2	15.9
2374	8 29 68	38.7628	81.0371	379.8	380.7	719.0	28.3	11.4	23.5	5.2	30.7
2393	11 15 68	38.9178	81.2192	257.3	260.6	1219.8	36.1	12.4	19.4	8.9	26.7
2418	7 15 69	38.7473	81.0306	263.7	264.3	605.3	26.1	12.6	22.4	4.3	29.4
2440	12 22 69	38.7657	81.0426	321.0	321.6	652.6	26.7	12.0	22.5	4.6	29.6
2446	5 18 70	38.8865	81.0132	345.0	346.3	692.5	26.1	11.6	20.9	5.0	28.1
2447	5 24 70	38.8914	81.0102	270.1	272.2	605.6	28.9	12.3	27.3	4.3	34.4
2456	7 14 70	38.8766	81.0127	331.3	332.5	652.0	25.0	11.8	20.3	4.6	27.4
2465	11 26 70	38.7142	81.0151	421.5	422.8	709.6	30.6	11.1	27.5	5.1	34.6
2467	1 3 71	38.8907	81.0159	260.6	262.7	603.5	23.9	12.4	19.0	4.3	26.0
2474	10 8 71	38.8763	81.1010	328.3	330.1	684.0	29.4	11.8	25.8	4.9	33.0
2483	10 26 71	38.8840	81.1010	361.5	363.3	711.4	28.3	11.5	23.7	5.1	30.9
2484	11 3 71	38.8741	81.1154	296.6	298.4	634.9	27.2	12.1	23.8	4.5	30.9
2485	11 12 71	38.9308	81.1486	239.0	240.8	581.6	27.8	12.6	26.1	4.1	33.1
2503	3 3 74	38.8834	81.0185	366.7	374.9	5168.8	106.1	11.3	18.3	13.6	21.0
2503	10 8 73	38.8834	81.0185	366.7	374.9	813.5	61.1	11.3	61.2	5.9	68.4
2503	5 4 74	38.8834	81.0185	366.7	374.9	5911.0	127.8	11.3	19.7	6.3	20.8
2503	1 13 73	38.8834	81.0185	366.7	374.9	4268.7	94.4	11.3	19.5	18.1	23.7
2503	2 10 74	38.8834	81.0185	366.7	374.9	4882.9	92.8	11.3	16.7	15.5	19.8
2503	11 28 73	38.8834	81.0185	366.7	374.9	3312.0	75.6	11.3	19.4	18.6	25.0
2503	11 29 73	38.8834	81.0185	366.7	374.9	3311.7	75.0	11.3	19.2	18.6	24.9
2503	2 11 74	38.8834	81.0185	366.7	374.9	4881.4	97.2	11.3	17.6	15.5	20.8
2503	1 13 74	38.8834	81.0185	366.7	374.9	4268.7	81.7	11.3	16.5	18.1	20.7
2503	3 2 74	38.8834	81.0185	366.7	374.9	5170.0	103.9	11.3	17.9	13.6	20.5

Calhoun County (cont)

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
2505	6 21 73	38.9275	81.2365	306.3	308.5	651.1	28.3	11.9	25.2	4.6	32.3
2524	8 13 74	38.7598	81.0831	368.5	371.9	1904.1	51.1	11.5	20.8	13.3	27.8
2537	8 3 75	38.7308	81.1449	287.1	290.5	777.8	24.4	12.3	15.6	5.6	22.8
2544	12 7 75	38.7335	81.0851	330.1	331.6	684.6	24.4	11.9	18.3	4.9	25.4
2548	12 14 75	38.7291	81.1433	281.3	284.7	766.6	22.2	12.4	12.8	5.5	20.0
2560	9 8 76	38.7177	81.1523	302.7	306.0	676.0	23.9	12.2	17.3	4.8	24.4
2562	9 16 75	38.7348	81.1416	286.5	289.9	674.2	25.6	12.3	19.6	4.8	26.7
2577	6 21 78	38.7197	81.1072	283.2	285.0	614.5	26.1	12.4	22.3	4.4	29.4
2625	4 13 78	38.7397	81.1569	262.1	265.2	918.1	29.4	12.6	18.4	6.7	25.7
2636	7 23 78	38.6846	81.0648	323.7	325.2	602.9	26.7	12.1	24.2	4.3	31.3

Clay County

607	4 4 61	38.5000	81.0833	372.2	372.8	631.9	31.7	11.8	31.4	4.5	38.5
622	6 6 61	38.5000	81.0833	317.0	317.6	623.3	21.1	12.3	14.1	4.4	21.2
629	6 29 61	38.5833	81.0000	396.5	397.5	780.9	30.0	11.5	23.7	5.6	31.0
630	9 5 61	38.6667	81.0000	258.2	258.8	667.8	35.0	12.7	33.4	4.8	40.5
712	3 11 63	38.5000	80.9167	312.1	313.0	604.4	25.6	12.4	21.8	4.3	28.9
810	1 3 66	38.4772	81.1842	317.6	318.2	591.9	21.7	12.4	15.7	4.2	22.8
820	8 6 66	38.4940	81.1479	324.3	324.6	588.9	25.6	12.3	22.5	4.2	29.6
976	3 30 73	38.2791	81.2153	406.9	409.0	776.6	32.2	11.7	26.4	5.6	33.6
1059	5 14 75	38.5166	81.1630	345.0	347.5	640.1	26.7	12.0	22.9	4.6	30.0
1093	8 30 75	38.3556	81.1518	317.0	319.1	674.5	22.2	12.5	14.4	4.8	21.6
1107	10 11 75	38.5349	81.1504	375.8	377.6	677.9	27.2	11.7	22.9	4.8	30.0
1109	11 1 75	38.5319	81.1583	308.5	310.3	608.1	26.7	12.4	23.5	4.3	30.6
1110	10 22 75	38.5312	81.1648	317.9	319.7	608.7	26.1	12.3	22.7	4.3	29.8
1126	11 12 75	38.5185	81.1632	283.8	285.9	583.1	26.1	12.6	23.1	4.1	30.2
1130	12 3 75	38.5269	81.1532	299.6	301.8	602.3	28.3	12.5	26.3	4.3	33.4

Doddridge County

2	6 30 65	39.1507	80.7819	325.5	325.5	637.6	22.8	11.5	17.6	4.5	24.7
11	2 4 66	39.1381	80.7854	301.8	301.8	762.9	23.9	11.8	15.9	5.5	23.1
24	12 13 67	39.3686	80.6089	284.4	285.0	618.7	26.7	11.7	24.2	4.4	31.3
34	4 9 69	39.2897	80.6729	358.1	358.7	642.8	30.0	11.1	29.5	4.6	36.6
41	8 14 70	39.4465	80.5951	380.4	381.0	916.2	29.4	10.7	20.5	6.7	27.8
42	6 16 71	39.4200	80.5824	318.8	319.4	670.6	25.6	11.3	21.2	4.8	28.4
47	9 30 71	39.3281	80.5929	311.2	311.8	716.3	28.9	11.5	24.3	5.1	31.5
50	6 7 72	39.1885	80.5747	345.9	346.6	701.0	25.6	11.3	20.3	5.0	27.5
51	6 21 72	39.1838	80.5825	321.3	321.9	701.0	23.3	11.5	16.8	5.0	24.0
52	9 12 72	39.2029	80.5894	352.7	353.3	731.5	21.7	11.2	14.3	5.3	21.5
55	5 4 73	39.1902	80.5996	274.6	275.2	760.2	21.7	12.0	12.7	5.5	19.9
172	2 24 66	39.1642	80.7851	291.1	291.1	457.2	21.7	11.9	21.4	3.1	28.2
923	4 29 63	39.1729	80.7697	302.4	303.0	580.0	27.8	11.7	27.7	4.1	34.7
1107	6 24 64	39.3306	80.7114	290.5	291.1	613.9	22.2	11.7	17.2	4.3	24.2
1112	6 16 64	39.3899	80.6135	284.4	285.0	621.8	30.6	11.7	30.4	4.4	37.4
1116	5 25 64	39.4167	80.5833	305.7	324.6	652.6	26.7	11.3	23.6	4.6	30.7
1120	7 3 64	39.3527	80.6236	307.8	308.5	629.7	26.7	11.5	24.1	4.5	31.2
1147	7 19 64	39.2933	80.8418	344.1	344.4	691.3	23.9	11.2	18.4	5.0	25.5
1151	10 20 64	39.2250	80.6773	341.7	342.3	698.6	23.3	11.3	17.2	5.0	24.4
1186	4 22 65	39.3322	80.7146	316.4	317.3	649.5	26.7	11.4	23.5	4.6	30.6
1187	3 10 65	39.2459	80.5791	280.1	280.1	835.8	31.1	11.9	23.0	6.1	30.3
1223	4 10 65	39.2757	80.6989	324.9	324.9	571.2	19.4	11.4	14.1	4.0	21.1
1234	3 31 71	39.3051	80.7350	364.5	364.8	671.5	24.4	11.0	20.0	4.8	27.2
1234	6 16 56	39.3051	80.7350	298.4	299.0	542.5	27.8	11.6	29.8	3.8	36.7
1256	8 10 65	39.3037	80.6933	338.3	338.9	639.5	27.2	11.2	25.0	4.5	32.1
1295	9 25 65	39.2083	80.7046	279.8	280.7	658.4	22.8	11.9	16.5	4.7	23.6
1316	12 2 65	39.1503	80.7819	344.7	344.7	1485.6	23.3	11.4	8.1	10.7	15.3
1317	10 13 65	39.1414	80.7842	322.2	322.2	609.9	18.9	11.6	12.0	4.3	19.1
1318	11 20 65	39.2990	80.7433	275.8	276.5	585.2	22.8	11.9	18.7	4.1	25.7
1347	3 22 66	39.1086	80.7889	320.3	321.3	655.3	23.3	11.6	17.9	4.7	25.0
1429	1 26 67	39.1451	80.7868	266.1	266.1	553.5	22.8	12.1	19.2	3.9	26.2

Doddridge County (cont)

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KRELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
1443	3 17 67	39.4007	80.7146	262.7	264.6	637.3	26.7	11.9	23.2	4.5	30.3
1477	2 14 68	39.3642	80.6061	348.1	348.7	690.1	26.7	11.1	22.6	4.9	29.7
1507	7 1 68	39.2771	80.7433	333.5	333.8	620.6	27.2	11.3	25.6	4.4	32.7
1522	10 12 68	39.1428	80.7882	350.8	351.4	823.6	29.4	11.3	22.0	6.0	29.3
1532	6 17 69	39.1103	80.7976	347.5	347.5	608.1	15.6	11.4	6.9	4.3	14.0
1532	3 17 69	39.1103	80.7976	347.5	348.1	667.8	19.4	11.4	12.1	4.8	19.2
1533	11 12 68	39.1101	80.7979	294.4	295.4	598.6	18.3	11.9	10.8	4.2	17.8
1534	12 10 68	39.1299	80.8038	379.5	380.4	652.9	20.0	11.0	13.8	4.7	20.9
1535	12 6 68	39.1194	80.8109	348.4	349.0	827.8	25.0	11.3	16.5	6.0	23.7
1544	2 11 69	39.1071	80.7847	260.3	260.9	771.4	23.3	12.2	14.4	5.6	21.6
1547	5 2 69	39.1325	80.7995	372.2	372.8	611.7	20.0	11.1	14.6	4.3	21.6
1548	3 3 72	39.2803	80.7021	268.8	269.4	530.7	22.2	12.0	19.4	3.7	26.3
1549	6 12 69	39.2957	80.7461	273.7	274.3	592.2	25.0	11.9	22.1	4.2	29.2
1550	7 24 69	39.3012	80.7376	295.4	296.0	623.9	29.4	11.7	28.5	4.4	35.6

Fayette County

214	7 30 73	38.1792	81.2037	326.1	326.7	710.5	27.2	12.6	20.5	5.1	27.7
215	7 24 73	38.1647	81.0898	420.3	420.9	847.0	26.7	11.7	17.6	6.1	24.9
216	7 17 73	38.1971	81.2605	326.1	330.7	760.2	32.8	12.6	26.6	5.5	33.8
216	7 24 73	38.1971	81.2605	326.1	330.7	1879.4	63.9	12.6	27.3	13.2	34.3
218	8 24 73	38.2006	81.2400	442.3	447.1	836.4	32.2	11.4	24.9	6.1	32.1
220	8 23 73	38.0993	81.2800	316.4	318.5	662.9	29.4	12.8	25.1	4.7	32.2
224	11 14 73	38.1734	81.1820	240.5	241.1	577.6	29.4	13.5	27.6	4.1	34.7
236	6 11 74	38.1970	81.2341	490.7	493.8	811.7	32.2	11.0	26.2	5.9	33.4
238	5 30 74	38.2069	81.2320	471.8	474.9	819.0	32.2	11.2	25.7	5.9	33.0
241	4 18 74	38.1134	80.9851	702.6	707.4	2416.5	74.4	9.0	27.1	15.9	33.7
241	3 22 74	38.1134	80.9851	702.6	707.4	739.4	27.8	9.0	25.4	5.3	32.6
241	4 29 74	38.1134	80.9851	702.6	707.4	2642.6	73.3	9.0	24.3	16.9	30.7
242	7 11 74	38.1315	81.1761	315.5	316.4	638.6	23.9	12.8	17.4	4.5	24.5
248	7 1 74	38.0836	81.1695	478.8	482.2	789.4	31.7	11.2	25.9	5.7	33.1
252	9 10 74	37.9942	81.1646	634.3	637.3	1043.9	30.6	9.8	19.9	7.6	27.1
256	11 15 74	38.1582	81.1643	338.3	340.8	609.0	26.1	12.5	22.3	4.3	29.4
275	7 22 75	38.1761	81.2559	471.8	474.3	853.4	31.1	11.2	23.3	6.2	30.6
280	9 16 75	38.2382	81.2195	338.6	341.7	697.1	25.6	12.4	18.8	5.0	26.0
283	10 15 75	38.1771	80.9642	555.3	557.8	817.8	30.6	10.4	24.7	5.9	31.9
287	3 29 76	38.0822	81.3069	470.6	472.7	803.8	26.7	11.3	19.1	5.8	26.3
288	4 10 76	38.0734	81.3003	667.2	669.3	969.3	31.7	9.4	23.0	7.1	30.2
289	4 19 76	38.0785	81.2960	470.9	473.0	801.6	28.9	11.3	21.9	5.8	29.1
290	4 24 76	38.1595	80.9612	518.8	521.8	645.3	28.9	10.8	28.1	4.6	35.2
292	8 22 76	38.0704	81.2575	365.8	367.9	708.4	32.2	12.4	28.0	5.1	35.2
293	8 31 76	38.0776	81.1937	539.2	541.3	860.5	29.4	10.7	21.8	6.2	29.1
298	5 10 77	38.1894	81.1482	435.9	438.9	749.5	23.3	11.5	15.7	5.4	23.0
349	12 3 78	38.0605	81.0270	605.9	609.0	666.0	27.2	10.0	25.8	4.8	33.0

Gilmer County

2010	9 2 69	38.8369	80.9731	248.7	249.3	1169.5	39.4	12.6	22.9	8.5	30.2
2015	8 15 69	39.0658	80.8059	326.4	328.3	739.7	32.2	11.6	27.9	5.3	35.1
2045	3 14 70	38.8445	80.7976	322.2	323.1	715.4	26.1	11.9	19.9	5.1	27.1
2049	4 5 70	38.9863	80.8754	286.5	287.1	624.8	23.9	12.1	18.9	4.4	26.0
2057	4 11 70	38.9300	80.9477	215.8	217.0	585.2	24.4	12.8	19.8	4.1	26.9
2058	4 25 70	38.8996	80.9565	331.3	333.5	625.8	28.3	11.7	26.5	4.4	33.6
2062	6 2 70	38.9885	80.8683	291.1	291.7	642.2	28.9	12.0	26.2	4.6	33.3
2063	8 13 70	38.9846	80.8641	277.4	278.0	624.2	23.9	12.2	18.8	4.4	25.8
2166	9 9 71	39.0548	80.7731	323.1	324.9	665.4	32.2	11.6	30.9	4.7	38.1
2223	7 23 72	39.0605	80.7933	338.3	339.9	688.2	31.1	11.5	28.5	4.9	35.7
2231	8 19 72	38.9865	80.8946	288.6	289.3	553.5	24.4	12.1	22.4	3.9	29.4
2233	7 13 72	39.0664	80.7446	261.2	263.0	589.2	27.8	12.2	26.4	4.2	33.4
2238	7 30 72	39.0372	80.8556	316.7	317.9	630.0	27.2	11.7	24.6	4.5	31.7
2255	9 21 72	38.8594	80.9533	328.9	330.7	657.1	27.8	11.8	24.3	4.7	31.4
2328	5 31 73	38.8148	81.0252	305.4	307.2	649.5	25.6	12.1	20.7	4.6	27.9
2333	8 3 73	39.0656	80.7763	244.1	247.5	1467.9	39.4	12.4	18.4	10.6	25.6
2451	6 25 74	38.8205	80.9274	231.6	233.2	539.5	31.7	12.8	35.0	3.8	41.9
2486	7 21 74	38.8228	81.0048	339.9	343.2	753.2	29.4	11.7	23.5	5.4	30.7

Gilmer County (cont)

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
2486	7 27 74	38.8228	81.0048	339.9	343.2	1892.2	56.7	11.7	23.8	13.2	30.8
2539	7 9 75	38.8990	80.6255	373.1	374.6	716.0	23.3	11.3	16.8	5.1	24.0
2546	6 3 75	38.8935	80.9709	256.6	258.2	564.5	22.2	12.5	17.3	4.0	24.3
2559	6 14 67	38.9753	80.7673	291.1	291.7	526.1	20.6	12.1	16.2	3.7	23.1
2670	7 22 76	38.9023	80.6380	371.2	372.8	714.5	21.7	11.3	14.5	5.1	21.6
2685	9 30 76	38.9664	80.8641	226.5	228.6	506.9	27.2	12.7	28.7	3.5	35.6
3024	8 21 78	39.0575	80.8877	361.5	364.5	1630.7	45.0	11.3	20.7	11.7	27.8
3029	6 10 78	38.8808	80.9473	306.6	308.2	623.0	26.7	12.0	23.5	4.4	30.6
3211	9 13 78	38.9080	80.8866	332.2	335.3	1600.8	43.3	11.7	19.8	11.5	26.9
3230	8 8 78	38.9178	80.8563	272.2	275.2	1573.4	42.2	12.3	19.0	11.3	26.2

Grant County

2 10 24 65	39.2239	79.1202	716.0	719.9	3960.6	87.2	7.5	20.1	18.7	24.9
2 10 6 65	39.2239	79.1202	716.0	719.9	3054.4	70.0	7.5	20.5	18.1	26.4

Greenbrier County

12 6 24 60	38.1412	80.4738	1125.6	1129.9	2488.1	62.8	4.8	23.3	16.3	29.8
14 6 20 63	37.7599	80.5222	632.8	636.1	2164.1	64.4	10.1	25.1	14.7	31.9
16 11 22 63	38.0912	80.8142	840.6	844.3	2437.2	73.3	7.7	26.9	16.0	33.5
18 1 30 68	38.0927	80.8448	810.8	815.3	2665.5	71.7	8.0	23.9	17.0	30.3
19 12 10 69	37.8865	80.5310	782.7	786.4	2356.7	60.0	8.5	21.9	15.7	28.5
20 3 5 70	37.9272	80.5473	644.3	648.0	2471.6	71.7	9.8	25.0	16.2	31.6
21 6 20 74	37.9640	80.6269	876.3	879.3	1033.3	30.6	7.5	22.3	7.5	29.6
22 11 16 75	38.0608	80.7328	1055.2	1060.1	909.8	32.2	5.6	29.3	6.6	36.6
22 12 7 75	38.0608	80.7328	1055.2	1060.1	2532.0	61.7	5.6	22.1	16.4	28.6
22 1 6 76	38.0608	80.7328	1055.2	1060.1	3084.6	94.4	5.6	28.8	18.2	34.7
23 4 3 77	38.1750	80.5094	1018.9	1023.5	723.9	33.3	5.8	38.0	5.2	45.2

Hampshire County

5 12 5 55	39.2868	78.6620	390.4	392.0	1637.1	60.0	10.5	30.2	11.7	37.4
7 10 27 56	39.2990	78.6790	409.0	412.4	1857.1	51.1	10.3	22.0	13.0	29.0
12 3 11 64	39.4945	78.6363	285.9	292.3	4262.9	82.2	11.3	16.6	18.1	20.9
12 1 11 64	39.4945	78.6363	285.9	292.3	2663.6	51.7	11.3	15.1	17.0	21.5
13 7 9 64	39.4473	78.5467	276.8	280.4	1653.5	37.2	11.5	15.6	11.8	22.7
19 9 5 65	39.4496	78.5409	207.0	210.6	1707.2	44.4	12.2	18.9	12.1	26.0
21 12 21 65	39.3701	78.6000	328.3	331.9	1710.5	57.2	11.0	27.0	12.2	34.1
22 7 14 66	39.1727	78.7711	534.9	539.2	2073.6	58.9	9.2	23.9	14.3	30.8
25 10 15 66	39.2595	78.6819	438.0	438.0	1626.1	41.1	10.1	19.1	11.6	26.2
26 9 12 68	39.2453	78.6925	477.0	482.2	1825.8	41.1	9.7	17.2	12.9	24.2

Hancock County

80 5 23 65	40.5400	80.5565	316.7	320.6	1742.2	40.6	10.2	17.4	12.4	24.5
80 8 9 65	40.5400	80.5565	316.7	320.6	3163.8	78.9	10.2	21.7	18.4	27.5
87 3 1 75	40.5514	80.5332	394.1	397.8	2340.6	60.0	9.4	21.6	15.6	28.3

Hardy County

3 12 6 62	39.0019	78.8503	598.9	602.3	3226.6	70.6	8.8	19.1	18.5	24.9
3 9 30 62	39.0019	78.8503	598.9	602.3	2304.0	48.3	8.8	17.2	15.4	23.9
9 11 23 63	39.0140	78.8412	626.4	630.0	2139.4	51.1	8.5	19.9	14.6	26.7
15 8 27 65	39.0260	78.8200	602.6	607.5	2286.0	60.0	8.7	22.4	15.3	29.1

Harrison County

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
1057	7 22 77	39.2110	80.4461	329.2	331.3	741.0	28.9	11.4	23.6	5.3	30.8
1068	8 8 77	39.2949	80.4003	351.1	354.2	1395.4	45.0	11.1	24.3	10.1	31.5
1070	9 23 77	39.3240	80.4155	349.3	352.7	1411.5	41.1	11.1	21.3	10.2	28.5
1071	9 22 77	39.3299	80.3949	349.9	352.3	1079.6	35.6	11.1	22.7	7.9	30.0
1072	12 28 77	39.4016	80.3394	364.8	367.3	1077.5	28.9	10.9	16.7	7.9	24.0
1076	7 11 77	39.3009	80.3965	343.5	346.6	1401.8	40.6	11.2	21.0	10.1	28.2
1077	9 9 77	39.4174	80.3826	428.2	431.3	1200.3	35.6	10.2	21.1	8.7	28.4
1081	7 18 77	39.2470	80.4209	350.2	353.6	1365.5	35.6	11.2	17.9	9.9	25.1
1083	2 2 78	39.2341	80.4259	355.4	358.7	1374.3	41.7	11.1	22.2	10.0	29.5
1084	9 21 77	39.2053	80.5142	390.1	393.2	1510.6	43.9	10.8	21.9	10.9	29.1
1087	7 24 77	39.2125	80.4308	358.4	360.3	1360.6	44.4	11.1	24.5	9.9	31.7
1095	10 2 77	39.2511	80.4355	379.8	382.2	1412.4	44.4	10.9	23.8	10.2	31.0
1106	11 9 77	39.3516	80.4184	383.1	385.6	1154.9	35.6	10.7	21.5	8.4	28.8
1111	10 8 77	39.2762	80.4543	382.2	384.7	1228.3	41.7	10.8	25.1	8.9	32.4
1112	10 8 77	39.2669	80.4589	383.1	385.6	1448.4	40.6	10.8	20.5	10.5	27.8
1124	9 15 77	39.4174	80.3682	380.4	382.8	1471.3	42.2	10.7	21.4	10.6	28.6
1137	1 17 78	39.2390	80.4596	322.2	325.2	1371.9	40.6	11.4	21.2	9.9	28.5
1146	11 14 77	39.3556	80.4195	346.3	349.3	1077.2	33.9	11.1	21.2	7.9	28.5
1147	1 22 78	39.2187	80.4177	373.1	375.5	1394.2	38.9	11.0	20.0	10.1	27.3
1148	12 11 77	39.4147	80.4369	342.3	345.3	1433.2	38.9	11.1	19.4	10.4	26.6
1158	11 23 77	39.3349	80.3827	383.7	386.2	1098.2	35.6	10.7	22.6	8.0	29.9
1169	1 1 78	39.3237	80.4015	355.7	358.7	1417.0	41.1	11.0	21.2	10.3	28.5
1170	12 10 77	39.2006	80.4294	318.5	321.3	1320.4	38.9	11.5	20.7	9.6	28.0
1181	12 22 77	39.3357	80.4341	312.4	315.5	1068.0	29.4	11.4	16.9	7.8	24.2
1182	1 4 78	39.3155	80.4369	403.9	406.9	1488.9	42.8	10.6	21.6	10.7	28.8

Jackson County

1145	7 2 67	38.7740	81.8018	250.5	253.6	1766.0	50.0	12.6	21.2	12.5	28.2
1158	9 11 68	38.9226	81.6995	225.6	228.9	1672.7	53.3	12.7	24.3	11.9	31.4
1182	12 14 69	38.8995	81.5787	191.7	193.5	715.1	21.1	13.1	11.2	5.1	18.4
1183	11 21 69	38.8254	81.7343	210.6	214.9	1698.0	48.9	12.9	21.2	12.1	28.3
1191	2 19 70	38.8618	81.7315	225.6	230.1	1699.9	44.4	12.8	18.6	12.1	25.8
1201	4 13 70	38.8892	81.7196	259.1	263.7	1715.4	46.7	12.4	20.0	12.2	27.1
1201	4 17 70	38.8892	81.7196	259.1	263.7	1729.4	47.8	12.4	20.5	12.3	27.6
1203	5 12 70	38.9618	81.5920	318.2	322.8	1682.2	47.8	11.7	21.4	12.0	28.5
1212	6 22 70	38.9739	81.6354	189.0	193.5	1709.6	51.1	13.0	22.3	12.1	29.4
1212	8 10 70	38.8629	81.7203	265.2	269.7	1755.0	53.3	12.4	23.3	12.4	30.4
1216	7 14 70	38.8895	81.7436	241.1	245.1	1692.9	48.3	12.6	21.1	12.0	28.2
1219	7 16 70	38.8910	81.7342	259.1	263.7	1714.8	47.2	12.4	20.3	12.2	27.4
1226	8 29 70	38.8456	81.7444	253.6	257.9	1737.4	46.7	12.5	19.7	12.3	26.8
1246	12 19 70	39.0578	81.7059	224.0	227.7	1829.1	45.6	12.6	18.0	12.9	25.1
1247	12 4 70	38.9012	81.7425	230.7	235.0	1929.4	60.0	12.7	24.5	13.5	31.5
1248	12 2 70	38.8659	81.7613	260.6	265.2	1680.4	43.3	12.4	18.4	12.0	25.5
1267	5 2 71	38.8675	81.7713	261.5	264.9	1660.2	42.8	12.4	18.3	11.8	25.4
1282	6 9 71	38.8951	81.7892	248.4	253.6	1613.3	46.1	12.5	20.8	11.5	28.0
1293	7 24 71	38.8475	81.7810	261.5	266.7	1666.6	47.8	12.4	21.2	11.9	28.3
1365	3 22 74	38.8062	81.8064	253.9	257.6	1373.7	41.7	12.5	21.2	10.0	28.4
1386	1 13 77	38.7166	81.7279	204.8	204.8	1691.0	52.2	13.2	23.1	12.0	30.2
1388	12 23 76	38.9643	81.6808	215.2	217.6	1441.1	42.8	12.8	20.8	10.4	28.1
1389	6 3 77	38.9643	81.6808	219.8	222.2	1413.1	37.8	12.7	17.7	10.2	25.0
1391	6 6 77	38.8417	81.8237	234.4	236.8	1426.8	51.1	12.7	26.9	10.3	34.1
1425	1 30 78	38.8715	81.8239	196.6	200.3	1606.0	46.1	13.0	20.6	11.5	27.8

Kanawha County

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
2234	4 16 68	38.4540	81.6947	252.4	256.9	1711.1	48.3	13.0	20.7	12.2	27.8
2257	6 16 68	38.0895	81.5345	428.2	433.1	980.5	36.1	11.7	24.9	7.1	32.2
2266	7 2 68	38.4995	81.6953	185.3	189.9	1653.8	40.6	13.6	16.3	11.8	23.4
2277	7 30 68	38.4536	81.5696	212.4	216.4	1710.8	43.3	13.4	17.5	12.2	24.6
2287	8 31 68	38.5170	81.7067	198.7	203.3	1681.9	42.8	13.4	17.5	12.0	24.6
2294	9 26 68	38.5174	81.7158	259.1	264.3	1739.2	46.1	12.8	19.1	12.3	26.2
2302	9 21 68	38.5129	81.6637	278.9	282.5	1756.6	51.1	12.7	21.9	12.4	29.0
2314	10 16 68	38.5152	81.6475	200.9	204.5	1702.9	46.1	13.4	19.2	12.1	26.3
2315	11 3 68	38.2407	81.6815	336.5	338.6	538.6	26.7	12.4	26.4	3.8	33.4
2394	5 9 69	38.5029	81.5958	262.7	268.8	1755.3	44.4	12.8	18.0	12.4	25.1
2400	8 28 69	38.2217	81.6862	330.7	332.8	515.4	27.2	12.5	28.5	3.6	35.5
2408	6 12 69	38.4719	81.5587	221.0	226.2	1723.6	47.8	13.3	20.0	12.2	27.1
2410	9 9 69	38.4786	81.5614	267.9	273.1	1703.5	48.9	12.8	21.2	12.1	28.3
2410	9 13 69	38.4786	81.5614	267.9	273.1	1772.4	50.6	12.8	21.3	12.5	28.4
2621	5 13 73	38.4654	81.3421	225.9	228.9	1513.0	43.9	13.2	20.3	10.9	27.4
2622	4 9 73	38.4601	81.3338	237.1	239.9	1499.0	50.6	13.1	25.0	10.8	32.2
2623	6 28 73	38.4517	81.3124	262.7	265.8	1624.0	50.6	12.9	23.2	11.6	30.3
2624	6 13 73	38.4437	81.3099	256.9	260.0	1537.1	42.8	13.0	19.4	11.1	26.6
2662	10 2 73	38.1233	81.4537	228.6	231.0	841.6	30.0	13.6	19.4	6.1	26.7
2667	11 30 73	38.4576	81.3152	300.5	302.7	1656.9	48.3	12.5	21.6	11.8	28.7
2718	11 26 75	38.2751	81.5367	276.8	281.3	1917.8	48.9	13.0	18.7	13.4	25.7
2719	1 20 76	38.3508	81.4930	353.6	358.1	2095.2	46.1	12.1	16.2	14.4	23.1
2751	9 1 76	38.2420	81.3914	218.5	223.1	2085.1	51.7	13.6	18.3	14.3	25.1
2755	10 4 76	38.3559	81.3496	224.6	228.9	2093.4	54.4	13.4	19.6	14.4	26.5
2788	9 19 77	38.3785	81.8894	303.9	306.6	750.7	30.0	12.6	23.2	5.4	30.4
3199	8 12 78	37.9750	81.3913	730.3	732.7	1107.0	39.4	8.9	27.6	8.1	34.9

Lewis County

1877	10 27 72	39.0839	80.4088	356.3	359.1	1336.9	37.2	11.3	19.4	9.7	26.7
1878	11 5 72	39.0969	80.3645	409.3	412.4	1378.6	38.3	10.7	20.0	10.0	27.3
1879	11 8 72	39.0465	80.4379	368.5	371.6	1385.6	39.4	11.2	20.4	10.0	27.6
1880	11 13 72	39.0680	80.3899	352.7	356.6	1356.1	40.0	11.3	21.2	9.8	28.4
1881	11 12 72	39.0402	80.5103	350.8	353.6	1407.9	41.1	11.4	21.1	10.2	28.4
1882	11 19 72	39.0221	80.5297	363.3	366.4	1500.8	37.8	11.3	17.7	10.8	24.9
1889	5 1 73	39.0884	80.5202	349.3	353.0	2176.9	56.7	11.3	20.8	14.8	27.6
1891	4 24 73	39.0858	80.3917	309.1	309.7	1293.0	40.0	11.8	21.8	9.4	29.1
1895	3 16 73	38.8953	80.5732	319.4	321.3	735.8	25.0	11.9	17.9	5.3	25.1
1896	3 28 73	38.8896	80.5700	280.4	282.2	705.9	23.3	12.2	15.7	5.1	22.9
1897	4 6 73	38.9738	80.5459	357.5	359.7	661.4	21.7	11.4	15.5	4.7	22.7
1901	6 3 73	39.0807	80.5353	363.9	365.8	492.6	25.6	11.2	29.1	3.4	36.0
1904	5 6 73	39.0524	80.3818	375.2	378.3	1394.5	40.0	11.1	20.7	10.1	28.0
1907	5 28 73	39.0638	80.5283	381.0	385.3	2196.1	55.6	11.0	20.3	14.9	27.1
1909	5 21 73	39.0619	80.3659	339.9	342.9	1332.6	39.4	11.5	21.0	9.7	28.3
2101	3 25 77	39.0726	80.3347	413.6	416.1	827.2	29.4	10.7	22.6	6.0	29.9
2105	9 24 77	38.9305	80.3743	379.2	382.2	1326.5	47.8	11.2	27.6	9.6	34.8
2120	6 20 77	39.0535	80.4243	403.9	406.3	1408.2	43.3	10.8	23.1	10.2	30.3
2148	2 23 78	39.0940	80.5331	339.9	342.9	1349.0	40.0	11.4	21.2	9.8	28.4
2173	4 14 78	39.1220	80.5433	378.6	381.9	710.8	23.3	11.0	17.3	5.1	24.5
2176	6 7 78	39.1194	80.5121	439.8	443.2	1467.0	37.2	10.4	18.3	10.6	25.5
2184	6 25 78	39.1172	80.5364	403.9	407.2	716.0	27.8	10.8	23.8	5.1	30.9
2490	8 30 78	39.0357	80.4897	406.6	409.7	1485.0	62.8	10.8	35.0	10.7	42.2
2540	12 15 78	39.0784	80.4494	423.4	426.4	1407.9	38.3	10.6	19.7	10.2	26.9
2548	12 21 78	39.0740	80.4524	406.0	409.0	1408.2	35.0	10.8	17.2	10.2	24.4
2554	1 9 79	39.0284	80.4925	354.5	356.9	1432.9	38.3	11.4	18.8	10.4	26.1

Lincoln County

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
1343	6 4 62	38.1533	82.2531	221.3	221.9	613.9	27.2	13.6	22.1	4.3	29.2
1344	5 25 62	38.1474	82.2537	254.5	255.1	658.4	28.9	13.3	23.6	4.7	30.8
1375	7 8 64	38.1631	82.1301	264.9	264.9	523.3	22.8	13.2	18.3	3.6	25.2
1379	11 9 64	38.1403	82.0164	278.0	278.6	741.6	30.6	13.1	23.5	5.3	30.7
1381	4 12 65	38.1126	82.0886	336.2	337.1	799.5	27.2	12.6	18.3	5.8	25.5
1383	1 4 67	38.1178	82.0799	324.9	325.2	792.2	28.3	12.7	19.7	5.7	27.0
1393	11 19 65	38.0334	82.1979	308.5	309.1	629.4	17.8	13.0	7.7	4.5	14.8
1399	1 26 66	38.0325	82.2022	373.1	373.4	693.1	23.3	12.3	15.9	5.0	23.0
1418	1 16 67	38.3001	81.9296	259.1	260.0	687.3	28.3	13.1	22.1	4.9	29.3
1421	9 21 67	38.0537	82.1297	253.9	253.9	1009.8	35.0	13.5	21.3	7.4	28.6
1422	6 20 67	38.1562	82.1294	220.1	221.0	1022.9	33.9	13.7	19.8	7.5	27.1
1428	5 6 68	38.1678	82.2729	352.0	353.0	1079.0	40.6	12.3	26.1	7.9	33.4
1431	7 29 68	38.1656	82.1186	265.8	265.8	1074.1	33.9	13.2	19.2	7.8	26.5
1431	7 29 68	38.1656	82.1186	265.8	266.7	1074.1	43.3	13.2	28.0	7.8	35.3
1456	9 22 70	38.1858	82.2566	240.5	240.5	484.9	27.2	13.4	28.5	3.3	35.3
1469	2 4 74	38.2176	81.9401	224.3	233.8	2743.2	73.3	13.5	21.8	17.2	28.1
1469	1 10 74	38.2176	81.9401	224.3	233.8	3687.5	75.0	13.5	16.7	18.9	21.8
1469	1 9 74	38.2176	81.9401	224.3	233.8	3688.7	76.7	13.5	17.1	18.9	22.3
1469	6 4 74	38.2176	81.9401	224.3	233.8	5825.0	124.4	13.5	19.1	7.3	20.3
1469	12 28 73	38.2176	81.9401	224.3	233.8	3451.6	73.3	13.5	17.3	18.8	22.8
1469	10 9 73	38.2176	81.9401	224.3	233.8	2767.9	58.9	13.5	16.4	17.3	22.7
1469	1 9 74	38.2176	81.9401	224.3	233.8	3688.4	75.0	13.5	16.7	18.9	21.8
1469	12 27 73	38.2176	81.9401	224.3	233.8	3451.9	73.3	13.5	17.3	18.8	22.8
1469	2 4 74	38.2176	81.9401	224.3	233.8	3934.1	88.9	13.5	19.2	18.8	23.9
1469	9 1 73	38.2176	81.9401	224.3	233.8	652.3	47.8	13.5	52.6	4.6	59.7
1469	4 1 74	38.2176	81.9401	224.3	233.8	4872.2	98.3	13.5	17.4	15.6	20.6
1469	6 4 74	38.2176	81.9401	224.3	233.8	5823.2	118.9	13.5	18.1	7.3	19.4
1469	12 28 73	38.2176	81.9401	224.3	233.8	3451.6	72.2	13.5	17.0	18.8	22.5
1469	12 27 73	38.2176	81.9401	224.3	233.8	3453.4	72.2	13.5	17.0	18.8	22.5
1499	3 22 74	38.2554	81.8651	258.8	260.9	735.5	25.6	13.2	16.8	5.3	24.0
1499	3 22 74	38.2554	81.8651	258.8	260.9	735.5	25.6	13.2	16.8	5.3	24.0
1636	3 22 76	38.0969	82.2406	351.4	355.1	1239.3	31.1	12.4	15.1	9.0	22.4
1636	3 26 76	38.0969	82.2406	351.4	355.1	1238.4	38.3	12.4	20.9	9.0	28.2
1637	2 4 76	38.1822	82.2244	362.7	366.4	1241.5	35.0	12.2	18.4	9.0	25.6
1637	1 11 76	38.1822	82.2244	362.7	366.4	800.7	25.0	12.2	16.0	5.8	23.2
1637	2 1 76	38.1822	82.2244	362.7	366.4	1243.3	32.2	12.2	16.1	9.1	23.4
1637	2 5 76	38.1822	82.2244	362.7	366.4	1238.1	40.6	12.2	22.9	9.0	30.2
1656	3 27 76	38.0969	82.2406	354.5	357.5	1239.3	38.3	12.4	20.9	9.0	28.2
1748	2 10 77	38.1444	81.9931	239.6	243.2	1318.6	44.4	13.5	23.5	9.6	30.8
1776	6 9 77	38.1035	82.1133	319.1	319.7	652.9	24.4	12.8	17.9	4.7	25.0

Logan County

868	7 10 66	37.8247	81.7799	424.0	427.0	1049.4	29.4	12.1	16.5	7.7	23.8
871	8 28 67	37.9580	82.1701	330.7	331.6	1101.2	41.7	12.8	26.2	8.0	33.5
873	6 18 67	37.9226	81.8184	294.4	296.6	892.5	35.6	13.3	25.0	6.5	32.3
874	7 12 67	37.8072	81.8756	540.7	543.2	1201.8	36.1	11.0	20.9	8.8	28.2
881	1 28 69	38.0048	81.9794	188.4	189.3	482.5	18.9	14.2	9.8	3.3	16.6
882	7 9 69	37.9530	81.9369	284.7	285.3	605.3	26.7	13.3	22.1	4.3	29.1
889	9 15 70	37.8007	81.8721	440.1	440.7	1089.1	34.4	12.0	20.6	7.9	27.9
892	12 22 70	37.7725	82.0049	235.0	238.0	795.8	28.9	14.0	18.7	5.8	25.9
916	5 16 72	37.8486	81.9560	293.2	293.8	907.4	47.2	13.4	37.3	6.6	44.6
917	8 28 72	37.6927	81.8953	463.6	467.0	1154.6	33.3	11.9	18.6	8.4	25.9
919	11 16 72	37.7825	81.8464	634.9	638.3	1225.6	36.7	10.1	21.7	8.9	29.0
921	1 3 73	37.8186	81.9518	274.9	275.5	901.3	31.1	13.6	19.4	6.6	26.7
922	4 2 73	37.8368	81.9594	261.5	262.1	868.1	46.7	13.7	38.0	6.3	45.2
924	7 18 73	37.8420	81.9454	247.5	248.4	725.7	26.7	13.8	17.7	5.2	24.9
925	10 30 73	37.8324	81.9535	269.4	270.1	894.6	32.8	13.6	21.4	6.5	28.7
926	10 28 73	37.8409	81.9228	257.3	260.3	905.6	35.0	13.7	23.5	6.6	30.8
927	9 11 73	37.7412	81.9656	327.4	329.8	793.7	28.3	13.2	19.1	5.7	26.3
928	10 20 73	37.7269	81.9832	510.5	512.7	959.2	26.7	11.4	15.9	7.0	23.2
929	10 14 73	37.8425	81.9740	333.8	336.8	779.7	40.6	13.0	35.4	5.6	42.6
930	9 23 73	37.7467	81.9875	292.9	295.0	752.2	27.2	13.5	18.2	5.4	25.5
938	6 20 74	37.8173	81.6535	578.2	580.6	1197.6	34.4	10.6	19.9	8.7	27.2
945	4 8 76	37.8173	81.6776	458.7	460.9	1079.9	34.4	11.8	21.0	7.9	28.3
946	7 27 76	37.7797	81.6755	605.9	608.1	1240.8	36.1	10.4	20.7	9.0	28.0
947	8 10 76	37.7943	81.6995	645.3	647.4	1281.4	29.4	10.0	15.2	9.3	22.5
955	4 24 77	37.8164	81.7396	698.0	701.0	1323.7	32.2	9.4	17.2	9.6	24.5
956	5 20 77	37.8552	81.9393	242.0	244.4	674.8	29.4	13.8	23.1	4.8	30.3

McDowell County

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
608	9 2 73	37.4808	81.9270	443.2	446.8	1246.9	35.0	12.4	18.1	9.1	25.4
609	8 10 73	37.3122	81.4162	755.0	758.3	1342.9	36.7	9.6	20.2	9.7	27.4
609	10 10 73	37.4911	81.9239	494.4	497.7	1289.9	38.3	11.9	20.5	9.4	27.8
610	9 16 73	37.3628	81.3496	794.9	798.6	1448.4	38.3	9.1	20.2	10.5	27.4
611	10 22 73	37.4992	81.9187	469.1	472.1	1246.3	35.0	12.1	18.4	9.1	25.6
613	10 24 73	37.3972	81.3281	890.0	893.4	1507.5	39.4	8.1	20.8	10.9	28.0
617	1 29 74	37.3372	81.7628	535.8	538.3	1387.4	35.0	11.7	16.8	10.1	24.0
618	1 2 74	37.4912	81.9444	414.5	417.6	1788.6	45.6	12.7	18.4	12.6	25.5
619	11 17 73	37.3563	81.7700	634.0	637.0	1498.4	36.7	10.7	17.3	10.8	24.5
623	5 30 74	37.3434	81.7535	373.4	375.2	1218.6	37.2	13.3	19.6	8.9	26.9
624	8 7 74	37.3521	81.7842	600.2	603.8	1467.0	40.6	11.0	20.1	10.6	27.3
629	9 14 74	37.3961	81.8738	402.9	406.0	1243.0	32.2	12.9	15.5	9.1	22.8
631	10 26 74	37.4959	81.8861	422.5	425.5	1198.8	37.2	12.6	20.6	8.7	27.8
639	8 25 75	37.3604	81.7863	639.5	642.2	1495.3	37.8	10.7	18.1	10.8	25.3
648	1 5 76	37.3733	81.4279	749.2	752.2	1560.3	40.0	9.6	19.5	11.2	26.7
649	11 3 75	37.4047	81.4616	556.3	558.7	1194.5	33.9	11.4	18.8	8.7	26.1
654	2 19 76	37.4046	81.3591	457.8	460.2	1348.7	36.7	12.4	18.0	9.8	25.3
666	8 22 76	37.3004	81.7461	473.7	476.4	1378.3	42.2	12.4	21.7	10.0	28.9
700	7 17 78	37.3810	81.4080	751.0	753.8	1356.4	33.3	9.5	17.5	9.8	24.8
727	11 2 77	37.2938	81.4119	609.9	612.3	1204.6	37.8	11.0	22.2	8.8	29.5
728	10 9 77	37.3270	81.4050	751.0	753.5	1372.5	33.3	9.6	17.3	9.9	24.5
730	10 21 77	37.3162	81.3965	653.8	656.5	1268.0	35.6	10.6	19.7	9.2	27.0
742	11 12 77	37.4558	81.3999	674.5	677.3	1261.6	39.4	10.2	23.2	9.2	30.5
744	3 14 78	37.3878	81.4154	307.5	310.0	1413.4	45.0	13.9	22.0	10.2	29.3
770	7 17 78	37.3100	81.4256	751.0	753.8	1359.7	33.3	9.6	17.4	9.9	24.7
783	12 14 78	37.3617	81.3620	671.8	674.5	1317.3	40.6	10.3	22.9	9.6	30.2

Marion County

293	5 12 67	39.5244	80.4451	323.4	323.4	640.1	23.9	11.2	19.9	4.6	27.0
294	1 31 68	39.5229	80.4327	338.9	339.5	962.9	30.0	11.0	19.7	7.0	27.0
297	8 19 68	39.6329	80.4158	366.7	367.3	1142.7	36.1	10.6	22.3	8.3	29.6
308	9 14 73	39.4749	80.3285	417.6	420.9	1585.6	40.0	10.3	18.8	11.4	25.9
310	10 2 73	39.5203	80.2477	356.9	360.0	1558.1	38.9	10.8	18.0	11.2	25.2
312	2 4 74	39.4370	80.0052	535.5	541.0	2409.1	60.6	9.1	21.4	15.9	28.0
321	7 7 77	39.4236	80.0263	469.7	474.0	2359.5	58.3	9.8	20.6	15.7	27.2

Mason County

69	8 7 59	38.7138	82.1601	182.0	185.6	2631.3	53.9	13.3	15.4	16.8	21.8
71	2 13 61	38.5345	82.0675	265.8	266.4	1280.2	40.0	12.8	21.3	9.3	28.6
81	10 27 64	38.7738	82.1785	192.9	193.5	552.0	30.0	13.2	30.5	3.9	37.5
84	11 25 64	38.5929	82.0925	233.8	235.0	694.0	28.3	13.0	22.1	5.0	29.3
102	6 28 65	38.9209	82.1158	173.7	174.3	502.9	23.9	13.2	21.2	3.5	28.2
108	12 20 67	38.5903	82.0703	233.5	233.8	706.2	23.9	13.0	15.4	5.1	22.6
121	12 19 73	38.6970	81.8049	296.6	298.7	1765.4	44.4	12.3	18.2	12.5	25.3
134	7 27 75	38.8223	81.8735	280.7	283.8	1255.2	37.2	12.3	19.9	9.1	27.2
136	1 23 76	38.9533	81.9802	232.0	235.0	1546.3	45.6	12.6	21.3	11.1	28.5
137	2 16 76	38.9341	81.9197	183.8	186.8	1585.6	40.6	13.1	17.3	11.4	24.5
146	3 14 78	38.9267	82.0586	202.7	205.7	1030.2	36.7	12.9	23.1	7.5	30.4
146	1 8 78	38.9267	82.0586	202.7	205.7	1037.5	35.0	12.9	21.3	7.6	28.6

Mercer County

13	12 10 63	37.5519	81.1715	896.4	897.0	1404.5	41.1	7.9	23.7	10.2	30.9
14	11 20 64	37.3542	81.1888	793.7	797.4	2749.9	58.9	9.1	18.1	17.3	24.4
16	11 29 64	37.5141	81.1764	791.9	794.3	1409.7	35.0	8.9	18.5	10.2	25.7
19	11 28 72	37.4113	81.3001	907.4	910.7	1522.8	38.3	7.9	20.0	11.0	27.2
21	4 7 73	37.4824	81.2158	802.2	805.6	1351.8	40.0	8.9	23.0	9.8	30.3
22	3 24 73	37.4495	81.2455	801.6	805.0	1371.9	33.9	8.9	18.2	9.9	25.4
23	10 6 73	37.3272	81.3430	748.0	751.6	1414.0	42.2	9.6	23.1	10.2	30.3
25	4 6 74	37.4408	81.0183	786.7	789.7	1351.8	34.4	9.1	18.8	9.8	26.0
27	4 19 74	37.3974	81.0702	776.3	779.4	491.0	23.9	9.2	29.8	3.4	36.7
27	4 24 74	37.3974	81.0702	776.3	779.4	1427.4	36.7	9.2	19.2	10.3	26.4
34	10 6 74	37.3689	81.3329	767.5	770.8	1440.8	38.9	9.4	20.5	10.4	27.7
55	8 28 77	37.3596	81.3031	731.8	733.7	1399.9	39.4	9.8	21.2	10.1	28.4
57	8 1 77	37.4031	81.2901	793.4	795.5	1432.6	40.6	9.1	22.0	10.4	29.2
62	9 23 77	37.4713	81.2697	784.3	787.3	1342.6	44.4	9.1	26.3	9.7	33.6

Mingo County

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
703	9 26 61	37.6227	81.8897	335.9	337.1	1026.0	67.8	13.3	53.1	7.5	60.4
704	1 8 62	37.7510	82.1267	499.3	500.2	1111.3	43.3	11.5	28.7	8.1	36.0
706	12 9 61	37.5843	81.8922	504.1	505.1	1188.1	32.2	11.7	17.3	8.7	24.6
708	10 16 61	37.6474	81.8854	484.3	484.3	1160.7	35.0	11.8	20.0	8.5	27.3
711	11 27 61	37.7839	82.2552	223.4	224.3	1086.6	31.1	14.1	15.6	7.9	22.9
713	9 20 61	37.5399	81.9106	515.4	518.5	1261.9	33.3	11.6	17.2	9.2	24.5
714	10 24 61	37.5953	81.8749	404.5	406.6	1102.5	32.8	12.6	18.3	8.0	25.6
715	11 12 61	37.5898	81.9026	531.6	531.6	1240.2	22.8	11.4	9.2	9.0	16.5
743	10 16 62	37.6676	81.8594	274.6	275.2	786.4	20.6	13.8	8.6	5.7	15.8
753	8 10 62	37.6502	81.8576	310.3	310.3	997.6	30.0	13.5	16.6	7.3	23.8
805	4 21 72	37.9053	82.1708	285.0	292.0	3914.5	72.8	13.3	15.2	18.8	20.0
805	4 21 72	37.9053	82.1708	285.0	292.0	1873.0	50.6	13.3	19.9	13.1	26.9
805	2 7 73	37.9053	82.1708	285.0	292.0	5957.0	125.6	13.3	18.8	5.7	19.8
805	2 10 72	37.9053	82.1708	285.0	292.0	3336.3	66.1	13.3	15.8	18.7	21.4
805	9 11 72	37.9053	82.1708	285.0	292.0	4975.9	98.9	13.3	17.2	14.9	20.2
805	7 18 72	37.9053	82.1708	285.0	292.0	4378.8	91.7	13.3	17.9	17.8	22.0
805	11 4 72	37.9053	82.1708	285.0	292.0	5477.9	115.6	13.3	18.7	10.9	20.7
807	7 7 72	37.6516	81.8195	530.7	534.3	1221.3	37.8	11.3	21.7	8.9	29.0
808	8 4 72	37.6420	81.8493	544.4	547.4	1219.8	35.6	11.2	20.0	8.9	27.3
811	9 22 72	37.5833	81.8333	435.9	438.3	1164.0	42.8	12.3	26.2	8.5	33.5
813	10 10 72	37.8322	82.2289	218.2	221.9	1419.5	43.3	14.1	20.6	10.3	27.8
814	10 14 72	37.5713	81.8576	382.5	385.6	1122.3	36.7	12.9	21.2	8.2	28.5
820	7 3 73	37.5795	81.8420	466.3	469.4	1195.4	38.9	12.0	22.5	8.7	29.8
824	8 6 73	37.6420	81.8380	535.8	538.6	1244.8	38.3	11.3	21.7	9.1	29.0
836	11 27 73	37.6363	81.8458	552.0	555.0	1260.3	31.1	11.1	15.9	9.2	23.1
838	6 4 74	37.6409	81.8270	545.3	548.6	1259.4	33.3	11.2	17.6	9.2	24.9
839	6 22 74	37.6326	81.8315	551.4	554.7	1276.5	33.9	11.1	17.8	9.3	25.1
850	5 24 75	37.6409	81.8515	545.3	547.7	1923.3	50.0	11.2	20.2	13.4	27.2
876	2 26 78	37.6691	81.9181	382.8	385.6	1031.4	31.1	12.7	17.8	7.5	25.1
879	8 27 78	37.8832	82.2622	311.8	336.8	2477.4	78.3	12.9	26.4	16.2	33.0
880	9 16 78	37.8831	82.3369	235.6	238.7	1238.1	40.6	13.8	21.6	9.0	28.9

Monroe County

6	5 11 74	37.5704	80.7526	584.9	588.6	1104.6	31.7	10.8	18.8	8.1	26.1
7	5 26 74	37.6299	80.6802	668.4	671.5	1065.6	29.4	9.9	18.3	7.8	25.6

Morgan County

4	4 13 67	39.5849	78.4377	168.6	169.5	1418.8	36.7	12.4	17.1	10.3	24.3
9	11 17 78	39.5775	78.4420	218.2	221.3	1530.1	38.3	11.9	17.3	11.0	24.5

Nichols County

22	1 13 60	38.2280	81.0851	344.1	344.7	506.6	27.8	12.4	30.3	3.5	37.3
58	6 30 62	38.2486	81.0734	475.5	476.1	637.3	25.6	11.1	22.7	4.5	29.8
220	6 10 59	38.2976	80.7401	619.4	619.7	974.4	32.2	9.6	23.2	7.1	30.5
224	11 9 72	38.3125	80.7437	659.9	660.5	682.8	22.2	9.2	19.1	4.9	26.2
256	12 11 64	38.3513	80.7966	575.8	576.7	620.3	24.4	10.0	23.3	4.4	30.4
271	1 8 68	38.3569	80.7584	595.9	596.5	649.8	26.7	9.8	26.0	4.6	33.1
278	12 9 71	38.3292	80.7974	605.3	605.9	662.3	25.6	9.7	23.9	4.7	31.1
280	11 4 69	38.3403	80.7946	620.0	620.6	670.3	29.4	9.6	29.7	4.8	36.8
283	11 6 70	38.3383	80.7614	603.2	603.8	626.1	28.9	9.7	30.6	4.4	37.7
286	11 4 70	38.2732	81.1927	382.8	385.3	853.4	27.8	12.0	18.5	6.2	25.8
288	6 27 71	38.2655	81.2153	459.3	462.4	817.8	36.1	11.2	30.5	5.9	37.7
289	8 7 71	38.3450	80.7996	657.5	659.6	713.8	37.8	9.2	40.1	5.1	47.3
291	7 24 71	38.3376	80.8123	583.4	584.6	616.6	37.2	9.9	44.3	4.4	51.4
292	7 15 71	38.2845	81.1878	352.0	355.1	700.1	25.0	12.2	18.2	5.0	25.4
293	12 8 71	38.2360	80.9193	482.8	485.2	2329.3	75.6	11.0	27.7	15.5	34.4
296	10 17 72	38.3715	80.7903	580.3	582.5	722.7	30.6	9.9	28.6	5.2	35.8
297	10 29 72	38.3237	80.8072	610.5	612.3	651.4	21.1	9.7	17.6	4.6	24.7
298	11 18 72	38.3207	80.8130	611.7	613.6	613.6	22.2	9.7	20.5	4.3	27.6
299	12 29 72	38.3270	80.8154	625.1	627.0	681.2	23.3	9.5	20.3	4.9	27.4
300	12 8 72	38.3333	80.8200	611.4	613.3	671.2	21.1	9.6	17.1	4.8	24.2
301	1 20 73	38.3061	80.7253	659.6	661.4	783.9	25.6	9.2	20.9	5.7	28.1
310	10 2 73	38.3081	80.7034	687.9	690.7	784.9	40.0	8.9	39.6	5.7	46.8
328	10 23 74	38.2809	81.1533	451.1	454.2	808.6	30.6	11.3	23.9	5.9	31.1
330	10 30 74	38.2514	81.1337	449.6	452.9	789.4	28.3	11.3	21.6	5.7	28.8

Pendleton County

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
6	4 6 64	38.5476	79.5123	909.8	909.8	2575.6	74.4	6.4	26.4	16.6	32.9

Pleasants County

571	12 3 58	39.3673	81.1579	343.5	343.5	644.3	28.9	11.1	27.6	4.6	34.7
586	6 16 59	39.3343	81.2699	337.7	337.7	238.7	15.6	11.2	18.2	1.4	23.9
626	6 15 64	39.3722	81.2638	268.5	269.4	376.7	23.3	11.8	30.5	2.5	37.1
628	8 18 64	39.3741	81.2670	246.6	247.2	481.3	23.3	12.1	23.4	3.3	30.3
647	12 20 68	39.3495	81.2717	235.3	235.9	1067.1	35.0	12.2	21.4	7.8	28.7
648	11 1 68	39.3549	81.2165	218.5	222.2	1220.1	34.4	12.3	18.1	8.9	25.4
667	2 17 71	39.3295	81.2880	326.7	330.7	2091.2	63.9	11.3	25.2	14.4	32.0
667	1 12 71	39.3295	81.2880	326.7	330.7	1553.3	40.6	11.3	18.8	11.2	26.0
699	9 5 77	39.3309	81.3546	233.2	234.7	673.3	26.7	12.2	21.5	4.8	28.6

Pocahontas County

9	6 7 58	38.6896	79.7535	1010.4	1010.4	1774.5	61.7	5.3	31.8	12.5	38.9
10	11 29 77	38.7033	79.7476	1074.1	1074.1	1866.6	48.9	4.6	23.7	13.1	30.7
20	6 2 62	38.6090	79.6466	1081.7	1085.7	1862.6	55.6	4.6	27.4	13.1	34.4
21	8 17 63	38.1528	80.0115	1064.7	1068.3	3604.6	77.8	5.3	20.1	18.9	25.3
21	3 1 63	38.1528	80.0115	1064.7	1068.3	1768.1	40.0	5.3	19.6	12.5	26.7
21	7 6 63	38.1528	80.0115	1064.7	1068.3	3060.8	70.0	5.3	21.1	18.2	27.1

Preston County

117	8 19 63	39.4016	79.5869	613.6	618.1	1577.0	37.8	8.4	18.7	11.3	25.8
-----	---------	---------	---------	-------	-------	--------	------	-----	------	------	------

Putnam County

109	3 5 63	38.3736	81.9534	224.0	224.0	750.4	29.4	13.4	21.4	5.4	28.6
277	12 28 61	38.3328	81.9482	228.6	228.6	641.0	22.2	13.4	13.8	4.6	20.9
331	7 14 64	38.4962	82.0186	191.1	191.1	471.8	22.2	13.5	18.4	3.2	25.2
676	5 8 61	38.4286	81.8544	211.5	212.1	1176.5	37.2	13.4	20.2	8.6	27.5
677	6 6 61	38.4588	82.0123	182.9	183.5	670.9	27.2	13.7	20.2	4.8	27.4
690	7 31 63	38.4231	81.9212	238.0	238.7	708.1	28.9	13.2	22.2	5.1	29.4
697	8 28 63	38.6474	81.8055	295.7	295.7	1493.5	47.8	12.4	23.7	10.8	30.9
700	8 4 64	38.6753	81.7518	289.3	291.7	1585.9	48.3	12.4	22.7	11.4	29.8
702	6 18 64	38.5100	81.7598	300.5	303.0	1541.4	52.2	12.5	25.8	11.1	33.0
706	12 11 64	38.5017	81.7595	285.9	288.6	1515.8	51.7	12.6	25.8	10.9	33.0
722	12 21 66	38.4827	81.8507	287.1	289.6	1687.4	45.0	12.6	19.2	12.0	26.3
726	5 30 67	38.4701	81.7291	191.4	196.9	1642.6	44.4	13.5	18.8	11.7	26.0
733	9 18 67	38.4787	81.8633	204.2	210.0	1378.0	46.7	13.4	24.1	10.0	31.4
734	10 25 67	38.4890	81.9026	257.6	260.0	1417.6	40.6	12.9	19.5	10.3	26.8
737	12 5 67	38.5583	82.0172	209.4	211.5	1713.0	43.3	13.3	17.6	12.2	24.7
740	12 18 67	38.6170	81.7206	324.0	327.1	1852.0	47.8	12.1	19.3	13.0	26.3
744	10 11 68	38.4903	81.8568	275.8	280.1	1451.2	48.9	12.7	24.9	10.5	32.2
745	8 12 68	38.4558	81.7614	226.8	231.3	1663.6	57.2	13.2	26.5	11.9	33.6
747	11 21 68	38.6129	81.8474	273.1	276.5	1962.9	51.1	12.6	19.6	13.6	26.6
750	10 30 68	38.5066	81.8807	252.4	256.6	1421.6	43.3	12.9	21.4	10.3	28.6
753	2 7 67	38.3111	81.9842	201.5	203.9	1389.9	45.6	13.6	23.0	10.1	30.2
762	8 21 69	38.6166	81.7572	214.0	218.5	1723.9	55.6	13.2	24.6	12.2	31.7
763	8 25 69	38.5449	81.7697	214.3	218.5	1700.2	52.8	13.2	23.3	12.1	30.4
776	3 18 73	38.5626	82.0383	203.9	207.3	1681.3	51.1	13.3	22.5	12.0	29.6

Raleigh County

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
262	3 21 63	37.6529	81.3335	590.7	591.3	1014.4	35.0	10.7	23.9	7.4	31.2
266	12 18 63	37.5762	81.2048	991.5	991.5	1519.7	44.4	6.9	24.7	10.9	31.9
267	4 27 64	37.5542	81.2055	807.4	807.4	777.2	24.4	8.8	20.2	5.6	27.4
269	7 13 64	37.7080	81.2847	755.0	755.6	620.6	30.0	9.1	33.8	4.4	40.8
274	4 7 65	37.5820	81.3020	802.8	805.3	1252.1	35.6	8.7	21.4	9.1	28.7
277	3 5 65	37.5652	81.2555	890.6	893.7	1372.5	33.3	7.9	18.5	9.9	25.8
281	1 12 65	37.7921	81.3472	616.9	620.6	1008.6	28.9	10.3	18.5	7.4	25.8
288	12 6 70	37.5583	81.2065	869.0	872.0	1180.2	41.1	8.1	28.0	8.6	35.3
289	11 19 71	37.8300	81.3115	548.0	551.1	991.8	31.1	10.9	20.4	7.2	27.7
290	10 27 71	37.8374	81.3351	541.9	545.0	1032.7	37.2	10.9	25.4	7.5	32.7
291	1 20 72	37.7495	81.3781	623.9	627.0	1068.9	32.8	10.3	21.1	7.8	28.4
296	2 13 73	37.7322	80.9828	857.1	862.0	2672.8	69.4	8.0	23.0	17.0	29.4
307	9 17 73	37.5515	81.2594	682.1	685.2	1127.8	27.2	10.0	15.3	8.2	22.6
308	10 3 73	37.5438	81.2576	795.8	798.9	1197.9	34.4	8.9	21.4	8.7	28.7
319	7 25 74	37.5421	81.2690	793.7	796.7	1234.4	36.7	8.9	22.5	9.0	29.8
320	8 16 74	37.5490	81.2812	743.1	746.2	1207.3	35.0	9.4	21.2	8.8	28.5
322	3 24 75	37.7042	81.2471	746.5	749.5	686.7	26.1	9.1	24.7	4.9	31.9
335	9 10 75	37.5592	81.2269	793.7	796.1	370.6	22.2	8.9	36.1	2.4	42.6
336	12 12 75	37.8560	81.3785	684.3	687.3	2332.6	76.7	9.5	28.8	15.6	35.5
340	2 24 76	37.9664	81.3771	774.2	776.3	1123.5	32.2	8.5	21.1	8.2	28.4
342	5 31 76	37.9537	81.4536	466.6	471.8	1891.3	63.9	11.5	27.7	13.2	34.7
371	2 27 77	37.8748	81.5508	344.1	347.2	884.2	30.0	12.8	19.4	6.4	26.7
372	2 15 77	37.8871	81.5313	295.0	298.1	817.5	30.0	13.3	20.4	5.9	27.7
379	3 13 77	37.9095	81.5278	285.9	289.0	837.9	26.7	13.4	15.9	6.1	23.1
381	4 3 77	37.9178	81.5505	334.1	337.1	866.9	30.0	12.9	19.8	6.3	27.0

Randolph County

175	6 25 74	38.8753	80.0291	826.9	830.6	1461.8	44.4	6.9	25.7	10.6	32.9
176	7 15 74	38.8145	80.0388	675.7	679.7	1143.0	38.3	8.4	26.2	8.3	33.5
178	7 20 76	38.8232	80.0624	819.9	823.0	2412.8	78.9	7.0	29.8	15.9	36.4
186	9 4 77	38.7850	80.0995	896.4	898.9	1613.6	50.0	6.3	27.1	11.5	34.2
188	7 24 77	38.8560	80.0762	801.3	803.8	1582.2	40.6	7.1	21.1	11.3	28.3
189	7 30 77	38.8638	80.0751	746.8	749.2	1555.4	45.0	7.7	24.0	11.2	31.2
190	8 7 77	38.8675	80.0829	576.1	578.5	1401.5	50.0	9.3	29.0	10.1	36.3
194	8 13 77	38.8683	80.0904	692.5	694.9	1477.4	51.1	8.2	29.1	10.7	36.3
217	5 19 78	38.8009	80.0960	922.9	926.0	1622.5	42.8	6.0	22.7	11.6	29.8
222	6 16 78	38.9098	80.0081	738.8	741.9	1556.3	41.1	7.7	21.5	11.2	28.7
224	6 4 78	38.8149	80.0671	798.9	801.3	1505.1	42.2	7.2	23.3	10.8	30.5
227	5 25 78	38.8204	80.0539	713.8	716.6	1433.5	56.1	8.0	33.5	10.4	40.8
228	5 5 78	38.7952	80.0919	843.7	846.7	1557.5	50.0	6.8	27.7	11.2	34.9
230	6 30 78	38.8604	80.0705	592.2	595.3	1402.1	55.0	9.2	32.7	10.2	39.9
232	7 24 78	38.8583	80.0890	708.4	711.4	1536.8	43.3	8.0	23.0	11.0	30.2

Ritchie County

3019	4 6 66	39.1366	80.9984	282.9	282.9	575.5	22.8	12.0	18.8	4.0	25.8
3133	7 14 66	39.1823	81.1586	278.0	278.6	620.3	26.7	12.0	23.7	4.4	30.8
3139	11 14 66	39.1755	80.8723	321.3	321.9	650.4	27.2	11.5	24.1	4.6	31.2
3218	8 28 67	39.0942	80.9561	271.9	272.5	589.2	27.8	12.1	26.6	4.2	33.6
3330	10 11 69	39.2596	80.9527	285.0	285.0	611.1	26.7	11.8	24.3	4.3	31.4
3337	12 3 69	39.2357	81.0806	266.7	266.7	632.2	20.6	12.0	13.5	4.5	20.6
3358	3 31 70	39.2459	81.0486	291.7	292.3	596.5	17.2	11.8	9.2	4.2	16.2
3364	5 22 70	39.2376	81.0441	291.4	291.4	636.7	25.0	11.8	20.8	4.5	27.9
3365	6 10 70	39.2168	80.9960	318.5	319.4	635.8	26.1	11.5	22.9	4.5	30.0
3368	5 8 70	39.0378	81.0703	224.6	226.5	594.7	27.8	12.6	25.5	4.2	32.5
3380	8 11 70	39.0202	81.0770	335.3	336.5	688.5	28.9	11.6	25.2	4.9	32.3
3384	10 7 70	39.2338	81.0822	248.4	249.0	559.9	18.9	12.2	12.0	3.9	19.0
3385	1 22 71	39.2173	80.9886	280.4	281.0	586.7	21.7	11.9	16.6	4.1	23.7
3402	3 8 71	39.2337	81.0507	286.5	287.1	609.9	23.3	11.8	18.9	4.3	25.9
3403	4 24 71	39.2728	81.0674	310.9	310.9	639.5	21.7	11.5	15.8	4.5	22.9

Roane County

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
1645	10 29 68	38.6256	81.4342	284.7	285.6	634.0	26.7	12.5	22.3	4.5	29.4
1663	1 27 68	38.6167	81.3597	286.5	287.1	602.0	22.2	12.5	16.2	4.3	23.2
1676	9 12 68	38.7747	81.2153	257.9	260.0	2424.7	65.6	12.6	21.8	16.0	28.4
1676	9 5 68	38.7747	81.2153	257.9	260.0	2040.0	60.0	12.6	23.2	14.1	30.1
1682	11 27 68	38.7878	81.5176	237.7	238.7	477.6	21.7	12.8	18.6	3.3	25.5
1723	10 27 69	38.6624	81.3583	315.2	315.8	691.3	30.0	12.2	25.8	5.0	33.0
1724	12 2 69	38.6632	81.3544	324.6	325.5	679.7	28.9	12.1	24.7	4.9	31.9
1745	9 10 69	38.6431	81.4360	280.7	282.9	661.7	29.4	12.5	25.6	4.7	32.7
1942	10 17 71	38.8763	81.2883	271.9	273.1	747.1	37.8	12.3	34.0	5.4	41.3
1983	7 20 73	38.8788	81.2953	323.1	325.2	844.6	42.2	11.8	36.0	6.1	43.2
1984	6 26 73	38.8741	81.2671	309.4	311.5	670.6	28.3	12.0	24.4	4.8	31.5
1986	7 2 73	38.8752	81.2583	283.5	285.3	672.1	30.6	12.2	27.3	4.8	34.4
2002	10 22 73	38.8666	81.2796	323.1	326.7	1786.1	53.3	11.8	23.2	12.6	30.3

Summers County

5	10 3 64	37.6921	80.9253	552.9	555.3	2519.2	58.3	11.0	18.8	16.4	25.3
6	11 23 64	37.6678	80.7064	471.8	474.9	1965.0	48.3	11.8	18.6	13.7	25.5
7	7 6 74	37.7943	80.7438	720.9	723.9	946.1	36.1	9.2	28.4	6.9	35.7

Taylor County

95	10 26 71	39.3108	79.9252	485.9	488.6	1286.6	38.9	9.7	22.7	9.4	29.9
96	11 3 71	39.3125	79.9354	454.8	457.5	1286.3	38.9	10.0	22.4	9.4	29.7
104	9 9 74	39.3105	80.0708	381.0	384.7	1393.2	40.6	10.8	21.4	10.1	28.6
167	10 30 78	39.2990	79.9394	412.4	415.4	1232.0	37.8	10.5	22.2	9.0	29.4
170	12 6 78	39.3019	79.9261	472.4	475.5	1288.4	33.9	9.9	18.6	9.4	25.9

Tucker County

33	11 24 61	39.0945	79.4021	975.1	979.0	2635.9	72.8	5.1	25.7	16.8	32.1
34	8 5 64	39.2245	79.5836	620.9	624.5	1407.9	47.2	8.5	27.5	10.2	34.8
34	8 21 64	39.2245	79.5836	620.9	624.5	2129.3	62.2	8.5	25.2	14.6	32.1
36	12 11 69	39.2464	79.7701	556.0	560.8	334.1	22.2	9.1	39.3	2.1	45.7
36	1 4 70	39.2199	79.7675	556.0	560.8	1462.1	43.9	9.1	23.8	10.6	31.0
36	4 25 70	39.2199	79.7675	556.0	560.8	2650.8	76.1	9.1	25.3	16.9	31.6
36	2 24 70	39.2199	79.7675	556.0	560.8	2239.4	59.4	9.1	22.5	15.1	29.2
41	2 6 74	38.9989	79.4776	1114.0	1118.9	2671.3	66.1	3.8	23.3	17.0	29.7
43	7 14 77	39.2125	79.7665	720.2	723.6	1705.7	48.9	7.5	24.2	12.1	31.4
44	9 17 77	39.1654	79.7668	688.5	692.8	1895.6	65.6	7.9	30.4	13.3	37.4

Tyler County

3	3 30 71	39.3710	80.8789	295.4	296.3	670.6	25.0	11.6	20.0	4.8	27.1
373	10 27 64	39.4699	80.7112	346.3	346.9	927.5	33.3	11.0	24.1	6.8	31.4
380	6 11 64	39.4343	80.6858	314.6	315.2	1609.3	48.9	11.3	23.3	11.5	30.5
411	4 7 67	39.3979	80.8735	350.5	351.1	939.1	35.6	11.0	26.1	6.8	33.4
419	4 26 68	39.4051	80.8575	250.5	250.9	619.4	20.0	12.0	12.9	4.4	20.0

Upshur County

1730	6 24 77	39.0146	80.0922	599.8	602.9	1260.3	39.4	8.9	24.2	9.2	31.5
1741	4 26 77	38.9989	80.1317	504.1	506.6	1224.1	33.9	9.9	19.6	8.9	26.9
1772	9 9 77	38.9024	80.1295	656.8	659.9	1174.1	41.7	8.5	28.2	8.6	35.5
1773	12 20 77	38.8747	80.3454	466.0	469.1	1315.2	35.6	10.4	19.1	9.6	26.4
1794	2 19 78	38.9912	80.2913	463.9	466.6	1409.4	41.7	10.3	22.2	10.2	29.5
1795	3 5 78	38.9846	80.2947	466.6	469.7	1406.0	41.1	10.3	21.9	10.2	29.2
1796	2 26 78	38.9876	80.2949	463.3	466.6	1424.6	40.6	10.3	21.2	10.3	28.5
1799	3 11 78	38.9489	80.1148	646.5	649.5	1196.9	37.2	8.6	24.0	8.7	31.2
1845	9 16 78	38.8996	80.1255	636.7	639.8	1165.9	33.9	8.7	21.6	8.5	28.9
1853	9 18 78	38.8486	80.2026	567.5	570.6	1219.8	37.8	9.4	23.2	8.9	30.5
1876	12 19 78	38.8976	80.2076	548.6	551.7	1250.6	35.0	9.6	20.3	9.1	27.6
1877	12 13 78	38.9922	80.0886	491.0	494.1	1231.4	30.6	10.0	16.7	9.0	24.0
1901	2 26 79	38.9125	80.1197	627.0	629.7	1167.1	37.8	8.8	24.8	8.5	32.1
1902	2 20 79	38.9065	80.1343	633.1	636.7	1179.9	35.6	8.7	22.7	8.6	30.0
1917	3 19 79	38.9967	80.1554	494.7	497.7	1288.7	38.9	10.0	22.4	9.4	29.7

Wayne County

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
1555	8 27 70	38.1667	82.3027	280.7	281.0	990.9	36.7	13.0	23.8	7.2	31.1
1572	10 16 74	38.2219	82.5343	181.1	189.6	4014.2	72.8	13.8	14.7	18.7	19.3
1572	8 9 74	38.2219	82.5343	181.1	189.6	2217.4	57.8	13.8	19.8	15.0	26.6
1572	11 9 74	38.2219	82.5343	181.1	189.6	3962.4	81.1	13.8	17.0	18.7	21.7
1572	7 23 74	38.2219	82.5343	181.1	189.6	590.1	28.3	13.8	24.6	4.2	31.6
1572	11 8 74	38.2219	82.5343	181.1	189.6	4447.6	76.7	13.8	14.1	17.6	18.1
1572	9 11 74	38.2219	82.5343	181.1	189.6	3188.5	60.0	13.8	14.5	18.4	20.3
1572	10 31 74	38.2219	82.5343	181.1	189.6	4331.8	77.2	13.8	14.6	17.9	18.8
1572	8 8 74	38.2219	82.5343	181.1	189.6	2117.8	52.2	13.8	18.1	14.5	25.0
1572	11 9 74	38.2219	82.5343	181.1	189.6	4447.6	76.7	13.8	14.1	17.6	18.1
1572	9 10 74	38.2219	82.5343	181.1	189.6	3188.5	60.0	13.8	14.5	18.4	20.3
1572	9 26 74	38.2219	82.5343	181.1	189.6	3493.3	66.7	13.8	15.1	18.8	20.5
1572	8 10 74	38.2219	82.5343	181.1	189.6	2216.8	58.9	13.8	20.3	15.0	27.1
1572	9 18 74	38.2219	82.5343	181.1	189.6	3371.4	61.1	13.8	14.0	18.7	19.6
1572	9 10 74	38.2219	82.5343	181.1	189.6	3188.5	58.9	13.8	14.1	18.4	19.9
1572	10 16 74	38.2219	82.5343	181.1	189.6	4017.0	76.1	13.8	15.5	18.7	20.1
1576	10 1 75	38.1230	82.5410	194.2	197.2	1095.5	28.9	13.9	13.7	8.0	21.0
1581	10 16 75	37.8911	82.3947	230.4	234.1	1220.1	36.1	13.9	18.2	8.9	25.5
1603	10 11 77	38.0394	82.5021	332.5	335.0	536.1	25.0	12.7	23.0	3.7	30.0
1604	10 17 77	38.0405	82.4895	250.2	252.7	460.2	23.9	13.5	22.6	3.1	29.5
1607	10 1 78	38.0000	82.3333	224.0	227.1	1204.0	43.3	13.8	24.5	8.8	31.8
1609	6 6 78	38.0413	82.4734	233.2	235.3	443.5	21.1	13.6	16.9	3.0	23.6
1610	6 12 78	38.0474	82.4811	244.8	247.2	449.3	30.0	13.5	36.7	3.0	43.5
1615	7 21 78	38.0336	82.4903	319.1	321.6	528.8	30.0	12.8	32.5	3.7	39.5

Webster County

50	3 23 57	38.4493	80.2587	539.8	540.7	952.2	37.2	10.2	28.4	6.9	35.7
55	3 30 68	38.5035	80.3626	495.3	500.2	2651.5	66.1	10.5	21.0	16.9	27.3
61	9 14 74	38.6111	80.5253	373.1	375.8	1405.7	41.1	11.6	21.0	10.2	28.2

Wetzel County

86	1 22 55	39.6446	80.7600	354.2	354.8	671.8	21.1	10.7	15.4	4.8	22.6
502	7 13 61	39.4771	80.6436	291.1	291.7	880.6	29.4	11.5	20.3	6.4	27.6
522	6 29 62	39.5877	80.5570	242.9	243.5	960.4	31.1	11.9	20.0	7.0	27.3
531	3 13 63	39.5771	80.5542	339.9	340.5	884.2	28.3	10.9	19.7	6.4	26.9
537	7 3 63	39.5955	80.6757	399.3	399.9	976.6	28.3	10.3	18.4	7.1	25.7
558	3 14 64	39.5113	80.5178	365.2	365.5	967.4	30.6	10.8	20.5	7.1	27.7
583	11 30 68	39.4885	80.6609	357.8	358.4	754.4	23.9	10.9	17.3	5.4	24.5
592	4 16 72	39.5305	80.6838	333.5	334.7	704.7	28.3	11.1	24.5	5.1	31.7
604	2 14 76	39.5363	80.5837	289.3	290.8	976.0	35.6	11.5	24.7	7.1	32.0
605	4 11 76	39.4406	80.5526	417.0	420.0	1008.3	31.1	10.3	20.6	7.4	27.9

Wirt County

404	7 20 59	39.0492	81.2765	272.8	273.4	588.6	16.1	12.1	6.7	4.1	13.8
404	1 20 60	39.0492	81.2765	272.8	273.4	1068.0	32.8	12.1	19.3	7.8	26.6
628	5 31 73	38.9962	81.2779	307.8	310.3	670.9	28.9	11.8	25.4	4.8	32.5
629	6 10 73	38.9691	81.2786	198.1	201.2	564.5	25.6	12.9	22.3	4.0	29.4

Wood County

752	8 15 76	39.2602	81.6780	193.5	197.8	1260.7	43.3	12.6	24.3	9.2	31.6
755	10 31 76	39.2485	81.6720	217.3	220.4	1797.1	49.4	12.4	20.6	12.7	27.7
755	10 25 76	39.2485	81.6720	217.3	220.4	1285.0	46.7	12.4	26.6	9.3	33.9
756	11 29 76	39.0806	81.5085	211.2	221.3	4045.3	85.0	12.6	17.9	18.6	22.5
758	2 11 77	39.2628	81.6628	235.6	239.0	1309.1	38.3	12.2	19.9	9.5	27.2
759	4 2 77	39.2392	81.6695	201.2	204.8	1285.0	40.0	12.6	21.3	9.3	28.6
769	5 25 77	39.2519	81.6901	188.4	190.2	577.0	25.6	12.7	22.2	4.1	29.3
769	5 29 77	39.2519	81.6901	188.4	190.2	1309.1	35.6	12.7	17.4	9.5	24.7
803	3 22 78	39.1157	81.4947	219.2	222.5	677.3	28.9	12.6	24.1	4.8	31.3
803	3 29 78	39.1157	81.4947	219.2	222.5	1935.8	60.0	12.6	24.5	13.5	31.5

Wyoming County

WELL NO	DATE LOG	LATITUDE DEGREES	LONGITUDE DEGREES	ELEV M	KBELV M	DEPTH M	BHT C	STEMP C	GRADIENT C/KM	BHTCOR C	AAPGRAD C/KM
105	8 13 71	37.5442	81.6432	475.8	475.8	896.1	30.0	12.0	20.1	6.5	27.3
106	5 28 70	37.5345	81.6273	570.9	571.2	1066.8	30.6	11.1	18.2	7.8	25.5
175	7 29 78	37.6965	81.6031	455.7	458.7	877.5	26.7	12.0	16.7	6.4	24.0
222	7 8 65	37.7629	81.4464	805.3	805.9	1165.3	43.3	8.5	29.9	8.5	37.2
255	6 13 66	37.7705	81.4632	798.9	799.8	1125.0	35.6	8.5	24.0	8.2	31.3
277	8 18 67	37.7696	81.4733	851.0	851.3	1178.4	36.1	8.0	23.8	8.6	31.1
314	4 3 73	37.7650	81.4974	553.5	553.8	1028.7	35.0	11.0	23.4	7.5	30.7
379	3 18 64	37.7051	81.6673	580.6	581.6	1221.0	36.1	10.8	20.8	8.9	28.0
436	1 5 66	37.6659	81.7346	393.8	394.1	1112.5	33.9	12.6	19.1	8.1	26.4
783	10 14 77	37.5282	81.2911	738.8	741.9	1207.3	33.9	9.4	20.3	8.8	27.5

APPENDIX B
WEST VIRGINIA GRAVITY DATA

P R I N C I P A L F A C T S A T G R A V I T Y S T A T I O N S										
STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
10.400	1073	38 48.60	-80 52.48	795.000	0.000	979967.140	-21.484	-48.599	980063.403	-48.599
10.206	1	38 54.53	-80 45.07	739.000	.620	979983.223	-19.401	-44.606	980072.135	-43.986
10.205	2	38 55.31	-80 47.00	733.000	.670	979983.190	-21.147	-46.148	980073.285	-45.478
10.204	3	38 55.45	-80 48.18	745.000	.670	979982.825	-20.590	-46.000	980073.491	-45.330
10.203	4	38 56.00	-80 49.23	740.000	.380	979982.687	-22.008	-47.248	980074.301	-46.868
10.215	5	38 57.69	-80 49.62	742.000	1.110	979983.334	-23.664	-48.971	980076.792	-47.861
10.214	6	38 57.13	-80 48.30	747.000	1.290	979985.034	-20.669	-46.147	980075.966	-44.857
10.210	7	38 57.15	-80 47.55	759.000	.410	979983.745	-20.858	-46.745	980075.996	-46.335
10.209	8	38 57.14	-80 46.39	777.000	1.440	979983.334	-19.561	-46.062	980075.981	-44.622
10.208	9	38 58.18	-80 45.68	810.000	1.200	979982.620	-18.704	-46.331	980077.514	-45.131
10.207	10	38 58.86	-80 45.29	840.000	1.100	979981.770	-17.734	-46.384	980078.516	-45.284
10.211	11	38 58.86	-80 49.50	882.000	.100	979976.468	-19.085	-49.168	980078.516	-49.068
10.219	12	38 48.81	-80 47.15	820.000	.900	979968.204	-18.378	-46.346	980063.712	-45.446
10.408	13	38 48.50	-80 47.05	826.000	1.220	979968.696	-16.865	-45.038	980063.256	-43.818
10.407	14	38 47.72	-80 47.82	915.000	1.170	979961.578	-14.463	-45.671	980062.108	-44.501
10.406	15	38 46.10	-80 49.53	868.000	.500	979962.656	-15.422	-45.027	980059.723	-44.527
10.404	16	38 46.40	-80 49.25	882.000	.990	979960.769	-16.434	-46.516	980060.165	-45.526
10.405	17	38 45.68	-80 48.38	900.000	1.220	979957.768	-16.682	-47.378	980059.105	-46.158
10.402	18	38 47.39	-80 50.83	847.000	2.170	979963.471	-18.480	-47.369	980061.622	-45.199
10.401	19	38 48.17	-80 52.47	824.000	.500	979965.808	-19.455	-47.559	980062.770	-47.059
10.212	20	38 59.55	-80 48.30	775.000	.990	979985.004	-21.632	-48.065	980079.533	-47.075
10.213	21	38 59.83	-80 48.98	736.000	.530	979987.849	-22.868	-47.971	980079.946	-47.441
10.202	22	38 57.47	-80 50.52	735.000	.620	979982.493	-24.839	-49.908	980076.467	-49.288
10.201	23	38 56.15	-80 51.00	772.000	1.200	979980.782	-21.125	-47.455	980074.522	-46.255
10.107	24	38 56.36	-80 45.07	731.000	.900	979981.157	-24.915	-49.848	980074.832	-48.948
10.106	25	38 56.71	-80 47.05	727.000	1.000	979982.464	-24.501	-49.297	980075.347	-48.297
10.105	26	38 57.15	-80 48.87	723.000	.690	979981.015	-26.974	-51.633	980075.996	-50.943
10.104	27	38 56.02	-80 48.87	723.000	.480	979981.015	-25.309	-49.968	980074.331	-49.488
10.103	28	38 55.50	-80 50.12	719.000	.680	979979.824	-26.110	-50.633	980073.564	-49.953
10.102	29	38 55.02	-80 51.45	719.000	.370	979978.956	-26.271	-50.794	980072.857	-50.424
10.101	30	38 54.48	-80 51.83	720.000	.380	979978.313	-26.024	-50.582	980072.062	-50.202
10.419	31	38 52.31	-80 50.08	770.000	.850	979975.227	-21.211	-47.473	980068.865	-46.623
10.418	32	38 51.70	-80 50.52	771.000	.290	979972.996	-22.449	-48.746	980067.967	-48.456
10.417	33	38 50.98	-80 50.59	780.000	.990	979970.994	-22.545	-49.148	980066.907	-48.158
10.416	34	38 50.58	-80 49.19	790.000	.270	979972.385	-19.624	-46.569	980066.318	-46.299
10.412	35	38 50.28	-80 47.77	800.000	.990	979971.794	-18.833	-46.119	980065.876	-45.129
10.413	36	38 50.17	-80 47.20	825.000	1.360	979970.914	-17.199	-45.338	980065.714	-43.978
10.414	37	38 49.88	-80 46.42	848.000	1.350	979968.997	-16.526	-45.449	980065.287	-44.099
10.410	38	38 49.43	-80 47.49	824.000	.830	979969.758	-17.360	-45.465	980064.625	-44.635
	1079	38 40.50	-80 47.78	996.000	0.000	979940.700	-17.101	-51.071	980051.486	-51.071

PRINCIPAL FACTS AT GRAVITY STATIONS

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
9.105	39	38 39.73	-80 43.05	850.000	.550	979951.795	-18.606	-47.597	980050.354	-47.047
9.102	40	38 39.50	-80 42.19	1055.000	.490	979932.848	-17.933	-53.916	980050.015	-53.426
9.101	41	38 38.36	-80 42.39	1367.000	1.500	979917.690	-2.067	-48.692	980048.339	-47.192
9.100	42	38 37.61	-80 42.04	850.000	.560	979952.718	-14.567	-43.558	980047.237	-42.998
9.104	43	38 39.99	-80 43.05	839.000	.360	979952.732	-19.086	-47.702	980050.736	-47.342
9.105	44	38 40.40	-80 42.86	850.000	.520	979952.726	-18.660	-47.651	980051.339	-47.131
9.107	45	38 40.50	-80 42.84	850.000	.180	979952.729	-18.804	-47.795	980051.486	-47.615
9.108	46	38 40.53	-80 40.05	1238.000	.120	979929.836	-5.245	-47.470	980051.530	-47.350
9.109	47	38 41.05	-80 38.98	1260.000	.100	979929.376	-4.401	-47.376	980052.295	-47.276
9.110	48	38 41.05	-80 38.98	1265.000	1.000	979929.378	-3.928	-47.074	980052.295	-46.074
9.111	49	38 42.31	-80 39.56	1110.000	.180	979940.529	-9.211	-47.070	980054.148	-46.890
9.112	50	38 43.38	-80 39.08	1071.000	1.050	979944.665	-10.317	-46.846	980055.722	-45.796
9.113	51	38 44.36	-80 39.40	940.000	.090	979953.995	-14.751	-46.812	980057.163	-46.722
9.114	52	38 44.78	-80 39.52	907.000	.950	979956.742	-15.725	-46.661	980057.781	-45.711
8.211	53	38 42.42	-80 45.86	965.000	1.360	979949.311	-14.229	-47.143	980054.309	-45.783
8.212	54	38 43.16	-80 46.16	1140.000	.500	979942.636	-5.532	-44.414	980055.398	-43.914
8.213	55	38 43.89	-80 46.22	1009.000	1.340	979949.089	-12.474	-46.889	980056.472	-45.549
8.214	56	38 44.35	-80 47.42	949.000	1.280	979954.176	-13.709	-46.076	980057.148	-44.796
8.215	57	38 44.85	-80 48.31	916.000	1.450	979956.262	-15.462	-46.704	980057.884	-45.254
8.216	58	38 44.04	-80 49.31	1212.000	.840	979938.796	-3.894	-45.232	980056.692	-44.392
8.217	59	38 43.67	-80 50.69	1002.000	.930	979952.165	-9.733	-43.909	980056.148	-42.979
10.400	60	38 48.60	-80 52.48	795.000	2.320	979967.140	-21.484	-48.599	980063.403	-46.279
10.306	61	38 49.00	-80 53.55	825.000	1.230	979967.969	-18.422	-46.560	980063.992	-45.330
10.307	62	38 48.28	-80 53.48	868.000	1.410	979962.897	-18.389	-47.994	980062.932	-46.584
10.308	63	38 47.90	-80 54.10	850.000	1.050	979962.888	-19.532	-48.524	980062.373	-47.474
10.305	64	38 49.38	-80 54.49	775.000	1.200	979971.332	-20.321	-46.754	980064.551	-45.554
10.304	65	38 50.08	-80 55.75	759.000	1.480	979970.194	-23.996	-49.883	980065.582	-48.403
10.304	66	38 51.07	-80 56.23	761.000	1.470	979972.298	-23.161	-49.116	980067.039	-47.646
10.302	67	38 51.03	-80 57.84	727.000	1.810	979972.250	-26.348	-51.144	980066.981	-49.334
10.301	68	38 51.02	-80 59.22	719.000	1.800	979973.197	-26.139	-50.662	980066.966	-48.862
10.319	69	38 50.65	-80 59.36	730.000	1.810	979972.426	-25.330	-50.229	980066.421	-48.419
10.318	70	38 49.68	-80 58.57	720.000	1.790	979971.925	-25.344	-49.901	980064.993	-48.111
10.317	71	38 48.85	-80 58.77	723.000	1.750	979970.317	-25.448	-50.107	980063.771	-48.357
10.316	72	38 48.13	-80 58.56	736.000	1.260	979968.012	-25.470	-50.573	980062.711	-49.313
10.315	73	38 47.05	-80 58.44	736.000	1.220	979967.204	-24.688	-49.791	980061.121	-48.571
10.314	74	38 46.83	-80 57.37	720.000	1.700	979966.325	-26.748	-51.305	980060.798	-49.605
10.313	75	38 45.72	-80 57.03	764.000	1.850	979963.484	-23.817	-49.875	980059.164	-48.025
10.312	76	38 45.22	-80 56.55	774.000	1.800	979963.233	-22.392	-48.791	980058.429	-46.991
10.311	77	38 45.97	-80 55.83	883.000	1.350	979958.090	-18.386	-48.502	980059.532	-47.152
10.310	78	38 46.95	-80 55.93	777.000	1.750	979965.099	-22.789	-49.291	980060.974	-47.541

P R I N C I P A L F A C T S A T G R A V I T Y S T A T I O N S

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET.	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
10.309	79	38 46.98	-80 55.08	800.000	1.680	979971.095	-14.675	-41.960	980061.018	-40.280
9.104	80	38 39.99	-80 43.05	839.000	1.130	979952.391	-19.428	-48.044	980050.736	-46.914
9.201	81	38 41.93	-80 37.32	1320.000	.460	979922.718	-6.709	-51.731	980053.589	-51.271
9.202	82	38 42.17	-80 36.62	1320.000	1.130	979922.711	-7.069	-52.091	980053.942	-50.961
9.203	83	38 41.65	-80 35.19	1315.000	1.120	979925.768	-3.718	-48.569	980053.177	-47.449
9.204	84	38 41.94	-80 34.97	1440.000	.820	979916.674	-1.481	-50.596	980053.603	-49.776
9.295	85	38 41.13	-80 34.65	1640.000	1.950	979905.529	7.378	-48.558	980052.412	-46.608
9.211	86	38 42.98	-80 34.46	1200.000	.380	979932.965	-9.294	-50.222	980055.133	-49.842
9.212	87	38 43.29	-80 34.81	920.000	.290	979952.145	-16.908	-48.286	980055.589	-47.996
9.213	88	38 44.12	-80 35.51	850.000	.270	979958.005	-18.853	-47.844	980056.810	-47.574
9.214	89	38 44.81	-80 35.90	870.000	.280	979960.615	-15.376	-45.050	980057.825	-44.770
9.215	90	38 44.66	-80 34.03	1051.000	.530	979946.946	-11.800	-47.647	980057.605	-47.117
9.216	91	38 44.73	-80 33.58	1123.000	.310	979943.251	-8.826	-47.128	980057.708	-46.818
9.207	93	38 41.07	-80 33.05	1044.000	.330	979938.192	-15.932	-51.540	980052.324	-51.210
9.208	94	38 40.33	-80 32.57	1006.000	.320	979939.028	-17.582	-51.894	980051.236	-51.574
9.210	95	38 39.18	-80 30.07	1054.000	.340	979939.042	-11.362	-47.311	980049.545	-46.971
9.209	96	38 39.81	-80 32.50	1020.000	.320	979939.056	-15.472	-50.262	980050.471	-49.942
9.316	97	38 37.03	-80 42.30	1494.000	.920	979908.129	2.272	-48.684	980046.384	-47.764
9.315	98	38 36.15	-80 42.27	1180.000	.740	979924.410	-9.688	-49.935	980045.091	-49.195
9.314	99	38 35.24	-80 42.30	1140.000	.720	979925.122	-11.402	-50.284	980043.754	-49.564
9.313	100	38 34.87	-80 42.62	1118.000	.700	979925.558	-12.491	-50.623	980043.210	-49.923
9.317	101	38 34.31	-80 41.46	1108.000	.700	979925.293	-12.874	-50.665	980042.387	-49.965
9.318	102	38 34.75	-80 43.93	1076.000	.690	979929.070	-12.754	-49.453	980043.034	-48.763
9.319	103	38 34.36	-80 44.87	1071.000	.670	979929.311	-12.410	-48.939	980042.461	-48.269
9.306	104	38 34.10	-80 41.95	1150.000	.670	979922.525	-11.383	-50.606	980042.079	-49.936
9.307	105	38 34.31	-80 41.46	1165.000	.730	979920.970	-11.836	-51.571	980042.387	-50.841
9.308	106	38 34.32	-80 40.43	1170.000	.860	979922.526	-9.824	-49.730	980042.402	-48.870
9.309	107	38 34.67	-80 39.69	1220.000	.770	979918.545	-9.616	-51.227	980042.916	-50.457
9.319	108	38 34.59	-80 39.24	1246.000	.780	979916.680	-8.918	-51.416	980042.799	-50.636
9.311	109	38 33.93	-80 38.97	1325.000	.830	979913.337	-3.861	-49.053	980041.829	-48.223
9.312	110	38 33.97	-80 38.00	1340.000	.840	979909.905	-5.940	-51.644	980041.888	-50.804
9.305	111	38 33.65	-80 41.96	1239.000	.780	979915.170	-9.705	-51.964	980041.418	-51.184
9.304	112	38 32.80	-80 42.35	1640.000	1.030	979891.355	5.447	-50.489	980040.169	-49.459
9.303	113	38 32.22	-80 42.83	1824.000	1.140	979879.827	12.078	-50.133	980039.317	-48.993
9.302	114	38 31.35	-80 43.67	1527.000	.960	979897.893	3.485	-48.597	980038.039	-47.637
9.301	115	38 30.77	-80 44.17	1330.000	.840	979906.966	-5.120	-50.482	980037.187	-49.642
6.101	116	38 29.60	-80 44.10	1133.000	2.540	979915.935	-12.963	-51.607	980035.469	-49.067
6.102	117	38 29.21	-80 43.90	1164.000	2.600	979912.709	-12.700	-52.401	980034.897	-49.801
6.103	118	38 28.39	-80 43.51	1242.000	2.750	979905.897	-10.971	-53.332	980033.693	-50.582
6.105	119	38 27.55	-80 43.12	1331.000	2.950	979899.172	-8.092	-53.489	980032.460	-50.539

PRINCIPAL FACTS AT GRAVITY STATIONS

STA NAME AND NUM	LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
6.104 120	38 27.97	-80 43.32	1295.000	2.870	979901.925	-9.341	-53.510	980033.076	-50.640
6.106 121	38 27.25	-80 42.58	1401.000	3.330	979894.139	-6.100	-53.884	980032.019	-50.554
9.402 122	38 36.95	-80 36.41	1691.000	.980	979893.921	6.712	-50.963	980046.267	-49.983
9.403 123	38 37.39	-80 34.04	1065.000	.480	979930.599	-16.139	-52.463	980046.914	-51.983
9.404 124	38 36.88	-80 34.02	1010.000	2.600	979933.141	-18.021	-52.469	980046.164	-49.869
8.210 125	38 40.99	-80 45.67	821.000	.420	979954.988	-19.994	-47.996	980052.206	-47.576
8.209 126	38 39.93	-80 46.82	834.000	.390	979952.736	-19.465	-47.910	980050.648	-47.520
8.208 127	38 40.10	-80 47.54	820.000	.440	979954.098	-19.669	-47.637	980050.898	-47.197
8.207 128	38 39.43	-80 48.13	840.000	.250	979953.136	-17.765	-46.415	980049.912	-46.165
8.206 129	38 40.45	-80 48.40	897.000	.290	979950.679	-16.360	-46.954	980051.412	-46.664
8.210 130	38 41.61	-80 49.11	1060.000	1.200	979943.359	-10.054	-46.207	980053.118	-45.007
8.219 131	38 42.23	-80 42.35	1431.000	.670	979922.208	2.780	-46.028	980054.030	-45.358
8.218 132	38 42.81	-80 49.18	1430.000	.590	979922.004	1.629	-47.145	980054.883	-46.555
8.205 133	38 39.88	-80 49.24	830.000	.170	979952.848	-19.655	-47.964	980050.574	-47.794
8.204 134	38 39.25	-80 50.02	830.000	.120	979953.011	-18.566	-46.875	980049.648	-46.755
8.203 135	38 39.31	-80 50.70	840.000	.340	979953.769	-16.956	-45.606	980049.736	-45.266
8.202 136	38 38.28	-80 50.86	845.000	.140	979951.886	-16.854	-45.674	980048.222	-45.534
8.201 137	38 38.14	-80 51.90	821.000	.260	979952.338	-18.454	-46.456	980048.016	-46.196
8.313 138	38 36.45	-80 52.52	810.000	.100	979950.090	-19.252	-46.879	980045.532	-46.779
8.312 139	38 35.81	-80 53.02	852.000	.110	979946.925	-17.526	-46.585	980044.591	-46.475
8.311 140	38 35.12	-80 53.87	807.000	.900	979948.681	-18.989	-46.514	980043.577	-45.614
8.310 141	38 34.71	-80 53.94	810.000	.160	979947.756	-19.029	-46.656	980042.975	-46.496
8.309 142	38 33.97	-80 53.85	807.000	.180	979946.757	-19.223	-46.748	980041.888	-46.568
8.308 143	38 34.58	-80 54.93	807.000	.120	979948.003	-18.874	-46.398	980042.784	-46.278
8.307 144	38 33.13	-80 55.64	794.000	.200	979947.539	-18.430	-45.511	980040.654	-45.311
8.306 145	38 34.98	-80 56.36	780.000	.190	979948.690	-21.314	-47.917	980043.372	-47.727
8.305 146	38 34.12	-80 56.08	792.000	.210	979947.853	-19.758	-46.771	980042.108	-46.561
8.304 147	38 33.97	-80 57.27	792.000	.220	979947.889	-19.502	-46.515	980041.888	-46.295
8.303 148	38 33.46	-80 57.83	785.000	.210	979946.494	-20.806	-47.581	980041.139	-47.371
8.302 149	38 32.75	-80 57.95	805.000	.250	979945.354	-19.022	-46.478	980040.096	-46.228
8.301 150	38 32.99	-80 59.74	772.000	.240	979947.222	-20.610	-46.941	980040.448	-46.701
8.325 151	38 35.52	-80 56.32	790.000	.290	979949.440	-20.416	-47.361	980044.165	-47.071
8.326 152	38 35.85	-80 56.72	840.000	.310	979949.567	-16.071	-44.721	980044.650	-44.411
8.327 153	38 36.63	-80 57.00	885.000	.100	979946.584	-15.968	-46.153	980045.797	-46.053
8.328 154	38 37.23	-80 57.49	870.000	.130	979946.945	-17.900	-47.573	980046.678	-47.443
8.212 155	38 38.91	-80 51.75	840.000	.150	979952.584	-17.553	-46.203	980049.148	-46.053
8.213 156	38 39.57	-80 51.88	910.000	.170	979949.361	-15.161	-46.198	980050.118	-46.028
8.101 157	38 40.40	-80 52.89	988.000	.330	979945.748	-12.658	-46.356	980051.339	-46.026
8.102 158	38 41.11	-80 53.18	930.000	.350	979949.960	-14.946	-46.666	980052.383	-46.316
8.103 159	38 41.04	-80 53.60	911.000	.270	979950.876	-15.714	-46.785	980052.280	-46.515

P R I N C I P A L F A C T S A T G R A V I T Y S T A T I O N S

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
8.104	160	38 40.11	-80 54.26	875.000	.290	979951.847	-16.762	-46.606	980050.912	-46.316
8.105	161	38 41.29	-80 55.13	835.000	.300	979955.034	-19.072	-47.552	980052.647	-47.252
8.112	162	38 42.17	-80 55.17	820.000	.190	979957.301	-19.510	-47.478	980053.942	-47.288
8.113	163	38 42.98	-80 55.49	796.000	.370	979959.748	-20.513	-47.662	980055.133	-47.292
8.114	164	38 43.82	-80 55.90	800.000	.160	979961.112	-20.008	-47.293	980056.369	-47.133
8.115	165	38 44.29	-80 56.54	772.000	.210	979962.430	-22.015	-48.346	980057.060	-48.136
8.116	166	38 44.89	-80 56.71	790.000	.200	979962.882	-20.753	-47.697	980057.943	-47.497
8.106	167	38 40.80	-80 55.67	930.000	.320	979948.516	-15.933	-47.653	980051.927	-47.333
8.107	168	38 39.97	-80 55.63	950.000	.110	979948.123	-13.225	-45.627	980050.706	-45.517
8.108	169	38 39.22	-80 54.92	915.000	.170	979948.437	-15.101	-46.309	980049.604	-46.139
8.109	170	38 39.34	-80 54.49	908.000	.410	979948.750	-15.622	-46.591	980049.780	-46.181
8.110	171	38 38.79	-80 53.54	979.000	.370	979944.405	-12.480	-45.871	980048.972	-45.501
8.111	172	38 38.81	-80 52.62	1232.000	.140	979929.413	-3.704	-45.724	980049.001	-45.584
8.400	173	38 37.46	-80 50.69	840.000	.390	979950.577	-17.427	-46.077	980047.016	-45.687
8.401	174	38 37.25	-80 50.70	818.000	.270	979950.062	-19.703	-47.603	980046.708	-47.333
8.402	175	38 36.93	-80 49.68	923.000	.290	979943.619	-15.799	-47.280	980046.237	-46.990
8.403	176	38 36.50	-80 48.94	940.000	.310	979939.199	-17.989	-50.050	980045.605	-49.740
8.404	177	38 36.15	-80 49.18	927.000	.190	979941.896	-16.000	-47.617	980045.091	-47.427
8.405	178	38 35.66	-80 48.62	1236.000	.250	979923.792	-4.319	-46.475	980044.371	-46.225
8.499	179	38 35.67	-80 48.64	1235.000	.280	979923.805	-4.415	-46.538	980044.386	-46.258
8.406	180	38 35.03	-80 48.49	1195.000	.280	979924.520	-6.521	-47.279	980043.445	-46.999
8.407	181	38 34.50	-80 48.10	949.000	.340	979936.869	-16.533	-48.901	980042.666	-48.561
8.408	182	38 33.81	-80 49.00	1000.000	.270	979934.227	-13.364	-47.472	980041.653	-47.202
8.410	183	38 32.12	-80 48.35	1300.000	.330	979912.668	-4.222	-48.562	980039.170	-48.232
8.411	184	38 31.43	-80 48.38	1530.000	.420	979895.662	1.420	-50.764	980038.157	-50.344
8.412	185	38 30.60	-80 47.78	1490.000	.380	979899.903	3.117	-47.703	980036.938	-47.323
8.413	186	38 31.02	-80 46.97	1490.000	.450	979899.895	2.492	-48.327	980037.555	-47.877
8.414	187	38 30.62	-80 45.91	1123.000	.360	979919.488	-11.848	-50.150	980036.967	-49.790
8.415	188	38 30.00	-80 45.28	1111.000	.550	979919.535	-12.019	-49.913	980036.057	-49.363
8.315	189	38 31.56	-80 57.35	1326.000	.120	979913.345	-.277	-45.504	980038.348	-45.384
8.316	190	38 31.91	-80 58.48	1365.000	.130	979910.326	-.142	-46.698	980038.862	-46.568
8.317	191	38 30.97	-80 59.28	1320.000	.150	979912.854	-.466	-45.487	980037.481	-45.337
5.223	192	38 29.84	-80 45.38	1120.000	.220	979919.279	-11.194	-49.394	980035.822	-49.174
5.222	193	38 29.29	-80 45.40	1152.000	.480	979915.031	-11.624	-50.916	980035.014	-50.436
5.221	194	38 29.00	-80 45.50	1168.000	.420	979911.575	-13.150	-52.987	980034.588	-52.567
5.220	195	38 28.70	-80 45.89	1217.000	.390	979908.763	-10.912	-52.421	980034.148	-52.031
5.219	196	38 28.39	-80 46.45	1280.000	.370	979904.373	-8.921	-52.578	980033.693	-52.208
5.218	197	38 27.98	-80 46.55	1380.000	.220	979897.110	-6.177	-53.245	980033.091	-53.025
5.217	198	38 27.29	-80 46.60	1872.000	.170	979867.135	11.140	-52.709	980032.078	-52.539
5.200	199	38 26.78	-80 46.97	1872.000	.260	979867.179	11.933	-51.916	980031.330	-51.656

PRINCIPAL FACTS AT GRAVITY STATIONS

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
5.216	200	38 26.77	-80 46.98	1880.000	.170	979867.209	12.730	-51.392	980031.315	-51.222
5.214	201	38 25.67	-80 47.12	2040.000	.290	979855.236	17.421	-52.158	980029.701	-51.868
5.212	202	38 25.07	-80 47.19	1885.000	.370	979866.017	14.503	-49.789	980028.820	-49.419
5.299	203	38 24.71	-80 47.50	1885.000	.380	979865.801	14.815	-49.477	980028.292	-49.097
5.201	204	38 22.58	-80 48.85	1865.000	.350	979860.501	10.759	-52.851	980025.167	-52.501
5.411	205	38 22.20	-80 49.31	1862.000	.280	979860.538	11.071	-52.437	980024.610	-52.157
5.410	206	38 22.03	-80 49.62	1851.000	.350	979860.575	10.323	-52.810	980024.360	-52.460
5.409	207	38 21.51	-80 50.11	1880.000	.340	979860.602	13.840	-50.282	980023.597	-49.942
5.408	208	38 21.15	-80 50.37	1853.000	.710	979860.644	11.871	-51.330	980023.069	-50.620
5.412	209	38 21.22	-80 50.94	1909.000	.420	979860.682	17.073	-48.038	980023.172	-47.618
5.413	210	38 21.50	-80 51.21	1880.000	.450	979860.719	13.972	-50.149	980023.583	-49.699
5.414	211	38 21.55	-80 51.95	1875.000	.340	979860.762	13.472	-50.479	980023.656	-50.139
5.407	212	38 20.78	-80 50.29	1870.000	.390	979860.838	14.206	-49.574	980022.527	-49.184
5.406	213	38 20.42	-80 50.25	1855.000	.410	979860.876	13.361	-49.908	980021.999	-49.498
5.405	214	38 19.80	-80 49.95	1890.000	.190	979852.150	8.836	-55.627	980021.090	-55.437
5.404	215	38 18.68	-80 50.18	1850.000	.210	979852.536	7.103	-55.996	980019.448	-55.786
5.415	216	38 18.76	-80 49.43	1915.000	.150	979847.886	8.449	-56.867	980019.565	-56.717
5.416	217	38 19.19	-80 48.04	1920.000	.110	979848.823	9.226	-56.260	980020.195	-56.150
5.417	218	38 19.33	-80 47.55	1923.000	.170	979850.532	11.012	-54.576	980020.401	-54.406
5.418	219	38 20.17	-80 47.13	2000.000	.270	979847.611	14.101	-54.113	980021.632	-53.843
5.419	220	38 18.84	-80 45.63	2083.000	.210	979839.173	15.421	-55.625	980019.682	-55.415
5.420	221	38 18.90	-80 45.13	2085.000	.120	979839.220	15.568	-55.545	980019.770	-55.425
5.403	222	38 17.55	-80 50.31	1944.000	.140	979850.775	15.840	-50.465	980017.791	-50.325
5.489	223	38 17.10	-80 50.60	1894.000	.100	979853.195	14.216	-50.383	980017.131	-50.283
5.402	224	38 16.87	-80 51.25	1920.000	.120	979852.966	16.769	-48.716	980016.794	-48.596
5.401	225	38 17.37	-80 51.95	1725.000	.310	979862.097	6.826	-52.009	980017.527	-51.699
5.311	226	38 18.33	-80 52.75	1581.000	.180	979878.460	8.237	-45.687	980018.935	-45.507
5.310	227	38 18.57	-80 54.05	1515.000	.220	979881.443	4.659	-47.013	980019.286	-46.793
5.309	228	38 18.33	-80 54.72	1530.000	.340	979880.303	5.283	-46.901	980018.935	-46.561
5.308	229	38 18.20	-80 55.05	1528.000	.110	979879.800	4.782	-47.334	980018.744	-47.224
5.371	230	38 18.20	-80 56.26	1311.000	.130	979889.008	-6.421	-51.136	980018.744	-51.006
5.307	231	38 18.02	-80 56.67	1299.000	.170	979893.838	-2.456	-46.762	980018.480	-46.592
5.306	232	38 17.25	-80 57.02	1268.000	.100	979894.542	-3.539	-46.787	980017.351	-46.687
5.305	233	38 16.84	-80 57.71	1207.000	.270	979897.959	-5.259	-46.427	980016.750	-46.157
5.304	234	38 17.89	-80 58.29	1207.000	.380	979897.983	-6.774	-47.942	980018.289	-47.562
5.303	235	38 16.38	-80 57.79	1165.000	.710	979898.460	-8.034	-47.769	980016.076	-47.059
5.302	236	38 16.40	-80 59.36	1160.000	.410	979898.489	-8.505	-48.070	980016.106	-47.660
5.301	237	38 16.37	-80 59.89	1153.000	.200	979898.517	-9.092	-48.417	980016.062	-48.217
5.311	238	38 17.86	-80 54.91	1480.000	.160	979881.624	2.590	-47.889	980018.246	-47.729
5.312	239	38 17.56	-80 54.77	1518.000	.170	979879.077	4.056	-47.718	980017.806	-47.548

P R I N C I P A L F A C T S A T G R A V I T Y S T A T I O N S

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
5.313	240	38 16.96	-80 54.65	1530.000	.220	979878.351	5.338	-46.846	980016.926	-46.626
5.314	241	38 16.45	-80 54.54	1525.000	.110	979874.867	2.132	-49.882	980016.179	-49.772
5.315	242	38 15.97	-80 53.78	1525.000	.180	979874.906	2.875	-49.139	980015.475	-48.959
5.316	243	38 21.93	-80 52.95	1890.000	.210	979863.632	17.195	-47.268	980024.213	-47.058
5.317	244	38 22.26	-80 52.93	1888.000	.250	979863.667	16.557	-47.837	980024.698	-47.587
5.101	245	38 22.78	-80 54.24	1952.000	.280	979863.272	21.419	-45.158	980025.460	-44.878
5.103	246	38 23.81	-80 55.14	1760.000	.170	979874.455	13.032	-46.997	980026.971	-46.827
5.104	247	38 23.93	-80 55.31	1779.000	.320	979871.633	11.821	-48.855	980027.147	-48.535
5.105	248	38 24.54	-80 55.35	1719.000	.230	979876.394	10.043	-48.587	980028.042	-48.357
5.101	249	38 24.97	-80 55.47	1725.000	.210	979876.137	9.720	-49.115	980028.673	-48.905
5.107	250	38 25.28	-80 55.85	1730.000	.290	979876.514	10.112	-48.893	980029.128	-48.603
5.108	251	38 25.76	-80 56.28	1383.000	.370	979898.575	-1.171	-48.341	980029.833	-47.971
5.109	252	38 26.15	-80 56.18	1140.000	.410	979912.899	-10.276	-49.158	980030.405	-48.748
5.110	253	38 26.59	-80 57.34	1000.000	.510	979921.346	-15.643	-49.750	980031.051	-49.240
5.111	254	38 26.93	-80 57.79	943.000	.620	979925.027	-17.823	-49.986	980031.550	-49.366
5.112	255	38 27.36	-80 58.10	840.000	.590	979933.037	-20.133	-48.783	980032.181	-48.193
5.113	256	38 27.39	-80 58.66	842.000	.720	979933.058	-19.968	-48.686	980032.225	-47.966
5.114	257	38 27.43	-80 59.23	828.000	.690	979934.377	-20.023	-48.264	980032.284	-47.574
5.171	258	38 27.56	-80 59.14	828.000	.580	979933.322	-21.270	-49.511	980032.474	-48.931
5.116	259	38 28.05	-80 57.67	880.000	.470	979934.089	-16.331	-46.345	980033.194	-45.875
5.117	260	38 28.00	-80 57.11	840.000	.540	979934.113	-19.996	-48.646	980033.120	-48.106
5.172	261	38 27.98	-80 59.32	826.000	.690	979934.173	-21.224	-49.396	980033.091	-48.706
5.115	262	38 28.42	-80 59.65	826.000	.680	979934.993	-21.049	-49.222	980033.737	-48.542
8.314	263	38 30.50	-80 56.69	1095.000	.410	979923.856	-9.937	-47.285	980036.791	-46.875
8.322	264	38 32.19	-80 55.65	891.000	.420	979937.795	-17.669	-48.058	980039.273	-47.638
8.323	265	38 32.53	-80 56.54	920.000	.410	979937.403	-15.833	-47.211	980039.772	-46.801
8.324	266	38 33.08	-80 56.87	920.000	.510	979937.442	-16.602	-47.981	980040.580	-47.471
8.321	267	38 31.23	-80 54.99	941.000	.450	979935.275	-14.077	-46.172	980037.863	-45.722
8.320	268	38 31.74	-80 53.82	1101.000	.460	979925.274	-9.776	-47.328	980038.612	-46.868
8.319	269	38 31.38	-80 53.50	1422.000	.570	979905.027	.700	-47.801	980038.083	-47.231
8.318	270	38 31.38	-80 53.50	1422.000	.250	979905.056	.728	-47.772	980038.083	-47.522
5.229	271	38 28.62	-80 51.87	1646.000	.210	979890.865	11.660	-44.481	980034.031	-44.271
5.230	272	38 28.59	-80 52.39	1625.000	.290	979890.889	9.752	-45.672	980033.987	-45.382
5.120	273	38 28.29	-80 53.12	1620.000	.270	979890.903	9.736	-45.518	980033.546	-45.248
5.119	274	38 28.78	-80 54.00	1210.000	.310	979914.775	-5.676	-46.946	980034.265	-46.636
5.118	275	38 29.66	-80 56.37	1180.000	.340	979916.180	-8.385	-48.631	980035.558	-48.291
5.228	276	38 29.23	-80 50.36	1268.000	.210	979911.622	-4.034	-47.282	980034.926	-47.072
5.227	277	38 29.33	-80 49.49	1199.000	.170	979915.718	-6.575	-47.470	980035.073	-47.300
5.226	278	38 29.82	-80 49.40	1183.000	.190	979917.563	-6.954	-47.303	980035.792	-47.113
5.225	279	38 29.62	-80 47.82	1730.000	.280	979882.155	9.383	-49.623	980035.499	-49.343

PRINCIPAL FACTS AT GRAVITY STATIONS

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
11.301	280	38 39.10	-80 45.41	891.000	.150	979948.136	-17.483	-47.872	980049.427	-47.722
11.302	281	38 38.50	-80 45.73	873.000	.170	979950.070	-16.359	-46.135	980048.545	-45.965
11.303	282	38 38.51	-80 45.73	870.000	.280	979950.252	-16.475	-46.148	980048.560	-45.868
11.304	283	38 38.52	-80 45.73	871.000	.310	979950.070	-16.577	-46.284	980048.575	-45.974
11.305	284	38 38.51	-80 45.74	874.000	.180	979950.071	-16.279	-46.089	980048.560	-45.909
11.306	285	38 38.52	-80 47.57	870.000	.190	979950.071	-16.670	-46.343	980048.575	-46.153
11.307	286	38 38.71	-80 47.97	875.000	.190	979948.137	-18.413	-48.257	980048.854	-48.067
11.308	287	38 39.15	-80 48.72	875.000	.140	979948.138	-19.059	-48.903	980049.501	-48.763
11.309	288	38 41.20	-80 49.87	840.000	.270	979958.030	-15.474	-44.124	980052.515	-43.854
11.313	289	38 41.19	-80 49.08	838.000	.310	979958.032	-15.645	-44.227	980052.500	-43.917
11.318	290	38 42.07	-80 49.66	1126.000	.260	979942.908	-4.974	-43.379	980053.795	-43.119
11.315	291	38 43.30	-80 49.95	871.000	.370	979957.961	-15.715	-45.422	980055.604	-45.052
13.417	717	38 31.18	-81 21.02	615.000	.390	979945.704	-34.238	-55.214	980037.790	-54.824
11.316	292	38 44.11	-80 49.73	929.000	.400	979954.631	-14.781	-46.466	980056.795	-46.066
11.317	293	38 43.36	-80 49.27	920.000	.410	979952.447	-16.708	-48.087	980055.692	-47.677
11.318	294	38 43.30	-80 48.57	980.000	.470	979948.439	-14.985	-48.410	980055.604	-47.940
11.319	295	38 43.30	-80 48.15	1070.000	.340	979945.148	-9.810	-46.305	980055.604	-45.965
11.320	296	38 43.61	-80 47.53	1028.000	.320	979944.443	-14.922	-49.984	980056.060	-49.664
11.321	297	38 44.96	-80 46.74	980.000	.420	979953.028	-12.838	-46.263	980058.046	-45.843
11.322	298	38 44.55	-80 46.16	871.000	.510	979958.541	-16.974	-46.682	980057.443	-46.172
11.323	299	38 44.32	-80 45.33	923.000	.480	979955.608	-14.678	-46.159	980057.104	-45.679
11.310	300	38 50.76	-80 40.13	760.000	.270	979975.851	-19.245	-45.167	980066.583	-44.897
11.311	301	38 51.72	-80 39.90	780.000	.250	979976.704	-17.925	-44.529	980067.997	-44.279
11.312	302	38 51.82	-80 41.95	802.000	.330	979976.237	-16.470	-43.824	980068.144	-43.494
11.101	303	38 52.79	-80 43.02	756.000	.420	979979.900	-18.562	-44.347	980069.572	-43.927
11.104	304	38 53.11	-80 43.23	753.000	.510	979981.113	-18.102	-43.785	980070.044	-43.275
11.103	305	38 53.36	-80 43.62	755.000	.570	979980.818	-18.578	-44.329	980070.412	-43.759
11.104	306	38 53.74	-80 43.89	750.000	.620	979981.617	-18.808	-44.389	980070.972	-43.769
11.105	307	38 54.53	-80 44.00	748.000	.420	979982.718	-19.059	-44.572	980072.135	-44.152
11.106	308	38 54.72	-80 44.11	745.000	.270	979983.728	-18.612	-44.022	980072.415	-43.752
11.107	309	38 55.19	-80 44.95	775.000	.310	979982.471	-17.739	-44.172	980073.108	-43.862
11.108	310	38 55.29	-80 43.66	747.000	.290	979984.764	-18.227	-43.705	980073.255	-43.415
11.199	311	38 55.38	-80 43.49	750.000	0.000	979984.777	-18.065	-43.645	980073.388	-43.645
11.109	312	38 56.40	-80 43.20	740.000	.340	979986.102	-19.183	-44.422	980074.891	-44.082
11.110	313	38 57.23	-80 43.89	800.000	.370	979983.058	-17.806	-45.092	980076.114	-44.722
11.111	314	38 57.75	-80 43.31	812.000	.440	979983.253	-17.249	-44.945	980076.880	-44.505
11.112	315	38 58.16	-80 43.81	880.000	.490	979980.129	-14.581	-44.595	980077.484	-44.105
11.113	316	38 58.73	-80 43.76	1118.000	.390	979967.770	-5.394	-43.526	980078.324	-43.136
11.114	317	38 59.37	-80 43.61	1118.000	.170	979967.776	-6.331	-44.463	980079.268	-44.293
11.115	318	38 56.00	-80 42.80	760.000	.270	979984.778	-18.036	-43.958	980074.301	-43.688

P R I N C I P A L F A C T S A T G R A V I T Y S T A T I O N S

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
11.118	319	38 56.67	-80 41.15	762.000	.320	979985.621	-17.992	-43.982	980075.288	-43.662
11.119	320	38 57.10	-80 40.40	810.000	.320	979985.882	-13.850	-41.477	980075.922	-41.157
11.120	321	38 57.61	-80 40.29	812.000	.290	979986.527	-13.768	-41.463	980076.674	-41.173
11.121	322	38 58.18	-80 38.89	792.000	.390	979986.388	-16.629	-43.642	980077.514	-43.252
11.122	323	38 58.43	-80 37.91	825.000	.400	979985.343	-14.939	-43.077	980077.882	-42.677
11.201	324	38 57.14	-80 36.68	868.000	.320	979981.877	-12.459	-42.064	980075.981	-41.744
11.202	325	38 57.25	-80 34.93	855.000	.410	979982.513	-13.207	-42.369	980076.143	-41.959
11.203	326	38 57.91	-80 33.56	884.000	.460	979980.864	-13.102	-43.252	980077.116	-42.792
11.204	327	38 58.03	-80 32.40	940.000	.290	979977.188	-11.687	-43.747	980077.293	-43.457
11.205	328	38 57.75	-80 30.74	1300.000	.370	979958.501	3.901	-40.439	980076.880	-40.069
11.206	329	38 57.09	-80 30.95	1140.000	.310	979967.413	-1.265	-40.147	980075.907	-39.837
11.207	330	38 56.82	-80 31.92	1231.000	.420	979959.644	-.075	-42.061	980075.509	-41.641
11.208	331	38 55.85	-80 34.34	1020.000	.460	979971.265	-6.872	-41.661	980074.080	-41.201
11.209	332	38 56.20	-80 33.31	1020.000	.350	979971.268	-7.386	-42.175	980074.596	-41.825
11.210	333	38 55.63	-80 34.20	921.000	.310	979974.642	-12.483	-43.896	980073.756	-43.586
11.211	334	38 56.03	-80 34.91	890.000	.420	979977.172	-13.458	-43.814	980074.345	-43.394
11.212	335	38 56.14	-80 35.68	871.000	.490	979978.754	-13.826	-43.533	980074.507	-43.043
11.213	336	38 55.55	-80 36.25	851.000	.500	979979.050	-14.542	-43.567	980073.638	-43.067
11.214	337	38 55.89	-80 37.43	824.000	.550	979981.577	-15.055	-43.159	980074.139	-42.609
11.175	338	38 55.60	-80 38.51	815.000	.420	979981.250	-15.802	-43.599	980073.712	-43.179
11.176	339	38 55.82	-80 39.85	810.000	.270	979982.317	-15.530	-43.156	980074.036	-42.886
11.177	340	38 55.50	-80 40.63	763.000	.380	979984.052	-17.744	-43.767	980073.564	-43.387
11.117	341	38 55.55	-80 41.51	850.000	.250	979978.654	-15.032	-44.023	980073.638	-43.773
11.116	342	38 55.78	-80 41.99	755.000	.360	979984.826	-18.135	-43.886	980073.977	-43.526
11.422	343	38 51.55	-80 39.92	801.000	.310	979974.533	-17.870	-45.190	980067.746	-44.880
11.421	344	38 51.83	-80 34.35	820.000	.210	979974.713	-16.315	-44.283	980068.159	-44.073
11.420	345	38 52.05	-80 33.39	826.000	.370	979973.454	-17.333	-45.506	980068.483	-45.136
11.419	346	38 51.67	-80 33.07	853.000	.290	979971.517	-16.171	-45.265	980067.923	-44.975
11.418	347	38 51.36	-80 32.01	941.000	.410	979968.623	-10.331	-42.426	980067.466	-42.016
11.417	348	38 51.77	-80 31.29	1015.000	.220	979964.084	-8.513	-43.132	980068.070	-42.912
11.416	349	38 51.39	-80 30.45	1020.000	.210	979963.222	-8.346	-43.135	980067.511	-42.925
11.415	350	38 51.02	-80 30.18	1373.000	.180	979938.280	.461	-46.368	980066.966	-46.188
11.410	351	38 48.03	-80 30.00	1020.000	.230	979954.508	-12.114	-46.903	980062.564	-46.673
11.411	352	38 48.36	-80 31.00	940.000	.270	979959.129	-15.503	-47.564	980063.050	-47.294
11.412	353	38 49.00	-80 30.82	980.000	.270	979960.268	-11.543	-44.968	980063.992	-44.698
11.413	354	38 48.60	-80 31.77	830.000	.380	979969.012	-16.320	-44.629	980063.403	-44.249
11.409	355	38 47.19	-80 31.15	1050.000	.190	979954.302	-8.261	-44.074	980061.328	-43.884
11.408	356	38 48.89	-80 31.86	791.000	.380	979969.316	-20.111	-47.090	980063.830	-46.710
11.405	357	38 47.03	-80 33.90	791.000	.430	979969.304	-17.385	-44.364	980061.092	-43.934
11.403	358	38 47.47	-80 35.39	820.000	.370	979966.110	-18.499	-46.467	980061.740	-46.097

PRINCIPAL FACTS AT GRAVITY STATIONS

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
11.402	359	38 46.90	-80 36.00	870.000	.420	979962.744	-16.324	-45.997	980060.901	-45.577
11.401	360	38 46.14	-80 36.80	850.000	.390	979964.959	-14.871	-43.863	980059.782	-43.473
22.220	361	38 16.89	-80 51.49	1870.000	0.000	979850.767	9.839	-53.942	980016.824	-53.942
22.220	1078	38 16.89	-80 51.49	1870.000	0.000	979850.770	9.841	-53.939	980016.824	-53.939
4.420	362	38 15.97	-81 .27	1225.000	.510	979891.227	-9.023	-50.804	980015.475	-50.294
4.419	363	38 16.05	-81 .49	1220.000	.610	979893.924	-6.914	-48.524	980015.593	-47.914
4.418	364	38 15.95	-81 1.15	1225.000	.650	979891.227	-8.993	-50.775	980015.446	-50.125
4.417	365	38 15.50	-81 1.70	1209.000	.550	979891.228	-9.838	-51.074	980014.787	-50.524
4.416	366	38 15.59	-81 2.14	1200.000	.480	979891.228	-10.817	-51.745	980014.918	-51.265
4.415	367	38 15.37	-81 2.60	1220.000	.470	979891.229	-8.612	-50.223	980014.596	-49.753
4.414	368	38 15.49	-81 3.14	1300.000	.520	979881.764	-10.728	-55.067	980014.772	-54.547
4.412	369	38 15.99	-81 4.68	1324.000	.410	979881.766	-9.201	-54.359	980015.505	-53.949
4.411	370	38 16.32	-81 5.25	1324.000	.380	979881.767	-9.684	-54.842	980015.988	-54.462
4.410	371	38 15.87	-81 5.95	1299.000	.590	979881.769	-11.374	-55.680	980015.329	-55.090
4.409	372	38 15.78	-81 6.11	1324.000	.620	979881.770	-8.890	-54.047	980015.197	-53.427
2.202	373	38 14.92	-81 6.21	800.000	.700	979911.321	-27.366	-54.652	980013.937	-53.952
2.201	374	38 14.73	-81 7.35	795.000	.590	979911.324	-27.556	-54.671	980013.658	-54.081
2.122	375	38 14.15	-81 7.85	730.000	.180	979914.927	-29.216	-54.115	980012.808	-53.935
2.212	376	38 14.22	-81 8.27	730.000	.210	979914.929	-29.317	-54.215	980012.911	-54.005
2.120	377	38 13.62	-81 9.35	709.000	.250	979914.130	-31.213	-55.395	980012.032	-55.145
2.119	378	38 13.96	-81 11.28	702.000	.170	979916.213	-30.286	-54.230	980012.530	-54.060
2.116	379	38 13.72	-81 11.56	710.000	.200	979915.819	-29.576	-53.792	980012.178	-53.592
2.117	380	38 14.28	-81 11.39	709.000	.270	979916.667	-29.642	-53.824	980012.999	-53.554
2.118	381	38 14.79	-81 11.52	702.000	.280	979916.307	-31.408	-55.351	980013.746	-55.071
4.301	382	38 15.08	-81 11.52	732.000	.210	979916.692	-28.626	-53.592	980014.171	-53.382
4.333	383	38 15.07	-81 12.59	840.000	.310	979914.734	-20.410	-49.061	980014.156	-48.751
4.334	384	38 15.30	-81 13.32	801.000	.290	979913.465	-25.686	-53.006	980014.493	-52.716
4.335	385	38 15.71	-81 13.25	810.000	.350	979912.955	-25.949	-53.576	980015.094	-53.226
4.336	386	38 15.78	-81 13.72	833.000	.620	979912.614	-24.230	-52.641	980015.197	-52.021
4.337	387	38 16.15	-81 14.87	1000.000	.410	979908.031	-13.647	-47.754	980015.739	-47.344
4.303	388	38 15.56	-81 11.71	775.000	.690	979914.656	-27.321	-53.754	980014.874	-53.064
4.302	389	38 15.72	-81 11.81	775.000	0.000	979914.658	-27.554	-53.987	980015.109	-53.987
4.399	390	38 15.73	-81 11.79	775.000	0.000	979914.655	-27.571	-54.004	980015.124	-54.004
4.304	391	38 15.89	-81 11.87	775.000	.490	979914.227	-28.234	-54.667	980015.358	-54.177
4.305	392	38 16.14	-81 11.94	880.000	.510	979912.427	-20.523	-50.538	980015.724	-50.028
4.306	393	38 16.38	-81 11.84	830.000	.430	979913.065	-24.940	-53.249	980016.076	-52.819
4.307	394	38 16.78	-81 11.62	876.000	.470	979911.269	-22.996	-52.874	980016.662	-52.404
4.308	395	38 17.02	-81 11.40	900.000	.510	979910.618	-21.741	-52.437	980017.014	-51.927
4.309	396	38 17.35	-81 11.68	961.000	.470	979908.181	-18.923	-51.700	980017.498	-51.230
4.310	397	38 17.34	-81 11.67	960.000	.480	979908.185	-18.999	-51.742	980017.483	-51.262

P R I N C I P A L F A C T S A T G R A V I T Y S T A T I O N S

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
4.311	398	38 18.36	-81 11.17	1260.000	.390	979894.213	-6.248	-49.223	980018.978	-48.833
4.312	399	38 18.36	-81 10.79	1258.000	.380	979894.216	-6.433	-49.340	980018.978	-48.960
4.313	400	38 18.75	-81 10.52	1371.000	.260	979888.248	-2.344	-49.105	980019.550	-48.845
4.314	401	38 18.73	-81 10.28	1371.000	.290	979888.258	-2.305	-49.066	980019.521	-48.776
4.315	402	38 18.74	-81 10.50	1371.000	.400	979888.253	-2.324	-49.085	980019.536	-48.685
4.316	403	38 18.75	-81 10.66	1371.000	.290	979888.259	-2.333	-49.094	980019.550	-48.804
4.317	404	38 19.75	-81 10.66	1080.000	.350	979909.526	-9.904	-46.740	980021.016	-46.390
4.318	405	38 20.21	-81 10.21	960.000	.390	979915.393	-15.999	-48.742	980021.691	-48.352
4.319	406	38 20.41	-81 10.51	950.000	0.000	979916.464	-16.161	-48.563	980021.984	-48.563
4.320	407	38 20.77	-81 9.80	925.000	.420	979918.409	-17.096	-48.646	980022.512	-48.226
4.321	408	38 21.00	-81 9.71	925.000	.450	979918.983	-16.859	-48.408	980022.849	-47.958
4.322	409	38 21.62	-81 9.51	857.000	.550	979923.294	-19.854	-49.084	980023.759	-48.534
4.338	410	38 21.89	-81 9.70	1080.000	.210	979914.307	-8.261	-45.097	980024.155	-44.887
4.339	411	38 22.29	-81 10.10	806.000	.420	979928.089	-20.839	-48.330	980024.742	-47.910
4.339	412	38 22.14	-81 10.35	860.000	.330	979926.317	-17.312	-46.644	980024.521	-46.314
4.341	413	38 21.89	-81 10.51	880.000	.590	979924.558	-16.823	-46.837	980024.155	-46.247
4.342	414	38 21.65	-81 10.75	875.000	0.000	979921.979	-19.520	-49.364	980023.803	-49.364
4.343	415	38 21.50	-81 11.19	880.000	.550	979922.753	-18.055	-48.070	980023.583	-47.520
4.344	416	38 21.00	-81 11.50	840.000	0.000	979921.717	-22.121	-50.771	980022.849	-50.771
4.345	417	38 22.23	-81 11.75	1050.000	.250	979916.338	-9.551	-45.364	980024.654	-45.114
4.323	418	38 21.51	-81 9.22	880.000	.350	979925.652	-15.171	-45.186	980023.597	-44.836
4.324	419	38 21.19	-81 8.82	930.000	.390	979918.708	-16.943	-48.663	980023.128	-48.273
4.325	420	38 21.02	-81 8.46	935.000	.310	979918.755	-16.176	-48.066	980022.879	-47.756
4.326	421	38 21.17	-81 8.21	1043.000	.410	979911.353	-13.640	-49.213	980023.099	-48.803
4.331	422	38 20.92	-81 8.07	980.000	.330	979910.732	-19.820	-53.245	980022.732	-52.915
4.332	423	38 20.90	-81 7.62	987.000	.360	979910.736	-19.128	-52.792	980022.703	-52.432
4.402	424	38 20.63	-81 7.12	1020.000	.420	979908.927	-17.437	-52.226	980022.307	-51.806
4.403	425	38 20.27	-81 7.03	1060.000	.440	979906.123	-15.951	-52.105	980021.779	-51.665
4.404	426	38 19.55	-81 6.97	1300.000	.450	979892.650	-5.793	-50.133	980020.723	-49.683
4.405	427	38 19.53	-81 6.49	1300.000	.390	979892.652	-5.762	-50.102	980020.694	-49.712
4.406	428	38 19.52	-81 5.93	1300.000	.370	979892.654	-5.745	-50.085	980020.679	-49.715
4.407	429	38 19.55	-81 5.51	1300.000	.400	979892.656	-5.788	-50.127	980020.723	-49.727
4.408	430	38 19.79	-81 5.51	1320.000	.380	979889.894	-7.020	-52.041	980021.075	-51.661
4.327	431	38 19.99	-81 7.68	1278.000	.150	979889.898	-11.260	-54.849	980021.368	-54.699
4.328	432	38 20.00	-81 7.55	1280.000	.190	979889.898	-11.086	-54.744	980021.383	-54.554
4.329	433	38 22.00	-81 7.59	1170.000	.210	979905.543	-8.721	-48.627	980024.316	-48.417
4.401	434	38 22.03	-81 7.48	1180.000	.210	979905.542	-7.825	-48.072	980024.360	-47.862
4.202	435	38 22.58	-81 6.98	920.000	.290	979924.658	-13.973	-45.351	980025.167	-45.061
4.203	436	38 22.89	-81 6.73	947.000	.330	979920.932	-15.613	-47.913	980025.622	-47.583
4.204	437	38 23.15	-81 6.89	970.000	.350	979922.963	-11.800	-44.884	980026.003	-44.534

PRINCIPAL FACTS AT GRAVITY STATIONS

STA NAME AND NUM	LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL	
4.205	438	38 23.36	-81 6.78	900.000	.410	979923.961	-17.694	-48.391	980026.311	-47.981
4.255	439	38 23.75	-81 6.81	877.000	.500	979926.515	-17.876	-47.788	980026.883	-47.288
4.206	440	38 23.32	-81 6.89	877.000	.570	979928.174	-15.586	-45.498	980026.252	-44.928
4.207	441	38 24.17	-81 6.79	840.000	.550	979930.264	-18.224	-46.874	980027.499	-46.324
4.208	442	38 24.37	-81 6.77	800.000	.610	979931.392	-21.151	-48.437	980027.793	-47.827
4.209	443	38 24.55	-81 6.90	797.000	.590	979932.607	-20.483	-47.667	980028.057	-47.077
4.210	444	38 24.78	-81 6.97	730.000	.620	979934.228	-25.502	-50.400	980028.395	-49.780
4.211	445	38 25.24	-81 6.72	726.000	.620	979937.688	-23.093	-47.855	980029.070	-47.235
4.212	446	38 25.58	-81 6.83	720.000	.670	979939.923	-21.921	-46.479	980029.568	-45.809
4.213	447	38 25.83	-81 6.82	701.000	.690	979939.352	-24.646	-48.555	980029.935	-47.865
4.214	448	38 25.87	-81 6.50	730.000	.680	979939.968	-21.361	-46.259	980029.994	-45.579
4.215	449	38 26.42	-81 6.40	720.000	.710	979941.266	-21.811	-46.368	980030.801	-45.658
4.216	450	38 26.80	-81 5.89	712.000	.680	979943.690	-20.697	-44.981	980031.359	-44.301
4.218	451	38 27.55	-81 5.26	715.000	.520	979944.037	-21.169	-45.556	980032.460	-45.036
4.232	452	38 27.57	-81 5.07	715.000	.570	979943.780	-21.455	-45.842	980032.489	-45.272
4.233	453	38 26.82	-81 4.13	1263.000	.630	979908.854	-3.735	-46.812	980031.388	-46.182
4.234	454	38 25.56	-81 3.60	1263.000	.710	979907.885	-2.854	-45.932	980029.539	-45.222
4.235	455	38 24.84	-81 3.55	1263.000	.660	979907.936	-1.747	-44.825	980028.483	-44.165
4.219	456	38 27.98	-81 3.47	820.000	.810	979940.387	-15.573	-43.541	980033.091	-42.731
4.220	457	38 28.52	-81 5.05	720.000	.590	979946.179	-19.981	-44.538	980033.884	-43.948
4.221	458	38 28.53	-81 4.71	720.000	.630	979946.191	-19.984	-44.541	980033.898	-43.911
4.222	459	38 28.97	-81 4.17	730.000	.710	979945.809	-20.071	-44.969	980034.544	-44.259
4.223	460	38 29.55	-81 3.31	722.000	.520	979945.515	-21.968	-46.594	980035.396	-46.074
4.224	461	38 29.39	-81 2.93	720.000	.490	979946.072	-21.365	-45.922	980035.161	-45.432
4.225	462	38 29.92	-81 5.13	720.000	.560	979947.050	-21.165	-45.722	980035.939	-45.162
4.226	463	38 29.95	-81 3.47	760.000	.710	979945.917	-18.580	-44.501	980035.983	-43.791
4.227	464	38 28.55	-81 5.37	765.000	.720	979944.127	-17.844	-43.936	980033.928	-43.216
4.228	465	38 28.69	-81 5.95	826.000	.490	979940.227	-16.212	-44.384	980034.133	-43.894
4.229	466	38 29.07	-81 5.40	950.000	.510	979932.684	-12.649	-45.051	980034.691	-44.541
4.230	467	38 29.17	-81 5.78	1032.000	.480	979930.953	-6.814	-42.012	980034.838	-41.532
4.231	468	38 29.16	-81 5.19	946.000	.430	979934.705	-11.136	-43.402	980034.823	-42.972
4.101	469	38 29.19	-81 7.72	910.000	.490	979937.761	-11.510	-42.548	980034.867	-42.058
4.102	470	38 29.32	-81 8.46	840.000	.420	979940.054	-15.993	-44.643	980035.058	-44.223
4.103	471	38 29.11	-81 9.25	780.000	.510	979942.540	-18.842	-45.446	980034.750	-44.936
4.104	472	38 29.00	-81 9.60	760.000	.550	979944.373	-18.729	-44.650	980034.588	-44.100
4.106	473	38 29.52	-81 9.81	768.000	.570	979944.875	-18.238	-44.432	980035.352	-43.862
4.107	474	38 29.87	-81 10.07	788.000	.410	979944.825	-16.921	-43.797	980035.866	-43.387
4.108	475	38 29.96	-81 11.17	960.000	.490	979935.651	-10.048	-42.791	980035.998	-42.301
4.109	476	38 29.72	-81 11.99	800.000	.560	979942.524	-17.873	-45.159	980035.646	-44.599
4.110	477	38 29.48	-81 12.27	664.000	.480	979949.659	-23.177	-45.824	980035.293	-45.344

P R I N C I P A L F A C T S A T G R A V I T Y S T A T I O N S

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
4.115	478	38 29.05	-81 12.26	770.000	.430	979943.336	-18.898	-45.161	980034.662	-44.731
4.116	479	38 28.54	-81 12.35	667.000	.590	979944.931	-26.243	-48.993	980033.913	-48.403
4.117	480	38 28.52	-81 11.81	680.000	.620	979945.722	-24.200	-47.392	980033.884	-46.772
4.118	481	38 28.67	-81 11.46	700.000	.580	979947.050	-21.203	-45.078	980034.104	-44.498
4.119	482	38 28.16	-81 11.30	680.000	.630	979945.392	-24.001	-47.194	980033.355	-46.564
4.120	483	38 28.01	-81 11.32	659.000	.610	979945.472	-25.677	-48.153	980033.135	-47.543
4.121	484	38 27.54	-81 11.65	700.000	.580	979944.805	-21.797	-45.672	980032.445	-45.092
4.122	485	38 26.96	-81 11.13	699.000	.580	979943.086	-22.759	-46.600	980031.594	-46.020
4.123	486	38 26.77	-81 11.70	665.000	.710	979943.425	-25.339	-48.020	980031.315	-47.310
4.124	487	38 26.04	-81 11.95	670.000	.750	979941.483	-25.740	-48.591	980030.244	-47.841
4.126	488	38 26.16	-81 11.12	675.000	.720	979941.444	-25.484	-48.507	980030.420	-47.787
4.127	489	38 25.68	-81 10.96	680.000	.690	979940.874	-24.879	-48.072	980029.715	-47.382
4.128	490	38 26.25	-81 10.39	680.000	.680	979941.293	-25.297	-48.490	980030.552	-47.810
4.129	491	38 26.85	-81 10.48	670.000	.720	979942.743	-25.668	-48.520	980031.432	-47.800
4.130	492	38 27.10	-81 10.12	670.000	.890	979942.286	-26.492	-49.344	980031.799	-48.454
4.131	493	38 26.95	-81 9.82	690.000	.850	979943.139	-23.538	-47.072	980031.579	-46.222
4.132	494	38 27.13	-81 9.22	680.000	.880	979942.703	-25.179	-48.372	980031.843	-47.492
4.133	495	38 26.96	-81 8.65	680.000	.890	979942.628	-25.004	-48.196	980031.594	-47.306
4.134	496	38 26.56	-81 8.53	690.000	.720	979941.204	-24.900	-48.434	980031.007	-47.714
4.135	497	38 26.27	-81 7.55	680.000	.900	979941.377	-25.242	-48.435	980030.581	-47.535

PRINCIPAL FACTS AT GRAVITY STATIONS

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
2.116	1077	38 13.72	-81 11.56	710.000	0.000	979915.860	-29.535	-53.751	980012.178	-53.751
4.141	498	38 23.63	-81 14.16	1014.000	.310	979919.792	-11.537	-46.122	980026.707	-45.812
4.140	499	38 23.63	-81 14.19	1015.000	.320	979919.790	-11.445	-46.064	980026.707	-45.744
4.139	500	38 25.11	-81 13.93	934.000	.490	979926.341	-14.685	-46.541	980028.879	-46.051
4.138	501	38 26.03	-81 14.21	917.000	.470	979928.344	-15.631	-46.907	980030.229	-46.437
4.137	502	38 27.07	-81 14.12	831.000	.510	979934.552	-19.038	-47.381	980031.755	-46.871
4.136	503	38 27.21	-81 13.67	1103.000	.380	979919.699	-8.512	-46.132	980031.961	-45.752
4.112	504	38 29.52	-81 13.00	652.000	.560	979947.942	-26.082	-48.320	980035.352	-47.760
4.113	505	38 29.46	-81 13.55	650.000	.650	979947.137	-26.987	-49.157	980035.264	-48.507
4.114	506	38 29.76	-81 13.14	640.000	.780	979947.624	-27.881	-49.709	980035.704	-48.929
4.111	507	38 29.77	-81 12.50	670.000	.250	979947.623	-25.075	-47.927	980035.719	-47.677
2.115	508	38 13.17	-81 11.48	715.000	.290	979913.521	-30.598	-54.985	980011.373	-54.695
2.114	509	38 12.27	-81 10.61	693.000	.350	979911.989	-32.881	-56.517	980010.054	-56.167
2.113	510	38 11.32	-81 11.55	700.000	.280	979910.922	-31.898	-55.773	980008.663	-55.493
2.112	511	38 10.03	-81 11.52	680.000	.470	979910.137	-32.675	-55.868	980006.774	-55.398
2.107	512	38 9.25	-81 7.82	702.000	.550	979905.656	-33.944	-57.888	980005.632	-57.338
2.108	513	38 8.79	-81 10.30	902.000	.370	979895.608	-24.507	-55.272	980004.958	-54.902
2.109	514	38 8.21	-81 10.31	1125.000	.450	979881.482	-16.808	-55.179	980004.109	-54.729
2.110	515	38 8.35	-81 8.85	1140.000	.410	979881.389	-15.695	-54.577	980004.314	-54.167
2.111	516	38 8.07	-81 8.72	1175.000	.470	979876.531	-16.851	-56.927	980003.904	-56.457
2.310	517	38 6.78	-81 8.71	801.000	.560	979895.528	-31.145	-58.465	980002.016	-57.905
2.305	518	38 5.87	-81 9.22	1175.000	.350	979876.523	-13.639	-53.715	980000.684	-53.365
2.302	519	38 5.53	-81 8.67	1370.000	.250	979865.860	-5.463	-52.189	980000.187	-51.939
2.303	520	38 5.75	-81 8.61	1400.000	.320	979862.923	-5.899	-53.650	980000.509	-53.330
2.106	521	38 9.79	-81 11.99	620.000	.470	979910.276	-37.828	-58.975	980006.422	-58.505
2.105	522	38 9.35	-81 12.85	625.000	.210	979908.605	-38.385	-59.702	980005.778	-59.492
2.104	523	38 8.85	-81 12.80	668.000	.190	979907.788	-34.425	-57.208	980005.046	-57.018
2.103	524	38 8.25	-81 12.96	698.000	.220	979906.212	-32.301	-56.108	980004.168	-55.888
2.102	525	38 7.66	-81 13.23	680.000	.150	979904.894	-34.448	-57.641	980003.304	-57.491
2.301	526	38 7.42	-81 14.02	665.000	.270	979905.571	-34.831	-57.512	980002.953	-57.242
2.101	527	38 7.62	-81 14.80	670.000	.190	979905.313	-34.911	-57.763	980003.246	-57.573
1.210	528	38 7.72	-81 15.29	655.000	.290	979905.996	-35.786	-58.126	980003.392	-57.836
1.210	1076	38 7.72	-81 15.29	655.000	0.000	979905.990	-35.792	-58.132	980003.392	-58.132
1.208	529	38 8.43	-81 16.77	676.000	.220	979907.234	-33.612	-56.669	980004.431	-56.449
1.207	530	38 8.97	-81 17.25	642.000	.310	979910.610	-34.224	-56.121	980005.222	-55.811
1.211	531	38 11.15	-81 18.10	650.000	.190	979914.545	-32.729	-54.899	980008.414	-54.709
1.212	532	38 11.62	-81 17.82	686.000	.120	979913.692	-30.884	-54.281	980009.102	-54.161
1.213	533	38 12.02	-81 16.61	768.000	.210	979909.355	-28.094	-54.289	980009.688	-54.079
1.214	534	38 12.23	-81 15.95	850.000	.310	979905.632	-24.412	-53.403	980009.996	-53.093
1.215	535	38 12.09	-81 15.18	908.000	.210	979900.710	-23.673	-54.643	980009.791	-54.433

P R I N C I P A L F A C T S A T G R A V I T Y S T A T I O N S

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
1.202	536	38 11.00	-81 19.02	640.000	.360	979914.667	-33.328	-55.157	980008.194	-54.797
1.216	537	38 11.05	-81 20.56	642.000	.370	979916.856	-31.024	-52.921	980008.268	-52.551
1.222	538	38 11.32	-81 21.36	640.000	.370	979917.721	-30.743	-52.572	980008.663	-52.202
1.201	539	38 11.61	-81 22.14	633.000	.390	979920.592	-28.954	-50.544	980009.088	-50.154
1.217	540	38 12.52	-81 22.36	610.000	.350	979922.566	-30.477	-51.282	980010.421	-50.932
1.218	541	38 12.89	-81 21.30	672.000	.390	979920.021	-27.732	-50.652	980010.963	-50.262
1.219	542	38 12.68	-81 20.63	740.000	.450	979916.936	-24.113	-49.353	980010.655	-48.903
1.220	543	38 13.04	-81 19.93	800.000	.420	979914.085	-21.848	-49.134	980011.182	-48.714
1.221	544	38 13.41	-81 19.81	804.000	.620	979912.289	-23.810	-51.232	980011.724	-50.612
1.203	545	38 10.47	-81 18.30	680.000	.710	979911.043	-32.413	-55.606	980007.418	-54.896
1.204	546	38 9.87	-81 18.53	620.000	.750	979911.223	-36.998	-58.145	980006.540	-57.395
1.205	547	38 8.68	-81 17.61	642.000	.690	979909.508	-34.901	-56.798	980004.797	-56.108
1.206	548	38 8.12	-81 18.21	655.000	.510	979906.669	-35.698	-58.038	980003.977	-57.528
1.409	549	38 7.43	-81 18.62	725.000	.490	979901.152	-33.621	-58.349	980002.967	-57.859
1.410	550	38 6.36	-81 19.40	805.000	.410	979895.704	-29.978	-57.434	980001.401	-57.024
1.411	551	38 5.95	-81 19.50	834.000	.360	979892.429	-29.925	-58.370	980000.801	-58.010
1.412	552	38 5.55	-81 19.95	880.000	.470	979887.539	-29.903	-59.917	980000.216	-59.447
1.413	553	38 5.56	-81 20.00	930.000	.510	979884.488	-28.266	-59.986	980000.231	-59.476
1.414	554	38 4.37	-81 20.24	1036.000	.490	979877.849	-23.192	-58.528	979998.489	-58.038
1.415	555	38 3.86	-81 20.35	1126.000	.380	979872.679	-19.151	-57.555	979997.743	-57.175
1.416	556	38 3.52	-81 20.25	1173.000	.450	979868.763	-18.149	-58.157	979997.246	-57.707
1.115	557	38 12.85	-81 22.93	642.000	.620	979922.231	-28.286	-50.183	980010.904	-49.563
1.114	558	38 12.49	-81 25.27	652.000	.710	979922.923	-26.125	-48.363	980010.377	-47.653
1.113	559	38 13.26	-81 25.78	620.000	.390	979925.677	-27.510	-48.656	980011.505	-48.266
1.116	560	38 13.78	-81 25.25	628.000	.410	979923.844	-29.352	-50.772	980012.266	-50.362
1.117	561	38 14.31	-81 24.40	667.000	.490	979924.576	-25.728	-48.477	980013.043	-47.987
1.118	562	38 14.75	-81 23.35	721.000	.270	979921.049	-24.821	-49.412	980013.688	-49.142
1.112	563	38 13.23	-81 11.86	634.000	.380	979923.845	-27.981	-49.605	980011.461	-49.225
1.111	564	38 12.68	-81 12.89	632.000	.510	979922.180	-29.029	-50.584	980010.655	-50.074
1.110	565	38 12.25	-81 13.61	620.000	.270	979922.279	-29.428	-50.575	980010.025	-50.305
1.109	566	38 11.00	-81 14.75	620.000	.280	979921.665	-28.211	-49.357	980008.194	-49.077
12.203	567	38 12.25	-81 .16	621.000	.240	979922.542	-29.071	-50.252	980010.025	-50.012
12.202	568	38 12.90	-81 1.01	643.000	.310	979922.859	-27.636	-49.567	980010.977	-49.257
12.201	569	38 14.56	-81 3.03	611.000	.360	979924.838	-31.100	-51.939	980013.409	-51.579
1.209	570	38 8.19	-81 16.39	670.000	0.000	979907.406	-33.653	-56.505	980004.080	-56.505
1.201	1075	38 11.61	-81 22.14	640.000	0.000	979920.590	-28.298	-50.127	980009.088	-50.127
1.108	571	38 11.59	-81 13.73	607.000	.460	979923.277	-28.686	-49.389	980009.058	-48.929
1.107	572	38 10.92	-81 13.11	633.000	.390	979920.803	-27.733	-49.323	980008.077	-48.933
1.106	573	38 10.65	-81 12.89	640.000	.510	979920.680	-26.803	-48.631	980007.682	-48.121
1.105	574	38 10.36	-81 12.07	640.000	.480	979918.367	-28.690	-50.519	980007.257	-50.039

PRINCIPAL FACTS AT GRAVITY STATIONS

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
1.104	575	38 10.04	-81 11.80	656.000	.450	979917.356	-27.728	-50.102	980006.788	-49.652
1.103	576	38 9.48	-81 11.80	670.000	.330	979917.051	-25.896	-48.748	980005.969	-48.418
1.101	578	38 7.69	-81 12.12	720.000	.430	979910.485	-25.139	-49.696	980003.348	-49.266
1.389	579	38 7.42	-81 27.22	731.000	.710	979909.216	-24.978	-49.910	980002.953	-49.200
1.317	580	38 6.95	-81 27.10	790.000	.690	979905.348	-22.608	-49.553	980002.265	-48.863
1.301	581	38 6.40	-81 26.88	790.000	.710	979904.437	-22.715	-49.659	980001.460	-48.949
1.316	582	38 6.37	-81 26.55	777.000	.650	979903.944	-24.386	-50.887	980001.416	-50.237
1.309	583	38 5.42	-81 26.63	812.000	.720	979900.552	-23.096	-50.791	980000.026	-50.071
1.314	584	38 4.77	-81 27.08	846.000	.700	979896.425	-23.074	-51.929	979999.075	-51.229
1.308	585	38 4.07	-81 26.95	885.000	.730	979894.292	-20.514	-50.699	979998.051	-49.969
1.307	586	38 3.42	-81 26.49	930.000	.620	979888.989	-20.633	-52.353	979997.100	-51.733
1.306	587	38 3.84	-81 25.60	988.000	.170	979884.301	-20.480	-54.178	979997.714	-54.008
1.315	588	38 2.30	-81 25.59	1070.000	.390	979880.337	-14.479	-50.974	979995.461	-50.584
1.305	589	38 1.92	-81 25.58	1080.000	.420	979877.138	-16.181	-53.017	979994.906	-52.597
1.304	590	38 1.56	-81 25.39	1080.000	.440	979874.268	-18.525	-55.361	979994.379	-54.921
1.303	591	38 1.09	-81 25.15	1124.000	.370	979872.543	-15.424	-53.761	979993.692	-53.391
1.302	592	38 .95	-81 24.77	1300.000	.590	979867.156	-4.051	-48.390	979993.487	-47.800
1.301	593	38 .34	-81 23.38	1385.000	.490	979861.114	-1.206	-48.444	979992.595	-47.954
1.331	594	38 7.10	-81 23.17	733.000	.470	979903.327	-30.210	-55.211	980002.484	-54.741
1.312	595	38 6.05	-81 22.91	762.000	.480	979900.822	-28.450	-54.440	980000.948	-53.960
1.318	596	38 5.75	-81 23.42	800.000	.510	979898.610	-26.650	-53.936	980000.509	-53.426
1.401	597	38 3.45	-81 22.45	880.000	.570	979888.679	-25.691	-55.705	979997.144	-55.135
1.402	598	38 2.82	-81 22.20	880.000	.480	979887.327	-26.121	-56.135	979996.222	-55.655
1.313	599	38 4.85	-81 22.83	800.000	0.000	979895.158	-28.784	-56.070	979999.192	-56.070
1.402	600	38 2.82	-81 22.20	880.000	.570	979887.327	-26.121	-56.135	979996.222	-55.565
1.403	601	38 2.35	-81 21.80	888.000	.620	979884.677	-27.330	-57.618	979995.534	-56.998
1.404	602	38 1.49	-81 21.27	930.000	.710	979880.411	-26.388	-58.108	979994.277	-57.398
1.405	603	38 1.18	-81 21.20	950.000	.850	979879.062	-25.403	-57.805	979993.823	-56.955
1.406	604	38 .77	-81 21.07	980.000	.790	979876.654	-24.389	-57.814	979993.224	-57.024
1.407	605	38 .15	-81 20.83	1030.000	.690	979872.238	-23.196	-58.326	979992.317	-57.636
1.119	606	38 8.47	-81 24.34	636.000	.490	979915.392	-29.274	-50.967	980004.490	-50.477
1.120	607	38 9.43	-81 24.45	666.000	.410	979913.573	-29.678	-52.393	980005.895	-51.983
1.121	608	38 8.48	-81 24.35	636.000	.420	979915.396	-29.285	-50.977	980004.504	-50.557
1.222	609	38 10.81	-81 23.80	625.000	.510	979918.799	-30.329	-51.646	980007.916	-51.136
3.304	610	38 19.97	-81 29.59	659.000	.390	979927.868	-31.485	-53.961	980021.339	-53.571
3.305	611	38 20.52	-81 29.13	660.000	.270	979927.409	-32.656	-55.167	980022.146	-54.897
3.306	612	38 20.37	-81 28.07	690.000	.250	979926.561	-30.463	-53.996	980021.926	-53.746
3.307	613	38 19.82	-81 27.13	734.000	.350	979924.212	-27.866	-52.901	980021.119	-52.551
3.308	614	38 19.65	-81 26.21	760.000	.390	979923.056	-26.327	-52.248	980020.870	-51.858
3.309	615	38 19.26	-81 25.57	793.000	.290	979920.532	-25.175	-52.222	980020.298	-51.932

P R I N C I P A L F A C T S A T G R A V I T Y S T A T I O N S

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	PREF AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
3.310	616	38 18.83	-81 25.63	820.000	.310	979918.742	-23.795	-51.763	980019.668	-51.453
3.311	617	38 18.39	-81 25.29	850.000	.420	979915.739	-23.331	-52.323	980019.022	-51.903
3.303	618	38 15.17	-81 15.20	820.000	.380	979919.877	-17.296	-45.264	980014.303	-44.884
3.301	619	38 15.62	-81 15.19	780.000	.360	979917.889	-23.705	-50.309	980014.962	-49.949
3.401	620	38 15.75	-81 22.43	880.000	.330	979914.020	-18.359	-48.373	980015.153	-48.043
3.402	621	38 15.84	-81 21.39	880.000	.470	979914.021	-18.490	-48.504	980015.285	-48.034
3.403	622	38 16.06	-81 20.10	1005.000	.620	979906.044	-15.032	-49.309	980015.607	-48.689
3.404	623	38 16.32	-81 19.02	1160.000	.710	979898.771	-8.106	-47.671	980015.988	-46.961
3.405	624	38 16.35	-81 18.13	1345.000	.830	979886.994	-2.526	-48.400	980016.032	-47.570
3.406	625	38 16.97	-81 17.52	1320.000	.740	979890.599	-2.181	-47.202	980016.941	-46.462
3.407	626	38 17.46	-81 17.81	1180.000	.450	979899.296	-7.371	-47.617	980017.659	-47.167
3.416	627	38 18.02	-81 17.31	1076.000	.550	979903.903	-13.367	-50.066	980018.480	-49.516
3.415	628	38 18.65	-81 17.51	1000.000	.730	979910.693	-14.649	-48.756	980019.404	-48.026
3.421	629	38 18.98	-81 17.62	946.000	.820	979914.798	-16.108	-48.373	980019.887	-47.553
3.422	630	38 19.18	-81 16.93	1080.000	.690	979909.923	-8.671	-45.507	980020.181	-44.817
3.423	631	38 18.99	-81 16.19	1060.000	.740	979910.007	-10.190	-46.344	980019.902	-45.604
3.414	632	38 19.50	-81 18.56	900.000	.800	979917.435	-18.560	-49.256	980020.650	-48.456
3.408	633	38 20.15	-81 18.82	859.000	.890	979921.683	-19.121	-48.419	980021.603	-47.529
3.413	634	38 20.62	-81 19.12	840.000	.910	979922.924	-20.357	-49.007	980022.292	-48.097
3.408	1074	38 20.15	-81 18.82	859.000	0.000	979921.910	-18.894	-48.192	980021.603	-48.192
3.424	635	38 21.48	-81 21.11	760.000	.670	979927.656	-24.410	-50.332	980023.553	-49.662
3.312	636	38 22.30	-81 25.19	788.000	.750	979924.952	-25.684	-52.560	980024.756	-51.810
3.103	637	38 23.04	-81 25.83	1052.000	.580	979910.691	-16.198	-52.079	980025.842	-51.499
3.199	638	38 23.05	-81 26.45	1052.000	.730	979910.691	-16.213	-52.093	980025.856	-51.363
3.104	639	38 23.48	-81 27.10	784.000	.840	979925.883	-26.859	-53.600	980026.487	-52.760
3.105	640	38 23.48	-81 27.87	729.000	.890	979928.479	-29.437	-54.301	980026.487	-53.411
3.313	641	38 22.37	-81 24.20	687.000	.480	979932.178	-28.061	-51.492	980024.859	-51.012
3.314	642	38 21.87	-81 24.27	720.000	.520	979931.446	-24.955	-49.512	980024.125	-48.992
3.102	643	38 22.35	-81 24.61	690.000	.600	979931.445	-28.482	-52.016	980024.830	-51.416
3.101	644	38 22.74	-81 22.74	698.000	.510	979931.619	-28.128	-51.934	980025.402	-51.424
3.411	645	38 21.87	-81 22.02	720.000	.480	979930.117	-26.284	-50.842	980024.125	-50.362
3.410	646	38 21.48	-81 21.60	734.000	.390	979927.553	-26.959	-51.994	980023.553	-51.604
3.238	647	38 22.35	-81 19.98	1080.000	.420	979908.291	-14.952	-51.788	980024.830	-51.368
3.239	648	38 23.25	-81 17.82	1387.000	.490	979896.128	.441	-46.865	980026.150	-46.375
2.237	649	38 23.00	-81 15.30	1396.000	.560	979894.631	.158	-47.456	980025.783	-46.896
3.240	650	38 22.64	-81 16.60	1400.000	.470	979892.501	-1.067	-48.817	980025.255	-48.347
3.419	651	38 21.19	-81 16.54	850.000	.520	979925.468	-17.708	-46.699	980023.128	-46.179
3.418	652	38 21.92	-81 17.05	860.000	.490	979925.521	-17.785	-47.117	980024.199	-46.627
3.417	653	38 21.78	-81 17.80	820.000	.550	979926.466	-20.397	-48.365	980023.993	-47.815
3.424	654	38 21.67	-81 18.55	820.000	.390	979926.471	-20.231	-48.199	980023.832	-47.809

PRINCIPAL FACTS AT GRAVITY STATIONS

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
4.142	655	38 22.89	-81 14.48	1214.000	.470	979906.747	-4.684	-46.090	980025.622	-45.620
3.228	656	38 24.30	-81 15.85	1000.000	.710	979919.986	-13.643	-47.750	980027.690	-47.040
3.236	657	38 23.92	-81 15.30	1080.000	.510	979908.411	-17.136	-53.971	980027.133	-53.461
3.227	658	38 24.71	-81 15.36	1080.000	.670	979909.693	-17.013	-53.848	980028.292	-53.178
3.229	659	38 25.10	-81 16.69	980.000	.820	979923.104	-13.579	-47.004	980028.864	-46.184
3.230	660	38 25.93	-81 16.99	1209.000	.490	979909.434	-6.927	-48.163	980030.082	-47.673
3.231	661	38 26.10	-81 17.82	915.000	.670	979925.852	-18.414	-49.622	980030.332	-48.952
3.232	662	38 26.97	-81 18.52	820.000	.920	979929.380	-25.098	-53.066	980031.608	-52.146
3.233	663	38 27.62	-81 18.79	780.000	.960	979933.245	-25.950	-52.554	980032.563	-51.594
3.234	664	38 28.48	-81 18.78	664.000	1.200	979943.126	-28.242	-50.890	980033.825	-49.690
3.235	665	38 28.89	-81 18.71	640.000	1.020	979943.811	-30.416	-52.245	980034.427	-51.225
3.208	666	38 29.38	-81 20.39	635.000	.420	979945.860	-29.558	-51.216	980035.146	-50.796
3.209	667	38 29.44	-81 20.92	629.000	.370	979944.703	-31.367	-52.820	980035.234	-52.450
3.207	668	38 29.55	-81 18.90	625.000	.250	979945.222	-31.386	-52.703	980035.396	-52.453
3.206	669	38 28.54	-81 17.80	650.000	.380	979943.926	-28.847	-51.017	980033.913	-50.637
3.205	670	38 28.32	-81 17.08	640.000	.270	979944.730	-28.660	-50.489	980033.590	-50.219
3.204	671	38 29.05	-81 17.29	650.000	.350	979945.553	-27.969	-50.139	980034.662	-49.789
3.203	672	38 29.31	-81 16.42	640.000	.330	979946.927	-27.917	-49.745	980035.044	-49.415
3.202	673	38 28.93	-81 15.72	667.000	.410	979945.563	-26.183	-48.933	980034.486	-48.523
3.201	674	38 29.55	-81 15.03	638.000	.170	979948.028	-27.357	-49.117	980035.396	-48.947
3.223	675	38 27.66	-81 16.35	880.000	.380	979931.702	-18.145	-48.159	980032.621	-47.779
3.224	676	38 27.39	-81 15.35	954.000	.350	979926.695	-15.796	-48.334	980032.225	-47.984
3.225	677	38 26.96	-81 16.38	880.000	.280	979924.993	-23.827	-53.841	980031.594	-53.561
3.210	678	38 28.98	-81 21.82	745.000	.420	979936.999	-27.485	-52.895	980034.559	-52.475
3.211	679	38 28.27	-81 22.15	745.000	.270	979936.998	-26.443	-51.853	980033.517	-51.583
3.212	680	38 27.98	-81 21.79	661.000	.380	979940.340	-30.577	-53.122	980033.091	-52.742
3.213	681	38 27.45	-81 21.58	797.000	.210	979932.367	-24.980	-52.163	980032.313	-51.953
3.214	682	38 27.73	-81 21.37	714.000	.190	979937.128	-28.436	-52.788	980032.724	-52.598
3.215	683	38 26.88	-81 20.65	757.000	.330	979934.496	-25.776	-51.595	980031.476	-51.265
3.216	684	38 26.46	-81 20.17	800.000	.170	979932.782	-22.829	-50.115	980030.860	-49.945
3.217	685	38 25.80	-81 20.08	1001.000	.250	979919.084	-16.652	-50.793	980029.891	-50.543
3.218	686	38 25.47	-81 20.87	748.000	.280	979933.557	-25.492	-51.004	980029.407	-50.724
3.219	687	38 24.66	-81 21.28	1169.000	.150	979907.416	-10.845	-50.716	980028.218	-50.566
3.220	688	38 24.49	-81 21.73	1207.000	.340	979904.888	-9.549	-50.716	980027.969	-50.376
3.221	689	38 24.12	-81 22.02	1100.000	.380	979912.482	-11.476	-48.994	980027.426	-48.614
3.222	690	38 23.58	-81 22.32	1175.000	.420	979905.417	-10.695	-50.771	980026.634	-50.351
3.223	691	38 23.20	-81 22.34	1171.000	.440	979905.054	-10.876	-50.816	980026.076	-50.376
3.105	1072	38 23.48	-81 27.79	729.000	.390	979928.480	-29.436	-54.301	980026.487	-53.911
3.106	692	38 24.03	-81 28.97	694.000	.150	979930.847	-31.168	-54.839	980027.294	-54.689
3.199	693	38 24.92	-81 29.29	600.000	.160	979937.365	-34.798	-55.262	980028.600	-55.102

P R I N C I P A L F A C T S A T G R A V I T Y S T A T I O N S

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
3.107	694	38 25.69	-81 29.20	619.000	.230	979937.362	-34.144	-55.256	980029.730	-55.026
3.108	695	38 26.38	-81 29.11	610.000	.190	979938.545	-34.820	-55.625	980030.743	-55.435
3.109	696	38 26.67	-81 28.29	612.000	.250	979940.564	-33.038	-53.912	980031.168	-53.662
3.110	697	38 26.70	-81 28.01	620.000	.270	979939.485	-33.409	-54.556	980031.212	-54.286
3.111	698	38 27.00	-81 27.42	625.000	.290	979939.235	-33.629	-54.946	980031.652	-54.656
3.112	699	38 27.00	-81 27.45	624.000	.320	979939.233	-33.725	-55.008	980031.652	-54.688
3.127	700	38 26.83	-81 27.09	617.000	.250	979939.333	-34.034	-55.079	980031.403	-54.829
3.125	701	38 26.09	-81 26.43	634.000	.420	979938.031	-32.651	-54.275	980030.317	-53.855
3.124	702	38 25.80	-81 25.72	636.000	.330	979937.247	-32.822	-54.514	980029.891	-54.184
3.123	703	38 25.26	-81 25.50	672.000	.310	979935.128	-30.762	-53.682	980029.099	-53.372
3.122	704	38 24.52	-81 24.94	666.000	.510	979935.014	-30.354	-53.069	980028.013	-52.559
3.121	705	38 24.10	-81 25.06	652.000	.420	979935.813	-30.256	-52.494	980027.397	-52.074
3.120	706	38 23.42	-81 25.59	826.000	.390	979923.694	-25.010	-53.183	980026.399	-52.793
3.118	707	38 22.80	-81 24.35	686.000	.590	979931.559	-29.405	-52.802	980025.490	-52.212
3.119	708	38 23.41	-81 25.21	681.000	.580	979933.454	-28.875	-52.102	980026.384	-51.522
3.105	1079	38 28.48	-81 27.79	729.000	0.000	979940.700	-24.554	-49.418	980033.825	-49.418
3.112	709	38 27.33	-81 27.14	683.000	.590	979937.358	-30.535	-53.830	980032.137	-53.240
3.130	710	38 27.88	-81 26.71	610.000	.620	979938.553	-37.014	-57.819	980032.944	-57.199
3.113	711	38 28.02	-81 26.31	603.000	.670	979938.925	-37.506	-58.073	980033.150	-57.403
3.114	712	38 27.67	-81 25.40	638.000	.270	979937.257	-35.368	-57.128	980032.636	-56.858
3.115	713	38 27.73	-81 25.59	651.000	.310	979937.407	-34.083	-56.287	980032.724	-55.977
3.116	714	38 28.33	-81 24.00	607.000	.390	979940.700	-35.810	-56.513	980033.605	-56.123
3.117	715	38 28.50	-81 23.29	620.000	.280	979941.377	-34.159	-55.306	980033.854	-55.026
13.418	716	38 30.42	-81 21.55	620.000	.460	979940.842	-37.513	-58.660	980036.673	-58.200
13.416	718	38 31.85	-81 20.87	628.000	.400	979945.560	-34.143	-55.562	980038.774	-55.162
13.415	719	38 32.38	-81 21.32	640.000	.480	979945.504	-33.849	-55.678	980039.552	-55.198
13.411	720	38 32.69	-81 21.49	636.000	.510	979946.336	-33.848	-55.540	980040.007	-55.030
13.412	721	38 33.13	-81 21.55	637.000	.590	979946.474	-34.263	-55.989	980040.654	-55.399
13.413	722	38 33.61	-81 21.62	658.000	.490	979945.760	-33.707	-56.149	980041.359	-55.659
13.414	723	38 34.10	-81 22.35	641.000	.460	979945.799	-35.987	-57.849	980042.079	-57.389
13.318	724	38 35.59	-81 22.78	731.000	.380	979944.183	-31.326	-56.258	980044.268	-55.878
13.316	725	38 36.57	-81 22.58	822.000	.510	979939.941	-28.449	-56.485	980045.708	-55.975
13.317	726	38 37.22	-81 23.35	820.000	.290	979941.140	-28.394	-56.362	980046.664	-56.072
13.101	727	38 37.98	-81 23.62	705.000	.630	979949.062	-32.406	-56.451	980047.781	-55.821
13.114	728	38 38.35	-81 24.15	710.000	.590	979949.602	-31.939	-56.155	980048.325	-55.565
13.102	729	38 38.75	-81 24.66	716.000	.580	979949.477	-32.088	-56.508	980048.913	-55.928
13.113	730	38 39.19	-81 23.69	720.000	.270	979950.216	-31.619	-56.176	980049.560	-55.906
13.103	731	38 39.69	-81 23.82	710.000	.250	979950.831	-32.681	-56.897	980050.295	-56.647
13.104	732	38 40.26	-81 23.55	719.000	.190	979951.356	-32.146	-56.670	980051.133	-56.480
13.105	733	38 41.17	-81 23.22	735.000	.280	979951.613	-31.722	-56.791	980052.471	-56.511

PRINCIPAL FACTS AT GRAVITY STATIONS

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
13.106	734	38 41.51	-81 23.62	747.000	.350	979952.161	-30.546	-56.024	980052.971	-55.674
13.112	735	38 41.95	-81 23.24	780.000	.400	979949.607	-30.644	-57.247	980053.618	-56.847
13.107	736	38 42.28	-81 24.66	797.000	.210	979950.210	-28.927	-56.110	980054.103	-55.900
13.108	737	38 42.98	-81 24.14	883.000	.300	979946.261	-25.816	-55.933	980055.133	-55.633
13.109	738	38 43.50	-81 23.45	883.000	.360	979947.976	-24.865	-54.982	980055.898	-54.622
13.110	739	38 44.02	-81 22.68	795.000	.190	979952.961	-28.923	-56.038	980056.663	-55.848
13.111	740	38 44.71	-81 22.67	785.000	.180	979954.440	-29.400	-56.174	980057.678	-55.994
13.201	741	38 43.61	-81 22.31	831.000	.220	979950.483	-27.412	-55.755	980056.060	-55.535
13.202	742	38 42.98	-81 21.54	910.000	.270	979945.420	-24.117	-55.155	980055.133	-54.885
13.203	743	38 42.43	-81 20.91	902.000	.200	979945.590	-23.890	-54.655	980054.324	-54.455
13.204	744	38 42.04	-81 20.34	774.000	.480	979952.078	-28.869	-55.268	980053.750	-54.788
13.205	745	38 40.40	-81 20.55	740.000	.440	979951.438	-30.295	-55.534	980051.339	-55.094
13.206	746	38 40.91	-81 19.44	807.000	.550	979950.351	-25.830	-53.355	980052.089	-52.805
13.315	747	38 36.05	-81 23.48	1120.000	.270	979922.517	-17.078	-55.278	980044.944	-55.008
13.314	748	38 35.83	-81 23.66	1100.000	.370	979920.718	-20.435	-57.953	980044.621	-57.583
13.313	749	38 35.41	-81 24.46	1100.000	.480	979920.719	-19.817	-57.334	980044.004	-56.854
13.312	750	38 34.96	-81 24.21	1100.000	.260	979920.721	-19.154	-56.672	980043.342	-56.412
3.131	751	38 34.96	-81 24.21	1100.000	.320	979920.735	-19.140	-56.658	980043.342	-56.338
3.126	752	38 28.33	-81 23.94	600.000	.360	979940.134	-37.034	-57.499	980033.605	-57.139
3.127	753	38 29.13	-81 23.39	673.000	.410	979938.333	-33.143	-56.097	980034.779	-55.687
3.128	754	38 29.66	-81 23.85	675.000	.290	979938.333	-33.733	-56.756	980035.558	-56.466
13.109	1071	38 25.73	-81 28.28	615.000	0.000	979935.760	-36.181	-57.157	980029.789	-57.157
13.301	755	38 30.29	-81 28.52	714.000	.380	979936.932	-32.390	-56.743	980036.483	-56.363
13.302	756	38 30.67	-81 27.76	681.000	.270	979937.007	-35.978	-59.205	980037.041	-58.935
13.303	757	38 31.09	-81 27.09	684.000	.400	979937.410	-35.909	-59.239	980037.657	-58.839
13.304	758	38 31.88	-81 25.48	706.000	.510	979937.346	-35.064	-59.144	980038.818	-58.634
13.305	759	38 32.08	-81 24.88	712.000	.460	979937.469	-34.671	-58.955	980039.111	-58.495
13.306	760	38 32.50	-81 24.67	721.000	.490	979937.476	-34.434	-59.025	980039.728	-58.535
13.318	761	38 31.42	-81 24.53	748.000	.490	979935.969	-31.815	-57.327	980038.142	-56.837
13.307	762	38 32.02	-81 24.04	1170.000	.280	979910.755	-18.217	-58.122	980039.023	-57.842
13.308	763	38 32.60	-81 24.69	1260.000	.290	979905.545	-15.813	-58.788	980039.875	-58.498
13.309	764	38 32.98	-81 23.38	1260.000	.340	979905.534	-16.382	-59.357	980040.433	-59.017
13.416	1070	38 34.02	-81 8.25	740.000	0.000	979946.280	-26.076	-51.315	980041.961	-51.315
13.409	765	38 33.07	-81 20.25	680.000	.210	979945.828	-30.776	-53.969	980040.566	-53.759
13.408	766	38 33.38	-81 20.12	670.000	.190	979946.998	-31.002	-53.854	980041.021	-53.664
13.407	767	38 33.37	-81 19.16	670.000	.270	979946.577	-31.408	-54.260	980041.006	-53.990
13.406	768	38 32.92	-81 18.04	775.000	.300	979942.185	-25.263	-51.696	980040.345	-51.396
13.405	769	38 33.48	-81 17.49	722.000	.190	979944.361	-28.894	-53.519	980041.168	-53.329
13.404	770	38 33.89	-81 16.94	809.000	.220	979939.495	-26.180	-53.773	980041.770	-53.553
13.429	771	38 33.70	-81 16.00	830.000	.360	979938.114	-25.306	-53.615	980041.491	-53.255

P R I N C I P A L F A C T S A T G R A V I T Y S T A T I O N S

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
13.428	772	38 32.00	-81 16.11	669.000	.240	979948.477	-27.590	-50.407	980038.994	-50.167
13.427	773	38 32.34	-81 16.63	654.000	.360	979947.539	-30.438	-52.745	980039.493	-52.385
13.426	774	38 32.45	-81 17.49	750.000	.250	979940.222	-28.887	-54.467	980039.655	-54.217
13.425	775	38 32.37	-81 18.35	630.000	.380	979948.482	-31.797	-53.285	980039.537	-52.905
13.424	776	38 31.94	-81 18.69	700.000	.290	979944.488	-28.574	-52.449	980038.906	-52.159
13.423	777	38 31.65	-81 18.52	635.000	.280	979947.271	-31.480	-53.138	980038.480	-52.858
13.424	778	38 31.95	-81 19.12	700.000	.310	979946.373	-26.704	-50.579	980038.920	-50.269
13.421	779	38 30.69	-81 18.68	742.000	.420	979939.391	-27.885	-53.193	980037.070	-52.773
13.420	780	38 30.59	-81 19.63	742.000	.210	979939.390	-27.739	-53.047	980036.923	-52.837
13.419	781	38 30.45	-81 20.41	712.000	.360	979939.838	-29.907	-54.192	980036.718	-53.832
13.441	782	38 33.61	-81 20.91	640.000	.440	979946.685	-34.474	-56.303	980041.359	-55.863
13.440	783	38 34.23	-81 20.65	679.000	.390	979946.559	-31.843	-55.002	980042.270	-54.612
13.439	784	38 34.63	-81 20.36	700.000	.350	979946.528	-30.487	-54.362	980042.858	-54.012
13.438	785	38 35.12	-81 20.25	720.000	.410	979945.568	-30.285	-54.842	980043.577	-54.432
13.437	786	38 37.59	-81 19.62	778.000	.390	979943.306	-30.722	-57.257	980047.208	-56.867
13.446	787	38 35.73	-81 21.48	800.000	.430	979940.685	-28.539	-55.825	980044.474	-55.395
13.445	788	38 36.22	-81 21.48	824.000	.320	979940.684	-27.003	-55.108	980045.194	-54.788
13.444	789	38 36.75	-81 21.13	1016.000	.210	979930.910	-19.496	-54.149	980045.973	-53.939
13.442	790	38 36.83	-81 19.82	1140.000	.180	979922.615	-16.245	-55.128	980046.090	-54.948
13.436	791	38 36.65	-81 18.99	1071.000	.180	979931.128	-13.958	-50.486	980045.826	-50.306
13.435	792	38 36.37	-81 18.92	869.000	.260	979944.163	-19.512	-49.152	980045.414	-48.892
13.434	793	38 36.86	-81 17.91	1187.000	.250	979924.500	-9.983	-50.468	980046.135	-50.218
13.433	794	38 34.62	-81 17.46	1156.000	.270	979924.699	-9.408	-48.836	980042.843	-48.566
13.433	795	38 34.62	-81 17.46	1156.000	.270	979924.699	-9.408	-48.836	980042.843	-48.566
13.432	796	38 35.19	-81 16.90	855.000	.310	979938.508	-24.750	-53.911	980043.680	-53.601
13.431	797	38 34.73	-81 16.39	740.000	.390	979950.512	-22.887	-48.126	980043.004	-47.736
13.430	798	38 33.93	-81 16.02	693.000	.260	979951.715	-24.930	-48.566	980041.829	-48.306
13.402	799	38 33.61	-81 15.69	682.000	.450	979952.520	-24.689	-47.951	980041.359	-47.501
13.401	800	38 36.27	-81 15.22	702.000	.230	979953.257	-25.979	-49.923	980045.267	-49.693
13.214	801	38 37.98	-81 15.78	830.000	.220	979948.857	-20.852	-49.161	980047.781	-48.941
13.213	802	38 38.53	-81 16.76	1085.000	.170	979934.155	-12.378	-49.384	980048.589	-49.214
13.212	803	38 39.55	-81 17.56	789.000	.290	979949.197	-26.677	-53.588	980050.089	-53.298
13.211	804	38 39.78	-81 17.12	808.000	.470	979952.239	-22.186	-49.745	980050.427	-49.275
13.210	805	38 41.77	-81 15.81	1068.000	.350	979940.565	-12.331	-48.757	980053.353	-48.407
13.209	806	38 40.94	-81 17.32	880.000	.480	979950.748	-18.611	-48.625	980052.133	-48.145
13.208	807	38 39.79	-81 18.22	815.000	.430	979952.232	-21.549	-49.347	980050.442	-48.917
1.791	808	38 34.02	-81 8.25	840.000	.490	979938.207	-24.743	-53.393	980041.961	-52.903
1.792	809	38 33.88	-81 9.16	840.000	.280	979938.207	-24.537	-53.187	980041.756	-52.907
1.793	810	38 34.47	-81 9.82	760.000	.290	979941.725	-29.411	-55.333	980042.622	-55.043
1.794	811	38 34.95	-81 10.52	900.000	.370	979938.289	-20.383	-51.079	980043.328	-50.709

PRINCIPAL FACTS AT GRAVITY STATIONS

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
1.795	812	38 35.09	-81 11.50	900.000	.310	979938.290	-20.588	-51.285	980043.533	-50.975
1.796	813	38 35.05	-81 11.13	900.000	.260	979938.290	-20.529	-51.225	980043.475	-50.965
1.797	814	38 34.72	-81 13.43	709.000	.380	979947.070	-29.230	-53.412	980042.990	-53.032
1.798	815	38 34.36	-81 15.00	876.000	.310	979938.196	-21.867	-51.745	980042.461	-51.435
1.791	1069	38 34.02	-81 8.25	740.000	0.000	979943.470	-28.886	-54.125	980041.961	-54.125
1.791	816	38 34.02	-81 8.25	740.000	.320	979945.453	-26.903	-52.142	980041.961	-51.822
7.910	817	38 35.28	-81 15.67	980.000	.410	979940.366	-11.267	-44.692	980043.813	-44.282
7.911	818	38 35.75	-81 4.57	920.000	.260	979941.904	-16.063	-47.441	980044.503	-47.181
7.912	819	38 35.75	-81 2.72	860.000	.460	979943.006	-20.604	-49.936	980044.503	-49.476
7.913	820	38 36.39	-81 1.68	880.000	.340	979942.264	-20.406	-50.420	980045.444	-50.080
7.914	821	38 37.00	-81 1.12	902.000	.440	979941.291	-20.206	-50.970	980046.340	-50.530
7.915	822	38 37.35	-81 .35	983.000	.510	979939.137	-15.255	-48.783	980046.855	-48.273
7.916	823	38 37.15	-80 59.31	1140.000	.490	979929.537	-9.794	-48.676	980046.561	-48.186
7.917	824	38 37.10	-80 58.32	1160.000	.370	979928.789	-8.587	-48.151	980046.487	-47.781
7.918	825	38 37.02	-80 57.25	1138.000	.380	979929.690	-9.638	-48.452	980046.370	-48.072
7.919	826	38 37.02	-80 56.21	1117.000	.360	979932.099	-9.204	-47.302	980046.370	-46.942
7.920	827	38 37.35	-80 55.25	1138.000	.420	979929.694	-10.118	-48.932	980046.855	-48.512
7.921	828	38 37.15	-80 54.20	1140.000	.380	979932.598	-6.733	-45.615	980046.561	-45.235
7.922	829	38 37.24	-80 52.95	1000.000	.490	979942.474	-10.157	-44.264	980046.693	-43.774
7.923	830	38 37.17	-80 52.17	1000.000	.470	979942.477	-10.052	-44.159	980046.590	-43.689
7.924	831	38 37.05	-80 51.12	900.000	.450	979942.891	-18.867	-49.564	980046.414	-49.114
7.925	832	38 36.69	-80 50.21	1075.000	.470	979934.225	-10.543	-47.208	980045.885	-46.738
7.926	833	38 36.62	-80 49.11	1077.000	.480	979934.228	-10.250	-46.983	980045.782	-46.503
7.927	834	38 36.60	-80 47.99	1028.000	.480	979934.784	-14.273	-49.335	980045.752	-48.855
7.928	835	38 36.79	-80 39.49	1490.000	.390	979909.111	3.230	-47.589	980046.032	-47.199
7.929	836	38 36.92	-80 39.11	1380.000	.510	979912.673	-3.745	-50.813	980046.223	-50.303
7.930	837	38 36.85	-80 39.20	1400.000	.460	979912.995	-1.438	-49.188	980046.120	-48.728
7.402	838	38 35.95	-81 2.40	860.000	.470	979944.597	-19.307	-48.639	980044.797	-48.169
7.401	839	38 36.75	-81 2.37	959.000	.420	979939.480	-16.288	-48.997	980045.973	-48.577
7.213	840	38 36.76	-81 2.62	967.000	.390	979940.245	-14.785	-47.767	980045.988	-47.377
7.212	841	38 38.40	-81 3.02	907.000	.510	979944.044	-19.040	-49.975	980048.398	-49.465
7.211	842	38 39.25	-81 4.21	846.000	.420	979948.036	-22.036	-50.891	980049.648	-50.471
7.226	843	38 39.02	-81 4.79	849.000	.320	979947.935	-21.517	-50.474	980049.310	-50.154
7.227	844	38 39.00	-81 5.57	880.000	.410	979940.812	-25.694	-55.708	980049.280	-55.298
7.228	845	38 39.17	-81 6.15	960.000	.350	979942.285	-16.946	-49.689	980049.530	-49.339
7.229	846	38 39.78	-81 5.50	880.000	.290	979947.073	-20.580	-50.595	980050.427	-50.305
7.230	847	38 40.45	-81 5.89	850.000	.330	979949.156	-22.304	-51.295	980051.412	-50.965
7.203	848	38 41.19	-81 6.13	802.000	.470	979953.026	-24.037	-51.391	980052.500	-50.921
7.204	849	38 41.59	-81 5.50	813.000	.410	979953.101	-23.516	-51.245	980053.089	-50.835
7.219	850	38 41.35	-81 3.93	868.000	.390	979949.587	-21.504	-51.109	980052.736	-50.719

P R I N C I P A L F A C T S A T G R A V I T Y S T A T I O N S

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
7.220	851	38 41.31	-81 3.48	858.000	.550	979951.185	-20.787	-50.051	980052.677	-49.501
7.221	852	38 41.29	-81 2.80	883.000	.490	979948.651	-20.941	-51.057	980052.647	-50.567
7.222	853	38 41.68	-81 2.39	1210.000	.610	979929.441	-9.966	-51.235	980053.221	-50.625
7.223	854	38 42.00	-81 1.44	889.000	.590	979949.209	-20.862	-51.184	980053.692	-50.594
7.224	855	38 41.49	-81 1.36	926.000	.470	979946.284	-19.557	-51.140	980052.942	-50.670
7.217	856	38 42.81	-81 1.32	854.000	.420	979952.659	-21.895	-51.023	980054.883	-50.603
7.218	857	38 40.63	-81 .14	920.000	.660	979945.827	-19.314	-50.692	980051.677	-50.032
7.216	858	38 43.78	-81 1.32	816.000	.570	979954.528	-25.028	-52.859	980056.310	-52.289
7.234	859	38 44.24	-81 2.16	806.000	.500	979956.831	-24.342	-51.833	980056.987	-51.333
7.215	860	38 43.98	-81 2.69	792.000	.510	979957.448	-24.659	-51.672	980056.604	-51.162
7.236	861	38 43.08	-81 2.77	906.000	.450	979951.534	-18.527	-49.428	980055.280	-48.978
7.235	862	38 42.54	-81 3.25	957.000	.490	979945.161	-19.308	-51.948	980054.486	-51.458
7.233	863	38 44.04	-81 3.92	860.000	.540	979952.623	-23.176	-52.508	980056.692	-51.968
7.214	864	38 44.73	-81 5.15	767.000	.650	979959.665	-25.898	-52.058	980057.708	-51.408
7.208	865	38 44.91	-81 5.98	767.000	.590	979960.650	-25.177	-51.337	980057.972	-50.747
7.207	866	38 43.77	-81 6.35	766.000	.610	979957.126	-27.118	-53.244	980056.295	-52.634
7.232	867	38 41.88	-81 6.32	774.000	.770	979955.857	-24.855	-51.253	980053.515	-50.483
7.206	868	38 41.67	-81 5.87	787.000	.690	979956.003	-23.177	-50.019	980053.206	-49.329
7.205	869	38 41.14	-81 5.40	795.000	.680	979954.583	-23.065	-50.180	980052.427	-49.500
7.202	870	38 40.55	-81 6.89	846.000	.710	979949.184	-22.799	-51.654	980051.559	-50.944
7.201	871	38 39.94	-81 7.37	1145.000	.590	979930.248	-12.714	-51.767	980050.662	-51.177
7.204	872	38 39.89	-81 8.11	863.000	.560	979947.277	-22.137	-51.571	980050.589	-51.011
7.103	873	38 39.38	-81 8.21	877.000	.540	979946.019	-21.328	-51.240	980049.839	-50.700
7.102	874	38 38.87	-81 7.90	899.000	.610	979943.995	-20.533	-51.195	980049.089	-50.585
7.122	875	38 40.42	-81 8.57	865.000	.370	979948.179	-21.826	-51.328	980051.368	-50.958
7.123	876	38 41.18	-81 8.60	826.000	.410	979951.037	-23.754	-51.926	980052.486	-51.516
7.124	877	38 41.83	-81 8.47	814.000	.470	979952.404	-24.472	-52.235	980053.442	-51.765
7.125	878	38 42.69	-81 9.02	805.000	.510	979954.329	-24.658	-52.114	980054.707	-51.604
7.126	879	38 43.33	-81 8.65	789.000	.710	979955.991	-25.442	-52.353	980055.648	-51.643
7.209	880	38 41.06	-81 4.89	804.000	.690	979952.516	-24.168	-51.590	980052.309	-50.900
7.210	881	38 40.35	-81 4.67	810.000	.670	979951.332	-23.743	-51.370	980051.265	-50.700
7.403	882	38 35.15	-81 2.45	848.000	.250	979944.728	-19.129	-48.052	980043.622	-47.802
7.404	883	38 34.52	-81 1.40	909.000	.270	979939.678	-17.516	-48.520	980042.696	-48.250
7.405	884	38 33.21	-81 1.67	799.000	.300	979944.528	-21.088	-48.340	980040.771	-48.040
7.406	885	38 31.94	-81 1.75	770.000	.280	979945.204	-21.275	-47.537	980038.906	-47.257
7.407	886	38 31.17	-81 1.62	880.000	.240	979939.095	-15.906	-45.920	980037.775	-45.680
7.408	887	38 30.04	-81 3.86	730.000	.270	979944.707	-22.743	-47.641	980036.115	-47.371
7.409	888	38 31.65	-81 4.56	892.000	.350	979937.693	-16.884	-47.308	980038.480	-46.958
7.301	889	38 30.55	-81 7.72	845.000	.340	979938.956	-18.426	-47.247	980036.864	-46.907
7.326	890	38 31.56	-81 8.85	1126.000	.210	979920.753	-11.682	-50.086	980038.348	-49.876

PRINCIPAL FACTS AT GRAVITY STATIONS

STA NAME AND NUM		LATITUDE NORTH +	LONGITUDE EAST +	ELEVATION FEET	TERR CORR MGAL	OBSERVED G MGAL	FREE AIR MGAL	BOUGUER MGAL	THEOR G MGAL	T C BOUGUER MGAL
7.325	891	38 31.95	-81 18.86	1285.000	.190	979913.432	-4.619	-48.447	980038.920	-48.257
7.327	892	38 31.95	-81 18.86	1285.000	.290	979913.433	-4.619	-48.446	980038.920	-48.156
7.414	893	38 31.66	-81 7.14	1020.000	.270	979929.781	-12.771	-47.560	980038.495	-47.290
7.302	894	38 42.43	-81 7.97	872.000	.380	979950.819	-21.484	-51.225	980054.324	-50.845
7.303	895	38 34.26	-81 7.85	790.000	.210	979946.063	-21.943	-48.887	980042.314	-48.677
7.304	896	38 34.01	-81 8.41	765.000	.400	979946.063	-23.926	-50.018	980041.947	-49.618
7.399	897	38 34.48	-81 9.69	749.000	.420	979948.268	-23.917	-49.463	980042.637	-49.043
7.305	898	38 35.15	-81 10.46	774.000	.390	979946.677	-24.141	-50.540	980043.622	-50.150
7.306	899	38 35.48	-81 10.78	721.000	.510	979950.627	-25.661	-50.253	980044.106	-49.743
7.307	900	38 35.28	-81 11.91	717.000	.470	979949.141	-27.229	-51.684	980043.813	-51.214
7.308	901	38 36.05	-81 11.99	736.000	.380	979949.381	-26.334	-51.437	980044.944	-51.057
7.309	902	38 36.56	-81 12.31	764.000	.570	979948.413	-25.417	-51.475	980045.694	-50.905
7.310	903	38 37.07	-81 12.82	804.000	.590	979945.783	-25.035	-52.457	980046.443	-51.867
7.313	904	38 36.71	-81 14.69	729.000	.460	979949.665	-27.678	-52.542	980045.914	-52.082
7.311	905	38 37.16	-81 14.72	739.000	.450	979949.209	-27.855	-53.060	980046.575	-52.610
7.305	906	38 37.55	-81 14.08	773.000	.420	979947.954	-26.485	-52.850	980047.149	-52.430
7.106	907	38 38.01	-81 13.39	820.000	.390	979943.432	-27.262	-55.230	980047.825	-54.840
7.107	908	38 39.02	-81 13.01	934.000	.510	979941.052	-20.404	-52.261	980049.310	-51.751
7.108	909	38 39.86	-81 12.20	845.000	.550	979947.212	-23.850	-52.671	980050.545	-52.121
7.109	910	38 40.58	-81 12.13	812.000	.440	979950.397	-24.828	-52.523	980051.603	-52.083
7.110	911	38 40.75	-81 11.82	811.000	.450	979950.811	-24.759	-52.420	980051.853	-51.970
7.111	912	38 41.45	-81 11.87	800.000	.430	979953.292	-24.341	-51.627	980052.883	-51.197
7.112	913	38 41.77	-81 11.74	801.000	.430	979953.680	-24.330	-51.650	980053.353	-51.220
7.113	914	38 42.19	-81 12.03	778.000	.520	979954.913	-25.878	-52.413	980053.971	-51.893
7.114	915	38 42.62	-81 12.02	774.000	.290	979956.026	-25.774	-52.173	980054.604	-51.883
7.116	916	38 43.04	-81 12.22	771.000	.310	979956.579	-26.121	-52.417	980055.221	-52.107
7.117	917	38 43.14	-81 12.62	766.000	.260	979956.903	-26.415	-52.541	980055.368	-52.281
7.118	918	38 42.39	-81 13.48	809.000	.250	979953.211	-24.958	-52.551	980054.265	-52.301
7.119	919	38 42.23	-81 14.48	864.000	.290	979949.829	-22.932	-52.400	980054.030	-52.110
7.120	920	38 43.94	-81 12.43	754.000	.350	979958.645	-26.978	-52.695	980056.545	-52.345
7.121	921	38 44.57	-81 13.31	748.000	.310	979959.803	-27.311	-52.823	980057.472	-52.513

DO NOT MICROFILM
COVER

Printed in the United States of America
Available from
National Technical Information Service
US Department of Commerce
5285 Port Royal Road
Springfield, VA 22161

Microfiche (A01)

Page Range	NTIS Price Code	Page Range	NTIS Price Code	Page Range	NTIS Price Code	Page Range	NTIS Price Code
001-025	A02	151-175	A08	301-325	A14	451-475	A20
026-050	A03	176-200	A09	326-350	A15	476-500	A21
051-075	A04	201-225	A10	351-375	A16	501-525	A22
076-100	A05	226-250	A11	376-400	A17	526-550	A23
101-125	A06	251-275	A12	401-425	A18	551-575	A24
126-150	A07	276-300	A13	426-450	A19	576-600	A25
						601-up*	A99

*Contact NTIS for a price quote.

DO NOT MICROFILM
COVER

Los Alamos