ARH-C-00008
CA-168-RAD-6

A REGIONAL GRAVITY INVESTIGATION OF THE HANFORD RESERVATION

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April 1, 1975

This report is based on work sponsored by the Atlantic Richfield Hanford Company under United States Energy Research and Development Administration Contract AT(45-1)-2130

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ACKNOWLEDGMENTS

The authors would like to acknowledge the help of Messrs. D. J. Brown, R. E. Gephart, and R. E. Isaacson of Atlantic Richfield Hanford Company and Mr. D. E. Peterson of Hanford Engineering Development Laboratory.

A REGIONAL GRAVITY INVESTIGATION OF THE HANFORD RESERVATION

INTRODUCTION

PURPOSE AND SCOPE

This study uses existing Bouguer gravity data[1,2] and applies the terrain and regional corrections needed to produce a residual gravity map. The resultant map is then examined to determine:

1. The value of gravity data in locating potential areas of buried stream channels.
2. The value of gravity data in clarifying the buried geologic structure of the Hanford Reservations.
3. The value of gravity data as an aid in locating areas that need additional subsurface definition.
4. The value of gravity data in pointing out areas of potential fractures in the basalt surface.

PREVIOUS WORK

The Bouguer gravity data used in this study were derived by Peterson.[1,2] In addition to published data, the authors have used in preparing this report:

1. A Bouguer gravity map of the Hanford Reservation with station locations and Bouguer values for the stations.
2. Notes containing the data used to calculate the Bouguer values.

The Bouguer map was on a 1:62,500 base with 100-foot contours and no other geographic data.

GEOLOGY

The Hanford Reservation is located in south central Washington in the Columbia Plateau physiographic province. The reservation presently encompasses 576 square miles in the structural and topographic low known as the Pasco Basin. The Pasco Basin (Figure 1) is delineated by the Saddle Mountains to the north, the Umtanum and Yakima Ridges to the west, the Rattlesnake and Horse Heaven Hills to the south, and a broad regional monocline (known locally as the Jackass Mountain monocline) to the east.

During the Tertiary period, the Columbia Plateau was the scene of numerous lava outpourings emanating from extensive fissure systems. These viscous fluids covered the surrounding terrain and flowed into the regional low areas, such as the Pasco Basin. As basining continued, thick sections of basalt accumulated in these low regions. At one location in the Pasco Basin the basalt rock and intercalated sediments are more than 10,000 feet thick.

The youngest flow dated within the Pasco Basin is about eight million years old and is confined to the eastern and southeastern sections. Between periods of lava outpourings, the basalt surface was subjected to various degrees of weathering and erosion. As a consequence, varying amounts of sediments accumulated on some of the basalt surfaces prior to being covered by later flows. One sedimentary horizon, the Vantage Sandstone (Formation), is identified over a broad region; however most sedimentary horizons between basalt flows are of limited horizontal extent.

Although the Columbia River now flows through the

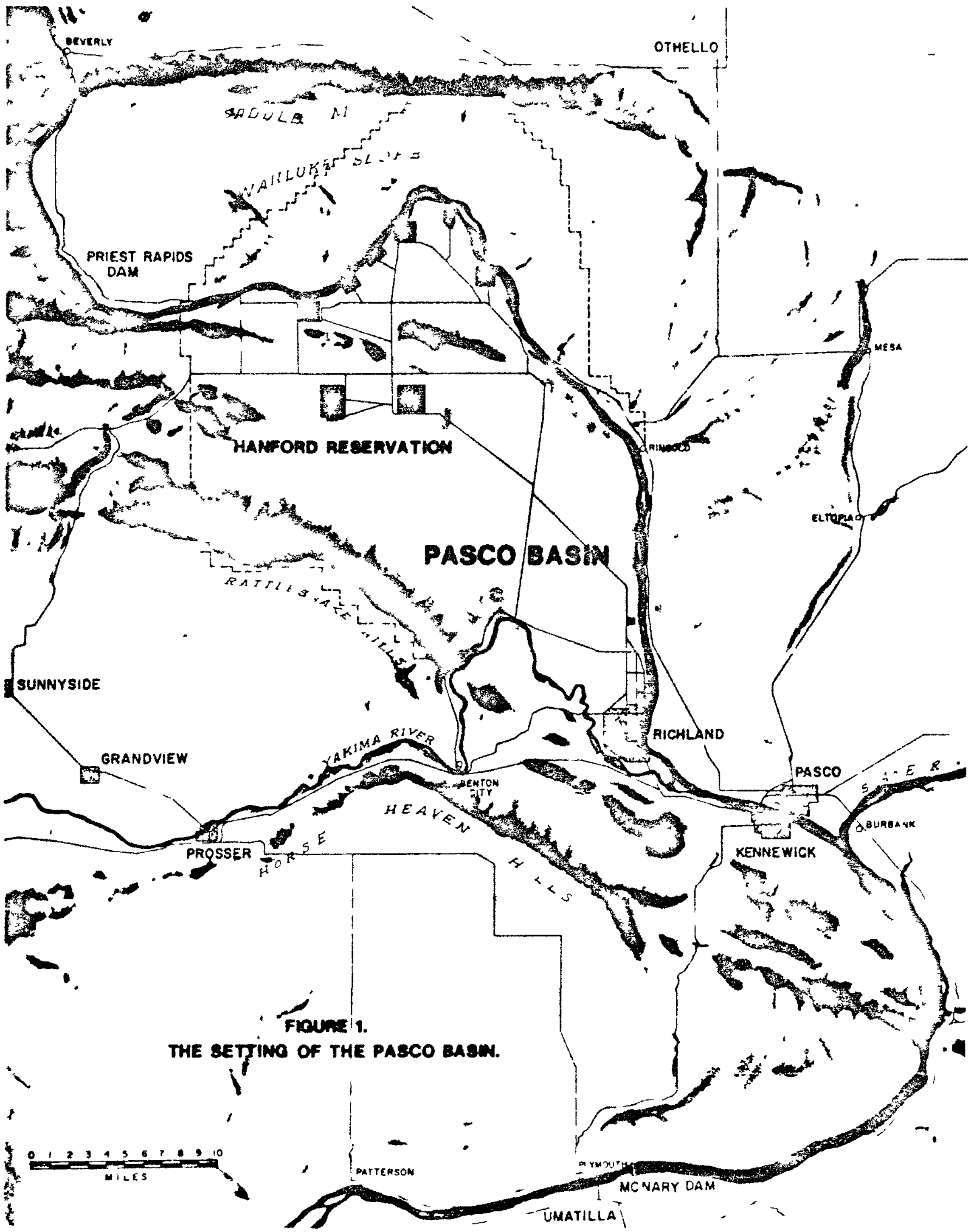

FIGURE 1

THE SETTING OF THE PASCO BASIN

center of the Pasco Basin, it is believed that the extensive basalt flows entering the Pasco Basin have altered significantly the course of the Columbia River in the past. The Columbia River represents the base level of the regional unconfined groundwater flow system. Confined groundwater is present within the basalt flows beneath the Hanford Reservation and may originate as far away as the Cascade Mountains to the west. The vesicular zones near the tops of the flows and the sedimentary interbeds provide the porosity for the groundwater and the dense sections of the flow units provide the confining material.

During Pliocene time the number and size of fissure eruptions decreased markedly and finally ceased. Even though the volcanic activity ceased, basining continued and was apparently accompanied by a regional north-south compression. As a result of these compressional forces acting on the basalt rocks, a number of east-west trending anticlinal ridges, *e.g.*, Saddle Mountains, were formed in the western part of the Columbia Plateau. The rise of these ridges had a significant effect on the course of the Columbia River. Where the Columbia River was able to erode the basalt at a rate equal to or faster than the anticlinal ridges were rising, little change in the course of the Columbia River occurred. Where the ridges rose faster than the river was able to erode, the river was temporarily halted and the water ponded behind the ridges. This appears to be the case with the rise of the Horse Heaven Hills. A shallow lake over 10,000 square miles in extent was created. It was into this lake that sediments began accumulating about three million years ago. As basining continued, the fluvial sediments continued to fill the Pasco Basin. The lacustrine and fluvial deposits overlying the basalt are known as the Ringold Formation. The upper portion of this formation presently comprises the steep cliffs exposed just east of the Columbia River, known as the White Bluffs. The total thickness of the Ringold Formation in the Pasco Basin is about 1000 feet, and is characterized in the lower part of the section by clay, in the middle section by cemented gravels, and in the upper section by silts and sands. The presence of abundant gravel beds throughout the Ringold tends to indicate that at no time during deposition of these beds did the Horse Heaven Hills completely impound the Columbia River for a significantly long time.

By late Pleistocene (300,000 years ago), Ringold deposition ceased. Basining decreased on a regional scale and instead the land area within the Pasco Basin was uplifted (the present surface of the Ringold Formation in the White Bluffs area is 1000 feet above mean sea level). A period of downcutting followed, during which the ancestral Columbia river eroded more than 600 feet into the Ringold sediments in the central part of the Pasco Basin.

At the close of the Ice Age (perhaps 20,000 to 40,000 years ago) the continental ice sheet, which covered much of northern Washington, melted and gradually retreated northward. As a result, large volumes of meltwater were released from the melting ice and from the ice marginal lakes. The block diagram shown in Figure 2 illustrates the topography as it would have appeared just prior to the release of the glacial floodwaters.

Eighteen to twenty thousand years ago a deep lake (2,000 feet at the deepest point), called Lake Missoula, formed behind an ice cork that plugged the surface drainage of portions of western Montana and northern Idaho. This ice cork was the result of ice filling a narrow valley where the Clark River empties into Pend Oreille Lake in Idaho. When

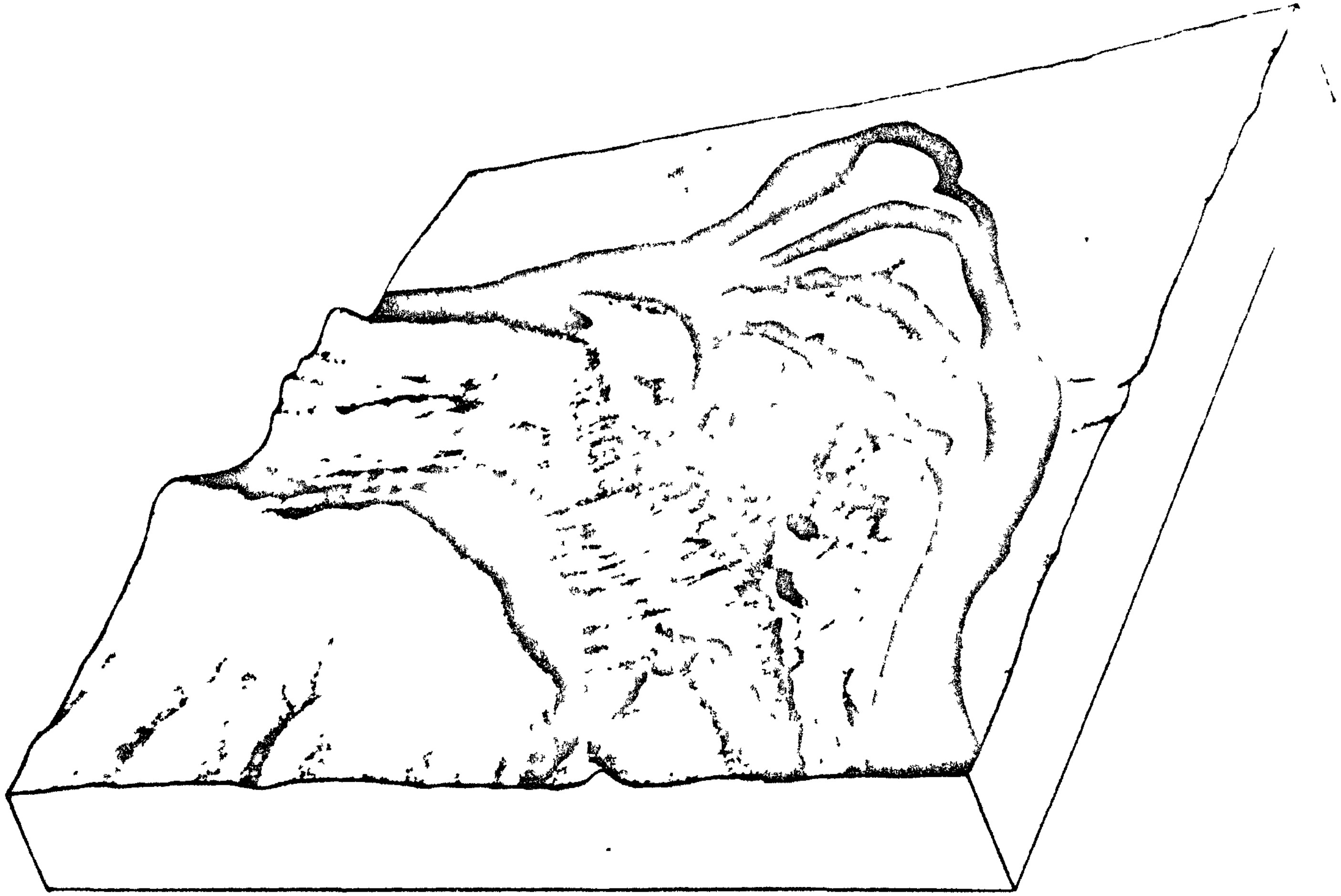

FIGURE 2

BLOCK DIAGRAM SHOWING TOPOGRAPHY PRIOR TO RELEASE OF GLACIAL FLOOD WATERS the ice dam failed, water flowed through the gap at the rate of 9.5 cubic miles per hour. This compares with the present average flow of the Columbia River of 8.7×10^{-6} cubic miles per hour.

Figure 3 shows the basin filled with iceberg-laden waters. It is estimated that over 500 cubic miles of water poured into the Pasco Basin at a rate of more than nine cubic miles of water an hour. Within a few months the floodwater receded to the stage shown in Figure 4. During this time, water continued to pour into the basin from the east downcutting into the sediments of the Ringold Formation, forming two channels: the Ringold Coulee and the Koontz Coulee.

Another significant drop in water level occurred as shown in the block diagram in Figure 5. At this stage the river cut two channels on either side of Gable Mountain. After the lake completely drained and the Columbia River established its present course, wind erosion became a more dominant factor in sculpturing the landscape. Sediments brought down during the flood were reworked by the wind, especially those in Cold Creek Valley. Here, updrafts created by the winds blowing over Rattlesnake Hills, pick up the finer grained materials and transport them downwind. The coarser grained materials are slowly moved over the land surface where they accumulate in dunes.

GEOHYDROLOGIC CHARACTERISTICS OF THE BASALTS AND INTERBEDS

The Ringold Formation overlies a warped and severely deformed layer of basalt. The Columbia River basalt series has, in general, a saucer-shaped synclinal structure. It is an accordantly layered sequence of flows which were extruded as highly fluid lava in Miocene and early Pliocene times.

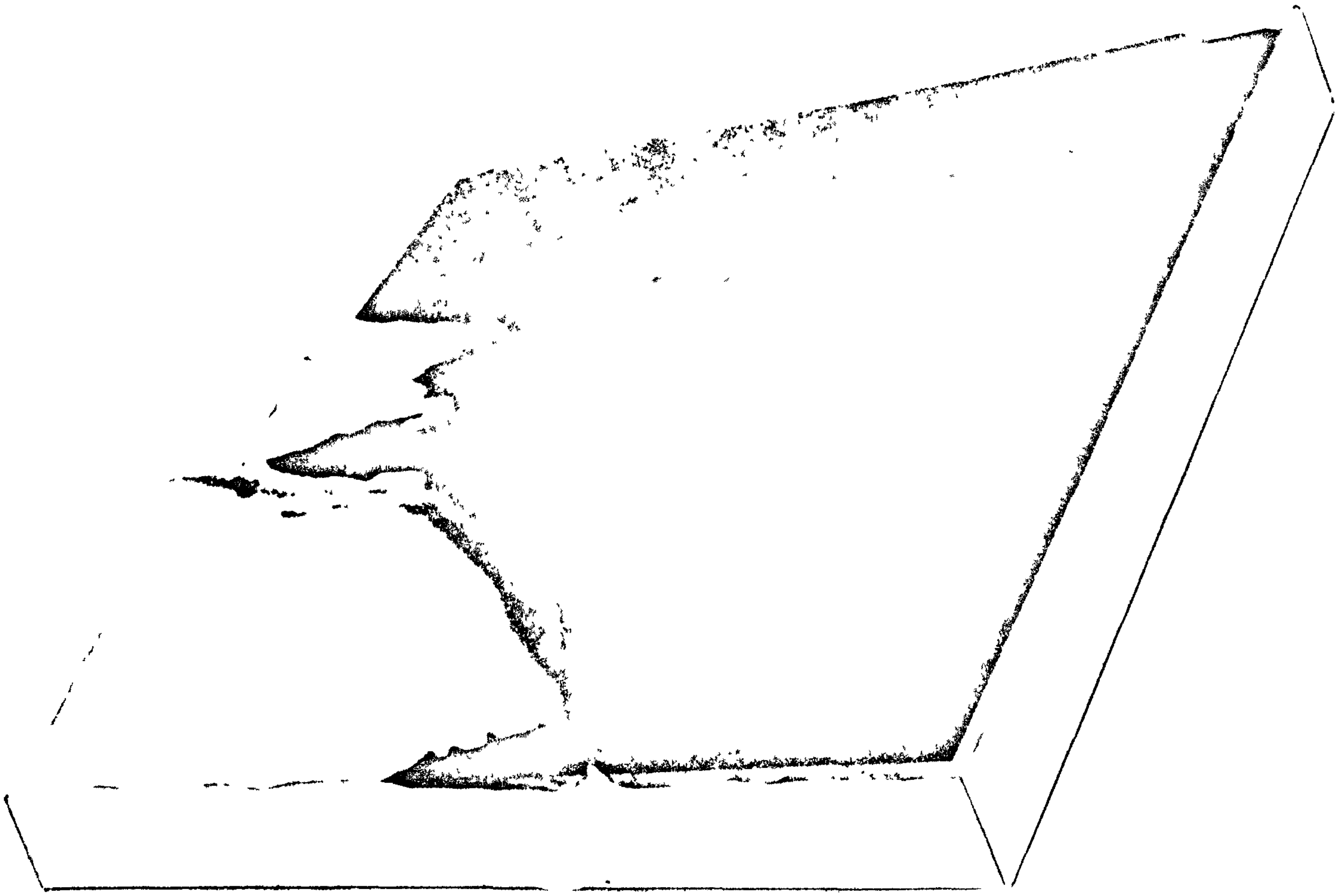

FIGURE 3

BLOCK DIAGRAM SHOWING HANFORD AREA INUNDATED BY ICEBERG-LADEN WATERS

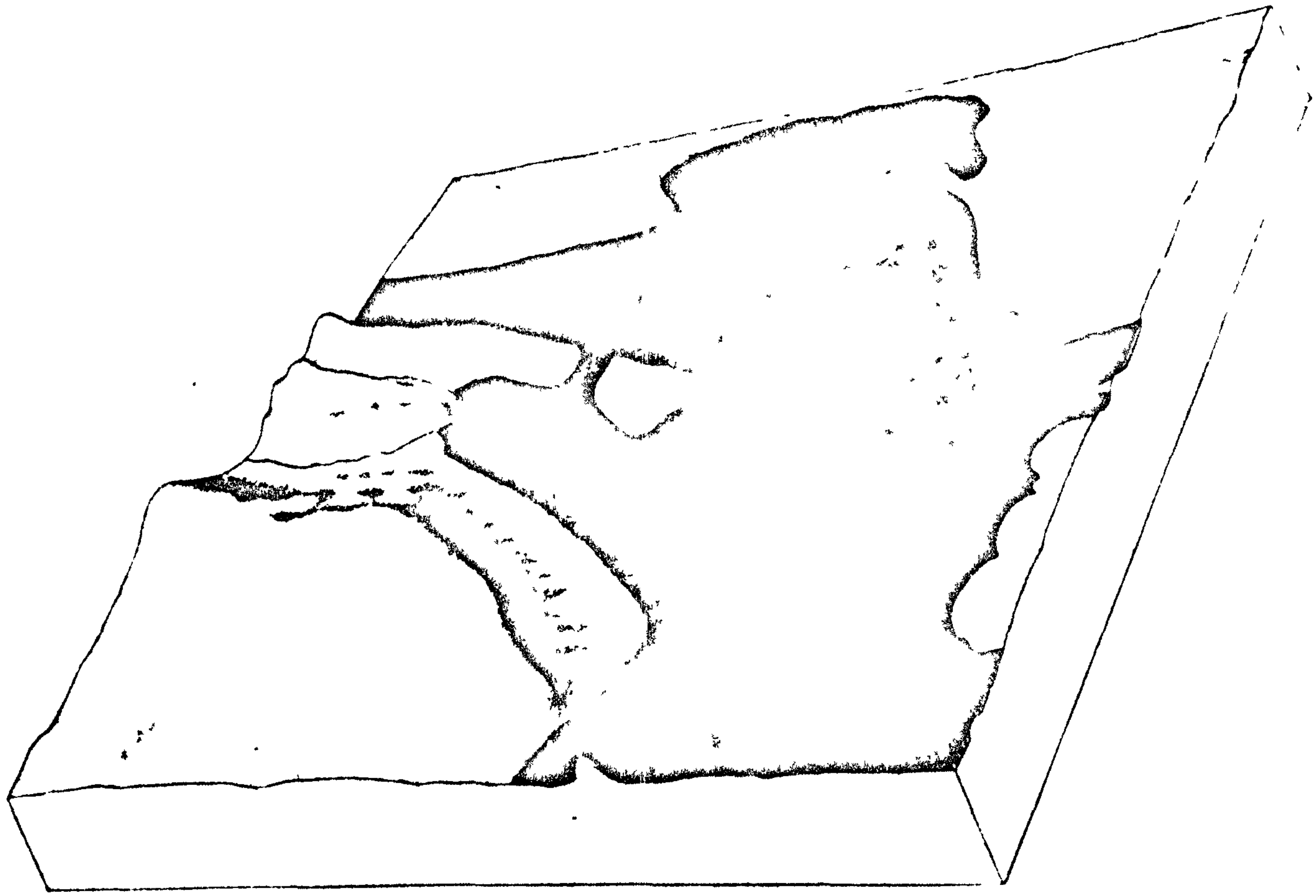

FIGURE 4

BLOCK DIAGRAM SHOWING EMERGING TOPOGRAPHIC "HIGHS"
WITH CONTINUED DOWNCUTTING BY FLOOD WATERS

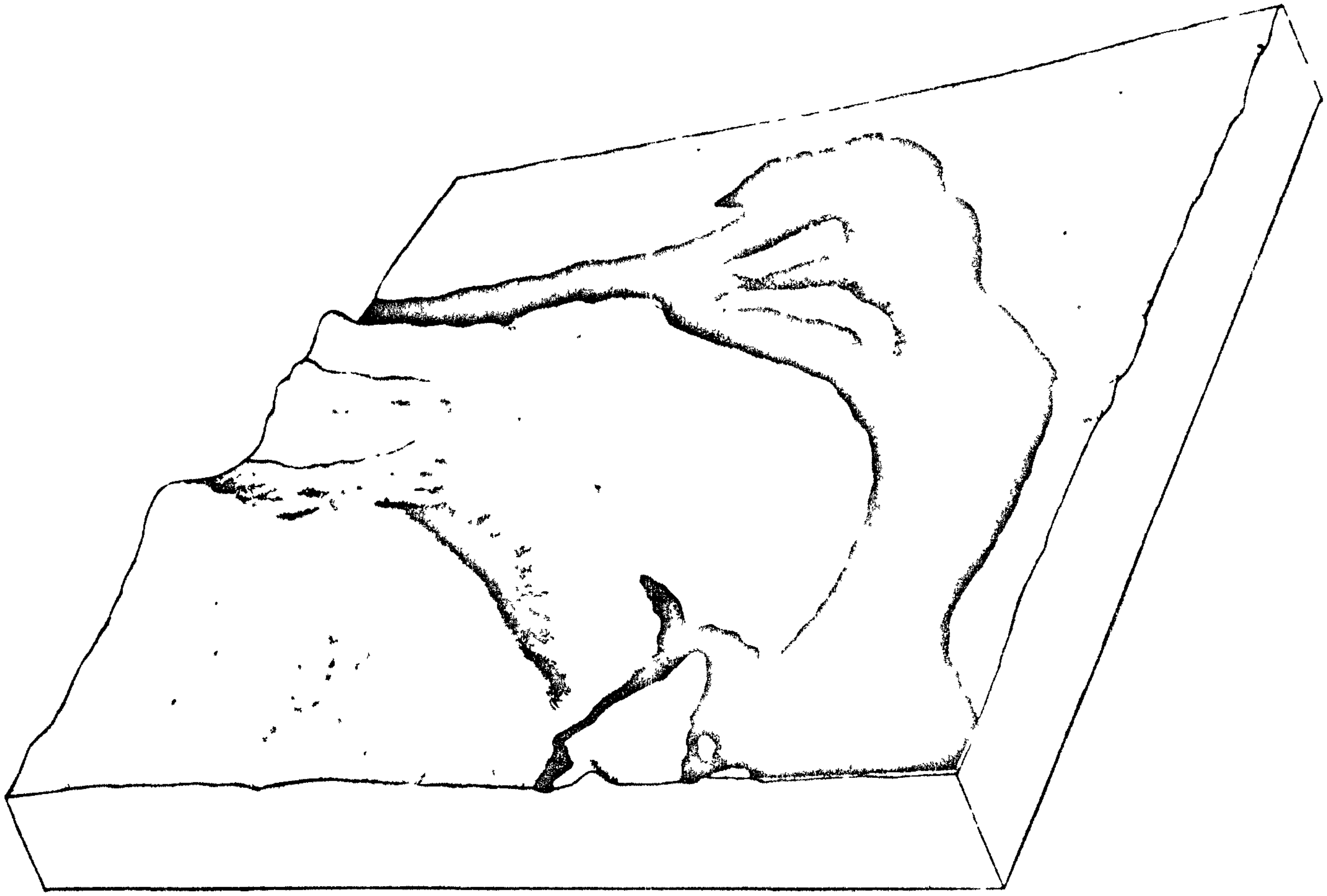

FIGURE 5

BLOCK DIAGRAM SHOWING LOWER FLOOD WATER STAGE
WITH DOWNCUTTING NEAR GABLE MOUNTAIN

Narrow zones of rubbly, permeable scoria somewhat similar to flow breccia, occur at the top of a few flows. Interflow sediments and former soils occur between successive flows and may be quite permeable. Some of the permeable zones in the basalt may constitute rather good confined aquifer systems.

GEOHYDROLOGIC CHARACTERISTICS OF THE OVERBURDEN

The Ringold sediments are well to poorly sorted and show a wide range of cementation. Locally the coarse sands and gravels possess a high permeability and are capable of storing vast quantities of groundwater. The clay and silty clay beds are generally impermeable under hydraulic gradients of ordinary magnitude. The water table over the western portion of the Hanford Reservation lies at the top of the Ringold formation. However, between the high terrace plateaus and the Columbia River the water table rises above the Ringold sediments and intersects the overlying glaciofluviatile sands and gravels.

FLOW REGIME

The flow pattern that originaly prevailed in the upper aquifer underlying the Hanford Reservation prior to waste discharges was primarily to the east and northeast with discharge into the Columbia River.[3] Natural recharge occurs at the foot of Rattlesnake Hills and Yakima Ridge. Surficial flow sinks into the floor of the valley at the foot of and paralleling Rattlesnake Hills. Probably the underflow is to a great extent interrupted by a buried extension of Yakima Ridge, which parallels Rattlesnake Hills at a distance of about two miles and which rises above the water table. Gable Mountain and Gable Butte also act as flow barriers.

The regional water table is largely within the Ringold Formation and, to a lesser extent, in the glaciofluviatile deposits. Geologic work has pointed to the existence of highly permeable channels along both the northern and southern flanks of Gable Mountain, extending southeastward from the western side of Gable Mountain toward the Columbia River and as narrow irregular zones paralleling the river.[4]

In 1944, before waste operations at Hanford began, the hydraulic gradient in all but the southwesternmost portion of the Hanford Reservation was about 5 feet/mile. Plant discharges have created two mounds in the vicinity of the 200 West and 200 East Areas. These mounds raised the water table in the recharge sites and altered the existing hydraulic gradient. Today, groundwater flows radially outward from the mounds under the influence of an average gradient of about 30 feet/mile in the 200 West Area and 15 feet/mile in the 200 East Area. The water table has been raised 75 feet at the 200 West mound and 20 feet at the 200 East mound.

GRAVITY

The gravity field at a point may be represented by the following equation:

$$g = \Sigma F/m_1 = \Sigma G\, m_i/r_i^2$$

where:

g = gravity field at a point

F = force of gravity at a point

m_1 = unit mass

G = gravitational constant

m_i = individual mass contributing to the field

r_i = distance from location of field measurement to m_i.

The gravity field will vary as a function of the distance from the individual masses which make up the surface of the earth. It will also vary as a function of the density of earth surface materials since mass is equal to density times volume. Other parameters that affect field gravity measurements are elevation, tides, latitude, irregular topography, and instrumental drift.[5] All variations except those caused by density can be systematically removed from the original gravity data. If all these variations are removed, the resultant map will reflect the densities of the materials that make up the surface of the earth. This is called a <u>Bouguer gravity map</u>. Such a map does not separate the deep density variations from the shallow variation.

To be able to interpret gravity data it is necessary to remove any effects due to the presence of hills and valleys. These effects are removed using terrain corrections.[5] Then, shallow density variations must be separated from the deep ones. All methods used to separate these anomalies are subject to error. Some standard techniques to minimize error are derivative mapping, polynomial surface fitting, wavelength filtering, and visual removal of regional trends.

CORRECTIONS

The standard corrections that must be made to gravity field data to be able to look at gravity anomalies caused by shallow density variations are listed below:

1. Corrections that move all field data to a common datum (sea level in this report).

    a. Free air correction (0.09406 milligal per foot). This correction is added if the datum is below the elevation of the field data point.

    b. Bouguer correction (0.0127 x density per foot). This correction is subtracted if the datum is below the elevation of the field data point.

2. Corrections that remove variations caused by differences in horizontal location and by differences in time.

   a. Drift and tidal corrections. This is done by rereading a base station value, plotting the variation of this reading with time, and removing this time variation from all data.

   b. Horizontal location corrections. This is done by calculating the normal variation of gravity along the geoid surface for the field point, then subtracting this value from the observed gravity. The data that were used in this report were corrected using the international formula which is:

   $$g = 978.049(1+.0052884\sin^2\phi-.000059\sin^2 2\phi)\text{gal}$$

   where:

   g = theoretical gravity value at sea level at the latitude of the field measurement

   ϕ = latitude of the field measurement

   gal = 1 cm/sec^2

3. Corrections for irregular terrain. This correction adds the values to the field data that eliminate the errors in the Bouguer values caused by valleys and hills adjacent to the location where the data were taken. This requires: the use of an overlay on a topographic map, the establishment of an average elevation for each of many sectors in the overlay, multiplying the elevations by constants, adding all these numbers together, and multiplying the resultant number by a constant that is a ratio of the density of the surface material to a density of 2.0 (in this report 1.43)(see Reference 5 for details of this method).

4. Removal of deep-seated density variations. This is more qualitative than all others and is subject to error. In this study the removal was done using a third order polynomial surface constructed from data points exclusive of data over known areas of thick cover over the basalt surface. This surface is subtracted from the terrain-corrected data. The residual data should be a representation of the shallow density variations.

LIMITATIONS

The limitations of the gravity method are due to instrumentation, data gathering, and interpretation errors. The instrument used was a Worden gravity meter that had negligible error. Data gathering and analysis were carefully done, and the geologic data available reduced the interpretation error. There is never a unique answer in gravity interpretation, but the confidence level of this interpretation is high because of the large amount of available geologic data.

The greatest limitation in this study is detailed knowledge of small areas. Anything smaller than a mile across may be missed. In areas with few data points, anomalies several miles across may be missed.

Finally, the anomalies shown are caused by two geologic situations--buried basalt structure and variation in thickness of material covering the basalt. These anomalies cannot be separated.

DATA BASE

The data used in this report were gathered by Peterson.[2] The original data were taken from a contoured Bouguer gravity map with station locations and Bouguer values of the stations. The data are accurate to ± 0.1 milligal. Plate 1 shows the distribution of data points. Most of the terrain corrections had been completed in the data obtained from Peterson.[2] These data were spot-checked by the authors and no errors were found.

This study took the above data and completed the terrain corrections for a density of 2.86 (the density assumed for the basalt). All of these data were placed on computer cards. The cards contained station numbers, (X,Y) coordinates for all stations, Bouguer values, and terrain corrections. The cards were carefully checked to eliminate transposition errors.

DATA REDUCTION

PREPARATION OF DATA FOR PROCESSING

All data used in this study came from cards described in the previous Section. Any datum that had a low confidence level such as a value that could not be read from the map or calculated from notes was eliminated. If the horizontal position appeared in doubt the point was also eliminated. Only terrain corrections that would change the data by 0.1 milligals or more were considered. Plate 1 shows the data points used.

PROCESSING OF DATA

All data were processed using the IBM Stampede-OS Versions Program on an IBM 360-65 computer. All output was on the printer. Table I summarizes the Stampede operation. The functions involved are:

1. MAKEFILE: This function transfers user data from cards to a standard sequential X,Y,Z data file on tape or disk. Numerical data fields are converted to standard precision floating point and placed on the output medium. As the data are transferred, the records are sorted on two fields designed by the user as the two independent variables X and Y. Apart from the data cards, input consists of control cards providing variable information such as field extents and input/output units.

2. DUMPFILE: This function displays on the printer records of the X,Y,Z data file. The program allows the user to read the results of his application without disturbing the contents of the file.

3. NUMAPROX: This function takes a Z value and approximates the surface described by variations in this Z value. The surface approximation is accomplished by superimposing a square grid system on the input data, and interpolating missing Z values onto that grid. Figure 6 shows a typical square grid with some data points.

4. GRIDINTR: This function takes two dissimilar grids and converts them to identical grids so that they may be used in the OPERATE function.

5. TRENSURF: This function is used for surface fitting with Orthogonal Polynomials. A choice of one of five different Z values per data point is allowed, and all other Z values are disregarded by the program. In general, the more irregular the surface, the higher the degree of the equation that must be used to represent it. If the number of terms equals the number of data points, the surface is fitted exactly.

6. EVALUATE: This function produces representative values for a surface by evaluating the defining

TABLE I

SUMMARY OF STAMPEDE FUNCTIONS

Function	Input Type	Input Device	Input Source	Output Type	Output Device
Create X,Y,Z File (MAKEFILE)	Irregularly distributed data points	Card, Tape, Disk	User created data	X,Y,Z, Data File	Tape, Disk
Display File on Printer (DUMPFILE)	X,Y,Z, Grid, Coefficient File	Tape, Disk	Output from any other function except CONTOURS, PRINTCON, LOCATSYM, INTGRATE	Printer representation of input file	Printer, Tape, Disk
Numerical Approximation over a Uniform Grid (NUMAPROX)	X,Y,Z File	Tape, Disk	Output from MAKEFILE, EVALUATE, OPERATE	Grid File	Tape, Disk
Grid interpolation (GRIDINTR)	Grid File	Tape, Disk	Output from NUMAPROX, EVALUATE, OPERATE, SMOOTHER, GRIDINTR	Grid File	Tape, Disk
Smoothing (SMOOTHER)	Grid File	Tape, Disk	Output from NUMAPROX, EVALUATE, OPERATE, SMOOTHER, GRIDINTR (generally NUMAPROX)	Grid File	Tape, Disk
Surface Future with Orthogonal Polynomials (TRENSURF)	X,Y,Z, File	Tape, Disk	Output from MAKEFILE, OPERATE	Coefficient File	Card, Tape, Disk
Equation Evaluation (EVALUATE)	Coefficient File	Card, Tape, Disk	TRENSURF output or user created	Input X,Y,Z File or Grid File	Tape, Disk
Grid-to-Grid or Point-to-Point Operations (OPERATE)	X,Y,Z File, or 1-3 Grid Files	Tape, Disk	Output from MAKEFILE, EVALUATE, OPERATE, SMOOTHER, GRIDINTR, NUMAPROX	X,Y,Z File or Grid File	Tape, Disk
Numerical Integration (INTGRATE)	Grid File	Tape, Disk	Output from NUMAPROX, EVALUATE, OPERATE, SMOOTHER, GRIDINTH	Single Value	Printer
Contouring (CONTOURS)	Grid File	Tape, Disk	Output from NUMAPROX, EVALUATE, OPERATE, SMOOTHER, GRIDINTR	Contour Map	Tape, Plotter
Printer Map Display (PRINTCON)	Grid File	Tape, Disk	Output from NUMAPROX, EVALUATE, OPERATE, SMOOTHER, GRINDINTR	Contour Map	Printer, Tape, Disk
Annotation · Symbol Location (LOCATSYM)	X,Y,Z File or Grid File	Tape, Disk	Output from MAKEFILE, EVALUATE, OPERATE, SMOOTHER, GRIDINTR, NUMAPROX	Annotated Map	Tape, Plotter

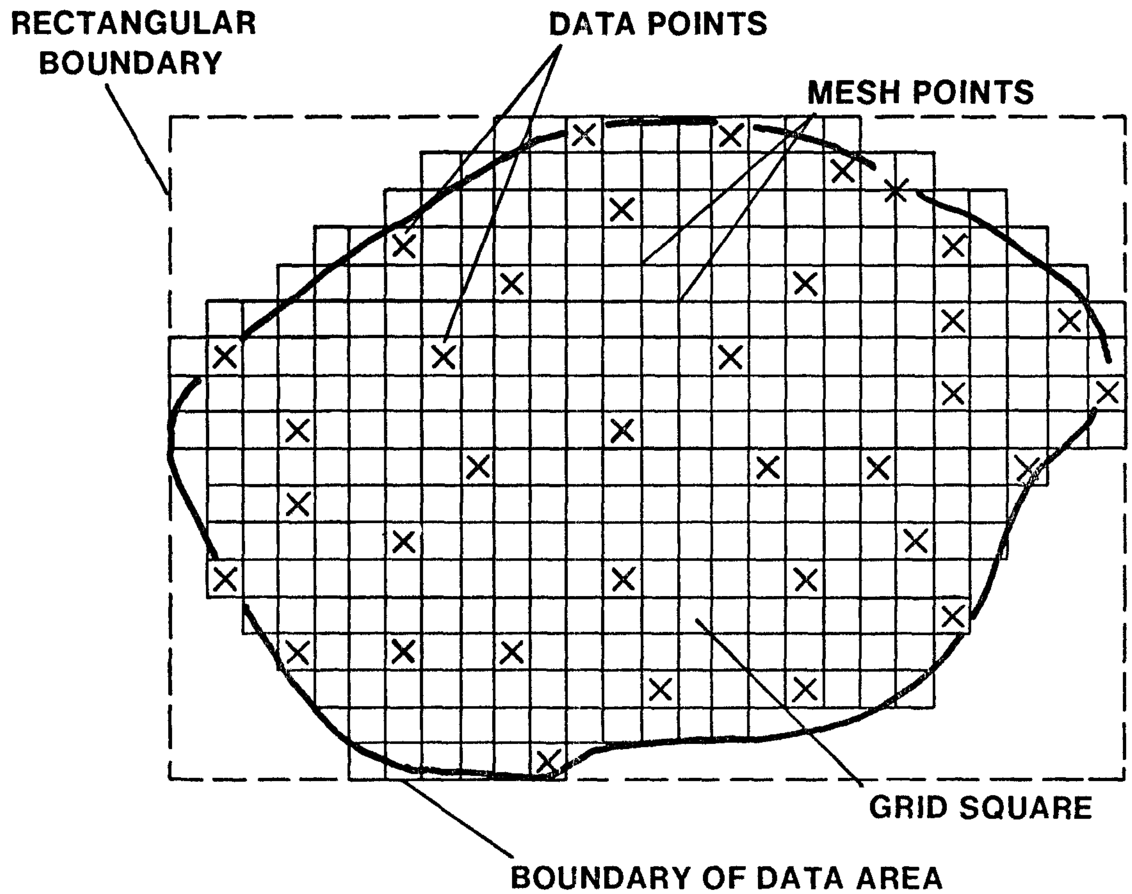

FIGURE 6

CONSTRUCTION OF A SQUARE GRID

polynomial at either mesh points of a grid or at specific X-Y locations.

7. OPERATE: This function is for grid-to-grid or point-to-point operations in which it is desirable to perform arithmetic operations on data points at specific X-Y coordinates or on mesh points common to two or three Z values.

8. PRINTCON: This function accepts as input a standard grid file. From this, Z values are calculated at the center of up to 120 print positions per line at either six or eight lines per inch. A contour map is then made on the printer with contour intervals alternately blank and indicated by a symbol. A modification of this function (PRINTPLOT) plots the value of a Z field at its X-Y coordinate.

After all data cards were read into the program, the following plates were made:

1. A map showing the location of the data points (Plate 1).
2. A Bouguer gravity map (Plate 2).
3. A topographically corrected Bouguer map (Plate 3).
4. A regional gravity map--third order polynomial surface of topographically corrected Bouguer data outside the hatched line* (Plate 4).
5. A residual gravity map produced by subtracting Plate 4 from Plate 3 (Plate 5).

In addition the Appendix to this report contains the gravity station number, the Bouguer value of the stations, the terrain corrections, and the terrain-corrected Bouguer values. Results were evaluated keeping in mind the State of Washington regional gravity map[6] and all geologic information available to the authors.

*The hatched line marks the boundary of the region where the basalt surface is at a depth of 250 feet or less. The area inside the line has a depth greater than 250 feet.

GEOPHYSICAL INTERPRETATION

Because of the distribution of data points, all computer operations used a grid of approximately 0.8 miles. This limits the sensitivity of the results to this minimum size. Some areas where detail was desirable contained few data points. There were few stations in the Gable Mountain and Gable Butte areas.

Plate 5 shows parallel highs and lows. These are believed to reflect the existence of buried anticlines and synclines--the highs are anticlinal structures in the basalt and the lows synclinal structures. These structures are for the most part beneath the Ringold Formation. The lows within the highs are believed to represent a reversal of plunge of the anticlinal fold and thus a low area in the crest of the fold. The anomalies present should be larger than usually produced by folding because these folds were frequently eroded on the anticlinal crests. The debris from the erosion was then deposited in the troughs of the synclines. This process produced higher density materials in the anticlines and lower density materials in the synclines. In addition, the synclinal areas will in general have a greater thickness of the Ringold Formation and the glaciofluviatile material. This material is less dense than the basalt and will further exaggerate the anomaly. The anomalies in Plate 5 also show higher gradients on their north and east sides. This suggests that the folds have steeper dips on their north and east sides than on their south and west sides.

CONCLUSIONS

The anomalies in the residual gravity map are mostly believed to be caused by folding of the basalt, erosion of the anticlinal ridges during folding, and filling of the synclinal troughs with the Ringold Formation and glaciofluviatile material. Separation of these effects is not possible without additional work. In addition some detail is lacking because of the field data distribution.

The bedrock highs shown in the residual gravity map were formed at various times in the past. They are not continuous or smooth. Their top surface in many cases has been deeply eroded and many of the bedrock highs contain deep but narrow gorges.

Locations A, B, C, D (Plate 5) are probably cols in an anticlinal structure that would have formed a buttress to erosion by the Columbia River during Ringold and glaciofluviatile times. The cols would be the most likely place for the river to cut through. These sites, therefore, would be probable areas of channeling and refilling with highly permeable material.

Plate 5 also focuses on areas where there may be great thicknesses of Ringold and glaciofluviatile material. These are sites of high transmissivity and, therefore, areas that should be delineated for additional study. If the total anomalies of Plate 5 were the result of differences in thicknesses of these materials, then the density difference between the basalt and the overlying material would be 1.0 g/cm^3. As mentioned before, other geologic conditions affect the anomalies. Therefore the density contrast is less, but probably not much less. If gravity modeling were done these effects could probably be separated. This would then allow for a direct calculation of the depth of overburden and from this a qualitative estimation of transmissivity.

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APPENDIX

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.3615000E 04	0.4275000E 04	0.2659798E 00	-0.5289999E 02	-0.5263400E 02	10-25
0.3212000E 04	0.4274000E 04	0.2273700E 00	-0.5120000E 02	-0.5097263E 02	10-22
0.3470000E 04	0.4274000E 04	0.2130700E 00	-0.5259999E 02	-0.5238692E 02	10-24
0.3340000E 04	0.4271000E 04	0.2030600E 00	-0.5209999E 02	-0.5189693E 02	10-23
0.2827000E 04	0.4270000E 04	0.2860000E 00	-0.4989999E 02	4961398E 02	10-19
0.3094000E 04	0.4270000E 04	0.2030600E 00	-0.5020000E 02	-0.4999693E 02	10-21
0.2954000E 04	0.4257000E 04	0.2416699E 00	-0.4979999E 02	-0.4955830E 02	10-20
0.1958000E 04	0.4263000E 04	0.2902898E 00	-0.5329999E 02	-0.5300969E 02	10
0.2207000E 04	0.4262000E 04	0.3260398E 00	-0.5279999E 02	-0.5247394E 02	10-3
0.2332000E 04	0.4262000E 04	0.3303298E 00	-0.5220000E 02	-0.5186966E 02	10-4
0.2460000E 04	0.4262000E 04	0.3346199E 00	-0.5159999E 02	-0.51265[illegible]E 02	10-5
0.2590000E 04	0.4262000E 04	0.3246099E 00	-0.5089999E 02	-0.5057538E 02	10-6
0.4270000E 03	0.4261000E 04	0.5920199E 00	-0.6279999E 02	-0.6220796E 02	11-12
0.1690000E [illegible]	0.4260000E 04	0.1901900E 00	-0.6300000E 02	-0.6280980E 02	11-14
0.3000000E 03	0.4260000E 04	0.0	-0.6309999E 02	-0.6309999E 02	11-13
0.6820000E 03	0.4260000E 04	0.0	-0.6070000E 02	-0.6070000E 02	11-10
0.4100000E 02	0.4257000E 04	0.1573000E 00	-0.6220000E 02	-0.6204269E 02	11-15
0.8150000E 03	0.4257000E 04	0.0	-0.5900000E 02	-0.5900000E 02	11-9
0.1703000E 04	0.4257000E 04	0.2531099E 00	-0.5459999E 02	-0.5434688E 02	11-2
0.2081000E 04	0.4257000E 04	0.2802798E 00	-0.5259999E 02	-0.5231970E 02	10-2
0.5490000E 03	0.4255000E 04	0.0	0.6139999E 02	-0.6139999E 02	11-11
0.9400000E 03	0.4255000E 04	0.1444300E 00	-0.5789999E 02	-0.5775555E 02	11-8
0.1071000E 04	0.4255000E 04	0.1158299E 00	-0.5689999E 02	-0.5678416E 02	11-7
0.1203000E 04	0.4255000E 04	0.2073500E 00	-0.5659999E 02	-0.5639264E 02	11-6

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.1448000E 04	0.4254000E 04	0.1859000E 00	-0.5520000E 02	-0.5501408E 02	11-4
0.1581000E 04	0.4254000E 04	0.2688398E 00	-0.5450000E 02	-0.5423116E 02	11-3
0.1823000E 04	0.4254000E 04	0.0	-0.5370000E 02	-0.5370000E 02	11-1
0.1323000E 04	0.4251000E 04	0.1701699E 00	-0.5670000E 02	-0.5652982E 02	11-5
0.2535000E 04	0.4189000E 04	0.5376799E 00	-0.5409999E 02	-0.5356230E 02	10-7
0.2959000E 04	0.4144000E 04	0.2044899E 00	-0.5189999E 02	-0.5169550E 02	12-1
0.2474000E 04	0.4142000E 04	0.4118396E 00	-0.5029999E 02	-0.4988814E 02	10-8
0.2342000E 04	0.4141000E 04	0.5605599E 00	-0.5250000E 02	-0.5193944E 02	10-11
0.3019000E 04	0.4141000E 04	0.4061199E 00	-0.5150000E 02	-0.5109387E 02	12-2
0.3086000E 04	0.4141000E 04	0.5062199E 00	-0.5159999E 02	-0.5109377E 02	12-3
0.3149000E 04	0.4140000E 04	0.6077499E 00	-0.5339999E 02	-0.5279224E 02	12-4
0.3607000E 04	0.4139000E 04	0.1229799E 00	-0.5729999E 02	-0.5717700E 02	13-1
0.1954000E 04	0.4134000E 04	0.2087800E 00	-0.5379999E 02	-0.5359120E 02	10-12
0.1575000E 04	0.4132000E 04	0.1701699E 00	-0.5520000E 02	-0.5502982E 02	11-23
0.107[illegible] 04	0.4131000E 04	0.0	-0.5820000E 02	-0.5820000E 02	11-16
0.2964000E 04	0.4078000E 04	0.0	-0.5409999E 02	-0.5409999E 02	12-5
0.245[illegible]000E 04	0.4027000E 04	0.2373798E 00	-0.4959999E 02	-0.4936261E 02	10-9
0.2717000E 04	0.4016000E 04	0.8007997E -01	-0.4900000E 02	-0.4891991E 02	4-65
0.2602000E 04	0.4014000E 04	0.2373798E 00	-0.4920000E 02	-0.4896262E 02	4-66
0.2963000E 04	0.4013000E 04	0.0	-0.5300000E 02	-0.5300000E 02	12-6
0.253[illegible] 04	0.4012000E 04	0.2044899E 00	-0.5039999E 02	-0.5019550E 02	10-10
0.2535000E 04	0.4005000E 04	0.2373800E 00	-0.4940000E 02	-0.4916262E 02	4-67
0.157[illegible] 04	0.4005000E 04	0.1144000E 00	-0.5539999E 02	-0.5528558E 02	11-24
0.1070000E 04	0.4002000E 04	0.0	-0.5870000E 02	-0.5870000E 02	11-17
0.2705000E 04	0.4002000E 04	0.2030600E 00	-0.4930000E 02	-0.4909694E 02	4-64

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.3156000E 04	0.3883000E 04	0.0	-0.5489999E 02	-0.5489999E 02	12-7
0.1956000E 04	0.3881000E 04	0.1229800E 00	-0.5200000E 02	-0.5187702E 02	10-14
0.3611000E 04	0.3881000E 04	0.0	-0.5839999E 02	-0.5839999E 02	13-3
0.1071000E 04	0.3880000E 04	0.1272700E 00	-0.5939999E 02	-0.5927272E 02	11-18
0.1701000E 04	0.3879000E 04	0.1515800E 00	-0.5500000E 02	-0.5484842E 02	11-27
0.3403000E 04	0.3879000E 04	0.1315600E 00	-0.5770000E 02	-0.5756844E 02	13-3A
0.1574000E 04	0.3877000E 04	0.1101100E 00	-0.5550000E 02	-0.5538988E 02	11-25
0.2655000E 04	0.3830000E 04	0.1644500E 00	-0.4979999E 02	-0.4963553E 02	4-63
0.2822000E 04	0.3827000E 04	0.1716000E 00	-0.5139999E 02	-0.5122839E 02	4-42
0.3473000E 04	0.3818000E 04	0.0	-0.5789999E 02	-0.5789999E 02	13-3B
0.2889000E 04	0.3810000E 04	0.2145000E 00	-0.5179999E 02	-0.5158548E 02	4-41
0.3221000E 04	0.3805000E 04	0.0	-0.5539999E 02	-0.5539999E 02	12-9
0.3130000E 04	0.3775000E 04	0.0	-0.5509999E 02	-0.5509999E 02	12-8
0.1998000E 04	0.3756000E 04	0.1172600E 00	-0.5279999E 02	-0.5268272E 02	10-16
0.1068000E 04	0.3755000E 04	0.0	-0.5920000E 02	-0.5920000E 02	11-19
0.1997000E 04	0.3755000E 04	0.1172600E 00	-0.5280000E 02	-0.5268274E 02	[illegible]-16
0.2711000E 04	0.3755000E 04	0.1215500E 00	-0.5090000E 02	-0.5077845E 02	4-43
0.1957000E 04	0.3754000E 04	0.1144000E 00	-0.5290000E 02	-0.5278560E 02	10-15
0.3618000E 04	0.3754000E 04	0.0	-0.5800000E 02	-0.5800000E 02	13-4
0.1578000E 04	0.3753000E 04	0.1859000E 00	-0.5509999E 02	-0.5491408E 02	11-26
0.2658000E 04	0.3735000E 04	0.1272700E 00	-0.5070000E 02	-0.5057272E 02	4-47
0.2533000E 04	0.3713000E 04	0.1215500E 00	-0.5050000E 02	-0.5037845E 02	4-48
0.2308000E 04	0.3707000E 04	0.1129699E 00	-0.5039999E 02	-0.5028702E 02	4-51
0.2925000E 04	0.3704000E 04	0.1901900E 00	-0.5259999E 02	-0.5240979E 02	4-40
0.2463000E 04	0.3689000E 04	0.1136900E 00	-0.5059999E 02	-0.5048[illegible]E 02	4-49
0.3227000E 04	0.3689000E 04	0.1358500E 00	-0.5650000E 02	-0.5636414E 02	[illegible]-10

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.3612000E 04	0.3944000E 04	0.0	-0.5879999E 02	-0.5879999E 02	13-2
0.2536000E 04	0.3891000E 04	0.1587300E 00	-0.4989999E 02	-0.4974126E 02	4-68
0.2389000E 04	0.3672000E 04	0.0	-0.5120000E 02	-0.5120000E 02	4-50
0.2605000E 04	0.3658000E 04	0.1058199E 00	-0.5170000E 02	-0.5159418E 02	4-46
0.2881000E 04	0.3658000E 04	0.1444300E 00	-0.5139999E 02	-0.5125555E 02	4-39
0.2128000E 04	0.3650000E 04	0.1987700E 00	-0.5089999E 02	-0.5070122E 02	10-18
0.3619000E 04	0.3631000E 04	0.0	-0.5839999E 02	-0.5839999E 02	13-5
0.1706000E 04	0.3629000E 04	0.1115400E 00	-0.5240000E 02	-0.5228846E 02	11-28
0.1960000E 04	0.3628000E 04	0.0	-0.5210000E 02	-0.5210000E 02	10-17
0.2803000E 04	0.3595000E 04	0.1186900E 00	-0.5170000E 02	-0.5158130E 02	4-32
0.2764000E 04	0.3549000E 04	0.0	-0.5170000E 02	-0.5170000E 02	4-37
0.2241000E 04	0.3531000E 04	0.0	-0.5079999E 02	-0.5079999E 02	4-54
0.3877000E 04	0.3508000E 04	0.0	-0.6120000E 02	-0.6120000E 02	13-14
0.3619000E 04	0.3506000E 04	0.0	-0.5870000E 02	-0.5870000E 02	13-6
0.3680000E 04	0.3506000E 04	0.0	-0.5839999E 02	-0.5839999E 02	13-17
0.3746000E 04	0.3506000E 04	0.0	-0.5939999E 02	-0.5939999E 02	13-16
0.3809000E 04	0.3506000E 04	0.1444300E 00	-0.6100000E 02	-0.6085556E 02	13-15
0.2699000E 04	0.3505000E 04	0.0	-0.5270000E 02	-0.5270000E 02	7-1
0.1070000E 04	0.3502000E 04	0.5119398E 00	-0.5670000E 02	-0.5618805E 02	11-20
0.3353000E 04	0.3501000E 04	0.1744600E 00	-0.5820000E 02	-0.5802554E 02	12-11
0.3478000E 04	0.3500000E 04	0.0	-0.5789999E 02	-0.5789999E 02	13-6A
0.1199000E 04	0.3496000E 04	0.5920199E 00	-0.5679999E 02	-0.5620796E 02	11-22
0.2095000E 04	0.3468000E 04	0.1001000E 00	-0.5120000E 02	-0.5109988E 02	4-55
0.2940000E 04	0.3454000E 04	0.1215500E 00	-0.5220000E 02	-0.5207845E 02	4-31
0.2597000E 04	0.3438000E 04	0.0	-0.5270000E 02	-0.5270000E 02	7-2
0.2292000E 04	0.3430000E 04	0.0	-0.5159999E 02	-0.5159999E 02	4-56
0.1541000E 04	0.3425000E 04	0.2302299E 00	-0.5409999E 02	-0.5386975E 02	6-2

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.1379000E 04	0.3408000E 04	0.3174599E 00	-0.5389999E 02	-0.5358253E 02	3-44
0.1645000E 04	0.3406000E 04	0.2016299E 00	-0.5339999E 02	-0.5319836E 02	6-4
0.3355000E 04	0.3389000E 04	0.3646500E 00	-0.5979999E 02	-0.5943533E 02	12-12
0.2542000E 04	0.3387000E 04	0.0	-0.5279999E 02	-0.5279999E 02	4-61
0.2360000E 04	0.3384000E 04	0.0	-0.5189999E 02	-0.5189999E 02	4-58
0.2449000E 04	0.3384000E 04	0.0	-0.5239999E 02	-0.5239999E 02	4-59
0.2481000E 04	0.3384000E 04	0.0	-0.5270000E 02	-0.5270000E 02	4-60
0.1004000E 04	0.3380000E 04	0.5534099E 00	-0.5539999E 02	-0.5484657E 02	11-21
0.3616000E 04	0.3380000E 04	0.1215500E 00	-0.6070000E 02	-0.6057845E 02	13-7
0.3874000E 04	0.3380000E 04	0.0	-0.6089999E 02	-0.6089999E 02	13-13
0.1577000E 04	0.3379000E 04	0.1930500E 00	-0.5359999E 02	-0.5340694E 02	6-3A
0.297600E 04	0.3377000E 04	0.1215500E 00	-0.5259999E 02	-0.5247844E 02	4-30
0.1449000E 04	0.3376000E 04	0.2502500E 00	-0.5409999E 02	-0.5384973E 02	6-1
0.1322000E 04	0.3375000E 04	0.3303298E 00	-0.5459999E 02	-0.5426965E 02	3-43
0.1962000E 04	0.3375000E 04	0.0	-0.5300000E 02	-0.5300000E 02	6-7C
0.2626000E 04	0.3375000E 04	0.0	-0.5339999E 02	-0.5339999E 02	4-62
0.1709000E 04	0.3370000E 04	0.0	-0.5350000E 02	-0.5350000E 02	6-5
0.2860000E 04	0.3355000E 04	0.1172600E 00	-0.5259999E 02	-0.5248273E 02	4-77
0.2091000E 04	0.3353000E 04	0.0	-0.5200000E 02	-0.5200000E 02	4-57
0.1871000E 04	0.3346000E 04	0.0	-0.5329999E 02	-0.5329999E 02	6-7B
0.2661000E 04	0.3339000E 04	0.0	-0.5300000E 02	-0.5300000E 02	4-79
0.2827000E 04	0.3319000E C4	0.0	-0.5289999E 02	-0.5289999E 02	4-78
0.1710000E 04	0.3315000E 04	0.1544400E 00	-0.5389999E 02	-0.5374554E 02	6-6
0.2526000E 04	0.3312000E 04	0.0	-0.5289999E 02	-0.5289999E 02	7-3
0.1207000E 04	0.3303000E 04	0.6277699E 00	-0.5550000E 02	-0.5487222E 02	3-42
0.2510000E 04	0.3276000E 04	0.0	-0.5270000E 02	-0.5270000E 02	7-4
0.3358000E 04	0.3261000E 04	0.5991699E 00	-0.5939999E 02	-0.5880081E 02	12-13
0.1384000E 04	0.3257000E 04	0.3060199E 00	-0.5359999E 02	-0.5329396E 02	3-38

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.1871000E 04	0.3256000E 04	0.0	-0.5329999E 02	-0.5329999E 02	6-7A
0.3876000E 04	0.3254000E 04	0.0	-0.6050000E 02	-0.6050000E 02	13-12
0.1200000E 04	0.3253000E 04	0.7121398E 00	-0.5470000E 02	-0.5398785E 02	3-40
0.1279000E 04	0.3252000E 04	0.4361500E 00	-0.5420000E 02	-0.5376384E 02	3-39
0.1711000E 04	0.3252000E 04	0.1401399E 00	-0.5320000E 02	-0.5305984E 02	6-7
0.1462000E 04	0.3251000E 04	0.2917199E 00	-0.5259999E 02	-0.5230826E 02	3-37
0.3110000E 04	0.3251000E 04	0.1558700E 00	-0.5279999E 02	-0.5264410E 02	4-29
0.3618000E 04	0.3251000E 04	0.1258399E 00	-0.6029999E 02	-0.6017415E 02	13-8
0.3749000E 04	0.3251000E 04	0.0	-0.6079999E 02	-0.6079999E 02	13-9
0.1280000E 04	0.3250000E 04	0.4361500E 00	-0.5420000E 02	-0.5376384E 02	3-39
0.2477000E 04	0.3247000E 04	0.0	-0.5309999E 02	-0.5309999E 02	7-6
0.2828000E 04	0.3244000E 04	0.1329899E 00	-0.5270000E 02	-0.5256700E 02	4-74
0.3186000E 04	0.3242000E 04	0.1973400E 00	-0.5300000E 02	-0.5280266E 02	4-76
0.2322000E 04	0.3237000E 04	0.0	-0.5120000E 02	-0.5120000E 02	7-9
0.2418000E 04	0.3230000E 04	0.0	-0.5239999E 02	-0.5239999E 02	7-7
0.2537000E 04	0.3224000E 04	0.1415700E 00	-0.5229999E 02	-0.5215842E 02	7-5
0.2006000E 04	0.3220000E 04	0.0	-0.5200000E 02	-0.5200000E 02	7-12
0.3104000E 04	0.3208000E 04	0.1444300E 00	-0.5259999E 02	-0.5245555E 02	4-75
0.1309000E 04	0.3206000E 04	0.6177599E 00	-0.5179999E 02	-0.5118222E 02	3-36
0.1711000E 04	0.3189000E 04	0.1301299E 00	-0.4920000E 02	-0.4906985E 02	6-8
0.1572000E 04	0.3185000E 04	0.1673099E 00	-0.5059999E 02	-0.5043268E 02	6-9
0.2339000E 04	0.3166000E 04	0.0	-0.4779999E 02	-0.4779999E 02	7-8
0.1862000E 04	0.3162000E 04	0.4576000E 00	-0.4959999E 02	-0.4914238E 02	6-12
0.2975000E 04	0.3159000E 04	0.1387100E 00	-0.5270000E 02	-0.5256128E 02	4-72
0.3214000E 04	0.3149000E 04	0.1973400E 00	-0.5279999E 02	-0.5260265E 02	4-28
0.2717000E 04	0.3146000E 04	0.4576000E 00	-0.5109999E 02	-0.5064238E 02	4-73
0.2204000E 04	0.3135000E 04	0.0	-0.4759999E 02	-0.4759999E 02	7-11
0.1711000E 04	0.3132000E 04	0.1144000E 00	-0.5020000E 02	-0.5008559E 02	6-10

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.3874000E 04	0.3129000E 04	0.1387100E 00	-0.5989999E 02	-0.5976128E 02	13-11
0.3494000E 04	0.3128000E 04	0.7536099E 00	-0.6059999E 02	-0.5984637E 02	12-14
0.3751000E 04	0.3125000E 04	0.1658800E 00	-0.6070000E 02	-0.6053410E 02	13-10
0.3620000E 04	0.3124000E 04	0.2659798E 00	-0.6020000E 02	-0.5993401E 02	13-8A
0.2261000E 04	0.3116000E 04	0.1215500E 00	-0.4800000E 02	-0.4787845E 02	7-13
0.2297000E 04	0.3112000E 04	0.0	-0.4770000E 02	-0.4770000E 02	7-10
0.2225000E 04	0.3108000E 04	0.0	-0.4850000E 02	-0.4850000E 02	7-14
0.2068000E 04	0.3103000E 04	0.6120398E 00	-0.4900000E 02	-0.4838795E 02	7-15
0.1936000E 04	0.3099000E 04	0.0	-0.4909999E 02	-0.4909999E 02	1-16B
0.2416000E 04	0.3097000E 04	0.3932500E 00	-0.4679999E 02	-0.4640674E 02	7-18
0.1831000E 04	0.3096000E 04	0.0	-0.4959999E 02	-0.4959999E 02	6-11
0.1323000E 04	0.3087000E 04	0.4747599E 00	-0.5289999E 02	-0.5242523E 02	3-35
0.2394000E 04	0.3087000E 04	0.1401399E 00	-0.4809999E 02	-0.4795984E 02	7-19
0.2957000E 04	0.3084000E 04	0.7879298E 00	-0.5100000E 02	-0.5021207E 02	4-71
0.1712000E 04	0.3070000E 04	0.1201200E 00	-0.5009999E 02	-0.4997986E 02	6-13
0.2935000E 04	0.3052000E 04	0.0	-0.5470000E 02	-0.5470000E 02	6-B
0.1762000E 04	0.3046000E 04	0.1072500E 00	-0.5009999E 02	-0.4999274E 02	6-14
0.1322000E 04	0.3041000E 04	0.3331898E 00	-0.5300000E 02	-0.5266681E 02	3-34
0.3304000E 04	0.3041000E 04	0.1816100E 00	-0.5320000E 02	-0.5301839E 02	4-27
0.2135000E 04	0.3035000E 04	0.0	-0.4800000E 02	-0.4800000E 02	7-16
0.3055000E 04	0.3034000E 04	0.2616898E 00	-0.5050000E 02	-0.5023830E 02	4-70
0.1311000E 04	0.3016000E 04	0.2774199E 00	-0.5350000E 02	-0.5322258E 02	3-33
0.1713000E 04	0.3014000E 04	0.1287000E 00	-0.4989999E 02	-0.4977129E 02	6-15
0.3223000E 04	0.3011000E 04	0.1358500E 00	-0.5250000E 02	-0.5236414E 02	4-69
0.4647000E 04	0.3010000E 04	0.1701699E 00	-0.5889999E 02	-0.5872981E 02	14-9

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.4897000E 04	0.3010000E 04	0.1415700E 00	-0.6220000E 02	-0.6205843E 02	16-1
0.2964000E 04	0.3008000E 04	0.0	-0.5000000E 02	-0.5000000E 02	6-A
0.4773000E 04	0.3005000E 04	0.0	-0.6100000E 02	-0.6100000E 02	14-10
0.4255000E 04	0.3004000E 04	0.0	-0.6159999E 02	-0.6159999E 02	14-6
0.4389000E 04	0.3004000E 04	0.1158299E 00	-0.6229999E 02	-0.6218416E 02	14-7
0.4516000E 04	0.3004000E 04	0.2931499E 00	-0.6289999E 02	-0.6260684E 02	14-8
0.3619000E 04	0.3002000E 04	0.1205489E 01	-0.6309999E 02	-0.6189450E 02	14-1
0.3613000E 04	0.3001000E 04	0.2473898E 00	-0.6050000E 02	-0.6025261E 02	14-3
0.4131000E 04	0.3001000E 04	0.1001000E 00	-0.6089999E 02	-0.6079988E 02	14-5
0.3880000E 04	0.3000000E 04	0.1744600E 00	-0.6059999E 02	-0.6042552E 02	14-4
0.3751000E 04	0.2999000E 04	0.3703699E 00	-0.6050000E 02	-0.6012962E 02	14-2
0.2056000E 04	0.2993000E 04	0.0	-0.4839999E 02	-0.4839999E 02	7-17A
0.1613000E 04	0.2992000E 04	0.2245100E 00	-0.4929999E 02	-0.4907547E 02	6-16
0.2541000E 04	0.2988000E 04	0.2102100E 00	-0.4750000E 02	-0.4728978E 02	7-22
0.1910000E 04	0.2987000E 04	0.0	-0.4939999E 02	-0.4939999E 02	1-16A
0.2721000E 04	0.2978000E 04	0.0	-0.4900000E 02	-0.4900000E 02	1-8A
0.2378000E 04	0.2972000E 04	0.0	-0.4800000E 02	-0.4800000E 02	7-20
0.2853000E 04	0.2971000E 04	0.0	-0.4900000E 02	-0.4900000E 02	1-7A
0.1712000E 04	0.2964000E 04	0.1444300E 04	-0.5029999E 02	-0.5015555E 02	6-17
0.2420000E 04	0.2944000E 04	0.0	-0.4820000E 02	-0.4820000E 02	7-21
0.3498000E 04	0.2944000E 04	0.4132700E 00	-0.5380000E 02	-0.5338673E 02	12-15
0.2050000E 04	0.2934000E 04	0.0	-0.4920000E 02	-0.4920000E 02	7-17
0.1321000E 04	0.2926000E 04	0.2559699E 00	-0.5400000E 02	-0.5374402E 02	3-32
0.1712000E 04	0.2913000E 04	0.1344200E 00	-0.5150000E 02	-0.5136557E 02	6-18
0.4904000E 04	0.2885000E 04	0.0	-0.6279999E 02	-0.6279999E 02	1-6B
0.1700000E 04	0.2881000E 04	0.2116399E 00	-0.5300000E 02	-0.5278836E 02	1-19

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.2602000E 04	0.2881000E 04	0.1387100E 00	-0.4759999E 02	-0.4746127E 02	1-10
0.3180000E 04	0.2877000E 04	0.0	-0.5109999E 02	-0.5109999E 02	1-4
0.3306000E 04	0.2877000E 04	0.1201200E 00	-0.5079999E 02	-0.5067986E 02	1-3
0.2483000E 04	0.2875000E 04	0.0	-0.4770000E 02	-0.4770000E 02	1-11
0.2050000E 04	0.2873000E 04	0.0	-0.4920000E 02	-0.4920000E 02	1-14
0.1650000E 04	0.2872000E 04	0.1987700E 00	-0.5329999E 02	-0.5310121E 02	1-18
0.1869000E 04	0.2871000E 04	0.1172600E 00	-0.5100000E 02	-0.5088274E 02	1-16
0.1982000E 04	0.2871000E 04	0.1043900E 00	-0.5000000E 02	-0.4989560E 02	1-15
0.1714000E 04	0.2870000E 04	0.1387100E 00	-0.5300000E 02	-0.5286128E 02	6-19
0.1407000E 04	0.2869000E 04	0.2102100E 00	-0.5559999E 02	-0.5538977E 02	1-20
0.1759000E 04	0.2869000E 04	0.1429999E 00	-0.5239999E 02	-0.5225699E 02	1-17
0.3359000E 04	0.2867000E 04	0.0	-0.5189999E 02	-0.5189999E 02	4-26
0.1190000E 04	0.2866000E 04	0.1587300E 00	-0.5559999E 02	-0.5544125E 02	1-22
0.1325000E 04	0.2866000E 04	0.2044899E 00	-0.5470000E 02	-0.5449550E 02	1-21
0.2950000E 04	0.2866000E 04	0.0	-0.5000000E 02	-0.5000000E 02	1-6
0.3060000E 04	0.2866000E 04	0.0	-0.5189999E 02	-0.5189999E 02	1-5
0.2846000E 04	0.2864000E 04	0.0	-0.4889999E 02	-0.4889999E 02	1-7
0.2222000E 04	0.2862000E 04	0.1530100E 00	-0.4839999E 02	-0.4824698E 02	1-13
0.2361000E 04	0.2862000E 04	0.0	-0.4839999E 02	-0.4839999E 02	1-12
0.2722000E 04	0.2862000E 04	0.1244100E 00	-0.4770000E 02	-0.4757558E 02	1-8
0.3754000E 04	0.2848000E 04	0.1089660E 01	-0.5539999E 02	-0.5431033E 02	12-16
0.3438000E 04	0.2844000E 04	0.1144000E 00	-0.5209999E 02	-0.5198558E 02	1-1
0.3720000E 04	0.2821000E 04	0.5133699E 00	-0.5489999E 02	-0.5438661E 02	12-16A
0.2625000E 04	0.2805000E 04	0.0	-0.4839999E 02	-0.4839999E 02	1-10A
0.1009000E 04	0.2796000E 04	0.1472899E 00	-0.5639999E 02	-0.5625270E 02	1-23

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.2908000E 04	0.2795000E 04	0.0	-0.4889999E 02	-0.4889999E 02	1-6C
0.3434000E 04	0.2788000E 04	0.0	-0.5109999E 02	-0.5109999E 02	4-25
0.1710000E 04	0.2765000E 04	0.2116399E 00	-0.5500000E 02	-0.5478836E 02	6-20
0.2724000E 04	0.2758000E 04	0.0	-0.4889999E 02	-0.4889999E 02	1-8B
0.8930000E 03	0.2757000E 04	0.1429999E 00	-0.5600000E 02	-0.5585699E 02	1-24
0.4916000E 04	0.2755000E 04	0.0	-0.6220000E 02	-0.6220000E 02	16-3
0.4389000E 04	0.2751000E 04	0.3689398E 00	-0.5939999E 02	-0.5903105E 02	15-1
0.3883000E 04	0.2750000E 04	0.7736298E 00	-0.5559999E 02	-0.5482635E 02	12-17
0.3258000E 04	0.2746000E 04	0.0	-0.5120000E 02	-0.5120000E 02	4-16C
0.1970000E 04	0.2711000E 04	0.1687400E 00	-0.5070000E 02	-0.5053125E 02	2-A
0.2477000E 04	0.2708000E 04	0.0	-0.4979999E 02	-0.4979999E 02	5-4A
0.1240000E 04	0.2707000E 04	0.4304298E 00	-0.5559999E 02	-0.5516956E 02	3-30
0.2146000E 04	0.2693000E 04	0.0	-0.5209999E 02	-0.5209999E 02	2-1
0.2728000E 04	0.2672000E 04	0.0	-0.5020000E 02	-0.5020000E 02	1-8C
0.3427000E 04	0.2650000E 04	0.0	-0.5309999E 02	-0.5309999E 02	4-24
0.2190000E 04	0.2648000E 04	0.0	-0.5259999E 02	-0.5259999E 02	2-2
0.1722000E 04	0.2642000E 04	0.2030600E 00	-0.5420000E 02	-0.5399693E 02	6-21
0.3190000E 04	0.2640000E 04	0.0	-0.5159999E 02	-0.5159999E 02	4-16B
0.4278000E 04	0.2640000E 04	0.2059200E 00	-0.5900000E 02	-0.5879407E 02	15-2
0.2940000E 04	0.2634000E 04	0.0	-0.5039999E 02	-0.5039999E 02	4-16B
0.4920000E 04	0.2629000E 04	0.0	-0.6400000E 02	-0.6400000E 02	16-4
0.1852000E 04	0.2617000E 04	0.2002000E 00	-0.5279999E 02	-0.5259978E 02	6-23
0.2632000E 04	0.2601000E 04	0.0	-0.5200000E 02	-0.5200000E 02	5-4B
0.3747000E 04	0.2600000E 04	0.0	-0.5289999E 02	-0.5289999E 02	4-23
0.3992000E 04	0.2600000E 04	0.6821100E 00	-0.5559999E 02	-0.5491788E 02	12-18
0.2056000E 04	0.2583000E 04	0.0	-0.5259999E 02	-0.5259999E 02	2-B

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.2196000E 04	0.2570000E 04	0.1215500E 00	-0.5309999E 02	-0.5297844E 02	2-9
0.1769000E 04	0.2567000E 04	0.2359500E 00	-0.5400000E 02	-0.5376404E 02	6-22
0.2375000E 04	0.2561000E 04	0.0	-0.5300000E 02	-0.5300000E 02	5-2
0.2606000E 04	0.2561000E 04	0.0	-0.5239999E 02	-0.5239999E 02	5-4
0.2678000E 04	0.2556000E 04	0.1315600E 00	-0.5220000E 02	-0.5206844E 02	5-5
0.2756000E 04	0.2534000E 04	0.0	-0.5109999E 02	-0.5109999E 02	5-6
0.1497000E 04	0.2531000E 04	0.4576000E 00	-0.5809999E 02	-0.5764238E 02	3-29
0.2159000E 04	0.2510000E 04	0.1172600E 00	-0.5329999E 02	-0.5318272E 02	2-J
0.4280000E 04	0.2510000E 04	0.1058199E 00	-0.5820000E 02	-0.5809418E 02	15-3
0.1627000E 04	0.2503000E 04	0.3503500E 00	-0.5539999E 02	-0.5504964E 02	6-25
0.2060000E 04	0.2501000E 04	0.1387100E 00	-0.5289999E 02	-0.5276128E 02	2-C
0.4920000E 04	0.2500000E 04	0.1029600E 00	-0.6509999E 02	-0.6499702E 02	16-5
0.3526000E 04	0.2494000E 04	0.0	-0.5300000E 02	-0.5300000E 02	4-21
0.2515000E 04	0.2481000E 04	0.0	-0.5289999E 02	-0.5289999E 02	5-3
0.2374000E 04	0.2460000E 04	0.1001000E 00	-0.5309999E 02	-0.5299988E 02	2-5
0.2014000E 04	0 2452000E 04	0.1372800E 00	-0.5220000E 02	-0.5206271E 02	2-D
0.4113000E 04	0.2440000E 04	0.3174599E 00	-0.5670000E 02	-0.5638254E 02	12-19
0.2055000E 04	0.2437000E 04	0.1730300E 00	-0.5279999E 02	-0.5262695E 02	2-E
0.2886000E 04	0.2434000E 04	0.0	-0.5139999E 02	-0.5139999E 02	5-7
0.2244000E 04	0.2427000E 04	0.1644500E 00	-0.5300000E 02	-0.5283554E 02	2-G
0.2167000E 04	0.2405000E 04	0.1644500E 00	-0.5320000E 02	-0 5303554E 02	2-F
0.3006000E 04	0.2401000E 04	0.0	-0.5259999E 02	-0.5259999E 02	6-54A
0.2931000E 04	0.2399000E 04	0.0	-0.5179999E 02	-0.5179999E 02	5-8
0.4281000E 04	0.2380000E 04	0.1901900E 00	-0.5750000E 02	-0.5730980E 02	15-4
0.2967000E 04	0.2375000E 04	0.0	-0.5270000E 02	-0.5270000E 02	6-54
0.4924000E 04	0.2375000E 04	0.0	-0.6500000E 02	-0.6500000E 02	16-6

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.3403000E 04	0.2340000E 04	0.0	-0.5320000E 02	-0.5320000E 02	4-20
0.2768000E 04	0.2334000E 04	0.0	-0.5220000E 02	-0.5220000E 02	6-54B
0.2923000E 04	0.2325000E 04	0.0	-0.5220000E 02	-0.5220000E 02	6-53
0.3048000E 04	0.2311000E 04	0.0	-0.5220000E 02	-0.5220000E 02	5-9
0.2525000E 04	0.2308000E 04	0.1444300E 00	-0.5279999E 02	-0.5265555E 02	2-6
0.1747000E 04	0.2307000E 04	0.4261398E 00	-0.5350000E 02	-0.5307385E 02	6-26
0.1809000E 04	0.2304000E 04	0.4275699E 00	-0.5320000E 02	-0.5277242E 02	6-27
0.3538000E 04	0.2298000E 04	0.0	-0.5350000E 02	-0.5350000E 02	4-22
0.1607000E 04	0.2296000E 04	0.5834398E 00	-0.5489999E 02	-0.5431654E 02	3-27
0.1875000E 04	0.2290000E 04	0.4132699E 00	-0.5329999E 02	-0.5288672E 02	6-28
0.1936000E 04	0.2287000E 04	0.3961099E 00	-0.5350000E 02	-0.5310388E 02	6-29
0.1996000E 04	0.2287000E 04	0.3331898E 00	-0.5279999E 02	-0.5246680E 02	6-30
0.2547000E 04	0.2285000E 04	0.0	-0.5450000E 02	-0.5450000E 02	2-13
0.2415000E 04	0.2284000E 04	0.1773199E 00	-0.5320000E 02	-0.5302267E 02	2-H
0.1747000E 04	0.2273000E 04	0.3918199E 00	-0.5270000E 02	-0.5230817E 02	3-24
0.2056000E 04	0.2273000E 04	0.3174599E 00	-0.5220000E 02	-0.5188254E 02	6-31
0.4188000E 04	0.2271000E 04	0.3918199E 00	-0.5650000E 02	-0.5610817E 02	12-20
0.1460000E 04	0.2270000E 04	0.7907898E 00	-0.5639999E 02	-0.5560919E 02	3-28
0.2901000E 04	0.2261000E 04	0.0	-0.5229999E 02	-0.5229999E 02	6-52
0.4924000E 04	0.2254000E 04	0.0	-0.6379999E 02	-0.6379999E 02	16-7
0.3133000E 04	0.2244000E 04	0.2502500E 00	-0.5189999E 02	-0.5164973E 02	6-10
0.2111000E 04	0.2241000E 04	0.3117398E 00	-0.5070000E 02	-0.5038824E 02	6-32
0.2941000E 04	0.2239000E 04	0.1001000E 00	-0.5179999E 02	-0.5169987E 02	6-54C
0.3379000E 04	0.2234000E 04	0.0	-0.5290000E 02	-0.5290000E 02	4-19
0.2612000E 04	0.2221000E 04	0.0	-0.5359999E 02	-0.5359999E 02	2-7
0.1762000E 04	0.2219000E 04	0.3918199E 00	-0.5259999E 02	-0.5220816E 02	3-24

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.2846000E 04	0.2215000E 04	0.0	-0.5270000E 02	-0.5270000E 02	6-51
0.1844000E 04	0.2208000E 04	0.4990699E 00	-0.5289999E 02	-0.5240092E 02	3-23
0.3179000E 04	0.2200000E 04	0.0	-0.5259999E 02	-0.5259999E 02	5-12
0.2159000E 04	0.2199000E 04	0.3103099E 00	-0.5200000E 02	-0.5168968E 02	6-38
0.2056000E 04	0.2197000E 04	0.4232798E 00	-0.5120000E 02	-0.5077670E 02	6-37
0.2796000E 04	0.2179000E 04	0.1329899E 00	-0.5309999E 02	-0.5296700E 02	6-50
0.2207000E 04	0.2178000E 04	0.3103099E 00	-0.5200000E 02	-0.5168968E 02	6-39
0.1748000E 04	0.2172000E 04	0.5820099E 00	-0.5289999E 02	-0.5231798E 02	3-24B
0.3232000E 04	0.2171000E 04	0.0	-0.5289999E 02	-0.5289999E 02	5-13
0.2665000E 04	0.2168000E 04	0.1744600E 00	-0.5279999E 02	-0.5262552E 02	2-8
0.1960000E 04	0.2165000E 04	0.5634199E 00	-0.5239999E 02	-0.5183656E 02	3-22
0.1599000E 04	0.2155000E 04	0.9194898E 00	-0.5700000E 02	-0.5608051E 02	3-26
0.2266000E 04	0.2151000E 04	0.3432000E 00	-0.5139999E 02	-0.5105679E 02	6-40
0.4027000E 04	0.2151000E 04	0.0	-0.5479999E 02	-0.5479999E 02	5-22M
0.1636000E 04	0.2140000E 04	0.9280699E 00	-0.5309999E 02	-0.5217192E 02	3-25
0.3273000E 04	0.2140000E 04	0.0	-0.5320000E 02	-0.5320000E 02	5-14
0.4541000E 04	0.2135000E 04	0.0	-0.6200000E 02	-0.6200000E 02	17-4
0.4607000E 04	0 2135000E 04	0.0	-0.6270000E 02	-0.6270000E 02	17-3
0.4740000E 04	0.2135000E 04	0.0	-0.6279999E 02	-0.6279999E 02	17-2
0.4796000E 04	0.2135000E 04	0.0	-0.6289999E 02	-0.6289999E 02	17-1
0.4923000E 04	0.2135000E 04	0.0	-0.6420000E 02	-0.6420900E 02	16-8
0 2744000E 04	0.2134000E 04	0.1715999E -01	-0.5209999E 02	-0.5208282E 02	6-49
0 2330000E 04	0.2130000E 04	0.3489199E 00	-0.5079999E 02	-0.5045107E 02	6-41
0.2071000E 04	0.2120000E 04	0.5176599E 00	-0.5150000E 02	-0.5098233E 02	3-21
0.2298000E 04	0.2113000E 04	0.3317599E 00	-0.5239999E 02	-0.5206822E 02	6-42
0.2389000E 04	0.2112000E 04	0.3289000E 00	-0.5120000E 02	-0.5087109E 02	6-43
0.2695000E 04	0.2105000E 04	0.1687400E 00	-0.5189999E 02	-0.5173125E 02	6-48

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X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.3325000E 04	0.2101000E 04	0.0	-0.5329999E 02	-0.5329999E 02	5-15
0.4186000E 04	0.2098000E 04	0.6692398E 00	-0.5539999E 02	-0.5473074E 02	12-21
0.2632000E 04	0.2094000E 04	0.2087800E 00	-0.5189999E 02	-0.5169121E 02	6-47
0.2195000E 04	0.2093000E 04	0.4933500E 00	-0.5120000E 02	-0.5070663E 02	3-19
0.2446000E 04	0.2093000E 04	0.2745599E 00	-0.5139999E 02	-0.5112543E 02	6-44
0.3632000E 04	0.2088000E 04	0.0	-0.5300000E 02	-0.5300000E 02	5-22E
0.2042000E 04	0.2079000E 04	0.5934500E 00	-0.5150000E 02	-0.5090654E 02	3-20
0.2504000E 04	0.2077000E 04	0.2445298E 00	-0.5179999E 02	-0.5155545E 02	6-45
0.2565000E 04	0.2075000E 04	0.2273700E 00	-0.5129999E 02	-0.5107262E 02	6-46
0.3988000E 04	0.2051000E 04	0.0	-0.5470000E 02	-0.5470000E 02	5-22I
0.1780000E 04	0.2044000E 04	0.1202629E 01	-0.5270000E 02	-0.5149736E 02	3-24C
0.4205000E 04	0.2031000E 04	0.3861000E 00	-0.5529999E 02	-0.5491388E 02	12-22
0.2332000E 04	0.2021000E 04	0.5677099E 00	-0.5120000E 02	-0.5063228E 02	3-18
0.3271000E 04	0.2014000E 04	0.0	-0.5359999E 02	-0.5359999E 02	9-1
0.5053000E 04	0.2010000E 04	0.0	-0.6359999E 02	-0.6359999E 02	16-9
0.4544000E 04	0.2005000E 04	0.0	-0.6279999E 02	-0.6279999E 02	17-5
0.2816000E 04	0.2001000E 04	0.1673099E 00	-0.5109999E 02	-0.5093268E 02	2-9
0.3689000E 04	0.1994000E 04	0.0	-0.5320000E 02	-0.5320000E 02	5-22A
0.4021000E 04	0.1904000E 04	0.1072500E 00	-0.5410000E 02	-0.5399275E 02	5-22C
0.3965000E 04	0.1991000E 04	0.0	-0.5459999E 02	-0.5459999E 02	5-22H
0.3716000E 04	0.1964000E 04	0.0	-0.5200000E 02	-0.5200000E 02	5-22K
0.2856000E 04	0.1963000E 04	0.1658800E 00	-0.5139999E 02	-0.5123410E 02	2-10
0.3948000E 04	0.1950000E 04	0.0	-0.5479999E 02	-0.5479999E 02	5-22G
0.2425000E 04	0.1946000E 04	0.4904898E 00	-0.5070000E 02	-0.5020950E 02	3-17
0.2665000E 04	0.1942000E 04	0.0	-0.5100000E 02	-0.5100000E 02	6-47A
0.3156000E 04	0.1930000E 04	0.0	-0.5289999E 02	-0.5289999E 02	9-2

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X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.3493000E 04	0.1894000E 04	0.0	-0.5400000E 02	-0.5400000E 02	5-16
0.4193000E 04	0.1880000E 04	0.1059629E 01	-0.5479999E 02	-0.5374036E 02	12-23
0.2509000E 04	0.1876000E 04	0.4218500E 00	-0.4970000E 02	-0.4927814E 02	3-16
0.3797000E 04	0.1874000E 04	0.0	-0.5260000E 02	-0.5260000E 02	5-22D
0.5055000E 04	0.1871000E 04	0.0	-0.6359999E 02	-0.6359999E 02	16-10
0.3914000E 04	0.1869000E 04	0.0	-0.5420000E 02	-0.5420000E 02	5-22F
0.2953000E 04	0.1865000E 04	0.2330898E 00	-0.5100000E 02	-0.5076691E 02	2-11
0.4544000E 04	0.1860000E 04	0.0	-0.6239999E 02	-0.6239999E 02	17-6
0.3896000E 04	0.1830000E 04	0.0	-0.5459999E 02	-0.5459999E 02	5-22E
0.1806000E 04	0.1808000E 04	0.2226509E 01	-0.5100000E 02	-0.4877348E 02	3-24D
0.2934000E 04	0.1805000E 04	0.1687400E 00	-0.5120000E 02	-0.5103125E 02	9-4
0.3014000E 04	0.1800000E 04	0.1301299E 00	-0.5059999E 02	-0.5046985E 02	2-12
0.3574000E 04	0.1798000E 04	0.0	-0.5329999E 02	-0.5329999E 02	5-17
0.2642000E 04	0.1786000E 04	0.4475898E 00	-0.4900000E 02	-0.4855240E 02	3-15
0.1868000E 04	0.1774000E 04	0.2659800E 01	-0.5020000E 02	-0.4754019E 02	3-24E
0.2826000E 04	0.1745000E 04	0.2116399E 00	-0.5000000E 02	-0.4978836E 02	9-5
0.5053000E 04	0.1741000E 04	0.0	-0.6379999E 02	-0.6379999E 02	16-11
0 4544000E 04	0.1734000E 04	0.0	-0.6150000E 02	-0.6150000E 02	17-7
0.3673000E 04	0.1725000E 04	0.0	-0.5339999E 02	-0.5339999E 02	5-18
0.4163000E 04	0.1721000E 04	0.4390100E 00	-0.5400000E 02	-0.5356099E 02	12-24
0.2740000E 04	0.1719000E 04	0.5133699E 00	-0.4889999E 02	-0.4838661E 02	3-14
0.3315000E 04	0.1694000E 04	0.0	-0.5270000E 02	-0.5270000E 02	4-9
0.3158000E 04	0.1654000E 04	0.1072500E 00	-0.5200000E 02	-0.5189275E 02	2-14
0.3753000E 04	0.1621000E 04	0.0	-0.5300000E 02	-0.5300000E 02	5-19
0.5053000E 04	0.1615000E 04	0.0	-0.6229999E 02	-0.6229999E 02	16-12
0.4543000E 04	0.1605000E 04	0.0	-0.6189999E 02	-0.6189999E 02	17-8

X COORDINATE	Y COORDINATE	TERRAIN CORRECTION IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.4029000E 04	0.1581000E 04	0.1372800E 00	-0.5350000E 02	-0.5336272E 02	5-22B
0.3290000E 04	0.1561000E 04	0.0	-0.5240000E 02	-0.5240000E 02	4-7
0.3851000E 04	0.1545000E 04	0.1329899E 00	-0.5329999E 02	-0.5316699E 02	5-20
0.2896000E 04	0.1531000E 04	0.3246099E 00	-0.4889999E 02	-0.4857538E 02	3-12
0.4073000E 04	0.1509000E 04	0.1630000E 00	-0.5300000E 02	-0.5283698E 02	5-22A
0.3898000E 04	0.1495000E 04	0.0	-0.5459999E 02	-0.5459999E 02	5-21
0.5049000E 04	0.1490000E 04	0.0	-0.6050000E 02	-0.6050000E 02	16-13
0.4336000E 04	0.1481000E 04	0.2488200E 00	-0.5880000E 02	-0.585518E 02	17-9A
0.4543000E 04	0.1479000E 04	0.0	-0.6159999E 02	-0.6159999E 02	17-9
0.3292000E 04	0.1478000E 04	0.1129699E 00	-0.5179999E 02	-0.5168701E 02	4-5
0.1926000E 04	0.1458000E 04	0.1019447E 02	-0.6309999E 02	-0.5290552E 02	R-11
0.2971000E 04	0.1450000E 04	0.2902898E 00	-0.4929999E 02	-0.4900969E 02	3-11
0.3283000E 04	0.1414000E 04	0.1272700E 00	-0.5140000E 02	-0.5127273E 02	4-4
0.3651000E 04	0.1400000E 04	0.0	-0.5220000E 02	-0.5220000E 02	2-19
0.4011000E 04	0.1375000E 04	0.1272700E 00	-0.5259999E 02	-0.5247272E 02	5-22
0.2043000E 04	0.1369000E 04	0.7823527E 01	-0.6400000E 02	-0.5617647E 02	R-10
0.5049000E 04	0.1363000E 04	0.0	-0.5979999E 02	-0.5979999E 02	16-14
0.4544000E 04	0.1351000E 04	0.2044899E 00	-0.6070000E 02	-0.6049550E 02	17-10
0.3028000E 04	0.1350000E 04	0.2860000E 00	-0.4889999E 02	-0.4861398E 02	3-10
0.3581000E 04	0.1349000E 04	0.1072500E 00	-0.5289999E 02	-0.5279274E 02	2-18
0.3710000E 04	0.1348000E 04	0.0	-0.5170000E 02	-0.5170000E 02	2-20
0.3271000E 04	0.1324000E 04	0.1487200E 00	-0.5000000E 02	-0.4985127E 02	4-3
0.3541000E 04	0.1284000E 04	0.0	-0.5179999E 02	-0.5179999E 02	2-17
0.3802000E 04	0.1267000E 04	0.0	-0.5200000E 02	-0.5200000E 02	2-21
0.4017000E 04	0.1261000E 04	0.1029600E 00	-0.5200000E 02	-0.5189703E 02	5-23
0.3251000E 04	0.1251000E 04	0.1587300E 00	-0.4929999E 02	-0.4914125E 02	4-2

X COORDINATE	Y COORDINATE	TERRAIN CORRECTIONS IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.2172000E 04	0.1247000E 04	0.1151293E 02	-0.6300000E 02	-0.5148706E 02	R-9
0.3057000E 04	0.1239000E 04	0.4332898E 00	-0.4800000E 02	-0.4756670E 02	3-9
0.5047000E 04	0.1235000E 04	0.0	-0.6050000E 02	-0.6050000E 02	16-15
0.4921000E 04	0.1234000E 04	0.0	-0.6020000E 02	-0.6020000E 02	18-1
0.4794000E 04	0.1229000E 04	0.0	-0.6070000E 02	-0.6070000E 02	18-2
0.4232000E 04	0.1225000E 04	0.5848699E 00	-0.5839999E 02	-0.5781512E 02	18-6
0.4538000E 04	0.1225000E 04	0.0	-0.5750000E 02	-0.5750000E 02	18-4
0.4666000E 04	0.1225000E 04	0.0	-0.5839999E 02	-0.5839999E 02	18-3
0.3244000E 04	0.1201000E 04	0.1587300E 00	-0.4929999E 02	-0.4914125E 02	4-1
0.3898000E 04	0.1180000E 04	0.0	-0.5170000E 02	-0.5170000E 02	2-22
0.4350000E 04	0.1179000E 04	0.6134699E 00	-0.5820000E 02	-0.5758652E 02	18-7
0.3093000E 04	0.1160000E 04	0.3546398E 00	-0.4820000E 02	-0.4784535E 02	3-8
0.2641000E 04	0.1157000E 04	0.7350199E 00	-0.4639999E 02	-0.4566496E 02	R-3
0.3976000E 04	0.1115000E 04	0.0	-0.5159999E 02	-0.5159999E 02	2-23
0.2324000E 04	0.1110000E 04	0.4454450E 01	-0.5859999E 02	-0.5414554E 02	R-8
0.4030000E 04	0.1108000E 04	0.0	-0.5210000E 02	-0.5210000E 02	5-24
0.5049000E 04	0.1105000E 04	0.0	-0.6029999E 02	-0.6029999E 02	16-16
0.2513000E 04	0.1101000E 04	0.1417130E 01	-0.4689999E 02	-0.4548286E 02	R-5
0.4799000E 04	0.1101000E 04	0.0	-0.5889999E 02	-0.5889999E 02	19-2
0.4922000E 04	0.1101000E 04	0.0	-0.5950000E 02	-0.5950000E 02	19-1
0.4289000E 04	0.1097000E 04	0.2116399E 00	-0.5539999E 02	-0.5518835E 02	18-8
0.4672000E 04	0.1097000E 04	0.0	-0.5759999E 02	-0.5759999E 02	19-3
0.4544000E 04	0.1095000E 04	0.0	-0.5659999E 02	-0.5659999E 02	19-4
0.2765000E 04	0.1091000E 04	0.5648500E 00	-0.4609999E 02	-0.4553514E 02	R-2
0.3310000E 04	0.1085000E 04	0.1716000E 00	-0.4870000E 02	-0.4852840E 02	3-7
0.2964000E 04	0.1081000E 04	0.4089798E 00	-0.4689999E 02	-0.4649101E 02	R-1

X COORDINATE	Y COORDINATE	TERRAIN CORRECTIONS IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.3412000E 04	0.1024000E 04	0.1258399E 00	-0.5059999E 02	-0.5047415E 02	3-6
0.4030000E 04	0.1004000E 04	0.0	-0.5209999E 02	-0.5209999E 02	5-25
0.3527000E 04	0.9880000E 03	0.0	-0.5100000E 02	-0.5100000E 02	3-5
0.5054000E 04	0.9810000E 03	0.0	-0.5959999E 02	-0.5959999E 02	16-17
0.4545000E 04	0.9700000E 03	0.0	-0.5589999E 02	-0.5589999E 02	19-5
0.2641000E 04	0.9650000E 03	0.1085369E 01	-0.4589999E 02	-0.4481462E 02	R-4
0.3660000E 04	0.9540000E 03	0.0	-0.5089999E 02	-0.5089999E 02	3-4
0.3397000E 04	0.9220000E 03	0.1587300E 00	-0.4870000E 02	-0.4854126E 02	3-1A
0.3778000E 04	0.9150000E 03	0.0	-0.5109999E 02	-0.5109999E 02	3-3
0.4030000E 04	0.9070000E 03	0.0	-0.5209999E 02	-0.5209999E 02	3-1
0.3906000E 04	0.8960000E 03	0.0	-0.5129999E 02	-0.5129999E 02	3-2
0.3478000E 04	0.8780000E 03	0.1372800E 00	-0.4950000E 02	-0.4936272E 02	3-1B
0.5055000E 04	0.8540000E 03	0.0	-0.5900000E 02	-0.5900000E 02	16-18
0.4545000E 04	0.8410000E 03	0.0	-0.5470000E 02	-0.5470000E 02	19-6
0.4030000E 04	0.8400000E 03	0.0	-0.5159999E 02	-0.5159999E 02	5-26
0.2653000E 04	0.8170000E 03	0.3257540E 01	-0.5220000E 02	-0.4894244E 02	R-7
0.3481000E 04	0.7700000E 03	0.1115400E 00	-0.4870000E 02	-0.4858846E 02	3-1C
0.5055000E 04	0.7270000E 03	0.0	-0.5850000E 02	-0.5850000E 02	16-19
0.4031000E 04	0.7250000E 03	0.0	-0.5250000E 02	-0.5250000E 02	5-27
0.4926000E 04	0.7220000E 03	0.0	-0.5800000E 02	-0.5800000E 02	16-20
0.4672000E 04	0.7200000E 03	0.0	-0.5620000E 02	-0.5620000E 02	19-8
0.4543000E 04	0.7150000E 03	0.0	-0.5520000E 02	-0.5520000E 02	19-7
0.4415000E 04	0.7140000E 03	0.0	-0.5479999E 02	-0.5479999E 02	19-9
0 4683000E 04	0.7090000E 03	0.0	-0.5629999E 02	-0.5629999E 02	19-8A
0.3657000E 04	0.6990000E 03	0.0	-0.4959999E 02	-0.4959999E 02	3-1D
0.3832000E 04	0.6530000E 03	0.0	-0.5070000E 02	-0.5070000E 02	3-1H

X COORDINATE	Y COORDINATE	TERRAIN CORRECTIONS IN MILLIGALS	BOUGUER VALUES IN MILLIGALS	TERRAIN CORRECTED BOUGUER VALUES IN MILLIGALS	STATION NUMBERS FROM PETERSON'S DATA
0.3901000E 04	0.6530000E 03	0.2902900E 00	-0.5080000E 02	-0.5050971E 02	3-11
0.3485000E 04	0.6570000E 03	0.1830400E 00	-0.4839999E 02	-0.4821695E 02	5-39
0.3764000E 04	0.6190000E 03	0.0	-0.5080000E 02	-0.5080000E 02	3-1G
0.4154000E 04	0.5840000E 03	0.0	-0.5250000E 02	-0.5250000E 02	5-31
0.4415000E 04	0.5840000E 03	0.0	-0.5420000E 02	-0.5420000E 02	19-10
0.4027000E 04	0.5810000E 03	0.0	-0.5229999E 02	-0.5229999E 02	5-28
0.3563000E 04	0.5150000E 03	0.1329899E 00	-0.4859999E 02	-0.4846700E 02	5-38
0.4543000E 04	0.4600000E 03	0.0	-0.5509999E 02	-0.5509999E 02	19-12
0.4416000E 04	0.4550000E 03	0.0	-0.5409999E 02	-0.5409999E 02	19-11
0.4025000E 04	0.4540000E 03	0.0	-0.5150000E 02	-0.5150000E 02	5-29
0.3735000E 04	0.4390000E 03	0.1201200E 00	-0.4920000E 02	-0.4907986E 02	5-37
0.3866000E 04	0.3900000E 03	0.0	-0.4930000E 02	-0.4930000E 02	5-36
0.3933000E 04	0.3900000E 03	0.0	-0.5089999E 02	-0.5089999E 02	5-35
0.4077000E 04	0.2540000E 03	0.0	-0.5000000E 02	-0.5000000E 02	5-32
0.4124000E 04	0.1510000E 03	0.0	-0.4970000E 02	-0.4970000E 02	5-33
0.4192000E 04	0.5600000E 02	0.0	-0.5000000E 02	-0.5000000E 02	5-34

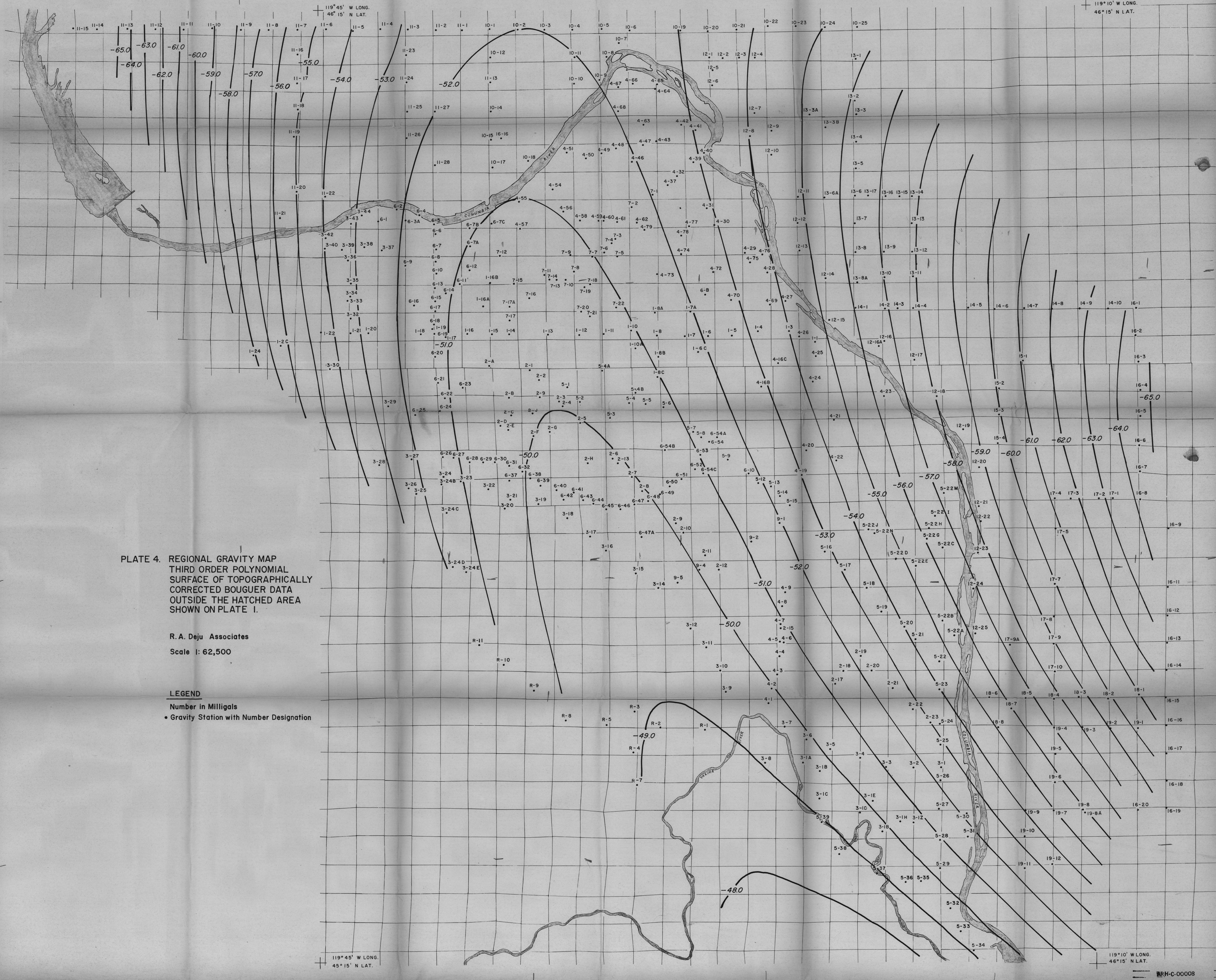

PLATE 4. REGIONAL GRAVITY MAP
THIRD ORDER POLYNOMIAL
SURFACE OF TOPOGRAPHICALLY
CORRECTED BOUGUER DATA
OUTSIDE THE HATCHED AREA
SHOWN ON PLATE I.

R. A. Deju Associates

Scale 1: 62,500

LEGEND

Number in Milligals

• Gravity Station with Number Designation

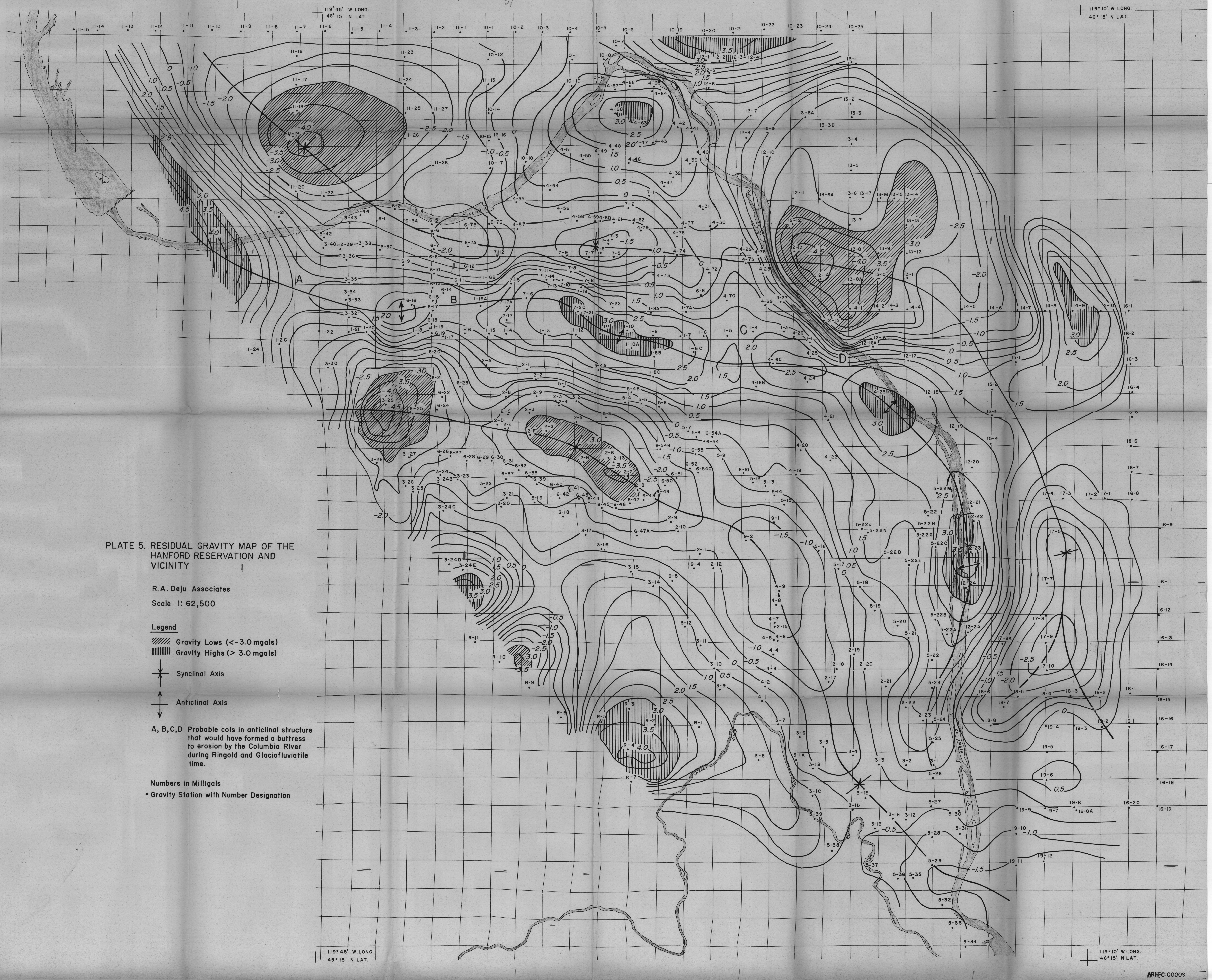

PLATE 5. RESIDUAL GRAVITY MAP OF THE HANFORD RESERVATION AND VICINITY