GL00974

CHEMISTRY, ORIGIN, AND GEOTHERMAL POTENTIAL OF THERMAL AND NON-THERMAL GROUNDWATERS IN NEW MEXICO

Final Subcontract Report
Submitted to the University of New Mexico

representing work performed under

U.S. Geol. Survey Grant #14-08-0001-G-255
New Mexico Dept. Energy and Minerals grant ERB-75-117

EVALUATION OF THE GEOTHERMAL POTENTIAL OF THE BASIN AND RANGE PROVINCE OF NEW MEXICO

by

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April, 1980

Abstract. Geochemical studies have consisted of the collection and analysis of all known thermal waters in New Mexico. Chemical data include major, minor and trace elements in addition to various isotopic ratios (Appendix A, Table 1-6). Further, non-thermal waters adjacent to geothermal anomalies have been analyzed for major and minor elements and isotopic ratios for comparison with the thermal waters. Finally, over 10,000 groundwater analyses from New Mexico and adjacent areas have been examined to complete the regional geochemical picture. Quantitative and qualitative geothermometers have been applied to these data in order to establish the location and potential of the state's geothermal resources. On the basis of the geochemical data, the state's geothermal resources have been ranked in the order of descending subsurface temperature estimates. Maps have been prepared showing the location of geothermal prospects with respect to various geological and geophysical parameters including heat flow, recent volcanics, deep sedimentary basins, and major Quaternary faults and continental lineaments. On the basis of the geochemical data, the following conclusions seem to be justified.

1. At least 7 and possibly as many as 20 discrete areas may have subsurface temperatures in excess of 150°C or sufficiently high for economic development of electricity (Table 1).
2. The vast majority of the high temperature geothermal prospects are located within the Rio Grande Rift, a tectonic province which includes the state's major population centers.
3. Several geothermal prospects such as the Southern Tularosa Basin are associated with large volumes of geothermal brine and are ideally suited for geothermal desalination.

4. Numerous geothermal prospects in western New Mexico consist of high quality, high temperature water but do not apparently have sufficient subsurface temperatures for electricity generation. These prospects appear ideal for direct heat utilization such as space heating and agricultural applications.

5. Nearly all groundwaters in southern New Mexico have temperatures in excess of 20 °C, the minimum temperature designated by the U.S. Department of Energy for low temperature utilization. Industries requiring (or having the ability to utilize) such waters should find a nearly inexhustable geothermal resource in southern New Mexico.

6. Two separate types of geothermal systems are recognized in New Mexico. Those of the more abundant type are located along the flanks of the deep sedimentary basins and owe their origin to deeply circulating groundwater which ascend to the surface along the tectonically active basin bounding faults. Those of the less abundant type are associated with Quaternary igneous rocks and may in part be heated by magmatic activity.

Literature Study. The initial part of the geochemical program consisted of a massive search of the hydrologic literature for waters which appeared on the basis of their chemical constituents to be of thermal origin. The main source of data for this search is the USGS multiple station listing computer file (WATSTORE) which contains chemical analyses of over 10,000 groundwaters for New Mexico and adjacent areas. Additional chemical data were obtained

from various state and federal files to fill in the gaps in the WATSTORE coverage. On the basis of these chemical data, quantitative geotemperatures (SiO_2, Na-K-Ca) were calculated and plotted on maps to a scale of 1:1,000,000 (Figures 1, 2). Additional maps were prepared for in situ temperature and total dissolved solids (Figures 3,4).

There are three reasons to include cold water geochemistry in a study aimed at regional appraisal of geothermal resources. The first is to establish background chemistry against which the hot geochemistry can be compared. Swanberg and Morgan (1978/79) have shown that there are regional trends in temperatures calculated using the SiO_2 and NaKCa geothermometers and these trends need to be known in order to properly evaluate the significance of hot spring data.

A second reason is to locate new geothermal areas. Swanberg (1975) and Swanberg and Alexander (1979) have shown that it is possible to recognize a geothermal water or detect a geothermal component in waters even though the waters may be of normal temperature. The procedure requires the assumption that a geothermal water, migrating from a geothermal reservoir into a shallow aquifer, will cool physically more rapidly than it looses its geothermal chemical signature, an assumption that gains credence because the speed at which reequilibration occurs becomes slow at colder temperatures. The procedure then is to apply the quantitative and qualitative geothermometers to whatever chemical data may exist in the literature and noting regions that yield high geotemperatures. Regions giving high

geochemical temperatures by three or more different geothermometers are likely geothermal prospects. A final reason to study cold waters is to locate areas where the groundwaters have high concentrations of boron, fluoride, etc. Geothermal resources in these areas may require special handling to insure that the environment is not adversely affected by geothermal development.

Hot Spring Study. Concurrently with the literature study, a list of reported thermal springs and wells was compiled. Any water in excess of 30°C was considered to be thermal, the hottest of which are Sulphur and Turkey Creek hot springs and the hot wells in the Southern Tularosa Basin and at the Lightning Dock KGRA, all of which are above 70°C. The locations of the thermal waters are shown in figure 5 and their locations temperatures, and geochemical temperatures are summarized in Tables 1, 2. Nearly all hot springs and wells in the study area were visited, temperatures and geology recorded, and samples collected for chemical analyses. The sampling procedures are those described by Presser and Barnes (1974). An untreated sample was collected in a polyethylene bottle for analyses of the stable constituents. A second sample, acidified with HNO_3, was collected in a polyethelene bottle for analyses of the unstable constituents such as silica, iron, arsenic, etc. A third sample was treated with zinc acetate for laboratory determination of hydrogen sulphide. A fourth sample, acidified with HNO_3, was collected in a glass bottle for analyses of trace elements such as mercury which might

be absorbed by a polyethelene bottle. The chemical constituents of the thermal waters including major, minor, and trace elements are given in Appendix A (Tables 2-5). All analyses were conducted at the State Soil and Water Testing Laboratory located at New Mexico State University using the procedures outlined by the Environmental Protection Agency (1971). The untreated samples were then forwarded to the University of New Mexico for isotopic analysis.

In addition to the thermal waters several nonthermal waters were collected near each occurrence of thermal water. These waters, representing cold springs, wells, and in some cases, surface waters, were chemically analyzed for major and minor constituents only (Appendix A, Tables 2-3). The purpose of analyzing nonthermal waters is to establish background chemistry, against which the chemistry of the thermal waters can be compared and therefore more meaningfully analyzed.

On the basis of the chemical data, both qualitative and quantitative geothermometers were evaluated and the results form the primary method whereby each specific area is appraised for geothermal potential. The quantitative geothermometers are silica (Fournier and Rowe, 1966), sodium-potassium (Ellis, 1970), and sodium-potassium-calcium (Fournier and Truesdell, 1973). Geochemical temperatures calculated using the silica and Na-K-Ca geothermometers are given in Appendix A, Table 1. The Na-K geothermometer is an older version of the Na-K-Ca technique and is not presented. The basic assumptions of these geothermometers are discussed by Fournier et al. (1974) and can be summarized as follows:

1) temperature dependent reactions in the geothermal reservoir control water chemistry, 2) water-rock equilibrium must exist within the geothermal reservoir, 3) minerals which supply the constituents upon which the geothermometers are based must exist within the geothermal reservoir, 4) re-equilibration must not occur as the water migrates from the reservoir to the sampling point, and 6) there must be negligible mixing with near surface waters of different chemical composition.

The qualitative geothermometers include low concentrations of calcium and bicarbonate in near neutral pH waters (Ellis, 1970), low ratios of magnesium to calcium (White, 1970), high ratios of sodium to calcium (Mahon, 1970), highest ratios of chloride to total carbonate ($Cl/CHCO_3+CO_3$); Fournier and Truesdell, 1970), and highest ratios of chloride to fluoride (Mahon, 1976). The basic data necessary to apply these geothermometers are given in Appendix A, Tables 2-3.

Ranking Criteria. On the basis of the silica and NaKCa geothermometers, "best guess" subsurface temperature estimates have been prepared and listed in Tables 1 and 2 in order of descending geothermal potential. The criteria used in the subsurface temperature estimates is the same as employed by the U.S. Geological Survey in the preparation of circular 726, White and Williams (1975). If the two geochemical temperatures are in good agreement, an approximate average is used. If there is a large discrepancy in the two geochemical temperatures, the lower value is taken. In some cases, mixing

models have been employed. These cases are designated by a check mark in Table 1a.

Several hot spring areas including two KGRAs and Turkey Creek Hot Spring, do not yield chemical temperatures in excess of adjacent nonthermal waters. These areas are given a subsurface temperature estimate of LT (low temperature) and are listed in Table 2 in order of descending surface temperature.

Geothermal Areas. The major geothermal areas in New Mexico are listed in Table 1a and shown in Figure 5. It is clear from Figure 5 that the vast majority of promising geothermal prospects in New Mexico are located within the Rio Grande Rift, a tectonic province running north-south through the center of the state and containing the state's major population centers. Several prospects are located near the boundary of the Colorado Plateau, a boundary that is also associated with geothermal resources in Utah, Arizona, and Colorado. A lesser number of promising prospects are located in the Basin and Range Province and the Colorado Plateau. There is no convincing evidence of any geothermal activity east of the Rio Grande Rift. Nearly all geothermal prospects in New Mexico are located with the high heat flow zone (>100 mWm^{-2}:2.5 HFU) delineated by Reiter et. al. (1975).

Although the data listed in Tables 1 and 2 and Figure 5 are self explanatory a few areas are worthy of special mention.

Valles Caldera. There appear to be three different types of thermal water in this area. Sulphur Springs is an acid sulphate type water containing very little chloride and appears to represent effluent from a vapor dominated portion of a major geothermal system. Several other springs such as Jemez Springs yield geochemical temperatures in excess of 200°C and probably represent effluent from the liquid dominated portion of the same geothermal system. A similar co-existance of liquid and vapor dominated portions of a geothermal system has been observed by White (1971) in Yellowstone Park. A third type of thermal water such as Spence Spring consist of high quality waters yielding geochemical temperatures which are not above regional background. These waters are not part of the major geothermal system. For a further treatment of this area, the reader is referred to Trainer (1975).

Southern Rio Grande Rift. There is so much geothermal water in the Southern Rio Grande Rift that it is difficult to delineate specific sites at the scale of Figure 5. A more detailed description of this area is given by Swanberg (1975). Most of thermal wells and springs give silica and NaKCa temperatures of about 115 and 200°C respectively. However, if mixing models are applied, both geothermometers give temperatures near 200°C. The hottest of these appear to be in the Radium Springs-San Diego Mountain area. Mixing models could not be applied to the Kilbourne Hole-Columbus areas because the wells have nearly the same temperature. The hot wells

in the White Sands-Southern Tularosa Basin area could not be studied because of limited access to the military land.

Socorro Area. The warm springs in the Socorro Galary do not show geothermal potential on the basis of their chemical constituents and are ranked far down the list of prospective geothermal prospects (Table 2). However, several wells to the north of the KGRA which were included in the WATSTORE file appear to be of thermal origin. This area is included in Table 1b.

Carlsbad Area. Although there are no warm wells or springs in this area, several of the groundwaters yield very high geochemical temperatures. It is most likely that the NaKCa data are too high due to the presence of potash deposits and the silica data are too high because of the presence of amorphous silica in several of the aquifers. However, this area is located on a major lineament and is included in Figure 1 for the sake of completeness.

Gila Area. The Gila Hot Springs KGRA is given a subsurface temperature estimate of 125°C by the USGS (Circular 726). This estimate is supported by the silica geotemperatures but is not supported by the NaKCa geotemperatures which generally fall in the 70-80°C range (Table 2). However, the Gila area is of high silica region and the nonthermal waters (and in some cases the surface waters) also give silica geotemperatures as high 110°C. Thus there is no convincing evidence from the chemistry of high subsurface

temperatures and the Gila Hot Springs KGRA is listed in Table 2 with the other low temperature geothermal resources.

Origins of Geothermal Areas. The major thermal areas in New Mexico are shown in Figures 6-8 along with other pertinent geothermal data such as recent volcanics, maar volcanoes, deep sedimentary basins, regions of high heat flow, and major continental lineaments. These figures reveal much about the origins and potential applications of the geothermal resources. For example, several of the thermal areas such as Valles Caldera, Kilbourne Hole, and the Guadalupe area are associated with recent volcanism and maar volcanoes (Figure 7). The source of the geothermal energy for these areas is likely to be of magmatic origin. These areas are the most likely prospects for electricity production. Also, since magmatic activity is involved, environmental problems associated with hydrogen sulphide, mercury, arsenic, etc., is likely to be the greatest. Other thermal areas are not associated with recent volcanics but are associated with deep sedimentary basins (Figure 6). Examples include the White Sands area (Tularosa Basin), the Cliff area (Mangas Trench), and the Jemez Reservoir area (Albuquerque Basin). These areas probably result from waters, heated by a normal geothermal gradient (i.e., ~40°C/Km), but which have ascended from great depth along major fault zones. Since these areas are likely to be associated with large volumes of water stored in sedimentary basins, their chief use may be geothermal desalination (for brackish waters) direct heat applications such as space heating or agricultural and industrial processes

(fresh waters), or, if the waters are sufficiently hot and suitable cap rocks exist, for electricity generation.

Additional Low Temperature Resource Areas (20-30°C). The U.S. Department of Energy has established 20°C as the cutoff temperature for designation as a geothermal water and such low temperature waters may have applications in agriculture, heat pump applications and other uses. For the State of New Mexico, roughly half of all wells exceed 20°C, thus making the entire southern portion of the state a proven geothermal resource area. In the present manuscript, only hot springs and wells in excess of 30°C are shown individually (i.e., Figure 3). Groundwaters in the 20°C-30°C range are shown separately in Figure 10. The southwest-northeast contour shown in Figure 10 denotes the approximate location of groundwaters exceeding 20°C. That is, any well drilled to the water table south of the contour will probably exceed 20°C with the obvious exception of the high mountain areas such as the Sacramento Mountains. North of the contour, wells drilled to the water table will generally be colder than 20°C. Also shown in Figure 10 are four geographic divisions of New Mexico. Figures 11 and 12 show the temperature of waters in these geographic divisions. The temperature data in Figures 11 and 12 form the basis for drawing the contour shown in Figure 10. For the Basin and Range and Southeast Plains, 67% and 79% of all groundwaters exceed 20°C. However, for Colorado Plateau and the Northeast Plains, only 32.2% and 28% of the groundwaters exceed 20°C.

Table 1a. Major Geothermal Areas Sampled

Name	Lat	Long	$T_{surface}$	T_{SiO_2}	T_{NaKCa}		$T_{subsurface}$
Valles Caldera*	35 43	106 32	87	177	234		240
Lightning Dock*	32 08.5	108 50	99	160	167		170
Guadalupe Area	35 30	107 15	35	156	177		170
Hillsboro Area	31 57.2	107 34.8	34	162	169		165
Columbus Area	31 45	107 30	31	135	195	✓	155
Kilbourne Hole*	31 45	106 50	28	133	200	✓	155
Lower Frisco*	33 15	108 47	49	132	148		150
Radium H.S.*	32 30	106 55.5	53	118	223	✓	130
Ojo Caliente	36 18.3	106 03.0	56	122	161		130
Montezuma H.S.	35 39.2	105 17.4	59	122	140		130
Mamby's H.S.	36 31.6	105 40.6	41	116	168	✓	125
San Deigo Mountain	32 38	106 58	52	105	233	✓	125
Mesquite-Berino	32 10.0	106 40.0	31	112	175	✓	120
Las Alturas	32 15.0	106 46.0	63	109	179	✓	120
Ponce de Leon	36 19.4	105 36.5	34	106	92		105
Truth or Consequences	33 08.1	107 15.2	45	96	180	✓	100
San Ysidro	35 35	106 50	52	89	160		100
Derry Spring	32 47.6	107 16.6	33	83	156	✓	100

Table 1b. Additional Major Geothermal Areas from WATSTORE

Southern Tularosa Basin	32 05	106 05	71	--	--	~150
White Sands (Town)	32 25	106 25	54	114	~160	~150
North of Socorro	34 20	106 50	41	110	166	~150
Prewitt Area	35 260	107 53.0	46	~100	~200	~150
Jemez Reservoir	35 20	106 40	warm	~120	~150	~150
Lordsburg	32 13.7	108 30.7	33	91	151	~150

*KGRA

✓ Estimated subsurface temperature in the 150-200°C range of mixing models are applied to the silica data

Table 2. Major Low Temperature Geothermal Areas

Name	Lat	Long	$T_{surface}$	T_{SiO_2}	T_{NaKCa}	$T_{subsurface}$
Turkey Creek H.S.	33 06.5	108 29.0	74	117	68	L.T.
Gila Hot Sp.*	33 10	108 10	66	129	77	L.T.
Closson	35 15.5	108 19.4	61	95	51	L.T.
Fort Wingate	35 30	108 35	61	--	--	L.T.
Mimbres H.S.	32 44.9	107 50.1	58	107	75	L.T.
Faywood H.S.	32 33.3	107 59.7	54	97	78	L.T.
Tohatchi	35 55.3	108 34.7	39	66	82	L.T.
San Francisco H.S.	33 49.8	108 47.9	37	97	52	L.T.
Crown Point	35 41.6	108 08.4	37	60	80	L.T.
E. San Augustin Plain	34 00.5	108 05.5	35	108	53	L.T.
Socorro*	34 05.0	106 57.0	34	61	72	L.T.
Garton Well	32 46.8	106 09.0	34	63	100	L.T.
Cliff Area	32 52.6	108 35.0	31	85	53	L.T.

*KGRA

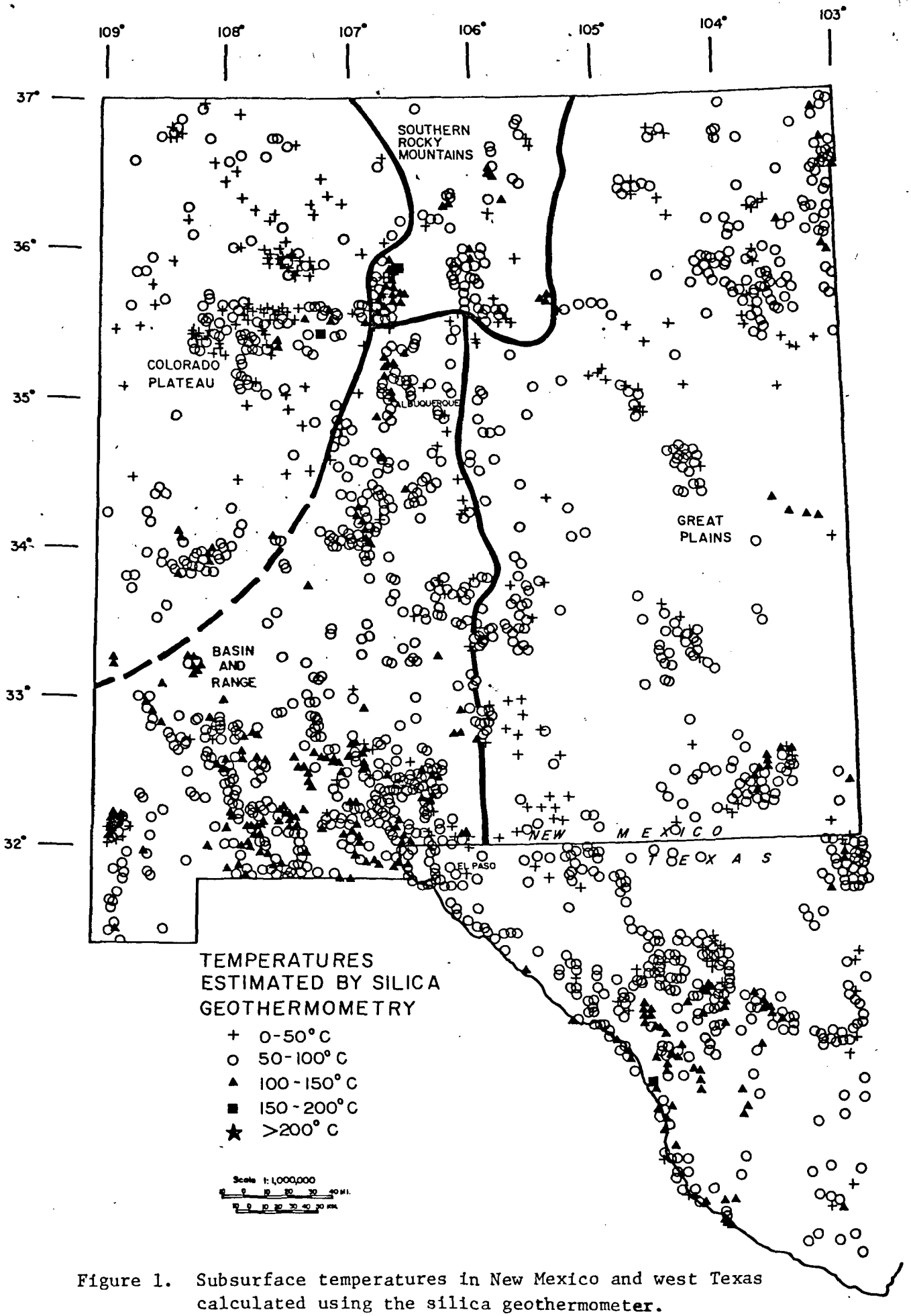


Figure 1. Subsurface temperatures in New Mexico and west Texas calculated using the silica geothermometer.

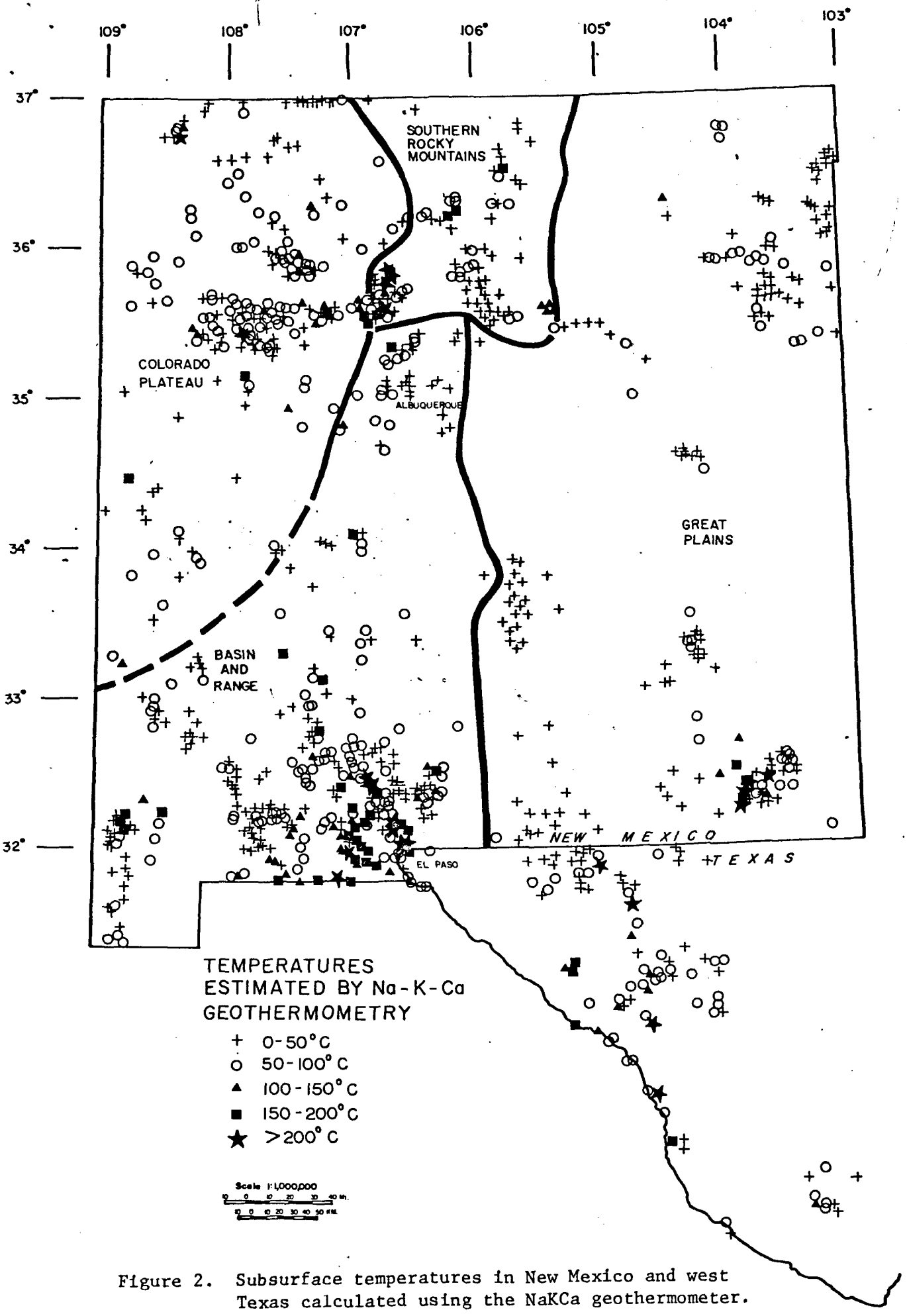


Figure 2. Subsurface temperatures in New Mexico and west Texas calculated using the NaKCa geothermometer.

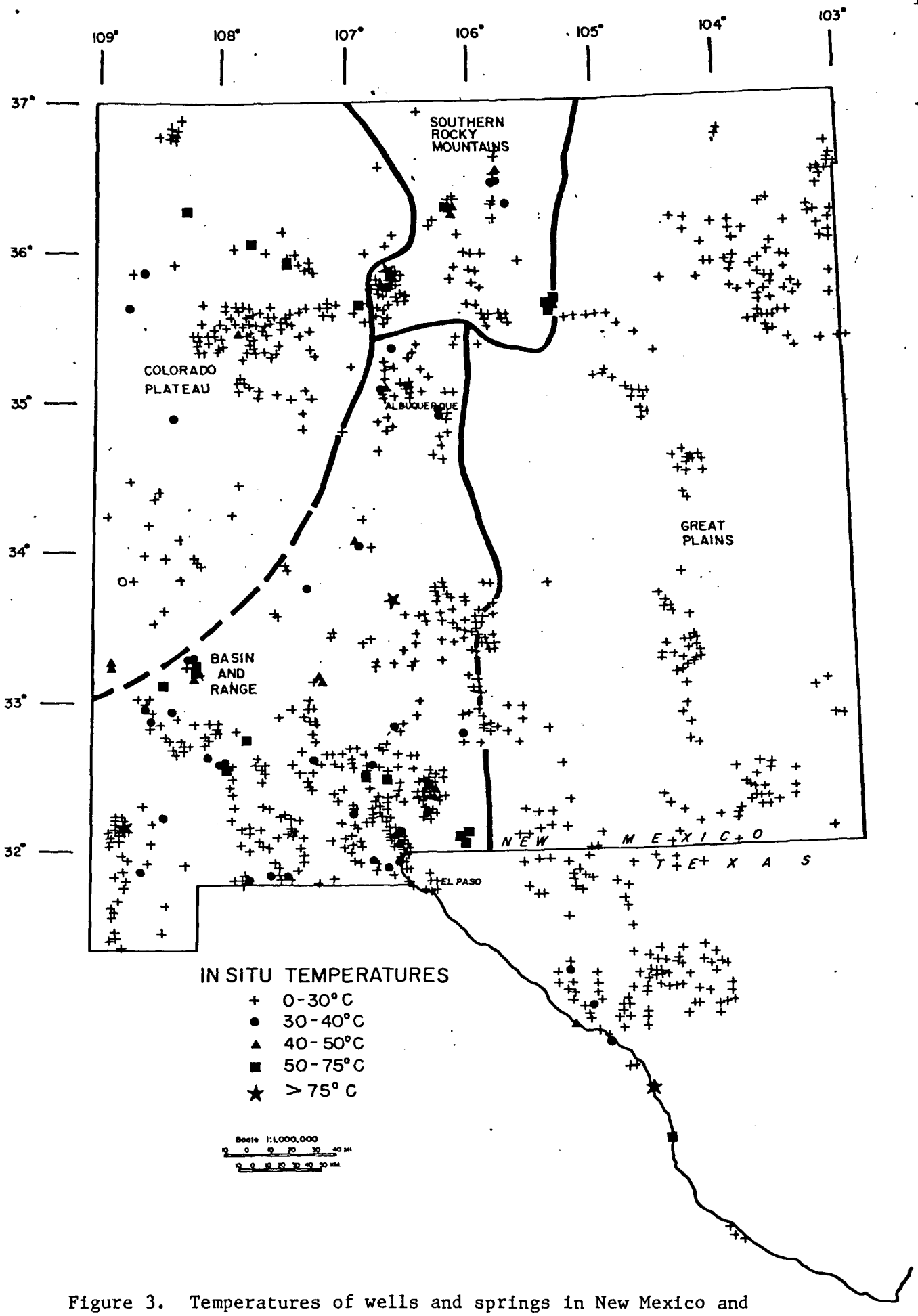


Figure 3. Temperatures of wells and springs in New Mexico and west Texas.

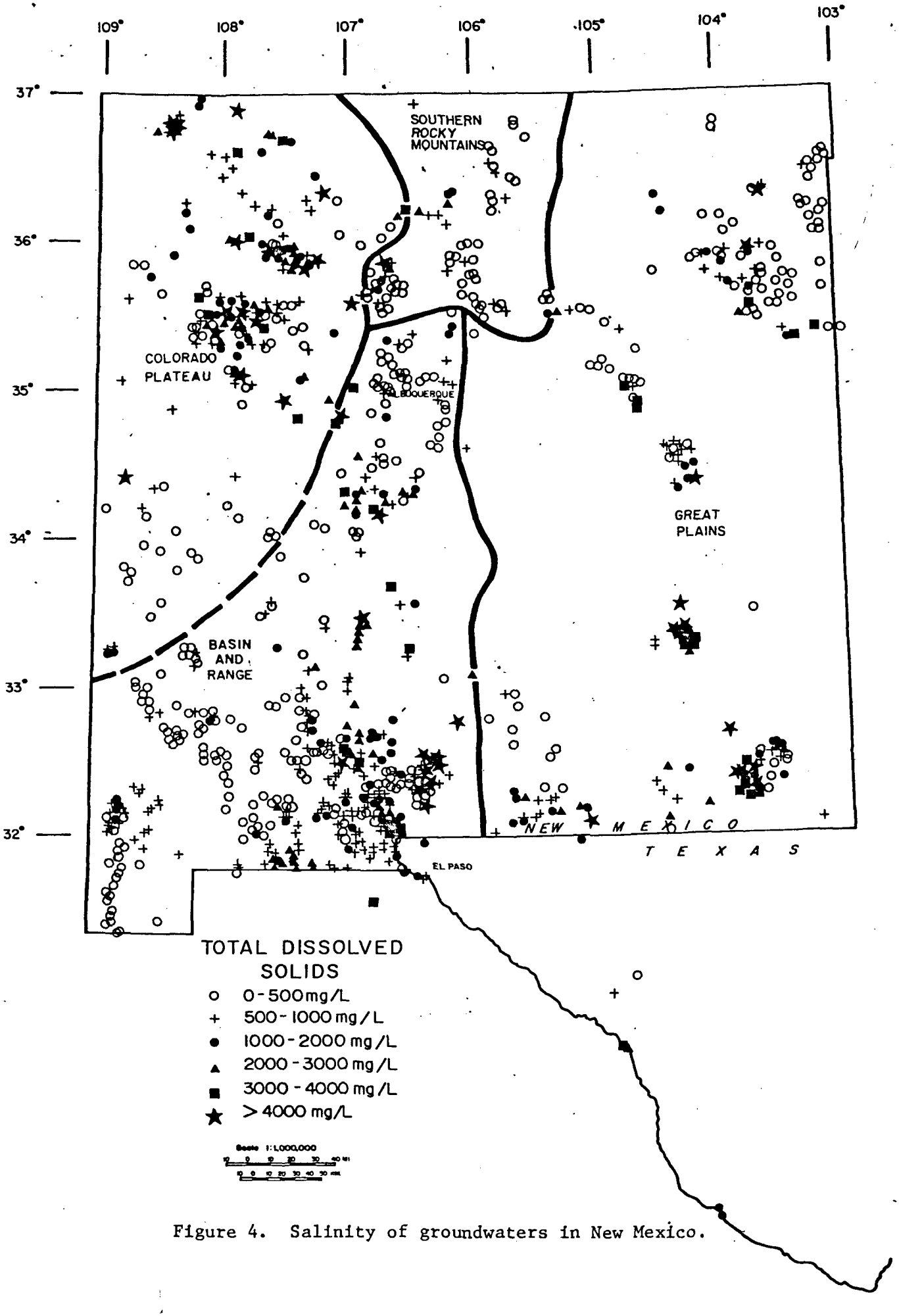


Figure 4. Salinity of groundwaters in New Mexico.

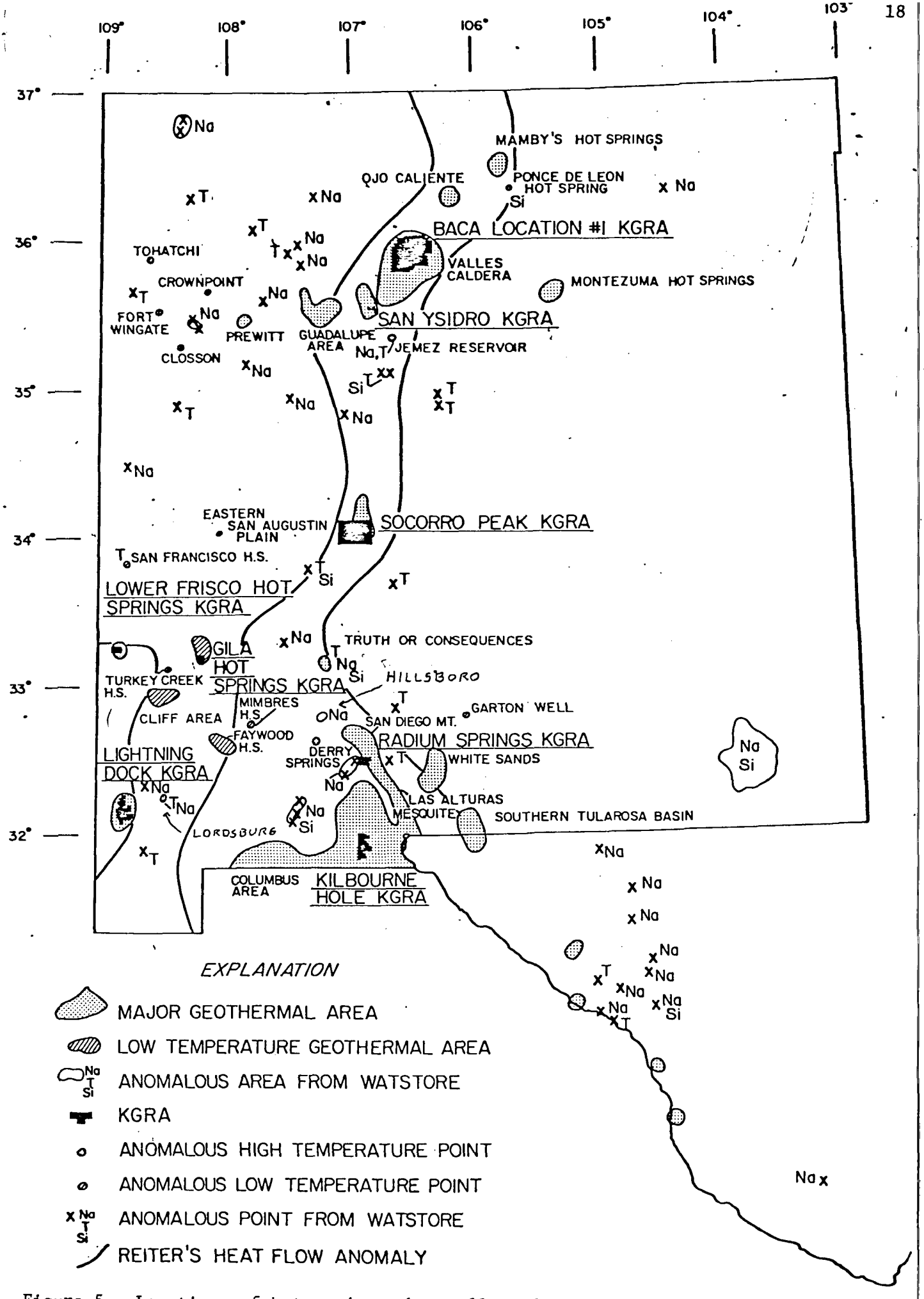


Figure 5. Locations of hot springs, hot wells and major geothermal areas in New Mexico. Basic data is given in Tables 1,2.

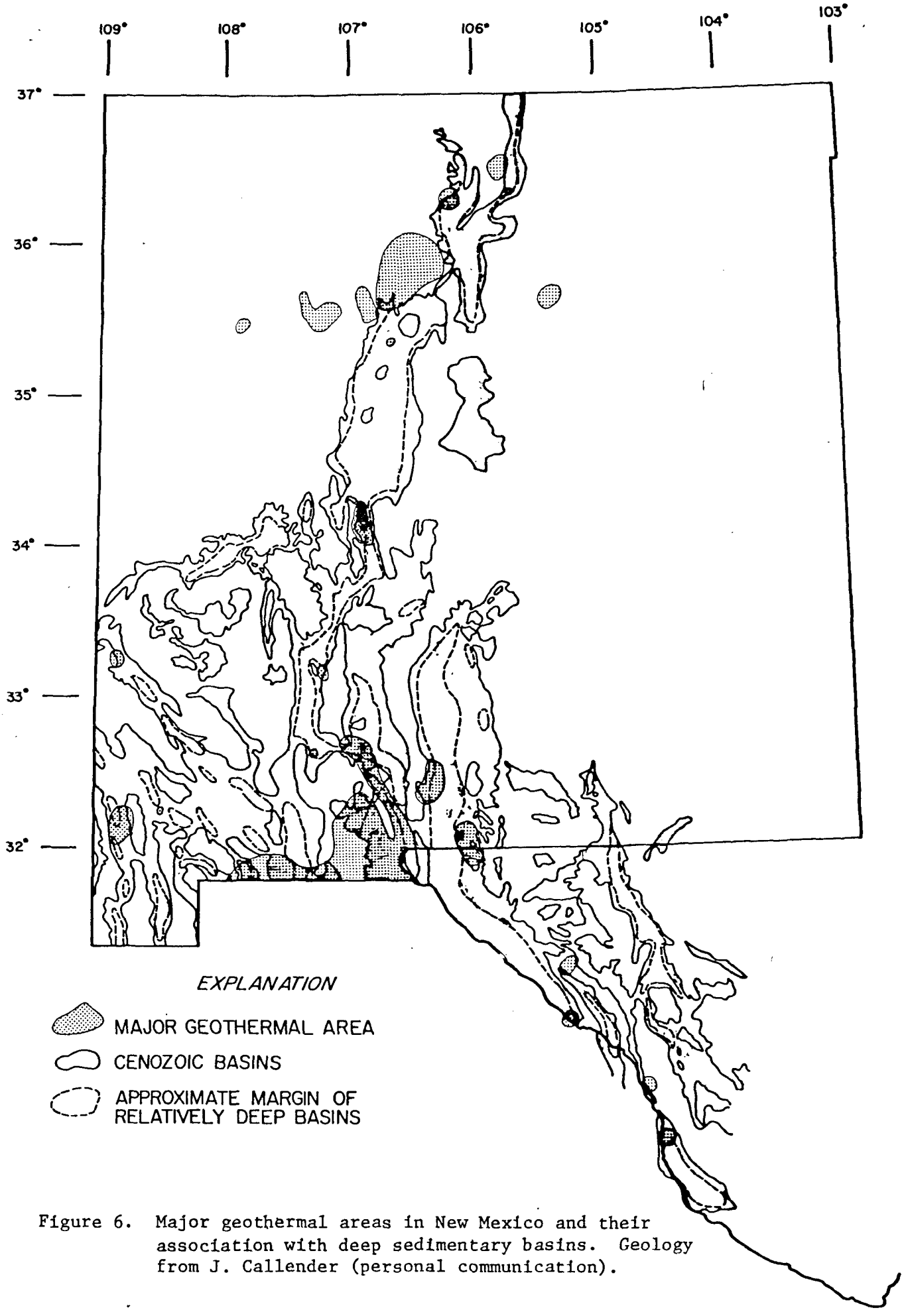


Figure 6. Major geothermal areas in New Mexico and their association with deep sedimentary basins. Geology from J. Callender (personal communication).

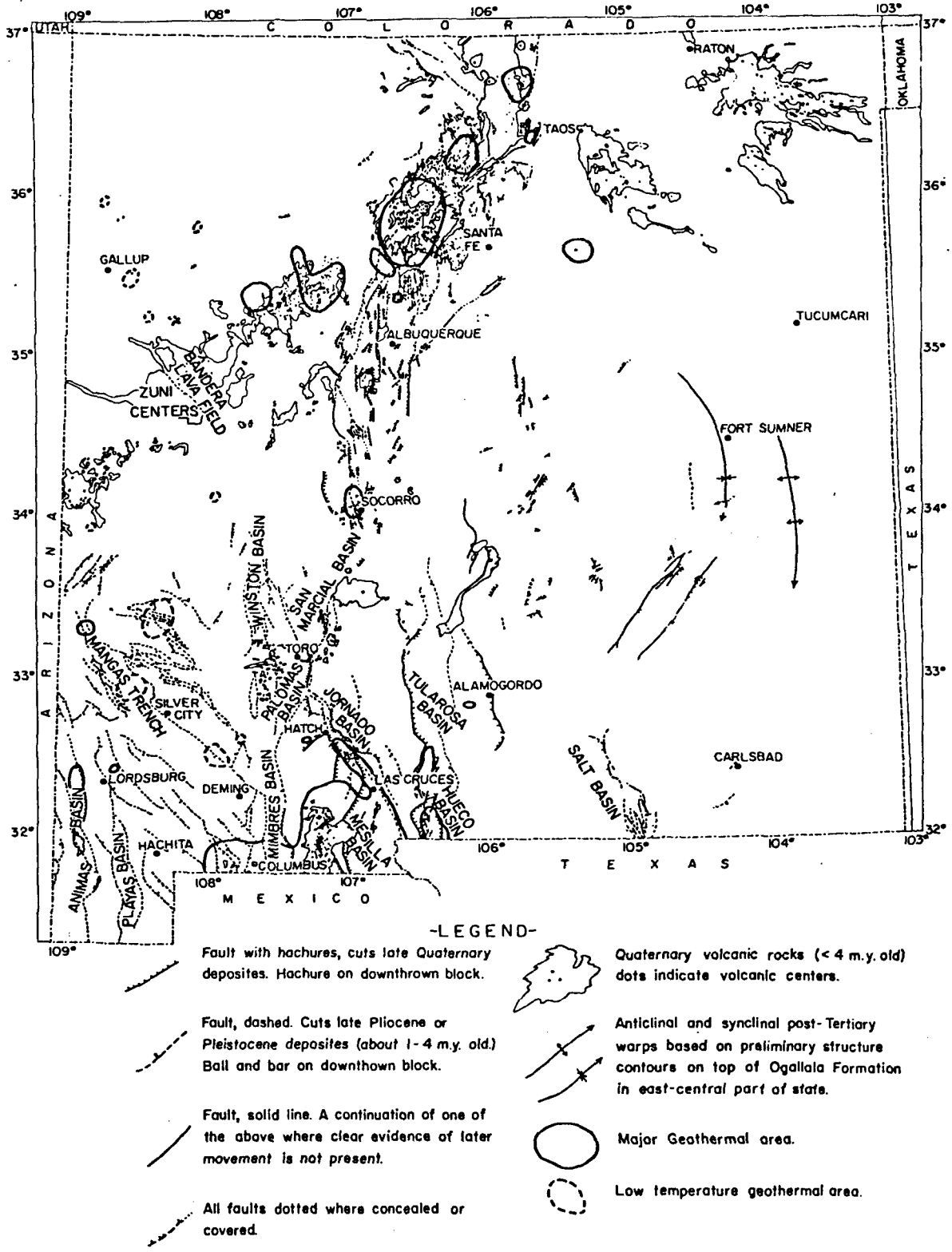
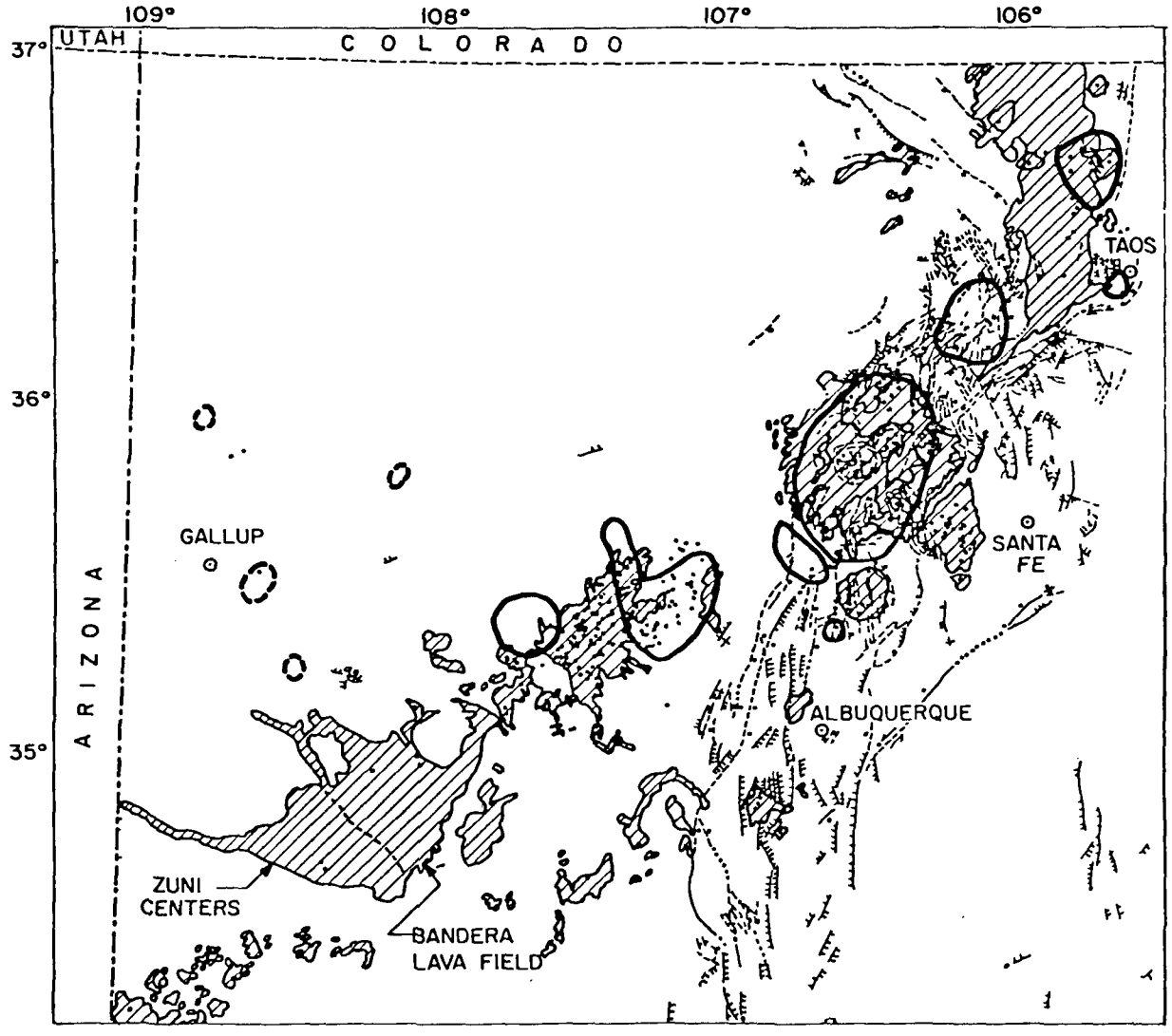


Fig. 7. Locations of major geothermal areas with respect to Quaternary tectonic activity and vulcanism. Geology from W. Seager and J. Callender (personal communication).



-LEGEND-

Fault with hachures, cuts late Quaternary deposites. Hachure on downthrown block.

Fault, dashed. Cuts late Pliocene or Pleistocene deposites (about 1-4 m.y. old.) Ball and bar on downthown block.

Fault, solid line. A continuation of one of the above where clear evidence of later movement is not present.

All faults dotted where concealed or covered.

Quaternary volcanic rocks (< 4 m.y. old) dots indicate volcanic centers.

Anticlinal and synclinal post-Tertiary warps based on preliminary structure contours on top of Ogallala Formation in east-central part of state.

Major Geothermal area.

Low temperature geothermal area.

Fig. 8. Detailed portion of the northwest part of Fig. 4.

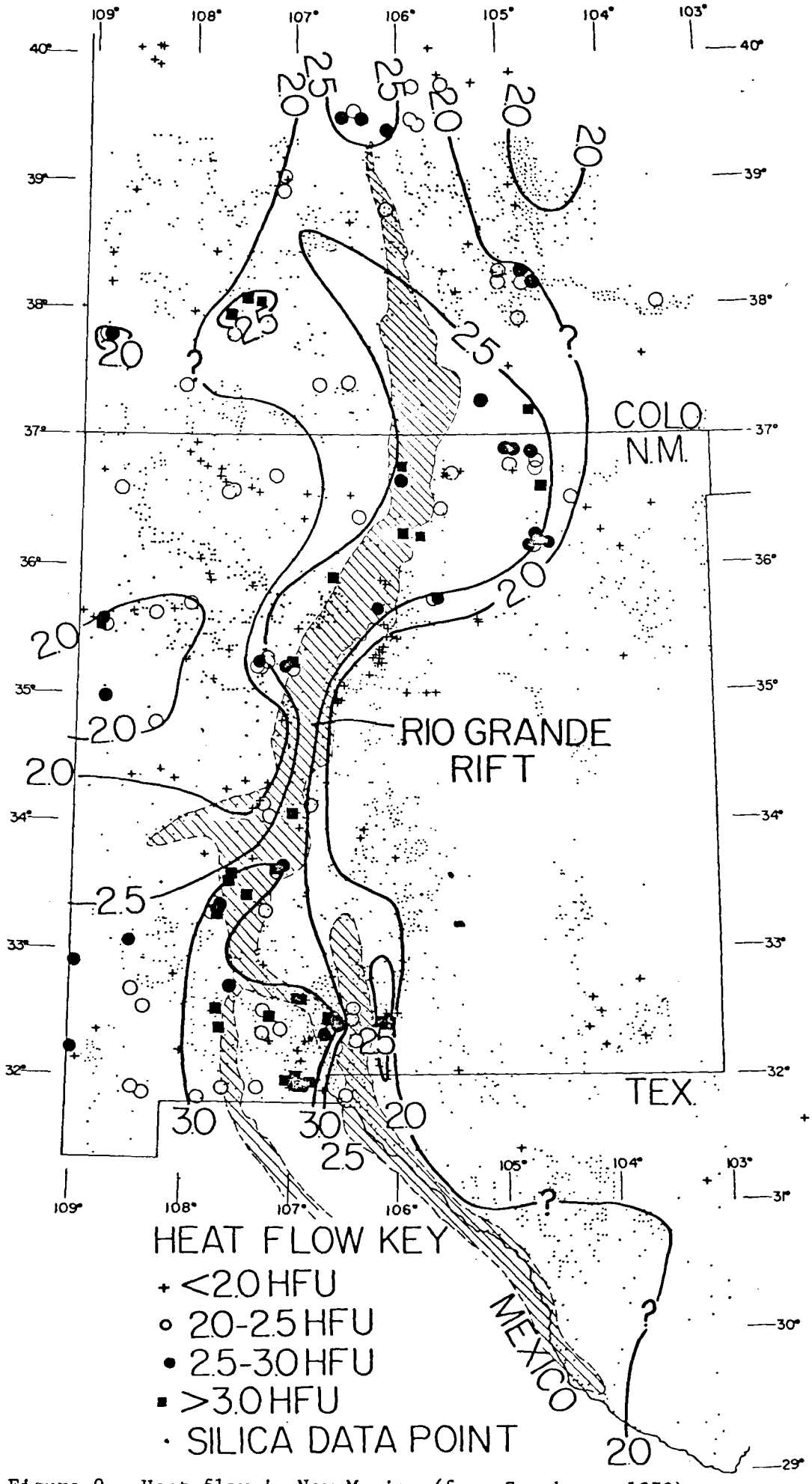


Figure 9. Heat flow in New Mexico (from Swanberg, 1979).

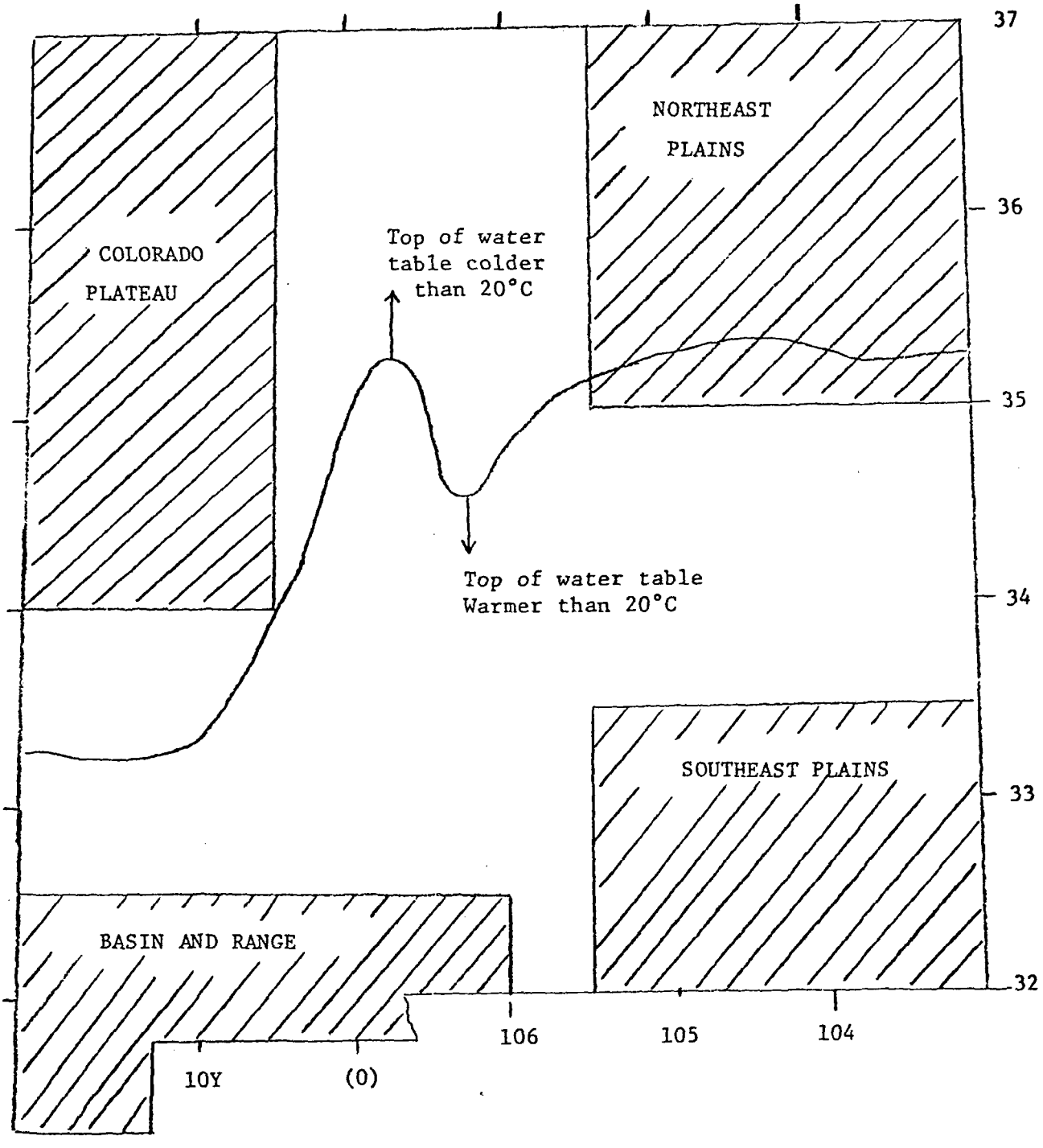
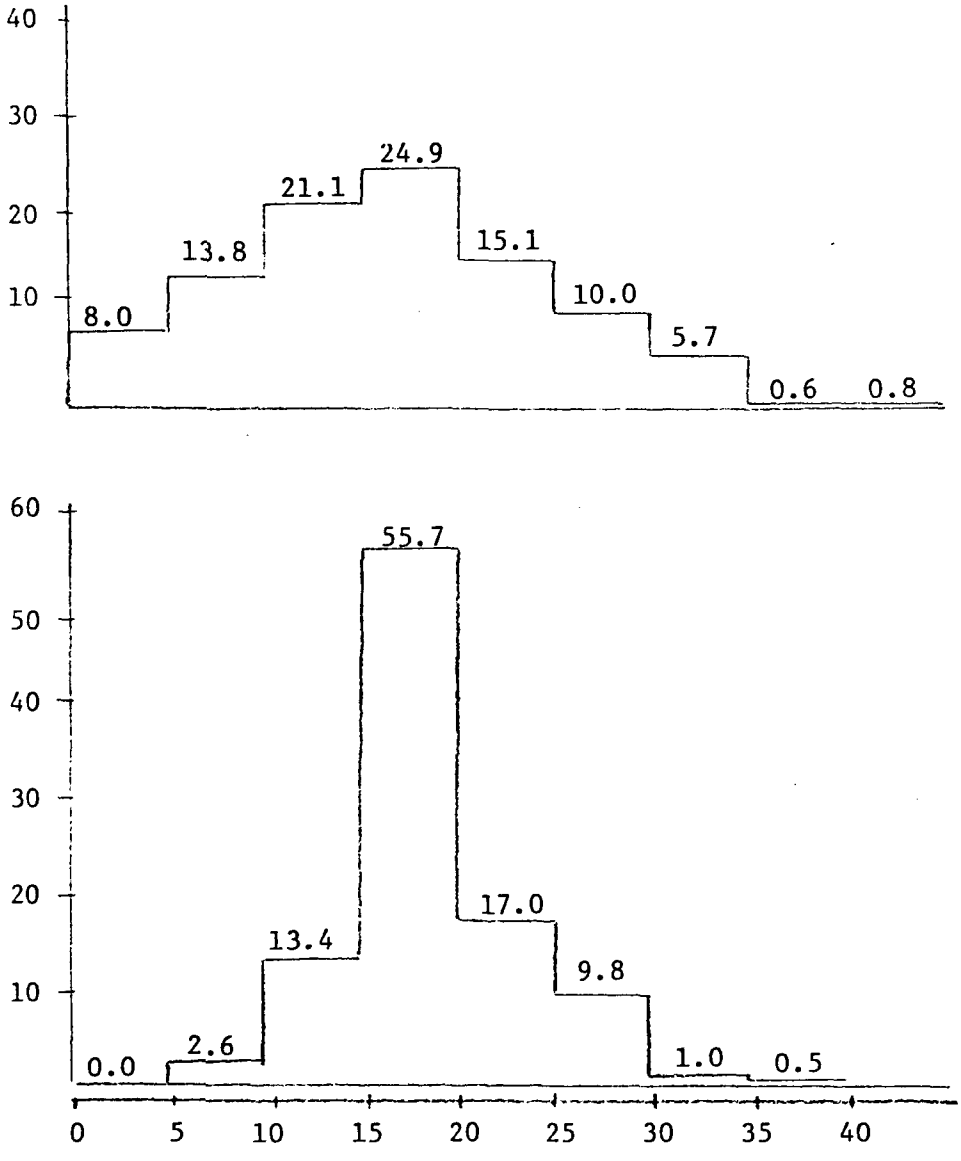


Figure 10. Map showing the locations in New Mexico where any well drilled into the water table should exceed 20°C.



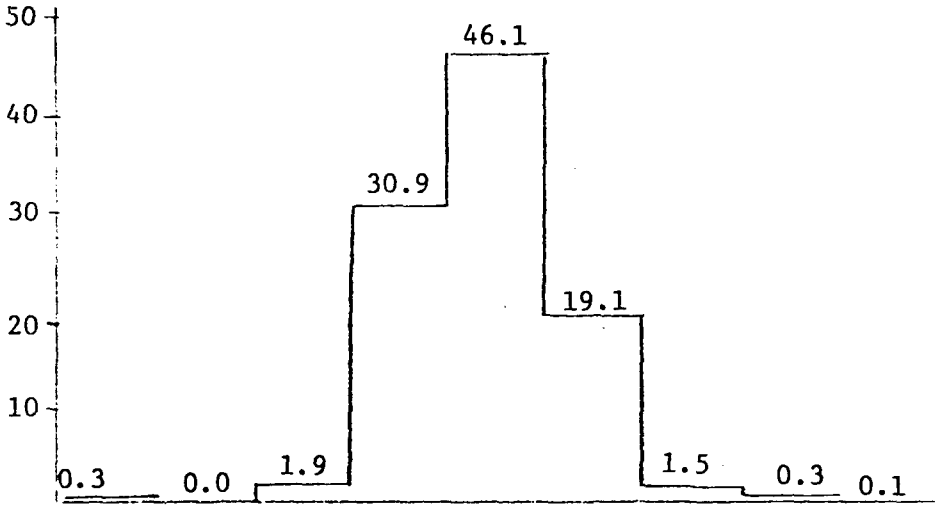
COLORADO PLATEAU

Average	16.81°C
Deviation	8.41°C
Samples	478
Latitude	34-37°N
Longitude	107.5-109°W

NORTHEAST PLAINS

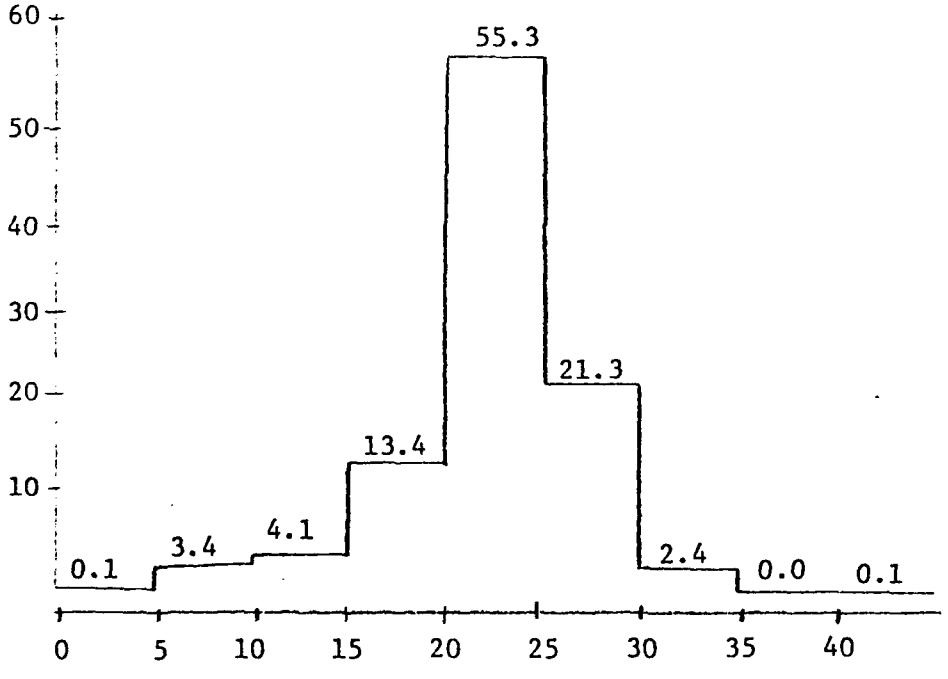
Average	18.65°C
Deviation	4.79°C
Samples	194
Latitude	35-37°N
Longitude	103-105.5°W

Figure 11. Histogram of groundwater temperatures in the Colorado Plateau and the Northeast Plains.



BASIN AND RANGE

Average	21.88°C
Deviation	4.20°C
Samples	797
Latitude	30-32.5°N
Longitude	106-109°W



SOUTHEAST PLAINS

Average	22.21°C
Deviation	4.84°C
Samples	1600
Latitude	30-33.5°N
Longitude	103-105.5°W

Figure 12. Histogram of groundwater temperatures in the Basin and Range and Southeast Plains.

ACKNOWLEDGEMENTS

I would like to thank my co-investigators from the University of New Mexico for their help and support on all parts of this project; specifically, D. G. Brookins, J. Callender, W. E. Elston, G. P. Landis, G. R. Jiracek, A. L. Kudo, and L. Woodward. I would also like to acknowledge the help of S. Alexander, R. Kelly, B. Stewart, A. Viescas, D. LaBrecque, R. Keeling, R. Montman, J. Fernandez, and J. Witcher. The chemical analyses were performed by A. Bristol at the New Mexico Soil and Water Testing Laboratory. The work was funded in part by U.S. Geological Survey Grant #14-08-0001-G-255 and New Mexico Department of Energy and Minerals Grant ERB-75-117.

REFERENCES CITED

Ellis, A. J., 1970, Quantitative interpretation of chemical characteristics of hydrothermal systems: Geothermics, Sp. Issue 2, p. 516-528.

Environmental Protection Agency, 1971, Methods for chemical analysis of water and wastes: E.P.A. Water Quality Office, Analytical Quality Control Laboratory, Cincinnati, Ohio, 298 p.

Fournier, R. O., and Rowe, J. J., 1966, Estimation of underground temperatures from the silica content of water from hot springs and wet steam wells: Amer. Jour. Sci., Vol. 264, No. 9, p. 685-697.

Fournier, R. O., and Truesdell, A. N., 1973, An empirical Na-K-Ca geothermometer for natural waters: Geochem. Cosmochim. Acta, vol. 37, No. 5, p. 1255-1275.

Fournier, R. O., White, D. E., and Truesdell, A. N., 1974, Geochemical indicators of subsurface temperature, I, Basic assumptions: Jour. Res. U. S. Geol. Survey, vol. 2, No. 3, p. 259-262.

Fournier, R. O., and Truesdell, A. N., 1970, Chemical indicators of subsurface temperature applied to hot waters of Yellowstone National Park, Wyo., USA: Geothermics, Sp. Issue 2, p. 529-535.

Mahon, W.A.J., Chemistry in the exploration and exploitation of hydrothermal systems: Geothermics, Sp. Issue 2, p. 1310-1322.

Presser, T. S., and Barnes, I., 1974, Special techniques for determining chemical properties of geothermal water: U.S. Geol. Survey, Water Resources Investigations, 22-74, 11 p.

Reiter, M., Hartman, C. L., and Weidman, C., 1975, Terrestrial heat flow along the Rio Grande Rift, New Mexico and southern Colorado: Geol. Soc. Am. Bull., Vol. 86, p. 811-818.

Swanberg, C. A., 1975, Detection of geothermal components in groundwaters of Dona Ana County, southern Rio Grande Rift, New Mexico: New Mexico Geol. Soc. Guidebook, 26th Field Conf., Las Cruces Country, p. 175-180.

Swanberg, C. A., and Alexander, S., The use of the water quality file WATSTORE in geothermal exploration: An example from the Imperial Valley, California, Geology, in press.

Swanberg, C. A., and P. Morgan, The linear relation between temperatures based on the silica content of groundwaters and regional heat flow: A new heat flow map of the United States, Pure and Appl. Geophys., in press.

Trainer, Frank W., Groundwater in the southwestern part of the Jemez Mountains volcanic region, New Mexico: Silver Anniversary Guidebook, Ghost Ranch, Central-Northern New Mexico; Economic Geology, Mexico, Economic Geology, N.M., N.M. Geol. Soc. Amer. Field Conf. Guideb., No. 25, p. 337-345.

White, D. E., 1970, Geochemistry applied to the discovery, evaluation, and exploitation of geothermal energy resources: Geothermics, Sp. Issue 2, p. 58-80.

White, D. E., Muffler, L.J.P., and Truesdell, A.H., 1971, Vapor-dominated hydrothermal systems compared with hot water systems: Econ. Geol., Vol. 66, p. 75-97.

White, D. E., and Williams, D. L., eds, Assessment of geothermal resources of the United States, 1975, U.S. Geol. Surv., Circ. No. 726, 155 p.

Table 1. Temperature and Locations of Springs and Wells in New Mexico and West Texas: T_1 = Actual Temperature; T_2 = Na-K-Ca Estimated Temperature; T_3 = Silica Estimated Temperature; L_1 = Map or Quadrangle Name; L_2 = Latitude and Longitude Location; L_3 = Township & Range Location

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
J1	N/A	25.6	2.8	31.8	Reading Mountain	108°21.7'W 32°53.2'N	T16S R15W Sec 26 SE 1/4 NW 1/4	Allen Spring
J2	N/A	36.7	51.8	97.4	Dillon Mountain	108°48.0'W 33°49.8'N	T5S R19W Sec 35 NW 1/4 NW 1/4	Upper Frisco Hot Springs
J3	N/A	43.3	148.6	121.9	Wilson Mountain	108°52.9'W 33°14.7'N	T12S R20W Sec 23 SW 1/4 NE 1/4	Lower Frisco Hot Springs
J4	N/A	40.0	97.0	114.3	Wilson Mountain	108°52.7'W 33°14.8'N	T12S R20W Sec 23 NW 1/4 SE 1/4	Lower Frisco Hot Springs
J5	N/A	48.9	147.9	131.9	Wilson Mountain	108°52.8'W 33°14.6'N	T12S R20W Sec 23 SW 1/4 NE 1/4	Lower Frisco Hot Springs
J6	N/A	21.1	38.9	74.1	Buckhorn (no map)	108°41.5'W 33°1.6'N	T15S R18W Sec 3 SW 1/4 NW 1/4	Well
J7	N/A	25.0	53.0	78.4	Cliff	108°37.5'W 32°58.5'N	T15S R17W Sec 30 NE 1/4 NE 1/4	Warm Spring
P1	N/A	23.0	38.1	81.2	Swallow Fork Peak	108°47.6'W 32°8.7'N	T25S R19W Sec 10 NW 1/4 SW 1/4	Road Well
P2	N/A	85.0	172.9	160.1	Swallow Fork Peak	108°49.9'W 32°8.7'N	T25S R19W Sec 7 NE 1/4 SW 1/4	Hot Well
P3	N/A	81.0	168.5	158.2	Swallow Fork Peak	108°49.9'W 32°8.9'W	T25S R19W Sec 7 NE 1/4 NW 1/4	McCants Well
P4	N/A	71.0	158.8	145.5	Swallow Fork Peak	108°50.4'W 32°8.7'N	T25S R19W Sec 7 NW 1/4 SE 1/4	Well
P5	N/A	22.0	60.0	94.2	Swallow Fork Peak	108°50.9'W 32° 8.1'N	T25S R20W Sec 13 NE 1/4 NW 1/4	Well
P10	N/A	23.0	71.1	111.1	Swallow Fork Peak	108°49.7'W 32°13.6'N	T24S R19W Sec 7 SE 1/4 SE 1/4	Hill Well

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
P5	N/A	22.0	60.0	94.2	Swallow Fork Peak	108°50.9'W 32° 8.1'N	T25S R20W Sec 13 NE 1/4 NW 1/4	Well
P10	N/A	23.0	71.1	111.1	Swallow Fork Peak	108°49.7'W 32°13.6'N	T24S R19W Sec 7 SE 1/4 SE 1/4	Hill Well
P13	N/A	19.0	49.3	121.1	Swallow Fork Peak	108°52.4'W 32°13.7'N	T24S R20W Sec 11 SW 1/4 NE 1/4	Well
P14	N/A	20.0	38.2	100.3	Swallow Fork Peak	108°52.8'W 32°10.1'N	T24S R20W Sec 34 SE 1/4 SE 1/4	Well
P15	N/A	24.0	57.4	85.0	Table Top Mountain	108°50.7'W 32°6.1'N	T25S R20W Sec 25 SE 1/4 NE 1/4	Well
P20	N/A	22.0	38.6	102.2	Cotton City	108°54.0'W 32°4.8'N	T26S R20W Sec 5 SE 1/4 SE 1/4	Well
P22	N/A	22.0	41.6	95.2	Table Top Mountain	108°52.9'W 32°4.1'N	T26S R20W Sec 3 SW 1/4 SW 1/4	Well
P23	N/A	24.0	45.6	78.4	Swallow Fork Peak	108°48.8'W 32°12.2'N	T24S R19W Sec 2 SE 1/4 NE 1/4	National Well
P24	N/A	N/A	156.0	161.0	Swallow Fork Peak	108°50.7'W 32°10.9'N	T24S R20W Sec 25 SE 1/4 SE 1/4	Well
P25	N/A	23.0	50.1	85.0	Swallow Fork Peak	108°52.8'W 32°9.1'N	T25S R20W Sec 10 NE 1/4 NE 1/4	Well
W1	N/A	28.0	161.7	117.8	Dona Ana Co.	106°59.4'W 32°9.2'N	T25S R1W Sec 7 NW 1/4 NW 1/4	Well
W2	N/A	N/A	165.4	120.9	Dona Ana Co.	106°58.7' 32°3,9'N	T26S R1W Sec 7 NE 1/4 NW 1/4	Well
W3	N/A	N/A	152.9	106.8	Dona Ana Co.	106°54.7' 31°55.6'N	T27S R1W Sec 26 SE 1/4 SW 1/4	Well
W4	N/A	N/A	185.8	109.5	Dona Ana Co.	106°50.2'W 31°55.0'N	T27S R1E Sec 33 SE 1/4 NE 1/4	Well

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
W5	N/A	22.0	163.5	99.0	Dona Ana Co.	107°2.3'W 32°16.6'N	T23S R2W Sec 27 SW 1/4 NW 1/4	Well
W6	N/A	22.0	153.2	114.6	Dona Ana Co.	107°1.3'W 32°17.4'N	T23S R2W Sec 23 SW 1/4 SW 1/4	Well
W7	N/A	21.0	42.4	89.3	Dona Ana Co.	107°7.5'W 32°21.2'N	T22S R3W Sec 35 NW 1/4 SW 1/4	Well
W8	N/A	21.0	29.0	99.0	Dona Ana Co.	107°9.3'W 32°23.2'N	T22S R3W Sec 21 NW 1/4 NE 1/4	Well
W9	N/A	N/A	133.8	14.1	Dona Ana Co.	107°4.8'W 32°26.1'N	T21S R2W Sec 31 SE 1/4 SW 1/4	Well
W10	N/A	N/A	84.6	33.3	Dona Ana Co.	106°56.4'W 32°41.8'N	T18S R1W Sec 33 SE 1/4 SE 1/4	Well
W11	N/A	23.0	28.4	77.2	Dona Ana Co.	106°49.4'W 32°42.5'N	T18S R1E Sec 27 SE 1/4 SE 1/4	Red Lake Well
W12	N/A	21.0	31.8	74.4	Dona Ana Co.	106°47.2'W 32°41.5'N	T19S R1E Sec 1 NE 1/4 NE 1/4	Middle Well
W13	N/A	24.0	32.9	75.7	Dona Ana Co.	106°40.6'W 32°38.8'N	T19S R3E Sec 19 NW 1/4 NE 1/4	Well
W14	N/A	22.0	39.2	69.3	Dona Ana Co.	106°40.5'W 32°34.5'N	T20S R3E Sec 18 NE 1/4 NW 1/4	Taylor Well
W15	N/A	23.0	65.2	100.0	Dona Ana Co.	106°45.0'W 32°32.2'N	T20S R2E Sec 28 SW 1/4 SW 1/4	Well
W16	N/A	26.0	40.9	51.3	Dona Ana Co.	106°48.6'W 32°34.3'N	T20S R1E Sec 14 NW 1/4 SE 1/4	Well
W17	N/A	N/A	43.2	48.8	Dona Ana Co.	106°50.3'W 32°39.6'N	T19S R1E Sec 16 NE 1/4 NE 1/4	Well
W18	N/A	24.0	41.7	117.0	Dona Ana Co.	106°55.8'W 32°38.8'N	T19S R1W Sec 22 NW 1/4 NE 1/4	Well
W19	N/A	N/A	95.5	94.9	Dona Ana Co.	107°00.6'W	T19S R2W Sec 11	Well

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
W20	N/A	N/A	55.0	115.5	Dona Ana Co.	107°8.1'W 32°34.2'N	T20S R3W Sec 15 NE 1/4 SW 1/4	Well
W21	N/A	17.0	57.2	117.0	Dona Ana Co.	107°6.7'W 32°34.4'N	T20S R3W Sec 14 NE 1/4 NE 1/4	Well
W22	N/A	21.0	47.9	114.6	Dona Ana Co.	107°9.4'W 32°35.8'N	T20S R3W Sec 4 SW 1/4 NE 1/4	Well
W23	N/A	22.0	10.3	93.7	Dona Ana Co.	107°6.0'W 32°11.5N	T24S R3W Sec 25 SE 1/4 NW 1/4	Well
W24	N/A	27.0	113.1	62.5	Dona Ana Co.	107°4.9'W 32°1.2'N	T26S R2W Sec 30 NE 1/4 SW 1/4	Well
W25	N/A	27.0	204.0	93.7	Dona Ana Co.	107°1.2'W 31°59.6'W	T27S R2W Sec 2 NW 1/4 SE 1/4	Well
W26	N/A	22.0	127.8	105.0	Dona Ana Co.	106°57.9'W 31°55.4'N	T27S R1W Sec 32 NW 1/4 NE 1/4	Well
W27	N/A	28.0	186.3	113.0	Dona Ana Co.	106°50.2'W 31°55.0'N	T27S R1E Sec 33 SW 1/4 NE 1/4	Well
W28	N/A	26.0	151.0	123.1	Dona Ana Co.	106°57.6'W 32°2.2'N	T26S R1W Sec 20 NE 1/4 NE 1/4	Well
W29	N/A	18.0	8.8	84.1	Dona Ana Co.	106°37.4'W 32°20.3'N	T23S R3E Sec 3 NE 1/4 SW 1/4	Well
W30	N/A	N/A	19.4	91.5	Dona Ana Co.	106°35.9'W 32°25.6'N	T22S R3E Sec 2 NE 1/4 SE 1/4	Well
W31	N/A	N/A	92.8	91.5	Dona Ana Co.	106°45.1'W 31°56.9'N	T27S R2E Sec 20 NE 1/4 NE 1/4	Well
W32	N/A	27.0	131.7	104.0	Dona Ana Co.	106°42.7'W 31°51.7'N	T28S R2E Sec 23 NW 1/4 SE 1/4	Well
W33	N/A	N/A	174.7	133.5	Dona Ana Co.	107°1.7'W 31°47.3'N	T29S R2W Sec 15 NE 1/4 NW 1/4	Well

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
W34	N/A	N/A	202.6	128.8	Dona Ana Co.	107°6.5'W 31°47.2'N	T29S R3W Sec 13 NW 1/4 SW 1/4	Well
W35	N/A	17.0	171.8	91.5	Dona Ana Co.	107°8.6'W 31°48.8'N	T29S R3W Sec 3 NW 1/4 NW 1/4	Well
W36	N/A	27.0	162.0	100.0	Dona Ana Co.	107°17.0'W 31°47.5'N	T29S R4W Sec 18 NE 1/4 NE 1/4	Well
B1	N/A	N/A	51.0	98.2	Dona Ana County	106°49.2'W 32°28.2'N	T21S R1E Sec 22 NE 1/4 SE 1/4	Cleofas Wells
B2	N/A	53.0	223.4	118.1	Las Cruces	106°55.7'W 32°29.8'N	T21S R1W Sec 10 NE 1/4 SW 1/4	Radium Springs
B3	N/A	N/A	84.7	86.4	Las Cruces	106°55.3'W 32°29.6'N	T21S R1W Sec 10 SE 1/4 NE 1/4	Well
B4	N/A	N/A	49.1	113.6	San Diego Mt.	106°55.8'W 32°38.8'N	T19S R1W Sec 22 NW 1/4 NE 1/4	Well
B5	N/A	N/A	156.2	81.2	Sierra County	107°16.6'W 32°47.7'N	T17S R4W Sec 29 SW 1/4 NE 1/4	Derry Spring
B6	N/A	N/A	155.7	82.5	Sierra County	107°16.6'W 32°47.6'N	T17S R4W Sec 29 SW 1/4 NE 1/4	Derry Spring
B7	N/A	N/A	49.9	77.9	Sierra County	107°16.4'W 32°48.7'N	T17S R4W Sec 20 SE 1/4 NW 1/4	Well
B8	N/A	N/A	78.7	96.2	San Diego Mt.	106°59.9'W 32°34.1'N	T20S R2W Sec 13 SE 1/4 NW 1/4	Well
B9	N/A	45.0	175.6	96.2	Sierra County	107°15.2'W 33°8.1'N	T13S R4W Sec 33 SE 1/4 NW 1/4	Well (Mineral Bath Blackstone)
B10	N/A	41.0	178.1	96.2	Sierra County	107°14.9'W 33°8.2'N	T13S R4W Sec 33 NE 1/4 SE 1/4	Well (Mineral Bath-Sierra)
B11	N/A	41.0	179.5	96.2	Sierra County	107°14.5'W 33°8.0'N	T13S R4W Sec 34 SW 1/4 NE 1/4	Warm Spring
B12	N/A	N/A	150.2	88.6	Sierra County	107°33.8'W 33°16.7'N	T12S R7W Sec 9 SE 1/4 NW 1/4	Warm Spring

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
B13	N/A	34.0	58.5	72.5	Socorro County	106°56.2'W 34°2.2'N	T3S R1W Sec 22 NW 1/4 SW 1/4	Sedillo Spring
B14	N/A	N/A	61.3	65.8	Socorro County	106°56.2'W 34° 2.8'N	T3S R1W Sec 17 SW 1/4 NW 1/4	Cook Spring
B15	N/A	N/A	48.2	82.2	Sierra County	107°21.4'W 33°14.1'N	T12S R5W Sec 28 SE 1/4 NW 1/4	Well
B16	N/A	N/A	28.1	96.2	Socorro County	107°40.4'W 33°30.3'N	T9S R8W Sec 28 NW 1/4 NE 1/4	Well
B17	N/A	28.0	67.2	86.2	Socorro County	107°36.1'W 33°34.4'N	T8S R7W Sec 31 SE 1/4 NW 1/4	Spring
B18	N/A	21.0	72.6	84.9	Socorro County	107°35.9'W 33°34.4'N	T8S R7W Sec 31 SE 1/4 SE 1/4	Spring
B19	N/A	41.0	176.8	81.2	Sierra County	107°15.2'W 33°8.1'N	T13S R4W Sec 33 SE 1/4 NW 1/4	Yucca Springs
WT1	N/A	82.2	195.7	101.3	Marfa 1:250,000	105°18.7'W 30°49.3'N	Texas	Indian Hot Springs
WT2	N/A	35.0	69.5	67.6	Marfa 1:250,000	105°1.5'W 30°41.4'N	Texas	Well
WT3	N/A	68.9	209.9	175.0	Marfa 1:250,000	104°43.3'W 30°23.4'N	Texas	Gulf Oil Well
WT4	N/A	N/A	51.0	75.9	Marfa 1:250,000	104°46.6'W 30°21.3'N	Texas	Well
WT5	N/A	N/A	60.5	81.6	Marfa 1:250,000	104°39.5'W 30°11.6'N	Texas	Downstream from Spring
WT6	N/A	43.9	173.4	94.0	Marfa 1:250,000	104°35.7'W 30°2.2'N	Texas	Hot Springs Resort
WT7	N/A	N/A	169.3	91.7	Marfa 1:250,000	104°35.8'W 30°2.5'N	Texas	Stream
WT8	N/A	N/A	169.4	92.9	Marfa	104°30.1'W 30°0.3'N	Texas	Stream

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
B20	SW19	N/A	83.3	75.0	Sierra County	107°00.6'W 33°03.8'N	T14S R2W Sec 26 NE 1/4 SE 1/4	Well
B21	SW20	N/A	96.2	35.9	Sierra County	107°02.2'W 33°22.3'N	T11S R2W Sec 3 SW 1/4 SW 1/4 (unsurveyed)	Well
B22	SW21	N/A	81.9	55.3	Socorro County	106°47.1'W 33°28.6'N	T9S R1E Sec 36 SE 1/4 SE 1/4 (unsurveyed)	Malpais Well
B23	SW22	18.0	14.6	78.2	Sierra County	106°55.1'W 33°25.9'N	T10S R1E Sec 29 NW 1/4 NE 1/4 (unsurveyed)	Chavez Well
B24	SW23	24.0	65.5	75.0	Sierra County	106°55.6'W 33°23.3'N	T10S R1W Sec 23 NW 1/4 NW 1/4 (unsurveyed)	Tucson Spring
B25	SW24	29.0	65.7	69.8	Socorro County	107°04.9'W 33°23.6'N	T8S R2W Sec 31 NE 1/4 SE 1/4	Ojo Caliente
B26	SW25	4.0	31.2	88.0	Socorro County	107°31.7'W 33°53.1'N	T5S R7W Sec 11 NE 1/4 SE 1/4	Spring
B27	SW26	4.0	31.5	88.0	Socorro County	107°32.2'W 33°54.0'N	T5S R7W Sec 2 SW 1/4 NE 1/4	Spring
B28	SW27	30.0	12.5	101.9	Socorro County	107°21.0'W 33°45.8'N	T6S R5W Sec 27 SW 1/4 NE 1/4	Well
Gila 1	SW28	17.7	36.1	94.0	Las Cruces 1:250,000	107°57.5'W 32°28.7'N	T21S R11W Sec 15 SE 1/4 NE 1/4	Well
Gila 2	SW29	53.8	78.4	97.2	Dwyer	107°59.7'W 32°33.3'N	T20S R11W Sec 20 NE 1/4 SE 1/4	Faywood Hot Spring
Gila 3	SW30	21.3	47.0	92.8	Las Cruces or Dwyer 1:250,000	107°58.1'W 32°33.5'N	T20S R11W Sec 22 NW 1/4 NE 1/4	Well
Gila 4	SW31	58.2	74.5	106.8	Dwyer	107°50.1'W 32°44.9'N	T18S R10W Sec 13 NW 1/4 NW 1/4	Mimbres Hot Spring

Field	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
Gila 5	SW32	62.8	76.3	119.8	Gila National Forest	108°12.5'W 33°12.0'N	T13S R13W Sec 5 NE 1/4 NW 1/4	Gila Hot Spring
Gila 6	SW33	66.3	77.3	120.5	Gila National Forest	108°12.6'W 33°12.0'N	T13S R13W Sec 5 NE 1/4 NW 1/4	Gila Hot Spring
Gila 7	SW34	64.8	74.4	128.9	Gila National Forest	108°14.2'W 33°14.0'N	T12S R14W Sec 24 SE 1/4 SE 1/4	Hot Spring
Gila 8	SW35	43.6	62.2	128.9	Gila National Forest	108°12.7'W 33°9.8'N	T13S R13W Sec 17 SW 1/4 NE 1/4	Hot Springs
Gila 9	SW36	N/A	44.4	110.3	Gila National Forest	108°00.5'W 32°34.6'N	T20S R11W Sec 8 SW 1/4 SW 1/4	Well
Gila 10	SW37	N/A	48.4	111.2	Gila National Forest	108°00.2'W 32°35.1'N	T20S R11W Sec 8 NW 1/4 SE 1/4	Well
Gila 11	SW38	N/A	55.0	105.9	Gila National Forest	108°2.5'W 32°33.8'N	T20S R11W Sec 18 SW 1/4 SW 1/4	Well
LD1	SW132	25.3	141.6	84.0	Lordsburg	108°38.7'W 32°18.9'N	T23S R18W Sec 12 SE 1/4 SW 1/4	Well
LD2	SW133	33.0	150.6	91.2	Muir Ranch	108°30.7'W 32°13.7'N	T24S R16W Sec 8 SW 1/4 NE 1/4	Well
LD3	SW134	N/A	61.3	95.3	Muir Ranch	108°33.6'W 32°10.6'N	T24S R17W Sec 35 NE 1/4 SW 1/4	LB Well
LD4	SW135	N/A	57.6	82.5	Coyote Peak	108°34.5'W 32°39 'N	T26S R17W Sec 10 NW 1/4 NW 1/4	Lone Hill Well
LD5	SW136	N/A	94.3	99.1	Playas	108°36.9'W 31°55.8'N	T27S R17W Sec 30 SW 1/4 NE 1/4	Well
LD6	SW137	N/A	35.8	89.5	Pratt (no map)	108°48.5'W 31°57.0'N	T27S R19W Sec 20 SE 1/4 SW 1/4	Well
LD7	SW138	24.4	21.3	99.5	Pratt (no map)	108°46.5'W 31°48.6'N	T29S R19W Sec 4 SE 1/4 SW 1/4	Well

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
LD8	SW139	21.2	18.9	97.2	Pratt (no map)	108°52.5'W 31°50.0'N	T28S R20W Sec 34 NE 1/4 NW 1/4	Well
LD9	SW140	18.7	44.7	99.5	Animas Peak (no map)	108°49.9'W 31°40.2'N	T30S R20W Sec 25 NE 1/4 SE 1/4	Well
LD10	SW141	N/A	57.6	90.9	Animas Peak (no map)	108°52.2'W 31°35.8'N	T31S R20W Sec 22 NE 1/4 SW 1/4	Well
LD11	SW142	18.3	69.9	104.0	Cienega Springs	108°51.8'W 31°24.2'N	T33S R20W Sec 27 SW 1/4 NW 1/4	Well
LD12	SW143	18.0	50.3	86.7	Cienega Springs	108°54.9'W 31°23.2'N	T33S R20W Sec 31 SW 1/4 SE 1/4	Well
LD13	SW144	17.0	56.2	90.9	Cienega Springs	108°47.9'W 31°20.4'N	T34S R19W Sec 18 SE 1/4	Cienega Springs
LD14	SW145	24.9	38.2	51.0	Cienega Springs	108°50.4'W 31°28.0'N	T33S R20W Sec 2 NW 1/4	Well
LD15	SW146	20.6	38.6	99.5	Animas Peak	108°52.4'W 31°34.2'N	T31S R20W Sec 33 NW 1/4 SE 1/4	Well
LD16	SW147	19.1	27.3	93.5	Animas Peak	108°54.3'W 31°37.3'N	T31S R20W Sec 7 SE 1/4 NW 1/4	Well
LD17	SW148	21.6	23.3	95.9	Animas Peak	108°48.6'W 31°44.8'N	T29S R19W Sec 30 SE 1/4 SW 1/4	Well
LD18	SW149	N/A	35.1	94.8	Animas Peak	108°48.0'W 31°52.9'N	T28S R19W Sec 8 SE 1/4 SW 1/4	Well
Gila 20	SW150	74.0	56.2	116.5	Canyon Hill	108°29.0'W 33°6.5'N	T14S R16W Sec 3 SW 1/4 SE 1/4	Spring on Turkey Creek
Gila 21	SW151	28.0	53.8	101.8	Canyon Hill	108°29.0'W 33°6.5'N	T14S R16W Sec 3 SW 1/4 SE 1/4	Turkey Creek
Gila 22	SW152	69.8	68.3	117.4	Canyon Hill	108°29.0'W 33°6.5'N	T14S R16W Sec 3 SW 1/4 SE 1/4	Spring on Turkey Creek

unsurveyed

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
Gila 23	SW153	29.0	50.5	66.0	Canteen Canyon	108°35.8'W 33°1.1'N	T15S R17W Sec 9 NE 1/4 NE 1/4	Well
Gila 24	SW154	31.0	41.8	85.3	Cliff	108°35.0'W 32°52.6'N	T16S R17W Sec 34 NE 1/4 NW 1/4	Spring
Gila 25	SW155	N/A	67.5	99.5	Cliff	108°36.7'W 32°56.1'N	T16S R17W Sec 9 NE 1/4 NE 1/4	Well
Gila 26	SW156	19.0	24.0	101.2	Cliff	108°35.0'W 32°55.4'N	T16S R17W Sec 10 SE 1/4 SW 1/4	Well
Gila 27	SW157	20.0	66.7	113.5	Cliff	108°36.3'W 32°57.9'N	T15S R17W Sec 28 SW 1/4 SE 1/4	Well
Gila 28	SW158	21.5	58.4	104.5	Cliff	108°36.8'W 32°57.9'N	T15S R17W Sec 29 SE 1/4 SE 1/4	Artesian Well
Gila 29	SW159	27.0	49.5	108.7	Cliff	108°30.6'W 32°50.5'N	T17S R16W Sec 8 NE 1/4 SE 1/4	Mangas Springs
Gila 30	SW160	24.0	77.8	100.1	Cliff	108°35.5'W 32°48.8'N	T17S R17W Sec 22 NW 1/4 SW 1/4	Spring
MFG1	SW161	31.0	34.6	102.7	Alum Mountain	108°15.8'W 33°17.0'N	T11S R14W Sec 35 SW 1/4 SE 1/4 (unsurveyed)	Spring
MFG2	SW162	37.0	19.4	107.2	Alum Mountain	108°15.9'W 33°17.4'N	T11S R14W Sec 35 SW 1/4 NE 1/4 (unsurveyed)	Spring
MFG3	SW163	36.0	31.4	107.5	Alum Mountain	108°15.9'W 33°17.4'N	T11S R14W Sec 34 NE 1/4 SE 1/4 (unsurveyed)	Spring
MFG4	SW164	26.0	22.6	105.4	Alum Mountain	108°15.0'W 33°16.4'N	T12S R14W Sec 1 SW 1/4 SW 1/4 (unsurveyed)	Spring
R1	SW165	25.0	74.1	120.0	San Diego Mt.	106°54.8'W 32°32.7'N	T20S R1W Sec 26 NW 1/4 NE 1/4	Well
R2	SW166	23.0	61.3	114.5	San Diego Mt.	106°55.3'W 32°34.8'N	T20S R1W Sec 11 SW 1/4 SW1/4	Windmill

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
TR1 2	SW206	17	71.9	61.5	Van Horn 1:250,000	105°14.2'W 31°53.0'N	Texas	Well
TR1 3	SW207	18	67.0	61.5	Van Horn 1:250,000	105°14.6'W 31°52.4'N	Texas	Well
TR1 4	SW208	24	3.9	71.2	Van Horn 1:250,000	105°17.3'W 31°59.7'N	Texas	Well
TR1 5	SW209	22	2.3	68.8	Van Horn 1:250,000	105°17.5'W 31°59.5'N	Texas	Well
TR1 6	SW210	N/A	98.3	72.0	Van Horn 1:250,000	105°5.5'W 31°56.1'N	Texas	Well
TR1 7	SW211	16	12.4	60.5	Van Horn 1:250,000	105°19.2'W 31°56.8'N	Texas	Well
TR1 8	SW212	N/A	32.2	68.8	Van Horn 1:250,000	105°15.5'W 31°55.8'N	Texas	Well
TR1 9	SW213	N/A	22.4	66.2	Van Horn 1:250,000	105°15.1'W 31°59.4'N	Texas	Well
TR1 10	SW214	N/A	7.3	68.8	Van Horn 1:250,000	105°15.0'W 31°58.4'N	Texas	Well
TR1 11	SW215	15	74.0	50.5	Van Horn 1:250,000	105°11.8'W 31°49.2'N	Texas	Well
TR1 12	SW216	15	36.3	46.7	Van Horn 1:250,000	105°12.2'W 31°44.7'N	Texas	Well
TR1 13	SW217	14	46.7	65.3	Van Horn 1:250,000	105°16.0'W 31°45.8'N	Texas	Windmill
TR1 14	SW218	14	47.0	67.9	Van Horn 1:250,000	105°16.1'W 31°47.2'N	Texas	Windmill
TR1 15	SW219	13	59.0	58.5	Van Horn 1:250,000	105°16.3'W 31°48.3'N	Texas	Well
TR1 16	SW220	N/A	73.2	48.0	Van Horn 1:250,000	105°28.3'W 31°46.8'N	Texas	Well

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
TR1 17	SW221	19	24.2	78.7	Van Horn 1:250,000	105°28.0'W 31°55.4'N	Texas	Well
TR1 18	SW222	13	37.8	54.1	Van Horn 1:250,000	105°32.8'W 31°56.3'N	Texas	Windmill
TR2 1	SW223	11	29.7	58.5	Van Horn 1:250,000	104°56.7'W 31°46.4'N	Texas	Well
TR2 2	SW224	17	-6.4	46.7	Van Horn 1:250,000	104°47.9'W 31°54.5'N	Texas	Spring
TR2 3	SW225	11	54.3	55.3	Van Horn 1:250,000	104°39.1'W 31°58.1'N	Texas	Windmill
TR2 4	SW226	11	12.7	62.5	Van Horn 1:250,000	104°30.5'W 32°00.5'N	Texas	Windmill
TR2 5	SW227	9	4.5	57.4	Van Horn 1:250,000	104°29.6'W 31°55.6'N	Texas	Windmill
TR2 6	SW228	10	-1.6	69.6	Van Horn 1:250,000	104°28.5'W 31°51.8'N	Texas	Well
TR2 7	SW229	9	29.4	75.1	Van Horn 1:250,000	104°16.0'W 31°54.3'N	Texas	Windmill
TR2 8	SW230	10	35.6	51.8	Van Horn 1:250,000	104°51.7'W 31°46.0'N	Texas	Windmill
TR2 9	SW231	6	59.4	63.4	Van Horn 1:250,000	104°53.7'W 31°41.2'N	Texas	Windmill
TR2 10	SW232	10	80.0	63.4	Van Horn 1:250,000	104°50.9'W 31°27.7'N	Texas	Windmill
TR2 11	SW233	20	213.4	68.8	Van Horn 1:250,000	104°51.9'W 31°37.2'N	Texas	Windmill
TR2 12	SW234	10	58.6	53.0	Van Horn 1:250,000	105°30.1'W 31°41.6'N	Texas	Well
TR2 13	SW235	20	45.5	81.4	Van Horn 1:250,000	105°33.0'W 31°41.9'N	Texas	Windmill

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
TR2 14	SW236	22	61.5	60.5	Van Horn 1:250,000	105°36.9'W 31°46.3'N	Texas	Well
TR2 15	SW237	20	28.6	67.1	Van Horn 1:250,000	105°39.0'W 31°54.5'N	Texas	Well
W50	SW238	N/A	53.3	67. 9	Dona Ana Co.	107°9.8'W 32°12.9'N	T24S R3W Sec 17 SE 1/4 SE 1/4	Well
W51	SW239	N/A	69.1	25.0	Dona Ana Co.	107°12.0'W 32°14.1'N	T24S R4W Sec 12 SE 1/4 NW 1/4	Well
W52	SW240	N/A	84.8	92.8	Dona Ana Co.	107°12.7'W 32°11.4'N	T24S R4W Sec 25 NW 1/4 SW 1/4	Well
W53	SW241	N/A	91.8	67.1	Dona Ana Co.	107°14.7'W 32°9.4'N	T25S R4W Sec 3 SW 1/4 SE 1/4	Well
W54	SW242	N/A	77.7	129.9	Dona Ana Co.	107°14.8'W 32°7.8'N	T25S R4W Sec 15 SW 1/4 SW 1/4	Well
W55	SW243	23.0	142.1	108.0	Dona Ana Co.	107°14.5'W 32°5.3'N	T25S R4W Sec 34 SW 1/4 NE 1/4	Well
W56	SW244	N/A	40.9	73.6	Dona Ana Co.	107°7.0'W 32°10.1'N	T25S R3W Sec 2 NE 1/4 NW 1/4	Well
W57	SW245	22.0	128.8	70.4	Dona Ana Co.	107°10.1'W 32°9.2'N	T25S R3W Sec 8 NE 1/4 NW 1/4	Well
W58	SW246	N/A	162.7	91.1	Dona Ana Co.	107°2·5.W 32°8.5'N	T25S R2W Sec 9 SE 1/4 SE 1/4	Well
W59	SW247	24.0	150.0	97.0	Dona Ana Co.	107°0.3'W 32°11.2'N	T24S R2W Sec 25 SW 1/4 SW 1/4	Well
W60	SW248	24.0	83.4	85.3	Dona Ana Co.	106°53.3'W 32°11.3'N	T24S R1W Sec 25 SE 1/4 NE 1/4	Well
W61	SW249	N/A	71.9	55.7	Dona Ana Co.	106°49.4'W 32°9.2'N	T25S R1E Sec 2 SW 1/4 SW 1/4	Well
W62	SW250	N/A	120.1	70.4	Luna County	107°24.5'W 31°48.0'N	T29S R6W Sec 12 NW 1/4 SE 1/4	Well

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
W63	SW251	N/A	77.8	76.6	Luna County	107°30.1'W 31°48.3'N	T29S R7W Sec 12 NE 1/4 NE 1/4	Well
W64	SW252	N/A	194.2	134.1	Luna County	107°34.3'W 31°47.7'N	T29S R7W Sec 8 SE 1/4 SE 1/4	Well
W65	SW253	N/A	99.0	88.3	Luna County	107°23.2'W 31°58.2'N	T27S R5W Sec 7 SE 1/4 SE 1/4	Well
W66	SW254	N/A	91.2	66.2	Luna County	107°26.9'W 31°53.2'N	T28S R6W Sec 9 SE 1/4 NE 1/4	Well
W67	SW255	22.0	77.5	77.3	Luna County	107°30.1'W 31°48.3'N	T29S R7W Sec 12 NE 1/4 NE 1/4	Well
W68	SW256	26.0	191.8	136.4	Luna County	107°34.3'W 31°47.7'N	T29S R7W Sec 8 SE 1/4 SE 1/4	Well
W69	SW257	30.0	106.6	90.6	Luna County	107°31.2'W 31°50.5'N	T28S R7W Sec 26 SE 1/4 NE 1/4	Well
W70	SW258	22.0	74.2	79.0	Luna County	107°26.9'W 31°53.2'N	T28S R6W Sec 9 SE 1/4 NE 1/4	Well
W71	SW259	21.0	91.6	78.7	Luna County	107°23.1'W 31°56.2'N	T27S R5W Sec 30 NE 1/4 NE 1/4	Well
W72	SW260	22.0	97.7	90.6	Luna County	107°23.2'W 31°58.2'N	T27S R5W Sec 7 SE 1/4 SE 1/4	Well
W73	SW261	20.0	44.0	109.7	Luna County	107°35.2'W 31°54.2'N	T28S R7W Sec 5 NW 1/4 NW 1/4	Well
W74	SW262	21.0	44.0	81.7	Luna County	107°40.1'W 32°1.3'N	T26S R8W Sec 28 NW 1/4 NW 1/4	Well
TR3 1	SW263	16	159.3	60.5	Van Horn 1:250,000	105°18.9'W 31°14.9'N	Texas	Well
TR3 2	SW264	14	83.5	32.2	Van Horn 1:250,000	104°47.3'W 31°9.7'N	Texas	Well

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
TR3 3	SW265	20	5.1	-12.1	Van Horn 1:250,000	104°50.0'W 31°18.6'N	Texas	Windmill
TR3 4	SW266	8	84.0	12.2	Van Horn 1:250,000	104°33.9'W 31°9.3'N	Texas	Windmill
TR3 5	SW267	20	26.4	79.4	Van Horn 1:250,000	104°38.5'W 31°14.7'N	Texas	Windmill
TR3 6	SW268	9	85.3	48.0	Van Horn 1:250,000	104°35.9'W 31°14.4'N	Texas	Windmill
TR3 7	SW269	14	31.3	74.4	Van Horn 1:250,000	104°28.2'W 31°20.3'N	Texas	Windmill
TR3 8	SW270	12	42.9	72.8	Van Horn 1:250,000	104°12.0'W 31°9.5'N	Texas	Windmill
TR3 9	SW271	19	64.8	49.3	Van Horn 1:250,000	104°10.0'W 31°12.6'N	Texas	Windmill
TR3 10	SW272	12	60.0	98.0	Van Horn 1:250,000	104°24.2'W 31°7.5'N	Texas	Windmill
W75	SW273	22.0	120.4	10.3	Luna County 1:250,000	107°26.1'W 32°13.3'N	T24S R6W Sec 14 SW 1/4 NW 1/4	Well
W76	SW274	21.0	43.6	107.3	Luna County 1:250,000	107°28.8'W 32°13.4"N	T24S R6W Sec 17 NW 1/4 SE 1/4	Well
W77	SW275	N/A	52.4	103.6	Luna County 1:250,000	107°28.9'W 32°11.3'N	T24S R6W Sec 29 SW 1/4 SW 1/4	Well
W78	SW276	21.0	54.4	115.6	Luna County 1:250,000	107°28.0'W 32°8.0'N	T25S R6W Sec 16 SW 1/4 NW 1/4	Well
W79	SW277	21.0	131.9	118.9	Luna County 1:250,000	107°28.7'W 32°6.7'N	T25S R6W Sec 29 NW 1/4 NE 1/4	Well
W80	SW278	23.0	75.2	93.9	Luna County 1:250,000	107°23.3'W 32°5.5'N	T25S R5W Sec 31 NE 1/4 SE 1/4	Well

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
W81	SW279	20.0	73.6	88.9	Luna County	107°25.0'W 32°2.2'N	T26S R6W Sec 24 NW 1/4 NW 1/4	Well
W82	SW280	19.0	68.3	91.7	Dona Ana County	107°00.2'W 32°34.6'N	T20S R2W Sec 12 SW 1/4 SW 1/4	Well
W83	SW281	N/A	113.3	54.1	Dona Ana County	107°2.8'W 32°30.8'N	T21S R2W Sec 4 NE 1/4 SE 1/4	Well
W84	SW282	N/A	58.9	109.3	Dona Ana County	107°4.8'W 32°30.9'N	T21S R2W Sec 6 NE 1/4 NW 1/4	Well
AN1	SW283	18.0	38.5	109.3	Swallow Fork Peak	108°52.2'W 32°11.7'N	T24S R20W Sec 26 NW 1/4 NE 1/4	Windmill
AN2	SW284	19.0	58.1	54.1	Swallow Fork Peak	108°48.8'W 32°12.2'N	T24S R19W Sec 20 SE 1/4 NE 1/4	Windmill
AN3	SW285	16.0	41.0	117.1	Swallow Fork Peak	108°52.8'W 32°10.1'N	T24S R20W Sec 34 SE 1/4 SE 1/4	Windmill
AN4	SW286	24.0	94.0	135.8	Swallow Fork Peak	108°50.7'W 32°9.7'N	T25S R20W Sec 1 NE 1/4 SE 1/4	
AN5	SW287	19.0	60.0	102.3	Swallow Fork Peak	108°50.9'W 32°8.1'N	T25S R20W Sec 13 NE 1/4 NW 1/4	
AN6	SW288	19.0	52.3	79.4	Table Top Mountain	108°51.2'W 32°7.3'N	T25S R20W Sec 24 SW 1/4 SE 1/4	
AN7	SW289	20.0	52.2	78.7	Table Top Mountain	108°50.8'W 32°6.3'N	T25S R20W Sec 25 NE 1/4 NE 1/4	
AN8	SW290	N/A	40.7	84.0	Swallow Fork Peak	108°53.2'W 32°7.7'N	T25S R20W Sec 15 SE 1/4 NW 1/4	Windmill
AN9	SW291	18.0	61.2	-20.9	Table Top Mountain	108°52.8'W 32°4.8'N	T25S R20W Sec 34 SE 1/4 SE 1/4	
AN10	SW292	18.0	58.0	89.0	Cotton City	108°53.5'W 32°3.5N	T26S R20W Sec 4 NW 1/4 SE 1/4	

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
AN11	SW293	19.0	44.9	96.5	Cotton City	108°54.6W 32°3.1N	T26S R20W Sec 5 SW 1/4 SE 1/4	
AN12	SW294	21.0	44.8	97.1	Cotton City	108°54.0'W 32°4.7'N	T26S R20W Sec 5 NE 1/4 NE 1/4	
AN13	SW295	26.0	63.9	82.3	Table Top Mountain	108°52.7'W 32°3.1'N	T26S R20W Sec 14 NW 1/4 NE 1/4	
AN14	SW296	20.0	44.6	96.0	Cotton City	108°55.0'W 32°2.7'N	T26S R20W Sec 17 NW 1/4 SW 1/4	
AN15	SW297	24.0	44.1	79.6	Table Top Mountain	108°51.2'W 32°4.3'N	T26S R20W Sec 14 SW 1/4 SW 1/4	
AN16	SW298	20.0	48.1	88.4	Cotton City	108°53.3'W 32°3.6'N	T26S R20W Sec 9 NE 1/4 SW 1/4	
AN17	SW299	22.0	80.3	79.6	Table Top Mountain	108°52.7'W 32°4.8'N	T25S R20W Sec 35 SE 1/4 SE 1/4	
AN18	SW300	21.0	45.3	89.0	Table Top Mountain	108°52.2'W 32°5.6'N	T25S R20W Sec 26 SE 1/4 SW 1/4	
AN19	SW301	N/A	29.9	91.8	Swallow Fork Peak	108°46.4'W 32°9.1'N	T25S R19W Sec 11 NW 1/4 NW 1/4	
AN20	SW302	20.0	39.2	101.5	Cotton City	108°53.6'W 32°5.2'N	T25S R20W Sec 34 NW 1/4 SW 1/4	
AN21	SW303	19.0	48.7	89.0	Cotton City	108°55.3'W 32°7.2'N	T25S R20W Sec 20 NW 1/4 NE 1/4	
AN22	SW304	19.0	47.6	82.9	Table Top Mountain	108°51.7'W 32°6.3'N	T25S R20W Sec 25 NW 1/4 NW 1/4	
AN23	SW305	18.0	41.4	88.4	Steins	108°52.7'W 32°9.1'N	T25S R20W Sec 2 SW 1/4 SW 1/4	

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
SWAN 306	SW306	34.0	22.7	101.4	Alum Mountain	108°15.0'W 33°16.4'N	T12S R14W Sec 1 SW 1/4 SW 1/4 (unsurveyed)	Spring
SWAN 307	SW307	32.0	22.7	101.9	Alum Mountain	108°15.0'W 33°16.4'N	T12S R14W Sec 1 SW 1/4 Sw 1/4 (unsurveyed)	Spring
SWAN 308	SW308	7.0	29.5	76.8	Alum Mountain	108°15.0'W 33°16.4'N	T12S R14W Sec 1 SW 1/4 SW 1/4 (unsurveyed)	Middle Fork Gila River
SWAN 309	SW309	N/A	29.7	91.3	Alum Mountain	108°12.1'W 33°10.6'N	T13S R13W Sec 8 SE 1/4 NW 1/4 (unsurveyed)	East Fork Gila River
SWAN 310	SW310	N/A	21.8	72.3	Alum Mountain	108°12.3'W 33°10.8'N	T13S R13W Sec 8 NE 1/4 SW 1/4 (unsurveyed)	West Fork Gila River
TR4 1	SW311	12.2	25.4	-9.2	Otero Co.	105°38.2'W 32°15.3'N	T23S R13E Sec 32 SE 1/4 SW 1/4	Well
TR4 2	SW312	12.8	18.0	33.3	Otero Co.	105°32.3'W 32°15.4'N	T23S R14E Sec 32 SE 1/4 SW 1/4	Well
TR4 3	SW313	13.9	22.3	48.0	Otero Co.	105°26.4'W 32°10.3'N	T24S R15E Sec 32 SW 1/4 NW 1/4	Well
TR4 4	SW314	18.3	17.7	48.0	Otero Co.	105°25.6'W 32°14.9'N	T24S R15E Sec 5 NE 1/4 SE 1/4	Well
TR4 5	SW315	20.6	-1.1	46.7	Otero Co.	105°22.6'W 32°9.6'N	T25S R15E Sec 2 SE 1/4 NE 1/4	Well
TR4 6	SW316	18.9	49.6	58.5	Otero Co.	105°34.7'W 32°7.8'N	T25S R13E Sec 13 SW 1/4 NW 1/4	Well
TR4 7	SW317	17.2	31.5	60.5	Otero Co.	105°31.5'W 32°3.9'N	T26S R14E Sec 4 SW 1/4 SW 1/4	Well
TR4 8	SW318	17.8	26.4	81.4	Otero County	105°39.3'W 32°6.6'N	T25S R13E Sec 19 SW 1/4 SE 1/4	Well
TR4 9	SW319	12.8	28.4	32.2	Otero Co.	105°44.5'W 32°5.3'N	T25S R12E Sec 32 NW 1/4 SW 1/4	Well
TR4 10	SW320	11.1	78.8	-12.1	Otero Co.	105°52.1'W 32°2.7'N	T26S R10E Sec 13 SW 1/4 SE 1/4	Well

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
TR5 1	SW321	23.3	159.4	88.9	Marfa 1:250,000	104°49.9'W 30°59.4'N	Texas	Windmill
TR5 2	SW322	21.1	37.8	81.4	Marfa 1:250,000	104°43.9'W 30°43.3'N	Texas	Windmill
TR5 3	SW323	22.3	84.3	114.1	Marfa 1:250,000	104°34.7'W 30°40.5'N	Texas	Windmill
TR5 4	SW324	22.8	57.0	87.7	Marfa 1:250,000	104°28.1'W 30°38.7'N	Texas	Windmill
TR5 5	SW325	21.7	35.6	75.9	Marfa 1:250,000	104°26.2'W 30°32.2'N	Texas	Windmill
TR5 6	SW326	18.3	61.8	125.1	Marfa 1:250,000	104°6.5'W 30°16.6'N	Texas	Windmill
TR5 7	SW327	20.0	54.9	117.5	Marfa 1:250,000	104°12.5'W 30°12.6'N	Texas	Windmill
TR5 8	SW328	21.1	55.3	95.4	Marfa 1:250,000	104°27.3'W 30°6.5'N	Texas	Well
TR5 9	SW329	24.4	162.8	128.6	Marfa 1:250,000	104°15.1'W 30°20.4'N	Texas	Well
TR5 10	SW330	19.4	14.9	102.7	Marfa 1:250,000	104°26.1'W 30°19.7'N	Texas	Windmill
TR5 11	SW331	23.3	20.9	80.8	Marfa 1:250,000	104°30.6'W 30°22.7'N	Texas	Well
TR5 12	SW332	19.4	81.5	103.2	Marfa 1:250,000	104°31.6'W 30°28.4'N	Texas	Well
TR5 13	SW333	21.1	68.1	124.1	Marfa 1:250,000	104°31.0'W 30°30.5'N	Texas	Windmill
NM1	SW381	53.5	138.2	120.0	Santa Fe Nat'l Forest (East)	105°17.4'W 35°39.2'N	T17N R15E Sec 36 SE 1/4 SE 1/4 (unsurveyed)	Montezuma Hot Spring
NM2	SW382	48.0	140.3	120.0	Santa Fe Nat'l Forest (East)	105°17.4'W 35°39.2'N	T17N R15E Sec 36 SE 1/4 SE 1/4 (unsurveyed)	Montezuma Hot Spring
NM3	SW383	34.3	137.9	117.5	Santa Fe Nat'l Forest (East)	105°17.4'W 35°39.2'N	T17N R15E Sec 36 SE 1/4 SE 1/4 (unsurveyed)	Montezuma Hot Spring

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
NM4	SW384	53.0	139.5	118.9	Santa Fe Nat'l Forest (East)	105°17.4'W 35°39.2'N	T17N R15E Sec 36 SE 1/4 SE 1/4 (unsurveyed)	Montezuma Hot Spring
NM5	SW385	58.5	140.3	121.7	Santa Fe Nat'l Forest (East)	105°17.4'W 35°39.2'N	T17N R15E Sec 36 SE 1/4 SE 1/4 (unsurveyed)	Montezuma Hot Spring
NM6	SW386	35.6	140.6	119.6	Santa Fe Nat'l Forest (East)	105°17.4'W 35°39.2'N	T17N R15E Sec 36 SE 1/4 SE 1/4 (unsurveyed)	Montezuma Hot Spring
NM7	SW387	16.5	60.2	33.0	Santa Fe 1:250,000	105°10.8'W 35°35.8'N	T16N R17E Sec 19 SW 1/4 SE 1/4	Windmill
NM8	SW388	12.9	29.7	53.0	Santa Fe 1:250,000	105°06.5'W 35°35.4'W	T16N R17E Sec 26 NE 1/4 SW 1/4	Windmill
NM9	SW389	14.0	24.4	61.5	Santa Fe 1:250,000	105°00.6'W 35°37.2'N	T16N R18E Sec 15 NE 1/4 NE 1/4	Windmill
NM10	SW390	18.0	45.2	59.5	Santa Fe 1:250,000	104°55.5'W 35°36.3'N	T16N R19E Sec 21 NW 1/4 SE 1/4	Windmill
NM11	SW391	14.3	50.0	50.5	Santa Fe 1:250,000	104°50.2'W 35°36.0'N	T16N R20E Sec 20 SE 1/4 NE 1/4	Windmill
NM12	SW392	14.0	16.2	62.5	Santa Fe 1:250,000	104°44.6'W 35°31.2'N	T15N R21E Sec 20 SW 1/4 NW 1/4	Windmill
NM13	SW393	21.0	82.6	40.8	Santa Fe 1:250,000	104°35.8'W 35°27.8'N	T14N R22E Sec 13 SW 1/4 SE 1/4	Windmill
NM14	SW394	20.5	44.9	48.0	Santa Fe 1:250,000	104°27.0'W 35°20.9'N	T13N R23E Sec 24 NE 1/4 NE 1/4	Windmill
NM15	SW395	27.0	80.5	68.8	Carson National Forest (West)	106°02.7'W 36°22.0'N	T25N R8E Sec 25 SE 1/4 SE 1/4	Spring
NM16	SW396	29.0	79.5	68.8	Carson National Forest (West)	106°02.7'W 36°22.0'N	T25N R8E Sec 25 SE 1/4 SE 1/4	Spring
NM17	SW397	27.5	83.3	67.9	Carson National Forest (West)	106°02.7'W 36°22.0'N	T25N R8E Sec 25 SE 1/4 SE 1/4	Spring
NM18	SW398	25.5	79.8	66.2	Carson National Forest (West)	106°02.5'W 36°21.8'N	T25N R8E Sec 36 NE 1/4 NE 1/4	Spring

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
NM19	SW399	43.5	157.8	114.5	Carson National Forest (West)	106°03.4'W 36°18.3'N	T24N R8E Sec 24 NW 1/4 NW 1/4	Arsenic Spring Ojo Caliente
NM20	SW400	41.1	158.4	115.2	Carson National Forest (West)	106°03.4'W 36°18.3'N	T24N R8E Sec 24 NW 1/4 NW 1/4	Sodium Sulfate Spring Ojo Caliente
NM21	SW401	55.6	160.5	121.0	Carson National Forest (West)	106°03.4'W 36°18.3'N	T24N R8E Sec 24 NW 1/4 NW 1/4	Hot Well Ojo Caliente
NM22	SW402	34.4	91.6	105.9	Carson National Forest (East)	105°36.5'W 36°19.4'N	T24N R13E Sec 7 SW 1/4 SW 1/4 SW 1/4	Ponce de Leon Hot Spring
NM23	SW403	11.5	23.1	75.1	Carson National Forest (East)	105°42.9'W 36°20.7'N	T24N R11E Sec 1 NE 1/4 SE 1/4	Spring
NM24	SW404	18.0	43.1	85.9	Carson National Forest (East)	105°44.3'W 36°19.9'N	T24N R11E Sec 11 NE 1/4 NE 1/4	Spring
NM25	SW405	19.0	76.8	85.9	Carson National Forest (East)	105°44.1'W 36°19.9'N	T24N R11E Sec 11 NE 1/4 SW 1/4	Rio Grande Spring
NM26	SW406	19.7	15.5	49.3	Carson National Forest (East)	105°43.6'W 35°15.0'N	T23N R11E Sec 1 SW 1/4 SW 1/4	"Warm" Spring
NM27	SW407	15.0	45.7	86.5	Carson National Forest (East)	105°41.2'W 36°39.9'N	T28N R12E Sec 17 NW 1/4 SE 1/4	Little Arsenic Spring
NM28	SW408	17.5	43.9	83.4	Carson National Forest (East)	105°41.2'W 36°40.4'N	T28 R12E Sec 18 SE 1/4 NW 1/4	Big Arsenic Spring
NM29	SW409	38.3	89.7	110.1	Carson National Forest (East)	105°43.2'W 36°30.6'N	T26N R11E Sec 12 NW 1/4 NE 1/4	Manby Hot Spring
NM30	SW410	32.8	73.4	110.5	Carson National Forest (East)	105°43.2'W 36°30.6'N	T26N R11E Sec 12 NW 1/4 NE 1/4	Manby Hot Spring
NM31	SW411	40.6	167.7	116.0	Carson National Forest (East)	105°42.9'W 36°31.7'N	T27N R11E Sec 36 SE 1/4 NE 1/4	No Name Spring
NM32	SW412	16.0	37.0	80.8	Carson National Forest (East)	105°42.9'W 36°31.7'N	T27N R11E Sec 36 SE 1/4 NE 1/4	Cold Spring
NM33	SW413	57.2	187.5	111.3	San Juan National Forest	107°00.8'W 37°15.9'N	T35N R2W Sec 13 SW 1/4 SE 1/4	Pagosa Hot Spring

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
NM34	SW414	N/A	21.7	92.2	San Juan National Forest	106°56.5'W 37°30.6'N	T38N R1W Sec 26 NE 1/4 NW 1/4 NW 1/4	Hot Spring
PV1	SW415	N/A	67.5	63.4	Roswell 1:250,000	104°19.6'W 33°19.1'N	T11S R26E Sec 34 SW 1/4	
PV2	SW416	N/A	19.8	84.6	Roswell 1:250,000	104°16.2'W 33°25.1'N	T10S R25E Sec 26 NW 1/4 SE 1/4	Windmill
PV3	SW417	N/A	-2.1	78.7	Roswell 1:250,000	104°29.9'W 33°15.1'N	T12S R24E Sec 24 SE 1/4 SE 1/4	
PV4	SW418	N/A	1.5	81.4	Roswell 1:250,000	104°30.3'W 33°11.8'N	T13S R24E Sec 13 NW 1/4 NW 1/4	Windmill
PV5	SW419	N/A	-2.3	43.9	Roswell 1:250,000	104°14.7'W 33°13.1'N	T13S R27E Sec 4 SW 1/4 NW 1/4 NW 1/4	Windmill
PV6	SW420	N/A	50.9	53.0	Roswell 1:250,000	104°11.8'W 33°11.1'N	T13S R27E Sec 13 SW 1/4 SW 1/4 SW 1/4	Windmill
PV7	SW421	N/A	16.0	78.0	Roswell 1:250,000	104°8.2'W 33°10.1'N	T13S R28E Sec 28 NW 1/4 NW 1/4 NW 1/4	Windmill
PV8	SW422	N/A	3.3	75.1	Roswell 1:250,000	104°27.8'W 33°4.4'N	T14S R25E Sec 29 NE 1/4 SW 1/4	
PV9	SW423	N/A	9.9	72.8	Roswell 1:250,000	104°30.8'W 33°4.4'N	T14S R24E Sec 26 SE 1/4 NW 1/4 NW 1/4	
PV10	SW424	N/A	4.5	71.2	Roswell 1:250,000	104°31.6'W 33°4.1'N	T14S R24E Sec 34 NE 1/4 NE 1/4 NW 1/4	Windmill
PV11	SW425	N/A	12.5	61.5	Roswell 1:250,000	104°41.3'W 33°3.1'N	T15S R23E Sec 6 NW 1/4 NE 1/4 NW 1/4	
T1	SW426	N/A	50.8	80.8	Hueco Tanks	106°02.4'W 31°57.0'N	Texas	Well

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
T2	SW427	N/A	64.7	35.9	San Antonio Mountain	105°37.1'W 31°46.2'N	Texas	Well
T3	SW428	N/A	74.9	59.5	Van Horn 1:250,000	105°28.1'W 31°46.8'N	Texas	Well
T4	SW429	N/A	46.2	87.7	Emory Peak 1:250,000	103°33.0'W 29°44.2'N	Texas	Windmill
T5	SW430	N/A	69.7	37.6	Emory Peak 1:250,000	103°24.7'W 29°31.9'N	Texas	Windmill
T6	SW431	N/A	27.0	92.2	Emory Peak 1:250,000	103°22.0'W 29°33.2'N	Texas	Windmill
T7	SW432	N/A	-15.3	85.3	Emory Peak	103°20.5'W 29°29.4'N	Texas	Spring
T8	SW433	N/A	12.6	101.8	Emory Peak	103°20.5'W 29°29.4'N	Texas	Spring
T9	SW434	N/A	66.8	94.9	Emory Peak	103°31.4'W 29°19.0'N	Texas	Well
T10	SW435	N/A	82.0	17.2	Emory Peak	103°24.0'W 29°32.8'N	Texas	Well
T11	SW436	N/A	54.9	95.4	Emory Peak	103°24.0'W 29°32.8'N	Texas	Windmill
T12	SW437	N/A	71.6	56.4	Emory Peak	103°29.8'W 29°35.1'N	Texas	Well
T13	SW438	N/A	137.3	-6.6	Emory Peak	103°29.9'W 29°32.9'N	Texas	Windmill
T14	SW439	N/A	25.7	66.2	Emory Peak	103°10.2'W 20°43.2'N	Texas	

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
T15	SW440	N/A	59.4	58.5	Emory Peak	103°24.9'W 29°46.3'N	Texas	Windmill
NM50	SW441	N/A	29.0	36.2	Gallup 1:250,000	108°34.9'W 35°35.2'N	T16N R16W Sec 30 SW 1/4 SW 1/4	Well
NM51	SW442	N/A	75.6	66.2	Gallup 1:250,000	108°34.7'W 35°55.3'N	T20N R16W Sec 31 SW 1/4 NE 1/4	Artesian Well
NM52	SW443	N/A	52.1	46.7	Gallup 1:250,000	108°45.9'W 35°51.7'N	T19N R18W Sec 31 SW 1/4 SW 1/4	Tohatchi Public School Well
STROM	SW444	N/A	36.6	69.3	Dona Ana Co.	106°43 W 32°19 N	T23S R2E Sec 9 SW 1/4 SW 1/4	
RK1	SW445	12.0	3.8	55.3	Lincoln Nat'l Forest	105°40.1'W 33°18.2'N	T12S R13E Sec 3 NW 1/4 NE 1/4	Spring
RK2	SW446	N/A	1.5	57.4	Lincoln Nat'l Forest	105°39.2'W 33°21.2'N	T11S R13E Sec 14 SE 1/4 NE 1/4	Bogg Spring
RK3	SW447	N/A	0.7	64.4	Lincoln Nat'l Forest	105°43.5'W 33°22.1'N	T11S R13E Sec 7 SW 1/4 NW 1/4	Spring
RK4	SW448	5.0	4.6	61.5	Lincoln Nat'l Forest	105°44.2'W 33°25.0'N	T10S R12E Sec 25 NW 1/4 NE 1/4	Spring
RK5	SW449	12.0	10.1	53.0	Lincoln Nat'l Forest	105°40.4'W 33°26.7'N	T10S R13E Sec 15 NW 1/4 SW 1/4	Well
RK6	SW450	N/A	-20.2	65.3	Lincoln Nat'l Forest	105°38.9'W 33°27.9'N	T10S R13E Sec 2 SE 1/4 SW 1/4	Windmill
RK7	SW451	N/A	-7.0	74.4	Lincoln Nat'l Forest	105°37.7'W 33°30.9'N	T9S R13E Sec 24 NE 1/4 SW 1/4	Windmill
RK8	SW452	N/A	4.1	73.6	Lincoln Nat'l Forest	105°39.1'W 33°35.2'N	T8S R13E Sec 26 NW 1/4 SE 1/4	Windmill

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
RK9	SW453	N/A	27.6	53.0	Lincoln National Forest	105°40.9'W 33°32.5'N	T9S R13E Sec 9 SE 1/4 NW 1/4	Spring
RK10	SW454	N/A	10.3	63.4	Lincoln National Forest	105°40.2'W 33°28.0'N	T10S R13E Sec 5 SW 1/4 NE 1/4	Spring
RK11	SW455	N/A	-9.2	56.4	Lincoln National Forest	105°45.2'W 33°27.2'N	T10S R11E Sec 12 SE 1/4 NE 1/4	Spring
RK12	SW456	N/A	7.4	58.5	Lincoln National Forest	105°47.5'W 33°29.0'N	T9S R11E Sec 34 SW 1/4 NE 1/4	Skull Spring
RK13	SW457	N/A	11.7	69.6	Lincoln National Forest	105°53.6' 33°39.7'	T7S R10E Sec 34 NW 1/4 NW 1/4	Scott Springs
RK14	SW458	14.0	25.5	82.1	Lincoln National Forest	105°31.8' 33°36.1'	T8S R14E Sec 24 NE 1/4 SW 1/4	Windmill
RK15	SW459	11.0	9.6	66.2	Lincoln National Forest	105°21.7' 33°33.6'	T9S R16E Sec 3 NE 1/4 NW 1/4	Spring
RK16	SW460	N/A	9.9	75.1	Lincoln National Forest	105°37.3' 33°37.4'	T8S R14E Sec 7 SW 1/4 SW 1/4	Well
RK17	SW461	N/A	87.7	12.2	Lincoln National Forest	105°35.4' 33°42.6	T7S R14E Sec 8 SE 1/4 SE 1/4	Windmill
RK18	SW462	N/A	23.9	57.4	Lincoln National Forest	105°36.0' 33°42.6'	T7S R14E Sec 8 SW 1/4 SE 1/4	Windmill
RK19	SW463	N/A	1.5	57.4	Lincoln National Forest	105°38.3' 33°44.1'	T7S R13E Sec 1 NW 1/4 NW 1/4	Spring
RK20	SW464	N/A	19.0	79.4	Lincoln National Forest	105°40.0' 33°47.4'	T6S R13E Sec 15 NE 1/4 SW 1/4	Well
RK21	SW465	N/A	16.9	70.4	Lincoln National Forest	105°42.5' 33°55.7'	T4S R12E Sec 29 SE 1/4 NW 1/4	Windmill

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
RK22	SW466	N/A	31.4	45.8	Lincoln National Forest	105°55.0' 33°48.6'	T6S R10E Sec 4 SW 1/4 SW 1/4	Windmill
RK23	SW467	N/A	22.2	46.7	Lincoln National Forest	105°44.8' 33°44.8'	T6S R11E Sec 36 NE 1/4 NE 1/4	Windmill
RK24	SW468	N/A	2.7	98.0	Lincoln National Forest	105°42.8' 33°39.9'	T7S R13E Sec 31 NE 1/4 NE 1/4	Windmill
RK25	SW469	N/A	5.7	66.2	Lincoln National Forest	105°44.2' 33°37.0'	T8S R12E Sec 13 NW 1/4 SE 1/4	Windmill
W85	SW539	25.0	49.5	97.5	Luna County	107°38.3'W 31°49.3'N	T29S R8W Sec 3 NE 1/4 NE 1/4	Well
W86	SW540	31.1	168.2	104.5	Luna County	107°46.9'W 31°48.1'N	T29S R9W Sec 8 NE 1/4 SW 1/4	Well
W87	SW541	25.6	139.0	60.5	Luna County	107°49.0'W 31°48.6'N	T29S R10W Sec 1 SW 1/4 SE 1/4	Well
W88	SW542	22.8	141.7	90.6	Luna County	107°50.3'W 31°47.5'N	T29S R10W Sec 14 NW 1/4 NE 1/4	Well
W89	SW543	24.4	73.0	80.1	Luna County	107°52.9'W 31°47.5'N	T29S R10W Sec 17 NE 1/4 NE 1/4	Well
GG1	SW544	N/A	172.0	58.5	Albuquerque 1:250,000	107°49.1'W 35°07.3'N	T10N R9W Sec 7 SW 1/4 SW 1/4	Spring
GG2	SW545	N/A	86.6	53.0	Albuquerque 1:250,000	107°48.9'W 35°5.9'N	T10N R9W Sec 18 NE 1/4 NE 1/4	Windmill
GG3	SW545	N/A	90.0	88.3	Albuquerque 1:250,000	107°47.0'W 35°5.2'N	T10N R9W Sec 21 NE 1/4 NE 1/4	Windmill
GG4	SW547	N/A	24.1	50.5	Albuquerque 1:250,000	107°48.3'W 35°2.4'N	T9N R9W Sec 5 NE 1/4 NW 1/4	Windmill

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
GG5	SW548	N/A	17.8	49.3	Socorro 1:250,000	107°49.8'W 34°56.5'N	T8N R9W Sec 7 NW 1/4 NW 1/4	Windmill
SA1	SW549	34.0	99.6	63.4	Otero Co.(North)	106°9.0'W 32°46.8'N	T18S R8E Sec 5 NW 1/4 SW 1/4	Garton Well
SA2	SW550	13.0	-8.0	39.3	Lincoln National Forest	105°46.6'W 32°57.6'N	T15S R12E Sec 33 SE 1/4 SE 1/4	Spring
SA3	SW551	11.0	-21.1	43.9	Lincoln National Forest	105°40.9'W 32°53.5'N	T16S R12E Sec 23 SE 1/4 SE 1/4	Spring
SA4	SW552	7.0	27.7	34.8	Lincoln National Forest	105°41.0'W 32°49.2'N	T17S R12E Sec 15 SE 1/4 SW 1/4	Spring
SA5	SW553	12.0	-28.2	37.3	Lincoln National Forest	105°34.2'W 32°47.9'N	T17S R13E Sec 25 SW 1/4 NE 1/4	Spring
SA6	SW554	N/A	-13.4	42.4	Lincoln National Forest	105°27.0'W 32°42.1'N	T18S R15E Sec 31 NW 1/4 SW 1/4	Spring
SA7	SW555	16.0	-17.7	35.2	Lincoln National Forest	105°21.9'W 32°35.5'N	T 20S R15E Sec 12 NW 1/4 NE 1/4	Well
SA8	SW556	N/A	4.1	56.4	Lincoln National Forest	105°26.3'W 32°32.5'N	T 20S R15E Sec 29 SW 1/4 NW 1/4	Well
SA9	SW557	21.0	32.0	54.1	Otero County (south)	105°42.0'W 32°17.9'N	T23S R12E Sec 23 NW 1/4 NW 1/4	Well
SA10	SW558	N/A	-4.7	45.3	Otero County (south)	105°26.8'W 32°20.7'N	T22S R15E Sec 32 SW 1/4 NW 1/4	Well
SA11	SW559	18.0	15.1	46.7	Otero County (south)	105°19.4'W 32°20.5'N	T23S R16E Sec 5 NE 1/4 NE 1/4	Well
SA12	SW560	N/A	10.7	55.3	Otero County (south)	105°11.9'W 32°11.1'N	T24S R17E Sec 27 SW 1/4 NE 1/4	Well

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
SA13	SW561	N/A	-3.1	55.3	Otero County (south)	105°07.9'W 32°11.8'N	T24S R18E Sec 29 NW 1/4 NE 1/4	Well
SA14	SW562	19.0	5.2	62.5	Otero County (south)	105°05.4'W 32°05.7'N	T25S R18E Sec 27 SE 1/4 SW 1/4	Well
SA15	SW563	19.5	10.6	70.4	Eddy County (south)	104°25.0'W 32°15.0'N	T24S R25E Sec 5 NE 1/4 NE 1/4	Spring
SA16	SW564	22.0	12.0	65.3	Eddy County (south)	104°32.2'W 32°17.3'N	T23S R24E Sec 19 SE 1/4 NW 1/4	Windmill
SA17	SW565	19.0	2.4	53.0	Eddy County (south)	104°36.1'W 32°21.4'N	T22S R23E Sec 28 SE 1/4 SE 1/4	Windmill
SA18	SW566	26.0	-0.5	67.1	Eddy County (south)	104°28.9'W 32°27.6'N	T21S R24E Sec 27 NE 1/4 NE 1/4	Spring
SA19	SW567	N/A	12.6	56.4	Eddy County (south)	104°28.1'W 32°27.7'N	T21S R24E Sec 23 SE 1/4 SW 1/4	Well
SA20	SW568	9.0	-23.8	33.0	Lincoln National Forest	105°41.0'W 32°57.8'N	T15S R13E Sec 33 SW 1/4 SE 1/4	Spring
US98	SW569	N/A	39.6	92.2	Apache National Forest	108°29.1'W 33°55.2'N	T4S R16W Sec 35 NW 1/4 NW 1/4	Windmill
US99	SW570	18.9	45.1	100.9	Apache National Forest	108°21.5'W 34°02.3'N	T3S R14W Sec 19 NW 1/4 NW 1/4	Spring
US100	SW571	N/A	50.5	108.0	Apache National Forest	108°21.0'W 34°05.7'N	T2S R15W Sec 36 NE 1/4 NW 1/4	Well
US101	SW572	15.6	9.1	84.0	Apache National Forest	108°35.8'W 34°09.5'N	T2S R17W Sec 3 SE 1/4 SW 1/4	Windmill
US102	SW573	N/A	8.0	74.4	Apache National Forest	108°38.1'W 34°13.2'N	T1S R17W Sec 17 NE 1/4 SE 1/4	Windmill

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
US90	SW574	17.0	-3.6	79.4	Clifton 1:250,000	108°42.9'W 33°46.9'N	T6S R18W Sec 17 SE 1/4 SE 1/4	Largo Spring
US91	SW575	21.0	50.1	95.9	Clifton 1:250,000	108°28.8'W 33°55.3'N	T4S R16W Sec 35 NW 1/4 NE 1/4	Windmill
US92	SW576	15.0	7.7	91.1	Clifton 1:250,000	108°13.3'W 33°56.0'N	T4S R13W Sec 29 NW 1/4 SW 1/4	Windmill
US93	SW577	19.0	55.8	91.7	Clifton 1:250,000	108°11.5'W 33°54.3'N	T5S R13W Sec 3 NW 1/4 SW 1/4	Windmill
US94	SW578	13.0	52.4	91.1	Clifton 1:250,000	108°10.0'W 33°52.3'N	T5S R13W Sec 14 SE 1/4 SW 1/4	Windmill
US95	SW579	15.0	43.2	99.9	Clifton 1:250,000	108°20.7'W 33°46.9'N	T6S R15W Sec 13 SW1/4 SW 1/4	Windmill
US96	SW580	16.0	59.9	67.1	Clifton 1:250,000	108°28.8'W 33°35.8'N	T8S R16W Sec 22 SW 1/4 SW 1/4	Turkey Spring
US97	SW581	18.5	27.9	75.0	Clifton 1:250,000	108°32.2'W 33°29.4'N	T9S R17W Sec 25 SE 1/4 NE 1/4	Spring
US98R	SW582	22.8	93.7	116.4	Clifton 1:250,000	108°52.6'W 33°14.9'N	T12 R20W Sec 23 NW 1/4 SW 1/4	San Francisco Hot Spring
US105	SW583	20.5	56.7	79.4	St. Johns 1:250,000	108°56.1'W 34°12.2'N	T1S R20W Sec 21 SW 1/4	Windmill
US106	SW584	16.0	24.1	92.8	St. Johns 1:250,000	108°32.9'W 34°20.3'N	T1N R16W Sec 6 SE1/4 NE 1/4	Well
US107	SW585	26.0	174.0	39.3	St. Johns 1:250,000	108°46.0'W 34°27.3'N	T3N R18W Sec 30 SW 1/4 NW 1/4	Salt Lake
US108	SW586	12.0	39.9	77.3	St. Johns 1:250,000	108°31.8'W 34°21.6'N	T2N R16W Sec 33 NW 1/4 NW 1/4	Windmill

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
US109	SW587	12.0	-15.6	84.0	Socorro 1:250,000	107°55.9'W 34°14.4'N	T1S R11W Sec 12 SW 1/4 SW 1/4	Windmill
US110	SW588	14.0	21.6	40.8	Socorro 1:250,000	107°52.7'W 34°25.7'N	T2N R10W Sec 3 SW 1/4 NE 1/4	Windmill
NM53	SW589	N/A	99.0	73.6	Cibola National Forest (Grants)	107°40.2'W 35°20.4'N	T13N R8W Sec 21 SE 1/4 NW 1/4	Bridge Spring
NM54	SW590	N/A	10.4	68.8	Cibola National Forest (Grants)	107°35.9'W 35°16.8'N	T12N R7W Sec 8 SW 1/4 NE 1/4	San Mateo Spring
NM55	SW591	N/A	16.4	72.0	Cibola National Forest (Grants)	108°03.1'W 35°06.0'N	T10N R12W Sec 13 NE 1/4 NE 1/4	La Jara Spring
GG100	SW592	N/A	74.7	79.4	Valencia County	107°40.9'W 35°20.3'N	T13N R8W Sec 21 SE 1/4 NE 1/4	Spring
GG101	SW593	N/A	49.5	55.3	McKinley County	107°46.8'W 35°20.9'N	T13N R9W Sec 22 NW 1/4 NE 1/4	Well
GG102	SW594	N/A	21.9	65.3	Valencia County	107°36 0'W 35°16.8'N	T12N R7W Sec 8 SW 1/4 NE 1/4	Spring
US103	SW595	N/A	49.3	78.0	Dona Ana County	106°40.2'W 32°02.7'N	T26S R2E Sec 14 SE 1/4 NE 1/4	Well
US104	SW596	N/A	48.7	78.9	Dona Ana County	106°40.2'W 32°02.7'N	T26S R2E Sec 14 SE 1/4 NE 1/4	Well
Leggs	SW597	N/A	115.3	75.9	Dona Ana County	106°45.0'W 32°13.0'N	T24S R2E Sec 19 SE 1/4	
NM56	SW598	18.9	57.9	82.9	Dona Ana County	106°49.5'W 32°20.4'N	T23SR 1E Sec 3	Well

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
SD1	SW602	19.0	78.7	74.8	Las Cruces	106°51.2'W 32°24.2'N	T22S R1E Sec 8 SE 1/4 SE 1/4	Well
SD2	SW603	20.0	84.5	82.9	Las Cruces	106°55.0'W 32°28.7'N	T21S R1W Sec 14 SW 1/4 NW 1/4	Well
SD3	SW604	20.0	78.9	92.9	San Diego Mtn.	106°59.9'W 32°34.0'N	T20S R2W Sec 13 SW 1/4 NE 1/4	Windmill
SD4	SW605	17.5	53.9	80.9	Rincon	107°03.1'W 32°38.2'N	T19S R2W Sec 21 SW 1/4 SE 1/4	Well
SD5	SW606	18.0	53.2	80.3	Rincon	107°03.4'W 32° 38.2'N	T19S R2W Sec 21 SW 1/4 SW 1/4	Well
SD6	SW607	19.0	50.5	75.3	Rincon	107°05.4'W 32°39.2'N	T19S R2W Sec 18 SW 1/4 NW 1/4	Well
SD7	SW608	19.0	68.4	98.3	Hatch	107°11.9'W 32°40.4'N	T19S R4W Sec 12 NE 1/4 SE 1/4	Well
SD8	SW609	19.0	66.7	127.7	Hatch	107°12.4'W 32°40.3'N	T19S R4W Sec 12 SW 1/4 NE 1/4	Spring
SD9	SW610	17.5	96.7	82.3	Sierra Alta	107°00.8'W 32°36.7'N	T19S R2W Sec 35 SE 1/4 NW 1/4	Well
SD10	SW611	17.5	167.1	83.4	San Diego Mtn.	106°59.6'W 32°35.0'N	T20S R2W Sec 12 NE 1/4 SE 1/4	Well
SD11	SW612	18.5	93.4	83.6	Sierra Alta	107°00.4'W 32°36.7'N	T19S R2W Sec 36 SW 1/4 NW 1/4	Well
SD12	SW613	26.0	19.2	80.3	San Diego Mtn.	106°50.8'W 32°36.3'N	T19S R1E Sec 33 SW 1/4 SE 1/4	Windmill
SD13	SW614	19.0	50.2	70.2	Las Cruces	106°56.2'W 32°29.9'N	T21S R1W Sec 10 NW 1/4 SW 1/4	Windmill
SD14	SW615	18.0	58.8	84.8	Las Cruces	106°56.1'W 32°29.9'N	T21S R1W Sec 10 NW 1/4 SW 1/4	Windmill

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
SD15	SW616	17.0	55.1	73.0	Sierra Alta	107°01.2'W 32°36.8'N	T19S R2W Sec 35 SW 1/4 NW 1/4	Well
SD16	SW617	17.0	58.5	77.5	Sierra Alta	107°01.0'W 32°36.8'N	T19S R2W Sec 35 SW 1/4 NE 1/4	Well
SD17	SW618	18.0	56.3	73.0	Sierra Alta	107°01.2'W 32°37.2'N	T19S R2W Sec 35 NW 1/4 NE 1/4	Well
SD18	SW619	23.5	50.7	87.8	San Diego Mtn.	106°59.1'W 32°31.5'N	T20SR1W Sec 31 NW 1/4 SE 1/4	Well
SD19	SW620	17.5	91.1	75.3	Sierra Alta	107°00.2'W 32°36.2'N	T20S R2W Sec 1 NW 1/4 NE 1/4	Well
SD20	SW621	17.0	86.0	73.8	Sierra Alta	107°00.3'W 32°36.2'N	T20S R2W Sec 1 NW 1/4 NW 1/4	Well
SD21	SW622	20.0	88.0	74.6	Las Cruces	106°54.0'W 32°29.9'N	T21S R1W Sec 12 NW 1/4 SW 1/4	Well
SD22	SW623	31.0	65.7	111.3	Souse Springs	107°11.7'W 32°36.4'N	T19S R3W Sec 31 SW 1/4 SE 1/4	Souse Springs
SD23	SW624	21.0	43.5	113.7	Souse Springs	107°09.8'W 32°35.5'N	T20S R3W Sec 4 SW 1/4 NW 1/4	Windmill
SD24	SW625	22.0	52.7	83.6	Corralitos Ranch	107°12.9'W 32°16.4'N	T23S R4W Sec 29 SE 1/4 SE 1/4	Mimms Well
SD25	SW626	23.0	74.3	95.6	Corralitos Ranch	107°02.7'W 32°22.2'N	T22S R2W Sec 28 NE 1/4 NW 1/4	Well
SD26	SW627	21.0	85.1	114.5	Lazy E Ranch	107°18.0'W 32°17.5'N	T23S R4W Sec 19 SW 1/4 NW 1/4	Well
SD27	SW628	23.0	44.2	53.2	San Diego Mtn	106°48.6'W 32°34.2'N	T20S R1E Sec 14 NE 1/4 SW 1/4	Well
SD28	SW629	28.0	67.2	103.7	San Diego Mtn	106°48.2'W 32°31.8'N	T21S R1E Sec 35 NE 1/4 NE 1/4	Well

Field #	Lab #	T_1 C	T_2 C	T_3 C	L_1	L_2	L_3	Name
SD29	SW630	26.0	49.5	115.3	San Diego Mt.	106°52.1'W 32°34.6'N	T20S R1E Sec 8 SW 1/4 SW 1/4	Windmill
SD30	SW631	27.0	60.6	116.4	San Diego Mt.	106°55.3'W 32°34.8'N	T20S R1W Sec 11 SW 1/4 SW1/4	Well
SD31	SW632	19.5	64.8	103.7	Souse Springs	107°09.0'W 32°32.2'N	T20S R3W Sec 28 SE 1/4 SW 1/4	Windmill
SD32	SW633	24.0	64.5	101.5	Dona Ana Co.	106°44.9'W 32°31.8	T20S R2E Sec 28 SW 1/4 SW 1/4	Windmill
SD33	SW634	25.0	42.4	68.2	Dona Ana Co.	106°40.3'W 32°33.6'N	T20S R3E Sec 27 SE 1/4 Se 1/4	Windmill
SD34	SW635	22.0	39.2	84.2	Dona Ana Co.	106°40.1'W 32°23.6'N	T22S R2E Sec 14 SE 1/4 NW 1/4	Well
COLM1	SW636	30.5	254.7	84.8	Pol Ranch	107°15.7'W 32°01.1'N	T26S R4W Sec 28 131	Windmill
COLM2	SW637	29.0	220.8	109.4	X-7 Ranch, NM	107°18.8'W 31°59.8'N	T27S R5W Sec 2 222	Windmill
COLM3	SW638	26.5	179.1	83.8	Pol Ranch	107°02.5'W 32°02.4'N	T26S R6W Sec 24 111	Windmill
COLM4	SW639	24.0	76.5	90.2	Sibley Hole, NM	107°30.0'W 32°02.4'N	T26S R6W Sec 24 NW 1/4 NW 1/4	Spring
PAL1	SW691	29.5	176.8	88.7	Luna Co.	107°46.6'W 31°48.0'N	T29S R9W Sec 8 NE 1/4 SE 1/4	Pumped Well
PAL2	SW692	26.0	79.8	92.5	Luna Co.	107°51.9'W 31°47.1'N	T29S R10W Sec 16 NE 1/4 NE 1/4	Pumped Well
PAL3	SW693	26.0	129.0	90.9	Luna Co.	107°50.6'W 31°48.3'N	T29S R10W Sec 10 NE 1/4 NE 1/4	Pumped Well
PAL4	SW694	31.5	172.6	109.8	Luna Co.	107°47.1'W 31°48.2'N	T29S R9W Sec 8 NW 1/4 NW 1/4	Pumped Well

Field #	Lab #	T_1 C°	T_2 C°	T_3 C°	L_1	L_2	L_3	Name
PAL5	SW695	28.5	88.0	93.6	Luna Co.	107°36.0'W 31°55.6'N	T27S R7W Sec 30 SW 1/4 NW 1/4	Pumped Well
ABQ1	SW696	19.5	58.6	120.4	ALBQ West	106°44.6'W 33°00.8'N	T9N R2E Sec 19	Pumped Well
ABQ2	SW697	14.0	39.8	86.0	6400 Coors NW	106°41.0'W 37°09.5'N	T11N R2E Sec 24	Pumped Well
ABQ3	SW698	19.0	59.4	113.7		106°41.4'W 37°09.6'N	T11N R2E Sec 23	Pumped Well
ABQ4	SW699	29.0	68.1	92.9		106°42.6'W 35°07.1'N	T10N R2E Sec 15	Pumped Well
SD35	SW780	20.8	106.3	82.3	San Diego Mt.	106°59.3'W 32°33.8'N	T20S R2W Sec 13	
Jemez1	SW808	N/A	43.3	85.6	Jemez	106°41.1'W 35°47.8'N	T18N R2E Sec 13	Jemez River
Jemez2	SW809	47.0	222.2	98.5	Jemez	106°41.2'W 35°47.6'N	T18N R2E Sec 13 Unsurveyed	Soda Dam Hot Spr.
Jemez3	SW810	N/A	60.1	86.3	Jemez	106°41.2'W 35°47.4'N	T18N R2E Sec 13 Unsurveyed	Jemez River
Jemez4	SW811	N/A	58.3	85.9	Jemez	106°41.3'W 35°46.5'N	T18N R2E Sec 23 Unsurveyed	Jemez River
Jemez5	SW812	56.0	189.6	128.9	Jemez	106°41.5'W 35°46.3'N	T18N R2E Sec 23 Unsurveyed	Jemez Springs
Jemez6	SW813	53.0	191.8	129.8	Jemez	106°41.5'W 35°46.3'N	T18N R2E Sec 23 Unsurveyed	Jemez Springs
Jemez7	SW814	74.0	194.5	134.5	Jemez	106°41.5'W 35°46.3'N	T18N R2E Sec 23 Unsurveyed	Jemez Springs
Jemez8	SW815	N/A	57.1	86.5	Jemez	106°41.8'W 35°46.0'N	T18N R2E Sec 26 Unsurveyed	Jemez River

Field #	Lab #	T_1 °C	T_2 °C	T_3 °C	L_1	L_2	L_3	Name
Jemez 9	SW816	N/A	60.9	86.3	Jemez	106°41.5'W 35°46.3'N	T18S R2E Sec 23 Unsurveyed	Jemez Springs
SD1	SW817	36.0	74.7	51.6	San Diego Mt.	107°00.0'W 32°38.0'N		Well
Just1	SW818	34.5	168.8	161.7	Hillsboro	107°34.8'W 32°57.2'N	T15S R7W Sec 5 NE 1/4 NW 1/4	Spring
A	N/A	42.0	61.0	116.0	Jemez	106°37.9'W 35°51.0'N	T19N R3E Sec 28 NE 1/4 SW 1/4	Spence Hot Spg.
B	N/A	32.0	27.0	108.0	Jemez	106°37.6'W 35°49.3'N	T18N R3E Sec 4 SE 1/4 NW 1/4	McCauley Spring
C	N/A	23.0	160.0	64.0	Jemez	106°49.6'W 35°32.9'N	T15N R1E Sec 10 NE 1/4 NW 1/4	San Ysidro KGRA
D	N/A	18.0	159.0	43.0	Jemez	106°49.9'W 35°32.8'N	T15N R1E Sec 10 SW 1/4 NW 1/4	San Ysidro KGRA
E	N/A	52.0	138.0	89.0	Jemez	106°52.8'W 35°37.2'N	Unsurveyed	Kaseman #1
F	N/A	56.0	70.0	129.0	Jemez	106°38.6'W 35°56.5'N	Unsurveyed	San Antonio Spring
G	N/A	70.0	87*	148*	Jemez	106°36.9'W 35°54.4'N	Unsurveyed	Sulphur Spring
H	N/A	25.0	26*	84*	Jemez	106°36.9'W 35°54.4'N	Unsurveyed	Sulphur Spring
I	N/A	40.0	59*	177*	Jemez	106°36.9'W 35°54.4'N	Unsurveyed	Sulphur Spring
AZ178	SW374	35.2	52.1	108.0	Cibola Nat'l Forest	107°32.6'W 34°06.0'N	T2S R7W Sec 27 SE 1/4 SE 1/4 SE 1/4	

* Acid(pH 2.1) Sulphate Springs-Geothermometers Not Valid

Table 2. Major Cations and Anions for Springs and Wells in New Mexico and West Texas

Field #	Lab #	TDS	pH	mg/l Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4
J-1	N/A	492	8.12	77.8	38.2	8.3	1.6	0	389.3	2.5	48.0
J-2	N/A	156	9.60	1.2	<.1	62.8	.4	49.2	72.0	.4	19.2
J-3	N/A	992	7.89	49.7	6.8	307.2	15.6	0	129.4	445.3	57.6
J-4	N/A	768	7.95	39.3	7.4	215.6	11.3	0	136.7	294.6	44.2
J-5	N/A	1,280	7.79	54.3	6.9	406.0	18.8	0	107.4	574.3	90.3
J-6	N/A	160	8.00	16.8	7.3	23.2	2.0	0	131.8	1.1	19.2
J-7	N/A	164	7.89	13.0	6.9	27.4	2.7	0	140.3	1.4	15.4
P1	N/A	484	8.20	28.0	7.3	68.7	1.9	0	183.1	20.5	79.3
P2	N/A	1,116	7.71	22.0	0.5	333.6	23.5	0	106.8	88.3	497.1
P3	N/A	1,024	8.16	23.2	0.8	318.6	21.1	0	103.7	87.6	480.0
P4	N/A	1,608	7.84	67.3	5.3	493.1	27.8	0	118.9	111.3	893.4
P5	N/A	1,660	8.08	159.3	34.9	231.7	9.0	0	209.3	181.9	956.3
P10	N/A	1,708	8.18	67.9	17.1	366.2	6.3	0	255.0	133.6	939.0
P13	N/A	756	7.90	38.3	2.7	105.5	3.1	0	237.9	16.7	298.7
P14	N/A	668	8.00	47.9	4.4	71.0	2.7	0	209.3	23.0	289.6
P15	N/A	868	8.07	78.7	12.6	152.2	5.9	0	201.4	80.5	483.7
P20	N/A	632	8.02	43.2	4.1	97.0	2.3	0	192.2	21.3	305.0
P22	N/A	600	7.90	49.3	4.4	111.3	2.7	0	192.2	38.6	311.7
P23	N/A	640	8.08	18.6	2.4	120.2	1.6	0	250.2	29.1	308.3
P24	N/A	1,348	7.92	38.5	1.8	321.4	18.0	0	275.8	79.1	768.5
P25	N/A	604	8.35	38.1	5.7	78.8	3.5	0	183.1	8.9	285.8
W-1	N/A	952	7.75	28.8	8.6	255.5	15.2	0	320.9	88.6	280.5
W-2	N/A	1,236	8.25	46.3	16.4	405.8	26.2	14.4	439.3	318.7	222.9
W-3	N/A	720	8.66	10.2	7.2	223.0	10.6	37.2	334.4	82.2	132.6
W-4	N/A	552	8.50	8.2	8.3	180.7	16.8	25.2	335.6	54.2	94.1
W-5	N/A	784	8.00	9.0	7.5	225.4	14.1	0	317.3	77.6	263.2
W-6	N/A	888	7.93	20.0	10.0	286.4	14.1	0	358.8	83.7	293.9
W-7	N/A	604	8.36	3.0	5.8	238.8	0.4	22.8	369.8	41.5	130.6
W-8	N/A	840	7.94	24.8	13.0	238.8	0.8	0	454.0	79.1	146.0
W-9	N/A	604	9.26	21.4	6.3	236.1	8.2	90.0	263.6	95.7	105.7
W-10	N/A	2,600	8.60	264.1	48.2	414.5	22.7	7.2	46.4	314.4	1219.9
W-11	N/A	1,860	7.56	345.7	80.6	64.6	7.0	0	145.2	19.1	1114.3
W-12	N/A	1,392	7.54	322.2	80.0	72.4	7.4	0	119.6	30.1	1085.5
W-13	N/A	1,848	7.49	240.5	113.3	140.2	5.1	0	175.7	90.4	1027.9
W-14	N/A	1,328	7.69	123.8	70.6	176.5	3.9	0	179.4	129.0	624.4
W-15	N/A	1,224	7.81	110.8	50.8	164.8	9.4	0	120.8	25.2	979.8
W-16	N/A	2,480	7.15	472.7	14.7	197.2	9.8	0	52.5	22.0	1498.6
W-17	N/A	1,968	7.94	321.4	49.0	152.4	9.0	0	45.1	20.6	1181.6
W-18	N/A	2,616	7.59	502.8	29.2	144.1	11.7	0	43.9	20.2	1575.4
W-19	N/A	2,120	8.87	155.7	58.3	388.5	22.3	27.6	37.8	229.7	1018.2
W-20	N/A	372	8.35	36.9	17.9	32.2	5.5	1.2	197.7	20.9	44.2
W-21	N/A	548	7.85	36.9	30.4	65.0	4.7	0	328.3	31.5	61.5
W-22	N/A	364	7.57	43.9	19.8	33.8	4.7	0	225.8	19.8	48.0
W-23	N/A	344	8.21	40.3	18.3	52.9	0.8	0	248.9	23.7	63.4
W-24	N/A	616	8.75	5.6	1.6	265.1	4.3	13.2	428.3	50.7	50.0
W-25	N/A	348	8.59	8.4	4.2	120.0	17.6	0	299.0	14.2	50.0
W-26	N/A	728	9.02	2.6	1.1	271.0	5.5	42.0	454.0	42.9	126.8
W-27	N/A	500	8.50	8.4	8.0	170.6	16.4	13.2	333.2	46.4	80.7

Field #	Lab #	TDS	pH	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	K (mg/l)	CO_3 (mg/l)	HCO_3 (mg/l)	Cl (mg/l)	SO_4 (mg/l)
W-28	N/A	768	8.44	24.4	8.6	232.0	12.1	0	222.7	178.0	178.7
W-29	N/A	228	7.48	48.9	7.8	18.6	1.2	0	109.8	3.2	96.1
W-30	N/A	1,436	7.83	270.0	39.8	71.0	3.9	0	158.6	80.1	739.7
W-31	N/A	616	8.95	15.8	6.1	211.7	5.5	21.6	234.3	70.9	186.4
W-32	N/A	720	8.53	19.2	6.3	242.1	7.8	0	379.5	67.0	194.0
W-33	N/A	720	9.42	10.0	2.1	233.3	16.8	69.6	371.0	29.4	101.8
W-34	N/A	604	10.56	3.6	2.3	190.1	20.3	199.2	41.5	23.7	71.1
W-35	N/A	556	8.66	9.6	5.5	196.8	14.1	13.2	458.9	22.3	59.6
W-36	N/A	2,028	8.09	84.5	27.5	671.3	37.9	54.0	445.4	606.9	475.5
B1	N/A	592	8.18	101.2	27.6	65.1	7.4	12.0	361.2	26.6	147.9
B2	N/A	3,532	8.16	118.6	15.2	1135.9	167.0	13.2	378.3	1593.6	263.2
B3	N/A	872	8.26	87.0	14.1	189.0	14.1	0	203.8	227.3	159.5
B4	N/A	2,236	7.66	404.2	29.9	214.0	11.7	0	41.5	14.2	1604.2
B5	N/A	1,240	8.23	47.1	15.8	323.9	18.8	0	366.1	151.0	376.6
B6	N/A	1,228	8.62	47.1	16.0	340.0	19.2	22.8	311.2	153.2	374.6
B7	N/A	252	8.18	39.5	10.5	34.3	4.7	0	185.5	.4	63.4
B8	N/A	2,784	8.03	153.9	17.9	806.7	10.6	0	289.2	828.5	647.5
B9	N/A	2,608	7.79	143.9	18.0	817.5	61.4	0	164.7	1285.2	196.0
B10	N/A	2,688	7.80	143.9	17.9	791.5	63.0	0	162.3	1353.6	169.1
B11	N/A	2,640	7.88	136.5	17.1	764.6	62.6	0	136.7	1370.3	115.3
B12	N/A	1,392	7.90	110.4	9.5	387.4	21.5	0	211.1	602.7	138.3
B13	N/A	284	8.48	17.2	4.3	56.1	3.1	0	162.3	10.3	50.0
B14	N/A	348	8.33	16.4	4.3	68.5	3.1	0	181.8	12.1	69.2
B15	N/A	420	8.14	49.5	4.5	78.4	3.9	0	175.7	80.5	67.2
B16	N/A	352	7.79	53.3	7.1	25.7	2.7	0	146.4	15.6	76.8
B17	N/A	468	8.24	34.9	1.3	125.5	5.1	0	131.8	104.2	96.1
B18	N/A	544	7.91	42.3	1.7	143.5	6.6	0	137.9	132.2	107.6
B19	N/A	2,708	7.98	164.1	18.7	785.6	62.6	0	224.5	1314.2	107.0
WT1	N/A	8,968	8.01	110.6	35.1	2742.0	189.2	0	817.6	3040.4	1229.6
WT2	N/A	352	8.29	17.2	4.2	85.7	3.9	0	196.5	19.5	61.5
WT3	N/A	1,876	8.35	43.1	1.4	518.0	67.6	22.8	502.8	301.3	376.5
WT4	N/A	3,792	7.95	151.9	52.8	1001.0	3.9	0	290.4	302.4	2017.3
WT5	N/A	528	8.28	17.2	0.7	169.2	2.3	0	310.0	26.2	98.0
WT6	N/A	584	8.17	36.9	5.2	162.5	16.0	0	288.0	74.4	111.4
WT7	N/A	648	8.08	43.5	7.2	156.1	14.8	0	311.2	69.8	105.7
WT8	N/A	448	8.25	69.7	18.8	28.0	5.1	12.0	255.8	17.4	88.4
B20	SW19	744	8.05	47.0	36.0	149.7	9.7	0	154.9	101.8	299.5
B21	SW20	2,652	8.18	65.8	44.1	706.5	10.5	0	181.8	269.4	1372.8
B22	SW21	5,208	7.99	599.2	273.1	363.1	37.8	0	143.9	232.2	3129.6
B23	SW22	2,152	7.90	420.2	97.5	51.5	4.7	0	134.2	27.7	1296.0
B24	SW23	2,500	8.10	441.2	156.6	66.0	7.0	0	184.2	47.5	1478.4
B25	SW24	516	8.10	44.2	1.7	137.7	5.5	0	124.4	150.1	107.5
B26	SW25	104	7.90	12.8	2.4	10.5	1.6	0	36.6	0.1	44.2
B27	SW26	104	7.81	12.8	2.2	10.8	1.6	0	31.7	0.7	40.3
B28	SW27	192	7.84	23.4	1.7	24.1	0.8	0	108.5	1.4	26.4
Gila 1	28	364	8.10	46.8	7.9	17.4	3.9	0	207.4	1.1	21.6
Gila 2	29	492	7.74	35.6	7.6	90.8	8.2	0	283.0	14.2	72.0
Gila 3	30	456	7.63	25.8	9.6	90.8	2.3	0	256.2	20.8	64.2
Gila 4	31	320	8.97	2.4	<.006	91.7	1.2	20.4	67.1	14.5	84.0

Field #	Lab #	TDS	pH	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	K (mg/l)	CO_3 (mg/l)	HCO_3 (mg/l)	Cl (mg/l)	SO_4 (mg/l)
Gila 5	32	408	8.19	10.6	0.1	123.0	3.1	0	108.6	99.4	69.6
Gila 6	33	416	8.15	10.4	0.2	129.7	3.1	0	115.9	100.1	67.2
Gila 7	34	548	7.92	15.4	0.1	151.5	3.5	0	131.1	104.3	118.0
Gila 8	35	516	8.08	18.4	0.8	141.9	2.7	0	125.0	115.7	93.6
Gila 9	36	320	8.15	31.6	13.0	28.9	3.5	0	227.5	1.4	24.0
Gila 10	37	344	7.84	32.0	18.1	24.8	4.3	0	213.5	17.0	16.2
Gila 11	38	428	7.82	39.8	13.2	47.1	5.1	0	236.6	8.5	50.4
LD1	132	564	8.09	7.6	1.4	143.2	5.9	0	234.3	27.6	93.7
LD2	133	816	7.86	28.0	2.7	216.1	11.7	0	314.8	47.5	223.8
LD3	134	740	7.48	117.4	18.7	98.6	10.2	0	218.4	116.6	181.5
LD4	135	592	7.94	10.2	1.8	159.3	1.5	0	301.4	33.0	104.2
LD5	136	796	7.82	15.6	1.3	234.5	5.5	0	400.3	50.7	154.6
LD6	137	208	7.92	22.0	7.3	27.6	2.0	0	147.7	3.5	19.2
LD7	138	208	7.82	40.3	4.9	15.2	2.0	0	156.2	2.5	4.3
LD8	139	184	7.57	26.0	2.2	21.1	1.2	0	109.8	2.8	4.3
LD9	140	176	7.39	21.0	3.2	6.2	4.5	0	65.9	0.7	33.6
LD10	141	156	7.31	17.8	3.3	6.9	6.2	0	57.3	1.4	40.3
LD11	142	200	7.74	16.6	4.8	36.8	5.1	0	173.3	1.4	3.8
LD12	143	136	6.88	15.8	2.9	13.8	3.5	0	37.8	0.7	52.8
LD13	144	132	7.00	8.2	1.7	15.2	2.7	0	22.0	1.4	40.3
LD14	145	160	8.80	2.4	0.5	54.7	0.4	0	137.9	4.2	16.3
LD15	146	212	8.11	27.6	3.2	16.3	3.1	0	124.4	1.0	13.4
LD16	147	164	7.94	29.4	1.7	11.5	2.3	0	117.1	0.1	5.7
LD17	148	168	8.06	21.2	0.7	12.9	1.5	0	98.8	0.1	9.1
LD18	149	320	8.15	16.4	0.6	65.3	1.2	0	173.3	4.2	32.7
Gila 20	150	236	8.66	6.8	1.6	61.1	1.5	0	94.0	4.2	64.8
Gila 21	151	200	8.33	10.6	3.5	48.7	2.0	0	103.7	3.9	43.7
Gila 22	152	260	9.10	2.8	<0.1	69.2	1.2	20.4	40.3	5.0	75.9
Gila 23	153	292	8.53	10.4	0.6	77.9	1.5	0	75.7	25.9	99.4
Gila 24	154	332	8.13	18.4	1.3	92.4	1.5	0	234.3	6.4	49.0
Gila 25	155	400	8.04	8.2	0.8	118.4	2.0	0	244.1	13.1	55.2
Gila 26	156	444	7.64	36.1	6.9	79.3	1.2	0	290.4	10.6	45.1
Gila 27	157	472	8.79	2.4	0.1	146.7	0.8	13.2	175.7	33.0	107.1
Gila 28	158	272	9.36	1.0	<0.1	87.6	0.4	46.8	125.7	2.8	13.4
Gila 29	159	544	8.00	87.0	16.5	34.9	7.8	0	390.5	18.8	35.0
Gila 30	160	672	7.98	10.0	1.3	190.6	2.7	0	336.8	18.8	142.6
MFG1	161	196	8.08	20.4	2.6	40.0	1.6	0	145.8	3.2	29.8
MFG2	162	188	8.07	19.2	1.6	41.8	0.8	0	128.1	4.2	31.7
MFG3	163	192	8.09	16.8	1.6	43.7	1.2	0	139.7	3.9	28.3
MFG4	164	168	8.15	14.8	1.5	37.5	.8	0	131.2	3.2	19.2
R1	165	500	8.40	38.5	16.5	97.2	7.4	0	233.1	17.0	176.8
R2	166	784	7.96	91.6	27.3	114.9	8.2	0	167.5	25.2	397.2
TR1 2	206	2536	7.37	261.5	92.0	451.7	14.8	0	282.5	673.2	792.5
TR1 3	207	3068	7.45	331.3	120.8	453.1	14.8	0	244.0	699.8	992.3
TR1 4	208	3124	7.40	542.3	135.4	44.8	3.5	0	225.1	20.2	1677.2
TR1 5	209	3048	7.38	575.9	140.1	40.0	3.5	0	236.7	17.4	1809.8
TR1 6	210	4660	7.53	330.1	284.1	599.3	34.4	0	235.5	1010.7	1527.4
TR1 7	211	2812	7.73	438.3	160.1	54.2	4.3	0	162.9	7.8	1588.8
TR1 8	212	2728	7.81	294.2	129.3	193.6	5.1	0	223.9	306.6	1050.4
TR1 9	213	2628	7.53	417.6	128.1	94.9	5.4	0	205.0	82.6	1332.8

Field #	Lab #	TDS	pH	mg/l Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4
TR1 10	214	2968	7.54	505.8	152.0	64.1	3.5	0	188.5	36.2	1695.0
TR1 11	215	2872	7.59	272.7	113.4	413.1	16.8	0	221.5	647.0	927.0
TR1 12	216	1256	7.69	159.7	67.6	92.6	5.1	0	150.1	106.4	538.4
TR1 13	217	3484	7.57	486.2	108.7	327.1	10.5	0	247.7	424.4	1491.8
TR1 14	218	4052	7.65	521.0	169.8	252.6	12.1	0	219.0	243.2	1827.6
TR1 15	219	1972	7.53	202.2	85.8	295.2	9.4	0	263.6	359.8	697.4
TR1 16	220	1632	8.03	117.2	58.9	257.5	10.9	0	273.4	297.4	485.6
TR1 17	221	484	7.85	74.7	33.6	30.8	2.7	0	236.7	23.4	150.3
TR1 18	222	3636	7.66	570.5	173.9	178.4	10.2	0	240.4	65.2	2145.0
TR2 1	223	1112	7.69	153.1	70.5	85.5	3.9	0	270.9	118.8	421.7
TR2 2	224	288	8.12	43.9	25.1	5.1	0.8	0	228.8	0.7	21.1
TR2 3	225	180	8.61	4.2	30.0	5.3	2.3	24.3	92.1	3.2	33.6
TR2 4	226	316	8.03	48.1	32.0	13.1	1.6	0	116.6	11.0	106.1
TR2 5	227	3224	7.27	617.8	98.7	140.2	2.7	0	67.7	146.1	1924.1
TR2 6	228	544	8.26	74.7	44.6	31.3	0.8	0	299.0	28.3	122.0
TR2 7	229	3220	7.75	603.0	64.5	220.7	7.0	0	150.1	236.1	1730.1
TR2 8	230	1540	8.16	135.9	88.1	138.6	3.9	0	150.1	244.6	504.8
TR2 9	231	2188	7.43	173.3	149.0	226.2	9.4	0	101.9	300.6	918.3
TR2 10	232	2128	7.86	126.2	96.1	341.1	12.9	0	166.0	511.2	618.1
TR2 11	233	3040	8.19	308.2	100.5	346.0	75.8	0	99.4	520.0	1059.5
TR2 12	234	1120	8.34	101.8	42.3	173.8	7.0	0	263.6	148.2	337.2
TR2 13	235	820	8.47	61.5	21.5	178.2	3.1	0	270.9	72.0	282.4
TR2 14	236	1184	8.04	138.7	77.3	366.9	7.4	0	292.3	296.0	732.9
TR2 15	237	1000	8.12	129.2	48.5	73.6	3.5	0	188.5	33.0	465.9
W-50	238	532	7.88	18.8	16.5	144.6	2.0	0	185.5	67.7	159.0
W-51	239	692	8.77	7.4	3.9	220.2	1.6	49.5	323.4	39.3	83.1
W-52	240	880	8.51	8.0	6.2	230.3	2.7	0	444.2	40.1	111.4
W-53	241	960	8.88	11.6	8.7	293.8	3.9	48.3	231.2	122.3	220.9
W-54	242	1,092	7.98	0.4	0.1	333.3	1.2	0	510.1	61.0	192.6
W-55	243	912	8.11	1.8	1.1	261.6	7.0	0	403.3	74.0	164.3
W-56	244	492	8.35	25.2	13.4	128.0	1.6	0	177.0	57.8	137.8
W-57	245	1,344	8.03	17.8	13.4	432.7	10.6	0	371.6	161.7	450.0
W-58	246	956	7.77	19.2	8.5	302.1	17.6	0	512.5	88.3	245.4
W-59	247	864	7.99	8.2	2.7	269.2	10.9	0	317.9	80.1	247.3
W-60	248	432	7.91	25.2	4.5	115.2	7.0	0	161.7	54.2	111.4
W-61	249	620	7.44	48.1	14.1	144.6	7.0	0	142.8	125.5	172.9
W-62	250	2,440	7.95	31.3	15.7	855.7	14.9	0	522.9	449.9	847.2
W-63	251	2,896	8.34	24.4	6.2	922.8	4.7	0	341.1	122.3	1491.8
W-64	252	2,832	7.91	58.1	22.1	908.8	79.4	0	1598.0	368.0	450.0
W-65	253	843	7.95	30.5	18.5	233.8	9.8	0	232.5	269.4	91.7
W-66	254	2,600	8.38	8.6	3.2	1023.5	6.3	46.2	585.1	589.6	794.4
W-67	255	2,740	8.29	20.2	5.5	859.6	4.3	0	327.0	112.4	1367.4
W-68	256	2,748	7.36	65.2	19.8	881.0	75.4	0	1565.7	338.9	423.6
W-69	257	1,168	8.70	1.4	0.2	416.1	3.9	25.5	367.3	234.7	236.8
W-70	258	2,520	8.35	9.0	2.9	900.7	3.5	0	657.8	512.6	635.4
W-71	259	736	8.52	4.2	2.4	265.3	2.3	24.3	245.3	193.9	67.2
W-72	260	808	8.06	29.8	16.9	227.4	9.4	0	208.7	275.8	79.2
W-73	261	516	8.39	14.2	3.4	137.7	1.2	0	270.9	31.9	60.0

Field #	Lab #	TDS	pH	mg/l Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4
W-74	262	328	8.61	32.3	16.6	41.6	3.1	0	197.1	12.0	54.7
TR3 1	263	2244	7.56	90.0	38.9	631.0	34.8	0	375.2	742.4	405.9
TR3 2	264	1208	8.20	13.4	18.5	377.7	3.1	0	416.1	185.8	303.5
TR3 3	265	332	7.81	59.7	27.1	16.3	1.2	0	240.4	22.0	47.6
TR3 4	266	1460	7.26	69.1	93.5	242.5	10.9	0	228.8	239.7	580.7
TR3 5	267	2876	7.47	428.4	74.5	253.6	4.7	0	91.5	382.9	1244.5
TR3 6	268	2252	7.94	180.5	95.3	412.2	18.0	0	234.3	109.2	1271.4
TR3 7	269	3156	7.56	616.4	59.9	158.8	8.6	0	171.4	145.7	1659.5
TR3 8	270	560	7.87	63.1	27.8	40.0	4.7	0	341.7	16.0	74.0
TR3 9	271	2000	7.49	205.2	73.9	315.4	11.3	0	270.9	411.2	618.1
TR3 10	272	192	7.93	20.2	3.0	26.0	4.7	0	110.4	8.1	22.1
W-75	273	340	8.74	1.2	0.1	115.9	2.3	32.4	140.9	23.4	46.6
W-76	274	380	8.13	12.4	4.5	100.5	1.2	0	225.1	20.9	49.5
W-77	275	676	8.31	11.2	4.2	216.3	1.2	0	317.9	49.3	169.5
W-78	276	904	8.12	23.4	10.2	252.6	2.0	0	361.8	75.5	229.6
W-79	277	1,152	7.98	19.0	6.6	381.4	10.6	0	460.7	96.8	339.1
W-80	278	608	8.29	9.0	3.0	195.2	2.3	0	311.8	84.4	70.6
W-81	279	832	7.86	15.2	7.0	297.2	2.7	0	326.4	210.6	91.3
W-82	280	3,020	7.48	166.7	50.8	762.6	8.2	0	276.4	882.8	588.4
W-83	281	6,764	7.60	253.7	126.9	1766.8	28.9	0	200.7	796.7	1677.7
W-84	282	576	7.96	18.4	8.4	164.4	2.3	0	411.9	14.5	50.0
AN1	283	300	7.88	26.2	2.2	54.0	2.0	0	151.3	7.1	42.8
AN2	284	360	8.00	13.0	1.6	115.4	2.0	0	241.0	23.7	44.0
AN3	285	380	8.29	39.7	3.8	66.9	2.7	0	207.4	15.6	64.8
AN4	286	1,372	7.59	79.7	8.3	353.3	14.1	0	228.8	122.7	492.8
AN5	287	1,184	7.82	122.0	25.3	178.6	8.2	0	172.1	144.3	351.9
AN6	288	1,020	8.00	125.2	14.6	161.4	6.6	0	83.6	117.0	369.1
AN7	289	624	7.52	60.5	9.7	134.3	4.3	0	195.2	68.1	167.7
AN8	290	272	7.83	28.8	2.7	55.6	2.3	0	170.8	3.5	51.6
AN9	291	384	7.85	19.8	4.7	98.2	3.1	0	81.1	59.2	107.3
AN10	292	524	7.92	29.8	8.5	112.2	3.5	0	156.8	53.9	111.7
AN11	293	688	7.68	81.8	9.1	110.6	4.3	0	202.0	38.3	198.6
AN12	294	384	7.73	34.5	3.0	77.9	2.7	0	185.5	8.5	74.8
AN13	295	420	8.26	25.0	1.8	103.4	3.9	0	167.8	27.3	84.1
AN14	296	340	7.75	26.0	1.8	70.3	2.3	0	176.3	1.8	58.8
AN15	297	240	7.93	18.2	2.5	49.6	2.0	0	139.1	6.4	38.4
AN16	298	384	8.39	30.7	3.0	89.9	2.7	0	178.8	19.8	86.9
AN17	299	524	8.17	30.7	5.7	129.2	7.0	0	237.4	29.4	113.3
AN18	300	352	8.43	31.3	3.2	67.8	2.7	0	157.4	27.3	58.8
AN19	301	675	8.33	81.0	23.5	74.5	2.7	0	181.8	42.5	197.0
AN20	302	628	7.41	76.1	7.2	91.7	3.5	0	187.9	64.2	124.9
AN21	303	404	8.27	39.9	6.3	74.5	3.5	0	186.7	9.6	88.5
AN22	304	396	8.41	25.4	2.5	93.8	2.3	0	172.1	20.9	76.4
AN23	305	384	8.44	22.0	2.1	53.4	2.0	0	148.0	2.1	51.6
N/A	306	192	8.12	14.2	1.3	35.2	0.8	0	82.0	1.4	44.0
N/A	307	224	8.44	14.0	1.3	34.0	0.8	0	97.6	1.1	23.2
N/A	308	116	7.89	9.0	2.3	9.9	1.2	0	54.3	0.4	11.6
N/A	309	240	8.45	24.4	4.2	31.5	1.6	0	109.8	18.8	26.4
N/A	310	76	8.02	12.4	2.4	7.1	1.2	0	51.2	0.4	8.8

Field #	Lab #	TDS	pH	mg/l Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4
TR4 1	311	2732	7.79	498.4	150.7	109.9	6.6	0	259.9	54.2	1368.6
TR4 2	312	880	8.00	152.9	62.1	26.2	3.5	0	206.8	9.2	383.8
TR4 3	313	1084	8.05	175.1	60.5	43.9	3.9	0	262.4	26.9	400.3
TR4 4	314	596	8.25	93.8	40.0	33.5	2.3	0	242.2	16.7	183.7
TR4 5	315	2476	7.27	460.7	95.9	33.5	2.7	0	244.1	12.4	1096.0
TR4 6	316	724	7.66	66.9	72.0	59.5	5.5	0	287.4	70.6	220.6
TR4 7	317	1992	7.56	243.1	108.7	95.9	5.5	0	323.4	72.7	713.7
TR4 8	318	696	7.59	77.1	41.0	43.2	2.7	0	265.4	36.9	145.7
TR4 9	319	1608	7.22	274.9	76.0	67.8	5.9	0	169.0	58.1	763.8
TR4 10	320	620	8.34	54.9	27.8	104.1	10.6	0	289.8	39.3	145.7
TR5 1	321	580	7.81	21.0	6.3	143.9	10.2	0	270.9	24.8	138.3
TR5 2	322	348	7.49	3.2	.5	92.6	.4	0	238.0	10.6	19.2
TR5 3	323	376	7.88	13.8	3.9	77.2	5.5	0	226.4	11.3	21.1
TR5 4	324	420	7.68	38.7	9.0	70.3	4.7	0	278.8	14.9	49.0
TR5 5	325	248	7.34	8.0	1.1	55.9	.8	0	145.2	10.3	19.2
TR5 6	326	368	7.44	44.5	7.3	24.8	8.6	0	225.1	3.5	18.2
TR5 7	327	360	7.62	61.3	12.7	17.7	9.4	0	281.3	4.9	19.2
TR5 8	328	364	8.21	27.4	.4	70.8	3.5	0	233.1	13.8	19.2
TR5 9	329	888	7.81	30.7	3.3	204.6	14.8	0	207.4	23.4	312.2
TR5 10	330	300	7.52	48.3	6.9	10.8	1.9	0	203.8	1.1	11.5
TR5 11	331	300	7.64	7.6	.4	64.1	.4	0	190.4	1.1	13.4
TR5 12	332	356	7.24	11.4	1.0	85.7	4.3	0	213.6	15.6	17.3
TR5 13	333	276	8.32	27.4	2.3	54.7	5.9	0	220.3	6.4	10.6
NM1	381	432	9.09	4.8	0.1	180.5	5.9	21.6	69.5	153.1	80.7
NM2	382	452	9.10	3.6	0.1	180.5	5.9	19.2	72.0	151.0	79.7
NM3	383	464	8.16	5.8	0.2	173.8	5.9	0	120.8	148.9	80.7
NM4	384	460	9.01	3.6	0.1	185.3	5.9	18.0	78.1	152.1	80.7
NM5	385	448	9.03	3.2	0.1	186.2	5.9	20.4	73.2	153.9	78.8
NM6	386	400	9.10	3.2	0.1	184.1	5.9	20.4	73.2	151.0	81.6
NM7	387	1,084	7.97	4.0	1.2	440.7	1.2	0	1145.9	29.8	23.0
NM8	388	2,772	6.56	264.7	208.2	91.0	5.5	0	108.6	25.9	1383.3
NM9	389	536	7.72	84.0	18.7	39.8	2.7	0	245.3	59.6	76.8
NM10	390	484	8.08	71.7	35.2	34.0	5.9	0	312.4	40.1	72.0
NM11	391	388	7.74	66.9	28.6	50.0	5.9	0	313.6	25.9	78.8
NM12	392	296	7.75	80.2	7.4	19.8	2.3	0	235.5	30.1	41.3
NM13	393	946	8.32	23.4	15.5	305.1	4.7	9.6	640.7	27.3	205.6
NM14	394	416	7.90	41.7	20.7	95.2	2.7	0	319.7	21.6	109.5
NM15	395	1,124	6.51	137.7	55.3	191.0	16.8	0	696.8	107.8	238.2
NM16	396	1,080	6.50	141.9	57.4	185.3	16.8	0	705.4	107.8	234.4
NM17	397	1,228	6.50	119.8	49.1	186.2	16.8	0	699.2	108.5	238.2
NM18	398	1,072	6.62	138.9	56.5	183.2	16.8	0	695.6	107.4	219.0
NM19	399	2,652	7.03	21.6	7.6	993.1	36.0	0	2172.2	235.4	187.3
NM20	400	2,668	7.20	20.2	7.4	993.1	36.0	0	2245.4	237.2	187.3
NM21	401	2,576	7.74	11.6	4.8	1,017.7	34.8	0	2123.4	251.7	196.9
NM22	402	512	8.56	10.0	0.6	160.2	4.3	0	112.3	89.0	144.1
NM23	403	272	7.90	43.9	8.1	22.7	1.9	0	150.1	11.3	49.0
NM24	404	284	8.31	38.7	5.8	37.5	3.5	0	152.5	0.3	66.3
NM25	405	356	8.35	14.8	1.4	94.2	4.3	0	283.1	0	25.0
NM26	406	56	7.17	5.2	1.5	1.8	0.8	0	28.1	0	3.8

Field #	Lab #	TDS	pH	mg/l Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4
NM27	407	184	8.10	16.8	4.8	20.5	2.7	0	108.6	0.7	20.2
NM28	408	112	8.14	18.8	5.2	21.1	2.7	0	109.8	2.5	21.2
NM29	409	552	7.36	27.4	5.1	128.0	8.6	0	217.2	52.1	121.0
NM30	410	396	7.43	28.8	5.5	72.4	6.6	0	192.8	24.8	60.5
NM31	411	584	8.14	22.8	5.2	149.2	12.5	0	196.5	57.1	137.4
NM32	412	232	8.25	32.5	7.8	12.9	3.5	0	133.0	0	31.7
NM33	413	3,164	7.00	154.3	25.5	805.6	76.6	0	876.2	176.9	1330.4
NM34	414	216	9.23	2.2	0.1	47.3	0.2	16.8	61.0	0	30.7
PV1	415	11,352	7.89	923.8	175.0	2366.7	17.2	0	186.7	3843.4	224.78
PV2	416	3,652	8.27	529.0	138.3	71.7	6.2	0	135.4	79.1	1690.7
PV3	417	836	7.90	116.4	42.8	20.9	1.2	0	157.4	14.2	338.1
PV4	418	944	7.88	124.4	45.3	21.1	1.5	0	205.1	12.8	338.1
PV5	419	3,384	7.97	527.8	86.1	36.3	2.7	0	131.8	90.0	1436.1
PV6	420	4,696	7.41	487.2	322.7	215.9	14.1	0	209.9	159.5	2391.9
PV7	421	3,900	8.04	524.6	206.4	75.8	5.1	0	130.6	15.2	2017.3
PV8	422	936	7.30	127.8	41.9	29.2	1.5	0	236.7	13.8	318.9
PV9	423	640	8.56	96.2	31.2	18.1	2.0	14.4	186.7	7.4	211.3
PV10	424	704	8.49	97.0	31.0	20.0	1.5	13.2	166.0	10.3	228.6
PV11	425	812	8.39	86.6	54.4	21.1	2.0	7.2	172.1	16.7	322.8
T1	426	288	7.67	80.2	8.4	23.5	10.56	0	283.1	8.5	48.0
T2	427	1,968	7.53	149.1	83.0	430.6	8.21	0	403.9	296.4	803.1
T3	428	1,616	7.73	141.7	62.1	358.4	11.7	0	314.8	302.4	674.4
T4	429	448	8.35	39.7	1.6	173.1	2.35	0	461.3	18.1	72.1
T5	430	1,316	8.58	31.7	7.8	407.4	3.5	13.2	402.7	57.8	482.2
T6	431	2,836	7.46	264.7	70.8	554.3	2.74	0	441.8	209.2	2160.4
T7	432	208	8.18	68.1	2.6	22.3	0.39	0	177.0	4.6	214.7
T8	433	632	8.21	90.2	13.4	108.5	1.17	0	357.6	19.5	527.9
T9	434	5,208	7.01	439.5	112.7	1080.5	13.3	0	803.0	30.8	2977.9
T10	435	12,012	8.03	99.8	111.6	3490.8	16.4	0	235.5	128.7	7367.9
T11	436	1,096	7.98	41.1	13.9	335.9	2.74	0	441.8	39.7	903.0
T12	437	3,656	8.09	269.3	100.9	775.9	12.5	0	713.9	292.5	1705.1
T13	438	2,616	9.22	5.0	28.6	1011.8	18.4	82.8	297.8	449.9	1335.3
T14	439	244	8.07	56.3	15.80	14.0	3.13	0	249.0	1.8	219.5
T15	440	660	7.87	106.6	55.67	36.1	12.51	0	488.1	2.8	561.0
NM50	441	252	7.70	34.5	5.6	58.2	1.6	0	200.1	13.8	56.7
NM51	442	376	8.92	1.2	.01	152.4	0.8	12.0	181.8	2.5	142.2
NM52	443	212	8.10	35.1	19.1	17.5	5.9	0	194.5	1.4	40.3
STROM	444	768	1.74	74.1	11.5	46.4	3.9	0	0	62.4	32.7
RK1	445	1,136	7.22	164.7	48.6	42.8	1.6	0	61.0	47.5	390.0
RK2	446	1,900	7.54	299.4	61.1	100.9	1.6	0	435.7	113.8	653.7
RK3	447	520	7.55	101.2	17.4	24.1	1.2	0	260.0	19.8	150.0
RK4	448	332	7.71	23.6	3.9	63.4	0.4	0	128.1	15.6	96.5
RK5	449	1,584	6.96	255.5	47.4	86.9	2.3	0	378.3	163.8	436.6
RK6	450	1,716	7.32	264.3	53.7	144.4	0.4	0	323.4	131.9	713.7
RK7	451	1,632	7.56	232.8	43.5	128.7	0.8	0	246.5	108.1	631.1
RK8	452	1,832	7.58	250.0	53.9	102.8	1.6	0	244.1	216.3	552.8
RK9	453	552	7.83	101.8	17.5	40.2	3.5	0	225.8	26.2	181.5
RK10	454	796	7.77	141.3	26.5	41.2	2.0	0	280.7	37.9	265.1
RK11	455	144	7.33	23.6	4.7	7.4	0.4	0	28.1	2.1	62.9
RK12	456	548	7.49	95.8	20.0	24.6	1.6	0	166.0	18.1	199.3

Field #	Lab #	TDS	pH	mg/l Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4
RK13	457	3,476	7.71	485.2	167.8	390.4	2.3	0	205.0	745.9	1377.0
RK14	458	1,472	7.79	220.2	34.3	104.6	3.9	0	324.6	95.7	470.2
RK15	459	116	7.19	18.4	3.0	9.9	0.8	0	33.0	3.2	46.1
RK16	460	1,580	7.32	254.7	39.9	83.4	2.3	0	346.6	113.8	490.9
RK17	461	876	8.99	4.6	11.1	306.9	2.3	39.6	163.5	149.6	288.7
RK18	462	1,316	7.85	161.5	40.0	139.1	2.7	0	177.0	147.5	466.4
RK19	463	700	7.15	116.2	22.8	36.8	1.2	0	240.4	53.2	176.3
RK20	464	2,464	6.88	414.8	137.8	118.6	4.3	0	535.7	272.3	872.7
RK21	465	980	7.60	126.6	39.6	83.4	2.0	0	228.2	103.9	282.9
RK22	466	1,728	7.64	172.1	53.8	184.1	3.5	0	101.3	95.4	782.9
RK23	467	1,920	7.61	240.5	81.4	112.9	3.5	0	273.4	220.9	597.5
RK24	468	1,128	7.74	205.2	31.7	56.8	1.6	0	272.1	124.4	320.4
RK25	469	1,996	7.73	238.5	75.5	119.5	1.6	0	878.0	194.3	691.2
W85	539	752	8.21	9.8	3.9	259.3	9.8	0	372.2	61.3	205.6
W86	540	732	7.82	26.4	4.2	244.6	18.0	0	346.6	52.8	245.9
W87	541	560	8.54	10.0	17.7	172.9	6.6	0	263.6	53.9	171.0
W88	542	516	8.61	6.4	5.8	192.6	7.0	20.4	256.3	46.4	141.2
W89	543	388	8.15	17.2	3.0	119.5	3.9	9.6	201.4	36.9	90.3
GG1	544	7,552	8.40	150.7	414.3	1481.9	86.0	28.8	438.1	1111.4	3535.1
GG2	545	2,348	7.44	156.1	111.7	423.5	16.8	0	504.0	319.4	922.2
GG3	546	888	9.18	35.3	65.6	166.2	9.4	28.8	86.6	123.0	426.5
GG4	547	312	7.86	46.1	21.4	28.5	2.0	0	208.7	7.8	83.6
GG5	548	392	7.49	103.0	20.3	25.3	2.7	0	385.6	2.5	78.8
SA1	549	9,140	7.12	645.3	186.0	2030.4	37.1	0	130.6	2476.7	2958.7
SA2	550	536	7.51	108.2	25.9	23.7	0.8	0	368.5	73.4	110.5
SA3	551	280	7.70	85.6	17.5	12.9	0.4	0	301.4	4.2	53.8
SA4	552	284	7.60	86.2	12.0	4.8	6.4	0	308.7	1.8	8.6
SA5	553	360	7.54	107.4	12.9	5.5	0.4	0	372.2	1.4	20.2
SA6	554	396	7.47	108.2	22.8	9.8	0.8	0	428.3	1.8	14.4
SA7	555	352	7.35	99.2	21.5	3.9	0.8	0	402.7	0.7	7.7
SA8	556	304	7.83	60.3	25.0	14.2	1.2	0	225.8	10.6	73.0
SA9	557	1,032	7.16	163.5	68.7	74.0	4.7	0	399.0	28.0	489.9
SA10	558	420	7.56	94.6	32.2	9.2	1.2	0	272.1	3.2	163.3
SA11	559	304	7.79	47.9	23.1	43.2	1.2	0	253.8	11.3	69.2
SA12	560	2,036	7.29	302.8	101.5	81.6	2.7	0	201.4	44.3	1071.1
SA13	561	1,060	7.21	168.7	59.3	13.1	1.7	0	285.6	4.2	441.1
SA14	562	4,164	7.31	567.7	239.5	131.0	2.7	0	205.0	115.6	2219.0
SA15	563	612	7.53	81.0	48.4	23.0	1.7	0	300.2	16.0	180.6
SA16	564	700	7.72	97.6	46.5	25.3	2.0	0	228.2	8.1	303.5
SA17	565	504	7.29	89.2	46.8	9.2	1.7	0	232.4	3.2	182.5
SA18	566	1,020	7.44	181.0	65.4	13.8	2.0	0	312.4	8.5	474.5
SA19	567	2,124	7.20	305.8	122.5	16.1	5.1	0	296.5	4.2	1012.5
SA20	568	408	7.53	96.2	14.9	9.9	0.4	0	356.3	4.2	17.3
US98	569	124	8.01	18.0	5.3	19.1	2.3	0	129.3	1.4	4.8
US99	570	116	7.45	19.6	6.3	8.7	3.9	0	101.3	1.4	17.3
US100	571	184	7.61	32.5	10.2	15.4	5.5	0	185.5	0.7	3.8
US101	572	480	7.82	27.0	12.1	158.6	0.4	0	477.1	22.3	50.9
US102	573	804	7.66	38.3	23.0	273.4	0.4	0	641.9	97.5	93.2

Field #	Lab #	TDS	pH	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	K (mg/l)	CO_3 (mg/l)	HCO_3 (mg/l)	Cl (mg/l)	SO_4 (mg/l)
US90	574	172	7.54	62.5	10.4	16.1	0.8	0	266.0	1.1	5.8
US91	575	76	9.05	13.2	4.9	20.7	2.7	14.4	91.5	2.5	4.8
US92	576	288	7.83	18.0	3.6	58.2	0.4	0	195.2	10.6	10.6
US93	577	292	8.87	12.6	4.4	85.1	2.0	18.0	200.1	21.3	11.5
US94	578	336	8.62	1.8	0.5	150.3	0.4	16.8	289.2	31.5	24.0
US95	579	220	7.92	20.0	9.2	7.3	3.9	0	119.6	1.1	7.7
US96	580	92	6.69	9.0	3.6	3.2	5.5	0	37.8	1.4	15.4
US97	581	164	7.45	20.8	8.3	6.2	2.3	0	100.1	1.4	14.4
US98	582	596	7.76	36.1	6.2	172.4	10.5	0	139.1	236.8	34.6
US105	583	232	8.15	23.2	16.5	42.8	3.9	0	255.0	9.2	7.7
US106	584	572	7.77	80.1	21.9	100.7	1.9	0	383.2	118.0	13.4
US107	585	220,152	8.24	195.2	4,884.9	66,204.9	1173.0	0	238.0	100,937.9	28,722.4
US108	586	716	8.21	12.8	8.3	235.9	0.8	0	589.4	44.0	40.3
US109	587	486	7.46	96.2	22.4	42.3	0.4	0	377.1	15.6	97.0
US110	588	516	7.92	32.3	8.9	156.8	0.8	0	361.2	38.1	149.8
NM53	589	892	8.08	31.3	46.9	247.8	9.8	21.6	864.0	23.4	80.7
NM54	590	40	7.17	10.6	2.3	3.7	0.8	0	37.8	5.0	5.8
NM55	591	220	7.11	54.1	8.5	14.2	2.0	0	239.2	1.8	5.8
GG100	592	572	7.51	37.3	17.9	156.3	6.3	0	574.8	16.3	8.6
GG101	593	624	8.13	45.7	8.5	152.6	3.1	0	263.6	13.5	267.0
GG102	594	56	6.75	9.4	2.3	4.1	1.2	0	41.5	1.4	5.8
US103	595	316	7.24	39.9	6.8	79.1	3.5	0	150.1	70.2	88.4
US104	596	352	7.56	47.7	8.5	76.3	3.9	0	150.1	77.6	88.4
LEGGS	597	348	7.86	.4	.2	149.4	2.0	0	189.1	58.5	88.4
NM56	598	1892	7.97	175.6	35.4	346.2	9.4	0	369.6	257.7	659.9
SD1	602	1325	8.20	218.64	30.63	175.87	22.29	0	369.76	185.77	480.31
SD2	603	820	7.76	92.38	18.48	168.29	15.25	0	279.46	132.95	255.04
SD3	604	2564	7.88	118.0	37.4	795.2	9.0	0	418.6	722.9	699.8
SD4	605	1548	7.54	213.8	34.5	252.7	8.6	0	419.8	196.1	589.8
SD5	606	1432	7.61	175.8	35.0	248.8	7.4	0	320.9	186.5	610.0
SD6	607	1026	7.60	148.5	22.4	157.3	7.0	0	308.8	113.1	350.1
SD7	608	4532	7.43	437.9	99.3	890.9	14.9	0	411.3	820.0	1800.2
SD8	609	464	8.35	43.9	10.3	100.2	6.3	15.0	216.0	49.3	85.0
SD9	610	3388	8.05	428.1	69.1	603.3	39.1	0	507.7	547.8	1419.8
SD10	611	2844	7.58	315.0	51.2	558.7	41.8	0	399.1	503.4	1139.8
SD11	612	2244	7.58	267.9	47.8	428.1	29.3	0	445.4	329.0	900.1
SD12	613	2262	8.02	440.9	10.2	138.6	4.3	0	269.7	13.1	1099.9
SD13	614	560	8.08	67.7	17.4	104.6	4.7	0	244.1	72.7	145.1
SD14	615	1396	7.80	123.7	37.3	299.6	6.7	0	268.5	314.1	410.2
SD15	616	1220	7.77	124.1	32.8	245.5	6.3	0	261.2	177.9	479.8
SD16	617	1200	7.67	168.7	30.3	222.5	9.0	0	400.3	151.7	479.8
SD17	618	884	7.89	108.6	22.9	155.4	7.0	0	292.9	137.2	269.9
SD18	619	1084	7.80	121.0	26.4	218.6	5.5	0	297.8	270.2	219.9
SD19	620	2556	7.67	304.0	52.4	432.7	29.7	0	408.8	391.1	1039.9
SD20	621	2800	7.78	352.7	58.8	479.1	27.4	0	446.7	384.7	1250.2
SD21	622	816	7.87	91.8	14.8	178.9	16.4	0	230.7	182.2	170.0
SD22	623	312	7.46	29.7	8.8	62.3	5.5	0	231.9	17.0	20.2
SD23	624	340	8.20	40.5	20.1	31.0	3.9	0	223.3	18.1	48.0
SD24	625	576	8.20	22.0	6.0	186.9	2.0	0	194.0	68.8	185.0
SD25	626	644	8.42	46.1	5.8	167.4	7.0	10.8	187.3	68.1	215.2

Field #	Lab #	TDS	pH	Ca (mg/l)	Mg (mg/l)	Na (mg/l)	K (mg/l)	CO_3 (mg/l)	HCO_3 (mg/l)	Cl (mg/l)	SO_4 (mg/l)
SD26	627	788	8.22	38.7	11.9	213.1	8.0	20.4	389.3	48.2	135.0
SD27	628	2452	7.40	434.6	13.7	215.9	10.2	0	18.3	7.4	1540.0
SD28	629	496	8.17	30.1	18.7	93.8	5.1	0	157.4	16.7	184.9
SD29	630	1268	7.70	187.2	16.0	139.3	8.2	0	73.2	18.1	740.2
SD30	631	884	7.79	88.0	27.4	135.0	7.4	0	136.7	26.2	450.0
SD31	632	456	7.78	79.8	21.9	47.6	11.3	0	350.2	25.5	70.1
SD32	633	1112	8.09	89.4	48.9	156.3	8.2	0	119.6	20.6	610.0
SD33	634	1332	8.16	118.0	66.7	172.9	4.3	0	169.6	122.3	590.0
SD34	635	316	7.95	42.9	11.4	42.1	3.1	0	159.9	15.6	101.8
Colm1	636	512	8.20	4.6	5.3	174.5	43.8	0	380.7	34.7	70.1
Colm2	637	500	7.98	9.8	9.5	165.1	29.3	0	333.1	42.9	84.0
Colm3	638	504	8.00	15.6	10.0	165.1	15.6	0	351.4	38.6	73.0
Colm4	639	748	8.08	13.0	6.9	286.4	2.7	0	325.8	201.7	101.8
Pal1	691	612	7.87	19.2	3.9	219.8	18.7	0	338.0	53.5	183.9
Pal2	692	348	8.09	9.6	3.6	139.3	3.1	0	136.1	40.1	76.4
Pal3	693	576	8.22	7.2	5.7	201.4	5.5	0	173.7	54.2	144.1
Pal4	694	700	8.07	31.5	5.1	234.5	19.6	0	201.4	54.6	265.1
Pal5	695	932	8.53	2.4	1.0	356.8	2.3	48.0	224.1	92.2	274.7
ALBQ1	696	312	7.90	40.5	10.3	46.0	5.9	0	151.3	25.9	91.7
ALBQ2	697	316	7.81	58.1	7.5	41.6	3.9	0	176.9	18.4	93.2
ALBQ3	698	400	7.72	68.3	12.0	40.0	9.0	0	144.0	36.2	114.8
ALBQ4	699	288	8.34	5.4	0.8	106.0	1.6	16.8	172.1	5.0	60.0
SD35	780	452	8.01	3.6	0.2	191.7	2.7	0	289.2	46.8	71.6
Jemez1	808	144	7.33	16.2	2.5	9.7	3.1	0	28.1	28.4	22.1
Jemez2	809	3496	7.06	285.6	24.1	1087.9	184.6	0	1526.6	1420.2	50.0
Jemez3	810	162	7.09	17.6	2.8	20.0	4.7	0	74.4	21.3	18.2
Jemez4	811	172	7.20	17.8	2.8	17.0	4.7	0	75.7	16.0	13.9
Jemez5	812	1952	6.89	129.1	5.2	603.5	63.7	0	685.8	740.6	53.8
Jemez6	813	1884	6.90	103.0	5.3	608.8	64.1	0	691.9	748.4	53.8
Jemez7	814	2156	7.01	97.2	4.5	668.8	70.8	0	738.3	859.7	0.5
Jemez8	815	170	7.27	20.4	2.7	19.8	4.7	0	85.4	22.3	13.9
Jemez9	816	184	7.20	19.7	2.7	21.4	5.1	0	2855.6	23.4	22.1
SD1	817	2020	7.49	291.4	34.9	269.4	20.7	0	102.5	255.3	979.8
JUST1	818	568	--	5.4	0.4	168.5	10.9	0	275.8	21.6	129.7
A	N/A	297	8.09	5.6	1.7	58.4	1.6	0	142.8	9.6	24.9
B	N/A	220	7.67	8.4	4.4	20.9	0.8	0	81.7	2.1	19.2
C	N/A	6128	7.37	322.8	80.6	1469.5	76.6	0	909.1	1689.7	1258.4
D	N/A	7740	7.19	380.4	94.6	1837.6	89.1	0	970.2	1948.8	1815.5
E	N/A	11300	6.87	417.8	73.4	3720.4	92.7	0	1464.4	3067.4	3342.9
F	N/A	148	8.02	3.2	0.5	23.2	2.0	0	59.8	5.0	9.6
G	N/A	1852	2.52	8.6	2.6	6.7	9.8	0	0	<.3	912.6
H	N/A	3040	2.35	200.2	35.7	7.1	9.0	0	0	7.8	1604.2
I	N/A	3936	2.12	121.0	9.8	11.9	19.2	0	0	9.2	2046.1
AZ178	374	232	8.48	6.4	0.7	74.2	1.2	0	140.3	17.0	40.3

Table 3. Analysis of Iron, Fluoride, Boron, Phosphorous, and Silica for Selected Thermal Waters in New Mexico and West Texas

Field #	Lab #	Fe (ppm)	F (ppm)	B (ppm)	P (ppm)	SiO_2 (ppm)
J -1		<.10	1.05	.04	.02	14.50
J -2		<.10	.72	.03	.02	45.35
J -3		<.10	1.43	.28	.02	75.18
J -4		<.10	1.49	.22	.01	64.80
J -5		<.10	1.80	.38	.01	90.94
J -6		<.10	.51	.02	.02	26.33
J -7		<.10	.62	.04	.01	29.31
1P		1.10	.35	.08	.01	31.3
2P		.20	12.6	.48	.02	147.5
3P		.40	12.0	.50	.02	143.0
4P		.83	7.25	.42	.01	115.6
5P		<.10	3.55	.25	.01	42.3
10P2		.53	7.25	.51	.01	60.7
13P		1.31	3.90	.10	.01	74.1
14P		.16	.85	.06	.01	48.4
15P		<.10	2.35	.18	.01	34.3
20P		<.10	2.65	.10	.01	50.4
22P		<.10	1.20	.06	.01	43.3
23P		7.66	1.15	.12	.01	29.3
24P		21.18	9.35	.50	.01	149.7
25P		.36	3.55	.12	.01	34.3
W-1	N/A	.20	2.68	.99	.02	69.5
W-2	N/A	.04	1.36	1.02	.02	73.8
W-3	N/A	.12	2.15	.67	.02	55.6
W-4	N/A	.10	2.15	.42	.02	58.8
W-5	N/A	.15	2.24	.55	.01	47.1
W-6	N/A	.42	2.68	.69	.02	65.2
W-7	N/A	.42	3.67	.35	.05	37.9
W-8	N/A	.34	2.68	.33	.02	47.1
W-9	N/A	.01	2.68	.29	.02	4.3
W-10	N/A	.21	1.40	.74	.01	8.3
W-11	N/A	1.24	.86	.14	.01	28.4
W-12	N/A	.88	.78	.16	.01	26.5
W-13	N/A	2.24	1.00	.25	.01	27.4
W-14	N/A	1.94	1.26	.35	.01	23.3
W-15	N/A	.30	1.11	.55	.01	48.1
W-16	N/A	.90	1.07	.27	.01	14.3
W-17	N/A	.10	.93	.16	.01	13.3
W-18	N/A	2.96	1.15	.23	.01	68.4
W-19	N/A	.62	1.50	.90	.01	43.0
W-20	N/A	.88	.86	.10	.02	66.3
W-21	N/A	.46	1.04	.10	.02	68.4
W-22	N/A	.25	.67	.07	.02	65.2
W-23	N/A	<.15	.80	.14	.04	41.9
W-24	N/A	.61	2.50	.76	.02	19.5
W-25	N/A	1.43	2.50	.32	.03	41.9
W-26	N/A	.29	8.00	.90	.28	53.5
W-27	N/A	<.15	2.25	.41	.04	63.1
W-28	N/A	1.00	1.65	.47	.02	77.0

Field #	Lab #	Fe (ppm)	F (ppm)	B (ppm)	P (ppm)	SiO_2 (ppm)
W29	N/A	.27	1.15	.05	.02	33.6
W30	N/A	<.15	2.50	.15	.01	39.8
W31	N/A	<.15	2.65	.40	.01	39.8
W32	N/A	<.15	2.05	.55	.10	52.4
W33	N/A	<.15	3.30	.49	.02	93.5
W34	N/A	.15	1.85	.25	.02	85.8
W35	N/A	2.94	1.40	.21	.05	39.8
W36	N/A	.83	3.00	.73	.01	48.1
B1	N/A	.12	.67	.12	.01	46.2
B2	N/A	.49	4.44	.86	.02	69.9
B3	N/A	.49	.57	.22	.01	35.4
B4	N/A	.53	.45	.23	.03	63.9
B5	N/A	<.10	5.90	.34	.01	31.3
B6	N/A	<.10	5.90	.37	.02	32.3
B7	N/A	<.10	1.48	.08	.02	28.9
B8	N/A	1.25	.64	.69	.03	44.3
B9	N/A	.38	1.49	.38	.01	44.3
B10	N/A	<.10	3.10	.35	.01	44.3
B11	N/A	<.10	3.10	.35	.01	44.3
B12	N/A	<.10	2.46	.20	.05	37.3
B13	N/A	<.10	2.02	.09	.02	25.3
B14	N/A	<.10	.69	.09	.02	21.3
B15	N/A	.12	1.73	.08	.01	32.1
B16	N/A	.36	.27	.07	.06	44.3
B17	N/A	<.10	3.10	.09	.01	35.3
B18	N/A	<.10	2.86	.10	.01	34.2
B19	N/A	<.10	3.20	.38	.01	31.3
WT1	N/A	<.10	2.15	5.48	.01	49.5
WT2	N/A	.11	1.25	.17	.01	22.3
WT3	N/A	.18	8.10	1.25	.01	185.9
WT4	N/A	.74	2.08	1.15	.01	27.5
WT5	N/A	<.10	3.15	.16	.01	31.6
WT6	N/A	.11	4.25	.30	.01	42.1
WT7	N/A	<.10	3.95	.27	.01	40.0
WT8	N/A	<.10	.78	.03	.01	41.1
B20	19	.16	2.70	.30	0	26.87
B21	20	.14	4.10	2.22	0	8.99
B22	21	1.28	2.50	1.96	.02	16.04
B23	22	.32	1.10	.18	0	29.07
B24	23	<.10	1.20	.09	0	26.87
B25	24	.22	.25	.02	0	23.58
B26	25	<.10	.11	0	.01	36.80
B27	26	<.10	.11	0	.01	36.80
B28	27	1.15	2.70	0	0	50.12
Gila 1	28	<.10	.53	0	0	42.06
Gila 2	29	.12	6.10	.01	.01	45.16
Gila 3	30	.25	3.10	.02	0	41.03
Gila 4	31	<.10	16.00	0	0	55.56
Gila 5	32	<.10	8.70	.03	0	72.27
Gila 6	33	<.10	8.70	.02	0	73.31
Gila 7	34	.22	9.50	.07	0	85.89
Gila 8	35	1.25	8.70	.11	.01	85.89
Gila 9	36	.29	.61	.01	0	59.73
Gila 10	37	3.11	.66	.01	0	60.78
Gila 11	38	<.11	3.00	.01	0	54.53

Field #	Lab #	Fe	F	B	P	SiO_2
LD1	132	<.15	3.66	.46	0	33.52
LD2	133	<.15	6.90	.46	.01	39.64
LD3	134	<.15	.44	.32	.01	43.36
LD4	135	.37	2.67	.50	.01	32.30
LD5	136	<.15	7.11	.64	.01	47.15
LD6	137	.62	.30	.12	.01	38.08
LD7	138	4.70	.16	.12	.02	47.62
LD8	139	6.39	1.34	.06	.01	45.23
LD9	140	<.15	.12	.04	.14	47.62
LD10	141	.56	.11	.04	.01	39.28
LD11	142	5.77	1.12	.12	.01	52.37
LD12	143	<.15	.18	.06	.01	35.68
LD13	144	<.15	.14	.06	.01	39.28
LD14	145	.56	.31	.10	.01	14.23
LD15	146	1.49	.42	.08	.01	47.62
LD16	147	.22	.22	.08	.01	41.65
LD17	148	1.91	.16	.08	0	44.03
LD18	149	.78	2.26	.12	0	42.85
Gila 20	150	.31	9.45	.12	.01	67.65
Gila 21	151	<.15	7.65	.08	.01	50.00
Gila 22	152	<.15	11.85	.12	0	68.91
Gila 23	153	.25	10.50	.92	0	21.39
Gila 24	154	<.15	5.85	.16	0	34.51
Gila 25	155	<.15	7.35	.44	0	47.62
Gila 26	156	<.15	3.00	.14	.01	49.40
Gila 27	157	<.15	19.05	2.56	.01	63.73
Gila 28	158	<.15	1.00	.12	.01	52.95
Gila 29	159	<.15	.49	.14	.23	57.75
Gila 30	160	.49	18.45	.42	.06	48.22
MFG1	161	.37	4.86	.05	.20	51.0
MFG2	162	.42	5.28	.02	.16	56.0
MFG3	163	<.10	5.28	.07	.09	56.5
MFG4	164	<.10	5.07	0	.09	54.0
R1	165	.92	.69	.28	.11	72.5
R2	166	.37	1.06	.48	.16	65.0
TR1 2	206	.23	1.05	.47	.01	19.0
TR1 3	207	<.10	1.53	.66	.01	19.0
TR1 4	208	.45	1.95	.24	.01	24.5
TR1 5	209	6.6	1.85	.24	.01	23.0
TR1 6	210	.26	1.45	.36	.01	25.0
TR1 7	211	.52	1.76	.26	.01	18.5
TR1 8	212	<.10	1.76	.36	.01	23.0
TR1 9	213	.16	1.85	.31	.01	21.5
TR1 10	214	.16	1.85	.29	.02	23.0
TR1 11	215	1.47	1.85	.46	.01	14.0
TR1 12	216	.33	2.61	.40	.01	12.5
TR1 13	217	1.63	2.52	.62	.01	21.0
TR1 14	218	19.5	1.98	.71	.01	22.5
TR1 15	219	.89	2.16	.63	.01	17.5
TR1 16	220	3.73	2.52	.81	.01	13.0
TR1 17	221	.16	1.14	.13	.01	29.5
TR1 18	222	2.00	2.07	.78	.01	15.5

Field #	Lab #	Fe	F	B	P	SiO_2
TR2 1	223	.38	.84	.12	.01	17.5
TR2 2	224	<.10	.10	0	.01	12.5
TR2 3	225	<.10	.13	0	.01	16.0
TR2 4	226	<.10	.20	0	.01	19.5
TR2 5	227	.28	.79	.26	.01	17.0
TR2 6	228	.23	.38	.05	.01	23.5
TR2 7	229	.21	.76	.93	.01	27.0
TR2 8	230	.35	.79	.23	.01	14.5
TR2 9	231	.19	1.53	.17	.01	20.0
TR2 10	232	.28	1.27	.25	.01	20.0
TR2 11	233	.45	3.75	2.03	.01	23.0
TR2 12	234	1.71	2.28	.56	.01	15.0
TR2 13	235	.99	4.02	.65	.01	31.5
TR2 14	236	.16	2.07	.61	.01	18.5
TR2 15	237	.16	1.71	.50	.01	22.0
W50	238	<.10	1.02	.22	.01	22.5
W51	239	.30	3.00	.42	.01	6.3
W52	240	<.10	7.50	.69	.02	41.0
W53	241	<.10	1.80	.74	.01	22.0
W54	242	.27	3.66	1.18	.02	87.5
W55	243	.19	2.16	.78	.02	57.0
W56	244	<.10	.81	.23	.01	26.0
W57	245	22.5	2.28	.80	.01	24.0
W58	246	.21	2.52	1.08	0	39.5
W59	247	2.62	2.85	.87	.04	45.0
W60	248	177.0	1.08	.18	.02	34.5
W61	249	.23	.22	.38	.01	16.2
W62	250	.33	3.66	1.57	.01	24.0
W63	251	.96	3.48	3.51	.02	28.0
W64	252	.64	3.99	2.00	.01	94.5
W65	253	.16	.99	.71	.03	37.0
W66	254	.62	5.82	3.13	0	21.5
W67	255	1.71	3.48	3.40	.02	28.5
W68	256	.82	3.99	1.78	.02	98.5
W69	257	<.10	8.25	1.56	.04	39.0
W70	258	1.04	6.15	2.91	.02	29.7
W71	259	7.41	1.71	.91	0	29.5
W72	260	.50	.93	.78	.03	39.0
W73	261	.20	2.52	.45	0	59.0
W74	262	.49	2.52	.21	.03	31.7
TR3 1	263	<.10	3.51	1.41	0	18.5
TR3 2	264	.41	1.80	2.05	0	8.00
TR3 3	265	2.08	.41	.40	0	1.45
TR3 4	266	.36	1.89	.98	0	3.95
TR3 5	267	.24	1.38	.70	.17	30.0
TR3 6	268	.41	1.56	.75	.01	13.0
TR3 7	269	.58	.78	.75	.02	26.5
TR3 8	270	<.10	.36	.73	.01	25.5
TR3 9	271	6.79	.99	1.18	0	13.5
TR3 10	272	.41	.50	.43	0	46.0
W75	273	.54	1.08	.14	0	49.5
W76	274	.31	.90	.10	.02	56.2
W77	275	6.84	1.23	.23	.02	52.0
W78	276	<.10	1.50	.30	.01	66.5

Field #	Lab #	Fe	F	B	P	SiO_4
W79	277	.25	2.16	.53	0	71.0
W80	278	1.62	1.50	.48	.04	42.0
W81	279	.76	1.71	.76	.02	37.5
W82	280	1.00	.43	.78	.01	40.0
W83	281	<.10	.33	1.36	.03	15.5
W84	282	<.10	1.54	.22	0	58.5
AN1	283	<.10	1.60	.12	.05	58.5
AN2	284	14.3	.95	.17	.01	15.5
AN3	285	14.92	.66	.02	.04	68.5
AN4	286	<.10	2.85	.59	.01	97.5
AN5	287	<.10	3.48	.18	.01	50.5
AN6	288	74.58	1.98	.78	0	30.0
AN7	289	1.73	2.28	.17	0	29.5
AN8	290	3.01	1.14	.05	0	33.5
AN9	291	47.69	.84	.01	0	.95
AN10	292	8.54	.63	.02	0	37.5
AN11	293	<.10	2.85	.19	0	44.5
AN12	294	10.31	2.28	0	.01	45.0
AN13	295	21.85	3.03	.12	.02	32.0
AN14	296	<.10	3.45	.04	.01	44.0
AN15	297	17.98	.63	0	0	30.0
AN16	298	.29	1.32	0	.01	37.0
AN17	299	<.10	4.02	.13	.01	30.0
AN18	300	<.10	1.71	.18	.01	37.5
AN19	301	3.63	Not enough sample	.04	.01	40.0
AN20	302	.68	.69	.05	0	49.5
AN21	303	<.10	3.81	.04	.01	37.5
AN22	304	.83	2.16	.05	.01	32.5
AN23	305	.65	.93	0	.01	37.0
N/A	306	<.10	5.01	0	.01	49.5
N/A	307	<.10	5.01	0	.01	50.0
N/A	308	<.10	.75	0	0	28.0
N/A	309	<.10	2.07	.02	.04	39.5
N/A	310	<.10	.46	0	.03	25.0
TR4 1	311	<.10	2.07	.90	.02	16.5
TR4 2	312	<.10	1.14	.05	0	8.25
TR4 3	313	<.10	1.80	.25	0	13.0
TR4 4	314	<.10	1.23	.08	0	13.0
TR4 5	315	<.10	1.17	.20	0	12.5
TR4 6	316	<.10	1.80	.26	0	17.5
TR4 7	317	<.10	1.83	.52	0	18.5
TR4 8	318	<.10	1.32	.31	0	31.5
TR4 9	319	<.10	1.65	.24	0	8.0
TR4 10	320	<.10	1.89	.37	0	1.5
TR5 1	321	1.51	1.82	.44	.01	37.5
TR5 2	322	.27	2.17	.24	.01	31.5
TR5 3	323	.27	1.33	.18	<.01	64.5
TR5 4	324	.14	1.14	.14	<.01	36.5
TR5 5	325	.11	1.34	.10	<.01	27.5
TR5 6	326	1.02	.45	.03	.01	80.0
TR5 7	327	1.31	.67	.06	<.01	69.0
TR5 8	328	.44	1.38	.10	<.01	43.5
TR5 9	329	.46	2.28	.78	.01	85.5
TR5 10	330	.11	<.2	.03	.09	51.0

Field #	Lab #	Fe	F	B	P	SiO_4
TR5 11	331	.09	.73	.14	.01	31.0
TR5 12	332	.11	1.38	.12	<.01	51.5
TR5 13	333	.33	.63	.14	.01	78.5
NM1	381	<.10	20.70	.47	<.01	72.5
NM2	382	<.10	.67	.50	.01	72.5
NM3	383	.34	.64	.56	<.01	69.0
NM4	384	<.10	.66	.70	<.01	71.0
NM5	385	.24	.67	.67	<.01	75.0
NM6	386	<.10	.67	.50	.01	72.0
NM7	387	.34	4.65	.28	.01	8.2
NM8	388	8.72	.43	.29	<.01	15.0
NM9	389	4.63	1.02	.25	<.01	19.0
NM10	390	2.41	.95	.04	<.01	18.0
NM11	391	3.60	.90	.20	.01	14.0
NM12	392	.47	.43	.06	.01	19.5
NM13	393	5.70	1.16	.43	.01	10.5
NM14	394	.47	1.46	.15	.05	13.0
NM15	395	.10	1.31	.40	.05	23.0
NM16	396	<.10	1.30	.57	.05	23.0
NM17	397	<.10	1.32	.58	.05	22.5
NM18	398	<.10	1.31	.33	.03	21.5
NM19	399	.10	14.70	1.30	.03	65.0
NM20	400	<.10	1.01	1.50	.06	66.0
NM21	401	.14	1.12	1.35	.01	74.0
NM22	402	1.08	12.60	.55	.01	54.5
NM23	403	<.10	.58	.10	.01	27.0
NM24	404	.37	.35	.15	.01	35.0
NM25	405	<.10	1.25	0	.14	35.0
NM26	406	.14	<.20	0	.01	13.5
NM27	407	<.10	1.25	0	.01	35.5
NM28	408	.19	1.17	0	.01	33.0
NM29	409	.64	2.74	.29	.01	59.5
NM30	410	<.10	1.64	.22	.02	60.0
NM31	411	<.10	2.49	.23	.02	67.0
NM32	412	3.76	.23	.12	<.01	31.0
NM33	413	<.10	3.41	1.66	<.01	61.0
NM34	414	<.10	2.09	0	.01	40.5
PV1	415	.10	1.16	.71	.01	20.0
PV2	416	.17	1.27	.61	.01	34.0
PV3	417	1.13	.53	0	.01	29.5
PV4	418	.42	.58	.12	.01	31.5
PV5	419	11.53	.86	.33	0	11.5
PV6	420	19.60	3.54	.84	0	15.0
PV7	421	.64	1.74	1.33	0	29.0
PV8	422	.57	.58	.18	.01	27.0
PV9	423	3.59	.57	.24	0	25.5
PV10	424	.84	.73	0	.01	24.5
PV11	425	1.25	1.63	.04	0	19.0
T1	426	<.10	.27	.30	.01	31.0
T2	427	9.21	3.00	.54	.01	9.0
T3	428	.24	2.96	.76	.01	18.0
T4	429	<.10	.96	.10	.01	36.5
T5	430	<.10	5.37	.20	.01	9.5
T6	431	2.39	2.91	.88	.01	40.5

Field #	Lab #	Fe	F	B	P	SiO_4
T7	432	.14	1.78	.06	.01	34.5
T8	433	.44	3.74	.18	.01	50.0
T9	434	11.53	1.93	.42	.01	43.0
T10	435	8.11	.67	.94	.01	4.8
T11	436	.67	2.54	.30	.01	43.5
T12	437	.31	1.23	1.52	.01	16.5
T13	438	.66	1.98	.82	.02	1.9
T14	439	<.10	.42	.08	.02	21.5
T15	440	.13	1.17	.18	.02	17.5
NM50	441	2.52	.45	.20	.06	9.10
NM51	442	<.10	.29	.05	.01	21.5
NM52	443	1.63	.20	.04	.01	12.5
Stromberg	444	<.10	.26	-	.04	23.25
RK1	445	<.10	.24	.10	.03	16.0
RK2	446	.22	.20	.20	.13	17.0
RK3	447	<.10	.19	.15	.09	20.5
RK4	448	<.10	.22	.19	.03	19.0
RK5	449	3.47	.19	.15	.01	15.0
RK6	450	<.10	.22	.10	.07	21.0
RK7	451	.15	.27	.17	.01	26.5
RK8	452	.20	.23	.15	.04	26.0
RK9	453	<.10	.38	.15	.03	15.0
RK10	454	<.10	.25	.14	.07	20.0
RK11	455	<.10	.53	.13	.02	16.5
RK12	456	<.10	.21	.13	.07	17.5
RK13	457	.42	.56	.28	.02	23.5
RK14	458	<.10	.39	.18	.01	32.0
RK15	459	<.10	.36	.15	.01	21.5
RK16	460	.36	.34	.19	.01	27.0
RK17	461	26.15	.84	.31	.01	4.00
RK18	462	.45	.84	.18	0	17.0
RK19	463	<.10	1.77	.05	0	17.0
RK20	464	2.18	.47	.35	0	30.0
RK21	465	.26	.48	.38	.01	24.0
RK22	466	11.93	.46	.35	0	12.2
RK23	467	3.24	1.58	.19	0	12.5
RK24	468	<.10	1.65	.18	.02	46.0
RK25	469	1.80	.67	.10	.01	21.5
W85	539	<.10	6.00	.50	.01	45.5
W86	540	<.10	5.00	.40	.01	53.0
W87	541	<.10	1.25	.40	.01	18.5
W88	542	<.10	2.92	.40	.05	39.0
W89	543	<.10	1.15	.35	.01	30.5
GG1	544	<.10	.88	3.90	<.01	17.5
GG2	545	30.37	.59	1.00	.01	15.0
GG3	546	.82	.90	.55	0	37.0
GG4	547	.19	.47	.20	0	14.0
GG5	548	.35	.20	.15	0	13.5
SA1	549	.53	3.15	.75	0	20.0
SA2	550	<.10	<.20	.15	0	10.0
SA3	551	<.10	<.2	.15	0	11.5
SA4	552	<.10	<.2	.15	0	8.70
SA5	553	<.10	<.2	.15	0	9.40
SA6	554	2.91	.42	.12	0	11.0

Field #	Lab #	Fe	F	B	P	SiO_4
SA7	555	1.28	<.2	.12	0	8.80
SA8	556	.21	.82	.15	0	16.5
SA9	557	3.60	2.30	.60	0	15.5
SA10	558	.96	.73	.15	0	12.0
SA11	559	10.60	1.60	.28	0	12.5
SA12	560	.84	1.52	.40	0	16.0
SA13	561	<.10	1.10	.18	0	16.0
SA14	562	<.10	1.30	.30	0	19.5
SA15	563	<.10	1.05	.15	0	24.0
SA16	564	.84	1.00	1.40	0	21.0
SA17	565	<.10	.40	.15	0	15.0
SA18	566	4.73	.70	.18	0	22.0
SA19	567	.21	1.60	.20	0	16.5
SA20	568	<.10	.20	.10	0	8.20
US98	569	<.10	.50	.10	.10	40.5
US99	570	.19	<.20	.10	.13	49.0
US100	571	<.10	2.20	.10	.40	57.0
US101	572	.10	1.85	.20	.14	33.5
US102	573	.21	1.20	.25	.08	26.5
US90	574	.42	.34	.10	.03	30.0
US91	575	<.10	.56	.10	.01	44.0
US92	576	.44	.73	.10	.03	39.5
US93	577	<.10	1.40	.25	.03	40.0
US94	578	<.10	1.60	.15	.10	39.5
US95	579	.33	.27	.05	.01	48.0
US96	580	1.88	<.20	.30	.64	22.0
US97	581	.37	<.20	.10	.06	27.5
US98	582	<.10	1.45	.25	.01	67.5
US105	583	.33	.48	.20	.01	30.0
US106	584	.19	1.20	.25	.03	41.0
US107	585	1.64	.73	3.00	.10	10.0
US108	586	<.10	1.40	.40	.06	28.5
US109	587	<.10	.25	.20	.49	33.5
US110	588	.19	.98	.20	.01	10.5
NM53	589	.55	2.40	.40	.03	26.0
NM54	590	.20	<.20	.05	.03	23.0
NM55	591	.20	.72	.05	.06	25.5
GG100	592	12.50	2.40	.15	.32	30.0
GG101	593	3.85	1.10	.15	.02	16.5
GG102	594	.15	<.20	.05	.02	21.5
US103	595	<.10	.31	.02	<.01	29.0
US104	596	<.10	.30	.01	<.01	29.0
LEGGS	597	<.10	.38	.01	.01	27.5
NM56	598	.87	.44	.40	.01	32.5
SD1	602	.81	.39	.11	0	26.63
SD2	603	.38	.65	.11	.01	32.5
SD3	604	.47	.72	.55	.06	41.0
SD4	605	.87	.47	.28	.01	31.0
SD5	606	.70	.59	.29	.01	30.5
SD6	607	.41	.49	.09	0	27.0
SD7	608	<.05	1.0	.13	.01	46.25
SD8	609	.21	1.3	.27	0	84.0
SD9	610	2.19	.37	.40	0	32.0
SD10	611	1.04	.64	.30	0	33.0

Field #	Lab #	Fe	F	B	P	SiO_2
SD11	612	1.46	.48	.27	0	33.0
SD12	613	.24	.43	.01	0	30.5
SD13	614	1.01	.56	.01	.01	23.75
SD14	615	.04	.46	.01	.05	34.0
SD15	616	.38	.52	.01	.01	25.5
SD16	617	2.92	.49	.01	.01	28.5
SD17	618	.27	.47	.01	.02	25.5
SD18	619	.04	.38	.01	.05	36.5
SD19	620	1.02	.48	.27	.01	27.0
SD20	621	.90	.43	.28	.01	26.0
SD21	622	.05	.57	.01	.01	26.5
SD22	623	.10	.70	.08	.01	61.0
SD23	624	.12	.84	.01	.05	64.0
SD24	625	6.54	1.90	.01	.35	33.0
SD25	626	.10	2.42	.02	.42	43.5
SD26	627	9.79	2.60	.03	.40	65.0
SD27	628	.12	.55	.01	.25	15.0
SD28	629	.12	.58	.01	.12	5210
SD29	630	.22	.47	.01	.28	66.0
SD30	631	.68	1.04	.01	.50	67.5
SD31	632	.10	.61	.05	.05	52.0
SD32	633	.41	.84	.01	.50	49.5
SD33	634	1.03	1.05	.01	.35	22.5
SD34	635	.20	1.02	.01	.04	33.5
Colm1	636	.95	1.02	.34	.05	34.0
Colm2	637	.64	1.04	.34	.01	58.5
Colm3	638	.90	1.49	.50	.01	33.2
Colm4	639	.12	2.16	.62	.02	38.5
PAL1	691	.10	4.95	.24	.01	37.24
PAL2	692	.10	1.50	.24	0	40.65
PAL3	693	.10	2.97	.4	.01	39.25
PAL4	694	.10	5.07	.24	0	59.0
PAL5	695	.10	7.65	.55	.01	41.6
ALBQ1	696	.26	.56	.19	.01	73.0
ALBQ2	697	.80	.26	.08	.02	35.0
ALBQ3	698	.17	.29	.09	.01	64.0
ALBQ4	699	.54	1.25	.24	.05	41.0
SD35	780	.10	2.40	.20	.10	32.00
Jemez1	808	.78	.35	.20	.02	34.65
Jemez2	809	.10	3.50	12.50	.54	46.40
Jemez3	810	.89	.40	.46	.03	35.15
Jemez4	811	.89	.39	.29	.03	34.90
Jemez5	812	.36	4.62	7.00	.22	85.90
Jemez6	813	.28	4.64	6.90	.07	87.40
Jemez7	814	.11	5.20	7.20	.10	95.40
Jemez8	815	.78	.43	.10	.03	35.40
Jemez9	816	.81	.43	.37	.05	35.15
SD1	817	241.66	.77	.37	.01	14.30
JUST1	818	.34	14.80	.01	.02	151.60
A	N/A	.20	.54	.10	.02	67.4
B	N/A	.20	.86	.01	.01	56.7
C	N/A	13.88	5.50	7.85	.60	20.3
D	N/A	2.86	6.55	7.65	.56	11.3
E	N/A	1.55	4.80	6.96	.14	37.9

Field #	Lab #	Fe	F	B	P	SiO_2
F	N/A	.20	.80	.02	.01	85.8
G	N/A	27.62	.19	.12	.02	121.3
H	N/A	36.36	1.03	.13	.05	33.6
I	N/A	65.46	.74	.15	.36	192.1
AZ178	374	.64	3.24	.28	.01	57.5

Table 4. Analysis of nitrogen species, nickel, lead, antimony, selenium, strontium, and zinc for selected thermal waters in New Mexico and West Texas.

ppm

Field #	Lab #	NO_3+NO_2	Ni	Pb	Sb	Se	Sr	Zn
J-1	N/A	5.23	<.03	.027	<.5	.003	.12	.17
J-2	N/	.60	<.03	.006	<.5	<.002	<.04	.14
J-3	N/A	.96	<.03	.021	<.5	.006	.33	.14
J-4	N/A	1.05	<.03	.018	<.5	.005	.28	.15
J-5	N/A	.96	<.03	.042	<.5	.007	.43	.12
J-6	N/A	2.12	<.03	.004	<.5	<.002	.03	.14
J-7	N/A	1.88	<.03	.005	<.5	.020	.04	.12
3P	N/A	.66	<.03	.242	<.5	.006	.47	.10
B1	N/A	5.57	<.03	.070	<.5	.005	1.28	.64
B2	N/A	.47	<.03	.844	<.5	.038	2.49	.10
B5	N/A	.08	<.03	.090	<.5	.006	.86	.09
B6	N/A	1.00	< 03	.139	<.5	.009	.83	.06
B9	N/A	2.12	<.03	.202	<.5	.018	4.10	.05
B10	N/A	1.88	<.03	.200	<.5	.017	4.12	.07
B11	N/A	2.01	<.03	.105	<.5	.015	4.19	.09
B12	N/A	11.14	<.03	.623	<.5	.009	2.21	.12
B13	N/A	1.63	<.03	.025	<.5	.003	.35	.16
B14	N/A	1.82	<.03	.033	<.5	.004	.39	3.58
B17	N/A	.84	<.03	.008	<.5	.004	.28	.09
B18	N/A	.40	<.03	.005	<.5	.004	.38	.09
B19	N/A	1.40	<.03	.257	<.5	.029	4.08	.10
WT3	N/A	2040.00	<.03	.311	<.5	.008	.69	.12
WT6	N/A	1.30	<.03	.025	<.5	.004	.65	.12
Gila 1	28	--	--	--	--	--	--	--
Gila 2	29	0.00	<.13	.014	<.6	.004	.10	<.028
Gila 3	30	--	--	--	--	--	--	--
Gila 4	31	0.00	<.13	.051	<.6	.004	<.02	<.028
Gila 5	32	.29	<.13	.024	<.6	.005	.02	.06
Gila 6	33	.19	<.13	.021	<.6	.005	.02	.06
Gila 7	34	.19	<.13	.021	<.6	.006	.03	<.028
Gila 8	35	0.00	<.13	.021	<.6	.006	.02	.05
Gila 9	36	--	--	--	--	--	--	--
Gila 10	37	--	---	--	--	--	---	--
Gila 11	38	--	--	--	--	--	--	--
LD1	I32	4.48	<.16	.005	<.5	.005	.03	<.02
LD2	133	.19	<.16	.009	<.5	.009	.15	<.02
LD3	134	42.65	<.16	.006	<.5	.016	.46	.21
LD4	135	15.30	<.16	.006	<.5	.008	.07	.33
LD5	136	15.02	<.16	.008	<.5	.010	.04	.05
LD6	137	4.93	<.16	.001	<.5	<.002	.06	.13
LD7	138	7.12	<.16	.039	<.5	<.002	.03	2.68
LD8	139	22.75	<.16	.006	<.5	<.002	.02	1.22
LD9	140	9.77	<.16	.001	<.5	.002	.02	< .02
LD10	141	1.47	<.16	.001	<.5	.002	.03	.20
LD11	142	2.15	<.16	.004	<.5	<.002	<.02	.44
LD12	143	0.00	<.16	.001	<.5	<.002	.03	.04
LD13	144	3.70	<.16	.001	<.5	<.002	<.02	.03

ppm

Field #	Lab #	NO_3+NO_2	Ni	Pb	Sb	Se	Sr	Zn
LD14	145	3.59	<.16	.002	<.5	.003	<.02	.17
LD15	146	4.88	<.16	.002	<.5	<.002	.03	.73
LD16	147	7.97	<.16	.001	<.5	<.002	.02	.21
LD17	148	1.28	<.16	867.500	3.19	<.002	.03	.63
LD18	149	7.53	<.16	.025	<.5	.002	.03	.17
Gila 20	150	.72	<.16	.008	.5	<.002	--	<.02
Gila 21	151	.15	--	--	--	.003	--	.03
Gila 22	152	.06	--	--	--	.003	--	<.02
Gila 23	153	6.72	--	--	--	.003	--	.14
Gila 24	154	.17	--	--	--	.003	--	<.02
Gila 25	155	2.00	--	--	--	.004	--	.03
Gila 26	156	.59	--	--	--	.003	--	.22
Gila 27	157	0.00	--	--	--	.006	--	.04
Gila 29	159	.89	--	--	--	.003	--	<.02
Gila 30	160	1.47	<.16	.008	<.5	.006	.03	.07
R1	165	7.38	<.15	.004	<.5	.010	.20	.26
R2	166	8.83	<.15	.006	<.5	.010	1.15	2.72
NM1	381	0.00	<.15	.003	<.5	.003	.03	<.02
NM5	385	.77	<.15	.005	<.5	.003	.02	<.02
NM15	395	1.78	<.15	.002	<.5	.006	.87	<.02
NM16	396	.91	<.15	.002	<.5	.005	.86	<.02
NM18	398	.90	<.15	.005	<.5	.006	.85	<.02
NM19	399	.20	<.15	.007	<.5	.005	.28	<.02
NM22	402	.10	<.15	.005	<.5	.002	.05	.03
NM27	407	2.11	<.15	.001	<.5	.003	.03	<.02
NM29	409	4.25	<.15	.002	<.5	.003	.13	<.02
NM30	410	0.00	<.15	.001	<.5	.003	.15	<.02
NM31	411	4.77	<.15	.003	<.5	.003	.12	<.02
NM33	413	.76	<.15	.016	<.5	.007	2.72	<.02
NM34	414	0.00	<.15	.001	<.5	.003	.02	<.02
T1	426	24.00	<.15	.002	<.5	.007	<.02	.49
T2	427	.05	<.15	.011	<.5	.005	2.71	.21
T3	428	5.40	<.15	.010	<.5	.005	3.77	1.95
T4	429	.55	<.15	.005	<.5	.004	.13	.15
T5	430	0.00	<.15	.010	<.5	.015	4.66	1.50
T6	431	5.65	--	--	--	--	--	--
T7	432	0.00	--	--	--	--	--	--
T8	433	.10	--	--	--	--	--	--
T9	434	.05	<.15	.011	<.5	.008	3.15	2.47
T10	435	.05	<.15	.122	<.5	.155	4.53	.75
T11	436	1.10	<.15	.021	<.5	.009	1.02	1.21
T12	437	23.50	<.15	.008	<.5	.042	2.75	6.55
T13	438	.05	<.15	.302	<.5	.007	.94	.17
T14	439	34.00	<.15	.022	<.5	.003	.08	.05
T15	440	1.10	--	.006	--	.004	--	--
W85	539	14.50	--	--	--	--	--	--
W86	540	3.50	--	--	--	--	--	--
W87	541	22.50	--	--	--	--	--	--
W88	542	21.00	--	--	--	--	--	--
W89	543	13.00	--	--	--	--	--	--
GG1	544	0.01	--	--	--	--	--	--
GG2	545	0.00	--	--	--	--	--	--

ppm

Field #	Lab #	NO_3+NO_2	Ni	Pb	Sb	Se	Sr	Zn
GG3	546	0.02	--	--	--	--	--	--
GG4	547	2.15	--	--	--	--	--	--
GG5	548	2.24	--	--	--	--	--	--
SA1	549	0.07	--	--	--	--	--	--
SA2	550	0.86	--	--	--	--	--	--
SA3	551	0.32	--	--	--	--	--	--
SA4	552	0.26	--	--	--	--	--	--
SA5	553	0.47	--	--	--	--	--	--
SA6	554	0.87	--	--	--	--	--	--
SA7	555	0.43	--	--	--	--	--	--
SA8	556	3.05	--	--	--	--	--	--
SA9	557	2.96	--	--	--	--	--	--
SA10	558	1.02	--	--	--	--	--	--
SA11	559	5.20	--	--	--	--	--	--
SA12	560	12.42	--	--	--	--	--	--
SA13	561	1.34	--	--	--	--	--	--
SA14	562	7.00	--	--	--	--	--	--
SA15	563	2.65	--	--	--	--	--	--
SA16	564	0.11	--	--	--	--	--	--
SA17	565	0.00	--	--	--	--	--	--
SA18	566	0.20	--	--	--	--	--	--
SA19	567	0.17	--	--	--	--	--	--
SA20	568	0.38	--	--	--	--	--	--
US98	569	0.59	--	--	--	--	--	--
US99	570	0.47	--	--	--	--	--	--
US100	571	0.12	--	--	--	--	--	--
US101	572	0.01	--	--	--	--	--	--
US102	573	0.14	--	--	--	--	--	--
US90	574	1.57	--	--	--	--	--	--
US91	575	0.01	--	--	--	--	--	--
US92	576	1.58	--	--	--	--	--	--
US93	577	0.72	--	--	--	--	--	--
US94	578	0.14	--	--	--	--	--	--
US95	579	0.21	--	--	--	--	--	--
US96	580	0.03	--	--	--	--	--	--
US97	581	0.41	--	--	--	--	--	--
US98	582	0.35	--	--	--	--	--	--
US105	583	0.56	--	--	--	--	--	--
US106	584	12.54	--	--	--	--	--	--
US107	585	0.14	--	--	--	--	--	--
US108	586	0.02	--	--	--	--	--	--
US109	587	0.04	--	--	--	--	--	--
US110	588	0.02	--	--	--	--	--	--
NM53	589	0.06	--	--	--	--	--	--
NM54	590	0.70	--	--	--	--	--	--
NM55	591	0.20	--	--	--	--	--	--
GG100	592	0.20	--	--	--	--	--	--
GG101	593	4.50	--	--	--	--	--	--
GG102	594	0.88	--	--	--	--	--	--
US103	595	.10	--	--	--	--	--	--
US104	596	.05	--	--	--	--	--	--
LEGGS	597	0.00	--	--	--	--	--	--

		ppm						
Field #	Lab #	NO_3+NO_2	Ni	Pb	Sb	Se	Sr	Zn
NM 56	598	2.10	--	--	--	--	--	--
SD 1	602	5.50	--	--	--	--	--	--
SD 2	603	.15	--	--	--	--	--	--
SD 3	604	.05	--	--	--	--	--	--
SD 4	605	.80	--	--	--	--	--	--
SD 5	606	.62	--	--	--	--	--	--
SD 6	607	.02	---	--	--	--	--	--
SD 7	608	5.15	--	--	--	--	--	--
SD 8	609	8.12	--	--	--	--	--	--
SD 9	610	2.15	--	--	--	--	--	--
SD 10	611	.50	--	--	--	--	--	--
SD 11	612	4.95	--	--	--	--	--	--
SD 12	613	6.00	--	--	--	--	--	--
SD 13	614	.62	--	--	--	--	--	--
SD 14	615	.08	--	--	--	--	--	--
SD 15	616	.01	--	--	--	--	--	--
SD 16	617	2.75	--	--	--	--	--	--
SD 17	618	.08	--	--	--	--	--	--
SD 18	619	.20	--	--	--	--	--	--
SD 19	620	2.50	--	--	--	--	--	--
SD 20	621	2.80	--	--	--	--	--	--
SD 21	622	.55	--	--	--	--	--	--
SD 22	623	10.96	--	--	--	--	--	--
SD 23	624	21.50	--	--	--	--	--	--
SD 24	625	87.00	--	--	--	--	--	--
SD 25	626	13.50	--	--	--	--	--	--
SD 26	627	74.00	--	--	--	--	--	--
SD 27	628	1.40	--	--	--	--	--	--
SD 28	629	6.35	--	--	--	--	--	--
SD 29	630	7.05	--	--	--	--	--	--
SD 30	631	7.20	--	--	--	--	--	--
SD 31	632	20.00	--	--	--	--	--	--
SD 32	633	5.80	--	--	--	--	--	--
SD 33	634	27.00	--	--	--	--	--	--
SD 34	635	4.70	--	--	--	--	--	--
Colm1	636	--	--	--	--	--	--	--
Colm2	637	--	--	--	--	--	--	--
Colm3	638	--	--	--	--	--	--	--
Colm4	639	--	--	--	--	--	--	--
Pal1	691	--	--	--	--	--	--	--
Pal2	692	--	--	--	--	--	--	--
Pal3	693	--	--	--	--	--	--	--
Pal4	694	--	--	--	--	--	--	--
Pal5	695	--	--	--	--	--	--	--
ALBQ1	696	--	--	--	--	--	--	--
ALBQ2	697	--	--	--	--	--	--	--
ALBQ3	698	--	--	--	--	--	--	--
ALBQ4	699	--	--	--	--	--	--	--
SD35	780	5.50	--	--	--	--	--	--

----------ppm----------

Field #	Lab #	NO_3+NO_2	Ni	Pb	Sb	Se	Sr	Zn
Jemez1	808	0.05	--	--	--	--	--	--
Jemez2	809	0.05	--	--	--	--	--	--
Jemez3	810	0.05	--	--	--	--	--	--
Jemez4	811	0.94	--	--	--	--	--	--
Jemez5	812	0.04	--	--	--	--	--	--
Jemez6	813	0.04	--	--	--	--	--	--
Jemez7	814	0.30	--	--	--	--	--	--
Jemez8	815	0.88	--	--	--	--	--	--
Jemez9	816	0.73	--	--	--	--	--	--
SD1	817	0.10	--	--	--	--	--	--
A	N/A	--	--	--	--	--	--	--
B	N/A	--	--	--	--	--	--	--
C	N/A	--	--	--	--	--	--	--
D	N/A	--	--	--	--	--	--	--
E	N/A	--	--	--	--	--	--	--
F	N/A	--	--	--	--	--	--	--
G	N/A	--	--	--	--	--	--	--
H	N/A	--	--	--	--	--	--	--
I	N/A	--	--	--	--	--	--	--
AZ178	374	--	--	--	--	--	--	--

Table 5. Analysis of cadmium, cobalt, chromium, copper, mercury, hydrogen sulfide, lithium, manganese, molybdeuum, ammonium, silver aluminum, arsenic, barium, and bromine for selected waters in New Mexico and West Texas.

		ppm														
Field #	Lab #	Cd	Co	Cr	Cu	Hg	H_2S	Li	Mn	Mo	NH_4	Ag	Al	As	Ba	Br
J-1	N/A	<.01	<.15	<.1	<.10	.0012	<.1	.02	<.07	<.5	.30	<.03	<2.5	.001	<.7	.54
J-2	N/A	<.01	<.15	<.1	<.10	.0011	<.1	.01	<.07	<.5	.90	<.03	<2.5	.007	<.7	.31
J-3	N/A	<.01	<.15	<.1	<.10	.0012	<.1	.48	<.07	<.5	.13	<.03	<2.5	.018	<.7	.56
J-4	N/A	<.01	<.15	<.1	<.10	.0012	<.1	.34	<.07	<.5	1.24	<.03	<2.5	.014	<.7	.43
J-5	N/A	<.01	<.15	<.1	<.10	.0080	<.1	.65	<.07	<.5	1.35	<.03	<2.5	.021	<.7	.56
J-6	N/A	<.01	<.15	<.1	<.10	.0011	<.1	.04	<.07	<.5	1.16	<.03	<2.5	.002	<.7	.22
J-7	N/A	<.01	<.15	<.1	<.10	.0006	<.1	.03	<.07	<.5	.69	<.03	<2.5	.002	<.7	.27
3P	N/A	<.01	<.15	<.1	<.10	.0006	<.1	.64	<.08	<.5	.30	<.03	<2.5	0.19	<.7	.56
B1	N/A	<.01	<.15	<.1	<.10	.0006	<.1	.03	<.07	<.5	0.00	<.03	<.25	.004	<.7	.65
B2	N/A	<.01	<.15	<.1	<.10	.0008	--	1.18	<.07	<.5	0.00	<.03	<.25	.075	<.7	1.54
B3	N/A	--	--	--	--	---	--	--	--	--	--	--	--	---	--	--
B4	N/A	--	--	--	--	---	--	--	--	--	--	--	--	--	---	--
B5	N/A	<.01	<.15	<.1	<.10	.0148	<.1	.36	<.07	<.5	0.00	<.03	<.25	.012	<.7	.94
B6	N/A	<.01	<.15	<.1	<.10	.0011	<.1	.35	<.07	<.5	.08	<.03	<.25	.011	<.7	.85
B7	N/A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B8	N/A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B9	N/A	<.01	<.15	<.1	<.10	.0009	<.1	1.21	<.07	<.5	0.00	<.03	<.25	.020	<.7	.77
B10	N/A	<.01	<.15	<.1	<.10	.0003	<.1	1.23	<.07	<.5	0.00	<.03	<.25	.019	<.7	.77
B11	N/A	<.01	<.15	<.1	<.10	.0004	<.1	1.24	<.07	<.5	2.01	<.03	<.25	.018	<.7	.75
B12	N/A	<.01	<.15	<.1	<.10	.0005	<.1	.42	<.07	<.5	1.84	<.03	<.25	.013	<.7	.78
B13	N/A	<.01	<.15	<.1	<.10	.0005	<.1	.06	<.07	<.5	.38	<.03	<.25	.041	<.7	.28
B14	N/A	<.01	<.15	<.1	<.10	<.0002	<.1	.08	<.07	<.5	.30	<.03	<.25	.037	<.7	.37
B15	N/A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B16	N/A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B17	N/A	<.01	<.15	<.1	<.10	.0003	<.1	.11	<.07	<.5	.30	<.03	<.25	.012	<.7	.23
B18	N/A	<.01	<.15	<.1	<.10	.0003	<.1	.13	<.07	<.5	0.00	<.03	<.25	.011	<.7	.30
B19	N/A	<.01	<.15	<.1	<.10	.0005	<.1	1.20	<.07	<.5	0.00	<.03	<.25	.039	<.7	.82
WT3	N/A	<.01	<.15	<.1	<.10	.0009	<.1	.67	<.09	<.5	.86	<.03	<2.50	.019	<.7	.30
WT6	N/A	<.01	<.15	<.1	<.10	.0006	<.1	.19	<.07	<.5	.13	<.03	<2.50	.015	<.7	.86
Gila 1	28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gila 2	29	<.02	<.18	<.1	<.12	.0006	--	.16	<.063	<.45	<.05	<.07	<1.10	.009	<.20	<.06
Gila 3	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gila 4	31	<.02	<.18	<.1	<.12	.0006	--	.11	<.063	<.45	<.05	<.07	<1.10	.006	<.20	<.06
Gila 5	32	<.02	<.18	<.1	<.12	.0033	--	.26	<.063	<.45	<.05	<.07	<1.10	.007	<.20	<.06

ppm

Field #	Lab #	Cd	Co	Cr	Cu	Hg	H_2S	Li	Mn	Mo	NH_4	Ag	Al	As	Ba	Br
Gila 6	33	<.02	<.18	<.10	<.12	.0007	--	.26	<.063	<.45	<.05	<.07	<1.10	.008	<.20	<.06
Gila 7	34	<.02	<.18	<.10	<.12	.0005	--	.43	<.063	<.45	<.05	<.07	<1.10	.006	<.20	<.06
Gila 8	35	<.02	<.18	<.10	<.12	.0006	--	.31	<.063	<.45	<.05	<.07	3.10	.009	<.20	<.06
Gila 9	36	--	--	--	---	--	--	--	---	--	--	--	--	--	--	--
Gila 10	37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gila 11	38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LD1	132	<.02	<.14	<.1		<.0002	<.1	.14	<.05	<.50	<.05	<.06	<1.00	.012	<.20	.53
LD2	133	<.02	<.14	<.1	<.10	<.0002	<.1	.31	<.05	<.50	<.05	<.06	<1.00	.017	.20	.67
LD3	134	<.02	<.14	<.1	<.10	.0002	<.1	.09	<.05	<.50	<.05	<.06	<1.00	.008	.20	1.52
LD4	135	<.02	<.14	<.1	<.10	<.0002	<.1	.13	<.05	<.50	<.05	<.06	<1.00	.018	.20	.56
LD5	136	<.02	<.14	<.1	<.10	<.0002	<.1	.23	<.05	<.50	<.05	<.06	<1.00	.017	<.20	.99
LD6	137	<.02	<.14	<.1	<.10	.0002	<.1	.03	<.05	<.50	<.05	<.06	<1.00	.003	<.20	0.00
LD7	138	<.02	<.14	<.1	.69	<.0002	<.1	<.02	<.05	<.50	<.05	<.06	<1.00	.003	<.20	.28
LD8	139	<.02	<.14	<.1	<.10	<.0002	<.1	.02	<.05	<.50	<.05	<.06	<1.00	.005	<.20	.32
LD9	140	<.02	<.14	<.1	<.10	<.0002	<.1	<.02	<.05	<.50	<.05	<.06	<1.00	.003	<.20	0.00
LD10	141	<.02	<.14	<.1	.11	<.0002	<.1	<.02	<.05	<.50	<.05	<.06	<1.00	.002	<.20	0.00
LD11	142	<.02	<.14	<.1	<.10	<.0002	<.1	.02	<.05	<.50	<.05	<.06	<1.00	.006	<.20	.35
LD12	143	<.02	<.14	<.1	<.10	<.0002	<.1	<.02	<.05	<.50	<.05	<.06	<1.00	.003	<.20	.12
LD13	144	<.02	<.14	<.1	<.10	<.0002	.1	<.02	<.05	<.50	<.05	<.06	<1.00	.017	<.20	.16
LD14	145	<.02	<.14	<.1	<.10	.0004	<.1	<.02	<.05	<.50	<.05	<.06	<1.00	.004	<.20	.41
LD15	146	<.02	<.14	<.1	<.10	.0006	.13	<.02	<.05	<.50	<.05	<.06	<1.00	.003	<.20	.23
LD16	147	<.02	<.14	<.1	<.10	.0004	<.1	<.02	<.05	<.50	<.05	<.06	<1.00	.003	<.20	.25
LD17	148	<.02	<.14	<.1	<.10	.0009	<.1	.02	<.05	<.50	<.05	<.06	<1.00	.031	<.20	.23
LD18	149	<.02	<.14	<.1	<.10	.0004	<.1	.11	<.05	<.50	<.05	<.06	<1.00	.007	<.20	.41
Gila 20	150	--	--	--	<.10	.0004	<.1	.06	--	--	<.05	<.06	<1.00	.007	<.20	--
Gila 21	151	--	--	--	<.10	.0003	<.1	.03	--	--	<.05	<.06	<1.00	.004	<.20	--
Gila 22	152	--	--	--	<.10	.0004	<.1	.11	--	--	<.05	<.06	<1.00	.006	<.20	--
Gila 23	153	--	--	--	<.10	.0006	<.1	.13	--	--	<.05	<.06	<1.00	.002	<.20	--
Gila 24	154	--	--	--	<.10	.0006	<.1	.08	--	--	<.05	<.06	<1.00	.006	<.20	--
Gila 25	155	--	--	--	<.10	.0006	<.1	.14	--	--	<.05	<.06	<1.00	.011	<.20	--
Gila 26	156		--	--	<.10	.0006	<.1	.15	--	--	<.05	<.06	<1.00	.006	<.20	--
Gila 27	157	--	--	--	<.10	.0006	<.1	.20	--	--	<.05	<.06	<1.00	.015	<.20	--
Gila 29	159	--	--	--	<.10	.0006	<.1	.02	--	--	<.05	<.06	<1.00	.004	<.20	--
Gila 30	160	<.02	<.14	<.1	<.10	.0006	<.1	.22	.40	< .50	<.05	<.06	<1.00	.014	<.20	.15
R1	165	<.02	<.15	<.1	<.10	--	<.1	.05	<.05	< .50	< --	<.06	<1.00	.010	<.40	--
R2	166	<.02	<.15	<.1	<.10	--	<.1	.08	<.05	< .50	--	<.06	<1.00	.010	<.40	--

ppm

Field #	Lab #	Cd	Co	Cr	Cu	Hg	H_2S	Li	Mn	Mo	NH_4	Ag	Al	As	Ba	Br
NM1	381	<.02	<.15	<.05	<.10	.0008	<.3	.44	<.05	<.5	.00	<.05	<1.0	.017	<.4	.58
NM5	385	<.02	<.15	<.05	<.10	.0005	<.3	.44	<.05	<.5	.05	<.05	<1.0	.011	<.4	.80
NM15	395	<.02	<.15	<.05	<.10	.0006	<.3	.57	<.05	<.5	.20	<.05	<1.0	.043	<.4	1.09
NM16	396	<.02	<.15	<.05	<.10	.0007	<.3	.57	<.05	<.5	.00	<.05	<1.0	.034	<.4	1.27
NM18	398	<.02	<.15	<.05	<.10	.0006	<.3	.54	<.05	<.5	.00	<.05	<1.0	.009	<.4	.97
NM19	399	<.02	<.15	<.05	<.10	.0005	<.3	3.86	<.05	<.5	.05	<.05	<1.0	.160	<.4	.42
NM22	402	<.02	<.15	<.05	<.10	.0008	<.3	.31	<.05	<.5	.00	<.05	<1.0	.009	<.4	.56
NM27	407	<.02	<.15	<.05	<.10	.0005	<.3	.02	<.05	<.5	.19	<.05	<1.0	.015	<.4	.49
NM29	409	<.02	<.15	<.05	<.10	.0005	<.3	.35	<.05	<.5	.19	<.05	<1.0	.018	<.4	.00
NM30	410	<.02	<.02	<.05	<.10	.0005	<.3	.19	<.05	<.5	.20	<.05	<1.0	.016	<.4	.57
NM31	411	<.02	<.15	<.05	<.10	.0004	.3	.37	<.05	<.5	.00	<.05	<1.0	.021	<.4	.75
NM33	413	<.02	<.15	<.05	<.10	.0005	5.8	3.70	.22	<.5	.71	<.05	<1.0	.076	<.4	.58
NM34	414	<.02	<.15	<.05	<.10	.0003	<.3	<.01	<.05	<.5	.00	<.05	<1.0	.012	<.4	.49
T1	426	<.02	<.15	<.05	<.10	.0006	--	.03	<.05	<.5	.10	<.05	<1.0	.018	<.4	.66
T2	427	<.02	<.15	<.05	.12	.0004	--	.22	.13	<.5	.18	<.05	<1.0	.041	<.4	1.22
T3	428	.02	.15	<.05	<.10	.0004	--	.20	<.05	<.5	.00	<.05	<1.0	.025	<.4	1.37
T4	429	<.02	<.15	<.05	<.10	.0004	--	.05	<.05	<.5	.18	<.05	<1.0	.004	<.4	.79
T5	430	<.02	<.15	<.05	<.10	.0004	--	.29	<.05	<.5	.00	<.05	<1.0	.015	<.4	1.12
T9	434	<.02	<.15	<.05	<.10	.0002	--	.53	.76	<.5	.85	<.05	<1.0	.092	<.4	.00
T10	435	<.02	<.15	<.05	<.10	.0002	--	.93	.44	<.5	3.21	<.05	<1.0	.142	<.4	1.38
T11	436	<.02	<.15	<.05	<.10	.0002	--	.12	.26	<.5	.18	<.05	<1.0	.012	<.4	1.22
T12	437	<.02	<.15	<.05	<.10	.0004	--	.58	.14	<.5	2.76	<.05	<1.0	.033	<.4	.34
T13	438	<.02	<.15	<.05	<.10	.0004	--	.66	<.05	<.5	1.40	<.05	<1.0	.025	<.4	1.58
T14	439	<.02	<.15	<.05	<.10	.0002	--	.04	<.05	<.5	.23	<.05	<1.0	.006	<.4	.55
T15	440	--	--	--	--	--	--	--	--	--	--	<.05	--	.004	--	--
W85	539	--	--	--	--	--	--	--	--	--	--	--	--	.044	--	--
W86	540	--	--	--	--	--	--	--	--	--	--	--	--	.023	--	--
W87	541	--	--	--	--	--	--	--	--	--	--	--	--	.011	--	--
W88	542	--	--	--	--	--	--	--	--	--	--	--	--	.031	--	--
W89	543	--	--	--	--	--	--	--	--	--	--	--	--	.025	--	--
GG1	544	--	--	--	--	--	--	--	--	--	--	--	--	.099	--	--
GG2	545	--	--	--	--	--	--	--	--	--	--	--	--	.029	--	--
GG3	546	--	--	--	--	--	--	--	--	--	--	--	--	.019	--	--
GG4	547	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
GG5	548	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
SA1	549	--	--	--	--	--	--	--	--	--	--	--	--	.055	--	--
SA2	550	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
SA3	551	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--

Field #	Lab #	Cd	Co	Cr	Cu	Hg	H_2S	Li	Mn	Mo	NH_4	Ag	Al	As	Ba	Br
		ppm														
SA4	552	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
SA5	553	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
SA6	554	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
SA7	555	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
SA8	556	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
SA9	557	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
SA10	558	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
SA11	559	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
SA12	560	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
SA13	561	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
SA14	562	--	--	--	--	--	--	--	--	--	--	--	--	.007	--	--
SA15	563	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
SA16	564	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
SA17	565	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
SA18	566	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
SA19	567	--	--	--	--	--	--	--	--	--	--	--	--	.005	--	--
SA20	568	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
US98	569	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
US99	570	--	--	--	--	--	--	--	--	--	--	--	--	.002	--	--
US100	571	--	--	--	--	--	--	--	--	--	--	--	--	.002	--	--
US101	572	--	--	--	--	--	--	--	--	--	--	--	--	.007	--	--
US102	573	--	--	--	--	--	--	--	--	--	--	--	--	.006	--	--
US90	524	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
US91	575	--	--	--	--	--	--	--	--	--	--	--	--	.005	--	--
US92	576	--	--	--	--	--	--	--	--	--	--	--	--	.006	--	--
US93	577	--	--	--	--	--	--	--	--	--	--	--	--	.017	--	--
US94	578	--	--	--	--	--	--	--	--	--	--	--	--	.016	--	--
US95	579	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
US96	580	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
US97	581	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
US98	582	--	--	--	--	--	--	--	--	--	--	--	--	.014	--	--
US105	583	--	--	--	--	--	--	--	--	--	--	--	--	.012	--	--
US106	584	--	--	--	--	--	--	--	--	--	--	--	--	.007	--	--
US107	585	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
US108	586	--	--	--	--	--	--	--	--	--	--	--	--	.017	--	--
US109	587	--	--	--	--	--	--	--	--	--	--	--	--	.005	--	--
US110	588	--	--	--	--	--	--	--	--	--	--	--	--	.006	--	--
NM53	589	--	--	--	--	--	--	--	--	--	--	--	--	.009	--	--

Field #	Lab #	ppm														
		Cd	Co	Cr	Cu	Hg	H_2S	Li	Mn	Mo	NH_4	Ag	Al	As	Ba	Br
NM54	590	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
NM55	591	--	--	--	--	--	--	--	--	--	--	--	--	.008	--	--
GG100	592	--	--	--	--	--	--	--	--	--	--	--	--	.014	--	--
GG101	593	--	--	--	--	--	--	--	--	--	--	--	--	.007	--	--
GG102	594	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
US103	595	--	--	--	--	--	--	--	--	--	--	--	--	.001	--	--
US104	596	--	--	--	--	--	--	--	--	--	--	--	--	.002	--	--
Leggs	597	--	--	--	--	--	--	--	--	--	--	--	--	.001	--	--
NM56	598	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
SD1	602	--	--	--	--	--	--	--	--	--	--	--	--	.053	--	--
SD2	603	--	--	--	--	--	--	--	--	--	--	--	--	.025	--	--
SD3	604	--	--	--	--	--	--	--	--	--	--	--	--	.048	--	--
SD4	605	--	--	--	--	--	--	--	--	--	--	--	--	.046	--	--
SD5	606	--	--	--	--	--	--	--	--	--	--	--	--	.039	--	--
SD6	607	--	--	--	--	--	--	--	--	--	--	--	--	.023	--	--
SD7	608	--	--	--	--	--	--	--	--	--	--	--	--	.049	--	--
SD8	609	--	--	--	--	--	--	--	--	--	--	--	--	.015	--	--
SD9	610	--	--	--	--	--	--	--	--	--	--	--	--	.090	--	--
SD10	611	--	--	--	--	--	--	--	--	--	--	--	--	.081	--	--
SD11	612	--	--	--	--	--	--	--	--	--	--	--	--	.065	--	--
SD12	613	--	--	--	--	--	--	--	--	--	--	--	--	.021	--	--
SD13	614	--	--	--	--	--	--	--	--	--	--	--	--	.007	--	--
SD14	615	--	--	--	--	--	--	--	--	--	--	--	--	.022	--	--
SD15	616	--	--	--	--	--	--	--	--	--	--	--	--	.023	--	--
SD16	617	--	--	--	--	--	--	--	--	--	--	--	--	.032	--	--
SD17	618	--	--	--	--	--	--	--	--	--	--	--	--	.015	--	--
SD18	619	--	--	--	--	--	--	--	--	--	--	--	--	.023	--	--
SD19	620	--	--	--	--	--	--	--	--	--	--	--	--	.069	--	--
SD20	621	--	--	--	--	--	--	--	--	--	--	--	--	.052	--	--
SD21	622	--	--	--	--	--	--	--	--	--	--	--	--	.013	--	--
SD22	623	--	--	--	--	--	--	--	--	--	--	--	--	.016	--	--
SD23	624	--	--	--	--	--	--	--	--	--	--	--	--	.002	--	--
SD24	625	--	--	--	--	--	--	--	--	--	--	--	--	.017	--	--
SD25	626	--	--	--	--	--	--	--	--	--	--	--	--	.011	--	--
SD26	627	--	--	--	--	--	--	--	--	--	--	--	--	.030	--	--
SD27	628	--	--	--	--	--	--	--	--	--	--	--	--	.010	--	--
SD28	629	--	--	--	--	--	--	--	--	--	--	--	--	.003	--	--
SD29	630	--	--	--	--	--	--	--	--	--	--	--	--	.002	--	--

Field #	Lab #	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Hg (ppm)	H_2S (ppm)	Li (ppm)	Mn (ppm)	Mo (ppm)	NH_4 (ppm)	Ag (ppm)	Al (ppm)	As (ppm)	Ba (ppm)	Br (ppm)
SD30	631	--	--	--	--	--	--	--	--	--	--	--	--	.009	--	--
SD31	632	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
SD32	633	--	--	--	--	--	--	--	--	--	--	--	--	.004	--	--
SD33	634	--	--	--	--	--	--	--	--	--	--	--	--	.006	--	--
SD34	635	--	--	--	--	--	--	--	--	--	--	--	--	.007	--	--
Colm1	636	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Colm2	637	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Colm3	638	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Colm4	639	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pal1	691	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pal2	692	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pal3	693	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pal4	694	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pal5	695	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ALBQ1	696	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ALBQ2	697	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ALBQ3	698	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ALBQ4	699	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SD35	780	--	--	--	--	--	--	--	--	--	--	--	--	.043	--	--
Jemez1	808	--	--	--	--	--	--	--	--	--	--	--	--	.005	--	--
Jemez2	809	--	--	--	--	--	--	--	--	--	--	--	--	2.880	--	--
Jemez3	810	--	--	--	--	--	--	--	--	--	--	--	--	.048	--	--
Jemez4	811	--	--	--	--	--	--	--	--	--	--	--	--	.026	--	--
Jemez5	812	--	--	--	--	--	--	--	--	--	--	--	--	.920	--	--
Jemez6	813	--	--	--	--	--	--	--	--	--	--	--	--	1.070	--	--
Jemez7	814	--	--	--	--	--	--	--	--	--	--	--	--	1.040	--	--
Jemez8	815	--	--	--	--	--	--	--	--	--	--	--	--	.037	--	--
Jemez9	816	--	--	--	--	--	--	--	--	--	--	--	--	.036	--	--
SD1	817	--	--	--	--	--	--	--	--	--	--	--	--	.025	--	--
A	N/A	--	--	--	--	.0011	<1.0	--	--	--	--	--	--	.057	--	--
B	N/A	--	--	--	--	.0010	<1.0	--	--	--	--	--	--	.022	--	--
C	N/A	--	--	--	--	.0012	<1.0	--	--	--	--	--	--	.083	--	--
D	N/A	--	--	--	--	.0005	<1.0	--	--	--	--	--	--	.132	--	--
E	N/A	--	--	--	--	.0005	<1.0	--	--	--	--	--	--	.192	--	--
F	N/A	--	--	--	--	.0005	<1.0	--	--	--	--	--	--	.010	--	--
G	N/A	--	--	--	--	.0004	<1.0	--	--	--	--	--	--	.006	--	--
H	N/A	--	--	--	--	.0007	<1.0	--	--	--	--	--	--	.016	--	--
I	N/A	--	--	--	--	.0005	22.8	--	--	--	--	--	--	.065	--	--
AZ178	374	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 6 Na,K,Ca,Mg Geotemperature

Field #	Lab #	Temp C°	Field #	Lab #	Temp C°
J1	N/A	2.	W33	N/A	105.
J2	N/A	51.	W34	N/A	87.
J3	N/A	97.	W35	N/A	41.
J4	N/A	83.	W36	N/A	52.
J5	N/A	102.	B1	N/A	50.
J6	N/A	38.	B2	N/A	150.
J7	N/A	52.	B3	N/A	84.
P1	N/A	38.	B4	N/A	49.
P2	N/A	172.	B5	N/A	49.
P3	N/A	164.	B6	N/A	49.
P4	N/A	129.	B7	N/A	49.
P5	N/A	60.	B8	N/A	78.
P10	N/A	71.	B9	N/A	111.
P13	N/A	49.	B10	N/A	112.
P14	N/A	38.	B11	N/A	113.
P15	N/A	57.	B12	N/A	118.
P20	N/A	38.	B13	N/A	58.
P22	N/A	41.	B14	N/A	61.
P23	N/A	45.	B15	N/A	48.
P24	N/A	146.	B16	N/A	28.
P25	N/A	50.	B17	N/A	67.
W1	N/A	59.	B18	N/A	72.
W2	N/A	50.	B19	N/A	116.
W3	N/A	26.	WT1	N/A	84.
W4	N/A	23.	WT2	N/A	69.
W5	N/A	26.	WT3	N/A	201.
W6	N/A	36.	WT4	N/A	50.
W7	N/A	42.	WT5	N/A	60.
W8	N/A	28.	WT6	N/A	103.
W9	N/A	57.	WT7	N/A	90.
W10	N/A	83.	WT8	N/A	40.
W11	N/A	28.	B20	SW19	83.
W12	N/A	31.	B21	SW20	96.
W13	N/A	32.	B22	SW21	44.
W14	N/A	39.	B23	SW22	14.
W15	N/A	65.	B24	SW23	65.
W16	N/A	40.	B25	SW24	65.
W17	N/A	43.	B26	SW25	31.
W18	N/A	41.	B27	SW26	31.
W19	N/A	48.	B28	SW27	12.
W20	N/A	54.	Gila1	SW28	36.
W21	N/A	57.	Gila2	SW29	78.
W22	N/A	47.	Gila3	SW30	46.
W23	N/A	10.	Gila4	SW31	27.
W24	N/A	69.	Gila5	SW32	76.
W25	N/A	62.	Gila6	SW33	77.
W26	N/A	68.	Gila7	SW34	73.
W27	N/A	25.	Gila8	SW35	62.
W28	N/A	49.	Gila9	SW36	44.
W29	N/A	8.	Gila10	SW37	48.
W30	N/A	19.	Gila11	SW38	54.
W31	N/A	52.	LD1	SW132	91.
W32	N/A	52.	LD2	SW133	118.

Table 6 Cont.

Field #	Lab #	Temp. C°	Field #	Lab #	Temp. C°
LD3	SW134	61.	TR2 4	SW226	12.
LD4	SW135	57.	TR2 5	SW227	4.
LD5	SW136	94.	TR2 6	SW228	-1.
LD6	SW137	35.	TR2 7	SW229	29.
LD7	SW138	21.	TR2 8	SW230	35.
LD8	SW139	18.	TR2 9	SW231	59.
LD9	SW140	44.	TR2 10	SW232	79.
LD10	SW141	57.	TR2 11	SW233	53.
LD11	SW142	69.	TR2 12	SW234	58.
LD12	SW143	50.	TR2 13	SW235	45.
LD13	SW144	56.	TR2 14	SW236	61.
LD14	SW145	38.	TR2 15	SW237	28.
LD15	SW146	38.	W50	SW238	53.
LD16	SW147	27.	W51	SW239	69.
LD17	SW148	23.	W52	SW240	84.
LD18	SW149	35.	W53	SW241	91.
Gila20	SW150	56.	W54	SW242	77.
Gila21	SW151	53.	W55	SW243	67.
Gila22	SW152	68.	W56	SW244	40.
Gila23	SW153	50.	W57	SW245	21.
Gila24	SW154	41.	W58	SW246	45.
Gila25	SW155	67.	W59	SW247	69.
Gila26	SW156	23.	W60	SW248	83.
Gila27	SW157	66.	W61	SW249	69.
Gila28	SW158	58.	W62	SW250	36.
Gila29	SW159	49.	W63	SW251	73.
Gila30	SW160	77.	W64	SW252	65.
MFG1	SW161	34.	W65	SW253	32.
MFG2	SW162	19.	W66	SW254	61.
MFG3	SW163	31.	W67	SW255	71.
MFG4	SW164	22.	W68	SW256	73.
R1	SW165	52.	W69	SW257	106.
R2	SW166	61.	W70	SW258	68.
TR1 2	SW206	59.	W71	SW259	40.
TR1 3	SW207	66.	W72	SW260	34.
TR1 4	SW208	3.	W73	SW261	43.
TR1 5	SW209	2.	W74	SW262	44.
TR1 6	SW210	98.	TR3 1	SW263	36.
TR1 7	SW311	12.	TR3 2	SW264	83.
TR1 8	SW212	32.	TR3 3	SW265	5.
TR1 9	SW213	22.	TR3 4	SW266	83.
TR1 10	SW214	7.	TR3 5	SW267	26.
TR1 11	SW215	51.	TR3 6	SW268	38.
TR1 12	SW216	36.	TR3 7	SW269	31.
TR1 13	SW217	46.	TR3 8	SW270	42.
TR1 14	SW218	46.	TR3 9	SW271	64.
TR1 15	SW219	58.	TR3 10	SW272	59.
TR1 16	SW220	44.	W75	SW273	120.
TR1 17	SW221	24.	W76	SW274	43.
TR1 18	SW222	37.	W77	SW275	52.
TR2 1	SW223	29.	W78	SW276	54.
TR2 2	SW224	-6.	W79	SW277	52.
TR2 3	SW225	54.	W80	SW278	64.

Table 6 Cont.

Field #	Lab #	Temp, C°	Field #	Lab #	Temp. C°
W81	SW279	49.	TR5 12	SW332	81.
W82	SW280	68.	TR5 13	SW333	68.
W83	SW281	31.	NM1	SW381	138.
W84	SW282	58.	NM2	SW382	81.
AN1	SW283	38.	NM3	SW383	137.
AN2	SW284	58.	NM4	SW384	139.
AN3	SW285	40.	NM5	SW385	140.
AN4	SW286	93.	NM6	SW386	140.
AN5	SW287	59.	NM7	SW387	60.
AN6	SW288	52.	NM8	SW388	29.
AN7	SW289	52.	NM9	SW389	24.
AN8	SW290	40.	NM10	SW390	45.
AN9	SW291	61.	NM11	SW391	49.
AN10	SW292	58.	NM12	SW392	16.
AN11	SW293	44.	NM13	SW393	33.
AN12	SW294	44.	NM14	SW394	43.
AN13	SW295	63.	NM15	SW395	51.
AN14	SW296	44.	NM16	SW396	51.
AN15	SW297	44.	NM17	SW397	49.
AN16	SW298	48.	NM18	SW398	50.
AN17	SW299	80.	NM19	SW399	71.
AN18	SW300	45.	NM20	SW400	71.
AN19	SW301	29.	NM21	SW401	80.
AN20	SW302	39.	NM22	SW402	91.
AN21	SW303	48.	NM23	SW403	23.
AN22	SW304	47.	NM24	SW404	43.
AN23	SW305	41.	NM25	SW405	76.
SWAN306	SW306	22.	NM26	SW406	15.
SWAN307	SW307	22.	NM27	SW407	45.
SWAN308	SW308	29.	NM28	SW408	43.
SWAN309	SW309	29.	NM29	SW409	85.
SWAN310	SW310	21.	NM30	SW410	73.
TR4 1	SW311	25.	NM31	SW411	76.
TR4 2	SW312	17.	NM32	SW412	36.
TR4 3	SW313	22.	NM33	SW413	99.
TR4 4	SW314	17.	NM34	SW414	21.
TR4 5	SW315	-1.	PV1	SW415	67.
TR4 6	SW316	49.	PV2	SW416	19.
TR4 7	SW317	31.	PV3	SW417	-2.
TR4 8	SW318	26.	PV4	SW418	1.
TR4 9	SW319	28.	PV5	SW419	-2.
TR4 10	SW320	43.	PV6	SW420	50.
TR5 1	SW321	58.	PV7	SW421	15.
TR5 2	SW322	37.	PV8	SW422	3.
TR5 3	SW323	70.	PV9	SW423	9.
TR5 4	SW324	56.	PV10	SW424	4.
TR5 5	SW325	35.	PV11	SW425	12.
TR5 6	SW326	61.	T1	SW426	50.
TR5 7	SW327	54.	T2	SW427	64.
TR5 8	SW328	55.	T3	SW428	49.
TR5 9	SW329	117.	T4	SW429	46.
TR5 10	SW330	14.	T5	SW430	69.
TR5 11	SW331	20.	T6	SW431	26.

Table 6 Cont.

Field #	Lab #	Temp. C°	Field #	Lab #	Temp. C°
T7	SW432	-15.	SA5	SW553	-28.
T8	SW433	12.	SA6	SW554	-13.
T9	SW434	66.	SA7	SW555	-17.
T10	SW435	81.	SA8	SW556	4.
T11	SW436	54.	SA9	SW557	31.
T12	SW437	56.	SA10	SW558	-4.
T13	SW438	137.	SA11	SW559	15.
T14	SW439	25.	SA12	SW560	10.
T15	SW440	59.	SA13	SW561	-3.
NM50	SW441	29.	SA14	SW562	5.
NM51	SW442	---	SA15	SW563	10.
NM52	SW443	52	SA16	SW564	12.
STROM	SW444	36.	SA17	SW565	2.
RK1	SW445	3.	SA18	SW566	-0.
RK2	SW446	1.	SA19	SW567	12.
RK3	SW447	0.	SA20	SW568	-23.
RK4	SW448	4.	US98	SW569	39.
RK5	SW449	10.	US99	SW570	45.
RK6	SW450	-20.	US100	SW571	50.
RK7	SW451	-7.	US101	SW572	9.
RK8	SW452	4.	US102	SW573	7.
RK9	SW453	27.	US103	SW574	-3.
RK10	SW454	10.	US91	SW575	50.
RK11	SW455	-9.	US92	SW576	7.
RK12	SW456	7.	US93	SW577	55.
RK13	SW457	11.	US94	SW578	52.
RK14	SW458	25.	US95	SW579	43.
RK15	SW459	9.	US96	SW580	59.
RK16	SW460	9.	US97	SW581	27.
RK17	SW461	87.	US98	SW582	88.
RK18	SW462	23.	US105	SW583	56.
RK19	SW463	1.	US106	SW584	24.
RK20	SW464	18.	US107	SW585	173.
RK21	SW465	16.	US108	SW586	39.
RK22	SW466	31.	US109	SW587	-15.
RK23	SW467	22.	US110	SW588	21.
RK24	SW468	2.	NM53	SW589	98.
RK25	SW469	5.	NM54	SW590	10.
W85	SW539	---	NM55	SW591	16.
W86	SW540	101.	GG100	SW592	74.
W87	SW541	138.	GG101	SW593	49.
W88	SW542	19.	GG102	SW594	21.
W89	SW543	72.	US103	SW595	49.
GG1	SW544	172.	US104	SW596	48.
GG2	SW545	86.	LEGGS	SW597	87.
GG3	SW546	89.	NM56	SW598	63.
GG4	SW547	24.	SDL	SW602	78.
GG5	SW548	17.	SD2	SW603	81.
SA1	SW549	57.	SD3	SW604	61
SA2	SW550	-8.	SD4	SW605	53.
SA3	SW551	-21.	SD5	SW606	53.
SA4	SW552	27.	SD6	SW607	50.

Table 6 Cont.

Field #	Lab #	Temp. C°	Field #	Lab #	Temp. C°
SD7	SW608	68.	A	N/A	61.
SD8	SW609	66.	B	N/A	26.
SD9	SW610	86.	C	N/A	62.
SD10	SW611	85.	D	N/A	62.
SD11	SW612	82.	E	N/A	81.
SD12	SW613	19.	F	N/A	70.
SD13	SW614	50.	G	N/A	79.
SD14	SW615	58.	H	N/A	25.
SD15	SW616	55.	I	N/A	58.
SD16	SW617	58.	AZ178	SW374	52.
SD17	SW618	56.			
SD18	SW619	50.			
SD19	SW620	84.			
SD20	SW621	86.			
SD21	SW622	87.			
SD22	SW623	65.			
SD23	SW624	43.			
SD24	SW625	52.			
SD25	SW626	74.			
SD26	SW627	62.			
SD27	SW628	44.			
SD28	SW629	67.			
SD29	SW630	49.			
SD30	SW631	60.			
SD31	SW632	64.			
SD32	SW633	64.			
SD33	SW634	42.			
SD34	SW635	39.			
COLM1	SW636	90.			
COLM2	SW637	38.			
COLM3	SW638	29.			
COLM4	SW639	43.			
PAL1	SW691	94.			
PAL2	SW692	58.			
PAL3	SW693	22.			
PAL4	SW695	99.			
PAL5	SW695	61.			
ALBQ1	SW696	58.			
ALBQ2	SW697	39.			
ALBQ3	SW698	59.			
ALBQ4	SW699	68.			
SD35	SW780	106.			
Jemez1	SW808	43.			
Jemez2	SW809	160.			
Jemez3	SW810	60.			
Jemez4	SW811	58.			
Jemez5	SW812	171.			
Jemez6	SW813	166.			
Jemez7	SW814	173.			
Jemez8	SW815	57.			
Jemez9	SW816	60.			
SD1	SW817	74.			
JUST1	SW818	154.			

X 11/15

ENERGY INSTITUTE

OFFICE OF THE DIRECTOR
Box 3EI/Las Cruces, New Mexico 88003
Telephone (505) 646-1745

November 11, 1982

Ms. Susan Prestwich
Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

RE: Contract DE-AS07-78ID01717

Dear Ms. Prestwich:

I am writing to request a no-cost time extension on the above contract through June 30, 1983. As the result of substantial support from the State of New Mexico to conduct low-temperature geothermal resource assessments throughout New Mexico, I have been expending the above contract funds judiciously and now have monies remaining to continue our activities for several more months. Much work of high quality has been accomplished especially in regard to resource assessment activities on Santa Ana Pueblo lands, the generation of a statewide aeromagnetic map, and the production of the scientific geothermal resources map series for New Mexico.

During the requested contract extension period our efforts will be focused on: (1) working closely with NOAA to complete the scientific map series, (2) continuing temperature gradient drilling activities initiated on November 8, 1982, on Santa Ana Pueblo lands and funded by the State of New Mexico, (3) conducting a regional temperature gradient drilling program in north central New Mexico as part of the State match to Task 4, Mod 5, and (4) coordinating an orderly close out of the contract and submission of the deliverables.

If you have any questions concerning our present or planned activities, please do not hesitate to contact me. Thank you for your cooperation.

Sincerely yours,

Larry Icerman

LARRY ICERMAN
Director

LI/dp

cc: Carl Ruscetta, UURI ✓
File DE-AS07-78ID01717

Last 4/4/78 Pak

FILE M2.6

APR 3 1978

Regents of New Mexico State
University
P. O. Box 3699
Las Cruces, New Mexico 88003

RECEIVED
APR 5 1978
GEOTHERMAL ENERGY
BRANCH

Attention: Dr. R. L. San Martin

Subject: CONTRACT NO. EW-78-S-07-1717

Gentlemen:

We are enclosing four copies of the above-subject contract. If satisfactory to you, please have three copies signed by an authorized official, have this signature witnessed by two persons, and affix your legal seal. These three signed copies should then be returned to this office for signature by the Contracting Officer (at which time the "entered into data" will be filled in). The fourth copy is for your files pending receipt from this office of one fully executed copy.

Very truly yours,
ORIGINAL SIGNED BY
W. C. Kendall

W. C. Kendall, Chief
Contracts Branch
Contracts and Procurement Division

C&P

Enclosures:
Contract No. EW-78-S-07-1717 (4)

bcc w/encl:
J. L. Griffith
M. L. Parks

CPC
RTNelson:ak
4-23-78

CPC
WCKendall

IN WITNESS WHEREOF, the parties hereto have executed this document as of the day and year first above written.

THE UNITED STATES OF AMERICA

BY THE DEPARTMENT OF ENERGY

By /s/ R. E. Simonds
R. E. Simonds, Director
Contracts and Procurement Division
Idaho Operations Office
Contracting Officer

REGENTS OF NEW MEXICO STATE UNIVERSITY

Witnesses as to signature of Contractor:

By /s/ Gerald W. Thomas

(Signature)

Gerald W. Thomas
Name (typed)

Name (typed)

Title President

P. O. Box 3699
Las Cruces, New Mexico 88003
(Address) (Business Address)

(Signature)

Name (typed)

(Address)

Contract No. EW-78-S-07-1717

CONTRACT BETWEEN

REGENTS OF NEW MEXICO STATE UNIVERSITY

AND

THE DEPARTMENT OF ENERGY

THIS AGREEMENT, entered into the 1st day of May 1978 (effective as of March 15, 1978), by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), acting through the DEPARTMENT OF ENERGY (hereinafter called "DOE"), and REGENTS OF NEW MEXICO STATE UNIVERSITY (hereinafter called the "Contractor"), a corporation organized and existing under the laws of the State of New Mexico, with its principal office at Las Cruces, New Mexico;

WITNESSETH THAT:

WHEREAS, DOE desires to have the Contractor perform certain research work, as hereinafter provided; and

WHEREAS, this agreement is authorized by Section 302(c)(5) of the Federal Property and Administrative Services Act of 1949, as amended, and the Department of Energy Organization Act of 1977 (Public Law 95-91), and other applicable laws;

NOW, THEREFORE, the parties hereto agree as follows:

ARTICLE I - THE RESEARCH TO BE PERFORMED

(a) The Contractor shall, to the best of its ability, furnish personnel, facilities, equipment, materials, supplies, and services, except such as are furnished by the Government, necessary for the performance of the research provided for in Appendix A hereto, and shall perform the research and report thereon pursuant to the provisions of this contract. It is understood that Appendix A, a guide to the performance of this contract, may be deviated from by the Contractor subject to the specific requirements of this contract.

(b) This work shall be conducted under the direction of Dr. R. L. San Martin or such other member(s) of the Contractor's staff as may be mutually satisfactory to the parties.

ARTICLE II - THE PERIOD OF PERFORMANCE

The period of performance under this contract shall commence on March 15, 1978 and expire on September 30, 1978. Performance may be extended for additional periods by the mutual written agreement of the parties.

ARTICLE III - CONSIDERATION

(a) In full consideration of the Contractor's performance hereunder, DOE shall furnish the equipment, supplies, materials, and services, if any, listed in Article A-II(b), and pay the Contractor the sum of One Hundred Thousand Dollars ($100,000.00), hereinafter called the "Support Ceiling" which sum shall be subject to adjustment as hereinafter provided.

(b) Payments to the Contractor shall equal the "Cumulative Support Cost" of the performance of this contract, as the term "Cumulative Support Cost" is defined in Article B-V; Provided, however, and notwithstanding any other provisions of this contract, that the Government's monetary liability under this contract shall not exceed the Support Ceiling specified in (a) above. DOE shall not pay more than the Support Ceiling or an amount equal to the Cumulative Support Cost, whichever is less. The Contractor shall be obligated to perform under this contract throughout the agreed-upon period of performance, and to bear all costs which DOE has not agreed to pay; Provided, however, That the Contractor shall have the right to cease to perform the research provided for in this contract, upon written notice to DOE to that effect, at any time when or after the Cumulative Support Cost equals or exceeds the Support Ceiling.

(c) The Support Ceiling specified in (a) above may be increased unilaterally by DOE by written notice to the Contractor and may be increased or decreased by written agreement of the parties (whether or not by formal modification to this contract). In the event the stated period of contract performance is extended, the Support Ceiling may be revised to reflect any increased DOE support for the extended period or periods.

(d) Upon termination, or expiration of the total period of performance, the Contractor shall promptly refund to DOE (or make such disposition as DOE may in writing direct) any sums paid by DOE to the Contractor under this contract, through direct payment or under letter of credit, in excess of the Cumulative Support Cost incurred in performance under the contract.

ARTICLE IV - GOVERNMENT PROPERTY

The following items of property procured or fabricated by the Contractor are hereby listed as "Government property":

None

ARTICLE V - ADDITIONAL CONTRACT PROVISIONS

(a) The Contractor shall obtain written approval for all subcontracts and consultant agreements from the Contracting Officer prior to award.

(b) Appendix B attached hereto and made a part hereof, sets forth additional general contract provisions of this contract.

I, Josie Pena, certify that I am the Executive Secretary of the Contractor named under this document, that Gerald W. Thomas, who signed this document on behalf of the Contractor, was then President of said Contractor; that said document was duly signed for and in behalf of said Contractor by authority of its governing body, and is within the scope of its legal powers.

IN WITNESS WHEREOF, I have hereunto affixed my hand and the seal of said corporation this 19th day of April 1978.

/s/ Josie Pena

(SEAL)

Contract No. EW-78-S-07-1717

CONTRACTOR: REGENTS OF NEW MEXICO STATE UNIVERSITY

APPENDIX A

For the Contract Period March 15, 1978 through September 30, 1978.

Article A-I - RESEARCH TO BE PERFORMED BY CONTRACTOR

The scope of the work under this contract is unclassified, and under this agreement with DOE will perform research consisting of the following in accordance with the Contractor's proposal No. NMSU-78-00287 incorporated herein and made a part hereof by reference:

(a) PHASE I

1. Subsurface Temperatures - The Contractor shall search the USGS WATSTORE file for all spring and well temperature in excess of 20°C. About 5000 data points for New Mexico are included in WATSTORE. The WATSTORE data will be supplemented by hot spring-well data from other published or unpublished reports and state and federal water resources file. The Contractor shall use the geothermistry information from hot well-spring data to calculate the inferred base temperatures of the geothermal system.

2. Water Quality - The Contractor shall use the data sources referred to above to tabulate TDS (total dissolved solids), fluoride, boron and other chemical constituents which may have deleterious environmental effects if that water is used. The Contractor shall store this data on magnetic tape for transfer to NOAA and USGS.

* 3. Seismicity - The Contractor shall prepare data on New Mexico seismicity from the USGS computerized file of worldwide epicenters, published seismic maps of New Mexico and, where applicable, from local microseismic surveys.

Subcontracted to New Mex Instit. of Mines & Tech. Swanberg = P.I. ≤ $7,802

* 4. Heat Flow - The Contractor shall compile heat flow data from published work and from unpublished work of several scientists who are presently working on this data collection.

* 5. Thermal Gradient - The Contractor shall make a systematic attempt to measure temperatures in existing wells throughout the geothermally promising areas in New Mexico. Particular attention will be placed on available wells located near suspected geothermal targets which are also near major user markets such as Santa Fe , Socorro, Albuquerque, Las Cruces, Alamogordo, etc.

Subcontracted to NMIMT/BMMR M.A. Reiter: P.I. ≤ $10,000

030278

* Refer to Subcontract document sent to Joe Lee by Betty Stevenson of New Mexico State on June 15, 1978. We will incorp. Subcontracts

6. Volcano-tectonics - The Contractor shall collect data on quaternary volcanism and tectonism and mapping of locations of hot spring deposits (extinct hot springs), active faults, cinder cones, diatremes, maar craters, recent volcanics (particularly silicic) and deep sedimentary basins which may contain large volumes of geothermal fluids.

Subcontracted to Univ. of NM As is part 7

≤ $16,995 combined

7. Geoelectric Investigations - Many of the state's major geothermal targets have been subject to some type of geoelectric prospecting including dipole-dipole and roving dipole soundings, magnetotelluric, audit-magnetotelluric sites, magnetic variation studies and self potential studies. The Contractor shall compile this data where available and conduct additional studies in other geothermally promising areas.

Subcontract to Univ. New Mex. J.E. Callender = P.I.

8. Geothermal Hydrologic Investigations - The Contractor shall analyze and plot existing well data in order to understand the geothermal hydrology of the promising sites in New Mexico. At suitable sites, some pumping tests shall be conducted to quantify the aquifer characteristics of shallow geothermal aquifers.

9. The Contractor shall make all of the above data available to NOAA and the USGS and other participating agencies in this study, viz., DOE, USFS, and BLM.

(b) PHASE II

1. The Contractor shall drill two 4-inch diameter, 1,000 ft. deep wells, one in Las Alturas area near Las Cruces and the other in the Socorro peak geothermal field west of NMIMT campus at Socorro. Each of these wells will be completed by placing a 1-inch metal pipe as casing, leaving the drilling mud around the casing and cementing the top 10 feet around the pipe. The holes will be used primarily to measure temperature at various depths to calculate the geothermal gradient. The site for each well will be selected on the basis of available geological, geophysical, and terrain information. After temperature measurements, the holes will be sealed at the top.

2. On the basis of data obtained from Phase I effort and through temperature measurement in 1-inch holes, the Contractor shall decide whether to drill a deeper (2,500 feet), 7-inch hole at one of the two areas listed in (b)1., above. This hole will be used to collect detailed geologic

data through sample collection and through geophysical well logging, e.g., electric resistivity and x-ray and neutron logging. The hole will also be used to conduct pumping tests to determine the characteristics of the geothermal aquifer(s). Water samples from this well will be collected to determine the quality of geothermal water.

Article A-II - WAYS AND MEANS OF PERFORMANCE

(a) Items for which support will be provided as indicated in A-III below:

Phase I	DOE	CONTRACTOR
Professional Staff and Faculty	$26,700	
Student Salaries	5,350	
Overhead (67% of salaries and wages)	21,473	
Fringes (14% of professional salaries)	3,738	
Travel for Field Work	15,000	
Supplies	1,239	
Publication Costs	1,500	
SUBTOTAL	$75,000	
Phase II		
Drill two temperature gradient wells and collect data	15,000	15,000
Drill one 7", 2,500 ft. depth test hole log geophysical data	60,000	20,000
SUBTOTAL	$75,000	$35,000
TOTALS	$150,000	$35,000

(b) Items, if any, significant to the performance of this contract, but excluded from computation of Support Cost and from consideration in proportioning costs:

None

(c) Costs contributed by the Contractor but excluded from computation of Support Ceiling:

$35,000.00

Article A-III - FUNDING

The total estimated cost to DOE for the performance of Phases I and II under Article A-II above is $150,000.00. An amount of $100,000.00 is hereby obligated for the period from March 15, 1978 through September 30, 1978 to start the work. The balance of $50,000.00 will be obligated when and if such funds become available. The Contractor shall perform the research set forth under Phases I and II of Article A-I until 90% of the $100,000.00 is obligated. At that time if the balance of $50,000.00 has not been authorized, the Contractor shall discontinue work and notify DOE that work has been stopped until additional funds are authorized. If the balance of $50,000.00 will not be authorized, DOE will notify the Contractor in writing within 30 days and at that time the Contractor shall submit a final report for the work that has been performed. DOE will pay 100% of the actual costs enumerated in Article A-II subject to the provisions contained in this article, Article III, and Article B-V.

Article A-IV - ADMINISTRATION AND REPORTS

(a) Principal Investigator - Dr. R. L. San Martin

DOE Program Manager - J. L. Griffith, DOE
Idaho Operations Office
Idaho Falls, Idaho

The Principal Investigator shall direct the work as outlined in discussions and in periodic letters from the Program Manager.

(b) Reports

1. General - General reporting requirements for DOE/DGE contractors are presented in ERDA76-72, "Requirements and Procedures for Reporting Geothermal Information", dated July 1976. Reports should be prepared for this contract as follows:

	Frequency	Draft to Program Manager for Concurrence	Distribution: Program Manager	Distribution: TIC
Administrative Letter Report	_____	N/A	10	N/A
Technical Progress Report	_____	3 weeks after end of reporting period	10	1 camera-ready copy

Article A-IV - ADMINISTRATION AND REPORTS (Cont'd)

	Frequency	Draft to Program Manager for Concurrence	Distribution Program Manager	Distribution TIC
Final Report	Completion of contract effort	3 weeks after end of reporting period	10	1 camera-ready copy
Topical Reports	As required	As agreed with Program Manager	10	1 camera-ready copy

2. Reports Format

The following will apply to all technical progress reports, topical reports and final reports:

(a) The cover page will be supplied by DOE/DGE unless the Contractor intends to use its corporate cover.

(b) Reports under this contract will all carry the number prescribed by the Program Manager. Report numbers will be assigned sequentially.

(c) The distribution category for reports prepared under this contract will be UC-66A as defined on page 16 of ERDA-76/72.

3. Content of Reports

Administrative Letter Reports -- Progress memo to Program Manager on personnel and fiscal matters, including such information as rate of expenditures, equipment ordering/availability/receipt, loss or gain of personnel, etc.

Technical Progress Reports -- Full account of progress, problems encountered, plans for future reporting periods, and an assessment of prospects for future progress, identifying clearly all facts with both positive and negative impact on expections for completely achieving task objectives on schedule and within contract funds, should include, as appropriate, accounts of activities aimed at utilization of task results.

Final Report - Comprehensive report of objectives, results and conclusions of task effort, should identify accomplishments,

Article A-IV - ADMINISTRATION AND REPORTS (Cont'd)

problems encountered and solutions applied, conclusions reached and recommendations for applications of results. It shall also include a summary of the available geological, geochemical, geophysical, hydrological, and environmental data relevant to the distribution of the low and moderate temperature geothermal resources in New Mexico. The report will contain a prioritized list of candidate sites for reservoir confirmation studies during follow-on work, if any. A map shall be prepared showing the low temperature geothermal resources for the State of New Mexico.

M. Widmayer
GEB E-T

FL 472.6

JUN 1 1978

RECEIVED
JUN 5 1978
GEOTHERMAL ENERGY BRANCH

New Mexico State University
Grants and Contracts Accounting
Box 3AA
Las Cruces, New Mexico 88003

Attention: Maysie Cross, Supervisor, Grants and Contracts Accounting

Reference: Contract No. EW-78-S-07-1717

Subject: INVOICE NO. 2, LETTER DATED MAY 22, 1978

Gentlemen:

When the referenced contract was executed DOE released $45,000 which was 45 per cent of the original support ceiling. Even though the total DOE share under the contract is $150,000, DOE only obligated $100,000. Therefore, DOE cannot pay the remaining $22,500 until the balance of $50,000 is obligated under the contract.

If New Mexico State is short of funds, it should request the second 45 per cent under the contract. Any request for additional funds should include supporting data to show how funds have been spent.

Very truly yours,
Original Signed By
R. E. Simonds

R. E. Simonds, Director
Contracts and Procurement Division

bcc: M. A. Widmayer, GEB
E. G. Jones, FM

CPC	GEB	FM	C&P
JOLee:ak			
WCKendall	JLGriffith	EGJones	RESimonds
5-30-78			

5-26-78

BUSINESS OFFICE

Box 3AA/Las Cruces, New Mexico 88003
Telephone (505) 646-2521

NEW MEXICO STATE UNIVERSITY

22 May 1978

Contract No. EW-78-S-07-1717

Invoice No. 2

Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

ARTICLE B-IV PAYMENTS:

45% of $150,000.00 contract requested by NMSU $67,500.00. Amount received $45,000.00 on voucher dated 5/12/78. Balance requested $22,500.00.

NEW MEXICO STATE UNIVERSITY

By _____
MAYSIE CROSS, Supervisor
Grant & Contract Accounting

CR: 3104-150-112

cc: Dr. R. San Martin

Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

SEP 20 1978

Regents, New Mexico State University
Office of Grants and Contracts
P.O. Box 3699
Las Cruces, New Mexico 88003

Attention: Betty Stevenson, Director, Grants and Contracts

Subject: CONTRACT NO. EW-78-S-07-1717

Gentlemen:

The "Support Ceiling" set forth in Article III-Consideration, paragraph (a) is hereby increased from $100,000.00 to $150,000.00, and the amount obligated under Article A-III-Funding of Appendix A is also increased from $100,000.00 to $150,000.00. Total FY 78

The scope of work set forth under Article A-I-Research To Be Performed By Contractor, paragraph (b) of Appendix A is hereby changed to show that the two 1000 feet deep slim holes and the one 2500 feet deep x 7 inch diameter hole under Phase II will all be drilled at the Las Alturas Geothermal Field, Las Cruces, New Mexico.

The period of performance for the work is hereby extended from September 30, 1978 to September 30, 1979.

Please indicate receipt and acceptance of the above changes by signing in the place indicated below and returning two copies to this office.

Very truly yours,

R. E. Simonds, Director
Contracts Management Division

First Endorsement

To: R. E. Simonds, Director
From: Betty L. Stevenson, Director

ACCEPTED:
The Regents of New Mexico State University
BY:

TITLE: Acting President

DATE: 25 September 1978

In accordance with the above instructions the original and one copy of this letter is returned accepted.

cc: R. L. San Martin

OG&C 7133-79

MAR 2 6 1979

New Mexico State University
Office of Grants and Contracts
P.O. Box 3699
Las Cruces, NM 88003

Attn: Betty Stevenson, Director
Office of Grants and Contracts

Subject: (1) CONTRACT NO. DE-AS07-78ID01717 (FORMERLY EW-78-S-07-1717)
(2) CONTRACT NO. DE-AS07-78ID01756 (FORMERLY ET-78-S-07-1756)

Gentlemen:

The U.S. Department of Energy is establishing a uniform contract report numbering system. Effective immediately contractors having no approved unique codes are to number all formal reports, (such as, annual, topical and final) in accordance with the procedure shown below.

All contractors should create unique numbering systems by (a) identifying the report with a DOE code, (b) selecting the final seven characters from the applicable contract number (two alphabetic and five numerals), and (c) adding suffix numbers sequentially for each report generated under the contract. For new contracts, the sequential number should begin with 1. For existing contracts the established sequence should continue. Slash marks and hyphens should be used as shown in the examples.

Example: Report numbers generated from contract number DE-AC07-78ET01834:

DOE/ET/01834-1; DOE/ET/01834-2; DOE/ET/01834-3; etc.

NOTE: It is essential that both the final five digit numeral and the two preceding alphabetical characters be extracted from the contract number as shown.

Reports issued in more than one binding, or reissued as revisions or latter editions, are to be identified by adding the following additional suffixes to the basic number: Rev. - Revision; Vol. - Volume; Pt. - Part; Add. - Addendum; Ed. - Edition; etc.

Examples: DOE/ET/01834-1 Rev.
DOE/ET/01834-1 Rev. 2

DOE/ET/01834-1 Pt. 1
DOE/ET/01834-1 Pt. 2

Please note, the above reporting system is to be used for formal reports that are furnished to DOE upon completion of a contract, contract phase, or a contract reporting period. Formal reports are retained by DOE's Technical Information Center (TIC), Oak Ridge, Tennessee, and distributed to interested parties on request.

If you have any questions please contact J. O. Lee of my office at telephone number (208) 526-1838.

Very truly yours,

J. P. Anderson, Chief
Contract Administration Branch

M. Widmayer
E:T

file M.2.6

JUN 1 1979

RECEIVED
1979
GEOTHERMAL ENERGY
BRANCH

New Mexico State University
Office of Grants and Contracts
P. O. Box 3699
Las Cruces, New Mexico 88003

Attention: Betty Stevenson, Director

Subject: MODIFICATION NO. A001 TO CONTRACT NO. DE-AS07-78ID01717
(FORMERLY NO. EW-78-S-07-1717)

Gentlemen:

You are hereby authorized effective May 15, 1979, to begin work and incur costs up to a maximum of $50,000 under proposed Modification No. A001 to the subject contract, pending execution of the formal modification. Work is to be performed in accordance with New Mexico State University Proposal No. NMSU-78-20-214 and the terms of Contract No. DE-AS07-78ID01717.

The resulting modification will contain the following article:

"Date of Incurrence of Costs - The Contractor shall be entitled to reimbursement for costs incurred in an amount not to exceed $50,000 on or after May 15, 1979, which, if incurred after this modification had been entered into, would have been reimbursable under the provisions of this modification."

If you have further questions, please contact J. O. Lee of my staff at telephone number 208-526-1838. Please indicate acceptance by signing in the space indicated below and returning one copy to this office. The second copy is for your files.

Very truly yours,
Original Signed by
R. E. Simonds
R. E. Simonds, Director
Contracts Management Division

Accepted:

By _____

Title _____

Date _____

bcc: E. G. Jones
M. A. Widmayer

RECORD NOTE: NMSU Proposal does not contain complete cost breakdown. It will take until approximately 6/30/79 to complete negotiations and execute contract. NMSU needs to hire summer employees by 6/1/79.

CAB
JOLee:tt

RDB
MAWidmayer

FMD
EGJones

P&B

M

CMD

file M.2.6

AUG 17 1979

RECEIVED
AUG 21 1979
GEOTHERMAL ENERGY
BRANCH

Regents of New Mexico State University
Office of Grants and Contracts
P. O. Box 3699
Las Cruces, New Mexico 88003

Attention: Betty Stevenson, Director
Office of Grants and Contracts

SUBJECT: MODIFICATION NO. A001 TO CONTRACT NO. DE-AS07-78ID01717

Gentlemen:

Enclosed are three copies of the subject modification, which I have signed on behalf of DOE. If this modification is satisfactory to you, please sign two copies and return them to this office. The third copy is for your files.

You are reminded that the negotiated overhead rate for the University of New Mexico is 53% of direct salaries and wages, and for New Mexico Institute of Mining and Technology, the negotiated overhead rate is 40% of direct salaries and wages. You should insure that these two organizations comply with the negotiated overhead rates prior to awarding subcontracts to them.

If you have any questions, please contact J. O. Lee of my staff.

Sincerely yours,
Original Signed By
J. P. Anderson

J. P. Anderson, Chief
Contract Administration Branch

Enclosures:
As noted above

bcc: E. G. Jones
M. A. Widmayer

CAB
JOLee
8-17-79

CAB
JPAnderson

STANDARD FORM 30, JULY 1966
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.101

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

PAGE 1 OF 2

1. AMENDMENT/MODIFICATION NO.	2. EFFECTIVE DATE	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. (If applicable)
A001			

5. ISSUED BY	CODE	6. ADMINISTERED BY (If other than block 5)	CODE
U. S. Department of Energy Idaho Operations Office 550 Second Street Idaho Falls, Idaho 83401			

7. CONTRACTOR NAME AND ADDRESS (Street, city, county, state, and ZIP Code)

CODE _____ FACILITY CODE _____

Regents of New Mexico State University
Office of Grants and Contracts
P.O. Box 3699
Las Cruces, New Mexico 88003
Attn: Betty Stevenson, Director
Office of Grants and Contracts

8.
☐ AMENDMENT OF SOLICITATION NO. _____
DATED _____ (See block 9)
☒ MODIFICATION OF CONTRACT/ORDER NO. DE-AS07-78ID01717
(formerly No. EW-78-S-07-1717
DATED May 9, 1978 (See block 11)

9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10. ACCOUNTING AND APPROPRIATION DATA (If required)

11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) ☐ This Change Order is issued pursuant to: _____
The Changes set forth in block 12 are made in the above numbered contract/order.

(b) ☐ The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) ☒ This Supplemental Agreement is entered into pursuant to authority of Public Law 95-91

It modifies the above numbered contract as set forth in block 12.

12. DESCRIPTION OF AMENDMENT/MODIFICATION

1. Contract is hereby changed from a "Special Research Support Agreement" to a "Special Research Contract." Wherever the words "Special Research Support Agreement" are used, they shall mean "Special Research Contract."

2. Article I, "THE RESEARCH TO BE PERFORMED," is amended by adding a new paragraph as follows:

"Appendix A1, attached to this Supplemental Agreement and made a part hereof, provides for the research to be performed by the Contractor during the Contract period specified therein."

3. Article II, "THE PERIOD OF PERFORMANCE," is amended as follows:

"The period of performance for the work performed under this Supplemental Agreement shall commence on May 15, 1979 and expire on December 31, 1979. The period of time for performing the research work under Appendix A1 may be extended for additional periods by the mutual written agreement of the parties."

CONTINUED.....

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

13. ☐ CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT ☒ CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 2 COPIES TO ISSUING OFFICE

14. NAME OF CONTRACTOR/OFFEROR	15. UNITED STATES OF AMERICA
The Regents of New Mexico State University BY Gerald W Thomas (Signature of person authorized to sign)	BY J P Anderson (Signature of Contracting Officer)

15. NAME AND TITLE OF SIGNER (Type or print)	16. DATE SIGNED	18. NAME OF CONTRACTING OFFICER (Type or print)	19. DATE SIGNED
Gerald W. Thomas President	19 Sep 1979	J. P. Anderson, Chief Contract Administration Branch	AUG 17 1979

NSN 7540-01-152-8070 30-101-31

☆ U.S. GOVERNMENT PRINTING OFFICE: 1967—244-244

Description - continued:

4. Article III, "CONSIDERATION", paragraph (a), is hereby revised to increase the contract Support Ceiling to a total of Three Hundred Fifty Thousand Dollars ($350,000.00). This includes $100,000.00 obligated by the original contract, $50,000.00 obligated by letter dated September 30, 1978 and Two Hundred Thousand Dollars ($200,000.00) obligated by this Modification No. A001.

5. Article IV, "GOVERNMENT PROPERTY", is revised to read as follows:

"The following items of property procured or fabricated by the Contractor are hereby listed as "Government Property."

a.	60 Reflections Geophones @ $35/each.....	$2,100
b.	5 Geophone Cable Assemblies with Summing Boxes	$2,000
c.	1 Gas Powered Auger	$ 400
d.	1 Depth to Water Temperature.....	$1,000 ✓
e.	1 Computer Terminal/Modern Package (G. E.).....	$2,200 ✓
f.	1 Temperature Logging System.....	$5,000 ✓
g.	1 2-Channel Spectrum Analyzer (Partial Cost only).....	$3,150 ✓
h.	1 Water Level Meter for Deep Wells.....	$ 800
	Total:	$16,650

6. Article V - "ADDITIONAL CONTRACT PROVISIONS" is revised to add paragraph (c) to read as follows:

" (c) "Date of Incurrence of Costs - The Contractor shall be entitled to reimbursement for costs incurred in an amount not to exceed $50,000 on or after May 15, 1979, which, if incurred after this modification had been entered into, would have been reimbursable under the provisions of this modification."

Contract No. DE-AS07-78ID01717

CONTRACTOR: REGENTS OF NEW MEXICO STATE UNIVERSITY

APPENDIX A1

For the contract period May 15, 1979 through December 31, 1979.

Article A-I - RESEARCH TO BE PERFORMED BY CONTRACTOR

(a) The scope of the work under this contract is unclassified, and the Contractor under this agreement with DOE will perform research consisting of the following in accordance with the Contractor's proposal No. NMSU-79-20-214 as revised July 23, 1979, incorporated herein and made a part hereof by reference:

Task 1 - Las Alturas

A seismic profile of the Las Alturas geothermal reservoir will be conducted to define subsurface structures controlling the geothermal system. Funding will cover operating expenses for data collection, reduction, and interpretation, and for purchase of reflection geophones as outlines in the proposal. The principle investigator for this task will be Dr. Paul Morgan of New Mexico State University. The product of this research will be a seismic profile map and report of findings in the Las Alturas geothermal reservoir area, and recommendations for future development of the resource.

Task 2 - Socorro

Three tasks will be conducted at Socorro:

a) A seismic study will be conducted to determine the thickness of tertiary sediments on the New Mexico Institute of Mining and Technology (NMIMT) land as outlined in the proposal. Dr. Allan Sanford and Dr. John Schlue from NMIMT will be the co-principle investigators of this task. The product of this research will be a seismic profile map and report of findings on the NMIMT land and recommendations for future development of the potential resource.

b) A tritium study will be conducted by sampling and analysis of water from springs and wells in the Socorro Mt., NMIMT, and Snake Ranch Flats areas. In addition, previous tritium and water well data will be compiled and interpreted to determine water quality and groundwater circulation patterns. Dr. Gerardo Gross of NMIMT will be the principle investigator. The product will be in the form of a report with maps defining the findings and recommendations about the nature of groundwater circulation in the Socorro area.

Article A-I - RESEARCH TO BE PERFORMED BY CONTRACTOR (Cont'd)

c) Hydrology studies will be conducted. Standard pump tests will be conducted on available wells in order to determine flow rate, draw down, and recharge. Numerical modeling will be employed to determine the heat production capacity and longevity of the geothermal reservoir.

Task 3 - Truth or Consequences

Work under this task shall include:

- compilation and synthesis of all available geoscience data for the Truth or Consequences area.

- geologic mapping of hot spring deposits, recent tectonics, faults, and lineaments on the western side of the Elephant Butte Reservoir.

- continued gravity studies to define faults and geometry of the geothermal reservoirs.

- detailed studies of the aquifer characteristics.

- temperature logging of all available wells in the Truth or Consequences area; in addition, chemical analyses will be performed on waters from selected wells to determine nature of contaminants and the presence of corroding or scaling ions.

Faculty at the University of New Mexico will conduct all but the last item under this task. Dr. C. A. Swanberg and Dr. Paul Morgan will conduct the temperature logging.

Task 4 - Chamberino and Mesquite

A Schlumberger, dipole-dipole and magnetotelluric survey will be conducted in an area near Mesquite and Chamberino, New Mexico, as outlined in the proposal. The low resistivity zone associated with known warm water will be delineated, as well as the zone's thickness. Dr. Charles Young of New Mexico State University will conduct this project.

Task 5 - Southcentral New Mexico Counties

Existing wells will be thermally logged in southcentral portions of the state including Mesquite/Berino, Columbus, Tularosa Basin, Albuquerque, Socorro, Las Alturas, Radium Springs, San Diego Mountains

Article A-I - RESEARCH TO BE PERFORMED BY CONTRACTOR (Cont'd)

Task 5 - Southcentral New Mexico Counties (Cont'd)

and other promising areas in southern New Mexico. Dr. C. A. Swanberg and Dr. Paul Morgan of New Mexico State University will be co-principle investigators for this project.

Task 6 - Columbus, Black Range, Potrillo Mountains and Southern Tularosa Basin

Detailed maping of faults associated with Basalt Lavas will be undertaken in the Columbus, Black Range, Potrillo Mountains and Southern Tularosa Basin areas. Basalt samples will be collected and dated by K-Ar methods. Dr. William Seager of New Mexico State University will conduct this project.

Task 7 - Northwest New Mexico Counties

A reconnaisance study will be conducted to identify promising geothermal areas which are related to near-term applications to industrial, agricultural, and municipal uses. Facility members of the Nex Mexico State University will perform this task.

(b) The Contractor shall perform such other tasks as may be mutually agreeable among the parties.

Article A-II - WAYS AND MEANS OF PERFORMANCE

(a) Items for which support may be provided as indicated in A-III below:

	DOE Share	New Mexico* Cost Sharing
1. Salaries, Wages and Fringe Benefits		
Faculty Salaries:		
Project Manager		$20,811
Las Alturas	$ 1,960	
T or C and SCNM	5,020	
Chamberino & Mesquite, FY79	708	
Chamberino & Mesquite, FY80	5,486	
Columbus	2,600	
NWNM, FY79	2,105	
NWNM, FY80	2,095	
Total Faculty Salaries	$19,974	$20,811

Article A-II - WAYS AND MEANS OF PERFORMANCE (Cont'd)

	DOE Share	New Mexico* Cost Sharing
1. Salaries, Wages and Fringe Benefits (Cont'd)		
Student Salaries:		
Las Alturas	$ 3,600	
T or T and SCNM	8,430	
Chamberino & Mesquite, FY79	700	
Chamberino & Mesquite, FY80	2,546	
NWNM, FY79	1,200	
NWNM, FY80	2,256	
Total Student Salaries	$18,732	0
Fringe Benefits		
Faculty F.B. (15.13% of $19,974 and $20,811)	$ 2,558	$ 3,613
Student F.B. (2% of $18,732)	375	0
	$ 2,933	$ 3,613
Total S,W, and F.B.	$41,639	$ 3,613
2. Travel		
Project Manager		$ 750
Las Alturas	$ 1,125	
SCNM Counties	6,200	
Chamberino & Mesquite	1,874	
Columbus, etc	1,830	
NWNM, FY79	2,460	
NWNM, FY80	1,420	
Total Travel	$14,909	$ 705
3. Permanent Equipment		
Las Alturas	$ 4,500	
T or C and SCNM	5,000	
Chamberino & Mesquite, FY79	3,150	
NWNM, FY80	800	
Total Equipment	$13,450	0

Article A-II - WAYS AND MEANS OF PERFORMANCE (Cont'd)

	DOE Share	New Mexico* Cost Sharing
4. Expendable Supplies		
Project Manager		$ 790
Las Alturas	$ 700	
SCNM Counties	650	
Chamberino & Mesquite	500	
NWNM, FY79	200	
NWNM, FY80	286	
Total Supplies	~~$ 2,226~~ 2336	$ 790
5. Computing Costs		
Las Alturas	$ 470	$
T or C and SC NM	650	
Chamberino & Mesquite	200	
Total Computing Costs	$ 1,320	0
6. Other Direct Costs		
Publication Costs Project Manager		$ 4,500
T or C and SCNM:		
Telephone, drafting, reports ($500)	4 500	
Drilling shallow wells ($4,000)	~~$4,550~~	
Chamberino & Mesquite, FY80:		
Report, drafting, photography ($300)	300	
Columbus:		
Publications, photos, thin sections ($729)		
Basalt dating ($4,500)	5,229	
NW NM, FY79:		
Publications, drafting ($620)	620	
NW NM, FY80:		
Publications, drafting ($650)	650	
Total Other Direct Costs	$11,349	$ 4,500
7. Subcontracting		
NMIMT	$39,800	0
University of NM	54,945	0
Total Subcontracts	$94,745	0

Article A-II - WAYS AND MEANS OF PERFORMANCE (Cont'd)

	DOE Share	New Mexico* Cost Sharing
8. Indirect Costs		
Las Alturas (77% of $5,560)	$ 4,281	$ 0
T or C and SC NM (77% of $13,450)	10,357	0
Chamberino & Mesquite, FY79 (77% of $1,408)	0	1,084
Chamberino & Mesquite, FY80 (77% of 8,032)	365	5,819
Columbus (77% of $2,600)	279	1,723
NW NM, FY79 (77% of $3,305)	1,620	925
NW NM, FY80 (77% of $4,351)	3,350	0
Total Indirect Costs	$20,252	$ 9,551
TOTAL	$200,000	$40,015

* Salary and Fringe Benefits of Project Manager are not subject to NMEI overhead as funds are contributed by State of New Mexico.

Article A-III - FUNDING

The total estimated cost for the performance of work under Article A-II above is $240,015.00. DOE's share of this total budget is $200,000.00 and the Contractor's share is $40,015.00. DOE will pay 100% of its share of the actual costs enumerated in Article A-II subject to the provisions of Article B-V.

Article A-IV - ADMINISTRATION AND REPORTS

(a) Principal Investigator - Harold A. Daw

DOE Program Manager - L. L. Mink, Resource Definition Branch
U.S. Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

(b) All Project Information Reports, as required by DOE Uniform Contractor Reporting System, Volume I, dated September 1978, and as indicated on the attached DOE Form CF-537, shall be submitted to the DOE Program Officer in accordance with the special instructions.

DOE Form CR-537
(1-78)

U. S. DEPARTMENT OF ENERGY

RE RTING REQUIREMENTS CHECKLI

(See Instructions on Reverse)

FORM APPROVED
OMB NO. 38R-0190

1. IDENTIFICATION NO. AS07-78ID01717	2. OBLIGATION INSTRUMENT: PR 07-79ID01717.501

3. REPORTING REQUIREMENTS

A. PROJECT MANAGEMENT		Frequency
1. ☐ Management Plan		
2. ☐ Milestone Schedule & Status Report		
3. ☐ Cost Plan		
4. ☐ Manpower Plan		
5. ☒ Contract Management Summary Report	6	M
6. ☒ Project Status Report	6	M
7. ☐ Cost Management Report		
8. ☐ Manpower Management Report		
9. ☐ Conference Record		
10. ☐ Hot Line Report		

B. TECHNICAL INFORMATION REPORTING		Frequency
1. ☐ Notice of Energy RD&D Project (SSIE)		
2. ☒ Technical Progress Report	10	S
3. ☐ Topical Report		
4. ☒ Final Technical Report	10	F
C. PMS/MINI-PMS		
1. Cost Performance Report		
☐ Format 1 WBS		
☐ Format 2 Functional		
☐ Format 3 Baseline		
☐ Format 5 Problem Analysis		
2. ☐ Cost/Schedule Status Report		
3. ☐ Management Control System Description		
4. ☐ Summary System Description		
5. ☐ WBS Dictionary		

FREQUENCY CODES:
A – As Required
C – Contract Change
F – Final (End of Contract)
M – Monthly
O – One Time (Soon After Contract Award)
Q – Quarterly
S – Semi-Annually
X – Mandatory for Delivery with Proposals/Bid
Y – Yearly or Upon Contract Renewal

4. SPECIAL INSTRUCTIONS

Only the camera ready copy of the Final Technical Report will be furnished to TIC.

5. ATTACHED HEREWITH:

☐ Report Distribution List ☐
☐ WBS/Reporting Category ☐

6. PREPARED BY (Signature and date):	7. REVIEWED BY (Signature and date): D O-Lee 7-12-79

File

New Mexico Energy Institute
Office of Director
P. O. Box 3EI
Las Cruces, New Mexico 88003

Attention: Arlene H. Starkey, Assistant Director

Subject: CONTRACT NO. DE-AS07-78ID01717
(FORMERLY NO. EW-78-S-07-1717)

Gentlemen:

As requested in your letter dated August 21, 1979, you are authorized to drill a production well in lieu of the 2500 foot test well that was to be drilled at Las Alturas. The new scope of work will be as follows:

> "To drill a production test well on the Las Alturas low temperature geothermal anomaly designed initially as a production well but which can, at a later date, be drilled deeper as a test well. The present target is a zone between 750 and 850 feet which, based upon the logging of the two slim test holes, displays high porosity and a water temperature of about 60° C. A production rate of 200 gpm of 60° C water would be sufficient to heat hot water for the NMSU campus, if the production test well establishes this availability of flow rate."

It is understood and agreed by both parties that the above change will be made with no increase in funding under the contract.

Very truly yours,

Original Signed By
J. P. Anderson

J. P. Anderson, Chief
Contract Administration Branch
Contracts Management Division

cc: M. A. Widmayer

Thorpe

JAN 30 1980

File M.2.b

STANDARD FORM 30, JULY 1966
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.101

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

PAGE 1 OF 1

1. AMENDMENT/MODIFICATION NO.: A002
2. EFFECTIVE DATE:
3. REQUISITION/PURCHASE REQUEST NO.:
4. PROJECT NO. (If applicable):

5. ISSUED BY — CODE:
U. S. Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

6. ADMINISTERED BY (If other than block 5) — CODE:

7. CONTRACTOR NAME AND ADDRESS (Street, city, county, state, and ZIP Code) — CODE: — FACILITY CODE:
Regents of New Mexico State University
Office of Grants and Contracts
P.O. Box 3699
Las Cruces, NM 88003
Attn: Betty Stevenson, Director
Office of Grants and Contracts

8.
☐ AMENDMENT OF SOLICITATION NO. ________
DATED ________ (See block 9)
☒ MODIFICATION OF CONTRACT/ORDER NO. DE-AS07-78ID01717
(Formerly EW-78-S-07-1717)
DATED 5/9/78 (See block 11)

9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning ______ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10. ACCOUNTING AND APPROPRIATION DATA (If required)

11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) ☐ This Change Order is issued pursuant to ________
The Changes set forth in block 12 are made to the above numbered contract/order.

(b) ☐ The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) ☒ This Supplemental Agreement is entered into pursuant to authority of Public Law 95-91 and other applicable laws
It modifies the above numbered contract as set forth in block 12.

12. DESCRIPTION OF AMENDMENT/MODIFICATION

The period of performance for Modification No. A001 is hereby extended from December 31, 1979 to May 15, 1980.

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

13. ☐ CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT ☒ CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 2 COPIES TO ISSUING OFFICE

14. NAME OF CONTRACTOR/OFFEROR: The Regents of New Mexico State University
BY D. C. Roush (Signature of person authorized to sign)

17. UNITED STATES OF AMERICA
BY J. F. Marmo (Signature of Contracting Officer)

15. NAME AND TITLE OF SIGNER (Type or print): D.C. Roush, Acting President
16. DATE SIGNED: 10 Jan 80
18. NAME OF CONTRACTING OFFICER (Type or print): J. F. Marmo
19. DATE SIGNED: 12/28/79

30-101-01

STANDARD FORM 30, JULY 1966
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.101

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

PAGE 1 OF 1

1. AMENDMENT/MODIFICATION NO.	2. EFFECTIVE DATE	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. (If applicable)
M003	5-15-80	07-80ID01717.506	

5. ISSUED BY (CODE)

U. S. Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

6. ADMINISTERED BY (If other than block 5) (CODE) M26

7. CONTRACTOR NAME AND ADDRESS (CODE) (FACILITY CODE)

Regents of New Mexico State University
Office of Grants and Contracts
P. O. Box 3699
Las Cruces, N.M. 88003
ATTN: Alan Sales, Acting Director
Office of Grants and Contracts

(street, city, county, state, and ZIP code)

8.
- ☐ AMENDMENT OF SOLICITATION NO. _____,
  DATED _____ (See block 9)
- ☒ MODIFICATION OF CONTRACT/ORDER NO. DE-AS07-78ID01717
  DATED 5-9-78 (See block 11)

THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods: (a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

ACCOUNTING AND APPROPRIATION DATA (If required)

THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) ☐ This Change Order is issued pursuant to _____
The Changes set forth in block 12 are made to the above numbered contract/order.

(b) ☐ The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) ☒ This Supplemental Agreement is entered into pursuant to authority of Mutual Agreement of the Parties.
It modifies the above numbered contract as set forth in block 12.

DESCRIPTION OF AMENDMENT/MODIFICATION

As requested during telephone conversation between J. O. Lee of DOE and Arlene Starkey of New Mexico Energy Institute May 12, 1980, the period of performance for Modification No. A001 is extended from May 15, 1980 through July 1, 1980.

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

☒ CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT ☐ CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN _____ COPIES TO ISSUING OFFICE

15A. NAME OF CONTRACTOR/OFFEROR	17. UNITED STATES OF AMERICA
(Signature of person authorized to sign)	BY (Signature of Contracting Officer)
15B. NAME AND TITLE OF SIGNER (Type or print) / 16. DATE SIGNED	18. NAME OF CONTRACTING OFFICER (Type or print): J. P. Anderson, Chief, Contract Operations Branch / 19. DATE SIGNED

M. 2. 6

June 11, 1980

New Mexico State University
New Mexico Energy Institute
Box 3E1
Las Cruces, New Mexico 88003

ATTENTION: Arlene Starkey

SUBJECT: MODIFICATION NO. A004 TO CONTRACT NO. DE-AS07-78ID01717

Gentlemen:

The three "Memorandums of Agreement" covering work under Tasks 1, 2, and 7 to the subject modification are approved.

The following subcontracts are also approved:

Subcontractor	Task
UNM	6
SDSU	6
NMIMT	8
Dr. Larry Lapley	4
NMIMT	3

It is understood the above agreements and subcontracts are subject to the General Provisions from Appendix B to the subject contract.

Very truly yours,

/s/ J. P. Anderson

J. P. Anderson
Contracting Officer
Chief, Contract Operations Branch
Contracts Management Division

bcc: M. A. Widmayer

COB
JOLee:mh
6/11/80

COB
JPAnderson

RECORD NOTE: [illegible]
Approval from RDB is attached. FMD had reviewed cost breakdowns for each agreement and for each subcontract during review of modification.

M.2.6

Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

MAY 19 [illegible]

Regents of New Mexico State University
Office of Grants and Contracts
P. O. Box 3699
Las Cruces, New Mexico 88003

ATTENTION: Alan Sales, Acting Director

SUBJECT: MODIFICATION NO. A004 - CONTRACT NO. DE-A[illegible]07-78ID01717

Gentlemen:

You are hereby authorized effective May 15, 1980, to begin work and incur costs up to a maximum of $75,000 under proposed Modification No. A004 to the subject contract pending execution of the formal modification. Work is to be performed in accordance with the NMSU Proposal No. 80-20-251R as revised May 8, 1980.

The resulting modification will include the following article:

> "Date of Incurrence of Costs - The Contractor shall be entitled to reimbursement for costs incurred in an amount not to exceed $75,000 on or after May 15, 1980, which, if incurred after this modification had been entered into, would have been reimbursable under the provisions of this modification."

In the event the Regents of New Mexico State University and the Government are unable to reach agreement and a modification is not executed, the Government shall not be liable for any obligations arising out of this letter.

Please indicate your acceptance of this action by signing in the space indicated on the following page and returning one copy to this office.

If you have any questions, please contact J. O. Lee of my staff at telephone 208-526-1838.

Very truly yours,

J. P. Anderson
Contracting Officer
Chief, Contract Operations Branch
Contracts Management Division

Attachment

ACCEPTED:

Name D. C. Arnold

Title Acting President

Date May 26, 1980

File M.2.6

June 13, 1980

Regents of New Mexico State University
Office of Grants and Contracts
P. O. Box 3699
Las Cruces, New Mexico 88003

ATTENTION: Jane Youngers, Director
Office of Grants and Contracts
* Mod 3 = NO cost time Extension from May 15 → July 1, 1980
SUBJECT: MODIFICATION NO. A004 - CONTRACT NO. DE-AS07-78ID01717

Gentlemen:

Enclosed are four copies of the subject modification. If this modification is satisfactory to you, please have three copies signed by an authorized official and return them to this office for execution by DOE. The fourth copy is for your files pending receipt of one fully executed copy.

If you have any questions, please contact J. O. Lee of this office at telephone 208-526-1838.

Very truly yours,

/s/ H. B. Clark, for

J. P. Anderson, Chief
Contract Operations Branch
Contracts Management Division

4 Enclosures

bcc: M. A. Widmayer, w/encl.

COB
MHanson
6/13/80

COB
JOLee

COB
JPAnderson

STANDARD FORM 30, JULY 1966
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.101

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

PAGE 1 OF 5

1. AMENDMENT/MODIFICATION NO.	2. EFFECTIVE DATE	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. (If applicable)
A004		PR 07-80ID01717.505	

5. ISSUED BY	CODE	6. ADMINISTERED BY (If other than block 5)	CODE
U. S. Department of Energy Idaho Operations Office 550 Second Street Idaho Falls, Idaho 83401			

7. CONTRACTOR NAME AND ADDRESS (Street, city, county, state, and ZIP Code)

CODE _____ FACILITY CODE _____

Regents of New Mexico State University
Office of Grants and Contracts
P. O. Box 3699
Las Cruces, New Mexico 88003
Attn: Jane Youngers, Director
Office of Grants and Contracts

8.
☐ AMENDMENT OF SOLICITATION NO. _____
DATED _____ (See block 9)
☒ MODIFICATION OF CONTRACT/ORDER NO. DE-AS07-78ID01717
DATED May 9, 1978 (See block 11)

9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods: (a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10. ACCOUNTING AND APPROPRIATION DATA (If required)

11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) ☐ This Change Order is issued pursuant to _____
The Changes set forth in block 12 are made to the above numbered contract/order.

(b) ☐ The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) ☒ This Supplemental Agreement is entered into pursuant to authority of mutual agreement of the parties.
It modifies the above numbered contract as set forth in block 12.

12. DESCRIPTION OF AMENDMENT/MODIFICATION

1. Article I, "THE RESEARCH TO BE PERFORMED," is amended by adding a new paragraph as follows:

"Appendix A4, attached to this Supplemental Agreement and made a part hereof, provides for the research to be performed by the Contractor during the Contract period specified therein."

2. Article II, "THE PERIOD OF PERFORMANCE," is amended as follows:

"The period of performance for the work performed under this Supplemental Agreement shall commence on May 15, 1980, and expire on June 14, 1981. The period of time for performing the research work under Appendix A4 may be extended for additional periods by the mutual written agreement of the parties."

CONTINUED.....

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

13. ☐ CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT ☒ CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 3 COPIES TO ISSUING OFFICE

14. NAME OF CONTRACTOR/OFFEROR		17. UNITED STATES OF AMERICA	
BY _____ (Signature of person authorized to sign)		BY _____ (Signature of Contracting Officer)	
15. NAME AND TITLE OF SIGNER (Type or print)	16. DATE SIGNED	18. NAME OF CONTRACTING OFFICER (Type or print) Nell W. Fraser, Director Contracts Management Division	19. DATE SIGNED

30-101

☆U.S.GPO:1979-0-281-187/5001

3. Article III, "CONSIDERATION", paragraph (a), is hereby revised to increase the contract Support Ceiling to a total of Six Hundred Thirty Five Thousand Two Hundred Dollars ($635,200). Total DOE support under the contract is summarized as follows:

Original contract	$100,000
Increase Letter dated 9-30-78	50,000
Increase Mod No. A001	200,000
Increase this Mod No. A004	285,200
Total	$635,200

4. Article IV, GOVERNMENT PROPERTY" is revised to read as follows:

"The following items of property procured or fabricated by the Contractor are hereby listed as "Government Property."

a. 60 Reflections Geophones @ $35/each.....$2,100 not purchased
b. 5 Geophone Cable Assemblies with Summing Boxes.....$2,000 not purchased
c. 1 Gas Powered Auger.....$ 400 not purchased
d. 1 Depth to Water Temperature.....$1,000 yes
e. 1 Computer Terminal.Modern Package (GE).....$2,200 yes
f. 1 Temperature Logging System.....$5,000 not purchased
g. 1 2-Channel Spectrum Analyzer (Partial Cost only)..$3,150 yes
h. 1 Water Level Meter for Deep Wells.....$ 800 not purchased
i. 1 Temperature Logging System.....$5,500 yes

5. Article VII - Price Reduction for Defective Cost or Pricing Data is added to read as follows:

ARTICLE VII - PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA

If any price, including profit or fee, negotiated in connection with this contract or any cost reimbursable under this contract was increased by any significant sums because:

A. The Contractor furnished cost or pricing data which was not accurate, complete and current as ceritified in the Contractor's Certificate of Current Cost or Pricing Data;

B. A subcontractor, pursuant to the article of this contract entitled "Subcontractor Cost or Pricing Data" or "Subcontractor Cost or Pricing Data--Price Adjustments" or any subcontract article therein required, furnished cost or pricing data which was not accurate, complete and current as certified in the subcontractor's Certificate of Current Cost or Pricing Data;

ARTICLE VII - PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA (Cont'd)

C. A subcontractor or prospective subcontractor furnished cost or pricing data which was required to be accurate, complete and current and to be submitted to support a subcontract cost estimate furnished by the Contractor but which was not accurate, complete and current as of the date certified in the Contractor's Certificate of Current Cost or Pricing Data;

D. The Contractor or a subcontractor or prospective subcontractor furnished any data, not within paragraphs A., B. or C. above, which was not accurate as submitted; the price or cost shall be reduced accordingly and the contract shall be modified in writing as may be necessary to reflect such reduction; However, any reduction in the contract price due to defective subcontract data of a prospective subcontractor when the subcontract was not subsequently awarded to such subcontractor, will be limited to the amount (plus applicable overhead and profit mark-up) by which the actual subcontract, or actual cost to the Contractor if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor: Provided, The actual subcontract price was not affected by defective cost or pricing data.

(Note: Since the contract is subject to reduction under this article by reason of defective cost or pricing data submitted in connection with certain subcontracts, it is expected that the Contractor may wish to include an article in each subcontract requiring the subcontractor to appropriately indemnify the Contractor. It is also expected that any subcontractor subject to such indemnification will generally require substantially similar indemnification for defective cost or pricing data required to be submitted by its lower-tier subcontractors.)

6. Article VIII, DATE OF INCURRENCE OF COSTS, is added to read as follows:

Article VIII - DATE OF INCURRENCE OF COSTS

The Contractor shall be entitled to reimbursement for costs incurred in an amount not to exceed $75,000 on or after May 15, 1980, which, if incurred after this modification had been entered into, would have been reimbursable under the provisions of this modification."

7. Article B-IV - PAYMENTS, of Appendix B is deleted and the following substituted therefor:

ARTICLE B-IV - PAYMENTS

A. Payments on Account of Allowable Costs. Once each month (or at more frequent intervals, if approved by the Contracting Officer) the Contractor may submit to the Contracting Officer, in such form and reason-

ARTICLE B-IV - PAYMENTS (Cont'd)

able detail as he may require, an invoice or voucher supported by a statement of cost incurred by the Contractor in the performance of this contract and claimed to constitute allowable costs. Promptly after receipt of each invoice or voucher the Government shall make payment thereon as approved by the Contracting Officer. In making such periodic payments there shall be retained 1% from each payment, which retained amount shall be paid upon completion and acceptance of all work.

B. Audit Adjustments. At any time or times prior to settlement under this contract the Contracting Officer may have invoices or vouchers and statements of cost audited. Each payment theretofore made shall be subject to reduction for amounts included in the related invoice or voucher which are found by the Contracting Officer, on the basis of such audit, not to constitute allowable cost. Any payment may be reduced for overpayments, or increased for underpayments, on preceding invoices or vouchers.

C. Completion Voucher. On receipt and approval of the invoice or voucher designated by the Contractor as the "completion invoice" or "completion voucher" and upon compliance by the Contractor with all the provisions of this contract (including, without limitation, the provisions relating to patents and provisions of paragraph E. below) the Government shall promptly pay to the Contractor any balance of allowable cost, or otherwise not paid to the Contractor. The completion invoice or voucher shall be submitted by the Contractor promptly following completion of the work under this contract but in no event later than one (1) year (unless within the year the Contracting Officer grants a further period of time) from the date of such completion.

D. Applicable Credits. The Contractor agrees that any refunds, rebates, credits, or other amounts (including any interest thereon) accruing to or received by the Contractor or any assignee under this contract shall be paid by the Contractor to the Government, to the extent that they are properly allocable to costs for which the Contractor has been reimbursed by the Government under this contract. Reasonable expenses incurred by the Contractor for the purpose of securing such refunds, rebates, credits, or other amounts shall be allowable costs hereunder when approved by the Contracting Officer.

E. Financial Settlement. Prior to final payment under this contract, the Contractor and each assignee under this contract whose assignment is in effect at the time of final payment under this contract shall execute and deliver:

(1) An assignment to the Government in form and substance satisfactory to the Contracting Officer of refunds, rebates, credits, or other amounts (including any interest thereon) properly allocable to costs for which the Contractor has been reimbursed by the Government under this contract; and

ARTICLE B-IV - PAYMENTS (Cont'd)

(2) A release discharging the Government, its officers, agents, and employees from all liabilities, obligations, and claims arising out of or under this contract, subject only to the following exceptions:

(i) Specified claims in stated amounts or in estimated amounts where the amounts are not susceptible of exact statement by the Contractor;

(ii) Claims, together with reasonable expenses incidental thereto, based upon liabilities of the Contractor to third parties arising out of performance of this contract; provided, that such claims are not known to the Contractor on the date of the execution of the release; and provided further, that the Contractor gives notice of such claims in writing to the Contracting Officer not more than six (6) years after the date of the release or the date of any notice to the Contractor that the Government is prepared to make payment, whichever is earlier; and

(iii) Claims for reimbursement of costs (other than expenses of the Contractor by reason of any indemnification of the Government against patent liability), including reasonable expenses incidental thereto, incurred by the Contractor under the provisions of this contract relating to patents.

Modification No. A004
Contract No. DE-AS07-78ID01717

CONTRACTOR: REGENTS OF NEW MEXICO STATE UNIVERSITY

APPENDIX A4

For the contract period May 15, 1980 through June 14, 1981.

Article A-I - RESEARCH TO BE PERFORMED BY CONTRACTOR

(a) The scope of the work under this contract is unclassified, and the Contractor under this agreement with DOE will perform research consisting of the following in accordance with the Contractor's proposal No. NMSU-80-20-251 as revised May 8, 1980, incorporated herein and made a part hereof by reference:

Program Administration - The Low-Temperature Program Director and the Field Engineer shall be responsible for the coordination and execution of all efforts under this program. Data acquired through the subcontracts will be collated, reviewed and compiled as a year-end final report of this effort. It is the responsibility of the program director to provide DOE with all required reports outlined in CR-537, including any foreseeable problems in completion of contracted work, and recommendations for future work.

A graduate student shall be employed to conduct a one-year effort of data compilation and storage of all available information generated from this contract from its inception. These data will be entered into the NMEI comptuer files in a logical retrievable format, so that resource-related questions from the New Mexico Geothermal Commercialization team (DOE-funded) and other users can be addressed. Coordination of this data compilation will be made with the New Mexico Energy and Minerals Department, to insure compatibility of data file entry and format between the resource and commercialization programs in New Mexico.

Task 1 - Completion of public and technical maps of New Mexico geothermal potential. This will include: 1) final review and revision of the public map; 2) the completion of an initial draft of the scientific map, with additional reviews and updates of information acquired during FY 80, prior to publication in 1981. Deliverables will include: 1) mylar overlays (scale 1:500,000) of each data set shown on the two maps, and 2) draft copies of each map as specified by NOAA.

Task 2 - Completion of the collection of oil and gas well data for New Mexico. This will include: 1) bottomhole temperatures and well depths, 2) latitude-longitude and township-range of well locations, and 3) the bottom-hole geological formation name and age, where available. Deliverables will consist of all tabulated data, and a map (scale 1:500,000) of all well locations, depths, bottomhole temperatures and formation name and age.

Task 3 - Data from on-going DOE and non-DOE funded research in New Mexico will be collected and collated to update the NOAA map publications. This new information will serve as addenda to the initial data sets used to develop the public and technical geothermal maps. The following data sets may be updated: seismic, water quality, electrical surveys, and thermal gradients.

Article A-I - RESEARCH TO BE PERFORMED BY CONTRACTOR (Cont'd)

Task 4 - A lineament map of the State of New Mexico will be constructed. Deliverables will include the map and mylar overlay (scale 1:500,000), a written report of the interpretations, and the photographs used to generate the final product.

Task 5 - All existing water well data in the southern Rio Grande Rift and the southwestern part of the state (parts of Socorro, Lincoln, and Otero counties, and all of Catron, Sierra, Grant, Hidalgo, Luna, and Dona Ana counties) will be collected. Data will include available temperature logs, lithologies, and drill cuttings. Deliverables will include a temperature gradient map and nylar overlay (1:500,000), a heat flow map and overlay to the same scale, county maps (1:250,000) for areas of high data density, tabulation of all data, and an interpretive report of the results.

Task 6 - West Mesa of Albuquerque - The following will be accomplished on the West Mesa of Albuquerque: 1) completion of a magnetic survey, 2) five shallow (approximately 50M) thermal gradient wells will be drilled and thermally logged, 3) a dipole-dipole resistivity survey will be conducted. Deliverables will include all data obtained, maps to the appropriate scale of each of the three data sets, and an interpretive report of the results of the surveys and the geothermal potential of the area.

Task 7 - Southwestern New Mexico Counties (Hidalgo, Grant, Luna, Dona Ana, and the Southwestern portion of Sierra and Catron). A county by county compilation and interpretation of geological, geophysical, and hydrologic data shall be performed for the purpose of an up to date assessment of their geothermal potential. In an effort to make a complete assessment, areas where data is lacking or insufficient will be identified and supplemented with the acquisition of new data. New data to be collected will be determined by a county by county inspection and may consist of electrical, gravity, magnetic, and/or temperature data. The collection of temperature data will consist of an ongoing compilation of temperature data generated from Task 1 and Task 5 plus bottom hole temperature and depths from the USGS WATSTORE file. In areas where temperature data is lacking the data may be supplemented by the drilling of shallow (approximately 30M) temperature gradient holes. The deliverables will include 1) the data collected, 2) an interpretive report, and 3) county maps of the data for the purpose of geothermal assessment (scale 1/250,000).

Task 8 - Animas Valley Lightning Dock KGRA - Hydraulic data will be used to prepare a preliminary computer simulated mode for calibration of hydraulic properties of the ground water reservoirs. Quarterly water quality samples and temperature measurements will be obtained from wells in the area. Deliverables will include: 1) results of the groundwater computer simulation, 2) a compilation of available data, 3) maps of water quality analysis, water temperature, groundwater flow patterns, and water shed delineations, and 4) an interpretive report of the results and geothermal potential of the area.

Article A-I - RESEARCH TO BE PERFORMED BY CONTRACTOR (Cont'd)

Task 9 - All monthly, semi-annual, and final reports of these tasks shall be prepared and distributed in accordance with reporting standards set forth in the original contract, this and subsequent modifications.

Article A-II - WAYS AND MEANS OF PERFORMANCE

			DOE Share	NMSU Share
(a)	Items for which support may be provided:			
1.	NMSU Salaries, Wages and Fringe Benefits			
	Faculty and Staff	$ 85,015		
	Students	16,069		
	Fringe Benefits			
	NMSU Faculty and Staff (@ 15.13% of $85,015)	12,863		
	NMSU Students (@ 2.0% of $16,069)	321		
2.	Travel	13,554		
3.	Equipment	5,500		
4.	Expendible Supplies	1,350		
5.	Computing Costs	7,200		
6.	Total Other Direct Costs	8,570		
	Total Direct Costs		$150,442	
7.	Subcontracting			
	Separate Subcontracts:			
	Task 3 - NMIMT	$ 3,460		
	Task 4 - Consultant Leplay	15,000		
	Task 6 - UNM	24,339		
	Task 6 - SDS	8,036		
	Task 7 - Drilling	14,000		
	Task 8 - NMIMT	17,389		
	Total Subcontracting		$ 82,224	
8.	NMSU Indirect Costs			
	48% of modified total on campus costs ($144,942)			
	Program Administration and Tasks 1, 2, 5, 7		$ 45,814	$23,758

Article A-II - WAYS AND MEANS OF PERFORMANCE (Cont'd)

	DOE Share	NMSU Share
48% of NMIMT subcontract ($3,460) Task 3		1,661
48% of Off ($15,000) Task 4		7,200
48% of UNM subcontract ($24,339) Task 6		11,683
48% of SDS subcontract ($8,036) Task 6		3,857
48% of off-campus subcontract ($14,000) Task 7	6,720	
48% of NMIMT subcontract ($17,389) Task 8		8,347
TOTAL PROJECT COSTS	$285,200	$56,506

Article A-III - FUNDING

The total estimated cost for the performance of work under Article A-II above is $341,706. DOE's share of this total budget is $285,200 and the Contractor's share is $56,506. DOE will pay 100% of its share of the actual costs enumerated in Article A-II subject to the provisions of Article B-V.

Article A-IV - ADMINISTRATION AND REPORTS

(a) Principal Investigator - Harold A. Daw

DOE Program Manager - M. A. Widmayer, Resource Definition Branch
U.S. Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401
Telephone 208-526-1466

(b) All Project Information Reports, as required by DOE Uniform Contractor Reporting System, Volume I, dated September 1978, and as indicated on the attached DOE Form CF-537, shall be submitted to the DOE Program Officer in accordance with the special instructions.

U. S. DEPARTMENT OF ENERGY

REPORTING REQUIREMENTS CHECKLIST

DOE Form CR-537
(1-78)

(See Instructions on Reverse)

FORM APPROVED
OMB NO. 38R-0190

1. IDENTIFICATION	2. OBLIGATION INSTRUMENT:
Geothermal Resource Assessment in New Mexico	Modification No. A004 to Contract No. DE-AS07-78ID01717

3. REPORTING REQUIREMENTS

A. PROJECT MANAGEMENT	Frequency
1. ☐ Management Plan	
2. ☐ Milestone Schedule & Status Report	
3. ☐ Cost Plan	
4. ☐ Manpower Plan	
5. ☒ Contract Management Summary Report	M
6. ☒ Project Status Report	M
7. ☒ Cost Management Report	M
8. ☐ Manpower Management Report	
9. ☐ Conference Record	
10. ☐ Hot Line Report	

B. TECHNICAL INFORMATION REPORTING	Frequency
1. ☐ Notice of Energy RD&D Project (SSIE)	
2. ☒ Technical Progress Report	M
3. ☒ Topical Report	Y
4. ☒ Final Technical Report	Y
C. PMS/MINI-PMS	
1. Cost Performance Report	
☐ Format 1 WBS	
☐ Format 2 Functional	
☐ Format 3 Baseline	
☐ Format 5 Problem Analysis	
2. ☐ Cost/Schedule Status Report	
3. ☐ Management Control System Description	
4. ☐ Summary System Description	
5. ☐ WBS Dictionary	

FREQUENCY CODES:
A – As Required
C – Contract Change
F – Final (End of Contract)
M – Monthly
O – One Time (Soon After Contract Award)
Q – Quarterly
S – Semi-Annually
X – Mandatory for Delivery with Proposals/Bid
Y – Yearly or Upon Contract Renewal

4. SPECIAL INSTRUCTIONS

A.5., A.6., and A.7. - Copies are due within fifteen days after end of the calendar month.

B.2. - Copies are due within fifteen days after end of the calendar month.

B.3. - Submit 2 copies in draft forty-five days prior to completion of the yearly term. After DOE approval is received, submit copies as required on attached "Report Distribution List."

B.4. - Submit 2 copies in draft forty-five days prior to completion date of contract term. After DOE approval is received, submit eleven copies including one camera-ready copy.

5. ATTACHED HEREWITH:

☐ Report Distribution List
☐ WBS/Reporting Category

6. PREPARED BY (Signature and date):	7. REVIEWED BY (Signature and date)

ID F-129 (Rev. 08-79)
Ref. DOE 13302
(use with DOE CR-537)

U.S. DEPARTMENT OF ENERGY
IDAHO OPERATIONS OFFICE

REPORT DISTRIBUTION LIST

Contract No.
DE-AS07-78ID01717
Modification No. A004

Addressees	Milestone Schedule & Status Report	Management Plan	Contract Management Summary Report	Cost Plan	Manpower Plan	Project Status Report	Cost Management Report	Manpower Management Report	Conference Record	Notice of Energy RD&D Project (SSIE)	Hot Line Report	Technical Progress Report	Final Technical Report	Topical Report	Cost Performance Report	Cost/Schedule Status Report	Management Control System Description	Summary System Description	WBS Dictionary
	Number of Report Copies																		
M. A. Widmayer, Program Manager Resource Definition Branch U.S.D.O.E. Idaho Operations Office 550 Second Street Idaho Falls, ID 83401						2	2							2	2	12			
Bob Gray U.S.D.O.E. Division of Geothermal Energy MS 3344 Federal Building 12th and Penn., N.W. Washington, D.C. 20461						2	2							2	2				
Duncan Foley UURI 420 Chipeta Way Suite 120 Salt Lake City, UT 84108						1	1							1	1				
E. G. Jones, Director Financial Management Division U.S.D.O.E. Idaho Operations Office 550 Second Street Idaho Falls, ID 83401								1											

Special Instructions

NEW MEXICO

NMSU CONTRACT
(LANL)

STANDARD FORM 30, JULY 1966
GENERAL SERVICES ADMINISTRATION
FED PROC REG. (41 CFR) 1-16.101

AMENDMENT OF SOLICITATION/

1. AMENDMENT/MODIFICATION NO	2. EFFECTIVE DATE	3. REQUISITION/PU
A005		07-81ID(

5. ISSUED BY — CODE

U. S. Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

6. ADMINISTERED B

7. CONTRACTOR NAME AND ADDRESS (Street, city, county, state, and ZIP Code) — CODE — FACILITY CODE

Regents of New Mexico State University
Office of Grants and Contracts
P. O. Box 3699
Las Cruces, New Mexico 88003
Attn: Jane Youngers, Director
Office of Grants and Contracts

7

DATED _____ (See block 11)

9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods: (a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10. ACCOUNTING AND APPROPRIATION DATA (If required)

Increase obligations and support ceiling by $236,480 to new total and ceiling of $871,680 TEC for work under Mod $336,809; NMSU share $100,329

11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) ☐ This Change Order is issued pursuant to _____

The Changes set forth in block 12 are made to the above numbered contract/order.

(b) ☐ The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) ☒ This Supplemental Agreement is entered into pursuant to authority of P.L. 95-91

It modifies the above numbered contract as set forth in block 12.

12. DESCRIPTION OF AMENDMENT/MODIFICATION

1. Article I, "THE RESEARCH TO BE PERFORMED," is amended by adding a new paragraph as follows:

"Appendix A5, attached to this Supplemental Agreement and made a part hereof, provides for the research to be performed by the Contractor during the Contract period specified therein."

2. Article II, "THE PERIOD OF PERFORMANCE," is amended as follows:

"The period of performance for the work performed under this Supplemental Agreement shall commence on June 15, 1981, and expire on June 14, 1982. The period of time for performing the research work under Appendix A5 may be extended for additional period by the mutual written agreement of the parties."

CONTINUED.....

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

13. ☐ CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT ☒ CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 3 COPIES TO ISSUING OFFICE

14. NAME OF CONTRACTOR/OFFEROR	17. UNITED STATES OF AMERICA
BY Robert E. Kirkpatrick (Signature of person authorized to sign)	BY Preston B. Brimhall (Signature of Contracting Officer)

15. NAME AND TITLE OF SIGNER (Type or print)	16. DATE SIGNED	18. NAME OF CONTRACTING OFFICER (Type or print)	19. DATE SIGNED
Robert E. Kirkpatrick Acting President	8/6/81	Preston B. Brimhall	8-19-81

30-101

☆U.S.GPO:1980-0-311-153/5520

3. Article III, "CONSIDERATION," Paragraph (a), is hereby revised to increase the contract Support Ceiling to a total of Eight Hundred Seventy-One Thousand Six Hundred Eighty Dollars ($871,680). Total DOE support under ths contract is summarized as follows:

Original contract	$100,000
Increase Letter dated September 30, 1978	50,000
Increase Mod. No. A001	200,000
Increase Mod. No. A004	285,200
Increase this Mod No. A005	236,480
	$871,680

Modification No. A005
Contract No. DE-AS07-78ID01717

CONTRACTOR: REGENTS OF NEW MEXICO STATE UNIVERSITY

APPENDIX A5

For the contract period June 15, 1981 through June 14, 1982.

Article A-I - RESEARCH TO BE PERFORMED BY CONTRACTOR

(a) The scope of the work under this contract is unclassified, and the Contractor under this agreement with DOE will perform research in accordance with, the following, and to the extent not inconsistent, with the Contractor's proposal No. NMSU-81-7121 as revised April 29, 1981, incorporated herein and made a part hereof by reference:

Task 1 Project Administration

The New Mexico Energy Institute (NMEI) of New Mexico State University (NMSU) will provide project management for all work to be performed under this contract. Deliverables will include monthly progress reports and topical and final technical reports of results of contract work.

Task 2 Scientific Geothermal Resource Map

A scientific map with a series of mylar overlays will be made at a scale of 1:500,000. All scientific data relevant to the state's geothermal resource potential will be depicted. Technical references supporting the data bases displayed on the scientific map series will be compiled and published to accompany the map series. NOAA will be responsible for the actual map production; NMEI will be responsible for scientific quality, and the New Mexico Bureau of Mines and Mineral Resources will be responsible for distributing the map series.

Task 3 Regional Geothermal Exploration in Otero County

All available geoscience information pertinent to geothermal resources will be collated and depicted on map overlays (scale 1:250,000) for Otero County. Field work will be limited to data checks and collection of temperature data. An interpretive report assessing the geothermal energy potential for Otero County will accompany the maps developed under this task.

Task 4 Regional Geothermal Assessment in North Central New Mexico

A regional assessment program will be conducted to determine the geothermal potential in north central New Mexico. Research will include the collection and compilation of all existing geoscience information for the study area, as well as the collection of heat flow data, location and thermal measurement of all available wells, collection of bottomhole temperature information for oil, gas, and water wells, and the performance of Bouguer

gravity surveys, (where appropriate) in targeted areas selected on the basis of geothermal potential. Within the study area there are major Indian Reservations for which individual reports will be prepared describing the geothermal resource on the Reservations.

All data will be integrated and analyzed for its geothermal significance and will be displayed as map overlays for the study area (scale 1:250,000). Summary reports of the geothermal potential in the study area and on specific Indian Reservations (e.g., Acoma, Isleta, Jicarillo, Laguna, and Mescalerco) will accompany the map.

Task 5 Aeromagnetic Map of New Mexico

An aeromagnetic map of New Mexico (scale, 1:500,000) will be produced by a subcontractor with the assistance of the New Mexico Bureau of Mines and Mineral Resources. This map will serve as an overlay for the scientific geothermal resources map produced in Task 2.

The deliverables to DOE will include: (1) a mylar overlay (scale, 1:500,000) of the aeromagnetic and (2) an associated interpretive report.

Article II - WAYS AND MEANS OF PERFORMANCE

(a) Items for which support will be provided:

	DOE Share	NMSU Share
NMSU Faculty and Staff	$ 80,178	$10,724
NMSU Students	14,225	8,825
Fringe Benefits:		
MNSU Faculty and Staff (15.13% of $90,902)	12,132	1,623
NMSU Students (2.0% of $23,000)	285	177
Total Salaries, Wages, and Fringe Benefits	$106,820	$21,349
Travel	13,000	4,120
Equipment	-0-	-0-
Expendable Supplies	3,250	2,000
Computing Costs	3,250	1,250
Other Direct Costs	8,000	1,500
Subcontracting	35,000	30,000
Total	169,320	50,219
Direct Costs		
Total Indirect Costs at 50% of modified total on-campus direct costs ($169,320-$10,000 = $159,320)	67,160	40,110
Total Project Costs	$236,480	$100,329

Article A-III - FUNDING

The total estimated cost for the performance of work under Article A-II above is $336,809 DOE's share of this total budget is $236,480 and the Contractor's share is $100,329. DOE will pay 100% of its share of the actual costs enumerated in Article A-II subject to the provisions of Article B-V.

Article A-IV - ADMINISTRATION AND REPORTS

(a) Principal Investigator - Dr. Larry Icerman

DOE Program Manager - L. L. Mink
U.S. Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401
Telephone: 208-526-0638

(b) All project information reports, as indicated on the attached DOE Form CR-537, shall be submitted in accordance with the special instructions.

U. S. DEPARTMENT OF ENERGY

REPORTING REQUIREMENTS CHECKLIST

DOE Form CR-537 (1-78)

(See Instructions on Reverse)

FORM APPROVED OMB NO. 38R-0190

1. IDENTIFICATION	2. OBLIGATION INSTRUMENT:
Geothermal Resource Assessment in New Mexico	Modification No. A005 to Contract No. DE-AS07-78ID01717

3. REPORTING REQUIREMENTS

A. PROJECT MANAGEMENT	Frequency	B. TECHNICAL INFORMATION REPORTING	Frequency
1. ☐ Management Plan		1. ☐ Notice of Energy RD&D Project (SSIE)	
2. ☐ Milestone Schedule & Status Report		2. ☐ Technical Progress Report	
3. ☐ Cost Plan		3. ☒ Topical Report	A
4. ☐ Manpower Plan		4. ☒ Final Technical Report	Y
5. ☒ Contract Management Summary Report	M	C. PMS/MINI-PMS	
6. ☒ Project Status Report	M	1. Cost Performance Report	
7. ☐ Cost Management Report		☐ Format 1 WBS	
8. ☐ Manpower Management Report		☐ Format 2 Functional	
9. ☐ Conference Record		☐ Format 3, Baseline	
10. ☐ Hot Line Report		☐ Format 5 Problem Analysis	
		2. ☐ Cost/Schedule Status Report	
		3. ☐ Management Control System Description	
		4. ☐ Summary System Description	
		5. ☐ WBS Dictionary	

FREQUENCY CODES:

A – As Required
C – Contract Change
F – Final (End of Contract)
M – Monthly
O – One Time (Soon After Contract Award)
Q – Quarterly
S – Semi-Annually
X – Mandatory for Delivery with Proposals/Bid
Y – Yearly or Upon Contract Renewal

4. SPECIAL INSTRUCTIONS

A.5., A.6., - Copies are due within fifteen days after end of the calendar month.

B.3. - Submit in draft after completion of work as indicated in Statement of Work. After DOE approval is received, submit copies as required on attahced "Report Distribution List."

B.4. - Submit 2 copies in draft forty-five days prior to completion date of contract term. After DOE approval is received, submit in final including one camera-ready copy.

5. ATTACHED HEREWITH:

☒ Report Distribution List ☐
☐ WBS/Reporting Category ☐

6. PREPARED BY (Signature and date):	7. REVIEWED BY (Signature and date):

ID F-129 (Rev. 08-79)
Ref. DOE 13302
(use with DOE CR-537)

U.S. DEPARTMENT OF ENERGY
IDAHO OPERATIONS OFFICE

REPORT DISTRIBUTION LIST

Contract No.

DE-AS07-78ID01717
Modification No. A005

Addressees	Milestone Schedule & Status Report	Management Plan	Contract Management Summary Report	Cost Plan	Manpower Plan	Project Status Report	Cost Management Report	Manpower Management Report	Conference Record	Notice of Energy RD&D Project (SSIE)	Hot Line Report	Technical Progress Report	Final Technical Report	Topical Report	Cost Performance Report	Cost/Schedule Status Report	Management Control System Description	Summary System Description	WBS Dictionary
	Number of Report Copies																		
U. S. Department of Energy Idaho Operations Office 550 Second Street Idaho Falls, Idaho 83401																			
Attn: M. K. Tucker, Program Manager Energy & Technology Division							2	2							2	12			
Attn: Nell W. Fraser, Director Contracts Management Division							1	1							1	1			
Attn: E. G. Jones, Director Financial Management Division							1	1											
Bob Gray U. S. Department of Energy, DGE MS 3344, Federal Building 12th and Penn., N.W. Washington, DC 20461							2	2							2	2			
Duncan Foley UURI 420 Chipeta Way, Suite 120 Salt Lake City, UT 84108							1	1							1	1			

Special Instructions

STANDARD FORM 30, JULY 1966
GENERAL SERVICES ADMINISTRATION
FED PROC. REG. (41 CFR) 1-16.101

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

PAGE 1 OF

1. AMENDMENT/MODIFICATION NO.	2. EFFECTIVE DATE	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. (If applicable)
A005		07-81ID01717.501	

5. ISSUED BY CODE

U. S. Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

6. ADMINISTERED BY (If other than block 5) CODE

7. CONTRACTOR NAME AND ADDRESS (Street, city, county, state, and ZIP Code) CODE FACILITY CODE

Regents of New Mexico State University
Office of Grants and Contracts
P. O. Box 3699
Las Cruces, New Mexico 88003
Attn: Jane Youngers, Director
Office of Grants and Contracts

8.
☐ AMENDMENT OF SOLICITATION NO. _____
DATED _____ (See block 9)
☒ MODIFICATION OF CONTRACT/ORDER NO. DE-AS07-78ID01717
DATED 5-1-78 (See block 11)

9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10. ACCOUNTING AND APPROPRIATION DATA (If required)

Increase obligations and support ceiling by $236,480 to new total and ceiling of $871,680 TEC for work under Mod $336,809; NMSU share $100,329

11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) ☐ This Change Order is issued pursuant to _____
The Changes set forth in block 12 are made to the above numbered contract/order.

(b) ☐ The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) ☒ This Supplemental Agreement is entered into pursuant to authority of P.L. 95-91
It modifies the above numbered contract as set forth in block 12.

12. DESCRIPTION OF AMENDMENT/MODIFICATION

1. Article I, "THE RESEARCH TO BE PERFORMED," is amended by adding a new paragraph as follows:

"Appendix A5, attached to this Supplemental Agreement and made a part hereof, provides for the research to be performed by the Contractor during the Contract period specified therein."

2. Article II, "THE PERIOD OF PERFORMANCE," is amended as follows:

"The period of performance for the work performed under this Supplemental Agreement shall commence on June 15, 1981, and expire on June 14, 1982. The period of time for performing the research work under Appendix A5 may be extended for additional period by the mutual written agreement of the parties."

CONTINUED.....

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

13. ☐ CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT ☒ CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 3 COPIES TO ISSUING OFFICE

14. NAME OF CONTRACTOR/OFFEROR		17. UNITED STATES OF AMERICA	
BY Robert E. Kirkpatrick (Signature of person authorized to sign)		BY Preston B. Brimhall (Signature of Contracting Officer)	
15. NAME AND TITLE OF SIGNER (Type or print)	16. DATE SIGNED	18. NAME OF CONTRACTING OFFICER (Type or print)	19. DATE SIGNED
Robert E. Kirkpatrick Acting President	8/6/81	Preston B. Brimhall	8-19-81

30-101

☆U.S.GPO:1980-0-311-153/5520

3. Article III, "CONSIDERATION," Paragraph (a), is hereby revised to increase the contract Support Ceiling to a total of Eight Hundred Seventy-One Thousand Six Hundred Eighty Dollars ($871,680). Total DOE support under ths contract is summarized as follows:

Original contract	$100,000
Increase Letter dated September 30, 1978	50,000
Increase Mod. No. A001	200,000
Increase Mod. No. A004	285,200
Increase this Mod No. A005	236,480
	$871,680

Modification No. A005
Contract No. DE-AS07-78ID01717

CONTRACTOR: REGENTS OF NEW MEXICO STATE UNIVERSITY

APPENDIX A5

For the contract period June 15, 1981 through June 14, 1982.

Article A-I - RESEARCH TO BE PERFORMED BY CONTRACTOR

(a) The scope of the work under this contract is unclassified, and the Contractor under this agreement with DOE will perform research in accordance with, the following, and to the extent not inconsistent, with the Contractor's proposal No. NMSU-81-7121 as revised April 29, 1981, incorporated herein and made a part hereof by reference:

Task 1 Project Administration

The New Mexico Energy Institute (NMEI) of New Mexico State University (NMSU) will provide project management for all work to be performed under this contract. Deliverables will include monthly progress reports and topical and final technical reports of results of contract work.

Task 2 Scientific Geothermal Resource Map

A scientific map with a series of mylar overlays will be made at a scale of 1:500,000. All scientific data relevant to the state's geothermal resource potential will be depicted. Technical references supporting the data bases displayed on the scientific map series will be compiled and published to accompany the map series. NOAA will be responsible for the actual map production; NMEI will be responsible for scientific quality, and the New Mexico Bureau of Mines and Mineral Resources will be responsible for distributing the map series.

Task 3 Regional Geothermal Exploration in Otero County

All available geoscience information pertinent to geothermal resources will be collated and depicted on map overlays (scale 1:250,000) for Otero County. Field work will be limited to data checks and collection of temperature data. An interpretive report assessing the geothermal energy potential for Otero County will accompany the maps developed under this task.

Task 4 Regional Geothermal Assessment in North Central New Mexico

A regional assessment program will be conducted to determine the geothermal potential in north central New Mexico. Research will include the collection and compilation of all existing geoscience information for the study area, as well as the collection of heat flow data, location and thermal measurement of all available wells, collection of bottomhole temperature information for oil, gas, and water wells, and the performance of Bouguer

gravity surveys, (where appropriate) in targeted areas selected on the basis of geothermal potential. Within the study area there are major Indian Reservations for which individual reports will be prepared describing the geothermal resource on the Reservations.

All data will be integrated and analyzed for its geothermal significance and will be displayed as map overlays for the study area (scale 1:250,000). Summary reports of the geothermal potential in the study area and on specific Indian Reservations (e.g., Acoma, Isleta, Jicarillo, Laguna, and Mescalerco) will accompany the map.

Task 5 Aeromagnetic Map of New Mexico

An aeromagnetic map of New Mexico (scale, 1:500,000) will be produced by a subcontractor with the assistance of the New Mexico Bureau of Mines and Mineral Resources. This map will serve as an overlay for the scientific geothermal resources map produced in Task 2.

The deliverables to DOE will include: (1) a mylar overlay (scale, 1:500,000) of the aeromagnetic and (2) an associated interpretive report.

Article II - WAYS AND MEANS OF PERFORMANCE

(a) Items for which support will be provided:

	DOE Share	NMSU Share
NMSU Faculty and Staff	$ 80,178	$10,724
NMSU Students	14,225	8,825
Fringe Benefits:		
MNSU Faculty and Staff (15.13% of $90,902)	12,132	1,623
NMSU Students (2.0% of $23,000)	285	177
Total Salaries, Wages, and Fringe Benefits	$106,820	$21,349
Travel	13,000	4,120
Equipment	-0-	-0-
Expendable Supplies	3,250	2,000
Computing Costs	3,250	1,250
Other Direct Costs	8,000	1,500
Subcontracting	35,000	30,000
Total	169,320	50,219
Direct Costs		
Total Indirect Costs at 50% of modified total on-campus direct costs ($169,320-$10,000 = $159,320)	67,160	40,110
Total Project Costs	$236,480	$100,329

Article A-III - FUNDING

The total estimated cost for the performance of work under Article A-II above is $336,809 DOE's share of this total budget is $236,480 and the Contractor's share is $100,329. DOE will pay 100% of its share of the actual costs enumerated in Article A-II subject to the provisions of Article B-V.

Article A-IV - ADMINISTRATION AND REPORTS

(a) Principal Investigator - Dr. Larry Icerman

DOE Program Manager - L. L. Mink
U.S. Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401
Telephone: 208-526-0638

(b) All project information reports, as indicated on the attached DOE Form CR-537, shall be submitted in accordance with the special instructions.

U. S. DEPARTMENT OF ENERGY

REPORTING REQUIREMENTS CHECKLIST

DOE Form CR-537 (1-78)

(See Instructions on Reverse)

FORM APPROVED OMB NO. 38R-0190

1. IDENTIFICATION Geothermal Resource Assessment in New Mexico	2. OBLIGATION INSTRUMENT: Modification No. A005 to Contract No. DE-AS07-78ID01717

3. REPORTING REQUIREMENTS

A. PROJECT MANAGEMENT	Frequency
1. ☐ Management Plan	
2. ☐ Milestone Schedule & Status Report	
3. ☐ Cost Plan	
4. ☐ Manpower Plan	
5. ☒ Contract Management Summary Report	M
6. ☒ Project Status Report	M
7. ☐ Cost Management Report	
8. ☐ Manpower Management Report	
9. ☐ Conference Record	
10. ☐ Hot Line Report	

B. TECHNICAL INFORMATION REPORTING	Frequency
1. ☐ Notice of Energy RD&D Project (SSIE)	
2. ☐ Technical Progress Report	
3. ☒ Topical Report	A
4. ☒ Final Technical Report	Y
C. PMS/MINI-PMS	
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☐ Format 1 WBS	
☐ Format 2 Functional	
☐ Format 3 Baseline	
☐ Format 5 Problem Analysis	
2. ☐ Cost/Schedule Status Report	
3. ☐ Management Control System Description	
4. ☐ Summary System Description	
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M – Monthly
O – One Time (Soon After Contract Award)
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S – Semi-Annually
X – Mandatory for Delivery with Proposals/Bid
Y – Yearly or Upon Contract Renewal

4. SPECIAL INSTRUCTIONS

A.5., A.6., - Copies are due within fifteen days after end of the calendar month.

B.3. - Submit in draft after completion of work as indicated in Statement of Work. After DOE approval is received, submit copies as required on attahced "Report Distribution List."

B.4. - Submit 2 copies in draft forty-five days prior to completion date of contract term. After DOE approval is received, submit in final including one camera-ready copy.

5. ATTACHED HEREWITH:

☒ Report Distribution List ☐
☐ WBS/Reporting Category ☐

6. PREPARED BY (Signature and date):	7. REVIEWED BY (Signature and date):

REPORTING REQUIREMENTS CHECKLIST

PURPOSE

A checklist to identify and communicate additional reporting requirements which are not otherwise set forth in the General Purpose clauses of DOE contracts and agreements. It will be included as part of the contract or agreement. This form will be completed for each proposed contract or agreement and can be modified as required in Special Instructions to adapt it to a specific situation.

INSTRUCTIONS

Item 1 – Enter the title as indicated in the Procurement Request, Interagency Agreement, or initiating memorandum.

Item 2 – Enter the identification number of the Procurement Request or Interagency Agreement, the date of the memorandum, and contract number after award.

Item 3 – Check spaces to indicate plans and reports required. For each reporting requirement checked, indicate frequency of delivery in column provided using one of the frequency codes shown.

3.A.1 *Management Plan* – The contractor's plan to manage the effort described in the statement of work or similar document. It will contain management methodologies, control systems, and procedures he will use. Includes milestones and other planning schedules, organizational identification and descriptions, and special and critical plans, such as test plans, plans for handling of Government owned property. Work breakdown structures, key personnel identification, and methods for monitoring progress toward objectives may be required.

3.A.2 *Milestone Schedule and Status Report* – The contractor's milestone schedule for all work breakdown structure items, line items, or deliverables specified in the contract. Updated periodically (usually monthly) with status, progress toward completion, and percent completion of each line item and of the total contract.

3.A.3 *Cost Plan* – A baseline plan for incurring costs on a contract or agreement to measure progress in terms of cost; update and forecast contract fund requirements; plan funding changes; and develop fund requirements and budget estimates.

3.A.4 *Manpower Plan* – A baseline plan to allocate manpower to each reporting category identified in the contract or agreement.

3.A.5 *Contract Management Summary Report* – A single-page graphic presentation of integrated cost, major milestones, and manpower for rapid visual analysis and trend forecasting.

3.A.6 *Project Status Report* – A periodic report to communicate to DOE management an assessment of contract status, to explain variances and problems, and to discuss any other areas of concern or achievements.

3.A.7 *Cost Management Report* – A periodic report of the status of costs compared to the Cost Plan. Data is used to: report actual and projected accrued costs; evaluate performance against plan; identify actual and potential problem areas; construct cost experience for projects and budgeting efforts; and, to verify the reasonableness of contractors' invoices.

3.A.8 *Manpower Management Report* – A periodic report of the status of actual and projected manpower expenditure against the Manpower Plan. Data is used to evaluate performance against plan; identify actual and potential problem areas; and to construct manpower experience for projections and planning efforts.

3.A.9 *Conference Record* – Documentation of the contractor's understanding of significant decisions, direction or redirection or required actions resulting from any meeting with DOE representatives.

3.A.10 *Hot Line Report* – A hardcopy report by the fastest means available, (TWX, etc) documenting critical problems, emergency situations, and important technical breakthroughs.

3.B.1 *Notice of Energy R&D Project* – A formatted, two-page report to provide information on unclassified DOE R&D projects for dissemination to the scientific, technical, and industrial communities and to the public. Also provides information to the Smithsonian Scientific Information Exchange.

3.B.2 *Technical Progress Report* – A formal, structured technical report, submitted periodically to communicate project results for dissemination to Government agencies, the scientific, technical and industrial communities and the public.

3.B.3 *Topical Report* – A special technical report prepared when a project has reached a point at which a major milestone or a significant phase has been completed, when unexpected results have been achieved, when it is logical to summarize results achieved, or when a new scientific or technological finding is deemed to warrant prompt publication.

3.B.4 *Final Technical Report* – Technical Progress Report reporting final results of DOE supported RD&D and scientific projects.

3.C *PMS/Mini-PMS*

1) *Cost Performance Report (PMS Application)*

Format 1 – Reports current period and cumulative budget, actual costs and earned value data by work breakdown structure elements. Identifies cost and schedule variances and provides contractor's estimate to complete comparisons to budgets.

Format 2 – Reports current period and cumulative budget, actual costs, and earned value data by contractor functional elements.

Format 3 – Provides periodic updating to the established performance measurement baseline. Incorporates authorized contract changes and internal re-planning into the performance measurement baseline.

Format 5 – Provides a narrative analysis of contract variances.

2) *Cost/Schedule Report (Mini-PMS Application)* – Periodic, usually monthly, report of cumulative budget, actual costs and earned value by summary work breakdown structure elements. Identifies cost and schedule variances and provides contractor's estimate to complete comparisons to budgets.

3) *System Description (PMS Application)* – Contractor's description of the management control system to be used in performing contract work. Must address all elements of the PMS criteria.

4) *Summary System Description (Mini-PMS Application)* – Contractor's summarized description of the management control system to be used in performing contract work.

5) *WBS Dictionary* – Lists and defines work breakdown structure. For more detailed instructions see PMS Manual.

Frequency Codes – Each code must have an identified time period (i.e., As Required – 5 days after event occurrence). These time periods are suggested in the solicitation and negotiated at contract award.

Item 4 – Identify any special reporting requirements not indicated in Item 3 and/or qualifiers to those selected. (Use additional sheets as necessary.)

Item 5 – Check appropriate blocks.

Report Distribution List – A comprehensive informative listing of reports by frequency of submission, addresses and number of copies for each addressee.

Reporting Categories (level of detail) – An identification by WBS level of task elements for which reporting will be required by DOE.

Item 6 – Signature of person or persons preparing the checklist and the date prepared. Preparation is by person or persons responsible for preparation of Procurement Request or Statement of Work.

Item 7 – Signature of the person reviewing the checklist and date reviewed.

* U.S. GOVERNMENT PRINTING OFFICE: 1978-- 281-130/ 514

ID F-129 (Rev. 08-79)
Ref. DOE 13302
(use with DOE CR-537)

U.S. DEPARTMENT OF ENERGY
IDAHO OPERATIONS OFFICE

REPORT DISTRIBUTION LIST

Contract No.

DE-AS07-78ID01717
Modification No. A005

Addressees	Milestone Schedule & Status Report	Management Plan	Contract Management Summary Report	Cost Plan	Manpower Plan	Project Status Report	Cost Management Report	Manpower Management Report	Conference Record	Notice of Energy RD&D Project (SSIE)	Hot Line Report	Technical Progress Report	Final Technical Report	Topical Report	Cost Performance Report	Cost/Schedule Status Report	Management Control System Description	Summary System Description	WBS Dictionary
	Number of Report Copies																		
U. S. Department of Energy Idaho Operations Office 550 Second Street Idaho Falls, Idaho 83401																			
Attn: M. K. Tucker, Program Manager Energy & Technology Division						2	2							2	12				
Attn: Nell W. Fraser, Director Contracts Management Division						1	1							1	1				
Attn: E. G. Jones, Director Financial Management Division						1	1												
Bob Gray U. S. Department of Energy, DGE MS 3344, Federal Building 12th and Penn., N.W. Washington, DC 20461						2	2							2	2				
Duncan Foley UURI 420 Chipeta Way, Suite 120 Salt Lake City, UT 84108						1	1							1	1				

Special Instructions

UNIFORM DOE CONTRACTOR SCIENTIFIC, TECHNICAL AND ENGINEERING REPORT NUMBERING SYSTEM

Effective with the implementation of the Procurement/Contract numbering system as shown in the example below, the following guidelines are established for identifying scientific and technical reports (progress, interim, final topical, etc.) conference papers, proceedings, theses, and translations.

1. All DOE contractors now applying uniquely identifying codes and systems approved by TIC are to continue using such codes and systems.

2. DOE Field Office codes such as ALO, IDO, COO, HCP, NVO, ORO, RLO, SAN, and SRO; and program codes such as FE, DSE, etc., are no longer approved for use by contractors.

3. Contractors having no approved unique codes are to number information products as shown below. All contractors in this category should create unique report numbers by (a) identifying the report with a DOE code, (b) selecting the final seven characters from the applicable contract number (two alphabetic and five numerals), and (c) adding suffix numbers sequentially for each report generated under the contract. For new contracts, the sequential number should begin with 1. For existing contracts the established sequence should continue. Slash marks and hyphens should be applied as shown in the examples.

   Examples: Report numbers generated from contract number DE-AC03-79ET01834.M001:

   DOE/ET/01834-1; DOE/ET/01834-2; DOE/ET/01834-3; etc.

   Note: It is essential that both the final five-digit numeral and the two preceeding alphabetical characters be extracted from the contract number as shown. The modification number, if any, normally shown as M001, etc., following the basic five-digit number is NOT used in the report number.

4. Reports issued in more than one binding, or reissued as revisions or later editions, are to be identified by adding the following aditional suffixes to the basic number: Rev. - Revision; Vol. -Volume; Pt. - part: Add. - Addenda; Ed. - Edition, etc.

   Examples: DOE/ET-01834-1 Rev.
   DOE/ET/01834-1 Rev. 2

   DOE/ET-01834-1 Pt. 1
   DOE/ET/01834-1 Pt. 2

It is intended that report numbers be structured exactly as specified in the examples insofar as possible. If modification to this basic format is essential, it is to be approved through normal channels before being used.

ENERGY INSTITUTE

OFFICE OF THE DIRECTOR
Box 3EI/Las Cruces, New Mexico 88003
Telephone (505) 646-1745

April 12, 1982

Ms. Susan Prestwich
Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

Re: Contract DE-AS07-78ID01717

Dear Ms. Prestwich:

As we discussed on April 6, 1982, in Salt Lake City, I am writing to request a no-cost time extension on the above contract through December 31, 1982, in order to: (1) align the DOE project period with the project period of the matching funds from the State of New Mexico (see attachment), (2) acquire time for a summer field season in north central New Mexico (Task 4, Mod 5), (3) allow completion of the New Mexico scientific geothermal resources map consistent with the time schedule recommended by NOAA, and (4) permit an orderly close out of the contract and submission of the deliverables. If my request cannot be approved as stated only because of concerns arising from the close of the federal fiscal year in September, please consider an extension through September 30, 1982, as a less desirable, but acceptable, alternative from my point of view.

Thank you for your cooperation.

Sincerely yours,

Larry Icerman

Larry Icerman
Director

rgy

cc Carl Ruscetta, UURI
File DE-AS07-78ID01717

STANDARD FORM 30, JULY 1966
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.101

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

PAGE 1 OF 1

1. AMENDMENT/MODIFICATION NO.	2. EFFECTIVE DATE	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. *(If applicable)*
M006		07-82ID01717.501	

5. ISSUED BY CODE

U. S. Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

6. ADMINISTERED BY *(If other than block 5)* CODE

7. CONTRACTOR NAME AND ADDRESS *(Street, city, county, state, and ZIP Code)* CODE FACILITY CODE

Regents of New Mexico State University
Office of Grants and Contracts
P.O. Box 3699
Las Cruces, New Mexico 88003
Attn: Jane Youngers, Director
Office of Grants & Contracts

8.
☐ AMENDMENT OF SOLICITATION NO. _____,
DATED _____ *(See block 9)*
☒ MODIFICATION OF CONTRACT/ORDER NO. DE-AS07-78ID01717
DATED 5/1/78 *(See block 11)*

9 THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10. ACCOUNTING AND APPROPRIATION DATA *(If required)*

11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) ☐ This Change Order is issued pursuant to _____
The Changes set forth in block 12 are made to the above numbered contract/order.

(b) ☐ The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) ☒ This Supplemental Agreement is entered into pursuant to authority of P.L. 95-91
It modifies the above numbered contract as set forth in block 12.

12. DESCRIPTION OF AMENDMENT/MODIFICATION

Article II, "THE PERIOD OF PERFORMANCE," is amended to extend the period of performance for the work performed under this contract through December 31, 1982.

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

13. ☐ CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT ☒ CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 2 COPIES TO ISSUING OFFICE

14. NAME OF CONTRACTOR/OFFEROR	17. UNITED STATES OF AMERICA
BY _____ (Signature of person authorized to sign)	BY _____ (Signature of Contracting Officer)
15. NAME AND TITLE OF SIGNER *(Type or print)*	16. DATE SIGNED
E.J. Waid, Acting President	5-6-82
18. NAME OF CONTRACTING OFFICER *(Type or print)*	19. DATE SIGNED
Kent R. Hastings	4/28/82

30-101

DE-AS07-78ID01717
Mod.

NEW MEXICO
NCTE TO
12/31/82

MOD 006

E FORM PR-799A (TEST)
AUGUST 1978

U. S. DEPARTMENT OF ENERGY

PROCUREMENT/FINANCIAL ASSISTANCE REQUEST-AUTHORIZATION

1. TO CMD

2. FROM INITIATING OFFICE E&T Division Geothermal

3. INITIAL: [X] UPDATE: [ ] 4. PROCUREMENT: [ ] FINANCIAL ASSISTANCE: [ ]

5. PR NUMBER: _____ 6. PR CORRECTION LETTER: _ 7. RELATED PR NUMBER: _____

ACTION IDENTIFICATION

8. TITLE: New Mexico State Research Assessment Modification to DE-AS07-78ID01717 No Cost Time Extension

9. UNSOLICITED PROPOSAL NO: _____ 10. PROJECT NO: _____ 11. CFDA NO: _____

12. PRODUCT OR SERVICE:* ____ 13. SUPPORT SERVICES: YES [ ] NO [ ] 14. CONSULTANT AWARD: YES [ ] NO [ ]

15. CONTROLLED DELIVERABLE:* ___ 16. REPORT/DRAWING REQ: YES [ ] NO [ ] IF YES, ATTACH DETAILS.

17. CLASSIFICATION OF MATERIALS/WORK: _ U — UNCLASSIFIED C CONFIDENTIAL S — SECRET T — TOP SECRET

18. GOVERNMENT PROPERTY: _ F — FURNISHED P — PURCHASED N — NOT INVOLVED IF CODE F OR P, ATTACH DETAILS.

AWARD PLANNING

19. AWARD AS ORDER UNDER BIN: _____

20. DESIRED AWARD DATE: ___ MONTH ___ DAY ___ YEAR 21. KIND OF AWARD ACTION:* LQ 22. TYPE OF AWARD:* T IF CODE T, ATTACH DETAILS.

23. IF MULTI YEAR AWARD, INDICATE NUMBER OF YEARS: _ 24. TYPE SOLICITATION INSTRUMENT: * __

25. EXTENT OF COMPETITION:* __ IF COMPETITIVE, ATTACH TECHNICAL EVALUATION PLAN. IF NON—COMPETITIVE, ATTACH JUSTIFICATION. REF: DOE-PR 9-3.805.51 or 9-4.909(f).

26. SOURCE SELECTION PROCEDURE: _ 1 — A-E 2 — SEB 3 — OTHER 4 — NONE

27. FOR A-E, SHOW ESTIMATED CONSTRUCTION COST IN DOLLARS: _____

AWARDEE

IF COMPETITIVE, HAS LIST OF SOURCES BEEN ATTACHED? YES [ ] NO [ ] IF NON—COMPETITIVE, COMPLETE 28 - 31.

28. NAME: New Mexico State University 29. ADDRESS: Box 3E1 / Las Cruses NM 88003

30. DIVISION: Energy Institute Attn Larry Icerman

31. GOCO/LAB: _ A — GOCO/LAB B — GOCO/NON—LAB C — NON-GOCO/LAB D — NOT APPLICABLE

FINANCIAL

AWARD VALUE

	DOLLAR AMOUNT
32. GOVT SHARE	-0-
33. TOTAL	

34. CONSIDERATION IN KIND, LOAN, OR LOAN GUARANTEE DATA REPORTED ON PR—799C: [ ]

35. PROJECT PERIOD: FROM 6 MONTH 14 DAY 82 YEAR THRU 12 MONTH 31 DAY 82 YEAR

CURRENT FY FUNDS COMMITTED

36. B&R NUMBER	37. FUND CLASS	38. DOLLAR AMOUNT
_____	_	_____
_____	_	_____
_____	_	_____

39. FROM PR 799B (PART A) _____

40. TOTAL THIS PR -0-

41. FUNDING PERIOD: FROM ___ MONTH ___ DAY ___ YEAR THRU ___ MONTH ___ DAY ___ YEAR

42. APPROPRIATION SYMBOL: _____

43. ALLOTMENT SYMBOL: _____

44. OBJECT CLASS: ____

* SEE BACK OF FORM FOR CODES

PROJECT MANAGER

45. NAME: S M Prestwich

46. SIGNATURE: S M Prestwich

47. DATE: 4 MONTH 20 DAY 82 YEAR 48. OFFICE CODE: _____

49. FTS TELEPHONE NUMBER: 6-1142

PROGRAM OFFICIAL

50. NAME: R E Wood

51. SIGNATURE: C E Wilmot for R E Wood

52. DATE: 4-20-82 MONTH DAY YEAR

CERTIFYING OFFICIAL

53. NAME: F. S. Smith

I HEREBY CERTIFY THAT THE FUNDS CITED IN ITEM 40 ARE AVAILABLE.

54. SIGNATURE: _____

55. DATE: MONTH DAY YEAR

ENERGY INSTITUTE

OFFICE OF THE DIRECTOR
Box 3EI Las Cruces, New Mexico 88003
Telephone (505) 646-1745

NEW MEXICO STATE UNIVERSITY

April 12, 1982

Ms. Susan Prestwich
Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

Re: Contract DE-AS07-78ID01717

Dear Ms. Prestwich:

As we discussed on April 6, 1982, in Salt Lake City, I am writing to request a no-cost time extension on the above contract through December 31, 1982, in order to: (1) align the DOE project period with the project period of the matching funds from the State of New Mexico (see attachment), (2) acquire time for a summer field season in north central New Mexico (Task 4, Mod 5), (3) allow completion of the New Mexico scientific geothermal resources map consistent with the time schedule recommended by NOAA, and (4) permit an orderly close out of the contract and submission of the deliverables. If my request cannot be approved as stated only because of concerns arising from the close of the federal fiscal year in September, please consider an extension through September 30, 1982, as a less desirable, but acceptable, alternative from my point of view.

Thank you for your cooperation.

Sincerely yours,

Larry Icerman

Larry Icerman
Director

rgy

cc Carl Ruscetta, UURI
File DE-AS07-78ID01717

New Mexico Energy Research and Development Institute

March 31, 1982

MEMORANDUM

TO: Larry Icerman
NMEI-NMSU

FROM: Peter Vogel
Liaison Officer

SUBJECT: Project 2-69-2208

Reference your correspondence of March 24th requesting a no-cost extension for project 2-69-2208. The requested project extension through December 31, 1982 is approved.

PV:cc

xc: Lou Seig
Gloria Lithgow
Celinda Gallop
File 2-69-2208
R. Kloeppel

P.O. Box 5307 • Santa Fe, New Mexico 87502 • (505) 827-3461

STANDARD FORM 30, JULY 1966
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.101

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

PAGE 1 OF 1

1. AMENDMENT/MODIFICATION NO.	2. EFFECTIVE DATE	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. (If applicable)
M007		07-83ID01717.501	

5. ISSUED BY CODE

U. S. Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

6. ADMINISTERED BY (If other than block 5) CODE

7. CONTRACTOR NAME AND ADDRESS (Street, city, county, state, and ZIP Code) CODE FACILITY CODE

Regents of New Mexico State University
Office of Grants and Contracts
P.O. Box 3699
Las Cruces, New Mexico 88003

Attn: Jane Youngers

8.
☐ AMENDMENT OF SOLICITATION NO. _____,
DATED _____ (See block 9)
☒ MODIFICATION OF CONTRACT/ORDER NO. DE-AS07-78ID01717
DATED 5/1/78 (See block 11)

9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10. ACCOUNTING AND APPROPRIATION DATA (If required)

11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) ☐ This Change Order is issued pursuant to _____
The Changes set forth in block 12 are made to the above numbered contract/order.

(b) ☐ The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) ☒ This Supplemental Agreement is entered into pursuant to authority of P.L. 95-91
It modifies the above numbered contract as set forth in block 12.

12. DESCRIPTION OF AMENDMENT/MODIFICATION

Article II, "THE PERIOD OF PERFORMANCE," is amended to extend the period of performance for the work performed under this contract through June 30, 1983.

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

13.
☐ CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT
☒ CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 2 COPIES TO ISSUING OFFICE

14. NAME OF CONTRACTOR/OFFEROR

BY _____ (Signature of person authorized to sign)

17. UNITED STATES OF AMERICA

BY Kent R. Hastings (Signature of Contracting Officer)

15. NAME AND TITLE OF SIGNER (Type or print)	16. DATE SIGNED	18. NAME OF CONTRACTING OFFICER (Type or print)	19. DATE SIGNED
E. J. Waid, Acting President	1/5/83	Kent R. Hastings	12/21/82

30-101

☆U.S.GPO:1980-0-311-153/5520

DOE FORM PR-799A (TEST)
30 AUGUST 1978

U. S. DEPARTMENT OF ENERGY

PROCUREMENT/FINANCIAL ASSISTANCE REQUEST-AUTHORIZATION

1. TO CMD

2. FROM INITIATING OFFICE E&T Geothermal

3. INITIAL: [X] UPDATE: [ ] 4. PROCUREMENT: [ ] FINANCIAL ASSISTANCE: [ ]

5. PR NUMBER: _____ 6. PR CORRECTION LETTER: _ 7. RELATED PR NUMBER: _____

ACTION IDENTIFICATION

8. TITLE: New Mexico State Resource Team
NSTE modification to DE-AS07-78ID01717

9. UNSOLICITED PROPOSAL NO: _____ 10. PROJECT NO: _____ 11. CFDA NO: _____

12. PRODUCT OR SERVICE:* ____ 13. SUPPORT SERVICES: YES [ ] NO [ ] 14. CONSULTANT AWARD: YES [ ] NO [ ]

15. CONTROLLED DELIVERABLE:* ___ 16. REPORT/DRAWING REQ: YES [ ] NO [ ] IF YES, ATTACH DETAILS.

17. CLASSIFICATION OF MATERIALS/WORK: _ U — UNCLASSIFIED C — CONFIDENTIAL S — SECRET T — TOP SECRET

18. GOVERNMENT PROPERTY: _ F — FURNISHED P — PURCHASED N — NOT INVOLVED IF CODE F OR P, ATTACH DETAILS.

AWARD PLANNING

19. AWARD AS ORDER UNDER BIN: _____ IF CODE T, ATTACH DETAILS.

20. DESIRED AWARD DATE: 12 (MONTH) 31 (DAY) 82 (YEAR) 21. KIND OF AWARD ACTION:* __ 22. TYPE OF AWARD:* _

23. IF MULTI-YEAR AWARD, INDICATE NUMBER OF YEARS: _ 24. TYPE SOLICITATION INSTRUMENT: * __

25. EXTENT OF COMPETITION:* __ IF COMPETITIVE, ATTACH TECHNICAL EVALUATION PLAN. IF NON-COMPETITIVE, ATTACH JUSTIFICATION. REF: DOE-PR 9-3.805.51 or 9-4.909(f).

26. SOURCE SELECTION PROCEDURE: _ 1 — A-E 2 — SEB 3 — OTHER 4 — NONE

27. FOR A-E, SHOW ESTIMATED CONSTRUCTION COST IN DOLLARS: _____

AWARDEE

IF COMPETITIVE, HAS LIST OF SOURCES BEEN ATTACHED? YES [ ] NO [ ] IF NON-COMPETITIVE, COMPLETE 28 - 31.

28. NAME: NM State University 29. ADDRESS: Las Cruses, NM 88003

30. DIVISION: Energy Institute RI Larry Iceman

31. GOCO/LAB: _ A — GOCO/LAB B — GOCO/NON-LAB C — NON-GOCO/LAB D — NOT APPLICABLE

FINANCIAL

AWARD VALUE

	DOLLAR AMOUNT
32. GOV'T SHARE	-0-
33. TOTAL	

34. CONSIDERATION IN KIND, LOAN, OR LOAN GUARANTEE DATA REPORTED ON PR-799C: [ ]

35. PROJECT PERIOD: FROM 12 (MONTH) 31 (DAY) 82 (YEAR) THRU 6 (MONTH) 30 (DAY) 83 (YEAR)

CURRENT FY FUNDS COMMITTED

36. B&R NUMBER	37. FUND CLASS	38. DOLLAR AMOUNT
_____	_	-0-
_____	_	_____
_____	_	_____

39. FROM PR-799B (PART A) _____

40. TOTAL THIS PR -0-

41. FUNDING PERIOD: FROM __ (MONTH) __ (DAY) __ (YEAR) THRU __ (MONTH) __ (DAY) __ (YEAR)

42. APPROPRIATION SYMBOL: _____

43. ALLOTMENT SYMBOL: _____

44. OBJECT CLASS: ____

PROJECT MANAGER

45. NAME: S M Prestwich

46. SIGNATURE: S M Prestwich

47. DATE: 12 (MONTH) 15 (DAY) 82 (YEAR) 48. OFFICE CODE: _____

49. FTS TELEPHONE NUMBER: _____

PROGRAM OFFICIAL

50. NAME: REWood

51. SIGNATURE: _____

52. DATE: __ (MONTH) __ (DAY) __ (YEAR)

CERTIFYING OFFICIAL

53. NAME: F S Smith

I HEREBY CERTIFY THAT THE FUNDS CITED IN ITEM 40 ARE AVAILABLE.

54. SIGNATURE: _____

55. DATE: __ (MONTH) __ (DAY) __ (YEAR)

* SEE BACK OF FORM FOR CODES

ENERGY INSTITUTE

OFFICE OF THE DIRECTOR
Box 3EI/Las Cruces, New Mexico 88003
Telephone (505) 646-1745

November 11, 1982

Ms. Susan Prestwich
Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

RE: Contract DE-AS07-78ID01717

Dear Ms. Prestwich:

I am writing to request a no-cost time extension on the above contract through June 30, 1983. As the result of substantial support from the State of New Mexico to conduct low-temperature geothermal resource assessments throughout New Mexico, I have been expending the above contract funds judiciously and now have monies remaining to continue our activities for several more months. Much work of high quality has been accomplished especially in regard to resource assessment activities on Santa Ana Pueblo lands, the generation of a statewide aeromagnetic map, and the production of the scientific geothermal resources map series for New Mexico.

During the requested contract extension period our efforts will be focused on: (1) working closely with NOAA to complete the scientific map series, (2) continuing temperature gradient drilling activities initiated on November 8, 1982, on Santa Ana Pueblo lands and funded by the State of New Mexico, (3) conducting a regional temperature gradient drilling program in north central New Mexico as part of the State match to Task 4, Mod 5, and (4) coordinating an orderly close out of the contract and submission of the deliverables.

If you have any questions concerning our present or planned activities, please do not hesitate to contact me. Thank you for your cooperation.

Sincerely yours,

Larry Icerman

LARRY ICERMAN
Director

LI/dp

cc: Carl Ruscetta, UURI
File DE-AS07-78ID01717