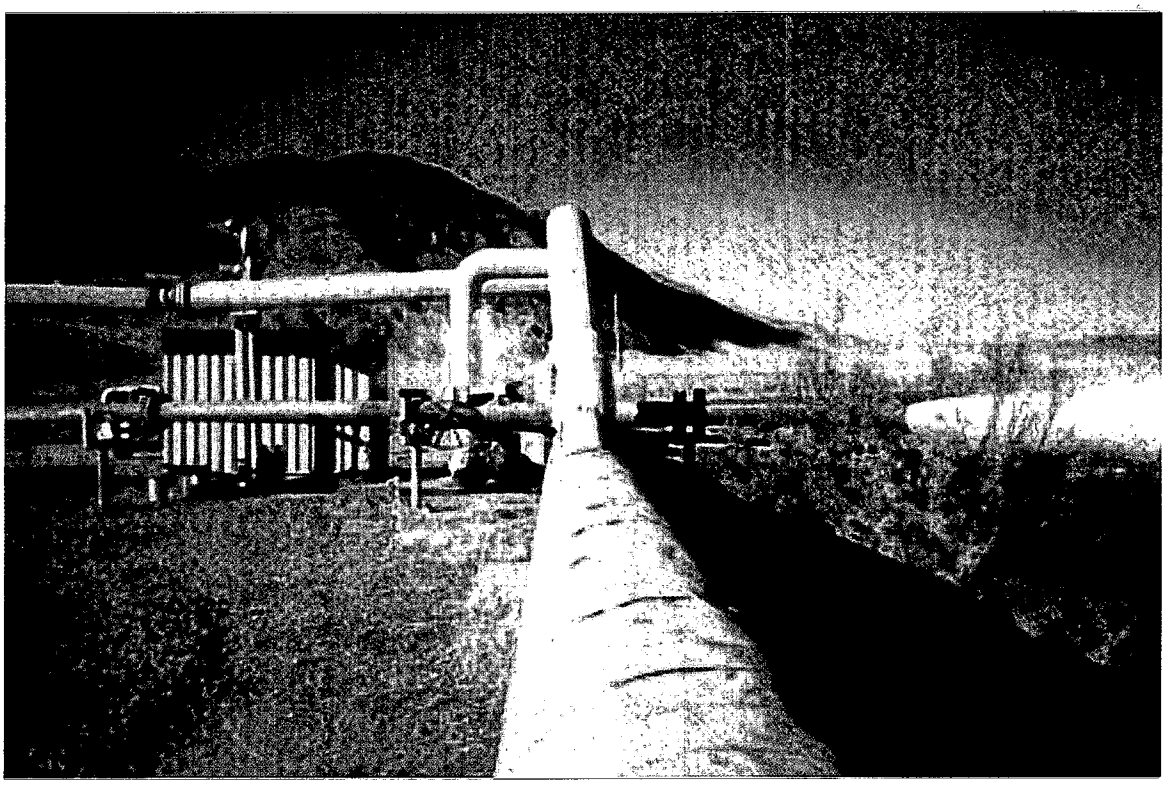
APPENDIX 7

DIXIE VALLEY GEOCHEMICAL DATA (GOFF ET AL., 2002)

LA-13972-MS
Approved for public release;
distribution is unlimited.

Geochemical Data on Waters, Gases, Scales, and Rocks from the Dixie Valley Region, Nevada (1996–1999)



Los Alamos
NATIONAL LABORATORY

DISCLAIMER

Cover Photo: Photo looking NNE of 37–33 production well and flow lines from the northern production zone, Dixie Valley geothermal field, Nevada. Geothermal brine and steam are being vented into a holding pond on the right side of photo. The Stillwater Range towers above Dixie Valley in the left background. The break in the slope between the range and the valley marks the approximate position of the Stillwater fault zone (photo by F. Goff).

Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by the University of California for the United States Department of Energy under contract W-7405-ENG-36.

LA-13972-MS
Issued: August 2002

Geochemical Data on Waters, Gases, Scales, and Rocks from the Dixie Valley Region, Nevada (1996–1999)

Fraser Goff
Deborah Bergfeld
Cathy J. Janik*
Dale Counce
Mike Murrell

* U.S. Geological Survey, MS 910, 345 Middlefield Road, Menlo Park, CA 94025
cjanik@usgs.gov

Los Alamos
NATIONAL LABORATORY

Contents

Figures

Tables

Geochemical Data on Waters, Gases, Scales, and Rocks from the Dixie Valley Region, Nevada (1996-1999)

by

Fraser Goff, Deborah Bergfeld, Cathy J. Janik,
Dale Counce, Mark Huebner, and Mike Murrell

ABSTRACT

This report tabulates an extensive geochemical database on waters, gases, scales, rocks, and hot-spring deposits from the Dixie Valley region, Nevada. The samples from which the data were obtained were collected and analyzed during 1996 to 1999. These data provide useful information for ongoing and future investigations on geothermal energy, volcanism, ore deposits, environmental issues, and groundwater quality in this region.

INTRODUCTION

The Dixie Valley geothermal system is located roughly 160 km northeast of Fallon in west central Nevada and supports a 62-MWe double-flash power plant that became operational in 1988. Located in the Basin and Range tectonic province, Dixie Valley trends north-northeast and is 120 km long by about 20 km wide. It is bounded by the Stillwater Range on the west and by the Clan Alpine Range to the east (Waibel 1987; Honjas et al. 1997; Lutz et al. 1997). Geothermal fluids are produced from the subsurface extension of the normal Stillwater fault zone and associated fractured rocks at depths of 3,050 to 2,800 m. The fault zone architecture is considered to be complex (Caine et al. 1996). The Dixie Valley geothermal system displays fault and fracture permeability typical of the Basin and Range. Convective heat flow in the geothermal system exceeds 300 mW/m^2, and conductive temperature gradients range from 100°C to >200°C/km (Williams et al. 1997).

Producing geologic formations penetrated by geothermal wells are exposed in the Stillwater Range west of the power plant. These rocks consist of Triassic to Jurassic marine quartzite, siltstone, shale, and volcaniclastic rocks overlain by the Humboldt Lopolith (Speed 1976), a complex of oceanic crustal rocks that includes gabbro, diorite, and basalt (Waibel 1987; Lutz 1997). The Triassic to Jurassic units have been imbricated into four similar stratigraphic packages by three thrust faults and were later intruded by Cretaceous granodiorite. Uplift and erosion exposed these older rocks by the mid-Tertiary during which an extensive complex of Oligocene ignimbrites was emplaced throughout the region. The Miocene Table Mountain Basalt rests on earlier rocks in the subsurface of Dixie Valley and in the bordering ranges. Within Dixie Valley, the basalt is found at 1,280 m below sea level and is overlain by a variety of late Tertiary basin-fill deposits. The mouths of all major canyons are now filled by alluvial fans, and the axis of Dixie Valley is occupied by alluvium, playa deposits, and the Humboldt Salt Marsh.

Extensive alteration from previous hydrothermal activity and present geothermal fluids affects most geologic units, particularly along range front faults. A series of active and dead hot springs and fumaroles is sporadically distributed along the Stillwater fault from a zone a few kilometers north of the Dixie Valley power plant (Senator fumarole group) to a point about 20k southwest of the power plant (Dixie hot springs). Additional hot and mineral fluids discharge as springs or occur as shallow aquifers throughout the Dixie Valley region.

The authors have been engaged in a series of geothermal investigations in the Dixie Valley region since October 1996 (Bruton et al. 1997; Goff et al. 1998; Kennedy et al. 1999; Nimz et al. 1999; Goff and Janik 2000; Bergfeld 2001; Bergfeld et al. 1998, 2001; Stamates 2001). During these investigations, large quantities of unpublished chemical and isotopic data on waters, gases, rocks, and hot spring deposits have accumulated. Because this data may be useful to other research groups and interested regional stakeholders, we are releasing this information into the public domain. This report contains the locations, field measurements, and analytical results of these accumulated data. No attempt is made herein to interpret the scientific meaning of these data.

PROJECTS SUMMARY

The following geothermal collaborations were responsible for production of the data included in this report:

1. A study of rock-water interaction, corrosion, and scaling of production/injection horizons, production wells, and injection wells with C. Bruton, Lawrence Livermore National Laboratory (LLNL) and J. Moore (Energy and Geoscience Institute).
2. A study of temporal and spatial stable isotope variations in production fluids of the Dixie Valley geothermal reservoir with C. J. Janik, U.S. Geological Survey (USGS).
3. A study of recharge sources and fluid ages with respect to the Dixie Valley region and the Dixie Valley geothermal system with G. Nimz (LLNL) and C. J. Janik (USGS).
4. A study of the distribution and flux of anomalous CO_2 and elevated steam discharge at the "dead zone" on the north edge of the Dixie Valley geothermal system with D. Bergfeld, Los Alamos National Laboratory (LANL) and C. J. Janik (USGS). This project was one of those contained in Bergfeld's Ph.D. thesis.
5. An evaluation of gold, mercury, and other trace metals contents in Dixie Valley production fluids and scales with S. Johnson, Oxbow Geothermal Company.
6. An investigation of the geology and age of selected travertine and sinter deposits within and along the flanks of Dixie Valley with M. Murrell (LANL) and C. J. Janik (USGS).
7. An investigation examining the tritium relations of Dixie Valley geothermal and regional fluids with M. Stamates and L. Shevenell (University of Nevada- Reno). This project made up a portion of Stamates' M.S. thesis.

LOCATIONS AND FIELD PARAMETERS

Latitude, longitude, and elevation of the sampling sites appear in Table 1, and the sites are keyed to map numbers on the regional and detailed maps of Figures 1 and 2. Table 1 also provides the name of the 1:100,000 topographic quadrangle and the lithology of each sampling site. Field parameters for the sampling sites appear in Table 2. All field and analytical data are keyed to sample numbers that are listed as initial entries in most of the tables. Temperatures were measured with thermocouples and digital thermometers, or occasionally, from gauges on geothermal wells. Pressures were obtained from gauges on geothermal wells, from a portable digital pressure gauge that was piped into our sampling equipment, or from power plant data. Steam fractions (y) were provided to us by the operator of the geothermal field. The field pH of produced fluids, injection fluids, and power plant fluids was usually measured with a pH electrode. The field pH of background waters was measured with pH-sensitive papers. Field alkalinity and conductivity of produced fluids, injection fluids, and power plant fluids were determined by pH titration and with a portable conductivity meter, respectively. The field Eh was obtained with a field portable electrode. Flow rates of wells, power plant fluids, and injection lines were provided to us by the operator of the geothermal field. Flow rates of background fluids were generally measured with a bucket or beaker and a stopwatch.

SAMPLING METHODS

Water Samples: Field procedures for sampling waters have been described in detail by Trujillo et al. (1987), Werner et al. (1997), and Goff and McMurtry (2000). Generally, four basic samples are collected at each water collection site: (1) a 125-ml plastic bottle of filtered (0.45 mm), unacidified water for anions, (2) a 125-ml plastic bottle of filtered (0.45 mm) water, acidified to pH ≤2 with spectrographically pure, concentrated HNO_3 for cations, silica, and trace metals, (3) a 30-ml glass bottle of raw water for deuterium and oxygen-18 isotope measurements, and (4) a 500-ml glass or plastic bottle of raw water for tritium measurements. Sampling for trace metals analysis followed a clean-hands protocol in order to avoid the introduction of contaminants. Samples were collected in precleaned, acid-washed (nitric acid) bottles and preserved with trace-metal grade reagents.

Aluminum and Silica Samples of Production, Injection, and Other Waters: Special samples were collected for total and ionized aluminum to allow for thermodynamic modeling of mineral phases in equilibrium or nonequilibrium with the production and injection well fluids (Bruton et al. 1997; Gallup 1998). The filtered, acidified sample described above was used for total aluminum analyses. Ionized aluminum was extracted from 500 ml of filtered sample using an oxine-MIBK method modified from Barnes (1975). Both 0.2- and 0.45-μ filters were used on the samples before extraction proceeded. Final extracts were stored in silica-glass vials in coolers and refrigerators before analysis. In early 1999 C. Bruton (LLNL) indicated that the analyzed values for ionized aluminum determined previously were probably too low, due possibly to coagulation of colloid particles and loss of aluminum during filtering. Thus, 1999 samples were determined on unfiltered oxine-MIBK extracts.

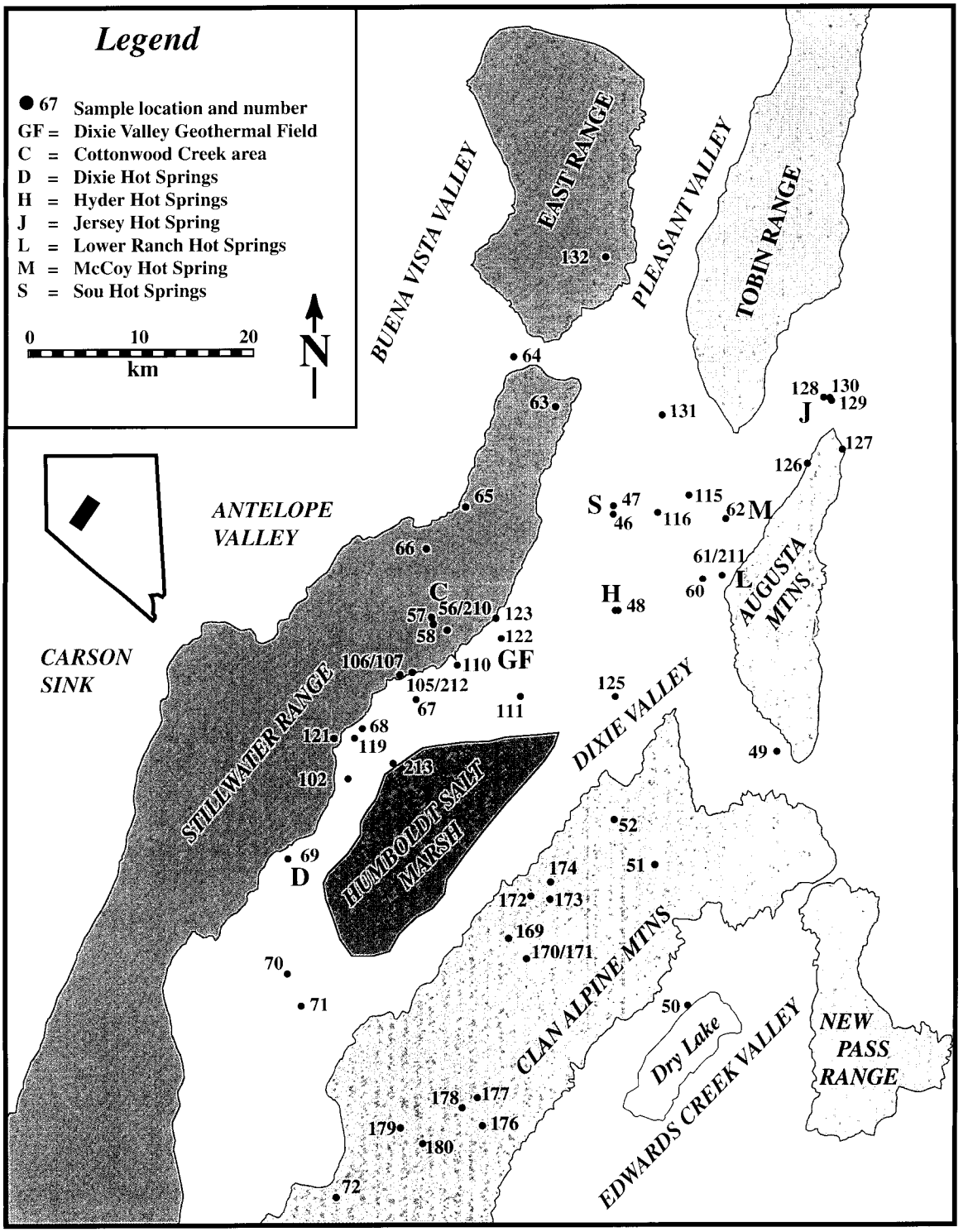


Figure 1. *Regional map of the Dixie Valley region, Nevada, showing the locations of samples (Table 1).*

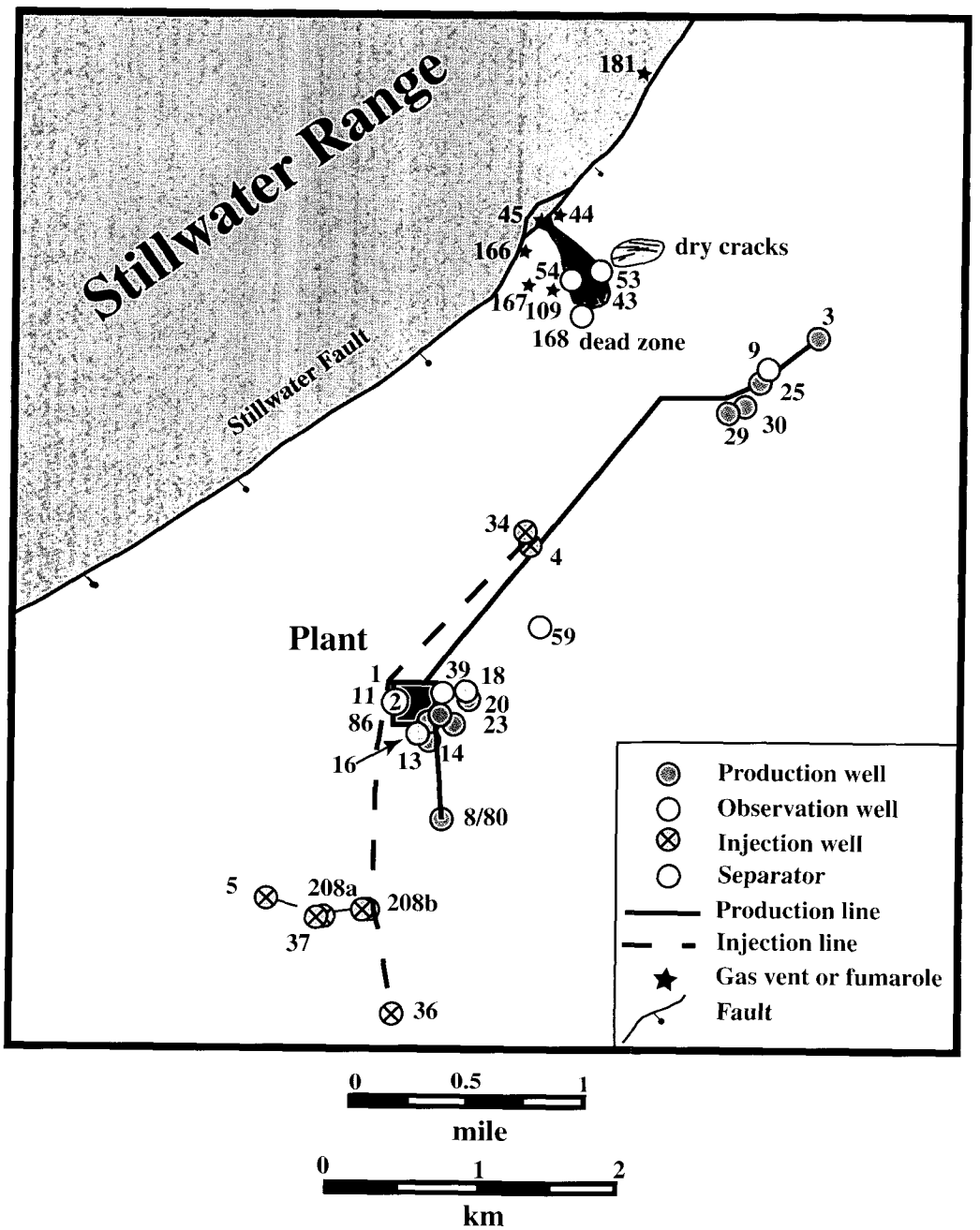


Figure 2. *Map of west central Dixie Valley in the vicinity of the geothermal power plant showing locations of production, injection, shallow observation, and water supply wells, the locations of fumaroles along the Stillwater fault zone, and the location of the "dead" zone (Bergfeld et al. 2001). North is straight up on this figure.*

Silica samples of initially hot or supersaturated fluids (such as those from production and injection wells, from power plant fluids, from other geothermal wells, and from hot springs) were obtained by pipetting 5 ml of fresh sample into 60 ml plastic vials containing 30 ml of deionized, silica-free water. Silica from cold features was determined on the filtered, acidified samples described above.

Additional Water Samples: Additional samples were collected for other kinds of analyses but were not collected at each sampling point or for all projects described above. For sulfide analysis, 5 ml raw water sample was pipeted into a 15 ml plastic bottle containing 5 ml of sulfide antioxidant buffer solution. Gold samples were collected by filling a 125-ml prewashed glass bottle with filtered water and adding 2 ml of aqua regia (a 3:1 mixture of trace-metal-grade HCl and HNO_3). Samples for carbon-13 analysis of dissolved inorganic carbon were collected by filling a 125- to 250-ml glass bottle with raw water and adding a saturated solution (in most cases10 ml) of $SrCl_2$ in NH_4OH.

Gases: Gas samples were obtained at fumaroles, gas vents, gaseous springs and gas-rich wells with funnels, pipes, tubing, and fittings as necessary. Gases were collected in 300-ml double-port, caustic-gas bottles as described by Trujillo et al. (1987), Fahlquist and Janik (1992), and Goff and McMurtry (2000). Caustic-gas bottles are prepared in the laboratory before sampling by adding roughly 100 ml of 4N NaOH solution (bicarbonate purged) to the bottle and pumping the remaining head space of the bottle to vacuum. Samples collected in caustic bottles can be used for bulk gas analysis and analysis of $\delta^{13}C\text{-}CO_2$, $\delta^{13}C\text{-}CH_4$, and other isotopic constituents.

Scales, Rocks, and Hot Springs Deposits: Samples of test bed scales were provided by J. Moore (EG&G). Samples of production and injection well scales were donated by S. Johnson (Oxbow Power Co.). Samples of representative volcanic, plutonic, metamorphic, and sedimentary rocks from the Dixie Valley region were identified using geologic and paleomagnetic maps and reports (Speed 1976; Hudson 1988; Hudson and Geissman 1984, 1991; Plank et al. 1999). These samples were analyzed for various isotopes using standard methods by several contract laboratories. Samples of hot spring deposits from the "dead" travertine in Cottonwood Canyon and the Lower Ranch sinter-travertine in northeastern Dixie Valley were collected for U-series dating methods. All scale and rock samples were collected in cloth or plastic bags for later chemical and isotopic analysis.

ANALYTICAL METHODS, RESULTS, AND CALCULATIONS

Waters: Major and trace element chemical analyses of waters were determined by D. Counce at Los Alamos National Laboratory using methods listed in Table 3 (Janik et al. 1999; Goff et al. 2001). Results of the analyses are given in Tables 4 and 5. Total aluminum was determined by inductively coupled plasma (ICP) spectroscopy on the acidified sample described above. Ionized aluminum was determined on methyl isobutyl ketone (MIBK) extracts described above using graphite furnace atomic adsorption (GFAA) spectroscopy. The aluminum results can be compared on Table 6. Isotope analyses of $\delta D\text{-}H_2O$, $\delta^{18}O\text{-}H_2O$, $\delta^{13}C\text{-}HCO_3$, and $\delta^{18}O\text{-}SO_4$ were determined by standard methods at various laboratories listed in Table 7. Tritium measurements were obtained primarily from the University of Miami. All isotope results on water samples are reported in Table 7.

Gases: Bulk gas analyses (Table 8) were obtained from either the U.S. Geological Survey by C. J. Janik or the EES-6 geochemistry lab at Los Alamos National Laboratory by D. Counce using gas methods listed in Table 3. Carbon-13 analyses of CO_2 were determined using standard methods at a variety of laboratories as listed in Table 8. Trace metals analyses of the caustic solutions from selected gas samples are listed in Table 9. These analyses used procedures for liquid samples listed in Table 3, and the results are adjusted for the density of the caustic solution.

Chemical Geothermometers: Results for the sulfate oxygen isotope geothermometer are listed in Table 7. Note that this geothermometer has many limitations due to brine flash, reequilibration, evaporation, and mixing of different fluids. Gas geothermometers that are used to estimate subsurface geothermal reservoir temperatures are listed for all gas samples in Table 9. Reconstructed chemical compositions of flashed brines are given in Table 10. Geothermometer calculations of the reconstructed brines are shown in Table 11. Geothermometer calculations of thermal and mineral springs and wells are listed in Table 12. All calculations use standard geothermometers that are referenced at the bottom of the various tables. Calculations were performed on a personal computer using the code of Urbani (1986).

Scales: About 0.25 g of dried scale and test-bed precipitates were mixed with a cocktail consisting of 2.0 ml HNO_3, 3.5 ml HCl, and 1.5 ml HF, heated in a microwave oven for about 10 minutes, and the resulting solution adjusted to 50 ml with deionized water. Analyses of selected metals by methods described in Table 2 appear in Table 13. This method extracts easily soluble metallic minerals and colloid particles from the scales without dissolving all the rock fragments, sand grains, and silt that may be in some samples.

Rocks: Rock samples were cleaned of debris and sent to contract laboratories for isotopic analyses as listed in Table 14. Rubidium and strontium concentrations were analyzed at LANL for a group of strontium isotope samples collected in 1998. The rubidium and strontium concentrations for strontium isotope samples collected for an earlier project were analyzed at the University of New Mexico (UNM).

Hot Spring Deposits: Two areas of hot-spring deposits were examined in detail and sampled for U-series radiometric dating: the Cottonwood Canyon travertine and the Lower Ranch mixed travertine and sinter. Samples were cleaned, crushed, and hand picked to obtain 5 to 20 g of pure carbonate and silica (opal and chalcedony). Samples were further processed in highly purified acids and analyzed by mass spectrometry according to procedures described in Edwards et al. (1997) and Pickett and Murrell (1997).

ACKNOWLEDGMENTS

Collection of the various samples and publication of this report was made possible by M. Reed and J. Renner of the U.S. Department of Energy, Office of Geothermal Technologies. C. J. Janik was also funded by the U.S. Geological Survey Volcano Hazards Program. Grants from the Geological Society of America supported some of the field work for D. Bergfeld. Stu Johnson and Dick Benoit (Oxbow Power Co.) provided valuable information and lots of muscle at the Dixie Valley geothermal system. Jerry Kelly (DJ Ranch) gave us free access to the Lower Ranch hot springs. J. Brinkerhoff cheerfully allowed us to sample his wells in northern Dixie Valley. The manuscript was reviewed by J. Heikoop (LANL), and Mable Amador provided the final editing.

REFERENCES

Barnes, R.B., 1975, The determination of specific forms of aluminum in natural water. Chemical Geology, v. 15, p. 177–191.

Bergfeld, D., 2001, Geothermal systems and CO_2 degassing: The Geysers–Clear Lake, and Dixie Valley regions of California and Nevada. Ph.D. thesis, University of New Mexico, Albuquerque, 123 pp.

Bergfeld, D., Goff, F.E., and Janik, C.J., 2001, Elevated carbon dioxide flux at the Dixie Valley geothermal field, Nevada; relations between surface phenomena and the geothermal reservoir, Chemical Geology, v. 177, p. 43–66.

Bergfeld, D., Goff, F.E., and Janik, C.J., Johnson, S., 1998, CO_2 flux measurements across portions of the Dixie Valley geothermal system, Nevada. Geothermal Resources Council Transactions, v. 22, p. 107–111.

Bruton, C., Counce, D., Bergfeld, D., Goff, F., Johnson, S., Moore, J., and Nimz, G., 1997, Preliminary investigation of scale formation and fluid chemistry at the Dixie Valley geothermal field, Nevada. Geothermal Resources Council Transactions, v. 21, p. 157–164.

Caine, J., Evans, J., and Forster, C.B., 1996, Fault zone architecture and permeability structure. Geology, v. 24, p. 1025–1028.

D'Amore, F., and Panichi, C., 1980, Evaluation of deep temperatures of hydrothermal systems by a new gas geothermometer. Geochimica Cosmochimica Acta, v. 44, p. 549–556.

Edwards, R.L., Cheng, H., Murrell, M.T., and Goldstein, S.J., 1997, Protactinium-231 dating of carbonates by thermal ionization mass spectrometry: Implications for quaternary climate change. Science, v. 276, p. 782–786.

Fahlquist, L., and Janik, C.J., 1992, Procedures for collecting and analyzing gas samples from geothermal systems. U.S. Geological Survey, Open-File Report 92–211, 19 pp.

Fouillac, C., and Michard, G., 1981, Sodium-lithium ratios in water applied to geothermometry of geothermal reservoirs. Geothermics, v. 10, p. 55–70.

Fournier, R.O., 1981, Application of water geochemistry to geothermal exploration and reservoir engineering, in (Rybach, L., and Muffler, L.J.P., eds.) Geothermal Systems, Principals and Case Histories. Wiley, NY, p. 109–143.

Fournier, R.O., and Potter, R.W., 1979, Magnesium correction to the Na-K-Ca chemical geothermometer. Geochimica Cosmochimica Acta, v. 43, p. 1543–1550.

Fournier, R.O., and Truesdell, A.H., 1973, An empirical Na-K-Ca geothermometer for natural waters. Geochimica Cosmochimica Acta, v. 37, p. 1255–1275.

Gallup, D.L., 1998, Aluminum silicate scale formation and inhibition (2): Scale solubilities and laboratory and field inhibition tests. Geothermics, v. 27, p. 485–501.

Giggenbach, W.F., 1986, Graphical techniques for the evaluation of water/rock equilibration conditions by use of Na, K, Mg, and Ca contents of discharge waters. Proceedings 8th N.Z. Geothermal Workshop, Auckland, N.Z., University of Auckland, p. 37–43.

Giggenbach, W.F., 1992, Chemical techniques in geothermal exploration. UNITAR/UNDP, Rome, Italy, p. 119–144.

Goff, F., and Janik, C.J., 2000, Geothermal Systems, in (H. Sigurdsson, ed.) Encyclopedia of Volcanoes. Academic Press, San Diego, p. 817–834.

Goff, F., and McMurtry, G.M., 2000, Tritium and stable isotopes of magmatic waters. Journal of Volcanology and Geothermal Research, v. 97, p. 347–396.

Goff, F., Hulen, J., Adams, A., Trujillo, P., Counce, D., and Evans, W.C., 1994, Geothermal characteristics of some oil field waters in the Great Basin, Nevada, in (Schalla, R.A., and Johnson, E.H., eds.) Oil Fields of the Great Basin. Nevada Petroleum Society, Reno, Nevada, p. 93–106.

Goff. F., Janik, C.J., Bergfeld, D., Counce, D., Bruton, C., and Nimz, G., 1998, Geothermal chemistry/exploration investigations at Dixie Valley, Nevada. U.S. Department of Energy, Geothermal Program Review, Berkeley, California, 7 pp.

Goff, F., Bergfeld, D., Janik, C.J., Counce, D., and Stimac, J.A., 2001, Geochemical data on waters, gases, rocks, and sediments from The Geysers-Clear Lake region, California (1991-2000). Los Alamos National Laboratory Report LA-13882-MS, 40 pp.

Goguel, R., 1976, Thermal water transport of some major rock constituents at Wairakei. New Zealand Journal of Science, v. 19, p. 359–368.

Goguel, R., 1988, Ultratrace metal analysis of New Zealand geothermal waters by ICP-MS. Proceedings of the New Zealand Trace elements Group Conference, 30 Nov - 2 Dec, 1988, Lincoln College, Canterbury, NZ, p. 263–270.

Honjas, W., Pullammanappillil, S.K., Lettis, W., Plank, G.L., Louie, J., and Schweichert, R., 1997, Predicting subsurface structure within the Dixie Valley geothermal field, Dixie Valley, Nevada, using a non-linear optimization scheme. Geothermal Resources Council Bulletin, February, pp. 45–52.

Hudson, M.R., 1988, Paleomagnetic and structural evidence bearing on the tectonic history of a region surrounding Dixie Valley, west-central Nevada. Ph.D. dissertation, Colorado School of Mines, Golden, Colorado, 352 pp.

Hudson, M.R., and Geissman, J.Wm., 1984, Preliminary paleomagnetic data from the Jurassic Humboldt Lopolith, west-central Nevada: Evidence for thrust belt rotation in the Fencemaker allochthon. Geophysical Research Letters, v. 1., p. 828–831.

Hudson, M.R., and Geissman, J.W., 1991, Paleomagnetic evidence for the age and extent of middle Tertiary counterclockwise rotation, Dixie Valley region, west central Nevada. Journal of Geophysical Research, v. 96, p. 3979–4006.

Hulen, J. B., Goff, F., Bereskin, S. R., and Bortz, L. C., 1994, Geology and geothermal origin of Grant Canyon and Bacon Flat oil fields, Railroad Valley, Nevada: American Association of Petroleum Geologists Bulletin, v. 78, p. 596–623.

Janik, C.J., Goff, F., Sorey, M., Rytuba, J., Counce, D., Colvard, E., Huebner, M., White, L.D., and Foster, A., 1999, Physical, chemical, and isotopic data for samples from the Anderson Springs area, Lake County, California, 1998-1999. U.S. Geological Survey Open-File Report 99-585, 27 pp.

Kennedy, B.M., Janik, C., Benoit, D., and Shuster, D., 1999, Natural geochemical tracers for injectate fluids at Dixie Valley. Proceedings, 24th Workshop on Geothermal Reservoir Engineering, Stanford University Report SGP-TR-162, Stanford, California, p. 108–115.

Kharaka, Y. and Mariner, R., 1989, Chemical geothermometers and their application to formation waters from sedimentary basins, in (Naeser, N., and McCulloh, T., eds.) Thermal History of Sedimentary Basins: Methods and Case Histories. Springer-Verlag, Berlin, p. 99–177.

Lutz, S., Moore, J., and Benoit, D., 1997, Geologic framework of Jurassic reservoir rocks in the Dixie Valley geothermal field, Nevada: Implications from hydrothermal alteration and stratigraphy. Proceedings, 22nd Workshop on Geothermal Reservoir Engineering, Stanford University Report SGP-TR-155, Stanford, California, p. 131–139.

McKenzie, W.F., and Truesdell, A.H., 1977, Geothermal reservoir temperatures estimated from the oxygen isotope compositions of dissolved sulfate and water from hot springs and shallow drillholes. Geothermics, v. 5, p. 51–61.

Nimz, G., Janik, C., Goff, F., Dunlap, C., Huebner, M., Counce, D., and Johnson, S., 1999, Regional hydrology of the Dixie Valley geothermal field, Nevada: preliminary interpretations of chemical and isotopic data. Geothermal Resources Council Transactions, v. 23, p. 333–338.

Norman, D., and Bernhardt, C., 1981, Assessment of geothermal reservoirs by analysis of gases in thermal waters. Final Technical Report, New Mexico Energy Institute, New Mexico State University, Las Cruces, 130 pp.

Picket, D.A., and Murrell, M.T., 1997, Observations of $^{231}Pa/^{235}U$ disequilibrium in volcanic rocks. Earth and Planetary Science Letters, v. 148, p. 259–271.

Plank, G., Schweickert, R., Benoit, D., and Simmons, A., 1999, Influence of fault surface geometry on the location of the Dixie Valley geothermal area, Dixie Valley, Nevada. Proceedings, 24th Workshop on Geothermal Reservoir Engineering, Stanford University Report SGP-TR-162, Stanford, California, 8 pp.

Speed, R.C., 1976, Geologic map of the Humboldt Lopolith. Geological Society of America Map Chart Series MC-14, 1:81050 scale, 1 sheet.

Stamates, M., 2001, Evaluation of injection effects on the Dixie Valley, Nevada, geothermal reservoir through the use of geochemical data. M.S. thesis, University of Nevada, Reno, 198 pp.

Trujillo, P., Counce, D., Grigsby, C., Goff, F., and Shevenell, L., 1987, Chemical analysis and sampling techniques for geothermal fluids and gases at the Fenton Hill laboratory. Los Alamos National Laboratory, Report LA-11006-MS, 84 pp.

Urbani, F., 1986, GTHERM, a spreadsheet and graphic setup for geothermal exploration. Unpublished report, Los Alamos National Laboratory, 103 pp.

Waibel, A.F., 1987, An overview of the geology and secondary mineralogy of the high temperature geothermal system in Dixie Valley, Nevada. Geothermal Resources Council Transactions, v. 11, p. 479–486.

Werner, C., Janik, C.J., Goff, F., Counce, D., Johnson, L., Siebe, C., Delgado, H., Williams, S.N., and Fischer, T.P., 1997, Geochemistry of summit fumarole vapors and flanking thermal/mineral waters at Popocatépetl Volcano, Mexico. Los Alamos National Laboratory, Report LA-13289-MS, 33 pp.

Williams, C., Sass, J., and Grubb, F., 1997, Thermal signature of subsurface fluid flow in the Dixie Valley geothermal field, Nevada. Proceedings, 22nd Workshop on Geothermal Reservoir Engineering, Stanford University Report SGP-TR-155, Stanford, California, Jan. 27–29, 8 pp.

Table 1: Sample Types, Locations, Elevations, and Surface Rocks of Fluid Samples Collected for the Dixie Valley Geothermal Project, Nevada.

Name or Description	Map[a] Number	Map Figure	Latitude (±25 m)	Longitude (±25 m)	Elevation (±3 m)	USGS 1:100,000 Metric Quadrangle	Surface Rocks	Comments
Production Wells								
27-33 Well	25	2	39.9869	117.8307	1050	Edwards Creek Valley	Alluvium	Bottoms in quartzite/granodiorite
28-33 Well	30	2	39.9852	117.8318	1057	Edwards Creek Valley	Alluvium	Bottoms in quartzite/granodiorite
37-33 Well	29	2	39.9861	117.8312	1055	Edwards Creek Valley	Alluvium	Added in July 1997; quartzite/granodiorite
45-33 Well Archived	3	2	39.9897	117.8260	1051	Edwards Creek Valley	Alluvium	Bottoms in quartzite/granodiorite
63-7 Well	86	2	39.9650	117.8580	1059	Edwards Creek Valley	Alluvium	Bottoms in gabbro/quartzite/granodiorite
73-7 Well	11	2	39.9655	117.8576	1059	Edwards Creek Valley	Alluvium	Bottoms in gabbro/quartzite/granodiorite
73B-7 Well	23	2	39.9652	117.8555	1058	Edwards Creek Valley	Alluvium	Added in 1995; gabbro/quartzite/granodiorite
74-7 Well	14	2	39.9637	117.8580	1059	Edwards Creek Valley	Alluvium	Bottoms in gabbro/quartzite/granodiorite
76-7 Well (V104 Separator)	8	2	39.9590	117.8570	1055	Edwards Creek Valley	Alluvium	Bottoms in gabbro/quartzite/granodiorite
76A-7 Well (V104 Separator)	80	2	39.9590	117.8570	1055	Edwards Creek Valley	Alluvium	Redrilled in July 1993 from 7,498'
82A-7 Well	20	2	39.9675	117.8548	1056	Edwards Creek Valley	Alluvium	Bottoms in gabbro/quartzite/granodiorite
84-7 Well	13	2	39.9639	117.8582	1059	Edwards Creek Valley	Alluvium	Bottoms in gabbro/quartzite/granodiorite
V101 Separator	9	2	39.9869	117.8307	1046	Edwards Creek Valley	Alluvium	27-33, 28-33, and 37-33 wells
V102 + V103 Separator	16	2	39.9639	117.8582	1055	Edwards Creek Valley	Alluvium	63-7, 73-7, 74-7, and 84-7 wells
V105 Separator	18	2	39.9663	117.8537	1063	Edwards Creek Valley	Alluvium	73B-7 and 82A-7 wells
Injection Well/Power Plant Fluids								
25-5 Injection Well	34	2	39.9774	117.8498	1052	Edwards Creek Valley	Alluvium	
32-18 Injection Well	37	2	39.9534	117.8629	1057	Edwards Creek Valley	Alluvium	
41-18 Injection Well	208a	2	39.9535	117.8632	1055	Edwards Creek Valley	Alluvium	
45-5 Injection Well	4	2	39.9771	117.8494	1052	Edwards Creek Valley	Alluvium	
52-18 Injection Well	208b	2	39.9534	117.8629	1049	Edwards Creek Valley	Alluvium	
65-18 Injection Well	36	2	39.9469	117.8609	1048	Edwards Creek Valley	Alluvium	
Lamb 1 Injection Well	5	2	39.9542	117.8713	1061	Edwards Creek Valley	Alluvium	Aka SWL-1 well
Power Plant Fluids, Miscellaneous	2	2	39.9668	117.8562	1058	Edwards Creek Valley	Alluvium	
Other Geothermal and On-Site Water Wells								
Domestic Well	1	2	39.9658	117.8556	1052	Edwards Creek Valley	Alluvium/Alluvial Fan	Water supply well
Goerenger Well	39	2	39.9693	117.8591	1050	Edwards Creek Valley	Alluvium	Water supply well
27-32 Well (Dick's Well)	54	2	39.9862	117.8484	1064	Edwards Creek Valley	Alluvial Fan	Quartizte @ 122 m
32-6 Well	123	1	39.9984	117.8463	1115	Edwards Creek Valley	Alluvial Fan	Observation well
38-32 Well	168	2	39.9843	117.8470	1055	Edwards Creek Valley	Alluvial Fan	Observation well
45-W-5 Well	59	2	39.9702	117.8582	1052	Edwards Creek Valley	Alluvium	Observation well
45-14 Well	102	1	39.8659	118.0049	1040	Carson Sink	Alluvium	Bedrock contact @ 1830 m
46-32 Well (Stu's Well)	53	2	39.9881	117.8434	1061	Edwards Creek Valley	Alluvial Fan	Quartzite @ 87 m
62-21 Well	111	1	39.9328	117.8198	1050	Edwards Creek Valley	Alluvium	Penetrates tuff, gabbro, shale
66-21 Well	67	1	39.9311	117.9284	1040	Edwards Creek Valley	Alluvium/Alluvial Fan	Bottoms in Humboldt Lopolith
97-2 Well	122	1	39.9821	117.8406	1055	Edwards Creek Valley	Alluvial Fan	Monitor well; bottoms in alluvium
Dixie Jack Gradient Well #1	near 122	1	39.9884	117.8427	1058	Edwards Creek Valley	Alluvial Fan	In vicinity of 97-2 well

Table 1: Continued

Name or Description	Map[a] Number	Map Figure	Latitude (±25 m)	Longitude (±25 m)	Elevation (±3 m)	USGS 1:100,000 Metric Quadrangle	Surface Rocks	Comments
Dixie Jack Gradient Well #4	near 122	1	39.9852	117.8463	1057	Edwards Creek Valley	Alluvial Fan	In vicinity of 97-2 well
Dixie Jack Gradient Well #7	near 122	1	39.9874	117.8484	1063	Edwards Creek Valley	Alluvial Fan	In vicinity of 97-2 well
Background Springs								
Basalt Spring	178	1	39.5985	117.8814	2250	Edwards Creek Valley	Basalt	
Big Horn Spring	68	1	39.9081	117.9865	1045	Edwards Creek Valley	Alluvium near Gabbro	
Dago Spring	64	1	40.2137	117.8277	1505	Fish Creek Mts	Alluvium	
Dead Travertine Spring, Upper	56	1	39.9879	117.8929	1465	Edwards Creek Valley	Gabbro/Quartzite	Northeast margin, travertine deposit
Dead Travertine Spring, Road Seep	210	1	39.9457	117.8972	1290	Edwards Creek Valley	Gabbro/Quartzite	Along main road
Dixie Hot Spring	69	1	39.8004	118.0592	1040	Carson Sink	Alluvium	Hottest spring near main road
Edward Creek Spring	50	1	39.6819	117.6444	1555	Edwards Creek Valley	Alluvium/Alluvial Fan	
Fault Line Spring	60	1	40.0317	117.6297	1140	Fish Creek Mts	Alluvium/Alluvial Fan	
Horse Creek Spring	72	1	39.5238	118.0138	1560	Carson Sink	Welded Tuff	
Horse Heaven Spring	52	1	39.8348	117.7220	1400	Edwards Creek Valley	Alluvium/Welded Tuff	
Hyder Hot Spring	48	1	40.0035	117.7169	1080	Fish Creek Mts	Alluvium	Spring at summit of deposit
Jersey Hot Spring	128	1	40.1782	117.4958	1355	Fish Creek Mts	Alluvial Fan	
Kitten Spring	66	1	40.0550	117.9159	1730	Fish Creek Mts	Basalt	
Kyle Spring	63	1	40.1736	117.7842	1600	Fish Creek Mts	Quartzite	
Lofthouse Spring	169	1	39.7337	117.8312	1460	Edwards Creek Valley	Alluvium	
Lower Ranch, Main Hot Spring	61	1	40.0335	117.5981	1240	Fish Creek Mts	Alluvial Fan/Limestone	Northern-most and hottest spring
Lower Ranch, Upper Warm Spring	211	1	40.0355	117.6026	1250	Fish Creek Mts	Alluvial Fan/Limestone	On summit of deposit
McCoy Hot Spring	62	1	40.0795	117.6036	1135	Fish Creek Mts	Alluvium/Alluvial Fan	Near cattle guard
Mustang Spring	65	1	40.0879	117.8774	1560	Fish Creek Mts	Volcanic sandstone	
Not-So-OK Spring	170	1	39.7192	117.8143	1690	Edwards Creek Valley	Quartzite/Argillite	
Old Man Main Spring	51	1	39.8000	117.6660	1500	Edwards Creek Valley	Welded Tuff	South canyon wall
Old Man, Upper Spring	51	1	39.7962	117.6822	1560	Edwards Creek Valley	Alluvium	0.5 km upstream of main spring
Pine Spring	177	1	39.6069	117.8586	2260	Edwards Creek Valley	Welded Tuff/Basalt	
Sou Hot Springs, Trav. Cone	46	1	40.0888	117.7240	1140	Fish Creek Mts	Alluvial Fan/Tuff	Aka Seven Devils Springs
Sou Hot Springs	47	1	40.0890	117.7240	1140	Fish Creek Mts	Alluvial Fan/Tuff	Hottest spring, constant gas emission
Spring in Spring Canyon	131	1	40.1664	117.6701	1195	Fish Creek Mts	Lake Beds/Mafic Volc.	
Stu's Seep	106	1	39.9450	117.9318	1200	Edwards Creek Valley	Fractured Gabbro	
Upper Cherry Spring	179	1	39.5815	117.9439	2345	Edwards Creek Valley	Welded Tuff	
Upper Jersey Seep	129	1	40.1779	117.4891	1380	Fish Creek Mts	Travertine/Alluvium	
War Canyon Spring	176	1	39.5747	117.8551	1950	Edwards Creek Valley	Silicified Welded Tuff	
Wild Rose Spring	132	1	40.2952	117.7308	1580	Fish Creek Mts	Quartzite/Metavolcanics	
Background Wells								
Bernice Well	172	1	39.7706	117.8092	1340	Edwards Creek Valley	Alluvium	At building foundation
Bolivia Artesian Well	57	1	39.9977	117.9157	1480	Edwards Creek Valley	Gabbro/Limestone	Iron hydroxide; flows into creek
Brinkerhoff Well	116	1	40.0849	117.6790	1120	Fish Creek Mts	Alluvium	Agricultrual well

Table 1: Continued

Name or Description	Map[a] Number	Map Figure	Latitude (±25 m)	Longitude (±25 m)	Elevation (±3 m)	USGS 1:100,000 Metric Quadrangle	Surface Rocks	Comments
Hole in the Wall #2 Well	49	1	39.8888	117.5562	1345	Edwards Creek Valley	Alluvium near Tuff	Abandoned wind mill
Flowing well @ AA Tank	70	1	39.7041	118.0592	1040	Carson Sink	Alluvium	In Dixie Valley Settlement
Shaw Well	71	1	39.6812	118.0503	1048	Carson Sink	Alluvium	In Dixie Valley Settlement
Unnamed Irrigation Well	115	1	40.0986	117.6450	1125	Fish Creek Mts	Alluvium	Agricultrual well
Background Streams and Rain								
Bernice Creek	173	1	39.7672	117.7897	1450	Edwards Creek Valley	Quartzite/Argillite	At Antimony King Mine
Bucher Creek	130	1	40.1792	117.4913	1375	Fish Creek Mts	Alluvial Fan	
Cedar Canyon Wash	127	1	40.1355	117.4791	1480	Fish Creek Mts	Lake Beds/Welded Tuff	
Cottonwood Creek, Lower	110	1	39.9763	117.8808	1189	Edwards Creek Valley	Gabbro/Quartzite	
Cottonwood Creek, Middle	58	1	39.9922	117.9128	1420	Edwards Creek Valley	Gabbro/Limestone	
Dixie Salt Lake	213	1	39.8542	118.0000	1030	Carson Sink	Alluvium	
Home Station Wash	126	1	40.1268	117.5117	1240	Fish Creek Mts	Welded Tuff	
Hoyt Creek	174	1	39.7817	117.7897	1435	Edwards Creek Valley	Argillite/Shale	
Mt. Augusta Creek	180	1	39.5679	117.9229	2350	Edwards Creek Valley	Welded Tuff	
Not-So-OK Creek	171	1	39.7101	117.8119	1700	Edwards Creek Valley	Argillite	
Rain, Lizard Well Tank	125	1	39.9352	117.7189	1140	Edwards Creek Valley	Alluvium/Alluvial Fan	
Unnamed Creek by Stu's Seep	107	1	39.9456	117.9317	1200	Edwards Creek Valley	Fractured Gabbro	Below waterfall
Unnamed Stream (east of 121)	119	1	39.8996	117.9953	1065	Edwards Creek Valley	Welded Tuff/Gabbro	
White Rock Canyon	121	1	39.8982	118.0180	1200	Carson Sink	Welded Tuff/Gabbro	
Fumaroles								
Calcite Fumarole, Senator area	109	2	39.9924	117.8537	1152	Edwards Creek Valley	Faulted Quartzite	Coarse calcite crystals; some sulfur
Crack 4 Fumarole near Stu's Well	43	2	39.9872	117.8432	1050	Edwards Creek Valley	Alluvial Fan	Recent ground crack; some alteration
Figure 8 Fumarole NE of Senator[b]	181	2	40.0025	117.8424	1143	Fish Creek Mts	Faulted Limestone and Fan	Weak vent; minor alteration
Lonely Fumarole SW of Senator	167	2	39.9915	117.8549	1134	Edwards Creek Valley	Faulted Alluvial Fan	Some sulfur
Range Front Fumarole, Senator area	45	2	39.9947	117.8539	1158	Edwards Creek Valley	Faulted Quartzite	Much sulfur
Senator Fumarole	44	2	39.9945	117.8520	1158	Edwards Creek Valley	Faulted Quartzite and Fan	Main vent; much sulfur
South Bench Fumarole, Senator area	166	2	39.9940	117.8546	1220	Edwards Creek Valley	Faulted Quartzite	Much sulfur
Unnamed Fumarole #1	105	1	39.9541	117.9172	1120	Edwards Creek Valley	Faulted Gabbro	Weak vent; 0.6 km NE of Stu's Seep
Unnamed Fumarole #2	212	1	39.9552	117.9159	1130	Edwards Creek Valley	Faulted Alluvial Fan	Weak vent; 1 km NE of Stu's Seep

[a]Locations are shown on Figures 1 and 2.

[b]Two samples listed on succeeding tables were mistakenly labeled 181; DV98-181 (Figure 8 Fumarole) and DV99-181 (Goerenger Well). Figure 8 Fumarole uses map number 181.

Table 2: Field Parameters for Various Geothermal and Regional Waters in the Dixie Valley Region, Nevada.

Sample No.	Name or Description	Date	Sampling Temp. (°C)	Sampling Press. (psig)	Steam Fraction (y)	pH[a] (field)	Alkalinity (ppm)	Conduc. (micromhos)	Eh (mV)	Eh Temp. (°C)	Comments
Production Well Brines											
DIXE102-W	V102 + V103 Separator	10/02/95	---	---	0.153	---	---	---	---	---	Sample provided by L. Shevenell, Univ. Nevada-Reno
DV96-8	76-7 Well	10/25/96	163	110.0	0.184	9.00	137	2800	-75	18.7	Brine flow = about 520,000 lb/h; BHT = 249°C
DV96-9	V101 Separator	10/25/96	166	158.0	0.159	8.92	185	2800	-148	31.1	Brine flow = 1,280,000 lb/h
DV97-11	73-7 Well	10/29/97	---	85.4	0.158	8.98	178	2600	-298	15	Total flow = about 450,000 lb/h
DV97-13	84-7 Well	10/29/97	---	85.5	0.159	9.01	200	2600	-309	16.5	Total flow = about 200,000 lb/h; from 2500 m
DV97-14	74-7 Well	10/29/97	---	83.8	0.163	8.84	236	2700	-300	18.4	Total flow = about 650,000 lb/h
DV97-16	V102 + V103 Separator	10/29/97	---	82.2	0.161	8.77	184	2800	-274	27.7	Brine flow = 1,212,000 lb/h
DV97-18	V105 Separator	10/29/97	---	108.0	0.151	8.68	172	3300	-250	34	Brine flow = 1,312,000 lb/h
DV97-20	82A-7 Well	10/29/97	---	85.0	0.159	9.00	186	2400	-286	17	Total flow = about 600,000 lb/h
DV97-23	73B-7 Well	10/30/97	---	86.0	0.160	9.10	186	2900	-218	20	
DV97-25	27-33 Well	10/30/97	---	97.0	0.157	8.77	222	2300	-282	19.8	Gas in line; poor separation
DV97-26	V101 Separator	10/30/97	---	148.0	0.164	8.82	188	2600	-328	17.7	
DV97-29	37-33 Well	10/30/97	---	96.6	0.159	8.77	200	2600	-215	34.6	New well as of July 1997
DV97-30	28-33 Well	10/30/97	---	101.6	0.156	8.84	182	2500	-272	33.4	
DV98-73	V101 Separator	04/28/98	160	97.0	0.157	8.47	192	2900	-331	56	
DV98-75	27-33 Well	04/28/98	---	104.0	0.155	8.49	173	2600	-319	30	
DV98-77	37-33 Well	04/28/98	165	99.6	0.156	8.39	166	2800	-311	48	
DV98-79	28-33 Well	04/28/98	168	100.0	0.157	8.82	180	2300	-313	24	
DV98-80	76A-7 Well	04/28/98	---	88.5	0.157	8.66	160	2700	-308	31.2	
DV98-82	V102 + V103 Separator	04/28/98	---	87.3	0.150	8.53	146	2900	-310	30	
DV98-84	74-7 Well	04/28/98	---	89.8	0.158	8.63	160	2400	-311	26.2	
DV98-86	63-7 Well	04/28/98	---	88.8	0.154	8.62	150	2500	-280	23.9	
DV98-88	73-7 Well	04/29/98	---	90.5	0.154	8.63	158	2900	-303	25	
DV98-90	82A-7 Well	04/29/98	---	90.6	0.153	8.85	170	2600	-285	24.2	
DV98-92	V105 Separator	04/29/98	---	86.5	0.150	8.74	165	2800	-295	36	
DV98-95	73B-7 Well	04/29/98	174	92.5	0.152	8.73	156	2300	-296	31.1	
DV98-133	27-33 Well	10/20/98	---	94.0	---	8.57	---	---	---	---	Backflow from separator; BHT = 243°C
DV98-135	27-33 Well	10/20/98	---	52.0	0.184	8.77	---	---	---	---	Off line
DV98-138	V101 Separator	10/21/98	---	151.2	0.160	8.78	---	---	---	---	
DV98-140	37-33 Well	10/21/98	---	90.0	0.162	8.82	194	---	---	---	
DV98-141	28-33 Well	10/21/98	---	108.0	0.162	8.84	190	---	---	---	BHT = 246°C
DV98-145	76A-7 Well	10/22/98	---	112.0	0.158	8.50	192	---	---	---	
DV98-147	63-7 Well	10/22/98	---	87.2	0.155	8.60	192	---	---	---	BHT = 241°C
DV98-148	V102 + V103 Separator	10/22/98	166	---	0.164	8.58	174	---	---	---	
DV98-150	74-7 Well	10/22/98	---	---	0.160	8.71	170	---	---	---	BHT = 244°C
DV98-152	73-7 Well	10/22/98	---	93.0	0.154	8.53	168	---	---	---	
DV98-154	73B-7 Well	10/22/98	---	96.0	0.154	8.89	160	---	---	---	
DV98-156	82A-7 Well	10/23/98		---	0.154	8.85	190	---	---	---	BHT = 241°C
DV98-159	V105 Separator	10/23/98	143?	110.5	0.146	8.79	198	---	---	---	
DV99-182	76A-7 Well	05/04/99	---	92.0 psi WH	0.152	9.27	155	---	-70	21.7	
DV99-184	74-7 Well	05/04/99	---	85.5	0.160	9.55	162	---	-170	19.4	
DV99-186	V102 + V103 Separator	05/04/99	---	83.5 psi	0.137	9.12	159	---	-228	56.6	
DV99-188	63-7 Well	05/04/99	---	90.0	0.152	9.44	168	---	-178	18.9	
DV99-190	73-7 Well	05/04/99	---	88.0	0.154	9.21	141	---	-172	39.4	
DV99-194	V105 Separator	05/05/99	---	83.8 psi	0.138	8.74	138	---	387?	62.4	
DV99-196	82A-7 Well	05/05/99	---	87.8	0.152	8.86	148	---	-151	56.3	

Table 2: Continued

Sample No.	Name or Description	Date	Sampling Temp. (°C)	Sampling Press. (psig)	Steam Fraction (y)	pH[a] (field)	Alkalinity (ppm)	Conduc. (micromhos)	Eh (mV)	Eh Temp. (°C)	Comments
DV99-197	73B-7 Well	05/05/99	---	80.5	0.159	9.48	150	---	-190	30.7	
DV99-199	37-33 Well	05/05/99	---	93.7	0.160	9.21	207	---	-437	43.1	
DV99-200	28-33 Well	05/05/99	---	97.0	0.159	8.98	193	---	-413	59.7	
DV99-204	V101 Separator	05/05/99	---	92.5	0.159	9.04	198	---	-422	42.6	
DV74782786-brine 2	74-7 Well Archived	08/27/86	---	---	0.199	---	---	---	---	---	Archived brine sample analyzed by LANL
DV76781986-brine 4	76-7 Well Archived	08/19/86	---	---	0.187	---	---	---	---	---	Archived brine sample analyzed by LANL
DV453382186-brine 6	45-33 Well Archived	08/21/86	---	---	0.165	---	---	---	---	---	Archived brine sample analyzed by LANL
DV73782886-brine 8	73-7 Well Archived	08/28/86	---	---	0.198	---	---	---	---	---	Archived brine sample analyzed by LANL
DV321882686-brine 10	32-18 Well Archived	08/26/86	---	---	---	---	---	---	---	---	Archived brine sample analyzed by LANL
DV651882686-brine 12	65-18 Well Archived	08/26/86	---	---	---	---	---	---	---	---	Archived brine sample analyzed by LANL
No number	28-33 Well Archived	09/23/93	---	---	0.158	---	---	---	---	---	Warm aquifer ~1,200' from liner hanger
Production Well Condensates											
DIXE102-S	V102 + V103 Separator	10/02/95	---	---	---	---	---	---	---	---	Sample provided by L. Shevenell, Univ. Nevada-Reno
DV96-7	76-7 Well	10/25/96	163	110	---	6.68	45	---	-17.8	61.6	Steam flow = 115,000 lb/h
DV96-10	V101 Separator	10/25/96	166	158	---	---	---	---	---	---	Steam flow = 250,000 lb/h
DV97-12	73-7 Well	10/29/97	---	85.4	---	---	---	---	---	---	Brine carry over in sample
DV97-15	74-7 Well	10/29/97	---	83.8	---	---	---	---	---	---	
DV97-17	V102 + V103 Separator	10/29/97	---	80.2	---	---	---	---	---	---	Steam flow = 230,000 lb/h
DV97-19	V105 Separator	10/29/97	---	81.3	---	---	---	---	---	---	Steam flow = 227,000 lb/h
DV97-21	82A-7 Well	10/29/97	---	84.7	---	---	---	---	---	---	
DV97-22	73B-7 Well	10/29/97	---	84	---	---	---	---	---	---	
DV97-24	V101 Separator	10/30/97	---	90.6	---	---	---	---	---	---	
DV97-27	27-33 Well	10/30/97	---	97	---	---	---	---	---	---	
DV97-28	37-33 Well	10/30/97	---	96.6	---	---	---	---	---	---	New well as of July 1997
DV97-31	28-33 Well	10/30/97	167.2	---	---	---	---	---	---	---	From mini-sep @ wellhead
DV98-74	V101 Separator	04/28/98	160	104	---	---	---	---	---	---	
DV98-76	27-33 Well	04/28/98	---	104	---	---	---	---	---	---	
DV98-78	37-33 Well	04/28/98	---	99.5	---	---	---	---	---	---	
DV98-81	76A-7 Well	04/28/98	---	88.5	---	---	---	---	---	---	
DV98-83	V102 + V103 Separator	04/28/98	---	87.25	---	---	---	---	---	---	
DV98-85	74-7 Well	04/28/98	---	88.7	---	---	---	---	---	---	
DV98-87	63-7 Well	04/28/98	---	88.8	---	---	---	---	---	---	
DV98-89	73-7 Well	04/29/98	---	90.5	---	---	---	---	---	---	Brine carry over in sample
DV98-91	82A-7 Well	04/29/98	---	89.8	---	---	---	---	---	---	Brine carry over in sample
DV98-93	V105 Separator	04/29/98	---	86.5	---	---	---	---	---	---	
DV98-94	73B-7 Well	04/29/98	174	90.5	---	---	---	---	---	---	
DV98-101	28-33 Well	04/30/98	168	99.5	---	---	---	---	---	---	
DV98-136	27-33 Well	10/20/98	---	94	---	---	---	---	---	---	Off line
DV98-137	V101 Separator	10/21/98	---	83	---	---	---	---	---	---	
DV98-139	37-33 Well	10/21/98	---	89.1	---	---	---	---	---	---	
DV98-142	28-33 Well	10/21/98	---	89.2	---	---	---	---	---	---	
DV98-144	76A-7 Well	10/22/98	---	83.3	---	---	---	---	---	---	
DV98-146	V102 + V103 Separator	10/22/98	---	82.7	---	---	---	---	---	---	
DV98-149	63-7 Well	10/22/98	---	87.2	---	---	---	---	---	---	BHT = 241°C
DV98-151	74-7 Well	10/22/98	---	85.4	---	---	---	---	---	---	
DV98-153	73-7 Well	10/22/98	---	87.5	---	---	---	---	---	---	Brine carry over in sample

Table 2: Continued

Sample No.	Name or Description	Date	Sampling Temp. (°C)	Sampling Press. (psig)	Steam Fraction (y)	pH* (field)	Alkalinity (ppm)	Conduc. (micromhos)	Eh (mV)	Eh Temp. (°C)	Comments
DV98-155	73B-7 Well	10/22/98	---	87.4	---	---	---	---	---	---	Brine carry over in sample
DV98-157	82A-7 Well	10/23/98	---	86.5	---	---	---	---	---	---	Brine carry over in sample
DV98-158	V105 Separator	10/23/98	163?	84.5	---	---	---	---	---	---	
DV99-183	76A-7 Well	05/04/99	---	---	---	---	---	---	---	---	
DV99-185	74-7 Well	05/04/99	---	---	---	---	---	---	---	---	Brine carry over in sample
DV99-187	V102 + V103 Separator	05/04/99	---	---	---	---	---	---	---	---	
DV99-189	63-7 Well	05/04/99	---	87.3	---	---	---	---	---	---	
DV99-191	73-7 Well	05/04/99	---	88	---	---	---	---	---	---	Brine carry over in sample
DV99-192	73B-7 Well	05/04/99	---	87	---	---	---	---	---	---	Brine carry over in sample
DV99-193	V105 Separator	05/05/99	---	---	---	---	---	---	---	---	
DV99-195	82A-7 Well	05/05/99	---	86.5	---	---	---	---	---	---	Brine carry over in sample
DV99-201	28-33 Well	05/05/99	---	96.7	---	---	---	---	---	---	
DV99-202	37-33 Well	05/05/99	---	96	---	---	---	---	---	---	
DV99-203	V101 Separator	05/05/99	---	90	---	---	---	---	---	---	
DV74782786-cond 1	74-7 Well Archived	08/27/86	---	---	---	---	---	---	---	---	Archived condensate sample analyzed by LANL
DV76781986-cond 3	76-7 Well Archived	08/19/86	---	---	---	---	---	---	---	---	Archived condensate sample analyzed by LANL
DV453382886-cond 5	45-33 Well Archived	08/28/86	---	---	---	---	---	---	---	---	Archived condensate sample analyzed by LANL
DV73782886-cond 7	73-7 Well Archived	08/28/86	---	---	---	---	---	---	---	---	Archived condensate sample analyzed by LANL
DV321882686-cond 9	32-18 Well Archived	08/26/86	---	---	---	---	---	---	---	---	Archived condensate sample analyzed by LANL
DV651882686-cond 11	65-18 Well Archived	08/26/86	---	---	---	---	---	---	---	---	Archived condensate sample analyzed by LANL
Injection Well/Power Plant Fluids											
DV96-2	Condensate from plant	10/24/96	41.8	---	---	6.28	7	300	363	37.9	Mix of condensate, raw steam, minor NaOH
DV96-3	LP brine @ plant	10/24/96	110	---	---	9.31	184	2700	-135	29.3	Low-pressure spent brine
DV96-4	45-5 Injection Well	10/24/96	107	10.5	---	8.77	180	---	-145	66	Spent brine + condensed steam; rate = 4,500 gpm
DV96-5	Lamb 1 Injection Well	10/24/96	107	14	---	8.99	184	---	-120	46.5	Pure spent brine; rate = 475 gpm
DV96-6	65-18 Injection Well	10/24/96	>60	---	---	8.67	198	2800	-145	55	Pure spent brine
DV97-32	Condensate from plant	10/31/97	40	---	---	---	---	---	---	---	From reinjection line
DV97-33	LP brine @ plant	10/31/97	107.2	38	---	9	204	3100	-267	35	From reinjection line
DV97-34	25-5 + 45-5 injectate	10/31/97	104.4	80	---	9.14	186	2700	-160	25.7	Brine + cond, well mixed
DV97-35	25-5 + 45-5 injectate	10/31/97	99.7	9	---	8.93	164	3100	-246	43.9	Line by N injection wells 25-5 & 45-5
DV97-36	65-18 Injection Well	10/31/97	108	27	---	8.95	196	3200	-185	45	Pure spent brine
DV97-37	32-18 Injection Well	10/31/97	102	---	---	9.07	210	3000	-225	35.8	
DV97-40	LP brine @ plant	10/31/97	---	100	---	8.97	178	3100	-245	40.1	
DV97-41	Condensate from plant	10/31/97	27.8	---	---	---	---	---	---	---	At cooling tower
DV97-42	High press. brine @ plant	10/31/97	---	89.4	---	8.86	195	2300	-172	25.3	North line above LP separators
DV98-97	Condensate from plant	04/29/98	41.0	---	---	6.29	---	---	---	---	From "hot well" line; sent to 65-18 injector
DV98-98	LP brine @ plant	04/29/98	110	94	---	9.07	166	2400	-307	35.7	Flow rate = 9,000 gpm
DV98-143	25-5 Injection Well	10/21/98	---	13.2	---	8.88(6.1)	190	---	---	---	LP brine
DV98-161	Condensate from plant	10/23/98	40.4	---	---	5.5	---	---	---	---	From "hot well" line
DV98-162	LP Brine @ Plant	10/23/98	100	100	---	9.29(27.2)	216	---	---	---	
DV98-163	65-18 Injection Well	10/23/98	>30	---	---	7.20	182	---	---	---	Injection Manifold Total fluid
DV99-198	65-18 Injection Well	05/05/99	---	---	---	7.4	174	---	181	31.4	
DV99-205	25-5 + 45-5 Injectate	05/06/99	---	12 psi WH	---	9.31(25.2)	214	---	341	39.9	
DV99-206	LP Brine @ Plant	05/06/99	---	---	---	9.32(27.9)	170	---	-89	48	
DV99-207	Condensate from plant	05/06/99	---	---	---	6.67	37	---	52	38.6	From "hot well" line
DV99-208	52-18 + 41-18 Injectate	05/06/99	---	---	---	9.08(15.0)	166	---	-108	51.4	

Table 2: Continued

Sample No.	Name or Description	Date	Sampling Temp. (°C)	Sampling Press. (psig)	Steam Fraction (y)	pH[a] (field)	Alkalinity (ppm)	Conduc. (micromhos)	Eh (mV)	Eh Temp. (°C)	Comments
Other Geothermal and On-Site Water Wells											
DV96-1	Domestic Well	10/24/96	34.2	---	---	---	---	---	---	---	
DV97-38	Domestic Well	10/31/97	29.2	---	---	7.46	244	1100	91.5	26.9	
DV97-39	Goerenger Well	10/31/97	27.8	---	---	7.13	312	1600	91.7	27.8	Depth = 73 m; cased to 67 m
DV97-53	46-32 Well	11/05/97	155	23	---	---	---	---	---	---	Depth = 101 m; static press. = 45 psig
DV97-54	27-32 Well	11/05/97	144	55	---	---	---	---	---	---	Depth = 296 m; static press. = 80 psig
DV97-55	27-32 Well	11/05/97	166	55	0.054	5	---	---	---	---	Producing fractures @ 148 m depth
DV97-59	45-W-5 Well	11/05/97	26.4	---	---	7.5	---	---	---	---	Depth = 6.9 m
DV97-67	66-21 Well	11/07/97	55.5	---	---	5.5	---	---	---	---	Artesian flow = 7 l/min; depth = 2,988 m
DV98-96	Goerenger Well	04/29/98	28.3	---	---	6.95	300	1500	249	27	Flow = 965 gpm, pumped; depth = 73 m
DV98-99	27-32 Well	04/29/98	---	47	---	---	---	---	---	---	Static press. = 62 psig
DV98-100	46-32 Well	04/29/98	---	10	---	---	---	---	---	---	Static press. = 13 psig
DV98-102	45-14 Well	04/30/98	123.5	---	---	---	---	---	---	---	Depth = 2440 m; condensate sampled w/ minisep.
DV98-103	45-14 Well	04/30/98	125	---	---	6.95	---	2350	---	---	Brine sampled w/ minisep.
DV98-104	66-21 Well	04/30/98	57.4	---	---	5.65	---	---	---	---	Sporadic artesian flow = 4 l/min
DV98-111	62-21 Well	05/01/98	75.5	---	---	6.85	436	2600	180	40	Depth = 3810 m; BHT = 190°C; flow = 36 gpm
DV98-122	97-2 Well	05/05/98	19.7	---	---	7.65	---	---	---	---	Depth = 61 m; no flow
DV98-123	32-6 Well	05/06/98	32	---	---	---	---	---	---	---	Depth = 152 m; flow 0 to 150 gpm
Dixie Jack #1	Gradient Well DJ #1	05/17/98	49	---	---	---	---	---	---	---	From 76 m depth during drilling and circulation
Dixie Jack #4	Gradient Well DJ #4	05/20/98	77	---	---	---	---	---	---	---	Artesian flow = 7 gpm @ 67 m depth
Dixie Jack #7	Gradient Well DJ #7	05/14/98	55	---	---	---	---	---	---	---	From 53 m depth during drilling; steam @ 61 m
DV98-160	Goerenger Well	10/23/98	26.7	90	---	7.64	296	---	---	---	Flow = 620 gpm pumped
DV98-168	38-32 Well	10/26/98	87.7	---	---	---	---	---	---	---	Depth to water = 9.1 m
DV98-175[b]	62-21 Well	10/28/98	11.5	---	---	6.0	---	---	---	---	Production @ 2,440 to 2,900 m; from gabbro
DV99-181[c]	Goerenger Well	05/04/99	27.7	68 psi	---	7.33	280	---	460	27.7	
Background Springs											
DV97-46	Sou Hot Spring	11/03/97	57.0	---	---	7.2	---	---	---	---	Pool in large travertine cone; no observed flow
DV97-47	Sou Hot Spring	11/03/97	72.6	---	---	7.0	---	---	---	---	Hottest spring with gas; flow = 4 l/min
DV97-48	Hyder Hot Spring	11/03/97	76.7	---	---	6.3	---	---	---	---	Summit of deposit; flow = 8 l/min (120 l/min total)
DV97-50	Edward Creek Spring	11/04/97	13.7	---	---	6.5	---	---	---	---	From broken corral; flow = 1 l/min
DV 97-51a	Old Man Spring, Upper	11/04/97	---	---	---	---	---	---	---	---	Isotope sample only; seep
DV 97-51b	Old Man Main Spring	11/04/97	10.8	---	---	6.5	---	---	---	---	Flow = 0.5 l/min
DV97-52	Horse Heaven Spring	11/04/97	13.2	---	---	6.0	---	---	---	---	Flow = 0.5 l/min
DV97-56	Dead Travertine Spring	11/05/97	17.4	---	---	6.5	---	---	---	---	Seep
DV97-60	Fault Line Spring	11/06/97	28.8	---	---	7.0	---	---	---	---	Flow = at least 2 l/min
DV97-61	Lower Ranch Hot Spring	11/06/97	40.8	---	---	7.0	---	---	---	---	Northern-most hottest spring; flow ≥120 l/min
DV97-62	McCoy Hot Spring	11/06/97	46.2	---	---	7.0	---	---	---	---	Flow ≥50 l/min
DV97-63	Kyle Spring	11/06/97	19.8	---	---	7.5	---	---	---	---	Flow = 30 l/min
DV97-64	Dago Spring	11/06/97	13.8	---	---	6.8	---	---	---	---	Flow = 1 l/min
DV97-65	Mustang Spring	11/06/97	14.2	---	---	6.5	---	---	---	---	Flow = 25 l/min
DV97-66	Kitten Spring	11/06/97	16.4	---	---	6.5	---	---	---	---	Flow = 5 l/min
DV97-68	Big Horn Spring	11/07/97	20.5	---	---	6.8	---	---	---	---	Flow = 1 l/min
DV97-69	Dixie Hot Spring	11/07/97	81.6	---	---	7.2	---	---	---	---	Hottest spring near road; flow = 10 l/min
DV97-72	Horse Creek Spring	11/07/97	14.4	---	---	6.2	---	---	---	---	Flow = 1 l/min
DV98-106	Stu's Seep	04/30/98	17.2	---	---	7.0	---	---	---	---	Seep
DV98-112	Hyder Hot Spring	04/30/98	75.3	---	---	6.44	---	---	---	---	Summit of deposit; flow ≥40 l/min

Table 2: Continued

Sample No.	Name or Description	Date	Sampling Temp. (°C)	Sampling Press. (psig)	Steam Fraction (y)	pH[a] (field)	Alkalinity (ppm)	Conduc. (micromhos)	Eh (mV)	Eh Temp. (°C)	Comments
DV98-113	Lower Ranch Hot Spring	05/04/98	40.4	---	---	7.05	---	---	---	---	Northern-most hottest spring; flow = 100 l/min
DV98-114	McCoy Hot Spring	05/04/98	46.0	---	---	7.05	---	---	---	---	Flow not measured
DV98-117	Sou Hot Spring	05/04/98	72.0	---	---	6.46	---	---	---	---	Hottest spring with gas; flow = 4 l/min
DV98-118	Big Horn Spring	05/04/98	18.1	---	---	7.35	---	---	---	---	Seep
DV98-120	Dixie Hot Spring	05/05/98	83.5	---	---	8.14	---	---	---	---	Hottest spring near road; flow = 10 l/min
DV98-128	Jersey Hot Spring	05/05/98	59.0	---	---	7.0	---	---	---	---	Flow = 200 l/min
DV98-129	Upper Jersey Seep	05/06/98	17.5	---	---	7.0	---	---	---	---	Seep
DV98-131	Spring in Spring Canyon	05/06/98	14.0	---	---	7.0	---	---	---	---	Flow = 1 l/min
DV98-132	Wild Rose Spring	05/07/98	8.0	---	---	6.5	---	---	---	---	Flow = 20 l/min
DV98-169	Lofthouse Spring	05/07/98	14.8	---	---	6.5	---	---	---	---	Flow = 8 l/min
DV98-170	Not-So-OK Spring	10/27/98	10.0	---	---	6.5	---	---	---	---	Flow = 4 l/min
DV98-176	War Canyon Spring	10/27/98	11.2	---	---	6.5	---	---	---	---	Flow = 1 l/min
DV98-177	Pine Spring	10/28/98	8.6	---	---	6.8	---	---	---	---	Flow = 20 l/min
DV98-178	Basalt Spring	10/28/98	8.4	---	---	6.5	---	---	---	---	Flow = 2 l/min
DV98-179	Upper Cherry Spring	10/28/98	7.4	---	---	6.5	---	---	---	---	Flow = 4 l/min
DV99-209	Dead Travertine Spring	05/07/99	19.2	---	---	6.7	---	---	---	---	Seep
DV99-210	Dead Travertine, road seep	05/08/99	19-22	---	---	7.5	---	---	---	---	Seep
DV99-211	Lower Ranch, upper spring	05/09/99	39.4	---	---	6.8	---	---	---	---	Flow = 10 l/min
Background Wells											
DV97-49	Hole in the Wall #2 Well	11/04/97	13.7	---	---	6.0	---	---	---	---	Unused well at abandoned wind mill
DV97-57	Bolivia Artesian Well	11/05/97	28.8	---	---	7.0	---	---	---	---	Flow = 40 l/min
DV97-70	Flowing well @ AA Tank	11/07/97	16.7	---	---	6.2	---	---	---	---	Flow = 5 l/min
DV97-71	Shaw Well	11/07/97	19.2	---	---	7.0	---	---	---	---	Flow >60 l/min
DV98-115	Irrigation Well	05/04/98	17.8	---	---	7.36	---	---	---	---	Flow ≤100 gpm pumped
DV98-116	Brinkerhoff Well	05/04/98	16.8	---	---	7.29	---	---	---	---	Pumped; flow unknown
DV98-172	Bernice Well	10/27/98	16.5	---	---	6.8	---	---	---	---	Unused well at building foundation
Background Streams and Rain											
DV97-58	Cottonwood Creek	11/05/97	14.0	---	---	7.0	---	---	---	---	Flow moderated but not measured
DV98-107	Unnamed Ck by Stu's Seep	04/30/98	16.2	---	---	8.0	---	---	---	---	Below waterfall; flow moderate but not measured
DV98-110	Cottonwood Creek	05/01/98	20.2	---	---	8.0	---	---	---	---	Flow large but not measured
DV98-119	Unnamed Stream	05/05/98	23.4	---	---	8.50	---	---	---	---	Flow roughly 200 l/min
DV98-121	White Rock Canyon	05/05/98	14.3	---	---	8.80	---	---	---	---	Flow roughly 300 l/min
DV98-125	Rain, Lizard Well Tank	05/06/98	15.0	---	---	---	---	---	---	---	
DV98-126	Home Station Wash	05/06/98	19.6	---	---	6.2	---	---	---	---	Flow roughly 2400 l/min (just rained)
DV98-127	Cedar Canyon Wash	05/06/98	18.6	---	---	6.5	---	---	---	---	Flow roughly 1600 l/min (just rained)
DV98-130	Bucher Creek	05/06/98	15.0	---	---	---	---	---	---	---	Flow roughly 200 l/min
DV98-171	Not-So-OK Creek	10/27/98	10.0	---	---	6.8	---	---	---	---	Flow roughly 120 l/min
DV98-173	Bernice Creek	10/27/98	13.4	---	---	7.2	---	---	---	---	At Antimony King Mine; flow roughly 120 l/min
DV98-174	Hoyt Creek	10/27/98	12.8	---	---	8.5	---	---	---	---	Flow = 20 l/min
DV98-180	Mt. Augusta Creek	10/28/98	8.0	---	---	6.5	---	---	---	---	Flow roughly 100 l/min
DV99-213	Dixie Salt Lake	05/10/99	19.2	---	---	8.2	---	---	---	---	Near Dixie Hot Spring; salty precipitates

[a]Two significant figures means pH was measured with paper; three significant figures means pH was measured with meter; number in parantheses gives hydroxide concentration in ppm (if measured).
[b]This temperature was obtained during nonflowing conditions; see DV98-111.
[c]Two samples were mistakenly labeled 181; DV98-181 (Figure 8 Fumarole) and DV99-181 (Goerenger Well).

Table 3: Analytical Methods Used for Water and Gas Analyses. Detection Limits (DLs) are in ppm unless noted.[a]

Methods For Waters							Methods for gases		
Analyte	Method	DL	Method	DL	Method	DL	Analyte	Method	DL
Ag	GFAA	0.0005	ICP-AES	0.002			Ar	GC	0.01%
Al	GFAA	0.002	ICP-AES	0.01			As	Hydride AA	0.002
Alkalinity	Calculation						Br	IC	0.2
As	Hydride-AA	0.0002	GFAA	0.002	ICP-AES	0.05	C_2H_6	GC	0.01%
Au	GFAA	0.002	ICP-AES	0.02			CH_4	GC	0.01%
B	ICP-AES	0.002					Cl	IC	1
Ba	ICP-AES	0.002					CO	GC	0.01%
Be	ICP-AES	0.002					CO_2	Titration	5
Br	IC	0.005					F	IC	0.1
Ca	ICP-AES	0.002					H_2	GC	0.01%
Cd	GFAA	0.0002	ICP-AES	0.005			H_2S	ISE	0.02
Cl	IC	0.01					He	GC	0.01%
Co	GFAA	0.002	ICP-AES	0.01			Hg	CVAA	0.0002
$CO_3/HCO_3/OH$	Titration	0.5					N_2	GC	0.01%
Conductivity	Electrode	0.5					NH_3	ISE	0.05
Cr	GFAA	0.002	ICP-AES	0.01			O_2	GC	0.01%
Cs	GFAA	0.002	AA	0.02			S	IC	1
Cu	GFAA	0.002	ICP-AES	0.01					
Eh	Electrode (in field)								
F	IC	0.01	Electrode	0.01					
Hg	CVAA	0.00005							
I	IC	0.01							
K	AA	0.01	ICP-AES	0.2					
Li	ICP-AES	0.005							
Mg	ICP-AES	0.002							
Mn	ICP-AES	0.002							
Mo	GFAA	0.002	ICP-AES	0.02					
Na	AA	0.01	ICP-AES	0.05					
NH_4	Electrode	0.02							
Ni	GFAA	0.002	ICP-AES	0.01					
NO_2	IC	0.01							
NO_3	IC	0.01							
Pb	GFAA	0.002	ICP-AES	0.05					
pH	Electrode	0.01							
PO_4	IC	0.02							
Rb	GFAA	0.002	AA	0.01					
S	Electrode	0.02	IC	0.01					
S_2O_3	IC	0.01							
Sb	Hydride AA	0.0002	GFAA	0.002	ICP-AES	0.05			
Se	Hydride AA	0.0002	GFAA	0.002	ICP-AES	0.1			
Si	ICP-AES	0.02							
SO_3	IC	0.01							
SO_4	IC	0.02							
Sr	ICP-AES	0.005							
TDS	Calculation								
Ti	ICP-AES	0.002							
Tl	GFAA	0.002							
V	ICP-AES	0.002							
Zn	ICP-AES	0.005							

[a]Methods used: AA = Atomic Adsorption Spectroscopy; CVAA = Cold Vapor AA; GFAA = Graphite Furnace AA; GC = Gas Chromatograph IC = Ion Chromatography; ICP-AES = Inductively Coupled Plasma-Atomic Emission Spectroscopy; ISE = Ion Selective Electrode

Table 4: Major Element Chemistry for Various Geothermal and Regional Fluids, Dixie Valley Region, Nevada (values in ppm unless otherwise noted).

Sample	Name or Description	Date	pH (lab)	SiO_2	SiO_2[a] Method	Na	K	Li	Ca	Mg	Sr	F	Cl	Br
Brines														
DIXE102-W	V102 + V103 Separator	10/02/95	9.45	638	archived	462	71.8	2.29	7.92	0.04	0.40	17.6	495	0.49
DV96-8	76-7 Well	10/25/96	9.09	599	TD	474	69.5	2.29	8.53	0.026	0.43	13.4	524	0.44
DV96-9	V101 Separator	10/25/96	9.19	599	TD	407	64.0	2.03	8.03	0.007	0.37	15.5	438	0.32
DV97-11	73-7 Well	10/29/97	9.07	580	FD	508	74.4	2.45	8.96	0.02	0.45	14.3	594	0.65
DV97-13	84-7 Well	10/29/97	9.04	580	FD	496	70.8	2.46	9.66	0.01	0.46	13.5	558	0.61
DV97-14	74-7 Well	10/29/97	9.06	586	FD	500	72.2	2.43	9.20	<0.01	0.49	13.5	584	0.66
DV97-16	V102 + V103 Separator	10/29/97	9.04	586	FD	500	77.2	2.48	9.02	<0.01	0.48	13.9	580	0.66
DV97-18	V105 Separator	10/29/97	9.04	595	FD	502	73.5	2.29	9.53	0.02	0.46	14.3	574	0.72
DV97-20	82A-7 Well	10/29/97	9.05	556	FD	495	72.6	2.22	9.63	<0.01	0.47	14.5	575	0.73
DV97-23	73B-7 Well	10/30/97	9.07	569	FD	499	76.4	2.34	9.09	<0.01	0.45	13.7	571	0.64
DV97-25	27-33 Well	10/30/97	9.03	627	FD	423	66.8	2.22	7.69	<0.01	0.32	14.7	443	0.56
DV97-26	V101 Separator	10/30/97	9.10	627	FD	439	68.8	2.27	7.95	<0.01	0.34	15.4	463	0.55
DV97-29	37-33 Well	10/30/97	9.16	621	FD	431	68.8	2.26	7.20	0.02	0.32	16.1	475	0.41
DV97-30	28-33 Well	10/30/97	9.13	642	FD	429	70.1	2.24	7.40	0.02	0.34	15.4	470	0.61
DV98-73	V101 Separator	04/28/98	9.10	591	FD	448	70.5	2.40	7.41	0.05	0.33	17.2	449	0.43
DV98-75	27-33 Well	04/28/98	8.99	571	FD	430	60.2	2.27	6.97	<0.01	0.33	15.8	421	0.25
DV98-77	37-33 Well	04/28/98	9.03	554	FD	429	66.7	2.21	7.19	<0.01	0.34	17.4	444	0.27
DV98-79	28-33 Well	04/28/98	9.01	550	FD	447	67.8	2.28	7.50	<0.01	0.34	16.6	446	0.39
DV98-80	76A-7 Well	04/28/98	8.96	541	FD	498	75.6	2.58	8.56	0.01	0.42	14.1	556	<0.02
DV98-82	V102 + V103 Separator	04/28/98	8.94	518	FD	498	77.1	2.42	8.81	0.01	0.46	14.7	567	0.49
DV98-84	74-7 Well	04/28/98	8.99	531	FD	491	75.2	2.53	8.65	0.02	0.49	14.6	564	0.56
DV98-86	63-7 Well	04/28/98	8.97	516	FD	510	77.0	2.43	8.73	<0.01	0.46	15.1	560	0.41
DV98-88	73-7 Well	04/29/98	8.98	518	FD	498	76.8	2.40	8.44	0.02	0.46	14.7	547	0.37
DV98-90	82A-7 Well	04/29/98	8.97	520	FD	501	76.1	2.22	8.95	<0.01	0.42	15.6	561	0.41
DV98-92	V105 Separator	04/29/98	8.96	526	FD	496	75.9	2.32	8.65	<0.01	0.44	15.8	572	0.63
DV98-95	73B-7 Well	04/29/98	8.95	511	FD	500	74.2	2.27	8.43	<0.01	0.44	15.7	561	0.54
DV98-133	27-33 Well	10/20/98	9.22	529	FD	381	61.8	2.11	4.85	<0.01	0.24	14.4	405	0.28
DV98-135	27-33 Well	10/20/98	9.64	582	FD	467	60.0	2.61	9.46	<0.01	0.51	18.0	496	0.40
DV98-138	V101 Separator	10/21/98	9.35	546	FD	409	63.8	2.11	7.18	<0.01	0.35	15.6	436	0.40
DV98-140	37-33 Well	10/21/98	9.35	526	FD	398	66.3	2.02	6.08	0.21	0.26	15.4	432	0.37
DV98-141	28-33 Well	10/21/98	9.38	531	FD	412	65.5	2.03	7.21	0.03	0.34	15.6	441	0.40
DV98-145	76A-7 Well	10/22/98	9.29	499	FD	479	70.8	2.26	8.23	0.01	0.44	13.7	541	0.44
DV98-147	63-7 Well	10/22/98	9.32	501	FD	496	71.9	2.21	8.87	<0.01	0.45	14.6	565	0.55

Table 4: Continued

Sample	Name or Description	Date	pH (lab)	SiO_2	SiO_2[a] Method	Na	K	Li	Ca	Mg	Sr	F	Cl	Br
DV98-148	V102 + V103 Separator	10/22/98	9.31	514	FD	485	72.3	2.24	9.18	0.17	0.46	14.0	560	0.53
DV98-150	74-7 Well	10/22/98	9.30	518	FD	486	74.1	2.38	8.90	0.04	0.048	13.8	554	0.42
DV98-152	73-7 Well	10/22/98	9.32	509	FD	476	73.7	2.14	8.81	0.02	0.46	14.7	567	0.46
DV98-154	73B-7 Well	10/22/98	9.28	514	FD	485	72.0	2.15	7.75	0.01	0.42	14.2	560	0.59
DV98-156	82A-7 Well	10/23/98	9.30	514	FD	473	69.3	2.10	8.87	0.04	0.46	14.7	557	0.55
DV98-159	V105 Separator	10/23/98	9.30	507	FD	480	69.4	2.14	9.39	0.34	0.48	14.4	560	0.59
DV99-182	76A-7 Well	05/04/99	9.02	524	FA	508	73.7	2.51	8.52	0.24	0.43	14.0	576	0.64
DV99-184	74-7 Well	05/04/99	9.00	522	FA	482	74.3	2.32	8.65	0.33	0.46	15.1	592	0.47
DV99-186	V102 + V103 Separator	05/04/99	9.01	522	FA	496	72.7	2.33	8.47	<0.01	0.46	15.2	594	0.59
DV99-188	63-7 Well	05/04/99	9.01	516	FA	504	73.6	2.26	8.48	<0.01	0.45	15.5	604	0.49
DV99-190	73-7 Well	05/04/99	9.01	518	FA	508	74.6	2.21	8.79	<0.01	0.45	15.5	624	0.64
DV99-194	V105 Separator	05/05/99	8.98	514	FA	514	74.4	2.23	9.51	<0.01	0.47	15.9	620	0.58
DV99-196	82A-7 Well	05/05/99	9.01	503	FA	518	72.2	2.25	8.89	<0.01	0.47	16.0	623	0.58
DV99-197	73B-7 Well	05/05/99	9.00	520	FA	516	74.4	2.22	8.78	<0.01	0.47	15.9	624	0.44
DV99-199	37-33 Well	05/05/99	9.05	563	FA	433	65.7	2.23	6.66	0.12	0.31	16.0	475	0.38
DV99-200	28-33 Well	05/05/99	9.10	561	FA	432	66.2	2.24	6.68	0.02	0.32	16.3	483	0.50
DV99-204	V101 Separator	05/05/99	9.05	576	FA	428	68.4	2.39	7.35	<0.01	0.31	16.4	481	0.34
DV74782786-brine 2	74-7 Well Archived	08/27/86	9.13	574	archived	413	61.5	2.82	1.11	<0.01	0.16	11.3	396	0.40
DV76781986-brine 4	76-7 Well Archived	08/19/86	9.16	563	archived	403	54.2	2.79	1.53	<0.01	0.17	10.1	402	0.31
DV453382186-brine 6	45-33 Well Archived	08/21/86	9.12	589	archived	370	59.2	2.63	1.27	0.04	0.13	14.9	320	0.30
DV73782886-brine 8	73-7 Well Archived	08/28/86	9.01	548	archived	380	59.2	2.55	1.24	<0.01	0.15	10.6	363	0.39
DV321882686-brine 10	32-18 Well Archived	08/26/86	8.70	484	archived	406	43.3	2.65	2.07	<0.01	0.23	8.36	428	0.37
DV651882686-brine 12	65-18 Well Archived	08/26/86	8.85	417	archived	440	40.7	2.09	1.16	<0.01	0.21	7.17	404	0.37
No number	28-33 Well Archived	09/23/93	7.58	101	archived	228	6.13	0.35	15.6	2.08	1.33	4.28	70.1	0.19
Condensates														
DIXE102-S	V102 + V103 Separator	10/02/95	5.85	2.7	archived	2.74	---	---	---	---	---	0.07	3.1	<0.02
DV96-7	76-7 Well	10/25/96	5.98	4.6	T	1.05	1.03	<0.01	0.15	<0.01	<0.01	0.03	0.26	<0.02
DV96-10	V101 Separator	10/25/96	5.98	4.2	T	0.96	1.33	<0.01	0.22	0.01	<0.01	0.01	0.13	<0.02
DV97-12	73-7 Well	10/29/97	5.29	---	---	194	28.6	---	---	---	---	6	242	0.32
DV97-15	74-7 Well	10/29/97	4.93	---	---	6.77	3.21	---	---	---	---	0.14	7.26	<0.02
DV97-17	V102 + V103 Separator	10/29/97	4.99	---	---	0.74	1.38	---	---	---	---	<0.01	<0.02	<0.02
DV97-19	V105 Separator	10/29/97	5.24	---	---	0.16	0.14	---	---	---	---	<0.01	0.31	<0.02
DV97-21	82A-7 Well	10/29/97	5.20	---	---	19.1	5.43	---	---	---	---	0.52	20	<0.02

Table 4: Continued

Sample	Name or Description	Date	pH (lab)	SiO_2	SiO_2[a] Method	Na	K	Li	Ca	Mg	Sr	F	Cl	Br
DV97-22	73B-7 Well	10/29/97	5.73	---	---	234	37.2	---	---	---	---	6.37	281	0.3
DV97-24	V101 Separator	10/30/97	4.96	---	---	0.28	0.48	---	---	---	---	0.05	<0.02	<0.02
DV97-27	27-33 Well	10/30/97	5.37	---	---	1.51	0.8	---	---	---	---	0.06	0.87	<0.02
DV97-28	37-33 Well	10/30/97	5.35	---	---	0.07	0.05	---	---	---	---	<0.01	<0.02	<0.02
DV97-31	28-33 Well	10/30/97	5.12	---	---	6.39	1.94	---	---	---	---	0.12	3.69	<0.02
DV98-74	V101 Separator	04/28/98	5.34	2.2	T	0.64	0.75	<0.01	0.13	<0.01	---	0.03	0.07	<0.02
DV98-76	27-33 Well	04/28/98	5.66	4.8	T	0.35	0.29	<0.01	0.10	<0.01	---	0.01	0.09	<0.02
DV98-78	37-33 Well	04/28/98	5.54	5.1	T	0.57	0.34	0.01	1.07	0.06	---	0.02	0.21	<0.02
DV98-81	76A-7 Well	04/28/98	5.60	0.8	T	0.08	0.16	<0.01	0.05	<0.01	---	<0.01	<0.02	<0.02
DV98-83	V102 + V103 Separator	04/28/98	5.87	0.5	T	0.93	0.73	<0.01	0.14	0.02	---	<0.01	0.20	<0.02
DV98-85	74-7 Well	04/28/98	5.58	15.1	T	13.2	2.23	0.05	0.13	<0.01	---	0.35	15.7	<0.02
DV98-87	63-7 Well	04/28/98	5.63	1.8	T	0.30	0.13	<0.01	0.17	<0.01	---	<0.01	0.10	<0.02
DV98-89	73-7 Well	04/29/98	6.03	342	T	344	51.5	1.63	5.04	0.01	---	10.2	388	0.30
DV98-91	82A-7 Well	04/29/98	5.94	244	T	246	34.5	1.09	4.13	<0.01	---	7.48	281	0.23
DV98-93	V105 Separator	04/29/98	5.70	0.6	T	0.29	0.26	<0.01	0.05	<0.01	---	<0.01	0.03	<0.02
DV98-94	73B-7 Well	04/29/98	5.85	1.0	T	0.93	0.33	<0.01	0.09	<0.01	---	0.05	0.45	<0.02
DV98-101	28-33 Well	04/30/98	5.78	1.2	T	0.85	0.33	<0.01	0.06	0.01	---	0.03	0.45	<0.02
DV98-136	27-33 Well	10/20/98	5.96	0.7	T	0.86	0.51	<0.01	0.12	0.02	---	0.02	0.50	<0.02
DV98-137	V101 Separator	10/21/98	5.93	0.3	T	0.06	0.07	<0.01	0.05	<0.01	---	<0.01	<0.02	<0.02
DV98-139	37-33 Well	10/21/98	5.75	0.6	T	0.45	0.47	<0.01	0.04	<0.01	---	<0.01	0.04	<0.02
DV98-142	28-33 Well	10/21/98	5.69	2.2	T	1.06	0.50	<0.01	1.14	0.07	---	0.03	0.62	<0.02
DV98-144	76A-7 Well	10/22/98	6.14	<0.05	T	0.79	0.73	<0.01	0.08	<0.01	---	<0.01	0.03	<0.02
DV98-146	V102 + V103 Separator	10/22/98	6.33	<0.05	T	0.08	0.07	<0.01	0.08	0.01	---	<0.01	0.02	<0.02
DV98-149	63-7 Well	10/22/98	5.50	0.5	T	0.03	<0.01	<0.01	0.09	<0.01	---	<0.01	0.03	<0.02
DV98-151	74-7 Well	10/22/98	5.71	15.3	T	13.4	2.18	0.06	0.26	0.01	---	0.40	14.9	<0.02
DV98-153	73-7 Well	10/22/98	5.90	81.5	T	86.9	12.5	0.37	1.47	0.31	---	2.65	105	0.09
DV98-155	73B-7 Well	10/22/98	6.15	248	T	239	33.2	0.99	3.65	0.03	---	7.31	287	0.24
DV98-157	82A-7 Well	10/23/98	5.67	80.5	T	83.4	12.1	0.35	1.24	0.03	---	2.48	90.9	0.07
DV98-158	V105 Separator	10/23/98	5.79	0.4	T	0.29	0.24	<0.01	0.05	<0.01	---	<0.01	0.03	<0.02
DV99-183	76A-7 Well	05/04/99	6.66	3.36	T	0.2	0.38	<0.01	0.11	0.05	---	0.01	0.08	<0.01
DV99-185	74-7 Well	05/04/99	6.24	56.3	T	54.8	7.94	0.26	0.84	<0.01	---	1.46	58	0.04
DV99-187	V102 + V103 Separator	05/04/99	6.52	2.95	T	1.25	2.14	<0.01	0.08	<0.01	---	<0.01	0.02	<0.01
DV99-189	63-7 Well	05/04/99	6.59	2.63	T	0.33	0.51	<0.01	0.02	<0.01	---	<0.01	0.16	<0.01
DV99-191	73-7 Well	05/04/99	6.53	114	T	117	17.3	0.51	1.49	<0.01	---	3.29	132	0.1

Table 4: Continued

Sample	Name or Description	Date	pH (lab)	SiO_2	SiO_2[a] Method	Na	K	Li	Ca	Mg	Sr	F	Cl	Br
DV99-192	73B-7 Well	05/04/99	6.60	166	T	164	22.5	0.74	1.80	<0.01	---	5.42	181	0.13
DV99-193	V105 Separator	05/05/99	5.95	2.40	T	0.79	1.79	<0.01	0.08	<0.01	---	0.01	0.03	<0.01
DV99-195	82A-7 Well	05/05/99	6.59	159	T	158	19.3	0.68	2.91	<0.01	---	4.82	175	0.13
DV99-201	28-33 Well	05/05/99	6.16	6.16	T	2.77	2.36	<0.01	0.12	<0.01	---	0.02	0.91	<0.01
DV99-202	37-33 Well	05/05/99	5.67	2.14	T	0.6	0.29	<0.01	0.27	<0.01	---	<0.01	0.43	<0.01
DV99-203	V101 Separator	05/05/99	6.50	1.95	T	0.16	0.14	<0.01	0.02	<0.01	---	<0.01	0.17	<0.01
DV74782786-cond 1	74-7 Well Archived	08/27/86	7.13	3.77	archived	3.79	0.01	0.03	0.94	<0.01	---	<0.01	0.04	<0.01
DV76781986-cond 3	76-7 Well Archived	08/19/86	6.97	5.39	archived	3.79	0.02	<0.01	0.33	<0.01	---	<0.01	0.2	<0.01
DV453382886-cond 5	45-33 Well Archived	08/28/86	7.00	5.11	archived	3.82	0.03	<0.01	0.38	<0.01	---	<0.01	0.15	<0.01
DV73782886-cond 7	73-7 Well Archived	08/28/86	6.78	5.09	archived	4	0.02	<0.01	0.36	<0.01	---	<0.01	0.44	<0.01
DV321882686-cond 9	32-18 Well Archived	08/26/86	6.82	5.29	archived	3.94	0.02	<0.01	0.38	<0.01	---	<0.01	0.13	<0.01
DV651882686-cond 11	65-18 Well Archived	08/26/86	7.03	3.21	archived	3.78	<0.01	<0.01	0.67	<0.01	---	<0.01	0.04	<0.01
Injection Well/Power Plant Fluids														
DV96-2	Condensate from plant	10/24/96	6.63	1.7	FA	0.65	0.11	<0.01	1.3	0.12	0.01	0.01	0.42	<0.02
DV96-3	LP Brine @ Plant	10/24/96	9.61	644	TD	493	73.4	2.61	8.74	0.027	0.41	17.8	519	0.409
DV96-4	45-5 Injection Well	10/24/96	9.54	601	TD	470	72.0	2.50	8.38	0.023	0.41	15.0	518	0.368
DV96-5	Lamb 1 Injection Well	10/24/96	9.59	618	TD	506	74.6	2.52	9.55	0.014	0.46	16.2	549	0.442
DV96-6	65-18 Injection Well	10/24/96	9.58	629	TD	506	75.2	2.57	8.68	0.009	0.45	16.1	556	0.451
DV97-32	Condensate from plant	10/31/97	6.22	---	---	56.4	7.83	---	---	---	---	1.46	62.2	0.06
DV97-33	LP Brine	10/31/97	9.49	655	FD	483	72.6	2.62	8.85	<0.01	0.46	16.1	579	0.58
DV97-34	25-5 + 45-5 Injectate	10/31/97	9.40	574	FD	434	66.4	2.24	7.76	0.03	0.39	14.4	515	0.54
DV97-35	25-5 + 45-5 Injectate	10/31/97	9.42	561	FD	450	67.6	2.29	7.93	0.03	0.39	14.4	511	0.47
DV97-36	65-18 Injection Well	10/31/97	9.50	629	FD	497	74.0	2.61	8.65	0.01	0.45	16.6	590	0.53
DV97-37	32-18 Injection Well	10/31/97	9.49	597	FD	499	76.8	2.53	8.95	<0.01	0.47	16.3	588	0.54
DV97-40	LP Brine @ Plant	10/31/97	9.49	642	FD	465	72.5	2.66	9.03	0.03	0.46	15.6	571	0.58
DV97-41	Condensate from plant	10/31/97	6.66	---	---	56.1	7.78	---	---	---	---	1.48	63.1	<0.02
DV97-42	High P Brine @ plant	10/31/97	9.09	593	FD	432	70.0	2.28	7.25	0.03	0.34	15.4	464	0.49
DV98-97	Condensate from plant	04/29/98	6.95	1.1	T	1.17	0.20	<0.01	0.65	0.15	---	0.04	0.70	<0.02
DV98-98	LP Brine @ Plant	04/29/98	9.38	597	FD	536	79.9	2.61	9.69	0.17	0.46	18.0	589	0.55
DV98-143	25-5 Injection Well	10/21/98	9.72	561	FD	508	74.5	2.33	9.03	0.01	0.45	16.4	576	0.52
DV98-161	Condensate from plant	10/23/98	7.16	25.7	FA	33.3	4.54	0.15	2.56	1.20	0.059	0.89	33.0	0.02
DV98-162	LP Brine @ Plant	10/23/98	9.74	599	FD	510	75.8	2.46	9.63	0.12	0.47	16.2	573	0.41
DV98-163	65-18 Injection Well	10/23/98	8.04	43.2	FD	134	12.3	0.48	28.7	23.5	0.61	1.02	146	0.09

Table 4: Continued

Sample	Name or Description	Date	pH (lab)	SiO_2	SiO_2[a] Method	Na	K	Li	Ca	Mg	Sr	F	Cl	Br
DV99-198	65-18 Injection Well	05/05/99	8.01	38.5	FA	151	12.8	0.57	32.7	27.5	0.71	0.61	166	0.12
DV99-205	25-5 + 45-5 Injectate	05/06/99	9.43	603	FA	539	80.5	2.63	9.08	<0.01	0.45	17.9	631	0.78
DV99-206	LP Brine @ Plant	05/06/99	9.44	603	FA	528	79.7	2.55	8.70	<0.01	0.46	17.2	634	0.63
DV99-207	Condensate from plant	05/06/99	7.36	2.78	FA	1.06	0.33	<0.01	0.12	<0.01	0.004	<0.01	0.45	<0.02
DV99-208	52-18 + 41-18 Injectate	05/06/99	9.41	595	FA	529	78.5	2.60	8.80	<0.01	0.44	17.0	621	0.63
Other Geothermal and On-Site Water Wells														
DV96-1	Domestic Well	10/24/96		74.3	FA	143	15.4	0.43	61.6	32.0	1.63	0.78	105	0.12
DV97-38	Domestic Well	10/31/97	7.82	77.0	FA	136	16.3	0.42	58.7	28.8	1.66	0.76	109	0.15
DV97-39	Goerenger Well	10/31/97	7.70	62.1	FA	228	20.4	0.9	50.3	37.5	1.06	1.21	222	0.26
DV97-53	46-32 Well	11/05/97	5.93	3.9	T	4.17	2.26	0.02	0.83	0.04	0.13	0.09	2.64	<0.02
DV97-54	27-32 Well	11/05/97	6.22	3.0	T	0.31	0.19	0.01	0.18	0.01	0.003	<0.02	0.27	<0.02
DV97-55	27-32 Well	11/05/97	6.29	58.2	FA	95.5	13.1	0.7	5.56	0.03	0.21	5.44	87.6	0.06
DV97-59	45-W-5 Well	11/05/97	7.75	22.5	FA	204	8.53	0.68	4.85	3.02	0.19	1.95	201	0.23
DV97-67	66-21 Well	11/07/97	6.97	321	FA	935	86.6	4.57	41.2	0.41	2.48	2.68	1476	1.32
DV98-96	Goerenger Well	04/29/98	7.88	61.4	FA	254	22.1	0.92	52.3	42.5	1.11	1.29	218	0.21
DV98-99	27-32 Well	04/29/98	5.81	61.2	T	88.0	11.6	0.48	5.91	0.91	---	4.00	84.8	0.05
DV98-100	46-32 Well	04/29/98	5.72	0.8	T	0.69	0.74	0.01	0.30	0.06	---	<0.01	0.24	<0.02
DV98-102	45-14 Well	04/30/98	5.71	19.8	T	31.0	2.83	0.07	1.93	0.02	---	0.58	36.0	<0.02
DV98-103	45-14 Well	04/30/98	7.23	285	FD	432	41.4	1.06	23.0	0.04	1.10	7.92	481	0.49
DV98-104	66-21 Well	04/30/98	6.51	325	FD	876	86.9	4.89	40.0	0.35	2.61	3.06	1440	1.05
DV98-111	62-21 Well	05/01/98	7.84	172	FD	513	17.1	0.49	6.10	0.41	0.48	6.60	79.6	0.15
DV98-122	97-2 Well	05/05/98	7.96	55.2	FA	383	35.3	1.45	52.6	47.5	1.10	3.73	325	0.25
DV98-123	32-6 Well	05/06/98	8.15	2.5	FA	179	6.83	0.07	28.1	64.1	0.31	1.55	189	0.20
Dixie Jack #1	Gradient Well DJ #1	05/17/98	7.93	43.2	FA	410	25.9	1.65	37.8	5.30	0.38	7.55	316	0.26
Dixie Jack #4	Gradient Well DJ #4	05/20/98	7.45	119	FA	281	24.7	1.17	12.2	0.57	0.34	20.4	282	0.21
Dixie Jack #7	Gradient Well DJ #7	05/14/98	7.13	5.0	FA	19.9	2.12	0.09	4.21	0.18	0.10	0.72	6.20	<0.02
DV98-160	Goerenger Well	10/23/98	8.18	59.7	FD	231	20.6	0.80	52.2	43.8	1.17	1.18	252	0.21
DV98-168	38-32 Well	10/26/98	8.22	166	FA	234	25.2	0.98	14.4	1.08	0.47	15.9	161	0.14
DV98-175	62-21 Well	10/28/98	7.86	162	FA	488	16.5	0.42	12.1	1.04	0.61	5.89	77.3	0.11
DV99-181	Goerenger Well	05/04/99	7.89	61.2	FA	266	21.1	0.93	56.6	47.8	1.24	1.46	296	0.26

Table 4: Continued

Sample	Name or Description	Date	pH (lab)	SiO_2	SiO_2[a] Method	Na	K	Li	Ca	Mg	Sr	F	Cl	Br
Background Springs														
DV97-46	Sou Hot Spring	11/03/97	7.98	64.2	FA	166	29.3	0.75	107	21.0	12.5	4.95	79.0	0.07
DV97-47	Sou Hot Spring	11/03/97	7.75	62.7	FA	162	28.2	0.72	112	20.9	12.4	4.72	77.1	0.09
DV97-48	Hyder Hot Spring	11/03/97	7.96	60.3	FA	325	20.5	1.71	42.1	10.1	1.23	7.38	46.6	0.07
DV97-50	Edward Creek Spring	11/04/97	7.83	87.5	FA	50.7	7.61	0.16	33.3	1.65	0.14	2.18	26.4	0.05
DV 97-51b	Old Man Spring	11/04/97	8.07	44.9	FA	228	7.78	0.08	32.4	1.38	0.27	0.74	130	0.33
DV97-52	Horse Heaven Spring	11/04/97	7.91	44.1	FA	152	7.53	0.04	36.2	4.36	0.44	0.58	141	0.21
DV97-56	Dead Travertine Spring	11/05/97	7.93	27.8	FA	325	48.5	2.03	201	79.4	2.62	2.34	527	0.64
DV97-60	Fault Line Spring	11/06/97	8.01	41.5	FA	162	11.9	0.36	67	18.5	1.51	2.62	32.1	<0.02
DV97-61	Lower Ranch Hot Spring	11/06/97	8.07	40.7	FA	141	11.4	0.28	37.5	13.2	0.73	3.09	29.9	<0.02
DV97-62	McCoy Hot Spring	11/06/97	8.00	35.7	FA	185	9.05	0.16	78.6	30.0	2.35	1.47	228	0.31
DV97-63	Kyle Spring	11/06/97	8.18	17.1	FA	84.7	2.32	0.02	90.5	41.4	1.20	0.59	189	0.29
DV97-64	Dago Spring	11/06/97	8.06	38.3	FA	186	1.96	0.05	105	29.3	0.93	1.31	253	0.35
DV97-65	Mustang Spring	11/06/97	8.13	29.5	FA	262	1.43	0.06	105	76.4	2.21	0.9	311	0.49
DV97-66	Kitten Spring	11/06/97	7.64	43.7	FA	50.6	3.89	<0.01	95.6	35.4	0.55	0.1	202	0.25
DV97-68	Big Horn Spring	11/07/97	7.88	36.4	FA	427	4.52	0.06	87.2	47.4	1.80	0.74	707	0.92
DV97-69	Dixie Hot Spring	11/07/97	8.00	105	FA	194	4.94	0.42	11	0.12	0.068	11.1	161	0.28
DV97-72	Horse Creek Spring	11/07/97	7.38	26.8	FA	16	0.98	<0.01	12.4	2.01	0.11	0.15	7.95	<0.02
DV98-106	Stu's Seep	04/30/98	8.00	18.9	FA	284	7.40	0.07	33.3	47.2	1.17	0.58	257	0.16
DV98-112	Hyder Hot Spring	04/30/98	7.73	57.6	FA	357	20.5	1.59	42.8	10.1	1.22	7.84	45.4	0.07
DV98-113	Lower Ranch Hot Spring	05/04/98	7.89	36.0	FA	157	11.4	0.28	38.6	13.3	0.71	3.26	27.8	<0.02
DV98-114	McCoy Hot Spring	05/04/98	7.83	32.3	FA	206	9.12	0.18	79.4	30.4	2.26	1.52	219	0.26
DV98-117	Sou Hot Spring	05/04/98	7.56	58.6	FA	174	28.7	<0.01	106	20.7	12.6	5.28	74.6	0.11
DV98-118	Big Horn Spring	05/04/98	7.83	33.8	FA	802	6.83	0.08	131	69.5	2.73	0.36	1359	1.18
DV98-120	Dixie Hot Spring	05/05/98	8.36	107	FA	211	4.91	0.42	10.7	0.22	0.086	12.6	162	0.23
DV98-128	Jersey Hot Spring	05/05/98	7.41	134	FA	188	17.5	1.13	23.1	3.12	0.57	9.27	37.8	0.04
DV98-129	Upper Jersey Seep	05/06/98	8.17	109	FA	261	26.4	1.50	23.7	2.84	0.52	10.5	48.6	0.07
DV98-131	Spring in Spring Canyon	05/06/98	7.80	52.2	FA	380	11.4	0.12	88.6	59.6	1.31	0.94	418	0.54
DV98-132	Wild Rose Spring	05/07/98	7.75	35.7	FA	176	5.96	0.04	97.0	30.4	0.92	1.01	135	0.13
DV98-169	Lofthouse Spring	05/07/98	7.99	20.8	FA	40.5	1.36	<0.01	58.7	15.6	0.67	0.30	43.2	0.07
DV98-170	Not-So-OK Spring	10/27/98	8.17	18.7	FA	33.5	3.32	<0.01	56.2	13.9	0.58	0.30	30.6	<0.02
DV98-176	War Canyon Spring	10/27/98	8.28	16.8	FA	32.5	0.61	0.05	42.1	1.61	0.62	0.17	30.1	0.04
DV98-177	Pine Spring	10/28/98	8.04	30.8	FA	31.8	3.20	<0.01	28.3	14.9	0.14	0.22	29.0	0.04
DV98-178	Basalt Spring	10/28/98	7.95	31.0	FA	18.0	2.22	<0.01	22.2	12.6	0.24	0.07	20.8	0.03

Table 4: Continued

Sample	Name or Description	Date	pH (lab)	SiO_2	SiO_2[a] Method	Na	K	Li	Ca	Mg	Sr	F	Cl	Br
DV98-179	Upper Cherry Spring	10/28/98	7.85	21.4	FA	24.4	1.59	<0.01	23.9	5.44	0.25	0.07	22.1	<0.02
DV99-209	Dead Travertine Spring	05/07/99	7.72	27.2	FA	331	48.9	2.05	200	76	2.51	2.46	551	0.49
DV99-210	Road seep, Dead Travertine	05/08/99	7.96	31.7	FA	370	56.4	2.28	158	90.4	2.92	2.72	630	0.51
DV99-211	Upper Spg, Lower Ranch	05/09/99	8.07	38.3	FA	149	12.1	0.27	40.3	13.3	0.68	3.06	27.8	0.05
Background Wells														
DV97-49	Hole in the Wall #2 Well	11/04/97	7.93	8.8	FA	77.7	7.61	0.03	30.4	5.62	0.33	0.49	69.6	0.14
DV97-57	Bolivia Artesian Well	11/05/97	8.08	26.1	FA	146	4.02	0.16	99.2	66.8	2.97	0.30	289	0.43
DV97-70	Flowing well @ AA Tank	11/07/97	7.89	61.8	FA	60.3	4.11	0.05	24.2	1.48	0.19	5.43	21.2	0.08
DV97-71	Shaw Well	11/07/97	7.92	65.3	FA	68.3	3.15	0.06	14.8	0.74	0.11	7.21	19.7	<0.02
DV98-115	Irrigation Well	05/04/98	7.87	47.5	FA	221	12.6	0.53	62.3	35.1	1.44	1.87	72.4	0.10
DV98-116	Brinkerhoff Well	05/04/98	7.78	36.0	FA	236	6.94	0.31	191	48.7	1.42	0.57	469	0.56
DV98-172	Bernice Well	10/27/98	8.35	3.0	FA	94.2	2.13	0.02	31.7	55.3	0.31	0.14	80.7	0.13
Background Streams/Rain														
DV97-58	Cottonwood Creek	11/05/97	8.12	34.5	FA	147	3.17	0.04	66.2	46.3	0.97	0.31	216	0.32
DV98-107	Unnamed Crk, Stu's Seep	04/30/98	8.42	21.1	FA	307	9.72	0.07	48.5	52.5	1.25	0.51	322	0.22
DV98-110	Cottonwood Creek	05/01/98	8.03	38.3	FA	155	6.40	0.08	89.4	40.7	0.82	0.41	191	0.15
DV98-119	Unnamed Stream	05/05/98	8.20	20.1	FA	262	3.40	0.04	61.6	49.1	0.90	0.43	306	0.24
DV98-121	White Rock Canyon	05/05/98	8.44	16.8	FA	112	2.44	0.01	52.3	28.8	0.70	0.34	96.2	0.06
DV98-125	Rain, Lizard Well Tank	05/06/98	7.03	7.8	FA	15.0	3.47	0.01	14.9	1.75	0.19	0.21	9.12	<0.02
DV98-126	Home Station Wash	05/06/98	7.47	33.0	FA	38.3	2.72	0.01	18.1	3.88	0.15	0.39	23.2	<0.02
DV98-127	Cedar Canyon Wash	05/06/98	7.52	35.3	FA	46.8	3.63	0.02	26.3	4.66	0.24	0.43	27.2	<0.02
DV98-130	Bucher Creek	05/06/98	7.90	31.2	FA	42.3	3.33	0.01	29.7	6.82	0.26	0.39	24.5	<0.02
DV98-171	Not-So-OK Creek	10/27/98	8.28	18.6	FA	34.0	1.53	<0.01	52.7	12.6	0.54	0.24	30.1	<0.02
DV98-173	Bernice Creek	10/27/98	8.43	21.2	FA	129	3.65	0.05	62.4	78.2	0.83	0.32	128	0.16
DV98-174	Hoyt Creek	10/27/98	8.72	17.1	FA	403	4.23	0.09	64.3	181	1.86	0.35	449	0.52
DV98-180	Mt. Augusta Creek	10/28/98	7.72	19.0	FA	14.3	1.71	<0.01	12.2	2.49	0.13	0.11	8.36	<0.02
DV99-213	Dixie Salt Lake	05/10/99	7.95	88.4	FA	4400	102	3.65	463	132	20.4	10.9	5310	5.51
Fumarole Condensates														
DV97-43	Crack 4 Fumarole	11/03/97	---	---	---	1.12	0.08	<0.01	0.39	0.05	---	<0.01	0.24	<0.04
DV97-44	Senator Fumarole	11/03/97	---	---	---	4.3	1.24	<0.01	4.01	0.79	---	0.06	2.90	<0.04
DV98-108	Senator Fumarole	05/01/98	7.11	1.8	T	0.23	0.06	<0.01	0.04	0.06	---	<0.01	0.44	<0.02

Table 4: Continued

Sample	Name or Description	Date	pH (lab)	SiO_2	SiO_2[a] Method	Na	K	Li	Ca	Mg	Sr	F	Cl	Br
DV98-109	Calcite Fumarole	05/01/98	6.56	1.6	T	0.26	0.12	<0.01	0.16	0.03	---	<0.01	0.18	<0.02
DV98-164	Senator Fumarole	10/24/98	6.72	5.5	T	6.25	<0.01	<0.01	0.32	0.08	---	<0.01	9.41	<0.02
DV98-165	Calcite Fumarole	10/25/98	7.05	3.7	T	0.17	<0.01	<0.01	0.25	0.01	---	<0.01	0.11	<0.02
DV98-166	South Bench Fumarole	10/26/98	3.13	2.5	T	0.11	<0.01	<0.01	0.14	0.03	---	<0.01	<0.02	<0.02

[a]Sample collection and analysis for silica varied; FA = filtered acidified, FD = filtered and diluted with deionized water, T = total (unacidified), TD = total diluted with deionized water.

[b]Bicarbonate and carbonate were analyzed in the field by pH titration on fresh samples.

[c]Bicarbonate and carbonate were analyzed in the labortory by pH titration on filtered, unacidified or raw, untreated samples. The values shown in bold type were not corrected for excess silica.

Table 4: continued

Sample	HCO_3(F)[b]	CO_3(F)[b]	HCO_3(L)[c]	CO_3(L)[c]	SO_4	B	TDS	Alkalinity	Conductivity (micromhos)
Brines									
DIXE102-W	---	---	**0**	**76.3**	225	9.35	2025	---	---
DV96-8	---	---	**32.8**	**87.8**	201	11.6	2026	173	2550
DV96-9	89.1	67.2	**18.2**	**93.2**	196	9.92	1855	170	2280
DV97-11	61	76.8	7.8	49.2	207	11.5	2078	161	2550
DV97-13	110	66	16.4	53.7	206	11.7	2042	172	2540
DV97-14	0	139	15	55.8	204	11.8	2076	183	2590
DV97-16	102	60	16.3	52.5	203	11.7	2072	168	2590
DV97-18	83	62.4	17.1	49	213	11.8	2084	162	2600
DV97-20	26.8	98.4	11.7	46.4	212	11.7	2028	164	2600
DV97-23	31.7	96	3.7	49.4	212	11.7	2040	159	2620
DV97-25	100	84	43.7	50.5	183	9.16	1907	188	2180
DV97-26	107	60	15.1	51.4	197	9.53	1930	173	2260
DV97-29	87.8	76.8	11	57.7	191	9.51	1918	172	2240
DV97-30	115	52.8	9.5	56.4	199	9.47	1938	169	2240
DV98-73	171	31.2	21.1	54.1	196	9.51	1334	177	2270
DV98-75	150	30.0	40.7	56.3	183	9.03	1282	188	2170
DV98-77	173	14.4	18.7	55.1	197	9.19	1303	174	2250
DV98-79	73.2	72.0	18.9	47.2	199	9.38	1329	171	2270
DV98-80	117	38.4	15.4	49.2	204	11.9	1494	169	2610
DV98-82	120	28.8	10.1	46.5	211	11.7	1502	156	2640
DV98-84	117	38.4	10.5	44.3	209	11.3	1494	163	2620
DV98-86	70.8	55.2	5.6	44.7	214	12.0	1505	153	2620
DV98-88	80.5	55.2	4.0	41.8	210	11.5	1473	150	2610
DV98-90	80.5	62.4	9.8	46.4	219	11.9	1509	156	2620
DV98-92	89.1	55.2	7.7	42.4	218	11.6	1510	153	2620
DV98-95	56.1	66.0	6.4	40.9	216	11.4	1496	153	2630
DV98-133	---	---	57.1	55.9	181	9.00	1713	190	2120
DV98-135	---	---	0	65.6	225	10.9	1947	224	2560
DV98-138	---	---	21.0	58.7	198	9.50	1777	180	2240
DV98-140	105	64.8	27.4	57.8	197	9.53	1749	181	2230
DV98-141	75.6	76.8	17.7	58.3	199	9.73	1770	178	2250
DV98-145	112	60.0	19.7	58.6	210	12.2	1923	173	2560
DV98-147	48.8	91.2	3.6	50.8	219	11.7	1953	150	2630

Table 4: Continued

Sample	HCO_3(F)[b]	CO_3(F)[b]	HCO_3(L)[c]	CO_3(L)[c]	SO_4	B	TDS	Alkalinity	Conductivity (micromhos)
DV98-148	85.4	62.4	7.4	53.6	215	11.8	1953	157	2610
DV98-150	90.3	57.6	10.4	56.1	212	11.9	1957	164	2570
DV98-152	107	48.0	2.8	50.9	214	11.8	1940	149	2600
DV98-154	78.1	57.6	6.6	54.0	218	11.9	1955	154	2590
DV98-156	56.1	86.4	13.1	54.3	222	11.8	1950	158	2600
DV98-159	26.8	106	8.6	54.0	218	12.0	1945	155	2600
DV99-182	87.4	50	17.1	53.1	229	11.7	2027	167	2550
DV99-184	57.3	69	8.2	48.5	231	11.5	2005	158	2590
DV99-186	15	88	3.7	48.9	235	11.5	2018	152	2590
DV99-188	28.1	87	0.8	46.1	239	11.5	2029	148	2630
DV99-190	86.6	42	0	40.2	236	11.8	2049	140	2660
DV99-194	76.9	45	3.7	45.2	243	12.0	2063	147	2650
DV99-196	91.1	44	2.8	47.4	243	11.8	2057	152	2660
DV99-197	40.7	70	0.6	46.2	243	12.0	2072	145	2650
DV99-199	110	70	27.1	55.7	207	9.34	1871	183	2230
DV99-200	85	74	19	57.2	213	9.6	1876	178	2270
DV99-204	83	78	22.2	57.6	211	9.69	1889	180	2230
DV74782786-brine 2	---	---	109	80.3	159	9.24	1822	309	2070
DV76781986-brine 4	---	---	90	79.2	158	9.42	1779	286	2040
DV453382186-brine 6	---	---	126	79.9	149	7.99	1726	311	1859
DV73782886-brine 8	---	---	131	68.6	150	8.72	1729	291	1953
DV321882686-brine 10	---	---	140	42	150	9.44	1721	223	2040
DV651882686-brine 12	---	---	221	57	162	9.18	1766	334	2180
No number	---	---	140	0	273	2.25	846	127	1162
Condensates									
DIXE102-S	---	---	**34.9**	**0**	3.35	0.12	---	---	---
DV96-7	54.9	0	**51**	**0**	1.26	0.16	78.2	41.8	114
DV96-10	---	---	**42**	**0**	1.96	0.13	64.1	34.4	97.7
DV97-12	---	---	**101**	**0**	88.5	4.9	---	83	---
DV97-15	---	---	**59.3**	**0**	2.74	0.28	---	49	---
DV97-17	---	---	**57.8**	**0**	5.19	0.16	---	47	---
DV97-19	---	---	**47**	**0**	0.87	0.12	---	39	---
DV97-21	---	---	**54.9**	**0**	8.89	0.54	---	45	---

Table 4: Continued

Sample	$HCO_3(F)^b$	$CO_3(F)^b$	$HCO_3(L)^c$	$CO_3(L)^c$	SO_4	B	TDS	Alkalinity	Conductivity (micromhos)
DV97-22	---	---	**121**	**0**	105	6.35	---	99	---
DV97-24	---	---	**45.8**	**0**	0.28	0.16	---	38	---
DV97-27	---	---	**48.3**	**0**	2.50	0.16	---	40	---
DV97-28	---	---	**46.1**	**0**	0.49	0.09	---	38	---
DV97-31	---	---	**54.3**	**0**	7.32	0.44	---	45	---
DV98-74	---	---	**42.0**	**0**	5.60	0.22	61.9	34.4	96.3
DV98-76	---	---	**46.1**	**0**	2.86	0.24	64.2	37.8	99.0
DV98-78	---	---	**29.4**	**0**	14.2	0.31	58.6	24.1	107
DV98-81	---	---	**47.2**	**0**	2.72	0.26	64.2	38.7	102
DV98-83	---	---	**48.5**	**0**	3.86	0.22	68.3	39.8	104
DV98-85	---	---	**51.9**	**0**	7.42	0.55	107	42.5	176
DV98-87	---	---	**49.9**	**0**	2.57	0.21	56.1	40.9	105
DV98-89	---	---	**142**	**0**	138	7.80	1096	116	1870
DV98-91	---	---	**120**	**0**	108	5.71	818	98.4	1380
DV98-93	---	---	**45.0**	**0**	2.92	0.22	64.3	36.9	101
DV98-94	---	---	**49.1**	**0**	2.51	0.17	68.6	40.2	103
DV98-101	---	---	**43.4**	**0**	2.54	0.16	60.4	35.6	93.1
DV98-136	---	---	**39.5**	**0**	2.58	0.05	58.1	32.4	97.9
DV98-137	---	---	**37.6**	**0**	2.66	0.08	41.6	30.8	90.2
DV98-139	---	---	**45.7**	**0**	1.02	0.03	61.4	37.5	94.0
DV98-142	---	---	**49.6**	**0**	1.25	0.07	69.5	40.7	104
DV98-144	---	---	**48.6**	**0**	1.48	0.10	65.3	39.8	102
DV98-146	---	---	**47.9**	**0**	3.41	0.10	65.5	39.3	102
DV98-149	---	---	**44.1**	**0**	7.33	0.09	67.8	36.1	107
DV98-151	---	---	**55.1**	**0**	6.20	0.42	123	45.2	176
DV98-153	---	---	**73.6**	**0**	42.3	2.21	424	60.3	608
DV98-155	---	---	**114**	**0**	112	5.81	1062	93.4	1426
DV98-157	---	---	**70.1**	**0**	38.0	2.03	393	57.5	545
DV98-158	---	---	**45.5**	**0**	2.34	0.14	62.9	37.3	97.0
DV99-183	---	---	**44**	**0**	2.55	0.13	65.8	36.1	96.6
DV99-185	---	---	**60**	**0**	24.9	1.39	280	---	---
DV99-187	---	---	**46.9**	**0**	2.45	0.15	69.8	38.4	94.4
DV99-189	---	---	**44.6**	**0**	2.96	0.10	67.7	36.6	97.3
DV99-191	---	---	**76.6**	**0**	51.3	2.96	532	62.8	711

Table 4: Continued

Sample	HCO_3(F)[b]	CO_3(F)[b]	HCO_3(L)[c]	CO_3(L)[c]	SO_4	B	TDS	Alkalinity	Conductivity (micromhos)
DV99-192	---	---	**85.3**	**0**	77.9	4.19	724	69.9	960
DV99-193	---	---	**44.8**	**0**	5.65	0.16	71.3	36.7	98.1
DV99-195	---	---	**83.5**	**0**	74.5	3.95	696	68.4	926
DV99-201	---	---	**37.7**	**0**	4.11	0.18	66.2	30.9	98.1
DV99-202	---	---	**18.8**	**0**	20.0	0.11	55.4	15.4	106
DV99-203	---	---	**35**	**0**	2.35	0.13	53.3	28.7	88.4
DV74782786-cond 1	---	---	**53.6**	**0**	4.7	0.043	80.0	43.9	108
DV76781986-cond 3	---	---	**58.9**	**0**	2.01	0.057	84.5	48.3	109
DV453382886-cond 5	---	---	**20**	**0**	28.1	0.057	69.5	16.4	118
DV73782886-cond 7	---	---	**52.8**	**0**	4.87	0.052	80.5	43.3	105
DV321882686-cond 9	---	---	**63.3**	**0**	9.52	0.071	99.8	51.9	136
DV651882686-cond 11	---	---	**66.2**	**0**	3.1	0.054	92.7	54.3	121
Injection Well/Power Plant Fluids									
DV96-2	8.5	0	**7.5**	**0**	26.4	0.24	109	6.1	176
DV96-3	0	73.2	**0**	**58**	228	11.5	2078	186	2580
DV96-4	31.7	92.4	**0**	**57.7**	213	11.4	2005	175	2510
DV96-5	0	104	**0**	**62.6**	224	12.6	2067	190	2690
DV96-6	39	99.6	**0**	**59.9**	226	12.5	2119	192	2700
DV97-32	---	---	**9.7**	**0**	49.9	1.5	---	8	
DV97-33	0	91.2	0	19.6	217	12	2093	188	2690
DV97-34	0	84	0	18.3	196	10.7	1868	161	2370
DV97-35	19.5	88.8	0	18.7	198	10.6	1870	162	2380
DV97-36	68.3	84	0	20.1	222	12.1	2095	191	2720
DV97-37	0	122	0	20.5	222	12.0	2066	188	2700
DV97-40	0	98.4	0	19	219	11.9	2053	188	2700
DV97-41	---	---	**<0.8**	**0**	51.4	1.51	---	0	---
DV97-42	37.8	98.4	18.3	55.5	193	9.43	1887	173	2220
DV98-97	---	---	**16.2**	**0**	21.5	0.36	90.4	13.3	168
DV98-98	17.1	91.2	0	14.5	228	11.9	1571	182	2750
DV98-143	0	103	0	22.0	229	12.6	2026	184	2720
DV98-161	---	---	**16.4**	**0**	47.8	0.96	211	13.4	340
DV98-162	0	81.6	0	21.7	230	12.2	2068	185	2720
DV98-163	222	0	**202**	**0**	117	1.88	734	166	1044

Table 4: Continued

Sample	HCO_3(F)[b]	CO_3(F)[b]	HCO_3(L)[c]	CO_3(L)[c]	SO_4	B	TDS	Alkalinity	Conductivity (micromhos)
DV99-198	212	0	197	14.8	124	1.93	784	192	1122
DV99-205	0	84	0	17.1	252	12.6	2182	181	2740
DV99-206	0	52.8	0	17.2	252	12.7	2173	181	2750
DV99-207	45.1	0	24.3	0	12.9	0.28	74.4	22	121
DV99-208	0	73.2	0	18.1	250	12.3	2149	177	2730
Other Geothermal and On-Site Water Wells									
DV96-1	293	0	**305**	**0**	194	1.46	937	---	---
DV97-38	298	0	297	0	191	1.65	921	249	1150
DV97-39	381	0	388	0	174	2.65	1190	318	1605
DV97-53	---	---	**53**	**0**	3.17	0.077	88.0	43.4	122
DV97-54	---	---	**59.6**	**0**	1.53	0.053	87.6	48.9	127
DV97-55	---	---	**59.8**	**0**	77.8	2.25	420	49	608
DV97-59	---	---	**226**	**0**	28.5	1.63	715	185	1039
DV97-67	---	---	**193**	**0**	84.7	5.79	3167	158	4850
DV98-96	366	0	**340**	**20.3**	177	2.71	1134	313	1705
DV98-99	---	---	**65.1**	**0**	54.2	2.03	329	53.4	557
DV98-100	---	---	**45.0**	**0**	2.91	0.14	63.8	36.9	99.3
DV98-102	---	---	**54.1**	**0**	16.9	0.51	159	44.3	282
DV98-103	---	---	89.5	0	195	6.77	1322	101	2250
DV98-104	---	---	162	0	80.2	5.78	2747	158	4890
DV98-111	532	0	688	0	219	5.52	1873	836	2150
DV98-122	---	---	**666**	**0**	161	6.66	1689	546	2300
DV98-123	---	---	**98.2**	**6.9**	334	1.26	910	92.0	1447
Dixie Jack #1	---	---	**430**	**0**	240	7.08	1527	352	2140
Dixie Jack #4	---	---	**131**	**0**	135	8.10	1020	107	1522
Dixie Jack #7	---	---	**39.7**	**0**	11.5	1.21	92.4	32.5	121
DV98-160	361	0	**338**	**19.8**	182	2.77	1207	310	1680
DV98-168	---	---	**243**	**19.2**	88.1	7.25	982	231	1227
DV98-175	---	---	**1016**	**0**	219	5.48	2011	833	2080
DV99-181	342	0	320	20.2	204	2.81	1303	292	1728

Table 4: Continued

Sample	HCO_3(F)[b]	CO_3(F)[b]	HCO_3(L)[c]	CO_3(L)[c]	SO_4	B	TDS	Alkalinity	Conductivity (micrombos)
Background Springs									
DV97-46	---	---	**278**	**16.5**	385	1.46	1169	255	1423
DV97-47	---	---	**315**	**0**	379	1.39	1179	258	1412
DV97-48	---	---	**817**	**31.3**	119	4.24	1490	722	1598
DV97-50	---	---	**139**	**0**	58.7	0.31	409	114	434
DV 97-51b	---	---	**185**	**9.9**	228	0.65	870	168	1250
DV97-52	---	---	**193**	**0**	113	0.59	695	158	957
DV97-56	---	---	**419**	**28.9**	422	1.21	2088	392	3010
DV97-60	---	---	**496**	**26**	133	1.4	994	450	1125
DV97-61	---	---	**408**	**20.7**	68.4	1.05	777	369	879
DV97-62	---	---	**292**	**15.4**	199	0.83	1079	265	1491
DV97-63	---	---	**219**	**14.6**	142	0.22	804	204	1177
DV97-64	---	---	**292**	**20.1**	179	0.97	1108	273	1589
DV97-65	---	---	**394**	**26.5**	333	1.05	1544	367	2130
DV97-66	---	---	**132**	**0**	123	0.45	693	108	1021
DV97-68	---	---	**221**	**0**	181	0.84	1716	181	2850
DV97-69	---	---	**93.5**	**0**	139	0.96	723	76.6	1011
DV97-72	---	---	**68.8**	**0**	8.05	0.09	144	56.4	152
DV98-106	---	---	**326**	**18.9**	213	1.63	1196	299	1774
DV98-112	---	---	666	0	118	4.01	1508	735	1596
DV98-113	---	---	**453**	**0**	66.2	1.03	773	371	887
DV98-114	---	---	**326**	**0**	186	0.84	1061	267	1496
DV98-117	---	---	282	0	363	1.31	1106	261	1427
DV98-118	---	---	**213**	**0**	243	1.08	2830	175	4920
DV98-120	---	---	57.2	8.9	121	0.95	608	76.4	1006
DV98-128	---	---	267	0	103	1.36	755	302	923
DV98-129	---	---	**471**	**24.2**	147	1.79	1019	426	1254
DV98-131	---	---	**432**	**0**	328	0.97	1722	354	2470
DV98-132	---	---	**376**	**0**	192	0.90	1016	308	1357
DV98-169	---	---	**210**	**0**	67.7	0.25	459	172	579
DV98-170	---	---	**203**	**0**	62.9	0.17	423	166	523
DV98-176	---	---	**131**	**0**	31.7	0.15	290	107	366
DV98-177	---	---	**164**	**0**	28.1	0.17	331	134	396
DV98-178	---	---	**117**	**0**	20.5	0.07	246	95.9	292

Table 4: Continued

Sample	HCO_3(F)[b]	CO_3(F)[b]	HCO_3(L)[c]	CO_3(L)[c]	SO_4	B	TDS	Alkalinity	Conductivity (micromhos)
DV98-179	---	---	**95.9**	**0**	21.9	0.10	222	78.6	280
DV99-209	---	---	407	0	451	1.42	2101	376	2770
DV99-210	---	---	315	20.8	515	1.46	2199	310	3120
DV99-211	---	---	395	18.8	67.4	1.10	768	378	792
Background Wells									
DV97-49	---	---	**116**	**0**	82.2	0.35	400	95.1	596
DV97-57	---	---	**244**	**17**	221	0.42	1118	228	1640
DV97-70	---	---	**105**	**0**	67.1	0.37	352	86.1	414
DV97-71	---	---	**92**	**0**	64.2	0.32	336	75.4	397
DV98-115	---	---	**648**	**0**	136	2.16	1201	531	1367
DV98-116	---	---	**277**	**0**	245	1.06	1514	227	2300
DV98-172	---	---	**282**	**15.1**	138	0.24	704	256	940
Background Streams/Rain									
DV97-58	---	---	**274**	**18**	148	0.78	956	255	1374
DV98-107	---	---	257	22.9	222	1.95	1349	340	1975
DV98-110	---	---	**264**	**17.3**	153	0.74	920	245	1301
DV98-119	---	---	**219**	**15.4**	241	1.12	1165	205	1795
DV98-121	---	---	**264**	**21.3**	82.7	0.55	661	252	886
DV98-125	---	---	**61.3**	**0**	16.4	0.23	124	50.2	173
DV98-126	---	---	**97.6**	**0**	22.6	0.19	208	80.0	284
DV98-127	---	---	**99.4**	**0**	62.0	0.19	272	81.5	384
DV98-130	---	---	**144**	**0**	32.0	0.27	284	118	371
DV98-171	---	---	**171**	**7.1**	62.9	0.15	391	152	495
DV98-173	---	---	**365**	**23.6**	223	0.32	1036	339	1348
DV98-174	---	---	**409**	**44.5**	756	0.84	2332	409	3180
DV98-180	---	---	**61.1**	**0**	8.71	0.06	129	50.1	149
DV99-213	---	---	314	54.6	3445	38.2	14390	415	20200
Fumarole Condensates									
DV97-43	---	---	---	---	0.91	0.07	---	---	---
DV97-44	---	---	---	---	37.8	0.11	---	---	---
DV98-108	---	---	**75.4**	**0**	1.62	0.04	99.5	61.8	151

Table 4: Continued

Sample	HCO_3 (F)[b]	CO_3 (F)[b]	HCO_3 (L)[c]	CO_3 (L)[c]	SO_4	B	TDS	Alkalinity	Conductivity (micromhos)
DV98-109	---	---	**195**	**0**	3.09	<0.02	257	160	387
DV98-164	---	---	**62.2**	**0**	3.61	<0.01	109	51.0	169
DV98-165	---	---	**188**	**0**	2.51	<0.01	251	154	---
DV98-166	---	---	**0**	**0**	33.1	<0.01	36.2	0	---

Table 5: Trace Element Chemistry for Various Geothermal and Regional Fluids, Dixie Valley Region, Nevada (values in ppm).

Sample	Name or Description	Date	Ag	Al (Total)	As	Au	Ba	Be	Cd	Co	Cr	Cs	Cu	Fe	Hg
Brines															
DIXE102-W	V102 + V103 Separator	10/02/95	---	1.41	0.46	---	---	---	---	---	---	0.58	---	0.02	---
DV96-8	76-7 Well	10/25/96	<0.001	1.12	0.51	---	0.07	0.002	<0.002	<0.002	<0.002	0.56	0.016	0.02	<0.0002
DV96-9	V101 Separator	10/25/96	<0.001	1.54	0.47	---	0.01	0.002	<0.002	<0.002	<0.002	0.6	0.009	<0.01	<0.0002
DV97-11	73-7 Well	10/29/97	<0.001	1.04	0.65	<0.002	0.078	0.002	<0.001	<0.002	<0.002	0.56	<0.002	0.04	<0.0001
DV97-13	84-7 Well	10/29/97	<0.001	1.12	0.52	<0.002	0.077	0.002	<0.001	<0.002	<0.002	0.56	<0.002	0.02	<0.0001
DV97-14	74-7 Well	10/29/97	<0.001	1.13	0.65	<0.002	0.073	0.002	<0.001	<0.002	<0.002	0.6	<0.002	0.01	<0.0001
DV97-16	V102 + V103 Separator	10/29/97	<0.001	1.12	0.65	<0.002	0.074	0.002	<0.001	<0.002	<0.002	0.53	<0.002	<0.01	<0.0001
DV97-18	V105 Separator	10/29/97	<0.001	1.05	0.54	<0.002	0.077	0.002	<0.001	<0.002	<0.002	0.62	0.003	0.01	<0.0001
DV97-20	82A-7 Well	10/29/97	<0.001	1.02	0.49	<0.002	0.078	0.002	<0.001	<0.002	<0.002	0.59	<0.002	0.02	<0.0001
DV97-23	73B-7 Well	10/30/97	<0.001	1.08	0.54	<0.002	0.079	0.002	<0.001	<0.002	<0.002	0.6	0.002	<0.01	<0.0001
DV97-25	27-33 Well	10/30/97	<0.001	1.44	0.27	<0.002	0.01	0.002	<0.001	<0.002	<0.002	0.48	<0.002	<0.01	<0.0001
DV97-26	V101 Separator	10/30/97	<0.001	1.47	0.37	<0.002	0.011	0.002	<0.001	<0.002	<0.002	0.5	0.004	0.01	0.0001
DV97-29	37-33 Well	10/30/97	<0.001	0.99	0.19	<0.002	0.007	0.002	<0.001	<0.002	<0.002	0.53	<0.002	0.02	0.107
DV97-30	28-33 Well	10/30/97	<0.001	1.27	0.25	<0.002	0.008	0.002	<0.001	<0.002	<0.002	0.54	<0.002	0.02	0.0001
DV98-73	V101 Separator	04/28/98	<0.001	1.34	0.49	---	0.010	ppm	<0.001	<0.002	<0.002	0.54	<0.002	<0.01	0.00012
DV98-75	27-33 Well	04/28/98	<0.001	1.29	0.35	---	0.010	---	<0.001	<0.002	<0.002	0.45	<0.002	0.01	0.00007
DV98-77	37-33 Well	04/28/98	<0.001	1.42	0.59	<0.0001	0.010	---	<0.001	<0.002	<0.002	0.49	<0.002	<0.01	0.00061
DV98-79	28-33 Well	04/28/98	<0.001	1.39	0.34	---	0.010	---	<0.001	<0.002	<0.002	0.46	<0.002	<0.01	<0.00005
DV98-80	76A-7 Well	04/28/98	<0.001	1.04	0.73	<0.0001	0.069	0.002	<0.001	<0.002	<0.002	0.50	<0.002	<0.01	0.00034
DV98-82	V102 + V103 Separator	04/28/98	<0.001	1.08	0.82	---	0.071	---	<0.001	<0.002	<0.002	0.54	<0.002	<0.01	0.00022
DV98-84	74-7 Well	04/28/98	<0.001	1.09	0.74	<0.0001	0.071	---	<0.001	<0.002	<0.002	0.59	<0.002	<0.01	<0.00005
DV98-86	63-7 Well	04/28/98	<0.001	1.03	0.72	---	0.074	---	<0.001	<0.002	<0.002	0.61	<0.002	<0.01	0.00019
DV98-88	73-7 Well	04/29/98	<0.001	1.04	0.70	0.0004	0.076	---	<0.001	<0.002	<0.002	0.56	<0.002	<0.01	0.00088
DV98-90	82A-7 Well	04/29/98	<0.001	1.01	0.72	---	0.081	---	<0.001	<0.002	<0.002	0.61	<0.002	<0.01	0.00007
DV98-92	V105 Separator	04/29/98	<0.001	1.01	0.80	---	0.080	---	<0.001	<0.002	<0.002	0.55	<0.002	<0.01	<0.00005
DV98-95	73B-7 Well	04/29/98	<0.001	0.97	0.69	<0.0001	0.085	---	<0.001	<0.002	<0.002	0.56	<0.002	<0.01	0.00028
DV98-133	27-33 Well	10/20/98	<0.001	1.31	0.30	---	0.012	<0.002	<0.001	<0.002	<0.002	0.51	<0.002	0.02	0.0003
DV98-135	27-33 Well	10/20/98	<0.001	0.39	0.79	---	0.021	0.003	<0.001	<0.002	<0.002	0.36	<0.002	<0.01	0.0010
DV98-138	V101 Separator	10/21/98	<0.001	1.32	0.35	---	0.012	---	<0.001	<0.002	<0.002	0.51	<0.002	<0.01	0.0013
DV98-140	37-33 Well	10/21/98	<0.001	1.04	0.30	---	0.005	---	<0.001	<0.002	<0.002	0.66	<0.002	<0.01	0.0021
DV98-141	28-33 Well	10/21/98	<0.001	1.36	0.28	---	0.010	<0.002	<0.001	<0.002	<0.002	0.48	<0.002	0.02	0.0001
DV98-145	76A-7 Well	10/22/98	<0.001	1.00	1.01	---	0.077	---	<0.001	<0.002	<0.002	0.53	<0.002	0.01	0.0001
DV98-147	63-7 Well	10/22/98	<0.001	1.02	0.95	---	0.069	---	<0.001	<0.002	<0.002	0.47	<0.002	<0.01	<0.0001
DV98-148	V102 + V103 Separator	10/22/98	<0.001	1.01	1.01	---	0.071	0.002	<0.001	<0.002	<0.002	0.42	<0.002	<0.01	0.0002
DV98-150	74-7 Well	10/22/98	<0.001	1.02	0.86	---	0.071	---	<0.001	<0.002	<0.002	0.48	<0.002	<0.01	<0.0001
DV98-152	73-7 Well	10/22/98	<0.001	1.02	0.95	---	0.079	---	<0.001	<0.002	<0.002	0.35	<0.002	<0.01	0.0004
DV98-154	73B-7 Well	10/22/98	<0.001	0.81	1.03	---	0.071	---	<0.001	<0.002	<0.002	0.50	<0.002	<0.01	0.0001
DV98-156	82A-7 Well	10/23/98	<0.001	0.90	0.81	---	0.068	---	<0.001	<0.002	<0.002	0.48	<0.002	0.01	<0.0001
DV98-159	V105 Separator	10/23/98	<0.001	0.99	0.80	---	0.079	---	<0.001	<0.002	<0.002	0.43	<0.002	<0.01	0.0004
DV99-182	76A-7 Well	05/04/99	<0.001	0.89	0.81	---	0.074	0.002	<0.001	<0.002	<0.002	0.93	<0.002	<0.01	<0.0001

Table 5: Continued

Sample	Name or Description	Date	Ag	Al (Total)	As	Au	Ba	Be	Cd	Co	Cr	Cs	Cu	Fe	Hg
DV99-184	74-7 Well	05/04/99	<0.001	0.97	0.73	---	0.068	0.002	<0.001	<0.002	<0.002	0.97	<0.002	<0.01	<0.0001
DV99-186	V102 + V103 Separator	05/04/99	<0.001	0.97	0.8	---	0.067	<0.002	<0.001	<0.002	<0.002	0.84	<0.002	<0.01	<0.0001
DV99-188	63-7 Well	05/04/99	<0.001	0.98	0.82	---	0.077	0.002	<0.001	<0.002	<0.002	0.9	<0.002	<0.01	<0.0001
DV99-190	73-7 Well	05/04/99	<0.001	1.0	0.83	---	0.074	0.002	<0.001	<0.002	<0.002	0.78	<0.002	<0.01	<0.0001
DV99-194	V105 Separator	05/05/99	<0.001	0.95	0.7	---	0.075	0.002	<0.001	<0.002	<0.002	0.94	<0.002	<0.01	0.0001
DV99-196	82A-7 Well	05/05/99	<0.001	0.86	0.78	---	0.079	0.002	<0.001	<0.002	<0.002	0.81	<0.002	<0.01	<0.0001
DV99-197	73B-7 Well	05/05/99	<0.001	0.96	0.75	---	0.078	0.002	<0.001	<0.002	<0.002	0.8	<0.002	<0.01	<0.0001
DV99-199	37-33 Well	05/05/99	<0.001	1.37	0.48	---	0.011	0.002	<0.001	<0.002	<0.002	0.67	<0.002	<0.01	<0.0001
DV99-200	28-33 Well	05/05/99	<0.001	1.37	0.49	---	0.011	0.002	<0.001	<0.002	<0.002	0.69	<0.002	<0.01	0.0001
DV99-204	V101 Separator	05/05/99	<0.001	1.3	0.43	---	0.01	0.002	<0.001	<0.002	<0.002	0.73	<0.002	<0.01	0.0001
DV74782786-brine	74-7 Well Archived	08/27/86	<0.001	1.1	0.81	---	0.046	0.002	<0.001	<0.002	<0.002	0.68	<0.002	0.01	<0.0001
DV76781986-brine	76-7 Well Archived	08/19/86	<0.001	1.19	0.86	---	0.05	0.002	<0.001	<0.002	<0.002	0.71	<0.002	<0.01	0.0003
DV453382186-brir	45-33 Well Archived	08/21/86	<0.001	1.52	0.68	---	0.019	0.003	<0.001	<0.002	<0.002	0.66	<0.002	0.04	0.0003
DV73782886-brine	73-7 Well Archived	08/28/86	<0.001	0.99	0.79	---	0.024	0.002	<0.001	<0.002	<0.002	0.68	<0.002	0.04	0.0006
DV321882686-brir	32-18 Well Archived	08/26/86	<0.001	0.75	0.75	---	0.047	0.002	<0.001	<0.002	<0.002	0.85	<0.002	0.02	0.0005
DV651882686-brir	65-18 Well Archived	08/26/86	<0.001	0.69	0.95	---	0.053	0.002	<0.001	<0.002	<0.002	0.77	<0.002	0.02	<0.0001
No number	28-33 Well Archived	09/23/93	<0.001	0.88	0.2	---	0.03	<0.002	<0.001	<0.002	<0.002	0.08	0.019	0.82	0.0009
Condensates															
DIXE102-S	V102 + V103 Separator	10/02/95	---	---	---	---	---	---	---	---	---	---	---	0.11	---
DV96-7	76-7 Well	10/25/96	<0.001	<0.01	0.0037	---	<0.01	<0.002	<0.002	<0.002	<0.002	0.055	0.025	1.02	0.0023
DV96-10	V101 Separator	10/25/96	<0.001	<0.01	0.0061	---	<0.01	<0.002	<0.002	<0.002	<0.002	0.06	0.12	0.25	0.103
DV97-12	73-7 Well	10/29/97	---	---	0.42	---	---	---	---	---	---	---	---	---	0.039
DV97-15	74-7 Well	10/29/97	---	---	0.023	---	---	---	---	---	---	---	---	---	0.011
DV97-17	V102 + V103 Separator	10/29/97	---	---	<0.0002	---	---	---	---	---	---	---	---	---	0.028
DV97-19	V105 Separator	10/29/97	---	---	0.0017	---	---	---	---	---	---	---	---	---	0.013
DV97-21	82A-7 Well	10/29/97	---	---	0.047	---	---	---	---	---	---	---	---	---	0.016
DV97-22	73B-7 Well	10/29/97	---	---	0.54	---	---	---	---	---	---	---	---	---	0.012
DV97-24	V101 Separator	10/30/97	---	---	0.0021	---	---	---	---	---	---	---	---	---	0.0054
DV97-27	27-33 Well	10/30/97	---	---	0.0046	---	---	---	---	---	---	---	---	---	0.022
DV97-28	37-33 Well	10/30/97	---	---	<0.0002	---	---	---	---	---	---	---	---	---	0.02
DV97-31	28-33 Well	10/30/97	---	---	0.0075	---	---	---	---	---	---	---	---	---	0.035
DV98-74	V101 Separator	04/28/98	---	---	0.0045	---	---	0.002	---	---	---	---	---	---	0.0090
DV98-76	27-33 Well	04/28/98	---	---	0.0046	---	---	0.002	---	---	---	---	---	---	0.0028
DV98-78	37-33 Well	04/28/98	---	---	0.0072	---	---	0.002	---	---	---	---	---	---	0.083
DV98-81	76A-7 Well	04/28/98	---	---	0.0028	---	---	0.002	---	---	---	---	---	---	0.0098
DV98-83	V102 + V103 Separator	04/28/98	---	---	0.0019	---	---	0.002	---	---	---	---	---	---	0.040
DV98-85	74-7 Well	04/28/98	---	---	0.040	---	---	0.002	---	---	---	---	---	---	0.0106
DV98-87	63-7 Well	04/28/98	---	---	0.0023	---	---	0.002	---	---	---	---	---	---	0.0105
DV98-89	73-7 Well	04/29/98	---	---	0.52	---	---	0.002	---	---	---	---	---	---	0.0094
DV98-91	82A-7 Well	04/29/98	---	---	0.39	---	---	0.002	---	---	---	---	---	---	0.019

Table 5: Continued

Sample	Name or Description	Date	Ag	Al (Total)	As	Au	Ba	Be	Cd	Co	Cr	Cs	Cu	Fe	Hg
DV98-93	V105 Separator	04/29/98	---	---	0.0036	---	---	0.002	---	---	---	---	---	---	0.015
DV98-94	73B-7 Well	04/29/98	---	---	0.0049	---	---	---	---	---	---	---	---	---	0.0037
DV98-101	28-33 Well	04/30/98	---	---	0.0024	---	---	---	---	---	---	---	---	---	0.0039
DV98-136	27-33 Well	10/20/98	---	---	0.0020	---	---	<0.002	---	---	---	---	---	---	0.0250
DV98-137	V101 Separator	10/21/98	---	---	0.0009	---	---	---	---	---	---	---	---	---	0.0156
DV98-139	37-33 Well	10/21/98	---	---	0.0011	---	---	0.002	---	---	---	---	---	---	0.0024
DV98-142	28-33 Well	10/21/98	---	---	0.0092	---	---	0.002	---	---	---	---	---	---	0.0180
DV98-144	76A-7 Well	10/22/98	---	---	0.0010	---	---	0.002	---	---	---	---	---	---	0.0162
DV98-146	V102 + V103 Separator	10/22/98	---	---	<0.0002	---	---	0.002	---	---	---	---	---	---	0.0218
DV98-149	63-7 Well	10/22/98	---	---	0.0004	---	---	0.002	---	---	---	---	---	---	0.0268
DV98-151	74-7 Well	10/22/98	---	---	0.027	---	---	0.002	---	---	---	---	---	---	0.0170
DV98-153	73-7 Well	10/22/98	---	---	0.22	---	---	<0.002	---	---	---	---	---	---	0.0350
DV98-155	73B-7 Well	10/22/98	---	---	0.57	---	---	<0.002	---	---	---	---	---	---	0.0175
DV98-157	82A-7 Well	10/23/98	---	---	0.21	---	---	<0.002	---	---	---	---	---	---	0.0368
DV98-158	V105 Separator	10/23/98	---	---	0.0057	---	---	---	---	---	---	---	---	---	0.0223
DV99-183	76A-7 Well	05/04/99	---	---	0.0019	---	---	---	---	---	---	---	---	---	0.0073
DV99-185	74-7 Well	05/04/99	---	---	0.1	---	---	---	---	---	---	---	---	---	0.0092
DV99-187	V102 + V103 Separator	05/04/99	---	---	0.002	---	---	---	---	---	---	---	---	---	0.0056
DV99-189	63-7 Well	05/04/99	---	---	0.0023	---	---	---	---	---	---	---	---	---	0.0079
DV99-191	73-7 Well	05/04/99	---	---	0.25	---	---	---	---	---	---	---	---	---	0.0072
DV99-192	73B-7 Well	05/04/99	---	---	0.4	---	---	---	---	---	---	---	---	---	0.010
DV99-193	V105 Separator	05/05/99	---	---	<0.0002	---	---	---	---	---	---	---	---	---	0.0024
DV99-195	82A-7 Well	05/05/99	---	---	0.38	---	---	---	---	---	---	---	---	---	0.0101
DV99-201	28-33 Well	05/05/99	---	---	0.0024	---	---	---	---	---	---	---	---	---	0.0031
DV99-202	37-33 Well	05/05/99	---	---	<0.0002	---	---	---	---	---	---	---	---	---	0.0047
DV99-203	V101 Separator	05/05/99	---	---	<0.0002	---	---	---	---	---	---	---	---	---	0.0077
DV74782786-cond	74-7 Well Archived	08/27/86	---	---	<0.0002	---	---	---	---	---	---	---	---	---	0.0004
DV76781986-cond	76-7 Well Archived	08/19/86	---	---	<0.0002	---	---	---	---	---	---	---	---	---	0.001
DV453382886-con	45-33 Well Archived	08/28/86	---	---	<0.0002	---	---	---	---	---	---	---	---	---	0.001
DV73782886-cond	73-7 Well Archived	08/28/86	---	---	0.0006	---	---	---	---	---	---	---	---	---	0.0005
DV321882686-con	32-18 Well Archived	08/26/86	---	---	<0.0002	---	---	---	---	---	---	---	---	---	0.0016
DV651882686-con	65-18 Well Archived	08/26/86	---	---	<0.0002	---	---	---	---	---	---	---	---	---	0.0015
Injection Well/Power Plant Fluids															
DV96-2	Condensate from plant	10/24/96	<0.001	0.14	0.0024	---	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	0.005	0.06	<0.0002
DV96-3	LP Brine @ Plant	10/24/96	<0.001	1.27	0.74	---	0.04	0.002	<0.002	<0.002	0.013	0.53	<0.002	0.05	<0.0002
DV96-4	45-5 Injection Well	10/24/96	<0.001	1.21	0.86	---	0.05	0.002	<0.002	<0.002	<0.002	0.52	<0.002	0.08	<0.0002
DV96-5	Lamb 1 Injection Well	10/24/96	<0.001	1.39	0.82	---	0.06	0.002	<0.002	<0.002	<0.002	0.61	<0.002	<0.01	<0.0002
DV96-6	65-18 Injection Well	10/24/96	<0.001	1.35	1.44	---	0.06	0.002	<0.002	<0.002	<0.002	0.59	<0.002	0.02	<0.0002
DV97-32	Condensate from plant	10/31/97	---	---	0.098	---	---	---	---	---	---	---	---	---	0.0004
DV97-33	LP Brine	10/31/97	<0.001	1.36	0.93	<0.002	0.056	0.002	<0.001	<0.002	0.003	0.86	0.013	<0.01	0.0002

Table 5: Continued

Sample	Name or Description	Date	Ag	Al (Total)	As	Au	Ba	Be	Cd	Co	Cr	Cs	Cu	Fe	Hg
DV97-34	25-5 + 45-5 Injectate	10/31/97	<0.001	1.14	0.79	<0.002	0.047	0.002	<0.001	<0.002	<0.002	0.68	<0.002	0.02	<0.0001
DV97-35	25-5 + 45-5 Injectate	10/31/97	<0.001	1.14	0.93	---	0.048	0.002	<0.001	<0.002	<0.002	0.71	<0.002	0.02	<0.0001
DV97-36	65-18 Injection Well	10/31/97	<0.001	1.32	1.03	<0.002	0.052	0.002	<0.001	<0.002	0.003	0.8	<0.002	0.01	0.0003
DV97-37	32-18 Injection Well	10/31/97	<0.001	1.34	1.03	<0.002	0.059	0.002	<0.001	<0.002	0.007	0.91	<0.002	0.02	<0.0001
DV97-40	LP Brine @ Plant	10/31/97	<0.001	1.36	1.03	<0.002	0.058	0.002	<0.001	<0.002	<0.002	0.75	<0.002	0.02	<0.0001
DV97-41	Condensate from plant	10/31/97	---	---	0.098	---	---	---	---	---	---	---	---	---	0.0001
DV97-42	High P Brine @ plant	10/31/97	<0.001	1.38	1.38	<0.002	0.01	0.002	<0.001	<0.002	<0.002	0.74	0.002	0.05	0.0001
DV98-97	Condensate from plant	04/29/98	---	---	0.0043	---	---	<0.002	---	---	---	---	---	---	0.00008
DV98-98	LP Brine @ Plant	04/29/98	<0.001	1.22	0.92	---	0.059	---	<0.001	<0.002	<0.002	0.59	<0.002	<0.01	0.00022
DV98-143	25-5 Injection Well	10/21/98	<0.001	1.19	1.06	---	0.060	---	<0.001	<0.002	<0.002	0.54	<0.002	<0.01	0.0001
DV98-161	Condensate from plant	10/23/98	<0.001	0.07	0.060	---	0.006	<0.002	<0.001	<0.002	<0.002	0.016	<0.002	0.07	0.0003
DV98-162	LP Brine @ Plant	10/23/98	<0.001	1.22	1.02	---	0.063	<0.002	<0.001	<0.002	<0.002	0.51	<0.002	<0.01	0.0003
DV98-163	65-18 Injection Well	10/23/98	<0.001	<0.02	0.034	---	0.026	0.002	<0.001	<0.002	<0.002	0.005	<0.002	0.43	0.0002
DV99-198	65-18 Injection Well	05/05/99	<0.001	<0.02	0.0095	---	0.024	<0.002	<0.001	<0.002	<0.002	0.041	<0.002	0.04	0.0001
DV99-205	25-5 + 45-5 Injectate	05/06/99	<0.001	1.19	0.97	---	0.055	0.002	<0.001	<0.002	<0.002	0.83	<0.002	<0.01	<0.0001
DV99-206	LP Brine @ Plant	05/06/99	<0.001	1.26	0.9	---	0.059	0.002	<0.001	<0.002	<0.002	0.86	<0.002	<0.01	0.0001
DV99-207	Condensate from plant	05/06/99	<0.001	0.04	0.0041	---	<0.002	<0.002	<0.001	<0.002	<0.002	0.011	<0.002	0.08	<0.0001
DV99-208	52-18 + 41-18 Injectate	05/06/99	<0.001	1.32	0.98	---	0.058	0.002	<0.001	<0.002	<0.002	0.87	<0.002	<0.01	0.0001
Other Geothermal and On-Site Water Wells															
DV96-1	Domestic Well	10/24/96	<0.001	0.2	0.052		0.04	<0.002	<0.002	<0.002	<0.002	0.084	0.008	1.18	<0.0002
DV97-38	Domestic Well	10/31/97	<0.001	0.1	0.053	<0.002	0.044	<0.002	<0.001	<0.002	<0.002	0.12	<0.002	0.88	0.0002
DV97-39	Goerenger Well	10/31/97	<0.001	0.18	0.013	<0.002	0.038	<0.002	<0.001	<0.002	<0.002	0.063	0.004	0.7	0.0016
DV97-53	46-32 Well	11/05/97	<0.001	0.03	0.008	<0.002	0.005	<0.002	<0.0002	<0.002	<0.002	0.15	<0.002	0.17	0.125
DV97-54	27-32 Well	11/05/97	<0.001	0.04	0.007	<0.002	<0.002	<0.002	0.0002	<0.002	0.002	0.035	0.006	0.2	0.159
DV97-55	27-32 Well	11/05/97	<0.001	0.13	0.31	<0.002	0.016	<0.002	0.0002	<0.002	<0.002	0.15	0.008	0.14	0.013
DV97-59	45-W-5 Well	11/05/97	<0.001	0.03	0.002	---	0.014	<0.002	<0.0002	<0.002	<0.002	0.034	<0.002	0.08	0.0003
DV97-67	66-21 Well	11/07/97	<0.001	0.05	0.23	<0.002	0.33	<0.002	<0.0002	<0.002	<0.002	0.6	<0.002	6.33	0.0004
DV98-96	Goerenger Well	04/29/98	<0.001	<0.02	0.015	---	0.041	<0.002	<0.001	<0.002	<0.002	0.040	<0.002	0.07	0.00025
DV98-99	27-32 Well	04/29/98	---	---	0.34	<0.0001	---	0.002	---	---	---	---	---	---	0.085
DV98-100	46-32 Well	04/29/98	---	---	0.0029	<0.0001	---	---	---	---	---	---	---	---	0.038
DV98-102	45-14 Well	04/30/98	---	---	0.10	---	---	---	---	---	---	---	---	---	0.076
DV98-103	45-14 Well	04/30/98	<0.001	0.23	0.32	---	0.055	---	<0.001	<0.002	<0.002	0.32	<0.002	0.07	0.00053
DV98-104	66-21 Well	04/30/98	<0.001	<0.02	0.14	---	0.34	<0.002	<0.001	<0.002	<0.002	0.52	<0.002	5.85	0.00012
DV98-111	62-21 Well	05/01/98	<0.001	0.09	0.56	<0.0001	0.12	<0.002	<0.001	<0.002	<0.002	0.11	<0.002	0.24	0.00090
DV98-122	97-2 Well	05/05/98	<0.001	<0.02	0.023	---	0.065	<0.002	<0.001	<0.002	0.003	<0.002	0.002	0.31	0.00031
DV98-123	32-6 Well	05/06/98	<0.001	0.04	0.0024	---	0.014	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.01	0.00014
Dixie Jack #1	Gradient Well DJ #1	05/17/98	<0.001	<0.02	0.043	<0.001	0.049	<0.002	<0.001	<0.002	<0.002	0.09	<0.002	0.03	0.00046
Dixie Jack #4	Gradient Well DJ #4	05/20/98	<0.001	0.07	0.074	<0.001	0.043	<0.002	<0.001	<0.002	0.002	0.28	0.002	0.08	0.00021
Dixie Jack #7	Gradient Well DJ #7	05/14/98	<0.001	0.03	0.003	<0.001	0.003	<0.002	<0.001	<0.002	<0.002	0.009	<0.002	0.02	0.00021
DV98-160	Goerenger Well	10/23/98	<0.001	<0.02	0.014	---	0.039	0.002	<0.001	<0.002	<0.002	0.022	<0.002	0.07	0.0001

Table 5: Continued

Sample	Name or Description	Date	Ag	Al (Total)	As	Au	Ba	Be	Cd	Co	Cr	Cs	Cu	Fe	Hg
DV98-168	38-32 Well	10/26/98	<0.001	<0.02	0.13	---	0.062	---	<0.001	<0.002	<0.002	0.28	0.002	0.34	0.0010
DV98-175	62-21 Well	10/28/98	<0.001	<0.02	0.30	---	0.13	<0.002	<0.001	<0.002	<0.002	0.10	<0.002	4.34	0.0001
DV99-181	Goerenger Well	05/04/99	<0.001	<0.02	0.012		0.041	<0.002	<0.001	<0.002	<0.002	0.093	<0.002	0.05	0.0003
Background Springs															
DV97-46	Sou Hot Spring	11/03/97	<0.001	<0.01	0.012	<0.002	0.068	<0.002	<0.0002	<0.002	0.002	0.17	<0.002	0.01	0.0004
DV97-47	Sou Hot Spring	11/03/97	<0.001	<0.01	0.012	<0.002	0.066	<0.002	0.0003	<0.002	<0.002	0.12	0.022	0.27	0.0001
DV97-48	Hyder Hot Spring	11/03/97	<0.001	0.02	0.033	<0.002	0.15	<0.002	0.0011	<0.002	<0.002	0.35	<0.002	0.04	0.0005
DV97-50	Edward Creek Spring	11/04/97	<0.001	0.02	0.023	---	0.004	<0.002	<0.0002	<0.002	0.005	<0.002	<0.002	0.03	<0.0001
DV 97-51b	Old Man Spring	11/04/97	<0.001	0.02	0.017	<0.002	0.02	<0.002	<0.0002	<0.002	<0.002	<0.002	<0.002	0.02	<0.0001
DV97-52	Horse Heaven Spring	11/04/97	<0.001	<0.01	0.018	---	0.035	<0.002	<0.0002	<0.002	<0.002	<0.002	<0.002	0.04	0.0003
DV97-56	Dead Travertine Spring	11/05/97	<0.001	<0.01	<0.001	<0.002	0.028	<0.002	<0.0002	<0.002	0.009	0.18	0.002	<0.01	0.0002
DV97-60	Fault Line Spring	11/06/97	<0.001	<0.01	0.005	<0.002	0.053	<0.002	<0.0002	<0.002	<0.002	0.047	0.002	<0.01	<0.0001
DV97-61	Lower Ranch Hot Spring	11/06/97	<0.001	<0.01	0.008	<0.002	0.11	<0.002	<0.0002	<0.002	<0.002	0.046	0.003	<0.01	0.0002
DV97-62	McCoy Hot Spring	11/06/97	<0.001	<0.01	0.011	<0.002	0.072	<0.002	<0.0002	<0.002	<0.002	0.014	<0.002	<0.01	0.0003
DV97-63	Kyle Spring	11/06/97	<0.001	0.01	0.003	---	0.049	<0.002	<0.0002	<0.002	<0.002	<0.002	<0.002	0.28	0.0001
DV97-64	Dago Spring	11/06/97	<0.001	<0.01	0.004	---	0.058	<0.002	<0.0002	<0.002	<0.002	<0.002	<0.002	0.03	<0.0001
DV97-65	Mustang Spring	11/06/97	<0.001	<0.01	<0.001	<0.002	0.028	<0.002	<0.0002	<0.002	<0.002	0.047	<0.002	<0.01	<0.0001
DV97-66	Kitten Spring	11/06/97	<0.001	<0.01	<0.001	<0.002	0.008	<0.002	<0.0002	<0.002	0.004	<0.002	<0.002	<0.01	<0.0001
DV97-68	Big Horn Spring	11/07/97	<0.001	0.03	0.041	<0.002	0.075	<0.002	<0.0002	<0.002	0.004	<0.002	<0.002	0.03	<0.0001
DV97-69	Dixie Hot Spring	11/07/97	<0.001	0.03	0.004	<0.002	0.012	<0.002	<0.0002	<0.002	<0.002	0.12	<0.002	<0.01	<0.0001
DV97-72	Horse Creek Spring	11/07/97	<0.001	0.02	<0.001	<0.002	0.019	<0.002	<0.0002	<0.002	<0.002	<0.002	<0.002	0.09	<0.0001
DV98-106	Stu's Seep	04/30/98	<0.001	<0.02	0.010	---	0.028	0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.01	0.0015
DV98-112	Hyder Hot Spring	04/30/98	<0.001	<0.02	0.027	---	0.15	<0.002	<0.001	<0.002	<0.002	0.25	<0.002	0.07	0.00019
DV98-113	Lower Ranch Hot Spring	05/04/98	<0.001	<0.02	0.0072	---	0.12	<0.002	<0.001	<0.002	<0.002	0.039	0.003	<0.01	0.00007
DV98-114	McCoy Hot Spring	05/04/98	<0.001	<0.02	0.011	---	0.062	<0.002	<0.001	<0.002	<0.002	0.009	0.003	<0.01	0.00030
DV98-117	Sou Hot Spring	05/04/98	<0.001	<0.02	0.0090	---	0.060	<0.002	<0.001	<0.002	<0.002	0.11	0.002	0.21	0.00031
DV98-118	Big Horn Spring	05/04/98	<0.001	<0.02	0.032	---	0.088	<0.002	<0.001	<0.002	0.004	<0.002	0.003	<0.01	0.00015
DV98-120	Dixie Hot Spring	05/05/98	<0.001	0.13	0.0013	---	0.011	<0.002	<0.001	<0.002	<0.002	0.10	0.003	0.09	<0.00005
DV98-128	Jersey Hot Spring	05/05/98	<0.001	0.04	0.011	---	0.10	<0.002	<0.001	<0.002	<0.002	0.24	<0.002	0.01	0.00016
DV98-129	Upper Jersey Seep	05/06/98	<0.001	0.09	0.042	---	0.014	<0.002	<0.001	<0.002	<0.002	0.15	0.002	0.05	0.00006
DV98-131	Spring in Spring Canyon	05/06/98	<0.001	<0.02	0.013	---	0.023	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.01	0.00015
DV98-132	Wild Rose Spring	05/07/98	<0.001	<0.02	0.18	---	0.021	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.01	0.00008
DV98-169	Lofthouse Spring	05/07/98	<0.001	<0.02	0.0078	---	0.058	<0.002	<0.001	<0.002	<0.002	0.005	<0.002	<0.01	0.0001
DV98-170	Not-So-OK Spring	10/27/98	<0.001	<0.02	0.0079	---	0.030	<0.002	<0.001	<0.002	<0.002	<0.002	0.002	<0.01	0.0001
DV98-176	War Canyon Spring	10/27/98	<0.001	<0.02	0.0034	---	0.005	<0.002	<0.001	<0.002	<0.002	0.003	<0.002	0.02	0.0001
DV98-177	Pine Spring	10/28/98	<0.001	<0.02	0.0029	---	0.012	<0.002	<0.001	<0.002	<0.002	<0.002	0.002	<0.01	0.0001
DV98-178	Basalt Spring	10/28/98	<0.001	<0.02	0.0012	---	0.015	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.01	0.0002
DV98-179	Upper Cherry Spring	10/28/98	<0.001	<0.02	<0.0002	---	0.045	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.01	0.0001
DV99-209	Dead Travertine Spring	05/07/99	<0.001	<0.02	<0.0002	---	0.023	<0.002	<0.001	<0.002	<0.002	0.2	<0.002	<0.01	0.0002
DV99-210	Dead Travertine, Road Seep	05/08/99	<0.001	<0.02	0.0042	---	0.047	<0.002	<0.001	<0.002	<0.002	0.21	0.005	0.36	0.0004
DV99-211	Upper Spring, Lower Ranch	05/09/99	<0.001	<0.02	0.0072	---	0.1	<0.002	<0.001	<0.002	<0.002	0.055	<0.002	<0.01	0.0002

Table 5: Continued

Sample	Name or Description	Date	Ag	Al (Total)	As	Au	Ba	Be	Cd	Co	Cr	Cs	Cu	Fe	Hg
Background Wells															
DV97-49	Hole in the Wall #2 Well	11/04/97	<0.001	0.01	<0.001	---	0.022	<0.002	0.0003	<0.002	<0.002	<0.002	0.01	<0.01	0.0002
DV97-57	Bolivia Artesian Well	11/05/97	<0.001	<0.01	0.027	<0.002	0.036	<0.002	<0.0002	<0.002	0.002	0.021	0.003	0.43	0.0003
DV97-70	Flowing well @ AA Tank	11/07/97	<0.001	<0.01	0.022	<0.002	0.012	<0.002	<0.0002	<0.002	0.003	<0.002	<0.002	<0.01	<0.0001
DV97-71	Shaw Well	11/07/97	<0.001	0.04	0.029	<0.002	0.014	<0.002	<0.0002	<0.002	0.004	<0.002	<0.002	<0.01	<0.0001
DV98-115	Irrigation Well	05/04/98	<0.001	<0.02	0.0067	---	0.054	<0.002	<0.001	<0.002	0.002	0.025	0.004	<0.01	0.00008
DV98-116	Brinkerhoff Well	05/04/98	<0.001	<0.02	0.0052	---	0.080	<0.002	<0.001	<0.002	0.003	<0.002	0.004	0.01	0.00010
DV98-172	Bernice Well	10/27/98	<0.001	<0.02	0.0008	---	0.002	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	0.43	0.0002
Background Streams/Rain															
DV97-58	Cottonwood Creek	11/05/97	<0.001	<0.01	0.004	---	0.036	<0.002	<0.0002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.0001
DV98-107	Unnamed Ck by Stu's Seep	04/30/98	<0.001	<0.02	0.010	---	0.11	<0.002	<0.001	<0.002	<0.002	<0.002	0.003	0.01	0.00035
DV98-110	Cottonwood Creek	05/01/98	<0.001	0.19	0.023	---	0.044	---	<0.001	<0.002	0.003	<0.002	<0.002	0.18	0.00024
DV98-119	Unnamed Stream	05/05/98	<0.001	0.31	0.0048	---	0.038	<0.002	<0.001	<0.002	<0.002	<0.002	0.005	0.35	0.00007
DV98-121	White Rock Canyon	05/05/98	<0.001	<0.02	0.0050	---	0.038	<0.002	<0.001	<0.002	<0.002	<0.002	0.003	0.02	<0.00005
DV98-125	Rain, Lizard Well Tank	05/06/98	<0.001	<0.02	0.0043	---	0.004	<0.002	<0.001	<0.002	0.005	0.003	0.018	0.75	<0.00005
DV98-126	Home Station Wash	05/06/98	<0.001	0.28	0.0044	---	0.021	<0.002	<0.001	<0.002	<0.002	<0.002	0.004	0.25	0.00006
DV98-127	Cedar Canyon Wash	05/06/98	<0.001	0.52	0.0010	---	0.023	<0.002	<0.001	<0.002	<0.002	<0.002	0.003	0.38	0.00005
DV98-130	Bucher Creek	05/06/98	<0.001	0.02	0.0020	---	0.044	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	0.03	<0.00005
DV98-171	Not-So-OK Creek	10/27/98	<0.001	<0.02	0.0026	---	0.029	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.01	0.0001
DV98-173	Bernice Creek	10/27/98	<0.001	<0.02	0.0065	---	0.029	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.01	0.0003
DV98-174	Hoyt Creek	10/27/98	<0.001	<0.02	0.025	---	0.030	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.01	0.0001
DV98-180	Mt. Augusta Creek	10/28/98	<0.001	<0.02	0.0030	---	0.029	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.01	0.0001
DV99-213	Dixie Salt Lake	05/10/99	<0.001	<0.02	0.18	---	0.03	<0.002	<0.001	<0.002	<0.002	<0.01	<0.002	0.05	0.0004
Fumarole Condensates															
DV97-43	Crack 4 Fumarole	11/03/97	---	0.08	<0.001	---	---	<0.002	---	---	---	---	---	0.02	0.009
DV97-44	Senator Fumarole	11/03/97	<0.001	3.15	0.003	---	---	<0.002	<0.0002	<0.002	0.006	<0.002	<0.002	1.85	0.056
DV98-108	Senator Fumarole	05/01/98	---	---	<0.0002	---	---	<0.002	---	---	---	---	---	---	0.0026
DV98-164	Calcite Fumarole	05/01/98	---	---	0.014	---	---	<0.002	---	---	---	---	---	---	0.0100
DV98-109	Senator Fumarole	10/24/98	---	---	0.0023	---	---	---	---	---	---	---	---	---	0.0040
DV98-165	Calcite Fumarole	10/25/98	---	---	0.0066	---	---	---	---	---	---	---	---	---	0.0104
DV98-166	South Bench Fumarole	10/26/98	---	---	0.0093	---	---	---	---	---	---	---	---	---	0.0008

Table 5: Continued

Sample	I	Mn	Mo	NH_4	Ni	NO_2	NO_3	Pb	PO_4	Rb	S	Sb	Se	S_2O_3	SO_4	Ti	Tl	V	Zn
Brines																			
DIXE102-W	---	<0.01	---	1.46	---	<0.05	<0.05	---	<0.1	0.71	---	---	---	---	0.97	---	---	---	---
DV96-8	0.043	<0.002	0.04	2.13	<0.002	<0.04	0.19	<0.002	<0.1	0.53	0.6	0.088	<0.0001	1.38	0.11	<0.002	---	0.013	<0.01
DV96-9	0.03	<0.002	0.06	1.84	<0.002	<0.04	<0.04	<0.002	<0.1	0.55	1.84	0.069	<0.0001	2.3	0.43	<0.002	---	0.009	<0.01
DV97-11	0.058	<0.002	0.1	1.88	<0.002	<0.05	<0.05	0.002	<0.1	0.61	11.3	0.0082	<0.001	2.3	0.33	<0.002	<0.005	0.011	<0.01
DV97-13	0.051	<0.002	0.08	1.82	<0.002	<0.05	<0.05	0.002	<0.1	0.69	14.3	0.0013	<0.001	2.87	0.43	<0.002	<0.005	0.012	0.01
DV97-14	0.057	<0.002	0.11	1.86	<0.002	<0.05	<0.05	0.002	<0.1	0.64	12.2	0.0069	<0.001	2.51	0.65	<0.002	<0.005	0.009	<0.01
DV97-16	0.055	<0.002	0.12	1.81	0.033	<0.05	<0.05	0.002	<0.1	0.61	10.8	0.0046	<0.001	2.53	0.22	<0.002	<0.005	0.011	<0.01
DV97-18	0.049	<0.002	0.09	1.67	<0.002	<0.05	<0.05	<0.002	<0.1	0.61	13.2	0.0005	<0.001	2.69	0.36	<0.002	<0.005	0.011	<0.01
DV97-20	0.054	<0.002	0.07	1.62	<0.002	<0.05	<0.05	0.002	<0.1	0.64	12.5	0.0092	<0.001	2.75	0.24	<0.002	<0.005	0.011	<0.01
DV97-23	0.055	<0.002	0.07	1.76	<0.002	<0.05	<0.05	0.002	<0.1	0.62	13.9	0.0036	<0.001	2.79	0.23	<0.002	<0.005	0.011	0.02
DV97-25	0.033	<0.002	0.023	1.79	<0.002	<0.05	<0.05	0.002	<0.1	0.57	25.7	0.011	<0.001	4.07	0.93	<0.002	<0.005	0.009	<0.01
DV97-26	0.032	<0.002	0.015	1.67	<0.002	<0.05	<0.05	0.002	<0.1	0.61	23.2	0.02	<0.001	3.68	0.71	<0.002	<0.005	0.011	<0.01
DV97-29	0.04	<0.002	0.023	1.64	<0.002	<0.05	<0.05	<0.002	<0.1	0.58	18.9	0.005	<0.001	3.61	0.63	<0.002	<0.005	0.011	<0.01
DV97-30	0.036	<0.002	0.026	1.63	<0.002	<0.05	<0.05	0.002	<0.1	0.61	17.5	0.0086	<0.001	3.74	0.94	<0.002	<0.005	0.01	<0.01
DV98-73	0.02	<0.002	0.06	1.51	<0.002	<0.05	<0.05	<0.002	<0.1	0.62	0.33	---	---	3.79	0.60	<0.002	---	0.009	<0.01
DV98-75	0.02	<0.002	0.03	1.54	<0.002	<0.05	<0.05	<0.002	<0.1	0.55	1.17	---	---	4.73	0.42	<0.002	---	0.007	<0.01
DV98-77	0.02	<0.002	0.05	1.51	<0.002	<0.05	<0.05	<0.002	<0.1	0.57	1.29	---	---	3.52	0.25	<0.002	---	0.009	<0.01
DV98-79	0.03	<0.002	0.05	1.49	<0.002	<0.05	<0.05	<0.002	<0.1	0.62	1.49	---	---	7.14	0.26	<0.002	---	0.008	<0.01
DV98-80	0.03	<0.002	0.05	1.56	<0.002	<0.05	<0.05	<0.002	<0.1	0.62	0.25	---	---	2.31	<0.05	<0.002	---	0.011	<0.01
DV98-82	0.03	<0.002	0.05	1.68	<0.002	<0.05	<0.05	<0.002	<0.1	0.58	0.33	---	---	2.27	<0.05	<0.002	---	0.009	<0.01
DV98-84	0.03	<0.002	0.06	1.97	<0.002	<0.05	<0.05	<0.002	<0.1	0.60	0.40	---	---	2.36	<0.05	<0.002	---	0.008	<0.01
DV98-86	0.03	<0.002	0.04	1.98	<0.002	<0.05	<0.05	<0.002	<0.1	0.62	0.20	---	---	2.35	<0.05	<0.002	---	0.010	<0.01
DV98-88	0.03	<0.002	0.08	2.15	<0.002	<0.05	<0.05	<0.002	<0.1	0.62	0.32	---	---	3.71	<0.05	<0.002	---	0.008	<0.01
DV98-90	0.03	<0.002	0.06	1.69	<0.002	<0.05	<0.05	<0.002	<0.1	0.62	0.61	---	---	3.68	<0.05	<0.002	---	0.009	<0.01
DV98-92	0.03	<0.002	0.07	1.83	<0.002	<0.05	<0.05	<0.002	<0.1	0.60	0.46	---	---	2.57	<0.05	<0.002	---	0.009	<0.01
DV98-95	0.03	<0.002	0.03	1.63	<0.002	<0.05	<0.05	<0.002	<0.1	0.55	0.25	---	---	2.88	<0.05	<0.002	---	0.008	<0.01
DV98-133	0.03	<0.002	0.039	1.94	<0.002	<0.05	0.17	<0.002	<0.1	0.56	2.51	---	---	4.02	<0.1	<0.002	---	0.011	<0.01
DV98-135	0.04	<0.002	0.068	1.20	<0.002	<0.05	0.45	0.002	<0.1	0.47	1.44	---	---	2.60	<0.1	<0.002	---	0.011	<0.01
DV98-138	0.03	<0.002	0.056	1.99	<0.002	<0.05	<0.05	<0.002	<0.1	0.53	1.83	---	---	3.50	<0.1	<0.002	---	0.008	<0.01
DV98-140	0.03	<0.002	0.049	1.60	<0.002	<0.05	<0.05	<0.002	<0.1	0.63	2.47	---	---	3.7	<0.1	<0.002	---	0.008	<0.01
DV98-141	0.03	<0.002	0.032	1.58	<0.002	<0.05	<0.05	0.002	<0.1	0.57	1.99	---	---	3.85	<0.1	<0.002	---	0.008	<0.01
DV98-145	0.04	0.003	0.048	1.81	<0.002	<0.05	0.12	<0.002	<0.1	0.56	0.63	---	---	2.38	<0.1	<0.002	---	0.010	<0.01
DV98-147	0.04	<0.002	0.052	1.88	<0.002	<0.05	<0.05	<0.002	<0.1	0.57	0.66	---	---	2.22	<0.1	<0.002	---	0.010	<0.01
DV98-148	0.05	<0.002	0.086	1.89	<0.002	<0.05	<0.05	<0.002	<0.1	0.57	0.42	---	---	2.50	<0.1	<0.002	---	0.010	<0.01
DV98-150	0.04	<0.002	0.079	1.89	<0.002	<0.05	<0.05	<0.002	<0.1	0.58	1.08	---	---	2.41	<0.1	<0.002	---	0.010	<0.01
DV98-152	0.05	<0.002	0.095	2.18	<0.002	<0.05	<0.05	<0.002	<0.1	0.57	0.75	---	---	2.31	<0.1	<0.002	---	0.011	<0.01
DV98-154	0.04	<0.002	0.072	2.37	<0.002	<0.05	<0.05	<0.002	<0.1	0.58	0.73	---	---	2.08	<0.1	<0.002	---	0.009	0.03
DV98-156	0.04	<0.002	0.091	1.70	<0.002	<0.05	<0.05	<0.002	<0.1	0.57	1.13	---	---	2.98	<0.1	<0.001	---	0.009	<0.01
DV98-159	0.04	<0.002	0.094	1.88	<0.002	<0.05	<0.05	<0.002	<0.1	0.56	0.89	---	---	2.87	<0.1	<0.002	---	0.012	<0.01
DV99-182	0.04	<0.002	0.05	1.78	<0.002	<0.05	<0.05	<0.002	<0.1	0.59	0.37	---	---	1.74	<0.1	<0.002	---	0.013	<0.01

Table 5: Continued

Sample	I	Mn	Mo	NH_4	Ni	NO_2	NO_3	Pb	PO_4	Rb	S	Sb	Se	S_2O_3	SO_3	Ti	Tl	V	Zn
DV99-184	0.04	<0.002	0.06	1.84	<0.002	<0.05	<0.05	<0.002	<0.1	0.63	0.37	---	---	2.06	<0.1	<0.002	---	0.011	<0.01
DV99-186	0.04	<0.002	0.06	1.7	<0.002	<0.05	<0.05	<0.002	<0.1	0.57	0.37	---	---	1.98	<0.1	<0.002	---	0.011	<0.01
DV99-188	0.04	<0.002	0.07	1.9	<0.002	<0.05	<0.05	<0.002	<0.1	0.65	0.37	---	---	1.41	<0.1	<0.002	---	0.01	<0.01
DV99-190	0.04	<0.002	0.09	1.93	<0.002	<0.05	<0.05	<0.002	<0.1	0.62	0.37	---	---	2.11	<0.1	<0.002	---	0.012	<0.01
DV99-194	0.04	<0.002	0.05	2.05	<0.002	<0.05	<0.05	<0.002	<0.1	0.63	0.37	---	---	2.3	<0.1	<0.002	---	0.013	<0.01
DV99-196	0.04	<0.002	0.08	1.74	<0.002	<0.05	<0.05	<0.002	<0.1	0.62	0.37	---	---	2.66	<0.1	<0.002	---	0.011	<0.01
DV99-197	0.04	<0.002	0.06	1.92	<0.002	<0.05	<0.05	<0.002	<0.1	0.63	0.37	---	---	2.63	<0.1	<0.002	---	0.012	<0.01
DV99-199	0.02	<0.002	0.06	1.66	<0.002	<0.05	<0.05	<0.002	<0.1	0.61	0.37	---	---	3.91	<0.1	<0.002	---	0.009	<0.01
DV99-200	0.02	<0.002	0.06	1.66	<0.002	<0.05	<0.05	<0.002	<0.1	0.62	0.37	---	---	3.74	<0.1	<0.002	---	0.01	<0.01
DV99-204	0.02	0.002	0.06	1.75	<0.002	<0.05	<0.05	<0.002	<0.1	0.65	0.37	---	---	3.74	<0.1	<0.002	---	0.01	<0.01
DV74782786-brine 2	0.03	<0.002	0.04	1.28	<0.002	<0.05	<0.05	<0.002	<0.1	0.6	---	---	---	<0.01	<0.1	<0.002	---	0.008	<0.01
DV76781986-brine 4	0.03	<0.002	0.03	1.42	<0.002	<0.05	<0.05	<0.002	<0.1	0.52	---	---	---	0.18	<0.1	<0.002	---	0.007	<0.01
DV453382186-brine 6	0.03	<0.002	0.04	1.39	<0.002	<0.05	<0.05	<0.002	<0.1	0.59	---	---	---	0.96	<0.1	<0.002	---	0.007	<0.01
DV73782886-brine 8	0.03	0.002	0.04	1.6	<0.002	<0.05	<0.05	<0.002	<0.1	0.56	---	---	---	0.13	<0.1	<0.002	---	0.008	<0.01
DV321882686-brine 10	0.05	0.004	0.05	1.92	<0.002	<0.05	<0.05	<0.002	<0.1	0.38	---	---	---	0.05	<0.1	<0.002	---	0.003	<0.01
DV651882686-brine 12	0.04	0.003	0.04	1.63	<0.002	<0.05	<0.05	<0.002	<0.1	0.31	---	---	---	0.08	<0.1	<0.002	---	0.008	<0.01
No number	0.15	0.047	0.02	0.1	<0.002	<0.05	<0.05	<0.002	<0.1	0.035	---	---	---	<0.01	<0.1	0.019	---	0.003	<0.01
Condensates																			
DIXE102-S	---	---	---	11.4	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.37	---	---	---	---
DV96-7	<0.005	0.016	<0.01	14.6	3.75	<0.02	<0.02	0.002	<0.05	0.03	---	0.0011	<0.0001	3.67	<0.05	<0.002	---	<0.002	0.07
DV96-10	<0.005	0.003	<0.01	12.7	<0.002	<0.02	<0.02	0.11	<0.05	0.026	---	0.0012	<0.0001	3.53	<0.05	<0.002	---	<0.002	0.48
DV97-12	---	---	---	11.6	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.17	---	---	---	---
DV97-15	---	---	---	12.3	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.2	---	---	---	---
DV97-17	---	---	---	13.3	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV97-19	---	---	---	13.5	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV97-21	---	---	---	10.8	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.11	---	---	---	---
DV97-22	---	---	---	9.51	---	<0.02	<0.02	---	0.63	---	---	---	---	---	<0.05	---	---	---	---
DV97-24	---	---	---	12.8	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.37	---	---	---	---
DV97-27	---	---	---	14.22	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.35	---	---	---	---
DV97-28	---	---	---	13.9	---	<0.05	<0.05	---	<0.1	---	---	---	---	---	<0.05	---	---	---	---
DV97-31	---	---	---	13.1	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV98-74	---	---	---	12.3	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.09	---	---	---	---
DV98-76	---	---	---	13.4	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.81	---	---	---	---
DV98-78	---	---	---	12.3	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV98-81	---	---	---	13.8	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV98-83	---	---	---	13.6	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV98-85	---	---	---	15.7	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV98-87	---	---	---	1.99	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.70	---	---	---	---
DV98-89	---	---	---	7.21	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV98-91	---	---	---	9.32	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.20	---	---	---	---

Table 5: Continued

Sample	I	Mn	Mo	NH_4	Ni	NO_2	NO_3	Pb	PO_4	Rb	S	Sb	Se	S_2O_3	SO_3	Ti	Tl	V	Zn
DV98-93	---	---	---	15.5	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV98-94	---	---	---	14.2	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.78	---	---	---	---
DV98-101	---	---	---	12.0	---	<0.02	0.03	---	<0.05	---	---	---	---	---	0.52	---	---	---	---
DV98-136	---	---	---	13.0	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.19	---	---	---	---
DV98-137	---	---	---	0.65	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.14	---	---	---	---
DV98-139	---	---	---	13.1	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.06	---	---	---	---
DV98-142	---	---	---	12.8	---	<0.02	<0.02	---	0.07	---	---	---	---	---	0.08	---	---	---	---
DV98-144	---	---	---	13.5	---	<0.02	0.02	---	<0.05	---	---	---	---	---	<0.02	---	---	---	---
DV98-146	---	---	---	13.9	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.02	---	---	---	---
DV98-149	---	---	---	15.6	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.02	---	---	---	---
DV98-151	---	---	---	14.9	---	<0.02	0.04	---	<0.05	---	---	---	---	---	0.06	---	---	---	---
DV98-153	---	---	---	15.0	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.02	---	---	---	---
DV98-155	---	---	---	10.3	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.02	---	---	---	---
DV98-157	---	---	---	11.3	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.07	---	---	---	---
DV98-158	---	---	---	13.9	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.03	---	---	---	---
DV99-183	---	---	---	14.9	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV99-185	---	---	---	13.9	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV99-187	---	---	---	13.9	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV99-189	---	---	---	16.2	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	0.18	---	---	---	---
DV99-191	---	---	---	15	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV99-192	---	---	---	14	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV99-193	---	---	---	15.6	---	<0.01	0.02	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV99-195	---	---	---	14.2	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV99-201	---	---	---	11.5	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	0.33	---	---	---	---
DV99-202	---	---	---	12.8	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV99-203	---	---	---	13.4	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV74782786-cond 1	---	---	---	13	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV76781986-cond 3	---	---	---	13.8	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV453382886-cond 5	---	---	---	11.9	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV73782886-cond 7	---	---	---	12.8	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV321882686-cond 9	---	---	---	17.2	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
DV651882686-cond 11	---	---	---	15.6	---	<0.01	<0.01	---	<0.02	---	---	---	---	---	<0.02	---	---	---	---
Injection Well/Power Plant Fluids																			
DV96-2	<0.005	0.012	0.02	26.3	<0.002	0.03	43.5	<0.002	<0.05	<0.002	0.04	<0.0001	0.0003	<0.01	<0.05	<0.002	---	<0.002	<0.01
DV96-3	0.04	0.004	0.08	1.02	0.004	<0.04	0.15	<0.002	<0.1	0.58	0.91	0.02	<0.0001	1.45	0.21	<0.002	---	0.013	0.01
DV96-4	0.034	0.004	0.06	2.9	<0.002	<0.04	4.01	<0.002	<0.1	0.57	0.53	0.12	<0.0001	1.11	0.22	<0.002	---	0.012	<0.01
DV96-5	0.043	<0.002	0.06	0.95	<0.002	<0.04	0.08	<0.002	<0.1	0.61	0.78	0.094	<0.0001	0.9	0.35	<0.002	---	0.012	<0.01
DV96-6	0.053	0.003	0.07	0.91	<0.002	<0.04	0.11	<0.002	<0.1	0.61	0.71	0.015	<0.0001	0.76	0.31	<0.002	---	0.012	<0.01
DV97-32	---	---	---	19.1	---	<0.02	57.4	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV97-33	0.056	<0.002	0.059	0.82	<0.002	<0.05	<0.05	0.002	<0.1	0.73	8.91	0.046	<0.001	1.76	0.27	<0.002	<0.005	0.012	<0.01

Table 5: Continued

Sample	I	Mn	Mo	NH_4	Ni	NO_2	NO_3	Pb	PO_4	Rb	S	Sb	Se	S_2O_3	SO_3	Ti	Tl	V	Zn
DV97-34	0.044	<0.002	0.07	3.22	<0.002	<0.05	7.08	0.002	<0.1	0.55	5.44	0.0084	<0.001	0.84	<0.05	<0.002	<0.005	0.01	<0.01
DV97-35	0.039	<0.002	0.06	3.23	<0.002	<0.05	7.35	0.002	<0.1	0.62	5.64	0.0081	<0.001	0.06	<0.05	<0.002	<0.005	0.01	0.02
DV97-36	0.051	<0.002	0.07	0.76	<0.002	<0.05	<0.05	0.002	<0.1	0.72	6.78	0.15	<0.001	<0.01	0.26	<0.002	<0.005	0.014	0.02
DV97-37	0.052	<0.002	0.08	0.81	<0.002	<0.05	<0.05	0.002	<0.1	0.72	6.4	0.022	<0.001	<0.01	0.39	<0.002	<0.005	0.013	<0.01
DV97-40	0.055	<0.002	0.1	0.73	<0.002	<0.05	<0.05	0.002	<0.1	0.74	7.8	0.026	<0.001	1.62	0.42	<0.002	<0.005	0.011	<0.01
DV97-41	---	---	---	19.6	---	<0.02	60.1	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV97-42	0.034	<0.002	0.041	1.51	<0.002	<0.05	<0.05	0.002	<0.1	0.61	19.9	0.055	<0.001	0.25	0.49	<0.002	<0.005	0.013	<0.01
DV98-97	---	---	---	19.1	---	0.03	30.3	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV98-98	0.04	<0.002	0.06	0.94	<0.002	<0.05	0.12	<0.002	<0.1	0.66	0.18	---	---	1.58	<0.05	<0.002	---	0.012	<0.01
DV98-143	0.04	<0.002	0.068	1.02	<0.002	<0.05	<0.05	<0.002	<0.1	0.59	0.28	---	---	1.55	<0.1	<0.002	---	0.009	<0.01
DV98-161	<0.01	0.008	<0.002	15.8	<0.002	10.2	18.0	0.002	<0.05	0.047	0.01	---	---	<0.01	<0.02	<0.002	---	<0.002	<0.01
DV98-162	0.05	<0.002	0.074	0.99	<0.002	<0.05	<0.05	<0.002	<0.1	0.63	0.15	---	---	1.25	<0.1	<0.002	---	0.012	<0.01
DV98-163	0.01	0.14	0.015	7.59	<0.002	5.35	9.24	<0.002	<0.1	0.076	<0.01	---	---	<0.01	<0.1	<0.002	---	0.006	0.03
DV99-198	0.02	0.16	0.006	7.88	<0.002	1.48	6.17	<0.002	<0.02	0.081	0.37	---	---	<0.01	<0.02	<0.002	---	0.012	0.03
DV99-205	0.05	<0.002	0.1	0.81	<0.002	<0.05	<0.05	<0.002	<0.1	0.062	0.37	---	---	1.57	<0.1	<0.002	---	0.013	<0.01
DV99-206	0.04	<0.002	0.09	0.81	<0.002	<0.05	0.07	<0.002	<0.1	0.69	0.37	---	---	1.59	<0.1	<0.002	---	0.012	<0.01
DV99-207	<0.01	<0.002	<0.002	16.5	<0.002	<0.01	15.2	<0.002	<0.02	0.006	0.37	---	---	<0.01	<0.02	<0.002	---	<0.002	<0.01
DV99-208	0.05	<0.002	0.1	0.89	<0.002	<0.05	0.29	<0.002	<0.1	0.66	0.37	---	---	1.43	<0.1	<0.002	---	0.014	<0.01
Other Geothermal and On-Site Water Wells																			
DV96-1	0.027	0.259	0.03	0.17	<0.002	<0.02	0.09	<0.002	<0.1	0.085	0.21	0.0002	<0.0001	<0.01	<0.1	<0.002		<0.002	0.01
DV97-38	0.029	0.22	0.021	0.23	<0.002	<0.02	<0.02	<0.002	<0.05	0.09	---	<0.0002	<0.001	<0.01	<0.05	<0.002	<0.005	<0.002	<0.01
DV97-39	0.037	0.28	0.01	0.56	<0.002	<0.02	<0.02	<0.002	<0.05	0.11	---	<0.0002	<0.001	<0.01	<0.05	0.009	<0.005	0.019	<0.01
DV97-53	<0.005	0.006	0.002	13.1	<0.002	<0.02	0.05	<0.002	<0.05	0.057	---	0.003	<0.001	3.68	0.31	0.002	---	<0.002	<0.01
DV97-54	0.008	0.009	0.006	18.6	0.011	<0.02	<0.02	<0.002	<0.05	0.008	---	0.012	<0.001	3.35	<0.05	0.003	---	<0.002	<0.01
DV97-55	<0.005	0.015	0.31	9.96	<0.002	<0.02	0.54	<0.002	<0.05	0.11	---	0.012	<0.001	1.77	<0.05	<0.002	---	<0.002	<0.01
DV97-59	0.052	0.017	0.005	3.43	<0.002	8.65	0.14	<0.002	<0.05	0.03	---	<0.001	<0.001	<0.01	<0.05	<0.002	---	<0.002	<0.01
DV97-67	0.033	0.13	<0.002	2.06	<0.002	<0.1	<0.05	<0.002	<0.1	0.91	---	<0.001	<0.001	1.57	<0.1	<0.002	---	<0.002	0.01
DV98-96	0.04	0.27	<0.01	0.53	<0.002	<0.02	0.14	---	<0.05	0.092	---	---	---	<0.01	<0.05	<0.002	---	0.018	<0.01
DV98-99	---	---	---	11.3	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV98-100	---	---	---	12.9	---	0.03	0.08	---	<0.05	---	---	---	---	---	0.66	---	---	---	---
DV98-102	---	---	---	14.7	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV98-103	0.03	0.017	<0.01	2.31	<0.002	<0.05	<0.05	<0.002	<0.1	0.28	1.05	---	---	5.16	<0.05	<0.002	---	<0.002	<0.01
DV98-104	0.03	0.12	<0.01	2.08	<0.002	<0.05	<0.05	<0.002	<0.1	0.80	0.87	---	---	2.25	<0.05	<0.002	---	<0.002	<0.01
DV98-111	0.02	0.007	0.01	2.02	<0.002	<0.05	<0.05	---	<0.1	0.065	0.03	---	---	0.84	<0.05	<0.002	---	<0.002	<0.01
DV98-122	<0.01	0.38	0.02	0.76	<0.002	<0.05	0.62	<0.002	2.43	0.090	---	---	---	<0.01	<0.05	<0.002	---	0.025	0.02
DV98-123	<0.01	0.44	<0.01	0.04	<0.002	<0.02	0.03	<0.002	<0.05	0.007	---	---	---	<0.01	<0.05	<0.002	---	<0.002	<0.01
Dixie Jack #1	0.03	0.14	0.045	1.04	0.003	<0.1	0.53	0.003	<0.05	0.09	---	---	---	<0.01	<0.05	<0.002	<0.002	0.009	<0.01
Dixie Jack #4	0.03	0.009	0.009	1.83	<0.002	<0.1	0.25	0.004	1.56	0.19	---	---	---	<0.01	<0.05	<0.002	<0.002	0.003	0.01
Dixie Jack #7	0.01	0.002	0.008	0.44	<0.002	0.05	0.86	<0.002	<0.05	0.011	---	---	---	<0.01	<0.05	<0.002	<0.002	<0.002	<0.01
DV98-160	0.03	0.27	0.025	0.48	<0.002	<0.02	0.35	<0.002	<0.05	0.11	<0.01	---	---	<0.01	<0.05	<0.002	---	0.021	<0.01

Table 5: Continued

Sample	I	Mn	Mo	NH_4	Ni	NO_2	NO_3	Pb	PO_4	Rb	S	Sb	Se	S_2O_3	SO_3	Ti	Tl	V	Zn
DV98-168	0.04	0.093	0.004	2.08	<0.002	<0.05	<0.05	<0.002	<0.1	0.20	---	---	---	1.60	<0.1	<0.002	---	<0.002	0.02
DV98-175	0.02	0.035	<0.002	1.95	<0.002	<0.05	<0.05	0.002	<0.1	0.051	---	---	---	<0.01	<0.1	<0.002	---	<0.002	<0.01
DV99-181	0.03	0.26	0.015	0.52	<0.002	1.77	0.19	<0.002	<0.1	0.13	0.37	---	---	<0.01	<0.1	<0.002	---	0.021	<0.01
Background Springs																			
DV97-46	0.012	0.045	<0.002	0.11	<0.002	<0.02	2.32	0.002	<0.05	0.13	---	0.012	<0.001	<0.01	<0.05	<0.002	---	0.002	0.14
DV97-47	0.007	0.05	<0.002	0.69	<0.002	0.6	<0.02	0.002	<0.05	0.12	---	0.014	<0.001	<0.01	<0.05	<0.002	---	<0.002	0.32
DV97-48	0.012	0.016	<0.002	1.98	<0.002	0.21	<0.02	<0.002	<0.05	0.17	---	0.021	<0.001	<0.01	<0.05	<0.002	---	<0.002	<0.01
DV97-50	<0.005	0.007	0.004	0.1	<0.002	<0.02	0.72	<0.002	<0.05	0.002	---	0.001	<0.001	<0.01	<0.05	<0.002	---	0.015	<0.01
DV 97-51b	<0.005	0.002	0.009	0.05	<0.002	<0.02	<0.02	<0.002	<0.05	0.024	---	0.002	<0.001	<0.01	<0.05	<0.002	---	0.004	0.01
DV97-52	<0.005	0.006	0.007	0.05	0.025	<0.02	1.77	<0.002	0.11	0.013	---	<0.001	<0.001	<0.01	<0.05	<0.002	---	0.012	0.01
DV97-56	<0.005	<0.002	0.004	0.08	<0.002	<0.05	<0.05	<0.002	<0.1	0.43	---	<0.001	<0.001	<0.01	<0.1	<0.002	---	0.002	<0.01
DV97-60	<0.005	0.002	<0.002	0.05	<0.002	<0.02	<0.02	<0.002	<0.05	0.057	---	<0.001	<0.001	<0.01	<0.05	<0.002	---	0.006	<0.01
DV97-61	<0.005	<0.002	<0.002	0.05	<0.002	<0.02	0.48	<0.002	<0.05	0.058	---	0.001	<0.001	<0.01	<0.05	0.028	---	0.006	<0.01
DV97-62	<0.005	<0.002	0.007	0.05	<0.002	<0.05	0.34	<0.002	<0.05	0.035	---	0.001	<0.001	<0.01	<0.05	0.018	---	0.003	<0.01
DV97-63	<0.005	0.007	0.003	0.25	<0.002	<0.05	<0.02	<0.002	<0.05	0.006	---	<0.001	<0.001	<0.01	<0.05	0.015	---	<0.002	<0.01
DV97-64	<0.005	<0.002	0.01	0.18	<0.002	<0.05	<0.02	<0.002	<0.05	<0.002	---	<0.001	<0.001	<0.01	<0.05	<0.002	---	0.009	<0.01
DV97-65	<0.005	<0.002	0.007	0.18	<0.002	<0.05	<0.02	<0.002	<0.05	<0.002	---	0.005	<0.001	<0.01	<0.05	<0.002	---	0.002	<0.01
DV97-66	<0.005	<0.002	<0.002	0.21	<0.002	<0.05	5.38	<0.002	<0.05	0.009	---	0.005	<0.001	<0.01	<0.05	<0.002	---	0.006	<0.01
DV97-68	<0.005	0.003	<0.002	0.14	<0.002	<0.1	<0.05	<0.002	<0.1	0.004	---	0.002	<0.001	<0.01	<0.1	0.006	---	0.018	<0.01
DV97-69	0.013	0.006	<0.002	0.2	<0.002	<0.05	0.07	<0.002	<0.05	0.048	---	0.001	<0.001	1.2	<0.05	<0.002	---	<0.002	<0.01
DV97-72	<0.005	<0.002	<0.002	0.16	<0.002	<0.02	<0.02	<0.002	<0.05	<0.002	---	<0.001	<0.001	<0.01	<0.05	<0.002	---	<0.002	<0.01
DV98-106	<0.01	<0.002	<0.01	<0.02	<0.002	<0.02	6.05	---	<0.05	0.006	---	---	---	<0.01	<0.05	<0.002	---	0.011	<0.01
DV98-112	<0.01	0.015	<0.01	1.97	<0.002	<0.02	<0.02	---	<0.05	0.16	---	---	---	<0.01	<0.05	<0.002	---	<0.002	<0.01
DV98-113	<0.01	<0.002	<0.01	0.02	<0.002	<0.02	0.38	---	<0.05	0.048	---	---	---	<0.01	<0.05	<0.002	---	0.004	<0.01
DV98-114	<0.01	<0.002	<0.01	<0.02	<0.002	<0.02	0.20	---	<0.05	0.030	---	---	---	<0.01	<0.05	<0.002	---	0.004	<0.01
DV98-117	<0.01	0.041	<0.01	0.51	<0.002	<0.02	0.11	---	<0.05	0.12	---	---	---	<0.01	<0.05	<0.002	---	<0.002	<0.01
DV98-118	<0.01	0.004	<0.01	<0.02	<0.002	<0.05	<0.05	<0.002	<0.1	0.006	---	---	---	<0.01	<0.05	<0.002	---	0.010	<0.01
DV98-120	<0.01	0.009	0.03	0.21	<0.002	<0.02	<0.02	<0.002	<0.05	0.056	---	---	---	1.32	0.13	0.004	---	<0.002	<0.01
DV98-128	<0.01	0.12	<0.01	1.55	<0.002	<0.02	<0.02	<0.002	<0.05	0.27	---	---	---	<0.01	<0.05	<0.002	---	<0.002	<0.01
DV98-129	<0.01	0.017	<0.01	0.04	<0.002	<0.02	<0.02	<0.002	<0.05	0.22	---	---	---	<0.01	<0.05	0.003	---	0.003	0.01
DV98-131	<0.01	0.002	0.04	<0.02	<0.002	<0.05	0.13	<0.002	<0.1	0.005	---	---	---	<0.01	<0.05	<0.002	---	0.039	<0.01
DV98-132	<0.01	<0.002	0.03	<0.02	<0.002	<0.02	<0.02	<0.002	<0.05	<0.002	---	---	---	<0.01	<0.05	<0.002	---	0.015	<0.01
DV98-169	<0.01	<0.002	<0.002	0.05	<0.002	<0.02	<0.02	<0.002	<0.05	<0.002	---	---	---	<0.01	<0.05	<0.002	---	0.003	<0.01
DV98-170	<0.01	<0.002	<0.002	0.03	<0.002	<0.02	<0.02	0.003	0.15	<0.002	---	---	---	<0.01	<0.05	<0.002	---	0.004	<0.01
DV98-176	<0.01	<0.002	<0.002	0.03	<0.002	<0.02	2.38	<0.002	<0.05	0.002	---	---	---	<0.01	<0.05	<0.002	---	<0.002	<0.01
DV98-177	<0.01	<0.002	<0.002	<0.02	<0.002	<0.02	<0.02	<0.002	0.24	0.006	---	---	---	<0.01	<0.05	<0.002	---	0.005	<0.01
DV98-178	<0.01	<0.002	<0.002	<0.02	<0.002	<0.02	1.53	<0.002	<0.05	0.004	---	---	---	<0.01	<0.05	<0.002	---	0.009	<0.01
DV98-179	<0.01	<0.002	<0.002	0.02	<0.002	<0.02	4.78	<0.002	<0.05	<0.002	---	---	---	<0.01	<0.05	<0.002	---	0.005	<0.01
DV99-209	<0.01	0.002	0.03	0.08	<0.002	<0.05	<0.01	0.002	<0.02	0.45	---	---	---	<0.01	<0.05	<0.002		<0.002	0.01
DV99-210	<0.01	0.22	<0.002	0.07	<0.002	<0.05	<0.01	0.003	<0.02	0.56	---	---	---	<0.01	<0.05	0.013		0.006	<0.01
DV99-211	<0.01	<0.002	<0.002	<0.02	<0.002	<0.01	0.04	<0.002	<0.02	0.06	---	---	---	<0.01	<0.02	<0.002		0.006	<0.01

Table 5: Continued

Sample	I	Mn	Mo	NH_4	Ni	NO_2	NO_3	Pb	PO_4	Rb	S	Sb	Se	S_2O_3	SO_3	Ti	Tl	V	Zn
Background Wells																			
DV97-49	0.023	0.03	<0.002	0.09	<0.002	<0.02	0.05	<0.002	<0.05	0.019	---	<0.001	<0.001	<0.01	<0.05	<0.002	---	<0.002	0.23
DV97-57	<0.005	0.007	<0.002	0.11	<0.002	<0.05	<0.02	<0.002	<0.05	0.026	---	0.002	<0.001	<0.01	<0.05	<0.002	---	<0.002	<0.01
DV97-70	<0.005	<0.002	0.023	0.06	<0.002	<0.02	0.81	<0.002	<0.05	0.002	---	0.001	<0.001	<0.01	<0.05	<0.002	---	0.02	<0.01
DV97-71	<0.005	<0.002	0.018	0.04	<0.002	<0.02	0.31	0.004	<0.05	0.002	---	<0.001	<0.001	<0.01	<0.05	<0.002	---	0.015	<0.01
DV98-115	<0.01	<0.002	<0.01	<0.02	<0.002	<0.02	7.27	---	<0.05	0.055	---	---	---	<0.01	<0.05	<0.002	---	0.013	0.01
DV98-116	<0.01	<0.002	0.02	<0.02	<0.002	<0.05	36.0	---	<0.1	0.005	---	---	---	<0.01	<0.05	<0.002	---	0.007	0.10
DV98-172	<0.01	0.34	<0.002	0.06	<0.002	<0.02	<0.02	<0.002	<0.05	<0.002	---	---	---	<0.01	<0.05	<0.002	---	<0.002	<0.01
Background Streams/Rain																			
DV97-58	<0.005	<0.002	0.005	0.31	<0.002	<0.05	<0.02	<0.002	<0.05	0.005	---	<0.001	<0.001	<0.01	<0.05	<0.002	---	0.005	<0.01
DV98-107	<0.01	<0.002	0.02	<0.02	<0.002	<0.02	0.78	---	<0.05	0.005	---	---	---	<0.01	<0.05	<0.002	---	0.009	<0.01
DV98-110	<0.01	0.002	0.02	<0.02	<0.002	<0.02	<0.02	---	<0.05	0.005	---	---	---	<0.01	<0.05	0.004	---	0.009	<0.01
DV98-119	<0.01	0.012	<0.01	<0.02	<0.002	<0.02	3.30	<0.002	<0.05	0.004	---	---	---	<0.01	<0.05	0.011	---	<0.002	<0.01
DV98-121	<0.01	0.003	0.02	<0.02	<0.002	<0.02	<0.02	<0.002	<0.05	0.002	---	---	---	<0.01	<0.05	<0.002	---	0.004	<0.01
DV98-125	<0.01	<0.002	0.04	0.22	<0.002	<0.02	<0.02	<0.002	<0.05	0.011	---	---	---	<0.01	<0.05	<0.002	---	<0.002	0.05
DV98-126	<0.01	0.019	0.02	0.04	<0.002	<0.02	<0.02	<0.002	<0.05	0.004	---	---	---	<0.01	<0.05	0.012	---	0.002	<0.01
DV98-127	<0.01	0.007	0.02	0.02	<0.002	<0.02	<0.02	<0.002	0.18	0.005	---	---	---	<0.01	<0.05	0.021	---	<0.002	<0.01
DV98-130	<0.01	0.003	<0.01	<0.02	<0.002	<0.02	<0.02	<0.002	<0.05	0.004	---	---	---	<0.01	<0.05	<0.002	---	<0.002	<0.01
DV98-171	<0.01	<0.002	<0.002	0.02	<0.002	<0.02	<0.02	<0.002	<0.05	<0.002	---	---	---	<0.01	<0.05	<0.002	---	0.002	<0.01
DV98-173	<0.01	0.002	0.003	<0.02	<0.002	<0.02	<0.02	<0.002	<0.05	0.003	---	---	---	<0.01	<0.05	<0.002	---	0.004	<0.01
DV98-174	<0.01	<0.002	<0.002	<0.02	<0.002	<0.05	<0.05	0.002	<0.1	0.002	---	---	---	<0.01	<0.1	<0.002	---	0.003	<0.01
DV98-180	<0.01	<0.002	<0.002	0.02	<0.002	<0.02	0.68	<0.002	0.12	<0.002	---	---	---	<0.01	<0.05	<0.002	---	0.006	<0.01
DV99-213	0.19	0.022	0.003	0.16	<0.002	<0.5	<0.5	0.003	<1	0.035	---	---	---	<0.01	<1	<0.002	---	0.006	0.01
Fumarole Condensates																			
DV97-43	---	0.045	---	---	---	0.02	<0.04	---	<0.05	---	---	---	---	---	<0.05	---	---	<0.002	<0.01
DV97-44	---	0.031	<0.002	---	0.002	0.03	0.48	<0.002	<0.05	0.01	---	---	---	---	<0.05	---	---	0.01	0.1
DV98-108	---	---	---	21.5	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	0.11	---	---	---	---
DV98-164	---	---	---	21.1	---	<0.02	0.06	---	<0.05	---	---	---	---	---	<0.02	---	---	---	---
DV98-109	---	---	---	58.1	---	<0.02	<0.02	---	<0.05	---	---	---	---	---	<0.05	---	---	---	---
DV98-165	---	---	---	56.0	---	<0.02	0.02	---	<0.05	---	---	---	---	---	<0.02	---	---	---	---
DV98-166	---	---	---	0.17	---	<0.02	0.06	---	<0.05	---	---	---	---	---	<0.02	---	---	---	---

Table 6: Analytical Results From Various Aluminum Samples And Extractions (All values in ppm).

Sample	Name or Description	Date	Total Al[a] (0.45 micron)	Ionized Al[b] (0.2 micron)	Ionized Al[b] (0.45 micron)	Ionized Al[c] (unfiltered)
Brines						
DIXE102-W	V102 + V103 Separator	10/02/95	1.41	---	---	---
DV96-8	76-7 Well	10/25/96	1.12	0.050	0.059	---
DV96-9	V101 Separator	10/25/96	1.54	0.101	0.0088	---
DV97-11	73-7 Well	10/29/97	1.04	0.063	---	---
DV97-13	84-7 Well	10/29/97	1.12	0.063	---	---
DV97-14	74-7 Well	10/29/97	1.13	0.082	---	---
DV97-16	V102 + V103 Separator	10/29/97	1.12	0.100	---	---
DV97-18	V105 Separator	10/29/97	1.05	0.126	---	---
DV97-20	82A-7 Well	10/29/97	1.02	0.043	---	---
DV97-23	73B-7 Well	10/30/97	1.08	0.049	---	---
DV97-25	27-33 Well	10/30/97	1.44	0.043	---	---
DV97-26	V101 Separator	10/30/97	1.47	0.055	---	---
DV97-29	37-33 Well	10/30/97	0.99	0.024	---	---
DV97-30	28-33 Well	10/30/97	1.27	0.060	---	---
DV98-73	V101 Separator	04/28/98	1.34	0.022	---	---
DV98-75	27-33 Well	04/28/98	1.29	0.028	---	---
DV98-77	37-33 Well	04/28/98	1.42	0.022	---	---
DV98-79	28-33 Well	04/28/98	1.39	0.032	---	---
DV98-80	76A-7 Well	04/28/98	1.04	0.035	---	---
DV98-82	V102 + V103 Separator	04/28/98	1.08	0.027	---	---
DV98-84	74-7 Well	04/28/98	1.09	0.039	---	---
DV98-86	63-7 Well	04/28/98	1.03	0.022	---	---
DV98-88	73-7 Well	04/29/98	1.04	0.057	---	---
DV98-90	82A-7 Well	04/29/98	1.01	0.054	---	---
DV98-92	V105 Separator	04/29/98	1.01	0.036	---	---
DV98-95	73B-7 Well	04/29/98	0.97	0.042	---	---
DV98-133	27-33 Well	10/20/98	1.31	0.032	---	---
DV98-135	27-33 Well	10/20/98	0.39	0.001	---	---
DV98-138	V101 Separator	10/21/98	1.32	0.041	---	---
DV98-140	37-33 Well	10/21/98	1.04	0.051	---	---
DV98-141	28-33 Well	10/21/98	1.36	0.044	---	---
DV98-145	76A-7 Well	10/22/98	1.00	0.022	---	---
DV98-147	63-7 Well	10/22/98	1.02	0.025	---	---
DV98-148	V102 + V103 Separator	10/22/98	1.01	0.038	---	---
DV98-150	74-7 Well	10/22/98	1.02	0.029	---	---
DV98-152	73-7 Well	10/22/98	1.02	0.026	---	---
DV98-154	73B-7 Well	10/22/98	0.81	0.037	---	---
DV98-156	82A-7 Well	10/23/98	0.90	0.061	---	---
DV98-159	V105 Separator	10/23/98	0.99	0.043	---	---
DV99-182	76A-7 Well	05/04/99	0.89	---	---	0.283
DV99-184	74-7 Well	05/04/99	0.97	---	---	0.233
DV99-186	V102 + V103 Separator	05/04/99	0.97	---	---	---
DV99-188	63-7 Well	05/04/99	0.98	---	---	0.33
DV99-190	73-7 Well	05/04/99	1.00	---	---	0.25
DV99-194	V105 Separator	05/05/99	0.95	---	---	0.261
DV99-196	82A-7 Well	05/05/99	0.86	---	---	0.29
DV99-197	73B-7 Well	05/05/99	0.96	---	---	0.242
DV99-199	37-33 Well	05/05/99	1.37	---	---	0.25

Table 6: Continued

Sample	Name or Description	Date	Total Al[a] (0.45 micron)	Ionized Al[b] (0.2 micron)	Ionized Al[b] (0.45 micron)	Ionized Al[c] (unfiltered)
DV99-200	28-33 Well	05/05/99	1.37	---	---	0.20
DV99-204	V101 Separator	05/05/99	1.30	---	---	0.33
DV74782786-brine 2	74-7 Well Archived	08/27/86	1.10	---	---	---
DV76781986-brine 4	76-7 Well Archived	08/19/86	1.19	---	---	---
DV453382186-brine 6	45-33 Well Archived	08/21/86	1.52	---	---	---
DV73782886-brine 8	73-7 Well Archived	08/28/86	0.99	---	---	---
DV321882686-brine 10	32-18 Well Archived	08/26/86	0.75	---	---	---
DV651882686-brine 12	65-18 Well Archived	08/26/86	0.69	---	---	---
No number	28-33 Well Archived	09/23/93	0.88	---	---	---
Injection Well/Power Plant Fluids						
DV96-2	Condensate from plant	10/24/96	0.14	0.0096	0.0106	---
DV96-3	LP Brine @ Plant	10/24/96	1.27	0.025	0.011	---
DV96-4	45-5 Injection Well	10/24/96	1.21	0.0079	0.0087	---
DV96-5	Lamb 1 Injection Well	10/24/96	1.39	0.0004	0.0004	---
DV96-6	65-18 Injection Well	10/24/96	1.35	0.0004	0.0014	---
DV97-33	LP Brine	10/31/97	1.36	0.04	---	---
DV97-34	25-5 + 45-5 Injectate	10/31/97	1.14	0.045	---	---
DV97-35	25-5 + 45-5 Injectate	10/31/97	1.14	0.103	---	---
DV97-36	65-18 Injection Well	10/31/97	1.32	0.0021	---	---
DV97-37	32-18 Injection Well	10/31/97	1.34	0.0036	---	---
DV97-40	LP Brine @ Plant	10/31/97	1.36	0.0081	---	---
DV97-42	High P Brine @ plant	10/31/97	1.38	0.038	---	---
DV98-98	LP Brine @ Plant	04/29/98	1.22	0.024	---	---
DV98-143	25-5 Injection Well	10/21/98	1.19	0.023	---	---
DV98-161	Condensate from plant	10/23/98	0.07	---	---	---
DV98-162	LP Brine @ Plant	10/23/98	1.22	0.040	---	---
DV98-163	65-18 Injection Well	10/23/98	<0.02	0.009	0.036	---
DV99-198	65-18 Injection Well	05/05/99	<0.02	---	---	0.001
DV99-205	25-5 + 45-5 Injectate	05/06/99	1.19	---	---	0.549
DV99-206	LP Brine @ Plant	05/06/99	1.26	---	---	0.774
DV99-207	Condensate from plant	05/06/99	0.04	---	---	0.004
DV99-208	52-18 + 41-18 Injectate	05/06/99	1.32	---	---	0.319
Other Geothermal and On-Site Water Wells						
DV96-1	Domestic Well	10/24/96	0.20	0.0026	---	---
DV97-38	Domestic Well	10/31/97	0.10	0.0028	---	---
DV97-39	Goerenger Well	10/31/97	0.18	0.022	---	---
DV97-53	46-32 Well	11/05/97	0.03	---	---	---
DV97-54	27-32 Well	11/05/97	0.04	---	---	---
DV97-55	27-32 Well	11/05/97	0.13	---	---	---
DV97-59	45-W-5 Well	11/05/97	0.03	---	---	---
DV97-67	66-21 Well	11/07/97	0.05	---	---	---
DV98-96	Goerenger Well	04/29/98	<0.02	0.0002	---	---
DV98-103	45-14 Well	04/30/98	0.23	---	---	---
DV98-104	66-21 Well	04/30/98	<0.02	---	---	---
DV98-111	62-21 Well	05/01/98	0.09	0.074	---	---
DV98-122	97-2 Well	05/05/98	<0.02	---	---	---
DV98-123	32-6 Well	05/06/98	0.04	---	---	---

Table 6: Continued

Sample	Name or Description	Date	Total Al[a] (0.45 micron)	Ionized Al[b] (0.2 micron)	Ionized Al[b] (0.45 micron)	Ionized Al[c] (unfiltered)
Dixie Jack #1	Gradient Well DJ #1	05/17/98	<0.02	---	---	---
Dixie Jack #4	Gradient Well DJ #4	05/20/98	0.07	---	---	---
Dixie Jack #7	Gradient Well DJ #7	05/14/98	0.03	---	---	---
DV98-160	Goerenger Well	10/23/98	<0.02	0.001	---	---
DV98-168	38-32 Well	10/26/98	<0.02	---	---	---
DV98-175	62-21 Well	10/28/98	<0.02	---	---	---
DV99-181	Goerenger Well	05/04/99	<0.02	---	---	0.004

[a]Analyses by ICP on filtered samples acidified with spectrographcially pure HNO_3 (see Table 3).

[b]Analyses by GFAA on filtered samples using MIBK extraction method of Barnes (1975).

[c]Analyses by GFAA on filtered samples using MIBK extraction method of Barnes (1975). Data were corrected using a "spike" procedure with duplicate unfiltered samples in which 1 ppm Al is added to a sample and the other is corrected.

Table 7: Miscellaneous Isotope Data for Various Geothermal and Regional Fluids from the Dixie Valley Region, Nevada.[a]

Sample	Name or Description	Date	^{3}H[b] (TU)	δD (USGS) (per mil)	$\delta^{18}O$ (USGS) (per mil)	δD (WM) (per mil)	$\delta^{18}O$ (WM) (per mil)	$\delta^{13}C$-HCO_3^- (per mil)	$\delta^{18}O$-SO_4^{2-}[c] (per mil)	$\delta^{18}O$ (Total Fluid) (per mil)	$\delta^{18}O$ (SO_4^{2-}-H_2O)[d] (°C)
Brines											
DV96-8	76-7 Well	10/25/96	0.07	---	---	-124	-14.2	-8.0	---	---	---
DV96-8b	76-7 Well	10/25/96	0.07	---	---	-119	-14.0	---	---	---	---
DV96-9	V101 Separator	10/25/96	0.12	---	---	-123	-14.3	-8.0	---	---	---
DV96-9b	V101 Separator	10/25/96	---	---	---	-123	-14.3	---	---	---	---
DV97-11	73-7 Well	10/29/97	---	-126	-13.21	-113	-13.9	-7.36	-7.94	-13.51	271
DV97-13	84-7 Well	10/29/97	---	-128	-13.37	-118	-14.0	-8.23	-8.34	---	---
DV97-14	74-7 Well	10/29/97	---	-126	-13.40	-118	-14.0	-7.74	-8.04	-13.97	261
DV97-16	V102 + V103 Separator	10/29/97	---	-126	-13.21	-123	-14.0	-7.66	-8.56	---	---
DV97-18	V105 Separator	10/29/97	**-0.07**	-125	-13.21	-122	-13.9	-8.66	-8.29	---	---
DV97-20	82A-7 Well	10/29/97	---	-127	-13.24	-123	-14.0	-7.39	-8.46	-13.29	293
DV97-23	73B-7 Well	10/30/97	0.38	-125	-13.14	-125	-13.9	-8.06	-7.96	-13.52	271
DV97-25	27-33 Well	10/30/97	0.38	-128	-13.96	-125	-14.7	-7.85	-9.05	-14.40	277
DV97-26	V101 Separator	10/30/97	0.10	-129	-13.72	-124	-14.5	-7.23	-8.86	---	---
DV97-29	37-33 Well	10/30/97	0.48	-129	-13.79	-124	-14.5	-7.35	-9.01	-14.24	281
DV97-30	28-33 Well	10/30/97	---	-126	-13.75	-124	-14.5	-6.91	-9.21	-14.17	289
DV98-73	V101 Separator	04/28/98	---	-126	-13.80	---	---	-7.02	---	-14.24	---
DV98-75	27-33 Well	04/28/98	---	-126	-13.89	---	---	-7.28	---	-14.33	---
DV98-77	37-33 Well	04/28/98	---	-127	-13.76	---	---	-7.05	-9.07	-14.19	284
DV98-79	28-33 Well	04/28/98	---	-127	-13.75	---	---	-7.60	-8.89	---	---
DV98-80	76A-7 Well	04/28/98	---	-125	-13.33	---	---	-6.85	-8.45	-13.82	277
DV98-82	V102 + V103 Separator	04/28/98	---	-124	-13.21	---	---	-6.72	---	-13.63	---
DV98-84	74-7 Well	04/28/98	---	-125	-13.27	---	---	-6.60	-8.49	-13.74	278
DV98-86	63-7 Well	04/28/98	0.48	-125	-13.10	---	---	-7.64	-8.07	-13.55	273
DV98-88	73-7 Well	04/29/98	---	-125	-13.11	---	---	-7.67	---	-13.19	---
DV98-90	82A-7 Well	04/29/98	---	-125	-13.24	---	---	-8.58	-8.32	-13.44	284
DV98-92	V105 Separator	04/29/98	---	-124	-13.12	---	---	-6.58	---	-13.55	---
DV98-95	73B-7 Well	04/29/98	---	-126	-13.17	---	---	-7.95	-8.16	-13.60	275
DV98-133	27-33 Well	10/20/98	---	-129	-14.01	---	---	-7.28	---	---	---
DV98-135	27-33 Well	10/20/98	0.04	-127	-13.81	---	---	-6.26	-9.48	---	---
DV98-138	V101 Separator	10/21/98	---	-127	-13.71	---	---	-7.17	---	---	---
DV98-140	37-33 Well	10/21/98	0.08	-127	-13.76	---	---	-6.98	-8.69	---	---
DV98-141	28-33 Well	10/21/98	---	-127	-13.69	---	---	-7.24	-9.05	---	---
DV98-145	76A-7 Well	10/22/98	0.11	-126	-13.27	---	---	-7.26	-8.55	---	---
DV98-147	63-7 Well	10/22/98	0.33	-124	-12.97	---	---	-7.48	-8.51	---	---
DV98-148	V102 + V103 Separator	10/22/98	---	-125	-13.09	---	---	-7.38	---	---	---
DV98-150	74-7 Well	10/22/98	---	-126	-13.23	---	---	-8.78	-8.44	---	---
DV98-152	73-7 Well	10/22/98	---	-125	-12.96	---	---	-8.21	-8.60	---	---
DV98-154	73B-7 Well	10/22/98	---	-126	-13.14	---	---	-7.52	-7.88	---	---
DV98-156	82A-7 Well	10/23/98	---	-125	-13.14	---	---	-7.09	-7.75	---	---
DV98-159	V105 Separator	10/23/98	---	-125	-13.07	---	---	-7.37	---	---	---
DV99-182	76A-7 Well	05/04/99	---	-125	-13.21	---	---	-8.02	---	---	---

Table 7: Continued

Sample	Name or Description	Date	^{3}H[b] (TU)	δD (USGS) (per mil)	$\delta^{18}O$ (USGS) (per mil)	δD (WM) (per mil)	$\delta^{18}O$ (WM) (per mil)	$\delta^{13}C\text{-}HCO_3^-$ (per mil)	$\delta^{18}O\text{-}SO_4^{2-}$ (per mil)	$\delta^{18}O$ (Total Fluid) (per mil)	$\delta^{18}O$ (SO_4^{2-}-H_2O)[d] (°C)
DV99-184	74-7 Well	05/04/99	---	-126	-13.08	---	---	-6.87	-8.28	---	---
DV99-186	V102 + V103 Separator	05/04/99	---	-125	-13.10	---	---	-6.88	-7.82	---	---
DV99-188	63-7 Well	05/04/99	---	-125	-12.96	---	---	-8.01	---	---	---
DV99-190	73-7 Well	05/04/99	---	-124	-12.89	---	---	---	---	---	---
DV99-194	V105 Separator	05/05/99	---	-124	-13.04	---	---	-8.66	-8.08	---	---
DV99-196	82A-7 Well	05/05/99	---	-125	-13.07	---	---	-6.54	---	---	---
DV99-197	73B-7 Well	05/05/99	---	-124	-12.97	---	---	-7.13	-8.25	---	---
DV99-199	37-33 Well	05/05/99	---	-126	-13.80	---	---	-6.86	-9.00	---	---
DV99-200	28-33 Well	05/05/99	---	-127	-13.71	---	---	-6.67	---	---	---
DV99-204	V101 Separator	05/05/99	---	-128	-13.71	---	---	-6.97	-8.80	---	---
DV74782786-brine 2	74-7 Well Archived	08/27/86	---	-130	-14.11	---	---	---	**-8.31**	-14.76	**247**
DV76781986-brine 4	76-7 Well Archived	08/19/86	---	-130	-14.09	---	---	---	**-8.50**	-14.71	**254**
DV453382186-brine 6	45-33 Well Archived	08/21/86	---	-131	-14.44	---	---	---	---	-14.96	---
DV73782886-brine 8	73-7 Well Archived	08/28/86	---	-129	-14.20	---	---	---	**-8.27**	-14.91	**243**
DV321882686-brine 10	32-18 Well Archived	08/26/86	---	-130	-14.07	---	---	---	---	-14.51	---
DV651882686-brine 12	65-18 Well Archived	08/26/86	---	-131	-14.11	---	---	---	---	-14.64	---
No number	28-33 Well Archived	09/23/93	---	-133	-16.46	---	---	---	---	---	---
Mean brine temp., °C	Sulfate-oxygen geothermometer	n = 3	---	---	---	---	---	---	---	---	**248 ± 5**
Condensates											
DV96-7	76-7 Well	10/25/96	---	---	---	-130	-16.9	---	---	---	---
DV96-7b	76-7 Well	10/25/96	---	---	---	-130	-16.9	---	---	---	---
DV96-10	V101 Separator	10/25/96	---	---	---	-127	-17.1	---	---	---	---
DV96-10b	V101 Separator	10/25/96	---	---	---	-131	-17.2	-5.70	---	---	---
DV97-12	73-7 Well	10/29/97	---	-130	-15.11	-117	-15.5	---	---	---	---
DV97-15	74-7 Well	10/29/97	---	-133	-15.79	-134	-16.7	---	---	---	---
DV97-17	V102 + V103 Separator	10/29/97	---	-133	-16.18	-127	-16.9	---	---	---	---
DV97-19	V105 Separator	10/29/97	---	-133	-16.13	-114	-11.2	---	---	---	---
DV97-21	82A-7 Well	10/29/97	---	-126	-13.58	-127	-16.2	---	---	---	---
DV97-22	73B-7 Well	10/29/97	---	-132	-15.46	-130	-17.2	---	---	---	---
DV97-24	V101 Separator	10/30/97	---	-135	-16.47	-128	-17.3	---	---	---	---
DV97-27	27-33 Well	10/30/97	---	-135	-16.77	-130	-17.4	---	---	---	---
DV97-28	37-33 Well	10/30/97	---	-134	-16.58	-132	-17.3	---	---	---	---
DV97-31	28-33 Well	10/30/97	---	-134	-16.40	-129	-17	---	---	---	---
DV98-74	V101 Separator	04/28/98	---	-133	-16.60	---	---	---	---	---	---
DV98-76	27-33 Well	04/28/98	---	-134	-16.76	---	---	---	---	---	---
DV98-78	37-33 Well	04/28/98	---	-131	-16.53	---	---	---	---	---	---
DV98-81	76A-7 Well	04/28/98	---	-132	-16.18	---	---	---	---	---	---
DV98-83	V102 + V103 Separator	04/28/98	---	-131	-16.03	---	---	---	---	---	---
DV98-85	74-7 Well	04/28/98	---	-133	-16.24	---	---	---	---	---	---
DV98-87	63-7 Well	04/28/98	---	-132	-16.02	---	---	---	---	---	---
DV98-89	73-7 Well	04/29/98	---	-125	-13.64	---	---	---	---	---	---

Table 7: Continued

Sample	Name or Description	Date	$^{3}H^{b}$ (TU)	δD (USGS) (per mil)	$\delta^{18}O$ (USGS) (per mil)	δD (WM) (per mil)	$\delta^{18}O$ (WM) (per mil)	$\delta^{13}C\text{-}HCO_3^-$ (per mil)	$\delta^{18}O\text{-}SO_4^{2-}$ (per mil)	$\delta^{18}O$ (Total Fluid) (per mil)	$\delta^{18}O$ (SO_4^{2-}-H_2O)[d] (°C)
DV98-91	82A-7 Well	04/29/98	---	-128	-14.57	---	---	---	---	---	---
DV98-93	V105 Separator	04/29/98	---	-133	-15.97	---	---	---	---	---	---
DV98-94	73B-7 Well	04/29/98	---	-131	-15.99	---	---	---	---	---	---
DV98-101	28-33 Well	04/30/98	---	-133	-16.50	---	---	---	---	---	---
DV98-134	27-33 Well	10/20/98	---	-135	-16.90	---	---	---	---	---	---
DV98-136	27-33 Well	10/20/98	---	-137	-17.10	---	---	---	---	---	---
DV98-137	V101 Separator	10/21/98	---	-134	-16.58	---	---	---	---	---	---
DV98-139	37-33 Well	10/21/98	---	-134	-16.69	---	---	---	---	---	---
DV98-142	28-33 Well	10/21/98	---	-134	-16.60	---	---	---	---	---	---
DV98-144	76A-7 Well	10/22/98	---	-133	-16.20	---	---	---	---	---	---
DV98-146	V102 + V103 Separator	10/22/98	---	-132	-15.97	---	---	---	---	---	---
DV98-149	63-7 Well	10/22/98	---	-132	-15.89	---	---	---	---	---	---
DV98-151	74-7 Well	10/22/98	---	-133	-16.06	---	---	---	---	---	---
DV98-153	73-7 Well	10/22/98	---	-129	-15.26	---	---	---	---	---	---
DV98-155	73B-7 Well	10/22/98	---	-133	-15.74	---	---	---	---	---	---
DV98-157	82A-7 Well	10/23/98	---	-133	-15.83	---	---	---	---	---	---
DV98-158	V105 Separator	10/23/98	---	-132	-15.91	---	---	---	---	---	---
DV99-183	76A-7 Well	05/04/99	---	-133	-16.10	---	---	---	---	---	---
DV99-185	74-7 Well	05/04/99	---	-131	-15.69	---	---	---	---	---	---
DV99-187	V102 + V103 Separator	05/04/99	---	-132	-16.04	---	---	---	---	---	---
DV99-189	63-7 Well	05/04/99	---	-131	-15.93	---	---	---	---	---	---
DV99-191	73-7 Well	05/04/99	---	-130	-15.12	---	---	---	---	---	---
DV99-192	73B-7 Well	05/04/99	---	-127	-14.47	---	---	---	---	---	---
DV99-193	V105 Separator	05/05/99	---	-131	-15.86	---	---	---	---	---	---
DV99-195	82A-7 Well	05/05/99	---	-131	-15.66	---	---	---	---	---	---
DV99-201	28-33 Well	05/05/99	---	-133	-16.46	---	---	---	---	---	---
DV99-202	37-33 Well	05/05/99	---	-134	-16.59	---	---	---	---	---	---
DV99-203	V101 Separator	05/05/99	---	-134	-16.57	---	---	---	---	---	---
DV74782786-cond 1	74-7 Well Archived	08/27/86	---	-140	-17.39	---	---	---	---	---	---
DV76781986-cond 3	76-7 Well Archived	08/19/86	---	-141	-17.42	---	---	---	---	---	---
DV453382886-cond 5	45-33 Well Archived	08/28/86	---	-139	-17.56	---	---	---	---	---	---
DV73782886-cond 7	73-7 Well Archived	08/28/86	---	-141	-17.5	---	---	---	---	---	---
DV321882686-cond 9	32-18 Well Archived	08/26/86	---	-139	-17.3	---	---	---	---	---	---
DV651882686-cond 11	65-18 Well Archived	08/26/86	---	-142	-17.5	---	---	---	---	---	---
Injection Well/Power Plant Fluids											
DV96-2	Condensate from plant	10/24/96	0.35	---	---	-98	-10.7	---	---	---	---
DV96-3	LP Brine @ Plant	10/24/96	0.17	---	---	-119	-13.8	-5.80	---	---	---
DV96-4	45-5 Injection Well	10/24/96	0.19	---	---	-118	-13.5	---	---	---	---
DV96-5	Lamb 1 Injection Well	10/24/96	---	---	---	-122	-13.7	---	---	---	---
DV96-6	65-18 Injection Well	10/24/96	---	---	---	-121	-13.7	---	---	---	---
DV97-32	Condensate from plant	10/31/97	---	-95	-9.0	-94	-9.7	---	---	---	---
DV97-33	LP Brine @ Plant	10/31/97	---	-124	-13.0	-120	-13.8	-4.70	-8.80	---	*314*

Table 7: Continued

Sample	Name or Description	Date	$^3H^b$ (TU)	δD (USGS) (per mil)	$\delta^{18}O$ (USGS) (per mil)	δD (WM) (per mil)	$\delta^{18}O$ (WM) (per mil)	$\delta^{13}C\text{-}HCO_3^-$ (per mil)	$\delta^{18}O\text{-}SO_4^{2-}$ (per mil)	$\delta^{18}O$ (Total Fluid) (per mil)	$\delta^{18}O$ (SO_4^{2-}-H_2O)^d (°C)
DV97-34	25-5 + 45-5 Injectate	10/31/97	0.06	-120	-12.5	-116	-13.1	-8.20	-8.62	---	*326*
DV97-35	25-5 + 45-5 Injectate	10/31/97	---	-121	-12.4	---	---	-4.50	-8.80	---	*337*
DV97-36	65-18 Injection Well	10/31/97	---	-126	-13.0	---	---	-5.18	-9.26	---	*331*
DV97-37	32-18 Injection Well	10/31/97	---	-126	-13.0	---	---	-6.12	-9.22	---	*330*
DV97-40	LP Brine @ Plant	10/31/97	**-0.03**	-127	-12.9	---	---	-3.86	-8.62	---	*311*
DV97-41	*Condensate from plant*	10/31/97	---	-89	-8.5	---	---	---	---	---	---
DV97-42	High P Brine @ plant	10/31/97	---	-129	-13.8	---	---	-7.29	-9.02	---	*295*
DV98-97	Condensate from plant	04/29/98	---	-91	-8.5	---	---	---	---	---	---
DV98-98	LP Brine @ Plant	04/29/98	---	-124	-13.0	---	---	-5.99	---	---	---
DV98-143	25-5 Injection Well	10/21/98	---	-124	-13.0	---	---	-5.62	---	---	---
DV98-161	Condensate from plant	10/23/98	0.79	-95	-8.8	---	---	---	---	---	---
DV98-162	LP Brine @ Plant	10/23/98	---	-123	-12.9	---	---	-6.22	-8.11	---	*294*
DV98-163	65-18 Injection Well	10/23/98	0.62	-110	-12.1	---	---	-5.25	+1.22	---	*133*
DV99-198	65-18 Injection Well	05/05/99	---	-112	-12.7	---	---	-5.16	---	---	---
DV99-205	25-5 + 45-5 Injectate	05/06/99	**-0.10**	-123	-12.9	---	---	-4.99	-8.13	---	*295*
DV99-206	LP Brine @ Plant	05/06/99	---	-123	-12.8	---	---	-4.22	-8.05	---	*296*
DV99-207	Condensate from plant	05/06/99	1.08	-95	-8.9	---	---	---	---	---	---
DV99-208	52-18 + 41-18 Injectate	05/06/99	---	-123	-12.9	---	---	-2.47	-8.26	---	*299*
Other Geothermal and On-Site Water Wells											
DV96-1	Domestic Well	10/24/96	0.11	---	---	-122	-16.7	-6.40	---	---	---
DV97-38	Domestic Well	10/31/97	---	-125	-15.7	---	---	-5.70	+7.67	---	50
DV97-39	Goerenger Well	10/31/97	0.18	-127	-15.4	-121	-16	-5.49	+2.66	---	87
DV97-53	46-32 Well	11/05/97	---	-161	-22.3	---	---	---	---	---	---
DV97-54	27-32 Well	11/05/97	---	-134	-16.1	---	---	---	---	---	---
DV97-55	27-32 Well	11/05/97	0.41	-126	-14.1	---	---	-6.79	-9.02	-14.20	285
DV97-59	45-W-5 Well	11/05/97	---	-114	-12.7	---	---	---	---	---	---
DV97-67	66-21 Well	11/07/97	---	-124	-14.4	---	---	-6.12	-6.20	---	209
DV98-96	Goerenger Well	04/29/98	---	-127	-15.4	---	---	-5.26	+2.91	---	84
DV98-99	27-32 Well	04/29/98	---	-133	-16.0	---	---	---	---	---	---
DV98-100	46-32 Well	04/29/98	---	-148	-19.2	---	---	---	---	---	---
DV98-102	45-14 Well	04/30/98	---	-141	-18.4	---	---	---	---	---	---
DV98-103	45-14 Well	04/30/98	---	-128	-14.8	---	---	-6.58	-7.82	---	235
DV98-104	66-21 Well	04/30/98	---	-126	-14.5	---	---	-5.45	-6.21	---	207
DV98-111	62-21 Well	05/01/98	0.83	-135	-15.6	---	---	-4.41	-2.38	---	133
DV98-122	97-2 Well	05/05/98	---	-132	-15.0	---	---	---	---	---	---
DV98-123	32-6 Well	05/06/98	---	-120	-14.6	---	---	-8.07	+1.59	---	103
DV98-160	Goerenger Well	10/23/98	0.42	-128	-15.4	---	---	-5.28	---	---	---
DV98-168	38-32 Well	10/26/98	---	-134	-15.7	---	---	---	---	---	---
DV98-175	62-21 Well	10/28/98	---	-135	-15.6	---	---	---	---	---	---
DV99-181	Goerenger Well	05/04/99	---	-127	-15.3	---	---	-5.40	---	---	---

Table 7: Continued

Sample	Name or Description	Date	$^{3}H^{b}$ (TU)	δD (USGS) (per mil)	$\delta^{18}O$ (USGS) (per mil)	δD (WM) (per mil)	$\delta^{18}O$ (WM) (per mil)	$\delta^{13}C$-HCO_3^- (per mil)	$\delta^{18}O$-SO_4^{2-} (per mil)	$\delta^{18}O$ (Total Fluid) (per mil)	$\delta^{18}O$ (SO_4^{2-}-H_2O)[d] (°C)
Background Springs											
DV97-46	Sou Hot Spring	11/03/97	---	-129	-15.7	---	---	-1.23	-9.62	---	*257*
DV97-47	Sou Hot Spring	11/03/97	**-0.02**	-131	-16.0	---	---	-3.35	+10.48	---	33
DV97-48	Hyder Hot Spring	11/03/97	0.12	-135	-15.6	---	---	-3.87	+4.88	---	68
DV97-50	Edward Creek Spring	11/04/97	0.05	-122	-15.4	---	---	---	---	---	---
DV97-51a	Upper Old Man's Spr.	11/04/97	---	-112	-14.3	---	---	---	---	---	---
DV97-51b	Old Man Spring	11/04/97	0.09	-132	-16.8	---	---	-10.46	---	---	---
DV97-52	Horse Heaven Spring	11/04/97	---	-123	-15.4	---	---	-10.59	---	---	---
DV97-56	Dead Travertine Spring, Upper	11/05/97	---	-123	-14.9	---	---	-3.07	---	---	---
DV97-60	Fault Line Spring	11/06/97	0.02	-132	-16.4	---	---	-3.64	+3.46	---	73
DV97-61	Lower Ranch Hot Spring	11/06/97	0.07	-131	-16.4	---	---	-3.31	+1.63	---	87
DV97-62	McCoy Hot Spring	11/06/97	---	-130	-16.1	---	---	-3.96	+3.55	---	74
DV97-63	Kyle Spring	11/06/97	0.04	-122	-15.7	---	---	-6.46	---	---	---
DV97-64	Dago Spring	11/06/97	---	-120	-14.9	---	---	---	---	---	---
DV97-65	Mustang Spring	11/06/97	9.2	-116	-14.3	---	---	-9.54	---	---	---
DV97-66	Kitten Spring	11/06/97	0.11	-119	-15.2	---	---	-11.11	---	---	---
DV97-68	Big Horn Spring	11/07/97	---	-117	-14.7	---	---	-7.64	---	---	---
DV97-69	Dixie Hot Spring	11/07/97	0.16	-128	-16.1	---	---	-6.93	-2.87	---	133
DV97-72	Horse Creek Spring	11/07/97	10.2	-119	-15.5	---	---	-16.09	---	---	---
DV98-106	Stu's Seep	04/30/98	---	-111	-13.4	---	---	---	---	---	---
DV98-112	Hyder Hot Spring	04/30/98	---	-134	-15.5	---	---	-3.12	---	---	---
DV98-113	Lower Ranch Hot Spring	05/04/98	---	-130	-16.4	---	---	-2.93	-0.52	---	105
DV98-114	McCoy Hot Spring	05/04/98	---	-128	-16.2	---	---	-3.68	---	---	---
DV98-117	Sou Hot Spring	05/04/98	---	-129	-16.0	---	---	-2.60	+10.08	---	35
DV98-118	Big Horn Spring	05/04/98	---	-117	-14.7	---	---	-7.52	+7.52	---	57
DV98-120	Dixie Hot Spring	05/05/98	---	-127	-16.0	---	---	-6.67	---	---	---
DV98-128	Jersey Hot Spring	05/05/98	1.1	-128	-15.9	---	---	-3.51	-6.15	---	181
DV98-129	Upper Jersey Seep	05/06/98	---	-126	-15.5	---	---	---	---	---	---
DV98-131	Spring in Spring Canyon	05/06/98	---	-123	-15.8	---	---	-9.52	---	---	---
DV98-132	Wild Rose Spring	05/07/98	4.46	-118	-14.6	---	---	-11.98	+0.29	---	---
DV98-169	Lofthouse Spring	05/07/98	---	-114	-14.8	---	---	-11.41	---	---	---
DV98-170	Not-So-OK Spring	10/27/98	9.2	-113	-14.8	---	---	-11.95	---	---	---
DV98-176	War Canyon Spring	10/27/98	3.45	-126	-16.3	---	---	-12.99	---	---	---
DV98-177	Pine Spring	10/28/98	6.73	-119	-15.4	---	---	-13.46	---	---	---
DV98-178	Basalt Spring	10/28/98	---	-122	-16.0	---	---	-13.01	---	---	---
DV98-179	Upper Cherry Spring	10/28/98	---	-119	-15.6	---	---	-12.72	---	---	---
DV99-209	Dead Travertine Spring, Upper	05/07/99	---	-122	-15.0	---	---	-2.37	---	---	---
DV99-210	Dead Travertine Spring, Road	05/08/99	---	-117	-13.8	---	---	-3.34	---	---	---
DV99-211	Upper Spring, Lower Ranch	05/09/99	---	-130	-16.6	---	---	-3.69	---	---	---

Table 7: Continued

Sample	Name or Description	Date	^{3}H[b] (TU)	δD (USGS) (per mil)	$\delta^{18}O$ (USGS) (per mil)	δD (WM) (per mil)	$\delta^{18}O$ (WM) (per mil)	$\delta^{13}C$-HCO_3^- (per mil)	$\delta^{18}O$-SO_4^{2-} (per mil)	$\delta^{18}O$ (Total Fluid) (per mil)	$\delta^{18}O$ (SO_4^{2-}-H_2O)[d] (°C)
Background Wells											
DV97-49	Hole in the Wall #2 Well	11/04/97	0.46	-121	-15.3	---	---	-6.09	---	---	---
DV97-57	Bolivia Artesian Well	11/05/97	0.10	-121	-14.8	---	---	-8.96	+2.84	---	90
DV97-70	Flowing well @ AA Tank	11/07/97	---	-129	-16.6	---	---	-8.93	---	---	---
DV97-71	Shaw Well	11/07/97	**-0.04**	-134	-16.6	---	---	-9.47	---	---	---
DV98-115	Irrigation Well	05/04/98	0.75	-132	-15.9	---	---	-2.41	+0.75	---	---
DV98-116	Brinkerhoff Well	05/04/98	---	-128	-15.9	---	---	-4.41	---	---	---
DV98-172	Bernice Well	10/27/98	---	-112	-13.9	---	---	-9.22	---	---	---
Background Streams/Rain											
DV97-58	Cottonwood Creek	11/05/97	---	-118	-14.6	---	---	-9.95	---	---	---
DV98-107	Unnamed Ck by Stu's Seep	04/30/98	---	-109	-12.8	---	---	---	---	---	---
DV98-110	Cottonwood Creek	05/01/98	---	-115	-14.6	---	---	---	---	---	---
DV98-119	Unnamed Stream	05/05/98	---	-110	-13.7	---	---	-4.43	+3.94	---	---
DV98-121	White Rock Canyon	05/05/98	11.3	-109	-14.2	---	---	-7.19	---	---	---
DV98-125	Rain, Lizard Well Tank	05/06/98	11.2	-64	-8.0	---	---	---	---	---	---
DV98-126	Home Station Wash	05/06/98	---	-115	-15.2	---	---	-6.86	---	---	---
DV98-127	Cedar Canyon Wash	05/06/98	10.4	-111	-14.6	---	---	-6.50	---	---	---
DV98-130	Bucher Creek	05/06/98	---	-113	-14.9	---	---	---	---	---	---
DV98-171	Not-So-OK Creek	10/27/98	---	-115	-14.8	---	---	---	---	---	---
DV98-173	Bernice Creek	10/27/98	---	-112	-13.8	---	---	-8.41	---	---	---
DV98-174	Hoyt Creek	10/27/98	---	-110	-13.2	---	---	-5.99	---	---	---
DV98-180	Mt. Augusta Creek	10/28/98	---	-120	-15.8	---	---	-9.30	---	---	---
DV99-213	Dixie Salt Lake	05/10/99	---	-92	-7.8	---	---	1.67	---	---	---
Fumaroles											
DV97-43	Crack 4 Fumarole	11/03/97	---	-155	-20.1	---	---	---	---	---	---
DV97-44	Senator Fumarole	11/03/97	---	-137	-17.5	---	---	---	---	---	---
DV98-105	Unnamed Fumarole	04/30/98	---	-162	-21.9	---	---	---	---	---	---
DV98-108	Senator Fumarole	05/01/98	---	-145	-19.1	---	---	---	---	---	---
DV98-109	Calcite Fumarole	05/01/98	---	-161	-21.4	---	---	---	---	---	---
DV98-124	Crack 4 Fumarole	05/06/98	---	-160	-21.4	---	---	---	---	---	---
DV98-165	Calcite Fumarole	10/25/98	---	-167	-21.9	---	---	---	---	---	---
DV98-166	South Bench Fumarole	10/26/98	---	-166	-22.9	---	---	---	---	---	---

[a]Tritium analyzed by University of Miami (error = ±10%), stable isotopes of water analyzed by T. Coplan, USGS, Reston, Virginia (error = ±1 per mil deuterium and ±0.15 per mil oxygen-18) and Western Michigan University (error = ±1 per mil deuterium and ±0.25 per mil oxygen-18); carbon-13 analyses performed by Geochron Laboratories, Cambridge, Massachusetts (error = ±0.2 per mil); oxygen-18 in sulfate analyses by USGS (error = ±0.15 per mil).

[b]Negative values shown in bold should be considered to be 0.00 TU for any calculations.

[c]Values in bold are averages of 1997 and 1998 analyses for the same well to perform the sulfate-oxygen isotope geothermometer calculations.

[d]Sulfate oxygen isotope geothermometer of McKenzie and Truesdell (1977). Estimated reservoir temperatures of 1997 and 1998 brine samples are too high because the oxygen-18 value of unflashed reservoir water has increased due to production (Kennedy et al, 1999). Temperatures estimated from 1986 archived samples (bold) are most representative of the pre-production resevoir temperature and isotope composition. Temperatures in italics are probably not reliable due to reequilibration, evaporation, or mixing of different waters.

Table 8: Gas Geochemistry and Geothermometer Calculations for Various Geothermal and Regional Fluids, Dixie Valley Region, Nevada (values in mol% dry gas unless otherwise noted).

Sample	Name or Description	Date	Laboratory	Sampling Temp. (°C)	Steam Fraction (y)	Steam/Gas (molar)	H_2O (mol%, wet)	CO_2	H_2S	H_2	CH_4	C_2H_6	N_2	NH_3	O_2	Ar
Production and On-Site Wells																
DIXE102G	V102 + V103 Separator	10/02/95	LANL	---	0.153	1021	99.9	96.6	2.260	0.0000	0.003	0	0.159	0.909	0.0364	0.0022
DV96-7a	76-7 Well	10/25/96	LANL	163	0.184	604	99.8	97.5	0.560	0.0125	0.459	0.01790	0.802	0.687	0.0300	0.0134
DV96-7b	76-7 Well	10/25/96	LANL	163	---	703	99.9	96.9	0.633	0.0140	0.563	0.02086	1.011	0.830	0.0491	0.0173
DV96-7c	76-7 Well	10/25/96	LANL	163	---	496	99.8	96.6	0.563	0.0195	0.823	0.03027	1.272	0.626	0.0228	0.0325
DV96-10a	V101 Separator	10/25/96	LANL	160	0.159	512	99.8	96.6	1.147	0.0290	0.414	0.00901	1.318	0.619	0.0340	0.0252
DV96-10b	V101 Separator	10/25/96	LANL	160	---	1438	99.9	96.4	0.775	0.0164	0.225	0.00473	0.757	1.792	0.0201	0.0302
Average 1996 Geothermometer (n = 5)																
DV97-12 (2)	73-7 Well	10/29/97	USGS	---	0.158	816	99.9	93.9	1.976	0.0390	0.941	---	2.049	1.024	0.0038	0.0392
DV97-15	74-7 Well	10/29/97	LANL	---	0.163	542	99.8	96.8	0.739	0.0152	0.572	0.01879	0.966	0.408	0.0168	0.0542
DV97-15 (2)	74-7 Well	10/29/97	USGS	---	---	551	99.8	94.8	1.095	0.0238	1.039	---	2.058	0.879	0.0031	0.0401
DV97-17	V102 + V103 Separator	10/29/97	LANL	---	0.161	476	99.8	96.6	0.765	0.0122	0.634	0.02021	1.257	0.651	0.0082	0.0231
DV97-17	V102 + V103 Separator	10/29/97	USGS	---	---	487	99.8	95.6	0.683	0.0208	0.979	---	1.931	0.748	0.0000	0.0340
DV97-19	V105 Separator	10/29/97	USGS	---	0.151	545	99.8	95.7	0.816	0.0231	0.838	---	1.918	0.693	0.0022	0.0382
DV97-21 (1)	82A-7 Well	10/29/97	USGS	---	0.159	540	99.8	93.9	1.093	0.0177	0.802	---	3.64	0.535	0.0000	0.0579
DV97-22	73B-7 Well	10/29/97	USGS	---	0.160	626	99.8	91.2	1.145	0.0322	0.739	---	6.00	0.811	0.0000	0.0866
DV97-24	V101 Separator	10/30/97	USGS	---	0.164	476	99.8	93.6	1.026	0.0206	0.519	---	4.11	0.627	0.0000	0.0650
DV97-27	27-33 Well	10/30/97	USGS	---	0.157	376	99.7	95.2	0.929	0.0310	1.028	---	2.22	0.531	0.0230	0.0447
DV97-28	37-33 Well	10/30/97	USGS	---	0.159	448	99.8	94.5	1.200	0.0252	0.590	---	3.06	0.560	0.0014	0.0554
DV97-31	28-33 Well	10/30/97	USGS	---	0.156	214	99.5	44.8	0.981	0.0123	0.192	---	43.1	0.233	10.1	0.5582
Average 1997 Geothermometer (n = 11)																
DV98-74	V101 Separator	04/28/98	LANL	160	0.157	499	99.8	96.7	1.194	0.0160	0.458	0.00880	1.467	0.109	0.0064	0.0298
DV98-74	V101 Separator	04/28/98	USGS	---	---	441	99.8	95.0	1.188	0.0259	0.676	---	2.17	0.851	0.0000	0.0432
DV98-76	27-33 Well	04/28/98	USGS	---	0.155	369	99.7	95.1	1.068	0.0253	1.007	---	2.01	0.703	0.0000	0.0414
DV98-78	37-33 Well	04/28/98	USGS	---	0.156	435	99.8	95.2	1.207	0.0332	0.610	---	2.21	0.726	0.0000	0.0427
DV98-81	76A-7 Well	04/28/98	LANL	---	0.157	433	99.8	96.1	0.609	0.0140	1.050	0.03780	1.555	0.112	0.0065	0.0275
DV98-81	76A-7 Well	04/28/98	USGS	---	---	450	99.8	95.5	0.635	0.0173	1.248	---	1.690	0.839	0.0000	0.0331
DV98-83	V102 + V103 Separator	04/28/98	USGS	---	0.150	523	99.8	95.3	0.795	0.0212	1.041	---	1.796	0.970	0.0039	0.0350
DV98-85	74-7 Well	04/28/98	USGS	---	0.158	464	99.8	95.5	0.753	0.0235	1.103	---	1.782	0.742	0.0047	0.0353
DV98-87	63-7 Well	04/28/98	USGS	---	0.154	518	99.8	95.5	0.685	0.0343	0.959	---	1.746	1.001	0.0043	0.0336
DV98-93	V105 Separator	04/29/98	USGS	---	0.150	573	99.8	95.2	0.912	0.0210	0.864	---	1.860	1.056	0.0129	0.0369
DV98-94	73B-7 Well	04/29/98	USGS	---	0.152	567	99.8	95.2	1.081	0.0827	0.826	---	1.781	0.980	0.0000	0.0356
DV98-137	V101 Separator	10/21/98	LANL	---	0.160	453	99.8	96.0	1.167	0.0180	0.543	0.01240	1.630	0.516	0.0056	0.0309
DV98-139	37-33 Well	10/21/98	LANL	---	0.162	357	99.7	96.0	1.203	0.0309	0.581	0.01383	1.690	0.526	0.0059	0.0309
DV98-142	28-33 Well	10/21/98	LANL	---	---	423	99.8	96.0	0.966	0.0640	0.406	0.00620	1.766	0.602	0.0240	0.0300
DV98-144	76A-7 Well	10/22/98	LANL	---	0.158	462	99.8	95.8	0.643	0.0162	1.090	0.04098	1.603	0.669	0.0031	0.0295
DV98-146	V102 + V103 Separator	10/22/98	LANL	---	0.164	515	99.8	96.5	0.742	0.0118	0.584	0.01994	1.115	0.761	0.0078	0.0210
DV98-149	63-7 Well	10/22/98	LANL	---	---	462	99.8	94.5	0.517	0.0150	0.572	0.01830	1.230	0.826	0.0140	0.0210
DV98-153	73-7 Well	10/22/98	LANL	---	---	505	99.8	91.8	0.868	0.0260	0.457	0.01420	0.892	0.968	0.0180	0.0150
DV98-157	82A-7 Well	10/23/98	LANL	---	0.154	623	99.8	91.7	1.183	0.0164	0.749	0.02149	1.467	0.656	0.0051	0.0409
Average 1998 Geothermometer (n = 19)																
DV99-183	76A-7 Well	05/04/99	LANL	---	0.152	438	99.8	96.3	0.604	0.0110	0.914	0.0314	1.208	0.557	0.0029	0.0227
DV99-185	74-7 Well	05/04/99	LANL	---	0.160	383	99.7	96.6	0.544	0.0115	0.554	0.0198	0.898	0.471	0.0027	0.0169
DV99-187	V102 + V103 Separator	05/04/99	LANL	---	0.137	629	99.8	95.8	0.694	0.0118	0.860	0.0305	1.600	0.788	0.0243	0.0297
DV99-189	63-7 Well	05/04/99	LANL	---	0.152	459	99.8	97.1	0.494	0.0205	0.574	0.0197	1.070	0.620	0.0257	0.0195

Table 8: Continued

Sample	Name or Description	Date	Laboratory	Sampling Temp. (°C)	Steam Fraction (y)	Steam/Gas (molar)	H_2O (mol%, wet)	CO_2	H_2S	H_2	CH_4	C_2H_6	N_2	NH_3	O_2	Ar
DV99-193	V105 Separator	05/05/99	LANL	---	---	536	99.8	95.8	0.817	0.0180	0.724	0.0224	1.419	1.004	0.0140	0.0240
DV99-203	V101 Separator	05/05/99	LANL	---	---	400	99.7	96.2	0.916	0.0150	0.466	0.0087	1.535	0.735	0.0120	0.0270
DV99-191	73-7 Well	05/04/99	LANL	---	0.154	471	99.8	94.7	0.825	0.0143	0.300	0.0102	0.611	0.646	0.0194	0.0109
DV99-192	73B-7 Well	05/04/99	LANL	---	0.159	812	99.9	86.9	1.714	0.0333	0.544	0.0167	1.097	0.700	0.0171	0.0363
DV99-195	82A-7 Well	05/05/99	LANL	---	0.152	475	99.8	93.4	1.128	0.0091	0.426	0.0127	0.825	0.418	0.0058	0.0269
DV99-201	28-33 Well	05/05/99	LANL	---	0.159	257	99.6	97.8	0.596	0.0268	0.253	0.0044	0.909	0.311	0.0072	0.0231
DV99-202	37-33 Well	05/05/99	LANL	---	0.160	229	99.6	97.2	0.597	0.0258	0.407	0.0093	1.250	0.302	0.0164	0.0263
Average 1999 Geothermometer (n = 11)																
Other Geothermal Wells																
DV97-53	46-32 Well	11/05/97	LANL	155	---	27.7	96.5	97.8	0.357	1.454	0.085	0.00109	0.229	0.046	0.0024	0.0060
DV97-53	46-32 Well	11/05/97	USGS	155	---	21.0	95.5	97.4	0.333	1.866	0.102	---	0.285	0.038	0.0000	0.0076
DV97-54	27-32 Well	11/05/97	USGS	144	0.054	454	99.8	97.1	0.378	0.2884	0.264	---	1.171	0.782	0.0349	0.0263
DV98-99	27-32 Well	04/29/98	USGS	---	---	588	99.8	95.9	1.452	0.5163	0.247	---	0.819	0.981	0.0000	0.0197
DV98-102	45-14 Well	04/30/98	USGS	123.5	---	47.0	97.9	67.8	1.181	0.5455	2.11	---	26.1	0.079	1.72	0.4685
DV98-111	62-21 Well	04/30/98	USGS	75.5	---	---	---	77.1	0.0035	0.1769	1.92	0.0153	20.1	---	0.298	0.3610
Hot Springs																
DV98-112	Hyder Hot Spring	04/30/98	LANL	75.3	---	2.51	71.5	94.6	<0.004	<0.0006	0.536	0.00052	4.24	<0.0006	0.2462	0.1252
DV98-117	Sou Hot Spring	05/04/98	LANL	72.0	---	1.76	63.8	52.0	<0.02	<0.005	0.801	<0.005	46.1	<0.003	0.5132	0.8394
Fumaroles, Senator Fumarole and Dead Zone Areas																
DV97-43	Crack 4 Fumarole	11/03/97	USGS	97.6	---	225	99.6	94.4	0.754	1.231	0.111	---	3.15	0.112	0.180	0.0725
DV97-44	Senator Fumarole	11/03/97	LANL	97.3	---	412	99.8	91.8	1.274	0.1753	0.125	0.00053	4.08	1.501	0.8473	0.0810
DV97-44	Senator Fumarole	11/03/97	USGS	97.3	---	420	99.8	88.8	1.883	0.2310	0.144	---	5.39	2.389	1.138	0.121
DV97-45	Range Front Fumarole	11/03/97	USGS	97.3	---	357	99.7	92.3	1.931	0.2230	0.147	---	5.25	0.014	0.0000	0.119
DV98-108	Senator Fumarole	05/01/98	USGS	97.1	---	345	99.7	96.6	0.579	0.3005	0.204	---	1.406	0.888	0.0000	0.0335
DV98-108	Senator Fumarole	05/01/98	LANL	97.1	---	289	99.7	96.5	0.515	0.3361	0.234	0.00173	1.824	0.139	0.0339	0.0393
DV98-109	Calcite Fumarole	05/01/98	USGS	95.8	---	258	99.6	96.0	0.739	0.6738	0.102	---	0.862	1.595	0.0007	0.0214
DV98-124	Crack 4 Fumarole	05/06/98	USGS	97.6	---	119	98.8	90.9	0.406	1.1680	0.165	---	6.771	0.00746	0.4518	0.0969
DV98-164	Senator Fumarole	10/24/98	LANL	96.5	---	471	99.8	91.0	0.574	0.1591	0.192	0.00292	5.42	1.023	1.4601	0.112
DV98-164	Senator Fumarole	10/24/98	USGS	96.5	---	---	---	88.6	0.0084	0.2461	0.224	0.0038	8.01	---	2.796	0.159
DV98-165	Calcite Fumarole	10/25/98	LANL	97.0	---	265	99.6	94.0	0.718	0.4084	0.104	0.00137	2.69	1.428	0.2025	0.0515
DV98-166	South Bench Fumarole	10/26/98	LANL	97.4	---	407	99.8	92.1	1.035	0.2251	0.209	0.00262	5.21	0.017	0.8531	0.104
DV98-167	Lonely Fumarole	10/26/98	LANL	96.4	---	29.7	96.7	97.2	0.417	0.5530	0.136	0.00215	1.62	<0.0004	0.0546	0.0270
DV98-181[d]	Figure 8 Fumarole	10/29/98	LANL	97.4	---	3.19	76.1	31.1	0.069	0.0895	<0.007	<0.007	53.6	0.012	14.7	0.647
Average Geothermometer (n = 12)																
Fumaroles, Southwest of Cottonwood Canyon Near Inactive Sinter Deposits																
DV98-105	Unnamed Fumarole #1	04/30/98	LANL	99.5	---	16.4	94.2	33.5	<0.004	0.0263	0.132	<0.007	52.4	0.004	13.1	0.639
DV99-212	Unnamed Fumarole #2	05/10/99	LANL	96.9	---	26.9	96.4	32.2	0.104	<0.006	0.000	<0.006	49.1	0.019	12.6	0.519

[a] CO_2-H_2S-H_2-CH_4 geothermometer equations of D'Amore and Panichi (1980).
[b] CO_2-CH_4 geothermometer equation of Norman and Bernhardt (1981).
[c] H_2-Ar geothermometer equation of Giggenbach (1992); parentheses mean value is ignored for averaging.
[d] Two samples were mistakenly labeled 181; DV98-181 (Figure 8 Fumarole) and DV99-181 (Goerenger Well).

Table 8: Continued

Sample	He	Cl (as HCl)	F (as HF)	As	Hg	Total	$\delta^{13}C\text{-}CO_2$ (per mil)	Lab for ^{13}C	T D-P[a] (°C)	T CO_2-CH_4[b] (°C)	T H_2/Ar[c] (°C)	Comments
Production and On-Site Wells												
DIXE102G	0	0	---	---	---	100.0	---	---	---	---	---	
DV96-7a	0.00584	0.0	---	---	---	100.0	-5.3	Geochron	182	174	173	
DV96-7b	0.00219	0.0	---	---	---	100.0	-4.8	Geochron	184	167	168	
DV96-7c	0.00307	0.0	---	---	---	100.0	---	---	188	153	160	
DV96-10a	0.00331	0.0	---	---	---	100.0	-4.8	Geochron	211	178	179	
DV96-10b	0.00226	0.0	---	---	---	100.0	-4.5	Geochron	197	200	156	
Average 1996 Geothermometer (n = 5)									**192**	**174**	**167**	
DV97-12 (2)	0.00215	---	---	---	---	100.0	-5.1	USGS	219	147	175	
DV97-15	0.00261	0.319	0.113	5.30E-04	4.18E-05	100.0	---	---	188	166	136	
DV97-15 (2)	0.00219	---	---	---	---	100.0	-4.8	USGS	198	144	159	
DV97-17	0.00196	<0.03	<0.04	6.94E-05	7.94E-05	100.0	---	---	182	162	155	
DV97-17	0.00219	---	---	---	---	100.0	-4.8	USGS	190	146	160	
DV97-19	0.00216	---	---	---	---	100.0	-4.8	USGS	196	152	160	
DV97-21 (1)	0.00209	---	---	---	---	100.0	-4.7	USGS	194	153	139	H_2S analysis may be suspect
DV97-22	0.00182	---	---	---	---	100.0	-5.0	USGS	210	155	145	High N_2 indicates air contamination?
DV97-24	0.00198	---	---	---	---	100.0	-4.5	USGS	200	168	140	Corrected for air contamination
DV97-27	0.00244	---	---	---	---	100.0	-4.7	USGS	203	144	164	
DV97-28	0.00235	---	---	---	---	100.0	-4.5	USGS	205	164	151	
DV97-31	0.00000	---	---	---	---	99.9	-4.8	USGS	*110*	*178*	*59*	Miniseparator; air contamination
Average 1997 Geothermometer (n = 11)									**199**	**155**	**153**	
DV98-74	0.00220	0.0445	<0.02	1.04E-04	4.53E-05	100.0	---	---	196	174	156	
DV98-74	0.00260	---	---	---	---	100.0	-4.7	USGS	205	159	159	
DV98-76	0.00222	---	---	---	---	100.0	-4.4	USGS	200	145	160	
DV98-78	0.00241	---	---	---	---	100.0	-4.6	USGS	212	163	167	
DV98-81	0.00270	0.0330	0.441	2.58E-05	2.59E-05	100.0	---	---	179	144	155	
DV98-81	0.00253	---	---	---	---	100.0	-5.0	USGS	183	137	155	
DV98-83	0.00234	---	---	---	---	100.0	-4.9	USGS	192	144	160	
DV98-85	0.00225	---	---	---	---	100.0	-5.2	USGS	193	142	163	
DV98-87	0.00217	---	---	---	---	100.0	-5.0	USGS	202	147	176	
DV98-93	0.00215	---	---	---	---	100.0	-5.0	USGS	195	150	158	
DV98-94	0.00209	---	---	---	---	100.0	-4.9	USGS	231	152	201	
DV98-137	0.00271	0.0227	<0.02	4.24E-05	3.94E-05	100.0	---	---	197	168	159	
DV98-139	0.00258	0.0134	<0.02	7.09E-05	4.51E-05	100.0	---	---	210	165	175	
DV98-142	<0.0002	0.1370	<0.3	1.52E-04	8.01E-05	100.0	---	---	229	178	203	
DV98-144	0.00279	0.0642	0.039	4.71E-05	8.40E-05	100.0	---	---	183	142	157	
DV98-146	0.00212	0.224	<0.02	2.69E-03	4.03E-05	100.0	---	---	182	165	158	
DV98-149	0.00110	0.211	2.060	1.06E-04	2.19E-04	100.0	---	---	184	165	169	
DV98-153	0.00110	2.520	2.440	2.17E-03	9.33E-05	100.0	---	---	205	172	196	
DV98-157	0.00416	3.78	0.410	2.17E-05	1.52E-04	100.0	---	---	194	154	147	
Average 1998 Geothermometer (n = 19)							---	---	**199**	**156**	**167**	
DV99-183	0.0018	0.269	0.0827	1.01E-05	3.85E-05	100.0	---	---	175	149	153	
DV99-185	0.0017	0.860	0.0403	6.71E-04	1.08E-04	100.0	---	---	178	167	163	
DV99-187	0.0023	0.0999	0.0245	6.75E-05	8.98E-05	100.0	---	---	179	151	147	
DV99-189	0.0016	0.0508	0.0293	2.12E-05	5.81E-05	100.0	---	---	190	166	177	

Table 8: Continued

Sample	He	Cl (as HCl)	F (as HF)	As	Hg	Total	$\delta^{13}C\text{-}CO_2$ (per mil)	Lab for ^{13}C	T D-P[a] (°C)	T CO_2-CH_4[b] (°C)	T H_2/Ar[c] (°C)	Comments
DV99-193	0.0020	0.1929	<0.4	1.85E-04	5.09E-05	100.0	---	---	191	157	170	
DV99-203	0.0021	0.0677	<0.3	1.01E-04	5.75E-05	100.0	---	---	191	173	161	
DV99-191	0.0008	2.77	0.0898	2.46E-03	9.17E-05	100.0	---	---	193	188	183	
DV99-192	0.0021	8.56	0.342	8.47E-03	8.36E-05	100.0	---	---	220	164	172	
DV99-195	0.0014	3.50	0.213	3.36E-03	1.41E-04	100.0	---	---	184	175	142	
DV99-201	0.0014	0.0932	0.0000	1.13E-05	4.66E-05	100.0	---	---	204	196	180	
DV99-202	0.0017	0.0757	0.0748	9.03E-06	5.99E-05	100.0	---	---	200	178	174	
Average 1999 Geothermometer (n = 11)									**191**	**169**	**166**	
Other Geothermal Wells												
DV97-53	<0.0002	<0.002	<0.003	2.09E-05	3.45E-04	100.0	---	---	241	235	342	Well fluid is mostly vapor
DV97-53	0.00009	---	---	---	---	100.1	-4.54	USGS	245	229	342	Well fluid is mostly vapor
DV97-54	0.00063	---	---	---	---	100.0	-4.85	USGS	192	194	248	Miniseparator
DV98-99	0.00067	---	---	---	---	100.0	-5.16	USGS	223	196	274	
DV98-102	0.01194	---	---	---	---	100.0	-6.48	USGS	155	106	180	Miniseparator; air contamination
DV98-111	0.01850	---	---	---	---	100.0	---	---	128	114	157	Evacuated bottle; W.C. Evans analyst
Hot Springs												
DV98-112	0.00464	0.0044	0.243	1.43E-05	2.26E-06	100.0	---	---	87	167	13	Summit of deposit
DV98-117	0.03357	0.0130	0.0368	3.57E-05	6.67E-06	100.4	---	---	63	131	19	Hottest spring with gas
Fumaroles, Senator Fumarole and Dead Zone Areas												
DV97-43	0.00021	---	---	---	---	100.0	-4.4	USGS	245	224	261	
DV97-44	0.00106	<0.03	0.0822	7.31E-05	4.29E-03	100.0	---	---	201	219	198	
DV97-44	0.00071	---	---	---	---	100.0	-5.4	USGS	213	213	195	
DV97-45	0.00071	---	---	---	---	100.0	-5.3	---	211	213	194	
DV98-108	0.00092	---	---	---	---	100.0	-5.3	USGS	200	203	242	
DV98-108	0.00124	0.0164	0.388	5.02E-05	3.51E-04	100.0	---	---	200	198	240	
DV98-109	0.00029	---	---	---	---	100.0	-3.6	USGS	229	228	280	
DV98-124	0.00067	---	---	---	---	100.0	-5.12	USGS	233	209	257	
DV98-164	<0.0008	0.0958	<0.02	5.39E-05	3.02E-04	100.0	---	---	187	203	186	
DV98-164	0.0018	---	---	---	---	100.0	---	---	152	197	193	Evacuated bottle; W.C. Evans analyst
DV98-165	0.00069	0.0316	0.395	2.74E-05	1.52E-04	100.0	---	---	216	227	238	
DV98-166	0.00131	0.0328	0.221	1.44E-05	1.52E-05	100.0	---	---	201	201	198	
DV98-167	0.00096	0.0027	0.006	4.49E-06	4.13E-06	100.0	---	---	213	218	267	
DV98-181[d]	<0.007	0.0419	<0.02	5.86E-05	1.61E-06	100.2	---	---	175	355	115	
Average Geothermometer (n = 12)									**205**	**222**	**219**	
Fumaroles, Southwest of Cottonwood Canyon Near Inactive Sinter Deposits												
DV98-105	<0.007	0.0331	0.650	9.57E-05	6.50E-07	100.5	---	---	88	181	78	
DV99-212	<0.006	0.0386	5.04?	1.40E-04	9.2E--06	99.67	---	---	112	---	---	

Table 9: Trace Metal Analyses of Selected Dixie Valley Region Gas Samples (Values are in ppm unless otherwise noted).[a]

Sample	Name or Description	Ag	As	Au	Cu	Hg	Pb	Sb	Se	Zn	Density (g/cm^3)
Production Wells											
DV97-12(2)	73-7 Well	<0.01	0.205	<0.01	0.02	0.012	0.07	0.027	<0.0002	0.23	1.0719
DV97-15(2)	74-7 Well	<0.01	0.111	<0.01	0.02	0.010	<0.02	0.010	<0.0002	0.23	1.0783
DV97-17	V102 + V103 Separator	<0.01	0.020	<0.01	0.38	0.0039	<0.02	0.0038	<0.0002	0.21	1.0748
DV97-19	V105 Separator	0.050	0.007	<0.01	0.21	0.011	<0.02	0.0061	<0.0002	0.24	1.0758
DV97-21(1)	82A-7 Well	<0.01	0.084	<0.01	0.04	0.020	<0.02	0.0087	<0.0002	0.18	1.0436
DV97-21(2)	82A-7 Well	<0.01	0.215	<0.01	0.02	0.020	<0.02	0.032	<0.0002	0.15	1.0681
DV97-22	73B-7 Well	<0.01	0.079	<0.01	<0.01	0.012	<0.02	0.018	<0.0002	0.17	1.0820
DV97-24	V101 Separator	<0.01	0.008	<0.01	0.24	0.0035	<0.02	0.0094	0.0005	0.27	1.0660
DV97-27	27-33 Well	<0.01	0.008	<0.01	0.03	0.0056	<0.02	0.0062	<0.0002	0.21	1.0888
DV97-28	37-33 Well	<0.01	0.007	<0.01	<0.01	0.0070	<0.02	0.0064	0.0003	0.18	1.0942
DV97-31	28-33 Well	<0.01	0.078	<0.01	0.13	0.013	0.16	0.11	0.0007	0.61	1.1151
Other Geothermal Wells											
DV97-53	46-32 Well	<0.01	0.014	<0.01	0.02	0.56	<0.02	0.0084	<0.0002	0.24	1.1247
DV97-54	27-32 well	<0.01	0.010	<0.01	0.03	0.067	<0.02	0.010	<0.0002	0.16	1.0815
DV98-102	45-14 Well	<0.01	0.037	<0.01	0.03	0.20	<0.02	0.012	0.0005	0.02	1.1245
Fumaroles											
DV97-43	Crack 4 Fumarole	<0.01	0.008	<0.01	<0.01	0.11	<0.02	0.0076	<0.0002	0.17	1.0871
DV97-44	Senator Fumarole	<0.01	0.004	<0.01	0.02	0.18	<0.02	0.0062	0.0004	0.29	1.0778
DV97-45	Range Front Fumarole	<0.01	0.009	<0.01	<0.01	0.054	<0.02	0.0065	0.0005	0.24	1.0830
DV98-108	Senator Fumarole	<0.01	0.009	<0.01	<0.01	0.021	<0.02	0.0075	<0.0002	0.18	1.0844
DV98-109	Calcite Fumarole	<0.01	0.014	<0.01	0.02	0.028	0.03	0.023	<0.0002	0.18	1.0821
DV98-124	Crack 4 Fumarole	<0.01	0.009	<0.01	<0.01	0.023	<0.02	0.0090	<0.0002	0.06	1.1160

[a]Analyses performed on caustic solutions obtained from USGS samples (Table 8). Values are corrected for density and background (blank sample).

Table 10: Reconstructed Reservoir Compositions Used For Geothermometry Calculations (Values in ppm except where otherwise noted).[a]

Sample	Location	Date	y value	Brine Analyses							Reconstructed Reservoir Compositions						
				Cl	SiO_2	Ca	Mg[b]	Na	K	Li	Cl	SiO_2	Ca	Mg	Na	K	Li
DIXE102-W	V102 + V103 Separator	10/02/95	0.153	495	638.0	7.92	0.04	462	71.8	2.29	419.3	540.4	6.71	0.034	391.3	60.8	1.94
DV96-8	76-7 Well	10/25/96	0.184	524	599.0	8.53	0.026	474	69.5	2.29	427.6	488.8	6.96	0.021	386.8	56.7	1.87
DV96-9	V101 Separator	10/25/96	0.159	438	599.0	8.03	0.007	407	64	2.03	368.4	503.8	6.75	0.006	342.3	53.8	1.71
DV97-11	V101 Separator	10/29/97	0.158	594	580.0	8.96	0.02	508	74.4	2.45	500.1	488.4	7.54	0.017	427.7	62.6	2.06
DV97-13	84-7 Well	10/29/97	0.159	558	580.0	9.66	0.01	496	70.8	2.46	469.3	487.8	8.12	0.008	417.1	59.5	2.07
DV97-14	74-7 Well	10/29/97	0.163	584	586.0	9.2	**0.01**	500	72.2	2.43	488.8	490.5	7.70	0.008	418.5	60.4	2.03
DV97-16	V102 + V103 Separator	10/29/97	0.161	580	586.0	9.02	**0.01**	500	77.2	2.48	486.6	491.7	7.57	0.008	419.5	64.8	2.08
DV97-18	V105 Separator	10/29/97	0.151	574	595.0	9.53	0.02	502	73.5	2.29	487.3	505.2	8.09	0.017	426.2	62.4	1.94
DV97-20	82A-7 Well	10/29/97	0.159	575	556.0	9.63	**0.01**	495	72.6	2.22	483.6	467.6	8.10	0.008	416.3	61.1	1.87
DV97-23	73B-7 Well	10/30/97	0.160	571	569.0	9.09	**0.01**	499	76.4	2.34	479.6	478.0	7.64	0.008	419.2	64.2	1.97
DV97-25	27-33 Well	10/30/97	0.157	443	627.0	7.69	**0.01**	423	66.8	2.22	373.4	528.6	6.48	0.008	356.6	56.3	1.87
DV97-26	V101 Separator	10/30/97	0.164	463	627.0	7.95	**0.01**	439	68.8	2.27	387.1	524.2	6.65	0.008	367.0	57.5	1.90
DV97-29	37-33 Well	10/30/97	0.159	475	621.0	7.2	0.02	431	68.8	2.26	399.5	522.3	6.06	0.017	362.5	57.9	1.90
DV97-30	28-33 Well	10/30/97	0.156	470	642.0	7.4	0.02	429	70.1	2.24	396.7	541.8	6.25	0.017	362.1	59.2	1.89
DV98-73	V101 Separator	04/28/98	0.157	449	590.6	7.41	0.05	448	70.5	2.40	378.5	497.9	6.25	0.042	377.8	59.4	2.02
DV98-75	27-33 Well	04/28/98	0.155	421	571.4	6.97	**0.01**	430	60.2	2.27	355.7	482.8	5.89	0.008	363.4	50.9	1.92
DV98-77	37-33 Well	04/28/98	0.156	444	554.3	7.19	**0.01**	429	66.7	2.21	374.7	467.8	6.07	0.008	362.1	56.3	1.87
DV98-79	28-33 Well	04/28/98	0.157	446	550.0	7.50	**0.01**	447	67.8	2.28	376.0	463.6	6.32	0.008	376.4	57.2	1.92
DV98-80	76A-7 Well	04/28/98	0.157	556	541.4	8.56	0.01	498	75.6	2.58	468.7	456.4	7.22	0.008	419.8	63.7	2.17
DV98-82	V102 + V103 Separator	04/28/98	0.150	567	517.9	8.81	0.01	498	77.1	2.42	482.0	440.2	7.49	0.009	423.3	65.5	2.06
DV98-84	74-7 Well	04/28/98	0.158	564	530.7	8.65	0.02	491	75.2	2.53	474.9	446.9	7.28	0.017	413.7	63.3	2.13
DV98-86	63-7 Well	04/28/98	0.154	560	515.7	8.73	**0.01**	510	77.0	2.43	473.8	436.3	7.39	0.008	431.1	65.1	2.06
DV98-88	73-7 Well	04/29/98	0.154	547	517.9	8.44	0.02	498	76.8	2.40	462.8	438.1	7.14	0.017	421.3	65.0	2.03
DV98-90	82A-7 Well	04/29/98	0.153	561	520.0	8.95	**0.01**	501	76.1	2.22	475.2	440.5	7.58	0.008	424.6	64.5	1.88
DV98-92	V105 Separator	04/29/98	0.150	572	526.4	8.65	***0.01***	496	75.9	2.32	486.2	447.5	7.35	0.009	421.9	64.5	1.97
DV98-95	73B-7 Well	04/29/98	0.152	561	511.5	8.43	**0.01**	500	74.2	2.27	475.7	433.7	7.15	0.008	423.7	62.9	1.92
DV98-135	27-33 Well	10/20/98	0.184	496	582.1	9.46	**0.01**	467	60.0	2.61	404.7	475.0	7.72	0.008	381.1	49.0	2.13
DV98-138	V101 Separator	10/21/98	0.160	436	545.7	7.18	**0.01**	409	63.8	2.11	366.2	458.4	6.03	0.008	343.6	53.6	1.77
DV98-140	37-33 Well	10/21/98	0.162	432	526.4	6.08	0.21	398	66.3	2.02	362.0	441.2	5.10	0.176	333.5	55.6	1.69
DV98-141	28-33 Well	10/21/98	0.162	441	530.7	7.21	0.03	412	65.5	2.03	369.6	444.7	6.04	0.025	345.3	54.9	1.70
DV98-145	76A-7 Well	10/22/98	0.158	541	498.6	8.23	0.01	479	70.8	2.26	455.5	419.8	6.93	0.008	403.3	59.6	1.90
DV98-147	63-7 Well	10/22/98	0.155	565	500.8	8.87	0.01	496	71.9	2.21	477.4	423.1	7.50	0.008	419.1	60.8	1.87
DV98-148	V102 + V103 Separator	10/22/98	0.164	560	513.6	9.18	0.17	485	72.3	2.24	468.2	429.4	7.67	0.142	405.5	60.4	1.87
DV98-150	74-7 Well	10/22/98	0.160	554	517.9	8.90	0.04	486	74.1	2.38	465.4	435.0	7.48	0.034	408.2	62.2	2.00
DV98-152	73-7 Well	10/22/98	0.154	567	509.3	8.81	0.02	476	73.7	2.14	479.7	430.9	7.45	0.017	402.7	62.4	1.81
DV98-154	73B-7 Well	10/22/98	0.154	560	513.6	7.75	0.01	485	72.0	2.15	473.8	434.5	6.56	0.008	410.3	60.9	1.82
DV98-156	82A-7 Well	10/23/98	0.154	557	513.6	8.87	0.04	473	69.3	2.10	471.2	434.5	7.50	0.034	400.2	58.6	1.78
DV98-159	V105 Separator	10/23/98	0.146	560	507.2	9.39	0.34	480	69.4	2.14	478.2	433.1	8.02	0.290	409.9	59.3	1.83
DV99-182	76A-7 Well	05/04/99	0.152	576	524	8.52	0.24	508	73.7	2.51	488.4	444.6	7.22	0.204	430.8	62.5	2.13
DV99-184	74-7 Well	05/04/99	0.160	592	522	8.65	0.33	482	74.3	2.32	497.3	438.6	7.27	0.277	404.9	62.4	1.95
DV99-186	V102 + V103 Separator	05/04/99	0.137	594	522	8.47	**0.01**	496	72.7	2.33	512.6	450.6	7.31	0.009	428.0	62.7	2.01

Table 10: Continued

Sample	Location	Date	y value	Brine Analyses							Reconstructed Reservoir Compositions						
				Cl	SiO_2	Ca	Mg[b]	Na	K	Li	Cl	SiO_2	Ca	Mg	Na	K	Li
DV99-188	63-7 Well	05/04/99	0.152	604	516	8.48	**0.01**	504	73.6	2.26	512.2	437.3	7.19	0.008	427.4	62.4	1.92
DV99-190	73-7 Well	05/04/99	0.154	624	518	8.79	**0.01**	508	74.6	2.21	527.9	438.1	7.44	0.008	429.8	63.1	1.87
DV99-194	V105 Separator	05/05/99	0.138	620	514	9.51	**0.01**	514	74.4	2.23	534.4	442.7	8.20	0.009	443.1	64.1	1.92
DV99-196	82A-7 Well	05/05/99	0.152	623	503	8.89	**0.01**	518	72.2	2.25	528.3	426.5	7.54	0.008	439.3	61.2	1.91
DV99-197	73B-7 Well	05/05/99	0.159	624	520	8.78	**0.01**	516	74.4	2.22	524.8	437.3	7.38	0.008	434.0	62.6	1.87
DV99-199	37-33 Well	05/05/99	0.160	475	563	6.66	0.12	433	65.7	2.23	399.0	472.8	5.59	0.101	363.7	55.2	1.87
DV99-200	28-33 Well	05/05/99	0.159	483	561	6.68	0.02	432	66.2	2.24	406.2	471.5	5.62	0.017	363.3	55.7	1.88
DV99-204	V101 Separator	05/05/99	0.159	481	576	7.35	**0.01**	428	68.4	2.39	404.5	484.1	6.18	0.008	359.9	57.5	2.01
DV99-204	V101 Separator	05/05/99	0.159	481	576	7.35	**0.01**	428	68.4	2.39	404.5	484.1	6.18	0.008	359.9	57.5	2.01
DV74782786-brine 2	74-7 Well Archived	08/27/86	0.199	396	574	1.11	**0.01**	413	61.5	2.82	317.2	459.4	0.89	0.008	330.8	49.3	2.26
DV76781986-brine 4	76-7 Well Archived	08/19/86	0.187	402	563	1.53	**0.01**	403	54.2	2.79	326.8	457.6	1.24	0.008	327.6	44.1	2.27
DV453382186-brine 6	45-33 Well Archived	08/21/86	0.165	320	589	1.27	0.04	370	59.2	2.63	267.2	491.4	1.06	0.033	309.0	49.4	2.20
DV73782886-brine 8	73-7 Well Archived	08/28/86	0.198	363	548	1.24	**0.01**	380	59.2	2.55	291.1	439.4	0.99	0.008	304.8	47.5	2.05
No number	28-33 Well Archived	09/23/93	0.158	70.1	101	15.6	2.08	228	6.13	0.35	59.0	84.9	13.14	1.751	192.0	5.2	0.29
DV97-55	27-32 Well	11/05/97	0.054	87.6	58.2	5.56	0.03	95.5	13.1	0.7	82.9	55.1	5.26	0.028	90.3	12.4	0.66
DV98-99[c]	27-32 Well	04/29/98	0.054	84.8	61.2	5.91	0.91	88.0	11.6	0.48	80.2	57.9	5.59	0.861	83.2	11.0	0.45

[a]The reconstructed composition is calculated as C(r) =(1-y) * C(b), where C(b) = analyte concentration in the brine, C(r) = reconstructed analyte composition, and y = the steam fraction.

[b]Mg values shown in bold are "less than" values that are assumed to be 0.01 ppm for the calculations.

[c]The y value for DV98-99 uses the 1997 value.

Table 11: Chemical Geothermometry of Geothermal Production Fluids (Corrected for steam flash, Table 10; all values in °C).[a]

Sample	Name or description	Date	tCH	tQC	tNK(f)	tNL(d)	tL(d)	tML[b]	tKM[b]	<------- Na-K-Ca------>		<------ Na-K-Ca Mg correction ----->		
										t(beta1/3)[c]	t(beta4/3)[c]	R[b]	t(beta1/3)[c]	t(beta4/3)[c]
DV74782786-brine 2	74-7 Well Archived	08/27/86	235	245	254	221	185	**308**	**248**	252	348	**0.050**	252	348
DV76781986-brine 4	76-7 Well Archived	08/19/86	235	244	244	222	185	**308**	**241**	241	316	**0.056**	241	316
DV453382186-brine 6	45-33 Well Archived	08/21/86	243	251	261	225	184	256	212	254	335	0.208	254	335
DV73782886-brine 8	73-7 Well Archived	08/28/86	230	241	258	219	181	**301**	**246**	252	334	**0.052**	252	334
Average August 1986			***236***	***245***	***254***	***222***	***184***	***293***	***237***	***250***			***250***	
No number	28-33 Well Archived	09/23/93	100	128	125	101	115	84	72	123	94	15.466	99	94
DIXE102-W	V102 + V103 Separator	10/02/95	254	260	258	189	179	248	222	235	255	0.147	235	255
DV96-8	76-7 Well	10/25/96	242	250	252	186	178	260	230	231	248	0.097	231	248
DV96-9	V101 Separator	10/25/96	246	253	259	189	174	299	261	233	243	0.028	233	243
Average October 1996			***244***	***252***	***256***	***188***	***176***	***279***	***245***	***232***			***232***	
DV97-11	73-7 Well	10/29/97	242	250	252	186	181	275	241	232	253	0.070	232	253
DV97-13	84-7 Well	10/29/97	242	250	250	189	182	300	257	229	246	0.036	229	246
DV97-14	74-7 Well	10/29/97	243	251	251	187	181	**299**	**258**	230	249	**0.036**	230	249
DV97-16	V102 + V103 Separator	10/29/97	243	251	257	189	182	**300**	**261**	235	255	**0.034**	235	255
DV97-18	V105 Separator	10/29/97	246	253	252	181	179	270	240	231	250	0.070	231	250
DV97-20	82A-7 Well	10/29/97	237	246	252	180	178	**292**	**258**	231	247	**0.035**	231	247
DV97-23	73B-7 Well	10/30/97	240	248	256	184	180	**296**	**261**	234	254	**0.034**	234	254
DV97-25	27-33 Well	10/30/97	251	257	260	194	178	**292**	**253**	235	249	**0.039**	235	249
DV97-26	V101 Separator	10/30/97	250	257	259	193	178	**294**	**255**	235	250	**0.038**	235	250
DV97-29	37-33 Well	10/30/97	250	256	261	194	178	269	237	237	254	0.078	237	254
DV97-30	28-33 Well	10/30/97	254	260	263	194	178	269	238	238	254	0.076	238	254
Average October 1997			***245***	***253***	***256***	***188***	***179***	***287***	***251***	***233***			***233***	
DV98-73	V101 Separator	04/28/98	244	252	259	196	181	244	215	236	256	0.189	236	256
DV98-75	27-33 Well	04/28/98	241	249	248	195	179	**294**	**248**	228	246	**0.044**	228	246
DV98-77	37-33 Well	04/28/98	237	246	258	192	177	**292**	**253**	235	252	**0.040**	235	252
DV98-79	28-33 Well	04/28/98	236	246	256	192	179	**294**	**254**	234	252	**0.039**	234	252
DV98-80	76A-7 Well	04/28/98	235	244	256	193	184	303	260	235	256	0.035	235	256
DV98-82	V102 + V103 Separator	04/28/98	231	241	258	187	181	299	262	236	257	0.034	236	257
DV98-84	74-7 Well	04/28/98	232	242	256	192	183	277	241	235	255	0.070	235	255
DV98-86	63-7 Well	04/28/98	230	240	255	185	181	**299**	**261**	235	258	**0.034**	235	258
DV98-88	73-7 Well	04/29/98	230	241	257	186	181	273	242	236	258	0.069	236	258
DV98-90	82A-7 Well	04/29/98	231	241	256	179	178	**292**	**261**	234	255	**0.034**	234	255
DV98-92	V105 Separator	04/29/98	232	242	256	183	180	**296**	**261**	235	257	**0.035**	235	257
DV98-95	73B-7 Well	04/29/98	229	240	253	181	179	**294**	**259**	233	256	**0.035**	233	256
Average April 1998			***234***	***244***	***256***	***188***	***180***	***288***	***252***	***234***			***234***	
DV98-135	27-33 Well	10/20/98	239	248	239	200	183	**303**	**247**	221	232	**0.041**	221	232
DV98-138	V101 Separator	10/21/98	235	244	258	193	176	**288**	**251**	234	248	**0.041**	234	248
DV98-140	37-33 Well	10/21/98	231	241	265	191	174	194	181	240	258	0.857	240	258
DV98-141	28-33 Well	10/21/98	232	242	260	188	174	249	224	235	249	0.121	235	249

Table 11: Continued

Sample	Name or description	Date	tCH	tQC	tNK(f)	tNL(d)	tL(d)	tML[b]	tKM[b]	<------- Na-K-Ca------>		<------ Na-K-Ca Mg correction ----->		
										t(beta1/3)[c]	t(beta4/3)[c]	R[b]	t(beta1/3)[c]	t(beta4/3)[c]
DV98-145	76A-7 Well	10/22/98	226	237	253	184	178	293	257	232	253	0.037	232	253
DV98-147	63-7 Well	10/22/98	226	237	251	179	178	**292**	**258**	231	251	**0.036**	231	251
DV98-148	V102 + V103 Separator	10/22/98	228	239	254	182	178	205	189	232	249	0.603	228	246
DV98-150	74-7 Well	10/22/98	229	240	256	188	180	250	223	234	252	0.140	234	252
DV98-152	73-7 Well	10/22/98	228	239	258	180	176	266	240	235	252	0.071	235	252
DV98-154	73B-7 Well	10/22/98	229	240	253	179	177	290	258	234	257	0.037	234	257
DV98-156	82A-7 Well	10/23/98	229	240	252	179	176	242	220	231	247	0.148	231	247
DV98-159	V105 Separator	10/23/98	229	240	251	179	177	186	174	230	245	1.231	230	245
Average October 1998			***230***	***241***	***254***	***185***	***177***	***255***	***227***	***232***			***232***	
DV99-182	76A-7 Well	05/04/99	232	242	251	189	183	202	183	232	256	0.847	232	256
DV99-184	74-7 Well	05/04/99	230	241	257	186	179	190	177	235	254	1.151	235	254
DV99-186	V102 + V103 Separator	05/04/99	233	243	252	184	180	**297**	**259**	232	255	**0.036**	232	255
DV99-188	63-7 Well	05/04/99	230	240	252	180	179	**294**	**259**	232	255	**0.036**	232	255
DV99-190	73-7 Well	05/04/99	230	241	252	177	178	**292**	**260**	232	255	**0.035**	232	255
DV99-194	V105 Separator	05/05/99	231	241	251	177	179	**293**	**260**	231	252	**0.035**	231	252
DV99-196	82A-7 Well	05/05/99	227	238	247	177	178	**293**	**258**	229	252	**0.036**	229	252
DV99-197	73B-7 Well	05/05/99	230	240	250	176	178	**292**	**259**	232	255	**0.035**	232	255
DV99-199	37-33 Well	05/05/99	238	247	256	192	178	214	193	234	255	0.488	234	255
DV99-200	28-33 Well	05/05/99	238	247	257	193	178	268	235	235	255	0.081	235	255
DV99-204	V101 Separator	05/05/99	241	249	261	200	180	**298**	**255**	236	253	**0.039**	236	253
Average May 1999			***233***	***243***	***253***	***185***	***179***	***267***	***236***	***233***			***233***	
DV97-55	27-32 Monitoring Well	11/05/97	76	106	246	228	140	193	158	199	144	0.401	199	144
DV98-99	27-32 Monitoring Well	04/29/98	79	109	242	198	128	108	100	195	135	11.233	135	116
Average 27-32 Well			***78***	***108***	***244***	***213***	***134***	***151***	***129***	***197***			***167***	

[a]Calculations use the following geothermometers: tCH, tQC, and tNK(f) = the chalcedony, quartz (conductive) and Na/K equations of Fournier (1981); tNL(d) = the Na/Li (dilute) equation of Fouillac and Michard (1981); tL(d) and tML = the Li (dilute) and Mg/Li equations of Kharaka and Mariner (1989); tKM = the K/Mg equation of Giggenbach (1986); Na-K-Ca refers to the equations of Fournier and Truesdell, 1973 (see their paper for an explanation of the "beta" factor); Na-K-Ca Mg correction refers to the equations of Fournier and Potter, 1979 ("cool" means <70°C).

[b]Values in bold use assumed concentrations of 0.01 ppm Mg to perform the calculation (see Table 10).

[c]The underlined value is the preferred temperature according to the rules of the geothermometer.

Table 12: Chemical Geothermometry of Background Thermal/Mineral Springs and Wells.[a]

Sample	Name or Description	Date	Sampling Temp (°C)	tCH	tQC	tNK(f)	tNL(d)	tL(d)	tML	tKM	<------- Na-K-Ca------> t(beta1/3)[b]	t(beta4/3)[b]	<---- Na-K-Ca Mg correction ----> R	t(beta1/3)[b]	t(beta4/3)[b]
Springs															
DV97-46	Sou Hot Spring	11/03/97	57.0	85	114	271	180	145	75	84	196	104	22	83	80
DV97-47	Sou Hot Spring	11/03/97	72.6	83	113	270	179	143	74	83	195	102	21	86	82
DV98-117[c]	Sou Hot Spring[c]	05/04/98	72.0	80	109	264	**-29**	**37**	**-14**	84	193	104	22	83	80
DV97-48	Hyder Hot Spring	11/03/97	76.7	81	111	180	194	174	112	84	161	124	24	71	71
DV98-112	Hyder Hot Spring	04/30/98	75.3	79	109	174	179	171	109	84	158	125	24	72	72
DV97-56	Dead Travertine Spring, upper seep	11/05/97	17.4	44	76	254	211	181	85	80	194	116	37	39	43
DV99-210	Dead Travertine Spring, road seep	05/07/99	19-22	50	82	256	210	185	86	82	200	131	44	25	27
DV97-60	Fault Line Spring	11/06/97	28.8	62	93	192	125	121	57	64	154	83	29	55	68
DV97-61	Lower Ranch Hot Spring	11/06/97	40.8	62	92	199	117	114	55	67	161	93	33	45	56
DV98-113	Lower Ranch Hot Spring	05/04/98	40.4	56	87	191	110	114	55	67	157	94	33	46	56
DV99-211	Lower Ranch, upper spring	05/08/99	39.4	59	90	200	111	113	54	68	161	95	32	48	58
DV97-62	McCoy Hot Spring	11/06/97	46.2	55	87	163	69	98	33	53	136	72	37	39	57
DV98-114	McCoy Hot Spring	05/04/98	46.0	51	82	156	70	102	35	53	133	73	37	39	56
DV97-63	Kyle Spring	11/06/97	19.8	25	58	126	14	50	-8	24	101	26	43	37	26
DV97-68	Big Horn Spring	11/07/97	20.5	56	88	79	-4	74	9	35	87	58	47	36	58
DV98-118	Big Horn Spring	05/05/98	18.1	53	84	69	-14	81	11	39	84	68	46	37	68
DV97-69	Dixie Hot Spring	11/07/97	81.6	113	140	122	123	126	141	106	123	97	1	123	97
DV98-120	Dixie Hot Spring	05/05/98	83.5	114	141	117	117	126	130	97	120	98	3	120	98
DV98-128	Jersey Hot Spring	05/05/98	59.0	129	154	211	208	159	117	96	177	126	14	115	105
Wells															
DV96-1	Domestic Well	10/24/96	34.2	93	121	223	147	127	55	64	171	93	43	26	39
DV97-38	Domestic Well	10/24/96	29.2	95	123	233	149	126	56	66	177	95	41	29	40
DV97-39	Goerenger Well	10/31/97	27.8	83	112	208	169	151	72	69	172	114	50	Cool	Cool
DV98-160	Goerenger Well	10/23/98	26.7	81	110	207	158	147	67	67	171	113	54	Cool	Cool
DV98-96	Goerenger Well	04/29/98	28.3	82	112	205	161	151	71	69	172	117	52	Cool	Cool
DV99-181	Goerenger Well	05/04/99	27.7	82	111	198	159	152	70	67	167	114	54	Cool	Cool
DV97-57	Bolivia Artesian Well	11/05/97	28.8	42	74	127	81	98	25	30	107	42	52	Cool	42
DV97-59	45-W-5 Well	11/05/97	26.4	36	68	152	155	141	101	78	151	141	35	42	42
DV97-67	66-21 Well	11/07/97	55.5	199	215	210	188	215	225	182	202	216	1	200	215
DV98-104	66-21 Well	04/30/98	57.4	200	216	216	200	219	233	185	205	216	1	202	214
DV98-111	62-21 Well	04/30/98	75.5	147	170	138	74	131	124	124	153	184	4	151	171
DV98-122	97-2 Well	05/05/98	19.7	77	106	210	165	168	82	79	182	143	53	Cool	Cool
DV98-123	32-6 Well	05/06/98	32	-33	0	146	33	78	9	40	132	85	77	Cool	Cool
DV98-168	38-32 Well	10/26/98	87.7	144	168	223	174	154	131	121	194	161	6	167	148
DJ-1	Dixie Jack Gradient Well #1	05/17/98	49	64	95	181	170	173	121	99	166	140	15	108	103
DJ-4	Dixie Jack Gradient Well #4	05/20/98	77	121	147	206	173	160	151	131	187	168	4	178	164
DJ-7	Dixie Jack Gradient Well #7	05/14/98	55	-15	18	222	181	84	82	78	160	65	5	151	65

[a]Calculations use the geothermometers described on the bottom of Table 11.

[b]The underlined value is the preferred temperature according to the rules of the geothermometer.

[c]This sample assumes 0.01 ppm lithium to perform the geothermometer calculations shown in bold.

Table 13: Chemical Analyses of Scales and Precipitates from Dixie Valley Production Wells, Pipelines, and Test Beds.[a]

Sample	Name or description	Date	Al_2O_3	CaO	CO_2	Fe_2O_3	Na_2O	MgO	MnO	K_2O	P_2O_5	SiO_2	TiO_2
			wt %	wt %	wt %	wt %	wt %	wt %	wt %	wt %	wt %	wt %	wt %
Test bed scale	Inlet	1996	7.47	4.07	---	4.64	1.19	2.88	0.172	1.53	0.035	62.10	---
Test bed scale	Aged	1996	6.60	3.50	---	3.29	1.06	4.75	0.197	1.38	0.031	61.56	---
Test bed scale	Exit	1996	3.84	3.64	---	5.82	1.08	10.82	0.091	1.02	0.033	60.52	---
DS97-Pig, white	DS97-Pig, white part of scale	Oct-97	11.2	4.43	0.39	0.06	---	0.04	0.005	---	---	70.7	0.003
DS97-DV-32 white	DS97-DV-32 brine, white part of scale	Oct-97	10.8	3.29	0.12	0.03	---	0.02	0.010	---	---	71.0	0.003
DS97-DV-32 grey	DS97-DV-32 brine, grey part of scale	Oct-97	10.4	3.31	0.42	0.12	---	0.12	0.010	---	---	70.7	0.004
DS97-DV97-32/33	DS97-DV97-32/33, white part of scale	Oct-97	5.83	21.0	13.2	0.31	---	0.90	0.051	---	---	51.0	0.13
DS97-DV97-37	DS97-DV97-37 fines, total sample	Oct-97	5.43	26.0	7.86	1.50	---	0.65	0.078	---	---	50.9	0.07
DS97-76A7 white	DS97-76A7, white part of scale	Nov-97	0.05	55.9	35.5	0.01	---	0.06	0.028	---	---	0.22	0.001
DS97-76A7 grey	DS97-76A7, grey part of scale	Nov-97	3.79	16.7	20.6	5.20	---	15.4	0.68	---	---	34.4	0.01

Sample	Name or Description	Date	Ag	Au	Al	As	Ba	Ca	Cu	Fe	Hg	K	Li
			ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Test bed scale	Inlet	1996	---	---	---	181	---	---	101	---	---	---	18.5
Test bed scale	Aged	1996	---	---	---	185	---	---	77	---	---	---	18.3
Test bed scale	Exit	1996	---	---	---	172	---	---	50	---	---	---	170
DS97-Pig, white	DS97-Pig, white part of scale	Oct-97	4.96	0.125	59030	2.6	720	31640	---	399	0.040	20260	---
DS97-DV-32 white	DS97-DV-32 brine, white part of scale	Oct-97	1.58	0.093	57070	1.9	1510	23510	---	211	0.068	23510	---
DS97-DV-32 grey	DS97-DV-32 brine, grey part of scale	Oct-97	29.0	1.64	55070	5.0	1705	23690	---	847	0.068	24480	---
DS97-DV97-32/33	DS97-DV97-32/33, white part of scale	Oct-97	2.00	0.225	30850	1.8	294	150000	---	2180	<0.04	9760	---
DS97-DV97-37	DS97-DV97-37 fines, total sample	Oct-97	5.79	0.087	28730	13.8	689	185700	---	10470	0.178	11480	---
DS97-76A7 white	DS97-76A7, white part of scale	Nov-97	<0.3	<0.05	278	1.9	634	399400	---	77.3	<0.05	420	---
DS97-76A7 grey	DS97-76A7, grey part of scale	Nov-97	17.2	1.97	20080	2.1	358	119300	---	36370	<0.3	2480	---

[a]Data for the test-bed scale was previously published in Bruton et al. (1997).

Table 13: Continued

Sample	Cl	F	S	TIC	TOC
	wt %	wt %	wt %	wt %	wt %
Test bed scale	0.113	0.033	0.136	0.083	0.272
Test bed scale	0.058	0.067	0.130	0.065	0.172
Test bed scale	0.121	0.183	0.109	0.282	0.180
DS97-Pig, white	---	---	---	---	---
DS97-DV-32 white	---	---	---	---	---
DS97-DV-32 grey	---	---	---	---	---
DS97-DV97-32/33	---	---	---	---	---
DS97-DV97-37	---	---	---	---	---
DS97-76A7 white	---	---	---	---	---
DS97-76A7 grey	---	---	---	---	---

Sample	Mg	Mn	Mo	Na	Ni	Si	Sr	Ti	TIC
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Test bed scale	---	---	4.0	---	20.5	---	1180	---	---
Test bed scale	---	---	6.1	---	9.4	---	2070	---	---
Test bed scale	---	---	<4	---	32.3	---	7	---	---
DS97-Pig, white	250	38.7	---	8020	---	330400	2920	19.8	1060
DS97-DV-32 white	144	74.6	---	9300	---	332000	1940	18.1	333
DS97-DV-32 grey	743	74.3	---	9810	---	330400	1950	24.8	1160
DS97-DV97-32/33	5460	394	---	5410	---	238200	1570	801	36000
DS97-DV97-37	3900	608	---	5150	---	238100	939	421	21440
DS97-76A7 white	344	214	---	151	---	1050	8440	7.6	96900
DS97-76A7 grey	92840	5300	---	5670	---	160600	2980	73.9	56060

Table 14: Miscellaneous Isotope Data for Vein and Rock Samples, Dixie Valley Region, Nevada.[a]

Sample[b]	Name or Description	Location	Age	$\delta^{13}C$ (PDB) (per mil)	$\delta^{18}O$ (SMOW) (per mil)	$\delta^{34}S$ (CDT) (per mil)	Rb (ppm)	Sr (ppm)	$^{87/86}Sr$	Laboratory
Samples from Dixie Valley region [c]										
F97-22	Marine limestone, post Star Peak strata	Augusta Mts, 2 km SE of well DV97-49	U. Triassic	1.37	16.6	---	---	---	---	USGS
F98-8	Calcite vein in graphitic argillite	Stillwater fault zone NW of Senator Fumarole	Quaternary	-3.9	-2.9	---	---	---	---	UNM
F98-9	Gypsum in quartzite fault gouge beneath gabbro	Stillwater fault zone NW of Senator Fumarole	Holocene?	---	---	0.2	---	---	---	GC
F98-10	Graphitic marble, Stillwater Range	About 0.4 km NW of Senator Fumarole	Jurassic	1.3	15.8	---	<1	352	0.707926	UNM/LANL
F98-12	Calcite-quartz veins in altered quartzite, Stillwater Range	About 0.25 km NW of Senator Fumarole	Quaternary	-4.3	-5.3	---	---	---	---	UNM
F98-13	Calcite vein in gabbro	Stillwater fault zone SW of Senator Fumarole	Quaternary	-4.0	-6.3	---	---	---	---	UNM
F98-14	Calcite crystals in fault gouge,	Stillwater fault zone SW of Senator Fumarole	Quaternary	-3.9	-5.1	---	---	---	---	UNM
F98-15	Sulphur from Range Front Fumarole	Stillwater fault zone W of Senator Fumarole	1998	---	---	4.6	---	---	---	GC
F98-16	*Pyrite in quartzite breccia*	*Stillwater fault zone W of Senator Fumarole*	*Quaternary*	---	---	6.0	---	---	---	GC
F98-17	Sulphur from Senator Fumarole	From main vent	1998	---	---	2.6	---	---	---	GC
F98-18	Coarse-grained diorite (part of Humboldt Lopolith?)	Augusta Mts, Hole in the Wall, N edge of creek	Jurassic	---	---	---	56.8	472	0.704710	UNM/LANL
F98-19	Welded tuff, overlies diorite	Augusta Mts, Hole in the Wall, N edge of creek	Oligocene	---	---	---	105	34.3	0.710082	UNM/LANL
F98-20	Welded tuff, underlies pyroclastic fall and lacustrine beds	Augusta Range, Cedar Canyon (spg DV98-127)	Oligocene	---	---	---	127	72.6	0.708330	UNM/LANL
F98-40	Meta-argillite, occurs near quartzite, Bernice Formation	Clan Alpine Range, Lofthouse Canyon (spg DV98-170)	U. Triassic	---	---	---	85.2	60.1	0.720839	UNM/LANL
F98-44	Calcareous argillite, Hoyt Canyon Formation	Clan Alpine Range, Hoyt Canyon (crk DV98-174)	U. Triassic	---	---	---	32.2	2075	0.708686	UNM/LANL
F98-45	Quartzite, overlies argillite, Hoyt Canyon Formation	Clan Alpine Range, Hoyt Canyon (crk DV98-174)	U. Triassic	---	---	---	25.3	49.1	0.718175	UNM/LANL
F98-48	Medium-grained diorite, underlies quartzite, lmst, and tuff	Clan Alpine Range, 16 km NW of Shoshone Pass	Jurassic	---	---	---	8.1	254	0.705198	UNM/LANL
F98-49	Marine limestone, underlies welded tuff	Clan Alpine Range, 10 km NW of Shoshone Pass	U. Triassic	---	---	---	<1	281	0.708007	UNM/LANL
F98-50	Welded tuff, slightly altered and silicified	Clan Alpine Range, War Canyon (near spg DV98-176)	Oligocene	---	---	---	7.8	166	0.706148	UNM/LANL
F98-52	Sheared marine limestone, Star Peak Group	Stillwater fault zone at Figure 8 Fumarole	M. Triassic	---	---	---	35.9	275	0.707749	UNM/LANL
F98-54	Gabbro-diorite, underies thrust fault and quartzite	Stillwater Range, Cottonwood Canyon, W of travertine	Jurassic	---	---	---	---	---	0.705409	UNM/LANL
Samples from North Central Nevada [d]										
F92-42	Marine dolomite, Nevada Group	Sulphur Springs Range, east of Pine Valley	Devonian	---	---	---	5.0	385	0.708658	UNM
F92-43	Vinini Group chert	Sulphur Springs Range, east of Pine Valley	Ordovician	---	---	---	0.56	6.96	0.715335	UNM
F92-44	Vinini Group shale	Sulphur Springs Range, east of Pine Valley	Ordovician	---	---	---	4.0	53.3	0.714235	UNM
F92-45	Travertine deposit at Buffy Hot Spring	Sulphur Springs Range, east of Pine Valley	Holocene	---	---	---	11.4	86.8	0.712022	UNM
F92-46	Troy Canyon muscovite granite	Grant Range, east of Railroad Valley	Cretaceous	---	---	---	100.3	475	0.714216	UNM
F92-48	Troy Canyon ignimbrite	Grant Range, east of Railroad Valley	Oligocene	---	---	---	294	132	0.711504	UNM
F92-49	Goodwyn Canyon Dolomite	Grant Range, east of Railroad Valley	Ordovician	---	---	---	4.7	551	0.711282	UNM
F92-50	Chainman Shale	Grant Range, east of Railroad Valley	Mississippian	---	---	---	86	178	0.717174	UNM
F92-51	Guilmette Limestone	Grant Range, east of Railroad Valley	Devonian	---	---	---	0.77	22.8	0.709684	UNM
F92-52	Joana Limestone	Grant Range, east of Railroad Valley	Mississippian	---	---	---	0.55	194	0.708406	UNM
F92-53	Chainman Shale	Pancake Range, west of Railroad Valley	Mississippian	---	---	---	78.1	242	0.716672	UNM
F92-54	Pancake Range ignimbrite	Pancake Range, west of Railroad Valley	Oligocene	---	---	---	128	340	0.712557	UNM
F92-55	Stone Cabin ignimbrite	Pancake Range, west of Railroad Valley	Oligocene	---	---	---	129	372	0.712320	UNM
F92-56	Horse Heaven ignimbrite	Pancake Range, west of Railroad Valley	Oligocene	---	---	---	261	340	0.710694	UNM
F92-57	Sheep Pass Formation, organic-rich lacustrine beds	Grant Range, east of Railroad Valley	Eocene	---	---	---	1.81	969	0.708174	UNM

[a]Stable isotope analyses were performed at Geochron Laboratories, Cambridge, Massachusetts. Strontium isotope analyses were obtained from the University of New Mexico, Albuquerque, New Mexico.

[b]Collection years for all samples are in the sample number, i.e., F97-22 was collected in 1997.

[c]Many samples were identified using the geologic map of Speed (1976) and the report of Lutz et al (1997).

[d]This group of samples was collected for an earlier geothermal project but data were unpublished (Goff et al., 1994 and Hulen et al., 1994).

Table 15: Uranium-Thorium and Uranium-Protactinium Dates on Two Samples of Old Spring Deposits, Dixie Valley, Nevada

Sample No.	F99-50b[a]	F99-61[b]
Material	Travertine Vein	Sinter Layer
Location	Cottonwood Canyon	Lower Ranch
Weight (g)	1.6666	0.9924
Th (ppm)	0.00443	0.04653
(+/-, %)	0.36	0.85
U (ppm)	0.71	0.04
(+/-, %)	0.25	0.31
Th/U	0.0062	1.1691
(+/-, %)	0.44	0.91
$^{234}U/^{238}U$	1.598	1.245
$^{230}Th/^{234}U$ Age (ka)	**182 ± 4**	**54 ± 4**
$^{231}Pa/^{235}U$	0.967	0.565
(+/-, %)	0.74	1.05
$^{231}Pa/^{235}U$ Age (ka)	**161 ± 15**	**39 ± 2**
Initial $^{234}U/^{238}U$	1.842	1.344

[a]Honey-colored calcite vein cutting altered gabbro, base of spring deposit near seep sample DV97-56.

[b]Sinter separate from layered silica and carbonate, base of northwestern edge of deposit, about 0.3 km from hot spring DV97-61.

Los Alamos NM 87545