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K/UR-129

NATIONAL URANIUM RESOURCE EVALUATION PROGRAM

HYDROGEOCHEMICAL AND STREAM SEDIMENT RECONNAISSANCE BASIC DATA FOR LUBBOCK NTMS QUADRANGLE, TEXAS

Uranium Resource Evaluation Project

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HYDROGEOCHEMICAL AND STREAM SEDIMENT RECONNAISSANCE BASIC DATA FOR LUBBOCK NTMS QUADRANGLE, TEXAS

Uranium Resource Evaluation Project

Union Carbide Corporation, Nuclear Division
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Oak Ridge, Tennessee

Prepared for the U. S. Department of Energy
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Grand Junction Office, Colorado
under U. S. Government Contract W-7405 eng 26

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Portions of the description of the geology of the Lubbock Quadrangle were provided by Joseph C. Cepeda

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ABSTRACT

Results of a reconnaissance geochemical survey of the Lubbock Quadrangle, Texas are reported. Field and laboratory data are presented for 994 groundwater and 602 stream sediment samples. Statistical and areal distributions of uranium and possible uranium-related variables are displayed. A generalized geologic map of the survey area is provided, and pertinent geologic factors which may be of significance in evaluating the potential for uranium mineralization are briefly discussed.

Interpretation of the groundwater data indicate that the area which appears most promising for uranium mineralization is located in the southwestern part of the quadrangle, particularly in Crosby, Garza, Lynn, and Lubbock Counties. The waters produced from the Ogallala Formation in this area have high values for arsenic, molybdenum, selenium, and vanadium. Groundwaters from the Dockum Group in Garza County where uranium is associated with selenium, molybdenum, and copper indicate potential for uranium mineralization. Uranium is generally associated with copper, iron, and sulfate in the Permian aquifers, reflecting the red bed evaporite lithology of those units.

The stream sediment data indicate that the Dockum Group has the highest potential for uranium mineralization, particularly in and around Garza County. Associated elements indicate that uranium may occur in residual minerals or in hydrous manganese oxides. Sediment data also indicate that the Blaine Formation shows limited potential for small red bed copper-uranium deposits.

HYDROGEOCHEMICAL AND STREAM SEDIMENT RECONNAISSANCE BASIC DATA FOR LUBBOCK NTMS QUADRANGLE, TEXAS

INTRODUCTION

The National Uranium Resource Evaluation (NURE) Program was established by the U. S. Atomic Energy Commission, now the U. S. Department of Energy (DOE), in the spring of 1973 to assess uranium resources and to identify favorable areas for detailed uranium exploration throughout the United States. The principal objectives of the NURE Program are: (1) to provide a comprehensive in-depth assessment of the nation's uranium resources for national energy planning, and (2) to identify areas favorable for uranium resources. A NURE Program report covering uranium resource assessment in 116 National Topographic Map Series (NTMS) 1° x 2° quadrangles, which contain 100% of the currently estimated uranium resources, is targeted for 1980. The complete resource assessment of the 272 highest-priority quadrangles is scheduled for completion in 1985, and the first comprehensive assessment report of the entire United States is scheduled for completion in 1988. This program, which is being administered by DOE, is expected to increase the activity of commercial exploration for uranium in the United States.

The NURE Program consists of five parts:

1. Hydrogeochemical and Stream Sediment Reconnaissance (HSSR) Program,
2. Aerial Radiometric and Magnetic Survey,
3. Surface Geologic Investigations,
4. Drilling for Geologic Information, and
5. Geophysical Technology Development.

The objective of the HSSR Program is to provide information to be used in accomplishing the overall NURE Program objectives. This is accomplished by a reconnaissance of surface water, groundwater, stream sediment, and lake sediment. The survey is being conducted by three Government-owned laboratories. Union Carbide Corporation, Nuclear Division (UCC-ND), under contract with DOE, is conducting its survey in 154 NTMS 1° x 2° quadrangles which cover approximately 2,500,000 km^2 (1,000,000 mi^2) of the Central United States (see Figure 1). This area includes most of the states of Texas, Oklahoma, Kansas, Nebraska, South Dakota, North Dakota, Minnesota, Wisconsin, Michigan, Indiana, Illinois, and Iowa, as well as parts of Arkansas, Missouri, New Mexico, and Ohio. Described herein is a portion of the work done by UCC-ND in the Lubbock NTMS Quadrangle, Texas.

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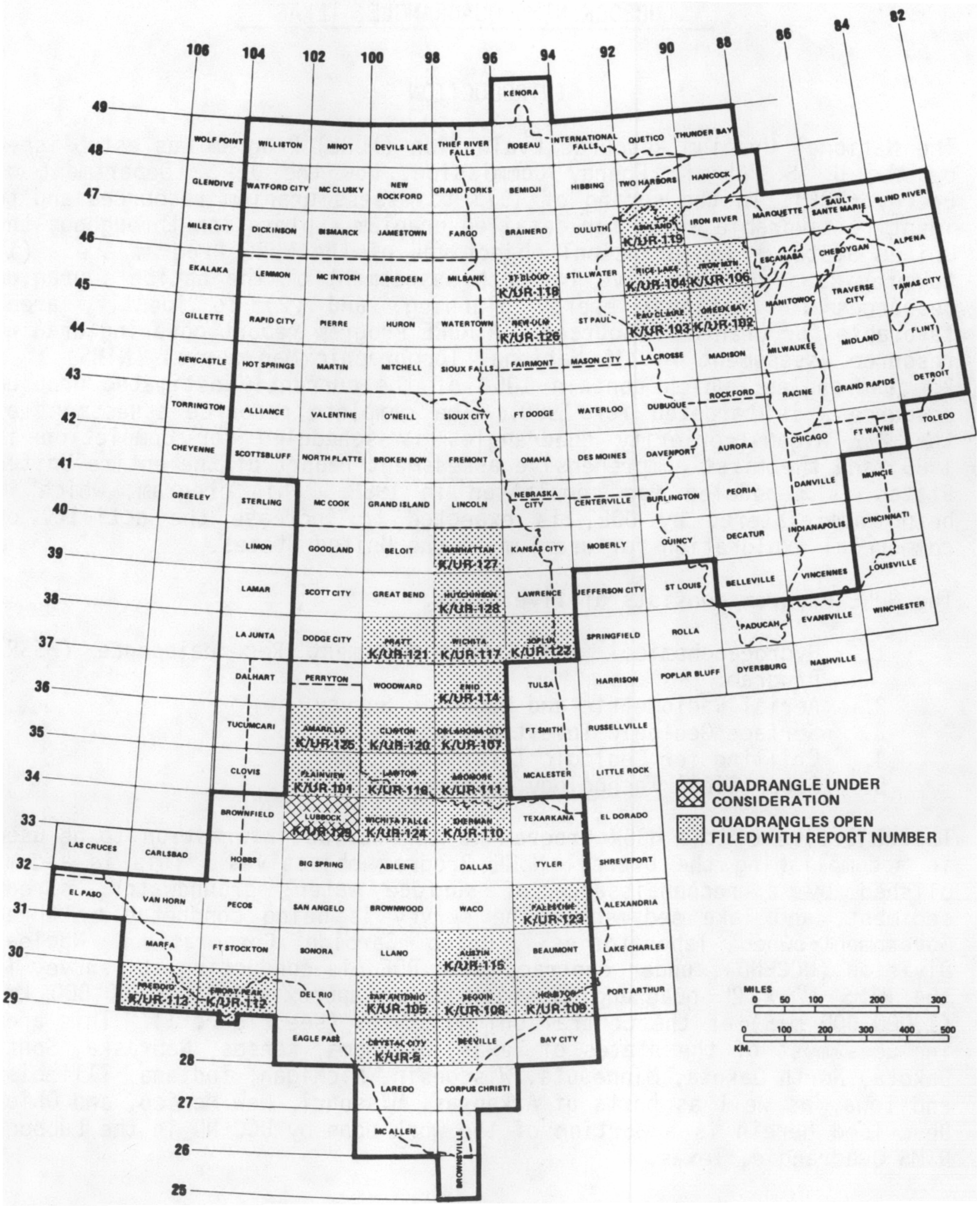

Figure 1

INDEX MAP SHOWING THE ORGDP AREA OF RESPONSIBILITY
FOR THE HSSR SURVEY, THE LUBBOCK QUADRANGLE,
AND QUADRANGLES FOR WHICH BASIC DATA REPORTS
HAVE BEEN OPEN FILED

GEOLOGY

LOCATION AND GEOLOGIC SETTING

The Lubbock Quadrangle covers a surface area of approximately 20,100 km^2 (7,770 mi^2) between lat. 33° and 34° N. and long. 100° and 102° W. The survey area outlined on the generalized geologic map of Texas shown in Figure 2, includes all or parts of Hale, Floyd, Motley, Cottle, Foard, King, Dickens, Crosby, Lubbock, Lynn, Garza, Kent, and Stonewall Counties. A generalized geologic map, along with a stratigraphic column listing geologic codes used in this report, is presented in Figure 3 and Plate 7.

The western third of the quadrangle is in the part of the southern High Plains Province known as Llano Estacado. This featureless plain is formed by a thin (<100 m thick) caprock of resistant limestone and caliche of Pliocene age. The eastern two-thirds of the quadrangle lies in the Osage Plains of the Central Lowland Province (Smith, 1974). Permian and Triassic beds dip gently to the west in this area. Thin accumulations of windblown sand, alluvium, fluvial terraces, and playa deposits cover a significant portion of the quadrangle (Barnes, 1967).

LITHOLOGY AND ENVIRONMENTS OF DEPOSITION

The Permian System consists of the following principal formations: Choza Formation, San Angelo Formation, Blaine Formation, Whitehorse Sandstone, Cloud Chief Gypsum, and Quartermaster Formation (Barnes, 1967).

Choza Formation, which is composed of interbedded shale and sandstone, is about 30 m (100 ft) thick and crops out only in the extreme southeastern corner of the quadrangle. The overlying San Angelo Formation of Middle Permian age crops out in a thin band along the eastern margin of the quadrangle. San Angelo Formation can be traced westward into the Midland Basin where it grades into red mudstone and evaporite beds (Smith, 1974) and has been traced northward into Oklahoma where it is equivalent to the Duncan Sandstone (Beede and Christner, 1926). According to Smith (1974), the San Angelo Formation was deposited as a progradational wedge building westward across a narrow shelf on the eastern margin of the Midland Basin. Material was derived from the Ouachita Fold Belt. In southwestern Oklahoma and north central Texas, copper mineralization occurs in the San Angelo Formation primarily in organic-rich, tidal-channel sandstones and thin algal mat shales (Smith, 1974).

Upper Permian Blaine Formation, Whitehorse Sandstone, Cloud Chief Gypsum, and Quartermaster Formations consist of up to 518 m (1,700 ft) of interbedded shale, sandstone, gypsum, and dolomite.

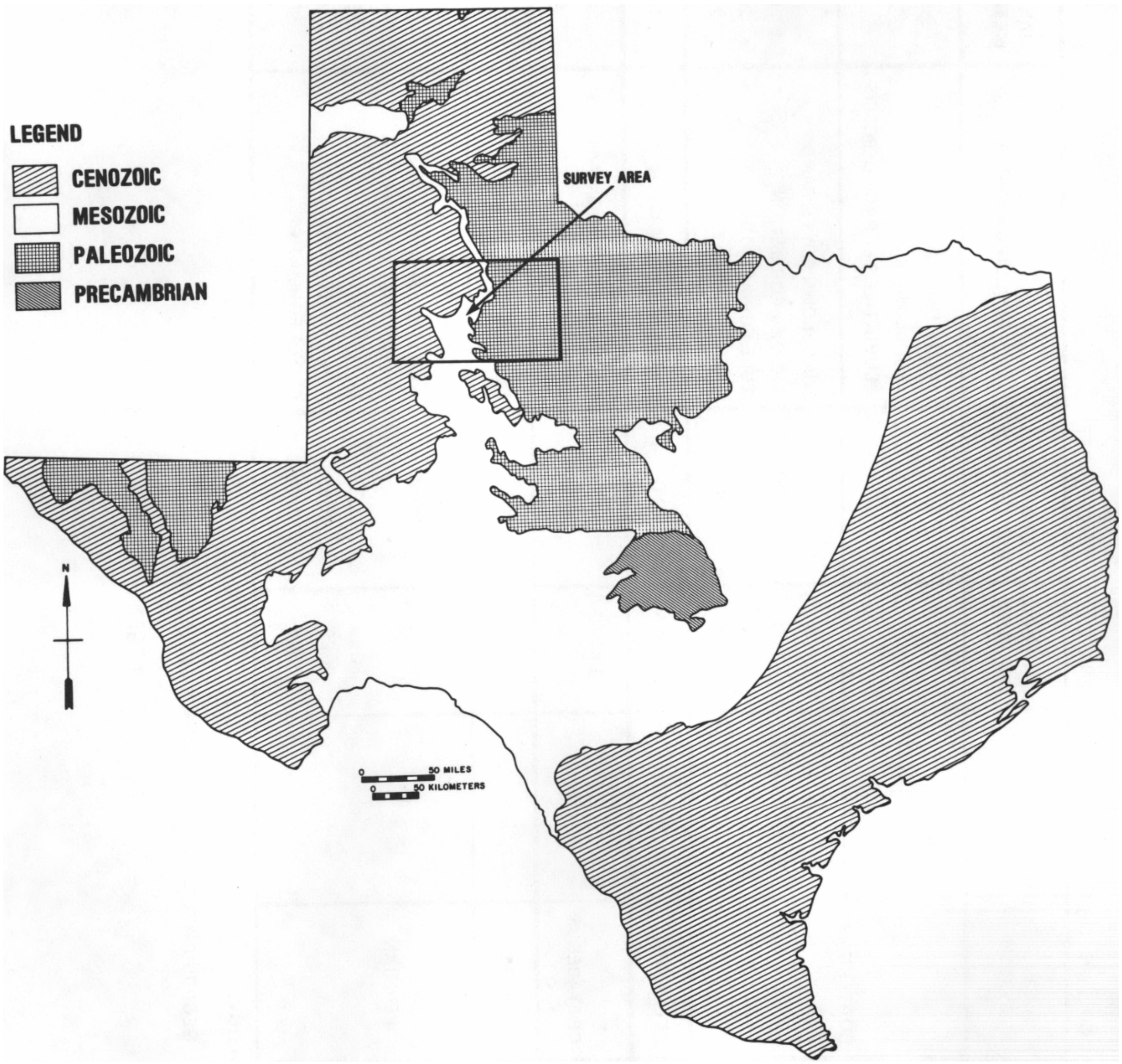

Figure 2

GENERALIZED GEOLOGIC MAP OF TEXAS
(AFTER KING, ET AL, 1974)

STRATIGRAPHIC COLUMN FOR THE LUBBOCK QUADRANGLE

ERA	SYSTEM	SERIES	GEOLOGIC MAP CODE	GEOLOGIC MEMBER CODE	GEOLOGIC MEMBER	MAXIMUM THICKNESS METERS	FEET
CENOZOIC	QUATERNARY	RECENT	QD	QAL	ALLUVIUM		
		PLEISTOCENE		QWS	WINDBLOWN SAND		
				QPFT	FLUVIATILE TERRACE DEPOSITS		
		PLEISTOCENE	QPCS	QPCS	WINDBLOWN COVER SAND		
			QPWT	QPWT	TAHOKA FORMATION	8	25
			QPTU	QPTU	TULE FORMATION	26	85
			QPNB	QPNB	BLANCO FORMATION	23	75
	TERTIARY	PLIOCENE	TPO	TPO	OGALLALA FORMATION	76	250
MESOZOIC	CRETACEOUS		LKFT		WALNUT FORMATION AND	8	25
					ANTLERS SAND	9	30
	TRIASSIC		TRD	TRD	DOCKUM GROUP	122	400
PALEOZOIC	PERMIAN		POQ	POQ	QUARTERMASTER FORMATION	107	350
			PGWC	PGWC	WHITEHORSE SANDSTONE & CLOUD CHIEF GYPSUM	198	650
			PGEB	PGEB	BLAINE FORMATION	213	700
			PGES	PGES	SAN ANGELO FORMATION	41	135
			PGCH	PGCH	CHOZA FORMATION	30	100

SOURCE OF GEOLOGY:

1. BARNES, V. E.; GEOLOGIC ATLAS OF TEXAS, LUBBOCK SHEET (1967).

LEGEND FOR FIGURE 3

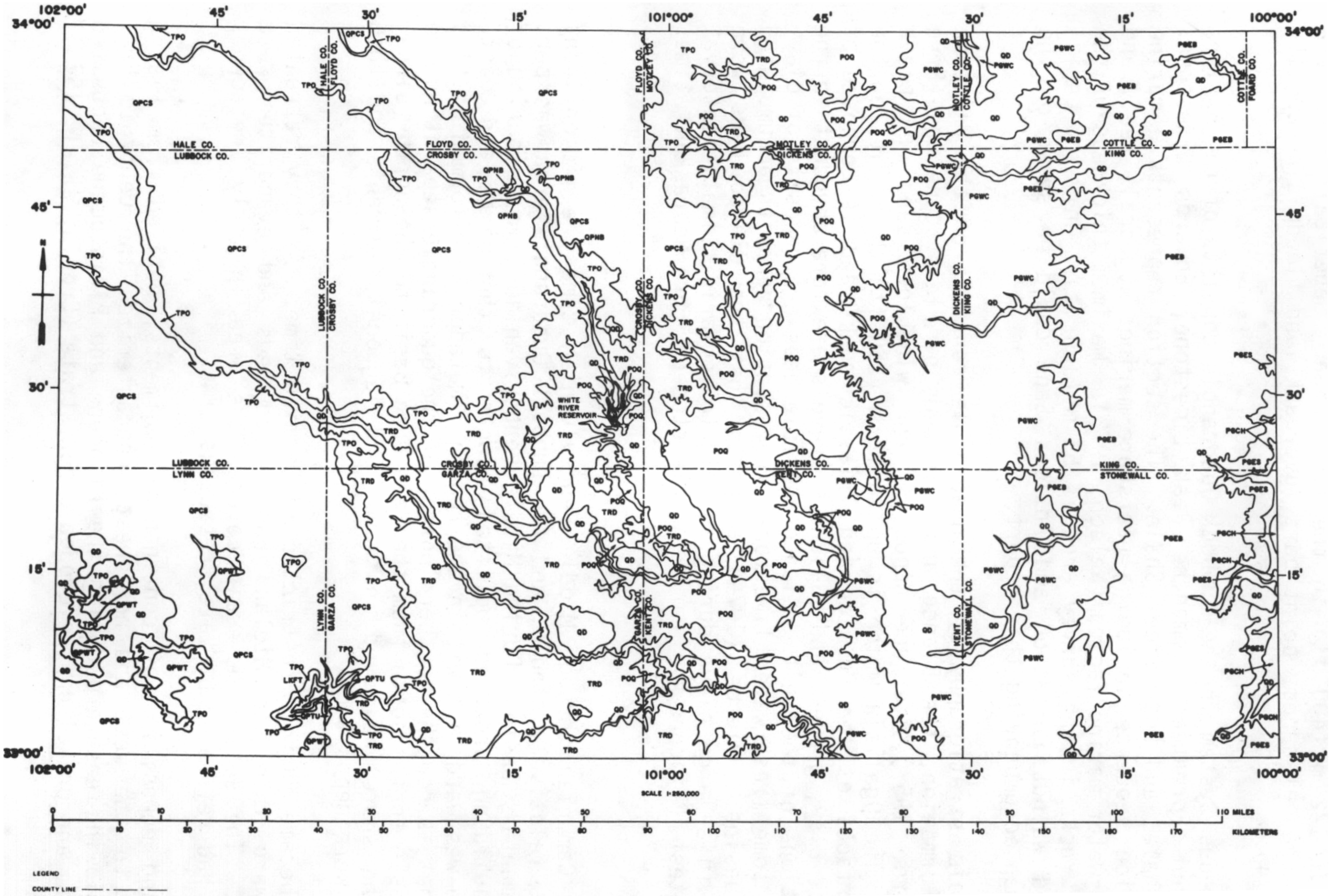

Figure 3

GENERALIZED GEOLOGIC MAP OF THE LUBBOCK QUADRANGLE

The Triassic System consists of a sequence of sandstone, clay, shale, and conglomerate within the Dockum Group. The Dockum has a maximum thickness of 122 m (400 ft) in the study area. Genetically, it is a mixture of channel sands, point bars, overbank, and floodplain deposits (Jones, 1974).

The Cretaceous System in the Lubbock Quadrangle consists of the Antlers Sand, Walnut Formation, Comanche Peak Limestone, Edwards Limestone, Kiamichi Shale, and Duck Creek Shale. The section represents a marine transgression sequence including nearshore marine, lagoonal, reef, and deep, open-water marine facies (Nelson, 1973). Maximum thickness of the Cretaceous rocks in the survey area is 55 m (180 ft). Only the undifferentiated Walnut Formation and Antlers Sand could be shown on the geologic map accompanying this report.

The Cenozoic stratigraphy of the quadrangle consists of the Pliocene Ogallala Formation, the Blanco and Tule beds of Pleistocene age (Frye and Leonard, 1957), terrace deposits, and windblown sand and playa deposits. The Ogallala which is up to 76 m (250 ft) thick lies on the eroded surfaces of the Permian and Triassic rocks and is composed of sand, silt, clay, gravel, and caliche. Gravels are more abundant in the lower portions of the unit. Blanco and Tule beds are deposits of clay, sand, and some fresh-water limestones representing deposits accumulated in lake basins. Pierce (1974) suggests that the Blanco beds were deposited in a large playa during an arid to semiarid climatic interval during latest Pliocene or earliest Pleistocene (pre-Nebraskan) time.

STRUCTURE

From Late Cambrian through Middle Pennsylvanian time the midcontinent region was relatively stable, and the Lubbock Quadrangle area was part of a sedimentary basin. During Middle Pennsylvanian time, a period of mountain-building produced uplifted blocks to the north and east, creating a westward tilt within the region. Matador Arch formed at this time at what is now the northern border of the quadrangle separating the Midland Basin to the south from the Palo Duro Basin to the north (Birsa, 1977). The shoreline moved westward, and lagoonal sediments and thin coal beds were deposited.

The seas became further restricted in Permian time. As they retreated southwestward into the Midland Basin, red beds and evaporites were deposited. The seas once again covered the area in Early Cretaceous time, but had retreated by Late Cretaceous time.

Erosion and deposition of continental sediments, derived from rising mountains to the west and northwest, characterized the Cenozoic Era. Streams flowing eastward during the Pliocene and Pleistocene deposited sand, silt, and gravel on the eroded older strata (Cronin, et al, 1973).

HYDROLOGY

Permian rocks, generally, have low permeabilities and the groundwater quality is usually poor. The water is slightly to moderately hard and moderately saline (Cronin, et al, 1973). Groundwaters in the Permian aquifers generally move to the east-southeast. The water table surface topography mimics the topography of the land surface. The water table slope varies from 130 ft/mi in Kent County to considerably less in Stonewall and King Counties (McMillion, 1958).

The Triassic Dockum Group is a secondary aquifer in the eastern part of the quadrangle area. East of the High Plains escarpment, wells in the Dockum yield small to moderate amounts of useable water. Exploratory wells which have been drilled into the Dockum Group on the High Plains yielded water with dissolved solids contents as high as 20,600 ppm. Beds within the Dockum Group are highly irregular and individual sand layers cannot be traced for long distances (Cronin, et al, 1973).

The Ogallala Formation is the only primary aquifer in the High Plains. Individual water-bearing sand layers pinch out or grade into other lithologies vertically and laterally (Leggat, 1957). Principal sources of recharge are precipitation that falls on the land surface and groundwater flow from the Ogallala in New Mexico. Movement of groundwater within the Ogallala is very slow to the southeast, along a water table that dips uniformly at about 9 ft/mi (Cronin, et al, 1973; Cronin and Wells, 1960).

Water from the Ogallala is typically hard (400 to 2,000 ppm dissolved solids) due primarily to bicarbonate and has a high concentration of fluorine (2 to 8 ppm) (Cronin, et al, 1973).

URANIUM OCCURRENCES

No commercial occurrences of radioactive minerals are presently known in the quadrangle but Geo-Data International (1975, Figure 13 and Page 32) relates that a truckload of ore averaging 2.0% U_3O_8 was shipped from a deposit in southwestern Dickens County. A radiometric assay revealed up to 2.00% eU_3O_8 in a deposit in northeastern Garza County. The aerial radiometric study undertaken by Geo-Data International (1975) revealed 14 anomalies, primarily in Lynn and Garza Counties. Most of the anomalies and the deposits mentioned earlier occur in the Dockum Group. The anomalies in Lynn County occur in the Ogallala Formation.

Mineralization in the Dockum occurs in conglomeratic channel sandstones and appears to have been formed by circulating groundwaters. The deposits are commonly associated with carbonaceous materials, suggesting that these provided the reduced chemical conditions needed to precipitate the uranium (Southern Interstate Nuclear Board, 1969). Small copper-uranium deposits occur in similar settings in the Permian red beds in southwestern Oklahoma (Finch, 1955; Shelton and Al-Shaieb, 1976). Similar deposits could occur in the San Angelo and other Permian formations in the Lubbock Quadrangle.

SAMPLE COLLECTION

CHRONOLOGY OF THE SURVEY

Sampling in the Lubbock Quadrangle began in December 1978 and was completed in April 1979. Laboratory analyses, as well as compilation and verification of all field and laboratory data, were completed by July 1979. The final field and laboratory data base used to illustrate the statistical and areal distribution of uranium and uranium-related parameters for this report was completed in August 1979.

FIELD PROCEDURES

Stream sediment and well water sampling was done by the UCC-ND staff. A total of 994 groundwater and 602 stream sediment samples were collected within the boundaries of the Lubbock Quadrangle. Spring and well water samples are reported together as groundwater. Plates 1 and 4 are overlays at a scale of 1:250,000 showing sample locations for groundwater sites and stream sediment sites, respectively. Drainage basins are drawn on Plate 4 to indicate the area represented by the stream sediment samples. There is only a very limited amount of surface drainage developed in the area covered by the Ogallala caprock in the western portion of the Lubbock Quadrangle. Therefore, few stream sediments were collected in this area.

Detailed information regarding techniques in sample collection, recording site data, field equipment, and field measurements may be found in the following reports: "Hydrogeochemical and Stream Sediment Reconnaissance Procedures of the Uranium Resource Evaluation Project" (Arendt, et al, In Press), "Procedures Manual for Groundwater Reconnaissance Sampling" (URE Project, March 1978), and "Procedures Manual for Stream Sediment Reconnaissance Sampling" (URE Project, May 1978). Field observations were recorded on the field form shown in Table C-2 and are included in the microfiche in Appendix C.

CONTAMINATION

Precautions were taken to avoid the possibility of collecting contaminated samples. Wells which were affected by any chlorination, water-softening, or filtering devices were not sampled if the water could not be taken before the water passed through such devices. Any well that had not been pumped recently was allowed to run long enough to flush the system. The fact that it had no recent use was noted on the field form. Since the possibility for contamination is high in dug wells, these are noted on the field form. Any wells that the samplers felt were possibly contaminated were checked as such on the field forms. Sediment samples were collected upstream from road crossings wherever possible. Visible signs of contamination, the presence of cultivated areas, or oil fields upstream from a sample site were noted on the field form. Many wells along major streams produce from the alluvium. Recharge of alluvial aquifers is principally from surface water. It is possible that contamination of the groundwater from upstream sources could occur.

Approximately 25% of the area east of the caprock escarpment is under cultivation with cotton being the chief crop. Only about one-fifth of this area is fertilized, the usual application being about 100 lb/acre of 16-20-0 nitrogen-phosphate mixture. Fertilization is done in late March and April. Arsenic acids previously used as desiccants, applied to cotton before harvest, have not been in use for at least 2 yr prior to the sampling season. Approximately 40 to 50% of the area on the caprock is cultivated primarily for wheat and grain sorghum. 0-46-0 phosphate fertilizer is applied in the spring. Since there is only limited surface drainage, few sediment samples were taken in this area, but there is potential for groundwater contamination. Areas immediately bordering on the caprock escarpment are used primarily for ranching.

Oil and gas production occurs over much of the quadrangle. The possibility of contamination from exploration and production activities is present. There is also a possible effect from leakage of subsurface hydrocarbon deposits. The metropolitan area around the city of Lubbock in the west central part of the quadrangle must also be considered a potential source of contamination.

CHEMICAL ANALYSIS

All samples collected in the field geology program were returned to the URE Project laboratory in Oak Ridge, Tennessee for preparation and analysis. The elements determined and the analytical techniques used, along with the appropriate detection limits, are given in Table 1. These detection limits are considered the best average during normal operation; however, some variables have values reported below these limits. All water samples were received in 250-ml polyethylene bottles and were filtered through 0.45-μm cellulose acetate paper. Stream sediment samples were dried overnight at 85°C and sieved to collect the <150-μm fraction. Part of the sediment sample was dissolved in 10 ml of 1:1 nitric-hydrofluoric acid. The analytical procedures which were used have been described by Cagle (1977) and Arendt, et al (In Press). All observed data from all samples are included in the microfiche in Appendix C.

QUALITY CONTROL

MEASUREMENTS CONTROL

The procedures used to analyze URE Project reconnaissance samples require that calibration standards, check samples, and blanks be run along with normal samples to ensure the validity of the reported results. A measurements control program provides information concerning precision and reliability of these measurements. Control samples of two water batches and two sediment batches are submitted anonymously along with routine samples on a daily basis. A statistical summary of results

Table 1

DETECTION LIMITS OF VARIABLES DETERMINED IN WATER AND SEDIMENT SAMPLES

Variable	Method	Detection Limits Sediment (ppm)	Detection Limits Water (ppb)
U-FL	Fluorometry	0.25	0.2
U-MS	Mass Spectrometry-Isotope Dilution	--	0.02
U-NT	Neutron Activation-Delayed Neutron Count	0.02	--
As	Atomic Absorption	0.1	0.5
Se	Atomic Absorption	0.1	0.2
Ag	Plasma Source Emission Spectrometry	2	2
Al	Plasma Source Emission Spectrometry	0.05[a]	10
B	Plasma Source Emission Spectrometry	10	8
Ba	Plasma Source Emission Spectrometry	2	2
Be	Plasma Source Emission Spectrometry	1	1
Ca	Plasma Source Emission Spectrometry	0.05[a]	0.1[b]
Ce	Plasma Source Emission Spectrometry	10	30
Co	Plasma Source Emission Spectrometry	4	2
Cr	Plasma Source Emission Spectrometry	1	4
Cu	Plasma Source Emission Spectrometry	2	2
Fe	Plasma Source Emission Spectrometry	0.05[a]	10
K	Plasma Source Emission Spectrometry	0.05[a]	0.1[b]
Li	Plasma Source Emission Spectrometry	1	4
Mg	Plasma Source Emission Spectrometry	0.05[a]	0.1[b]
Mn	Plasma Source Emission Spectrometry	4	2
Mo	Plasma Source Emission Spectrometry	4	4
Na	Plasma Source Emission Spectrometry	0.05[a]	0.1[b]
Nb	Plasma Source Emission Spectrometry	4	--
Ni	Plasma Source Emission Spectrometry	2	4
P	Plasma Source Emission Spectrometry	5	40
Sc	Plasma Source Emission Spectrometry	1	1
Si	Plasma Source Emission Spectrometry	--	0.1[b]
Sr	Plasma Source Emission Spectrometry	1	2
Th	Plasma Source Emission Spectrometry	2	--
Ti	Plasma Source Emission Spectrometry	10	2
V	Plasma Source Emission Spectrometry	2	4
Y	Plasma Source Emission Spectrometry	1	1
Zn	Plasma Source Emission Spectrometry	2	4
Zr	Plasma Source Emission Spectrometry	2	2
SO_4	Spectrophotometry	--	5[b]
Cl	Spectrophotometry	--	10[b]

[a]Detection limits expressed in percent.

[b]Detection limits expressed in ppm.

reported on control samples, which were analyzed along with the samples included in this survey, is given in Table 2. Results of uranium analysis of water and sediment control samples obtained from the Ames Laboratory as part of the Multilaboratory Analytical Quality Control for the HSSR Program are reported by D'Silva, et al (1979).

PRINCIPAL COMPONENT ERROR ANALYSIS

A principal component analysis of data from well water and stream sediment samples was used to produce an ordered list of samples using the eigenvalue statistics as described by Kane, et al (1977), where the most extreme samples were listed first. Additional unusual samples were identified if single-element measurements were outside a three standard deviation confidence interval around the mean. The laboratory and field data from the unusual samples identified by this procedure were reviewed. Seven well water samples (025942, 025968, 026623, 026640, 026641, 026842, and 026943) and six stream sediment samples (023870, 025635, 025640, 025729, 026791, and 027013) which appeared to be the most unusual were submitted for reanalysis. The original results were compared to the results from reanalysis. Of the more than 500 individual analyses that were compared, the only results which were considered to be in error in the original analysis and thus require corrections were four chloride, four sulfate, and one set of multi-element values for groundwaters, and one uranium value for sediments. This low error rate for the unusual samples indicates a high level of reliability for the laboratory measurements.

GEOCHEMICAL RESULTS

GEOCHEMICAL DISTRIBUTIONS IN GROUNDWATER

The sample site locations for groundwater samples collected in the Lubbock Quadrangle are shown on Plate 1 at the 1:250,000 scale. Symbol plots for uranium and specific conductance are presented at this same scale on Plates 2 and 3 and at the 1:1,000,000 scale in Figures A-1b and A-2b, respectively. A map of the major producing horizons sampled and the samples noted as having hydrogen sulfide odor at the time of sampling is presented in Figure 4. The number of groundwater samples collected from each of the major producing units is presented in Table 3.

Observed data for the variables uranium, specific conductance, arsenic, copper, chloride, potassium, lithium, molybdenum, sodium, selenium, and vanadium are listed in Table A-3. The figures in Appendix A present log frequency, lognormal probability, percentile and areal symbol plots for these variables plus 1,000 x uranium/specific conductance, and sulfate.

Table 2

SUMMARY OF THE MEASUREMENTS CONTROL OBTAINED WITH SAMPLES FROM THE LUBBOCK QUADRANGLE

		Measurements Control Results for Water							
		Batch L-4				Batch H-4			
Element	Method	No. of Samples	Mean (ppb)	Standard Deviation (ppb)	Coefficient of Variation	No. of Samples	Mean (ppb)	Standard Deviation (ppb)	Coefficient of Variation
U	FL[(a)]	20	0.58	0.11	0.19	15	10.3	1.8	0.17
As	AA[(b)]	24	5.0	0.8	0.16	14	1.1	0.1	0.09
Se	AA	25	1.2	0.2	0.17	14	0.7	0.1	0.14
Al	PS[(c)]	20	104.0	17.0	0.16	10	358.0	22.0	0.06
B	PS	23	1,607.0	66.0	0.04	11	75.0	2.0	0.03
Ba	PS	23	139.0	5.0	0.04	11	31.0	1.0	0.03
Ca	PS	23	10,600.0	500.0	0.05	11	97,250.0	4,300.0	0.04
Co	PS	23	20.0	3.0	0.15	11	95.0	5.0	0.05
Cr	PS	23	97.0	7.0	0.07	11	20.0	3.0	0.15
Cu	PS	23	55.0	12.0	0.22	11	186.0	11.0	0.06
Fe	PS	23	106.0	12.0	0.11	11	995.0	44.0	0.04
K	PS	23	2,080.0	260.0	0.12	10	20,710.0	990.0	0.04
Li	PS	23	19.0	1.0	0.05	11	98.0	11.0	0.11
Mg	PS	23	9,720.0	540.0	0.06	11	72,620.0	2,300.0	0.03
Mn	PS	23	21.0	1.0	0.05	11	102.0	6.0	0.06
Mo	PS	23	37.0	6.0	0.16	11	8.0	3.0	0.38
Na	PS	23	1,820.0	490.0	0.27	11	43,960.0	7,050.0	0.16
Ni	PS	23	201.0	11.0	0.05	11	43.0	5.0	0.12
P	PS	23	106.0	12.0	0.11	11	4,711.0	273.0	0.06
Sc	PS	23	63.0	3.0	0.04	11	12.0	1.0	0.08
Si	PS	23	1,150.0	150.0	0.13	11	8,650.0	390.0	0.04
Sr	PS	23	56.0	3.0	0.05	11	5,000.0	147.0	0.03
Ti	PS	23	113.0	6.0	0.05	11	42.0	2.0	0.05
V	PS	22	10.0	3.0	0.30	11	45.0	3.0	0.07
Y	PS	22	10.0	1.0	0.20	11	48.0	2.0	0.04
Zn	PS	23	493.0	44.0	0.09	11	38.0	22.0	0.58

		Measurements Control Results for Stream Sediments							
		Batch R-2				Batch S-2			
Element	Method	No. of Samples	Mean (ppm)	Standard Deviation (ppm)	Coefficient of Variation	No. of Samples	Mean (ppm)	Standard Deviation (ppm)	Coefficient of Variation
U	FL	18	4.04	0.35	0.09	20	10.30	1.30	0.13
U	NT[(d)]	10	5.03	0.16	0.03	17	10.32	0.57	0.06
As	AA	16	5.70	0.49	0.09	22	10.40	0.68	0.07
Se	AA	16	0.81	0.17	0.21	22	0.87	0.12	0.14
Al	PS	15	40,690.00	4,360.00	0.11	21	53,495.00	3,590.00	0.07
B	PS	15	18.0	4.00	0.22	21	47.00	9.00	0.19
Ba	PS	15	339.0	17.00	0.05	22	356.00	16.00	0.04
Be	PS	15	2.0	1.00	0.50	22	3.00	1.00	0.33
Ca	PS	15	2,670.0	240.00	0.09	22	3,760.00	380.00	0.10
Co	PS	15	18.0	1.00	0.06	22	23.00	2.00	0.09
Cr	PS	15	42.0	4.00	0.10	22	59.00	6.00	0.10
Cu	PS	14	15.0	2.00	0.13	22	44.00	6.00	0.14
Fe	PS	15	25,260.0	1,150.00	0.05	22	32,760.00	1,510.00	0.05
K	PS	14	12,210.0	1,650.00	0.14	22	19,070.00	4,070.00	0.21
Li	PS	15	34.0	6.00	0.18	22	34.00	4.00	0.12
Mg	PS	15	3,960.0	240.00	0.06	22	5,430.00	300.00	0.06
Mn	PS	15	1,015.0	56.00	0.06	22	753.00	42.00	0.06
Mo	PS	15	4.0	1.00	0.25	22	23.00	5.00	0.22
Na	PS	15	2,610.0	520.00	0.20	22	2,100.00	300.00	0.14
Ni	PS	15	30.0	3.00	0.10	21	57.00	4.00	0.07
P	PS	15	500.0	50.00	0.10	22	826.00	67.00	0.08
Sc	PS	15	8.0	1.00	0.12	22	11.00	1.00	0.09
Sr	PS	15	54.0	1.00	0.02	22	78.00	3.00	0.04
Th	PS	15	8.0	2.00	0.25	22	9.00	3.00	0.33
Ti	PS	15	2,608.0	233.00	0.09	22	2,709.00	183.00	0.07
V	PS	15	81.0	5.00	0.06	19	156.00	3.00	0.02
Y	PS	15	20.0	3.00	0.15	22	29.00	3.00	0.10
Zn	PS	15	80.0	9.00	0.11	22	96.00	7.00	0.07
Zr	PS	15	116.0	6.00	0.05	22	112.00	5.00	0.04

(a) Fluorometric analyses.
(b) Atomic absorption.
(c) Plasma source emission spectroscopy
(d) Neutron activation delayed neutron count.

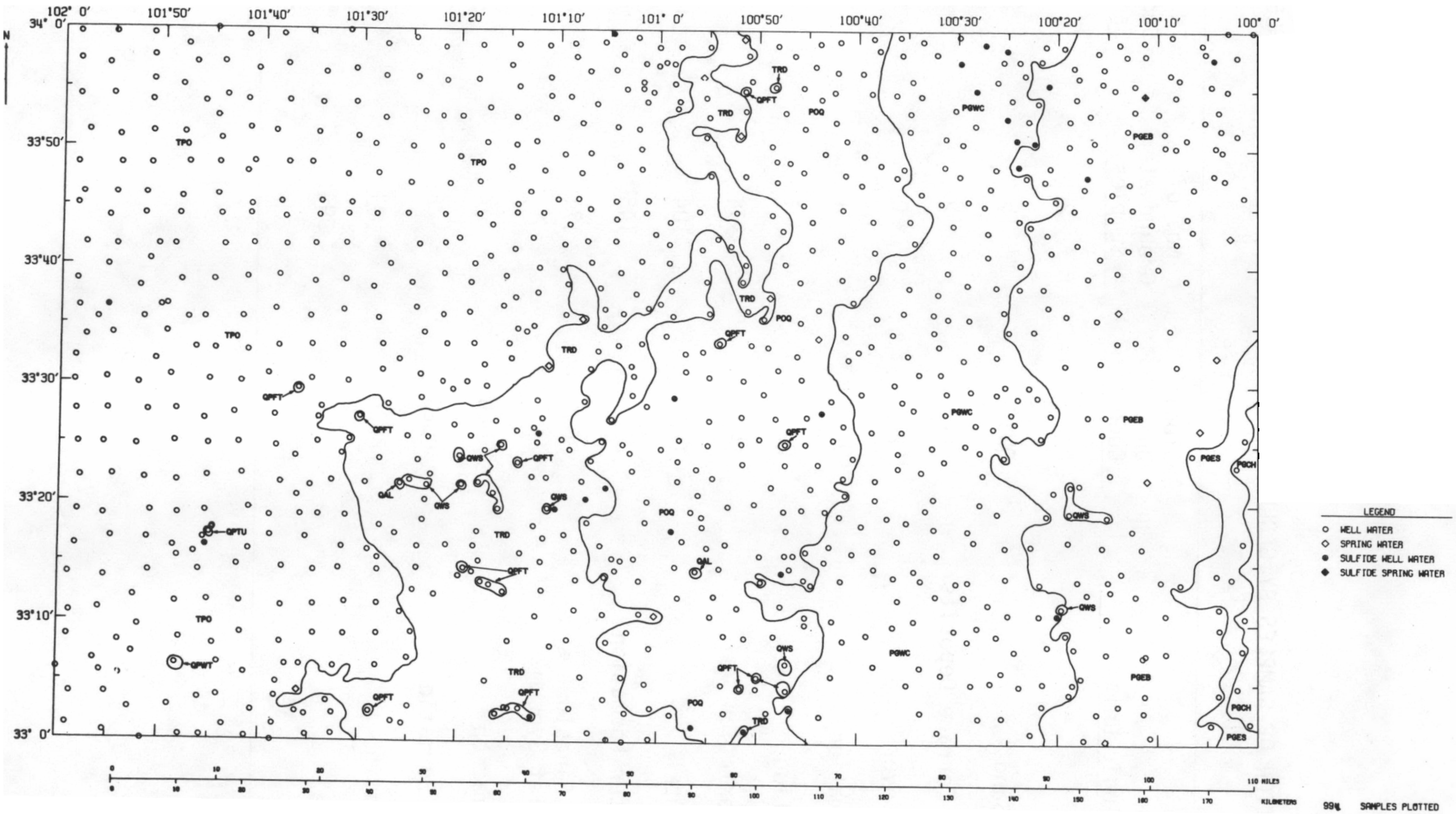

Figure 4

PRODUCING HORIZON MAP FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

Table 3

DISTRIBUTION OF SAMPLES BY GEOLOGIC UNIT FROM THE LUBBOCK QUADRANGLE

Geologic Unit	Geologic Unit Code	No. of Groundwater Samples	No. of Sediment Samples
Alluvium	QAL	2	5
Windblown Sand	QWS	15	21
Fluviatile Terrace Deposits	QPFT	19	12
Windblown Cover Sand	QPCS	0	3
Tahoka Formation	QPWT	1	0
Tule Formation	QPTU	1	0
Ogallala Formation	TPO	394	33
Dockum Group	TRD	104	126
Quartermaster Formation	POQ	145	75
Whitehorse Sandstone and Cloud Chief Gypsum	PGWC	171	115
Blaine Formation	PGEB	132	150
San Angelo Formation	PGES	6	10
Choza Formation	PGCH	4	1
Total		994	551

Uranium

Figure A-1b indicates that groundwaters with uranium concentrations greater than 24.65 ppb (85th percentile) are relatively evenly distributed throughout the quadrangle, except in the northwestern corner. The percentile plot (Figure A-1a) shows a similar range of uranium concentrations for all geologic units. The group composed of the Choza and San Angelo Formations shows the highest background range. The groups with the highest values are the Permian Quartermaster Formation, Triassic Dockum Group, and Tertiary Ogallala Formation.

Clusters of groundwater samples with high uranium concentrations occur as follows from east to west: (1) in central Stonewall County with about half of the waters coming from the Blaine Formation and half from the Cloud Chief Gypsum; (2) at the common corners of Dickens, Kent, and King Counties with the waters coming from the Whitehorse-Cloud Chief Formations; (3) in a north-south trending belt in southeastern Dickens, eastern Garza, and western Kent Counties with the waters coming primarily from the Quartermaster Formation and some from the Dockum Group; and (4) in several other places in Garza County one in the north extending north into Crosby County, one in the south central area, and one in the northwestern central area trending towards the northwestern corner. Almost all the groundwaters with high uranium contents were produced from the Dockum Group. Finally, the largest groupings occur in a trend that extends from the southwestern corner of Garza County, westward across Lynn County to the corner of the quadrangle, then north along the quadrangle boundary into middle Lubbock County. These waters were collected from wells penetrating the Ogallala Formation.

One well sampled in the Dockum Group near the MacArthur Deposit (Geo-Data International, 1975) had an anomalous uranium concentration. Other anomalies in waters produced from the Dockum in nearby Garza County may indicate additional mineralization. The 85th and 15th percentile values of 24.65 and 4.18 ppb, respectively, are the highest such values recorded for any quadrangle in the Texas-Oklahoma area by this program. Groupings of anomalous well waters occur in the Quartermaster and Ogallala Formations and Dockum Group in the southwestern quarter of the quadrangle supporting the findings of a wide-spaced regional sampling program in the Plainview, Lubbock, and Big Spring Quadrangles by the URE Project (Nichols, et al, December 1977). That report also indicated this area as having the highest potential for uranium mineralization in the Lubbock Quadrangle. These results would appear to indicate that applicability of such wide-spaced surveys for regional exploration efforts in areas where similar climatic and geologic conditions exist.

Most of the groundwaters with uranium concentrations less than 4.16 ppb (15th percentile) occur in the southern and eastern parts of the quadrangle. These groundwaters of low uranium content do not appear to be restricted to any particular geologic unit, but seem to be rare in the High Plains area.

The correlation matrix (Table A-2) indicates a significant positive correlation, with coefficients of greater than 0.15 for both Pearson and Spearman correlations between uranium and specific conductance, boron, potassium, lithium, magnesium, sodium, strontium, and vanadium.

Specific Conductance

Figure A-2b indicates that most groundwaters with specific conductance values greater than 5,287 µmhos/cm (85th percentile) occur in the eastern and southern portions of the quadrangle, whereas those with specific conductance values of less than 930 µmhos/cm tend to occur in the west central area. The percentile plot in Figure A-2a indicates that the highest background ranges for specific conductance occurs in the Blaine, Whitehorse-Cloud Chief, and Quartermaster Formations of Permian age.

The lowest background ranges for specific conductance are found in water from the Ogallala Formation and the windblown sand deposits.

Two major trends of groundwaters with high specific conductances are apparent from Figure A-2b. The first is along the eastern border of the quadrangle mainly east of long. 100° 10' W. The trend corresponds to the area underlain by the Blaine, San Angelo, and Choza Formation aquifers (see Figure 4). The second trend joins the first in southwestern King County and southeastern Dickens County and extends west-southwestward through Kent, Garza, and Lynn Counties. The waters along this trend are produced from aquifers of almost every unit represented in the quadrangle above the Blaine Formation. A large group of groundwaters with specific conductances less than 930 µmhos/cm (15th percentile) occur in Crosby, Dickens, Floyd, and Motley Counties. These waters came from the Ogallala Formation and Quaternary deposits.

The correlation matrix (Table A-2) indicates significant positive correlations, with coefficients for both Pearson and Spearman correlations greater than 0.15, between specific conductance and uranium, boron, calcium, chloride, lithium, magnesium, manganese, sodium, strontium, and sulfate. There is also significant correlation coefficients between specific conductance and arsenic, silicon, vanadium, and total alkalinity.

Related Variables

Arsenic, molybdenum, selenium, and vanadium are considered to be pathfinder elements for sandstone-type uranium deposits. Anomalous concentrations of these variables occur in waters produced from the Ogallala Formation in the southwestern area where high uranium values were found. The presence of anomalous concentrations of the pathfinders, together with high values for uranium, specific conductance, and 1,000 x uranium/specific conductance indicate a high potential for uranium mineralization in the Ogallala Formation in Lynn, Lubbock, and Garza Counties. The groundwaters in this area have a neutral to slightly acidic pH and moderate to high alkalinities and high concentrations of potassium and lithium. In Lynn and Garza Counties, mineralized waters from the Ogallala also contain high copper, chloride, and sodium concentrations.

Several groupings of groundwater samples with high uranium values are produced from the Dockum Group in Crosby and Garza Counties and from the Quartermaster Formation in Dickens County. Groundwaters generally have high values for specific conductance, 1,000 x uranium/specific conductance, copper, chloride, lithium, molybdenum, sodium, selenium, and total alkalinity. The waters are slightly more basic than those produced from the Ogallala and generally contain lesser amounts of potassium.

Waters that are high in uranium from the other Permian aquifers tend to have moderate to high copper, chloride, lithium, sodium, and sulfate contents and low 1,000 x uranium/specific conductance, potassium, and total alkalinity values.

Summary of Groundwater Data

The area that appears most promising for uranium mineralization is the southwestern part of the quadrangle, particularly Crosby, Garza, Lynn, and Lubbock Counties. The waters produced from the Ogallala Formation in this area have high values for arsenic, molybdenum, selenium, and vanadium. Groundwaters from the Dockum Group in Garza County indicate a potential for uranium mineralization. Most of the known uranium mineralization in this area is from the Dockum, including the only deposit mined in the quadrangle. The uranium appears to be associated with selenium, molybdenum, and copper in this area. Uranium appears to be associated with copper, sulfate, and total alkalinity in the Permian aquifers.

GEOCHEMICAL DISTRIBUTIONS IN STREAM SEDIMENTS

The sample site locations for stream sediments collected in the Lubbock Quadrangle are shown on Plate 4 at the 1:250,000 scale. The symbol plot for the hot-acid-soluble uranium as determined by fluorometric analysis (U-FL) and thorium is presented at this scale in Plates 5 and 6, respectively, and at the 1:1,000,000 scale in Figures B-1b and B-4b, respectively. The stream sediment data subset used to generate Tables B-1 and B-2 and the figures in Appendix B include all stream sediment samples collected from basins in the Lubbock Quadrangle that average approximately 25 km^2 (10 mi^2). Samples which were collected from basins larger than 50 km^2 (Phase G) were not included. The number of stream sediment samples (551) in this subset which were collected from the major stratigraphic units of the survey area are presented in Table 3. Results from all stream sediment samples collected from the Lubbock

Quadrangle are included in Table B-3 and in the microfiche in Appendix C.

Observed data for the variables hot-acid-soluble uranium (U-FL), total uranium as determined by neutron activation (U-NT), thorium, barium, copper, cobalt, iron, manganese, titanium, yttrium, and zinc are listed in Table B-3. The figures in Appendix B represent log frequency, log normal probability, percentile, and areal symbol plots for these same variables, plus U-FL/U-NT, cerium, chromium, lithium, and nickel.

Uranium

The percentile plots for U-FL and U-NT (Figures B-1a and B-2a, respectively) indicate that sediments derived from the Dockum Group and Blaine Formation have the highest background ranges for these variables. The geochemical distribution maps (Figures B-1b and B-2b, respectively) indicate that most U-FL and U-NT values above the 85th percentile (2.3 and 3.1 ppb, respectively) in the quadrangle occur in sediments derived from the Dockum Group and Blaine Formation.

There are two large (more than 6 samples) groups of sediment samples with high U-FL and U-NT values. One group occurs in eastern Garza and western Kent Counties where the sediments are derived from the Dockum Group. The other group occurs in south central Motley County with the sediments derived from the Quartermaster and Ogallala Formations and the Dockum Group. There are also three other groupings of sediments that have high U-NT, but not necessarily high U-FL values. One is in northern Dickens County, another is in southeastern Crosby County, and the third is in northern Garza County. These sediments are derived from the Dockum Group.

Small groups of sediments with high U-FL and U-NT values occur in both south central King and east central Stonewall Counties. These sediments are derived primarily from the Blaine although some are from the Choza and San Angelo Formations.

Many of the sediments with U-FL values less than 1.36 ppm (15th percentile) appear to be derived from the Whitehorse Sandstone-Cloud Chief Gypsum. Most of the sediments with U-NT values less than 1.90 ppm (15th percentile) are derived primarily from the Whitehorse Sandstone-Cloud Chief Gypsum. The percentile plot (Figure B-2a) indicates this unit to have the lowest background range for U-NT.

The correlation matrix (Table B-2) indicates significant positive correlations, with coefficients for both Pearson and Spearman correlations of >0.35 between U-FL and U-NT, arsenic, cerium, chromium, cobalt, copper, iron, manganese, phosphorus, scandium, titanium, vanadium, yttrium, and zinc. The table also indicates similar positive correlations between U-NT and U-FL, barium, cerium, manganese, titanium, vanadium, yttrium, and zirconium.

Thorium

Figure B-4b indicates that most of the sediments with thorium concentrations greater than 9.0 ppm (85th percentile) are derived from the Blaine Formation and Dockum Group. The percentile plot (Figure B-4a) indicates that these units plus the Choza-San Angelo Formations have the highest background ranges for thorium. The lowest background range occurs in sediments from the Ogallala Formation. The sediments with thorium values less than 4.0 ppm (15th percentile) are primarily from the Whitehorse-Cloud Chief, Quartermaster, and Ogallala Formations.

The correlation matrix (Table B-2) indicates significant positive correlations, with coefficients of ≧0.35 for both Pearson and Spearman correlations, between thorium and cerium, cobalt, chromium, iron, niobium, nickel, scandium, titanium, vanadium, yttrium, and zinc.

Related Variables

Sediments containing anomalously high concentrations of U-FL, U-NT, and thorium seem to be derived primarily from the Blaine Formation and Dockum Group. The thorium does not seem to be geographically associated with the uranium. The U-FL/U-NT values tend to be moderate to low where high U-FL concentrations were found in sediments derived from the Dockum Group. Some high U-FL/U-NT values were found associated with high U-FL concentrations in sediments derived from the Blaine Formation. Most of the U-FL/U-NT values greater than the 85th percentile value (0.94) occur in sediments from the Whitehorse-Cloud Chief Formations which generally contained moderate to low uranium concentrations.

Sediments with high uranium concentrations from the Dockum Group, particularly in Crosby, Garza, and Kent Counties, also tend to have high concentrations of barium, cerium, manganese, titanium, yttrium, and sometimes vanadium. The association seems to indicate residual or heavy minerals or possibly hydrated manganese oxides are responsible for the concentration of uranium.

The sediments with high uranium values derived from the Blaine Formation in southern King and Stonewall Counties also contain high cobalt, chromium, copper, iron, sometimes lithium, nickel, vanadium, and zinc concentrations. The association of metals appears to be related to the red bed lithology of these rocks. The presence of anomalous copper and uranium values in these sediments indicates potential for copper-uranium mineralization in this area.

Geochemical data for sediments do not indicate that any area is particularly favorable for uranium mineralization. However, the presence of one small high-grade deposit (the MacArthur Prospect) in Dickinson County, the presence of aerial radiometric anomalies (Geo-Data International, 1975), and the presence of uranium anomalies in both the groundwater and sediment data seems to indicate that Garza County, with the adjacent parts of Crosby and Kent Counties, would have significant potential for uranium mineralization. Stream sediment data from wide-spaced geochemical sampling (URE Project, December 1977) also indicated this area to be favorable. Not enough stream sediment data are available from the area underlain by the Ogallala Formation to make an assessment, even though the groundwater data indicate the area is favorable.

Summary of Stream Sediment Data

Stream sediment data indicate that the Dockum Group has the highest potential for mineralization, particularly in and around Garza County. Associated elements indicate that uranium may occur in residual minerals or in hydrous manganese oxides. Sediments derived from the Blaine Formation show limited potential for small red bed copper-uranium deposits similar to those found in southwestern Oklahoma.

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APPENDIX A

GROUNDWATER

APPENDIX A

GROUNDWATER

LIST OF TABLES

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LIST OF FIGURES, Continued

LIST OF FIGURES, Continued

Table A-1

STATISTICAL SUMMARY FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

ELEMENT	NO. SAMPLES ANALYZED: MEASURABLE VALUES	NO. SAMPLES ANALYZED: BELOW DETECTION LIMIT	DETECTION LIMIT	MINIMUM VALUE	MAXIMUM VALUE	MEAN	MEDIAN	MODE	STANDARD DEVIATION	COEFFICIENT OF VARIATION	LN TRANSFORMATION MEAN	LN TRANSFORMATION S. D.	LN TRANSFORMATION ROBUST MEAN	LN TRANSFORMATION ROBUST S. D.
U	983	11	<0.20	<0.20	411.30	15.93	10.83	11.35	21.372	1.341	2.35	0.92	2.35	0.96
SP	994			192	50000	3269	2375	879	3573.7	1.1	7.74	0.83	7.72	0.76
U/SP	994			0.01	180.53	7.44	5.53	1.78	9.044	1.216	1.47	1.24	1.56	1.12
U/B	994			0.01	674.87	35.38	28.15	0.84	47.387	1.339	3.05	1.24	3.16	1.17
U/SO	994			0.05	6975.99	214.08	44.02	7.28	459.358	2.146	3.77	2.05	3.81	1.88
AG	292	702	<2	<2	46	3	<2	<2	4.0	1.1	1.09	0.48		
AL	423	571	<10	<10	600	45	<10	<10	47.5	1.0	3.55	0.68		
AS	848	146	<0.5	<0.5	104.6	4.1	2.1	<0.5	5.61	1.37	0.95	0.94	0.68	1.13
B	994			9	10013	715	441	290	868.0	1.2	6.15	0.91	6.16	0.90
BA	981	13	<2	<2	695	39	18	6	64.1	1.6	3.05	1.08	2.99	1.00
BE	18	976	<1	<1	9	2	<1	<1	2.2	1.0	0.58	0.64		
CA	993	1	<0.1	<0.1	1481.0	248.3	101.5	45.0	240.64	0.97	4.86	1.28	4.90	0.97
CO	268	726	<2	<2	39	3	<2	<2	4.0	1.1	1.08	0.49		
CR	279	715	<4	<4	156	11	<4	<4	16.2	1.5	2.08	0.66		
CU	412	582	<2	<2	166	9	<2	<2	16.4	1.7	1.85	0.81		
FE	484	510	<10	<10	9804	43	<10	<10	445.3	10.3	2.99	0.56		
K	989	5	<0.1	<0.1	118.0	7.9	6.3	2.9	6.97	0.89	1.76	0.82	1.77	0.78
LI	994			4	3800	105	80	66	146.4	1.4	4.39	0.71	4.40	0.70
MG	993	1	<0.1	<0.1	1783.0	88.3	64.3	31.1	102.82	1.16	4.09	0.96	4.13	0.89
MN	819	175	<2	<2	4205	53	5	<2	231.0	4.4	2.25	1.40	1.66	1.92
MO	534	460	<4	<4	262	11	<4	<4	16.6	1.5	2.16	0.63		
NA	994			0.4	1838.0	149.9	82.1	23.6	192.76	1.29	4.46	1.09	4.47	1.03
NI	110	884	<4	<4	41	6	<4	<4	5.8	0.8	1.77	0.50		
P	20	974	<40	<40	1340	272	<40	<40	304.6	1.1	5.12	1.02		
SC	323	671	<1	<1	12	1	<1	<1	1.3	0.8	0.30	0.50		
SE	796	198	<0.2	<0.2	40.0	0.7	0.4	0.3	2.42	3.51	-0.80	0.62	-1.05	0.64
SI	987	7	<0.1	<0.1	174.2	15.4	12.2	6.8	15.15	0.98	2.46	0.78	2.49	0.62
SR	993	1	<2	<2	74018	5118	3463	1167	5125.5	1.0	8.05	1.10	8.09	0.92
TI	434	560	<2	<2	2521	35	<2	<2	242.3	6.8	2.20	0.81		
V	608	386	<4	<4	371	25	7	<4	30.1	1.2	2.88	0.85		
Y	352	642	<1	<1	14	1	<1	<1	1.8	1.3	0.13	0.43		
ZN	905	89	<4	<4	9679	201	59	5	582.4	2.9	4.21	1.43	3.95	1.63
ZR	232	762	<2	<2	76	4	<2	<2	10.1	2.2	1.07	0.62		
T-AK	994			28	4030	269	268	311	184.6	0.7	5.44	0.60	5.47	0.57
M-AK	994			28	3920	267	267	262	180.6	0.7	5.44	0.59	5.47	0.57
P-AK	993			0	1585	2	0	0	52.2	18.0				
CL	960	33	<10	<10	32860	381	101	28	1295.6	3.4	4.79	1.44	4.67	1.46
NA/C	993			0.00	70.54	1.58	0.75	0.30	3.813	2.417	-0.23	1.13	-0.22	1.00
PH	991			4.7	10.6	7.3	7.3	7.5	0.60	0.08				
SO4	976	18	<5	<5	9925	756	278	47	883.0	1.2	5.52	1.80	5.51	1.66

NOTE: Refer to Table 1, Page 22 and Table C-1, Page C-4 for concentration units and symbol definitions.

Table A-2

CORRELATION MATRIX FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

	L-U	L-K	L-LI	L-AS	L-V	L-SI	L-SP	LSO4	L-CL
L-U	1.00 (983)								
L-K	0.17*** 0.19*** (978)	1.00 (989)							
L-LI	0.32*** 0.33*** (983)	0.60*** 0.63*** (989)	1.00 (994)						
L-AS	0.12*** 0.08** (845)	0.42*** 0.47*** (844)	0.25*** 0.29*** (848)	1.00 (848)					
L-V	0.22*** 0.20*** (607)	0.52*** 0.56*** (606)	0.42*** 0.47*** (608)	0.64*** 0.65*** (593)	1.00 (608)				
L-SI	0.20*** 0.13*** (976)	0.26*** 0.43*** (982)	0.13*** 0.23*** (987)	0.54*** 0.62*** (843)	0.51*** 0.59*** (603)	1.00 (987)			
L-SP	0.15*** 0.22*** (983)	-0.09*** -0.16*** (989)	0.30*** 0.25*** (994)	-0.36*** -0.38*** (848)	-0.23*** -0.23*** (608)	-0.44*** -0.49*** (987)	1.00 (994)		
LSO4	0.10*** 0.16*** (966)	-0.27*** -0.31*** (971)	0.10*** 0.06* (976)	-0.40*** -0.42*** (834)	-0.34*** -0.32*** (595)	-0.49*** -0.57*** (969)	0.77*** 0.79*** (976)	1.00 (976)	
L-CL	0.14*** 0.21*** (950)	0.01 -0.02 (955)	0.32*** 0.30*** (960)	-0.26*** -0.27*** (822)	-0.12*** -0.11*** (584)	-0.35*** -0.33*** (953)	0.72*** 0.72*** (960)	0.60*** 0.59*** (945)	1.00 (960)
L-B	0.24*** 0.34*** (983)	0.22*** 0.15*** (989)	0.61*** 0.53*** (994)	-0.09*** -0.09*** (848)	0.05 0.07* (608)	-0.31*** -0.37*** (987)	0.61*** 0.65*** (994)	0.56*** 0.62*** (976)	0.49*** 0.53*** (960)
L-NA	0.24*** 0.31*** (983)	0.15*** 0.09*** (989)	0.48*** 0.42*** (994)	-0.20*** -0.22*** (848)	-0.05 -0.01 (608)	-0.33*** -0.32*** (987)	0.59*** 0.62*** (994)	0.43*** 0.44*** (976)	0.68*** 0.72*** (960)
L-MN	-0.16*** -0.05 (808)	-0.09** -0.14*** (817)	0.12*** 0.09*** (819)	-0.29*** -0.37*** (681)	-0.19*** -0.28*** (456)	-0.41*** -0.43*** (813)	0.42*** 0.51*** (819)	0.32*** 0.43*** (805)	0.36*** 0.40*** (796)
L-ZN	-0.06* -0.08** (895)	0.08** 0.09*** (902)	0.04 0.02 (905)	0.02 0.04 (774)	0.03 0.01 (568)	0.05* 0.08** (898)	-0.01 -0.06* (905)	-0.05 -0.08** (888)	-0.04 -0.07** (877)
PH	-0.11*** -0.13*** (980)	0.02 0.09*** (986)	-0.01 -0.00 (991)	0.07** 0.14*** (845)	0.02 0.11*** (607)	-0.11*** 0.02 (984)	-0.02 -0.16*** (991)	-0.11*** -0.22*** (973)	-0.08** -0.17*** (957)
L-MG	0.33*** 0.37*** (982)	0.22*** 0.10*** (988)	0.48*** 0.42*** (993)	-0.12*** -0.16*** (847)	-0.03 -0.02 (608)	-0.12*** -0.25*** (986)	0.59*** 0.72*** (993)	0.61*** 0.73*** (975)	0.44*** 0.55*** (959)
L-SR	0.32*** [illegible] (982)	0.08** 0.02 (988)	0.43*** 0.38*** (993)	-0.16*** -0.20*** (847)	-0.01 -0.03 (608)	-0.16*** -0.30*** (986)	0.63*** 0.71*** (993)	0.67*** 0.72*** (975)	0.47*** 0.53*** (959)
L-CA	0.09*** 0.11*** (982)	-0.23*** -0.31*** (988)	0.06* 0.00 (993)	-0.43*** -0.45*** (847)	-0.47*** -0.46*** (608)	-0.33*** -0.46*** (986)	0.64*** 0.70*** (993)	0.78*** 0.81*** (975)	0.43*** 0.50*** (959)
LTAK	0.15*** 0.13*** (983)	0.19*** 0.24*** (989)	0.07** 0.11*** (994)	0.18*** 0.21*** (848)	0.29*** 0.30*** (608)	0.26*** 0.32*** (987)	-0.28*** -0.34*** (994)	-0.47*** -0.51*** (976)	-0.18*** -0.22*** (960)
L-SE	0.10*** 0.07** (787)	0.08** 0.04 (792)	0.07* 0.01 (796)	0.15*** 0.05 (688)	0.05 0.04 (504)	-0.00 0.03 (789)	-0.01 -0.06* (796)	-0.09** -0.12*** (787)	0.00 -0.06* (766)

NOTE: (1) Pearson correlation/Spearman correlation/(sample size). If either element has a concentration below the laboratory detection limits, it is omitted from the pairwise computations.
(2) Significance levels: *-10%, **-5%, ***-1%.

	L-B	L-NA	L-MN	L-ZN	PH	L-MG	L-SR	L-CA	LTAK	L-SE
L-B	1.00 (994)									
L-NA	0.69*** 0.66*** (994)	1.00 (994)								
L-MN	0.21*** 0.34*** (819)	0.25*** 0.36*** (819)	1.00 (819)							
L-ZN	-0.01 -0.06* (905)	-0.05 -0.09*** (905)	0.10*** 0.10*** (766)	1.00 (905)						
PH	0.05 -0.02 (991)	0.04 -0.05 (991)	-0.04 -0.07* (816)	-0.07** 0.01 (902)	1.00 (991)					
L-MG	0.61*** 0.67*** (993)	0.37*** 0.39*** (993)	0.18*** 0.38*** (819)	0.06* 0.00 (905)	-0.21*** -0.24*** (990)	1.00 (993)				
L-SR	0.63*** 0.68*** (993)	0.37*** 0.40*** (993)	0.19*** 0.37*** (819)	0.05 0.01 (905)	-0.21*** -0.25*** (990)	0.87*** 0.88*** (993)	1.00 (993)			
L-CA	0.45*** 0.46*** (993)	0.25*** 0.26*** (993)	0.24*** 0.39*** (819)	0.03 -0.02 (905)	-0.25*** -0.31*** (990)	0.79*** 0.78*** (993)	0.81*** 0.78*** (993)	1.00 (993)		
LTAK	-0.25*** -0.21*** (994)	0.01 0.03 (994)	-0.19*** -0.26*** (819)	-0.13*** -0.06* (905)	0.04 0.06** (991)	-0.41*** -0.45*** (993)	-0.42*** -0.44*** (993)	-0.57*** -0.57*** (993)	1.00 (994)	
L-SE	-0.03 -0.07* (796)	0.06* 0.02 (796)	0.08* -0.00 (651)	0.05 0.02 (724)	0.08** 0.06 (794)	-0.08** -0.14*** (795)	-0.08** -0.10*** (795)	-0.16*** -0.17*** (795)	0.18*** 0.20*** (796)	1.00 (796)

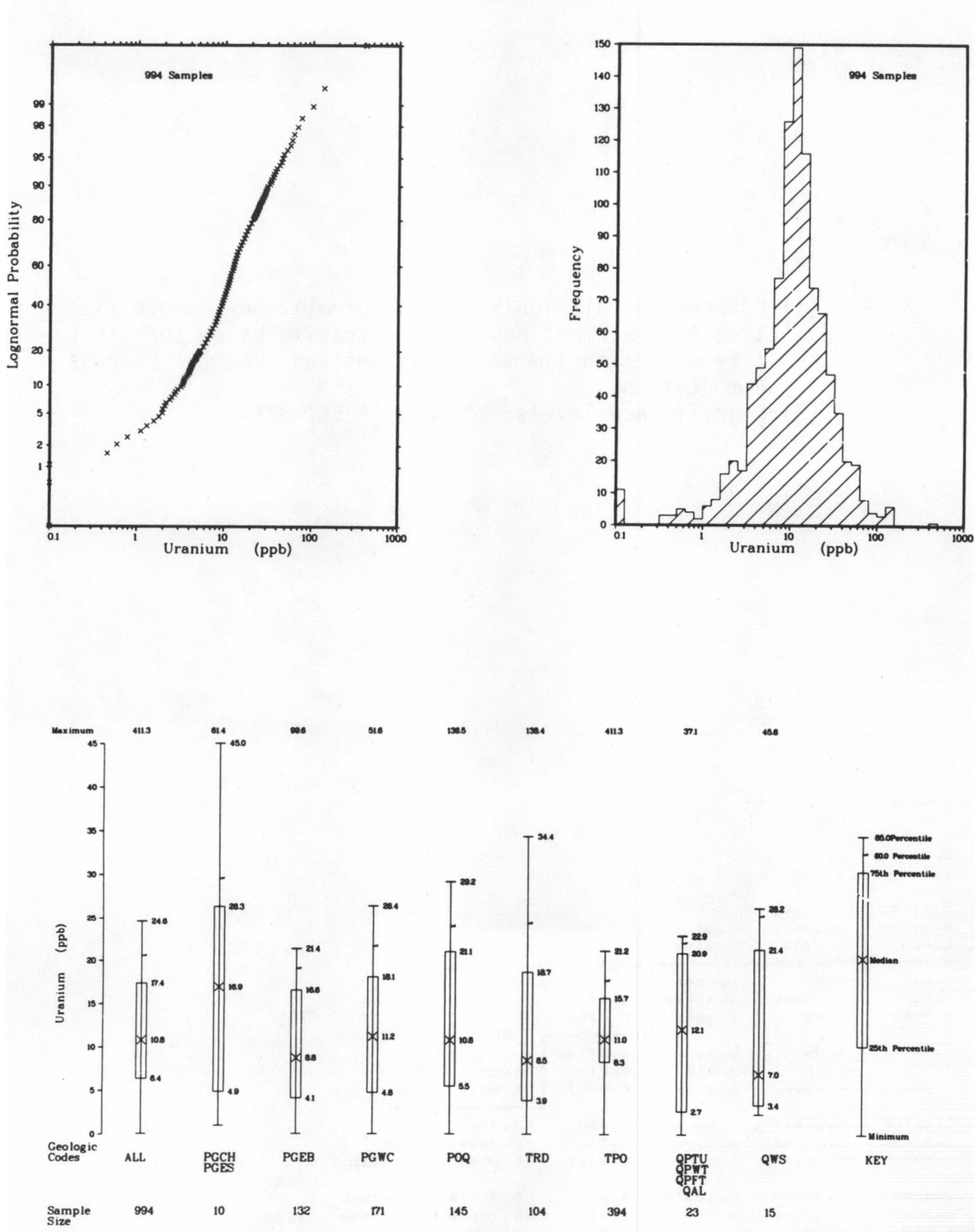


Figure A-1a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR URANIUM (PPB)
IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

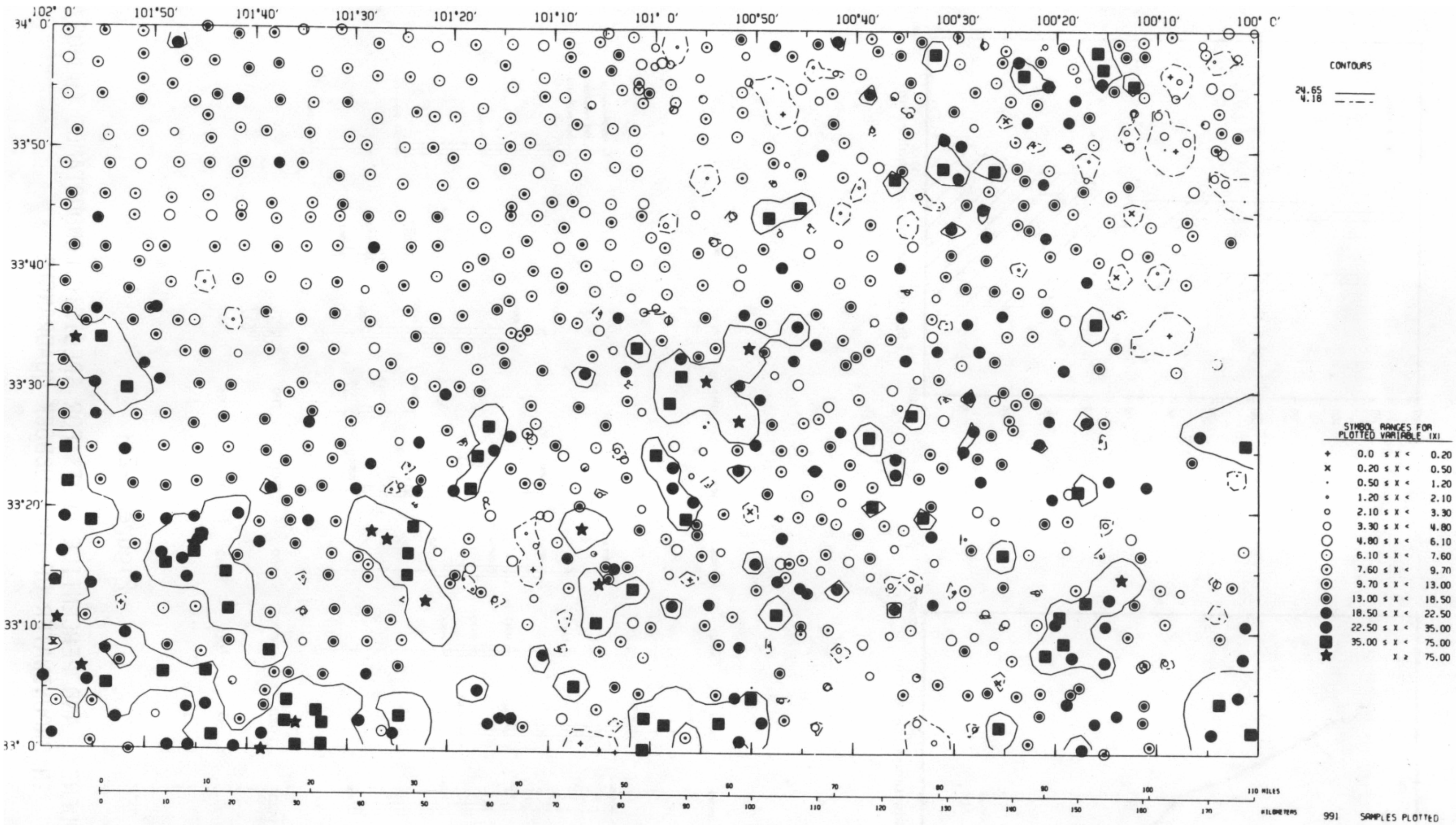


Figure A-1b

GEOCHEMICAL DISTRIBUTION OF URANIUM (PPB) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

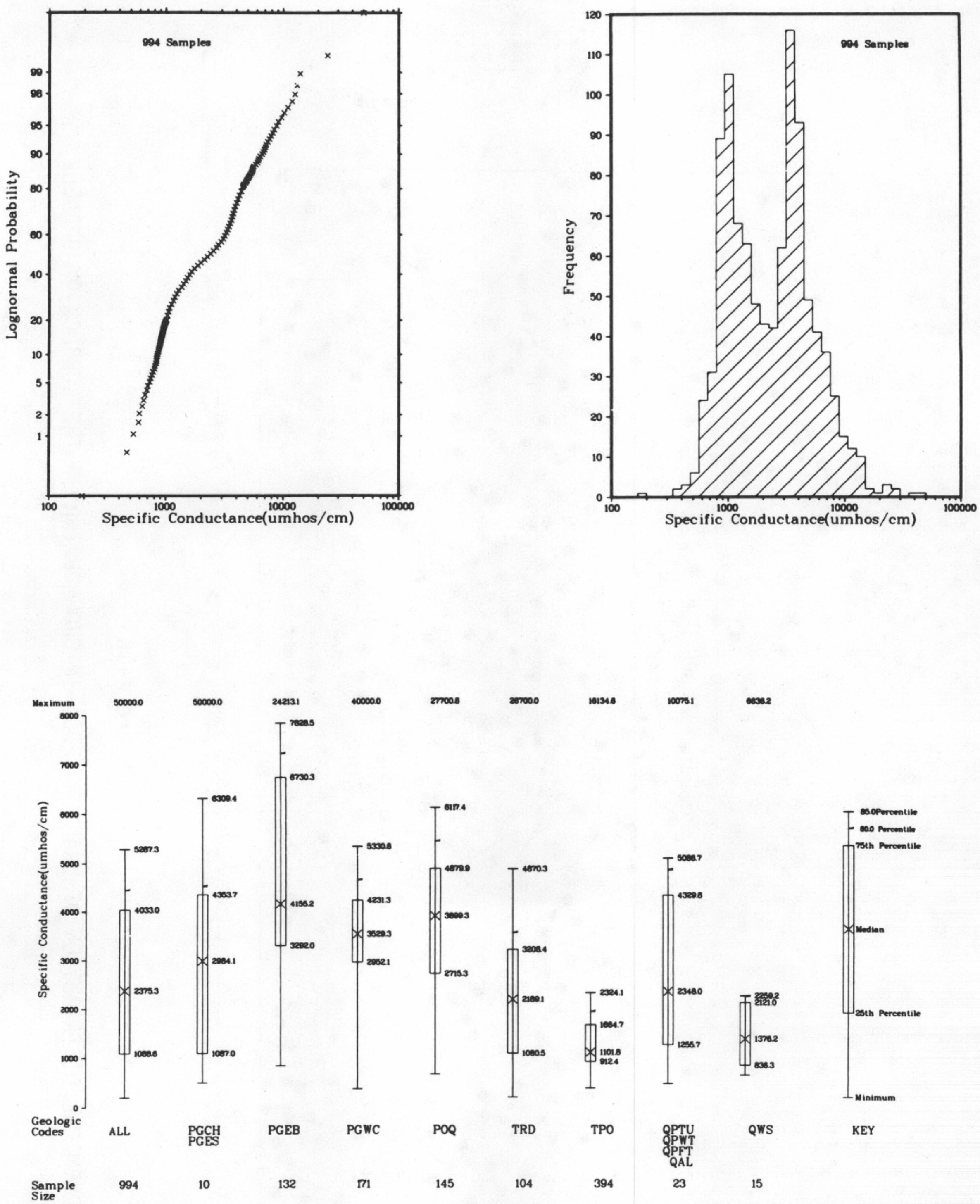


Figure A-2a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR SPECIFIC CONDUCTANCE (μMHOS/CM) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

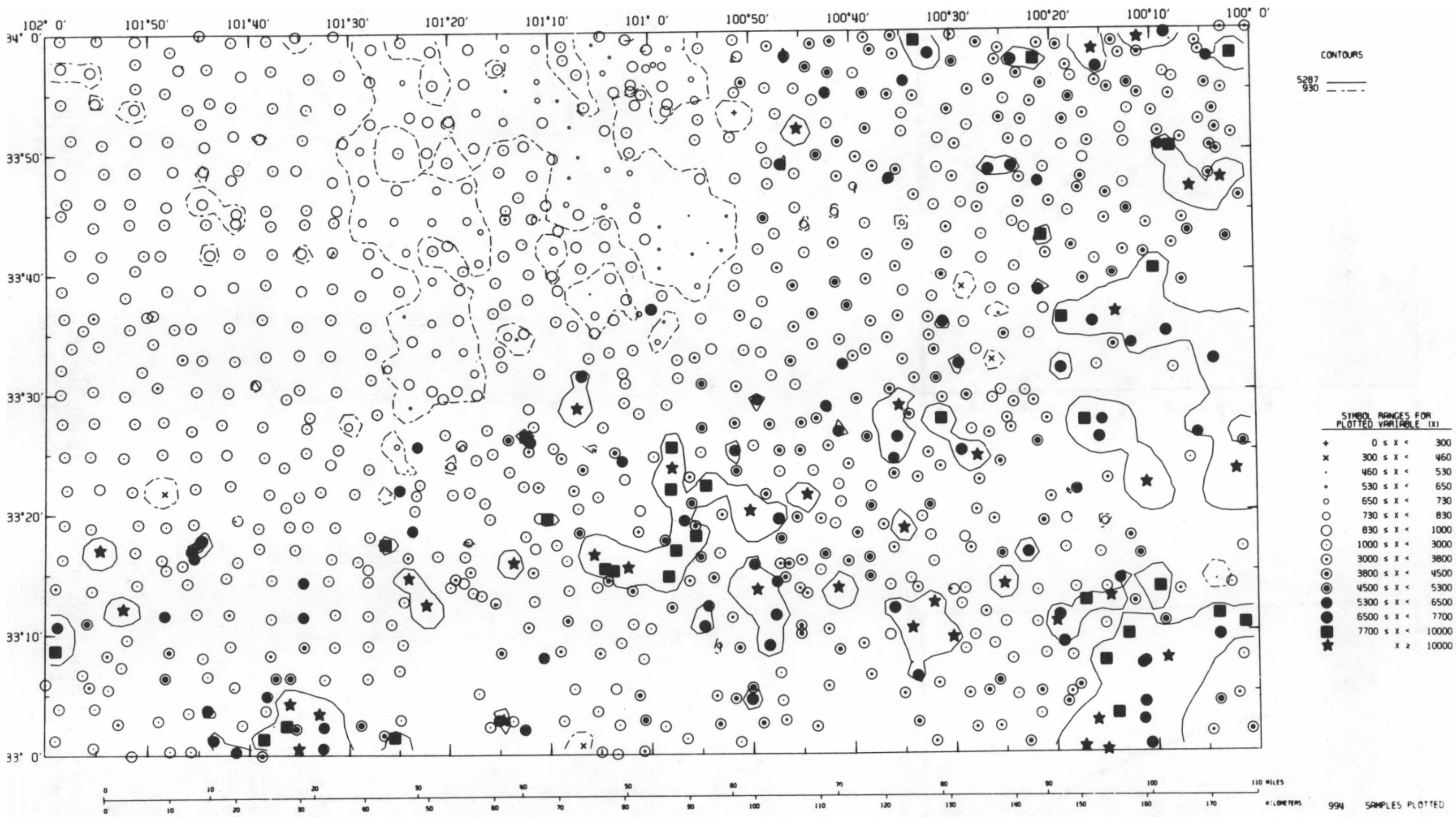


Figure A-2b

GEOCHEMICAL DISTRIBUTION OF SPECIFIC CONDUCTANCE (μMHOS/CM) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

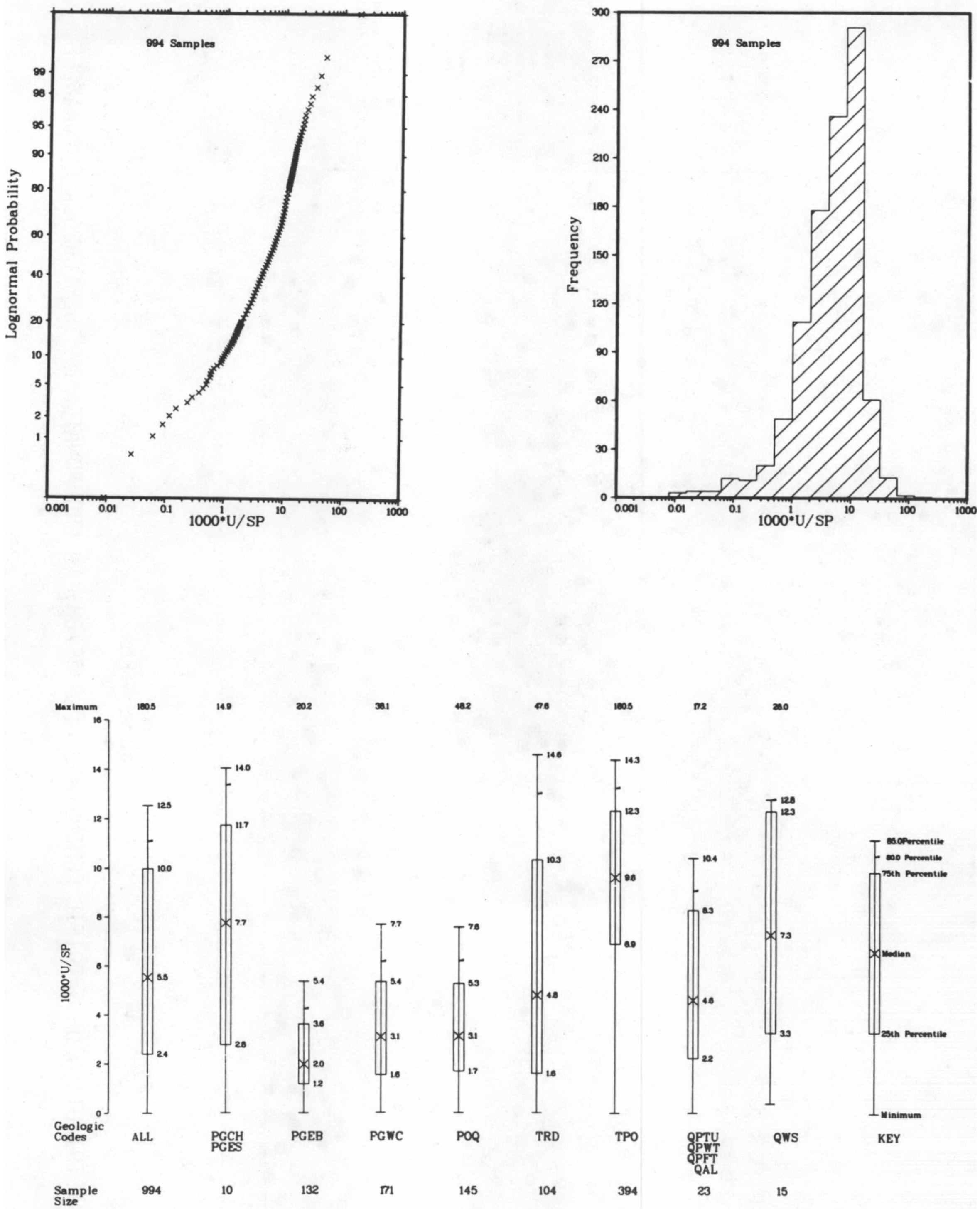


Figure A-3a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR 1,000·URANIUM/
SPECIFIC CONDUCTANCE IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

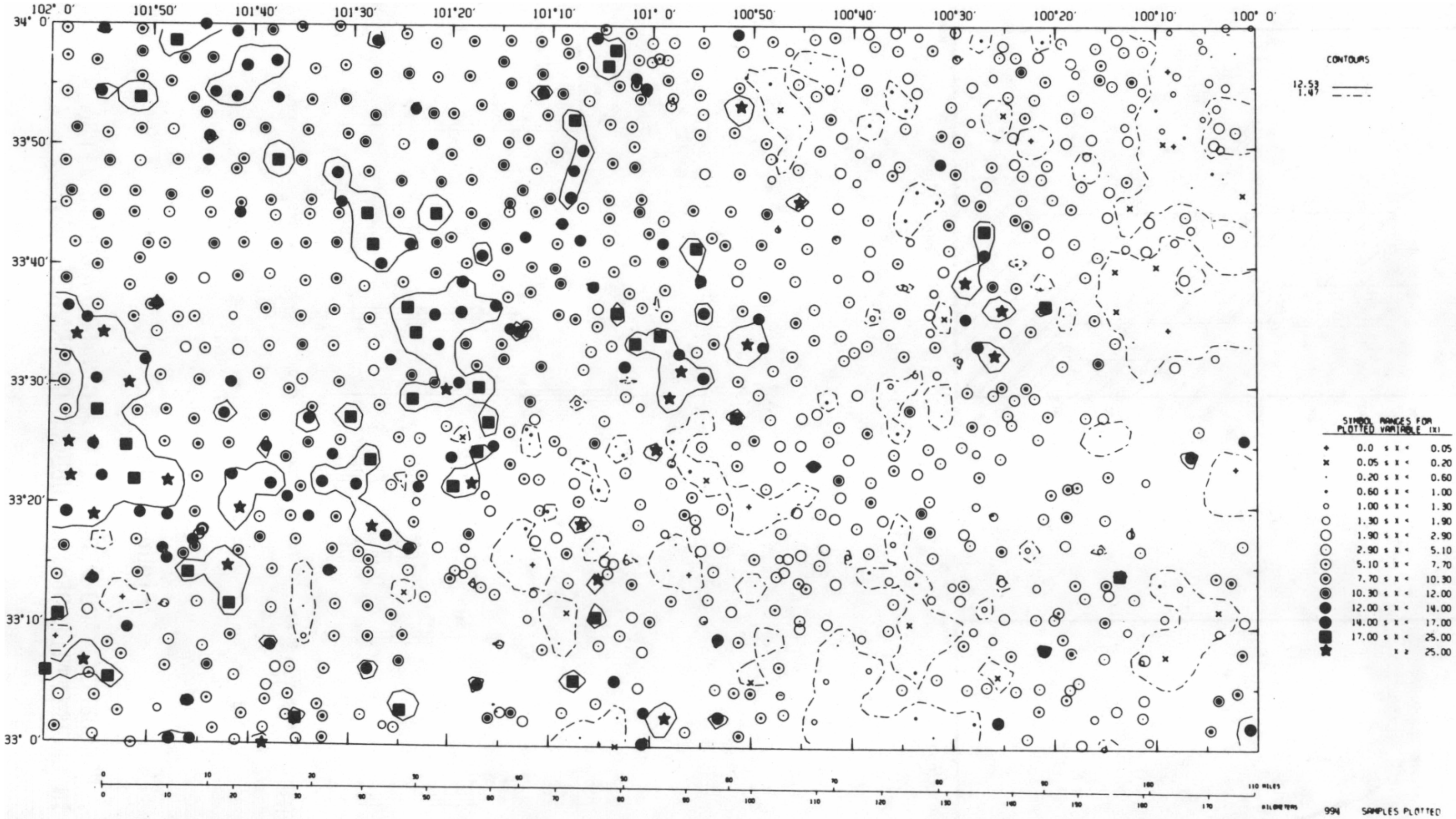


Figure A-3b

GEOCHEMICAL DISTRIBUTION OF 1,000·URANIUM/SPECIFIC CONDUCTANCE IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

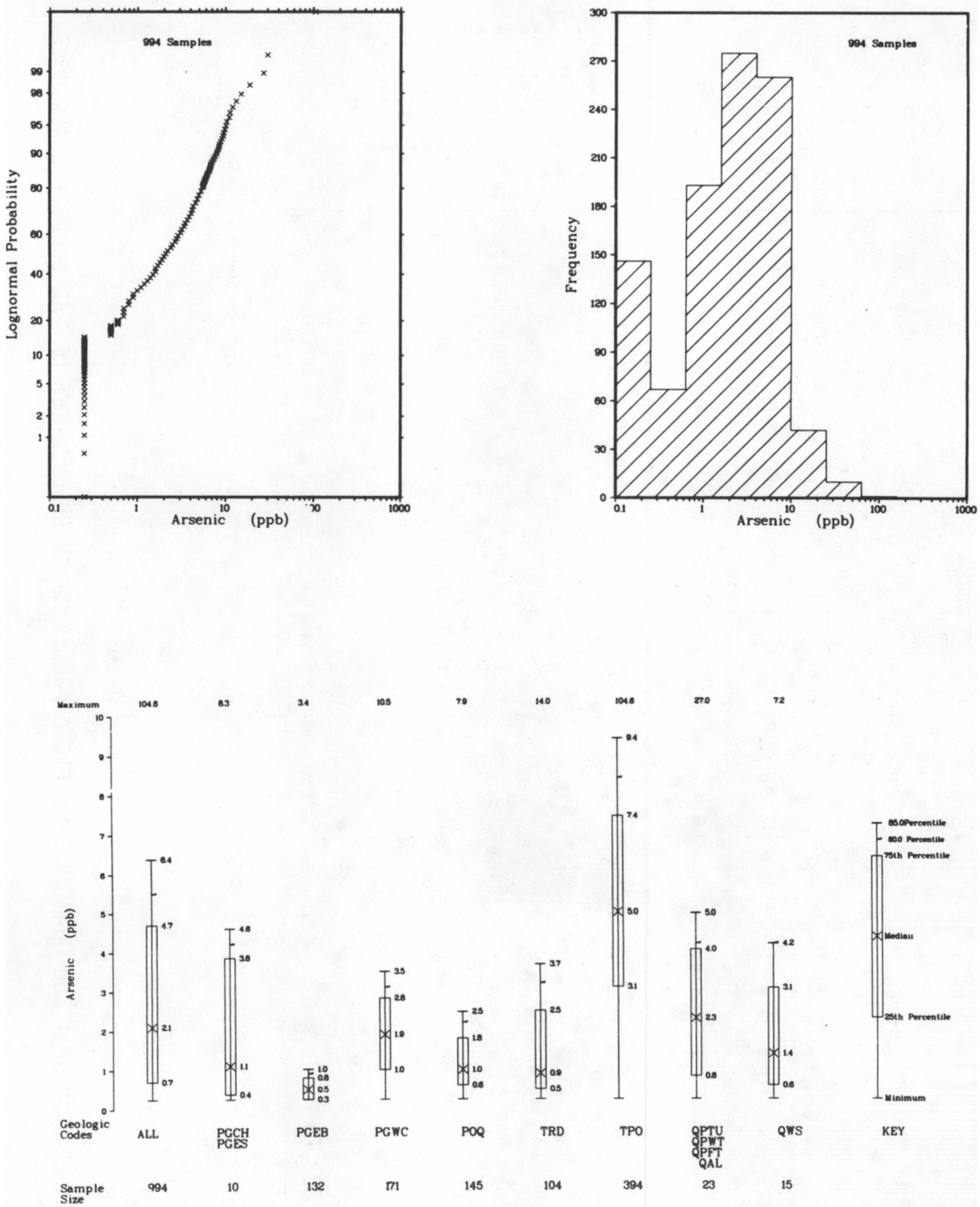


Figure A-4a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR ARSENIC (PPB) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

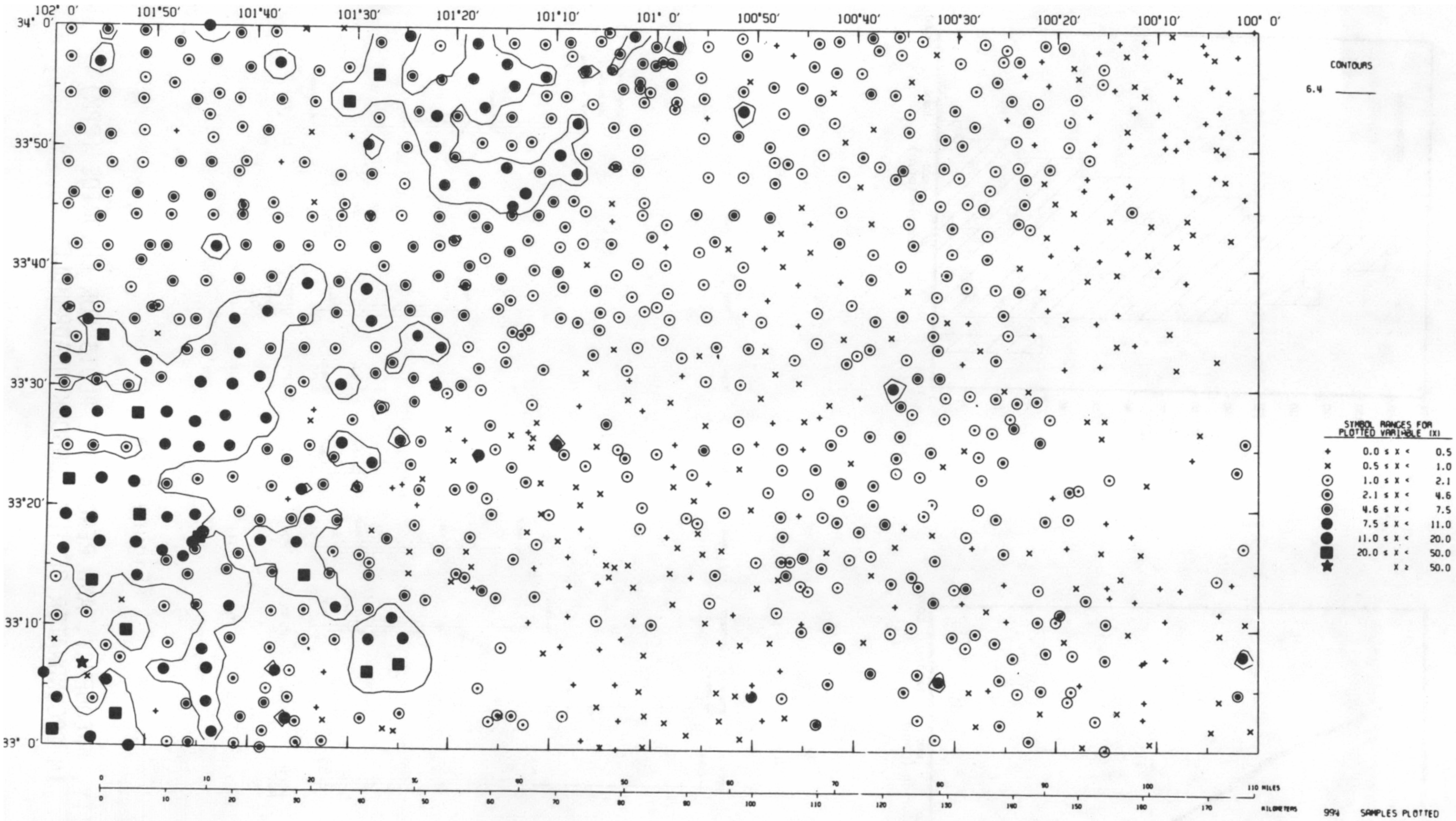


Figure A-4b

GEOCHEMICAL DISTRIBUTION OF ARSENIC (PPB) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

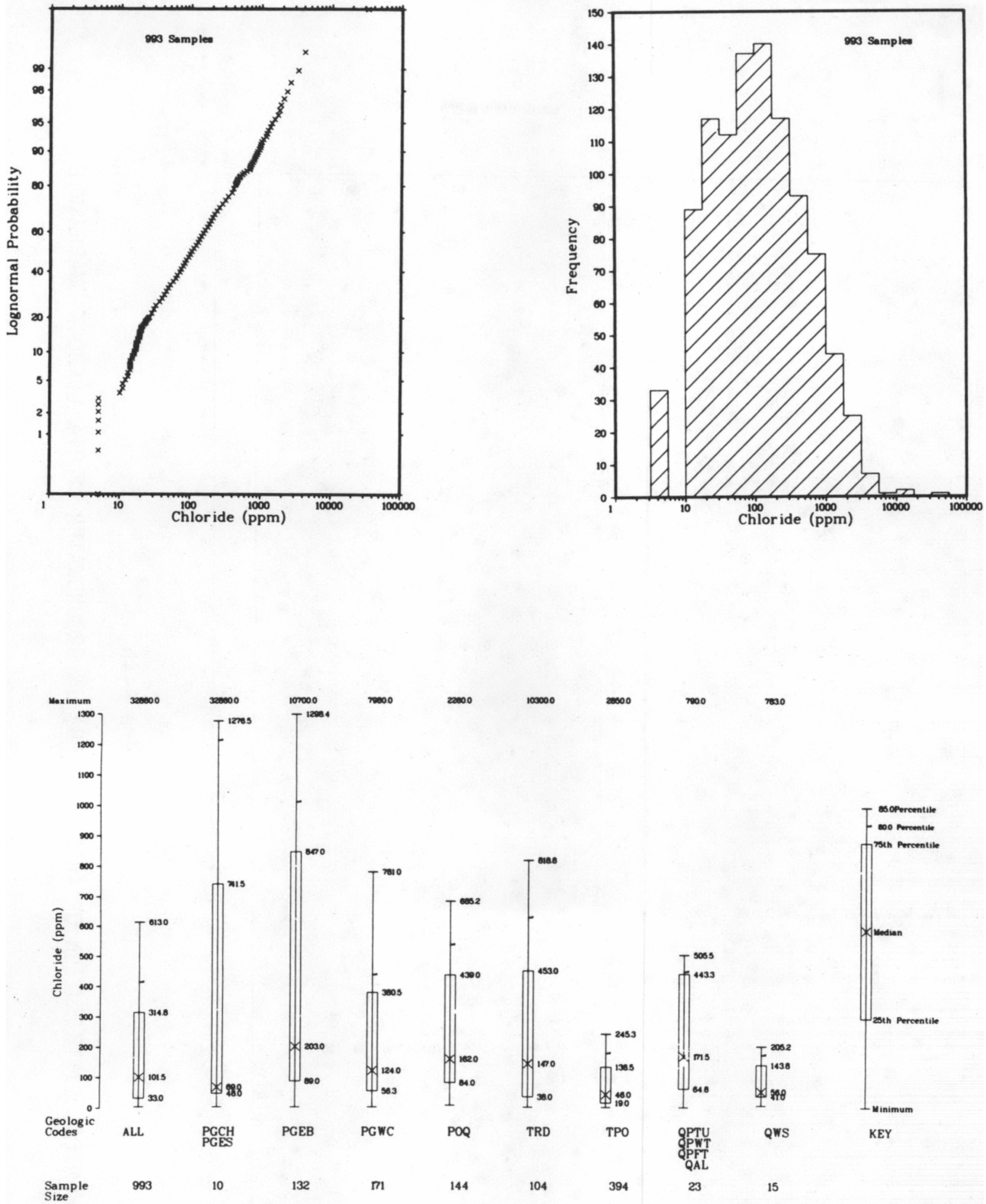


Figure A-5a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR CHLORIDE (PPM)
IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

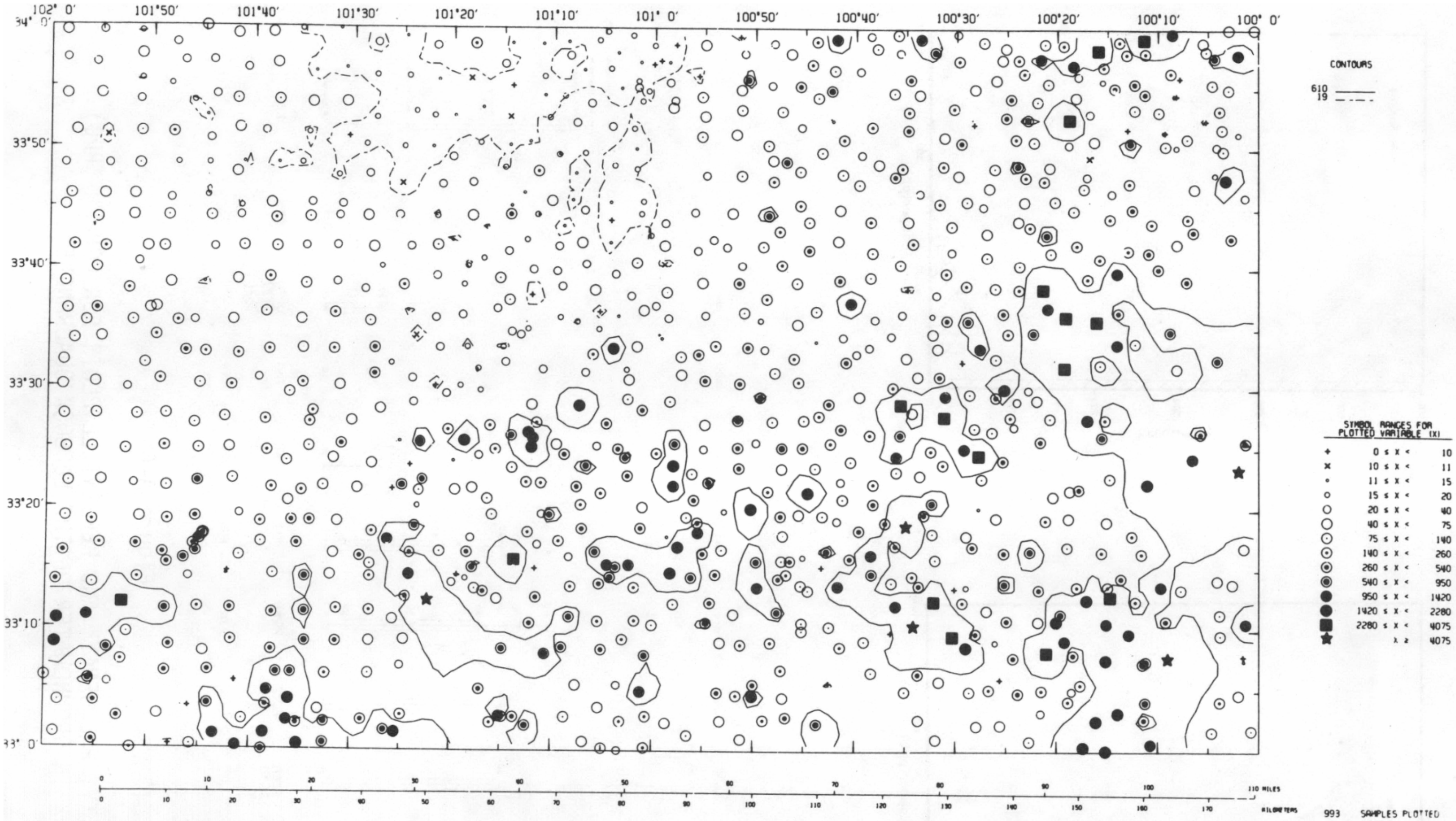


Figure A-5b

GEOCHEMICAL DISTRIBUTION OF CHLORIDE (PPM) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

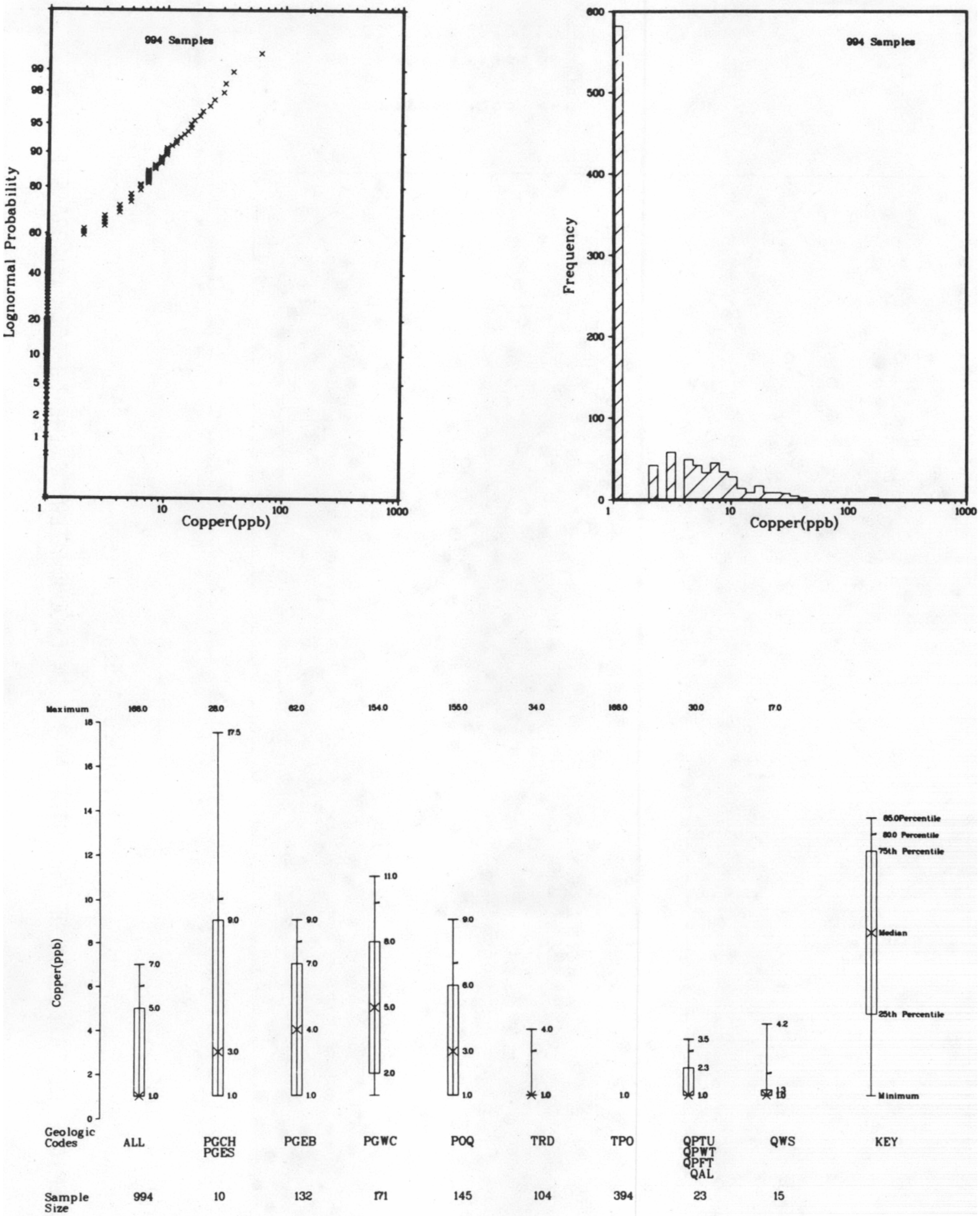


Figure A-6a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR COPPER (PPB)
IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

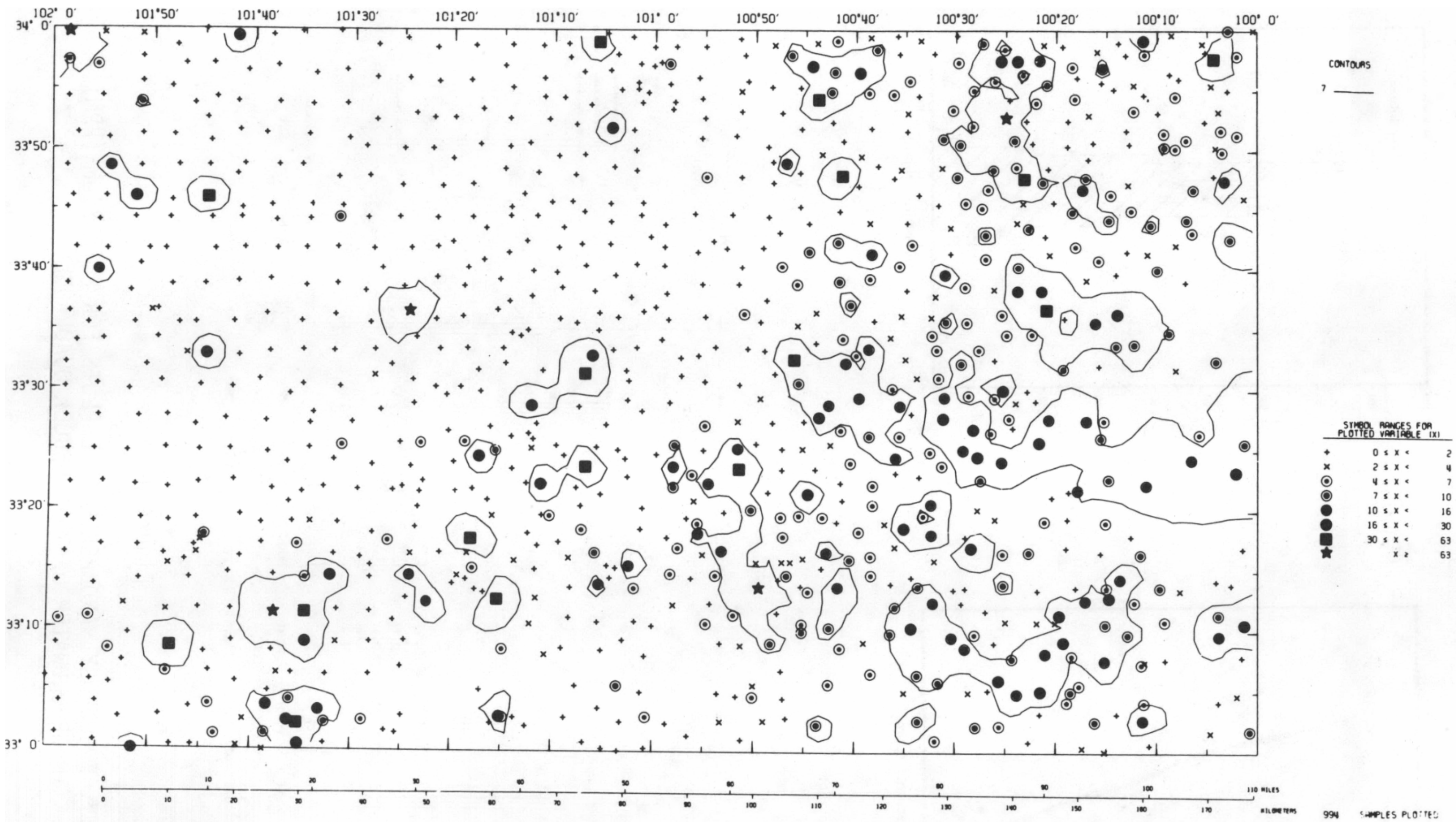


Figure A-6b

GEOCHEMICAL DISTRIBUTION OF COPPER (PPB) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

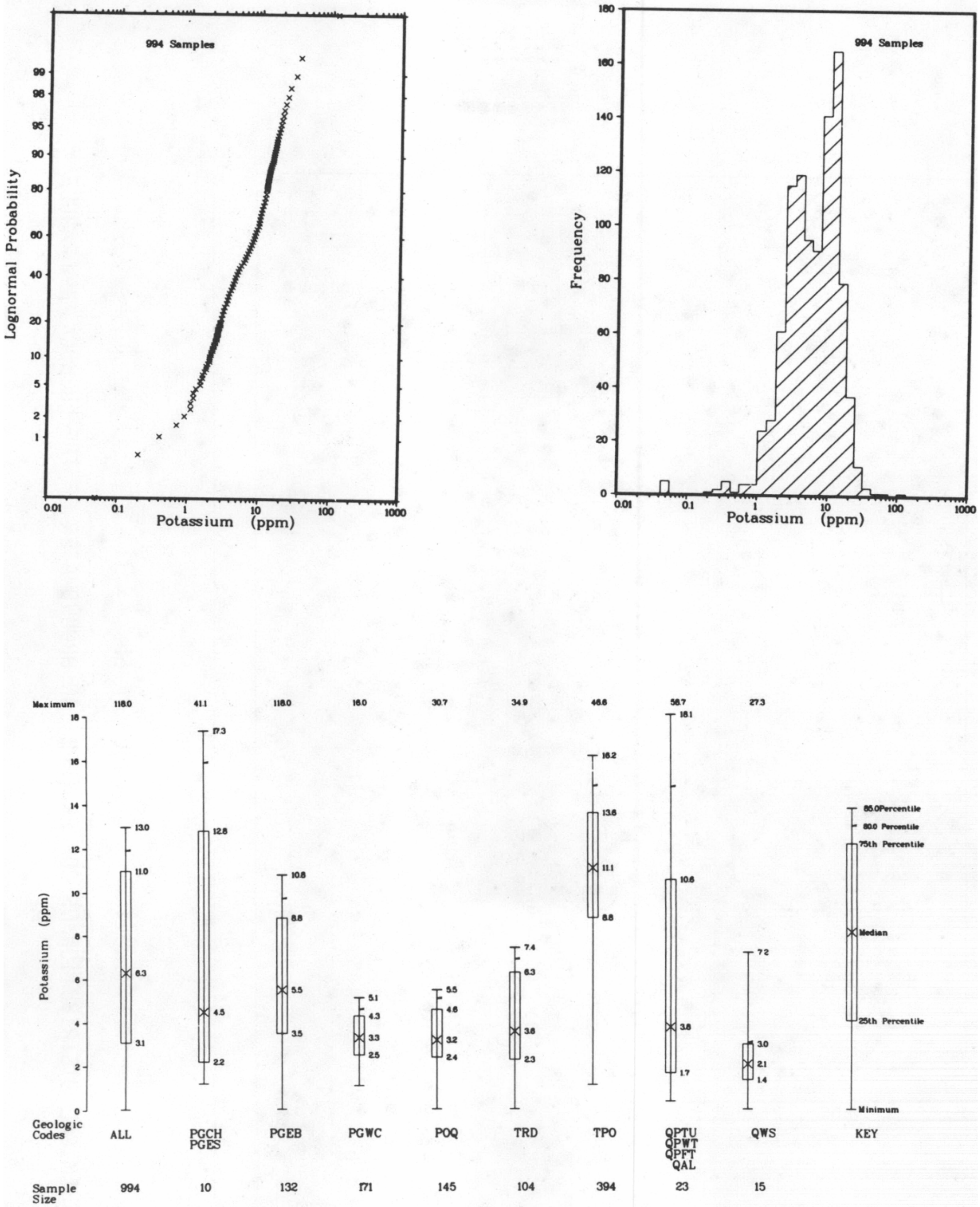


Figure A-7a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR POTASSIUM (PPM)
IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

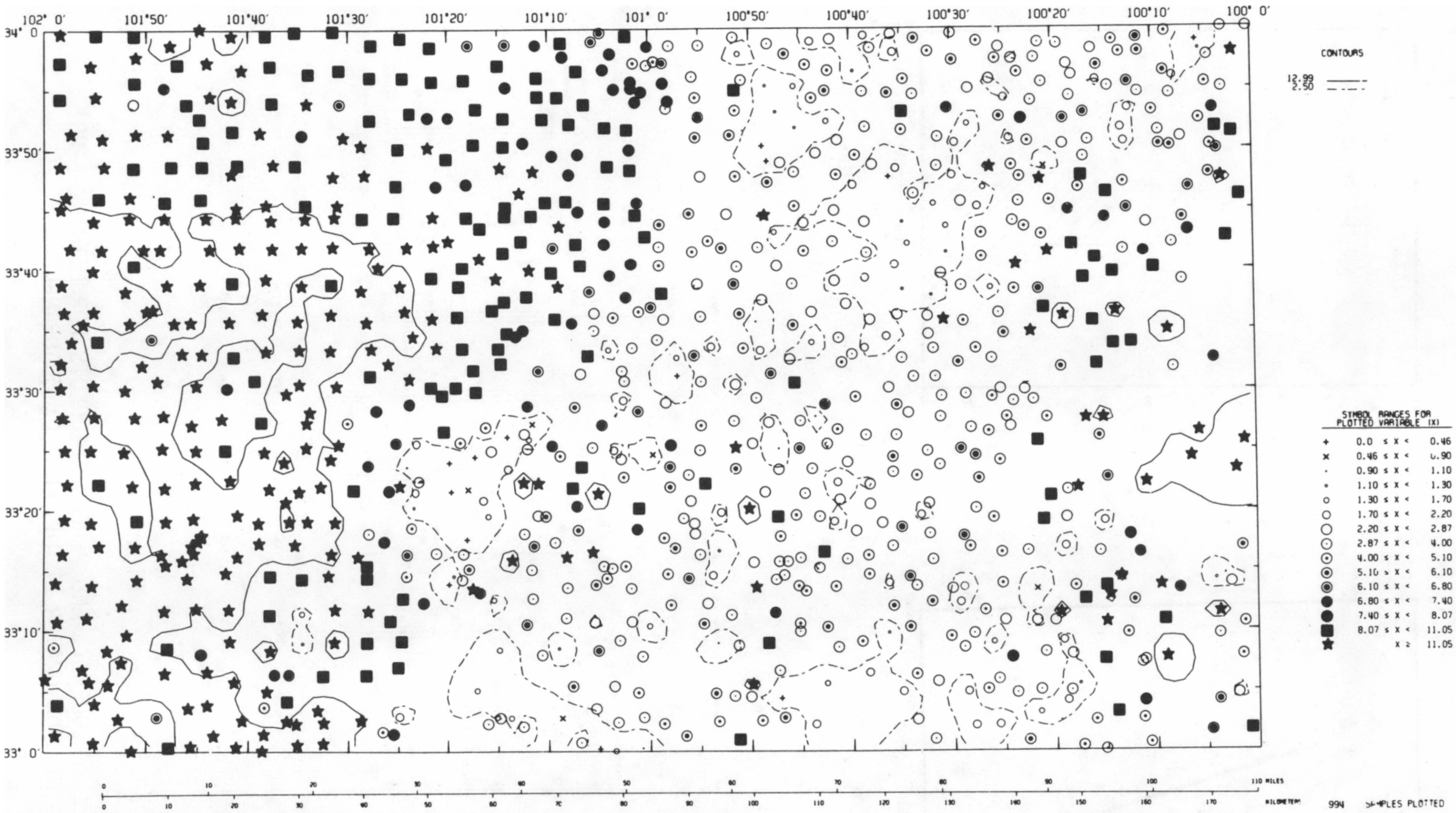


Figure A-7b

GEOCHEMICAL DISTRIBUTION OF POTASSIUM (PPM) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

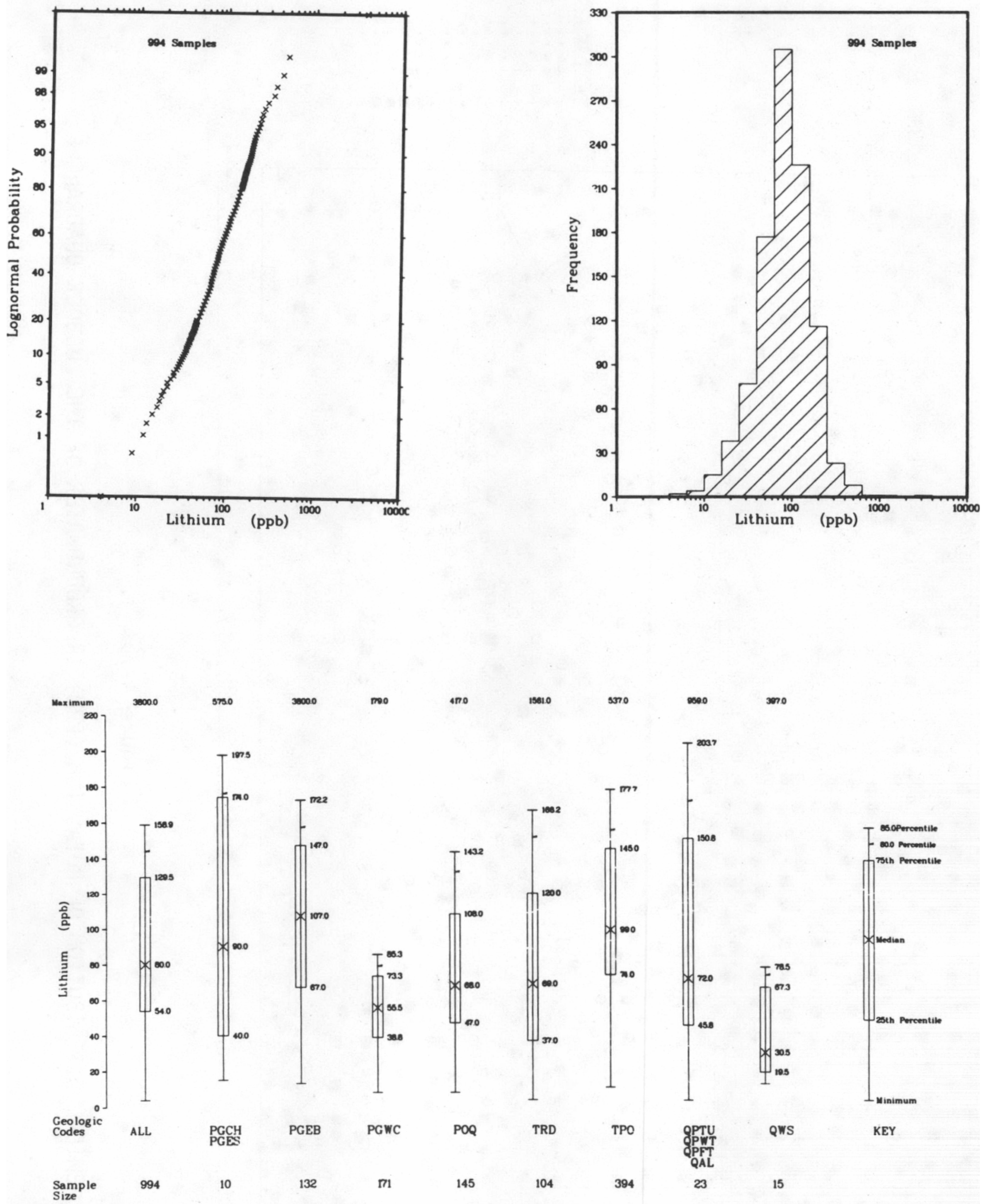


Figure A-8a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR LITHIUM (PPB)
IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

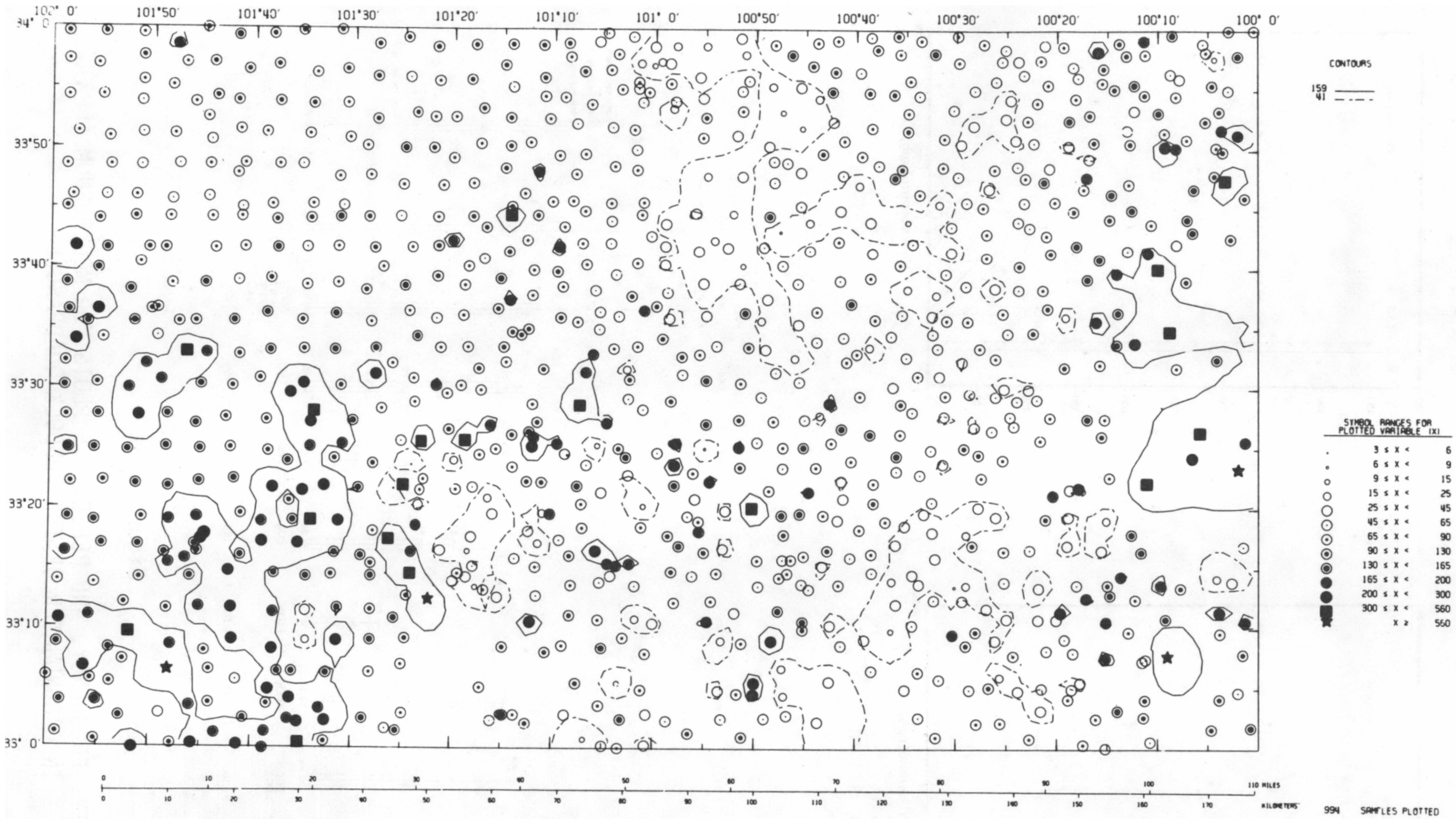


Figure A-8b

GEOCHEMICAL DISTRIBUTION OF LITHIUM (PPB) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

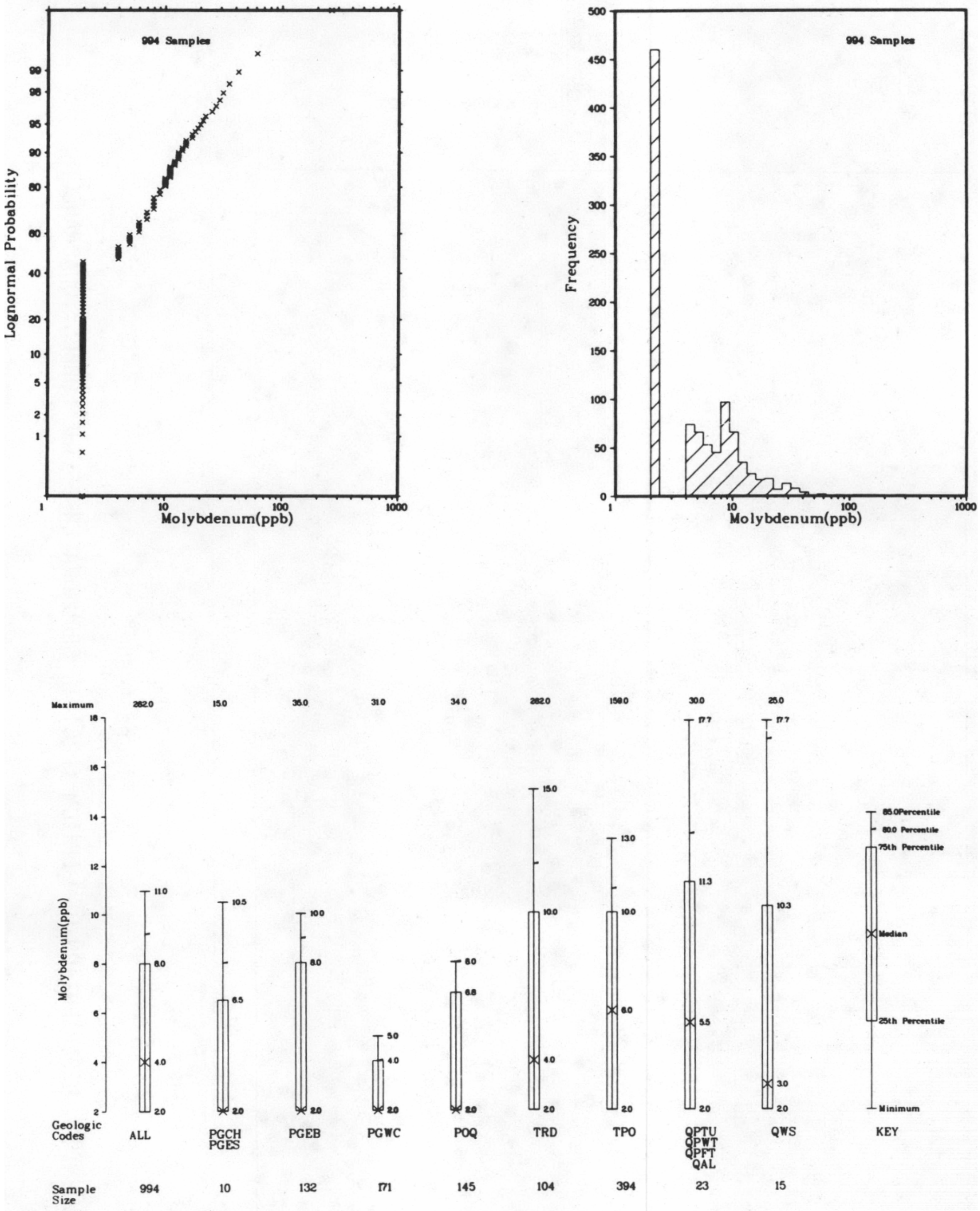


Figure A-9a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR MOLYBDENUM (PPB)
IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

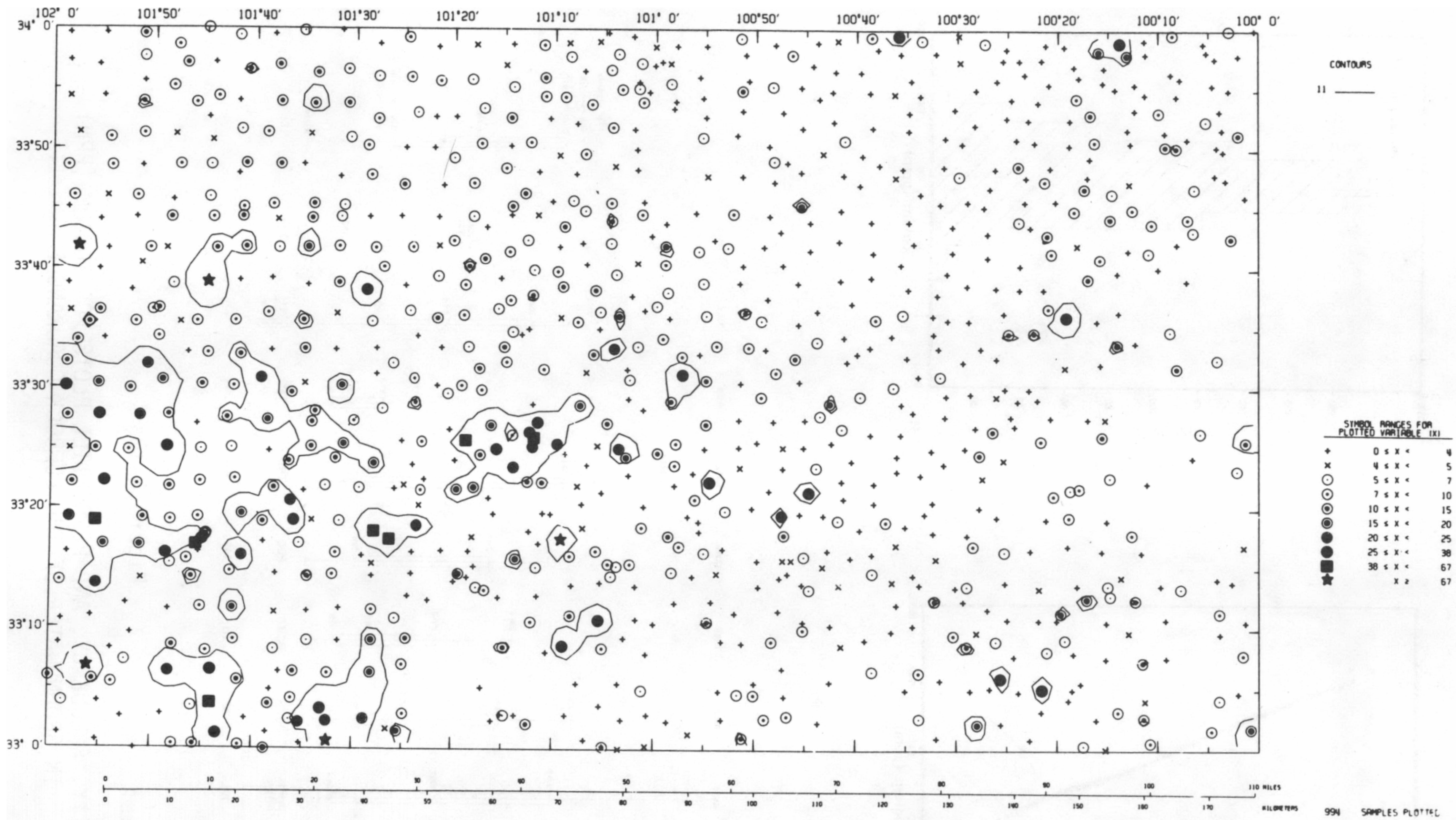


Figure A-9b

GEOCHEMICAL DISTRIBUTION OF MOLYBDENUM (PPB) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

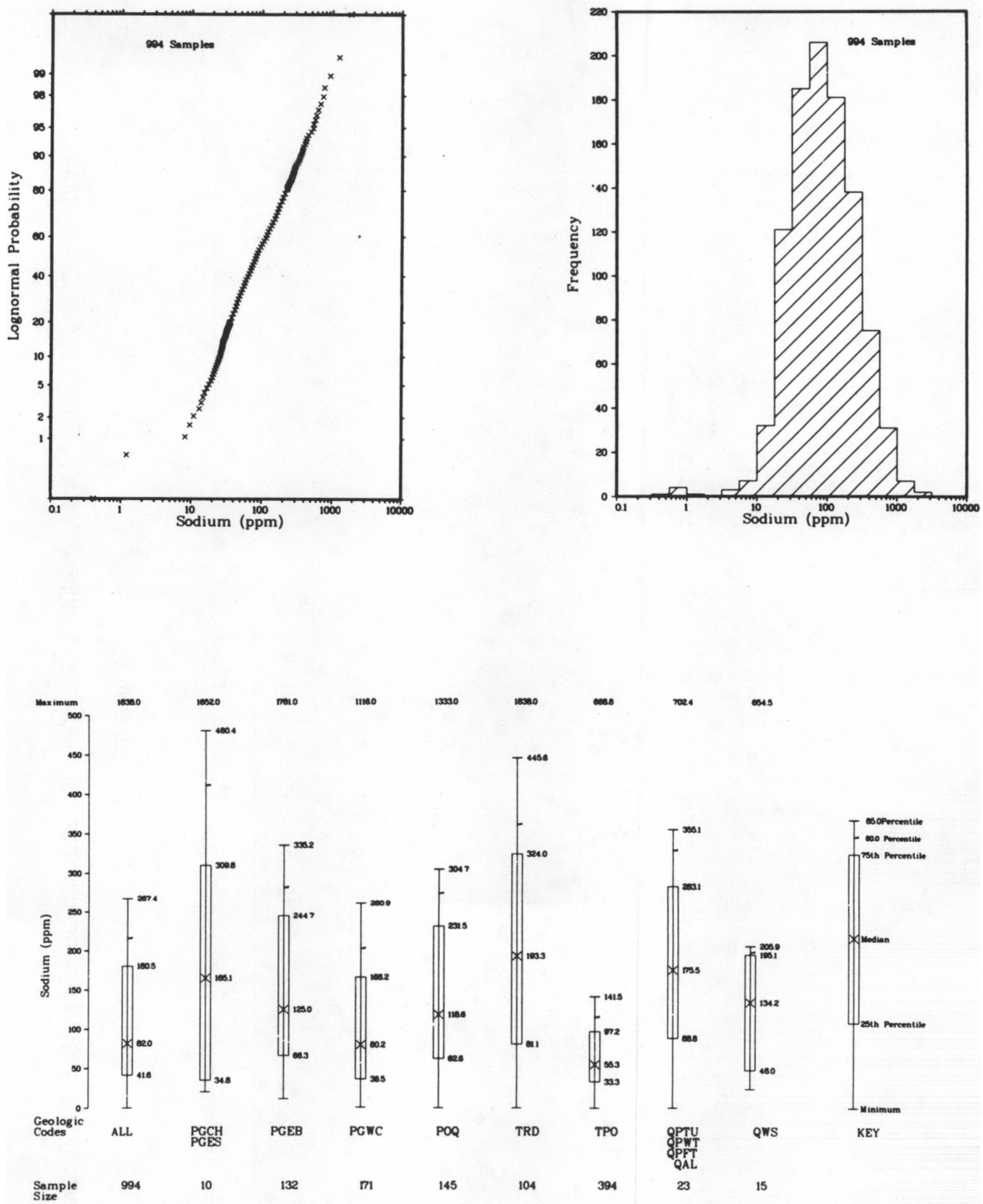


Figure A-10a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR SODIUM (PPM)
IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

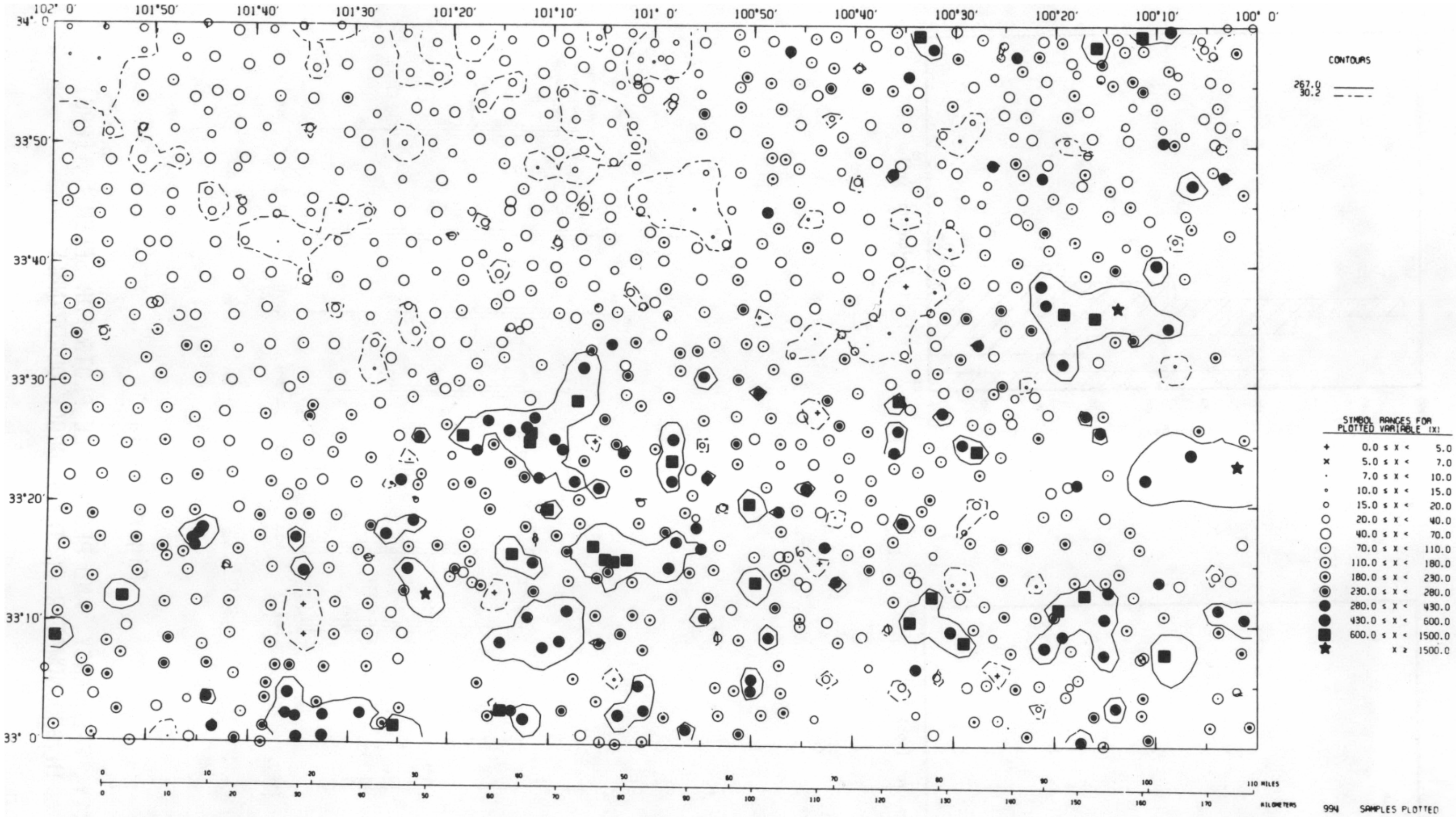


Figure A-10b

GEOCHEMICAL DISTRIBUTION OF SODIUM (PPM) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

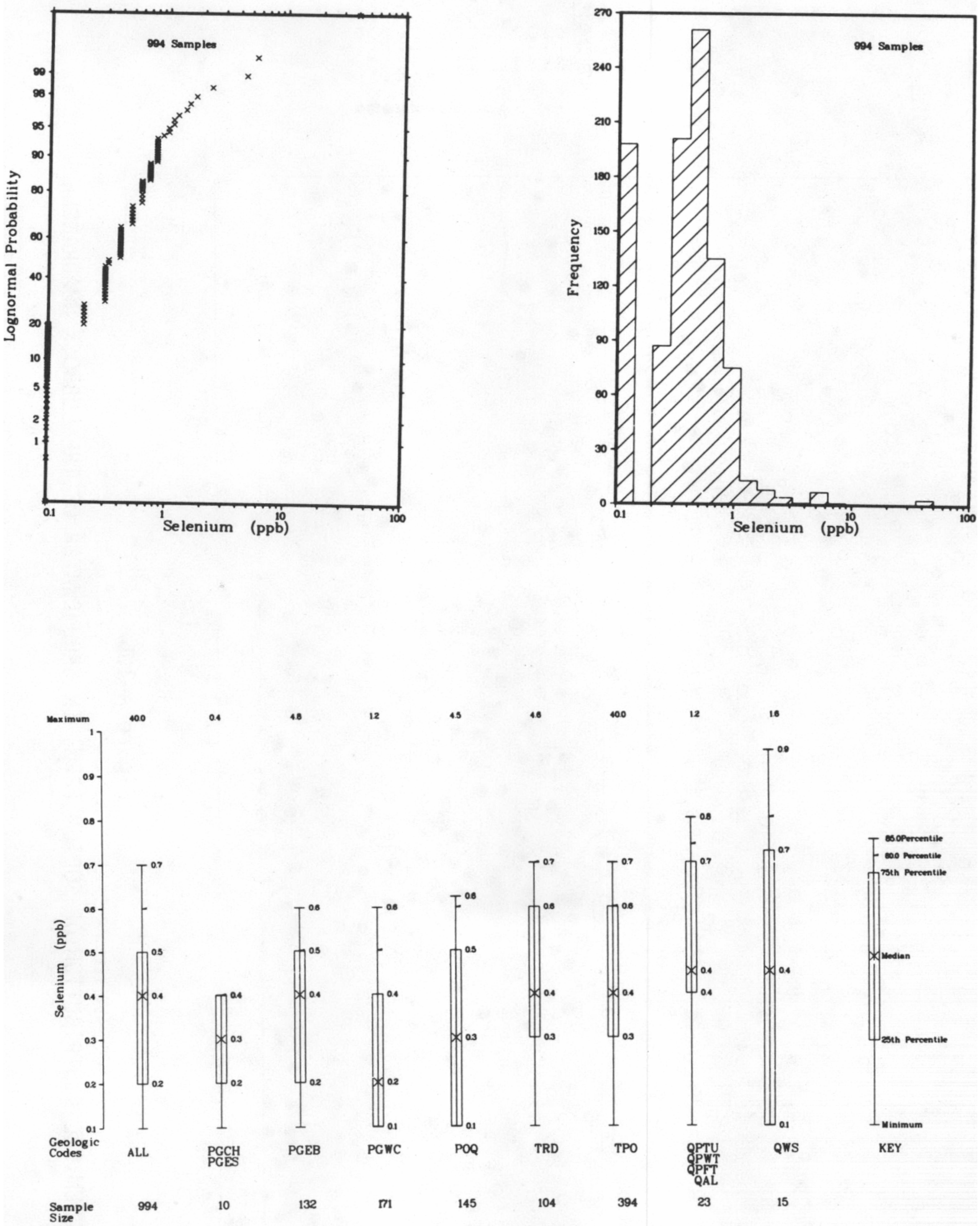


Figure A-11a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR SELENIUM (PPB)
IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

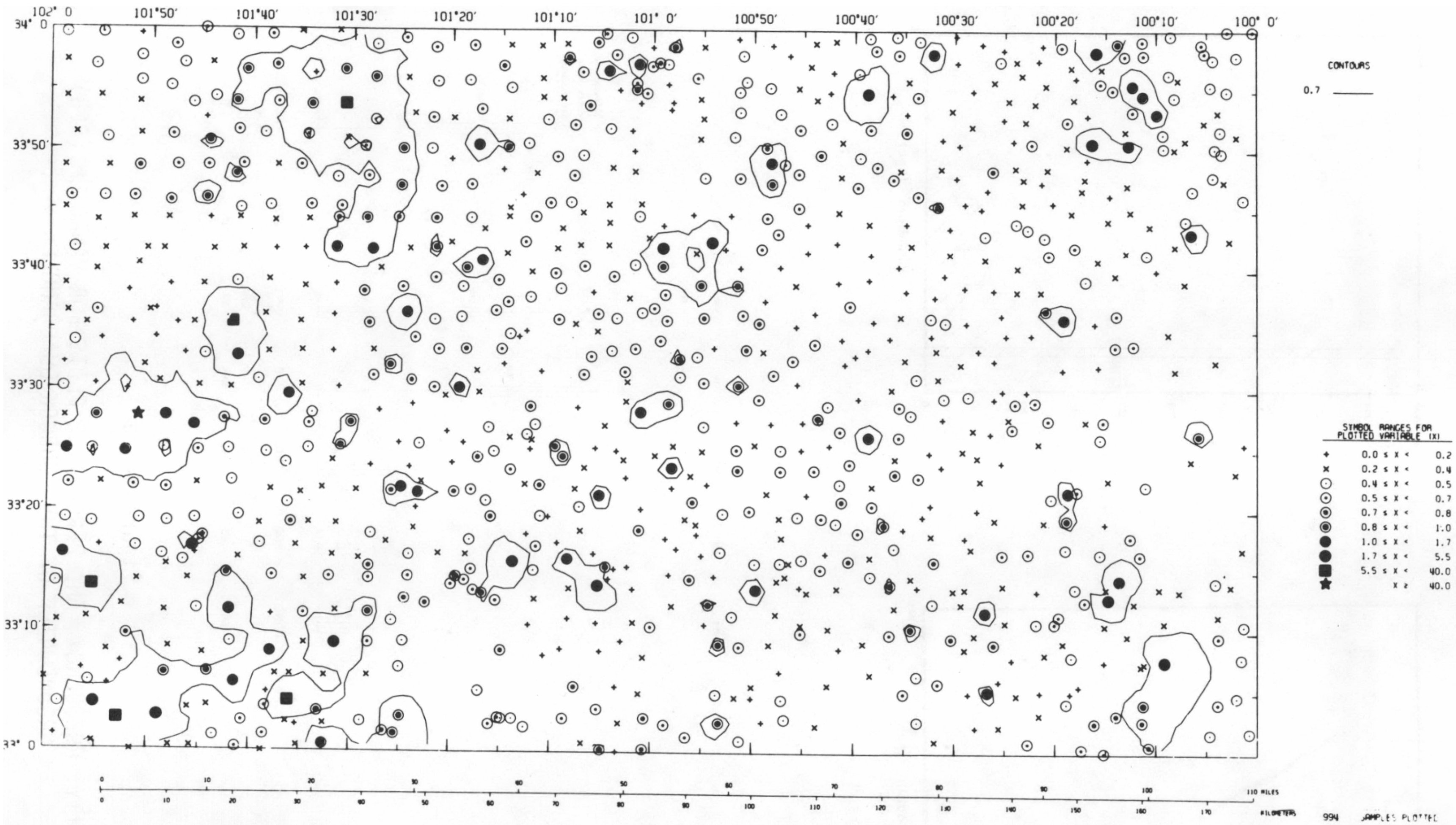
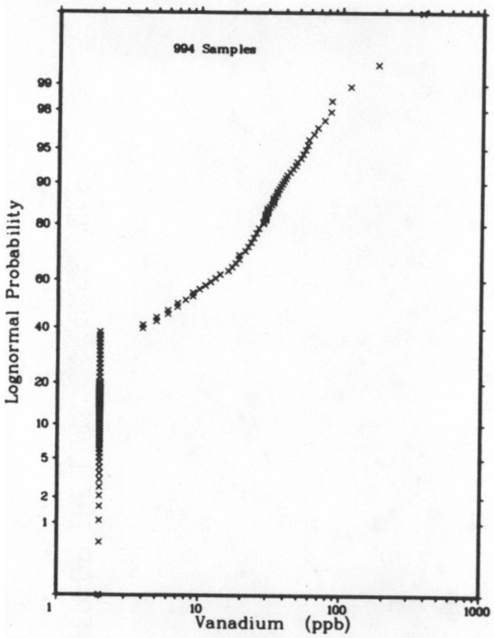
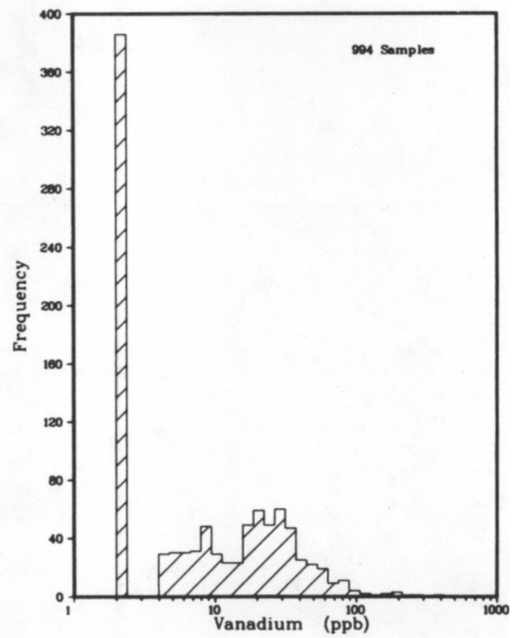


Figure A-11b

GEOCHEMICAL DISTRIBUTION OF SELENIUM (PPB) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE





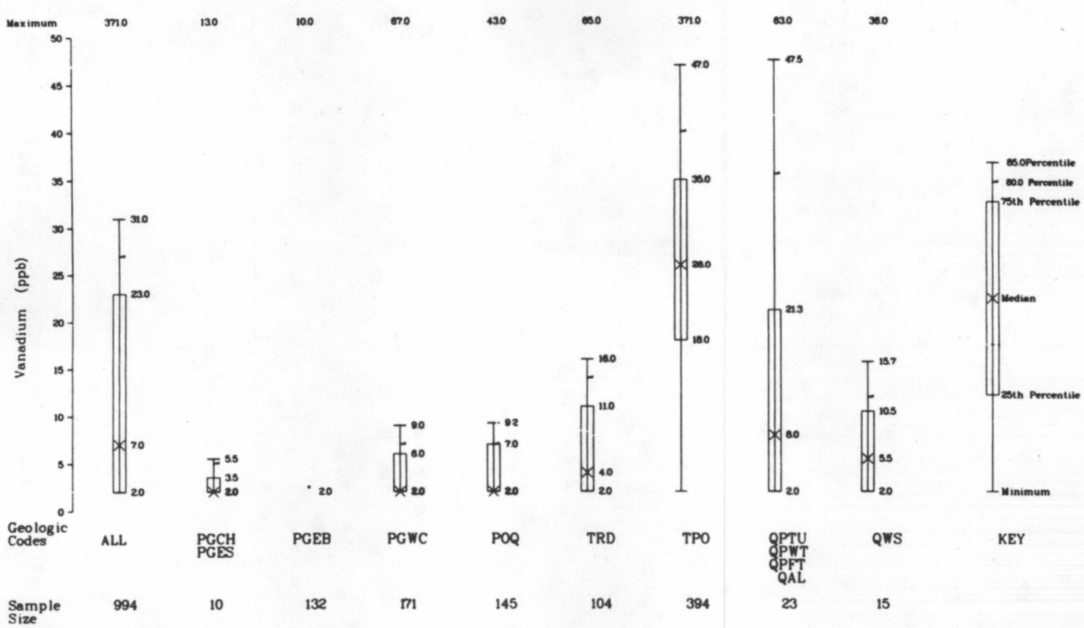


Figure A-12a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR VANADIUM (PPB) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

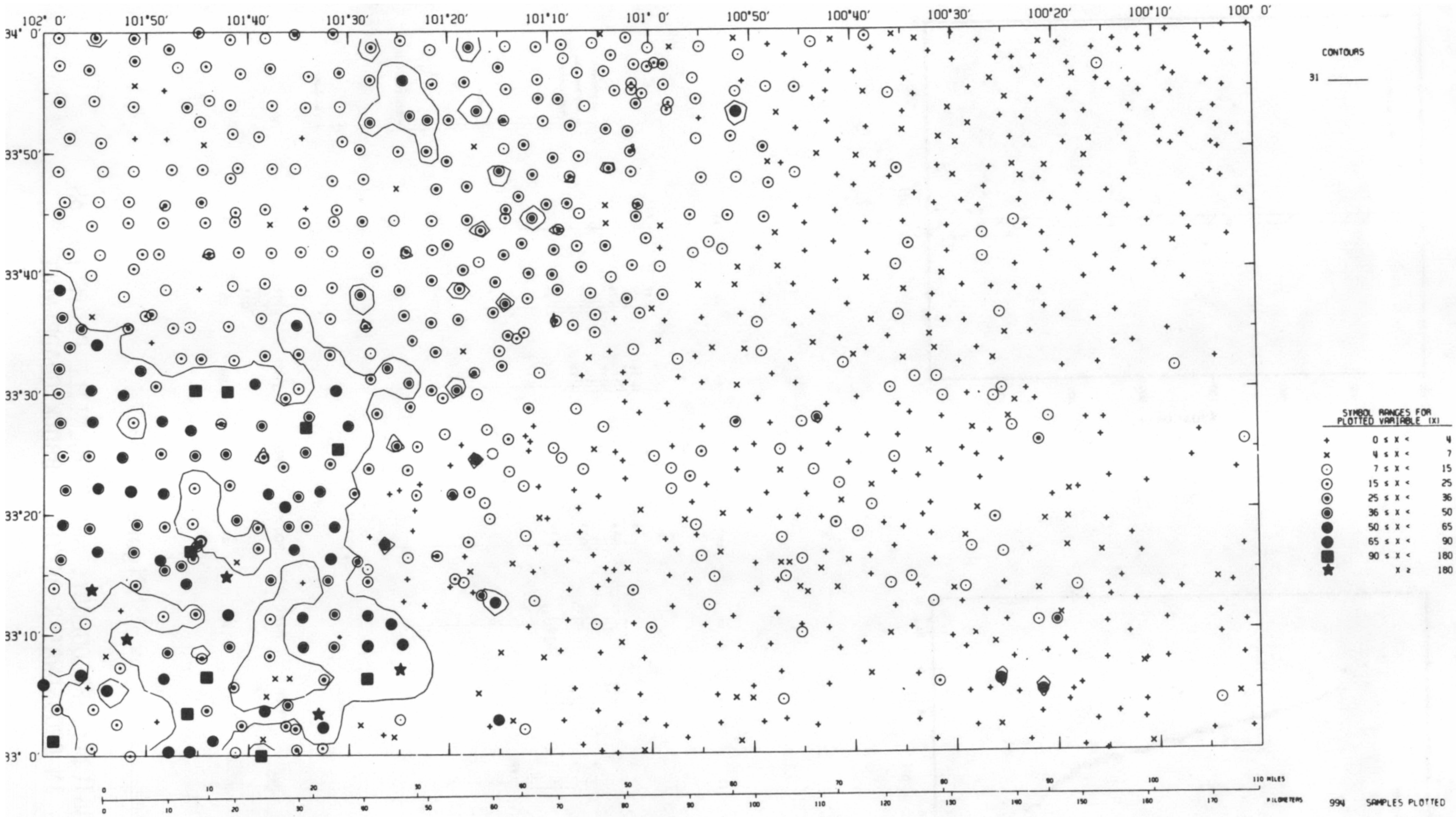


Figure A-12b

GEOCHEMICAL DISTRIBUTION OF VANADIUM (PPB) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

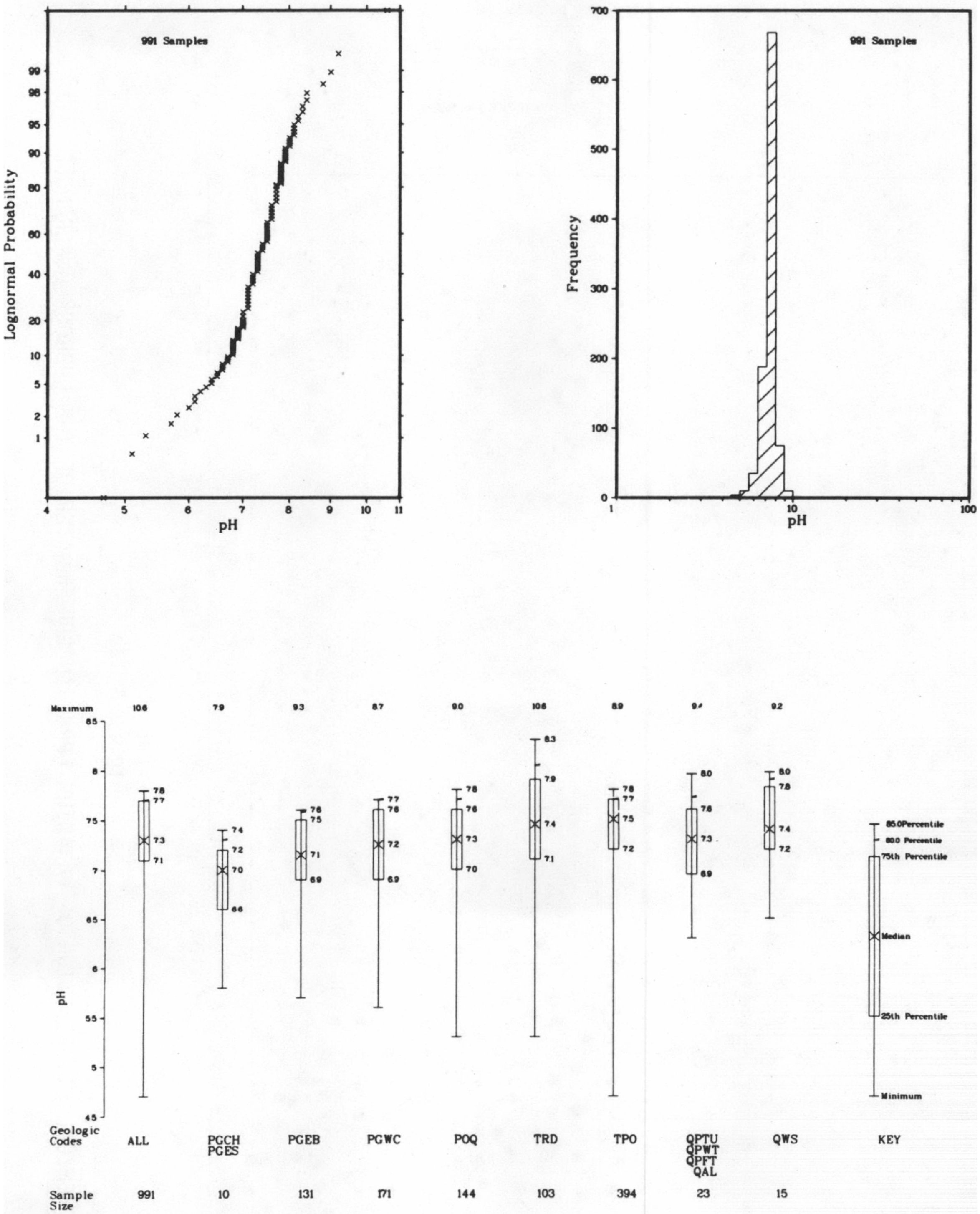


Figure A-13a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR pH
IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

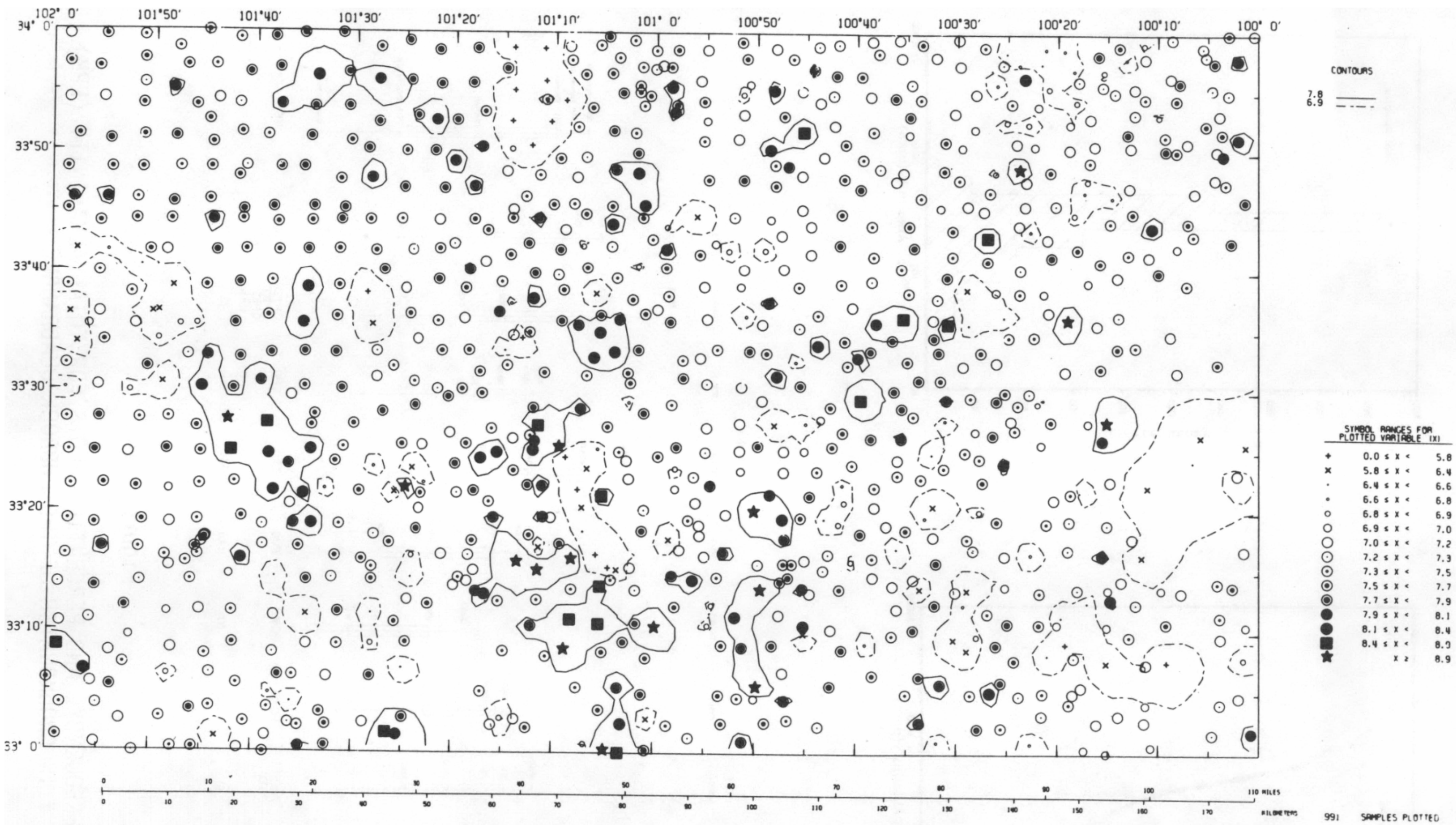


Figure A-13b

GEOCHEMICAL DISTRIBUTION OF pH IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

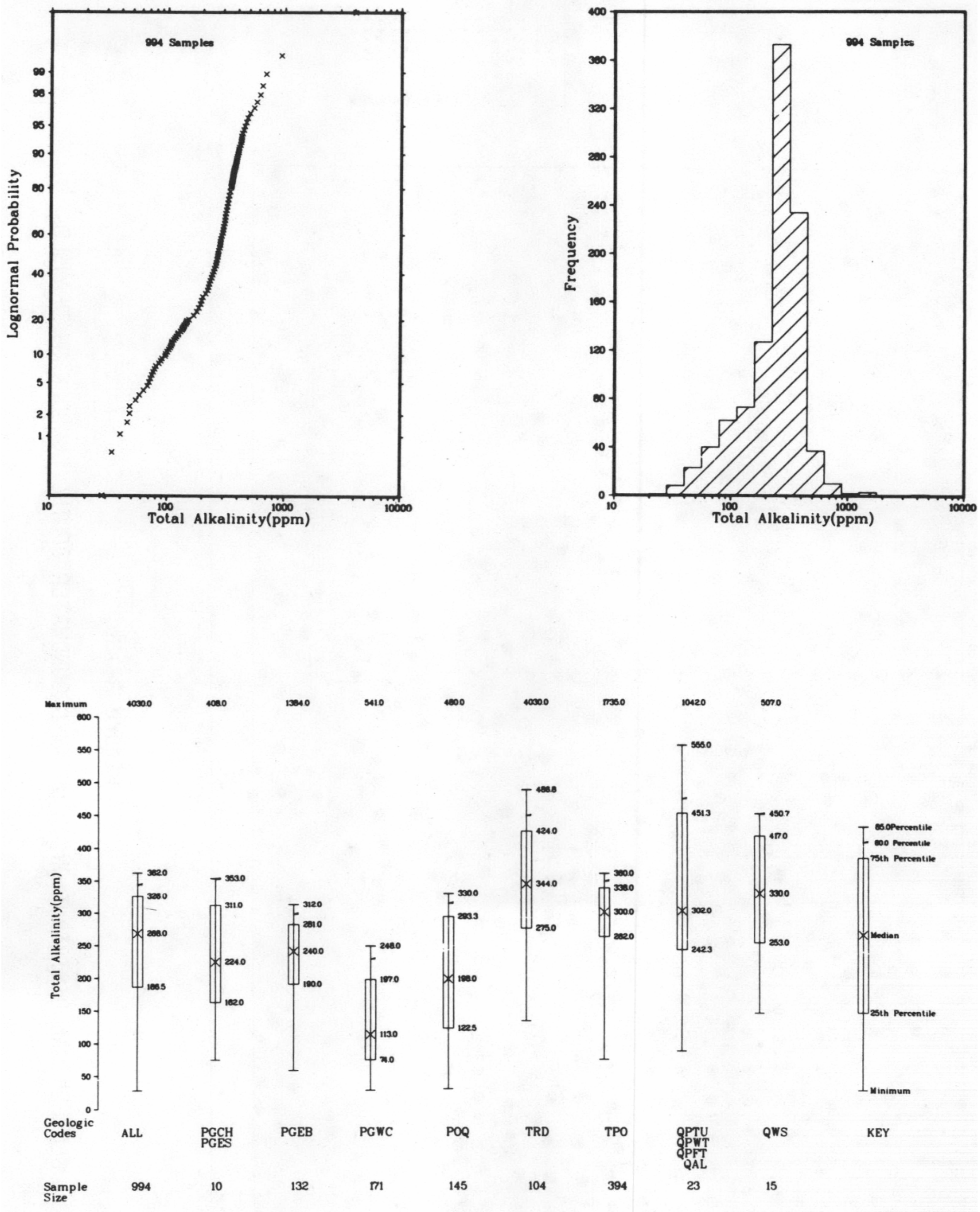


Figure A-14a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR TOTAL ALKALINITY (PPM)
IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

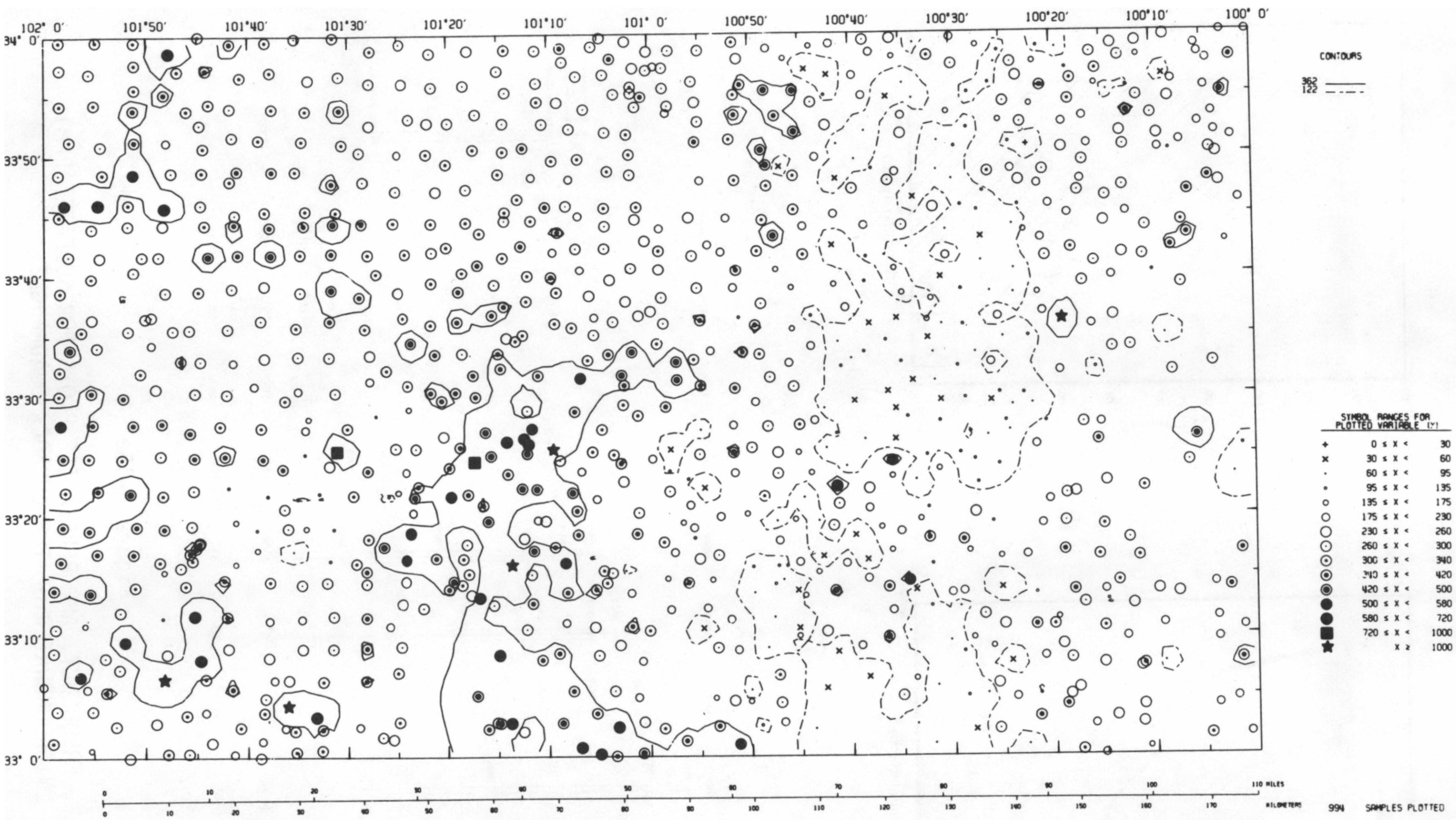


Figure A-14b

GEOCHEMICAL DISTRIBUTION OF TOTAL ALKALINITY (PPM) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

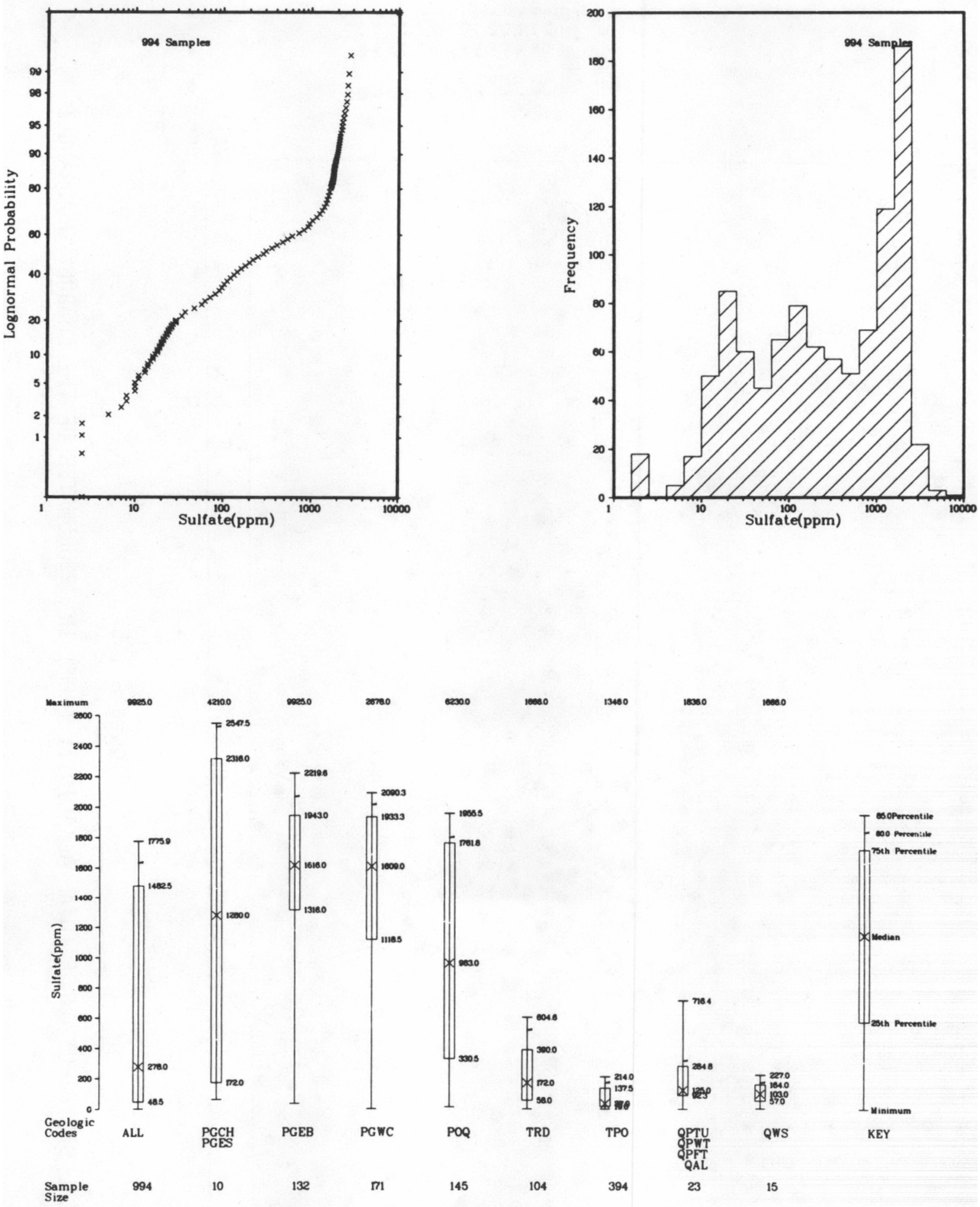


Figure A-15a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR SULFATE (PPM)
IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

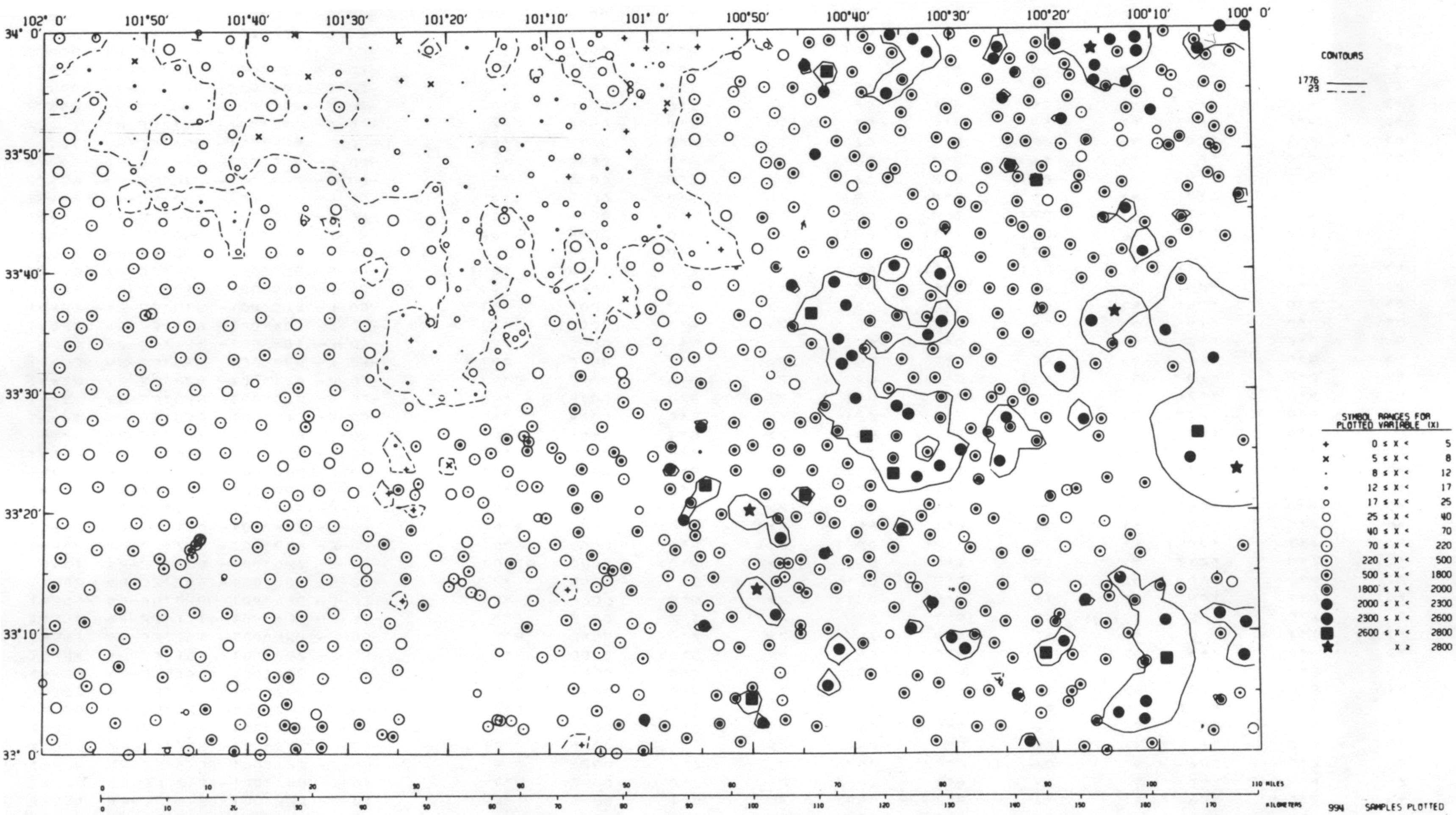


Figure A-15b

GEOCHEMICAL DISTRIBUTION OF SULFATE (PPM) IN GROUNDWATER OF THE LUBBOCK QUADRANGLE

Table A-3

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
14316	48-33.370	-101.186	-3-03-	13.	3200	0.5	23	180	11.	120	10	280.	0.7	<4
14317	48-33.252	-101.195	-3-03-	<0.20	3300	<0.5	<2	<10	3.0	67	5	350.	0.4	<4
14318	48-33.268	-101.139	-3-03-	22.	2400	<0.5	3	20	13.	120	7	250.	1.1	<4
14319	48-33.423	-101.161	-3-03-	14.	2600	14.	<2	62	5.8	190	21	360.	0.8	9
14320	48-33.471	-101.019	-3-03-	4.3	2800	<0.5	<2	380	6.5	64	<4	140.	1.1	<4
14321	48-33.426	-100.831	-3-03-	24.	2500	<0.5	<2	33	2.8	59	<4	52.	0.3	<4
14322	48-33.325	-100.790	-3-03-	2.7	6900	3.2	5	380	9.3	160	21	330.	0.3	<4
14323	48-33.278	-100.887	-3-03-	4.7	2200	0.5	11	120	1.1	26	<4	83.	0.4	7
14324	48-33.262	-100.830	-3-03-	34.	5400	1.0	2	890	2.8	72	<4	93.	0.4	<4
14325	48-33.263	-100.788	-3-03-	6.0	3600	3.7	2	97	2.9	47	4	44.	0.4	7
14326	48-33.263	-100.774	-3-03-	9.7	4200	3.7	3	260	3.2	70	4	78.	0.3	5
14328	48-33.359	-100.811	-3-03-	13.	4300	1.5	<2	150	2.6	77	<4	77.	0.3	<4
14329	48-33.268	-100.753	-3-03-	9.4	3300	5.0	3	15	3.5	80	5	18.	0.4	12
14330	48-33.327	-100.760	-3-03-	7.7	3900	<0.5	5	73	4.5	130	<4	110.	0.4	<4
14332	48-33.244	-100.780	-3-03-	8.7	3900	5.1	7	160	3.9	71	<4	120.	0.3	10
14333	48-33.150	-100.806	-3-03-	2.0	6900	0.6	8	250	8.6	300	9	370.	0.3	<4
14334	48-33.189	-100.867	-3-03-	7.8	3500	<0.5	4	49	3.4	40	<4	44.	0.4	<4
14397	48-33.195	-100.450	-3-03-	3.6	3400	0.7	<2	57	4.4	39	<4	89.	1.1	<4
14398	48-33.151	-100.436	-3-03-	4.7	2800	2.1	<2	15	1.5	35	5	30.	0.7	5
14399	48-33.086	-100.446	-3-03-	15.	3900	<0.5	<2	150	4.6	91	<4	80.	1.0	<4
14400	48-33.205	-100.906	-3-03-	22.	5400	1.5	<2	430	2.5	85	<4	200.	0.8	12
14401	48-33.240	-100.937	-3-03-	<0.20	3800	<0.5	<2	750	6.1	51	<4	210.	0.7	<4
14402	48-33.226	-100.828	-3-03-	10.	28000	0.5	160	1200	12.	61	<4	1300.	1.1	<4
14407	48-33.150	-100.889	-3-03-	9.8	660	<0.5	<2	49	1.0	15	<4	23.	0.8	<4
14412	48-33.132	-100.026	-3-03-	23.	3000	8.3	<2	<10	4.2	90	8	190.	0.4	<4
14413	48-33.190	-100.065	-3-03-	0.70	7700	<0.5	9	130	24.	220	8	420.	0.3	<4
14414	48-33.161	-100.064	-3-03-	11.	7600	0.5	10	130	3.1	71	<4	220.	0.5	<4
14417	48-33.079	-100.034	-3-03-	30.	3400	5.0	3	51	2.2	46	<4	28.	0.4	6
14420	48-33.237	-100.069	-3-03-	3.4	490	1.9	<2	68	1.2	15	<4	20.	0.4	5
14421	48-33.030	-100.013	-3-03-	61.	4200	0.5	7	120	9.7	160	15	210.	0.4	<4
14425	48-33.028	-100.078	-3-03-	25.	3100	0.8	2	140	7.0	120	8	170.	0.4	<4
14428	48-33.224	-100.129	-3-03-	4.3	3500	<0.5	2	89	6.8	110	5	67.	0.3	<4
14433	48-33.486	-100.368	-3-03-	14.	3300	2.1	<2	52	2.9	56	<4	43.	0.5	<4
14434	48-33.484	-100.401	-3-03-	13.	3300	2.6	3	39	3.0	48	<4	36.	0.6	6
14435	48-33.449	-100.406	-3-03-	12.	3500	4.6	<2	34	2.8	46	<4	47.	0.6	10
14437	48-33.015	-100.379	-3-03-	12.	4000	2.8	<2	100	5.5	89	<4	190.	0.6	<4
14439	48-33.045	-100.190	-3-03-	16.	5300	<0.5	14	590	4.1	98	12	150.	0.7	<4
14440	48-33.240	-100.228	-3-03-	100.	5800	0.7	10	330	15.	170	4	120.	1.5	<4
14443	48-33.069	-100.188	-3-03-	13.	6600	<0.5	6	710	7.9	130	4	220.	0.8	<4
14444	48-33.054	-100.233	-3-03-	20.	9400	0.6	<2	1500	11.	140	9	340.	0.7	<4
14445	48-33.070	-100.065	-3-03-	55.	4600	0.8	<2	200	6.1	120	6	110.	0.5	8
14448	48-33.982	-100.092	-3-03-	4.1	3700	<0.5	2	65	<0.1	47	<4	21.	0.6	<4
23859	48-33.973	-100.632	-3-03-	13.	4100	2.7	9	79	2.9	100	<4	63.	0.6	<4
23860	48-33.967	-100.594	-3-03-	13.	3500	1.6	<2	26	2.0	79	<4	35.	0.5	<4
23861	48-33.968	-100.536	-3-03-	44.	7100	0.9	<2	670	4.0	130	<4	340.	1.2	<4
23862	48-33.772	-100.562	-3-03-	2.3	3800	3.3	<2	25	3.5	89	<4	100.	0.6	<4
23865	48-33.909	-100.562	-3-03-	6.8	3500	0.7	<2	43	2.9	45	<4	54.	0.5	<4
23866	48-33.825	-100.658	-3-03-	5.6	3700	2.1	3	39	4.6	80	<4	110.	0.4	7
23867	48-33.812	-100.630	-3-03-	5.0	3100	1.7	<2	50	2.4	58	<4	58.	0.5	4
23868	48-33.864	-100.641	-3-03-	3.2	3900	0.6	<2	190	3.2	88	<4	69.	0.6	<4
23869	48-33.828	-100.723	-3-03-	27.	4500	1.8	2	120	2.8	100	4	120.	0.7	7
23871	48-33.986	-100.559	-3-03-	16.	8400	1.4	2	1100	5.8	80	6	650.	0.4	5
23954	48-33.128	-100.153	-3-03-	2.8	24000	<0.5	<2	11000	120.	3800	<4	1500.	4.8	<4
23955	48-33.214	-100.246	-3-03-	30.	14000	<0.5	20	2900	15.	150	5	510.	3.1	<4
23967	48-33.780	-100.107	-3-03-	5.9	10000	<0.5	7	40	6.2	140	5	580.	0.4	<4

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
23968	48-33.799	-100.073	-3-03-	3.5	4100	<0.5	<2	19	5.9	110	<4	82.	0.4	<4
23970	48-33.768	-100.023	-3-03-	0.53	4300	<0.5	3	38	8.1	130	<4	110.	0.4	<4
23971	48-33.838	-100.070	-3-03-	11.	4000	0.5	3	20	4.1	84	<4	41.	0.4	<4
23973	48-33.837	-100.137	-3-03-	<0.20	7900	<0.5	5	19	5.1	170	13	230.	0.2	<4
23974	48-33.849	-100.119	-3-03-	3.3	3300	<0.5	5	110	2.2	71	<4	23.	0.3	<4
23976	48-33.874	-100.088	-3-03-	4.0	3600	<0.5	<2	<10	4.9	130	6	52.	0.2	<4
23977	48-33.839	-100.155	-3-03-	0.78	6000	<0.5	8	91	5.3	270	10	300.	0.4	<4
23978	48-33.858	-100.156	-3-03-	3.9	3300	<0.5	4	<10	3.1	85	<4	31.	0.4	<4
23980	48-33.909	-100.137	-3-03-	4.2	3800	<0.5	5	<10	3.1	79	<4	72.	0.4	<4
23981	48-33.862	-100.218	-3-03-	2.5	1500	0.8	<2	<10	2.0	38	<4	28.	0.3	<4
25500	48-33.596	-100.517	-3-03-	1.1	7000	0.8	9	420	13.	78	<4	200.	0.4	<4
25502	48-33.557	-100.532	-3-03-	21.	3800	2.1	4	57	3.8	53	<4	49.	0.3	4
25503	48-33.544	-100.584	-3-03-	25.	3700	1.7	3	64	3.2	63	<4	27.	0.3	7
25504	48-33.518	-100.565	-3-03-	4.4	3500	6.3	3	41	3.3	65	<4	30.	0.4	9
25505	48-33.518	-100.529	-3-03-	9.9	5300	5.2	5	400	3.0	42	5	150.	0.2	13
25506	48-33.503	-100.606	-3-03-	4.8	4000	11.	6	150	2.7	42	6	59.	0.3	13
25509	48-33.604	-100.591	-3-03-	21.	3500	2.1	3	30	2.6	50	5	23.	0.3	11
25511	48-33.577	-100.540	-3-03-	5.9	3700	2.4	6	62	2.8	45	<4	38.	<0.2	7
25512	48-33.574	-100.609	-3-03-	13.	3500	0.7	3	21	1.7	50	<4	15.	<0.2	<4
25513	48-33.597	-100.636	-3-03-	3.6	3600	2.3	<2	32	2.5	87	8	32.	<0.2	7
25516	48-33.639	-100.582	-3-03-	3.2	2800	0.5	<2	<10	1.2	19	<4	3.2	<0.2	5
25521	48-33.558	-100.645	-3-03-	11.	3600	2.2	13	31	2.1	20	<4	8.5	<0.2	<4
25526	48-33.572	-100.688	-3-03-	13.	3700	0.9	5	30	3.3	61	<4	29.	<0.2	<4
25527	48-33.538	-100.683	-3-03-	16.	5400	2.5	10	420	4.1	68	<4	210.	<0.2	9
25536	48-33.490	-100.661	-3-03-	9.3	4200	<0.5	10	73	4.2	65	5	85.	<0.2	<4
25541	48-33.651	-100.694	-3-03-	7.2	4800	<0.5	7	320	2.4	53	<4	67.	<0.2	<4
25543	48-33.549	-100.666	-3-03-	14.	3500	1.0	4	25	3.5	81	<4	25.	<0.2	6
25544	48-33.590	-100.763	-3-03-	33.	3700	<0.5	2	43	5.7	41	<4	63.	<0.2	<4
25546	48-33.647	-100.764	-3-03-	15.	3900	<0.5	5	75	3.1	46	<4	45.	0.3	<4
25548	48-33.929	-100.846	-3-03-	3.8	3800	0.8	<2	920	3.6	55	<4	190.	0.4	<4
25549	48-33.653	-101.255	-3-03-	8.0	1300	5.5	<2	130	11.	160	<4	20.	0.6	29
25550	48-33.611	-101.259	-3-03-	18.	1200	3.8	<2	24	10.	93	6	70.	0.6	27
25551	48-33.669	-101.452	-3-03-	14.	960	3.9	<2	16	12.	67	7	41.	0.3	20
25552	48-33.670	-101.308	-3-03-	7.8	1100	4.8	<2	17	11.	77	13	52.	0.9	28
25553	48-33.399	-101.609	-3-03-	15.	1400	5.6	<2	84	11.	130	13	96.	0.4	35
25554	48-33.317	-101.600	-3-03-	16.	2500	6.1	<2	530	11.	130	34	170.	0.7	40
25555	48-33.761	-101.170	-3-03-	11.	950	5.2	<2	45	9.5	86	<4	55.	0.6	30
25556	48-33.864	-101.071	-3-03-	6.5	910	3.8	17	21	8.8	51	7	21.	0.4	26
25557	48-33.813	-101.684	-3-03-	11.	1400	3.9	<2	13	11.	65	11	47.	0.6	15
25558	48-33.877	-101.746	-3-03-	12.	1100	4.1	<2	13	9.4	70	<4	32.	<0.2	18
25559	48-33.821	-101.334	-3-03-	11.	1200	6.2	<2	20	8.7	84	5	37.	<0.2	30
25560	48-33.527	-101.183	-3-01-	15.	1400	2.5	<2	20	6.3	90	9	93.	<0.2	14
25561	48-33.593	-101.127	-3-01-	9.3	1100	2.7	<2	15	7.1	80	9	62.	0.3	23
25563	48-33.583	-101.208	-3-03-	12.	980	4.4	<2	16	7.9	95	<4	42.	<0.2	24
25565	48-33.925	-100.975	-3-03-	6.9	840	4.7	<2	28	7.9	65	6	32.	<0.2	24
25568	48-33.890	-100.970	-3-03-	3.5	890	2.7	<2	48	3.6	18	<4	26.	<0.2	16
25569	48-33.900	-100.967	-3-03-	6.9	910	4.0	<2	28	8.0	57	<4	37.	<0.2	23
25572	48-33.924	-100.077	-3-03-	5.3	4000	<0.5	3	81	4.2	110	<4	66.	0.4	<4
25573	48-33.933	-100.131	-3-03-	3.0	1600	0.7	<2	<10	2.0	36	<4	27.	0.3	<4
25578	48-33.888	-100.065	-3-03-	7.8	4300	<0.5	2	140	7.3	130	<4	80.	0.3	<4
25580	48-33.855	-100.034	-3-03-	13.	3700	<0.5	6	17	8.1	200	10	34.	0.3	<4
25583	48-33.862	-100.061	-3-03-	11.	4100	<0.5	6	110	8.1	170	<4	66.	0.4	<4
25584	48-33.832	-100.059	-3-03-	5.2	3900	<0.5	5	100	6.4	97	<4	42.	0.4	<4
25587	48-33.965	-100.034	-3-03-	4.1	8700	<0.5	6	1100	15.	150	<4	200.	0.4	<4
25588	48-33.917	-100.050	-3-03-	5.1	3600	<0.5	<2	82	3.6	55	<4	37.	0.4	<4

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHUS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
25591	48-33.889	-100.206	-3-03-	3.4	2300	<0.5	6	79	1.9	44	<4	32.	0.5	<4
25594	48-33.607	-100.233	-3-01-	2.7	23000	<0.5	23	310	14.	140	<4	1600.	0.5	<4
25596	48-33.720	-100.109	-3-03-	7.7	6200	0.8	3	270	7.5	150	6	140.	1.2	<4
25599	48-33.792	-100.055	-3-03-	3.7	11000	0.9	13	1700	16.	330	<4	340.	0.3	<4
25607	48-33.644	-100.485	-3-03-	14.	360	1.0	5	160	3.0	52	<4	84.	<0.2	<4
25612	48-33.601	-100.320	-3-03-	4.9	9900	0.7	<2	2300	17.	20	35	750.	1.0	<4
25616	48-33.613	-100.350	-3-03-	17.	830	<0.5	62	1200	11.	120	8	420.	0.8	<4
25625	48-33.606	-100.424	-3-03-	19.	560	2.3	6	450	3.8	65	<4	270.	<0.2	12
25627	48-33.578	-100.416	-3-03-	8.1	4300	1.1	4	160	5.4	48	13	86.	<0.2	5
25628	48-33.543	-100.436	-3-03-	15.	420	2.2	<2	84	3.0	73	<4	62.	<0.2	5
25631	48-33.595	-100.482	-3-03-	21.	1600	<0.5	6	790	4.1	66	<4	270.	<0.2	<4
25636	48-33.557	-100.462	-3-03-	27.	1800	0.8	6	950	4.7	88	<4	320.	<0.2	<4
25637	48-33.490	-100.436	-3-03-	7.0	1400	3.8	6	350	4.5	56	4	140.	<0.2	8
25638	48-33.501	-100.422	-3-03-	15.	1500	0.8	16	1900	2.6	25	<4	260.	<0.2	10
25639	48-33.500	-100.382	-3-03-	11.	1100	0.8	<2	37	2.3	37	<4	15.	<0.2	<4
25643	48-33.535	-100.263	-3-03-	14.	1200	<0.5	<2	130	9.5	85	<4	67.	<0.2	<4
25644	48-33.579	-100.374	-3-03-	9.6	1500	<0.5	4	850	12.	95	12	230.	<0.2	<4
25645	48-33.531	-100.322	-3-03-	24.	6900	<0.5	7	4100	5.9	110	4	570.	<0.2	<4
25646	48-33.595	-100.269	-3-03-	47.	6700	<0.5	12	3900	9.8	190	<4	730.	<0.2	<4
25649	48-33.641	-100.437	-3-03-	14.	1200	1.6	2	110	1.5	26	<4	41.	<0.2	<4
25664	48-33.726	-100.380	-3-03-	14.	1400	1.5	8	190	5.0	59	<4	100.	0.4	<4
25665	48-33.734	-100.399	-3-03-	9.9	1200	2.2	3	61	3.6	58	5	57.	0.4	12
25667	48-33.639	-100.358	-3-03-	4.3	7500	0.7	10	3800	6.4	82	<4	590.	0.3	<4
25668	48-33.684	-100.451	-3-03-	18.	1300	3.5	4	130	4.0	84	<4	83.	0.3	8
25669	48-33.717	-100.451	-3-03-	23.	1200	1.6	8	73	4.7	74	<4	50.	0.4	9
25670	48-33.639	-100.398	-3-03-	8.5	1300	3.2	13	140	4.2	58	<4	82.	0.3	<4
25671	48-33.672	-100.397	-3-03-	1.2	1300	0.5	8	130	12.	100	<4	120.	0.2	<4
25672	48-33.749	-100.307	-3-03-	8.4	1300	0.8	7	130	7.2	120	8	84.	0.2	<4
25673	48-33.654	-100.284	-3-03-	20.	4200	0.5	3	190	9.6	130	10	130.	0.4	<4
25674	48-33.682	-100.264	-3-03-	8.4	2900	<0.5	4	210	10.	130	8	130.	0.3	<4
25675	48-33.701	-100.302	-3-03-	13.	4400	<0.5	4	230	9.1	150	4	150.	0.5	<4
25676	48-33.690	-100.345	-3-03-	10.	3700	<0.5	3	79	12.	120	9	93.	0.5	<4
25680	48-33.468	-101.566	-3-03-	15.	1700	<0.5	<2	260	18.	540	11	210.	0.4	38
25684	48-33.453	-101.571	-3-03-	25.	1500	0.9	<2	170	16.	250	14	250.	0.5	110
25685	48-33.419	-101.572	-3-03-	12.	1100	3.1	<2	79	17.	190	12	89.	0.4	47
25686	48-33.358	-101.584	-3-03-	15.	1500	7.8	<2	210	20.	220	<4	87.	0.3	48
25687	48-33.365	-101.548	-3-03-	18.	1200	5.7	<2	100	15.	240	5	57.	0.3	50
25688	48-33.316	-101.524	-3-03-	12.	1300	7.2	<2	72	15.	200	6	71.	0.3	53
25690	48-33.317	-101.570	-3-03-	24.	1800	9.0	2	460	23.	320	4	210.	0.3	35
25691	48-33.272	-101.530	-3-03-	13.	1400	4.2	<2	64	15.	160	7	100.	0.3	71
25692	48-33.285	-101.591	-3-03-	15.	2100	9.5	4	480	19.	270	5	350.	0.3	50
25693	48-33.287	-101.651	-3-03-	23.	1900	8.4	<2	130	18.	210	<4	170.	0.4	27
25694	48-33.268	-101.687	-3-03-	13.	1300	5.5	<2	98	17.	130	21	150.	0.2	7
25695	48-33.326	-101.687	-3-03-	33.	910	3.0	<2	25	19.	98	17	54.	0.4	41
25696	48-33.315	-101.652	-3-03-	9.9	2200	6.2	<2	220	24.	190	11	190.	0.3	29
25697	48-33.362	-101.634	-3-03-	27.	1600	3.0	<2	170	23.	240	12	170.	0.2	58
25698	48-33.581	-100.147	-3-03-	<0.20	6600	0.5	7	930	19.	480	5	330.	0.2	<4
25705	48-33.691	-100.183	-3-03-	13.	4500	0.5	3	340	7.0	200	5	95.	0.4	<4
25707	48-33.694	-100.217	-3-03-	5.5	3200	<0.5	<2	170	2.9	45	<4	37.	0.3	<4
25710	48-33.751	-100.210	-3-03-	0.46	4700	3.0	4	450	6.2	140	7	150.	0.2	<4
25711	48-33.738	-100.247	-3-03-	9.6	3500	0.5	9	180	7.1	110	11	90.	0.2	<4
25715	48-33.731	-100.178	-3-03-	6.3	3300	0.5	8	180	2.7	80	8	65.	0.2	<4
25716	48-33.703	-100.136	-3-03-	4.2	3100	0.6	2	54	3.8	41	<4	16.	0.3	4
25717	48-33.738	-100.118	-3-03-	12.	3700	0.6	7	190	5.3	140	8	89.	0.4	<4
25719	48-33.651	-100.120	-3-03-	8.0	3900	<0.5	<2	290	3.0	120	<4	83.	0.2	<4

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE NUMBER ST LAT	LONG	L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
25722	48-33.662	-100.235	-3-03-	0.32	4800	0.7	<2	1000	8.6	180	<4	230.	0.3	<4
25730	48-33.563	-100.235	-3-03-	15.	4300	0.5	7	1200	10.	160	15	150.	0.6	<4
25731	48-33.565	-100.205	-3-03-	2.0	5800	<0.5	9	100	9.7	210	<4	280.	0.5	<4
25732	48-33.530	-100.136	-3-03-	7.1	2800	0.9	2	60	3.8	67	10	14.	0.3	8
25739	48-33.542	-100.069	-3-01-	11.	6900	0.7	7	850	6.8	160	6	210.	0.2	<4
25740	48-33.992	-101.853	-3-03-	8.3	970	5.4	3	18	11.	87	10	22.	<0.2	27
25741	48-33.993	-101.975	-3-03-	9.0	1200	4.1	170	56	11.	120	<4	16.	0.4	18
25742	48-33.993	-101.915	-3-03-	13.	980	6.7	2	28	10.	110	<4	19.	0.4	34
25743	48-33.898	-101.854	-3-03-	17.	840	2.6	8	28	2.3	45	13	150.	0.2	18
25744	48-33.906	-101.918	-3-03-	12.	920	5.0	<2	48	12.	81	<4	16.	0.3	23
25745	48-33.905	-101.974	-3-03-	6.2	1200	4.1	<2	40	11.	73	4	28.	0.3	28
25746	48-33.855	-101.958	-3-03-	13.	1100	5.6	<2	52	12.	89	4	57.	0.3	29
25747	48-33.848	-101.907	-3-03-	7.3	1100	5.6	<2	10	12.	80	9	27.	0.4	18
25748	48-33.854	-101.852	-3-03-	8.0	990	1.1	<2	120	11.	46	7	29.	0.3	<4
25749	48-33.809	-101.854	-3-03-	5.3	1100	1.8	<2	130	8.6	48	<4	22.	0.7	11
25750	48-33.767	-101.966	-3-03-	13.	1200	4.8	<2	92	12.	76	7	56.	0.6	18
25751	48-33.767	-101.911	-3-03-	11.	1200	3.4	<2	74	9.7	57	4	72.	0.4	14
25752	48-33.762	-101.803	-3-03-	9.6	930	5.1	<2	31	8.1	58	<4	40.	0.7	32
25753	48-33.811	-101.792	-3-03-	9.5	970	5.7	<2	19	8.6	59	9	26.	0.5	24
25754	48-33.952	-101.782	-3-03-	10.	900	2.3	<2	25	8.1	74	10	37.	0.4	11
25755	48-33.955	-101.974	-3-03-	5.7	860	3.1	4	34	9.9	67	<4	13.	0.3	19
25756	48-33.949	-101.926	-3-03-	8.8	900	7.8	4	37	12.	81	<4	11.	0.4	26
25757	48-33.961	-101.852	-3-03-	12.	1100	6.4	<2	48	12.	110	5	19.	0.4	25
25758	48-33.809	-101.976	-3-03-	9.4	950	4.4	<2	31	12.	71	8	59.	0.3	22
25759	48-33.767	-101.862	-3-03-	9.2	1100	5.0	23	43	12.	74	7	40.	0.5	16
25760	48-33.853	-101.800	-3-03-	4.8	1400	<0.5	<2	150	12.	79	4	39.	0.5	<4
25761	48-33.920	-101.804	-3-03-	12.	1300	3.1	<2	19	7.3	70	8	88.	0.4	<4
25762	48-33.809	-101.904	-3-03-	11.	1000	3.8	10	28	13.	69	9	43.	0.2	14
25763	48-33.927	-101.852	-3-03-	11.	1100	1.7	<2	18	9.7	79	<4	69.	0.4	7
25764	48-33.977	-101.796	-3-03-	30.	1600	4.9	<2	39	22.	190	9	79.	0.5	29
25765	48-33.897	-101.767	-3-03-	11.	1100	5.5	<2	16	11.	79	9	40.	0.4	27
25767	48-33.906	-101.731	-3-03-	14.	1000	4.4	<2	34	12.	98	8	44.	0.4	22
25768	48-33.953	-101.736	-3-03-	12.	1200	5.6	<2	39	13.	95	<4	64.	0.3	17
25769	48-33.990	-101.696	-3-03-	14.	1200	5.8	16	47	14.	150	6	44.	0.4	18
25770	48-33.856	-101.648	-3-03-	10.	910	5.6	<2	26	13.	77	7	32.	0.4	15
25771	48-33.860	-101.692	-3-03-	8.4	980	4.5	<2	44	9.9	75	6	46.	0.6	19
25772	48-33.845	-101.740	-3-03-	13.	950	1.6	<2	22	9.6	56	4	37.	0.8	4
25773	48-33.811	-101.742	-3-03-	11.	910	4.7	<2	19	11.	67	6	46.	0.6	22
25774	48-33.766	-101.744	-3-03-	8.4	830	4.7	30	15	11.	55	6	28.	0.9	26
25775	48-33.756	-101.638	-3-03-	10.	1100	3.3	<2	65	12.	72	7	37.	0.4	19
25776	48-33.799	-101.696	-3-03-	8.6	980	4.3	<2	43	12.	73	<4	31.	0.8	21
25777	48-33.812	-101.587	-3-03-	11.	970	3.4	<2	17	9.6	63	<4	44.	0.6	14
25778	48-33.757	-101.570	-3-03-	9.4	1000	0.5	<2	26	9.9	70	10	55.	0.6	<4
25779	48-33.755	-101.519	-3-03-	13.	950	2.8	<2	20	11.	63	6	47.	0.6	20
25780	48-33.795	-101.526	-3-03-	15.	1000	3.3	<2	17	12.	77	<4	31.	0.4	20
25781	48-33.812	-101.626	-3-03-	20.	1100	<0.5	<2	13	12.	74	11	63.	0.3	21
25782	48-33.849	-101.509	-3-03-	8.8	920	<0.5	<2	<10	12.	81	6	59.	0.3	23
25784	48-33.897	-101.513	-3-03-	17.	1500	28.	<2	49	6.2	78	10	180.	39.	14
25785	48-33.944	-101.514	-3-03-	8.1	1100	3.1	<2	13	11.	110	7	43.	0.8	30
25786	48-33.998	-101.524	-3-03-	8.4	980	0.9	<2	12	9.1	100	<4	26.	0.3	25
25787	48-33.997	-101.588	-3-03-	7.5	850	0.8	<2	17	11.	100	5	26.	0.3	27
25788	48-33.939	-101.565	-3-03-	6.1	1100	4.0	<2	13	8.3	89	11	24.	<0.2	18
25789	48-33.896	-101.570	-3-03-	9.5	1100	4.0	<2	48	11.	110	14	50.	0.8	18
25790	48-33.854	-101.576	-3-03-	9.8	1100	0.8	<2	17	7.5	74	4	28.	0.6	<4
25791	48-33.900	-101.696	-3-03-	23.	1600	4.2	<2	130	15.	130	<4	60.	0.8	16

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
25792	48-33.943	-101.679	-3-03-	13.	960	6.0	<2	36	12.	110	12	43.	0.8	24
25793	48-33.899	-101.626	-3-03-	15.	1200	5.6	<2	81	11.	94	10	77.	0.5	22
25794	48-33.950	-101.629	-3-03-	15.	1000	9.4	<2	47	9.6	94	11	56.	0.7	26
25795	48-33.992	-101.637	-3-03-	12.	1100	4.1	<2	65	10.	130	<4	38.	0.6	13
25800	48-33.788	-100.803	-3-03-	3.1	1900	3.0	<2	150	5.4	45	<4	120.	0.8	21
25801	48-33.796	-100.856	-3-03-	8.2	1600	1.7	<2	93	4.2	39	<4	76.	0.5	9
25808	48-33.372	-100.691	-3-03-	13.	1100	5.6	<2	23	1.7	33	<4	38.	0.4	8
25809	48-33.318	-100.697	-3-03-	6.5	3000	3.3	<2	32	2.1	41	6	9.0	0.4	22
25810	48-33.284	-100.601	-3-03-	3.8	3500	0.8	3	370	3.9	36	4	130.	0.4	<4
25812	48-33.301	-100.540	-3-03-	23.	2500	0.7	11	77	3.6	37	<4	130.	0.3	<4
25821	48-33.343	-100.541	-3-03-	17.	4800	1.6	10	870	2.5	54	<4	230.	<0.2	<4
25824	48-33.462	-100.521	-3-03-	5.7	9600	2.0	16	2600	3.4	37	<4	430.	<0.2	<4
25829	48-33.407	-100.600	-3-03-	29.	6200	3.0	13	1100	5.3	140	<4	370.	0.2	8
25833	48-33.415	-100.543	-3-03-	11.	3100	4.2	6	200	2.9	55	<4	80.	<0.2	6
25836	48-33.396	-100.523	-3-03-	12.	3200	0.9	4	260	2.9	36	<4	85.	<0.2	<4
25837	48-33.369	-100.638	-3-03-	8.5	2900	3.5	4	220	2.4	75	<4	82.	0.2	6
25838	48-33.276	-100.714	-3-03-	11.	5100	0.7	10	770	8.4	110	<4	350.	<0.2	<4
25840	48-33.271	-100.641	-3-03-	15.	5000	1.8	4	1200	4.0	69	<4	140.	0.3	<4
25842	48-33.327	-100.554	-3-03-	35.	3000	1.5	5	480	2.0	34	<4	150.	<0.2	<4
25843	48-33.310	-100.586	-3-03-	6.2	12000	<0.5	21	4600	6.1	40	<4	500.	<0.2	<4
25844	48-33.316	-100.618	-3-03-	8.3	3700	4.7	3	360	2.5	73	7	69.	0.8	<4
25845	48-33.265	-100.535	-3-03-	4.0	1300	2.1	2	83	3.2	30	4	28.	0.7	<4
25849	48-33.480	-100.711	-3-03-	5.0	5500	0.6	13	470	7.2	220	15	230.	0.4	<4
25850	48-33.425	-100.708	-3-03-	14.	3400	2.7	2	250	2.4	68	<4	88.	<0.2	<4
25851	48-33.413	-101.873	-3-03-	25.	1100	4.4	<2	78	13.	160	9	100.	1.5	64
25852	48-33.415	-101.927	-3-03-	12.	1000	5.3	<2	84	12.	130	12	71.	0.6	35
25853	48-33.415	-101.969	-3-03-	38.	1300	3.3	<2	110	16.	170	4	95.	1.5	35
25854	48-33.363	-101.806	-3-03-	16.	370	5.4	<2	130	13.	160	11	87.	0.5	55
25855	48-33.370	-101.912	-3-03-	12.	950	15.	<2	73	9.8	97	31	90.	0.3	57
25856	48-33.271	-101.811	-3-03-	28.	2300	9.9	<2	380	12.	140	31	220.	0.4	51
25857	48-33.282	-101.854	-3-03-	13.	2300	12.	<2	360	11.	140	16	190.	0.4	42
25858	48-33.272	-101.972	-3-03-	29.	2400	12.	<2	400	18.	180	<4	170.	1.4	44
25859	48-33.320	-101.969	-3-03-	24.	1500	16.	<2	97	15.	140	20	130.	0.4	51
25860	48-33.320	-101.849	-3-03-	13.	1100	21.	<2	73	9.4	110	11	98.	0.4	44
25861	48-33.461	-101.973	-3-03-	14.	1400	11.	<2	140	13.	130	14	140.	0.3	36
25862	48-33.462	-101.921	-3-03-	22.	1000	9.1	<2	78	13.	150	28	89.	0.8	51
25863	48-33.317	-101.804	-3-03-	23.	1800	8.4	<2	160	15.	170	8	130.	0.4	33
25864	48-33.321	-101.759	-3-03-	20.	2400	9.8	<2	410	18.	170	8	130.	0.4	20
25865	48-33.315	-101.926	-3-03-	65.	2000	9.3	<2	160	21.	140	50	180.	0.4	45
25866	48-33.461	-101.855	-3-03-	12.	1400	29.	<2	130	16.	240	21	78.	40.	18
25867	48-33.463	-101.808	-3-03-	12.	1200	15.	<2	76	13.	150	12	100.	1.2	58
25869	48-33.450	-101.762	-3-03-	13.	1400	12.	<2	140	12.	140	<4	110.	1.1	51
25870	48-33.415	-101.755	-3-03-	11.	1100	8.8	<2	99	13.	140	6	83.	0.5	39
25871	48-33.366	-101.859	-3-03-	18.	1000	15.	<2	22	12.	140	9	99.	0.5	75
25872	48-33.368	-101.965	-3-03-	50.	1200	44.	<2	78	15.	120	14	52.	0.5	41
25873	48-33.263	-101.777	-3-03-	26.	2300	9.5	<2	570	19.	190	8	140.	0.4	36
25874	48-33.290	-101.752	-3-03-	32.	5200	27.	3	790	31.	220	30	380.	0.6	47
25875	48-33.370	-101.756	-3-03-	12.	2000	3.5	<2	550	13.	150	8	140.	0.3	18
25876	48-33.418	-101.810	-3-03-	13.	1800	8.0	<2	190	13.	150	29	140.	0.4	33
25877	48-33.740	-101.423	-3-03-	7.9	770	1.2	<2	30	10.	64	<4	54.	0.7	10
25878	48-33.739	-101.476	-3-03-	16.	830	7.0	<2	42	10.	110	<4	28.	0.9	25
25879	48-33.697	-101.403	-3-03-	10.	790	6.1	<2	28	13.	78	8	44.	0.3	33
25880	48-33.556	-101.463	-3-03-	5.2	1500	2.4	<2	390	12.	130	<4	26.	0.3	11
25881	48-33.740	-101.301	-3-03-	7.0	730	5.7	<2	65	10.	110	6	30.	0.4	28
25882	48-33.699	-101.358	-3-03-	12.	1100	3.2	<2	110	12.	130	4	34.	0.8	18

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
25883	48-33.644	-101.314	-3-03-	13.	840	6.7	<2	19	9.9	71	9	77.	0.4	35
25884	48-33.739	-101.359	-3-03-	14.	800	5.2	<2	17	11.	71	<4	43.	0.7	22
25885	48-33.696	-101.466	-3-03-	24.	960	5.0	<2	51	13.	100	7	39.	1.5	19
25886	48-33.643	-101.415	-3-03-	12.	1700	5.8	<2	200	15.	150	<4	48.	0.6	26
25887	48-33.656	-101.359	-3-03-	7.5	760	5.0	<2	26	10.	100	5	36.	0.5	28
25888	48-33.602	-101.316	-3-03-	13.	880	5.1	<2	21	9.0	77	9	85.	0.4	25
25889	48-33.558	-101.308	-3-03-	9.8	830	1.2	<2	16	8.8	71	5	61.	0.7	7
25890	48-33.504	-101.319	-3-03-	11.	840	5.5	<2	18	9.8	83	7	94.	1.1	45
25891	48-33.504	-101.360	-3-03-	9.4	830	7.5	<2	<10	8.2	190	<4	25.	0.6	28
25892	48-33.557	-101.353	-3-03-	11.	740	8.4	<2	23	11.	69	<4	47.	0.5	30
25893	48-33.598	-101.360	-3-03-	12.	780	5.1	<2	20	11.	50	11	57.	0.4	30
25894	48-33.608	-101.407	-3-03-	13.	640	4.7	99	12	13.	69	5	28.	1.0	25
25895	48-33.681	-101.282	-3-03-	13.	740	1.3	<2	19	12.	63	10	31.	1.0	10
25896	48-33.535	-101.435	-3-03-	10.	760	7.4	<2	16	12.	89	5	40.	0.8	37
25897	48-33.520	-101.463	-3-03-	6.0	2400	5.7	2	470	9.7	250	<4	14.	0.5	32
25898	48-33.637	-101.480	-3-03-	4.8	1100	11.	<2	28	31.	110	27	69.	0.7	40
25899	48-33.593	-101.471	-3-03-	12.	1200	10.	<2	120	15.	85	5	38.	0.7	32
25900	48-33.514	-101.399	-3-03-	9.3	870	5.4	<2	35	12.	79	8	35.	0.7	37
25901	48-33.573	-101.393	-3-03-	17.	880	9.8	<2	10	16.	160	<4	22.	0.6	30
25902	48-33.363	-100.298	-3-03-	42.	5500	1.5	10	400	12.	210	8	280.	0.5	<4
25903	48-33.323	-100.315	-3-03-	8.4	900	1.2	<2	42	2.6	35	8	77.	0.8	7
25904	48-33.283	-100.317	-3-03-	3.7	1500	<0.5	<2	130	1.9	36	<4	210.	0.4	7
25905	48-33.320	-100.353	-3-03-	18.	4200	2.8	4	160	8.1	93	<4	110.	0.3	7
25906	48-33.323	-100.435	-3-03-	4.4	3100	2.4	2	49	4.4	35	<4	33.	0.2	18
25908	48-33.275	-100.422	-3-03-	45.	4700	2.6	6	360	4.8	77	5	270.	0.5	14
25914	48-33.361	-100.313	-3-03-	5.1	640	2.7	<2	41	3.0	32	6	51.	1.0	7
25915	48-33.276	-100.260	-3-03-	1.9	1600	0.6	<2	150	3.0	31	<4	130.	0.4	4
25917	48-33.318	-100.252	-3-03-	2.8	810	<0.5	5	63	1.9	24	<4	65.	<0.2	<4
25922	48-33.336	-100.464	-3-03-	5.0	3100	1.7	2	11	3.3	36	<4	20.	<0.2	4
25923	48-33.298	-100.484	-3-03-	1.9	940	2.0	<2	45	6.6	19	<4	18.	<0.2	6
25925	48-33.283	-100.474	-3-03-	13.	3600	<0.5	21	310	4.5	100	9	110.	0.2	9
25929	48-33.462	-100.412	-3-03-	12.	3800	1.5	4	220	4.2	60	<4	86.	0.3	5
25930	48-33.402	-100.424	-3-03-	18.	4100	2.2	10	420	4.4	80	4	99.	<0.2	<4
25931	48-33.442	-100.442	-3-03-	18.	3700	1.5	4	110	4.1	56	10	74.	<0.2	<4
25932	48-33.461	-100.346	-3-03-	22.	3600	1.8	15	100	4.1	69	<4	49.	0.6	10
25933	48-33.447	-100.471	-3-03-	27.	2800	1.1	23	110	3.0	36	<4	86.	0.3	5
25934	48-33.377	-100.459	-3-03-	21.	3800	1.1	7	92	5.2	66	4	120.	0.2	<4
25936	48-33.409	-100.464	-3-03-	17.	11000	1.2	16	2300	6.5	98	10	750.	0.2	<4
25937	48-33.418	-100.488	-3-03-	27.	6600	0.8	12	980	6.6	90	<4	410.	0.3	<4
25940	48-33.459	-100.284	-3-03-	29.	8500	0.5	12	1800	12.	130	<4	310.	0.2	<4
25942	48-33.429	-100.362	-3-03-	26.	5100	5.8	16	440	9.5	67	8	190.	0.2	29
25943	48-33.378	-100.247	-3-03-	22.	3700	1.5	9	98	6.7	70	5	96.	0.3	<4
25955	48-33.277	-100.379	-3-03-	6.8	6800	0.6	7	840	3.8	47	<4	270.	0.5	<4
25956	48-33.435	-100.260	-3-03-	1.8	7300	0.7	7	740	5.9	120	11	310.	0.4	<4
25957	48-33.459	-100.255	-3-03-	11.	5900	0.7	4	220	15.	87	4	110.	0.6	<4
25958	48-33.502	-101.976	-3-03-	13.	1400	5.9	<2	68	15.	150	26	110.	0.4	35
25959	48-33.645	-101.974	-3-03-	18.	1600	5.4	<2	120	13.	150	<4	110.	0.3	53
25960	48-33.696	-101.960	-3-03-	17.	2400	4.3	<2	210	30.	250	160	160.	0.4	24
25961	48-33.694	-101.909	-3-03-	16.	1900	2.9	<2	190	18.	130	<4	99.	0.3	9
25962	48-33.695	-101.813	-3-03-	11.	1400	5.0	<2	110	14.	120	4	51.	0.2	23
25963	48-33.738	-101.806	-3-03-	5.1	1200	4.1	<2	78	14.	86	10	39.	0.3	17
25964	48-33.738	-101.863	-3-03-	9.3	1200	4.3	<2	64	14.	93	<4	57.	0.3	19
25965	48-33.734	-101.922	-3-03-	21.	1800	6.0	<2	140	17.	120	<4	79.	0.3	18
25966	48-33.751	-101.976	-3-03-	10.	1400	4.2	<2	59	15.	120	<4	86.	0.3	26
25967	48-33.607	-101.970	-3-03-	18.	1300	6.6	<2	110	14.	160	4	94.	0.3	46

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
25968	48-33.566	-101.958	-3-03-	160.	2200	3.0	<2	120	19.	260	11	180.	0.4	39
25969	48-33.591	-101.939	-3-03-	14.	1100	7.6	<2	75	12.	150	14	66.	0.3	42
25970	48-33.608	-101.922	-3-03-	21.	3400	1.7	<2	410	20.	240	10	140.	0.6	7
25971	48-33.665	-101.923	-3-03-	16.	1900	3.7	13	130	17.	150	<4	130.	0.3	12
25972	48-33.695	-101.840	-3-03-	9.6	1200	5.3	<2	59	13.	96	7	58.	0.3	17
25974	48-33.505	-101.754	-3-03-	13.	1400	12.	<2	100	12.	160	11	110.	0.2	90
25975	48-33.549	-101.745	-3-03-	16.	2200	7.0	20	230	17.	180	9	130.	0.4	26
25976	48-33.533	-101.843	-3-03-	22.	1600	9.6	<2	130	17.	180	20	120.	0.3	54
25977	48-33.511	-101.818	-3-03-	21.	3100	6.5	<2	250	16.	190	16	120.	0.2	33
25978	48-33.499	-101.871	-3-03-	72.	1500	5.0	<2	26	13.	180	14	67.	<0.2	60
25979	48-33.506	-101.923	-3-03-	23.	1700	6.2	<2	60	13.	130	18	100.	<0.2	57
25980	48-33.536	-101.975	-3-03-	16.	1600	8.3	<2	48	13.	110	13	96.	<0.2	47
25981	48-33.636	-101.870	-3-03-	17.	2700	1.7	<2	220	16.	140	<4	83.	<0.2	8
25982	48-33.609	-101.835	-3-03-	17.	1600	5.5	3	47	15.	120	8	76.	0.2	19
25983	48-33.593	-101.763	-3-03-	7.0	1200	6.1	<2	38	11.	92	8	46.	0.2	18
25984	48-33.645	-101.802	-3-03-	9.3	1100	5.3	<2	42	12.	81	5	44.	<0.2	12
25985	48-33.592	-101.790	-3-03-	12.	1900	3.9	<2	170	13.	130	4	55.	<0.2	22
25986	48-33.611	-101.825	-3-03-	26.	1700	4.3	<2	47	13.	98	10	75.	<0.2	29
25987	48-33.572	-101.825	-3-03-	11.	2300	0.5	<2	200	6.5	55	7	180.	<0.2	<4
25988	48-33.592	-101.863	-3-03-	17.	1900	4.8	<2	130	14.	160	9	72.	<0.2	35
25989	48-33.550	-101.777	-3-03-	10.	3600	6.8	3	270	20.	340	<4	190.	<0.2	22
25990	48-33.674	-101.854	-3-03-	10.	1200	5.0	<2	31	10.	68	4	49.	0.3	19
25994	48-33.419	-101.201	-3-03-	0.78	3100	0.6	2	2200	3.2	280	23	720.	<0.2	<4
25996	48-33.326	-101.171	-3-03-	5.9	9400	2.0	5	940	6.0	190	<4	620.	<0.2	<4
25997	48-33.327	-101.184	-3-03-	3.6	850	0.9	<2	28	2.4	17	<4	30.	0.4	4
26000	48-33.274	-100.194	-3-03-	17.	5000	0.5	7	200	6.8	150	<4	170.	0.6	<4
26019	48-33.370	-100.185	-3-01-	19.	13000	0.5	13	2300	15.	340	<4	560.	0.4	<4
26022	48-33.440	-100.097	-3-01-	29.	6100	0.9	6	380	12.	420	6	190.	0.8	<4
26035	48-33.427	-100.022	-3-03-	61.	4500	3.5	8	270	19.	170	13	170.	<0.2	13
26036	48-33.405	-100.110	-3-03-	17.	1100	<0.5	10	1300	16.	220	<4	550.	0.3	<4
26041	48-33.105	-101.542	-3-03-	14.	1800	<0.5	<2	190	9.9	160	8	180.	0.3	29
26043	48-33.056	-101.553	-3-03-	74.	13000	<0.5	11	68	15.	190	35	190.	0.8	190
26045	48-33.039	-101.543	-3-03-	45.	5500	0.8	7	670	30.	280	23	410.	0.3	67
26046	48-33.008	-101.587	-3-03-	58.	13000	3.2	16	1700	20.	430	<4	570.	0.3	30
26047	48-33.037	-101.589	-3-03-	110.	5000	2.8	31	490	16.	240	22	280.	<0.2	25
26048	48-33.041	-101.605	-3-03-	38.	7800	11.	18	1400	12.	170	5	380.	0.3	30
26049	48-33.107	-101.623	-3-03-	11.	4800	10.	3	760	7.0	160	<4	230.	0.3	5
26050	48-33.239	-101.577	-3-03-	2.1	5400	28.	6	810	9.7	130	12	520.	0.3	<4
26051	48-33.195	-101.524	-3-03-	13.	1900	8.5	<2	200	11.	160	<4	120.	0.3	43
26052	48-33.150	-101.525	-3-03-	15.	2700	4.2	3	410	18.	280	<4	160.	5.4	41
26053	48-33.246	-101.706	-3-03-	70.	1100	6.8	<2	<10	15.	290	9	22.	0.8	370
26054	48-33.189	-101.631	-3-03-	12.	3000	4.3	110	480	9.5	190	4	110.	<0.2	22
26055	48-33.005	-101.689	-3-03-	25.	6300	3.4	2	1200	25.	260	8	270.	0.6	14
26056	48-33.062	-101.640	-3-03-	14.	2400	6.5	19	290	4.6	91	11	200.	0.6	84
26057	48-33.243	-101.630	-3-03-	12.	1500	6.1	<2	97	10.	160	<4	82.	0.5	48
26058	48-33.242	-101.535	-3-03-	18.	1300	6.7	19	68	11.	120	8	76.	0.6	48
26059	48-33.138	-101.632	-3-03-	57.	3400	4.3	<2	480	17.	230	6	170.	1.3	30
26060	48-33.151	-101.699	-3-03-	14.	1500	5.7	<2	170	12.	200	9	78.	0.4	41
26061	48-33.195	-101.701	-3-03-	57.	3100	8.4	<2	380	15.	220	15	180.	1.9	83
26073	48-33.141	-101.248	-3-03-	5.9	4100	1.9	4	690	1.4	98	12	400.	0.7	5
26079	48-33.039	-101.267	-3-03-	22.	2000	1.3	<2	210	3.9	60	<4	210.	0.5	<4
26080	48-33.048	-101.252	-3-03-	3.3	5700	3.5	26	1200	1.6	23	<4	0.6	0.6	56
26082	48-33.210	-101.257	-3-03-	2.9	870	4.2	30	52	1.6	28	<4	0.7	0.6	63
26084	48-33.191	-101.577	-3-03-	2.9	5600	3.9	30	680	1.6	27	<4	0.6	0.6	61
26085	48-33.150	-101.576	-3-03-	4.7	4400	4.2	17	610	1.3	18	6	0.4	0.3	51

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
26086	48-33.095	-101.692	-3-03-	4.1	920	2.9	<2	<10	14.	60	13	77.	1.1	29
26087	48-33.042	-101.679	-3-03-	11.	1700	5.9	3	100	14.	150	<4	75.	0.6	35
26091	48-33.193	-101.469	-3-03-	15.	1600	5.9	<2	150	12.	110	9	120.	0.8	54
26092	48-33.151	-101.469	-3-03-	13.	1400	8.4	<2	49	11.	140	15	72.	0.6	84
26093	48-33.153	-101.411	-3-03-	9.4	1100	11.	<2	40	10.	110	10	46.	0.4	84
26094	48-33.117	-101.417	-3-03-	13.	1200	30.	<2	30	8.1	78	7	59.	0.4	230
26095	48-33.232	-101.331	-3-03-	11.	1200	0.7	<2	33	0.3	36	<4	100.	0.5	<4
26096	48-33.238	-101.309	-3-03-	1.6	910	2.1	<2	19	2.7	27	<4	51.	0.5	13
26097	48-33.243	-101.323	-3-03-	15.	3700	3.1	2	<10	1.1	74	15	270.	0.8	19
26098	48-33.243	-101.403	-3-03-	48.	13000	0.5	12	1800	4.4	430	<4	550.	0.6	<4
26102	48-33.042	-101.481	-3-03-	24.	4700	4.0	5	440	14.	150	23	330.	0.4	6
26105	48-33.106	-101.470	-3-03-	20.	1400	21.	<2	98	11.	87	18	110.	0.3	150
26106	48-33.229	-100.562	-3-03-	3.0	3500	2.3	9	300	2.9	33	<4	56.	<0.2	<4
26107	48-33.225	-100.503	-3-03-	1.3	840	1.9	<2	<10	2.6	8	<4	11.	0.2	7
26108	48-33.109	-100.640	-3-03-	4.2	3300	6.2	4	94	2.1	49	5	40.	0.3	6
26109	48-33.094	-100.710	-3-03-	3.9	3100	3.1	4	<10	1.6	27	<4	25.	0.2	<4
26110	48-33.038	-100.729	-3-03-	3.7	3700	6.7	8	870	2.0	31	<4	38.	0.2	<4
26111	48-33.144	-100.691	-3-03-	2.5	4300	3.5	5	200	3.2	59	4	160.	<0.2	<4
26112	48-33.152	-100.652	-3-03-	6.0	3600	0.9	2	120	4.6	41	<4	44.	0.2	<4
26119	48-33.172	-100.709	-3-03-	7.9	3400	2.2	8	83	6.0	28	<4	50.	0.2	<4
26120	48-33.233	-100.607	-3-03-	2.1	1600	3.1	<2	79	2.0	22	4	120.	0.8	14
26121	48-33.245	-100.640	-3-03-	4.7	5100	0.7	5	810	4.6	59	5	260.	0.4	<4
26122	48-33.201	-100.600	-3-03-	31.	7300	<0.5	7	1300	5.5	37	<4	160.	0.3	<4
26123	48-33.164	-100.608	-3-03-	4.6	920	1.3	7	<10	1.1	9	<4	22.	0.5	7
26124	48-33.242	-100.573	-3-03-	2.6	2000	3.1	<2	200	6.1	35	<4	94.	0.3	13
26125	48-33.166	-100.754	-3-03-	9.7	3900	3.8	7	120	2.9	110	8	78.	0.5	12
26127	48-33.222	-100.744	-3-03-	21.	3700	1.0	6	130	4.4	48	6	46.	0.3	4
26128	48-33.228	-100.695	-3-03-	33.	11000	1.1	11	960	4.1	85	4	410.	0.3	7
26129	48-33.207	-100.537	-3-03-	20.	13000	6.5	14	2600	5.1	61	14	660.	0.4	9
26130	48-33.172	-100.573	-3-03-	6.2	40000	1.5	17	8000	5.5	51	<4	1100.	0.8	<4
26131	48-33.159	-100.506	-3-03-	5.7	10000	3.7	10	3900	4.7	180	9	530.	0.7	<4
26132	48-33.083	-100.585	-3-03-	12.	3300	3.4	2	95	1.8	41	<4	22.	0.6	5
26135	48-33.044	-100.562	-3-03-	3.3	3900	1.6	9	70	2.5	54	5	38.	0.4	<4
26136	48-33.097	-100.528	-3-03-	11.	3200	8.7	7	45	2.7	51	<4	24.	0.6	20
26137	48-33.017	-100.533	-3-03-	2.1	3600	2.0	3	72	3.9	79	<4	57.	0.3	<4
26140	48-33.107	-100.563	-3-03-	3.9	6100	3.3	9	440	4.3	70	7	290.	0.4	<4
26148	48-33.558	-101.249	-3-03-	11.	1200	1.7	<2	16	8.5	100	10	57.	0.6	23
26149	48-33.742	-101.238	-3-03-	12.	3100	5.4	<2	530	10.	360	<4	49.	0.3	23
26150	48-33.707	-101.211	-3-03-	11.	930	4.4	<2	19	10.	86	5	41.	0.5	25
26152	48-33.742	-101.194	-3-03-	8.8	910	5.0	<2	16	9.4	110	4	44.	0.6	38
26155	48-33.663	-101.161	-3-03-	9.5	910	4.8	<2	20	9.2	90	8	42.	0.5	30
26158	48-33.623	-101.239	-3-03-	10.	1300	4.0	<2	85	10.	190	7	52.	0.6	36
26159	48-33.691	-101.241	-3-03-	8.1	1100	5.0	<2	39	10.	120	9	31.	0.2	26
26161	48-33.726	-101.150	-3-03-	13.	960	2.3	<2	11	12.	82	11	60.	0.2	33
26162	48-33.748	-101.116	-3-03-	5.2	920	1.3	<2	32	8.0	68	6	21.	0.3	9
26163	48-33.734	-101.072	-3-03-	10.	1000	<0.5	<2	<10	6.8	54	13	70.	0.3	4
26164	48-33.743	-101.022	-3-03-	10.	910	1.8	<2	16	9.1	69	7	27.	0.4	27
26165	48-33.703	-101.120	-3-03-	12.	990	1.2	<2	41	9.8	78	<4	64.	0.2	15
26166	48-33.703	-101.073	-3-03-	6.4	990	2.9	<2	11	7.4	58	5	73.	0.2	26
26167	48-33.713	-101.006	-3-03-	7.5	890	2.8	<2	17	8.9	63	<4	48.	0.3	20
26168	48-33.675	-101.029	-3-03-	6.6	1100	1.1	<2	110	7.4	67	4	100.	0.4	19
26169	48-33.659	-101.064	-3-03-	4.8	860	1.2	<2	22	7.1	53	5	32.	0.5	9
26170	48-33.629	-101.038	-3-03-	4.7	880	1.0	<2	27	7.3	95	<4	23.	0.2	25
26171	48-33.673	-101.113	-3-03-	8.2	1200	0.8	<2	24	8.4	79	<4	44.	0.5	17
26172	48-33.698	-101.158	-3-03-	4.9	800	1.4	<2	20	6.3	200	<4	25.	0.3	28

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
26173	48-33.665	-101.200	-3-03-	10.	1000	3.3	<2	23	12.	88	5	63.	0.3	26
26178	48-33.642	-101.152	-3-03-	11.	950	3.3	<2	25	11.	88	10	73.	0.4	30
26179	48-33.630	-101.202	-3-03-	9.2	1100	1.6	<2	<10	10.	78	12	81.	0.4	22
26180	48-33.607	-101.090	-3-03-	2.0	800	3.3	<2	<10	2.8	46	5	28.	0.5	16
26182	48-33.599	-101.155	-3-03-	10.	1000	3.7	<2	18	9.8	110	4	79.	0.5	33
26187	48-33.548	-101.101	-3-03-	10.	2100	3.8	26	230	10.	170	12	280.	0.5	7
26189	48-33.556	-101.067	-3-03-	3.4	1100	0.8	<2	1500	1.5	72	21	280.	0.4	<4
26190	48-33.527	-101.045	-3-03-	19.	1200	1.6	<2	17	3.8	22	<4	59.	0.5	<4
26193	48-33.523	-101.113	-3-03-	33.	7200	0.8	31	23	2.7	200	4	570.	0.6	<4
26195	48-33.513	-101.041	-3-03-	1.4	2500	<0.5	<2	48	3.6	120	6	250.	0.3	<4
26196	48-33.559	-101.028	-3-03-	40.	1900	1.1	<2	48	3.6	68	6	220.	0.5	14
26197	48-33.609	-101.017	-3-03-	3.9	720	1.5	<2	50	4.5	180	<4	24.	0.4	22
26199	48-33.601	-101.059	-3-03-	20.	950	1.8	<2	14	4.1	64	16	110.	0.4	<4
26200	48-33.583	-101.091	-3-03-	5.1	870	2.3	<2	17	3.0	55	<4	120.	0.3	17
26202	48-33.177	-100.252	-3-03-	20.	2600	2.2	8	1400	12.	170	<4	430.	0.3	<4
26204	48-33.228	-100.301	-3-03-	9.2	1500	0.7	<2	230	4.2	52	<4	140.	0.4	9
26205	48-33.228	-100.250	-3-03-	18.	2000	<0.5	4	240	9.7	98	6	160.	0.2	<4
26207	48-33.134	-100.307	-3-03-	26.	2900	1.2	6	310	2.3	54	<4	110.	0.4	<4
26208	48-33.137	-100.351	-3-03-	39.	2500	2.9	15	2400	3.7	56	5	580.	0.2	<4
26209	48-33.130	-100.406	-3-03-	8.1	1500	2.9	7	270	7.7	66	<4	170.	<0.2	<4
26210	48-33.181	-100.417	-3-03-	3.5	1500	<0.5	3	390	2.5	39	<4	230.	0.3	<4
26214	48-33.144	-100.484	-3-03-	18.	2900	1.0	11	1700	3.5	110	14	650.	0.3	<4
26215	48-33.081	-100.398	-3-03-	12.	2800	1.0	10	360	2.9	40	<4	220.	0.3	<4
26218	48-33.037	-100.427	-3-03-	47.	3200	2.1	5	63	2.0	76	<4	80.	0.3	4
26220	48-33.232	-100.421	-3-03-	13.	10000	<0.5	8	670	4.1	62	<4	200.	0.3	<4
26222	48-33.227	-100.484	-3-03-	7.7	1500	4.9	<2	17	1.8	22	6	13.	0.3	11
26224	48-33.163	-100.468	-3-03-	4.0	2300	3.1	6	420	3.8	93	4	170.	0.2	4
26226	48-33.206	-100.490	-3-03-	4.6	1800	<0.5	<2	150	1.8	44	<4	50.	0.2	<4
26227	48-33.180	-100.365	-3-03-	7.1	1900	3.9	3	40	2.2	43	<4	170.	0.4	14
26228	48-33.298	-101.746	-3-03-	32.	6500	7.0	7	400	21.	210	7	360.	<0.2	20
26229	48-33.297	-101.746	-3-03-	34.	6200	3.6	<2	380	19.	200	4	320.	0.4	18
26230	48-33.296	-101.747	-3-03-	55.	6000	4.5	3	360	21.	210	15	350.	<0.2	25
26231	48-33.283	-101.762	-3-03-	93.	6700	13.	<2	400	18.	150	39	490.	1.8	98
26232	48-33.145	-101.983	-3-03-	0.46	9300	0.6	<2	1700	4.9	150	<4	670.	<0.2	<4
26233	48-33.112	-101.939	-3-03-	410.	2300	100.	<2	130	35.	240	130	95.	<0.2	75
26234	48-33.091	-101.897	-3-03-	60.	3000	10.	<2	30	12.	130	9	210.	<0.2	74
26235	48-33.122	-101.876	-3-03-	13.	2000	3.8	<2	150	11.	110	5	140.	<0.2	21
26236	48-33.283	-101.913	-3-03-	8.2	16000	13.	<2	200	17.	150	15	130.	<0.2	55
26237	48-33.273	-101.758	-3-03-	60.	5500	6.5	2	600	20.	150	<4	340.	<0.2	30
26238	48-33.673	-100.983	-3-03-	6.5	600	1.2	<2	10	4.8	37	9	48.	0.8	10
26239	48-33.566	-100.732	-3-01-	24.	3400	1.0	<2	11	1.5	54	5	8.2	0.6	6
26241	48-33.010	-101.544	-3-03-	52.	6100	3.6	<2	680	47.	96	75	530.	1.6	22
26243	48-33.049	-101.415	-3-03-	36.	1500	4.4	<2	150	1.7	83	8	180.	0.8	14
26244	48-33.408	-101.288	-3-03-	37.	1700	10.	18	36	<0.1	85	14	290.	0.7	58
26245	48-33.391	-101.233	-3-03-	12.	1400	2.7	<2	96	2.0	76	20	200.	0.6	10
26246	48-33.478	-101.201	-3-03-	11.	970	1.3	24	47	7.0	73	<4	64.	0.7	25
26248	48-33.356	-101.087	-3-03-	2.4	2700	0.8	<2	210	25.	44	<4	320.	1.0	<4
26250	48-33.810	-100.523	-3-03-	38.	3000	3.1	3	160	3.8	68	<4	37.	0.2	<4
26252	48-33.850	-100.521	-3-03-	26.	3000	2.9	7	53	3.6	69	<4	27.	<0.2	5
26254	48-33.807	-100.591	-3-03-	13.	3800	4.7	3	180	2.0	91	<4	70.	0.2	17
26255	48-33.930	-100.577	-3-03-	13.	5600	0.7	6	480	4.3	71	<4	290.	0.3	<4
26264	48-33.860	-100.581	-3-03-	11.	2300	2.8	<2	340	4.4	100	<4	36.	0.7	6
26265	48-33.885	-100.580	-3-03-	2.3	2800	1.3	2	250	8.4	78	<4	170.	<0.2	<4
26266	48-33.911	-100.604	-3-03-	3.5	3900	4.0	4	95	5.1	130	4	120.	<0.2	9
26267	48-33.913	-100.645	-3-03-	33.	4800	5.9	4		3.6	100	<4	190.	4.5	7

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
26270	48-33.698	-101.527	-3-03-	9.6	920	1.9	<2	29	15.	71	8	30.	1.1	8
26271	48-33.739	-101.524	-3-03-	8.5	1100	3.4	7	21	12.	130	5	15.	0.7	23
26273	48-33.697	-101.579	-3-03-	8.4	870	3.2	<2	39	14.	63	15	28.	<0.2	20
26274	48-33.737	-101.573	-3-03-	8.0	1300	4.1	<2	86	16.	93	11	34.	0.3	17
26275	48-33.697	-101.683	-3-03-	9.5	1100	5.1	<2	94	17.	83	14	28.	0.3	21
26276	48-33.739	-101.689	-3-03-	11.	880	5.3	<2	20	13.	65	11	31.	0.3	20
26277	48-33.738	-101.738	-3-03-	5.5	1000	2.8	<2	85	14.	69	9	27.	<0.2	17
26278	48-33.695	-101.732	-3-03-	9.9	870	8.4	<2	35	13.	79	13	58.	0.3	33
26279	48-33.696	-101.628	-3-03-	10.	1300	6.0	<2	96	16.	130	6	9.6	<0.2	22
26280	48-33.735	-101.630	-3-03-	8.8	2000	4.3	<2	240	19.	120	4	31.	0.3	6
26281	48-33.647	-101.527	-3-03-	9.9	1000	4.6	<2	30	10.	66	10	93.	<0.2	17
26283	48-33.604	-101.530	-3-03-	13.	1600	4.6	<2	180	17.	150	4	26.	<0.2	16
26284	48-33.554	-101.531	-3-03-	12.	2200	4.3	<2	230	21.	130	<4	62.	<0.2	33
26285	48-33.504	-101.521	-3-03-	10.	1100	11.	<2	56	12.	110	17	79.	<0.2	76
26286	48-33.507	-101.583	-3-03-	10.	2100	3.9	<2	180	14.	200	4	72.	0.3	21
26287	48-33.555	-101.583	-3-03-	13.	1200	4.6	<2	69	12.	120	11	74.	0.3	31
26288	48-33.595	-101.586	-3-03-	9.8	1100	6.8	<2	49	12.	100	13	54.	0.3	50
26289	48-33.644	-101.579	-3-03-	7.0	1000	14.	<2	83	13.	85	<4	28.	0.3	20
26290	48-33.653	-101.639	-3-03-	7.9	1800	4.6	<2	160	16.	130	<4	65.	0.3	21
26291	48-33.605	-101.645	-3-03-	14.	1400	7.8	<2	76	13.	130	8	68.	0.3	24
26292	48-33.553	-101.639	-3-03-	10.	1700	7.1	<2	150	13.	150	<4	53.	0.3	28
26293	48-33.547	-101.691	-3-03-	4.7	2100	11.	<2	180	10.	97	13	37.	2.2	23
26294	48-33.650	-101.693	-3-03-	8.8	950	6.2	<2	42	9.4	59	<4	52.	0.4	8
26295	48-33.646	-101.748	-3-03-	1.9	990	3.0	<2	14	12.	140	120	43.	0.3	<4
26296	48-33.594	-101.700	-3-03-	2.0	1300	8.3	<2	74	19.	150	7	52.	7.6	16
26297	48-33.514	-101.656	-3-03-	5.9	870	8.9	<2	26	9.9	120	21	46.	0.4	63
26298	48-33.503	-101.702	-3-03-	14.	1100	18.	<2	180	7.5	90	9	59.	0.3	140
26299	48-33.784	-101.419	-3-03-	9.2	890	1.2	<2	10	9.1	65	11	37.	0.8	4
26300	48-33.783	-101.351	-3-03-	8.6	810	11.	<2	20	8.0	74	<4	42.	0.6	32
26301	48-33.835	-101.416	-3-03-	7.3	1500	5.6	<2	17	8.6	160	<4	18.	0.8	20
26302	48-33.786	-101.301	-3-03-	8.7	900	10.	<2	20	7.8	80	8	35.	0.5	26
26304	48-33.878	-101.331	-3-03-	9.3	950	5.8	<2	14	7.2	65	<4	57.	0.3	28
26306	48-33.878	-101.365	-3-03-	8.9	840	11.	<2	15	7.5	83	<4	32.	0.5	36
26307	48-33.978	-101.298	-3-03-	8.0	850	8.5	<2	180	6.1	110	4	21.	0.5	39
26308	48-33.975	-101.361	-3-03-	5.3	940	1.7	<2	21	10.	96	<4	39.	0.6	8
26309	48-33.890	-101.285	-3-03-	7.2	750	9.1	<2	12	9.1	94	5	26.	0.6	44
26310	48-33.841	-101.289	-3-03-	6.7	830	4.2	<2	19	9.4	73	9	70.	1.1	5
26312	48-33.979	-101.461	-3-03-	11.	840	7.3	<2	20	10.	110	<4	31.	0.4	33
26313	48-33.988	-101.412	-3-03-	6.5	1100	7.7	<2	12	9.1	99	8	27.	0.6	22
26314	48-33.928	-101.358	-3-03-	6.8	1100	6.6	<2	14	9.6	89	8	27.	0.4	30
26315	48-33.933	-101.408	-3-03-	7.9	690	5.1	<2	18	9.7	62	7	24.	0.3	50
26316	48-33.934	-101.463	-3-03-	8.7	930	31.	<2	16	9.9	97	5	40.	0.8	30
26317	48-33.797	-101.474	-3-03-	8.7	890	4.7	<2	33	11.	65	7	44.	0.6	19
26318	48-33.838	-101.480	-3-03-	8.5	780	11.	<2	18	11.	76	8	46.	0.6	29
26319	48-33.884	-101.396	-3-03-	11.	850	7.1	<2	15	10.	90	6	47.	0.3	38
26320	48-33.930	-101.305	-3-03-	8.9	900	8.5	<2	10	9.2	96	6	34.	0.4	26
26321	48-33.752	-101.688	-3-03-	7.0	870	6.8	<2	16	12.	56	7	30.	0.4	22
26322	48-34.000	-101.748	-3-03-	16.	1200	9.7	<2	63	13.	97	6	34.	0.6	29
26323	48-33.875	-101.463	-3-03-	9.3	890	3.3	<2	17	10.	91	8	35.	0.4	37
26324	48-33.835	-101.367	-3-03-	11.	860	8.4	<2	11	12.	120	<4	33.	0.4	35
26327	48-33.035	-101.209	-3-03-	13.	5500	2.0	<2	780	3.1	93	12	450.	0.4	8
26333	48-33.047	-101.145	-3-03-	5.7	1600	1.0	<2	120	0.7	41	<4	240.	0.5	<4
26334	48-33.060	-101.089	-3-03-	8.4	1900	0.8	<2	70	2.5	70	<4	170.	0.6	<4
26335	48-33.132	-101.013	-3-03-	7.2	2600	0.7	<2	610	3.5	67	<4	200.	0.2	<4
26337	48-33.082	-101.020	-3-03-	11.	4000	0.9	<2	1200	4.2	66	5	370.	0.3	<4

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
26341	48-33.041	-101.053	-3-03-	0.77	1500	<0.5	<2	210	3.4	150	<4	510.	0.3	<4
26343	48-33.001	-101.057	-3-03-	<0.20	1500	<0.5	<2	31	1.3	66	4	210.	<0.2	<4
26346	48-33.091	-101.059	-3-03-	13.	930	<0.5	7	23	2.7	13	<4	11.	<0.2	<4
26353	48-33.203	-100.966	-3-03-	30.	3900	0.7	3	100	4.0	65	<4	120.	0.3	<4
26354	48-33.246	-100.971	-3-03-	4.2	8500	0.7	6	1500	4.3	110	5	490.	<0.2	<4
26356	48-33.180	-101.030	-3-03-	5.9	2400	<0.5	<2	230	2.6	19	<4	180.	0.3	<4
26366	48-33.257	-101.804	-3-03-	35.	2800	7.2	2	280	22.	190	6	120.	0.3	37
26367	48-33.193	-101.806	-3-03-	7.4	5400	4.0	3	870	17.	110	<4	160.	0.3	23
26368	48-33.143	-101.799	-3-03-	18.	4000	2.4	36	400	8.6	170	10	240.	0.3	47
26369	48-33.238	-101.769	-3-03-	26.	1500	6.8	<2	35	16.	130	13	78.	0.3	56
26370	48-33.196	-101.754	-3-03-	7.9	2700	6.4	<2	160	13.	180	7	110.	0.4	27
26371	48-33.135	-101.744	-3-03-	8.5	1700	7.9	<2	56	8.0	110	7	79.	0.3	25
26372	48-33.107	-101.805	-3-03-	37.	5200	8.8	4	450	59.	960	21	230.	0.8	56
26373	48-33.006	-101.763	-3-03-	24.	1800	5.2	<2	93	17.	200	11	53.	0.3	83
26374	48-33.059	-101.767	-3-03-	19.	1300	6.4	<2	<10	22.	180	5	31.	0.3	120
26375	48-33.000	-101.859	-3-03-	15.	2700	19.	10	190	18.	230	<4	74.	0.3	19
26376	48-33.011	-101.921	-3-03-	12.	2900	12.	<2	300	12.	120	<4	110.	0.3	17
26377	48-33.021	-101.983	-3-03-	20.	2400	22.	<2	87	14.	99	<4	160.	<0.2	110
26378	48-33.048	-101.816	-3-03-	3.8	2100	<0.5	<2	46	6.2	38	<4	64.	5.2	<4
26379	48-33.006	-101.797	-3-03-	25.	1700	1.6	<2	<10	11.	120	8	8.5	0.3	71
26380	48-33.044	-101.881	-3-03-	25.	3700	29.	<2	330	13.	130	<4	190.	37.	18
26381	48-33.065	-101.919	-3-03-	10.0	1900	2.9	<2	300	12.	170	<4	66.	1.7	24
26382	48-33.065	-101.977	-3-03-	9.1	1800	8.0	<2	130	9.2	140	6	65.	0.4	32
26383	48-33.109	-101.736	-3-03-	35.	3000	18.	<2	450	13.	120	35	190.	0.8	170
26385	48-33.095	-101.928	-3-03-	26.	3400	0.5	<2	830	17.	120	12	190.	0.4	<4
26386	48-33.099	-101.999	-3-03-	34.	1600	7.6	<2	170	14.	110	11	30.	0.3	79
26387	48-33.178	-101.980	-3-03-	150.	6300	2.2	5	1600	29.	210	<4	160.	0.3	12
26388	48-33.160	-101.867	-3-03-	27.	2200	32.	<2	120	19.	380	<4	47.	0.7	250
26389	48-33.236	-101.851	-3-03-	21.	2100	9.3	<2	200	13.	110	4	110.	0.3	35
26390	48-33.201	-101.875	-3-03-	<0.20	11000	0.5	3	2900	29.	120	<4	630.	0.3	<4
26391	48-33.183	-101.932	-3-03-	11.	4900	2.4	6	1200	16.	190	<4	220.	0.3	9
26392	48-33.228	-101.924	-3-03-	24.	1600	20.	<2	87	15.	83	21	130.	5.5	180
26393	48-33.138	-101.899	-3-03-	20.	3200	2.5	5	850	14.	160	<4	150.	0.3	7
26394	48-33.232	-101.983	-3-03-	23.	3500	1.8	<2	470	13.	87	7	160.	0.4	15
26398	48-33.417	-100.917	-3-03-	3.4	1100	6.8	<2	22	3.2	8	<4	20.	0.3	18
26399	48-33.383	-100.936	-3-03-	2.7	3600	1.9	6	93	3.0	68	<4	66.	0.2	16
26400	48-33.451	-100.915	-3-03-	2.0	4500	0.9	5	59	4.6	140	11	180.	0.4	<4
26408	48-33.706	-100.696	-3-03-	4.5	3200	3.4	9	43	3.3	67	<4	54.	<0.2	<4
26409	48-33.749	-100.693	-3-03-	1.7	810	1.6	<2	64	2.2	26	<4	43.	0.2	<4
26410	48-33.733	-100.643	-3-03-	11.	2400	0.9	3	150	2.3	33	<4	41.	0.2	<4
26411	48-33.690	-100.640	-3-03-	6.2	3000	1.5	10	130	2.9	44	<4	43.	<0.2	<4
26412	48-33.655	-100.643	-3-03-	9.0	3400	2.3	5	100	1.8	70	<4	63.	<0.2	7
26413	48-33.661	-100.518	-3-03-	10.	3800	4.1	12	180	2.6	58	<4	71.	<0.2	6
26414	48-33.631	-100.534	-3-03-	4.7	3000	2.0	2	26	1.2	17	<4	10.	<0.2	<4
26415	48-33.673	-100.594	-3-03-	19.	3600	1.7	5	110	1.8	73	<4	56.	<0.2	9
26416	48-33.703	-100.573	-3-03-	5.3	3600	3.4	5	200	1.3	45	<4	68.	0.2	18
26417	48-33.733	-100.581	-3-03-	0.63	700	1.8	<2	62	1.1	11	<4	15.	<0.2	<4
26418	48-33.691	-100.509	-3-03-	16.	3300	1.2	<2	31	1.2	32	<4	14.	0.2	<4
26419	48-33.727	-100.509	-3-03-	30.	3400	2.5	3	120	1.3	45	<4	31.	<0.2	<4
26420	48-33.608	-100.732	-3-03-	17.	4100	1.8	2	87	2.5	65	<4	46.	<0.2	<4
26421	48-33.619	-100.675	-3-03-	16.	4500	1.6	8	1100	2.6	140	<4	170.	0.5	<4
26423	48-33.489	-100.824	-3-03-	21.	6300	0.9	3	680	3.0	59	7	330.	0.5	<4
26424	48-33.390	-100.788	-3-03-	8.6	3000	1.2	<2	44	2.6	48	<4	39.	0.6	6
26459	48-33.558	-100.845	-3-03-	140.	2800	2.7	<2	280	4.9	110	7	140.	0.7	5
26462	48-33.606	-100.851	-3-03-	19.	3700	<0.5	4	80	5.8	160	13	240.	0.6	<4

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

DR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
26463	48-33.602	-100.915	-3-03-	15.	1000	1.1	<2	31	3.1	42	5	88.	0.7	<4
26471	48-33.545	-100.955	-3-03-	28.	2100	1.6	<2	100	1.4	120	8	200.	0.8	9
26473	48-33.512	-100.915	-3-03-	83.	5000	1.5	<2	430	3.3	150	11	370.	0.6	<4
26474	48-33.548	-100.926	-3-03-	14.	3200	0.8	<2	380	6.2	65	<4	200.	0.4	<4
26475	48-33.615	-100.997	-3-03-	3.5	7300	1.2	<2	20	6.6	90	6	57.	0.5	7
26476	48-33.634	-100.979	-3-03-	6.3	1000	1.8	<2	96	8.4	60	6	160.	0.6	15
26477	48-33.647	-100.860	-3-03-	5.5	2400	1.6	<2	320	6.7	46	<4	130.	0.8	6
26480	48-33.741	-100.811	-3-03-	63.	5300	6.0	<2	820	16.	140	<4	280.	0.5	18
26483	48-33.508	-100.858	-3-03-	20.	3500	1.6	<2	440	2.2	88	<4	270.	0.8	6
26484	48-33.595	-100.824	-3-03-	12.	910	1.6	<2	18	0.9	21	5	13.	0.7	8
26485	48-33.523	-100.800	-3-03-	4.2	1000	0.9	<2	110	6.6	51	9	140.	0.5	<4
26486	48-33.730	-100.982	-3-03-	2.3	590	1.9	<2	20	5.1	26	<4	8.5	<0.2	5
26487	48-33.699	-100.983	-3-03-	8.4	650	<0.5	<2	42	3.7	43	15	110.	3.6	<4
26488	48-33.625	-100.814	-3-01-	12.	1300	<0.5	<2	190	2.5	28	<4	70.	<0.2	<4
26489	48-33.520	-100.954	-3-03-	56.	1200	<0.5	<2	61	0.4	45	27	110.	0.4	<4
26491	48-33.555	-100.817	-3-03-	16.	1200	0.7	<2	34	1.8	28	<4	82.	0.3	10
26493	48-33.744	-100.871	-3-03-	3.3	640	4.7	<2	58	2.7	19	8	31.	<0.2	17
26494	48-33.697	-100.880	-3-03-	5.0	590	0.5	<2	39	5.2	30	5	28.	<0.2	9
26495	48-33.745	-100.933	-3-03-	4.1	500	3.3	<2	29	5.9	42	<4	15.	<0.2	24
26496	48-33.698	-100.820	-3-03-	10.	1100	<0.5	<2	130	3.3	49	<4	97.	0.5	<4
26497	48-33.707	-100.902	-3-03-	3.5	530	2.8	<2	26	4.5	22	<4	14.	3.0	14
26498	48-33.637	-101.098	-3-03-	7.1	510	2.8	<2	41	6.7	49	10	51.	<0.2	16
26499	48-33.575	-101.220	-3-03-	8.7	590	2.7	<2	30	7.9	110	<4	37.	<0.2	16
26500	48-33.647	-100.920	-3-03-	9.2	690	1.1	<2	53	2.4	26	5	62.	0.8	4
26503	48-33.692	-100.928	-3-03-	12.	570	1.7	<2	32	5.0	38	6	48.	0.3	12
26506	48-33.732	-100.744	-3-03-	1.9	740	<0.5	<2	100	2.2	16	<4	10.	<0.2	<4
26507	48-33.693	-100.744	-3-03-	6.0	2000	0.5	7	300	4.1	50	<4	120.	<0.2	<4
26508	48-33.672	-100.789	-3-03-	23.	3600	0.6	6	220	2.5	50	<4	52.	<0.2	5
26509	48-33.560	-100.898	-3-03-	10.	980	2.4	<2	200	2.1	50	8	89.	<0.2	5
26510	48-33.598	-100.976	-3-03-	3.3	590	1.2	<2	22	2.6	26	<4	26.	0.5	<4
26514	48-33.934	-100.927	-3-01-	4.5	670	1.6	<2	<10	3.3	37	<4	31.	0.5	10
26515	48-33.965	-100.851	-3-03-	4.0	840	2.4	<2	34	1.5	22	<4	70.	0.4	9
26516	48-33.887	-100.856	-3-03-	9.2	190	12.	<2	120	4.7	69	<4	130.	0.4	65
26518	48-33.796	-100.914	-3-03-	2.0	860	1.8	4	39	2.6	18	4	17.	0.4	21
26521	48-33.921	-100.806	-3-03-	0.90	1500	2.7	<2	38	1.2	19	5	130.	0.4	10
26524	48-33.885	-100.789	-3-03-	<0.20	1600	1.4	<2	83	1.2	10	<4	120.	0.4	6
26526	48-33.838	-100.812	-3-03-	8.4	1700	2.3	<2	75	<0.1	33	<4	140.	0.7	27
26528	48-33.817	-100.804	-3-03-	10.	2600	1.4	<2	72	0.2	54	6	150.	1.5	6
26530	48-33.802	-100.759	-3-03-	11.	2700	1.1	<2	130	3.0	43	<4	72.	0.6	13
26531	48-33.538	-100.491	-3-03-	7.3	6800	<0.5	9	<10	5.1	38	<4	200.	0.2	<4
26532	48-33.890	-100.505	-3-03-	15.	4200	3.5	4	180	6.8	46	<4	140.	0.3	6
26535	48-33.914	-100.707	-3-03-	8.0	6000	0.7	7	610	5.4	140	<4	270.	<0.2	<4
26536	48-33.904	-100.729	-3-03-	4.4	1500	2.2	33	140	4.6	23	<4	57.	0.2	<4
26537	48-33.942	-100.702	-3-03-	2.4	4700	3.2	8	130	4.8	120	<4	150.	<0.2	<4
26538	48-33.950	-100.739	-3-03-	1.3	4500	2.7	16	230	4.3	96	<4	100.	0.2	<4
26539	48-33.853	-100.865	-3-01-	7.5	1000	4.8	<2	70	5.8	41	<4	60.	0.4	16
26540	48-33.982	-100.731	-3-03-	13.	4100	2.3	2	210	1.9	82	<4	71.	0.3	14
26545	48-33.798	-100.689	-3-03-	9.2	3700	1.8	35	100	4.7	50	<4	33.	0.3	<4
26546	48-33.846	-100.687	-3-03-	9.7	4000	0.5	<2	240	2.7	68	5	76.	0.3	<4
26547	48-33.985	-100.698	-3-03-	29.	4400	2.4	4	1000	2.3	79	4	82.	0.3	6
26550	48-33.990	-100.642	-3-03-	8.7	3700	5.5	3	35	1.9	58	7	37.	0.4	17
26552	48-33.941	-100.660	-3-03-	6.4	2400	1.5	23	22	1.2	45	<4	21.	0.4	<4
26555	48-33.872	-100.705	-3-03-	17.	2200	1.5	<2	14	1.5	39	<4	18.	0.4	<4
26560	48-33.758	-100.529	-3-03-	1.0	1300	1.4	<2	160	1.6	21	<4	35.	0.8	<4
26561	48-33.992	-100.597	-3-03-	10.	3900	4.0	<2	110	2.6	110	29	86.	0.4	4

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
26563	48-33.176	-101.203	-3-03-	6.3	3500	<0.5	3	540	6.3	230	8	350.	<0.2	<4
26565	48-33.212	-101.193	-3-03-	4.2	2300	2.3	3	270	3.9	45	<4	260.	0.3	10
26566	48-33.185	-101.138	-3-03-	0.54	4200	<0.5	<2	800	3.5	130	10	440.	<0.2	<4
26570	48-33.143	-101.150	-3-03-	1.6	3400	<0.5	<2	550	1.2	70	26	380.	<0.2	<4
26571	48-33.091	-101.127	-3-03-	37.	1800	<0.5	<2	48	5.1	110	<4	160.	0.7	<4
26572	48-33.122	-100.192	-3-03-	6.4	5800	<0.5	5	750	3.5	53	13	160.	0.2	5
26579	48-33.177	-100.022	-3-03-	19.	8100	0.8	28	1200	4.5	180	<4	410.	0.4	<4
26582	48-33.232	-100.044	-3-03-	10.	1000	<0.5	<2	69	2.2	34	<4	65.	0.2	<4
26586	48-33.082	-101.638	-3-03-	11.	5300	1.6	<2	1300	12.	240	<4	180.	<0.2	4
26587	48-33.000	-101.646	-3-03-	110.	4400	6.6	3	730	31.	190	17	220.	0.2	110
26588	48-33.107	-101.599	-3-03-	17.	4500	1.4	<2	730	7.1	130	10	270.	0.2	5
26591	48-33.371	-100.909	-3-03-	0.91	8800	<0.5	10	680	8.2	200	34	370.	<0.2	<4
26592	48-33.357	-100.745	-3-03-	6.5	14000	1.8	16	2300	3.7	180	32	470.	<0.2	<4
26596	48-33.282	-100.959	-3-03-	5.6	9600	0.8	6	1900	5.8	160	8	380.	<0.2	<4
26598	48-33.273	-100.918	-3-03-	12.	5300	0.6	3	520	3.6	100	5	300.	<0.2	11
26599	48-33.302	-100.926	-3-03-	15.	8300	0.7	10	1300	2.8	170	<4	290.	<0.2	<4
26600	48-33.316	-100.927	-3-03-	15.	4300	1.3	4	340	2.7	68	<4	35.	0.3	8
26601	48-33.419	-100.788	-3-03-	11.	4000	1.3	<2	550	0.9	72	4	150.	0.4	9
26603	48-33.212	-101.409	-3-03-	0.55	2900	4.9	<2	320	10.	110	<4	240.	0.7	<4
26604	48-33.220	-101.280	-3-03-	11.	2700	6.3	<2	300	6.8	72	7	210.	0.8	48
26605	48-33.224	-101.294	-3-03-	1.5	1500	<0.5	<2	75	16.	14	5	97.	0.6	<4
26608	48-33.013	-101.114	-3-03-	<0.20	420	<0.5	<2	64	3.5	12	<4	56.	0.3	<4
26609	48-33.070	-101.602	-3-01-	58.	11000	2.5	8	2000	9.4	210	7	440.	6.0	39
26610	48-33.023	-101.643	-3-03-	33.	8300	2.1	7	1600	16.	180	<4	270.	0.6	7
26611	48-33.021	-101.726	-3-03-	43.	6100	8.1	6	1000	24.	180	29	290.	0.4	62
26612	48-33.063	-101.736	-3-03-	34.	6100	8.0	6	900	19.	120	44	360.	0.3	33
26613	48-33.181	-101.430	-3-03-	11.	1200	9.4	<2	45	9.5	140	6	69.	0.4	80
26614	48-33.240	-101.469	-3-03-	11.	1500	5.3	<2	160	11.	150	<4	58.	0.5	29
26618	48-33.025	-101.425	-3-03-	28.	8900	0.8	<2	1800	7.6	150	15	610.	0.9	5
26621	48-33.028	-101.443	-3-03-	7.3	4400	0.7	<2	820	4.2	52	4	230.	0.7	<4
26624	48-33.092	-100.834	-3-03-	0.59	5000	<0.5	3	310	20.	240	<4	390.	0.2	<4
26625	48-33.077	-100.862	-3-03-	22.	4200	0.9	<2	140	3.6	66	5	110.	0.3	5
26627	48-33.017	-100.854	-3-03-	24.	2600	0.5	<2	72	9.9	110	12	260.	0.4	5
26628	48-33.074	-100.785	-3-03-	2.1	1500	1.3	<2	72	0.4	18	<4	150.	0.4	11
26631	48-33.047	-101.247	-3-03-	21.	10000	0.6	5	430	3.7	190	6	700.	0.4	<4
26633	48-33.047	-101.229	-3-03-	28.	2700	4.0	<2	450	1.6	89	<4	330.	0.4	5
26635	48-33.085	-101.285	-3-03-	28.	2000	1.3	<2	320	1.3	82	<4	220.	0.4	4
26637	48-33.004	-101.083	-3-03-	1.2	2000	0.6	<2	81	0.4	27	10	100.	0.8	<4
26638	48-33.005	-101.013	-3-03-	45.	3100	0.7	<2	160	1.0	35	4	140.	0.7	6
26640	48-33.264	-101.229	-3-03-	5.1	13000	3.4	3	2300	23.	62	16	950.	2.3	4
26641	48-33.206	-101.373	-3-03-	130.	27000	2.1	15	10000	7.5	1600	<4	1800.	0.7	<4
26642	48-33.048	-101.011	-3-03-	62.	4900	0.6	4	170	3.4	44	<4	310.	0.7	<4
26643	48-33.174	-101.001	-3-01-	11.	1200	3.2	<2	86	1.6	37	<4	140.	0.5	16
26644	48-33.081	-100.893	-3-03-	12.	3700	0.6	<2	280	5.5	35	<4	120.	0.4	<4
26646	48-33.039	-100.978	-3-03-	61.	2200	0.6	<2	44	4.1	49	<4	200.	0.5	<4
26647	48-33.042	-100.888	-3-03-	70.	4400	0.6	2	49	4.5	64	<4	160.	0.9	<4
26648	48-33.147	-100.855	-3-03-	22.	4000	0.7	3	170	2.4	67	<4	140.	0.6	<4
26651	48-33.022	-100.942	-3-03-	8.8	2600	0.5	<2	120	5.5	99	4	290.	0.6	<4
26654	48-33.335	-100.839	-3-03-	0.40	16000	0.5	9	1900	31.	420	<4	880.	0.6	<4
26655	48-33.047	-100.780	-3-03-	12.	3700	0.8	<2	320	5.2	64	7	230.	0.4	<4
26656	48-33.298	-100.786	-3-03-	24.	5000	4.0	5	96	4.1	110	10	170.	0.3	12
26657	48-33.483	-100.973	-3-03-	42.	1600	0.6	<2	81	2.6	97	12	170.	0.9	<4
26658	48-33.930	-100.435	-3-03-	6.1	3300	2.2	5	48	2.5	45	<4	34.	0.2	4
26660	48-33.868	-100.472	-3-03-	4.7	2700	2.3	6	<10	1.6	35	<4	16.	0.2	7
26661	48-33.842	-100.493	-3-03-	23.	3100	2.6	7	350	2.0	31	<4	15.	<0.2	4

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. ST LAT	SAMPLE LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
26664	48-33.807	-100.438	-3-03-	39.	6900	1.1	7	140	16.	70	<4	340.	0.7	<4
26667	48-33.906	-100.303	-3-03-	19.	4600	1.8	4	74	3.4	73	7	150.	0.2	<4
26668	48-33.904	-100.411	-3-03-	7.8	2500	4.5	<2	290	2.1	32	<4	59.	0.2	6
26670	48-33.958	-100.398	-3-03-	28.	7400	2.1	20	250	2.2	44	<4	290.	0.2	<4
26671	48-33.780	-100.290	-3-03-	14.	3800	<0.5	14	110	4.4	68	11	41.	0.3	<4
26672	48-33.773	-100.244	-3-03-	9.3	3900	<0.5	4	30	8.3	140	6	120.	<0.2	<4
26673	48-33.787	-100.215	-3-03-	16.	2900	<0.5	3	180	4.4	82	4	43.	0.2	<4
26674	48-33.796	-100.285	-3-03-	2.4	4500	<0.5	7	24	8.8	170	<4	150.	0.2	<4
26677	48-33.754	-100.457	-3-03-	29.	3200	2.2	4	23	2.0	68	<4	37.	<0.2	<4
26678	48-33.761	-100.484	-3-03-	17.	2800	1.5	5	100	2.4	54	<4	32.	<0.2	<4
26679	48-33.950	-100.307	-3-03-	7.2	3700	0.8	6	1200	2.6	57	<4	69.	0.2	<4
26680	48-33.959	-100.361	-3-03-	18.	8100	<0.5	12	960	3.7	72	<4	200.	<0.2	<4
26681	48-33.848	-100.403	-3-03-	9.0	3600	1.9	9	150	1.9	33	<4	35.	<0.2	<4
26682	48-33.795	-100.387	-3-03-	13.	3200	2.7	49	230	4.0	67	<4	150.	0.3	5
26683	48-33.761	-100.389	-3-03-	15.	3400	3.3	2	67	3.1	58	<4	49.	0.3	<4
26685	48-33.900	-100.367	-3-03-	12.	3700	1.4	5	140	3.6	68	<4	51.	0.2	<4
26686	48-33.840	-100.315	-3-03-	3.3	1500	1.2	<2	27	2.6	34	<4	15.	0.3	<4
26689	48-33.939	-100.389	-3-03-	52.	4400	<0.5	5	140	4.2	55	<4	150.	0.3	<4
26690	48-33.811	-100.400	-3-03-	14.	7100	1.6	6	820	4.5	45	11	230.	0.3	4
26691	48-33.809	-100.347	-3-03-	6.5	2100	3.0	<2	72	0.7	41	<4	48.	0.2	4
26693	48-33.863	-100.757	-3-03-	5.5	12000	2.3	<2	36	1.1	11	<4	43.	0.6	<4
26694	48-33.875	-100.383	-3-03-	22.	3300	2.4	<2	720	7.9	82	<4	99.	0.3	<4
26695	48-33.668	-100.167	-3-03-	1.3	8800	<0.5	7	300	9.7	420	<4	530.	<0.2	<4
26696	48-33.711	-100.046	-3-01-	16.	5200	0.6	9	280	8.8	120	10	110.	0.2	<4
26697	48-33.905	-100.922	-3-03-	4.1	750	2.5	<2	94	4.9	42	<4	31.	0.2	19
26698	48-33.920	-100.759	-3-03-	5.4	1900	2.2	<2	390	1.4	29	<4	84.	0.3	15
26699	48-33.965	-100.774	-3-03-	11.	5800	<0.5	9	52	5.1	140	8	300.	<0.2	<4
26700	48-33.988	-100.859	-3-01-	15.	1100	1.0	<2	<10	3.2	39	6	100.	<0.2	6
26701	48-33.966	-100.219	-3-03-	14.	3800	0.9	<2	200	5.0	110	17	87.	0.5	<4
26702	48-33.967	-100.188	-3-03-	18.	4200	<0.5	4	250	5.8	84	<4	83.	0.5	<4
26703	48-33.925	-100.206	-3-03-	42.	5100	0.6	3	350	6.1	160	<4	230.	1.3	<4
26704	48-33.886	-100.166	-3-03-	3.4	3500	<0.5	<2	130	4.8	160	7	79.	1.0	<4
26705	48-33.970	-100.087	-3-03-	6.4	3700	<0.5	<2	99	1.1	67	<4	27.	0.5	<4
26707	48-33.961	-100.073	-3-03-	1.8	5500	0.6	33	870	2.8	13	<4	24.	0.4	<4
26710	48-34.000	-100.049	-3-03-	5.8	3500	<0.5	7	57	2.9	110	5	25.	0.5	<4
26711	48-34.000	-100.007	-3-03-	4.1	3400	<0.5	2	62	2.6	76	<4	28.	0.5	<4
26713	48-33.983	-100.231	-3-03-	10.	3800	<0.5	<2	190	4.8	110	30	94.	0.8	<4
26716	48-33.986	-100.190	-3-03-	7.9	13000	<0.5	16	3900	6.4	180	<4	1000.	0.5	<4
26720	48-33.994	-100.143	-3-03-	7.8	7400	0.7	3	1300	5.0	130	8	470.	0.4	<4
26721	48-33.570	-100.987	-3-03-	12.	680	1.3	<2	14	3.7	130	8	48.	0.6	7
26722	48-33.911	-100.189	-3-01-	6.3	3900	0.9	<2	410	3.5	110	<4	240.	1.0	<4
26723	48-33.940	-100.146	-3-03-	<0.20	2800	<0.5	<2	170	5.4	64	<4	120.	0.4	<4
26725	48-33.843	-100.213	-3-03-	4.6	1700	<0.5	<2	950	2.0	110	<4	51.	1.0	<4
26726	48-33.919	-100.239	-3-03-	17.	4100	<0.5	<2	270	3.1	91	<4	180.	0.5	<4
26727	48-33.928	-100.259	-3-03-	28.	3100	2.0	<2	17	2.1	65	<4	22.	0.5	<4
26728	48-33.971	-100.266	-3-03-	67.	18000	<0.5	3	2500	2.8	230	19	1200.	2.3	<4
26729	48-33.875	-100.314	-3-03-	19.	4400	1.6	<2	3300	6.2	140	<4	170.	0.5	<4
26730	48-33.845	-100.273	-3-03-	7.1	3200	<0.5	<2	56	3.6	110	7	51.	2.1	4
26731	48-33.844	-100.373	-3-03-	<0.20	2700	<0.5	<2	85	4.2	53	<4	53.	0.5	<4
26732	48-33.958	-100.425	-3-03-	10.	3300	1.2	16	52	4.2	53	<4	28.	0.4	<4
26733	48-33.795	-100.603	-3-03-	45.	6000	2.4	<2	430	<0.1	150	4	400.	0.5	<4
26735	48-33.978	-100.323	-3-03-	14.	4200	2.1	<2	220	3.5	76	<4	160.	0.5	<4
26736	48-33.755	-100.759	-3-03-	44.	1700	0.6	<2	210	4.2	62	18	170.	0.5	<4
26738	48-33.602	-100.541	-3-03-	7.9	3100	1.9	2	17	2.7	33	<4	26.	0.4	<4
26739	48-33.715	-100.352	-3-03-	19.	7800	0.6	<2	920	4.9	75	13	250.	0.4	<4

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE NUMBER ST LAT	LONG	L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
26740	48-33.543	-100.769	-3-03-	22.	4200	1.1	38	150	2.3	15	10	18.	0.6	<4
26741	48-33.719	-100.793	-3-03-	2.7	2200	0.7	<2	180	1.6	8	<4	130.	0.5	5
26742	48-33.815	-100.782	-3-03-	2.1	7000	3.8	15	700	2.5	61	<4	180.	0.5	<4
26743	48-33.784	-100.662	-3-03-	1.6	830	0.6	<2	76	2.1	16	<4	24.	0.5	<4
26744	48-33.391	-100.859	-3-03-	31.	4900	0.7	30	270	5.4	120	4	120.	0.7	<4
26745	48-33.331	-100.883	-3-03-	11.	3300	1.3	<2	15	2.0	29	6	21.	0.4	7
26746	48-33.347	-100.933	-3-03-	30.	5300	0.8	3	380	2.6	40	7	110.	0.7	<4
26747	48-33.323	-100.945	-3-03-	51.	5800	2.0	<2	100	2.9	56	<4	170.	0.3	7
26748	48-33.002	-100.253	-3-01-	12.	10000	2.0	3	1700	3.9	42	4	180.	0.6	<4
26749	48-33.011	-100.179	-3-03-	13.	7000	0.6	<2	950	4.7	51	8	250.	0.7	4
26750	48-33.007	-100.290	-3-03-	30.	12000	0.6	2	2200	4.3	80	6	380.	0.5	<4
26751	48-33.043	-100.269	-3-03-	21.	11000	1.8	7	2100	4.4	75	<4	240.	0.7	<4
26752	48-33.180	-100.335	-3-03-	34.	11000	1.6	3	1600	2.7	37	<4	240.	0.6	38
26753	48-33.494	-100.479	-3-03-	30.	3900	2.0	5	91	3.4	40	<4	77.	0.4	<4
26756	48-33.228	-100.162	-3-03-	7.8	9000	<0.5	7	1300	13.	180	<4	280.	0.3	<4
26757	48-33.208	-100.204	-3-03-	16.	4400	<0.5	4	210	5.5	67	12	75.	0.3	<4
26762	48-33.163	-100.215	-3-03-	12.	7900	0.9	9	1200	4.6	79	4	170.	0.3	<4
26763	48-33.125	-100.187	-3-03-	13.	6200	<0.5	2	680	3.0	61	<4	140.	0.3	<4
26764	48-33.181	-100.154	-3-03-	8.8	5000	<0.5	4	320	8.7	140	<4	150.	0.3	<4
26778	48-33.340	-101.120	-3-03-	17.	2800	0.8	<2	170	7.2	68	<4	160.	0.4	<4
26780	48-33.394	-101.112	-3-03-	3.7	4000	1.1	39	790	9.4	58	<4	200.	0.2	12
26782	48-33.440	-101.207	-3-03-	7.8	8100	<0.5	<2	1900	2.3	160	23	530.	0.4	<4
26785	48-33.308	-101.021	-3-03-	14.	3000	1.6	<2	500	6.9	72	7	130.	0.7	<4
26787	48-33.409	-101.147	-3-03-	5.6	3500	2.2	<2	360	4.4	37	<4	300.	0.9	11
26788	48-33.285	-101.191	-3-03-	2.4	1000	1.4	<2	27	6.5	16	<4	15.	0.5	<4
26789	48-33.436	-101.235	-3-03-	24.	4600	0.7	<2	560	0.4	110	8	490.	0.3	15
26790	48-33.477	-101.123	-3-03-	14.	12000	<0.5	<2	1500	5.9	330	15	910.	<0.2	13
26792	48-33.365	-101.127	-3-03-	7.4	3300	0.5	<2	390	10.	150	4	350.	0.2	<4
26793	48-33.257	-101.040	-3-03-	15.	13000	0.5	15	950	4.7	200	7	700.	<0.2	4
26794	48-33.254	-101.062	-3-03-	23.	9000	0.8	<2	860	3.6	170	6	740.	<0.2	<4
26795	48-33.257	-101.076	-3-03-	18.	9600	0.8	<2	1200	3.0	190	8	730.	0.8	<4
26797	48-33.290	-101.156	-3-03-	6.9	2400	0.5	<2	180	3.0	56	260	220.	<0.2	<4
26798	48-33.275	-101.096	-3-03-	2.7	13000	<0.5	7	720	13.	260	8	1000.	<0.2	<4
26799	48-33.411	-100.995	-3-03-	47.	1800	1.8	<2	140	0.7	54	11	160.	0.2	9
26802	48-33.371	-101.210	-3-03-	12.	2200	3.2	<2	220	35.	110	11	250.	0.3	9
26803	48-33.302	-101.207	-3-03-	1.9	2100	0.9	<2	210	3.7	43	<4	190.	<0.2	8
26807	48-33.421	-101.094	-3-03-	7.1	610	0.7	<2	27	3.5	12	4	4.9	<0.2	7
26809	48-33.337	-101.018	-3-03-	4.4	940	1.2	<2	49	8.6	13	<4	24.	<0.2	4
26810	48-33.380	-101.043	-3-03-	11.	2400	1.4	<2	320	4.0	34	<4	180.	<0.2	<4
26812	48-33.244	-100.897	-3-03-	17.	4500	2.1	4	390	1.9	87	4	150.	<0.2	8
26816	48-33.192	-100.795	-3-03-	45.	7000	1.1	<2	770	7.1	140	<4	280.	0.2	<4
26820	48-33.405	-101.047	-3-03-	4.0	5400	2.8	<2	670	2.6	140	19	300.	0.2	<4
26822	48-33.486	-101.043	-3-03-	10.	2200	0.5	<2	110	1.7	53	<4	81.	0.3	<4
26823	48-33.417	-101.059	-3-03-	2.2	4000	1.8	<2	500	2.1	110	20	260.	<0.2	<4
26824	48-33.569	-101.914	-3-03-	38.	1000	35.	<2	54	9.5	70	<4	22.	<0.2	84
26825	48-33.177	-100.912	-3-03-	10.	7200	0.7	4	690	5.2	200	13	420.	<0.2	<4
26826	48-33.076	-100.835	-3-03-	71.	7000	7.9	4	1000	2.3	200	8	360.	<0.2	4
26828	48-33.043	-100.817	-3-03-	29.	4100	<0.5	3	150	4.6	52	8	120.	<0.2	<4
26833	48-33.481	-101.397	-3-03-	11.	600	5.2	<2	36	7.9	86	13	81.	<0.2	31
26834	48-33.472	-101.453	-3-03-	7.7	1100	6.8	<2	57	7.7	74	6	47.	<0.2	27
26835	48-33.432	-101.199	-3-03-	6.8	7600	0.5	<2	1400	1.5	180	42	610.	0.3	<4
26836	48-33.453	-101.193	-3-03-	7.3	2900	0.7	<2	160	0.5	96	27	410.	0.4	<4
26838	48-33.452	-101.078	-3-03-	14.	2900	6.0	<2	290	7.2	190	11	240.	0.3	9
26839	48-33.424	-100.965	-3-03-	5.8	8500	<0.5	7	900	7.5	190	8	570.	0.2	<4
26840	48-33.338	-101.390	-3-03-	1.6	1000	<0.5	<2	19	1.2	25	4	20.	<0.2	<4

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
26841	48-33.310	-101.394	-3-03-	39.	5900	3.6	<2	750	4.7	170	37	530.	0.2	<4
26842	48-33.291	-101.440	-3-03-	140.	8100	7.4	5	1000	7.4	380	61	540.	0.3	57
26843	48-33.362	-101.491	-3-03-	23.	1400	6.9	<2	74	8.9	160	5	88.	0.3	35
26844	48-33.493	-101.342	-3-03-	25.	910	1.5	<2	23	9.8	78	6	61.	0.2	23
26845	48-33.498	-101.286	-3-03-	17.	880	1.8	<2	19	8.9	85	8	84.	0.3	9
26846	48-33.112	-100.788	-3-03-	17.	2300	<0.5	<2	220	3.1	20	<4	120.	<0.2	<4
26847	48-33.177	-100.754	-3-03-	16.	4300	<0.5	5	130	4.3	140	<4	130.	0.3	<4
26848	48-33.229	-100.756	-3-03-	20.	3400	1.5	<2	95	4.5	47	<4	33.	<0.2	5
26849	48-33.238	-100.793	-3-03-	26.	5500	0.7	<2	450	3.5	84	<4	180.	0.2	<4
26850	48-33.374	-101.699	-3-03-	17.	1300	3.8	<2	110	12.	140	9	82.	0.4	32
26851	48-33.459	-101.713	-3-03-	18.	1300	7.6	<2	110	12.	100	13	59.	0.7	30
26852	48-33.417	-101.705	-3-03-	9.6	970	10.	<2	63	10.	110	5	66.	0.4	44
26853	48-33.413	-101.642	-3-03-	18.	1400	5.6	<2	160	16.	120	<4	46.	0.4	29
26854	48-33.456	-101.645	-3-03-	16.	1400	9.5	<2	190	11.	120	19	120.	0.7	42
26856	48-33.494	-101.605	-3-03-	13.	1500	2.2	<2	110	21.	230	11	62.	1.2	28
26859	48-33.423	-101.518	-3-03-	17.	2300	11.	5	270	14.	190	15	140.	0.8	180
26860	48-33.344	-101.606	-3-03-	14.	1200	<0.5	<2	52	12.	130	20	80.	0.4	65
26861	48-33.403	-101.531	-3-03-	11.	920	6.8	<2	46	11.	130	10	81.	0.3	30
26862	48-33.455	-101.501	-3-03-	13.	730	4.2	<2	68	5.0	160	9	120.	0.8	57
26865	48-33.273	-101.402	-3-03-	52.	3200	0.8	2	450	6.4	170	<4	140.	0.4	12
26871	48-33.268	-101.486	-3-03-	13.	1700	4.3	<2	310	13.	150	<4	76.	0.3	41
26872	48-33.257	-101.469	-3-03-	9.6	940	2.9	<2	89	8.9	130	4	23.	0.7	8
26874	48-33.275	-101.352	-3-03-	4.3	1700	4.1	<2	89	3.3	29	<4	190.	0.3	33
26875	48-33.274	-101.307	-3-03-	3.9	2600	0.7	2	460	3.5	14	<4	180.	0.3	<4
26876	48-33.253	-101.298	-3-03-	6.0	3200	0.6	5	700	5.7	46	<4	160.	0.5	4
26877	48-33.294	-101.301	-3-03-	8.4	810	2.7	34	33	0.4	29	4	81.	0.4	21
26882	48-33.326	-101.266	-3-03-	5.6	2200	4.4	2	130	1.6	29	<4	190.	0.7	10
26883	48-33.348	-101.274	-3-03-	2.4	1500	1.6	<2	100	1.8	18	<4	160.	0.4	8
26885	48-33.363	-101.299	-3-03-	36.	1400	4.2	<2	43	0.7	54	18	200.	0.5	17
26889	48-33.374	-101.381	-3-03-	17.	2700	0.6	<2	610	2.6	88	<4	160.	0.3	<4
26895	48-33.416	-101.261	-3-03-	27.	2100	1.6	7	180	2.3	80	25	210.	0.4	12
26897	48-33.302	-101.466	-3-03-	100.	2500	0.6	<2	260	3.6	78	44	260.	0.4	<4
26901	48-33.394	-101.402	-3-03-	1.5	520	4.5	<2	<10	1.0	4	<4	7.4	<0.2	17
26904	48-33.396	-101.467	-3-03-	20.	1100	8.9	<2	49	6.8	130	18	120.	<0.2	25
26908	48-33.361	-101.432	-3-03-	2.0	470	<0.5	<2	<10	7.9	4	<4	14.	0.7	<4
26909	48-33.366	-101.416	-3-03-	2.5	6300	<0.5	<2	570	15.	400	4	520.	1.6	<4
26910	48-33.359	-101.387	-3-03-	20.	1600	2.7	<2	87	1.7	65	7	170.	1.6	19
26911	48-33.360	-101.327	-3-03-	25.	1400	4.2	<2	41	0.3	74	17	150.	0.7	36
26912	48-33.400	-101.330	-3-03-	9.6	790	0.7	<2	11	<0.1	23	<4	39.	<0.2	<4
26913	48-33.443	-101.339	-3-03-	11.	2700	0.5	<2	250	8.2	130	<4	120.	<0.2	9
26914	48-33.428	-101.312	-3-03-	<0.20	830	<0.5	4	1800	4.7	330	56	820.	<0.2	<4
26915	48-33.449	-101.270	-3-03-	61.	2700	2.5	<2	170	4.8	180	17	320.	0.4	8
26916	48-33.426	-101.385	-3-03-	25.	5400	4.2	6	970	2.0	350	8	450.	0.4	19
26917	48-33.427	-101.420	-3-03-	4.3	670	8.5	<2	14	6.9	60	<4	62.	<0.2	37
26918	48-33.224	-100.364	-3-03-	2.9	1600	1.0	<2	400	0.8	25	4	12.	<0.2	5
26922	48-33.153	-100.321	-3-03-	43.	6600	0.7	22	1000	2.1	60	5	320.	0.2	<4
26924	48-33.100	-100.428	-3-03-	0.36	4900	2.5	29	<10	3.0	17	31	1.2	<0.2	67
26925	48-33.085	-100.359	-3-03-	11.	3900	3.7	17	190	3.1	41	28	95.	<0.2	64
26926	48-33.084	-100.309	-3-03-	14.	3200	1.3	7	24	2.9	32	<4	28.	<0.2	<4
26927	48-33.054	-100.360	-3-03-	15.	2400	0.8	<2	32	1.6	30	<4	19.	0.3	<4
26929	48-33.036	-100.466	-3-03-	2.5	3800	0.8	7	54	1.9	87	18	130.	<0.2	<4
26931	48-33.083	-100.478	-3-03-	10.	3400	0.9	2	76	1.7	47	<4	53.	<0.2	<4
26933	48-33.070	-100.315	-3-03-	25.	4500	1.3	4	240	1.9	67	<4	100.	0.4	<4
26937	48-33.093	-100.295	-3-03-	14.	4100	<0.5	4	240	1.2	38	<4	73.	<0.2	<4
26938	48-33.127	-100.253	-3-03-	29.	8200	3.4	10	1600	11.	190	<4	420.	<0.2	<4

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
26939	48-33.190	-100.328	-3-03-	46.	6600	7.2	17	780	27.	290	18	650.	0.6	4
26941	48-33.299	-100.210	-3-03-	5.3	3800	<0.5	<2	200	7.8	130	9	110.	0.6	<4
26942	48-33.282	-100.025	-3-03-	6.4	2000	1.1	<2	45	6.0	46	4	42.	0.2	<4
26943	48-33.388	-100.036	-3-03-	1.0	50000	4.2	25	33000	41.	580	5	1700.	0.2	<4
26944	48-33.353	-100.341	-3-03-	19.	3600	<0.5	<2	69	9.8	170	9	63.	0.4	<4
26945	48-33.210	-100.285	-3-03-	37.	7800	2.1	12	2000	9.5	170	19	890.	0.5	<4
26946	48-33.706	-101.334	-3-03-	8.3	940	6.9	<2	12	11.	200	7	29.	0.3	30
26947	48-33.725	-101.279	-3-03-	7.3	700	5.6	<2	11	10.	120	<4	28.	0.3	35
26948	48-33.802	-101.193	-3-03-	6.1	1400	7.4	<2	200	12.	190	<4	13.	0.3	29
26949	48-33.528	-101.290	-3-03-	8.3	810	2.6	<2	17	10.	96	10	80.	0.3	33
26950	48-33.759	-101.073	-3-03-	7.2	720	0.7	<2	12	9.1	75	8	48.	0.3	6
26951	48-33.760	-101.019	-3-23-	6.0	710	1.9	<2	16	6.8	81	<4	21.	0.3	33
26952	48-33.805	-101.030	-3-03-	7.3	660	2.5	<2	19	8.8	80	<4	35.	0.2	19
26953	48-33.810	-101.067	-3-03-	6.8	670	7.1	<2	17	8.2	78	4	30.	0.3	34
26954	48-33.907	-101.183	-3-03-	10.	710	2.5	<2	14	9.4	87	7	42.	0.3	26
26955	48-33.843	-101.207	-3-03-	8.7	990	4.1	<2	13	7.7	80	8	38.	0.4	29
26956	48-33.876	-101.175	-3-03-	7.6	850	2.6	<2	19	8.6	79	<4	35.	0.4	22
26957	48-33.877	-101.240	-3-03-	8.5	740	4.6	<2	10	8.5	100	10	42.	0.3	32
26958	48-33.920	-101.236	-3-03-	6.8	620	10.	<2	<10	7.7	64	5	20.	0.4	18
26959	48-33.979	-101.237	-3-03-	7.6	780	3.3	<2	14	6.7	100	<4	34.	0.3	14
26960	48-33.978	-101.186	-3-03-	5,7	730	3.6	<2	14	6.8	90	7	48.	0.2	19
26961	48-33.933	-101.184	-3-03-	7.1	670	9.1	<2	19	8.9	110	10	40.	0.3	24
26963	48-33.906	-101.150	-3-03-	6.7	640	4.3	<2	19	8.4	73	9	27.	0.3	28
26964	48-33.799	-101.131	-3-03-	8.1	580	9.4	<2	13	7.6	73	<4	18.	0.6	33
26965	48-33.762	-101.136	-3-03-	11.	660	4.1	<2	11	9.8	75	5	40.	0.4	25
26966	48-33.827	-101.116	-3-03-	9.0	620	4.0	<2	19	7.8	87	8	33.	0.4	20
26967	48-33.869	-101.130	-3-03-	10.	590	9.4	<2	27	9.0	59	<4	22.	0.6	29
26968	48-33.966	-101.062	-3-03-	13.	630	7.1	<2	14	7.4	79	6	45.	0.5	22
26969	48-33.983	-101.093	-3-03-	8.8	580	3.7	39	19	6.3	42	4	20.	0.7	11
26970	48-33.944	-101.074	-3-03-	13.	660	6.6	<2	15	8.0	82	5	40.	1.0	20
26971	48-33.838	-101.240	-3-03-	9.9	1000	3.1	<2	13	8.3	93	<4	36.	0.8	11
26972	48-33.950	-101.249	-3-03-	11.	1000	9.0	<2	21	8.1	110	4	49.	0.7	26
26973	48-33.962	-101.141	-3-03-	11.	1100	1.9	<2	29	7.7	72	5	42.	0.8	9
26974	48-33.942	-101.118	-3-03-	12.	1300	7.9	<2	14	8.5	98	<4	43.	0.5	22
26975	48-33.995	-101.079	-3-03-	6.5	910	2.5	<2	15	6.1	52	<4	38.	0.5	6
26976	48-33.955	-100.990	-3-03-	5.3	690	6.5	<2	<10	4.3	21	<4	18.	0.7	15
26978	48-33.950	-101.002	-3-03-	4.0	820	4.8	<2	<10	2.9	11	<4	11.	0.6	16
26979	48-33.953	-101.024	-3-03-	5.6	860	5.0	<2	11	4.8	21	5	19.	1.0	17
26980	48-33.918	-101.028	-3-03-	8.6	970	5.6	<2	23	6.9	60	6	28.	0.8	23
26981	48-33.913	-101.011	-3-03-	16.	1000	3.5	<2	16	8.0	72	<4	62.	0.6	18
26982	48-33.927	-101.028	-3-03-	11.	870	6.2	<2	18	7.7	67	<4	28.	0.6	18
26983	48-33.953	-100.976	-3-03-	3.4	780	5.0	7	13	6.3	41	4	24.	0.4	28
26984	48-33.977	-100.965	-3-03-	2.1	700	7.9	<2	<10	3.7	17	<4	16.	0.8	7
26985	48-33.825	-101.159	-3-03-	7.0	960	11.	<2	18	7.5	80	4	43.	0.5	29
26986	48-33.754	-101.237	-3-03-	12.	1100	10.	<2	14	11.	93	10	57.	0.3	29
26988	48-33.807	-101.248	-3-03-	11.	1000	9.7	<2	16	12.	96	9	70.	<0.2	39
26990	48-33.772	-101.216	-3-03-	13.	1100	12.	<2	14	11.	79	11	72.	<0.2	26
26991	48-33.976	-101.001	-3-03-	4.1	95[illegible]	6.2	<2	19	7.0	39	4	30.	<0.2	11
26994	48-33.990	-101.037	-3-03-	6.9	960	8.1	<2	16	8.4	61	<4	34.	0.4	19
26996	48-33.455	-100.804	-3-03-	14.	4400	<0.5	<2	120	2.2	69	<4	140.	<0.2	<4
26997	48-33.457	-100.752	-3-03-	9.4	3800	0.7	<2	84	3.9	51	<4	45.	<0.2	8
26998	48-33.419	-100.754	-3-03-	9.0	4500	<0.5	3	290	6.3	130	<4	84.	<0.2	<4
26999	48-33.419	-100.861	-3-03-	11.	6300	1.9	10	430	15.	190	<4	240.	0.5	<4
27000	48-33.457	-100.861	-3-03-	83.	4300	1.3	3	650	3.7	93	<4	110.	<0.2	35
27002	48-33.915	-100.857	-3-03-	6.7	1300	2.4	2	55	9.4	60	11	88.	0.4	9

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
27005	48-33.878	-100.917	-3-03-	9.4	2800	<0.5	<2	40	6.9	100	<4	260.	0.3	<4
27006	48-33.850	-100.922	-3-03-	9.5	1500	1.7	<2	100	5.7	71	6	120.	0.3	9
27009	48-33.899	-101.021	-3-03-	8.5	960	3.1	<2	19	7.6	56	9	31.	<0.2	30
27010	48-33.861	-101.035	-3-03-	7.9	1000	3.6	<2	18	8.2	72	<4	32.	<0.2	27
27011	48-33.833	-101.031	-3-03-	6.8	1000	2.0	<2	14	7.6	62	<4	29.	<0.2	33
27012	48-33.979	-100.802	-3-03-	20.	3700	<0.5	2	29	3.3	78	<4	56.	<0.2	<4
27015	48-33.977	-100.916	-3-03-	8.1	1200	1.7	<2	68	3.4	24	<4	53.	0.2	10
27016	48-33.917	-101.056	-3-03-	9.5	940	5.9	<2	14	7.9	70	9	34.	<0.2	20
27017	48-33.296	-100.977	-3-03-	8.4	4800	<0.5	<2	14	4.0	120	11	260.	<0.2	<4
27018	48-33.394	-100.967	-3-03-	33.	24000	<0.5	11	1500	6.2	230	8	700.	1.5	12
27019	48-33.366	-100.967	-3-03-	30.	8000	0.6	7	970	5.3	130	<4	370.	<0.2	10
27020	48-33.981	-101.144	-3-03-	11.	1200	6.7	<2	14	9.3	99	4	62.	0.3	22
27021	48-33.896	-101.106	-3-03-	3.9	1000	1.3	<2	24	10.	76	7	29.	0.7	8
27022	48-33.671	-100.855	-3-03-	4.5	1300	1.4	<2	36	3.2	13	<4	65.	<0.2	6
27023	48-33.510	-100.761	-3-03-	4.8	1700	0.9	8	140	8.2	56	<4	150.	<0.2	<4
27024	48-33.537	-101.245	-3-03-	14.	1200	3.6	<2	24	11.	88	8	79.	<0.2	29
27025	48-33.790	-100.356	-3-03-	22.	6300	0.9	9	160	15.	160	9	280.	<0.2	<4
27028	48-33.974	-100.419	-3-03-	8.8	3300	1.2	5	70	2.7	46	<4	26.	<0.2	<4
27029	48-33.956	-100.496	-3-03-	6.2	4600	1.2	6	170	5.5	86	4	190.	<0.2	<4
27031	48-33.917	-100.470	-3-03-	9.8	3400	1.0	6	62	2.8	45	<4	68.	<0.2	<4
27033	48-33.982	-100.455	-3-03-	3.4	3800	1.2	7	84	4.1	78	6	100.	<0.2	<4
27036	48-33.925	-100.349	-3-03-	28.	4000	<0.5	7	79	3.4	80	<4	64.	0.3	<4
27038	48-33.878	-100.419	-3-03-	0.34	4200	<0.5	150	380	5.3	33	<4	65.	<0.2	<4
27039	48-33.993	-100.498	-3-03-	9.8	3200	<0.5	<2	35	3.5	69	4	48.	<0.2	<4
27040	48-33.980	-100.354	-3-03-	2.9	3600	2.7	3	89	3.0	44	<4	52.	<0.2	6
27041	48-33.935	-100.299	-3-03-	2.9	1800	0.5	<2	20	2.6	47	<4	35.	<0.2	6
27042	48-33.948	-100.257	-3-03-	35.	6800	1.8	11	230	5.2	91	<4	280.	0.2	10
27043	48-33.883	-100.280	-3-03-	13.	3200	<0.5	3	32	6.6	110	11	68.	<0.2	<4
27044	48-33.822	-100.281	-3-03-	1.3	950	1.9	<2	10	3.3	30	<4	23.	<0.2	7
27045	48-33.762	-100.338	-3-03-	16.	3700	0.5	<2	110	4.1	70	<4	88.	<0.2	<4
27052	48-33.780	-100.447	-3-03-	9.1	3500	1.7	4	57	1.5	31	<4	37.	<0.2	<4
27053	48-33.797	-100.498	-3-03-	27.	3400	1.4	7	62	2.1	48	5	45.	<0.2	5
27055	48-33.579	-101.235	-3-03-	9.6	800	4.2	<2	22	9.5	97	6	25.	0.4	31
27056	48-33.266	-100.676	-3-03-	5.2	4100	1.4	7	420	3.3	61	<4	110.	0.7	6
27057	48-33.254	-100.722	-3-03-	3.9	1000	3.0	<2	<10	2.2	26	4	4.7	0.6	5
27058	48-33.305	-100.661	-3-03-	17.	3900	3.6	4	270	2.5	66	<4	49.	0.6	9
27060	48-33.325	-100.721	-3-03-	12.	3700	1.0	5	130	2.9	80	<4	56.	0.6	<4
27061	48-33.391	-100.733	-3-03-	27.	1700	3.9	<2	120	3.0	81	5	49.	0.5	8
27062	48-33.400	-100.675	-3-03-	11.	3700	0.7	4	130	2.7	88	<4	73.	0.6	<4
27063	48-33.437	-100.644	-3-03-	39.	5000	2.9	9	250	3.1	130	<4	170.	1.0	<4
27064	48-33.463	-100.727	-3-03-	8.6	4200	<0.5	19	210	0.9	22	5	0.6	0.8	43
27065	48-33.342	-100.638	-3-03-	36.	4600	2.6	5	320	2.8	110	<4	130.	0.6	12
27066	48-33.381	-100.561	-3-03-	10.	3800	1.9	<2	72	4.3	52	<4	72.	0.6	<4
27067	48-33.386	-100.600	-3-03-	29.	4300	1.3	<2	84	2.9	54	<4	94.	0.7	<4
27068	48-33.468	-100.574	-3-03-	44.	4000	1.8	<2	60	2.7	48	<4	45.	0.4	<4
27070	48-33.491	-100.519	-3-03-	2.1	3600	1.6	10	1400	3.2	71	<4	46.	0.4	10
27071	48-33.479	-100.593	-3-03-	3.2	13000	6.2	14	2600	5.5	100	<4	750.	0.5	<4
27074	48-33.437	-100.594	-3-03-	4.8	7300	2.5	5	920	3.5	73	<4	400.	0.5	<4
27076	48-33.348	-100.688	-3-03-	3.8	1400	2.0	<2	80	2.5	42	<4	100.	0.7	6
27077	48-33.445	-100.691	-3-03-	19.	5900	1.4	6	510	4.9	160	5	260.	0.5	<4
27079	48-33.154	-101.050	-3-03-	9.0	2200	<0.5	<2	230	3.0	79	<4	230.	<0.2	6
27081	48-33.226	-101.031	-3-03-	36.	4200	0.9	4	150	3.2	59	<4	150.	<0.2	15
27083	48-33.240	-101.071	-3-03-	14.	4500	0.8	<2	680	4.5	44	6	270.	<0.2	<4
27086	48-33.231	-101.089	-3-03-	78.	2600	<0.5	11	260	5.1	45	<4	240.	4.6	<4
27087	48-33.179	-101.091	-3-03-	47.	2000	1.8	<2	170	2.3	70	33	220.	<0.2	11

Table A-3, Continued

PARTIAL DATA LISTING FOR GROUNDWATER OF THE LUBBOCK QUADRANGLE

OR SAMPLE NUMBER	D. O. E. SAMPLE ST	LAT	LONG	NUMBER L TY REP	U (PPB)	SP UMHOS/CM	AS (PPB)	CU (PPB)	CL (PPM)	K (PPM)	LI (PPB)	MO (PPB)	NA (PPM)	SE (PPB)	V (PPB)
27088	48	-33.140	-101.085	-3-03-	13.	3700	<0.5	<2	460	6.5	160	8	280.	<0.2	<4
27090	48	-33.307	-101.118	-3-03-	130.	4900	<0.5	5	380	5.9	85	4	150.	0.2	<4
27093	48	-33.227	-101.136	-3-03-	8.5	1800	<0.5	<2	180	3.0	72	<4	140.	0.3	<4
27097	48	-33.134	-101.178	-3-03-	33.	5500	0.9	3	970	5.7	120	<4	400.	<0.2	4

APPENDIX B

STREAM SEDIMENT

APPENDIX B

STREAM SEDIMENT

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LIST OF FIGURES, Continued

Table B-1

STATISTICAL SUMMARY FOR STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

	NO. SAMPLES ANALYZED										LN TRANSFORMATION			
													ROBUST	
ELEMENT	MEASURABLE VALUES	BELOW DETECTION LIMIT	DETECTION LIMIT	MINIMUM VALUE	MAXIMUM VALUE	MEAN	MEDIAN	MODE	STANDARD DEVIATION	COEFFICIENT OF VARIATION	MEAN	S. D.	MEAN	S. D.
U-FL	551			0.64	6.44	1.87	1.80	1.66	0.592	0.317	0.58	0.29	0.58	0.28
U-NT	547			0.80	14.00	2.53	2.40	2.50	0.961	0.380	0.88	0.28	0.87	0.26
TH	538	12	<2	<2	15	6	6	5	2.3	0.4	1.78	0.40	1.78	0.41
U/TU	545			0.12	1.17	0.76	0.76	0.67	0.169	0.222	-0.30	0.25	-0.28	0.23
TH/U	544			0.36	7.50	2.59	2.50	2.83	1.053	0.406	0.86	0.47	0.89	0.46
AG	0	550	<2	<2	<2		<2	<2						
AL	550			1.15	6.49	3.56	3.60	4.02	0.919	0.258	1.23	0.29	1.25	0.29
AS	551			0.8	8.6	3.0	2.9	3.4	1.16	0.38	1.03	0.38	1.04	0.40
B	435	115	<10	<10	154	32	18	15	27.3	0.8	3.24	0.66	2.91	0.95
BA	550			139	5426	544	443	412	401.9	0.7	6.19	0.41	6.15	0.37
BE	538	12	<1	<1	3	1	<1	<1	0.5	0.4	0.27	0.35		
CA	550			0.13	16.92	2.82	2.44	1.12	2.092	0.742	0.76	0.80	0.80	0.83
CE	549	1	<10	<10	157	55	55	55	14.9	0.3	3.99	0.27	4.00	0.26
CO	542	8	<4	<4	26	10	10	10	3.6	0.3	2.27	0.37	2.27	0.38
CR	550			7	68	28	28	24	10.1	0.4	3.29	0.37	3.30	0.38
CU	550			5	154	18	16	17	14.4	0.8	2.80	0.48	2.78	0.46
FE	550			0.60	4.39	1.89	1.83	1.84	0.637	0.338	0.58	0.35	0.58	0.36
K	550			0.41	2.54	1.37	1.39	1.48	0.365	0.267	0.27	0.30	0.29	0.28
LI	550			7	73	29	27	21	13.0	0.4	3.26	0.48	3.27	0.49
MG	550			0.14	4.52	1.28	1.19	0.63	0.710	0.553	0.06	0.66	0.09	0.66
MN	550			102	1754	450	406	335	197.6	0.4	6.03	0.39	6.02	0.38
MO	161	389	<4	<4	11	5	<4	<4	1.6	0.3	1.64	0.25		
NA	550			0.12	3.26	0.57	0.51	0.41	0.272	0.479	-0.65	0.39	-0.65	0.36
NB	546	4	<4	<4	46	12	12	10	4.2	0.3	2.50	0.31	2.50	0.30
NI	550			3	34	15	15	15	5.5	0.4	2.64	0.40	2.66	0.40
P	550			79	784	325	327	326	109.8	0.3	5.72	0.39	5.74	0.40
SC	550			1	11	5	6	6	1.9	0.3	1.68	0.38	1.70	0.35
SE	510	41	<0.1	<0.1	2.4	0.6	0.6	0.7	0.27	0.45	-0.61	0.50	-0.68	0.69
SR	550			39	1908	239	159	85	251.5	1.0	5.18	0.71	5.14	0.70
TI	550			708	7001	1881	1871	1909	466.6	0.2	7.51	0.23	7.52	0.21
V	550			12	134	44	43	41	16.0	0.4	3.74	0.37	3.75	0.38
Y	550			4	21	10	11	11	2.4	0.2	2.35	0.23	2.35	0.22
ZN	550			11	107	38	38	41	13.7	0.4	3.59	0.38	3.60	0.39
ZR	550			26	243	64	64	61	15.6	0.2	4.14	0.21	4.15	0.19

NOTE: Refer to Table 1, Page 22 and Table C-1, Page C-4 for concentration units and symbol definitions.

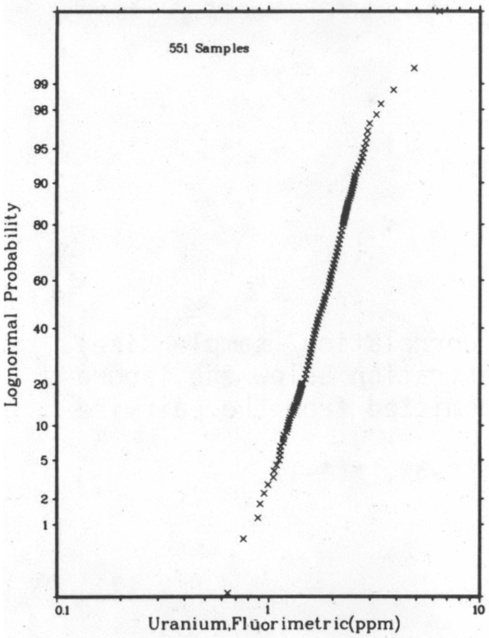
Table B-2

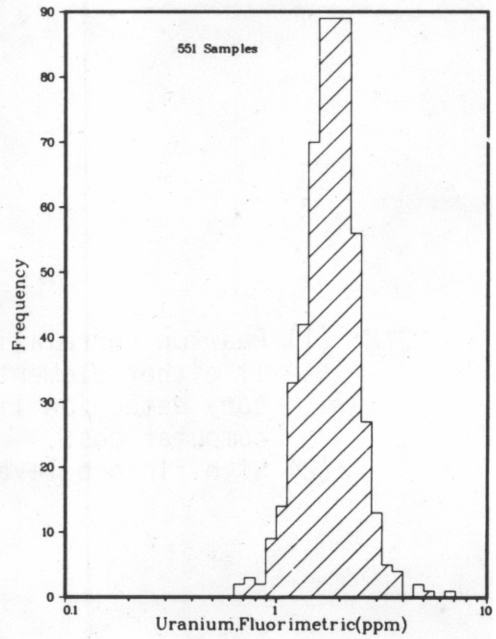
CORRELATION MATRIX FOR STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

	L-U	LUNT	L-CE	L-Y	L-NB	L-TH	L-BA	L-MN	L-NA	L-SE	L-CA	L-SR	L-LI	L-MG
L-U	1.00 (551)													
LUNT	0.61*** 0.59*** (545)	1.00 (545)												
L-CE	0.49*** 0.46*** (549)	0.50*** 0.43*** (543)	1.00 (549)											
L-Y	0.51*** 0.49*** (550)	0.49*** 0.47*** (544)	0.76*** 0.72*** (549)	1.00 (550)										
L-NB	0.31*** 0.35*** (546)	0.29*** 0.29*** (540)	0.64*** 0.66*** (545)	0.54*** 0.53*** (546)	1.00 (546)									
L-TH	0.32*** 0.30*** (538)	0.29*** 0.27*** (533)	0.60*** 0.57*** (537)	0.43*** 0.41*** (538)	0.44*** 0.44*** (536)	1.00 (538)								
L-BA	0.29*** 0.35*** (550)	0.39*** 0.36*** (544)	0.40*** 0.46*** (549)	0.47*** 0.52*** (550)	0.18*** 0.28*** (546)	0.16*** 0.18*** (538)	1.00 (550)							
L-MN	0.43*** 0.46*** (550)	0.42*** 0.45*** (544)	0.48*** 0.52*** (549)	0.67*** 0.69*** (550)	0.30*** 0.30*** (546)	0.21*** 0.22*** (538)	0.56*** 0.58*** (550)	1.00 (550)						
L-NA	-0.04 -0.12*** (550)	-0.15*** -0.21*** (544)	-0.14*** -0.20*** (549)	-0.04 -0.09** (550)	-0.10** -0.19*** (546)	-0.17*** -0.20*** (538)	-0.10** -0.15*** (550)	0.04 0.01 (550)	1.00 (550)					
L-SE	0.02 0.05 (510)	0.04 0.10** (504)	0.00 0.03 (508)	0.04 0.04 (509)	0.09** 0.11** (505)	0.03 0.03 (497)	-0.15*** -0.11** (509)	-0.02 -0.02 (509)	-0.05 -0.07 (509)	1.00 (510)				
L-CA	0.27*** 0.31*** (550)	0.15*** 0.26*** (544)	0.12*** 0.16*** (549)	0.19*** 0.26*** (550)	0.20*** 0.15*** (546)	0.05 0.07 (538)	0.29*** 0.35*** (550)	0.40*** 0.43*** (550)	-0.19*** -0.25*** (550)	0.03 0.04 (509)	1.00 (550)			
L-SR	0.22*** 0.27*** (550)	0.10** 0.14*** (544)	0.03 0.07 (549)	0.10** 0.14*** (550)	0.14*** 0.15*** (546)	-0.01 0.00 (538)	0.12*** 0.18*** (550)	0.28*** 0.36*** (550)	-0.05 -0.03 (550)	0.06 0.06 (509)	0.67*** 0.66*** (550)	1.00 (550)		
L-LI	0.24*** 0.28*** (550)	-0.02 0.05 (544)	0.36*** 0.36*** (549)	0.37*** 0.32*** (550)	0.49*** 0.53*** (546)	0.15*** 0.14*** (538)	-0.14*** -0.01 (550)	0.09** 0.09** (550)	0.07* -0.04 (550)	0.21*** 0.27*** (509)	0.19*** 0.14*** (550)	0.35*** 0.31*** (550)	1.00 (550)	
L-MG	0.27*** 0.29*** (550)	-0.03 0.04 (544)	0.25*** 0.23*** (549)	0.34*** 0.27*** (550)	0.39*** 0.40*** (546)	0.09** 0.07* (538)	-0.01 0.06 (550)	0.25*** 0.24*** (550)	0.09** -0.01 (550)	0.18*** 0.24*** (509)	0.37*** 0.31*** (550)	0.50*** 0.51*** (550)	0.83*** 0.82*** (550)	1.00 (550)
L-K	0.10** 0.14*** (550)	-0.11** -0.04 (544)	0.24*** 0.28*** (549)	0.29*** 0.30*** (550)	0.36*** 0.42*** (546)	0.08* 0.07* (538)	-0.19*** 0.03 (550)	0.02 0.06 (550)	0.16*** 0.06 (550)	0.23*** 0.28*** (509)	-0.21*** -0.21*** (550)	0.05 0.05 (550)	0.77*** 0.77*** (550)	0.67*** 0.69*** (550)
L-P	0.41*** 0.41*** (550)	0.21*** 0.25*** (544)	0.48*** 0.46*** (549)	0.71*** 0.69*** (550)	0.39*** 0.38*** (546)	0.27*** 0.24*** (538)	0.17*** 0.27*** (550)	0.53*** 0.53*** (550)	0.21*** 0.17*** (550)	0.10** 0.09** (509)	0.17*** 0.11*** (550)	0.14*** 0.10** (550)	0.57*** 0.48*** (550)	0.59*** 0.47*** (550)
L-TI	0.47*** 0.49*** (550)	0.53*** 0.46*** (544)	0.72*** 0.68*** (549)	0.72*** 0.71*** (550)	0.55*** 0.54*** (546)	0.38*** 0.37*** (538)	0.31*** 0.37*** (550)	0.44*** 0.47*** (550)	-0.03 -0.14*** (550)	0.01 0.07 (509)	-0.07 -0.01 (550)	-0.01 0.00 (550)	0.40*** 0.44*** (550)	0.34*** 0.36*** (550)
L-ZR	0.33*** 0.26*** (550)	0.41*** 0.23*** (544)	0.51*** 0.42*** (549)	0.64*** 0.56*** (550)	0.40*** 0.39*** (546)	0.28*** 0.25*** (538)	0.13*** 0.07 (550)	0.24*** 0.20*** (550)	0.09** 0.04 (550)	0.03 0.08* (509)	-0.25*** -0.26*** (550)	-0.07* -0.09** (550)	0.37*** 0.48*** (550)	0.35*** 0.41*** (550)
L-SC	0.47*** 0.50*** (550)	0.25*** 0.32*** (544)	0.66*** 0.66*** (549)	0.76*** 0.74*** (550)	0.58*** 0.62*** (546)	0.36*** 0.36*** (538)	0.22*** 0.35*** (550)	0.50*** 0.53*** (550)	-0.00 -0.12*** (550)	0.12*** 0.15*** (509)	0.24*** 0.24*** (550)	0.28*** 0.31*** (550)	0.76*** 0.72*** (550)	0.72*** 0.64*** (550)
L-CR	0.41*** 0.44*** (550)	0.19*** 0.24*** (544)	0.64*** 0.66*** (549)	0.63*** 0.59*** (550)	0.60*** 0.63*** (546)	0.39*** 0.37*** (538)	0.11** 0.23*** (550)	0.36*** 0.37*** (550)	0.01 -0.08* (550)	0.10** 0.13*** (509)	0.18*** 0.15*** (550)	0.21*** 0.21*** (550)	0.82*** 0.79*** (550)	0.70*** 0.61*** (550)
L-FE	0.49*** 0.52*** (550)	0.34*** 0.37*** (544)	0.71*** 0.71*** (549)	0.74*** 0.72*** (550)	0.60*** 0.63*** (546)	0.40*** 0.37*** (538)	0.26*** 0.39*** (550)	0.50*** 0.52*** (550)	-0.10** -0.20*** (550)	0.11** 0.15*** (509)	0.20*** 0.21*** (550)	0.24*** 0.27*** (550)	0.72*** 0.69*** (550)	0.64*** 0.59*** (550)
L-CO	0.44*** 0.50*** (542)	0.25*** 0.34*** (537)	0.67*** 0.70*** (541)	0.69*** 0.69*** (542)	0.58*** 0.62*** (540)	0.39*** 0.40*** (533)	0.18*** 0.35*** (542)	0.48*** 0.52*** (542)	-0.07 -0.16*** (542)	0.08* 0.11** (501)	0.23*** 0.22*** (542)	0.24*** 0.28*** (542)	0.73*** 0.67*** (542)	0.63*** 0.55*** (542)
L-ZN	0.41*** 0.44*** (550)	0.25*** 0.31*** (544)	0.57*** 0.59*** (549)	0.67*** 0.66*** (550)	0.59*** 0.63*** (546)	0.38*** 0.36*** (538)	0.03 0.22*** (550)	0.36*** 0.39*** (550)	-0.04 -0.12*** (550)	0.15*** 0.19*** (509)	0.08** 0.06 (550)	0.14*** 0.14*** (550)	0.74*** 0.70*** (550)	0.63*** 0.56*** (550)
L-AL	0.29*** 0.36*** (550)	0.05 0.16*** (544)	0.53*** 0.59*** (549)	0.59*** 0.58*** (550)	0.52*** 0.59*** (546)	0.26*** 0.27*** (538)	0.02 0.19*** (550)	0.31*** 0.32*** (550)	0.17*** 0.05 (550)	0.13*** 0.17*** (509)	-0.00 -0.03 (550)	0.09** 0.10** (550)	0.81*** 0.77*** (550)	0.68*** 0.59*** (550)
L-NI	0.37*** 0.42*** (550)	0.11** 0.19*** (544)	0.58*** 0.61*** (549)	0.59*** 0.55*** (550)	0.53*** 0.56*** (546)	0.35*** 0.36*** (538)	0.08* 0.18*** (550)	0.35*** 0.36*** (550)	0.07 -0.03 (550)	0.10** 0.14*** (509)	0.18*** 0.12*** (550)	0.19*** 0.20*** (550)	0.79*** 0.74*** (550)	0.68*** 0.58*** (550)
L-V	0.45*** 0.48*** (550)	0.36*** 0.36*** (544)	0.64*** 0.62*** (549)	0.66*** 0.65*** (550)	0.65*** 0.65*** (546)	0.42*** 0.39*** (538)	0.26*** 0.39*** (550)	0.42*** 0.45*** (550)	-0.07 -0.13*** (550)	0.00 0.05 (509)	0.22*** 0.20*** (550)	0.20*** 0.23*** (550)	0.62*** 0.58*** (550)	0.50*** 0.45*** (550)
L-AS	0.43*** 0.47*** (551)	0.28*** 0.35*** (545)	0.56*** 0.58*** (549)	0.61*** 0.63*** (550)	0.45*** 0.45*** (546)	0.31*** 0.30*** (538)	0.37*** 0.52*** (550)	0.54*** 0.57*** (550)	-0.08* -0.15*** (550)	0.04 0.08* (510)	0.34*** 0.36*** (550)	0.31*** 0.37*** (550)	0.55*** 0.51*** (550)	0.48*** 0.43*** (550)
L-CU	0.36*** 0.45*** (550)	0.23*** 0.36*** (544)	0.43*** 0.53*** (549)	0.48*** 0.61*** (550)	0.39*** 0.47*** (546)	0.29*** 0.32*** (538)	0.15*** 0.31*** (550)	0.40*** 0.53*** (550)	-0.14*** -0.14*** (550)	0.16*** 0.18*** (509)	0.27*** 0.30*** (550)	0.26*** 0.26*** (550)	0.50*** 0.48*** (550)	0.49*** 0.46*** (550)
L-B	0.26*** 0.26*** (435)	0.13*** 0.12** (431)	0.33*** 0.28*** (434)	0.09* 0.04 (435)	0.37*** 0.36*** (433)	0.18*** 0.17*** (428)	-0.00 0.08 (435)	-0.06 -0.04 (435)	-0.15*** -0.19*** (435)	0.07 0.12** (404)	0.08 0.04 (435)	0.29*** 0.27*** (435)	0.72*** 0.71*** (435)	0.60*** 0.63*** (435)

NOTE: (1) Pearson correlation/Spearman correlation/(sample size). If either element has a concentration below the laboratory detection limits, it is omitted from the pairwise computations.
(2) Significance levels: *-10%, **-5%, ***-1%.

	L-K	L-P	L-TI	L-ZR	L-SC	L-CR	L-FE	L-CO	L-ZN	L-AL	L-NI	L-V	L-AS	L-CU	L-B
L-K	1.00 (550)														
L-P	0.55*** 0.52*** (550)	1.00 (550)													
L-TI	0.46*** 0.50*** (550)	0.55*** 0.61*** (550)	1.00 (550)												
L-ZR	0.48*** 0.62*** (550)	0.48*** 0.53*** (550)	0.76*** 0.68*** (550)	1.00 (550)											
L-SC	0.62*** 0.62*** (550)	0.77*** 0.68*** (550)	0.68*** 0.76*** (550)	0.51*** 0.52*** (550)	1.00 (550)										
L-CR	0.67*** 0.65*** (550)	0.69*** 0.60*** (550)	0.65*** 0.67*** (550)	0.48*** 0.48*** (550)	0.93*** 0.91*** (550)	1.00 (550)									
L-FE	0.62*** 0.61*** (550)	0.70*** 0.66*** (550)	0.81*** 0.82*** (550)	0.55*** 0.53*** (550)	0.93*** 0.95*** (550)	0.92*** 0.91*** (550)	1.00 (550)								
L-CO	0.59*** 0.57*** (542)	0.69*** 0.64*** (542)	0.68*** 0.75*** (542)	0.43*** 0.45*** (542)	0.93*** 0.93*** (542)	0.93*** 0.92*** (542)	0.95*** 0.96*** (542)	1.00 (542)							
L-ZN	0.69*** 0.69*** (550)	0.78*** 0.73*** (550)	0.65*** 0.72*** (550)	0.49*** 0.57*** (550)	0.87*** 0.86*** (550)	0.87*** 0.86*** (550)	0.87*** 0.88*** (550)	0.87*** 0.86*** (542)	1.00 (550)						
L-AL	0.82*** 0.78*** (550)	0.74*** 0.67*** (550)	0.60*** 0.69*** (550)	0.48*** 0.57*** (550)	0.88*** 0.88*** (550)	0.92*** 0.93*** (550)	0.84*** 0.87*** (550)	0.80*** 0.86*** (542)	0.82*** 0.87*** (550)	1.00 (550)					
L-NI	0.62*** 0.60*** (550)	0.68*** 0.60*** (550)	0.55*** 0.63*** (550)	0.40*** 0.44*** (550)	0.89*** 0.88*** (550)	0.93*** 0.93*** (550)	0.64*** 0.86*** (550)	0.88*** 0.87*** (542)	0.83*** 0.81*** (550)	0.88*** 0.88*** (550)	1.00 (550)				
L-V	0.49*** 0.50*** (550)	0.57*** 0.58*** (550)	0.68*** 0.69*** (550)	0.40*** 0.44*** (550)	0.80*** 0.82*** (550)	0.84*** 0.84*** (550)	0.85*** 0.85*** (550)	0.80*** 0.80*** (542)	0.81*** 0.82*** (550)	0.74*** 0.78*** (550)	0.76*** 0.77*** (550)	1.00 (550)			
L-AS	0.38*** 0.37*** (550)	0.48*** 0.45*** (550)	0.53*** 0.58*** (550)	0.27*** 0.29*** (550)	0.72*** 0.75*** (550)	0.71*** 0.69*** (550)	0.77*** 0.77*** (550)	0.74*** 0.75*** (542)	0.63*** 0.62*** (550)	0.62*** 0.62*** (550)	0.66*** 0.64*** (550)	0.71*** 0.71*** (550)	1.00 (551)		
L-CU	0.38*** 0.38*** (550)	0.51*** 0.60*** (550)	0.42*** 0.57*** (550)	0.25*** 0.32*** (550)	0.65*** 0.75*** (550)	0.65*** 0.71*** (550)	0.66*** 0.72*** (550)	0.65*** 0.73*** (542)	0.64*** 0.72*** (550)	0.56*** 0.65*** (550)	0.62*** 0.70*** (550)	0.58*** 0.66*** (550)	0.52*** 0.61*** (550)	1.00 (550)	
L-B	0.51*** 0.51*** (435)	0.10** 0.11** (433)	0.38*** 0.35*** (435)	0.29*** 0.28*** (435)	0.55*** 0.51*** (435)	0.69*** 0.64*** (435)	0.59*** 0.53*** (435)	0.56*** 0.51*** (434)	0.48*** 0.45*** (435)	0.55*** 0.53*** (435)	0.60*** 0.57*** (435)	0.50*** 0.43*** (435)	0.45*** 0.37*** (435)	0.42*** 0.34*** (435)	1.00 (435)





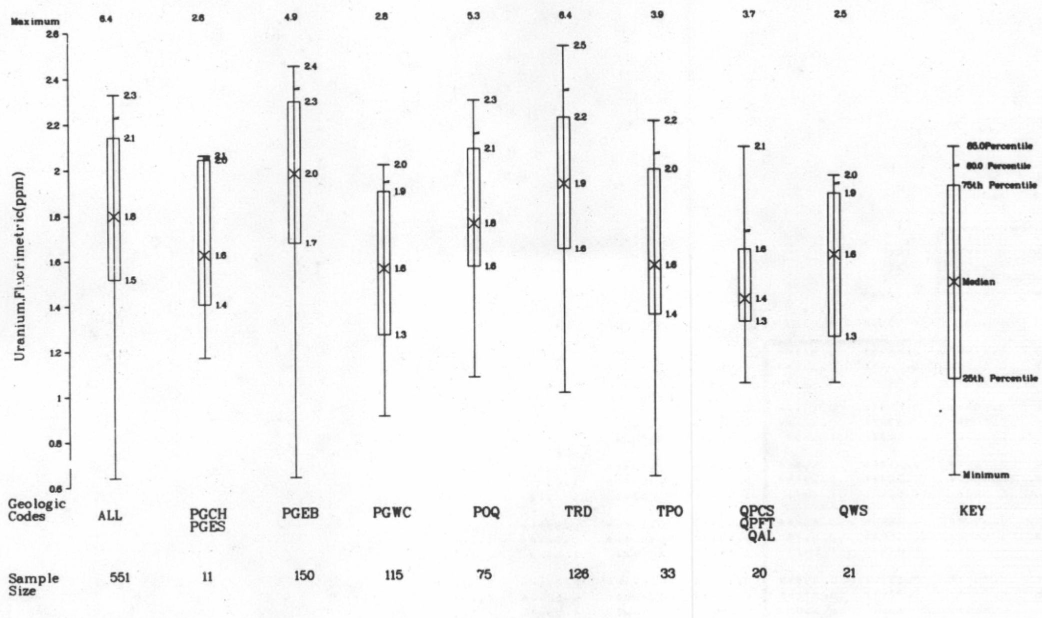


Figure B-1a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR SOLUBLE URANIUM (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

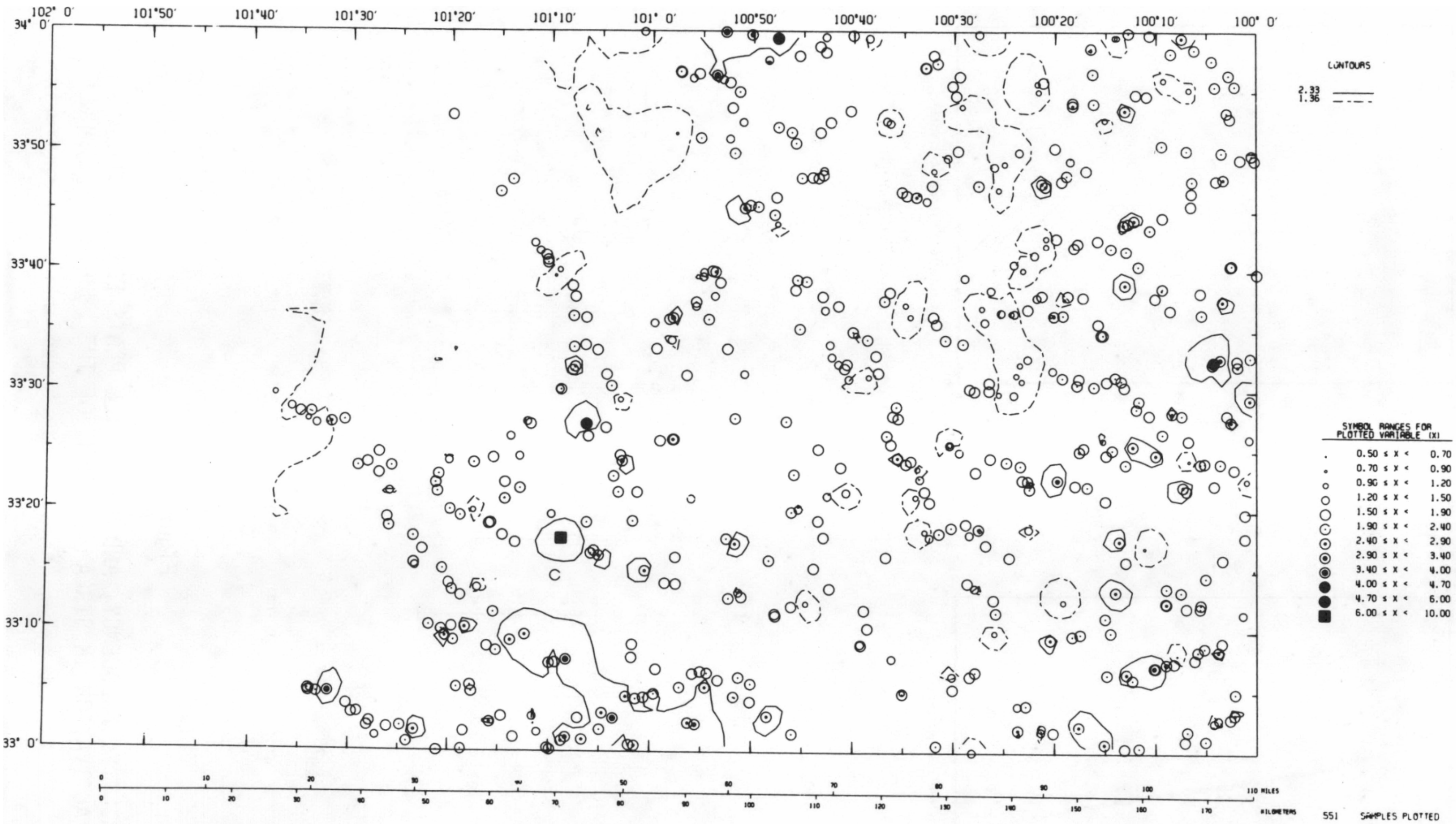


Figure B-1b

GEOCHEMICAL DISTRIBUTION OF SOLUBLE URANIUM (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

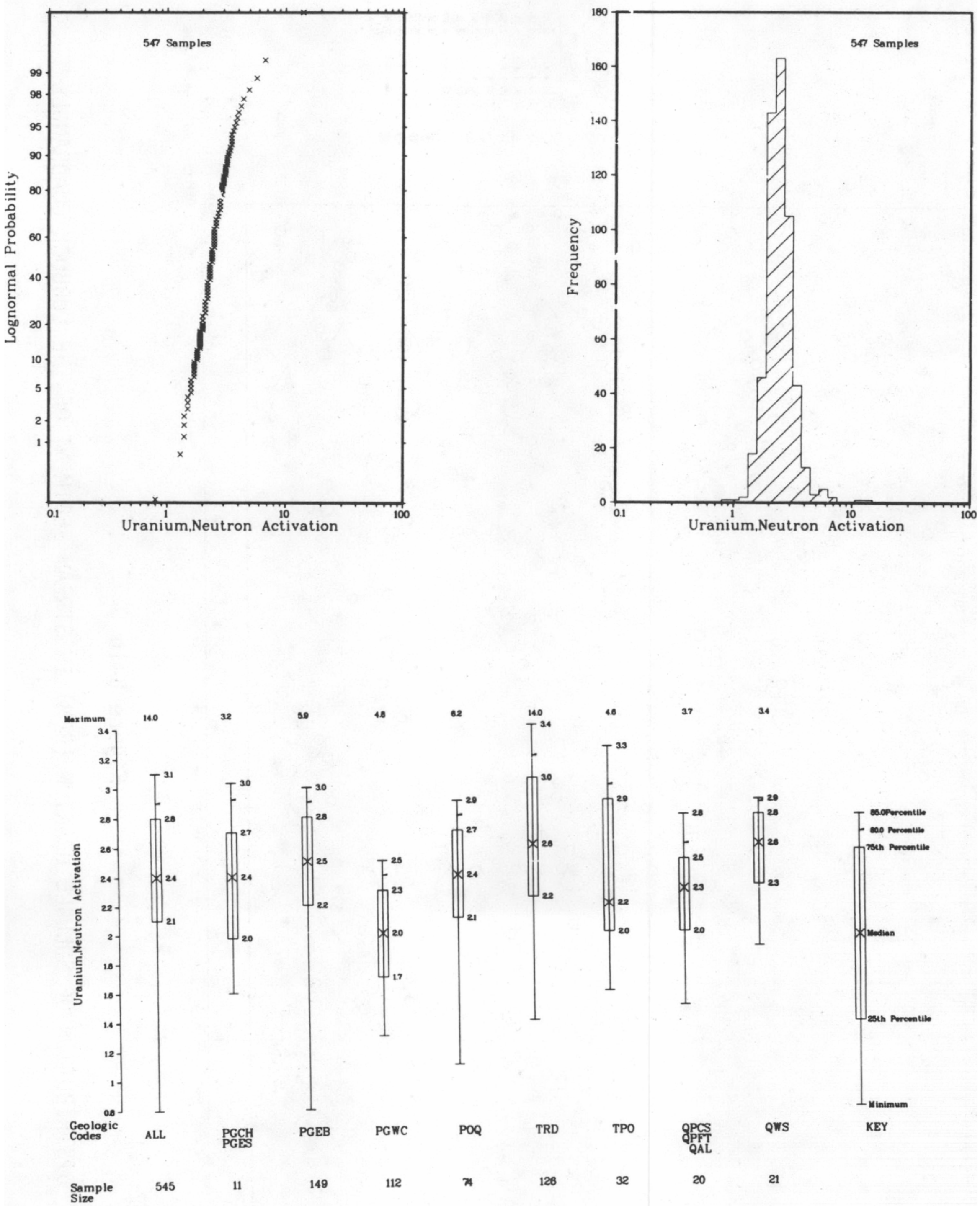


Figure B-2a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR URANIUM
BY NEUTRON ACTIVATION IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

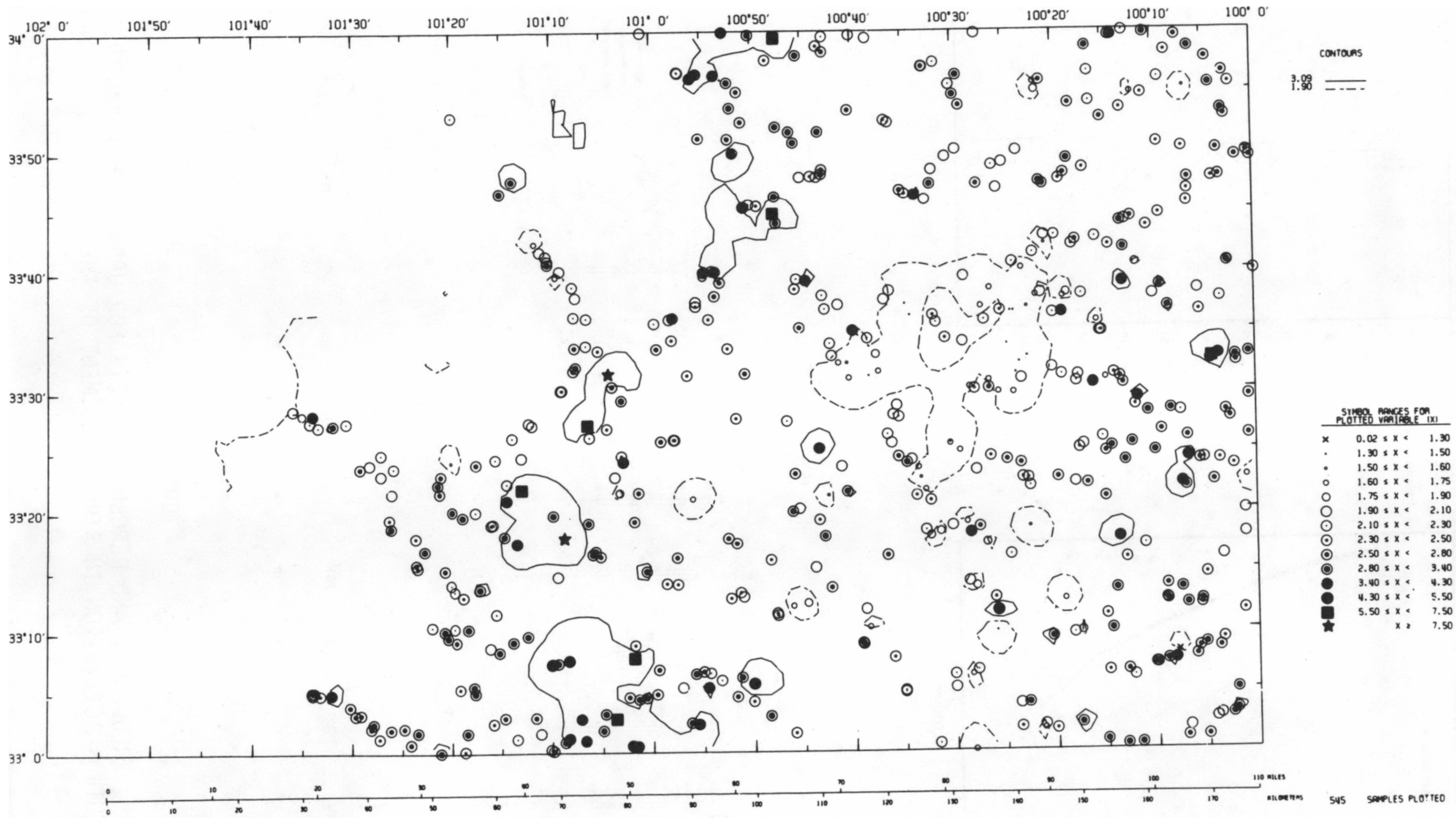


Figure B-2b

GEOCHEMICAL DISTRIBUTION OF URANIUM BY NEUTRON ACTIVATION IN STREAM SEDIMENT OF THE LUBBOCK QUADRNAGLE

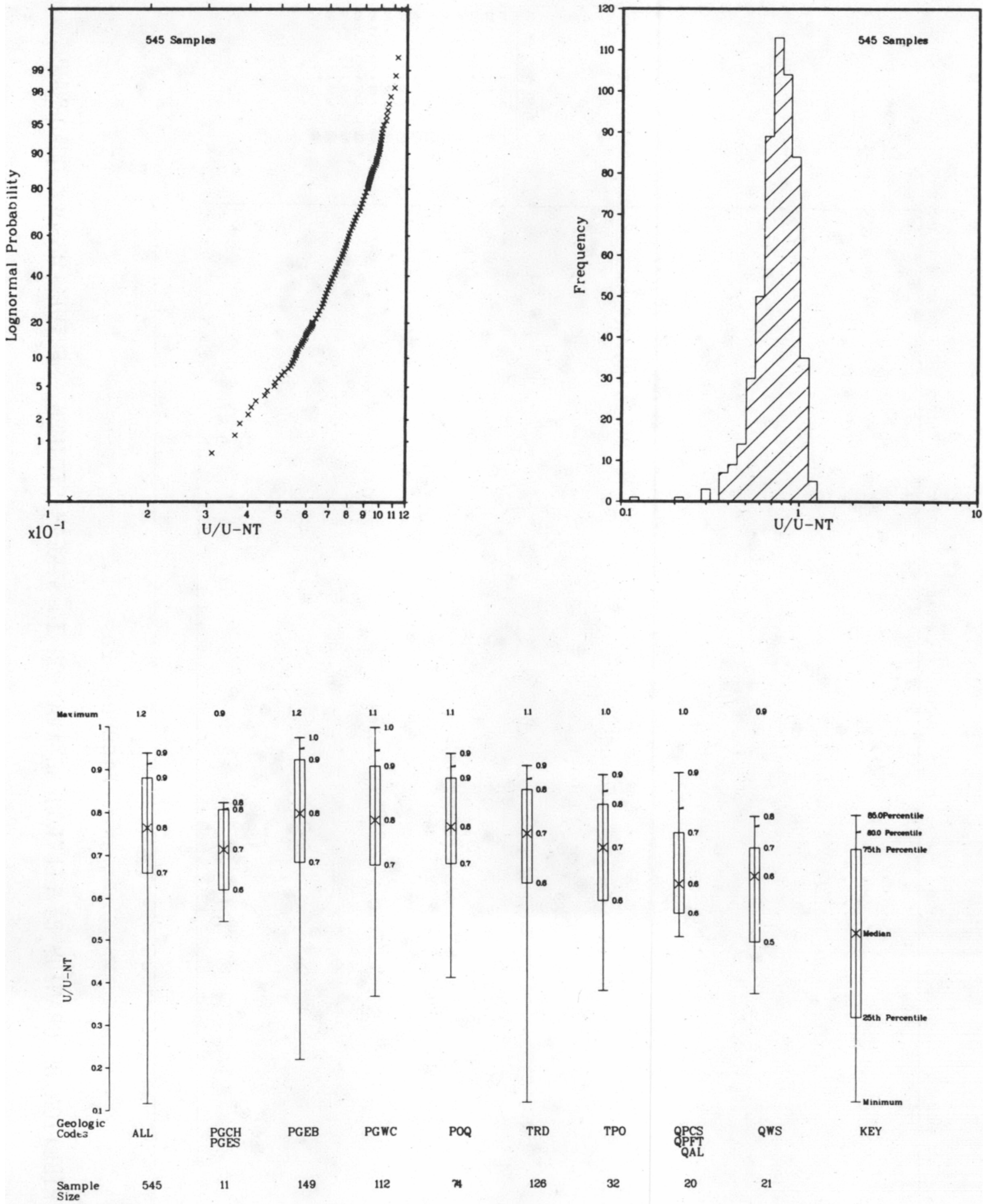


Figure B-3a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR URANIUM FLUOROMETRIC/
URANIUM NEUTRON ACTIVATION IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

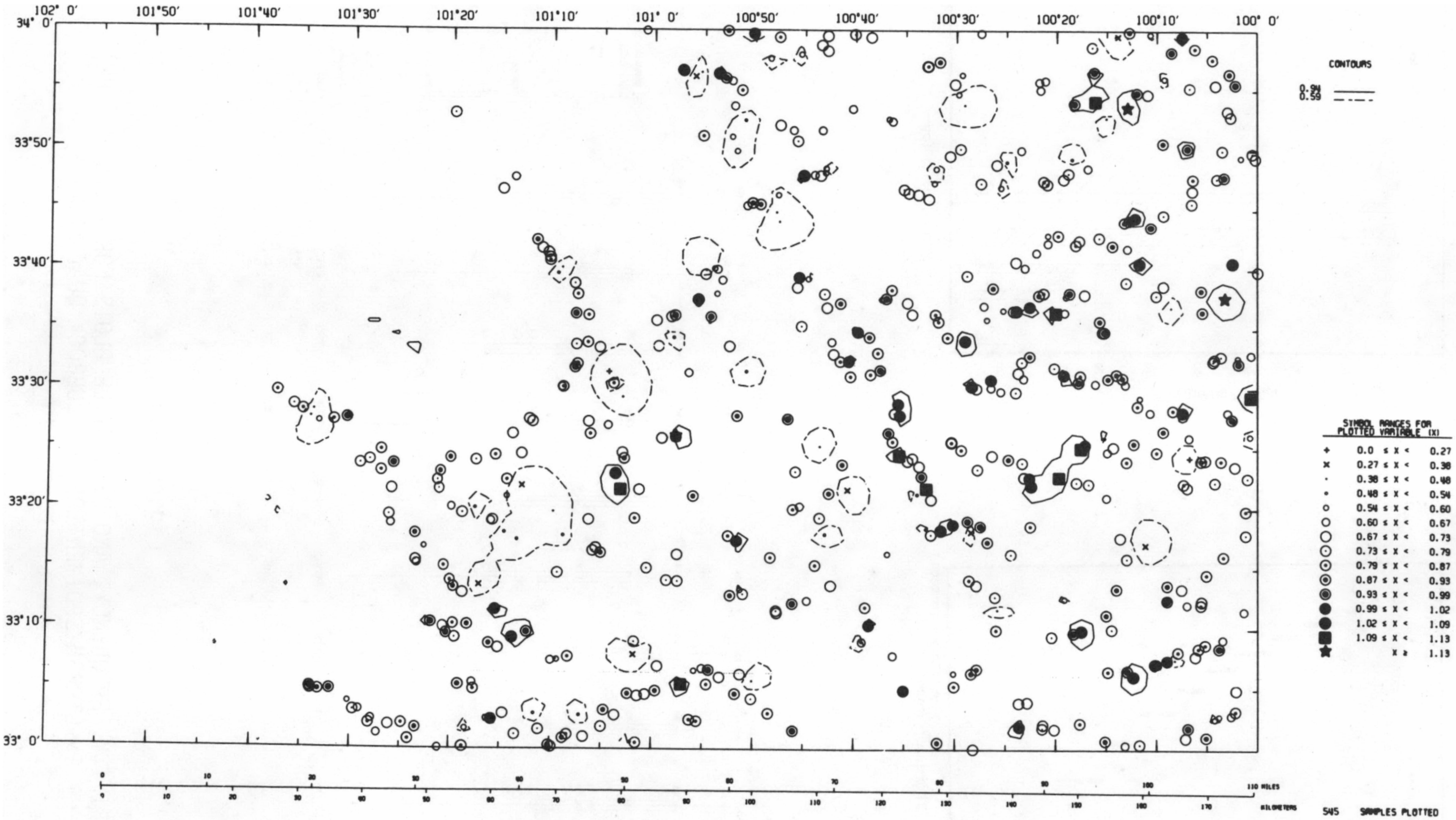
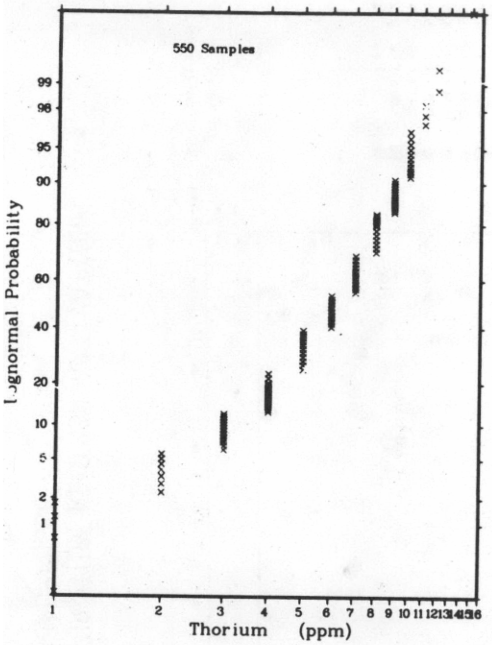
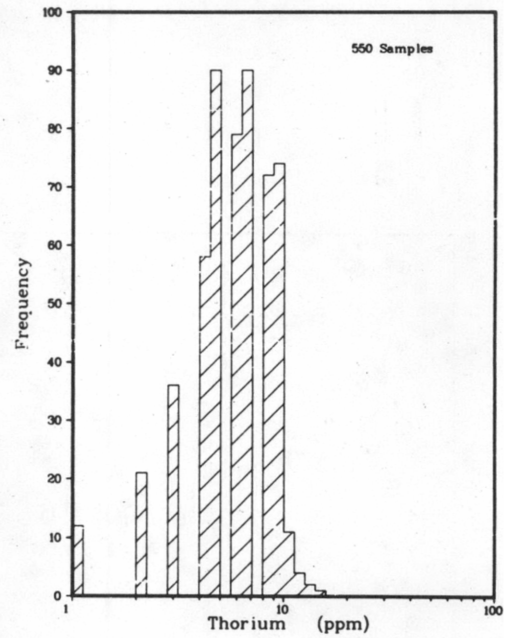


Figure B-3b

GEOCHEMICAL DISTRIBUTION OF URANIUM FLUOROMETRIC/URANIUM NEUTRON ACTIVATION
IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE





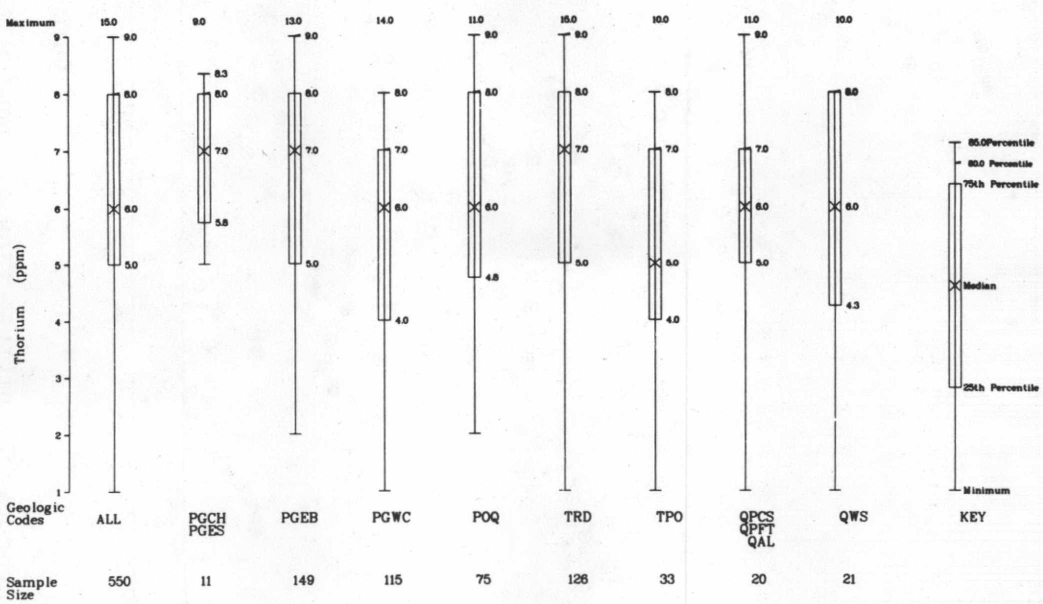


Figure B-4a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR THORIUM (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

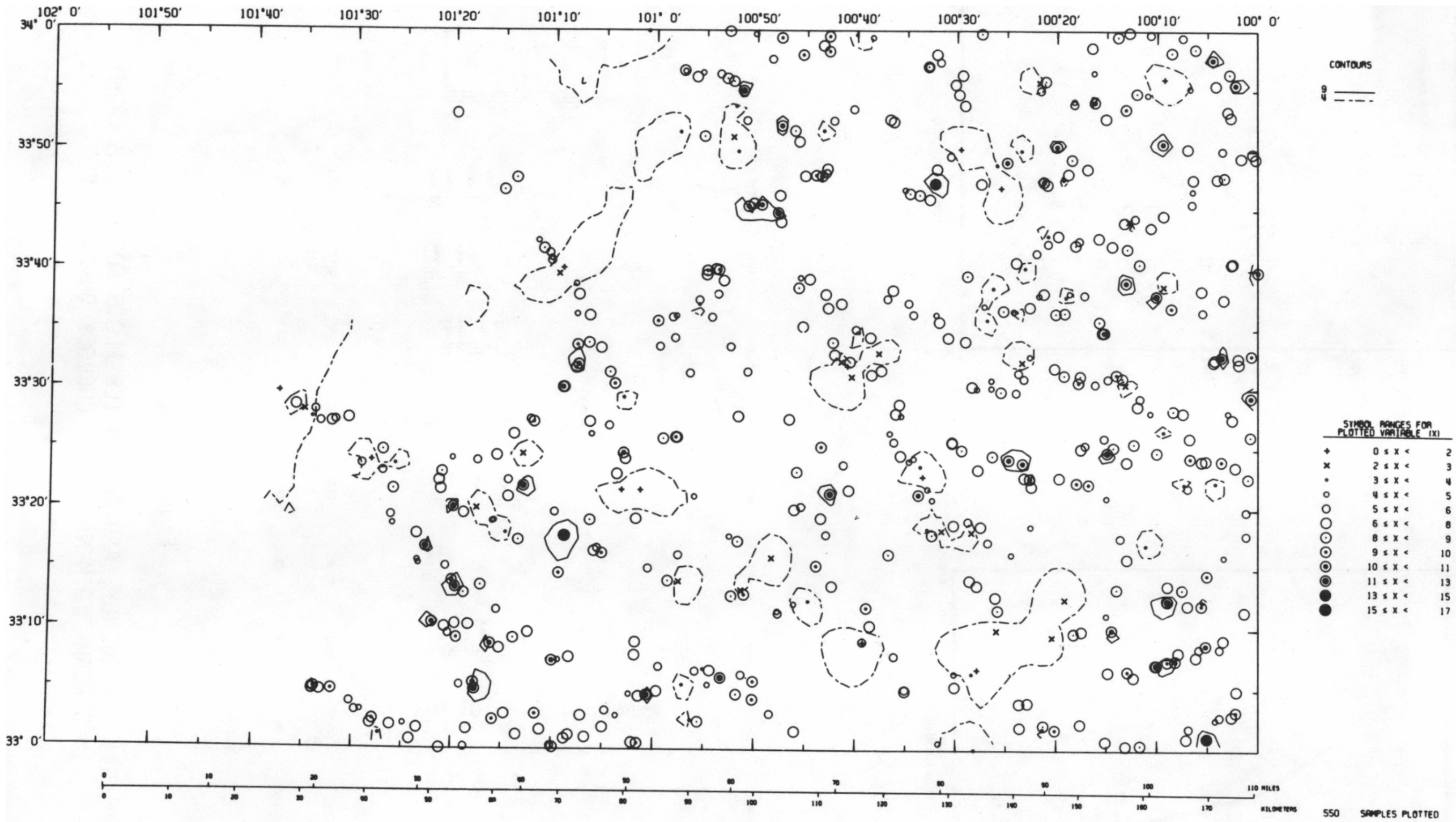
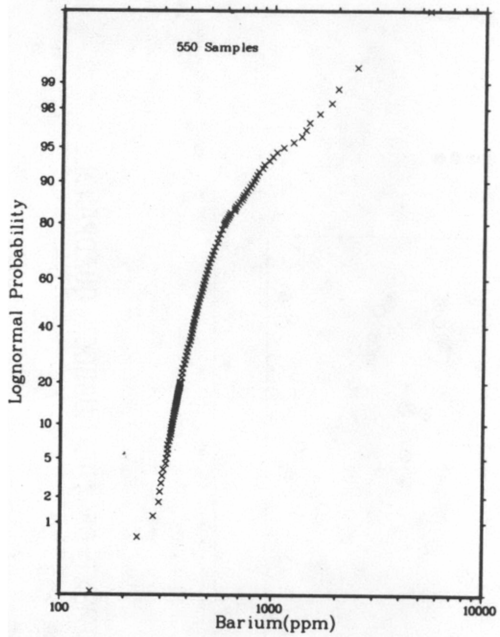
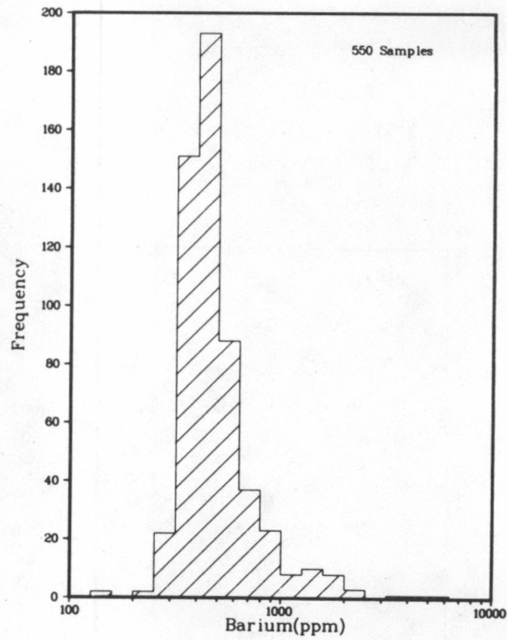


Figure B-4b

GEOCHEMICAL DISTRIBUTION OF THORIUM (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE





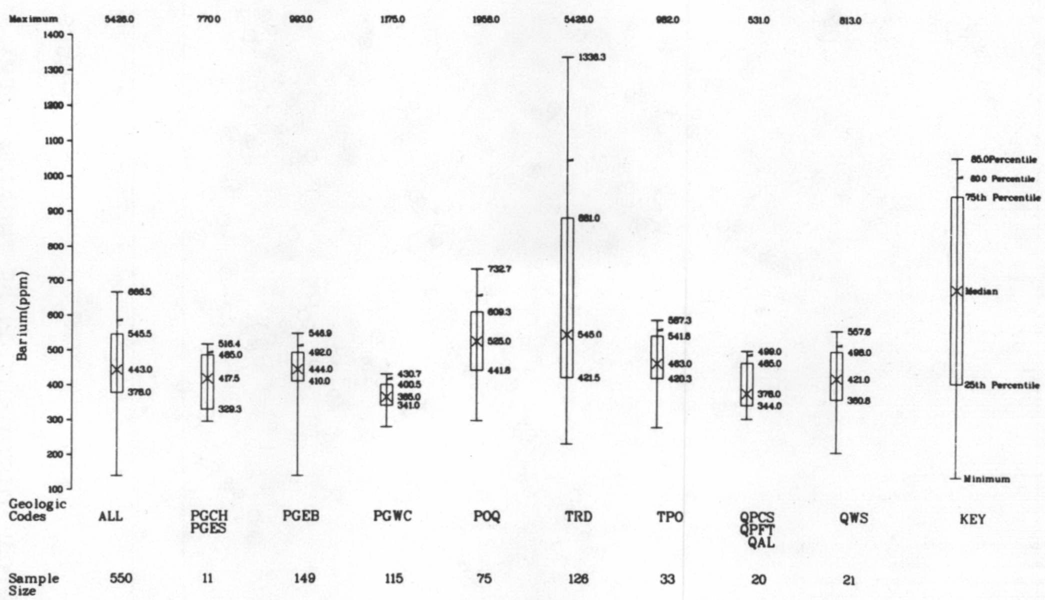


Figure B-5a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR BARIUM (PPM)
IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

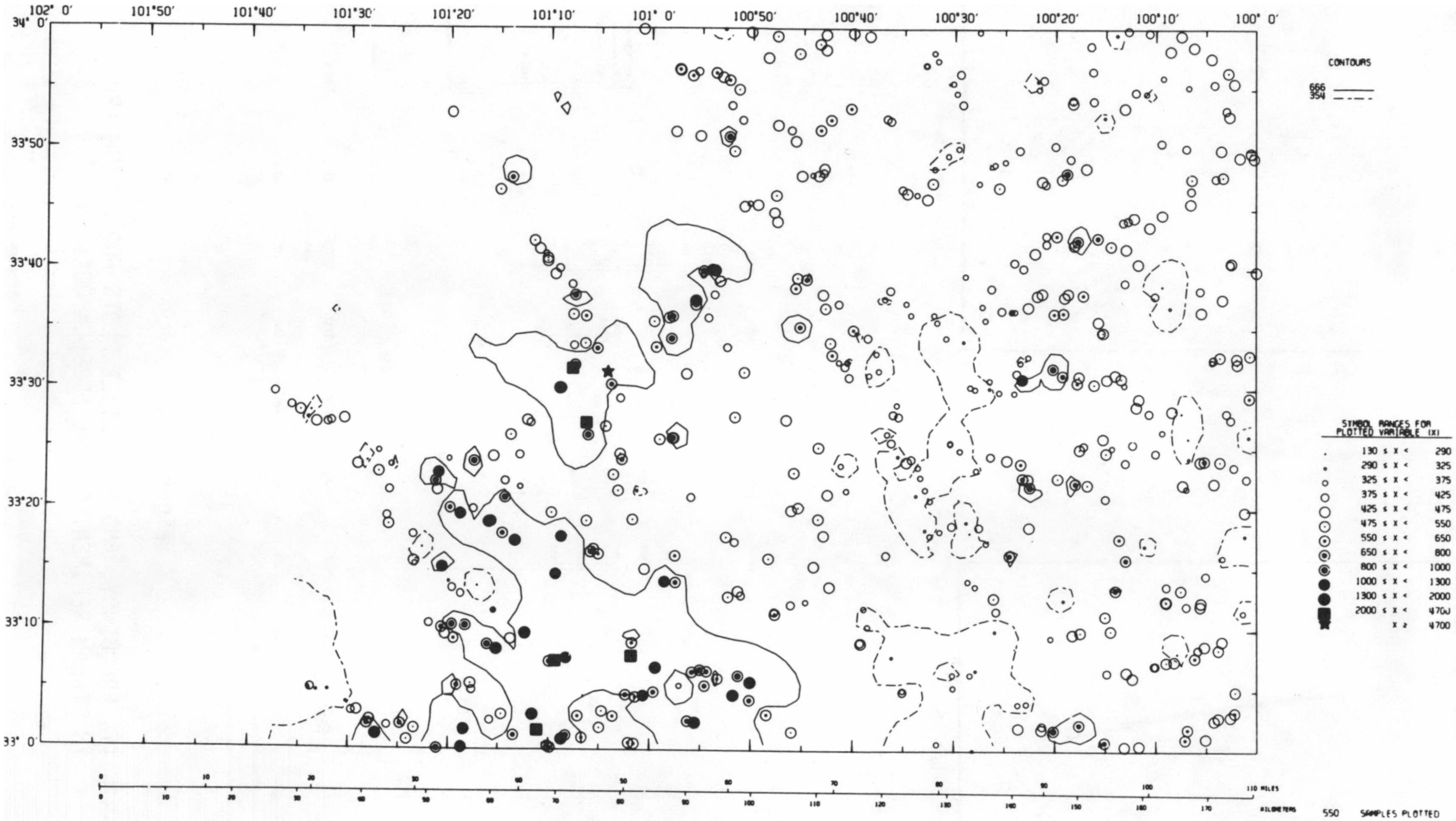


Figure B-5b

GEOCHEMICAL DISTRIBUTION OF BARIUM (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

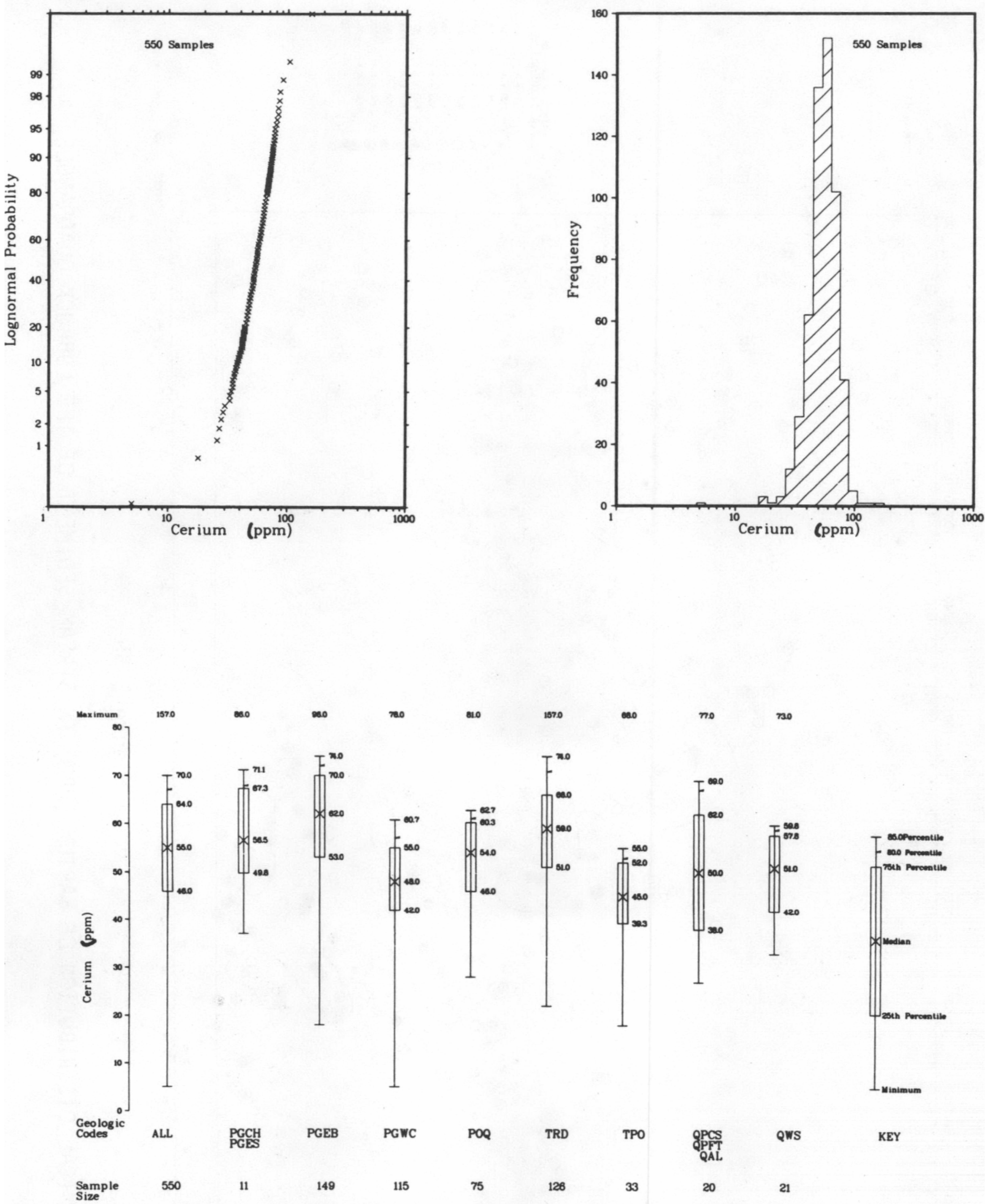


Figure B-6a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR CERIUM (PPM)
IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

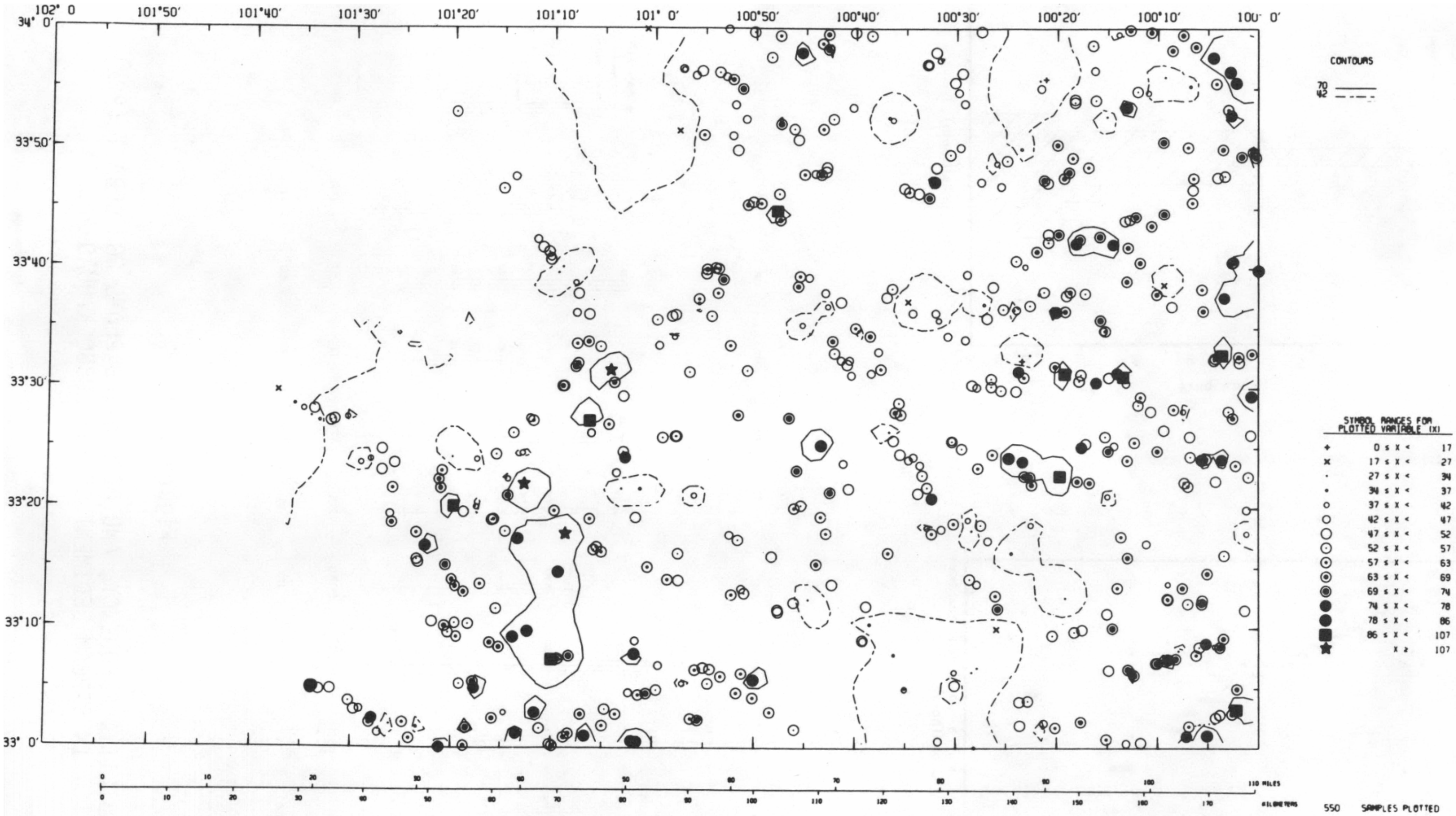
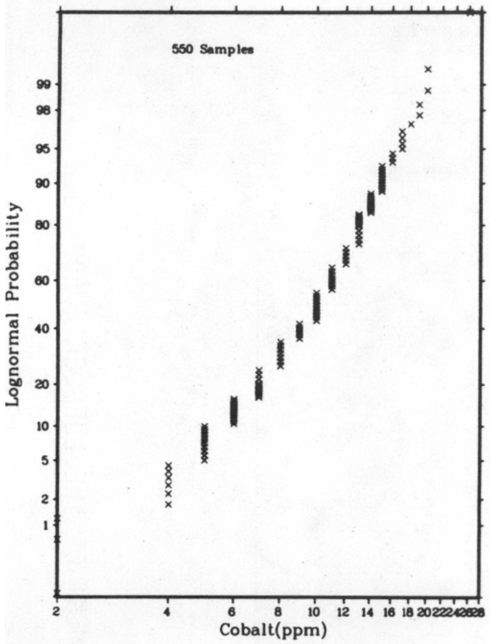
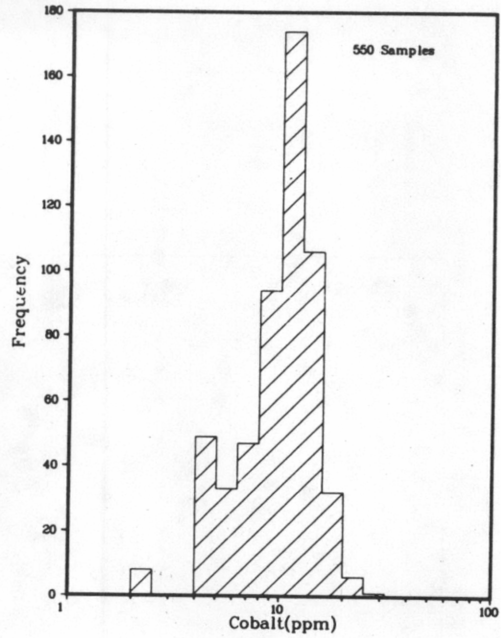


Figure B-6b

GEOCHEMICAL DISTRIBUTION OF CERIUM (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE





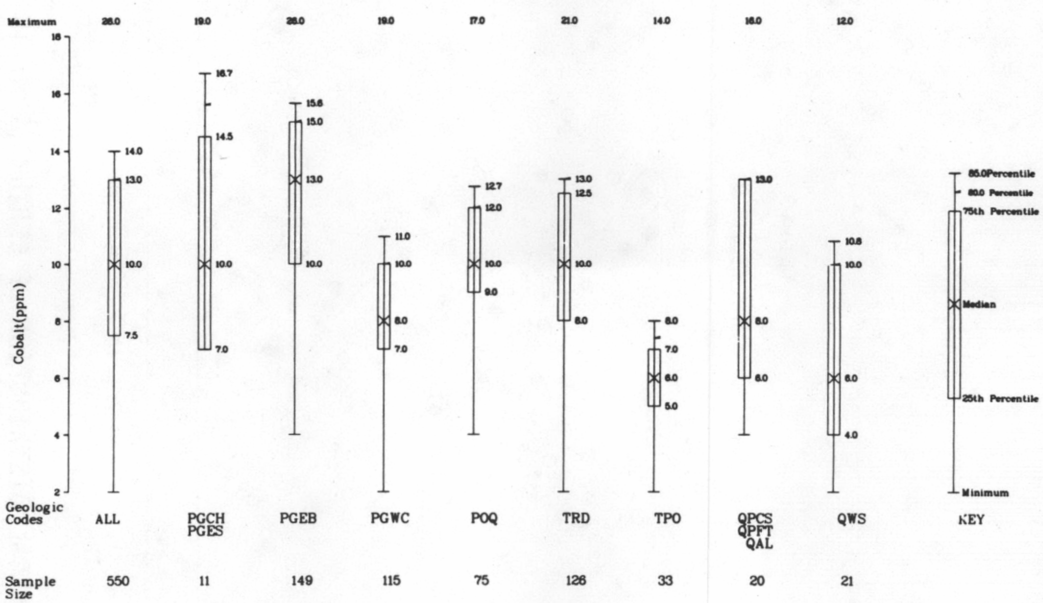


Figure B-7a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR COBALT (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

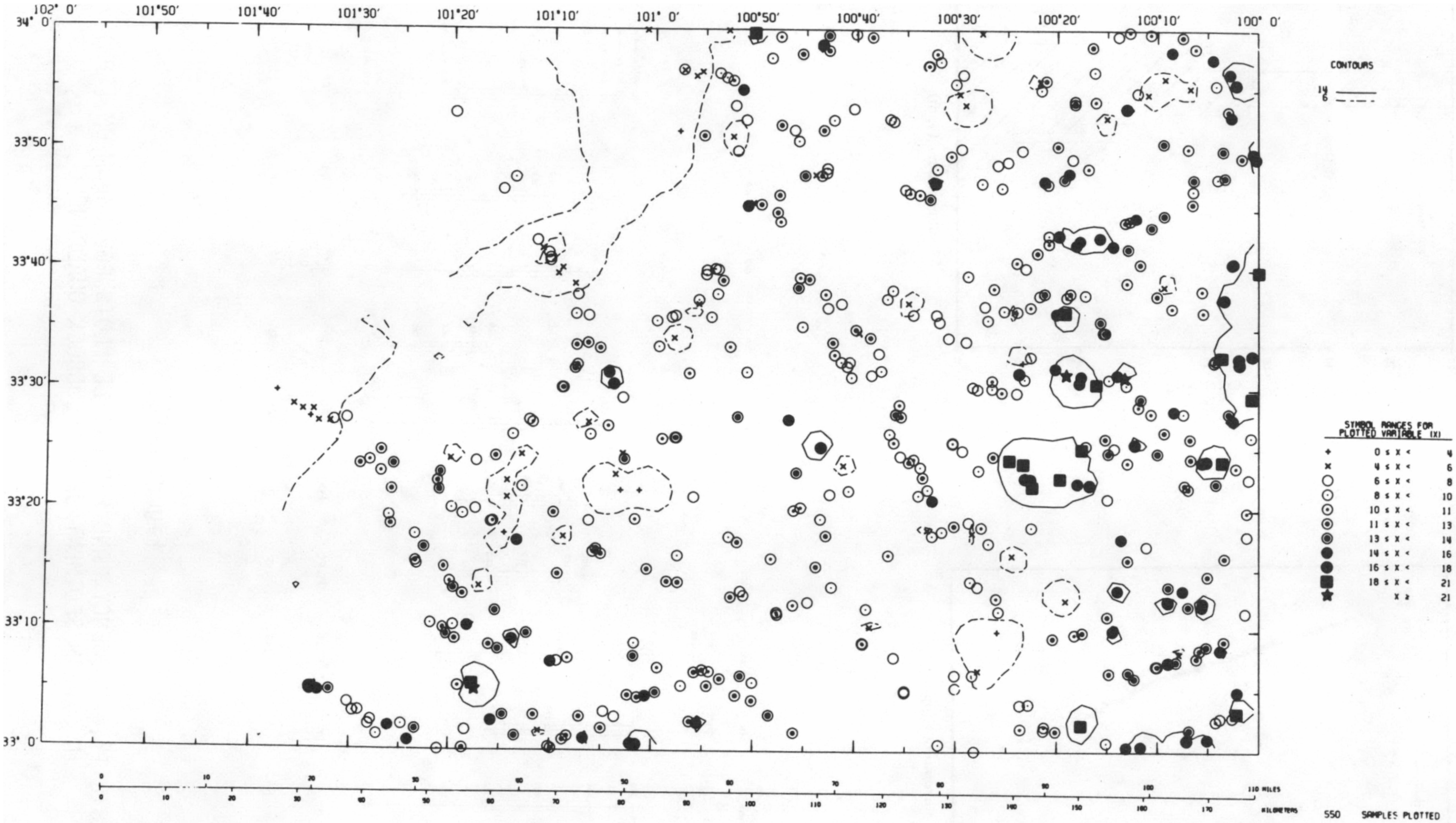


Figure B-7b

GEOCHEMICAL DISTRIBUTION OF COBALT (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

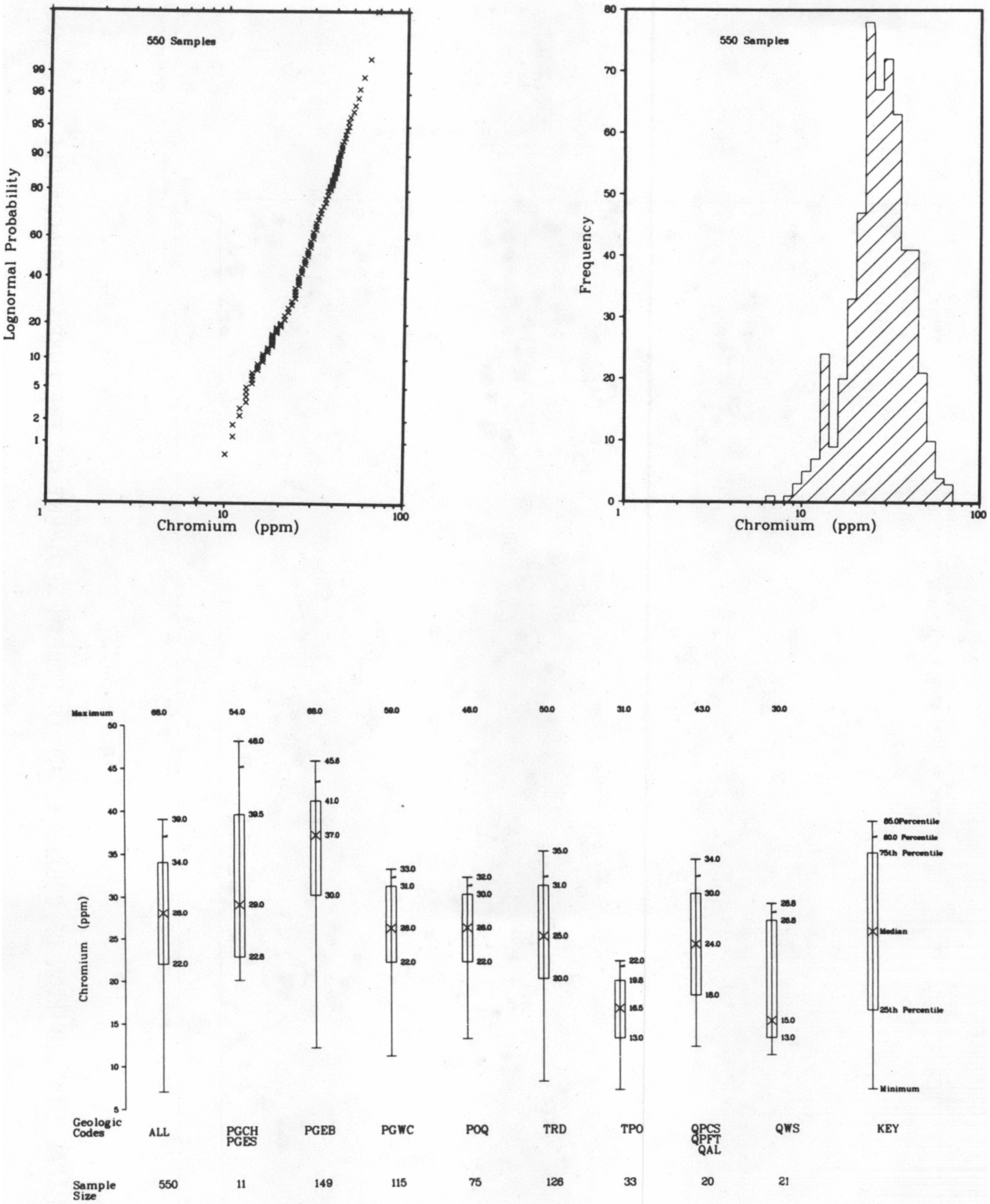


Figure B-8a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR CHROMIUM (PPM)
IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

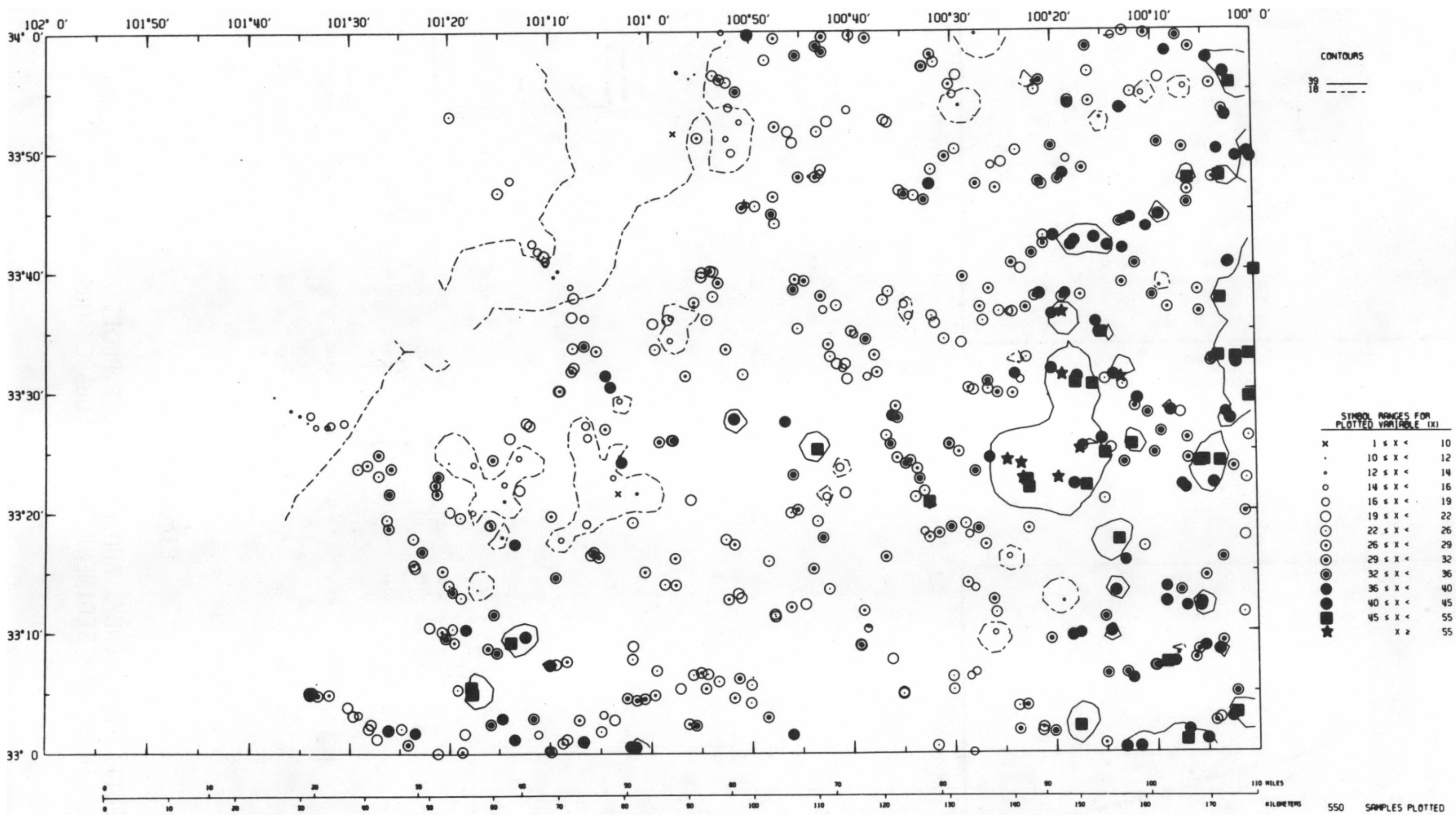


Figure B-8b

GEOCHEMICAL DISTRIBUTION OF CHROMIUM (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

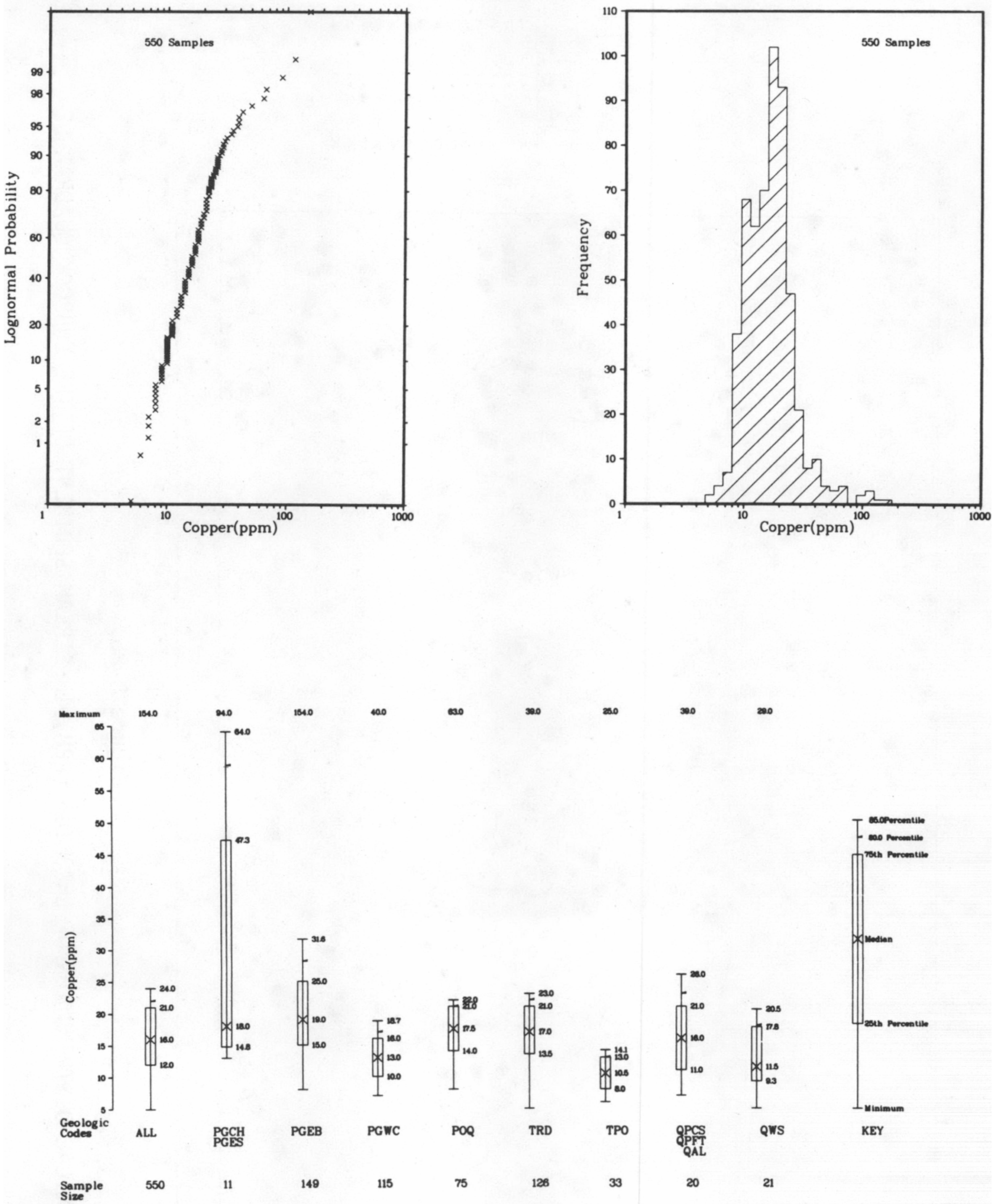


Figure B-9a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR COPPER (PPM)
IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

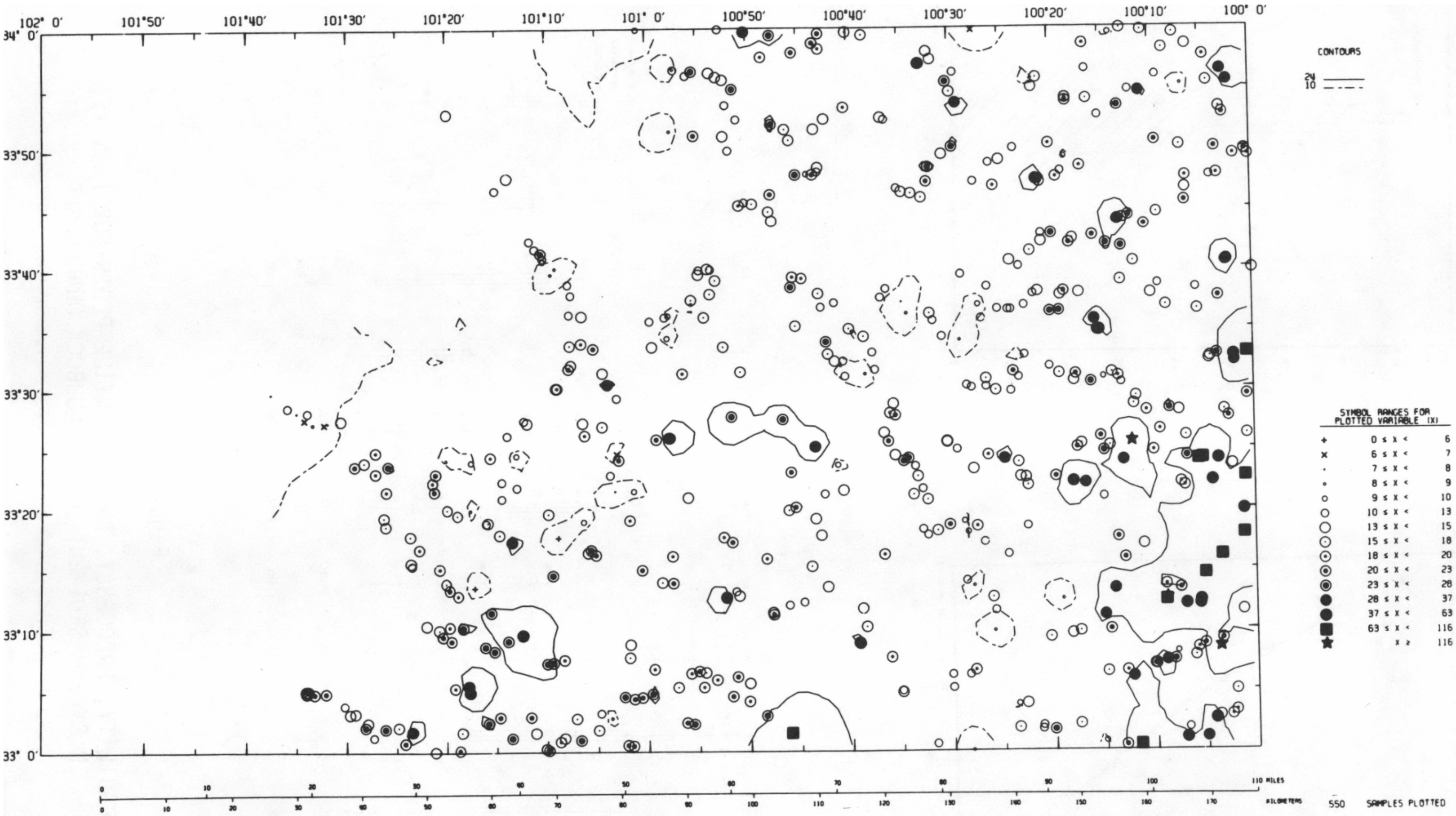


Figure B-9b

GEOCHEMICAL DISTRIBUTION OF COPPER (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

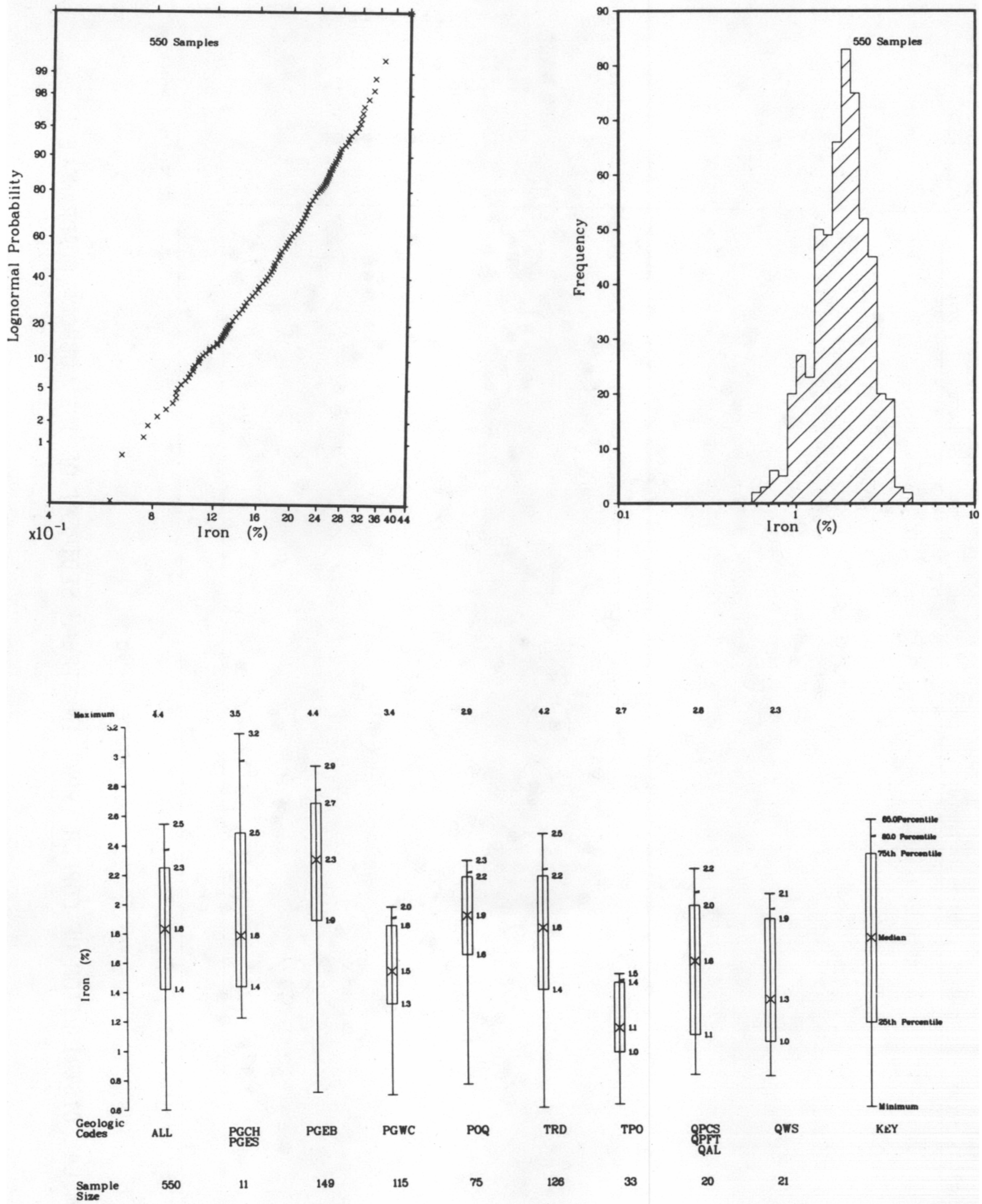


Figure B-10a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR IRON (%)
IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

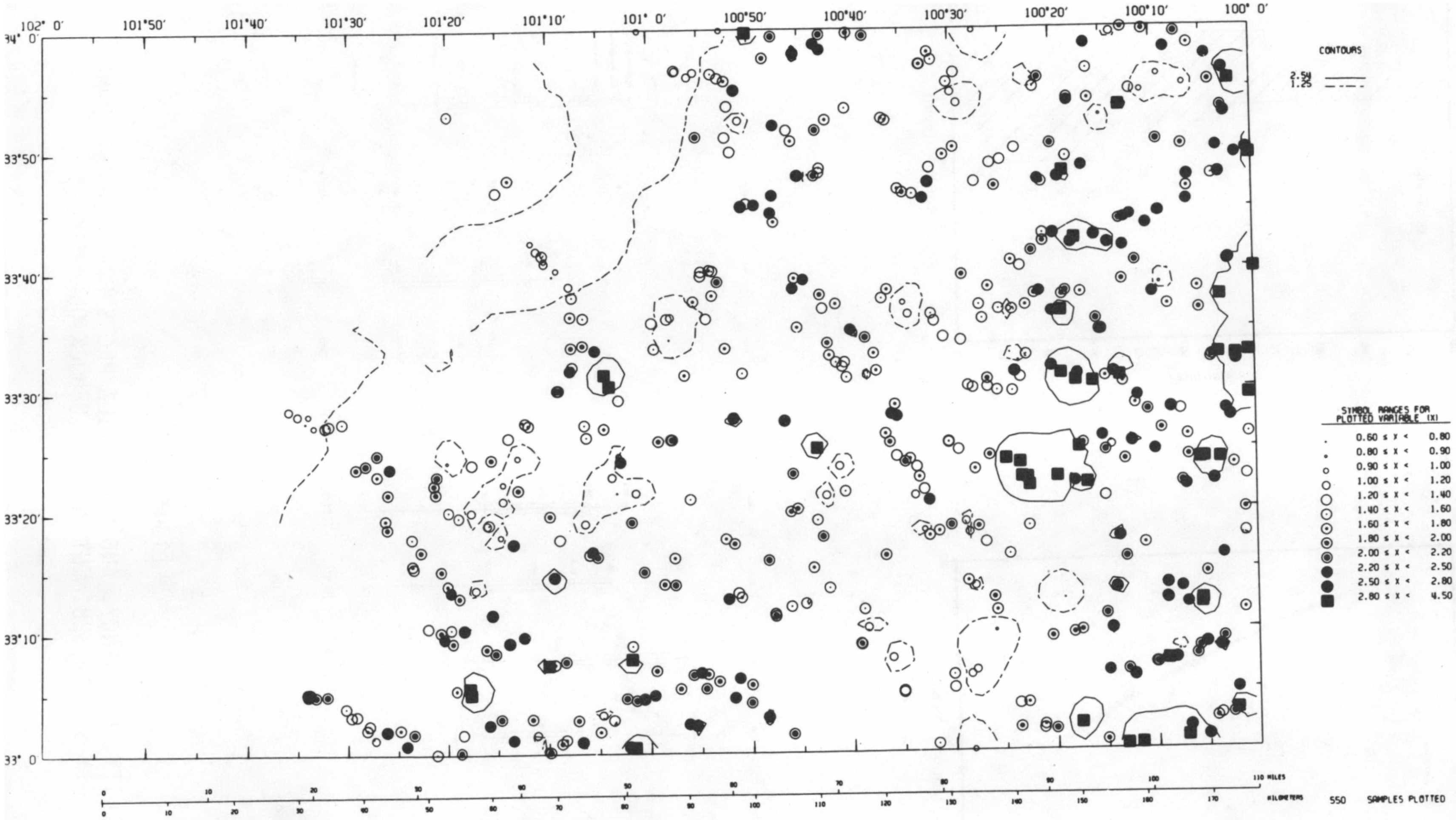


Figure B-10b

GEOCHEMICAL DISTRIBUTION OF IRON (%) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

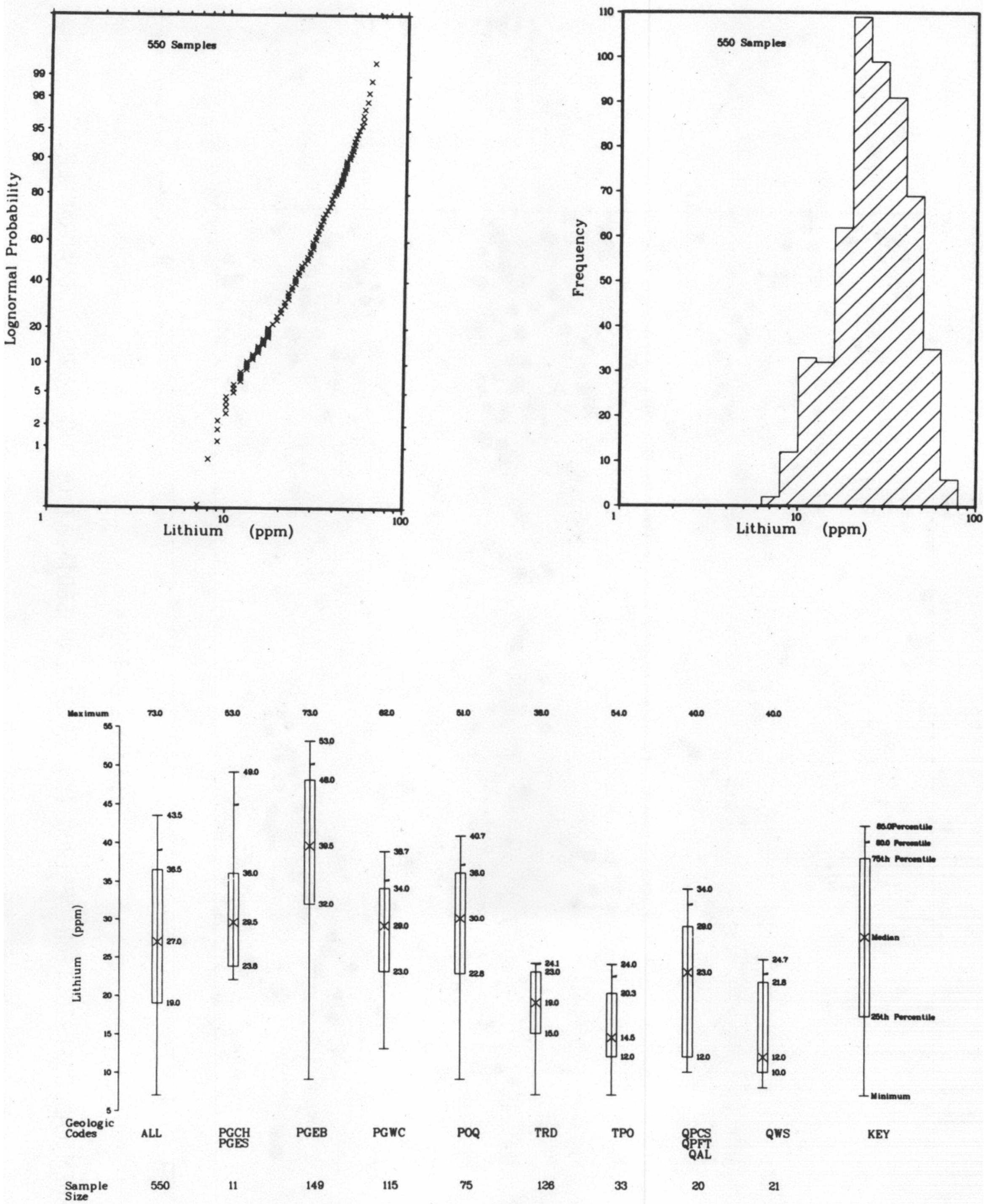


Figure B-11a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR LITHIUM (PPM)
IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

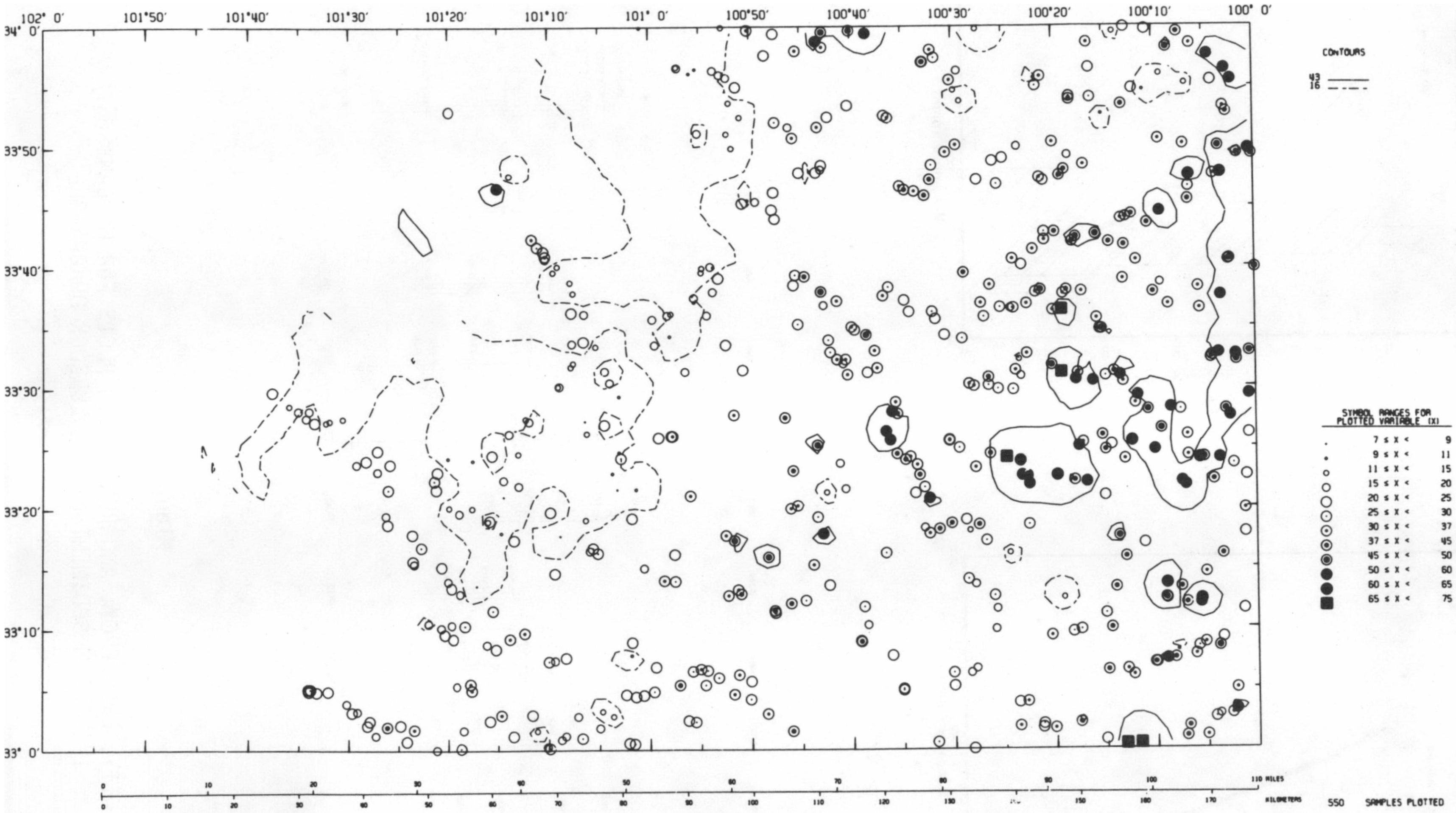


Figure B-11b

GEOCHEMICAL DISTRIBUTION OF LITHIUM (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

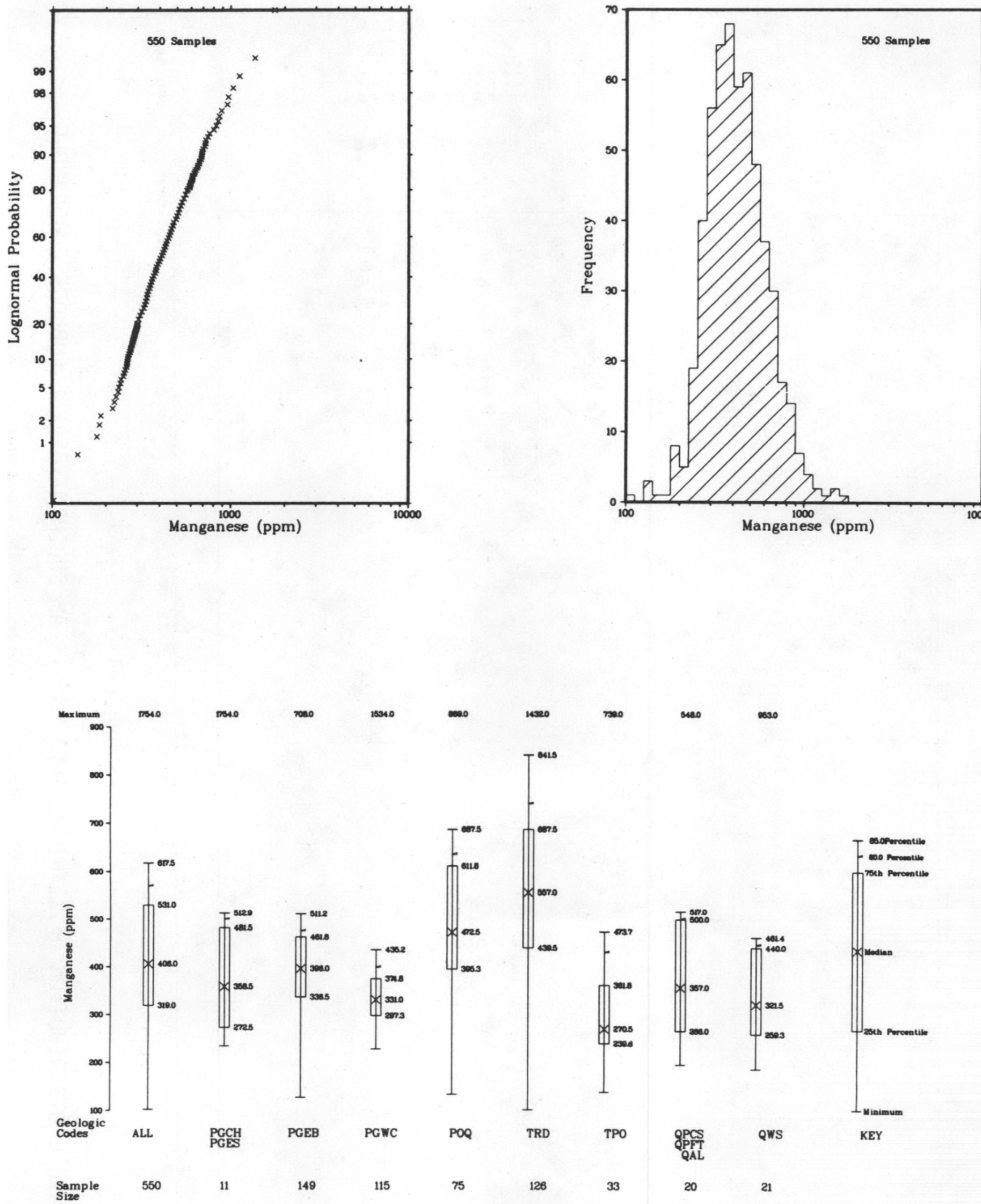


Figure B-12a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR MANGANESE (PPM)
IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

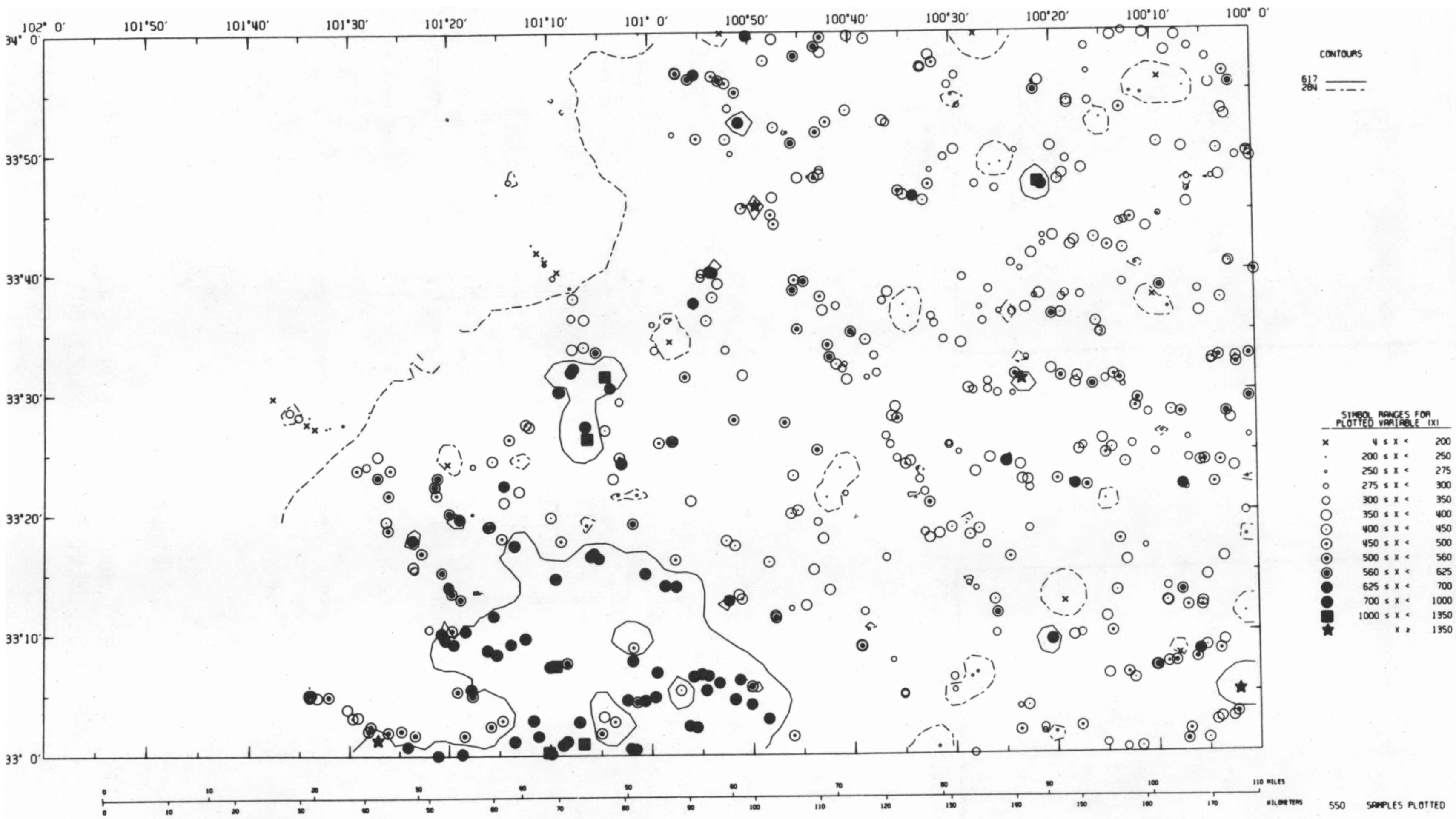


Figure B-12b

GEOCHEMICAL DISTRIBUTION OF MANGANESE (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

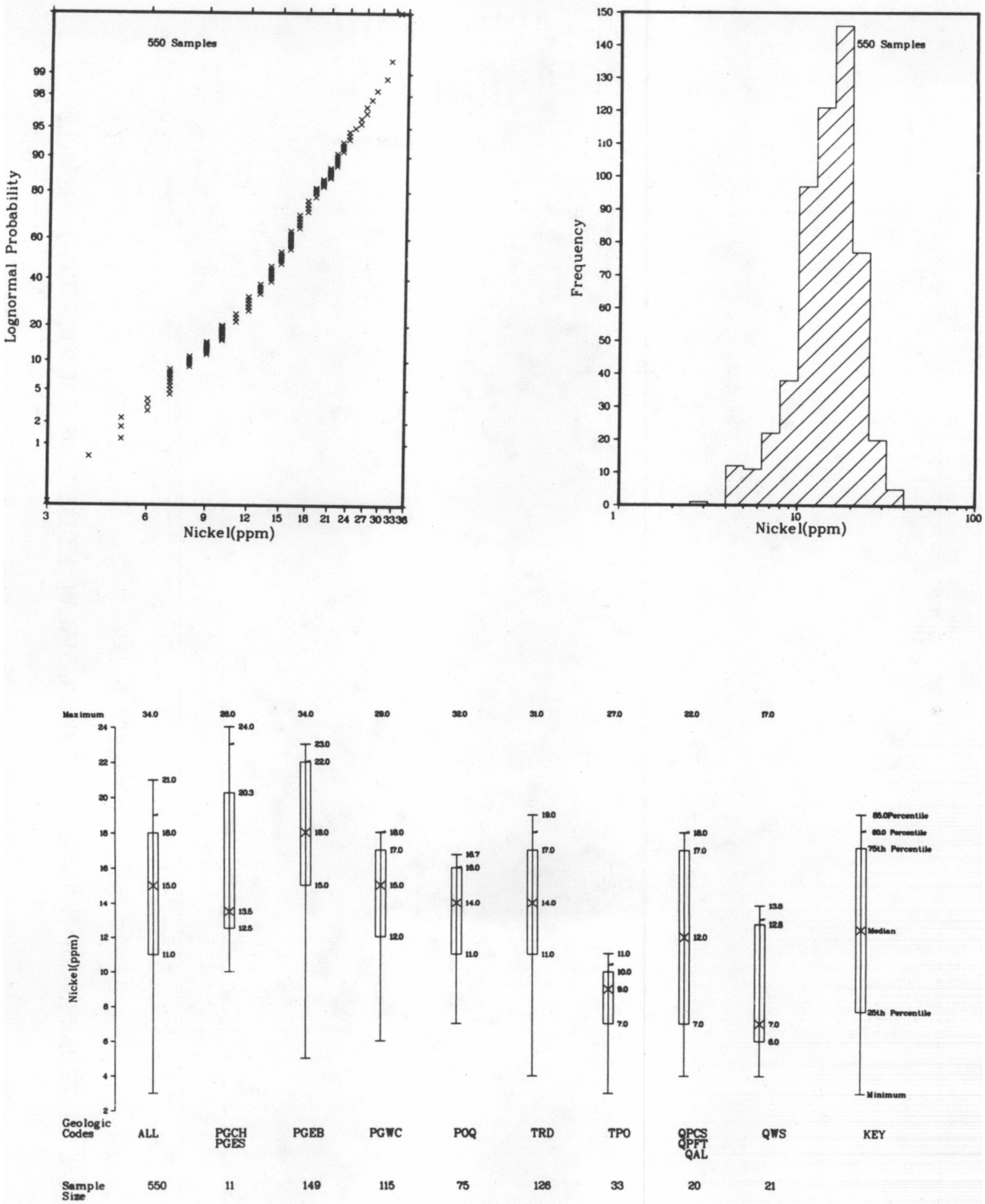


Figure B-13a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR NICKEL (PPM)
IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

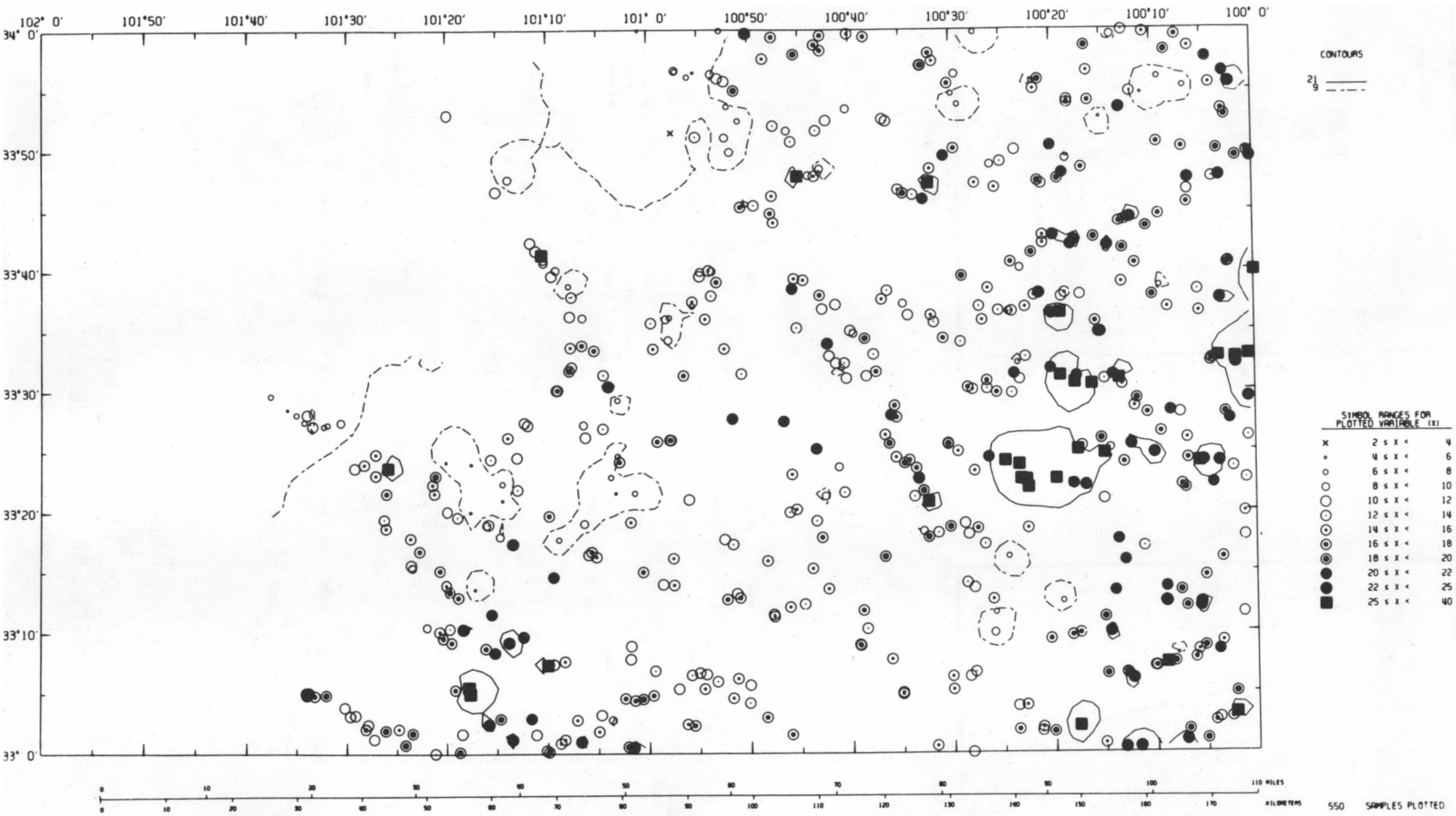


Figure B-13b

GEOCHEMICAL DISTRIBUTION OF NICKEL (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

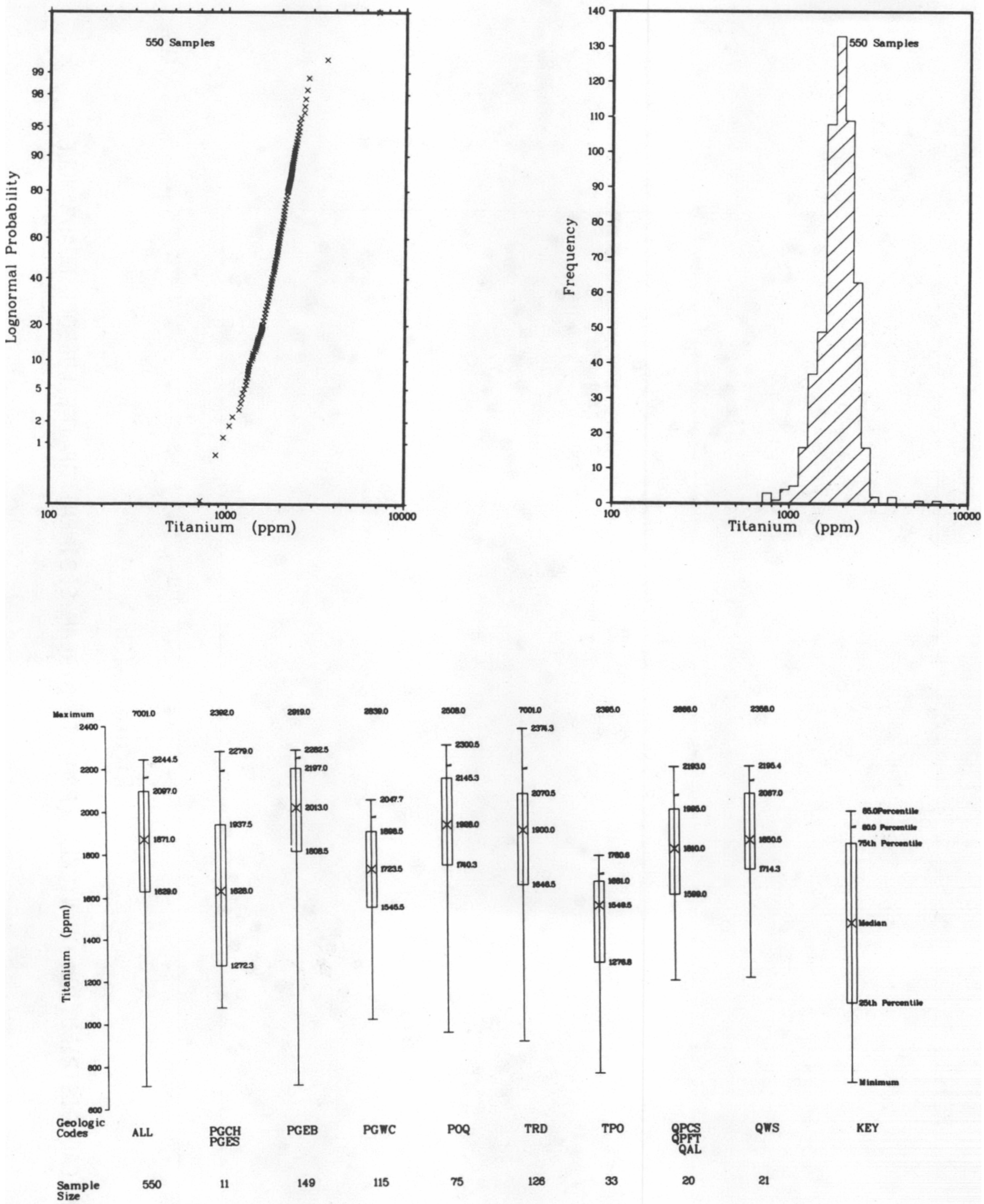


Figure B-14a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR TITANIUM (PPM)
IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

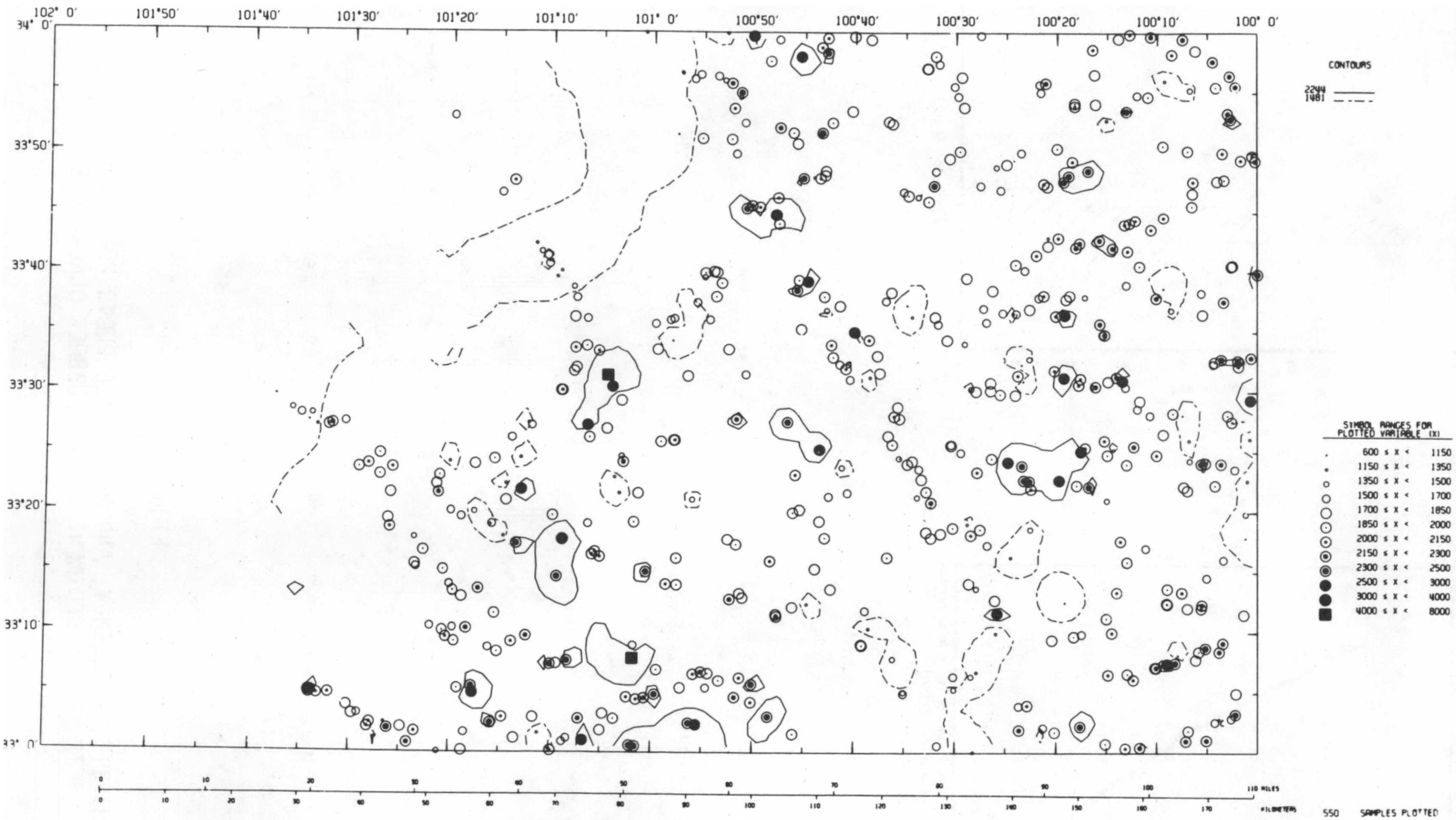
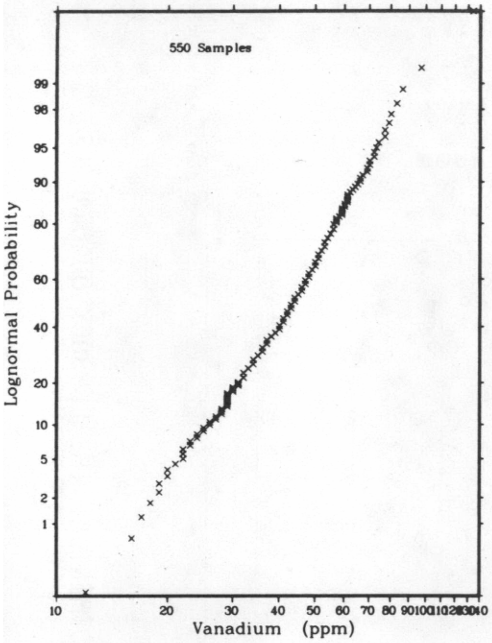
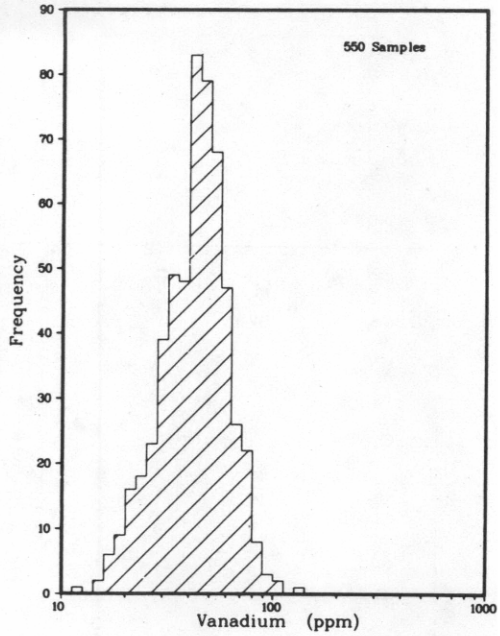


Figure B-14b

GEOCHEMICAL DISTRIBUTION OF TITANIUM (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE





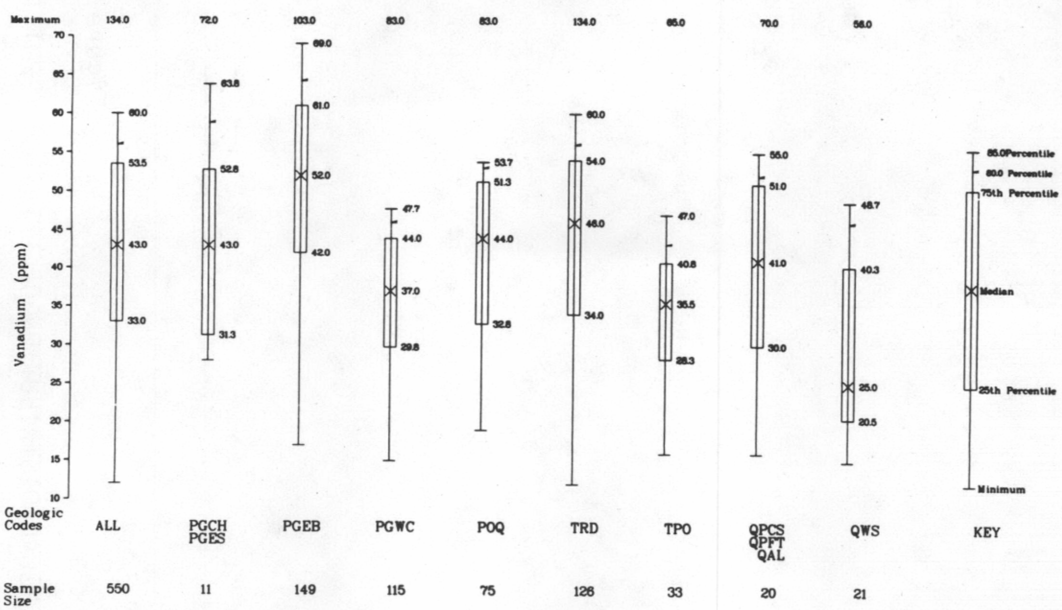


Figure B-15a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR VANADIUM (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

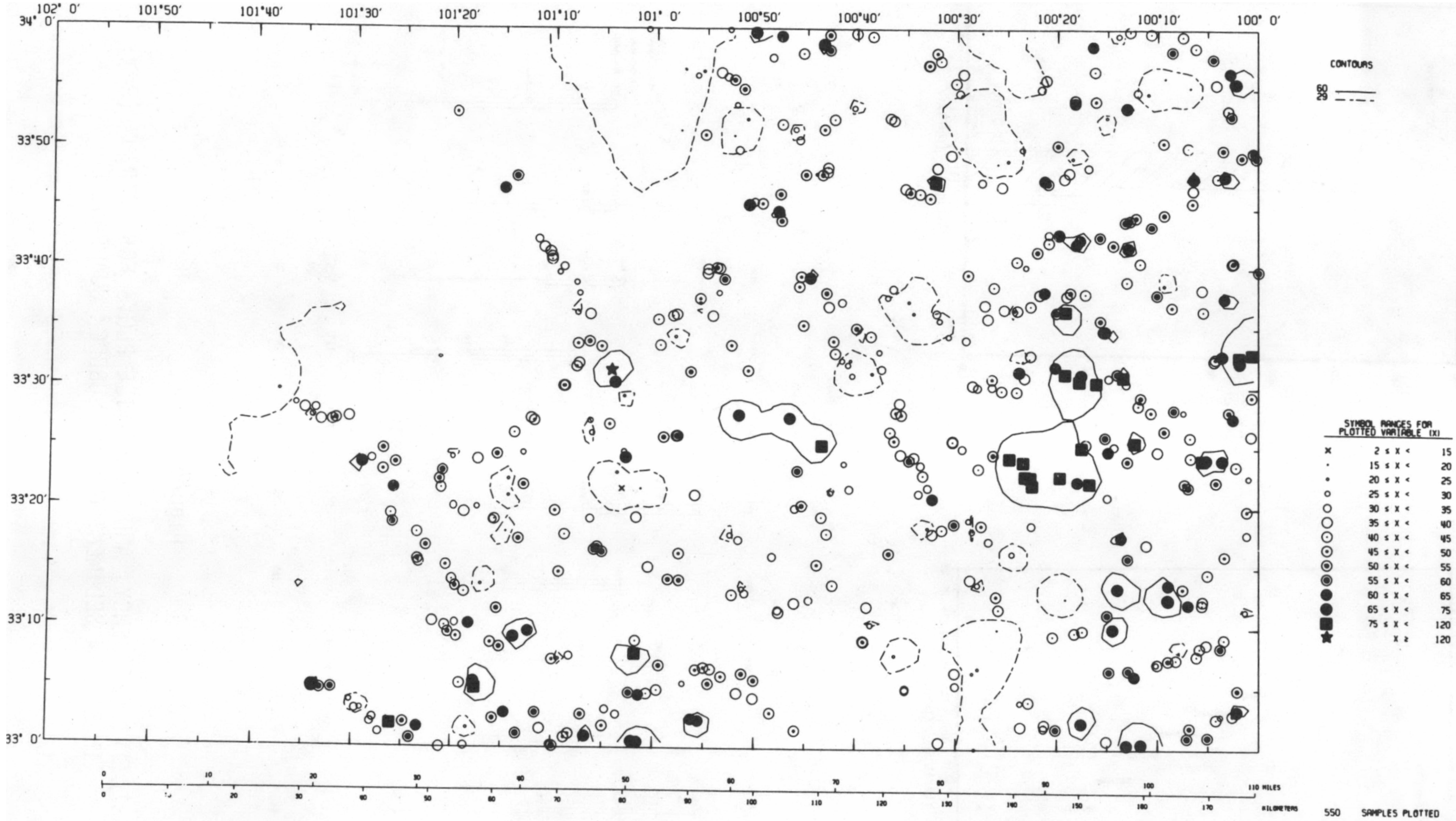
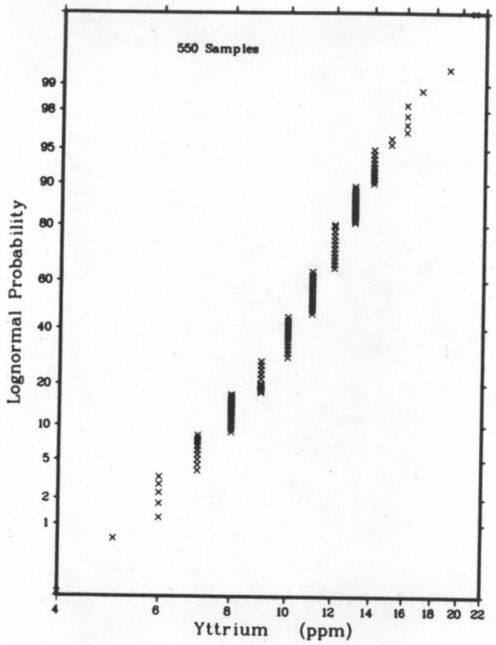
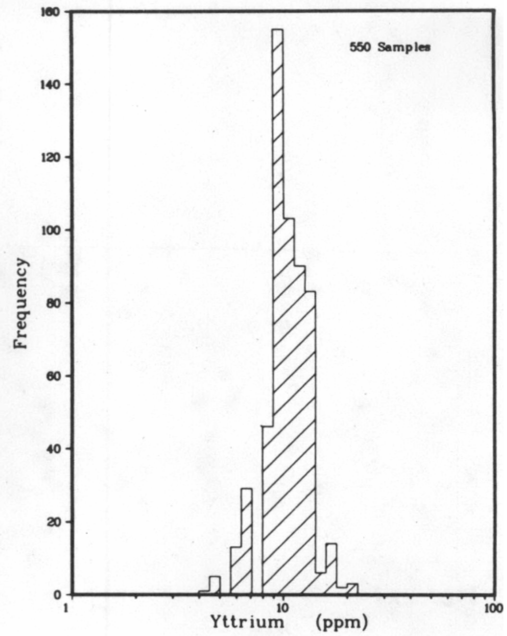


Figure B-15b

GEOCHEMICAL DISTRIBUTION OF VANADIUM (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE





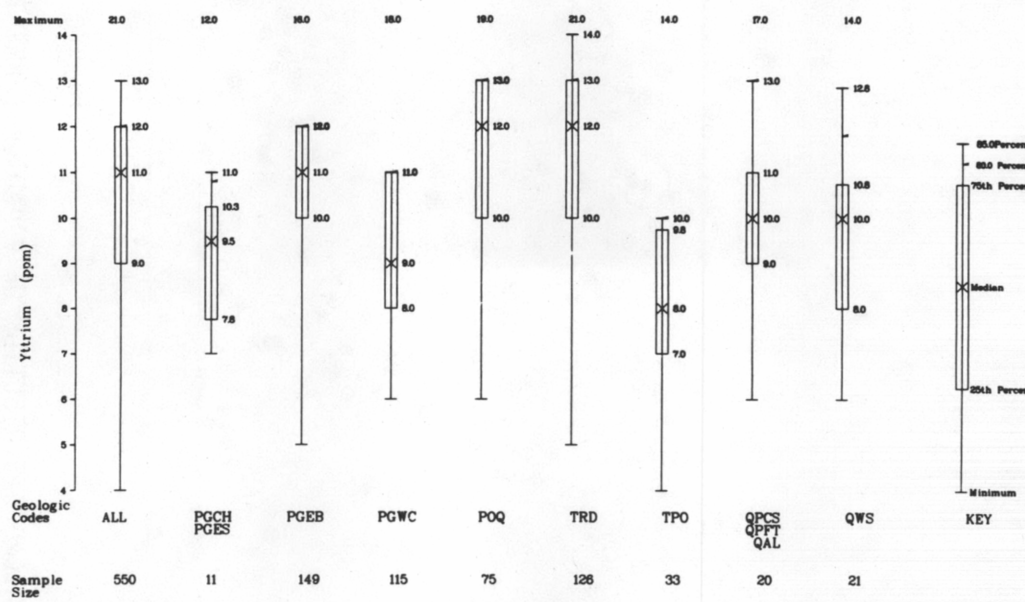


Figure B-16a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR YTTRIUM (PPM)
IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

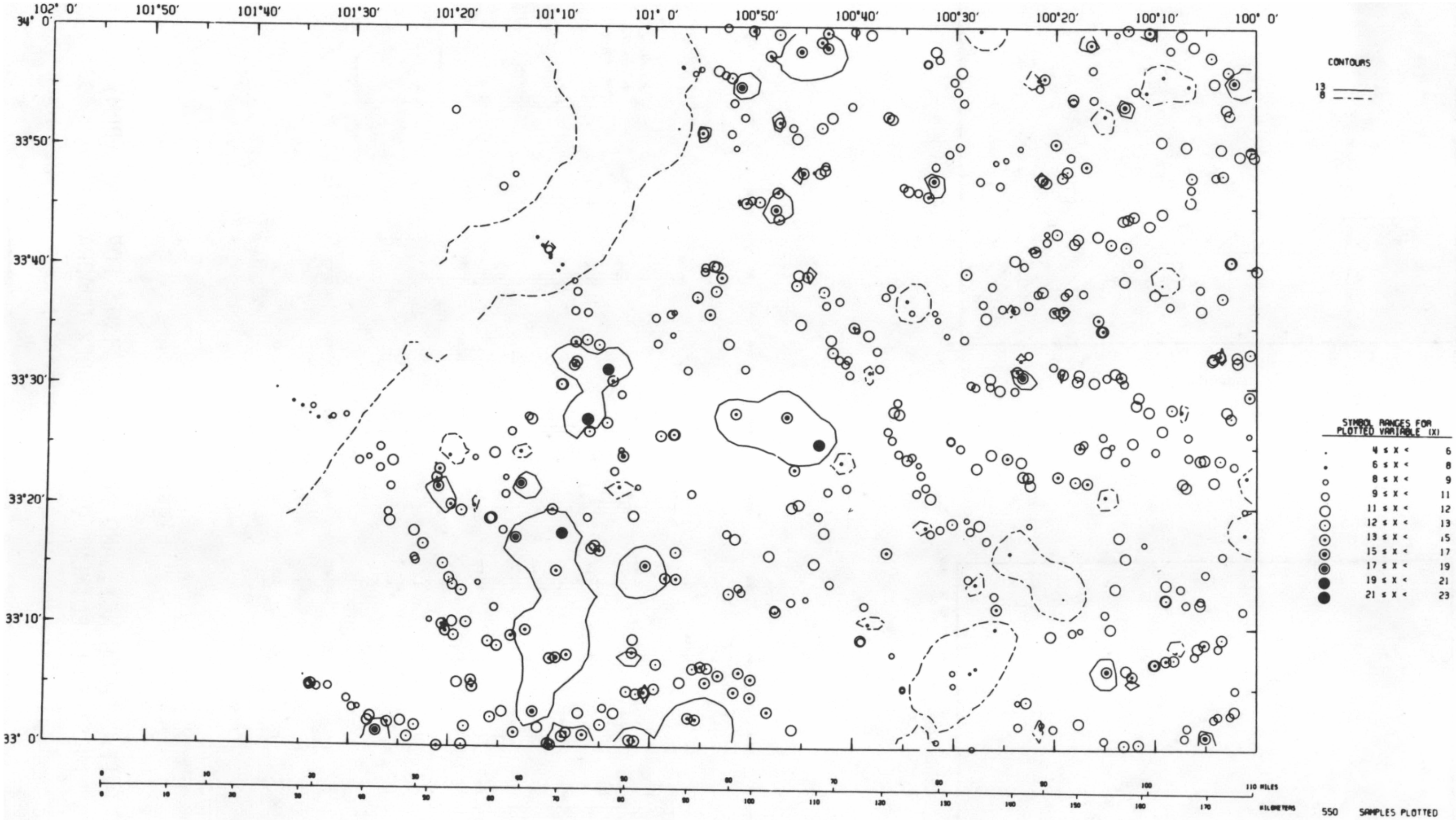


Figure B-16b

GEOCHEMICAL DISTRIBUTION OF YTTRIUM (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

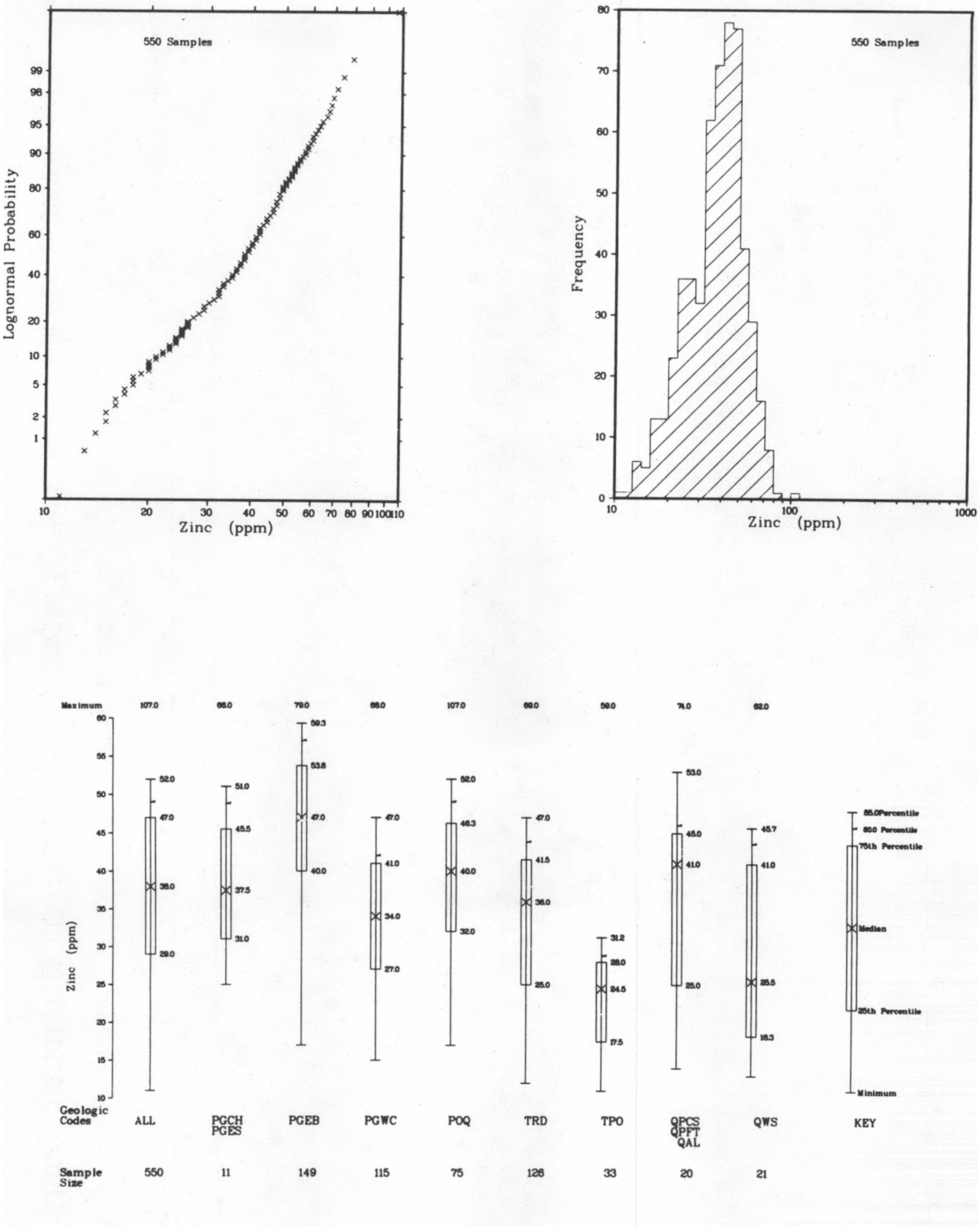


Figure B-17a

PROBABILITY, FREQUENCY, AND PERCENTILE PLOTS FOR ZINC (PPM)
IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

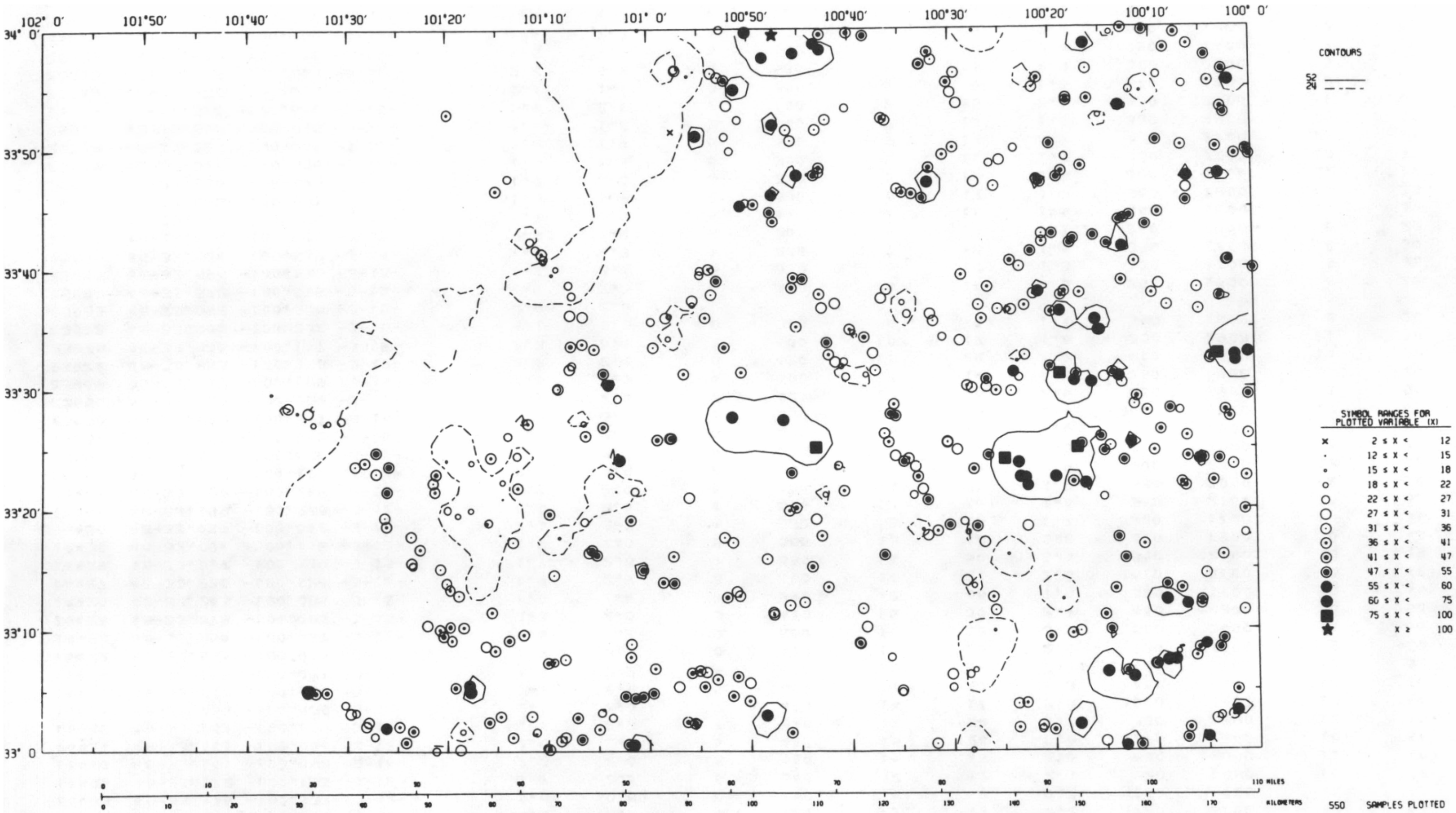


Figure B-17b

GEOCHEMICAL DISTRIBUTION OF ZINC (PPM) IN STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

Table B-3

PARTIAL DATA LISTING FOR STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

LUBBOCK QUADRANGLE - SEDIMENT

SECTION 1 OF 1

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPM)	U-NT (PPM)	TH (PPM)	BA (PPM)	CO (PPM)	CU (PPM)	FE (%)	MN (PPM)	TI (PPM)	Y (PPM)	ZN (PPM)
14327	48-33.337	-100.758	-3-15-	1.3	1.9	5	530	10	20	1.9	430	1800	11	43
14403	48-33.110	-100.907	-3-15-	2.0	2.1	7	740	10	17	1.8	680	1900	12	35
14404	48-33.100	-100.889	-3-15-	1.6	2.2	11	600	11	19	2.0	640	1900	13	40
14405	48-33.112	-100.918	-3-15-	1.6	2.5	3	800	12	21	2.2	870	2200	13	42
14406	48-33.109	-100.931	-3-15-	1.6	2.8	5	720	11	19	2.2	720	2100	12	41
14408	48-33.136	-100.132	-3-12-	0.64	0.80	6	140	4	9	0.71	130	760	5	18
14409	48-33.130	-100.103	-3-12-	1.7	2.5	6	560	12	17	2.1	520	1800	10	37
14410	48-33.141	-100.098	-3-15-	2.3	2.6	5	410	11	18	2.0	630	2000	11	46
14411	48-33.141	-100.064	-3-12-	2.6	2.6	5	480	15	120	2.8	470	2200	10	51
14415	48-33.153	-100.058	-3-15-	1.5	2.3	7	440	11	20	2.1	380	2200	12	47
14416	48-33.083	-100.036	-3-12-	2.1	3.0	7	480	14	17	2.3	1800	1800	10	44
14418	48-33.047	-100.064	-3-15-	1.3	2.1	5	460	7	13	1.3	450	1300	10	26
14419	48-33.043	-100.071	-3-12-	1.2	2.2	4	490	10	49	2.0	420	1700	10	32
14422	48-33.048	-100.044	-3-15-	1.9	3.1	6	470	10	18	2.1	420	1600	9	39
14423	48-33.054	-100.037	-3-12-	2.6	3.2	9	560	19	18	3.5	510	2400	11	66
14424	48-33.018	-100.085	-3-15-	2.3	2.5	13	470	15	30	2.7	450	2200	15	56
14426	48-33.243	-100.085	-3-12-	1.9	2.4	9	390	12	66	1.9	380	1700	10	34
14427	48-33.223	-100.126	-3-12-	1.9	2.9	8	490	14	21	2.3	610	2100	10	42
14429	48-33.017	-100.119	-3-15-	1.7	2.5	7	580	16	50	3.3	510	2200	10	49
14430	48-33.031	-100.115	-3-12-	1.9	2.0	5	560	13	10	2.8	470	1900	9	43
14436	48-33.439	-100.612	-3-12-	2.1	2.2	4	330	8	13	1.7	300	1700	10	34
14441	48-33.109	-100.248	-3-12-	2.0	2.4	7	390	12	16	2.4	360	2100	15	63
14446	48-33.007	-100.219	-3-15-	1.8	2.9	6	440	14	22	2.9	330	2000	12	58
14447	48-33.008	-100.195	-3-12-	2.1	2.9	8	470	15	72	2.9	400	2300	12	52
23863	48-33.873	-100.606	-3-15-	1.3	2.1	6	380	8	11	1.6	310	1800	11	36
23864	48-33.876	-100.612	-3-15-	1.3	2.3	6	390	8	13	1.6	360	1900	13	41
23870	48-33.828	-100.721	-3-15-	2.8	3.1	8	390	14	18	2.4	2000	1800	13	63
23956	48-33.228	-100.150	-3-12-	2.2	2.5	7	420	13	18	2.6	350	1900	11	51
23969	48-33.777	-100.109	-3-15-	1.6	2.3	4	400	8	14	1.6	280	1800	9	30
23972	48-33.843	-100.158	-3-15-	2.2	2.4	10	420	13	20	2.2	410	1900	11	52
23975	48-33.836	-100.117	-3-15-	2.3	2.4	7	400	10	17	1.8	350	1900	11	38
23982	48-33.992	-100.232	-3-15-	1.1	3.5	8	320	6	9	1.1	360	1800	8	20
23983	48-33.992	-100.236	-3-15-	0.90	2.0									
25501	48-33.572	-100.515	-3-15-	1.9	2.3	6	330	6	11	1.3	300	1700	8	25
25507	48-33.594	-100.530	-3-15-	1.7	2.1	6	330	6	10	1.3	330	1700	8	35
25508	48-33.604	-100.535	-3-15-	1.8	2.3	4	370	7	15	1.4	330	1700	8	30
25510	48-33.604	-100.573	-3-15-	0.99	1.4	5	360	6	8	1.1	240	1300	8	22
25514	48-33.619	-100.692	-3-15-	1.7	1.9	6	410	7	11	1.6	340	1800	9	30
25515	48-33.638	-100.607	-3-15-	1.6	1.9	6	390	8	12	1.6	360	1800	10	33
25517	48-33.626	-100.616	-3-12-	1.9	2.0	5	350	8	10	1.5	300	1600	10	27
25518	48-33.526	-100.626	-3-15-	1.5	1.6	6	350	9	11	1.7	330	1700	10	32
25519	48-33.527	-100.628	-3-15-	1.5	1.9	5	420	9	13	1.7	420	1700	11	31
25520	48-33.550	-100.630	-3-15-	1.6	1.8	2	340	7	10	1.6	330	1800	10	29
25522	48-33.572	-100.644	-3-15-	1.9	2.1	7	400	12	15	2.1	430	2100	11	41
25524	48-33.579	-100.663	-3-15-	1.1	1.1	3	300	5	8	1.0	270	1200	8	18
25525	48-33.583	-100.668	-3-15-	2.2	3.8	5	580	11	16	2.3	590	2600	13	39
25528	48-33.538	-100.678	-3-15-	1.5	1.5	6	340	8	10	1.4	280	1400	9	25
25529	48-33.548	-100.703	-3-15-	1.4	2.0	6	600	10	16	1.8	610	1900	12	40
25530	48-33.565	-100.706	-3-15-	1.4	2.2	8	520	11	25	2.0	510	2100	11	53
25531	48-33.538	-100.692	-3-15-	1.3	1.6	2	370	9	13	1.5	420	1500	10	27
25532	48-33.532	-100.682	-3-15-	1.7		<2	380	7	8	1.4	320	2100	10	20
25533	48-33.517	-100.675	-3-15-	1.3	1.6	2	400	8	10	1.5	370	1600	9	24
25534	48-33.522	-100.632	-3-15-	2.0	2.4	5	590	10	16	2.0	630	2100	13	37
25535	48-33.520	-100.642	-3-12-	1.1	1.4	7	340	7	8	1.2	280	1200	7	20
25538	48-33.620	-100.581	-3-15-	0.91	1.3	5	370	5	7	0.93	230	1100	6	20

Table B-3, Continued

PARTIAL DATA LISTING FOR STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

LUBBOCK QUADRANGLE - SEDIMENT SECTION 1 OF 1

OR SAMPLE NUMBER	D. O. E. ST LAT	SAMPLE LONG	NUMBER L TY REP	U (PPM)	U-NT (PPM)	TH (PPM)	BA (PPM)	CO (PPM)	CU (PPM)	FE (%)	MN (PPM)	TI (PPM)	Y (PPM)	ZN (PPM)
25539	48-33.613	-100.714	-3-12-	1.5	2.1	6	540	6	11	1.2	350	1400	9	27
25540	48-33.632	-100.718	-3-15-	1.6	2.2	7	460	10	16	2.0	450	2000	12	40
25542	48-33.653	-100.745	-3-15-	2.0	3.7	6	710	12	18	2.4	600	2500	14	49
25545	48-33.587	-100.756	-3-12-	1.9	2.5	6	790	8	15	1.7	560	1700	11	37
25547	48-33.894	-100.868	-3-15-	1.8	2.8	3	420	6	12	1.4	340	2000	10	29
25562	48-33.604	-101.129	-3-15-	2.1	2.2	4	490	8	12	1.6	350	1700	10	28
25566	48-33.944	-100.954	-3-12-	2.2	2.2	7	560	6	8	1.3	360	1300	7	25
25567	48-33.943	-100.953	-3-15-	1.6	2.2	4	500	5	10	1.1	510	1300	7	28
25570	48-33.888	-100.050	-3-15-	2.0	2.8	7	420	11	16	2.1	350	2200	11	44
25571	48-33.924	-100.070	-3-15-	1.9	2.8	6	420	9	15	1.8	350	1900	11	36
25574	48-33.933	-100.155	-3-15-	1.2	2.1	<2	370	5	10	0.96	200	1200	6	25
25575	48-33.911	-100.183	-3-15-	1.6	2.3	4	340	4	28	0.96	270	1900	7	16
25576	48-33.891	-100.219	-3-15-	2.8	2.4	9	470	16	25	3.0	500	2300	16	61
25577	48-33.913	-100.201	-3-15-	1.7	1.7	8	390	7	10	1.4	270	1700	9	26
25579	48-33.880	-100.045	-3-15-	1.8	2.5	7	460	14	20	2.5	380	2300	12	50
25581	48-33.829	-100.009	-3-12-	2.1	2.7	6	480	15	21	2.6	490	2100	12	48
25582	48-33.823	-100.028	-3-15-	1.6	2.6	6	450	12	18	2.2	330	2100	11	41
25585	48-33.833	-100.059	-3-15-	2.1	2.7	5	460	13	20	2.3	420	2000	11	46
25586	48-33.822	-100.004	-3-15-	1.7	2.5	7	480	15	19	2.9	460	2300	11	47
25589	48-33.940	-100.047	-3-15-	2.2	2.5	8	520	15	35	2.7	470	2200	12	48
25590	48-33.925	-100.037	-3-15-	2.1	2.3	10	430	17	28	3.2	570	2200	16	62
25592	48-33.726	-100.178	-3-15-	2.3	2.4	7	430	13	21	2.4	360	2100	11	49
25593	48-33.743	-100.157	-3-15-	1.9	2.4	6	430	13	17	2.5	280	2100	11	45
25597	48-33.759	-100.110	-3-15-	1.7	2.3	5	440	12	22	2.2	380	1900	11	50
25598	48-33.793	-100.108	-3-15-	2.2	2.6	7	490	13	19	2.5	280	2100	12	60
25600	48-33.796	-100.056	-3-12-	2.4	2.5	8	480	13	19	2.5	370	2000	12	61
25601	48-33.794	-100.068	-3-15-	1.8	2.3	7	400	8	12	1.5	280	1800	10	34
25602	48-33.515	-100.300	-3-12-	2.8	2.9	9	550	18	17	3.4	410	2500	13	68
25603	48-33.634	-100.356	-3-15-	1.6	2.0	6	440	13	14	2.5	380	2100	12	68
25604	48-33.631	-100.364	-3-15-	1.5	1.7	4	430	9	10	1.8	280	1700	9	38
25605	48-33.616	-100.455	-3-15-	1.1	1.7	4	350	7	9	1.5	290	1600	10	33
25606	48-33.658	-100.483	-3-15-	1.4	1.9	8	360	9	11	1.8	330	1700	12	38
25608	48-33.580	-100.258	-3-12-	1.7	2.2	8	410	10	15	1.9	340	1700	11	46
25609	48-33.580	-100.255	-3-12-	2.3	2.4	10	520	13	37	2.7	430	2200	13	55
25610	48-33.510	-100.298	-3-15-	2.1	2.2	9	580	15	14	3.0	390	2100	12	58
25611	48-33.519	-100.295	-3-12-	1.8	2.2	8	540	14	22	2.5	440	2100	11	49
25613	48-33.607	-100.321	-3-12-	2.3	3.5	8	570	20	25	3.7	410	2700	14	74
25614	48-33.612	-100.330	-3-12-	2.5	2.5	5	320	11	12	2.2	290	1600	11	42
25615	48-33.606	-100.336	-3-15-	2.4	2.2	8	620	14	23	2.3	610	2000	13	43
25617	48-33.546	-100.379	-3-12-	1.2	1.4	4	360	7	11	1.4	280	1500	9	33
25618	48-33.538	-100.392	-3-12-	0.99	1.3	2	340	<4	7	0.69	230	1000	7	16
25619	48-33.523	-100.398	-3-12-	0.95	1.4	5	410	16	22	2.7	560	2100	14	55
25620	48-33.515	-100.389	-3-15-	1.2	1.9	5	1200	8	12	1.3	1500	1000	18	25
25621	48-33.615	-100.379	-3-12-	1.5	1.5	6	450	10	12	1.7	370	1700	9	38
25623	48-33.609	-100.401	-3-15-	1.4	1.4	3	370	9	12	1.5	300	1700	10	33
25624	48-33.609	-100.406	-3-15-	1.0	1.4	4	350	4	10	0.91	240	1300	7	20
25626	48-33.610	-100.423	-3-15-	1.4	2.3	8	380	8	11	1.4	290	1600	9	33
25629	48-33.513	-100.443	-3-15-	1.6	1.6	4	370	10	15	1.9	300	1800	11	48
25630	48-33.504	-100.475	-3-12-	1.6	1.6	6	340	8	10	1.4	440	1400	10	38
25632	48-33.597	-100.450	-3-15-	1.3	2.1	3	370	9	10	1.6	340	1600	11	38
25633	48-33.567	-100.486	-3-12-	2.0	1.9	7	320	7	8	1.2	350	1500	10	29
25634	48-33.501	-100.467	-3-12-	1.7	2.3	4	340	8	11	1.4	330	1800	9	31
25635	48-33.502	-100.443	-3-12-	1.7	2.7	4	320	8	10	1.4	310	1800	10	30
25640	48-33.520	-100.322	-3-12-	2.2	2.2	8	740	26	15	4.4	530	2900	14	78
25641	48-33.530	-100.338	-3-15-	1.4	1.9	6	990	14	11	2.6	390	2100	10	49

Table B-3, Continued

PARTIAL DATA LISTING FOR STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

LUBBOCK QUADRANGLE - SEDIMENT SECTION 1 OF 1

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPM)	U-NT (PPM)	TH (PPM)	BA (PPM)	CO (PPM)	CU (PPM)	FE (%)	MN (PPM)	TI (PPM)	Y (PPM)	ZN (PPM)
25642	48-33.508	-100.270	-3-12-	2.1	3.4	5	500	18	24	3.2	590	2300	11	60
25647	48-33.595	-100.263	-3-15-	1.5	1.7	8	430	13	28	2.2	430	2300	13	60
25648	48-33.641	-100.440	-3-15-	1.4	1.6	3	380	10	12	1.7	340	1800	10	39
25650	48-33.669	-100.387	-3-15-	1.1	1.7	3	380	7	10	1.2	300	1500	9	33
25651	48-33.677	-100.402	-3-15-	1.5	2.1	6	380	10	13	1.8	340	1900	11	42
25652	48-33.632	-100.288	-3-15-	1.6	2.2	5	610	9	14	1.7	330	1500	10	36
25653	48-33.634	-100.313	-3-12-	1.8	1.8	4	490	12	20	2.0	340	1900	10	44
25655	48-33.629	-100.319	-3-15-	0.89	1.6	3	480	10	14	1.8	300	1700	9	41
25656	48-33.703	-100.349	-3-15-	0.98	1.5	5	420	10	14	1.8	280	1800	10	39
25657	48-33.714	-100.349	-3-15-	1.1	1.9	3	400	9	11	1.5	280	1300	8	33
25658	48-33.714	-100.332	-3-15-	1.8	2.2	6	600	16	23	2.7	370	2100	12	52
25659	48-33.701	-100.303	-3-15-	1.9	2.4	8	610	14	20	2.6	390	2300	12	50
25660	48-33.707	-100.297	-3-15-	1.8	2.5	5	930	15	16	2.9	380	2200	11	51
25661	48-33.711	-100.264	-3-15-	1.7	2.2	6	660	15	21	2.6	410	2300	11	47
25662	48-33.700	-100.266	-3-15-	1.5	1.8	7	490	11	17	2.0	360	1900	10	44
25663	48-33.690	-100.368	-3-15-	1.4	2.1	5	430	12	16	2.1	360	2100	14	52
25677	48-33.459	-101.571	-3-15-	0.90	2.2	3	320	<4	6	0.62	140	870	4	14
25678	48-33.469	-101.584	-3-15-	1.5	1.8	2	510	5	7	1.0	330	1600	7	17
25679	48-33.469	-101.566	-3-15-	1.7	3.5	5	280	5	10	0.90	240	1400	8	28
25681	48-33.455	-101.532	-3-15-	2.5	3.0	5	420	6	7	1.5	250	2200	8	21
25682	48-33.453	-101.538	-3-15-	0.64	1.6	6	420	5	6	1.3	240	2100	7	17
25683	48-33.453	-101.557	-3-15-	1.2	2.1	5	430	5	8	0.93	180	1200	6	19
25699	48-33.548	-100.011	-3-12-	2.0	3.0	9	490	17	69	3.0	540	2200	12	63
25700	48-33.536	-100.032	-3-12-	2.4	2.5	7	550	16	35	2.8	560	2100	12	55
25701	48-33.544	-100.033	-3-12-	1.6	2.9	7	510	17	46	3.2	460	2300	12	68
25702	48-33.644	-100.157	-3-15-	2.3	3.3	2	160	4	10	0.84	570	710	5	27
25703	48-33.631	-100.169	-3-15-	1.5	2.0	11	400	12	13	2.2	180	2200	11	40
25704	48-33.614	-100.144	-3-12-	1.5	3.2	9	310	10	15	1.6	270	1400	10	34
25706	48-33.696	-100.217	-3-15-	1.9	3.1	8	440	13	23	2.4	420	2100	12	55
25708	48-33.733	-100.222	-3-15-	2.5	2.8	6	380	12	39	2.1	350	2100	11	53
25709	48-33.735	-100.214	-3-15-	2.1	2.2	2	390	12	19	2.3	340	2100	11	50
25712	48-33.700	-100.242	-3-15-	2.2	2.4	7	500	14	25	2.7	460	2300	12	52
25714	48-33.739	-100.204	-3-15-	2.5	2.5	5	450	14	25	2.4	460	2000	12	48
25718	48-33.675	-100.197	-3-15-	1.9	1.8	8	450	11	17	2.1	270	2000	10	40
25720	48-33.651	-100.194	-3-12-	1.9	2.3	2	450	7	12	1.5	250	1300	9	29
25721	48-33.649	-100.219	-3-15-	2.7	3.5	10	410	10	16	1.8	330	1500	11	42
25723	48-33.608	-100.092	-3-15-	2.0	2.3	5	430	10	15	1.8	390	1700	11	34
25724	48-33.638	-100.094	-3-15-	1.8	2.0	7	410	10	12	1.8	340	1700	10	33
25725	48-33.676	-100.042	-3-15-	1.9	1.8	7	470	14	24	2.6	430	1700	12	47
25726	48-33.675	-100.044	-3-15-	1.7	3.0	6	420	13	30	2.3	340	1800	11	40
25727	48-33.626	-100.057	-3-15-	2.4	2.1	6	460	16	22	3.1	400	2200	12	54
25728	48-33.539	-100.074	-3-12-	1.5	1.9	7	350	10	14	1.8	340	1600	11	36
25729	48-33.542	-100.072	-3-15-	4.9	5.9	6	410	12	17	2.2	410	1900	12	45
25733	48-33.515	-100.249	-3-15-	1.5	1.7	5	460	8	9	1.6	320	1800	9	29
25734	48-33.521	-100.235	-3-12-	2.1	2.3	9	440	15	15	2.8	480	2300	11	54
25735	48-33.516	-100.225	-3-15-	2.3	2.5	8	490	22	19	3.8	530	2700	13	71
25736	48-33.507	-100.220	-3-15-	1.6	2.5	2	330	8	12	1.6	280	1600	9	32
25737	48-33.664	-100.000	-3-15-	1.7	2.3	10	470	18	13	3.2	550	2400	12	48
25738	48-33.546	-100.061	-3-15-	2.9	3.9	12	510	20	25	3.1	540	2300	14	77
25796	48-33.755	-100.847	-3-15-	3.0	4.6	10	450	14	18	2.7	450	2400	14	59
25797	48-33.759	-100.838	-3-15-	1.9	2.1	8	350	5	10	1.3	220	2200	10	23
25798	48-33.757	-100.825	-3-15-	2.0	2.3	10	440	12	15	2.2	1400	2000	12	43
25799	48-33.770	-100.795	-3-15-	1.6	2.9	6	510	11	21	2.2	350	2100	13	55
25802	48-33.797	-100.753	-3-15-	2.0	1.9	7	450	13	23	2.5	370	2400	15	71
25803	48-33.858	-100.852	-3-12-	1.3	2.2	2	500	7	18	1.4	390	1300	8	29

Table B-3, Continued

PARTIAL DATA LISTING FOR STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

LUBBOCK QUADRANGLE - SEDIMENT SECTION 1 OF 1

OR SAMPLE NUMBER	D. O. E. ST LAT	SAMPLE LONG	NUMBER L TY REP	U (PPM)	U-NT (PPM)	TH (PPM)	BA (PPM)	CO (PPM)	CU (PPM)	FE (%)	MN (PPM)	TI (PPM)	Y (PPM)	ZN (PPM)
25804	48-33.874	-100.850	-3-15-	1.4	2.7	5	420	6	11	1.0	950	1600	9	26
25805	48-33.893	-100.819	-3-15-	1.2	2.1	7	430	5	10	1.1	270	1600	8	21
25806	48-33.360	-100.679	-3-15-	1.2	3.3	7	360	8	14	1.4	290	1600	9	36
25807	48-33.355	-100.710	-3-15-	1.4	1.5	11	470	6	11	1.1	240	1500	9	21
25811	48-33.306	-100.549	-3-15-	1.1	2.1	3	300	5	10	0.99	310	1700	7	16
25814	48-33.298	-100.541	-3-15-	1.4	1.8	8	360	9	10	1.6	360	1800	9	30
25815	48-33.271	-100.613	-3-15-	1.5	2.6	8	420	10	18	1.9	340	1900	13	47
25816	48-33.269	-100.700	-3-12-	2.7	2.7	5	500	13	20	2.2	690	1900	13	49
25817	48-33.255	-100.732	-3-15-	1.6	1.9	9	440	11	17	1.7	380	1800	11	42
25818	48-33.321	-100.725	-3-12-	1.7	2.3	6	490	8	13	1.4	310	1800	10	30
25819	48-33.357	-100.705	-3-12-	1.8	2.4	7	390	7	11	1.1	460	1300	8	30
25820	48-33.395	-100.688	-3-15-	1.7	1.9	5	330	5	9	1.0	230	1400	7	23
25822	48-33.347	-100.541	-3-15-	1.6	2.4	4	370	14	17	2.4	530	2300	11	48
25823	48-33.362	-100.549	-3-15-	1.9	1.7	4	330	8	10	1.4	300	1900	9	27
25825	48-33.379	-100.557	-3-15-	1.4	1.5	<2	350	11	15	1.8	330	1800	9	41
25826	48-33.393	-100.561	-3-15-	1.2	1.7	3	330	8	11	1.3	260	1500	8	28
25827	48-33.402	-100.580	-3-12-	2.3	2.8	7	330	11	23	1.7	420	1500	9	40
25828	48-33.400	-100.580	-3-15-	2.1	3.1	4	430	12	24	2.1	470	2000	12	53
25830	48-33.408	-100.594	-3-15-	2.8	2.5	6	300	7	14	1.3	330	1500	10	29
25831	48-33.427	-100.605	-3-15-	1.7	2.0	5	390	10	21	1.9	340	1900	10	39
25832	48-33.404	-100.572	-3-15-	1.6	2.0	4	380	10	26	1.6	360	1700	9	39
25834	48-33.426	-100.508	-3-15-	1.4	1.7	7	340	9	14	1.6	310	1700	10	35
25835	48-33.427	-100.508	-3-15-	1.1	1.4	6	340	8	13	1.5	300	1600	9	34
25841	48-33.354	-100.564	-3-15-	1.1	2.3	10	300	8	15	1.2	260	1400	9	26
25846	48-33.304	-100.525	-3-15-	1.9	1.8	2	370	8	16	1.7	380	1700	10	40
25847	48-33.312	-100.505	-3-15-	2.0	2.0	7	390	11	21	2.1	450	2000	12	47
25848	48-33.420	-100.725	-3-12-	1.8	4.1	9	490	17	33	2.9	540	2500	19	80
25907	48-33.289	-100.432	-3-12-	1.8	2.1	5	1000	7	13	1.5	550	2200	11	30
25909	48-33.377	-100.380	-3-12-	1.6	2.3	8	760	8	9	1.6	400	1900	9	30
25910	48-33.377	-100.379	-3-15-	2.4	2.4	10	520	17	15	3.1	350	2400	12	59
25911	48-33.378	-100.388	-3-15-	1.7	2.4	6	680	17	14	3.2	380	2500	12	62
25912	48-33.366	-100.376	-3-15-	2.3	2.2	7	820	18	16	3.2	340	2100	11	59
25913	48-33.271	-100.409	-3-12-	1.6	2.1	4	710	5	10	1.5	460	1200	6	15
25918	48-33.350	-100.251	-3-15-	1.6	2.5	4	410	6	12	1.2	240	1500	7	24
25919	48-33.403	-100.414	-3-12-	2.3	2.6	10	430	20	31	3.5	710	2700	13	79
25920	48-33.497	-100.427	-3-15-	1.1	1.7	8	370	10	15	1.6	340	1900	11	39
25921	48-33.496	-100.402	-3-15-	1.3	1.7	5	370	7	12	1.4	280	1800	9	33
25924	48-33.302	-100.475	-3-15-	1.2	3.4	2	280	5	9	1.2	410	2000	9	20
25926	48-33.317	-100.481	-3-15-	1.5	1.6	5	320	6	9	1.0	230	1300	8	24
25927	48-33.310	-100.460	-3-15-	2.5	2.5	7	390	10	18	1.8	410	1900	11	51
25928	48-33.288	-100.448	-3-15-	1.6	1.8	5	350	8	12	1.3	310	1700	9	30
25935	48-33.389	-100.465	-3-12-	1.6	2.0	7	350	9	13	1.7	390	2100	11	41
25938	48-33.416	-100.492	-3-15-	1.4	1.7	8	330	7	11	1.3	280	1700	9	28
25939	48-33.408	-100.441	-3-12-	1.7	2.4	8	380	11	18	2.0	400	1900	11	47
25941	48-33.398	-100.391	-3-15-	2.1	2.7	10	620	19	15	3.4	370	2400	11	66
25944	48-33.433	-100.255	-3-15-	1.2	2.2	5	450	12	21	2.3	370	2000	10	54
25945	48-33.418	-100.294	-3-15-	2.5	2.3	7	500	20	21	3.6	420	2700	14	79
25946	48-33.423	-100.287	-3-15-	1.9	1.9	5	400	10	15	1.9	340	2100	10	49
25948	48-33.310	-100.377	-3-15-	1.3	1.5	4	460	8	10	1.4	300	1400	8	30
25949	48-33.371	-100.301	-3-12-	1.6	2.0	9	790	14	40	2.4	650	1900	12	44
25950	48-33.369	-100.281	-3-15-	2.0	2.6	9	480	16	32	2.9	550	2400	13	60
25951	48-33.110	-100.216	-3-15-	2.4	2.6	9	430	13	18	2.2	460	1900	11	48
25952	48-33.102	-100.206	-3-15-	2.3	2.2	6	430	13	31	2.5	420	2100	14	65
25953	48-33.127	-100.154	-3-12-	2.4	2.4	5	410	11	19	2.1	940	1900	10	50
25954	48-33.378	-100.330	-3-12-	3.0	2.7	6	550	19	22	3.5	500	2700	13	66

Table B-3, Continued

PARTIAL DATA LISTING FOR STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

LUBBOCK QUADRANGLE - SEDIMENT

SECTION 1 OF 1

OR SAMPLE NUMBER	D. O. E. SAMPLE NUMBER ST LAT LONG L TY REP	U (PPM)	U-NT (PPM)	TH (PPM)	BA (PPM)	CO (PPM)	CU (PPM)	FE (%)	MN (PPM)	TI (PPM)	Y (PPM)	ZN (PPM)
25991	48-33.495 -101.627 -3-12-	1.1	1.4	<2	390	<4	7	0.60	100	950	5	15
25992	48-33.351 -101.227 -3- -	1.8	2.1	3	510	<4	7	0.73	240	1200	6	13
25993	48-33.365 -101.216 -3-15-	2.0	6.7	12	350	9	10	1.8	400	2800	17	36
25995	48-33.329 -101.164 -3-12-	1.5	3.3	5	480	11	15	1.8	440	1900	13	46
25999	48-33.265 -100.217 -3-15-	1.8	2.3	7	650	12	20	2.2	360	2000	11	47
26001	48-33.284 -100.186 -3-15-	0.79	2.2	3	320	7	14	1.6	290	1600	8	36
26002	48-33.402 -100.087 -3-15-	2.0	2.4	6	770	16	94	3.2	520	2300	11	50
26003	48-33.401 -100.094 -3-15-	2.3	2.5	6	460	17	90	3.2	460	2400	12	58
26004	48-33.405 -100.113 -3-15-	0.76	3.5	9	310	11	24	1.9	300	1400	10	45
26005	48-33.371 -100.071 -3-12-	1.9	2.5	3	450	13	52	2.6	470	1900	11	43
26006	48-33.377 -100.017 -3-15-	1.2	1.6	8	390	7	66	1.3	270	1200	7	36
26007	48-33.393 -100.038 -3-15-	1.6	2.4	7	400	10	14	1.8	400	1700	10	32
26008	48-33.268 -100.057 -3-15-	1.6	2.0	4	350	11	120	2.2	380	1600	9	38
26009	48-33.401 -100.061 -3-15-	2.0	2.4	9	490	18	39	3.1	470	2300	12	53
26010	48-33.459 -100.043 -3-12-	2.6	2.6	7	410	15	21	2.6	400	1900	12	46
26011	48-33.468 -100.050 -3-12-	1.6	2.5	4	410	13	16	2.3	620	1900	11	43
26012	48-33.468 -100.125 -3-12-	2.2	2.1	6	250	8	14	1.3	510	1100	7	24
26013	48-33.471 -100.141 -3-12-	2.4	2.9	8	430	14	26	2.6	420	1900	12	48
26014	48-33.433 -100.114 -3-12-	1.6	2.5	7	280	11	15	1.8	290	1300	9	39
26015	48-33.433 -100.134 -3-12-	1.3	2.5	5	1100	8	14	1.6	480	1500	11	30
26016	48-33.468 -100.179 -3-15-	1.8	2.8	4	380	10	18	2.0	340	1700	11	40
26017	48-33.477 -100.200 -3-12-	2.1	2.4	7	470	10	15	1.8	480	1600	11	35
26018	48-33.488 -100.196 -3-12-	2.1	3.6	5	440	13	17	2.3	510	1800	11	45
26020	48-33.369 -100.123 -3-12-	2.9	3.4	3	430	11	18	2.1	690	1700	11	44
26021	48-33.364 -100.117 -3-12-	2.3	3.2	5	370	12	19	2.3	290	1800	11	45
26023	48-33.489 -100.012 -3-12-	2.8	2.5	10	560	19	20	3.5	590	2700	13	48
26025	48-33.416 -100.179 -3-12-	2.2	2.5	7	380	11	17	2.2	370	1800	11	37
26026	48-33.413 -100.168 -3-15-	2.5	3.1	8	420	13	19	2.4	320	2100	10	38
26027	48-33.400 -100.218 -3-15-	2.3	2.8	7	400	10	35	1.9	410	1900	10	48
26028	48-33.413 -100.250 -3-15-	1.7	2.6	11	490	13	23	2.1	480	1900	11	50
26029	48-33.420 -100.240 -3-12-	2.2	3.1	8	370	7	16	1.1	410	1200	8	32
26030	48-33.425 -100.206 -3-15-	2.6	3.0	8	420	16	140	2.8	320	2200	11	58
26032	48-33.298 -100.020 -3-15-	1.5	1.9	5	300	7	63	1.2	270	1100	7	25
26033	48-33.331 -100.020 -3-15-	1.6	2.0	5	440	10	42	1.8	320	1400	8	42
26034	48-33.435 -100.013 -3-15-	1.4	2.6	8	300	8	15	1.5	290	1300	8	31
26037	48-33.442 -100.157 -3-15-	2.3	2.5	3	360	11	18	2.0	260	1800	11	43
26038	48-33.082 -101.567 -3-12-	1.8	2.2	7	290	11	16	1.8	440	1900	10	37
26039	48-33.085 -101.568 -3-12-	2.2	2.3	5	320	13	18	2.0	530	2200	10	42
26040	48-33.085 -101.564 -3-15-	1.5	2.5	9	380	16	21	2.8	500	2700	13	54
26042	48-33.081 -101.554 -3-15-	2.2	2.4	7	300	14	22	2.1	360	2100	10	44
26044	48-33.082 -101.535 -3-12-	3.7	3.7	9	310	13	20	2.1	520	2100	10	45
26062	48-33.175 -101.367 -3-15-	2.1	2.2	10	420	9	14	1.3	340	1500	8	28
26063	48-33.160 -101.340 -3-15-	2.8	3.0	5	440	13	22	2.2	750	2000	13	41
26064	48-33.154 -101.325 -3-15-	2.1	2.7	9	580	12	21	1.9	660	1900	12	38
26065	48-33.169 -101.346 -3-15-	2.0	2.8	7	710	11	17	2.0	820	1900	14	36
26066	48-33.140 -101.254 -3-12-	2.0	2.8	7	1300	13	23	2.2	720	2000	12	37
26067	48-33.146 -101.269 -3-12-	1.8	2.0	10	970	11	23	1.9	840	1600	12	28
26068	48-33.172 -101.305 -3-15-	2.6	2.9	7	830	15	26	2.7	630	2200	12	38
26070	48-33.173 -101.328 -3-12-	1.8	2.2	7	950	8	18	1.5	530	1600	11	41
26071	48-33.013 -101.402 -3-15-	1.8	2.7	6	430	9	14	1.4	450	1800	9	30
26072	48-33.013 -101.403 -3-12-	2.1	2.6	7	530	14	22	2.2	690	2300	12	45
26074	48-33.092 -101.296 -3-15-	2.0	3.0	10	540	19	28	3.3	630	2500	13	58
26075	48-33.083 -101.294 -3-15-	2.3	2.8	11	390	21	30	3.4	590	2800	13	60
26077	48-33.048 -101.260 -3-15-	2.0	2.7	6	630	10	21	1.8	550	1900	12	31
26078	48-33.041 -101.264 -3-15-	2.4	2.4	9	390	14	25	2.4	550	2400	12	42

Table B-3, Continued

PARTIAL DATA LISTING FOR STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

LUBBOCK QUADRANGLE – SEDIMENT SECTION 1 OF 1

OR SAMPLE NUMBER	D. O. E. SAMPLE NUMBER ST LAT	LONG	L TY REP	U (PPM)	U-NT (PPM)	TH (PPM)	BA (PPM)	CO (PPM)	CU (PPM)	FE (%)	MN (PPM)	TI (PPM)	Y (PPM)	ZN (PPM)
26081	48-33.089	-101.319	-3-15-	2.2	2.4	5	730	10	19	1.7	540	1900	11	42
26083	48-33.193	-101.259	-3-12-	2.2	2.2	5	350	13	27	2.5	660	2000	10	37
26088	48-33.233	-101.334	-3-15-	1.9	2.2	10	320	10	17	1.7	650	1700	12	31
26089	48-33.224	-101.328	-3-15-	1.9	2.2	11	410	13	21	2.2	580	2000	12	38
26090	48-33.216	-101.313	-3-15-	1.6	2.4	8	410	11	18	1.8	590	1800	12	35
26099	48-33.065	-101.504	-3-15-	1.6	2.7	5	300	7	12	1.4	390	1800	9	26
26100	48-33.053	-101.495	-3-15-	1.9	2.5	5	420	9	13	1.5	500	1700	9	29
26101	48-33.054	-101.486	-3-15-	1.6	2.5	4	440	8	13	1.3	390	1600	8	25
26103	48-33.041	-101.465	-3-15-	1.9	3.1	9	610	8	13	1.6	520	2000	11	32
26104	48-33.035	-101.469	-3-15-	2.2	2.6	7	750	9	26	1.8	530	2100	12	34
26113	48-33.149	-100.654	-3-15-	1.8	2.8	<2	430	10	15	1.9	510	1900	10	42
26115	48-33.150	-100.655	-3-15-	1.4	2.8	5	380	10	39	1.9	500	1700	11	41
26116	48-33.172	-100.643	-3-12-	1.7	1.7	6	340	5	15	1.0	260	1200	7	30
26117	48-33.197	-100.649	-3-15-	1.7	2.0	9	350	9	13	1.5	320	1600	9	35
26118	48-33.168	-100.632	-3-12-	1.9	4.0	6	2000	<4	10	1.0	350	2100	9	12
26126	48-33.206	-100.745	-3-12-	1.1	1.8	3	360	6	10	1.2	390	1300	8	32
26133	48-33.082	-100.585	-3-15-	2.1	2.1	6	380	7	14	1.3	300	1500	8	26
26134	48-33.084	-100.585	-3-15-	1.1	2.2	5	340	7	10	1.3	310	1500	8	27
26138	48-33.106	-100.503	-3-15-	1.3	2.1	4	370	7	11	1.5	310	1600	8	30
26139	48-33.121	-100.557	-3-15-	0.96	2.6	3	320	8	11	1.3	270	1300	8	26
26141	48-33.010	-100.529	-3-15-	1.9	2.1	4	330	9	12	1.5	270	1500	8	33
26142	48-33.227	-100.706	-3-15-	1.8	2.5	7	440	8	13	1.6	390	1700	10	37
26143	48-33.130	-100.603	-3-12-	1.4	2.3	5	320	6	19	1.2	300	1400	8	25
26144	48-33.088	-100.502	-3-15-	1.6	2.0	7	340	7	12	1.3	280	1500	8	26
26145	48-33.689	-101.175	-3-15-	1.6	2.1	5	370	7	24	1.3	240	1500	9	37
26146	48-33.695	-101.185	-3-15-	1.4	2.0	8	430	5	10	1.0	180	1400	7	26
26147	48-33.706	-101.194	-3-15-	1.5	1.7	4	540	6	11	0.97	240	1300	7	22
26153	48-33.667	-101.161	-3-12-	1.2	2.2	4	380	4	8	0.85	150	1400	6	17
26154	48-33.660	-101.159	-3-12-	0.86	1.7	2	450	4	8	0.77	280	1200	6	17
26156	48-33.668	-101.152	-3-15-	0.91	1.9	<2	420	5	8	0.92	180	1200	6	21
26157	48-33.678	-101.172	-3-15-	2.3	2.8	5	520	6	9	1.2	260	1700	7	20
26160	48-33.682	-101.172	-3-15-	1.6	2.2	4	480	7	11	0.99	180	1300	7	24
26174	48-33.641	-101.134	-3-12-	2.3	2.7	13	650	7	9	1.5	480	2000	9	19
26176	48-33.646	-101.131	-3-15-	1.6	2.1	4	400	5	10	1.1	250	1400	8	22
26177	48-33.631	-101.126	-3-15-	1.6	2.0	6	980	7	12	1.4	420	1600	10	22
26181	48-33.602	-101.108	-3-12-	1.8	2.2	6	560	7	13	1.5	360	1700	10	30
26183	48-33.502	-101.151	-3-12-	1.4	2.1	10	2000	10	16	2.0	650	2000	12	25
26184	48-33.502	-101.149	-3-12-	1.9	2.3	6	620	11	19	2.2	560	2100	11	33
26185	48-33.534	-101.126	-3-12-	2.7	3.0	10	980	11	17	1.7	740	1800	14	25
26186	48-33.529	-101.130	-3-12-	2.4	2.5	9	2400	13	21	2.3	870	1900	16	32
26188	48-33.557	-101.089	-3-15-	1.6	2.3	6	750	12	20	2.3	560	2100	12	36
26191	48-33.507	-101.066	-3-15-	2.1	2.5	9	670	17	28	3.2	690	2600	13	57
26192	48-33.508	-101.073	-3-12-	1.4	3.0	4	1400	4	8	1.3	320	2200	9	24
26194	48-33.523	-101.074	-3-15-	1.6	14.	8	5400	15	14	4.2	1100	7000	20	48
26201	48-33.564	-101.109	-3-15-	1.9	2.2	8	500	11	18	1.9	450	1900	12	37
26203	48-33.209	-100.320	-3-15-	0.93	1.6	2	320	4	8	0.75	160	1000	5	17
26206	48-33.157	-100.341	-3-15-	2.5	3.3	2	370	12	16	1.9	800	1700	11	43
26211	48-33.212	-100.435	-3-15-	1.8	2.3	6	480	10	17	1.8	420	1800	10	40
26212	48-33.166	-100.433	-3-12-	1.2	1.4	2	290	<4	8	0.84	330	1200	6	15
26213	48-33.131	-100.467	-3-12-	0.85	1.3	7	310	5	8	0.85	270	1200	6	16
26216	48-33.065	-100.395	-3-12-	1.4	1.9	7	330	7	9	1.3	300	1600	8	32
26217	48-33.066	-100.381	-3-15-	2.0	2.9	6	340	8	14	1.8	410	2000	12	39
26219	48-33.001	-100.470	-3-12-	1.2	1.7	3	300	6	8	0.96	330	1200	8	18
26221	48-33.228	-100.466	-3-15-	1.3	1.8	6	370	6	8	1.1	290	1500	7	20
26223	48-33.235	-100.478	-3-15-	1.6	1.9	7	370	9	11	1.6	280	1800	9	29

Table B-3, Continued

PARTIAL DATA LISTING FOR STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

LUBBOCK QUADRANGLE - SEDIMENT SECTION 1 OF 1

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPM)	U-NT (PPM)	TH (PPM)	BA (PPM)	CO (PPM)	CU (PPM)	FE (%)	MN (PPM)	TI (PPM)	Y (PPM)	ZN (PPM)
26225	48-33.194	-100.431	-3-15-	2.2	4.8	8	400	9	10	1.7	610	2800	13	33
26240	48-33.651	-100.887	-3-15-	1.6	2.7	7	510	12	16	2.1	370	1900	14	48
26242	48-33.001	-101.353	-3-15-	2.2	3.3	7	840	9	14	1.5	660	1500	13	23
26247	48-33.454	-101.199	-3-15-	1.7	2.2	9	420	10	14	1.7	430	1700	11	38
26251	48-33.825	-100.511	-3-15-	1.4	1.9	5	350	10	14	1.8	350	1700	9	36
26256	48-33.967	-100.534	-3-15-	1.6		7	370	10	13	1.8	370	2000	11	41
26257	48-33.950	-100.548	-3-15-	2.0	2.6	8	360	10	17	1.7	370	1700	10	42
26258	48-33.950	-100.547	-3-15-	2.0	2.4	5	370	10	29	1.7	350	1700	10	42
26259	48-33.956	-100.528	-3-12-	1.9	2.2	5	350	8	14	1.5	480	1600	9	34
26260	48-33.925	-100.503	-3-15-	1.5	2.1	7	350	9	23	1.5	330	1600	9	41
26261	48-33.807	-100.534	-3-15-	1.1	2.0	7	340	8	26	1.3	280	1600	9	46
26262	48-33.787	-100.537	-3-15-	1.7	3.0	14	490	17	22	2.7	500	2300	16	68
26263	48-33.771	-100.563	-3-15-	2.5	3.5	8	360	10	16	1.5	690	1400	10	42
26268	48-33.798	-100.735	-3-12-	1.5	2.3	9	360	5	9	0.76	270	1300	6	17
26269	48-33.773	-100.579	-3-15-	1.8	2.3	8	540	10	17	1.9	400	2000	11	42
26303	48-33.777	-101.251	-3-15-	2.0	2.9	8	540	7	12	1.3	220	1600	10	38
26305	48-33.883	-101.331	-3-15-	1.5	2.1	6	430	7	14	1.4	250	1700	10	40
26311	48-33.935	-101.424	-3-15-	1.6	2.4	8	420	12	19	2.2	400	2100	15	62
26326	48-33.049	-101.194	-3-15-	1.3	2.6	9	1600	11	21	1.9	970	1700	16	32
26328	48-33.027	-101.186	-3-15-	1.4	1.9	6	2200	5	13	1.2	670	1200	11	23
26329	48-33.005	-101.169	-3-12-	1.8	2.1	5	550	6	13	1.0	1200	910	13	23
26330	48-33.003	-101.165	-3-15-	2.0	2.7	6	620	12	23	2.1	680	2000	13	44
26331	48-33.047	-101.119	-3-12-	1.8	3.7	7	560	12	16	1.8	960	2300	11	41
26332	48-33.054	-101.079	-3-15-	2.8	3.1	5	480	7	10	1.1	360	1800	9	23
26336	48-33.131	-101.031	-3-15-	1.7	5.6	7	2100	13	16	3.1	970	5300	14	39
26338	48-33.074	-101.024	-3-15-	2.1	3.0	6	640	12	22	2.1	600	2000	12	52
26339	48-33.076	-101.011	-3-15-	2.4	3.3	12	1200	14	22	2.5	720	2200	14	48
26340	48-33.047	-101.061	-3-15-	4.0	5.7	4	570	7	8	1.2	480	1900	11	26
26342	48-33.031	-101.083	-3-15-	2.3	3.1	6	540	11	15	1.7	560	1800	12	38
26344	48-33.010	-101.035	-3-12-	1.9	3.9	7	580	14	20	2.7	640	2500	14	48
26345	48-33.009	-101.026	-3-15-	2.9	3.5	9	550	17	21	2.9	700	2400	13	61
26347	48-33.077	-101.040	-3-15-	2.5	2.7	4	660	12	23	2.2	760	2100	12	51
26349	48-33.081	-100.994	-3-15-	2.4	2.6	7	750	13	26	2.4	740	2400	12	49
26350	48-33.090	-100.952	-3-15-	2.2	2.0	3	360	9	16	1.8	430	1700	11	30
26351	48-33.115	-100.991	-3-15-	1.9	2.7	5	1400	10	18	1.9	860	1900	12	40
26352	48-33.233	-100.959	-3-15-	1.8	2.4	2	650	12	21	2.0	840	1900	13	48
26355	48-33.234	-100.977	-3-15-	1.8	2.3	8	1000	11	16	2.0	820	2100	13	41
26357	48-33.149	-101.030	-3-15-	1.7	2.3	6	550	9	14	1.6	450	1600	11	33
26358	48-33.977	-100.275	-3-15-	2.4	3.1	7	420	12	18	2.2	310	2100	14	65
26359	48-33.942	-100.272	-3-15-	2.0	2.1	4	380	8	12	1.5	300	1800	10	35
26360	48-33.901	-100.271	-3-15-	2.3	2.1	10	420	10	16	1.7	340	1800	9	41
26361	48-33.898	-100.280	-3-12-	2.0	2.5	5	430	9	16	1.7	330	1800	9	37
26362	48-33.878	-100.252	-3-15-	1.1	2.5	6	320	4	10	0.81	210	1300	6	19
26363	48-33.900	-100.251	-3-15-	1.2	2.2	4	440	10	19	1.8	280	1700	9	36
26364	48-33.902	-100.305	-3-15-	1.8		4	390	10	18	1.9	420	2000	12	44
26365	48-33.898	-100.305	-3-15-	2.4	2.5	5	490	13	22	2.3	350	2000	10	50
26395	48-33.431	-100.986	-3-15-	1.8	2.6	8	530	10	21	1.9	470	2000	12	46
26396	48-33.433	-100.965	-3-15-	2.6	2.3	9	860	11	21	1.8	610	1800	12	37
26397	48-33.433	-100.963	-3-15-	2.1	2.4	7	580	12	34	2.1	600	2100	12	52
26401	48-33.462	-100.862	-3-15-	2.1	2.4	6	520	13	27	2.6	530	2300	14	70
26402	48-33.385	-100.765	-3-15-	2.0	2.5	8	500	13	20	2.2	450	2100	13	50
26403	48-33.400	-100.767	-3-15-	2.4	3.1	2	490	8	13	1.5	260	1700	10	33
26405	48-33.458	-100.778	-3-15-	2.1	2.2	7	470	14	26	2.5	540	2300	16	68
26406	48-33.351	-100.934	-3-12-	1.5	1.6	4	400	7	13	1.4	390	1500	10	27
26407	48-33.325	-100.925	-3-15-	1.6	2.1	2	700	9	17	1.7	640	1500	12	34

Table B-3, Continued

PARTIAL DATA LISTING FOR STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

LUBBOCK QUADRANGLE - SEDIMENT

SECTIUN 1 OF 1

OR SAMPLE NUMBER	D. O. E. SAMPLE ST LAT	LONG	NUMBER L TY REP	U (PPM)	U-NT (PPM)	TH (PPM)	BA (PPM)	CO (PPM)	CU (PPM)	FE (%)	MN (PPM)	TI (PPM)	Y (PPM)	ZN (PPM)
26454	48-33.030	-100.356	-3-15-	1.2	1.6	3	450	7	11	1.3	290	1300	7	26
26455	48-33.035	-100.355	-3-15-	1.4	2.0	8	390	10	12	1.6	310	1600	8	36
26456	48-33.030	-100.353	-3-15-	1.0	1.9	6	420	5	8	1.0	270	1300	7	25
26457	48-33.029	-100.336	-3-15-	1.7	2.4	9	810	12	23	2.1	260	1900	10	42
26458	48-33.559	-100.875	-3-12-	1.7	2.3	5	410	10	16	1.8	340	1800	11	41
26460	48-33.524	-100.847	-3-15-	1.4	2.7	5	530	9	15	1.5	360	1600	10	37
26461	48-33.519	-100.856	-3-12-	1.7	3.1	3	600	5	10	1.3	390	1700	9	27
26464	48-33.618	-100.927	-3-12-	1.3	2.4	3	690	4	8	0.64	270	910	7	20
26465	48-33.624	-100.927	-3-12-	2.2	2.1	5	1600	9	15	1.7	670	1600	12	29
26466	48-33.602	-100.965	-3-15-	3.4	3.4	4	830	6	9	1.2	270	1700	8	20
26467	48-33.600	-100.971	-3-15-	1.7	2.2	5	720	7	11	1.3	290	1600	9	29
26468	48-33.571	-100.967	-3-15-	1.2	2.4	5	900	4	9	0.77	130	950	8	20
26469	48-33.559	-100.992	-3-15-	1.7	2.5	5	570	8	13	1.5	340	1700	9	32
26470	48-33.595	-100.996	-3-15-	1.5	2.1	9	500	8	11	1.3	290	1500	9	25
26472	48-33.522	-100.942	-3-15-	1.5	2.3	5	470	10	18	1.8	520	1800	10	38
26478	48-33.600	-100.906	-3-15-	2.3	2.4	5	400	9	15	1.4	430	1600	13	40
26479	48-33.733	-100.793	-3-15-	1.1	2.8	7	460	10	14	1.8	450	2000	12	42
26481	48-33.746	-100.798	-3-15-	2.1	5.6	11	440	12	15	2.5	500	3900	16	51
26482	48-33.655	-100.760	-3-15-	2.2	2.2	4	520	10	18	1.8	450	1900	11	42
26492	48-33.641	-100.763	-3-15-	1.6	2.4	8	570	13	23	2.3	600	2400	12	46
26501	48-33.659	-100.915	-3-15-	1.2	1.8	8	370	8	14	1.3	340	1400	10	24
26502	48-33.665	-100.914	-3-15-	1.4	3.6	9	880	6	12	1.5	310	1900	10	26
26504	48-33.667	-100.900	-3-12-	1.8	3.2	7	1000	9	17	1.8	960	1800	12	37
26505	48-33.666	-100.895	-3-12-	2.8	4.2	9	1800	6	10	1.4	660	1800	11	19
26511	48-33.939	-100.894	-3-12-	3.9	3.8	5	590	8	13	1.5	470	1700	11	31
26512	48-33.933	-100.883	-3-12-	1.3	1.4	8	470	9	13	1.3	560	1500	10	33
26513	48-33.929	-100.872	-3-15-	1.7	2.8	8	570	10	14	1.8	470	2200	12	47
26517	48-33.851	-100.872	-3-15-	1.4	2.5	2	850	5	13	1.4	430	1900	10	24
26519	48-33.935	-100.933	-3-12-	1.3	3.5	7	590	5	11	1.1	560	1600	8	16
26520	48-33.941	-100.923	-3-12-	1.6	3.7	4	390	4	25	1.1	660	1600	8	13
26522	48-33.960	-100.808	-3-15-	1.3	2.4	5	460	8	19	1.9	440	1900	13	56
26523	48-33.966	-100.757	-3-15-	1.6	2.9	9	550	12	20	2.6	580	2500	16	58
26525	48-33.860	-100.770	-3-15-	1.9	2.9	8	390	7	15	1.4	250	1900	10	34
26527	48-33.867	-100.792	-3-15-	2.3	3.1	10	450	11	27	2.3	430	2200	14	62
26529	48-33.845	-100.763	-3-12-	2.3	3.0	7	440	8	15	1.6	620	1800	11	32
26534	48-33.890	-100.672	-3-15-	1.5	2.5	5	590	7	18	1.6	430	1800	10	26
26541	48-33.979	-100.723	-3-15-	1.6	2.3	7	530	15	22	2.3	570	2100	13	56
26542	48-33.807	-100.716	-3-15-	1.4	2.5	6	460	8	14	1.5	320	1700	10	45
26543	48-33.801	-100.717	-3-15-	1.5	2.8	5	420	7	11	1.3	360	1900	11	38
26544	48-33.797	-100.725	-3-15-	1.6	2.3	10	480	12	22	2.0	510	2000	12	52
26548	48-33.971	-100.713	-3-15-	1.8	2.6	9	450	12	19	2.3	400	2300	16	59
26549	48-33.994	-100.668	-3-15-	1.5	2.0	3	450	9	15	1.9	400	1800	10	43
26551	48-33.990	-100.641	-3-15-	1.3	1.9	4	430	11	17	2.0	400	1700	11	47
26553	48-33.860	-100.722	-3-15-	1.8	2.8	3	580	11	14	2.0	510	2300	12	35
26554	48-33.874	-100.705	-3-15-	1.6		5	630	9	14	1.7	460	1900	11	32
26557	48-33.992	-100.713	-3-15-	1.5	2.1	9	460	13	21	2.2	530	2000	13	42
26558	48-33.778	-100.587	-3-15-	2.0	2.7	4	390	9	11	1.6	510	1700	10	34
26559	48-33.765	-100.546	-3-15-	1.4	2.0	7	450	13	17	2.2	420	2000	13	53
26562	48-33.162	-101.207	-3-15-	2.8	2.9	6	1400	13	39	2.3	850	2200	14	38
26564	48-33.154	-101.231	-3-12-	2.9	2.8	8	460	15	26	2.5	670	2000	13	43
26567	48-33.015	-101.146	-3-15-	2.6	2.9	8	1700	11	18	1.8	950	1700	14	36
26568	48-33.020	-101.139	-3-15-	3.0	3.7	7	910	11	16	1.7	890	1700	13	38
26569	48-33.017	-101.112	-3-12-	2.9	4.2	6	610	15	23	2.7	1000	2800	14	53
26573	48-33.119	-100.168	-3-15-	2.3	2.9	12	400	12	26	2.1	570	2200	13	52
26574	48-33.119	-100.170	-3-15-	2.9	2.8	7	410	9	21	1.8	440	1900	11	46

Table B-3, Continued

PARTIAL DATA LISTING FOR STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

LUBBOCK QUADRANGLE - SEDIMENT

SECTION 1 OF 1

OR SAMPLE NUMBER	D. O. E. SAMPLE NUMBER ST LAT	LONG	L TY REP	U (PPM)	U-NT (PPM)	TH (PPM)	BA (PPM)	CO (PPM)	CU (PPM)	FE (%)	MN (PPM)	TI (PPM)	Y (PPM)	ZN (PPM)
26575	48-33.124	-100.150	-3-15-	3.2	3.2	9	480	16	29	3.3	460	2700	13	68
26576	48-33.125	-100.137	-3-15-	1.6	3.9	10	450	13	26	2.6	510	2300	12	69
26577	48-33.172	-100.026	-3-15-	1.7	2.2	7	390	7	16	1.3	290	1500	8	26
26578	48-33.192	-100.023	-3-15-	1.4	2.3	7	340	7	13	1.6	230	1800	10	31
26580	48-33.206	-100.093	-3-12-	2.0	3.0	3	470	15	62	3.1	440	2200	10	48
26581	48-33.201	-100.094	-3-12-	2.2	2.5	9	470	15	38	2.8	460	2100	11	45
26584	48-33.146	-100.087	-3-15-	2.3	2.8	10	440	13	20	2.5	400	2400	14	58
26585	48-33.133	-100.111	-3-12-	2.9	2.9	10	420	11	19	2.0	400	1900	11	44
26589	48-33.296	-100.876	-3-12-	2.1	2.6	4	550	8	18	1.7	430	1800	10	31
26590	48-33.289	-100.862	-3-15-	2.6	2.6	8	420	11	21	2.0	430	2000	11	35
26593	48-33.333	-100.769	-3-15-	2.3	2.8	6	460	10	15	1.9	410	2000	11	39
26594	48-33.266	-100.806	-3-15-	1.9	2.4	2	510	10	18	2.0	420	2100	11	33
26595	48-33.270	-100.960	-3-15-	1.7	2.5	5	580	9	18	1.8	470	1900	12	39
26602	48-33.227	-101.286	-3-15-	1.2	3.3	8	210	4	5	1.0	260	2200	8	14
26615	48-33.029	-101.391	-3-15-	2.5	2.8	7	550	13	30	2.1	550	2100	12	41
26616	48-33.035	-101.414	-3-15-	2.3	2.7	4	780	9	15	1.8	520	1800	11	36
26619	48-33.033	-101.436	-3-15-	1.8	2.7	6	410	14	23	2.5	510	2500	13	55
26620	48-33.021	-101.455	-3-15-	1.4	2.3	3	1400	8	12	1.2	1400	1300	17	24
26622	48-33.088	-100.839	-3-12-	2.2	3.5	7	800	10	14	1.9	620	1800	12	32
26623	48-33.095	-100.835	-3-15-	2.0	4.9	9	2000	8	13	1.9	600	2300	13	30
26626	48-33.077	-100.863	-3-15-	2.3	2.6	8	1400	11	22	2.3	760	2200	13	43
26629	48-33.028	-101.307	-3-15-	1.5	2.8	6	1500	7	16	1.3	500	1600	12	20
26630	48-33.003	-101.311	-3-15-	1.9	2.4	5	1500	12	22	2.1	760	1800	12	27
26632	48-33.049	-101.245	-3-15-	1.8	2.7	7	490	13	21	2.0	500	2000	11	39
26636	48-33.020	-101.225	-3-15-	1.7	2.2	7	700	13	23	2.3	750	1800	13	36
26639	48-33.208	-101.253	-3-12-	2.1	4.7	5	900	12	14	2.8	560	3000	12	36
26645	48-33.090	-100.910	-3-15-	2.9	3.5	4	770	12	19	2.1	740	1700	13	42
26649	48-33.041	-100.938	-3-15-	2.4	3.0	3	740	12	21	2.5	680	2500	14	46
26650	48-33.039	-100.926	-3-15-	2.9	3.4	8	1400	15	23	2.6	850	2600	14	54
26652	48-33.104	-100.855	-3-15-	2.2	3.1	5	840	13	21	2.3	690	2000	13	45
26653	48-33.202	-100.769	-3-15-	1.6	1.6	4	390	10	11	1.6	300	1700	9	34
26659	48-33.896	-100.487	-3-15-	1.0	2.5	6	380	4	29	1.0	290	1700	9	28
26662	48-33.835	-100.494	-3-15-	1.6	2.0	<2	350	7	26	1.7	360	1900	10	40
26665	48-33.813	-100.434	-3-15-	1.4	2.1	3	350	6	11	1.3	250	1500	8	26
26666	48-33.817	-100.417	-3-12-	1.0	1.9	10	360	7	13	1.3	230	1700	8	27
26669	48-33.996	-100.459	-3-15-	1.2	1.9	8	360	4	6	0.94	190	1600	7	16
26675	48-33.821	-100.309	-3-15-	1.3	2.8	8	400	6	9	1.4	300	2100	10	25
26676	48-33.808	-100.283	-3-15-	1.6	2.4	6	430	10	18	2.2	390	2400	13	46
26684	48-33.801	-100.315	-3-15-	2.0	2.7	6	810	15	11	2.9	380	2400	12	41
26688	48-33.793	-100.323	-3-15-	1.6	2.3	3	480	13	18	2.6	410	2300	12	51
26692	48-33.632	-100.896	-3-15-	1.4	2.5	5	400	8	17	1.8	430	1900	12	35
26706	48-33.960	-100.075	-3-15-	2.3	2.7	10	460	14	18	2.5	310	2200	12	49
26708	48-33.975	-100.104	-3-15-	2.3	2.8	8	460	10	14	1.7	320	1800	11	37
26709	48-33.972	-100.108	-3-12-	2.4		7	460	13	20	2.5	390	2200	12	52
26714	48-33.961	-100.204	-3-15-	2.0	2.4	6	440	13	18	2.3	450	2200	14	53
26715	48-33.995	-100.178	-3-15-	1.8	3.1	5	420	10	17	2.0	380	2200	14	48
26717	48-33.998	-100.213	-3-15-	1.9	2.2	7	410	10	16	1.8	300	2100	12	46
26718	48-33.970	-100.143	-3-15-	2.2	2.4	8	470	14	17	2.3	400	2100	10	46
26719	48-33.991	-100.125	-3-15-	2.5	2.5	5	430	11	17	2.1	390	2200	11	45
26724	48-33.920	-100.113	-3-15-	1.2	1.5	4	360	5	8	0.90	240	1400	7	24
26737	48-33.831	-100.864	-3-12-	2.1	3.9	3	480	6	10	1.3	290	1600	8	25
26754	48-33.187	-100.251	-3-12-	2.1	2.3	4	530	11	29	2.1	400	1900	10	45
26755	48-33.233	-100.214	-3-12-	2.6	2.8	12	470	13	26	2.3	430	1900	10	48
26758	48-33.167	-100.242	-3-12-	2.1	2.8	10	540	15	20	2.6	480	2000	11	53
26759	48-33.223	-100.234	-3-15-	2.8	3.1	8	680	15	29	2.7	430	2100	11	46

Table A-3, Continued

PARTIAL DATA LISTING FOR STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

LUBBOCK QUADRANGLE - SEDIMENT — SECTION 1 OF 1

OR SAMPLE NUMBER	D. O. E. SAMPLE NUMBER ST LAT	LONG	L TY REP	U (PPM)	U-NT (PPM)	TH (PPM)	BA (PPM)	CO (PPM)	CU (PPM)	FE (%)	MN (PPM)	TI (PPM)	Y (PPM)	ZN (PPM)
26760	48-33.207	-100.150	-3-12-	2.8	2.9	11	510	14	110	2.4	380	1900	12	57
26761	48-33.208	-100.151	-3-15-	1.8	3.0	10	500	15	150	2.5	440	1900	11	57
26765	48-33.201	-100.117	-3-12-	1.8	2.9	7	400	13	38	2.4	460	1800	10	57
26766	48-33.296	-101.148	-3-12-	6.4	12.	15	1200	5	5	1.3	470	3600	20	15
26767	48-33.409	-101.217	-3-15-	1.4	1.9	2	380	5	9	0.94	220	1300	7	22
26768	48-33.407	-101.229	-3-15-	1.5	2.1	3	660	<4	7	0.74	300	1200	8	13
26769	48-33.437	-101.232	-3-15-	1.5	2.2	6	490	8	12	1.3	460	1600	10	25
26770	48-33.457	-101.204	-3-15-	1.3	1.9	5	460	7	10	1.2	460	1300	9	21
26771	48-33.403	-101.048	-3-15-	3.2	3.6	7	660	13	21	2.4	720	2300	15	62
26772	48-33.411	-101.051	-3-15-	1.7	2.4	10	520	5	6	0.91	480	1500	8	17
26773	48-33.449	-101.075	-3-15-	1.5	2.3	5	520	10	17	1.8	450	1800	12	44
26774	48-33.275	-101.096	-3-12-	1.8	2.4	5	600	4	7	0.74	240	1100	7	12
26775	48-33.275	-101.099	-3-15-	2.3	2.9	6	670	10	17	1.8	880	2000	12	39
26776	48-33.279	-101.094	-3-15-	2.0	2.8	5	650	13	24	2.3	640	2000	12	54
26777	48-33.272	-101.086	-3-15-	2.5	2.7	9	570	12	21	2.1	690	2100	13	47
26779	48-33.318	-101.106	-3-12-	1.9	2.8	8	500	6	9	1.1	250	1500	9	23
26783	48-33.437	-101.104	-3-15-	1.8	2.2	4	880	8	18	1.4	1000	1900	12	36
26784	48-33.360	-101.023	-3-15-	1.7	2.5	<2	320	<4	9	1.0	260	1700	8	23
26786	48-33.360	-101.054	-3-15-	2.0	1.8	<2	520	<4	7	0.75	260	1300	7	12
26791	48-33.454	-101.107	-3-15-	4.9	7.2	7	4300	4	14	1.5	860	2700	21	18
26796	48-33.251	-101.010	-3-15-	2.5	3.2	5	470	11	20	2.2	720	2300	15	54
26800	48-33.372	-101.228	-3-12-	2.7	5.5	7	860	10	14	2.3	1200	2300	11	31
26801	48-33.373	-101.241	-3-12-	1.8	2.2	5	410	4	10	0.93	630	1200	8	18
26804	48-33.290	-101.224	-3-15-	1.9	3.5	8	1300	14	28	2.7	910	2500	17	34
26805	48-33.300	-101.245	-3-15-	1.6	3.2	3	770	<4	17	0.93	500	1300	10	13
26806	48-33.350	-101.241	-3-12-	2.0	3.4	6	800	4	10	1.1	380	1700	10	13
26808	48-33.320	-101.030	-3-12-	2.1	2.5	6	500	10	18	2.1	590	2000	11	42
26811	48-33.382	-101.062	-3-15-	2.0	1.9	7	530	5	11	1.0	360	1300	9	19
26813	48-33.213	-100.872	-3-12-	2.1	2.3	8	490	11	38	2.2	680	2200	12	42
26814	48-33.215	-100.851	-3-15-	1.5	2.0	9	380	10	14	1.7	470	1900	10	37
26815	48-33.221	-100.856	-3-12-	1.3	2.3	2	440	7	12	1.6	380	1900	10	30
26818	48-33.192	-100.796	-3-12-	1.8	2.4	4	420	10	15	1.8	440	1900	10	31
26819	48-33.189	-100.795	-3-15-	1.7	2.4	5	560	10	21	2.2	580	2300	12	37
26821	48-33.488	-101.051	-3-15-	1.2	2.8	3	380	6	12	1.3	300	1800	10	23
26827	48-33.070	-100.836	-3-15-	1.8	2.4	9	720	11	18	2.0	630	2100	13	39
26829	48-33.050	-100.808	-3-15-	2.5	2.9	5	600	13	24	2.6	700	2500	13	64
26831	48-33.026	-100.767	-3-15-	2.1	2.3	7	540	11	63	2.1	490	2000	11	44
26855	48-33.476	-101.599	-3-12-	1.4	1.9	7	400	5	10	1.1	350	1400	6	27
26857	48-33.493	-101.623	-3-12-	0.72	1.3	4	340	<4	8	0.58	96	900	4	12
26858	48-33.458	-101.510	-3-15-	2.1	2.1	7	450	7	13	1.4	250	1600	8	26
26863	48-33.257	-101.391	-3-15-	1.5	2.4	4	360	7	10	1.3	350	1700	9	25
26864	48-33.261	-101.393	-3-15-	1.8	2.5	4	440	11	16	1.7	430	1800	10	34
26866	48-33.312	-101.435	-3-12-	2.0	3.2	4	510	11	17	1.9	520	2100	11	37
26867	48-33.298	-101.394	-3-12-	2.1	2.3	7	390	9	15	1.5	680	1500	11	32
26868	48-33.280	-101.379	-3-12-	1.8	3.0	11	230	13	18	2.0	530	1900	12	38
26869	48-33.319	-101.390	-3-12-	1.6	2.2	4	410	10	15	1.6	490	1800	10	34
26870	48-33.376	-101.433	-3-12-	1.8	2.2	6	390	13	18	2.0	530	2100	11	44
26873	48-33.253	-101.345	-3-15-	2.2	2.7	5	1100	11	18	1.9	590	1900	12	33
26879	48-33.318	-101.261	-3-12-	2.0	2.4	7	1100	8	14	1.4	610	1500	12	21
26880	48-33.317	-101.264	-3-12-	1.6	2.3	4	500	10	16	1.6	500	1600	11	24
26881	48-33.316	-101.267	-3-12-	1.5	2.4	4	1900	6	12	1.1	560	1300	11	16
26884	48-33.334	-101.293	-3-12-	1.0	2.1	2	390	6	8	1.0	270	1400	7	18
26886	48-33.372	-101.357	-3-12-	2.2	2.9	7	890	12	18	1.9	590	1800	12	32
26887	48-33.360	-101.354	-3-12-	1.9	2.5	6	440	13	20	2.0	450	2200	15	39
26888	48-33.384	-101.352	-3-12-	2.2	2.5	8	1000	13	22	2.2	610	1900	14	41

Table B-3, Continued

PARTIAL DATA LISTING FOR STREAM SEDIMENT OF THE LUBBOCK QUADRANGLE

LUBBOCK QUADRANGLE - SEDIMENT

SECTION 1 OF 1

OR SAMPLE NUMBER	D. O. E. SAMPLE NUMBER ST LAT	LONG	L TY REP	U (PPM)	U-NT (PPM)	TH (PPM)	BA (PPM)	CO (PPM)	CU (PPM)	FE (%)	MN (PPM)	TI (PPM)	Y (PPM)	ZN (PPM)
26890	48-33.335	-101.332	-3-15-	2.0	3.2	11	690	9	15	1.4	620	1700	14	22
26892	48-33.403	-101.334	-3-12-	1.3	1.5	4	350	5	8	0.87	180	1300	6	15
26893	48-33.400	-101.292	-3-15-	2.0	2.5	5	810	6	9	1.3	300	1800	8	18
26894	48-33.407	-101.260	-3-15-	1.8	2.1	6	470	11	18	1.9	440	1900	11	38
26896	48-33.324	-101.438	-3-15-	1.7	2.3	5	390	9	17	1.7	410	1800	9	32
26898	48-33.385	-101.452	-3-15-	1.6	2.0	5	530	10	19	1.7	590	1900	10	35
26899	48-33.395	-101.431	-3-15-	2.0	2.2	3	330	13	25	2.2	490	2100	11	47
26900	48-33.414	-101.452	-3-15-	1.8	2.1	8	370	11	19	2.2	350	1900	10	49
26902	48-33.327	-101.314	-3-15-	2.1	2.8	6	1700	8	17	1.5	710	1500	12	19
26903	48-33.395	-101.487	-3-12-	1.9	2.6	5	430	11	20	1.8	480	1900	9	32
26905	48-33.400	-101.471	-3-15-	1.5	1.9	<2	280	10	16	2.1	310	2100	8	37
26906	48-33.360	-101.434	-3-15-	1.3	1.9	8	380	12	19	1.9	560	1800	10	47
26919	48-33.162	-100.305	-3-15-	2.1	2.2	8	440	10	13	1.9	390	1900	9	39
26920	48-33.165	-100.292	-3-15-	1.9	1.8	7	550	11	16	1.9	330	1600	8	35
26923	48-33.112	-100.465	-3-12-	1.9	2.1	<2	320	5	19	1.1	260	1300	7	18
26928	48-33.032	-100.394	-3-12-	2.4	2.4	6	430	10	16	1.8	490	2200	10	38
26930	48-33.106	-100.474	-3-12-	1.6	1.7	3	330	6	12	1.1	270	1500	7	23
26932	48-33.037	-100.294	-3-12-	2.7	3.3	7	740	19	17	3.5	470	2500	11	64
26936	48-33.013	-100.252	-3-15-	2.5	2.8	7	680	8	9	1.8	300	1900	9	27
26940	48-33.294	-100.228	-3-12-	2.7	4.0	5	590	14	20	2.7	490	2000	11	49
26987	48-33.800	-101.241	-3-15-	2.0	2.4	6	450	10	19	1.8	330	1700	11	48
26989	48-33.794	-101.231	-3-15-	2.0	3.2	8	710	8	13	1.8	290	2100	8	26
26992	48-33.999	-100.879	-3-12-	3.9	4.2	8	310	5	12	0.93	190	1300	9	25
26993	48-33.999	-101.014	-3-15-	1.2	2.0	3	470	5	9	0.97	220	1300	6	16
26995	48-33.487	-100.860	-3-15-	2.3	2.8	10	580	19	32	3.3	780	2600	17	79
27003	48-33.916	-100.856	-3-15-	2.1	2.6	11	530	15	23	2.5	550	2300	17	74
27007	48-33.852	-100.920	-3-15-	2.0	2.5	8	460	11	21	2.1	500	2000	14	67
27008	48-33.858	-100.960	-3-12-	0.75		3	440	<4	8	0.65	290	760	5	11
27013	48-33.990	-100.793	-3-15-	5.3	6.2	9	500	10	27	2.1	380	1700	12	110
27014	48-33.995	-100.836	-3-12-	3.2	3.2	4	470	18	34	3.2	650	2700	13	69
27026	48-33.790	-100.356	-3-12-	2.7	3.1	10	430	14	40	2.3	1200	2100	14	54
27027	48-33.786	-100.350	-3-15-	2.5	3.0	8	420	11	20	1.9	710	2000	12	53
27030	48-33.938	-100.491	-3-15-	1.7	2.8	7	400	7	12	1.3	340	1800	11	34
27032	48-33.911	-100.497	-3-15-	1.5	2.8	7	370	5	16	1.0	260	1600	9	30
27034	48-33.928	-100.363	-3-15-	1.0	1.7	2	320	4	7	0.82	250	1600	6	14
27035	48-33.930	-100.353	-3-12-	1.5	2.5	8	420	12	17	2.1	360	2200	13	43
27037	48-33.917	-100.361	-3-12-	1.2	1.8	5	360	8	13	1.5	610	1600	9	31
27047	48-33.839	-100.334	-3-15-	1.8		10	410	12	19	2.2	360	2000	13	50
27048	48-33.833	-100.393	-3-12-	1.2	1.9	3	390	6	11	1.3	290	1600	8	26
27049	48-33.816	-100.394	-3-15-	1.4	2.5	5	370	7	14	1.4	300	1900	9	29
27050	48-33.781	-100.427	-3-15-	1.1	2.0	<2	520	9	19	1.9	310	1700	9	35
27051	48-33.787	-100.460	-3-12-	1.9	2.5	7	360	8	12	1.3	330	1600	9	28
27054	48-33.561	-101.128	-3-15-	1.9	2.6	9	410	11	17	2.0	380	2100	13	44
27059	48-33.298	-100.716	-3-15-	1.5	3.1	5	460	12	14	2.0	370	2000	11	40
27072	48-33.479	-100.596	-3-15-	1.9	1.9	6	360	10	13	1.7	360	1800	10	38
27073	48-33.466	-100.602	-3-15-	1.6	2.2	6	420	13	19	2.4	450	2100	11	49
27075	48-33.463	-100.593	-3-15-	2.1	2.1	4	410	11	21	2.2	520	2000	11	48
27092	48-33.244	-101.157	-3-15-	1.5	2.0	9	1100	12	23	2.7	830	2400	14	35
27094	48-33.128	-101.139	-3-15-	3.4	4.3	6	1300	10	19	2.1	590	2400	13	33
27095	48-33.124	-101.157	-3-15-	1.7	2.9	4	3200	6	26	1.6	1000	1700	16	22
27096	48-33.123	-101.167	-3-15-	2.8	4.4	10	650	15	26	3.0	720	2400	13	41
27098	48-33.143	-101.206	-3-15-	2.5	3.5	6	510	16	26	2.7	670	2300	12	56

APPENDIX C

MICROFICHE OF FIELD AND LABORATORY DATA

APPENDIX C

MICROFICHE OF FIELD AND LABORATORY DATA

LIST OF TABLES

Table C-1

COMPUTER CODE LIST OF GEOCHEMICAL VARIABLES

Variable[a]	Code	Variable[a]	Code
Uraniun Measured by Fluorometry[b]	U-FL	Thorium	TH
		Titanium	TI
Uranium Measured by Mass Spectrometry[b]	U-MS	Vanadium	V
Uranium Measured by Neutron Activation	U-NT	Yttrium	Y
		Zinc	ZN
Arsenic	AS	Zirconium	ZR
Selenium	SE	Sulfate (ppm)	SO, SO_4
Silver	AG	Chloride (ppm)	CL
Aluminum	AL	Conductivity from Lab (μmhos/cm)	CT-L
Boron	B	Conductivity from Field (μmhos/cm)	CT-F
Barium	BA	Dissolved Oxygen (ppm)	DO
Beryllium	BE	Temperature (°C)	TP, TEMP
Calcium	CA	pH	PH
Cerium	CE	pH Measured by Lo Ion Paper	PH-P
Cobalt	CO	Total Alkalinity (ppm)	T-AK
Chromium	CR	M Alkalinity (ppm)	T-AK
Copper	CU	P Alkalinity (ppm)	P-AK, LIP
Iron	FE	Carbonate (ppm)	CB
Potassium	K	$CB = \begin{cases} 0 & \text{if pH} \le 8.3 \\ \dfrac{3.42 \times \text{M-AK}}{5.61 + 10^{(11-\text{pH})}} & \text{if pH} > 8.3 \end{cases}$	
Lithium	LI		
Magnesium	MG		
Manganese	MN		
Molybdenum	MO	Bicarbonate (ppm)	BC
Sodium	NA	$BC = \begin{cases} \dfrac{2.62 \times \text{M-AK}}{4.3 + 10^{(7-\text{pH})}} & \text{if pH} \le 8.3 \\ 0.61 \times \text{M-AK} - \text{CB} & \text{if pH} > 8.3 \end{cases}$	
Niobium	NB		
Nickel	NI		
Phosphorus	P	U-NT/U-FL	U/U, TUU
Lead	PB	U-FL/U-NT	U/TU
Platinum	PT	TH/U-NT	TH/U
Scandium	SC	1,000·U/SP	U/SP
Silicon	SI	1,000·U/B	U/B
Strontium	SR	1,000·U/SO	U/SO, USO

[a] If natural logarithm of variable is used, L or L- precedes the variable code.

[b] If method is not specified for waters, U-FL is used, except where value is below laboratory detection limit in which case U-MS is substituted if it is available.

Table C-2

OAK RIDGE GEOCHEMICAL SAMPLING FORM
SHOWING FIELD DATA RECORDED ON MICROFICHE

OAK RIDGE GEOCHEMICAL SAMPLING FORM

1 | 1 Card Number

GENERAL SITE DATA

Attach Identical Sample Number Here (2–7)

8 9 10 11 Site Number

12 13 14 15 – 16 17 Map Code

Sample Type (18)

18	
M	Stream Sediment
H	Lake Sediment
S	Stream Water
W	Well Water
P	Spring Water
L	Lake Water
A	Bog Water
B	Plant
F	Soil
G	Rock
Ø	Other

(Use Remarks)

19 Replicate Letter (A–Z)

Hour		Day		Month		Year	
20	21	22	23	24	25	26	27

28 29 30 Collector's Initials

31 Phase (P, 1, 2, or G)

Field Sheet Status (32)

32	
Ø	Original
C	Correction
V	Voiding

Control Sample (33)

33	
A	Sediment, High U
B	Sediment, Low U
C	Water, High U
D	Water, Low U
Ø	Other

34 35 36 37 Air Temperature (°C)

Location

Latitude						Longitude					
Deg.		Min.		Sec.		Deg.		Min.		Sec.	
38	39	40	41	42	43	44	45	46	47	48	49	50

51 52 53 54 Surface Geologic Unit Code

Type of Vegetation (55) (Within 1 Km Upstream)

55	
C	Conifer
&	Conifer & Deciduous
D	Deciduous
B	Brush
G	Grass
M	Moss
L	Lichen
Ø	Other

Density of Vegetation (56) (Within 1 Km Upstream)

56	
B	Barren
S	Sparse
M	Moderate
D	Dense
V	Very Dense

Local Relief (57) (Within 1 Km Upstream)

57		
F	Flat	(<2m)
L	Low	(2–15m)
G	Gentle	(15–60m)
M	Moderate	(60–300m)
H	High	(>300m)
Ø	Other	

Weather

58		59	
C	Calm	C	Clear
P	Lt Wind	L	Pt Cldy
V	Windy	W	Overcst
R	V. Windy	V	Rainy
S	Gale	G	Snowy

Classes of Contaminants (60)

60	
N	None
M	Mining
A	Agriculture
F	Oil Field
I	Industry
S	Sewage
P	Power Plant
U	Urban
Ø	Other

(Use Remarks)

Average Stream Velocity (m/sec)

61 62 63 N = No Visible Movement; P = Stagnant Pool

64 65 66 Water Width (m)

67 68 69 Average Depth (m)

Water Level

70		70	
D	Dry	N	Normal
P	Pools	H	High
L	Low	F	Flood

Dominant Bed Material (71)

71	
B	Boulder
C	Cobble
P	Pebble
S	Sand
T	Silt
Y	Clay
N	None (Use Remarks)

Sample Color (Except Plants)

Adj			Noun	
72	73	74	75	76

V	V Lt	PK	Pink
L	Light	RD	Red
M	Medium	GN	Green
D	Dark	BU	Blue
CL	Clear	BN	Brown
WH	White	GY	Gray
YL	Yellow	BK	Black
OR	Orange	ØT	Other

Odor of Sampled Material (77)

77	
N	None
S	H_2S
Ø	Other

78 R Results Request (Use Remarks)

1 | 2 Card Number

PLANT SAMPLE

18 19 Number of Plants Sampled (Number of grabs for moss)

20 21 22 Trunk Diameter (m) (1 m above ground)

23 24 25 Plant Height (m) (Average of Plants Sampled)

Name of Tree, Deciduous (26)

26		26	
R	Alto Verde	U	Locust
A	Ash	P	Maple
B	Beech	M	Mesquite
I	Birch	K	Oak, Other
D	Box Elder	V	Olive
F	Cherry	Y	Poplar
N	Cottonwood	S	Sycamore
E	Elm	T	Salt Cedar
H	Hackberry	G	Walnut
C	Hickory	X	Willow
W	Huisache	Ø	Other
L	Live Oak		

Name of Tree, Conifer (27)

27		27	
A	N. Wh. Cedar	L	Larch
C	Cedar, Other	P	Pine
F	Fir	S	Spruce
H	Hemlock	Ø	Other
J	Juniper		

Name of Bush (28)

28		28	
A	Alder	W	Witch Hazel
B	Blueberry	Y	Yew
P	Pussy Willow	Ø	Other

Name of Moss (29)

29	
P	Peat
S	Sphagnum (live)
Ø	Other

Algae (30)

30	
G	Blue-Green
B	Brown
Ø	Other

UCN-11982
(1 5-77)

Table C-2, Continued

OAK RIDGE GEOCHEMICAL SAMPLING FORM SHOWING FIELD DATA RECORDED ON MICROFICHE

STREAM OR LAKE SEDIMENT

Sample Condition (31)
- D Dry
- W Wet

Sample Treatment (32)
- N None
- S Sieved
- Ø Other

33 34 Number of Grabs

35 36 % Organic Material (Field Estimate)

GENERAL WATER SAMPLES

Water Sample Treatment (37)
- N None
- F Filtered Only
- C Acidified Only
- A Acidified and Filtered
- Ø Other

Depth of Visibility (m) (38 39 40) C = Clear

41 42 43 44 45 Conductivity (μmhos/cm)

46 47 48 Dissolved O_2 (ppm)

49 50 51 Temperature (°C)

52 53 54 pH

55 P pH by Lo-Ion Paper

56 57 58 59 Total Alkalinity (ppm)

60 61 62 63 P Alkalinity (ppm)

64 65 66 67 M Alkalinity (ppm)

Appearance of Water (68)
- C Clear
- M Murky
- A Algal
- Ø Other

69 70 71 72 73 Discharge (liters/min)

76 75 76 77 Identification of Producing Horizon (Geologic Unit Code)

Confidence of Producing Horizon Identification (78)
- H High Degree
- R Probable
- S Possible

Source of Producing Horizon Identification (79)
- P Publication
- W Owner
- U User
- G Geologic Inference
- Ø Other

1 3 Card Number

WELL WATER

Type of Well (18)
- D Drilled
- P Drive Point
- G Dug
- U Unknown
- Ø Other

Power Classification (19)
- A Artesian Flow
- E Electric
- G Gasoline
- W Wind
- H Hand
- Ø Other

Casing (20)
- N None (Below Water Table)
- S Steel
- G Galvanized
- P Plastic
- U Unknown
- Ø Other

Pipe Composition (21)
- F Steel
- Z Galvanized
- C Copper
- P Plastic
- U Unknown
- Ø Other

Sample Location (22 23 24) Meters from Well Head; H = Holding Tank (Use Remarks)

Where Sample Taken With Respect To Pressure Tank (25)
- B Before
- A After
- N No Pressure Tank
- F From Pressure Tank (Use Remarks)

Use of Well (26)
- M Municipal
- H Household
- S Stock
- I Irrigation
- A All of above
- X H and S
- Y H and I
- Z S and I
- N None
- Ø Other

Frequency of Pumping (27)
- C Constant (hourly)
- F Frequent (daily)
- I Infrequent (weekly)
- R Rare (no recent use)

Depth to top of Producing Horizon (28 29 30 31) (Meters)

Confidence of Producing Depth (32)
- H High
- R Probable
- S Possible

Source of Producing Depth Information (33)
- P Publication
- W Owner
- U User
- G Geologic Inference
- Ø Other

Total Well Depth (34 35 36 37) (Meters)

Confidence of Total Depth (38)
- H High
- R Probable
- S Possible

Source of Total Depth Information (39)
- P Publications
- W Owner
- U User
- G Geologic Inference
- Ø Other

LAKE WATER

Type of Lake (35)
- N Natural
- M Manmade

Lake Area (66 67 68 69) (sq km)

REMARKS (Card 4)

MICROFICHE OF FIELD AND LABORATORY DATA

CONTENTS

LEGEND

○ WELL WATER

◇ SPRING WATER

PLATE 1
LUBBOCK QUADRANGLE GROUNDWATER SAMPLE LOCATION MAP

SCALE 1: 250000

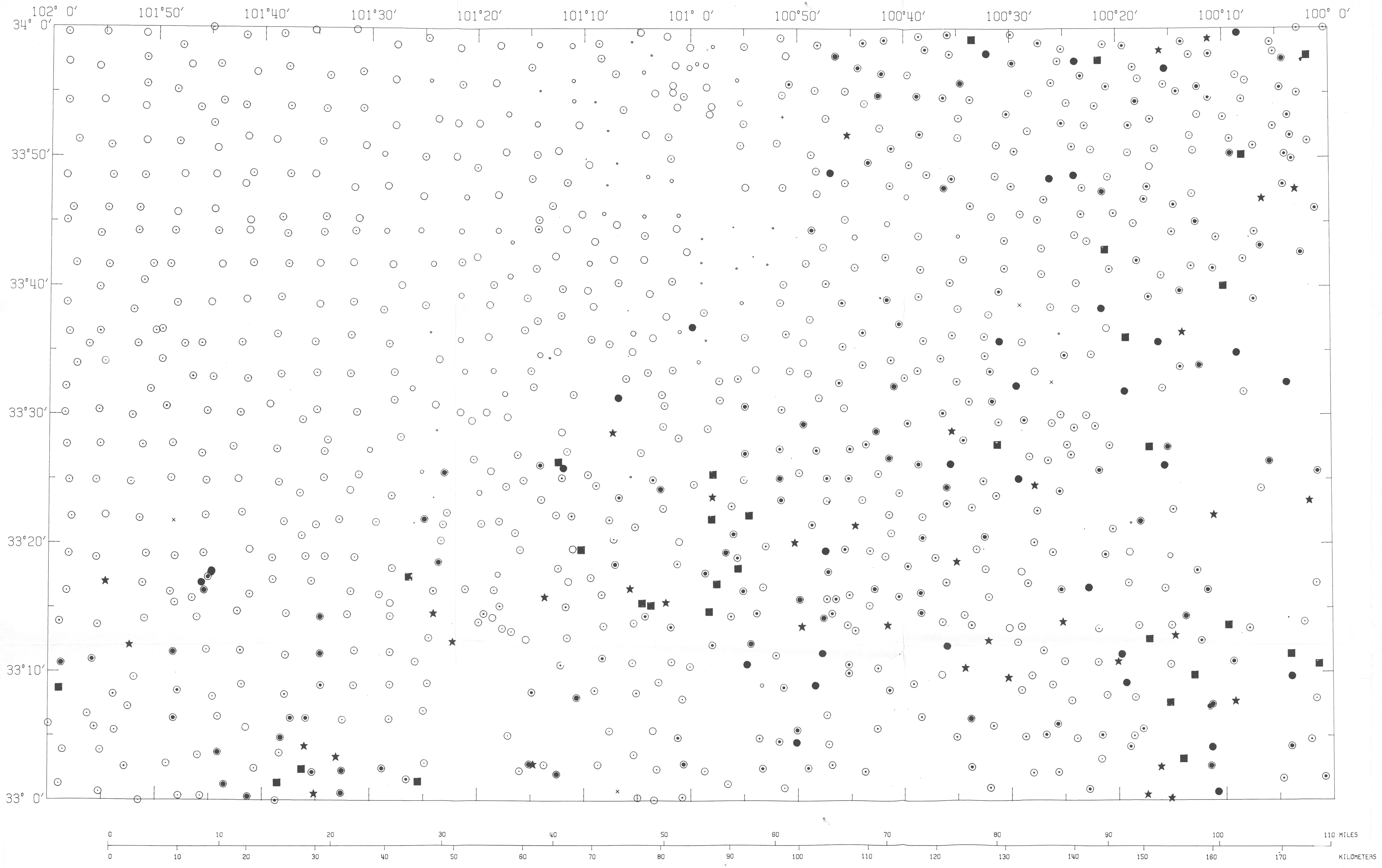
994 SAMPLES PLOTTED

SYMBØL RANGES FØR PLØTTED VARIABLE (X)

+	0.0 ≤ X < 0.20
×	0.20 ≤ X < 0.50
·	0.50 ≤ X < 1.20
∘	1.20 ≤ X < 2.10
○	2.10 ≤ X < 3.30
○	3.30 ≤ X < 4.80
○	4.80 ≤ X < 6.10
⊙	6.10 ≤ X < 7.60
⊙	7.60 ≤ X < 9.70
⊙	9.70 ≤ X < 13.00
◉	13.00 ≤ X < 18.50
◉	18.50 ≤ X < 22.50
●	22.50 ≤ X < 35.00
■	35.00 ≤ X < 75.00
★	X ≥ 75.00

PLATE 2
LUBBØCK QUADRANGLE
SYMBØL PLØT
GRØUNDWATER
URANIUM (PPB)

SCALE 1: 250000
994 SAMPLES PLØTTED



SYMBØL RANGES FØR
PLØTTED VARIABLE (X)

Range
0 ≤ X < 300
300 ≤ X < 460
460 ≤ X < 530
530 ≤ X < 650
650 ≤ X < 730
730 ≤ X < 830
830 ≤ X < 1000
1000 ≤ X < 3000
3000 ≤ X < 3800
3800 ≤ X < 4500
4500 ≤ X < 5300
5300 ≤ X < 6500
6500 ≤ X < 7700
7700 ≤ X < 10000
X ≥ 10000

PLATE 3
LUBBØCK QUADRANGLE
SYMBØL PLØT
GRØUNDWATER
SPECIFIC CØNDUCTANCE (UMHØS/CM)

SCALE 1: 250000

994 SAMPLES PLØTTED

LEGEND

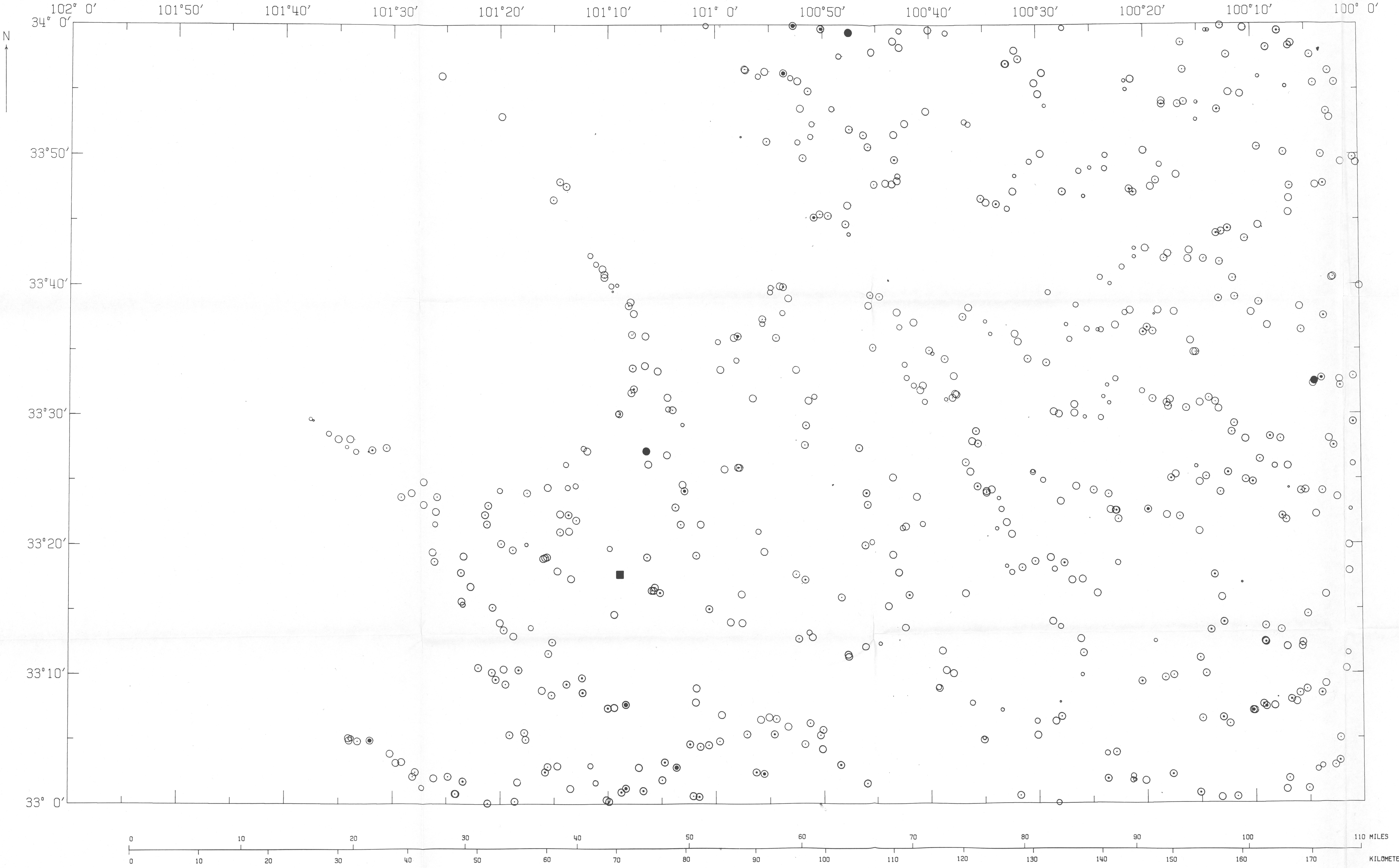
□ STREAM SEDIMENT

PLATE 4
LUBBOCK QUADRANGLE
STREAM SEDIMENT SAMPLE LOCATION AND DRAINAGE BASIN MAP

SITE NUMBER

SCALE 1: 250000

602 SAMPLES PLOTTED



SYMBOL RANGES FOR PLOTTED VARIABLE (X)

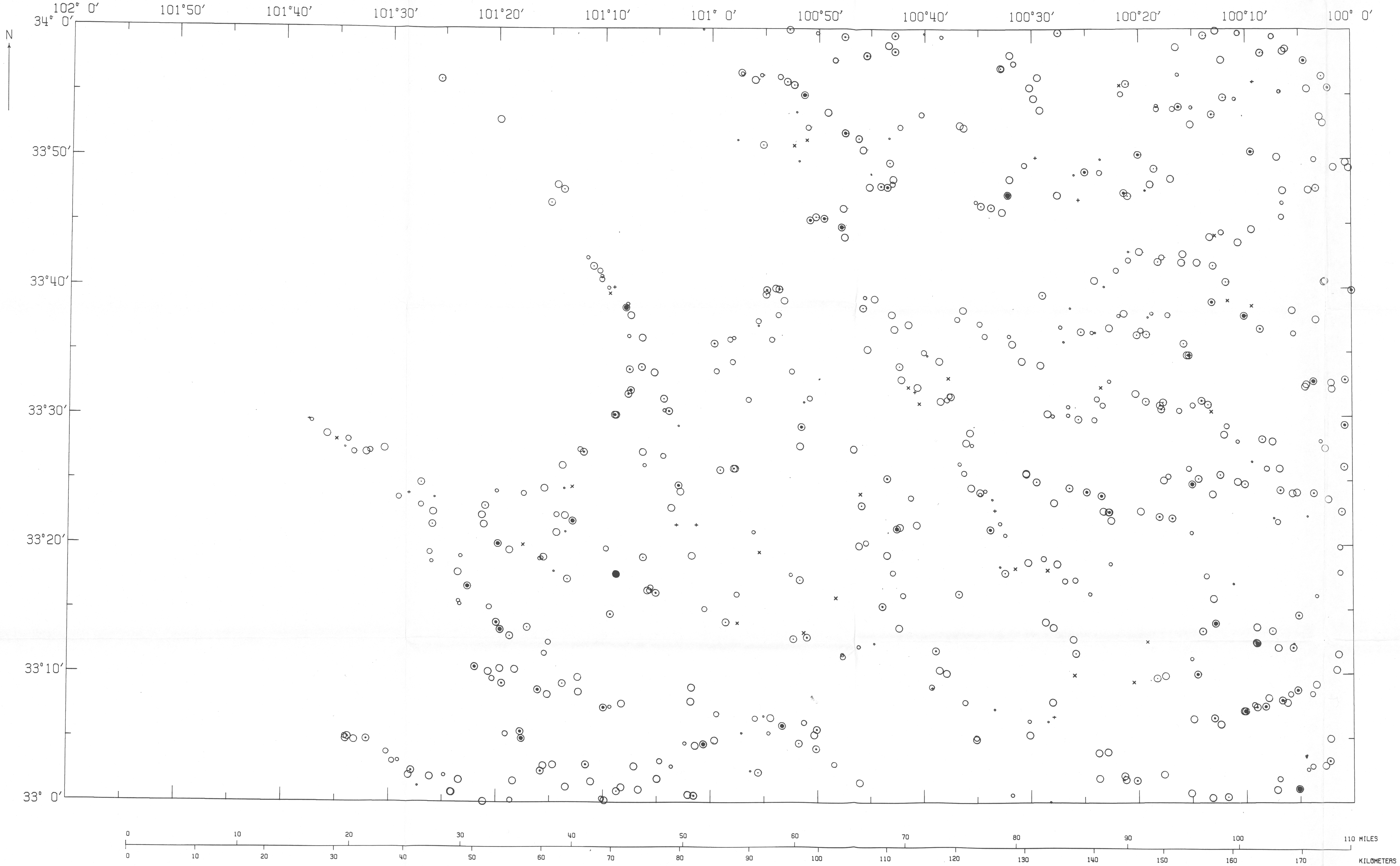
·	0.50 ≤ X < 0.70
∘	0.70 ≤ X < 0.90
○	0.90 ≤ X < 1.20
○	1.20 ≤ X < 1.50
○	1.50 ≤ X < 1.90
⊙	1.90 ≤ X < 2.40
⊙	2.40 ≤ X < 2.90
◉	2.90 ≤ X < 3.40
◉	3.40 ≤ X < 4.00
◉	4.00 ≤ X < 4.70
●	4.70 ≤ X < 6.00
■	6.00 ≤ X < 10.00

PLATE 5
LUBBOCK QUADRANGLE
SYMBOL PLOT - STREAM SEDIMENT

URANIUM (PPM)

SCALE 1: 250000

602 SAMPLES PLOTTED



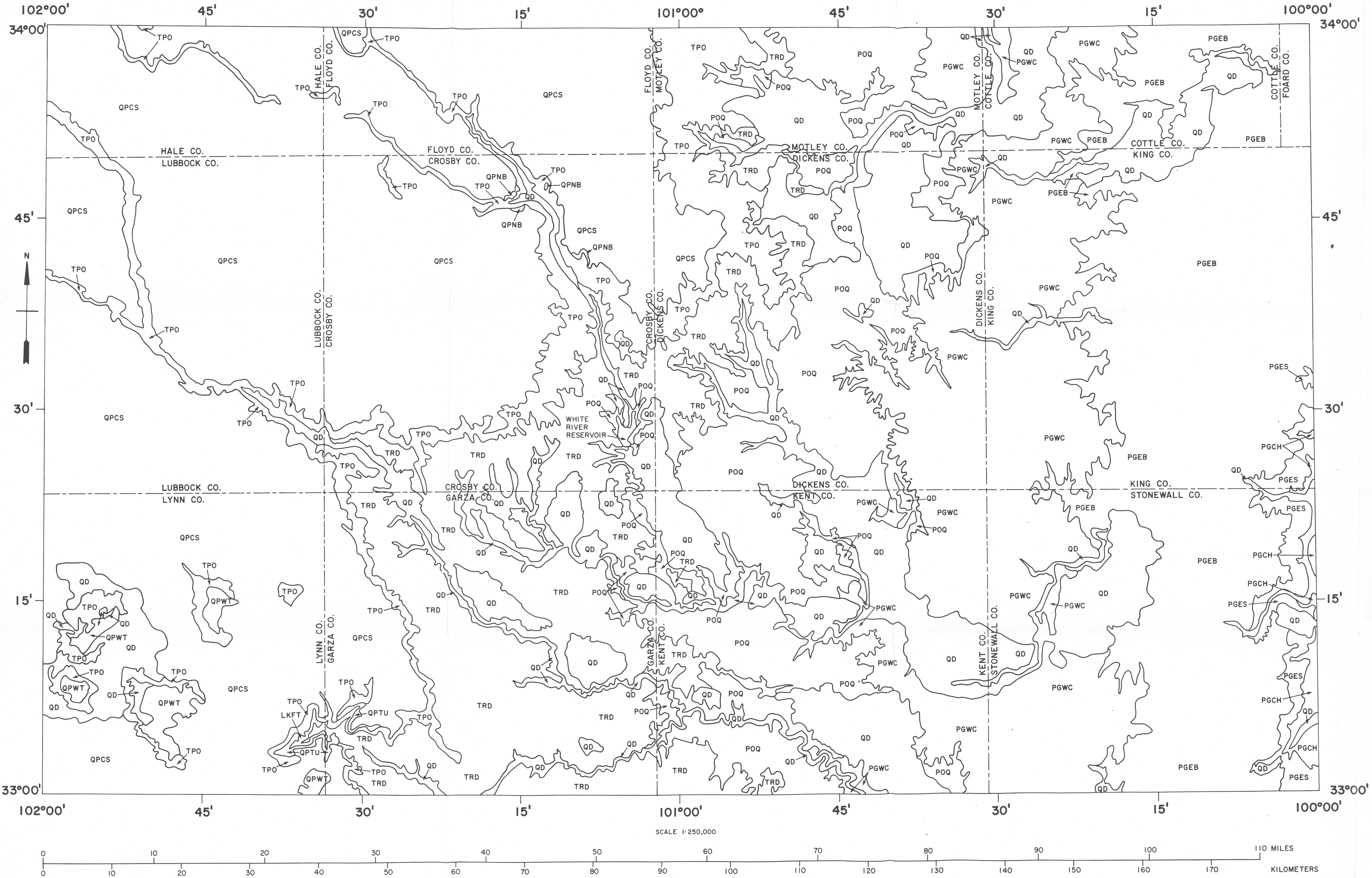
SYMBOL RANGES FOR PLOTTED VARIABLE (X)

Symbol	Range
+	0 ≤ X < 2
×	2 ≤ X < 3
·	3 ≤ X < 4
∘	4 ≤ X < 5
○	5 ≤ X < 6
○	6 ≤ X < 8
⊙	8 ≤ X < 9
⊙	9 ≤ X < 10
◉	10 ≤ X < 11
◉	11 ≤ X < 13
◉	13 ≤ X < 15
●	15 ≤ X < 17

PLATE 6
LUBBOCK QUADRANGLE
SYMBOL PLOT - STREAM SEDIMENT
THORIUM (PPM)

SCALE 1: 250000

601 SAMPLES PLOTTED



STRATIGRAPHIC COLUMN FOR THE LUBBOCK QUADRANGLE

ERA	SYSTEM	SERIES	GEOLOGIC MAP CODE	GEOLOGIC MEMBER CODE	GEOLOGIC MEMBER	MAXIMUM THICKNESS METERS	FEET
CENOZOIC	QUATERNARY	RECENT PLEISTOCENE	QD	QAL	ALLUVIUM		
				QWS	WINDBLOWN SAND		
				QPFT	FLUVIATILE TERRACE DEPOSITS		
		PLEISTOCENE	QPCS	QPCS	WINDBLOWN COVER SAND		
			QPWT	QPWT	TAHOKA FORMATION	8	25
			QPTU	QPTU	TULE FORMATION	26	85
			QPNB	QPNB	BLANCO FORMATION	23	75
	TERTIARY	PLIOCENE	TPO	TPO	OGALLALA FORMATION	76	250
MESOZOIC	CRETACEOUS		LKFT		WALNUT FORMATION &	8	25
					ANTLERS SAND	9	30
	TRIASSIC		TRD	TRD	DOCKUM GROUP	122	400
PALEOZOIC	PERMIAN		POQ	POQ	QUARTERMASTER FORMATION	107	350
			PGWC	PGWC	WHITEHORSE SANDSTONE & CLOUD CHIEF GYPSUM	198	650
			PGEB	PGEB	BLAINE FORMATION	213	700
			PGES	PGES	SAN ANGELO FORMATION	41	135
			PGCH	PGCH	CHOZA FORMATION	30	100

SOURCE OF GEOLOGY:

1. BARNES, V. E.; GEOLOGIC ATLAS OF TEXAS, LUBBOCK SHEET (1967).

LEGEND

GEOLOGIC CONTACT ————

COUNTY LINE — — - — —

PLATE 7

GENERALIZED GEOLOGIC MAP LUBBOCK QUADRANGLE, TEXAS