Preliminary Geophysical Investigation of the Sand and Gravel Aquifers in the Kaskaskia River Valley near Evansville, Illinois

Timothy H. Larson

Prepared for the Randolph County Water Commission

Open File Series 1996-4

Department of Natural Resources
ILLINOIS STATE GEOLOGICAL SURVEY
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OFS 1996-4

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ACKNOWLEDGMENTS

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DNR LOGO

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ABSTRACT

Exploratory geophysical tests were conducted in the Evansville, Illinois, area to determine whether the Kaskaskia River Valley contains sand and gravel deposits large enough to produce 2- to 3-million gallons of water per-day (mgd). The integrated geophysical testing program consisted of 19 reversed seismic refraction lines and 77 electrical earth resistivity soundings.

No extensive areas of coarse grained alluvium or outwash were found west of the Kaskaskia River. East of the Kaskaskia, localized areas of sandy deposits are indicated both north and south of Evansville. Test drilling to confirm the geophysical results is recommended for one area north of Evansville (Beagle Lane area) and one area south of Evansville (Dew Drop Landing Road area). Within the study area, the total area likely to contain coarse grained deposits is probably too small to obtain a 2- to 3-mgd groundwater supply. None of the recommended areas is larger than a similar field 7 miles upstream near Baldwin, which yields approximately 0.5 mgd.

INTRODUCTION

The Randolph County Water Commission (RCWC) is seeking to establish a 2- to 3-million gallon per day (mgd) regional water supply. Both groundwater and surface water supplies are being considered. Because the most likely location for the system's water plant is near Evansville, Illinois, representatives of the RCWC contacted the Illinois State Geological Survey (ISGS) for information concerning the groundwater potential of the shallow sand and gravel aquifer in the Kaskaskia River Valley near Evansville (fig. 1). The required volume of water is relatively large for Kaskaskia River Valley aquifers, which typically support well fields with capacities of only about 0.5 mgd. Regional data suggest that a similar low yield could be expected in the Evansville area; little specific information, however, is available to confirm this expectation.

This report documents exploratory geophysical tests in the Evansville area undertaken to determine whether sufficiently large sand and gravel deposits might be present to produce the required volume of water. The integrated geophysical program used seismic refraction and electrical earth resistivity tests. Maps based on the results of these tests show areas that are more or less favorable for the location of a well field. The maps can guide the location of test drilling in the more favorable areas.

The study area is defined by the 1- to 1.5-mile-wide Kaskaskia River Valley from about 1.5 miles north to 3 miles south of Evansville (fig. 1). It includes parts of Sections 12, 13, 14, 22, 23, 26, 27, 34, and 35 of T5S, R8W, Randolph County. The river has been channelized in the study area so that it flows in a relatively straight northeast to southwest reach through most of the area. Significant sand and gravel deposits most frequently occur in sharp valley bends. The study area is, therefore, terminated near the first sharp bend in the channel both at the north and south edges of the study area.

For most of the river valley within the study area, the modern channel is located along the east edge of the valley. A prominent bluff line that defines the east edge of the valley lies about 0.25 mile from the main channel. The bluff is closest to the main channel at Evansville where the uplands come within several blocks of the channel and bedrock is less than 15 ft below land surface along the river's edge. On the west side of the river, the valley is generally about 0.75 mile wide. A pronounced change in valley morphology occurs at the south end of the study area where the river bends sharply to the southeast. There, the modern river channel crosses to the west side of the valley, hugging prominent bluffs that come to within several hundred feet of the river. On the opposite side of the river, the eastern bluffs recede to about 0.5 mile from the river.

Landforms and sediments in the Kaskaskia River Valley reveal several stages in the history of the valley (fig. 2; Miles 1988). Nearest the river, the modern alluvial deposits have been greatly altered by the channelization and alignment project. The natural materials are primarily silty and clayey alluvium. Some areas of sandy alluvium and outwash are also present in the lower river bottoms. A lower terrace usually several hundred feet away from the river marks the edge of silty backwater lake sediments that were deposited during the latest glacial episode when the river

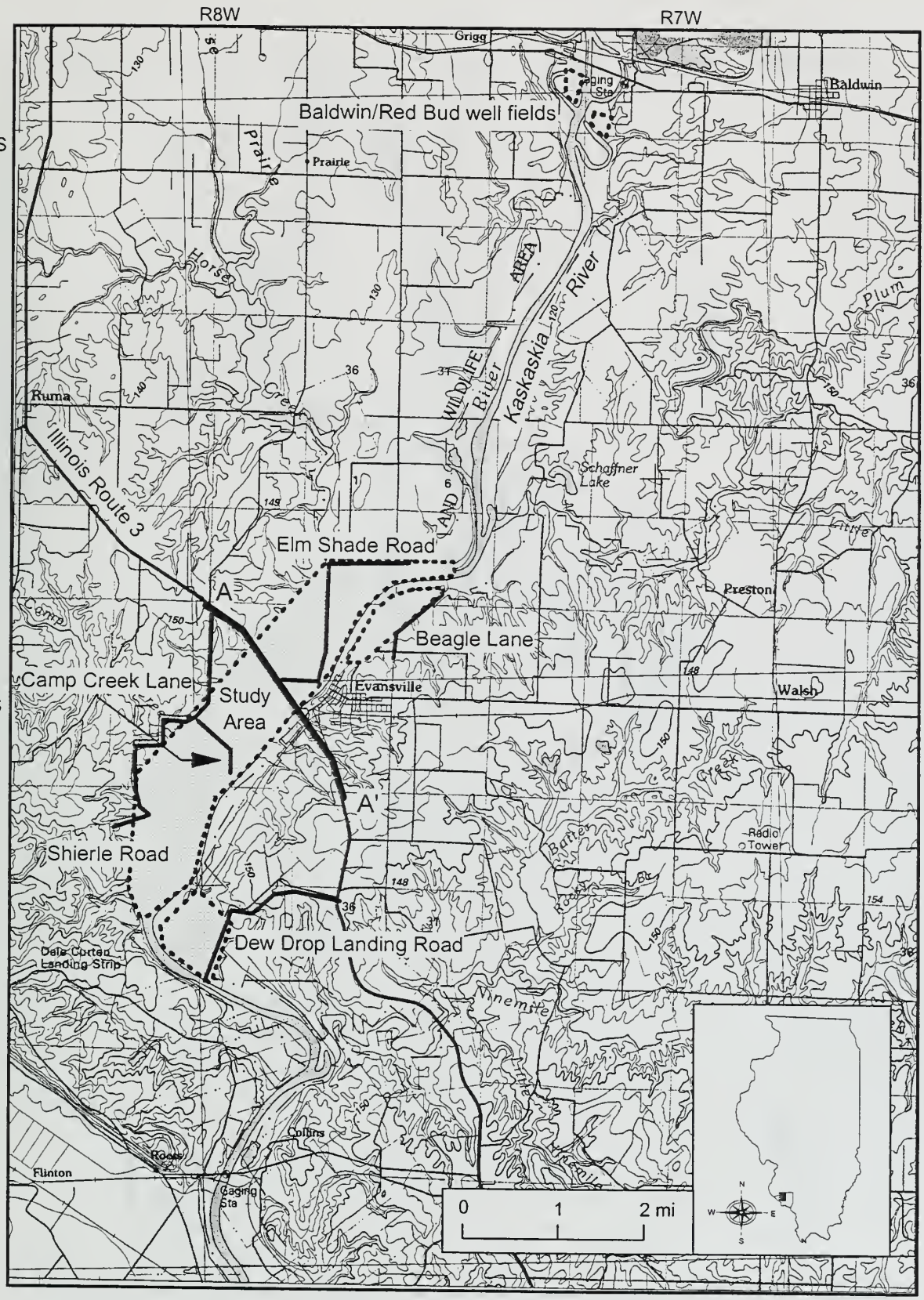

Figure 1 Study area in western Randolph County, Illinois. Base map is part of the Pinckneyville, Illinois, 1:100,000-scale quadrangle map published by the U.S. Geological Survey in 1985. Elevation contour interval is 10 meters. Line A–A′ along Illinois Route 3 locates the cross section shown in figure 2.

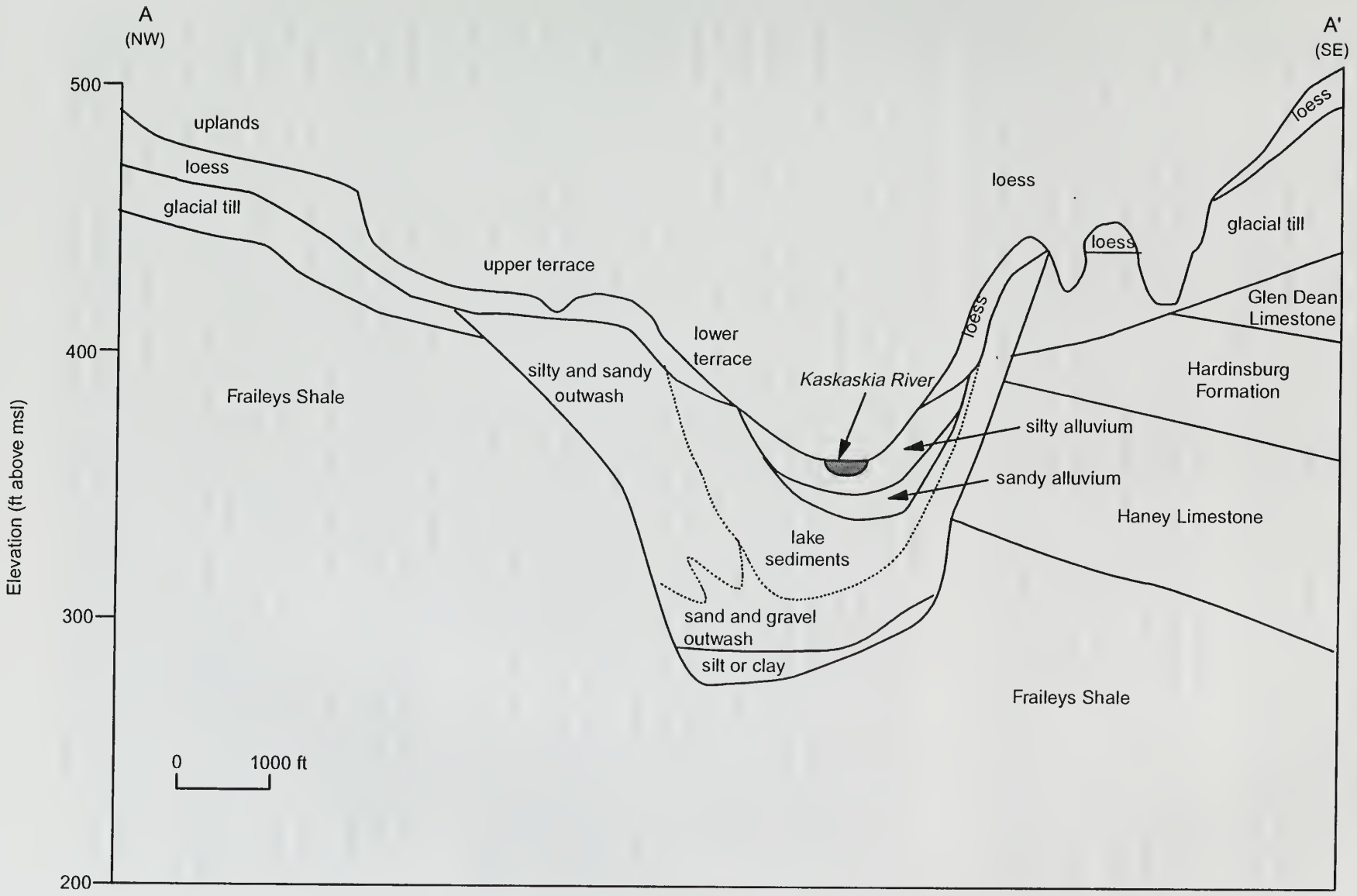

Figure 2 Generalized northwest–southeast cross section along Illinois Route 3 shows the sediments within the Kaskaskia River Valley. Location of cross section is indicated as line A–A′ on figure 1. Surface features are from Randolph County Soil Maps; deeper features are interpreted from available well and boring records.

was dammed by outwash sediments (Willman and Frye 1970). These silty lake deposits once blanketed the area within the lower terrace, but have since been eroded near the modern channel. A higher, usually broader terrace containing sandy outwash marks the edge of an old, high stage in the river that developed during the peak of Illinoian glacial meltout. Above this upper terrace, the upland soils are formed in till from the Illinoian glaciers and loess from Illinoian and Wisconsinan glacial times (Miles 1988).

The geophysical testing in this study targeted the coarse grained materials in the river valley. These materials are of two types. The first is sandy alluvium in the modern valley deposits near the river. The most favorable locations for well fields are where these alluvial deposits are thick and extensive. The second type of coarse grained deposit is sandy outwash in the upper terraces. At one time, the sandy outwash probably filled the valley. Although most of it was eroded, remnants of the sandy outwash deposits still underlie the younger deposits in some places within the valley. Areas where these deep remnant deposits are thick and extensive or where they are directly overlain by modern coarse grained alluvial deposits are also favorable for locating well fields. The geophysical tests can delineate areas of both types of coarse grained materials if they are present within the study area.

GEOLOGIC AND HYDROLOGIC BACKGROUND

Records from 38 wells, borings, and test holes in the study area were available for study at the ISGS. These records show that in the study area the unlithified sediments filling the Kaskaskia River Valley range in thickness from less than 10 to about 100 feet. In the Evansville area, most domestic water wells that use the sand and gravel aquifer are completed in sand at depths of about 25 to 35 feet. Very few wells or borings completely penetrate the entire thickness of unlithified sediments. Most of the records for wells completed in the bedrock provide very little detail about the unlithified materials. Consequently, the composition and extent of the deeper sand and gravel deposits are not well documented. The most complete description of the unlithified materials was reported in the log for the bridge boring for the Illinois Route 3 river crossing. The boring, located on the east side of the valley in the NW, NW, Section 24, T5S, R8W, encountered 20 feet of silty clay loam to sandy clay loam, above 15 feet of fine to coarse sand and gravel, above 12 feet of clay, above 18 feet of coarse sand and gravel, above 7 feet of gravelly clay loam, above limestone bedrock. Geologic information on file at the ISGS for the Evansville area suggests that although large variations in the thickness and composition in these units can be expected, the basic sequence found in the Route 3 boring is probably typical for the valley. The typical sequence includes an upper unit of alluvium, a middle unit of silty or clayey lake deposits, and a lower unit of glacial outwash or till. In the Route 3 boring, the lower 15 feet of the alluvium is sand and gravel, and most of the glacial outwash is very coarse grained.

The shallow bedrock in the study area consists of sedimentary rocks of the Pope Group of Mississippian age (Weibel et al. 1993). Geologic reports by Weller (1913) and Sutton (1934) provide most of the published geologic information for the area. East of Evansville, the uplands are underlain by the Glen Dean Limestone. Distinctive karstic sinkholes form in the unlithified sediments above these limestones. A clastic unit below the Glen Dean, the Hardinsburg Formation, is primarily shale and is generally not seen in surface exposures in the study area. West of the Glen Dean, the bedrock in the study area consists of the limestone and shales of the Golconda Formation, which stratigraphically lie below the Hardinsburg Formation. The principal unit of the Golconda is the Haney Limestone Member, which is present several feet below the land surface at Evansville and probably forms the uplands west of the river. Below the Haney lies the Fraileys Shale Member. Shale, probably part of the Fraileys Shale, is exposed in stream beds west of the river.

No published reports give details concerning the shallow groundwater potential in the local Evansville area. Regional studies by Horberg (1950) and Pryor (1956) agree that groundwater potential in the lower Kaskaskia River Valley is marginal. Both studies recommend that site-specific investigations be conducted before locating a well field in the Kaskaskia River Valley.

Two well fields have been developed in a shallow alluvial aquifer near Baldwin, about 7 miles upstream from Evansville (fig. 1). There, municipal wells for Baldwin and Red Bud were constructed in an abandoned channel of the Kaskaskia River. Shallow, coarse grained alluvium overlies deeper coarse grained outwash with little or no intervening fine grained deposits. This configuration of deposits is particularly favorable for developing a municipal well field. The Baldwin and Red Bud well fields, located in a moderately productive aquifer within the Kaskaskia River Valley, together produce about 0.5 mgd.

The ISGS conducted two geophysical studies (Reed 1977, 1987) in the Baldwin area of the Kaskaskia River Valley. These two studies and a separate resistivity study closer to Red Bud (Poole and Heigold 1981) helped define favorable areas for siting the Red Bud well field. In these studies, electrical earth resistivity surveying demonstrated that the alluvium is highly variable but that favorable locations could be found.

Preliminary geologic site investigations were conducted in the Evansville area by ISGS geologists in December 1941. Data from shallow auger drilling and resistivity tests as well as field observations were collected, but no report was prepared (the report is on file at the Groundwater Resources and Protection Section, ISGS). Some of the field observations and resistivity data were incorporated into the present study.

GEOPHYSICAL STUDY

Method of Investigation

Two types of geophysical tests, seismic refraction and electrical earth resistivity soundings, were used in this study. The seismic tests define the depth to bedrock, which is also the thickness of the overlying glacial and alluvial deposits. The resistivity tests locate sand and gravel deposits within the alluvium and outwash. Because of the variable nature of the bedrock lithology, the resistivity tests alone do not indicate reliably the thickness of the shallow deposits. However, when the two tests are used together, both the thickness and nature of the glacial and alluvial deposits can be inferred.

Seismic refraction Seismic refraction surveys record the seismic energy from a small, buried charge of explosive. The energy radiates in all directions through the ground. Some energy travels down to the bedrock surface, where it is refracted back up to the ground surface (fig. 3). The returned energy is recorded by a series of sensors laid in a line near the explosive charge. The recorded information is used to calculate the depth to the bedrock surface beneath the charge and sensors.

The seismic refraction field configuration consisted of a line of 24 single 14-Hz geophones placed at 50-foot intervals for a total of 1,150 feet. Charges were shot at the center and at both ends of the geophone line. Longer profiles of investigation were created by aligning consecutive geophone lines end-to-end along the profile. Generally, adjacent lines were located such that the holes for the end charges were 10 ft apart. Charges were placed in 5-foot-deep boreholes and varied from 0.3 to 1 lb of Kinepak explosive. Data were recorded in digital format for later processing using SIPT, a ray tracing interpretation program (Scott 1977). Seismic data are tabulated in appendix A.

Electrical earth resistivity In the electrical earth resistivity procedure, an electric current is applied to the ground through two current electrodes, and the potential difference is measured across a pair of potential electrodes (fig. 4). Apparent resistivity is calculated based on the measured potential drop, applied current, and electrode spacing (Dobrin 1976). Resistivity depth soundings are obtained by systematically increasing the separation between the electrodes, which increases the effective depth of the resistivity measurement. Apparent resistivities measured at increasing electrode separations are related to the resistivity of the earth materials at increasing depth. Units of resistivity reported in this study are ohm-feet.

The Wenner electrode configuration was employed in this study using a computer controlled Terrameter SAS 300C resistivity meter and ABEM Multimac control system. In the Wenner electrode configuration, the electrodes are laid out in a line with the current electrodes positioned at the outside ends and the potential electrodes forming an inner pair. The spacing between electrodes remains equal as the configuration is expanded from the center point. In this study, the electrode separation was increased in 10 and 20 foot increments to a maximum of 200 feet. Thirteen readings were obtained at each station.

The resistivity data obtained during this study were analyzed quantitatively using an analysis technique developed by Zohdy and Bisdorf (1975). The technique converts apparent resistivity soundings from each location into a sequence of layers representing types of earth materials of varying thickness and calculated resistivity. Resistivity data are tabulated in appendix B. Although this technique provides only one of many geoelectrically equivalent solutions for a given resistivity data set, prior knowledge of the geologic conditions in the study area helps to compensate for this shortcoming (Heigold et al. 1985).

In general, sand and gravel deposits have higher resistivity values than do clay or silt deposits. Gravel has even higher resistivity than sand. Silt or clay in a sand deposit reduces the overall resistivity of the unit. Limestone, the predominant bedrock lithology in the area, typically has a high resistivity and is difficult to differentiate from sand or gravel. Seismic testing is used to locate the top of bedrock, so that high-resistivity limestone can be distinguished from high-resistivity sand and gravel deposits.

Results

Data from four long, exploratory geophysical profiles combining seismic refraction lines (fig. 5) and resisitivity soundings (fig. 6) were gathered to establish a framework for more detailed work. Three lines were on the west side of the river (Elm Shade Road North and South, and Camp Creek Lane). One line (Dew Drop Landing Road) was on the east side of the river. These lines established that, for the most part, the sediments along the Kaskaskia River are thicker west of the present river channel, but that thick sand and gravel deposits are of limited extent. An exception is at Dew Drop Landing Road, where the buried river channel is very deep on the east side of the river for several hundred feet east and north of the present river. Farther from the present river, the buried channel is shallower and approaches the more common depth of 50 to 60 feet.

Two miles south of Evansville, west of the river, the area north of Crooked Creek was investigated in more detail. The river valley is widest north of Crooked Creek. Four resistivity stations were

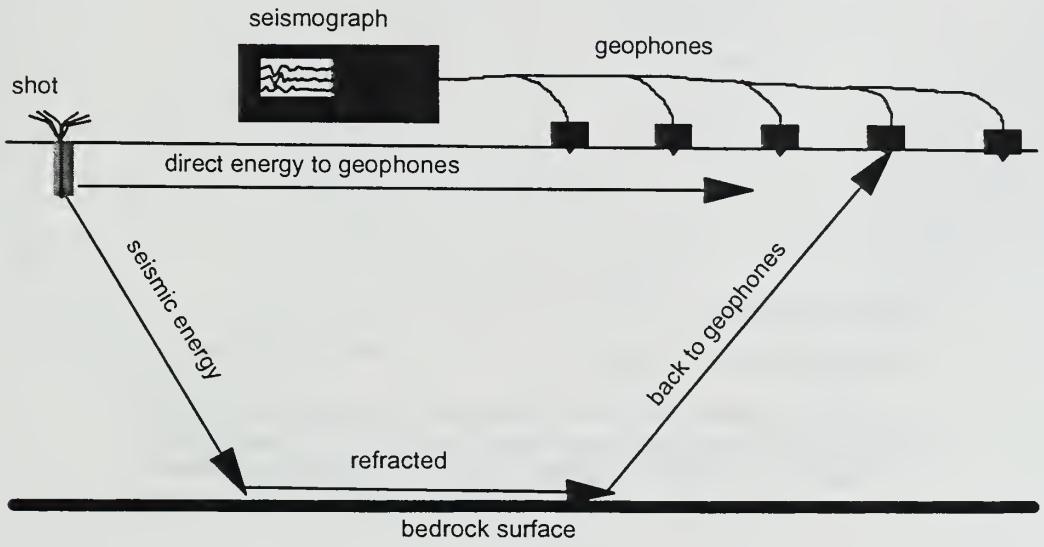

Figure 3 Sketch of seismic refraction field operation.

occupied in this area near Shierle Road (fig. 7). Results from these stations indicated that the river sediments are fine grained, except for a ridge of surface sand. The prominent, north–south sand ridge is probably a dune or river bar that remains from an earlier high water stage of the Kaskaskia River. The fine sandy deposits of the sand ridge do not extend very deep into the alluvium.

On the east side of the river, south of Evansville, 25 resistivity stations were occupied in the river bend west of Dew Drop Landing Road (fig. 7). The highest resistivity values recorded in the entire study area were obtained from two stations nearest the river on the extreme western edge of the Dew Drop Landing Road area. These readings suggest that coarse grained alluvium and/or outwash is present from the ground surface down to bedrock in the river bend. Moderately high resistivity values were recorded at several other stations. Some of the high resistivity values are caused by shallow bedrock along the north rim of the Dew Drop Landing Road area. At other stations, however, high resistivity indicates that shallow sandy alluvium is present to depths of about 40 feet. In some places, the shallow sandy alluvium may be connected to a deeper layer of coarse grained alluvium or outwash. The general geologic conditions in the southern area are shown in a pair of west–east cross sections (fig. 8).

North of Evansville, on the west side of the river, 12 resistivity stations were occupied between Horse Creek and Route 3 (figs. 6, 9). These include a series along the north–south part of Elm Shade Road, aligned approximately parallel to the river, and another series in the river bottoms immediately south of Horse Creek. In general, the resistivity data in this area imply the absence of sand and gravel deposits. Low resistivity readings dominated the unlithified materials. High resistivity values, indicating coarser materials, were found at one station at the confluence of Horse Creek and the Kaskaskia River and at a few stations along Elm Shade Road near the Kaskaskia River.

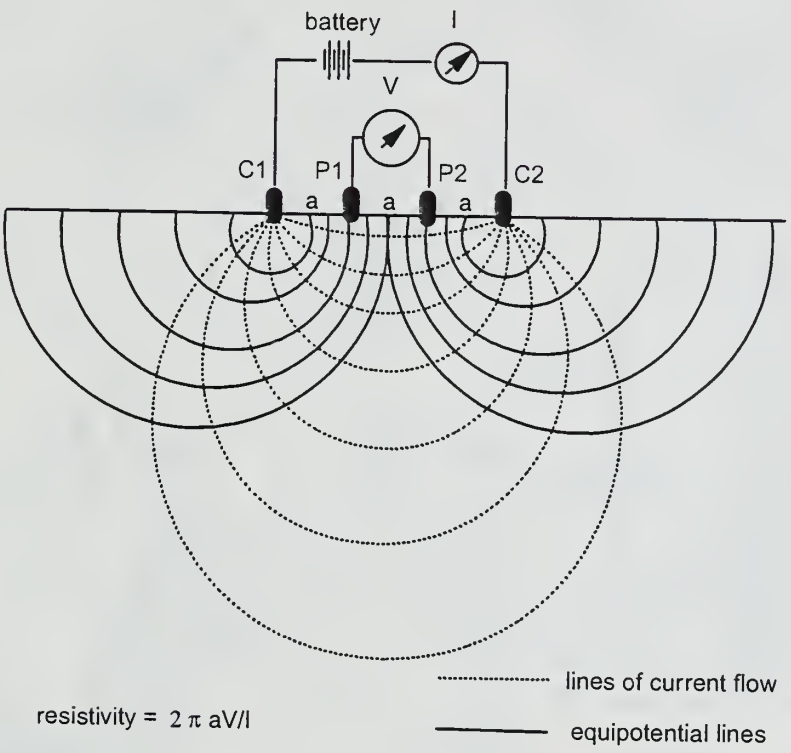

Figure 4 Basic elements of a resistivity meter and the Wenner electrode configuration. C1 and C2 are the current electrodes; P1 and P2 are the potential electrodes; a is the spacing between electrodes; V is measured voltage; and I is the impressed current.

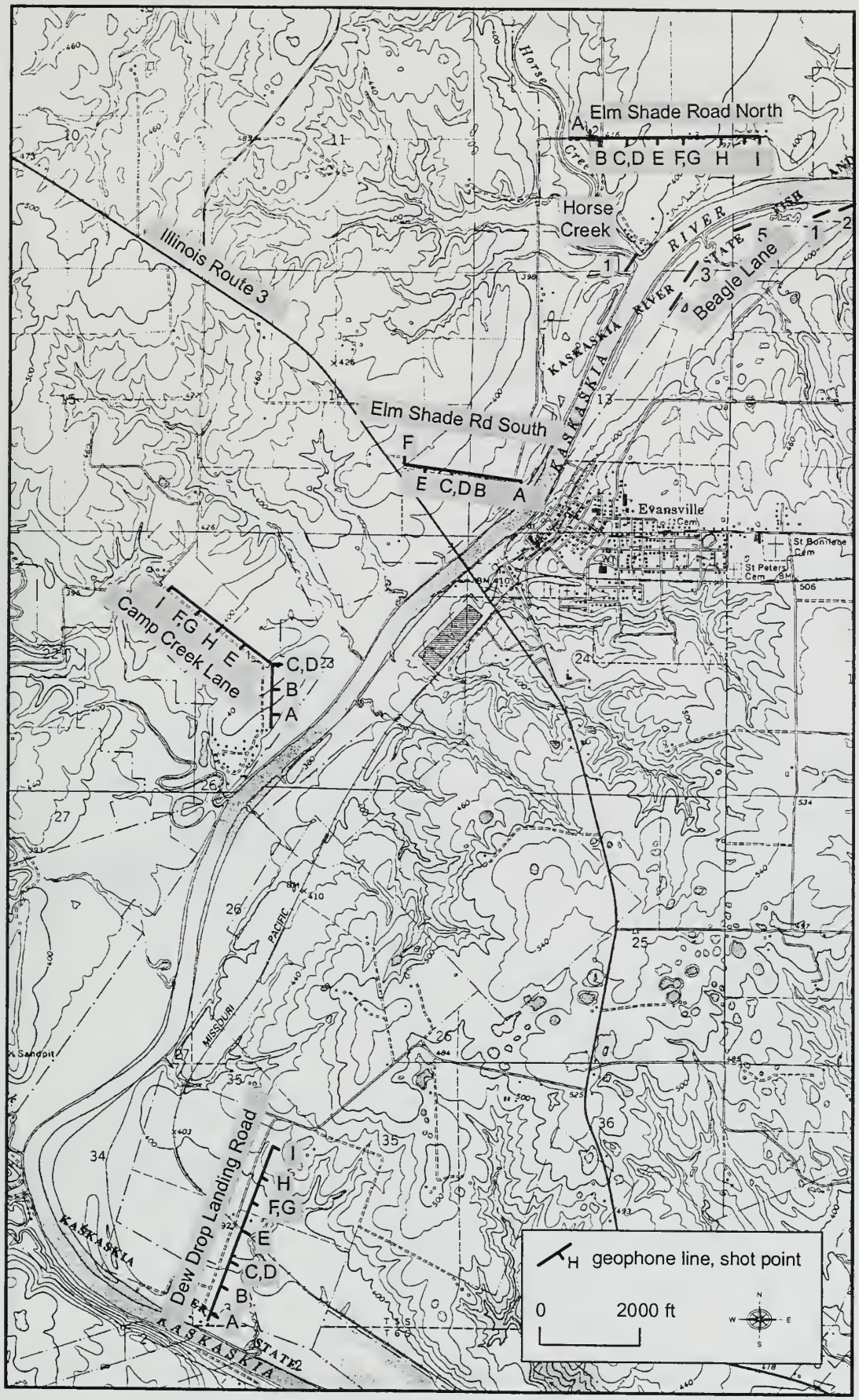

Figure 5 Location of seismic lines in the Evansville study area. Locations of the lines and shot points are shown. Base map is from the Evansville 7.5–minute topographic quadrangle map. Contour interval is 20 feet.

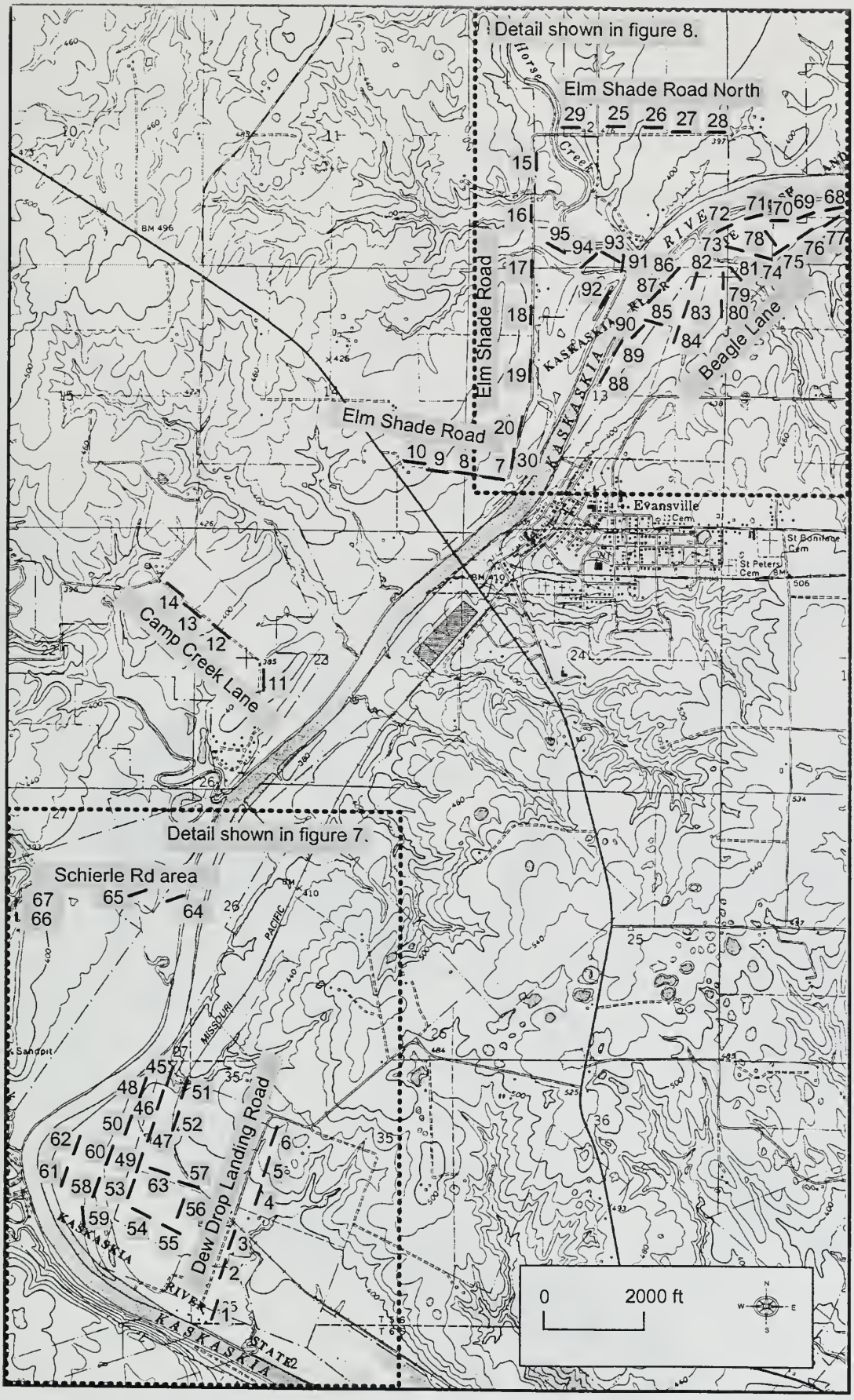

Figure 6 Location of numbered resistivity stations in the Evansville study area. Base map same as in figure 5.

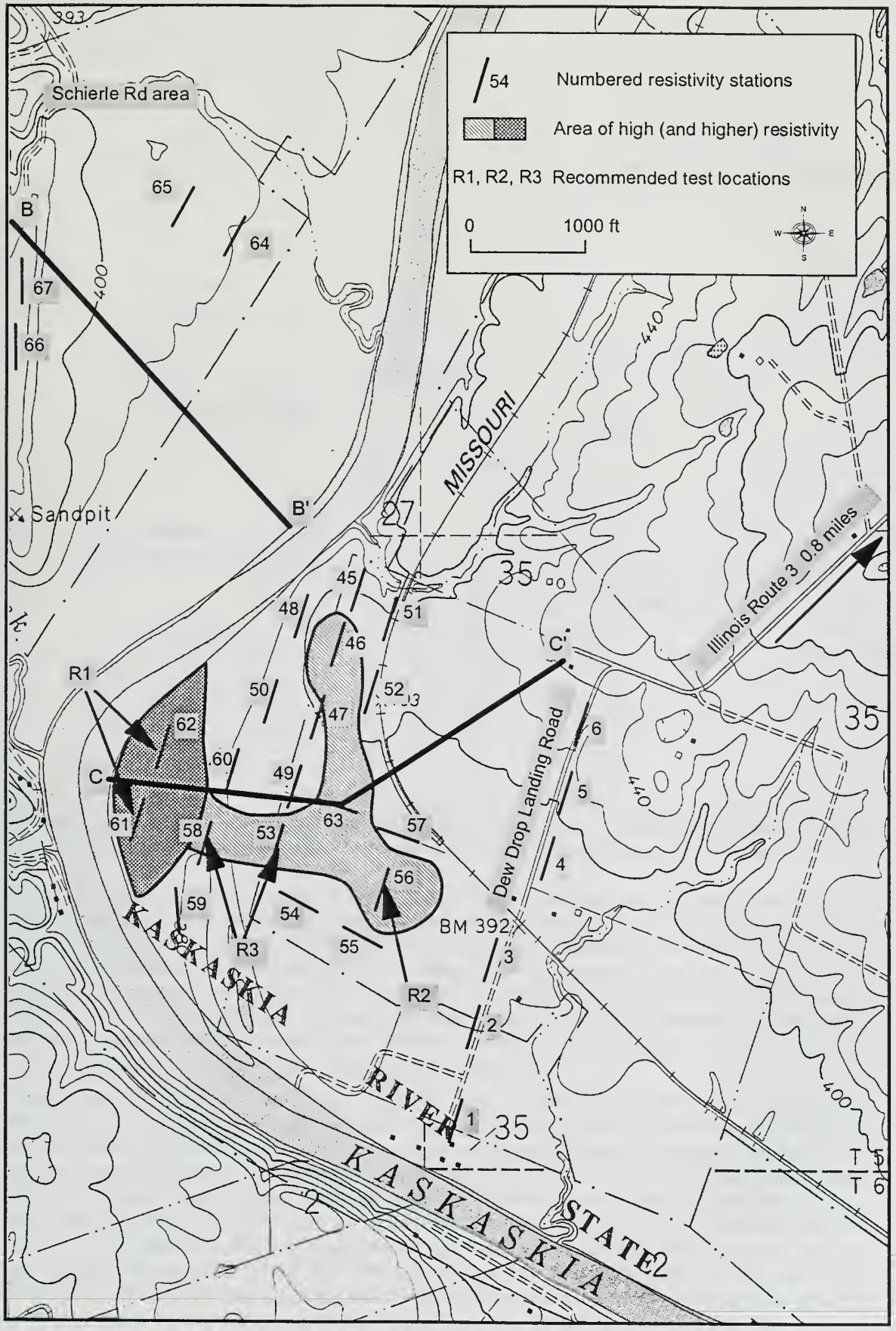

Figure 7 Detailed map of the southern part of the Evansville study area. Map shows areas of high resistivity values, recommended test locations, and approximate locations in figure 8 of lines of cross sections (B–B′ and C–C′) are figure 8. Base map is from the Evansville 7.5–minute topographic quadrangle map. Contour interval is 20 feet.

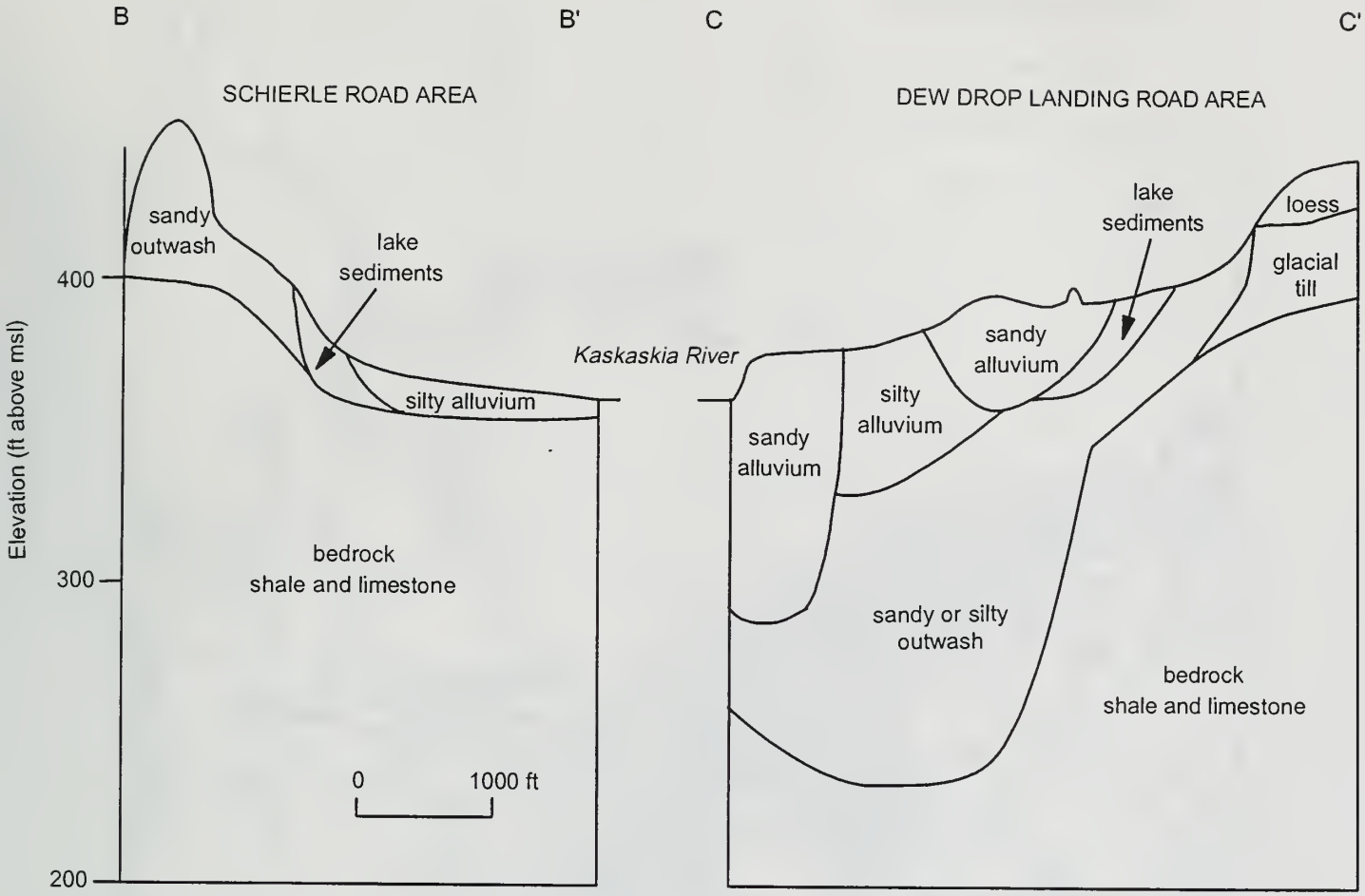

Figure 8 Generalized cross sections in the southern part of the Evansville study area. Locations are indicated by lines B–B′ and C–C′ on figure 7. Interpretations are based on geophysical data, existing well and boring records, and soils maps.

On the east side of the river, 23 stations were located in the bottomland west of Beagle Lane (fig. 9). Several local residents indicated that bedrock had been exposed in the river bed during times of low river stage before the river was channelized. During the investigation, we collected data from five isolated seismic refraction lines to confirm these reports (locations are shown on fig. 5). We found that the bedrock was indeed within 15 feet of the ground surface in the very northern part of the Beagle Lane area where the river flows westward. Farther south where the river flows southward, the tests indicated that the bedrock is 60 to 100 ft deep, which is comparable to depths reported in test borings drilled for the Route 3 bridge south of Evansville.

Several resistivity stations in the Beagle Lane area had high resistivity values. In the northeastern part of the area, high resistivity values are attributed to shallow bedrock. Farther south and west, the high resistivity values more likely indicate sand and gravel alluvium or outwash. In particular, a possible channel containing coarse grained deposits is indicated in the vicinity of a northwest–flowing stream. Sand and gravel are also indicated both north and south of the mouth of the stream. An area of high resistivity extends south along the river bank from the mouth of the small stream for about 0.5 mile. Data from the 1941 resistivity survey indicate that this high resistivity area does not extend all the way south to Evansville. This area of high resistivity could indicate the presence of sand and gravel alluvial deposits along the margin of the modern river valley. The general geologic conditions in the northern area are shown in a pair of west–east cross sections (fig. 10).

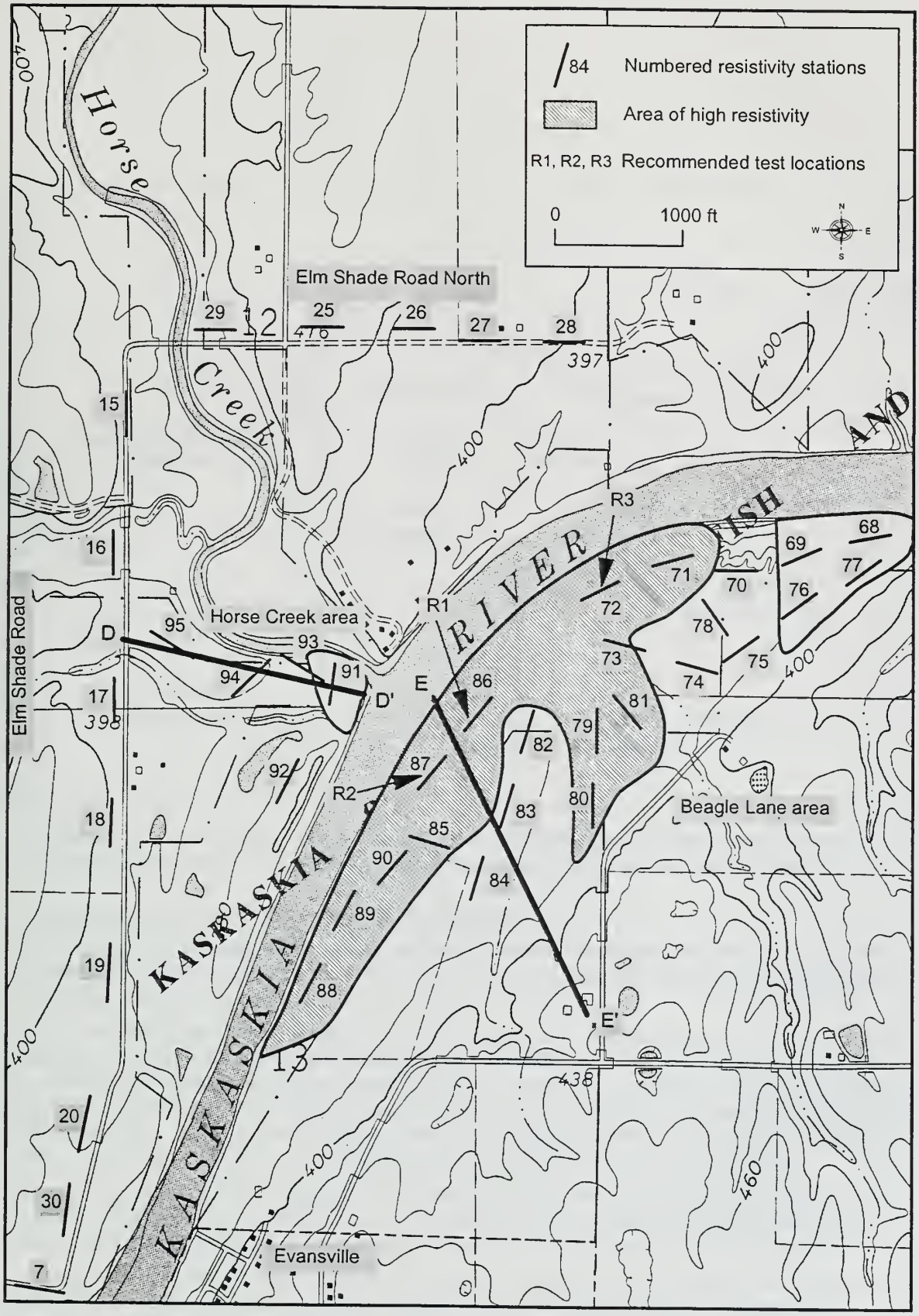

Figure 9 Detailed map of the northern part of the Evansville study area. Map shows areas of high resistivity values, recommended test locations, and approximate locations of lines of cross sections (D–D′ and E–E′) in figure 10. Base map is from the Evansville 7.5–minute topographic quadrangle map. Contour is 20 feet.

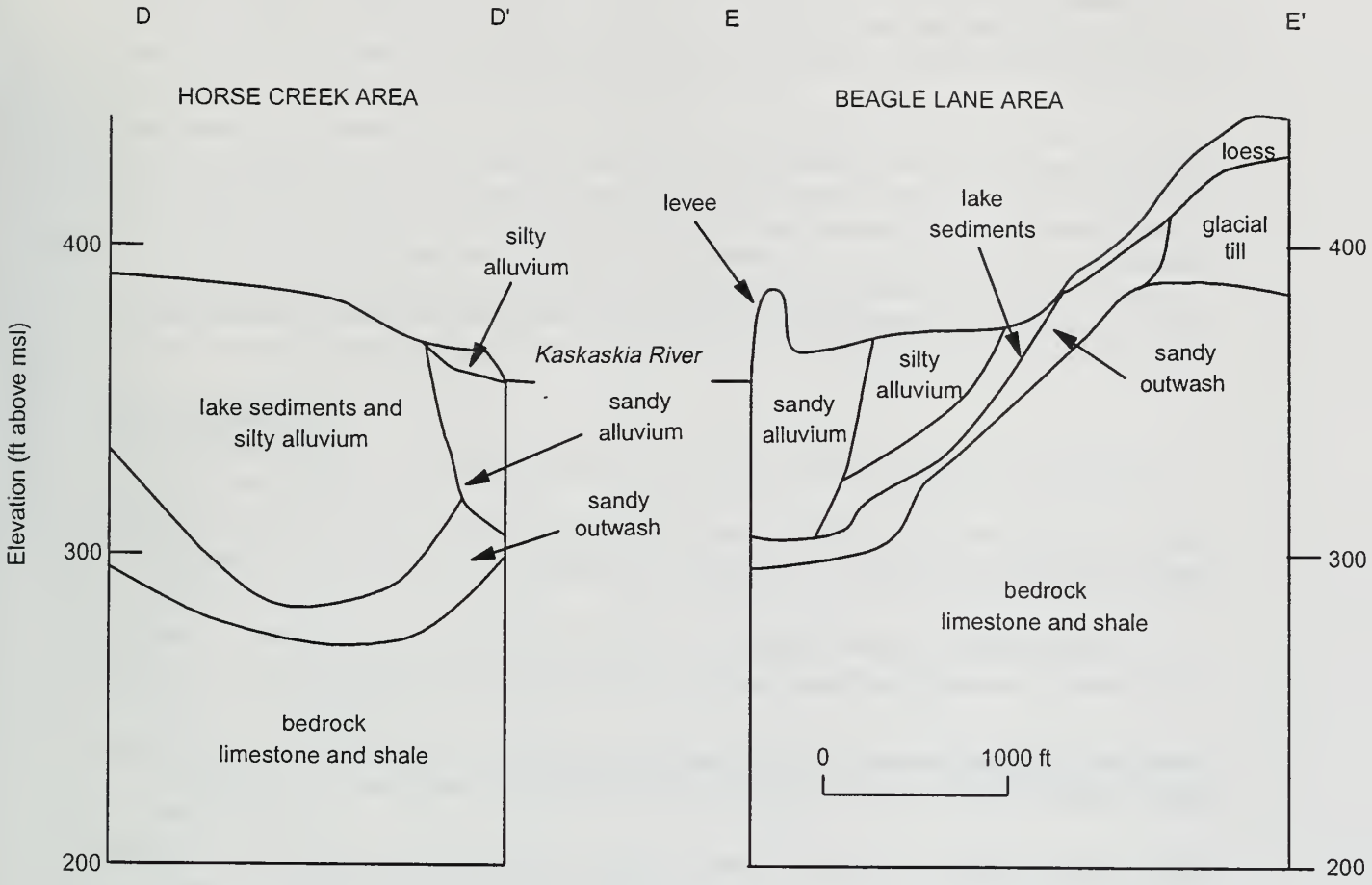

Figure 10 Generalized cross sections in the northern part of the Evansville study area. Locations are indicated by lines D–D′ and E–E′ on figure 9. Interpretations are based on geophysical data, existing well and boring records, and soils maps.

CONCLUSIONS AND RECOMMENDATIONS

In summary, no extensive areas of high resistivity values that would indicate sand and gravel deposits were found west of the Kaskaskia River. If present, coarse grained alluvium or outwash do not form extensive deposits.

East of the Kaskaskia River, localized areas of high resistivity that can be attributed to sandy deposits are present both north and south of Evansville. The most favorable location for coarse grained deposits is south of Evansville in a 20- to 25-acre area on the inside bend of the Kaskaskia River (fig. 7). Although not as extensive as other areas, it has much higher resistivity and because of its proximity to the river, has a high likelihood of favorable well yield. Other locations in the Dew Drop Landing Road area have resistivity values sufficiently high to warrant test drilling.

North of Evansville (fig. 9), a long but narrow zone along the river has high resistivity values similar to those in the well field near Baldwin. The narrow width of this area could limit the yield of any wells drilled, but the relatively high resistivity values suggest that test drilling is warranted.

In total, the areas within the study area with elevated resistivity values are small and restrict the potential for obtaining a 2- to 3-mgd groundwater supply. None of the recommended areas is larger than the Baldwin–Red Bud fields, which together yield approximately 0.5 mgd. The Beagle Lane area is almost as large as the Baldwin fields; and if testing proves that the materials are comparable to those upstream near Baldwin, then 0.5 mgd is probably an upper limit for that area's

yield. The most favorable part of the Dew Drop Landing Road area is about half the size of the Baldwin fields; but because the resistivity values are much higher, this area might support a somewhat higher capacity well. The rest of the area underlain by elevated resistivity values in the Dew Drop Landing Road area is approximately the size of the Baldwin fields. By comparison, 0.5 mgd is likely to be an upper limit for the yield from this area.

Test drilling is recommended to confirm the results of the geophysical tests. Test drilling should be continued through the unlithified material and into bedrock. Recommended test sites are identified by resistivity station numbers. Three recommended test sites are in the Dew Drop Landing Road area: at either station 61 or 62 at the far west end of the area, at station 56, and at either station 58 or 53 (fig. 7). Bedrock is estimated to be 80 to 120 feet deep in this area. The most favorable area for test drilling in the Beagle Lane area is from station 87 north to station 72, near the mouth of the small stream entering the Kaskaskia River (fig. 9). Test drilling sites should be within 500 feet of the river bank in the Beagle Lane area, where bedrock is estimated to be 75 to 85 feet deep.

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APPENDIX A SEISMIC DATA

SIPT2 V-4.1 --- SEISMIC REFRACTION INTERPRETATION PROGRAM --- RIMROCK GEOPHYSICS, INC.

DATA FILE: EVAN41F.SIP PRINT FILE: A:EVAN41F.OUT RUN
DATE AND TIME: 08-17-1995 at 15:09

TITLE: Randolph County Water Commission Elm Shade Rd South vers F

SHOTPOINT AND GEOPHONE INPUT DATA for EVAN41F.SIP
Spread 2, 3 Shotpoints, 24 Geophones, X-Shift = 0.0, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
F	421.0	30.0	15.0	5.0	0.0	0.0	1
E	412.0	400.0	12.0	5.0	0.0	0.0	0
D	396.0	1050.0	12.0	5.0	0.0	0.0	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP F		SP E		SP D	
				T	L	T	L	T	L
1	421.0	-150.0	15.0	0.00	0	0.00	0	0.00	0
2	421.0	-100.0	15.0	0.00	0	0.00	0	0.00	0
3	421.0	-50.0	15.0	0.00	0	0.00	0	0.00	0
4	420.0	0.0	15.0	13.25	1	91.00	2	136.20	3
5	419.0	50.0	15.0	12.50	1	84.50	2	133.00	3
6	418.0	100.0	10.0	24.25	2	76.50	2	130.50	3
7	417.0	150.0	5.0	32.00	2	66.75	2	127.70	3
8	416.0	200.0	0.0	41.75	2	57.75	2	124.20	3
9	415.0	250.0	0.0	52.75	2	52.00	2	121.70	3
10	414.0	300.0	0.0	61.50	2	45.00	2	119.70	3
11	413.0	350.0	0.0	70.75	2	35.50	2	116.70	3
12	412.0	400.0	0.0	79.50	2	10.75	1	114.20	3
13	411.0	450.0	0.0	87.25	2	38.00	2	110.50	3
14	410.0	500.0	0.0	95.75	2	46.75	2	106.70	3
15	409.0	550.0	0.0	99.75	3	55.25	2	102.00	3
16	408.0	600.0	0.0	103.50	3	64.75	2	98.25	3
17	407.0	650.0	0.0	108.20	3	73.50	2	94.00	2
18	406.0	700.0	0.0	112.50	3	83.50	2	85.50	2
19	404.0	750.0	0.0	116.70	3	92.25	2	74.00	2
20	402.0	800.0	0.0	120.00	3	100.50	2	65.00	2
21	400.0	850.0	0.0	123.70	3	103.00	3	56.00	2
22	399.0	900.0	0.0	126.20	3	107.20	3	47.00	2
23	398.0	950.0	0.0	130.50	3	110.20	3	38.00	2
24	397.0	1000.0	0.0	133.70	3	114.70	3	28.00	2

SHOTPOINT AND GEOPHONE INPUT DATA for EVAN41F.SIP
Spread 1, 3 Shotpoints, 24 Geophones, X-Shift = 1285.00, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
C	395.00	-225.00	12.00	5.00	0.00	0.00	1
B	380.00	575.00	10.00	5.00	0.00	0.00	0
A	378.00	1175.00	15.00	5.00	0.00	0.00	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP C		SP B		SP A	
				T	L	T	L	T	L
1	391.0	0.0	0.0	56.00	2	90.75	3	128.00	3
2	390.0	50.0	0.0	65.00	2	86.00	3	124.50	3
3	389.0	100.0	0.0	74.75	2	82.00	3	121.00	3
4	388.0	150.0	0.0	83.00	2	78.00	3	117.00	3
5	387.0	200.0	0.0	89.75	2	74.00	3	113.20	3
6	386.0	250.0	0.0	96.25	2	69.00	3	109.70	3
7	385.0	300.0	0.0	100.70	3	65.00	2	105.00	3
8	384.0	350.0	0.0	103.00	3	54.25	2	101.00	3
9	383.0	400.0	0.0	106.00	3	43.75	2	97.00	3
10	382.0	450.0	0.0	109.00	3	32.50	2	93.25	3
11	381.0	500.0	0.0	112.50	3	22.00	2	89.00	3
12	380.0	550.0	0.0	115.00	3	9.25	1	85.00	3
13	380.0	600.0	0.0	118.20	3	11.25	1	81.00	3
14	379.0	650.0	0.0	120.70	3	23.00	2	77.00	3
15	379.0	700.0	0.0	124.50	3	32.50	2	73.00	3
16	379.0	750.0	0.0	126.50	3	41.50	2	69.00	3
17	379.0	800.0	0.0	129.20	3	50.25	2	65.00	3

18	379.0	850.0	0.0	131.20 3	58.50 2	61.00 2
19	379.0	900.0	0.0	134.70 3	61.50 3	53.00 2
20	379.0	950.0	0.0	137.70 3	64.75 3	45.00 2
21	379.0	1000.0	0.0	140.70 3	67.50 3	37.00 2
22	379.0	1050.0	0.0	144.70 3	71.75 3	29.00 2
23	378.0	1100.0	0.0	147.50 3	74.00 3	22.00 2
24	378.0	1150.0	0.0	150.70 3	78.00 3	14.00 1

Velocities used, Spread 2

	Layer 1	Layer 2	Layer 3
Vertical	2103	5623	
Horizontal		5623	10500

Velocities used, Spread 1

	Layer 1	Layer 2	Layer 3
Vertical	2103	5623	
Horizontal	5623		14500

Randolph County Water Commission Elm Shade Rd South vers F

Spread 2 Depth and Elev of layers directly beneath SPs and Geos for EVAN41F.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
F	30.0	421.0	19.8	401.2	56.3	364.7
E	400.0	412.0	28.0	384.0	122.6	289.4
D	1049.7	396.0	25.1	370.9	135.4	260.6
Geo						
1	-150.0	421.0	11.4	409.6	52.8	368.2
2	-100.0	421.0	13.7	407.3	53.8	367.2
3	-50.0	421.0	16.1	404.9	54.7	366.3
4	-0.0	420.0	17.5	402.5	54.7	365.3
5	50.0	419.0	18.7	400.3	54.6	364.4
6	100.0	418.0	19.5	398.5	61.3	356.7
7	150.0	417.0	18.2	398.8	66.6	350.4
8	199.9	416.0	19.2	396.8	72.9	343.1
9	249.9	415.0	23.6	391.4	80.9	334.1
10	299.9	414.0	25.9	388.1	89.9	324.1
11	349.9	413.0	26.6	386.4	104.8	308.2
12	399.9	412.0	28.0	384.0	122.6	289.4
13	449.9	411.0	28.2	382.8	134.5	276.5
14	499.9	410.0	30.4	379.6	138.7	271.3
15	549.9	409.0	34.2	374.8	137.0	272.0
16	599.9	408.0	36.3	371.7	136.1	271.9
17	649.9	407.0	36.7	370.3	135.9	271.1
18	699.8	406.0	36.9	369.1	139.5	266.5
19	749.8	404.0	35.3	368.7	141.1	262.9
20	799.8	402.0	33.6	368.4	141.1	260.9
21	849.7	400.0	31.2	368.8	138.7	261.3
22	899.7	399.0	30.3	368.7	135.9	263.1
23	949.7	398.0	26.9	371.1	135.7	262.3
24	999.7	397.0	26.0	371.0	135.5	261.5

Randolph County Water Commission Elm Shade Rd South vers F

Spread 1 Depth and Elev of layers directly beneath SPs and Geos for EVAN41F.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
C	1059.7	395.0	24.1	370.9	134.5	260.5
B	1859.5	380.0	15.4	364.6	141.8	238.2
A	2459.5	378.0	9.1	368.9	86.4	291.6
Geo						
1	1284.6	391.0	20.5	370.5	134.3	256.7
2	1334.6	390.0	19.6	370.4	134.1	255.9
3	1384.6	389.0	20.3	368.7	134.0	255.0
4	1434.6	388.0	18.4	369.6	136.5	251.5
5	1484.6	387.0	14.8	372.2	139.2	247.8

6	1534.6	386.0	14.5	371.5	141.4	244.6
7	1584.6	385.0	25.9	359.1	144.1	240.9
8	1634.6	384.0	29.9	354.1	146.8	237.2
9	1684.6	383.0	28.2	354.8	149.4	233.6
10	1734.5	382.0	23.9	358.1	149.0	233.0
11	1784.5	381.0	19.1	361.9	146.4	234.6
12	1834.5	380.0	15.6	364.4	142.3	237.7
13	1884.5	380.0	15.2	364.8	141.3	238.7
14	1934.5	379.0	15.6	363.4	138.2	240.8
15	1984.5	379.0	16.5	362.5	139.0	240.0
16	2034.5	379.0	16.3	362.7	137.9	241.1
17	2084.5	379.0	13.9	365.1	135.9	243.1
18	2134.5	379.0	7.2	371.8	130.5	248.5
19	2184.5	379.0	4.1	374.9	124.3	254.7
20	2234.5	379.0	1.4	377.6	118.3	260.7
21	2284.5	379.0	3.0	376.0	115.2	263.8
22	2334.5	379.0	4.9	374.1	111.1	267.9
23	2384.5	378.0	8.3	369.7	101.9	276.1
24	2434.5	378.0	9.6	368.4	86.7	291.3

SIPT2 V-4.1 --- SEISMIC REFRACTION INTERPRETATION PROGRAM --- RIMROCK GEOPHYSICS, INC.

DATA FILE: EVAN40C.SIP PRINT FILE: EVAN40C.OUT RUN
DATE AND TIME: 08-23-1995 at 21:39

TITLE: Randolph County Water Commission: Elm Shade Rd North version B

SHOTPOINT AND GEOPHONE INPUT DATA for EVAN40C.SIP

Spread 1, 3 Shotpoints, 24 Geophones, X-Shift = 0.0, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
A	356.0	-25.0	17.0	5.0	0.0	0.0	1
B	405.0	600.0	5.0	5.0	0.0	0.0	0
C	409.0	1235.0	5.0	5.0	0.0	0.0	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP A		SP B		SP C	
				T	L	T	L	T	L
1	360.0	0.0	0.0	12.5	1	91.0	3	131.5	3
2	362.0	50.0	0.0	22.0	2	88.0	3	129.0	3
3	366.0	100.0	0.0	33.0	2	86.5	3	127.0	3
4	372.0	150.0	0.0	42.5	2	84.0	3	124.5	3
5	376.0	200.0	0.0	50.5	2	80.5	3	122.0	3
6	380.0	250.0	0.0	54.0	3	76.0	3	118.5	3
7	382.0	300.0	0.0	57.5	3	72.5	2	117.0	3
8	386.0	350.0	0.0	61.0	3	68.5	2	114.5	3
9	391.0	400.0	0.0	64.5	3	58.0	2	111.5	3
10	394.0	450.0	0.0	70.0	3	50.0	2	109.5	3
11	397.0	500.0	0.0	74.5	3	43.0	2	107.5	3
12	400.0	550.0	0.0	79.5	3	35.5	1	106.0	3
13	403.0	600.0	0.0	87.5	3	6.0	1	104.5	3
14	406.0	650.0	0.0	95.5	3	42.0	1	102.5	3
15	410.0	700.0	0.0	100.0	3	54.0	2	100.0	3
16	413.0	750.0	0.0	104.0	3	65.0	2	98.5	3
17	417.0	800.0	0.0	107.5	3	73.0	2	95.0	3
18	418.0	850.0	0.0	110.0	3	80.5	2	92.0	3
19	418.5	900.0	0.0	114.5	3	91.5	2	88.0	2
20	418.5	950.0	0.0	118.0	3	95.0	3	81.0	2
21	418.0	1000.0	0.0	122.0	3	99.0	3	74.5	2
22	417.0	1050.0	0.0	125.0	3	101.0	3	62.0	2
23	414.0	1100.0	0.0	128.0	3	103.7	3	50.0	2
24	411.0	1150.0	0.0	131.5	3	106.0	3	35.5	1

SHOTPOINT AND GEOPHONE INPUT DATA for EVAN40C.SIP

Spread 2, 3 Shotpoints, 24 Geophones, X-Shift = 1270.0, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
D	409.0	-25.0	5.0	5.0	0.0	0.0	1
E	400.0	575.0	5.0	5.0	0.0	0.0	0
F	404.0	1123.0	5.0	5.0	0.0	0.0	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP D		SP E		SP F	
				T	L	T	L	T	L
1	408.0	0.0	0.0	15.00	1	91.75	3	132.00	3
2	406.0	50.0	0.0	27.00	3	88.00	3	129.00	3
3	404.0	100.0	0.0	35.25	2	85.50	3	124.20	3
4	402.0	150.0	0.0	47.00	2	80.50	3	120.50	3
5	401.5	200.0	0.0	56.00	2	77.50	3	118.00	3
6	401.5	250.0	0.0	66.75	2	74.25	2	114.70	3
7	401.0	300.0	0.0	72.50	3	65.25	2	109.50	3
8	401.0	350.0	0.0	76.50	3	56.50	2	106.20	3
9	400.0	400.0	0.0	83.50	3	47.00	2	103.50	3
10	400.0	450.0	0.0	87.75	3	37.75	2	100.00	3
11	399.0	500.0	0.0	93.00	3	27.50	2	97.75	3
12	400.0	550.0	0.0	95.75	3	16.00	1	94.00	3
13	400.0	600.0	0.0	98.25	3	13.50	1	91.75	3
14	401.0	650.0	0.0	101.50	3	26.50	2	88.75	3
15	401.0	700.0	0.0	104.00	3	37.50	2	84.25	3
16	402.0	750.0	0.0	108.20	3	47.75	2	80.75	3
17	402.0	800.0	0.0	113.50	3	56.50	2	76.25	2
18	402.0	850.0	0.0	116.70	3	67.00	2	67.75	2
19	403.0	900.0	0.0	119.20	3	76.25	2	59.50	2
20	403.0	950.0	0.0	124.00	3	80.75	3	49.25	2
21	403.0	1000.0	0.0	127.00	3	84.25	3	40.00	2

22	404.0	1050.0	0.0	130.00	3	86.25	3	27.50 2
23	404.0	1100.0	0.0	134.00	3	90.50	3	14.75 1
24	404.0	1150.0	0.0	138.20	3	95.75	3	15.25 1

SHOTPOINT AND GEOPHONE INPUT DATA for EVAN40C.SIP

Spread 3, 3 Shotpoints, 24 Geophones, X-Shift = 2428.00, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
G	404.00	-25.00	5.00	5.00	0.00	0.00	1
H	400.00	575.00	10.00	5.00	0.00	0.00	0
I	385.00	1192.00	22.00	5.00	0.00	0.00	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP G		SP H		SP I	
				T	L	T	L	T	L
1	404.0	0.0	0.0	16.00	1	113.20	3	151.00	3
2	405.0	50.0	0.0	35.00	2	110.00	3	147.50	3
3	405.0	100.0	0.0	50.75	2	107.00	3	145.00	3
4	404.0	150.0	0.0	63.75	2	103.20	3	141.50	3
5	404.0	200.0	0.0	72.75	2	101.20	3	138.00	3
6	403.0	250.0	0.0	85.25	2	98.50	3	135.00	3
7	403.0	300.0	0.0	90.50	3	95.00	2	131.50	3
8	402.0	350.0	0.0	92.75	3	86.75	2	128.00	3
9	402.0	400.0	0.0	96.25	3	77.75	2	125.00	3
10	401.0	450.0	0.0	100.00	3	66.25	2	120.00	3
11	401.0	500.0	0.0	103.70	3	55.50	2	116.00	3
12	400.0	550.0	0.0	107.50	3	22.50	1	113.00	3
13	400.0	600.0	0.0	113.50	3	23.50	1	110.00	3
14	399.0	650.0	0.0	118.00	3	59.50	2	107.00	3
15	399.0	700.0	0.0	119.00	3	68.75	2	104.00	3
16	398.0	750.0	0.0	123.20	3	79.50	2	101.00	3
17	398.0	800.0	0.0	125.00	3	88.00	2	98.00	2
18	397.0	850.0	0.0	128.50	3	98.50	2	90.00	2
19	397.0	900.0	0.0	131.00	3	103.20	3	81.75	2
20	397.0	950.0	0.0	135.00	3	105.00	3	67.50	2
21	395.0	1000.0	3.0	138.50	3	107.00	3	55.75	2
22	392.0	1050.0	12.0	142.00	3	109.00	3	43.25	2
23	391.0	1100.0	17.0	145.00	3	111.50	3	34.00	2
24	387.0	1150.0	20.0	148.50	3	114.00	3	20.00	1

EVAN40C.SIP

Velocities used, Spread 1

	Layer 1	Layer 2	Layer 3
Vertical	1600	5500	
Horizontal		5500	12500

Velocities used, Spread 2

	Layer 1	Layer 2	Layer 3
Vertical	1600	5500	
Horizontal		5500	12500

Velocities used, Spread 3

	Layer 1	Layer 2	Layer 3
Vertical	1200	5000	
Horizontal		5000	12500

Randolph County Water Commission: Elm Shade Rd North version B

Spread 1 Depth and Elev of layers directly beneath SPs and Geos for EVAN40C.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
A	-24.7	356.0	16.7	339.3	35.6	320.4
B	600.0	405.0	28.3	376.7	106.1	298.9
C	1232.6	409.0	14.9	394.1	115.4	293.6
Geo						
1	0.0	360.0	18.8	341.2	39.0	321.0
2	50.0	362.0	18.9	343.1	39.0	323.0

3	99.8	366.0	21.2	344.8	44.2	321.8
4	149.4	372.0	22.2	349.8	53.1	318.9
5	199.3	376.0	20.1	355.9	60.4	315.6
6	249.1	380.0	18.1	361.9	67.1	312.9
7	299.1	382.0	14.2	367.8	69.5	312.5
8	348.9	386.0	16.8	369.2	72.2	313.8
9	398.7	391.0	17.8	373.2	76.3	314.7
10	448.6	394.0	17.8	376.2	80.8	313.2
11	498.5	397.0	20.0	377.0	87.2	309.8
12	548.4	400.0	23.2	376.8	95.7	304.3
13	598.3	403.0	26.3	376.7	104.0	299.0
14	648.2	406.0	28.0	378.0	109.5	296.5
15	698.1	410.0	30.6	379.4	112.4	297.6
16	748.0	413.0	31.8	381.2	113.3	299.7
17	797.8	417.0	31.5	385.5	118.6	298.4
18	847.8	418.0	28.6	389.4	125.5	292.5
19	897.8	418.5	26.8	391.7	134.1	284.4
20	947.8	418.5	27.1	391.4	136.6	281.9
21	997.8	418.0	27.8	390.2	136.2	281.8
22	1047.8	417.0	25.2	391.8	135.2	281.8
23	1097.7	414.0	20.7	393.3	133.0	281.0
24	1147.6	411.0	17.5	393.5	125.3	285.7

Randolph County Water Commission: Elm Shade Rd North version B

Spread 2 Depth and Elev of layers directly beneath SPs and Geos for EVAN40C.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
D	1242.6	409.0	15.0	394.0	114.5	294.5
E	1842.4	400.0	14.2	385.8	119.6	280.4
F	2390.4	404.0	13.7	390.3	112.9	291.1
Geo						
1	1267.6	408.0	13.9	394.1	111.1	296.9
2	1317.5	406.0	11.9	394.1	104.5	301.5
3	1367.5	404.0	11.4	392.6	102.1	301.9
4	1417.4	402.0	14.6	387.4	101.2	300.8
5	1467.4	401.5	15.7	385.8	101.5	300.0
6	1517.4	401.5	16.9	384.6	101.8	299.7
7	1567.4	401.0	16.2	384.8	104.5	296.5
8	1617.4	401.0	16.6	384.4	108.4	292.6
9	1667.4	400.0	16.0	384.0	112.8	287.2
10	1717.4	400.0	15.8	384.2	116.7	283.3
11	1767.4	399.0	14.2	384.8	118.6	280.4
12	1817.4	400.0	14.5	385.5	120.0	280.0
13	1867.4	400.0	14.0	386.0	119.3	280.7
14	1917.4	401.0	15.0	386.0	118.2	282.8
15	1967.4	401.0	17.3	383.7	115.9	285.1
16	2017.4	402.0	19.2	382.8	114.3	287.7
17	2067.4	402.0	19.3	382.7	108.9	293.1
18	2117.4	402.0	20.6	381.4	107.2	294.8
19	2167.4	403.0	21.3	381.7	106.6	296.4
20	2217.4	403.0	20.0	383.0	107.0	296.0
21	2267.4	403.0	18.2	384.8	107.6	295.4
22	2317.4	404.0	14.7	389.3	108.5	295.5
23	2367.4	404.0	13.9	390.1	111.9	292.1
24	2417.4	404.0	13.5	390.5	114.2	289.8

Randolph County Water Commission: Elm Shade Rd North version B

Spread 3 Depth and Elev of layers directly beneath SPs and Geos for EVAN40C.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
G	2400.4	404.0	13.6	390.4	113.4	290.6
H	3000.3	400.0	29.3	370.7	114.2	285.8
I	3616.9	385.0	12.5	372.5	98.8	286.2
Geo						
1	2425.4	404.0	14.3	389.7	114.5	289.5
2	2475.4	405.0	17.5	387.5	117.8	287.2
3	2525.4	405.0	23.3	381.7	116.6	288.4
4	2575.3	404.0	26.1	377.9	110.8	293.2
5	2625.3	404.0	27.4	376.6	107.4	296.6
6	2675.3	403.0	28.1	374.9	109.1	293.9
7	2725.3	403.0	28.1	374.9	112.3	290.7

8	2775.3	402.0	28.9	373.1	112.1	289.9
9	2825.3	402.0	30.1	371.9	112.0	290.0
10	2875.3	401.0	29.0	372.0	110.9	290.1
11	2925.3	401.0	28.6	372.4	111.6	289.4
12	2975.3	400.0	28.6	371.4	113.0	287.0
13	3025.3	400.0	30.1	369.9	115.4	284.6
14	3075.3	399.0	30.5	368.5	115.4	283.6
15	3125.3	399.0	30.7	368.3	115.1	283.9
16	3175.3	398.0	29.6	368.4	113.2	284.8
17	3225.3	398.0	27.7	370.3	112.3	285.7
18	3275.3	397.0	28.3	368.7	110.9	286.1
19	3325.3	397.0	27.9	369.1	111.7	285.3
20	3375.3	397.0	25.4	371.6	115.1	281.9
21	3425.2	395.0	22.2	372.8	116.1	278.9
22	3475.1	392.0	19.5	372.5	115.4	276.6
23	3525.1	391.0	19.4	371.6	112.9	278.1
24	3575.0	387.0	14.8	372.2	101.3	285.7

SIPT2 V-4.1 --- SEISMIC REFRACTION INTERPRETATION PROGRAM --- RIMROCK GEOPHYSICS, INC.

DATA FILE: EVAN43D.SIP PRINT FILE: A:EVAN43D.OUT RUN
DATE AND TIME: 08-08-1995 at 10:42

TITLE: Evansville: Dew Drop Landing Road July 27 1995 version 1.1

SHOTPOINT AND GEOPHONE INPUT DATA for EVAN43D.SIP
Spread 1, 3 Shotpoints, 24 Geophones, X-Shift = 0.0, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
A	366.0	-25.0	5.0	5.0	0.0	0.0	1
B	371.0	575.0	5.0	5.0	0.0	0.0	0
C	380.0	1216.0	5.0	5.0	0.0	0.0	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP A		SP B		SP C	
				T	L	T	L	T	L
1	366.0	0.0	0.0	16.75	1	84.50	3	126.00	3
2	366.0	50.0	0.0	30.50	2	82.00	3	123.20	3
3	367.0	100.0	0.0	40.00	2	79.00	3	119.50	3
4	367.0	150.0	0.0	48.00	2	76.00	3	116.20	3
5	368.0	200.0	0.0	58.00	2	73.50	3	113.20	3
6	368.0	250.0	0.0	68.25	2	69.00	2	109.70	3
7	369.0	300.0	0.0	72.00	3	59.75	2	106.70	3
8	369.0	350.0	0.0	75.00	3	50.25	2	102.50	3
9	370.0	400.0	0.0	79.25	3	40.75	2	99.50	3
10	370.0	450.0	0.0	81.75	3	31.25	2	98.00	3
11	371.0	500.0	0.0	86.00	3	20.75	2	93.75	3
12	371.0	550.0	0.0	89.00	3	10.50	1	90.75	3
13	372.0	600.0	0.0	91.00	3	10.75	1	88.25	3
14	372.0	650.0	0.0	92.25	3	24.00	2	86.50	3
15	373.0	700.0	0.0	95.75	3	32.25	2	83.00	3
16	373.0	750.0	0.0	98.25	3	40.75	2	79.00	3
17	374.0	800.0	0.0	100.50	3	50.25	2	76.00	3
18	374.0	850.0	0.0	104.50	3	62.00	2	73.25	3
19	375.0	900.0	0.0	108.70	3	69.25	2	69.25	2
20	376.0	950.0	0.0	113.70	3	74.50	3	61.75	2
21	377.0	1000.0	0.0	117.70	3	79.00	3	52.25	2
22	378.0	1050.0	0.0	121.70	3	82.25	3	44.00	2
23	379.0	1100.0	0.0	125.00	3	84.50	3	33.25	2
24	380.0	1150.0	0.0	127.50	3	85.75	3	22.00	1

SHOTPOINT AND GEOPHONE INPUT DATA for EVAN43D.SIP

Spread 2, 3 Shotpoints, 24 Geophones, X-Shift = 1251.00, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
D	380.00	-25.00	5.00	5.00	0.00	0.00	1
E	385.00	575.00	5.00	5.00	0.00	0.00	0
F	391.50	1175.00	5.00	5.00	0.00	0.00	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP D		SP E		SP F	
				T	L	T	L	T	L
1	380.0	0.0	0.0	17.25	1	85.50	3	123.50	3
2	380.0	50.0	0.0	25.75	2	80.75	3	120.50	3
3	381.0	100.0	0.0	35.75	2	79.25	3	117.20	3
4	381.0	150.0	0.0	46.25	2	76.50	3	114.20	3
5	382.0	200.0	0.0	54.00	2	72.75	3	111.00	3
6	382.0	250.0	0.0	65.00	2	69.50	2	106.70	3
7	383.0	300.0	0.0	70.75	3	62.25	2	103.00	3
8	383.0	350.0	0.0	75.50	3	55.00	2	101.00	3
9	384.0	400.0	0.0	78.50	3	46.25	2	98.50	3
10	384.0	450.0	0.0	83.25	3	37.25	2	93.50	3
11	385.0	500.0	0.0	85.25	3	26.00	2	87.75	3
12	385.0	550.0	0.0	87.75	3	13.50	1	80.50	3
13	386.0	600.0	0.0	88.00	3	10.75	1	74.25	3
14	386.0	650.0	0.0	88.50	3	19.00	2	69.50	3
15	387.0	700.0	0.0	93.00	3	31.25	2	64.75	3
16	387.0	750.0	0.0	97.00	3	41.50	2	63.25	3
17	388.0	800.0	0.0	101.20	3	52.25	2	60.00	3
18	388.0	850.0	0.0	103.00	3	55.50	3	54.25	3
19	389.0	900.0	0.0	106.50	3	58.25	3	50.75	3
20	389.0	950.0	0.0	109.70	3	61.75	3	46.50	3
21	390.0	1000.0	0.0	111.70	3	63.00	3	44.50	2
22	390.0	1050.0	0.0	115.20	3	67.50	3	37.00	2

23	391.0	1100.0	0.0	118.00	3	69.25	3	26.00 2
24	391.0	1150.0	0.0	121.50	3	72.50	3	14.00 1

SHOTPOINT AND GEOPHONE INPUT DATA for EVAN43D.SIP

Spread 3, 3 Shotpoints, 24 Geophones, X-Shift = 2461.00, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
G	391.50	-25.00	5.00	5.00	0.00	0.00	1
H	399.50	575.00	5.00	5.00	0.00	0.00	0
I	422.50	1175.00	5.00	5.00	0.00	0.00	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP G		SP H		SP I	
				T	L	T	L	T	L
1	392.0	0.0	0.0	13.50	1	63.00	3	107.50	3
2	392.0	50.0	0.0	25.75	2	60.75	3	104.20	3
3	393.0	100.0	0.0	36.25	2	58.00	3	102.00	3
4	393.0	150.0	0.0	44.25	2	54.75	3	99.00	3
5	394.0	200.0	0.0	48.00	3	50.75	3	95.75	3
6	394.0	250.0	0.0	50.25	3	46.50	3	91.50	3
7	395.0	300.0	0.0	52.25	3	42.50	3	86.25	3
8	395.0	350.0	0.0	55.00	3	39.75	3	83.00	3
9	396.0	400.0	0.0	59.25	3	36.75	3	79.00	3
10	397.0	450.0	0.0	61.00	3	31.50	2	74.50	3
11	398.0	500.0	0.0	65.50	3	23.75	2	71.50	3
12	399.0	550.0	0.0	68.50	3	12.50	1	68.50	3
13	400.0	600.0	0.0	70.75	3	10.75	1	65.50	3
14	402.0	650.0	0.0	72.00	3	20.50	2	61.50	3
15	404.0	700.0	0.0	75.00	3	29.00	2	55.75	3
16	406.0	750.0	0.0	80.00	3	33.00	3	49.50	3
17	408.0	800.0	0.0	84.75	3	37.75	3	45.00	3
18	410.0	850.0	0.0	87.75	3	42.00	3	41.50	3
19	412.0	900.0	0.0	91.25	3	46.00	3	37.00	3
20	414.0	950.0	0.0	95.50	3	51.00	3	35.25	3
21	416.0	1000.0	0.0	98.25	3	55.25	3	34.00	3
22	418.0	1050.0	0.0	101.20	3	59.75	3	30.50	3
23	420.0	1100.0	0.0	105.00	3	63.25	3	26.75	2
24	422.0	1150.0	0.0	108.70	3	68.25	3	16.00	1

EVAN43D.SIP

Velocities used, Spread 1

	Layer 1	Layer 2	Layer 3
Vertical	1850	5365	
Horizontal		5365	16000

Velocities used, Spread 2

	Layer 1	Layer 2	Layer 3
Vertical	1875	5365	
Horizontal		5365	15000

Velocities used, Spread 3

	Layer 1	Layer 2	Layer 3
Vertical	1950	5365	
Horizontal		5365	14500

Evansville: Dew Drop Landing Road July 27 1995 version 1.1

Spread 1 Depth and Elev of layers directly beneath SPs and Geos for EVAN43D.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
A	-25.0	366.0	19.8	346.2	121.5	244.5
B	574.9	371.0	11.3	359.7	119.4	251.6
C	1215.9	380.0	14.8	365.2	128.6	251.4
Geo						
1	0.0	366.0	19.2	346.8	121.2	244.8
2	50.0	366.0	18.6	347.4	116.9	249.1
3	100.0	367.0	18.6	348.4	110.5	256.5
4	150.0	367.0	17.1	349.9	109.3	257.7
5	200.0	368.0	17.6	350.4	110.3	257.7
6	250.0	368.0	16.4	351.6	110.9	257.1
7	300.0	369.0	14.4	354.6	112.8	256.2
8	350.0	369.0	13.3	355.7	114.0	255.0
9	400.0	370.0	13.2	356.8	117.1	252.9
10	450.0	370.0	12.3	357.7	119.2	250.8
11	499.9	371.0	10.8	360.2	121.4	249.6
12	549.9	371.0	10.9	360.1	120.5	250.5
13	599.9	372.0	12.6	359.4	119.3	252.7
14	649.9	372.0	13.5	358.5	117.4	254.6
15	699.9	373.0	12.4	360.6	116.8	256.2
16	749.9	373.0	11.0	362.0	115.2	257.8
17	799.9	374.0	12.0	362.0	116.3	257.7
18	849.9	374.0	14.0	360.0	118.7	255.3
19	899.9	375.0	12.3	362.7	124.6	250.4
20	949.9	376.0	14.3	361.7	129.7	246.3
21	999.9	377.0	14.9	362.1	132.7	244.3
22	1049.9	378.0	15.6	362.4	132.1	245.9
23	1099.9	379.0	14.5	364.5	130.1	248.9
24	1149.9	380.0	15.4	364.6	130.0	250.0

Evansville: Dew Drop Landing Road July 27 1995 version 1.1

Spread 2 Depth and Elev of layers directly beneath SPs and Geos for EVAN43D.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
D	1225.9	380.0	15.2	364.8	128.4	251.6
E	1825.8	385.0	12.6	372.4	111.0	274.0
F	2425.7	391.5	12.5	379.0	62.4	329.1
Geo						
1	1250.9	380.0	15.1	364.9	127.9	252.1
2	1300.9	380.0	15.5	364.5	126.8	253.2
3	1350.8	381.0	17.2	363.8	129.3	251.7
4	1400.8	381.0	17.6	363.4	131.0	250.0
5	1450.8	382.0	16.1	365.9	131.6	250.4
6	1500.8	382.0	13.7	368.3	130.9	251.1
7	1550.8	383.0	13.1	369.9	131.8	251.2
8	1600.8	383.0	15.1	367.9	133.9	249.1
9	1650.8	384.0	17.1	366.9	134.4	249.6
10	1700.8	384.0	17.0	367.0	132.2	251.8
11	1750.8	385.0	15.4	369.6	126.9	258.1
12	1800.8	385.0	13.2	371.8	117.0	268.0
13	1850.8	386.0	13.0	373.0	106.0	280.0
14	1900.8	386.0	13.2	372.8	95.0	291.0
15	1950.8	387.0	17.9	369.1	87.9	299.1
16	2000.8	387.0	20.2	366.8	81.6	305.4
17	2050.8	388.0	21.7	366.3	76.7	311.3
18	2100.8	388.0	20.3	367.7	72.6	315.4
19	2150.8	389.0	19.8	369.2	70.1	318.9
20	2200.8	389.0	18.3	370.7	67.2	321.8
21	2250.8	390.0	17.9	372.1	65.2	324.8
22	2300.8	390.0	18.5	371.5	63.0	327.0
23	2350.7	391.0	17.7	373.3	62.9	328.1
24	2400.7	391.0	14.2	376.8	61.7	329.3

Evansville: Dew Drop Landing Road July 27 1995 version 1.1

Spread 3 Depth and Elev of layers directly beneath SPs and Geos for EVAN43D.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
G	2435.7	391.5	12.3	379.2	61.4	330.1
H	3035.7	399.5	12.0	387.5	60.0	339.5
I	3635.2	422.5	12.1	410.4	49.5	373.0
Geo						
1	2460.7	392.0	15.0	377.0	59.6	332.4
2	2510.7	392.0	18.0	374.0	55.0	337.0
3	2560.7	393.0	19.4	373.6	56.1	336.9
4	2610.7	393.0	17.8	375.2	58.8	334.2
5	2660.7	394.0	17.0	377.0	61.9	332.1
6	2710.7	394.0	15.3	378.7	61.5	332.5
7	2760.7	395.0	14.5	380.5	61.3	333.7
8	2810.7	395.0	12.8	382.2	60.8	334.2
9	2860.7	396.0	12.0	384.0	62.0	334.0
10	2910.7	397.0	11.3	385.7	62.8	334.2
11	2960.7	398.0	12.9	385.1	62.1	335.9
12	3010.7	399.0	12.6	386.4	60.9	338.1
13	3060.7	400.0	11.3	388.7	59.2	340.8
14	3110.6	402.0	10.2	391.8	58.0	344.0
15	3160.6	404.0	8.8	395.2	56.3	347.7
16	3210.5	406.0	9.0	397.0	53.6	352.4
17	3260.5	408.0	9.2	398.8	51.6	356.4
18	3310.5	410.0	9.5	400.5	51.4	358.6
19	3360.4	412.0	9.7	402.3	52.4	359.6
20	3410.4	414.0	9.9	404.1	54.7	359.3
21	3460.3	416.0	10.1	405.9	57.1	358.9
22	3510.3	418.0	10.4	407.6	58.8	359.2
23	3560.3	420.0	10.6	409.4	58.4	361.6
24	3610.2	422.0	12.6	409.4	51.2	370.8

SIPT2 V-4.1 --- SEISMIC REFRACTION INTERPRETATION PROGRAM --- RIMROCK GEOPHYSICS, INC.

DATA FILE: EVAN42E.SIP PRINT FILE: EVAN42E.OUT RUN
DATE AND TIME: 09-08-1995 at 15:09

TITLE: Randolph County Water Commission Camp Creek Lane shot 7/95 version E

SHOTPOINT AND GEOPHONE INPUT DATA for EVAN42E.SIP
Spread 3, 3 Shotpoints, 24 Geophones, X-Shift = 0.0, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
I	423.0	-24.0	5.0	5.0	0.0	0.0	1
H	421.0	570.0	5.0	5.0	0.0	0.0	0
G	400.0	1175.0	5.0	5.0	0.0	0.0	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP I		SP H		SP G	
				T	L	T	L	T	L
1	423.0	0.0	0.0	19.00	1	98.00	3	122.00	3
2	424.0	50.0	0.0	43.50	2	96.00	3	120.00	3
3	424.0	100.0	0.0	56.00	2	94.00	3	118.50	3
4	425.0	150.0	0.0	62.25	2	91.25	3	115.00	3
5	425.0	200.0	0.0	70.00	2	88.25	3	111.00	3
6	426.0	250.0	0.0	78.25	2	84.50	2	107.00	3
7	426.0	300.0	0.0	85.25	2	75.75	2	103.00	3
8	426.0	350.0	0.0	89.25	3	66.75	2	97.00	3
9	425.0	400.0	0.0	93.00	3	58.00	2	93.00	3
10	424.0	450.0	0.0	95.50	3	48.50	2	89.00	3
11	423.0	500.0	0.0	98.50	3	37.75	2	85.00	3
12	422.0	550.0	0.0	100.00	3	15.25	1	81.00	3
13	420.0	600.0	0.0	101.50	3	19.00	1	78.00	3
14	416.0	650.0	0.0	102.70	3	37.25	2	75.00	3
15	408.0	700.0	0.0	104.00	3	44.00	2	73.00	3
16	402.0	750.0	0.0	105.00	3	50.25	2	70.75	3
17	402.0	800.0	0.0	107.00	3	59.25	2	66.75	3
18	402.0	850.0	0.0	109.20	3	66.75	2	62.75	3
19	401.0	900.0	0.0	111.00	3	73.25	2	59.25	2
20	401.0	950.0	0.0	113.20	3	77.00	3	50.50	2
21	401.0	1000.0	0.0	115.50	3	79.75	3	41.00	2
22	400.0	1050.0	0.0	117.50	3	82.00	3	31.00	2
23	400.0	1100.0	0.0	119.70	3	85.00	3	21.00	2
24	400.0	1150.0	0.0	121.00	3	87.00	3	10.25	2

SHOTPOINT AND GEOPHONE INPUT DATA for EVAN42E.SIP

Spread 2, 3 Shotpoints, 24 Geophones, X-Shift = 1257.00, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
F	400.00	-72.00	5.00	5.00	0.00	0.00	1
E	394.00	540.00	30.00	5.00	0.00	0.00	0
D	385.00	1175.00	0.00	5.00	0.00	0.00	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP F		SP E		SP D	
				T	L	T	L	T	L
1	399.0	0.0	0.0	21.25	1	84.25	3	124.00	3
2	399.0	50.0	0.0	31.50	2	82.25	3	122.20	3
3	398.0	100.0	0.0	41.00	2	79.50	3	120.70	3
4	398.0	150.0	0.0	50.00	2	76.75	3	118.70	3
5	397.0	200.0	0.0	58.00	2	73.75	3	116.00	3
6	397.0	250.0	0.0	65.00	2	69.75	3	114.20	3
7	396.0	300.0	0.0	68.00	3	67.50	2	113.00	3
8	396.0	350.0	0.0	71.25	3	61.25	2	111.70	3
9	395.0	400.0	0.0	74.75	3	53.50	2	109.00	3
10	395.0	450.0	0.0	78.75	3	43.50	2	106.70	3
11	394.0	500.0	0.0	81.50	3	33.00	1	103.20	3
12	394.0	550.0	0.0	84.00	3	25.25	1	101.70	3
13	395.0	600.0	0.0	88.00	3	42.00	2	98.25	3
14	395.0	650.0	0.0	91.50	3	54.75	2	95.50	3
15	395.0	700.0	0.0	95.75	3	63.75	2	93.25	3
16	394.0	750.0	0.0	98.75	3	73.25	2	89.25	3
17	393.0	800.0	0.0	101.50	3	80.75	2	87.00	3
18	392.0	850.0	0.0	105.00	3	82.75	3	84.50	3
19	392.0	900.0	0.0	108.50	3	84.75	3	82.50	2
20	391.0	950.0	0.0	112.20	3	86.75	3	73.75	2
21	389.0	1000.0	0.0	115.00	3	88.00	3	62.50	2
22	387.0	1050.0	0.0	117.70	3	91.25	3	52.00	2

23	385.0	1100.0	0.0	119.50	3	93.00 3	41.00 2
24	385.0	1150.0	0.0	121.00	3	95.50 3	21.25 1

SHOTPOINT AND GEOPHONE INPUT DATA for EVAN42E.SIP

Spread 1, 3 Shotpoints, 24 Geophones, X-Shift = 2457.00, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
C	385.00	-25.00	0.00	5.00	0.00	0.00	1
B	399.50	570.00	5.00	5.00	0.00	0.00	0
A	396.50	1073.00	0.00	5.00	0.00	0.00	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP C	SP B	SP A
				---T---L	---T---L	---T---L
1	385.0	0.0	0.0	23.75 1	111.20 3	134.70 3
2	385.0	50.0	0.0	48.50 2	109.70 3	133.00 3
3	387.0	100.0	0.0	59.50 2	107.50 3	132.20 3
4	389.0	150.0	0.0	70.25 2	105.00 3	131.20 3
5	391.0	200.0	0.0	79.75 2	102.70 3	129.00 3
6	393.0	250.0	0.0	83.50 3	101.20 3	127.00 3
7	394.0	300.0	0.0	87.00 3	99.00 2	124.70 3
8	395.0	350.0	0.0	92.50 3	91.25 2	122.50 3
9	396.0	400.0	0.0	96.00 3	83.00 2	120.20 3
10	397.0	450.0	0.0	99.00 3	74.25 2	117.50 3
11	398.0	500.0	0.0	100.00 3	60.50 1	115.70 3
12	399.0	550.0	0.0	102.00 3	16.50 1	113.70 3
13	400.0	600.0	0.0	105.70 3	36.50 1	111.00 3
14	400.0	650.0	0.0	108.20 3	69.25 1	108.00 3
15	401.0	700.0	0.0	110.50 3	81.00 2	105.20 3
16	402.0	750.0	0.0	113.00 3	91.50 2	102.70 2
17	402.0	800.0	0.0	115.70 3	98.50 2	97.75 2
18	401.0	850.0	0.0	118.20 3	101.50 3	90.25 2
19	400.0	900.0	0.0	120.00 3	103.70 3	79.25 2
20	399.0	950.0	0.0	122.50 3	105.00 3	67.00 2
21	398.0	1000.0	0.0	124.20 3	108.00 3	56.50 1
22	397.0	1050.0	0.0	126.50 3	110.70 3	25.00 1
23	396.0	1100.0	0.0	128.50 3	112.70 3	27.75 1
24	395.0	1150.0	0.0	130.00 3	114.70 3	58.75 1

EVAN42E.SIP
Velocities used, Spread 3

	Layer 1	Layer 2	Layer 3
Vertical	1350	5845	
Horizontal		5845	16900

Velocities used, Spread 2

	Layer 1	Layer 2	Layer 3
Vertical	1250	5845	
Horizontal		5845	17300

Velocities used, Spread 1

	Layer 1	Layer 2	Layer 3
Vertical	1100	5845	
Horizontal		5845	17300

Randolph County Water Commission Camp Creek Lane shot 7/95 version E

Spread 3 Depth and Elev of layers directly beneath SPs and Geos for EVAN42E.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
I	-24.0	423.0	22.2	400.8	151.7	271.3
H	569.9	421.0	19.1	401.9	116.5	304.5
G	1173.7	400.0	10.3	389.7	106.5	293.5
Geo						
1	0.0	423.0	22.2	400.8	151.9	271.1
2	50.0	424.0	22.2	401.8	151.7	272.3
3	100.0	424.0	24.2	399.8	148.5	275.5

4	150.0	425.0	23.3	401.7	150.9	274.1
5	200.0	425.0	22.0	403.0	150.0	275.0
6	250.0	426.0	22.9	403.1	145.1	280.9
7	300.0	426.0	22.1	403.9	133.9	292.1
8	350.0	426.0	23.7	402.3	122.9	303.1
9	400.0	425.0	23.4	401.6	115.2	309.8
10	449.9	424.0	22.1	401.9	114.3	309.7
11	499.9	423.0	20.0	403.0	114.8	308.2
12	549.9	422.0	19.9	402.1	116.3	305.7
13	599.9	420.0	18.5	401.5	117.4	302.6
14	649.7	416.0	15.2	400.8	117.4	298.6
15	699.1	408.0	12.5	395.5	114.5	293.5
16	748.7	402.0	9.9	392.1	112.7	289.3
17	798.7	402.0	10.4	391.6	114.4	287.6
18	848.7	402.0	10.0	392.0	111.3	290.7
19	898.7	401.0	12.0	389.0	105.3	295.7
20	948.7	401.0	15.9	385.1	101.6	299.4
21	998.7	401.0	15.9	385.1	101.1	299.9
22	1048.7	400.0	13.9	386.1	100.6	299.4
23	1098.7	400.0	11.9	388.1	100.7	299.3
24	1148.7	400.0	10.0	390.0	104.5	295.5

Randolph County Water Commission Camp Creek Lane shot 7/95 version E

Spread 2 Depth and Elev of layers directly beneath SPs and Geos for EVAN42E.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
F	1183.7	400.0	8.7	391.3	107.2	292.8
E	1795.6	394.0	22.3	371.7	105.2	288.8
D	2430.5	385.0	22.0	363.0	120.8	264.2
Geo						
1	1255.7	399.0	10.0	389.0	111.8	287.2
2	1305.7	399.0	10.5	388.5	115.7	283.3
3	1355.7	398.0	11.3	386.7	119.8	278.2
4	1405.7	398.0	11.9	386.1	122.7	275.3
5	1455.7	397.0	10.9	386.1	122.7	274.3
6	1505.7	397.0	11.1	385.9	119.8	277.2
7	1555.7	396.0	17.7	378.3	116.0	280.0
8	1605.7	396.0	21.6	374.4	112.2	283.8
9	1655.7	395.0	22.4	372.6	109.8	285.2
10	1705.7	395.0	21.7	373.3	108.6	286.4
11	1755.6	394.0	21.6	372.4	107.2	286.8
12	1805.6	394.0	22.5	371.5	104.7	289.3
13	1855.6	395.0	26.3	368.7	99.7	295.3
14	1905.6	395.0	30.0	365.0	92.6	302.4
15	1955.6	395.0	32.0	363.0	86.2	308.8
16	2005.6	394.0	32.4	361.6	84.5	309.5
17	2055.6	393.0	32.0	361.0	86.6	306.4
18	2105.6	392.0	31.7	360.3	89.4	302.6
19	2155.6	392.0	32.5	359.5	92.4	299.6
20	2205.6	391.0	32.0	359.0	96.4	294.6
21	2255.6	389.0	29.5	359.5	101.7	287.3
22	2305.5	387.0	26.8	360.2	107.5	279.5
23	2355.5	385.0	23.9	361.1	112.1	272.9
24	2405.5	385.0	20.4	364.6	117.0	268.0

Randolph County Water Commission Camp Creek Lane shot 7/95 version E

Spread 1 Depth and Elev of layers directly beneath SPs and Geos for EVAN42E.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
C	2430.5	385.0	18.6	366.4	119.5	265.5
B	3025.3	399.5	33.8	365.7	123.6	275.9
A	3528.2	396.5	26.4	370.1	125.6	270.9
Geo						
1	2455.5	385.0	22.7	362.3	122.0	263.0
2	2505.5	385.0	24.1	360.9	124.3	260.7
3	2555.4	387.0	27.0	360.0	126.4	260.6
4	2605.4	389.0	28.9	360.1	125.7	263.3
5	2655.4	391.0	30.1	360.9	123.0	268.0
6	2705.3	393.0	31.0	362.0	121.9	271.1
7	2755.3	394.0	31.0	363.0	123.8	270.2
8	2805.3	395.0	31.4	363.6	126.8	268.2

9	2855.3	396.0	31.7	364.3	128.2	267.8
10	2905.3	397.0	31.7	365.3	127.1	269.9
11	2955.3	398.0	32.5	365.5	125.0	273.0
12	3005.3	399.0	33.3	365.7	123.5	275.5
13	3055.2	400.0	34.1	365.9	123.4	276.6
14	3105.2	400.0	33.7	366.3	121.6	278.4
15	3155.2	401.0	34.2	366.8	118.4	282.6
16	3205.2	402.0	33.1	368.9	115.2	286.8
17	3255.2	402.0	33.7	368.3	114.2	287.8
18	3305.2	401.0	33.0	368.0	117.4	283.6
19	3355.2	400.0	30.6	369.4	121.2	278.8
20	3405.2	399.0	27.7	371.3	124.2	274.8
21	3455.2	398.0	27.4	370.6	125.6	272.4
22	3505.2	397.0	27.2	369.8	125.9	271.1
23	3555.2	396.0	25.6	370.4	125.3	270.7
24	3605.2	395.0	24.1	370.9	124.7	270.3

SIPT2 V-4.1 --- SEISMIC REFRACTION INTERPRETATION PROGRAM --- RIMROCK GEOPHYSICS, INC.

DATA FILE: BEAGLE1A.SIP PRINT FILE: A:BEAGLE1A.OUT RUN
DATE AND TIME: 02-08-1996 at 20:44

TITLE: RANDOLPH COUNTY PROJECT BEAGLE LANE SPREAD 1

SHOTPOINT AND GEOPHONE INPUT DATA for BEAGLE1A.SIP
Spread 1, 3 Shotpoints, 12 Geophones, X-Shift = 0.0, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
A	375.0	-150.0	0.0	5.0	0.0	0.0	0
C	375.0	-5.0	0.0	5.0	0.0	0.0	1
B	375.0	280.0	0.0	5.0	0.0	0.0	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP A		SP C		SP B	
				T	L	T	L	T	L
1	375.0	0.0	0.0	23.62	2	4.500	1	36.500	2
2	375.0	25.0	0.0	26.00	2	10.870	2	34.120	2
3	375.0	50.0	0.0	27.37	2	12.370	2	31.000	2
4	375.0	75.0	0.0	29.75	2	15.370	2	28.250	2
5	375.0	100.0	0.0	32.50	2	17.870	2	25.120	2
6	375.0	125.0	0.0	34.75	2	20.500	2	23.000	2
7	375.0	150.0	0.0	37.37	2	23.370	2	21.120	2
8	375.0	175.0	0.0	40.25	2	25.870	2	20.620	2
9	375.0	200.0	0.0	41.00	2	27.120	2	17.620	2
10	375.0	225.0	0.0	43.00	2	29.370	2	15.620	2
11	375.0	250.0	0.0	44.12	2	31.120	2	13.250	2
12	375.0	275.0	0.0	45.37	2	34.500	2	5.625	1

Velocities used, Spread 1

	Layer 1	Layer 2
Vertical	1414	
Horizontal		11169

RANDOLPH COUNTY PROJECT BEAGLE LANE SPREAD 1
Spread 1 Depth and Elev of layers directly beneath SPs and Geos for BEAGLE1A.SIP

	Surface		Layer 2	
SP	X-Loc	Elev	Depth	Elev
C	-5.0	375.0	9.7	365.3
B	280.0	375.0	8.3	366.7
Geo				
1	0.0	375.0	9.7	365.3
2	25.0	375.0	9.7	365.3
3	50.0	375.0	8.7	366.3
4	75.0	375.0	8.8	366.2
5	100.0	375.0	8.8	366.2
6	125.0	375.0	9.0	366.0
7	150.0	375.0	9.7	365.3
8	175.0	375.0	10.7	364.3
9	200.0	375.0	9.4	365.6
10	225.0	375.0	9.3	365.7
11	250.0	375.0	8.6	366.4
12	275.0	375.0	8.4	366.6

SIPT2 V-4.1 --- SEISMIC REFRACTION INTERPRETATION PROGRAM --- RIMROCK GEOPHYSICS, INC.

DATA FILE: BEAGLE2A.SIP PRINT FILE: A:BEAGLE2A.OUT RUN
DATE AND TIME: 02-08-1996 at 20:45

TITLE: RANDOLPH COUNTY PROJECT BEAGLE LANE SPREAD 2
SHOTPOINT AND GEOPHONE INPUT DATA for BEAGLE2A.SIP

Spread 2, 2 Shotpoints, 12 Geophones, X-Shift = 0.0, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
B	372.0	-5.0	0.0	5.0	0.0	0.0	1
A	367.0	280.0	0.0	5.0	0.0	0.0	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP B		SP A	
				T	L	T	L
1	372.0	0.0	0.0	3.875	1	33.500	2
2	372.0	25.0	0.0	9.125	2	31.870	2
3	371.0	50.0	0.0	11.620	2	29.870	2
4	371.0	75.0	0.0	13.870	2	27.750	2
5	370.0	100.0	0.0	15.750	2	25.250	2
6	370.0	125.0	0.0	17.620	2	22.620	2
7	369.0	150.0	0.0	19.250	2	19.500	2
8	369.0	175.0	0.0	21.620	2	17.250	2
9	368.0	200.0	0.0	23.620	2	15.120	2
10	368.0	225.0	0.0	25.120	2	13.000	2
11	367.0	250.0	0.0	29.120	2	10.000	2
12	367.0	275.0	0.0	31.620	2	3.375	1

Velocities used, Spread 2

	Layer 1	Layer 2
Vertical	1960	
Horizontal		11002

RANDOLPH COUNTY PROJECT BEAGLE LANE SPREAD 2

Spread 2 Depth and Elev of layers directly beneath SPs and Geos for BEAGLE2A.SIP

	Surface		Layer 2	
SP	X-Loc	Elev	Depth	Elev
B	-5.0	372.0	10.1	361.9
A	279.9	367.0	9.5	357.5
Geo				
1	0.0	372.0	10.2	361.8
2	25.0	372.0	10.9	361.1
3	50.0	371.0	11.3	359.7
4	75.0	371.0	11.5	359.5
5	100.0	370.0	10.8	359.2
6	125.0	370.0	10.2	359.8
7	149.9	369.0	8.7	360.3
8	174.9	369.0	8.8	360.2
9	199.9	368.0	8.6	359.4
10	224.9	368.0	8.2	359.8
11	249.9	367.0	8.9	358.1
12	274.9	367.0	9.4	357.6

SIPT2 V-4.1 --- SEISMIC REFRACTION INTERPRETATION PROGRAM --- RIMROCK GEOPHYSICS, INC.

DATA FILE: BEAGLE3A.SIP PRINT FILE: A:BEAGLE3A.OUT RUN
DATE AND TIME: 02-08-1996 at 20:47

TITLE: RANDOLPH COUNTY PROJECT BEAGLE LANE SPREAD 3

SHOTPOINT AND GEOPHONE INPUT DATA for BEAGLE3A.SIP
Spread 1, 4 Shotpoints, 12 Geophones, X-Shift = 0.0, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
A	375.0	-150.0	0.0	5.0	0.0	0.0	0
B	375.0	-5.0	0.0	5.0	0.0	0.0	1
C	375.0	280.0	0.0	5.0	0.0	0.0	2
D	371.0	425.0	0.0	5.0	0.0	0.0	0

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP A		SP B		SP C		SP D	
				T	L	T	L	T	L	T	L
1	375.0	0.0	0.0	50.25	2	5.375	1	61.250	3	71.87	3
2	375.0	25.0	0.0	53.25	2	18.620	1	60.370	3	70.75	3
3	375.0	50.0	0.0	57.37	2	30.000	1	59.250	3	69.12	3
4	375.0	75.0	0.0	60.87	2	36.750	2	58.000	2	68.62	3
5	375.0	100.0	0.0	62.62	3	42.000	2	54.870	2	66.87	3
6	375.0	125.0	0.0	64.12	3	46.500	2	50.000	2	64.87	3
7	375.0	150.0	0.0	65.25	3	50.500	2	44.750	2	62.25	3
8	375.0	175.0	0.0	67.25	3	54.500	2	40.000	2	61.12	2
9	375.0	200.0	0.0	68.25	3	59.370	2	35.870	2	58.75	2
10	375.0	225.0	0.0	70.37	3	60.120	3	28.870	2	55.12	2
11	375.0	250.0	0.0	71.12	3	60.870	3	21.870	1	51.12	2
12	375.0	275.0	0.0	72.87	3	61.620	3	6.125	1	47.25	2

Velocities used, Spread 1

	Layer 1	Layer 2	Layer 3
Vertical	1250	5921	
Horizontal		5921	17806

RANDOLPH COUNTY PROJECT BEAGLE LANE SPREAD 3

Spread 1 Depth and Elev of layers directly beneath SPs and Geos for BEAGLE3A.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
B	-5.0	375.0	18.3	356.7	80.5	294.5
C	280.0	375.0	16.6	358.4	80.0	295.0
Geo						
1	0.0	375.0	18.2	356.8	80.5	294.5
2	25.0	375.0	17.9	357.1	86.1	288.9
3	50.0	375.0	18.0	357.0	89.0	286.0
4	75.0	375.0	18.7	356.3	91.1	283.9
5	100.0	375.0	20.1	354.9	91.5	283.5
6	125.0	375.0	20.2	354.8	91.4	283.6
7	150.0	375.0	19.3	355.7	90.1	284.9
8	175.0	375.0	17.8	357.2	91.6	283.4
9	200.0	375.0	17.8	357.2	92.4	282.6
10	225.0	375.0	16.8	358.2	90.8	284.2
11	250.0	375.0	16.8	358.2	87.5	287.5
12	275.0	375.0	16.6	358.4	80.0	295.0

SIPT2 V-4.1 --- SEISMIC REFRACTION INTERPRETATION PROGRAM --- RIMROCK GEOPHYSICS, INC.

DATA FILE: BEAGLE4C.SIP PRINT FILE: A:BEAGLE4C.OUT RUN
DATE AND TIME: 02-08-1996 at 20:50

TITLE: RANDOLPH COUNTY PROJECT BEAGLE LANE SPREAD 4 C

SHOTPOINT AND GEOPHONE INPUT DATA for BEAGLE4C.SIP

Spread 4, 2 Shotpoints, 12 Geophones, X-Shift = 0.0, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
A	375.0	-5.0	0.0	5.0	0.0	0.0	1
B	375.0	280.0	0.0	5.0	0.0	0.0	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP A		SP B	
				T	L	T	L
1	375.0	0.0	0.0	4.875	1	49.500	3
2	375.0	25.0	0.0	10.870	2	48.120	3
3	375.0	50.0	0.0	15.870	2	46.750	3
4	375.0	75.0	0.0	21.000	2	45.250	3
5	375.0	100.0	0.0	26.620	2	44.000	2
6	375.0	125.0	0.0	32.250	2	39.120	2
7	375.0	150.0	0.0	37.120	2	35.000	2
8	375.0	175.0	0.0	42.000	2	30.750	2
9	375.0	200.0	0.0	43.870	3	25.500	2
10	375.0	225.0	0.0	46.250	3	20.120	2
11	375.0	250.0	0.0	47.870	3	12.870	2
12	375.0	275.0	0.0	49.870	3	5.500	1

Velocities used, Spread 4

	Layer 1	Layer 2	Layer 3
Vertical	1368	5002	
Horizontal		5002	14816

RANDOLPH COUNTY PROJECT BEAGLE LANE SPREAD 4 C

Spread 4 Depth and Elev of layers directly beneath SPs and Geos for BEAGLE4C.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
A	-5.0	375.0	5.9	369.1	54.6	320.4
B	280.0	375.0	8.1	366.9	75.3	299.7
Geo						
1	0.0	375.0	6.0	369.0	54.6	320.4
2	25.0	375.0	6.9	368.1	59.9	315.1
3	50.0	375.0	7.2	367.8	63.3	311.7
4	75.0	375.0	7.5	367.5	66.1	308.9
5	100.0	375.0	8.4	366.6	68.5	306.5
6	125.0	375.0	9.0	366.0	72.1	302.9
7	150.0	375.0	9.5	365.5	75.8	299.2
8	175.0	375.0	10.0	365.0	79.5	295.5
9	200.0	375.0	10.5	364.5	82.1	292.9
10	225.0	375.0	9.9	365.1	82.1	292.9
11	250.0	375.0	7.9	367.1	80.4	294.6
12	275.0	375.0	8.2	366.8	75.3	299.7

SIPT2 V-4.1 --- SEISMIC REFRACTION INTERPRETATION PROGRAM --- RIMROCK GEOPHYSICS, INC.

DATA FILE: BEAGLE5A.SIP PRINT FILE: A:BEAGLE5A.OUT RUN
DATE AND TIME: 02-08-1996 at 20:52

TITLE: RANDOLPH COUNTY PROJECT BEAGLE LANE SPREAD 5
SHOTPOINT AND GEOPHONE INPUT DATA for BEAGLE5A.SIP

Spread 5, 2 Shotpoints, 12 Geophones, X-Shift = 0.0, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
B	375.0	-5.0	0.0	5.0	0.0	0.0	1
A	375.0	280.0	0.0	5.0	0.0	0.0	2

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP B ---T---L	SP A ---T---L
1	375.0	0.0	0.0	4.375 1	52.870 3
2	375.0	25.0	0.0	16.250 2	51.750 3
3	375.0	50.0	0.0	22.500 2	50.620 3
4	375.0	75.0	0.0	28.120 2	49.370 3
5	375.0	100.0	0.0	34.370 2	47.620 2
6	375.0	125.0	0.0	38.000 2	42.620 2
7	375.0	150.0	0.0	42.370 2	38.370 2
8	375.0	175.0	0.0	47.000 2	34.620 2
9	375.0	200.0	0.0	50.500 2	31.620 2
10	375.0	225.0	0.0	51.370 3	25.870 2
11	375.0	250.0	0.0	53.870 3	20.620 2
12	375.0	275.0	0.0	55.750 3	6.250 1

Velocities used, Spread 5

	Layer 1	Layer 2	Layer 3
Vertical	1374	5704	
Horizontal		5704	15591

RANDOLPH COUNTY PROJECT BEAGLE LANE SPREAD 5

Spread 5 Depth and Elev of layers directly beneath SPs and Geos for BEAGLE5A.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
B	-5.0	375.0	10.5	364.5	71.7	303.3
A	280.0	375.0	13.8	361.2	76.4	298.6
Geo						
1	0.0	375.0	10.7	364.3	71.7	303.3
2	25.0	375.0	11.0	364.0	71.3	303.7
3	50.0	375.0	12.9	362.1	69.8	305.2
4	75.0	375.0	14.5	360.5	69.4	305.6
5	100.0	375.0	15.5	359.5	71.4	303.6
6	125.0	375.0	15.0	360.0	76.3	298.7
7	150.0	375.0	15.0	360.0	81.2	293.8
8	175.0	375.0	15.5	359.5	86.0	289.0
9	200.0	375.0	15.7	359.3	90.9	284.1
10	225.0	375.0	14.8	360.2	88.5	286.5
11	250.0	375.0	13.9	361.1	85.7	289.3
12	275.0	375.0	13.9	361.1	76.4	298.6

SIPT2 V-4.1 --- SEISMIC REFRACTION INTERPRETATION PROGRAM --- RIMROCK GEOPHYSICS, INC.

DATA FILE: HRSCRK1A.SIP PRINT FILE: A:HRSCRK1A.OUT RUN
DATE AND TIME: 02-08-1996 at 20:54

TITLE: RANDOLPH COUNTY PROJECT HORSE CREEK AREA SPREAD 1
SHOTPOINT AND GEOPHONE INPUT DATA for HRSCRK1A.SIP

Spread 1, 4 Shotpoints, 12 Geophones, X-Shift = 0.0, X-True = 0, Units: Feet.

SP	Elev	X-Loc	Y-Loc	Depth	UpHole T	Fudge T	End SP
C	372.0	-150.0	0.0	5.0	0.0	0.0	0
B	375.0	-5.0	0.0	5.0	0.0	0.0	1
A	375.0	280.0	0.0	5.0	0.0	0.0	2
D	375.0	425.0	0.0	5.0	0.0	0.0	0

Arrival Times + Fudge T and Layers represented

Geo	Elev	X-Loc	Y-Loc	SP C	SP B	SP A	SP D
				---T---L	---T---L	---T---L	---T---L
1	375.0	0.0	0.0	39.75 3	4.375 1	59.000 3	66.00 3
2	375.0	25.0	0.0	42.25 3	19.750 2	57.000 3	64.25 3
3	375.0	50.0	0.0	44.37 3	27.120 2	55.500 3	62.37 3
4	375.0	75.0	0.0	45.25 3	33.750 2	53.870 2	61.37 3
5	375.0	100.0	0.0	46.50 3	38.250 2	51.370 2	60.50 3
6	375.0	125.0	0.0	48.37 3	41.870 2	49.250 2	59.00 3
7	375.0	150.0	0.0	50.75 3	46.750 2	46.370 2	58.00 3
8	375.0	175.0	0.0	52.37 3	49.620 2	42.000 2	56.00 3
9	375.0	200.0	0.0	53.62 3	52.750 2	36.620 1	54.62 3
10	375.0	225.0	0.0	54.00 3	54.370 3	27.250 1	54.25 3
11	375.0	250.0	0.0	55.37 3	56.250 3	17.620 1	52.62 3
12	375.0	275.0	0.0	56.37 3	57.870 3	4.375 1	50.87 3

Velocities used, Spread 1

	Layer 1	Layer 2	Layer 3
Vertical	1835	6737	
Horizontal		6737	16574

RANDOLPH COUNTY PROJECT HORSE CREEK AREA SPREAD 1

Spread 1 Depth and Elev of layers directly beneath SPs and Geos for HRSCRK1A.SIP

	Surface		Layer 2		Layer 3	
SP	X-Loc	Elev	Depth	Elev	Depth	Elev
B	-5.0	375.0	18.3	356.7	105.4	269.6
A	280.0	375.0	31.4	343.6	78.5	296.5
Geo						
1	0.0	375.0	18.6	356.4	104.9	270.1
2	25.0	375.0	19.3	355.7	102.4	272.6
3	50.0	375.0	21.7	353.3	99.3	275.7
4	75.0	375.0	23.9	351.1	94.8	280.2
5	100.0	375.0	25.6	349.4	90.8	284.2
6	125.0	375.0	27.1	347.9	88.1	286.9
7	150.0	375.0	28.1	346.9	86.1	288.9
8	175.0	375.0	28.3	346.7	83.1	291.9
9	200.0	375.0	29.1	345.9	79.9	295.1
10	225.0	375.0	29.8	345.2	77.2	297.8
11	250.0	375.0	30.5	344.5	77.4	297.6
12	275.0	375.0	31.3	343.7	78.3	296.7

APPENDIX B RESISTIVITY DATA

The following tables are taken from computer output generated by the resistivity inversion routine described by Zohdy and Bisdorf (1975). The first item is the station location as shown on figure 6. This is followed by a list of the input data and a list of the output data for each station. In these tables AB/2 refers to the distance between the two potential electrodes (fig. 4), and OBS corresponds to apparent resistivity (ohm-ft). These are the input parameters to the program for each station. Output parameters are the layering parameters: THICKNESS (of each layer, in feet), DEPTH (to layer bottom, in feet), RESISTIVITY (calculated resistivity, in ohm-ft). The program assumes the bottom layer approaches infinite thickness.

Phase One, Dew Drop Landing Road area

EVAN #01

AB/2	OBS
5.000	70.843
10.000	70.435
20.000	76.655
30.000	85.860
40.000	90.981
60.000	96.133
80.000	104.050
100.000	104.929
120.000	117.433
140.000	124.734
160.000	152.103
180.000	160.146
200.000	155.823

THICKNESS	DEPTH	RESISTIVITY
4.33941	4.33941	74.05148
3.88754	8.22695	58.27103
39.75027	47.97721	93.87492
43.75132	91.72853	83.96599
99999830.00000	99999920.00000	285.45260

EVAN #2
dewdroplanding #2

AB/2	OBS
5.000	169.646
10.000	185.354
20.000	193.459
30.000	160.787
40.000	163.614
60.000	155.509
80.000	156.074
100.000	166.504
120.000	177.186
140.000	197.041
160.000	194.879
180.000	213.302
200.000	227.388

THICKNESS	DEPTH	RESISTIVITY
4.29183	4.29183	161.06140
10.27760	14.56943	210.72890
88.19027	102.75970	141.54030
62.40028	165.16000	241.34350
99999650.00000	99999820.00000	687.68540

EVAN #3
dewdroplading south of rr #3

AB/2	OBS
5.000	106.500
10.000	120.229
20.000	137.099
30.000	143.916
40.000	159.342
60.000	171.531
80.000	159.593
100.000	167.761
120.000	172.285
140.000	181.207
160.000	202.620
180.000	206.912
200.000	233.609

THICKNESS	DEPTH	RESISTIVITY
7.08613	7.08613	98.88239
41.13429	48.22043	181.15490
99.91303	148.13350	120.70730
10.83265	158.96610	801.14480
99997820.00000	99997980.00000	3828.13900

EVAN #4
dew drop landing rd #4 500'

AB/2	OBS
5.000	84.352
10.000	81.587
20.000	75.210
30.000	71.534
40.000	76.781
60.000	93.117
80.000	100.782
100.000	100.971
120.000	133.719
140.000	140.743
160.000	159.844
180.000	161.164
200.000	159.907

THICKNESS	DEPTH	RESISTIVITY
6.16898	6.16898	83.86452
31.71755	37.88653	71.62310
84.34023	122.22680	162.49880
99999860.00000	99999980.00000	182.41460

EVAN #5
dewdroplanding #5 redo

AB/2	OBS
5.000	34.652
10.000	48.820
20.000	58.811
30.000	64.465
40.000	76.781
60.000	95.756
80.000	108.825
100.000	130.690
120.000	130.062
140.000	155.697
160.000	136.973
180.000	210.927
200.000	222.425

THICKNESS	DEPTH	RESISTIVITY
6.97067	6.97067	34.68565
46.27542	53.24610	101.73580
87.71880	140.96490	237.91010
99999790.00000	99999940.00000	321.88550

EVAN #6
dewdroplandingrd #6 600 N of

AB/2	OBS
5.000	66.445
10.000	86.677
20.000	94.185
30.000	84.823
40.000	86.080
60.000	84.446
80.000	82.838
100.000	97.704
120.000	110.232
140.000	112.287
160.000	119.682
180.000	138.544
200.000	142.628

THICKNESS	DEPTH	RESISTIVITY
2.98690	2.98690	57.99607
8.87520	11.86210	99.80561
66.64549	78.50759	76.85693
99999890.00000	99999970.00000	193.36670

Phase One Elm Shade Road South area

EVAN #7
elm shade rd. south east end

AB/2	OBS
5.000	46.040
10.000	51.931
20.000	72.445
30.000	88.687
40.000	102.416
60.000	122.334
80.000	133.958
100.000	141.058
120.000	151.927
140.000	135.685
160.000	140.040
180.000	169.081
200.000	175.929

THICKNESS	DEPTH	RESISTIVITY
10.52130	10.52130	44.37132
152.80480	163.32610	154.31680
99999790.00000	99999950.00000	264.14820

VAN #8
lm shade rd 2

AB/2	OBS
5.000	15.190
10.000	18.567
20.000	29.782
30.000	36.003
40.000	46.370
60.000	51.271
80.000	72.382
100.000	97.075
120.000	82.900
140.000	111.275
160.000	103.245
180.000	112.815
200.000	162.734

THICKNESS	DEPTH	RESISTIVITY
5.58574	5.58574	15.17023
16.78149	22.36724	36.64052
98.70259	121.06980	119.06470
99999390.00000	99999510.00000	722.42250

VAN #9
mshaderd #3

AB/2	OBS
5.000	31.494
10.000	32.201
20.000	44.736
30.000	52.025
40.000	62.204
60.000	75.021
80.000	92.488
100.000	100.845
120.000	105.181
140.000	131.639
160.000	147.781
180.000	144.765
200.000	148.283

THICKNESS	DEPTH	RESISTIVITY
13.21070	13.21070	30.17426
51.62780	64.83849	101.54990
99999900.00000	99999960.00000	189.24870

EVAN #10
elm shade rd. #4

AB/2	OBS
5.000	42.946
10.000	50.265
20.000	65.157
30.000	67.953
40.000	75.650
60.000	78.037
80.000	85.728
100.000	103.987
120.000	104.502
140.000	132.871
160.000	133.204
180.000	143.634
200.000	155.823

THICKNESS	DEPTH	RESISTIVITY
7.68809	7.68809	39.39129
86.06035	93.74844	80.99574
50.79290	144.54130	229.49240
99999420.00000	99999570.00000	761.63870

Phase One, Camp Creek Lane Area

EVAN #11
campcreeklane #1 south

AB/2	OBS
5.000	22.949
10.000	132.889
20.000	94.688
30.000	76.529
40.000	86.582
60.000	102.353
80.000	102.793
100.000	105.558
120.000	96.133
140.000	143.822
160.000	126.669
180.000	143.068
200.000	138.858

THICKNESS	DEPTH	RESISTIVITY
2.39923	2.39923	22.65110
1.23641	3.63564	54.41937
11.76878	15.40441	103.26660
26.23144	41.63585	91.28478
9999950.00000	9999992.00000	132.49900

EVAN #12
campcreekln #2

AB/2	OBS
5.000	17.389
10.000	24.410
20.000	32.358
30.000	37.605
40.000	46.119
60.000	58.999
80.000	68.361
100.000	85.137
120.000	85.577
140.000	107.317
160.000	121.140
180.000	134.020
200.000	148.283

THICKNESS	DEPTH	RESISTIVITY
6.45710	6.45710	15.25542
47.97932	54.43642	54.01348
74.55562	128.99200	151.08870
99999420.00000	99999550.00000	629.25330

EVAN #13
campcreek lane #3

AB/2	OBS
5.000	40.825
10.000	31.950
20.000	40.778
30.000	47.124
40.000	56.674
60.000	62.072
80.000	79.168
100.000	90.446
120.000	83.202
140.000	127.988
160.000	139.738
180.000	109.252
200.000	233.106

THICKNESS	DEPTH	RESISTIVITY
4.37750	4.37750	40.63662
11.92728	16.30478	29.42208
115.89180	132.19660	110.59120
99999460.00000	99999600.00000	672.57610

EVAN #14
camp creek land 4

AB/2	OBS
5.000	152.367
10.000	167.447
20.000	178.065
30.000	154.943
40.000	146.273
60.000	124.784
80.000	98.948
100.000	93.305
120.000	114.982
140.000	94.078
160.000	127.172
180.000	127.857
200.000	161.666

THICKNESS	DEPTH	RESISTIVITY
4.76842	4.76842	152.41450
20.22116	24.98959	183.43490
37.56388	62.55347	83.18460
38.85557	101.40900	71.16117
53.80936	155.21840	157.04890
99999050.00000	99999200.00000	1271.72400

Phase One, Elm Shade Road North area

EVAN #15
elm shade rd.1

AB/2	OBS
5.000	31.824
10.000	31.196
20.000	44.171
30.000	46.276
40.000	54.161
60.000	52.590
80.000	72.131
100.000	88.593
120.000	128.554
140.000	121.831
160.000	130.690
180.000	131.758
200.000	79.796

THICKNESS	DEPTH	RESISTIVITY
2.05969	2.05969	28.42020
3.65110	5.71079	21.39027
30.20652	35.91730	45.51385
22.69229	58.60960	572.31470
63.58801	122.19760	114.54420
99999590.00000	99999710.00000	28.01009

EVAN #40
repeat of EVAN 15

AB/2	OBS
5.000	40.338
10.000	42.223
20.000	39.207
30.000	40.527
40.000	46.496
60.000	50.517
80.000	52.779
100.000	55.292
120.000	58.961
140.000	61.575
160.000	63.938
180.000	67.858
200.000	69.743

THICKNESS	DEPTH	RESISTIVITY
2.88747	2.88747	34.54292
2.51496	5.40243	56.07051
27.74232	33.14476	36.10216
114.49890	147.64370	68.45688
99999830.00000	99999980.00000	95.64254

EVAN #16
elm shade rd n-s 2

AB/2	OBS
5.000	38.956
10.000	38.516
20.000	46.747
30.000	55.700
40.000	52.653
60.000	81.430
80.000	90.981
100.000	119.066
120.000	119.129
140.000	137.049
160.000	159.844
180.000	145.896
200.000	135.214

THICKNESS	DEPTH	RESISTIVITY
13.47133	13.47133	38.93578
29.42937	42.90069	86.57383
111.05750	153.95820	163.94580
99999820.00000	99999980.00000	108.11290

EVAN #43
elm shade rd. repeat evan16

AB/2	OBS
5.000	47.155
10.000	35.500
20.000	37.448
30.000	41.281
40.000	48.758
60.000	60.696
80.000	67.858
100.000	73.513
120.000	77.359
140.000	83.566
160.000	86.256
180.000	95.002
200.000	103.044

THICKNESS	DEPTH	RESISTIVITY
.45000	.45000	57.22106
.08123	.53123	346.17900
.17358	.70480	14.60894
1.91139	2.61619	72.87592
15.34673	17.96292	29.82366
11.10043	29.06336	53.47250
28.45041	57.51376	106.25390
88.41545	145.92920	64.68605
99999280.00000	99999420.00000	594.13700

EVAN #17
elm shade rd n-s#3

AB/2	OBS
5.000	23.876
10.000	28.526
20.000	43.417
30.000	37.699
40.000	45.892
60.000	65.408
80.000	73.136
100.000	78.226
120.000	78.113
140.000	96.761
160.000	74.393
180.000	107.273
200.000	95.504

THICKNESS	DEPTH	RESISTIVITY
7.19280	7.19280	21.81534
33.97889	41.17169	59.05380
116.50530	157.67700	103.71020
99999820.00000	99999980.00000	65.60895

EVAN #18
elm shade rd n-s4

AB/2	OBS
5.000	28.007
10.000	36.945
20.000	39.333
30.000	59.659
40.000	73.011
60.000	66.350
80.000	77.409
100.000	127.863
120.000	158.336
140.000	124.030
160.000	199.051
180.000	191.135
200.000	152.179

THICKNESS	DEPTH	RESISTIVITY
2.20161	2.20161	19.78786
8.44477	10.64638	29.10918
20.05390	30.70028	83.00471
72.78529	103.48560	309.57690
99999850.00000	99999950.00000	118.09290

EVAN #37
elm shade rd. repeat of evan

AB/2	OBS
5.000	27.709
10.000	25.824
20.000	33.050
30.000	37.699
40.000	44.736
60.000	53.156
80.000	61.324
100.000	69.743
120.000	76.152
140.000	82.687
160.000	88.467
180.000	97.264
200.000	98.018

THICKNESS	DEPTH	RESISTIVITY
3.78261	3.78261	29.03298
9.76855	13.55116	21.85850
47.93063	61.48179	68.71075
91.74181	153.22360	129.21410
99999820.00000	99999970.00000	114.17920

EVAN #19
elm shade rd n-s5

AB/2	OBS
5.000	14.640
10.000	16.525
20.000	17.342
30.000	27.238
40.000	33.653
60.000	56.737
80.000	82.687
100.000	48.695
120.000	83.692
140.000	79.168
160.000	157.834
180.000	163.991
200.000	101.788

THICKNESS	DEPTH	RESISTIVITY
20.60164	20.60164	14.35957
10.40411	31.00574	48.79856
17.38829	48.39403	276.67190
99999880.00000	99999930.00000	114.95440

EVAN #44
elm shade rd. repeat evan19

AB/2	OBS
5.000	11.687
10.000	13.195
20.000	18.096
30.000	22.431
40.000	29.154
60.000	40.715
80.000	52.025
100.000	62.832
120.000	70.874
140.000	78.113
160.000	87.462
180.000	92.740
200.000	101.034

THICKNESS	DEPTH	RESISTIVITY
9.90703	9.90703	10.56301
15.83377	25.74080	26.39287
28.62473	54.36553	111.11760
46.36243	100.72800	211.93000
99999660.00000	99999770.00000	308.81360

EVAN #20
elmshade rd. n-s#6

AB/2	OBS
5.000	36.380
10.000	49.449
20.000	53.533
30.000	72.382
40.000	64.842
60.000	104.238
80.000	118.124
100.000	93.431
120.000	145.142
140.000	118.796
160.000	131.193
180.000	149.006
200.000	240.018

THICKNESS	DEPTH	RESISTIVITY
7.25860	7.25860	36.54776
51.07299	58.33158	94.93970
94.46961	152.80120	166.47540
99999290.00000	99999440.00000	1077.37000

EVAN #31
elm shade rd. repeat of evan

AB/2	OBS
5.000	39.066
10.000	45.333
20.000	56.423
30.000	55.512
40.000	66.476
60.000	77.472
80.000	94.248
100.000	103.358
120.000	117.244
140.000	126.229
160.000	138.130
180.000	143.521
200.000	150.796

THICKNESS	DEPTH	RESISTIVITY
8.11452	8.11452	36.52961
52.47886	60.59338	74.97432
99999870.00000	99999940.00000	252.74910

EVAN #30
elm shade rd N-S #7 repeat

AB/2	OBS
5.000	70.529
10.000	74.644
20.000	89.410
30.000	94.813
40.000	104.552
60.000	117.810
80.000	137.727
100.000	154.566
120.000	169.269
140.000	167.265
160.000	191.009
180.000	190.512
200.000	185.040

THICKNESS	DEPTH	RESISTIVITY
14.27911	14.27911	69.85259
49.53001	63.80912	134.42730
92.17722	155.98630	271.64350
99999820.00000	99999980.00000	191.90700

Phase One, Elm Shade Rd West-East area

VAN #29
lm shade rd. W-E #1

AB/2	OBS
5.000	54.915
10.000	51.616
20.000	45.616
30.000	47.218
40.000	53.533
60.000	67.104
80.000	73.890
100.000	77.283
120.000	84.069
140.000	88.404
160.000	87.914
180.000	92.174
200.000	94.876

THICKNESS	DEPTH	RESISTIVITY
7.68464	7.68464	55.91957
22.28626	29.97089	38.96531
132.79280	162.76370	105.32300
99999820.00000	99999980.00000	118.70840

VAN #25
m shade rd

AB/2	OBS
5.000	49.433
10.000	55.198
20.000	69.052
30.000	73.325
40.000	87.713
60.000	106.312
80.000	105.809
100.000	106.814
120.000	101.788
140.000	104.898
160.000	110.584
180.000	114.228
200.000	124.407

THICKNESS	DEPTH	RESISTIVITY
9.49903	9.49903	49.05167
15.04785	24.54688	82.19487
27.29836	51.84524	162.42200
110.29900	162.14430	72.72659
99999340.00000	99999500.00000	625.99540

EVAN #26
elm shade rd w-e3

AB/2	OBS
5.000	43.935
10.000	50.831
20.000	59.125
30.000	60.884
40.000	68.487
60.000	74.154
80.000	89.473
100.000	100.217
120.000	107.065
140.000	116.993
160.000	130.188
180.000	134.586
200.000	127.988

THICKNESS	DEPTH	RESISTIVITY
4.42205	4.42205	39.40051
14.41654	18.83858	63.93602
22.35035	41.18893	53.24672
30.13008	71.31901	145.93780
46.25462	117.57360	294.77490
99999850.00000	99999970.00000	112.14390

EVAN #27
elm shade rd. W-E #4

AB/2	OBS
5.000	46.731
10.000	60.853
20.000	70.497
30.000	71.723
40.000	72.508
60.000	82.938
80.000	85.929
100.000	103.044
120.000	112.343
140.000	116.993
160.000	127.674
180.000	142.503
200.000	136.848

THICKNESS	DEPTH	RESISTIVITY
3.13530	3.13530	38.75142
23.00928	26.14458	74.06310
23.75268	49.89726	60.21498
75.90298	125.80020	154.60480
99999820.00000	99999950.00000	219.22260

EVAN #28
elm shade rd. w-e#5

AB/2	OBS
5.000	33.065
10.000	44.171
20.000	52.465
30.000	47.595
40.000	50.391
60.000	60.507
80.000	71.126
100.000	81.493
120.000	78.791
140.000	86.557
160.000	106.563
180.000	121.580
200.000	135.717

THICKNESS	DEPTH	RESISTIVITY
3.96165	3.96165	29.24160
14.28293	18.24459	57.00883
26.96402	45.20860	39.68731
95.88496	141.09360	112.36440
99999240.00000	99999380.00000	780.16830

PhaseTwo, Dew Drop Landing area

EVAN #45
east side river..north-south

AB/2	OBS
5.000	190.381
10.000	87.399
20.000	73.262
30.000	85.577
40.000	94.499
60.000	117.621
80.000	97.012
100.000	113.977
120.000	127.046
140.000	135.641
160.000	150.998
180.000	157.771
200.000	175.552

THICKNESS	DEPTH	RESISTIVITY
3.23908	3.23908	299.12220
1.59034	4.82943	147.72400
3.28622	8.11564	30.47683
13.67926	21.79490	92.60247
12.86186	34.65676	143.69980
95.64281	130.29960	95.36337
29.87000	160.16960	263.39650
99999310.00000	99999470.00000	915.39120

EVAN #46
river east side. north-south

AB/2	OBS
5.000	694.292
10.000	312.903
20.000	210.235
30.000	198.486
40.000	205.083
60.000	191.888
80.000	172.411
100.000	162.734
120.000	177.940
140.000	175.138
160.000	205.083
180.000	203.462
200.000	206.591

THICKNESS	DEPTH	RESISTIVITY
3.22438	3.22438	1074.97800
1.62819	4.85257	561.24150
4.49944	9.35201	152.87540
19.95735	29.30936	223.23770
94.88789	124.19730	152.89710
99999860.00000	99999980.00000	256.88850

EVAN #47
east side river. north-south

AB/2	OBS
5.000	384.217
10.000	339.920
20.000	317.929
30.000	274.261
40.000	249.065
60.000	181.333
80.000	145.267
100.000	137.602
120.000	131.495
140.000	131.507
160.000	131.293
180.000	132.889
200.000	162.232

THICKNESS	DEPTH	RESISTIVITY
7.40648	7.40648	401.34360
32.05074	39.45723	286.93080
23.45390	62.91113	91.57554
60.63346	123.54460	68.01054
35.69468	159.23930	160.94380
99999540.00000	99999700.00000	576.46450

EVAN #48

AB/2	OBS
5.000	143.257
10.000	196.664
20.000	218.906
30.000	197.920
40.000	197.041
60.000	154.943
80.000	140.241
100.000	138.230
120.000	140.768
140.000	133.970
160.000	137.124
180.000	143.973
200.000	145.267

THICKNESS	DEPTH	RESISTIVITY
3.56532	3.56532	113.91750
15.32284	18.88816	277.66510
132.77940	151.66760	130.05090
99999840.00000	99999990.00000	173.12010

EVAN #49
east side of rive n-s 4

AB/2	OBS
5.000	404.323
10.000	196.035
20.000	191.637
30.000	181.710
40.000	184.474
60.000	145.142
80.000	126.166
100.000	121.077
120.000	119.355
140.000	132.123
160.000	133.405
180.000	179.146
200.000	152.681

THICKNESS	DEPTH	RESISTIVITY
.28897	.28897	320.04430
1.66377	1.95274	739.93190
2.82382	4.77656	327.93060
2.59087	7.36743	93.55251
22.78106	30.14849	171.59630
99.82576	129.97420	112.68900
99999840.00000	99999970.00000	221.12250

EVAN #50
see evan50 (east side of river)

AB/2	OBS
5.000	210.801
10.000	170.903
20.000	179.950
30.000	170.588
40.000	169.143
60.000	185.103
80.000	138.733
100.000	137.602
120.000	140.995
140.000	140.304
160.000	136.320
180.000	152.908
200.000	133.455

THICKNESS	DEPTH	RESISTIVITY
1.86083	1.86083	350.58590
17.38944	19.25027	170.19500
37.51670	56.76697	211.52700
99999940.00000	99999990.00000	115.57330

EVAN #51
along rr tracks

AB/2	OBS
5.000	95.504
10.000	79.294
20.000	59.942
30.000	53.721
40.000	61.324
60.000	65.219
80.000	75.499
100.000	86.708
120.000	94.776
140.000	108.548
160.000	116.918
180.000	123.050
200.000	128.177

THICKNESS	DEPTH	RESISTIVITY
4.77358	4.77358	106.23700
3.78710	8.56068	72.00802
35.77408	44.33476	46.57388
82.59499	126.92980	151.89760
99999820.00000	99999950.00000	196.63950

EVAN #52

AB/2	OBS
5.000	580.252
10.000	234.363
20.000	151.676
30.000	140.995
40.000	140.995
60.000	123.653
80.000	126.669
100.000	134.460
120.000	152.304
140.000	159.216
160.000	184.072
180.000	195.771
200.000	200.936

THICKNESS	DEPTH	RESISTIVITY
3.13969	3.13969	1040.05900
1.60139	4.74108	439.92650
3.17585	7.91693	87.35880
23.45512	31.37205	156.55960
58.65659	90.02863	96.16714
99999860.00000	99999940.00000	294.71860

EVAN #53

AB/2	OBS
5.000	216.456
10.000	105.212
20.000	132.324
30.000	137.979
40.000	141.372
60.000	153.812
80.000	144.011
100.000	156.137
120.000	153.435
140.000	167.397
160.000	191.662
180.000	200.748
200.000	184.726

THICKNESS	DEPTH	RESISTIVITY
.58031	.58031	740.58690
1.58149	2.16180	683.64650
.80955	2.97135	319.61650
2.32640	5.29776	30.50437
11.09782	16.39557	199.20070
74.50661	90.90218	136.58920
51.04115	141.94330	343.42470
99999840.00000	99999980.00000	211.46670

EVAN #54

AB/2	OBS
5.000	148.597
10.000	85.608
20.000	101.788
30.000	107.914
40.000	118.878
60.000	120.449
80.000	131.444
100.000	135.717
120.000	149.552
140.000	156.225
160.000	175.276
180.000	186.611
200.000	224.310

THICKNESS	DEPTH	RESISTIVITY
2.31559	2.31559	259.32450
1.06554	3.38113	185.43300
1.28500	4.66614	82.10241
2.78678	7.45291	40.43793
36.17515	43.62807	126.38980
74.00890	117.63700	107.76550
36.52365	154.16060	274.32860
99998980.00000	99999140.00000	1675.84800

EVAN #55
dewdroplandingarea

AB/2	OBS
5.000	65.659
10.000	102.761
20.000	141.183
30.000	150.985
40.000	156.326
60.000	145.707
80.000	146.524
100.000	154.566
120.000	164.745
140.000	152.355
160.000	188.496
180.000	203.575
200.000	216.142

THICKNESS	DEPTH	RESISTIVITY
3.76839	3.76839	52.62169
12.07500	15.84340	187.60240
115.56710	131.41040	141.95400
99999760.00000	99999890.00000	467.29100

EVAN #56

AB/2	OBS
5.000	2962.522
10.000	887.186
20.000	327.982
30.000	400.553
40.000	298.074
60.000	263.894
80.000	241.023
100.000	274.261
120.000	296.315
140.000	370.331
160.000	349.848
180.000	403.758
200.000	398.982

THICKNESS	DEPTH	RESISTIVITY
3.13505	3.13505	5101.44600
1.31473	4.44978	3145.84500
6.65543	11.10521	193.42390
8.71764	19.82285	687.04290
4.84538	24.66823	235.13500
21.66672	46.33495	157.89280
99999920.00000	99999970.00000	365.63550

EVAN #57

AB/2	OBS
5.000	1916.372
10.000	1017.248
20.000	434.796
30.000	313.657
40.000	290.032
60.000	234.111

80.000	188.998
100.000	199.177
120.000	223.933
140.000	233.986
160.000	379.002
180.000	303.101
200.000	282.743

THICKNESS	DEPTH	RESISTIVITY
4.61545	4.61545	2467.29300
4.27873	8.89418	704.47170
5.99693	14.89111	258.89080
20.25869	35.14980	381.33490
50.11155	85.26135	118.98340
99999850.00000	99999940.00000	499.52560

EVAN #58

AB/2	OBS
5.000	691.150
10.000	438.880
20.000	160.661
30.000	115.359
40.000	122.145
60.000	121.391
80.000	124.658
100.000	127.863
120.000	140.618
140.000	155.258
160.000	161.855
180.000	186.045
200.000	178.065

THICKNESS	DEPTH	RESISTIVITY
2.71728	2.71728	707.90390
1.59493	4.31221	1301.01500
4.16953	8.48173	435.62750
.53924	9.02098	4.21991
17.30389	26.32487	187.98950
36.74225	63.06712	79.04695
99999890.00000	99999950.00000	242.79280

EVAN #59

AB/2	OBS
5.000	588.734
10.000	293.425
20.000	165.876
30.000	153.247
40.000	169.395
60.000	173.039
80.000	173.919
100.000	170.903
120.000	174.170
140.000	175.929
160.000	196.236
180.000	225.516
200.000	219.158

THICKNESS	DEPTH	RESISTIVITY
3.23012	3.23012	845.04140
1.68326	4.91338	520.33000
3.92113	8.83451	196.81190
5.81251	14.64702	103.78300
51.66770	66.31472	171.90320
60.71464	127.02940	135.24320
99999810.00000	99999940.00000	403.01160

VAN #60

AB/2	OBS
5.000	55.889
10.000	60.067
20.000	66.727
30.000	69.743
40.000	78.917
60.000	88.970
80.000	87.965
100.000	93.934
120.000	112.343
140.000	120.511
160.000	127.674
180.000	128.365
200.000	138.984

THICKNESS	DEPTH	RESISTIVITY
17.08544	17.08544	54.63139
114.27020	131.35570	100.61850
99999700.00000	99999830.00000	392.25410

EVAN #61

AB/2	OBS
5.000	4231.725
10.000	1032.956
20.000	350.602
30.000	435.425
40.000	389.557
60.000	999.027
80.000	612.234
100.000	2054.602
120.000	1266.690
140.000	2313.469
160.000	1045.522
180.000	2408.973
200.000	1696.460

THICKNESS	DEPTH	RESISTIVITY
3.09231	3.09231	8729.36700
1.50011	4.59241	2906.80600
.33575	4.92817	46.86317
5.51970	10.44787	80.49186
109.68750	120.13540	1110.79400
99999770.00000	99999890.00000	2236.58300

EVAN #62

AB/2	OBS
5.000	3958.407
10.000	864.566
20.000	780.372
30.000	959.442
40.000	494.110
60.000	1108.354
80.000	586.096
100.000	1652.478
120.000	2367.504
140.000	2137.540
160.000	6021.805
180.000	943.232
200.000	1237.788

THICKNESS	DEPTH	RESISTIVITY
.26401	.26401	2720.41800
.55565	.81966	5340.55200
.86632	1.68599	3056.62500
1.09240	2.77839	4256.78100
.93492	3.71330	1101.81100
1.21677	4.93007	131.75490
.62902	5.55909	1097.70700
55.96613	61.52522	807.62680
51.54081	113.06600	2154.90100
99999770.00000	99999880.00000	4034.57500

EVAN #63

AB/2	OBS
5.000	522.761
10.000	387.044
20.000	371.965
30.000	307.625
40.000	274.952
60.000	234.111
80.000	195.533
100.000	200.434
120.000	197.543
140.000	244.542
160.000	247.306
180.000	219.409
200.000	368.195

THICKNESS	DEPTH	RESISTIVITY
6.60038	6.60038	521.48210
26.92101	33.52139	263.38280
82.39568	115.91710	159.03250
44.12323	160.04030	369.57990
99999190.00000	99999350.00000	2128.39200

Phase Two, Schierle Road area

EVAN #64

demond field west side of ri

AB/2	OBS
5.000	73.199
10.000	26.389
20.000	21.903
30.000	25.315
40.000	28.752
60.000	43.769
80.000	55.945
100.000	67.858
120.000	79.168
140.000	92.539
160.000	91.282
180.000	112.419
200.000	131.947

THICKNESS	DEPTH	RESISTIVITY
3.24852	3.24852	111.71060
1.57493	4.82345	54.35497
2.31899	7.14244	8.31988
10.82346	17.96590	11.82707
52.60542	70.57131	69.95635
34.28036	104.85170	243.08650
99998160.00000	99998260.00000	1710.49600

EVAN #65

AB/2	OBS
5.000	46.998
10.000	34.997
20.000	25.887
30.000	24.297
40.000	32.371
60.000	47.463
80.000	55.141
100.000	65.094
120.000	84.295
140.000	100.280
160.000	143.659
180.000	199.956
200.000	247.558

THICKNESS	DEPTH	RESISTIVITY
5.06784	5.06784	46.95682
24.64875	29.71659	22.98987
28.18829	57.90488	99.26281
25.23669	83.14157	604.87210
99997750.00000	99997830.00000	2978.15600

VAN #66

AB/2	OBS
5.000	484.748
10.000	681.097
20.000	893.469
30.000	755.867
40.000	605.699
60.000	337.407
80.000	277.968
100.000	226.823
120.000	162.106
140.000	159.744
160.000	145.669
180.000	130.062
200.000	134.460

THICKNESS	DEPTH	RESISTIVITY
.74132	.74132	358.40230
.08729	.82861	307.45160
2.25535	3.08397	358.60180
1.63473	4.71869	415.82180
11.22318	15.94187	1684.49900
9.49382	25.43569	606.45310
5.82452	31.26020	218.03070
21.18997	52.45017	104.96520
82.85185	135.30200	202.72230
99999640.00000	99999780.00000	69.39077

EVAN #67

AB/2	OBS
5.000	512.080
10.000	598.159
20.000	711.257
30.000	646.540
40.000	562.973
60.000	330.998
80.000	229.462
100.000	160.850
120.000	130.439
140.000	122.139
160.000	124.105
180.000	132.494
200.000	142.000

THICKNESS	DEPTH	RESISTIVITY
5.17645	5.17645	458.70070
23.14293	28.31938	903.77250
9.61778	37.93715	402.50430
12.37649	50.31364	132.45590
4.84935	55.16299	23.50981
5.94233	61.10532	11.23237
58.91444	120.01980	81.43129
99999510.00000	99999630.00000	571.32530

Phase Two, Beagle Lane area

EVAN #68

AB/2	OBS
5.000	74.142
10.000	82.341
20.000	121.077
30.000	139.581
40.000	151.048
60.000	161.541
80.000	157.582
100.000	158.336
120.000	150.759
140.000	149.100
160.000	141.749
180.000	141.259
200.000	140.429

THICKNESS	DEPTH	RESISTIVITY
2.13085	2.13085	129.97440
1.05702	3.18786	49.29268
1.22959	4.41745	28.66165
3.51990	7.93735	87.25688
46.61433	54.55169	198.72280
110.91680	165.46850	121.94510
99999820.00000	99999990.00000	150.74190

EVAN #69

AB/2	OBS
5.000	188.338
10.000	228.080
20.000	230.027
30.000	240.143
40.000	268.166
60.000	265.590
80.000	218.152
100.000	192.580
120.000	179.448
140.000	174.786
160.000	173.014
180.000	173.378
200.000	172.285

THICKNESS	DEPTH	RESISTIVITY
2.72963	2.72963	159.23840
11.05007	13.77971	239.73460

42.00308	55.78279	295.83270
104.00590	159.78870	132.58590
99999820.00000	99999980.00000	210.41990

EVAN #70

AB/2	OBS
5.000	494.801
10.000	160.850
20.000	98.960
30.000	97.264
40.000	100.280
60.000	100.657
80.000	105.055
100.000	110.835
120.000	119.582
140.000	127.549
160.000	135.365
180.000	137.639
200.000	144.325

THICKNESS	DEPTH	RESISTIVITY
3.10585	3.10585	976.25520
1.49889	4.60475	330.14210
2.04833	6.65308	37.83410
24.64608	31.29916	103.30260
62.72594	94.02509	87.38808
99999840.00000	99999940.00000	265.09090

EVAN #71

AB/2	OBS
5.000	498.257
10.000	183.469
20.000	107.442
30.000	117.244
40.000	129.685
60.000	141.749
80.000	147.781
100.000	145.142
120.000	138.431
140.000	137.841
160.000	130.389
180.000	141.032
200.000	129.559

THICKNESS	DEPTH	RESISTIVITY
3.20432	3.20432	825.46130
1.70843	4.91275	421.23680
7.04128	11.95403	64.60336
97.48537	109.43940	150.21500
99999870.00000	99999980.00000	111.47280

EVAN #72

AB/2	OBS
5.000	164.305
10.000	115.045
20.000	136.094
30.000	154.189
40.000	175.678
60.000	193.396
80.000	178.442
100.000	166.504
120.000	149.213
140.000	139.336
160.000	130.992
180.000	127.687
200.000	119.004

THICKNESS	DEPTH	RESISTIVITY
3.20655	3.20655	228.53760
1.63475	4.84131	116.51560
5.14549	9.98680	60.95087
54.46130	64.44810	246.19670
85.95726	150.40540	97.22443
99999790.00000	99999940.00000	71.05392

EVAN #73

AB/2	OBS
5.000	114.982
10.000	76.655
20.000	81.933
30.000	90.478
40.000	101.788
60.000	110.081
80.000	118.627
100.000	122.648
120.000	122.221
140.000	125.086
160.000	126.770
180.000	135.717
200.000	125.035

THICKNESS	DEPTH	RESISTIVITY
3.30952	3.30952	154.34910
1.59891	4.90843	91.94585
7.54514	12.45357	40.70570
174.44720	186.90080	139.46930
99999810.00000	99999990.00000	113.42320

EVAN #74

AB/2	OBS
5.000	77.754
10.000	79.734
20.000	79.796
30.000	73.513
40.000	78.917
60.000	82.373
80.000	87.010
100.000	89.378
120.000	95.002
140.000	100.280
160.000	104.552
180.000	101.788
200.000	106.626

THICKNESS	DEPTH	RESISTIVITY
4.58017	4.58017	74.15402
4.47982	9.05999	96.87395
36.11074	45.17073	70.35648
119.56830	164.73910	100.61400
99999770.00000	99999940.00000	222.42930

EVAN #75

AB/2	OBS
5.000	38.579
10.000	44.359
20.000	55.606
30.000	59.470
40.000	68.361
60.000	78.226
80.000	84.044
100.000	92.049
120.000	100.581
140.000	113.914
160.000	120.084
180.000	118.187
200.000	126.229

THICKNESS	DEPTH	RESISTIVITY
8.73556	8.73556	36.17070
66.11489	74.85046	80.03162
77.84254	152.69300	159.73440
99999750.00000	99999900.00000	283.01950

EVAN #76

AB/2	OBS
5.000	73.827
10.000	118.218
20.000	179.636
30.000	213.565
40.000	258.867
60.000	291.414
80.000	289.278
100.000	262.323

120.000	217.901
140.000	187.804
160.000	169.747
180.000	170.212
200.000	166.379

THICKNESS	DEPTH	RESISTIVITY
3.24329	3.24329	49.14283
2.11292	5.35621	112.70220
22.27706	27.63327	323.07570
26.25870	53.89197	555.15850
45.07840	98.97037	205.66290
99999760.00000	99999860.00000	70.40257

EVAN #77

AB/2	OBS
5.000	48.977
10.000	90.478
20.000	137.099
30.000	154.755
40.000	173.667
60.000	191.511
80.000	182.464
100.000	170.903
120.000	163.614
140.000	157.457
160.000	146.775
180.000	143.634
200.000	152.053

THICKNESS	DEPTH	RESISTIVITY
.17809	.17809	33.21939
3.01928	3.19736	27.19758
59.33373	62.53109	252.98310
71.20373	133.73480	58.44641
99999730.00000	99999860.00000	307.91380

EVAN #78

AB/2	OBS
5.000	63.460
10.000	69.366
20.000	75.021
30.000	78.603
40.000	84.195
60.000	89.347
80.000	91.483
100.000	100.468
120.000	105.859
140.000	113.650
160.000	120.939
180.000	119.883
200.000	122.773

THICKNESS	DEPTH	RESISTIVITY
8.90235	8.90235	59.76392
70.45496	79.35730	91.13185
99999900.00000	99999980.00000	152.22150

EVAN #79

AB/2	OBS
5.000	40.511
10.000	46.307
20.000	64.088
30.000	75.115
40.000	87.713
60.000	101.411
80.000	112.846
100.000	122.836
120.000	130.062
140.000	132.343
160.000	139.235
180.000	140.241
200.000	135.842

THICKNESS	DEPTH	RESISTIVITY
12.90807	12.90807	39.40342
59.94703	72.85509	155.43510
63.52050	136.37560	200.92370
99999820.00000	99999950.00000	79.98773

EVAN #80

AB/2	OBS
5.000	44.391
10.000	50.140
20.000	66.602
30.000	81.053
40.000	99.023
60.000	134.209
80.000	157.834
100.000	174.044
120.000	183.218
140.000	188.244
160.000	191.511
180.000	197.920
200.000	186.359

THICKNESS	DEPTH	RESISTIVITY
6.03650	6.03650	41.25737
22.30691	28.34341	69.80400
9.73637	38.07978	404.79040
28.44693	66.52670	685.32840
63.34060	129.86730	220.55880
99999690.00000	99999820.00000	70.13557

EVAN #81

AB/2	OBS
5.000	43.480
10.000	45.679
20.000	52.779
30.000	61.827
40.000	78.665
60.000	102.542
80.000	124.156
100.000	130.062
120.000	140.995
140.000	138.808
160.000	140.140
180.000	140.241
200.000	143.382

THICKNESS	DEPTH	RESISTIVITY
2.35231	2.35231	36.26842
7.47323	9.82554	51.45360
10.00613	19.83167	33.26117
7.88542	27.71709	131.06360
33.85323	61.57032	291.60180
99999910.00000	99999980.00000	154.74310

EVAN #82

AB/2	OBS
5.000	112.312
10.000	76.592
20.000	88.970
30.000	95.190
40.000	107.317
60.000	115.171
80.000	111.087
100.000	110.364
120.000	104.690
140.000	113.870
160.000	110.835
180.000	110.270
200.000	106.751

THICKNESS	DEPTH	RESISTIVITY
2.34824	2.34824	208.86570
2.12441	4.47265	79.45404
3.08080	7.55345	53.63093
132.99850	140.55200	111.26700
99999860.00000	100000000.00000	82.65870

EVAN #83

AB/2	OBS
5.000	65.031
10.000	57.868
20.000	63.837
30.000	66.727
40.000	77.535
60.000	84.446
80.000	87.688
100.000	86.991
120.000	85.879
140.000	84.798
160.000	89.975
180.000	92.174
200.000	96.761

THICKNESS	DEPTH	RESISTIVITY
4.21689	4.21689	72.15411
4.25845	8.47535	44.95370
94.00430	102.47970	84.42750
59.55833	162.03800	53.34143
99999690.00000	99999850.00000	240.14430

EVAN #84

AB/2	OBS
5.000	114.668
10.000	84.635
20.000	75.587
30.000	75.210
40.000	82.310
60.000	83.504
80.000	87.713
100.000	87.965
120.000	79.545
140.000	85.590
160.000	89.975
180.000	93.305
200.000	99.274

THICKNESS	DEPTH	RESISTIVITY
3.70379	3.70379	149.04790
8.60532	12.30911	62.25161
55.53212	67.84123	87.88921
83.68694	151.52820	54.46750
20.25689	171.78510	150.21520
99999370.00000	99999540.00000	499.76650

EVAN #85

AB/2	OBS
5.000	112.469
10.000	77.409
20.000	77.535
30.000	84.635
40.000	102.793
60.000	115.736
80.000	115.611
100.000	113.977
120.000	119.129
140.000	123.150
160.000	120.285
180.000	138.884
200.000	148.283

THICKNESS	DEPTH	RESISTIVITY
4.68766	4.68766	134.89530
5.37699	10.06466	45.16371
14.43360	24.49825	89.21542
30.72050	55.21876	157.72360
111.19570	166.41450	88.61462
99999100.00000	99999270.00000	1009.82800

EVAN #86

AB/2	OBS
5.000	346.832
10.000	336.779
20.000	278.345
30.000	239.955
40.000	242.657
60.000	219.974
80.000	198.046
100.000	185.040
120.000	186.988
140.000	179.448
160.000	188.496
180.000	195.658
200.000	190.506

THICKNESS	DEPTH	RESISTIVITY
1.79275	1.79275	298.11040
7.86861	9.66136	387.38410
36.91475	46.57611	222.58200
78.40336	124.97950	168.95370
39.89330	164.87280	220.19550
99999820.00000	99999990.00000	158.24980

EVAN #87

AB/2	OBS
5.000	203.889
10.000	174.673
20.000	162.860
30.000	173.416
40.000	197.292
60.000	214.508
80.000	215.639
100.000	221.168
120.000	223.933
140.000	224.310
160.000	229.211
180.000	234.111
200.000	231.975

THICKNESS	DEPTH	RESISTIVITY
4.31877	4.31877	223.23920
13.68440	18.00317	143.68440
9999979.00000	9999997.00000	236.50990

EVAN #88

AB/2	OBS
5.000	164.777
10.000	163.363
20.000	155.383
30.000	151.833
40.000	160.598
60.000	179.448
80.000	194.025
100.000	202.004
120.000	199.805
140.000	206.717
160.000	196.538
180.000	199.617
200.000	200.748

THICKNESS	DEPTH	RESISTIVITY
11.91290	11.91290	158.64400
10.85892	22.77183	132.30170
9999974.00000	9999997.00000	212.89140

EVAN #89

AB/2	OBS
5.000	179.385
10.000	172.473
20.000	170.212
30.000	159.938
40.000	170.274
60.000	180.956
80.000	192.265
100.000	198.863
120.000	200.559
140.000	211.995
160.000	214.131
180.000	225.629
200.000	213.817

THICKNESS	DEPTH	RESISTIVITY
24.56859	24.56859	180.83980
33.39762	57.96622	157.72670
114.52150	172.48770	251.59460
99999820.00000	100000000.00000	225.71750

EVAN #90

AB/2	OBS
5.000	111.527
10.000	108.825
20.000	131.319
30.000	140.429
40.000	160.473
60.000	173.793
80.000	183.720

100.000	184.726
120.000	193.773
140.000	194.842
160.000	197.945
180.000	204.706
200.000	209.230

THICKNESS	DEPTH	RESISTIVITY
3.38446	3.38446	115.16060
11.55962	14.94409	98.50035
143.79180	158.73590	205.03710
99999830.00000	99999990.00000	258.10280

Phase Two, Horse Creek area

EVAN #91

AB/2	OBS
5.000	119.852
10.000	99.054
20.000	98.332
30.000	103.673
40.000	121.642
60.000	144.011
80.000	161.352
100.000	175.929
120.000	183.218
140.000	194.402
160.000	191.009
180.000	193.962
200.000	191.009

THICKNESS	DEPTH	RESISTIVITY
4.53194	4.53194	131.15170
18.33023	22.86217	80.30312
136.31310	159.17530	224.33400
99999820.00000	99999980.00000	151.75120

EVAN #92

AB/2	OBS
5.000	52.889
10.000	49.135
20.000	52.402
30.000	55.700
40.000	56.674
60.000	66.539
80.000	68.135
100.000	76.655
120.000	81.430
140.000	85.985
160.000	93.092
180.000	96.698
200.000	97.515

THICKNESS	DEPTH	RESISTIVITY
4.17429	4.17429	53.71199
15.70308	19.87737	45.32152
76.15366	96.03103	82.44767
38.27324	134.30430	117.53040
25.17026	159.47450	118.29970
99999830.00000	99999990.00000	114.05340

VAN #93

AB/2	OBS
5.000	114.040
10.000	104.709
20.000	99.588
30.000	89.253
40.000	97.138
60.000	99.714
80.000	103.798
100.000	106.594
120.000	114.228
140.000	111.275
160.000	118.627
180.000	140.241
200.000	133.895

THICKNESS	DEPTH	RESISTIVITY
2.62940	2.62940	129.52220
2.33817	4.96757	98.50498
2.45870	7.42627	107.96950
62.36208	69.78835	90.57762
80.87924	150.66760	145.23810
99999820.00000	99999980.00000	191.67580

EVAN #94

AB/2	OBS
5.000	73.356
10.000	52.967
20.000	49.072
30.000	44.862
40.000	49.461
60.000	57.491
80.000	62.329
100.000	61.198
120.000	65.710
140.000	83.127
160.000	86.457
180.000	81.430
200.000	102.039

THICKNESS	DEPTH	RESISTIVITY
4.36786	4.36786	81.34506
32.96040	37.32826	42.60470
124.92030	162.24860	67.73088
99999480.00000	99999640.00000	382.08530

EVAN #95

AB/2	OBS
5.000	77.911
10.000	47 438
20.000	38.956
30.000	42.223
40.000	47.878
60.000	58.622
80.000	67.858
100.000	71.942
120.000	82.561
140.000	86.205
160.000	96.007
180.000	103.484
200.000	115.611

THICKNESS	DEPTH	RESISTIVITY
3.42253	3.42253	102.45860
1.48541	4.90795	72.63326
17.60527	22.51322	28.18072
127.06600	149.57930	83.68282
99998980.00000	99999130.00000	928.51100