

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc. Client: COCORP

630

DATE 11/23/80	INSTRUMENT MAN G. Cotcamp		ROD MAN G. Litzinger		PARTY NUMBER 6834		NOTES CHECKED BY slw		LINE NO. 8	PAGE 10 of 44
AREA OKLAHOMA	TOPO MAP Clinton 15'	STATE Oklahoma	COUNTY Custer	TWP 13 N	RANGE 17 W	PPM	PARTY MANAGER L. Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS
														Y	X	
7F										1662.0				212,700	1,711,990	Instrument - Wild T1A chaining - 330' steel cable + pins. → scaled. R.
	560		260° 52' - 180°	+9.5'	+13.1	-		+13.1	1675.1		BS	-4	+560			T-intersect. e! 1662.
	560				+10.3	84	+2.8	+13.1			BS					
X	0				5.4	-		-5.4		1669.7	X	0	0	212,694	1,712,530	
7F	944		79° 40.3'	+9.5°	10.6	92° -	-32.9	-43.5		1631.4	TP	+14	+944	212,710	1,713,494	212,720 + 1,713,500 4-Way Intersect.
7F	944				14.4	91° 46'	-29.1	-43.5			TP					
	600		184° 4.8' - 180°	+9.5°	+3.2	89° -	-10.5	-7.3	1624.3		BS	+583-3	+141			Town of Arapaho
	600				+0.4	89° 16'	-7.7	-7.3			BS					↓
1	660		181° 41'	+9.5°	4.2	89° -	+11.5	+7.3		1631.6		-647	-128	212,643	1,713,507	state RT # 183
2	330		" "	" "	0.7	-		-0.7		1623.4		-324	-64	212,964	1,713,571	
3	0				5.4	-		-5.4		1618.9	X	0	0	213,290	1,713,635	
4	330		11° 50'	+9.5°	2.3	-		-2.3		1622.0		+307	+120	213,597	1,713,755	
5	660		14° 51'	+9.5°	2.9	TH	+3.3	+0.4		1624.7		+601	+272	213,891	1,713,907	
6	990		14° 51'	+9.5°	4.6	TH	+5.0	+0.4		1624.7	TP	+902-3	+408	214,189	1,714,043	
6	990				5.4	89° 40'	+5.8	+0.4			TP					
	990		198° 0.8' - 180°	+9.5°	+8.6	89° -	-17.3	-8.7			BS	+878-3	+457			
	990				+2.9	89° 20'	-11.5	-8.6	1416.1		BS					
7	660		198° 0.8'	+9.5°	6.2	89° -	+11.5	+5.3		1621.4		-585	-305	214,479	1,714,195	
8	330		" "	" "	3.3	89° -	+5.8	+2.5		1614.6		-293	-152	214,771	1,714,348	
9	0				5.4	-		-5.4		1610.7	X	0	0	215,064	1,714,500	
10	330		10° 27'	+9.5°	13.1	91° -	-5.8	-18.6		1597.5		+310	+113	215,374	1,714,613	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/23/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G.L. Tzinger	PARTY NUMBER 6834	NOTES CHECKED BY shl new	LINE NO. 8	PAGE 2 of 44
AREA Oklahoma	TOPO MAP Clinton 15'	STATE Oklahoma	COUNTY Custer	TWP 13 N	RANGE 17 W	PPM
PARTY MANAGER L. Davis						

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -		EAST + WEST -		COORDINATES		REMARKS
												LAT.	DEP.	Y	X			
									1616.1									
11	660		6°39'	+9.5°	13.7	92°-	-23.0	-36.7		1579.4		+634	+184	215,1698	1,714,684			
12	986	985	3°20.2'	+9.5°	13.4	92°6'	-36.1	-49.5		1546.6	TP	+960-3	+219	216,021	1,714,719			
12	986				9.4	92°26'	-40.1	-49.5			TP							
	1250		173°18.5'±180°	+9.5°	+14.6	90°22'	+10.6	+25.3	1591.8		BS	+1648-2	+81					
	150				+16.8	90°30'	+14.4	+25.2			BS							
13	1320		173°18.5'	+9.5°	12.1	91°-	-23.0	-33.1		1558.7		-1318	-65	216,349	1,714,735			
≡	1190		173°16'	+9.5°	12.5	91°-	-20.8	-33.3		1558.5		-1189	-57	216,478	1,714,743	bridge		
BM	1138		172°22'	+9.5°	12.9	91°-	-19.9	-32.8		1559.0		-1137	-37	216,530	1,714,743	EL. 1559 U.S.G.S. 6114 1935		
14	990		171°51'	+9.5°	10.0	91°20'	-23.0	-33.0		1538.8		-990	-23	216,677	1,714,777			
15	660		"	"	11.1	91°20'	-15.4	-26.5		1525.3		-660	-16	217,007	1,714,784			
16	330		"	"	13.3	-	-	-13.3		1578.5		-330	-8	217,337	1,714,792			
17	0		"	"	5.4	-	-	-5.4		1586.4	π	0	0	217,667	1,714,800			
18	330		348°22.6'	+9.5°	2.1	-	-	-2.1		1589.7		+330	-12	217,997	1,714,788			
TL TF	335		345°52'	+9.5°	2.1	-	-	-2.1		1589.7		+334	-27	218,001	1,714,773	217,940 + 1,714,790 + 1/2 way to record		
19	660		348°22.6'	+9.5°	1.8	TH	3.3	+1.5		1593.3		+660	-24	218,327	1,714,776			
20	990		"	"	4.1	89°-	+17.3	+13.2		1605.0		+989	-37	218,656	1,714,763			
21	1320		"	"	3.9	89°-	+23.0	+19.1		1610.9		+1319	-49	218,986	1,714,751			
22	1650		"	"	8.7	88°40'	+38.4	+29.7		1621.5		+1649	-61	219,316	1,714,739			
23	1920	1979	348°22.8'	+9.5°	4.2	88°40'	+46.1	+41.9		1633.7	TP	+1978-2	-73	219,643	1,714,727			
23	1980		"	"	0.7	88°41'	+42.6	+41.9			TP							

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
		G. Cotcamp		G. Litzinger		6834		Sld elw		8		3 of 44			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Clinton 15'		Oklahoma		Custer		13 W		17 W				L. Davis	
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
23										1633.7					
	1650		170° 25.7' +180°	+9.5°	+13.9	91° 6'	+31.7	+45.6	1679.3		BS	+1650-2	-2		
	1650				+10.2	91° 14'	+35.5	+45.7			BS				
24	1320		170° 25.7'	+9.5°	10.5	91° -	-23.0	-33.5		1645.8		-1320	+2	219,971 1,714,727	
25	990		" "	"	8.2	91° -	-17.3	-25.5		1653.8		-990	+1	220,301 1,714,724	
26	660		" "	"	15.0	BH	-3.3	-18.3		1641.0		-660	+1	220,631 1,714,724	
27	330		" "	"	10.9	-		-10.9		1668.4		-330	0	220,961 1,714,725	
28	0				5.4	-		-5.4		1673.9	TP	0	0	221,291 1,714,725	
29	330		350° 53.2'	+9.5°	5.4	-		-5.4		1673.9		+330	+2	221,621 1,714,727	
30	660		" "	"	7.8	-		-7.8		1671.5		+660	+4	221,951 1,714,729	
31	990		" "	"	6.8	-		-6.8		1672.5		+990	+7	222,281 1,714,732	
32	1320		" "	"	4.2	-		-4.2		1675.1		+1320	+9	222,611 1,714,734	
33	1650		350° 53.2'	+9.5°	4.6	-		-4.6		1674.7	TP	+1650-2	+11	222,939 1,714,734	
33	1650				12.8	TH	+8.3	-4.5			TP				
	1650		171° 5' +180°	+9.5°	+13.3	BH	+8.3	+21.6	+21.5		BS	+1650-2	+17		
	1650				+14.7	90° 14'	+6.7	+21.4	1696.2		BS				
JL TP	1330		171° 39.3'	+9.5°	14.3	90° 20'	-7.7	-22.0		1674.2		-1330	-27	223,260 + 1,714,795 4-way Intersect	
34	1320		171° 5'	+9.5°	14.7	90° 20'	-7.7	-22.4		1673.8		-1320	-13	223,267 1,714,790	
35	990		" "	"	13.9	90° 30'	-8.6	-22.5		1673.7		-990	-10	223,597 1,714,743	
36	660		" "	"	12.9	BH	-3.3	-16.2		1680.0		-660	-7	223,927 1,714,746	
37	330		" "	"	9.7	-		-9.7		1686.5		-330	-3	224,257 1,714,750	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/23/80	INSTRUMENT MAN G. Cotcamp		ROD MAN G. Litzinger		PARTY NUMBER 6834	NOTES CHECKED BY SAL New		LINE NO. 8	PAGE 4
AREA Oklahoma	TOPO MAP Clinton 15'	STATE Oklahoma	COUNTY Custer	TWP 13 N	RANGE 17 W	PPM	PARTY MANAGER L. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1496.2								
38	0				5.4	-		-5.4		1490.8	T	0	0	224597	1714753		
39	330		350°55.6'	+93°	0.2	-		-0.2		1496.0		+330	+1	224,917	1,714,754		
40	660		"	"	0.3	TH	+3.3	+3.0		1499.7		+660	+3	225,247	1,714,754		
41	990		"	"	12.3	89°-	+17.3	+5.0		1701.2		+990	+4	225,577	1,714,757		
42	1320		350°55.6'	+9.3°	9.7	89°30'	+11.5	+18.7			T	+1320-1	+5-2	225,905	1,714,754		
42	1320				6.0	89°40'	+7.7	+11.7		1497.4	T						
	1320		171°5.8'+180°	+9.3°	+2.5	90°-	-23.0	-22.5	1675.4		FS	+1320-2	+9-2				
	1320				+4.4	88°50'	-26.9	-22.5			FS						
43	990		171°5.8'	+9.3°	3.9	89°-	+17.3	+13.4		1488.8		-990	-7	226,233	1,714,756		
44	660		"	"	3.3	89°-	+11.5	+8.2		1483.6		-660	-5	226,563	1,714,758		
45	330		"	"	1.3	89°-	+5.8	+4.5		1479.9		-330	-2	226,893	1,714,741		
46	0				5.4	-		-5.4		1470.0	T	0	0	227,223	1,714,763		
47	330		351°18'	+9.3°	10.0	92°-	-11.5	-22.5		1452.9		+330	+3	227,553	1,714,764		
48	660	659	"	"	6.5	93°-	-34.5	-41.0		1434.4		+659	+7	227,882	1,714,770		
49	990	989	"	"	6.3	93°-	-51.7	-58.0		1417.4		+989	+10	228,212	1,714,773		
50	1320	1319	351°18'	+9.3°	13.5	92°-	-46.0	-59.5		1415.9	TP	+1319-2	+19-2	228,540	1,714,775		
50	1320				9.6	92°10'	-49.9	-59.5			TP						
	1320		176°19.9'+180°	+9.3°	+14.9	90°6'	+2.3	+17.2	1433.1		BS	+1314-2	+130			13 N Township horiz. correct. y = -30' x = -6'	
	1320				+14.1	90°6'	+3.1	+17.2			BS						
51	1305		176°52.8'	+9.3°	13.8	90°6'	-2.3	-16.1		1617.0		-1297	-140	228,555	1,714,765	228,555+1,714,765 Twd (west)	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
11/23/80		G. Cotcamp		G. Litzinger		6834		SWJ dlw		8	5						
AREA		TOPO MAP	STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER									
Oklahoma		Clinton 15'	Oklahoma	Custer	14 W	17 W		L. Davis									
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1633.1								Township 14 W
51	990		176° 19.9'	+9.3°	10.0	-		-10.0		1623.1		-985	-97	228,867	1,714,808		
52	660		" "	"	31	-		-3.1		1630.0		-657	-65	229,195	1,714,840		
53	330		" "	"	1.7	-		-1.7		1631.4		-328	-32	229,524	1,714,873		
BM	408		170° 39'	+9.3°	5.1	88° 30'	+10.7	+5.6		1638.7		-408	0	229,444	1,714,905	Okl. Highway Dept. B.M.	
54	0				54	-		-5.4		1627.7	π	0	0	229,852	1,714,905		
55	330		356° 29'	+9.3°	13.8	BH	- 7	-15.5		1617.4		+328	+33	230,180	1,714,938		
56	660		" "	"	8.1	92°-	-23.0	-31.1		1602.0		+657	+67	230,509	1,714,972		
57	990	989	" "	"	4.8	92°-	-34.5	-39.3		1593.8		+984	+100	230,834	1,715,005	bridge	
58	1320		" "	"	11.9	91° 10'	-26.9	-38.8		1594.3		+1313	+133	231,165	1,715,038		
59	1650		355° 49.6'	+9.6°	9.0	91°-	-28.8	-37.8			TP	+1643.7	+156	231,488	1,715,061		
59	1650				13.9	90° 50'	-24.0	-37.9		1595.2	TP						
	990		160° 4.6' + 180°	+9.6°	+9.4	-		+9.4	1604.6		BS	+974.7	-177				
	990				+4.4	BH	+5.0	+9.4			BS						
60	660		158° 38'	+9.6°	8.9	-		-8.9		1595.7		-646	+135	231,809	1,715,019		
61	330		" "	"	8.3	-		-8.3		1596.3		-323	+67	232,132	1,714,951		
62	0				5.4	-		-5.4		1599.2	π	0	0	232,455	1,714,884		
63	330		346° 2'	+9.6°	0.1	-		-0.1		1604.5		+329	-25	232,784	1,714,859		
64	660		" "	"	2.1	89°-	+11.5	+9.4		1614.0		+658	-50	233,113	1,714,834		
65	990		" "	"	3.6	88° 40'	+23.0	+19.4		1624.0	TP	+987	-75	233,442	1,714,809		
65	990										TP						

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/24/90	INSTRUMENT MAN G. LITZINGER		ROD MAN G. COTO AMP		PARTY NUMBER 6834		NOTES CHECKED BY BHL rlew		LINE NO. 8	PAGE 6
AREA Oklahoma	TOPO MAP Clinton 15'	STATE Oklahoma	COUNTY Custer	TWP 14 W	RANGE 17 W	PPM	PARTY MANAGER L. Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -		EAST + WEST -		COORDINATES		REMARKS
												LAT.	DEP.	Y	X			
									1604.4									
66	1320		347°18'	+9.6°	4.8	88°40'	+30.7	+25.9		1630.5	TP	+1318-7	-71	233,746	1,714,813			
66	1320				1.0	88°50'	+26.9	+25.9			TP							
	1980		171°13.5' +180°	+9.6°	+10.5	90°40'	+23.0	+33.5	1664.0		BS	+1980-7	+29					
	1980				+4.8	90°50'	+28.8	+33.6			BS							
74	965 x 2 1930		171°34.8'	+9.6°	5.0	90°50'	-28.1	-33.1		1630.9		-1930	-40	233,809	1,714,802	233,795 + 1,714,800 Highway Intersect		
67	1650		171°13.5'	+9.6°	8.7	90°50'	-24.0	-32.7		1631.3		-1650	-24	234,089	1,714,818			
68	1320		"	"	13.4	90°50'	-19.2	-32.6		1631.4		-1320	-19	234,419	1,714,823			
69	990		"	"	14.6	90°50'	-14.4	-29.0		1635.0		-990	-14	234,749	1,714,828			
70	660		"	"	11.9	90°30'	-5.8	-17.7		1646.3		-660	-10	235,079	1,714,832			
71	330		"	"	8.7	—	—	-8.7		1655.3		-330	-5	235,409	1,714,837			
72	0				5.4	—	—	-5.4		1658.6	7	0	0	235,739	1,714,842			
73	330		358°54.4'	+9.8°	6.7	—	—	-6.7		1657.3		+330	+4	236,069	1,714,846			
74	660		"	"	14.4	—	—	-14.4		1649.4		+660	+8	236,399	1,714,850			
75	990		"	"	6.5	91°—	-17.3	-23.8		1640.2		+990	+12	236,729	1,714,854			
76	1320		"	"	14.6	814	-6.6	-21.2		1642.8		+1320	+16	237,059	1,714,858			
77	1650		"	"	2.7	90°30'	-14.4	-17.1		1646.9		+1650	+20	237,389	1,714,862			
78	1980		350°54.4'	+9.8°	1.2	90°30'	-17.3	-18.5		1645.6	TP	+1980-7	+24	237,712	1,714,866			
79	1980				3.3	90°26'	-15.0	-18.3			TP							
	1650		171°12.1' +180	+9.8°	+4.7	—	—	+4.7			BS	+1650-7	+29					
	1650				+12.9	714	-8.3	+4.6	1650.2		BS							

**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

DATE 11/24/80	INSTRUMENT MAN G LITZINGER	ROD MAN G COTCAMP	PARTY NUMBER 6834	NOTES CHECKED BY BHL	LINE NO. 8	PAGE 7
AREA OKLAHOMA	TOPO MAP CLINTON 10'	STATE OKLAHOMA	COUNTY CUSTER	TWP 14N	RANGE 17W	PPM
				PARTY MANAGER DAVIS		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
78									1450.2					
79	1320		171° 12.1'	+9.8°	11.6	—		-11.6		1639.6		-1320	-23	238,035 1,714,872
80	990		"	"	9.5	—		-9.5		1640.7		-990	-17	238,345 1,714,878
81	660		"	"	6.1	—		-6.1		1644.1		-660	-12	238,695 1,714,883
82	330		"	"	5.4	—		-5.4		1644.8		-330	-6	239,025 1,714,884
71	268		173° 53'	+9.8°	5.0	—		-5.0		1645.2		-267	-17	239,088 1,714,878 239,080 + 1,714,900 4w+V INTERSECT.
83	0				5.4	—		-5.4		1644.8	T	0	0	239,355 1,714,895
84	330		350° 55.2'	+9.5°	4.9	—		-4.9		1645.3		+330	+2	239,685 1,714,897
85	660		"	"	4.4	—		-4.4		1645.8		+660	+5	240,015 1,714,900
86	990		"	"	4.6	TH	+5.0	+0.4		1650.6		+990	+7	240,345 1,714,902
87	1320		"	"	14.7	89°	+23.0	+8.3		1654.5		+1320	+10	240,675 1,714,905
88	1650		"	"	2.9	89° 20'	+19.2	+16.3		1666.5		+1650	+1.2	241,005 1,714,907
89	1980		350° 55.2'	+9.5°	4.6	89° 10'	+28.8	+24.2			TP	-1980-7	+15-3	241,328 1,714,907
89	1980		"	"	8.2	89° 04'	+32.3	+24.1		1674.3	TP			
	1980		171° 14' + 190°	+9.5°	+13.0	89° 10'	-28.8	-15.8	1658.5		BS	+1980-7	+25-3	
	1980		"	"	+9.6	89° 16'	-25.3	-15.7			BS			
90	1650		171° 14'	+9.5°	4.5	89° 10'	+24.0	+19.5		1678.0		-1650	-21	241,651 1,714,908
91	1320		"	"	2.0	89° 10'	+19.2	+16.6		1675.1		-1320	-17	241,981 1,714,912
92	990		"	"	9.6	89°	+17.3	+7.7		1666.2		-990	-13	242,311 1,714,916
93	660		"	"	3.7	—		-3.7		1654.8		-660	-8	242,641 1,714,921
94	330		"	"	8.0	—		-8.0		1650.5		-330	-4	242,971 1,714,925

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/24/80	INSTRUMENT MAN G LITZINGER		ROD MAN G COTCAMP		PARTY NUMBER 6834		NOTES CHECKED BY SJT		LINE NO. 8	PAGE 8
AREA Oklahoma	TOPO MAP CLINTON		STATE Oklahoma	COUNTY CUSTER		TWP 14N	RANGE 17W	PPM	PARTY MANAGER DAVIS	

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
									1658.5							
95	0				574	—		-5.4		1653.1	TP	0	0	243,301	1,714,929	
96	330		357° 13.2'	+9.5°	1.5	TH	+1.7	+0.2		1658.7		+330	+4	243,631	1,714,933	
97	660		"	"	6.4	89°	+11.5	+5.1		1663.6		+660	+8	243,961	1,714,937	
98	990		"	"	1.3	89°	+17.3	+16.0		1674.5		+990	+12	244,291	1,714,941	
99	1036		350° 36.7'	+9.5°	5.4	88° 40'	+24.1	+18.7		1677.2		+1036	+2	244,337	1,714,931	244,325 + 1,714,970 4-way Intersect.
100	1320		357° 13.2'	+9.5°	0.7	88° 40'	+30.7	+30.0		1688.5		+1320	+17	244,621	1,714,946	
100	1650	1649			5.4	88° 30'	+43.2	+37.8		1696.3		+1649	+21	244,950	1,714,950	
101	1980	1979	357° 13.2'	+9.5°	11.6	89° 30'	+57.8	+40.2		1698.7	TP	+1979-7	+25-3	245,273	1,714,951	
101	1940				13.9	88° 26'	+54.1	+40.2			TP					
	1320		171° 41.7' +190	+9.5°	+7.3	89° 40'	-7.7	-0.4	1698.3		BS	+1320-7	+13-3			
	1320				+3.5	89° 50'	-3.8	-0.3			BS					
102	990		171° 41.7'	+9.5°	4.5	TH	+57.0	+0.5		1699.8		-990	-10	245,159	1,714,957	
103	660		"	"	4.0	—		-4.0		1694.3		-660	-7	245,924	1,714,954	
104	330		"	"	8.3	—		-8.3		1690.0		-330	-3	246,234	1,714,958	
105	0				574	—		-5.4		1692.9	TP	0	0	246,586	1,714,961	
106	330		350° 39.4'	+9.5°	1.0	TH	+1.7	+0.7		1699.0		+330	+1	246,916	1,714,962	
107	660		350° 39.4'	+9.5°	1.5	89°	+11.5	+10.0		1706.3		+660	+2	247,246	1,714,963	
108	986		347° 31.3	+9.5°	2.1	88° 40'	+22.9	+20.8		1719.1		+985	-51	247,571	1,714,910	curve
109	656.73 1312		344° 50.6'	+9.5°	5.6	88° 30'	+34.3	+28.7			TP	+1306-7	-129-3	247,885	1,714,829	curve
109	1312				9.0	88° 20'	+38.1	+28.6		1726.9	TP					

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
11/24/80		GLITZINGER		G. COCCAMPO		6834		GHL JEW		8	9						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
OKLAHOMA		CLINTON		Oklahoma	Custer		14N	17W		DRAVIS							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
109										1726.9							
77 BS	1980		148° 11' +100°	+9.5°	71.8	-		+1.8	1728.7		BS	+1930-7	-7573				
BS	1980				71.5	TH	-9.9	+1.65	1728.6		BS						
110	1650		148° 11'	+9.5°	8.4	TH	+8.3	-0.1		1728.5		-15-25	+631	248,183	1,714,700		
111	1320		"		0.4	-		-0.4		1728.2		-12-20	+505	248,488	1,714,574		
112	990		"		2.0	-		-2.0		1726.6		-915	+379	248,793	1,714,448		
113	660		"		5.5	-		-5.5		1723.1		-410	+252	249,098	1,714,321		
114	330		"		6.4	-		-6.4		1722.2		-305	+126	249,403	1,714,195		
115	118		163° 57.2'	+9.5°	5.1	-		-5.1		1723.5		-113	+34	249,595	1,714,103	249,600 + 1,714,090 MAY Intersect	
115	0				5.4	-		-5.4		1723.2	TP	0	0	249,708	1,714,064		
116	530		327° 38.1'	+9.3°	3.7	-		-3.7		1724.9		+304	-129	250,012	1,713,940		
117	660		" "		1.1	-		-1.1		1727.5		+607	-258	250,315	1,713,811		
118	990		" "		11.6	89°	+17.3	+5.7		1734.3		+911	-389	250,619	1,713,681		
119	1320		" "		11.6	89°	+23.0	+11.4		1740.0		+1214	-517	250,922	1,713,552		
120	1650		" "		13.6	89° 10'	+24.0	+10.4		1739.0		+1518	-646	251,226	1,713,423		
121	1980		" "		13.1	89° 20'	+23.0	+9.9		1738.5		+1822	-776	251,530	1,713,293		
122	2310		327° 38.1'	+9.3°	12.9	89° 20'	+26.9	+14.0	1741.1		TP	+2125-5	-905-9	251,828	1,713,161		
122	2310			+9.3°	6.0	89° 30'	+20.2	+14.25			TP	-	-				
	990		148° - +180°	+9.3	+11.4	89°	-17.3	-5.9			BS	+913-4	-382-3				
	990				+8.4	89° 10'	-14.4	-6.05	1736.7		BS						
123	660		148° 0.0'	+9.3	78	89°	-11.5	+4.0		1740.7		-609	+255	252,128	1,713,031		

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
11/24/80		G Litzinger		G Cotcamp		6834		Shl rluw		8	10						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
OKLAHOMA		Clinton		Oklahoma	Custer		14 N	17 W		DAVIS							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1736.7								
124	330		148° 0'	+9.3°	4.8	-		-4.8		1731.9		-304	+127	252,433	1,712,903		
125	0				5.4	-		-5.4		1731.3	T	0	0	252,737	1,712,776		
126	330		329° 2.9'	+9.3°	0.7	89°	+5.8	+5.1		1741.8		+307	-122	253,044	1,712,654		
127	660		329° 2.9'	+9.3°	6.2	88°	+23.0	+16.8		1753.5		+613	-244	253,350	1,712,532	Curve	
128	990		330° 20.1'	+9.3°	8.1	88°	+34.5	+26.4		1763.1	TP	+928-4	-345-3	253,661	1,712,428	Curve on rd.	
128	990				5.2	88° 10'	+31.7	+26.5			TP						
	662		168° 6.8' + 180°	+9.3°	+1.3			+1.3	1764.4		BS	+661-4	-30-4				
	662				+4.6	74	-3.3	+1.3			BS						
129	330		149° 32'	+9.3°	2.2	-		-2.2		1762.2		-330	+7	253,988	1,712,401		
130	0				5.9	-		-5.4		1759.0	T	0	0	254,318	1,712,399	horiz. curved, y=104'	
131	330		351° 26'	+9.3°	8.5	-		-8.5		1755.9		+330	+2	254,698	1,712,396	x=31'	
131	587		349° 47.7'	+9.3°	13.7	-		-13.7		1750.7		+557	-9	254,875	1,712,385	254,875 + 1,712,385 T-rd (west)	
132	660		351° 2.6'	+9.3°	12.6	84	-3.3	-15.9		1748.5	TP	+660++	+4	254,982	1,712,398		
132	660				14.0	90° 10'	-1.9	-15.9			TP						
	2310		171° 20.7' + 180°	+9.3°	+7.6	-		+7.6	1762.1		BS	+2310++	+26				
	2310				+14.4	89° 50'	-6.7	+7.7			BS						
133	1980		171° 20.7'	+9.3°	13.0	-		-13.0		1743.1		-1980	-22	255,316	1,712,402		
134	1650		"	"	13.4	-		-13.4		1742.7		-1650	-19	255,646	1,712,405		
135	1320		"	"	9.1	-		-9.1		1747.0		-1320	-15	255,976	1,712,409		
136	990		"	"	3.6	-		-3.6		1752.5		-990	-11	256,306	1,712,413		

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/25/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Litzinger	PARTY NUMBER 6837	NOTES CHECKED BY SAL	LINE NO. 8	PAGE 11
AREA Oklahoma	TOPO MAP Clinton 15'	STATE Oklahoma	COUNTY Custer	TWP 14N	RANGE 17W	PPM
				PARTY MANAGER L. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1756.1					
137	660		171° 20.7'	+9.3°	2.4	-		-2.4		1753.7		-660	-7	256,636 1,712,417
138	330		" "	"	1.3	-		-1.3		1754.8		-330	-4	256,966 1,712,420
139	0				5.4	-		-5.4		1750.7	T	0	0	257,296 1,712,424
140	330		351° 15'	+9.3°	14.1	BH	-1.7	-15.8		1740.3		+330	+3	257,626 1,712,427
141	660		" "	"	13.9	BH	-3.3	-17.2		1738.4		+660	+6	257,956 1,712,430
142	990		" "	"	9.7	-		-9.7		1746.4		+990	+10	258,286 1,712,434
143	1320		" "	"	9.6	-		-9.6		1746.5		+1320	+13	258,616 1,712,437
144	1650		" "	"	13.0	-		-13.0		1743.1		+1650	+16	258,946 1,712,440
145	1980		" "	"	4.0	-		-4.0		1752.1		+1980	+19	259,276 1,712,443
146	2310		351° 15'	+9.3°	7.2	TH	+11.6	+4.4			TP	+2310.4	+22	259,610 1,712,446
146	2310				5.1	89° 46'	+9.4	+4.3		1760.4	TP			
	1650		171° 4.7' +180°	+9.3°	+8.5	BH	+8.3	+16.8			BS	+1650.4	+11	
	1650				+13.8	90° 6'	+2.9	+16.7	1777.1		BS			
147	1320		171° 4.7'	+9.3°	9.2	BH	-6.6	-15.8		1761.3		-1320	-9	259,944 1,712,448
T	1100		171° 38'	+9.3°	11.1	BH	-5.5	-16.6		1760.5		-1100	-18	260,164 1,712,439
148	990		171° 4.7'	+9.3°	12.1	BH	-5.0	-17.1		1760.0		-990	-7	260,274 1,712,450
149	660		" "	"	9.9	-		-9.9		1767.2		-660	-4	260,604 1,712,453
150	330		" "	"	3.3	-		-3.3		1773.8		-330	-2	260,934 1,712,455
151	0				5.4	-		-5.4		1771.7	T	0	0	261,264 1,712,457
152	330		350° 50'	+9.4°	11.4	-		-11.4		1765.7		+330	+1	261,594 1,712,458

260,190 + 1,712,430  
4-Way Intersect cl. 1760.

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/25/80	INSTRUMENT MAN G. Catcamp	ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY shl	LINE NO. 8	PAGE 12
AREA Oklahoma	TOPO MAP Clinton 15'	STATE Oklahoma	COUNTY Custer	TWP 14N/15N	RANGE 17W	PPM
			PARTY MANAGER L. Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1777.1						
153	660		350° 50'	+9.9°	7.8	-		-7.8		1769.3		+660	+3	261,924	1,712,460
154	990		"	"	12.0	89°-	+17.3	+5.3		1782.4		+990	+4	262,254	1,712,461
155	1320		"	"	2.9	89°-	+23.0	+20.1		1797.2		+1320	+5	262,584	1,712,462
156	1650		350° 50'	+9.9°	4.7	88°50'	+33.6	+29.9		1806.0	TP	+1650.4	+7+2	262,918	1,712,466
156	1650				9.4	88°40'	+38.4	+29.0			TP				
	2640		171° 3.5' +180°	+9.4°	+14.3	90°20'	+15.4	+29.7	1835.7		BS	+2640.4	+21+2		
	2640				+9.8	90°26'	+20.0	+29.8			BS				
157	2310		171° 3.5'	+9.4°	7.8	90°30'	-20.2	+28.0		1807.7		-2310	-18	263,252	1,712,471
158	1980		"	"	9.5	90°30'	-17.3	-26.8		1808.9		-1980	-16	263,582	1,712,473
159	1650		"	"	10.5	90°30'	-14.4	-24.9		1810.8		-1650	-13	263,912	1,712,476
160	1320		"	"	11.0	90°30'	-11.5	-22.5		1813.2		-1320	-11	264,242	1,712,478
161	990		"	"	10.0	90°30'	-8.6	-18.6		1817.1		-990	-8	264,572	1,712,481
162	660		"	"	13.2	-		-13.2		1822.5		-660	-5	264,902	1,712,484
163	330		"	"	7.2	-		-7.2		1828.5		-330	-3	265,232	1,712,486
164	148		176° 18'	+9.9°	5.1	-		-5.1		1830.6		-147	-15	265,415	1,712,474
164	0				5.4	-		-5.4		1836.3	π	0	0	265,562	1,712,489
165	330		350° 59.2'	+9.9°	5.0	-		-5.0		1836.7		+330	+2	265,892	1,712,491
166	660		"	"	6.5	-		-6.5		1829.2		+660	+4	266,222	1,712,493
167	990		"	"	12.8	-		-12.8		1822.9		+990	+7	266,552	1,712,496
168	1320		"	"	11.0	-		-11.0		1824.7		+1320	+9	266,882	1,712,498

265,405 + 1,712,485  
1-rod (east)

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/25/80	INSTRUMENT MAN G. C. Camp		ROD MAN G. Litzinger		PARTY NUMBER 6834		NOTES CHECKED BY shl rlu		LINE NO. 8	PAGE 13
AREA Oklahoma	TOPO MAP Clinton 15'	STATE Oklahoma	COUNTY Custer	TWP 15N	RANGE 17W	PPM	PARTY MANAGER L. Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1435.7					
169	1650		350°59.2'	+9.4°	7.2	TH	+8.3	+1.1		1834.8		+1650	+11	267,212 1,712,500
170	1980		"	"	7.0	89°30'	+17.3	+16.3		1846.0		+1980	+13	267,542 1,712,502
171	2310		"	"	1.9	89°30'	+20.2	+18.3		1854.0		+2310	+16	267,872 1,712,505
172	2640		"	"	10.7	89°10'	+38.4	+27.7		1863.4		+2640	+18	268,202 1,712,507
173	2970		350°59.2'	+9.4°	5.9	89°10'	+43.2	+37.3			TP	+2970 +4	+20	268,536 1,712,509
173	2970		"	"	14.6	89°-	+51.8	+37.2		1872.9	TP			
	2640		171°17.3' +180°	+9.4°	+14.6	89°24'	+27.6	-13.0	1859.9		BS	+2640 +4	+32	
	2640		"	"	+10.0	89°30'	-23.0	-13.0			BS			
174	2310		171°17.3'	+9.4°	4.0	89°30'	+20.2	+16.2		1876.1		-2310	-28'	268,870 1,712,513
175	1980		"	"	4.9	89°30'	+17.3	+12.4		1872.3		-1980	-24	269,200 1,712,517
176	1650		"	"	7.6	89°30'	+14.4	+6.8		1866.7		-1650	-20	269,530 1,712,521
177	1320		"	"	3.3	TH	+6.6	+3.3		1863.2		-1320	-14	269,860 1,712,525
178	990		"	"	3.0	TH	+5.0	+2.0		1861.9		-990	-12	270,190 1,712,529
179	660		"	"	2.9	TH	+3.3	+0.4		1860.3		-660	-8	270,520 1,712,533
71	470		172°55'	+9.4°	0.1	-	-	-0.1		1859.8		-470	-19	270,710 1,712,522 Tr-d(west) el 1859
180	330		171°17.3'	+9.4°	1.8	-	-	-1.8		1858.1		-330	-4	270,850 1,712,537
181	0		"	"	5.4	-	-	-5.4		1854.5	TP	0	0	271,180 1,712,541
182	330		351°11.6'	+9.4°	7.3	-	-	-7.3		1852.6		+330	+3	271,510 1,712,544
183	660		"	"	8.7	-	-	-8.7		1851.2		+660	+7	271,840 1,712,548
184	990		"	"	10.1	-	-	-10.1		1849.8		+990	+10	272,170 1,712,551

**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

DATE 11/25/80	INSTRUMENT MAN G. Cotcamp		ROD MAN G. Litzinger		PARTY NUMBER 6834		NOTES CHECKED BY Guc. <i>dlw</i>		LINE NO. 8	PAGE 19
AREA Oklahoma	TOPO MAP Clinton 15/Putnam	STATE Oklahoma	COUNTY Custer	TWP 15N	RANGE 17W	PPM	PARTY MANAGER L. Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1859.9						
185	1320		351° 11.6'	+9.4°	11.2	-		-11.2		1849.7		+1320	+14	272,500	1,712,555
186	1550		"	"	11.8	-		-11.8		1849.1		+1650	+17	272,830	1,712,558
187	1980		"	"	7.9	-		-7.9		1852.0		+1980	+21	273,160	1,712,562
188	2310		"	"	2.5	-		-2.5		1857.4		+2310	+24	273,490	1,712,565
189	2640		351° 11.6'	+9.4°	9.7	TH	+13.2	+3.5 } +3.4		1863.3	TP	+2640+5	+27	273,825	1,712,568
189	2640				4.4	89°50'	+7.7	+3.3 }			TP				
	1320		171° 3.2' +180°	+9.4°	+11.6	-		+11.6 }	1874.9		BS	+1320+5	+10		
	1320				+5.0	BH	+6.6	+11.6 }			BS				↑
190	990		171° 3.2'	+9.4°	6.5	-		-6.5		1868.4		-990	-8	274,160	1,712,570 Clinton Quad.
191	660		"	"	4.6	-		-4.6		1870.3		-660	-5	274,490	1,712,573 Putnam Quad
192	330		"	"	3.9	-		-3.9		1871.0		-330	-3	274,820	1,712,575 ↓
193	0				5.4	-		-5.4		1869.5	T	0	0	275,150	1,712,578
194	330		350° 38.2'	+9.4°	8.8	-		-8.8		1866.1		+330	+0	275,480	1,712,578
195	660				12.7	-		-12.7		1862.2		+660	+0	275,810	1,712,578
195	860		349° 46'	+9.4°	10.5	BH	-4.3	-14.8		1860.1		+860	-13	276,010	1,712,565 276,010 - 1,712,565 75' (const) EL 1859
196	990		356° 38.2'	+9.4°	12.5	BH	-5.0	-17.5		1857.4		+990	+1	276,140	1,712,579
197	1320		"	"	8.0	90°40'	-15.4	-23.4		1857.5		+1320	+1	276,470	1,712,579
198	1660		350° 38.2'	+9.4°	6.5	90°40'	-19.2	-25.7 }		1849.2	TP	+1650-9	+1	276,791	1,712,579
198	1650				3.2	90°26'	-12.5	-25.7 }			TP				

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.	PAGE					
11/25/80		G. Cotcamp		J. Cruz		6834		GWC. <i>dlw</i>			8	15					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Putnam 15'		Oklahoma	Custer		15N	17W		L Davis							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
198										1849.2							
	2640		171° 14.8' +180°	+9.9°	72.6	-		+2.6	1851.8		BS	+2640 -9	+30				
	2640				+13.5	89° 46'	-10.7	+2.8			BS						
199	2310		171° 14.8'	+9.9°	2.5	-		-2.5		1849.3		-2310	-26	277,112	1,712,583		
200	1980		" "	"	2.9	-		-2.9		1848.9		-1980	-22	277,442	1,712,587		
201	1650		" "	"	2.4	-		-2.4		1849.4		-1650	-19	277,772	1,712,590		
202	1320		" "	"	1.7	-		-1.7		1850.1		-1320	-15	278,102	1,712,594		
203	990		" "	"	1.5	-		-1.5		1850.3		-990	-11	278,432	1,712,598		
204	660		" "	"	2.5	-		-2.5		1849.3		-660	-7	278,762	1,712,602		
205	330		" "	"	3.7	-		-3.7		1848.1		-330	-4	279,092	1,712,605		
206	0				5.4	-		-5.4		1846.4	TP	0	0	279,422	1,712,609		
207	330		351° 11.7'	+9.9°	6.2	-		-6.2		1845.6		+330	+3	279,752	1,712,612		
208	660		" "	"	7.8	-		-7.8		1844.0		+660	+7	280,082	1,712,616		
209	990		" "	"	10.9	-		-10.9		1840.9		+990	+10	280,412	1,712,619		
210	1320		" "	"	14.8	-		-14.8		1837.0		+1320	+14	280,742	1,712,623		
211	1650		" "	"	9.9	BH	-8.3	-18.2		1838.6		+1650	+17	281,072	1,712,626		
212	+1980																
$\frac{1}{2}$ $\frac{1}{2}$	1855		350° 47.8'	+9.9°	10.3	BH	-9.3	-19.6		1832.2		+1855	+6	281,277	1,712,615		281,295 + 1,712,605 4-Way Intersect
212	1980		351° 11.7'	+9.9°	10.8	BH	-9.9	-20.7		1831.1		+1980	+21	281,402	1,712,630		
213	2310		" "	"	7.2	BH	-11.6	-18.8		1833.0		+2310	+24	281,732	1,712,633		

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 12/3/80	INSTRUMENT MAN G. Cotcamp		ROD MAN J. Cruz		PARTY NUMBER 6837		NOTES CHECKED BY Gul. rhu		LINE NO. 8	PAGE 16
AREA Oklahoma	TOPO MAP Putnam 15	STATE Oklahoma	COUNTY Custer	TWP 15N	RANGE 17W	PPM	PARTY MANAGER L. Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1851.8					
214	2640		351° 11.7'	+9.4°	14.2	-		-14.2		1837.6	TP	+2640-9	+27	282,053 1,712,636
214	2640				1.0	84	-13.2	-14.2			TP			
	2970		171° 32' +180°	+9.4°	+6.3	91° -	+51.8	+58.1	1895.7		BS	+2970-9	+48	
	2970				+13.5	90° 52'	+44.9	+58.4			BS			
215	2640		171° 32'	+9.4°	5.8	91° -	-46.1	-51.9		1843.8		-2640	-43	282,374 1,712,641
216	2310		"	"	4.9	91° -	-40.3	-45.2		1850.5		-2310	-38	282,704 1,712,646
217	1980		"	"	4.1	91° -	-34.6	-38.7		1857.0		-1980	-32	283,034 1,712,652
218	1650		"	"	13.2	90° 40'	-19.2	-32.4		1863.3		-1650	-27	283,364 1,712,657
219	1320		"	"	11.9	90° 40'	-15.4	-27.3		1868.4		-1320	-22	283,694 1,712,662
220	990		"	"	15.0	90° 30'	-8.6	-23.6		1872.1		-990	-16	284,024 1,712,668
221	660		"	"	13.1	90° 30'	-5.8	-18.9		1876.8		-660	-11	284,354 1,712,673
222	330		"	"	11.9	-		-11.9		1883.8		-330	-5	284,684 1,712,679
223	0		"	"	5.4	-		-5.4		1890.3	X	0	0	285,014 1,712,684
224	330		251° 11.4'	+9.2°	3.6	-		-3.6		1892.1		+330	+2	285,344 1,712,686
225	660		"	"	6.7	-		-6.7		1889.0		+660	+4	285,674 1,712,688
226	990		"	"	9.2	-		-9.2		1886.5		+990	+7	286,004 1,712,691
227	1320		"	"	9.8	-		-9.8		1885.9		+1320	+9	286,334 1,712,693
TP	1520		350° 53'	+9.4°	8.8	-		-8.8		1886.9		+1520	+8	286,540 1,712,685 4-Way Intersect. c. 1886
228	1650		351° 11.4'	+9.2°	8.9	-		-8.9		1886.8		+1650	+11	286,664 1,712,695
229	1980		"	"	8.5	-		-8.5		1887.2		+1980	+13	286,994 1,712,697

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	12/3/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	J. Cruz	PARTY NUMBER	6834	NOTES CHECKED BY	G.W.C. <i>slw</i>	LINE NO.	8	PAGE	17	
AREA	Oklahoma	TOPO MAP	Putnam 15'	STATE	Oklahoma	COUNTY	Custer	TWP	15N	RANGE	17W	PPM	PARTY MANAGER	L. Davis

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
									1895.7							
230	2310		351° 11.4'	+9.2°	7.6	-		-7.6		1888.1		+2310	+16	287,324	1,712,700	
231	2640		351° 11.4'	+9.2°	5.8	-		-5.8			T	+2640-9	+18	287,645	1,712,702	
231	2640				13.6	87° 35'	+7.7	-5.9		1889.8	T					
	2640		171° 8.7' +180°	+9.2°	-5.1	84	+13.2	+18.3	1908.1		TS	+2640-9	+16			
	2640				+6.0	90° 16'	+12.3	+18.3			CS					
232	2310		171° 8.7'	+9.2°	14.9	-		-14.9		1893.2		-2310	-14	287,966	1,712,704	
233	1980		" "	"	8.7	84	-9.9	-18.6		1889.5		-1980	-12	288,296	1,712,706	
234	1650		" "	"	13.4	84	-8.3	-24.7		1886.4		-1650	-10	288,626	1,712,708	
235	1320		" "	"	12.0	84	-6.6	-18.6		1889.5		-1320	-8	288,956	1,712,710	
236	990		" "	"	14.5	-		-14.5		1893.6		-990	-6	289,286	1,712,712	
237	660		" "	"	10.3	-		-10.3		1897.8		-660	-4	289,616	1,712,714	
238	330		" "	"	7.6	-		-7.6		1900.5		-330	-2	289,946	1,712,716	
239	0		" "	"	5.4	-		-5.4		1902.7	T	0	0	290,276	1,712,718	
240	330		350° 56.2'	+9.2°	2.1	-		-2.1		1906.0		+330	+1	290,606	1,712,719	
241	660		" "	"	1.9	TH	-3.3	+1.4		1909.5		+660	+2	290,936	1,712,720	
242	990		" "	"	11.8	89° -	+17.3	+5.5		1913.6		+990	+2	291,266	1,712,720	
243	1320		" "	"	6.0	89° 20'	+15.4	+9.4		1917.5		+1320	+3	291,596	1,712,721	
TL	1535		350° 25'	+9.2°	5.5	89° 20'	+17.9	+12.4		1920.5		+1535	-10	291,811	1,712,708	291,810 + 1,712,705 4-way Intersect. of 1919
244	1650		350° 56.2'	+9.2°	5.4	89° 20'	+19.2	+13.8		1921.9		+1650	+4	291,926	1,712,722	
245	1980		" "	"	6.0	89° 20'	+23.0	+17.0		1925.1		+1980	+5	292,256	1,712,723	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 12/3/80	INSTRUMENT MAN G. Cotcamp	ROD MAN J. Cruz	PARTY NUMBER 6834	NOTES CHECKED BY Gvc. slw	LINE NO. 8	PAGE 18
AREA Oklahoma	TOPO MAP Putnam 15	STATE Oklahoma	COUNTY Custer	TWP 15N	RANGE 17W	PPM
				PARTY MANAGER L. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1908.1					
246	2310		350° 56.2'	+9.2°	7.1	89° 20'	+26.9	+19.8		1927.9		+2310	+6	292,586 1,712,724
247	2640		350° 56.2'	+9.2°	8.7	89° 20'	+30.7	+22.0		1930.1	TP	+2690.4	+6	292,912 1,712,724
247	2640				13.2	89° 14'	+35.3	+22.1			TP			
	2310		171° 9.3' +180°	+9.2°	+14.9	90° 30'	+20.2	+35.1	1965.2		BS	+2310.	+14	
	2310				+5.5	90° 44'	+29.6	+35.1			BS			
248	1980		171° 9.3'	+9.2°	15.3	90° 30'	-17.3	-32.6		1932.6		-1980	-12	293,242 712,726
249	1650		"	"	14.1	90° 30'	-14.4	-28.5		1936.7		-1650	-10	293,572 712,728
250	1320		"	"	12.6	90° 30'	-11.5	-24.1		1941.1		-1320	-8	293,902 1,712,730
251	990		"	"	14.1	04	-5.0	-19.1		1946.1		-990	-6	294,232 712,732
252	660		"	"	12.8	-	-	-2.8		1952.4		-660	-4	294,562 712,734
253	330		"	"	7.9	-	-	-7.9		1957.3		-330	-2	294,892 712,736
254	0		"	"	5.4	-	-	-5.4		1959.8	X	0	0	295,222 712,738
255	330		351° 3.8'	+9.2°	2.5	-	-	-2.5		1962.7		+330	+2	295,552 712,740
256	660		"	"	2.9	-	-	-2.9		1962.3		+660	+3	295,882 712,741
257	990		"	"	2.3	-	-	-2.3		1962.9		+990	+5	296,212 712,743
258	1320		"	"	6.3	TH	+6.6	+0.3		1965.5		+1320	+6	296,542 712,744
259	1650		351° 3.8'	+9.2°	13.4	TH	+8.3	-5.1			TP	+1650	+8	296,872 712,746
259	1650				10.0	89° 50'	+4.8	-5.2		1960.0	TP			
	660		171° 33.5' +180°	+9.2°	+6.2	88° -	-23.0	-16.8			BS	+660	+9	
	660				+2.3	88° 20'	-19.2	-16.9	1943.1		BS			

**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

DATE 12/3/80	INSTRUMENT MAN G. Cotcamp	ROD MAN J. Cruz	PARTY NUMBER 6839	NOTES CHECKED BY Gwc dw	LINE NO. 8	PAGE 19
AREA Oklahoma	TOPO MAP Putnam 15'	STATE Oklahoma	COUNTY Custer/Dewey	TWP 16N	RANGE 17W	PPM
PARTY MANAGER L. Davis						

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1943.1					horiz. correct. $y = -58'$ $x = 0'$
264	462		173° 17'	+9.2°	3.7	88° -	+16.1	+12.4		1955.5		-462	-20	297,070 712,735 4-Way Intersect.
260	330		171° 33.5'	+9.2°	4.2	88° -	+11.5	+7.3		1950.4		-330	-4	297,202 712,751 Dewey Co.
261	0				5.4	-	-	-5.4		1937.7	T	0	0	297,532 1,712,755 ↓
262	330		351° 17.3'	+9.3°	13.2	-	-	-13.2		1929.9		+330	+3	297,862 1,712,758
263	660		351° 17.3'	+9.3°	13.9	BH	-3.3	-17.2		1925.9	TP	+660-2	+7+3	298,190 1,712,765
263	660				13.4	90° 20'	-3.8	-17.2			TP			
	1650		171° 37.3' + 19.0'	+9.3°	+4.6	-	-	+4.6	1930.5		BS	+1650-2	+27+3	
	1650				+12.9	TH	-8.3	+4.6			BS			
264	1320		171° 37.3'	+9.3°	12.0	-	-	-12.0		1918.5		-1320	-21	298,518 1,712,774
265	990		"	"	14.2	EH	-5.0	-19.0		1911.5		-990	-16	298,848 1,712,779
266	660		"	"	15.3	BH	-3.3	-15.6		1914.9		-660	-11	299,178 1,712,784
267	330		"	"	4.1	-	-	-6.9		1923.6		-330	-5	299,508 1,712,790
268	0		"	"	5.4	-	-	-5.4		1925.1	T	0	0	299,838 1,712,795
269	330		30° 14.0'	+9.3°	4.7	-	-	-4.7		1925.8		+330	+4	300,168 1,712,799
270	660		"	"	4.0	-	-	-11.0		1919.5		+660	+7	300,498 1,712,802
271	990		"	"	6.8	-	-	-6.8		1923.7		+990	+11	300,828 1,712,806
272	1320		"	"	5.8	TH	+6.6	+0.8		1931.3		+1320	+14	301,158 1,712,809
273	1650		171° 19.0'	+9.3°	7.0	TP	+8.3	+1.3	+1.2	1931.7	TP	+1650-2	+18+3	301,486 1,712,816
274	1650		"	"	5.1	TP	+6.7	+1.1			TP			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 2/4/80	INSTRUMENT MAN G. Coiturf		ROD MAN C. Cruz		PARTY NUMBER 3859		NOTES CHECKED BY GWC. adw		LINE NO. 8	PAGE 50
AREA Oklahoma	TOPO MAP Section 15	STATE Oklahoma	COUNTY LeFlore		TWP 16N	RANGE 17W	PPM	PARTY MANAGER L. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
273										1931.7				
	1650			+9.3°	+4.5	21°	-28.5	-14.3	1917.4		FS	+1650-2	+18+3	
	2450				+4.7	21°	-19.2	-14.3			FS			
274	1320			+9.3°	4.4	21°	+15.4	+11.0		1928.4		-1320	-14	301,814 1712,823
275	200			"		21°	+11.5	+8.6		1926.0		-990	-11	302,144 1712,826
276	200			+9.3°	5.1	21°	+9.3	+7.6		1925.0		-800	-23	302,334 1712,814
277	200			+9.3°	5.2	21°	+11.5	+5.7		1923.1		-660	-7	302,474 1712,830
278	200			"	5.2	21°	+5.8	+11.6		1919.0		-330	-4	302,804 1712,833
279	200			"	4.4	21°		-5.4		1912.0		0	0	303,134 1712,837
280	200			+9.3°	4.7	21°	-1.7	-16.4		1901.0		+330	+2	303,464 1712,839
281	200			"	4.7	21°	-11.5	-23.9		1893.5		+660	+4	303,794 1712,841
282	200			"	5.2	21°	-5.0	-17.0		1900.4		+990	-6	304,124 1712,843
283	300			"	5.2	21°		-6.5		1910.9		+1320	+9	304,454 1712,846
284	200			+9.3°	2	21°		-2.0		1915.4		+1650-2	+11+3	304,782 1712,851
285	100			"	4.5	21°	+8.3	-2.0						
286	200			+9.3°	4.2	21°	+8.3	+21.9	1937.2			+1650-2	+26+3	
287	200			"	4.1	21°	+7.7	+21.7	+21.8					
288	200			+9.3°		21°	-11.5	-22.4		1914.8		-1320	-21	305,110 1712,859
289	200			"	5.2	21°	-17.3	-32.5		1904.7		-990	-16	305,440 1712,864
290	200			"	4.7	21°	-23.0	-32.3		1904.9		-660	-11	305,770 1712,869
291	200			"	4.2	21°	-5.8	-17.1		1920.1		-330	-5	306,100 1712,875

**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

DATE	12/4/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	J. Cruz	PARTY NUMBER	6857	NOTES CHECKED BY	Guc. alw	LINE NO.	8	PAGE	21	
AREA	Oklahoma	TOPO MAP	Putnam 15'	STATE	Oklahoma	COUNTY	Nowey	TWP	16N	RANGE	17W	PPM	PARTY MANAGER	L. Davis

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1937.2					
288	0				57	-		-5.4		1931.8	+	0	0	306,430 712,880
289	230			+9.3°	75	-		-4.5		1932.7		+330	+2	306,760 712,882
290	310			"	92	-		-8.8		1928.4		+660	+4	307,090 1,712,884
291	390			"	110	-		-10.2		1927.0		+990	+6	307,420 1,712,886
292	470			+9.3°	128	-		-10.8		1926.4		+1190	-6	307,620 1,712,874
293	550			+9.3°	146	-		-13.3		1923.9		+1320	+8	307,750 1,712,888
294	630			+9.3°	164	-14.4		-25.8		1911.4		+1650	+9.2	308,080 1,712,891
295	710				182	-11.5		-25.8						
296	790			+9.3°	200	+9.9		+23.2				+1980	+20	
297	870				218	+9.2		+23.1	1934.5					
298	950			+9.3°	236	-28.8		-35.9		1898.6		-1650	-17	308,410 1,712,894
299	1030			"	254	-30.7		-39.8		1894.7		-1820	-13	308,740 1,712,898
300	1110			"	272	-28.8		-41.0		1893.5		-990	-10	309,070 1,712,901
301	1190			"	290	-19.2		-33.1		1901.4		-660	-7	309,400 1,712,904
302	1270			"	308	-1.7		-15.6		1918.9		-330	-3	309,730 1,712,908
303	1350				326			-5.4		1929.1		0	0	310,060 1,712,911
304	1430			+9.3°	344			-5.2		1929.3		+330	+3	310,390 1,712,914
305	1510			"	362			-14.9		1919.6		+660	+6	310,720 1,712,917
306	1590			"	380			-15.0		1919.5		+990	+9	311,050 1,712,920
307	1670			"	398			-3.3		1931.2		+1320	+12	311,380 1,712,923

307,610 + 1,712,888  
+ 1,712,888 = el. 1926.

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.		PAGE		
12/4/80		G. Salscamp		T. Cruz		6839		GWC. dlw			8		22		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Putnam 15'		Oklahoma		LeFlore		16N		17W				L. Davis	
STATION NO.	SLOPE DISTANCE	PLOT DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1934.5						
204	1650		207° 12'	+9.3°	1.2	4° 30'	+14.2	+7.9		1942.4		+1650	+15	311,710	1,712,926
205	1720		207° 12'	+9.3°	5.7	4° 30'	+17.3	+14.6		1949.1		+1980	+18	312,040	1,712,929
206	1800		207° 12'		9.2	4° 30'	+23.0	+14.8							
	1850		207° 12'	+9.3°	+14.1	4° 30'	-14.4	+29.4		1977.6		+1650	+25		
	1650				+7.4	4° 30'	+19.2	+28.6							
206	1820		207° 12'	+9.3°	1.2	4° 30'	-14.5	-22.1		1955.5		-1320	-20	312,370	1,712,934
207	1700			"	1.1	4° 30'	-5.0	-16.0		1961.6		-990	-15	312,700	1,712,939
208	1700		207° 12'	+9.3°	1.1	-		-12.6		1965.0		-804	-24	312,886	1,712,925
209	1800		207° 12'	+9.3°	1.1	-		-10.0		1967.6		-660	-10	313,030	1,712,944
210	1800			"	1.1	-		-5.7		1971.9		-330	-5	313,360	1,712,949
211	1800			"	1.1	-		-5.4		1972.2		0	0	313,690	1,712,954
212	1800		207° 12'	+9.3°	1.1	-		-6.7		1970.9		+330	+4	314,020	1,712,958
213	1800			"	1.1	-		-6.2		1971.4		+660	+9	314,350	1,712,963
214	1800			"	1.1	-		-5.4		1972.2		+990	+13	314,680	1,712,967
215	1800			"	1.1	-		-7.2		1970.4		+1320	+17	315,010	1,712,971
216	1800		207° 12'	+9.3°	1.1	-		-8.7		1968.9		+1650	+22	315,340	1,712,976
217	1800			"	1.1	-	-8.3	-8.7							
	1800		207° 12'	+9.3°	+11.1	-		+11.8		1980.7		+1320	+24		
	1800			"	1.1	4° 30'	+6.6	+11.8							
218	1800		207° 12'	+9.3°	9.1	-		-9.1		1971.6		-990	-18	315,670	1,712,980

312,870 + 1,712,920  
1,712,920

**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

DATE 12/4/80	INSTRUMENT MAN G. Cotcamp		ROD MAN J. Cruz		PARTY NUMBER 6837		NOTES CHECKED BY GWC Jlw		LINE NO. 8	PAGE 23
AREA Oklahoma	TOPO MAP Putnam 15'	STATE Oklahoma	COUNTY Nowata		TWP 16N	RANGE 17W	PPM	PARTY MANAGER L. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
									1980.7							
317	0.60		111°41'	+9.3°	6.2	-		-6.2		1974.5		-660	-12	316,000	1,712,988	
318	330		"	"	4.2	-		-4.1		1976.6		-330	-6	316,330	1,712,994	
319	0				5.4	-		-5.4		1975.3	X	0	0	316,660	1,713,000	
320	1.80		111°42'	+9.3°	4.0	-		-9.8		1970.9		+330	+2	316,990	1,713,002	
321	3.60		"	"	4.2	-		-14.9		1965.8		+660	+5	317,320	1,713,025	
322	3.20		"	"	4.2	SE	-5.0	-19.9		1960.8		+990	+7	317,650	1,713,007	
323	1.820		"	"	2.5	NE	-11.5	-24.0		1956.7		+1320	+10	317,980	1,713,010	
324	4.10		111°43'	+9.3°	4.2	SE	-13.0	-24.3		1956.4		+1489	-40	318,149	1,712,960	pl. 1956.
325	0.50		111°42'	-9.3°	4.2	SE	-13.1	-24.3		1956.4		+1505	0	318,165	1,713,000	318,165 + 1,713,000
326	1.650		111°44'	+9.1°	4.2	SE	-14.9	-25.0	-25.1	1955.6		+1650	+7	318,310	1,713,007	horiz. correct. y = -8'
327	1.650		"	"	4.2	SE	-19.2	-25.2								x = +20'
	2640		171°26.8' + 180°	+9.1°	-2.6	89°40'	-15.4	-12.8	1942.8		BS	+2640	+25			
	2640				-10.2	89°30'	-23.0	-12.8			IS					
325	2310		171°26.8'	+9.1°	8.5	89°30'	+20.2	+11.7		1954.5		-2310	-22	318,640	1,713,010	
326	1980		"	"	7.8	89°30'	+17.3	+9.5		1952.3		-1980	-19	318,970	1,713,013	
327	1650		"	"	1.7	TH	+8.3	+6.6		1949.4		-1650	-16	319,300	1,713,016	
328	1320		"	"	2.9	TH	+6.6	+3.7		1946.5		-1320	-13	319,630	1,713,019	
329	990		"	"	4.3	TH	+5.0	+0.7		1943.5		-990	-9	319,960	1,713,023	
330	660		"	"	2.0	-		-2.0		1940.8		-660	-6	320,290	1,713,026	
331	230		"	"	3.6	-		-3.6		1939.2		-330	-3	320,620	1,713,029	

**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

DATE 12/5/80	INSTRUMENT MAN G. Cotcamp	ROD MAN J. Cruz	PARTY NUMBER 6834	NOTES CHECKED BY Guc. <i>rdw</i>	LINE NO. 8	PAGE 24
AREA Oklahoma	TOPO MAP Putnam 15'	STATE Oklahoma	COUNTY Dewey	TWP 16N	RANGE 17W	PPM
				PARTY MANAGER L. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1942.8					
332	0				54	-		-5.4		1937.4	π	0	0	320,950 1,713,032
333	330		251° 12.3'	+9.1°	8.2	-		-8.2		1924.6		+330	+2	321,280 1,713,034
334	660			"	14.0	-		-14.0		1928.8		+660	+5	321,610 1,713,037
335	990			"	11.5	BH	-5.0	-16.5		1926.5		+990	+7	321,940 1,713,039
336	1320			"	10.6	BH	-6.6	-17.2		1926.6		+1320	+10	322,270 1,713,042
337	1650			"	9.2	BH	-8.3	-17.5		1925.8		+1650	+12	322,600 1,713,044
338	1980			"	12.3	-		-12.3		1925.7		+1980	+15	322,930 1,713,047
339	2310			"	7.2	-		-7.2		1925.6		+2310	+17	323,260 1,713,049
JL 7F	2500		251° 8.2'	+9.1°	7.2	-		-6.6		1926.0		+2500	+10	323,450 1,713,042 + 1000 Inters.?
340	2640		251° 12.3'	+9.1°	6.5	-		-6.5		1932.3		+2640	+19	323,588 1,713,051
340	2640				6.9	70° 3'	-6.2	-6.6						
	1980		171° 34.2' (27)	+9.1°	5.6	74	+9.9	-4.3	1932.0		π	+1980-2	+23	
	1980				4.3	84° 1'	-11.5	-4.2			π			
341	1650		171° 34.2'	+9.1°	3.1	74	+2.3	+5.2		1927.2		-1650	-19	323,916 1,713,045
342	1320			"	5.2	74	+1.6	+1.4		1933.4		-1320	-15	324,246 1,713,048
343	990			"	7.8	-		-7.8		1924.2		-990	-12	324,576 1,713,052
344	660			"	10.7	-		-10.7		1921.3		-660	-8	324,906 1,713,066
345	330			"	7.8	-		-7.8		1924.2		-330	-4	325,236 1,713,070
346	0				54	-		-5.4		1923.6	π	0	0	325,566 1,713,074
347	330		350° 53'	+9.1°	2.3	-		-2.3		1929.7		+330	0	325,896 1,713,074

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 12/5/80	INSTRUMENT MAN G. Cotcamp	ROD MAN J. Cruz	PARTY NUMBER 6834	NOTES CHECKED BY Gwc. rdw	LINE NO. 8	PAGE 25
AREA Oklahoma	TOPO MAP Putnam 15'	STATE Oklahoma	COUNTY Dewey	TWP 16N/17W	RANGE 17W	PPM
				PARTY MANAGER L. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1922.2					
348	660		250° 53'	+9.10	5.9	-		-5.9		1926.1		+160	0	326,226 1,713,074
349	990		"	"	7.3	-		-7.3		1922.7		+990	0	326,556 1,713,074
350	1320				4.0	-		-4.0		1928.0		+1320	0	326,986 1,713,074
351	640		248° 4'	+9.10	5.3	TH	+2.2	+2.9		1934.9		+1638	-79	327,264 1,712,995
352	1020		245° 55.2'	+9.10	6.5	TH	+17.2	+10.4	+10.2	1942.2	TP	+1958-2	-171	327,520 1,712,903
352	1710				2.6	TH	+13.7	+10.1			TP			
	990		141° 54.5' +190°	+9.10	+11.6	BH	+5.0	+16.6			TP	+866	-480	
	100				+13.6	90° 10'	+2.9	+16.5	1958.7		TP			
353	660		240° 27'	+9.10	7.7	-		-9.9		1948.8		-557	+354	327,831 1,712,777
354	330		"	"	3.4	-		-3.4		1955.3		-278	+177	328,110 1,712,600
355	0				5.4	-		-5.4		1953.3	TP	0	0	328,388 1,712,923 ↑ T16N
356	330		221° 54'	+9.10	9.5	-		-8.5		1950.2		+289	-160	328,677 1,712,263
356	375		317° 19'	+9.10	9.4	-		-8.3		1950.4		+329	-218	328,717 1,712,205 328,710 + 1,712,205 T16 (cont)
357	660		251° 04'	+9.10	9.0	-		-9.0		1949.7		+577	-320	328,965 1,712,103 T17N
358	986		323° 53.7'	+9.10	10.1	-		-10.1		1942.6	TP	+878	-448+2	329,266 1,711,977 ↓ CUT 2
358	986				5.2	BH	-4.7	-10.1			TP			
	992		157° 15' +180°	+9.10	+1.7	TH	-5.0	-3.3	1945.3		BS	+964	-234+2	
	992				+5.4	89° 30'	-3.7	-3.3			BS			
359	660		157° 15'	+9.10	0.5	-		-0.5		1944.8		-641	-156	329,589 1,711,901
360	330				3.9	-		-3.9		1941.4		-321	+78	329,909 1,711,823

**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
12/5/80		G. Cotcamp		T. Sims		3837		GWC. Jlw		8	26						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Putnam 15'		Oklahoma	Pawnee		17N	17W		L. Davis							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1945.3								
361	0				54	-		-5.4		1939.7	π	0	0	330,230	1711,745	set up opposite sta.	
362	330		352°123'	+9.1°	3.5	-		-3.5		1941.8		+330	+8	330,560	1711,753		
363	660		"	"	3.2	TH	+3.3	+0.1		1945.4		+660	+15	330,890	1,711,760		
364	790		352°13.3'	+9.1°	2.0	TH	+5.0	+3.0		1948.2	TF	+990	+23±2	331,220	1711,770		
364	770				58	89°30'	+8.6	+2.8			TF						
	1980		171°37'±160"	+9.1°	+56	89°20'	-23.0	-17.4	1940.8		PS	+1980	+25±1				
	1980				+13.7	89°20'	-31.1	-17.4			PS						
365	1650		171°37'	+9.1°	3.9	89°20'	+19.2	+15.3		1946.1		-1650	-21	331,500	1711,775		
366	1320		"	"	3.1	89°20'	+15.4	+12.3		1943.1		-1320	-17	331,800	1711,779		
367	990		"	"	2.4	89°20'	+11.5	+8.1		1938.9		-990	-12	332,200	1711,784		
368	660		"	"	2.5	89°20'	+5.8	+3.3		1934.1		-660	-8	332,510	1711,788		
369	330		"	"	1.4	-		-1.4		1929.4		-330	-1	332,870	1711,792		
370	0				54	-		-5.4		1925.4	π	0	0	333,200	1711,796		
371	330		351°32.3'	+9.1°	6.2	-		-6.2		1924.6		+330	+4	333,530	1711,800	horiz. connect. y=-6', x=+7'	
372	660		"	"	4.3	-		-4.3		1926.5		+660	+7	333,860	1711,803		
373	730		350°28'	+9.1°	3.4	-		-3.4		1927.1		+730	-6	333,930	1711,790	333,930 = 1711,790 I-rod (west) el. 1926	
373	990		351°32.3'	+9.1°	1.4	-		-1.4		1929.7		+990	+11	334,190	1711,807		
374	1320		"	"	0.1	-		-0.1		1930.7		+1320	+15	334,520	1711,811		
376	1650		"	"	10.9	TH	+8.3	-2.6		1928.2		+1650	+18	334,850	1711,814		

**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

DATE 12/5/80	INSTRUMENT, MAN G. Cotcamp	ROD MAN T. Cruz	PARTY NUMBER 6834	NOTES CHECKED BY Gmc ndw	LINE NO. 8	PAGE 27
AREA Oklahoma	TOPO MAP Putnam 15'	STATE Oklahoma	COUNTY Dewey	TWP 17N	RANGE 17W	PPM
			PARTY MANAGER L. Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
									1229.8							
376	1980		351° 32.3'	+9.3°	14.8	TH	+2.7	-4.7	5.0	1225.8	TP	+1980-2	+29+2	335,178	1,711,827	
376	1980				14.3	89° 44'	+9.2	-5.1			TP					
	2640		171° 32.7' +180°	+9.3°	+11.8	-		+11.8	1227.6		BS	+2640-2	+43+2			
	2640				+14.9	59° 56'	-2.1	+11.8			BS					
377	2310		171° 37.7'	+9.3°	14.9	-		-14.9		1222.7		-2310	-37	335,506	1,711,835	
378	1980		"	"	4.7	64	-9.9	-24.6		1913.0		-1980	-32	335,836	1,711,840	
379	1650		"	"	9.4	91° -	-28.8	-38.2		1899.4		-1650	-27	336,166	1,711,845	
380	1320	1319	"	"	1.6	92° -	-46.0	-47.6		1890.0		-1319	-21	336,497	1,711,851	
381	990	989	"	"	7.0	92° -	-24.5	-41.5		1896.1		-989	-16	336,827	1,711,856	
382	660		"	"	5.2	92° -	-23.0	-28.2		1909.4		-660	-11	337,156	1,711,861	
383	330		"	"	14.3	64	-1.7	-15.7		1921.9		-330	-5	337,486	1,711,867	
384	0		"	"	54	-		-5.4		1932.2	TP	0	0	337,816	1,711,872	
385	230		351° 23.2'	+9.3°	5.3	-		-5.3		1932.3		+330	+4	338,146	1,711,876	
386	660		"	"	1.6	TH	+3.3	+1.7		1939.3		+660	+8	338,476	1,711,880	
387	990		"	"	+9	89° -	+17.3	+12.4		1950.0		+990	+12	338,806	1,711,884	
388	1320		351° 23.2'	+9.3°	14	91° -	+23.0	+11.6		1944.2	TP	+1320-2	+16+2	339,134	1,711,890	
388	1320				6.0	89° 14'	+17.7	+11.7			TP					
	1980		171° 24.2' +180°	+9.3°	+2.1	89° 22'	-21.9	-19.8	1929.4		BS	+1980-2	+24+2			
	1980				+5.5	89° 16'	-25.3	-19.8			BS					
389	1650		171° 24.2'	+9.3°	6.0	89° 30'	+14.4	+8.4		1937.8		-1650	-20	339,462	1,711,896	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 12/10/80	INSTRUMENT MAN G. Cotcamp	ROD MAN J. Cruz	PARTY NUMBER 6834	NOTES CHECKED BY GWC	LINE NO. 8	PAGE 28
AREA Oklahoma	TOPO MAP Putnam 15'	STATE Oklahoma	COUNTY Dewey	TWP 17N	RANGE 17W	PPM
				PARTY MANAGER L. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1929.4					
390	1320		171° 24.2'	+9.3°	5.2	TH	+6.6	+1.4		1930.8		-1320	-16	339,792 1,711,900
391	990		" "	"	0.7	-		-0.7		1928.7		-990	-12	340,122 1,711,904
392	660		" "	"	8.8	-		-8.8		1920.6		-660	-8	340,452 1,711,908
393	330		" "	"	13.9	-		-13.9		1915.5		-330	-4	340,782 1,711,912
394	0				5.4	-		-5.4		1924.0	TP	0	0	341,112 1,711,916
395	330		351° 11.7'	+9.3°	0.4	89° -	+5.8	+5.4		1934.8		+330	+3	341,442 1,711,919
396	660		" "	"	10.0	88° -	+23.0	+13.0		1942.4		+660	+6	341,772 1,711,922
397	990	989	" "	"	6.9	88° -	+34.5	+27.6		1957.0		-989	+9	342,101 1,711,925
398	1320	1319	" "	"	2.3	88° -	+46.0	+43.7		1973.1		-1319	+11	342,431 1,711,927
399	1650	1649	" "	"	2.3	87° 50'	+62.3	+60.0		1989.4		+1649	+14	342,761 1,711,930
400	1980	1979	351° 11.7'	+9.3°	5.6	87° 50'	+74.8	+69.2		1998.6	TP	+1979	+17.2	343,091 1,711,935
400	1980				11.3	87° 40'	+80.5	+69.2			TP			
	1980		171° 33.3' + 180°	+9.3°	+3.0	-		+3.0	2001.6		BS	+1980	+30	
	1980				+12.9	TH	-9.9	+3.0			BS			
401	1650		171° 33.3'	+9.3°	6.2	-		-6.2		1995.4		-1650	-25	343,421 1,711,940
402	1320		" "	"	8.7	-		-8.7		1992.9		-1320	-20	343,751 1,711,945
IF	1320		172° 7.8'	+9.3°	8.7	-		-8.7		1992.9		-1320	-33	343,751 1,711,932 Trail (east)
403	990		171° 33.3'	+9.3°	11.3	8H	-5.0	-16.3		1985.3		-990	-15	344,081 1,711,950
404	660		" "	"	6.0	92° -	-23.0	-29.0		1972.6		-660	-10	344,411 1,711,955
405	330		" "	"	8.7	92° -	-11.5	-20.2		1981.4		-330	-5	344,741 1,711,960

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 12/10/90	INSTRUMENT MAN G. Cotcamp	ROD MAN T. Gray	PARTY NUMBER 6874	NOTES CHECKED BY Gwc rlv	LINE NO. 8	PAGE 29
AREA Oklahoma	TOPO MAP Putnam 15'	STATE Oklahoma	COUNTY Noway	TWP 17N	RANGE 17W	PPM
				PARTY MANAGER L. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									2001.6					
406	0				54	-		-54		1996.2	X	0	0	345,071 1,711,965
407	330		350° 46'	+9.3°	1.2	TH	+1.7	+0.5		2002.1		+330	0	345,901 1,711,965
408	660		" "	"	1.8	TH	+3.3	+1.5		2003.1		+660	+1	345,731 1,711,966
409	990		349° 5'	+9.3°	10.9	89° -	+17.3	+6.4		2008.0		+990	-28	346,061 1,711,937
410	1317		347° 44'	+9.3°	13.7	89° 20'	+15.3	+1.6		2003.2		+1315	-68	346,386 1,711,897 S-curve
411	1645		347° 15'	+9.3°	13.0	89° 30'	+14.7	+1.7		2003.0		+1642	-99	346,713 1,711,866
412	1970		347° 42.3'	+9.3°	5.7	89° 30'	+17.2	+4.5		2013.1	TP	+1967	-103	347,038 1,711,862
412	1970				11.4	89° 20'	+22.9	+11.5			TP			
	1317		177° 26.3' +180°	+9.3°	+6.3	-		+6.3	2019.4		BS	+1308	+155	
	1317				+12.9	TH	-6.6	+6.3			BS			curve
413	990		177° 26.3'	+9.3°	7.7	-		-7.7		2011.7		-983	-116	347,363 1,711,901
414	660		175° 40'	+9.3°	15.2	-		-15.2		2004.2		-658	-57	347,688 1,711,960
415	330		" "	"	10.1	-		-10.1		2009.3		-329	-29	348,017 1,711,988
416	0				5.4	-		-5.4		2014.0	X	0	0	348,346 1,712,017
417	330		351° 5'	+9.3°	8.9	-		-8.9		2010.6		+330	+2	348,676 1,712,019
418	660		" "	"	11.2	-		-11.2		2008.2		+660	+4	349,006 1,712,021
419	990		" "	"	11.7	-		-11.7		2007.7		+990	+7	349,336 1,712,024
41	1320		350° 40'	+9.3°	11.3	-		-11.3		2008.1		+1320	-1	349,666 1,712,016 349,675 + 1,712,000 (2.000)
420	1320		351° 5'	+9.3°	11.4	-		-11.4		2008.0	TP	+1320	+9	349,667 1,712,028
420	1320				4.8	BH	-6.6	-11.4			TP			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
12/10/80		G. Cotcamp		E. Cruz		6824		GWC		8	30					
AREA		TOPO MAP	STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Putnam 15'	Oklahoma	Noway		17N	17W		L. Davis							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
420										2008.0						
	2310		171° 18.4' +180°	+9.3°	+5.2	TH	-11.6	-6.4	2001.6		BS	+2310-2	+24+2			
	2310				+13.9	89°30'	-20.2	-6.3		BS						
421	1980		171° 18.4'	+9.3°	4.1	TH	+9.9	+5.8		2007.4		-1980	-21	349,992	1,712,033	
422	1650		"	"	3.8	TH	+8.3	+4.5		2006.1		-1650	-17	350,322	1,712,037	
423	1320		"	"	3.4	TH	+6.6	+3.2		2004.8		-1320	-14	350,652	1,712,040	
424	990		"	"	3.0	TH	+5.0	+2.0		2003.6		-990	-10	350,982	1,712,044	
425	660		"	"	2.2	TH	+3.3	+1.1		2002.7		-660	-7	351,312	1,712,047	
426	330		"	"	0.8	-		-0.8		2000.8		-330	-3	351,642	1,712,051	
427	0		"	"	5.4	-		-5.4		1996.2	T	0	0	351,972	1,712,054	
428	230		351° 37.8'	+9.3°	8.3	-		-8.3		1993.3		+330	+5	352,302	1,712,059	
429	330		"	"	12.4	-		-12.4		1989.2		+660	+11	352,632	1,712,065	
430	990		"	"	11.4	BH	-5.0	-16.4		1985.2		+990	+16	352,962	1,712,070	
431	1320		"	"	13.9	BH	-6.6	-20.5		1981.1		+1320	+21	353,292	1,712,075	
432	1650		"	"	15.2	BH	-8.3	-23.5		1978.1		+1650	+27	353,622	1,712,081	
433	1980		"	"	11.7	BH	-9.9	-21.6		1980.0		+1980	+32	353,952	1,712,086	
434	2310		351° 37.8'	+9.3°	4.5	BH	-11.6	-16.7		1985.2	TP	+2310-2	+37+2	354,280	1,712,093	
434	2310		"	"	13.6	90°4'	-2.7	-16.3			TP					
	1980		172° 9.8' +180°	+9.3°	+12.1	89°30'	-17.3	-5.2	1980.0		BS	+1979	+51+2			
	1980		"	"	+14.5	89°25'	-19.6	-5.1		BS						
435	1650		172° 9.8'	+9.3°	8.7	89°30'	+14.4	+5.7		1985.7		-1649	-42	354,610	1,712,104	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 12/10/80	INSTRUMENT MAN G. Pate mp	ROD MAN F. Cruz	PARTY NUMBER 3874	NOTES CHECKED BY GWC	LINE NO. 8	PAGE 31
AREA Oklahoma	TOPO MAP Putnam 15'	STATE Oklahoma	COUNTY Covey	TWP 17N	RANGE 17W	PPM
				PARTY MANAGER L. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
									1980.0							horiz. correct. y = -14' x = +18'
436	1320		172°30'	+9.3°	6.4	89°30'	+11.5	+5.1		1985.1		-1319	-41	354,940	1,712,105	
17	1260		173°1'	+9.3°	5.7	89°30'	+11.0	+5.3		1985.3		-1259	-51	355,000	1,712,095	355,000 + 1,712,095 Trd (east) el. 1987.
437	990		172°30'	+9.3°	4.0	89°30'	+8.6	+4.6		1984.6		-990	-31	355,269	1,712,115	
438	660		"	"	2.3	89°30'	+5.8	+3.5		1983.5		-660	-21	355,599	1,712,125	
439	330		"	"	3.3	89°30'	+2.9	-0.4		1979.6		-330	-10	355,929	1,712,136	
440	0				5.4	-		-5.4		1974.6	X	0	0	356,259	1,712,146	
441	330		358°25'	+9.3°	8.7	-		-8.7		1971.3		+327	+44	356,586	1,712,190	
442	660		"	"	8.4	-		-8.4		1971.6		+654	+89	356,913	1,712,235	
443	990		1°12'	+9.3°	7.9	-		-7.9		1972.1		+973	+180	357,232	1,712,326	
444	1316		2°18'	+9.3°	6.9	-		-6.9		1973.1		+1289	+265	357,548	1,712,411	curve
445	1642		3°46'	+9.3°	14.64	89°50'	+4.8	-9.6	-9.7	1970.3	TP	+1599-2	+371-2	357,856	1,712,515	
445	1642				13.6	89°52'	+3.8	-9.8			TP					
	2635		201°17.2'-180°	+9.3°	+5.5	89°-	-46.0	-40.5	1929.9		BS	+2268-2	+1341-2			curve
	2635				+13.4	88°50'	-53.6	-40.2	1909		BS					
446	2308		202°12'	+9.3°	14.2	89°-	+40.3	+26.1		1956.0		-1968	-1206	358,154	1,712,648	
447	1980		203°25'	+9.3°	7.8	89°30'	+17.3	+9.5		1939.4		-1666	-1070	358,456	1,712,784	
448	1650		"	"	0.3	-		-0.3		1929.6		-1388	-892	358,734	1,712,962	
17	1370		204°9'	+9.3°	4.5	-		-4.5		1925.4		-1143	-755	358,979	1,713,099	
449	1320		203°25'	+9.3°	6.0	-		-6.0		1923.9		-1111	-713	359,011	1,713,141	
450	990		"	"	8.0	-		-8.0		1921.9		-833	-535	359,289	1,713,319	

**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

DATE 12/10/80	INSTRUMENT MAN G. Cotcamp	ROD MAN J. Cruz	PARTY NUMBER 6834	NOTES CHECKED BY GWC rde	LINE NO. 8	PAGE 32
AREA Oklahoma	TOPO MAP Putnam 15'	STATE Oklahoma	COUNTY Nowey	TWP 17N/18W	RANGE 17W	PPM
			PARTY MANAGER L. Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.	
									1929.9					
451	660		203° 25'	+9.3°	6.8	-		-6.8		1923.1		-555	-357	359,567 1713,497
452	330		" "	"	4.4	-		-4.4		1925.5		-278	-178	359,844 1,713,676 ↑
453	0				54	-		-5.4		1924.5	X	0	0	360,122 1,713,854 T 17N
454	330		22° 58'	+9.3°	14.3	04	-1.7	-16.0		1913.9		+279	+176	360,401 1,714,030 T 18N
455	660			"	11.2	91° 30'	-17.3	-28.5		1901.4		+558	+352	360,680 1,714,206 ↓
456	990			"	7.3	91° 30'	-25.9	-33.2		1896.7		+837	+529	360,959 1,714,383
457	1320		21° 54'	+9.3°	13.2	91°	-23.0	-36.2		1893.7		+1129	+684	361,251 1,714,538
458	1645		17° 38.3'	+9.3°	15.0	90° 30'	-14.4	-29.4		1900.5	TP	+1440	+796-2	361,562 1,714,918 curve
458	1645				10.3	90° 40'	-14.1	-29.4			TP			
	660		181° 43' -180°	+9.3°	+10.0	-		+10.0	1910.5		BS	+648	+126-2	
	660				+6.7	04	+3.3	+10.0			BS			
459	330		178° 32'	+9.3°	1.6	-		-1.6		1908.9		-327	-45	361,883 1,714,727
460	0				5.4	-		-5.4		1905.1	X	0	0	362,210 1,714,772
461	330		351° 59.8'	+9.3°	13.4	91° -	-5.8	-19.2		1891.3		+330	+7	362,540 1,714,779
462	660		" "	"	13.0	91° -	-11.5	-24.5		1886.0		+660	+15	362,870 1,714,787
463	990		" "	"	3.0	91° -	-17.3	-20.3		1890.2		+990	+22	363,200 1,714,794
464	1320		351° 59.8'	+9.3°	14.1	-		-14.1		1896.4	TP	+1320	+30-1	363,530 1,714,801
464	1320				7.5	04	-6.6	-14.1			TP			
	1320		172° 1' +180°	+9.3°	+3.1	TH	-6.6	-3.5	1892.9		BS	+1320	+30	
	1320				+4.2	89° 40'	-7.7	-3.5			BS			

**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

DATE 12/11/80	INSTRUMENT MAN G. Cotcamp	ROD MAN J. Cruz	PARTY NUMBER 6834	NOTES CHECKED BY G.C. rlu	LINE NO. 8	PAGE 33
AREA Oklahoma	TOPO MAP Putnam 15'/Taloga	STATE Oklahoma	COUNTY Dewey	TWP 18N	RANGE 17W	PPM
			PARTY MANAGER L. Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1892.9					
465	990		172° 1'	+9.3°	2.3	TH	+5.0	+2.7		1895.6		-990	-23	363860 1714808
466	660		" "	"	2.8	TH	+3.3	+0.5		1893.4		-660	-15	364190 1714816
467	330		" "	"	0.8	-		-0.8		1892.1		-330	-8	364520 1714823
468	0				5.4	-		-5.4		1887.5	X	0	0	364850 1714831
469	330		351° 50.3'	+9.3°	14.8	BH	-1.7	-16.5		1876.4		+330	+7	365180 1714838 Putnam Quad 15'
470	660		" "	"	4.4	92° -	-23.0	-27.4		1865.5		+660	+13	365510 1714844 Taloga Quad 7 1/2
470	660		350° 38'	+9.3°	4.2	92° -	-23.0	-27.2		1865.7		+660	-1	365510 1714830 Taloga Quad 7 1/2
471	990		351° 50.3'	+9.3°	11.8	91° 20'	-23.0	-34.8		1858.1		+990	+20	365840 1714851
472	1320		351° 50.3'	+9.3°	9.7	91° 20'	-30.7	-40.4		1852.5	TP	+1320-2	+26	366168 1714857
472	1320				13.5	91° 10'	-26.9	-40.4			TP			
	1980		172° 1.7' + 180°	+9.3°	+4.2	-		+4.2	1856.7		BS	+1979-2	+46	
	1980				+14.1	TH	-9.9	+4.2			BS			
473	1320		172° 1.7'	+9.3°	9.3	-		-9.3		1847.4		-1650	-38	366495 1714865
474	1320		" "	"	10.9	-		-10.9		1845.8		-1320	-31	366825 1714872
475	990		" "	"	12.0	-		-12.0		1841.7		-990	-23	367155 1714880
476	660		" "	"	11.8	-		-11.8		1844.9		-660	-15	367485 1714888
477	330		" "	"	4.2	-		-4.2		1852.5		-330	-8	367815 1714895
478	0				5.4	-		-5.4		1851.3	X	0	0	368145 1714903
479	330		351° 46.8'	+9.3°	12.2	91° -	-5.8	-18.0		1838.7		+330	+6	368475 1714909
480	660		" "	"	14.3	92° -	-23.0	-37.3		1819.4		+660	+12	368805 1714915

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	12/11/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	J. Cruz	PARTY NUMBER	6834	NOTES CHECKED BY	GWC xdw	LINE NO.	8	PAGE	34	
AREA	Oklahoma	TOPO MAP	Taloga 7 1/2	STATE	Oklahoma	COUNTY	Dewey	TWP	18N	RANGE	17W	PPM	PARTY MANAGER	L. Davis

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
									1856.7							
481	990	989	351°46.8'	+9.3°	11.7	92°30'	-43.1	-548		1801.9		+989	-19	369,134	1,714,922	
482	1320	1319	"	"	9.5	92°	-46.0	-55.5		1801.2		+1319	+25	369,464	1,714,928	
483	1650		"	"	10.8	91°10'	-33.6	-44.4		1812.3		+1650	+31	369,795	1,714,934	
484	1980		"	"	11.0	90°40'	-23.0	-34.0		1822.7		+1980	+37	370,126	1,714,940	
485	2310		351°46.8'	+9.3°	12.5	90°30'	-20.2	-32.7		1824.0	TP	+2310-2	+44	370,453	1,714,947	
485	2310				5.9	90°40'	-26.9	-32.8			TP					
	2640	2639	171°37.2'+180°	+9.3°	+7.8	88°20'	-76.7	-68.9	1755.1		BS	+2639	+42			
	2640				+14.0	88°12'	-82.9	-68.9			BS					
486	2310	2309	171°37.2'	+9.3°	3.9	88°20'	+67.2	+63.3		1818.4		-2309	-37	370,783	1,714,952	
JL JT	2280	2279	171°56.3'	+9.3°	4.0	88°20'	+66.3	+62.3		1817.4		-2278	-49	370,814	1,714,940	370,815 + 1,714,910 4-Way Intersect. el. 1818.
487	1980	1979	171°37.2'	+9.3°	5.8	88°30'	+51.8	+46.0		1801.1		-1979	-32	371,113	1,714,957	
488	1650		"	"	2.1	89°	+28.8	+26.7		1781.8		-1650	-26	371,412	1,714,963	
489	1320		"	"	10.2	89°	+23.0	+12.8		1767.9		-1320	-21	371,772	1,714,968	
490	990		"	"	10.2	89°	+17.3	+7.1		1762.2		-990	-16	372,102	1,714,973	
491	660		"	"	2.3	TH	+3.3	+1.0		1756.1		-660	-11	372,432	1,714,978	
492	330		"	"	3.4	-		-3.4		1751.7		-330	-5	372,762	1,714,984	
493	0		"	"	5.4	-		-5.4		1749.7	π	0	0	373,092	1,714,989	
494	330		351°21.3'	+9.3°	6.8	-		-6.8		1748.3		+330	+4	373,422	1,714,993	
495	660		"	"	11.2	-		-11.2		1743.9		+660	+8	373,752	1,714,997	
496	990		"	"	10.6	BH	-5.0	-15.6		1739.5		+990	+11	374,082	1,715,000	

**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

DATE 12/11/80	INSTRUMENT MAN G. Cotcamp		ROD MAN F. Cruz	PARTY NUMBER 6834	NOTES CHECKED BY GWC xlw		LINE NO. 8	PAGE 35
AREA Oklahoma	TOPO MAP Tuloga 7 1/2'	STATE Oklahoma	COUNTY Cewey	TWP 18N	RANGE 17W	PPM	PARTY MANAGER L. Davis	

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1755.1					
497	1320		351° 21.3'	+9.3°	12.8	BH	-6.6	-19.4		1735.7		+1320	+15	374,412 / 1,715,004
498	1650		" "	"	14.7	BH	-8.3	-23.0		1732.1		+1650	+19	374,742 / 1,715,008
499	1980		" "	"	8.7	90° 30'	-17.3	-26.0		1729.1		+1980	+23	375,072 / 1,715,012
500	2310		351° 21.3'	+9.3°	8.0	90° 30'	-20.2	-28.2			TP	+2310-2	+26	375,400 / 1,715,015
500	2310				14.7	90° 20'	-13.4	-28.1		1727.0	TP			
	1980		170° 16' +180°	+9.3°	4.0	TH	-9.9	-5.9			BS	+1980-2	-15	
	1980				5.7	89° 40'	-11.5	-5.8		1721.2	BS			
501	1650		170° 16'	+9.3°	3.9	TH	+8.3	+4.4		1725.6		-1650	+12	375,728 / 1,715,012
502	1320		" "	"	3.8	TH	+6.6	+2.8		1724.0		-1320	+10	376,058 / 1,715,010
IF	1268		170° 55'	+9.3°	3.9	TH	+6.3	+2.4		1723.6		-1268	-5	376,110 / 1,714,995 376,110 + 1,714,970 4-Way Intersect. el. 1724.
503	990		170° 16'	+9.3°	4.5	TH	+5.0	+0.5		1721.7		-990	+7	376,388 / 1,715,007
504	660		" "	"	0.9	-		-0.9		1720.3		-660	+5	376,718 / 1,715,005
505	330		" "	"	3.1	-		-3.1		1718.1		-330	+2	377,048 / 1,715,002
506	0				5.4	-		-5.4		1715.8	X	0	0	377,378 / 1,715,000
507	330		352° 51'	+9.3°	8.1	-		-8.1		1713.1		+330	+12	377,708 / 1,715,012
508	660		355° 29'	+9.3°	10.0	-		-10.0		1711.2		+658	+55	378,036 / 1,715,055
509	990		" "	"	10.3	-		-10.3		1710.9		+987	+83	378,365 / 1,715,083
510	1320		" "	"	12.2	-		-12.2		1709.0		+1315	+110	378,693 / 1,715,110 Town of Taloga
511	1650		354° 34'	+9.3°	13.7	-		-13.7		1707.5		+1646	+111	379,024 / 1,715,111

**SURVEY NOTES-HIGH RESOLUTION DATA**

GEO-445

**Geosource Inc.**

DATE 12/11/80	INSTRUMENT MAN G. Cotcamp	ROD MAN J. Cruz	PARTY NUMBER 6834	NOTES CHECKED BY G.W.C. J.W.	LINE NO. 8	PAGE 36
AREA Oklahoma	TOPO MAP Taloga 7 1/2'	STATE Oklahoma	COUNTY Nowata	TWP 18N	RANGE 17W	PPM
PARTY MANAGER L. Davis						

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS
														Y	X	
									1721.2							
512	1975		353° 38.8'	+9.3°	12.8	-		-12.8		1708.4	TP	+1972.2	+102	379,348	1,715,102	curve
512	1975				2.9	BH	-9.9	-12.8			TP					Town of Taloga
	1650		172° 32.2' +180°	+9.3°	+8.9	TH	-8.3	+0.6			BS	+1649.2	+53			↓
	1650				+10.3	89° 40'	-9.6	+0.7	1709.1		BS					
513	1320		172° 32.2'	+9.3°	7.8 <del>19.8</del>	TH <del>84° 30'</del>	+6.6	-1.2		1707.9		-1319	-42	379,676	1,715,113	
514	990		"	"	2.0	-		-2.0		1707.1		-989	-32	380,006	1,715,123	"
515	660		"	"	3.0	-		-3.0		1706.1		-660	-21	380,335	1,715,134	
BM	600		178° 22'	+9.3°	1.3	=		-1.3		1707.8		-595	-80	380,100	1,715,075	el. 1708. U.S.G.S. L114 1938
516	330		172° 32.2'	+9.3°	4.7	-		-4.7		1704.4		-330	-11	380,665	1,715,144	
517	0				5.4	-		-5.4		1703.7	TP	0	0	380,995	1,715,155	horiz. coord. y = -18 x = -9'
518	330		351° 14.8'	+9.3°	6.2	-		-6.2		1702.9		+330	+3	381,325	1,715,158	
TP	440		348° 9'	+9.3°	6.1	-		-6.1		1703.0		+440	-20	381,435	1,715,135	381,435 + 1,715,135 4-Way Intersect
519	660		351° 14.8'	+9.3°	6.5	-		-6.5		1702.6		+660	+6	381,655	1,715,161	
520	990		"	"	6.7	-		-6.7		1702.4		+990	+9	381,985	1,715,164	
521	1320		"	"	7.4	-		-7.4		1701.7		+1320	+13	382,315	1,715,168	
522	1650		351° 14.8'	+9.3°	10.9	-		-10.9		1698.2	TP	+1650.3	+16	382,648	1,715,171	
522	1650				2.7	BH	-8.3	-11.0			TP					
	982		156° 58.7' +180°	+9.3°	+3.3	89° -	-17.1	-13.8	1684.4		BS	+954.3	-233			
	982				+6.1	88° 50'	-20.0	-13.9			BS					
523	660		152° 32'	+9.3°	3.0	89° -	+11.5	+8.5		1692.9		-627	+206	382,978	1,715,144	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.	PAGE				
12/12/80		G. Cotcamp		J. Cruz		6837		GwC rluw			8	37				
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Oklahoma		Taloga 7 1/2'		Oklahoma	Dewey		18N	17W		L. Davis						
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH +	EAST +	COORDINATES		REMARKS
												SOUTH -	WEST -	Y	X	
												LAT.	DEP.	Y	X	
									1684.4							
524	330		148° 20'	+9.3°	3.3	89° -	+5.8	+2.5		1686.9		-30.5	+126	383,300	1,715,064	
525	0				5.4	-		-5.4		1679.0	π	0	0	383,605	1,719,938	
526	330		320° 11'	+9.3°	11.8	-		-11.8		1672.6		+284	-168	383,889	1,714,770	
527	660		316° 13'	+9.3°	13.9	-		-13.9		1670.5		+544	-374	384,149	1,714,564	
528	988		313° 30'	+9.3°	14.5	-		-14.5			TP	+787.3	-597	384,395	1,714,391	curve
528	988				9.5	64	-4.9	-14.9		1670.0	TP					
	1980		126° 46.3' + 180°	+9.3°	+10.0	TH	-9.9	+0.1	1670.1		BS	+1426.3	-1374			
	1980				+14.0	89° 36'	-13.8	+0.2			BS					
529	1650		126° 46.3'	+9.3°	7.1	TH	+8.3	+6.6		1676.7		-1188	+1145	384,636	1,714,112	529-533 (bridge)
530	1320				4.9	TH	+6.6	+1.7		1671.8		-951	+916	384,873	1,713,883	
531	970				3.5	TH	+5.0	+1.5		1671.6		-713	+687	385,111	1,713,654	
532	660				2.3	TH	+3.3	+1.0		1671.1		-475	+458	385,349	1,713,425	
533	330				0.5	-		-0.5		1669.6		-238	+229	385,586	1,713,196	
≡	162		131° 34'	+9.3°	2.7	-		-2.7		1667.4		-126	+102	385,698	1,713,069	385,710 + 1,713,090 Y-intersect.
534	0				5.4	-		-5.4		1664.7	π	0	0	385,824	1,712,967	
535	330		310° 43'	+9.1°	4.7	-		-4.7		1665.4		+252	-213	386,076	1,712,754	
536	660		315° 7'	+9.1°	2.8	-		-2.8		1667.3		+535	-386	386,359	1,712,581	
537	982		320° 7'	+9.1°	2.0	-		-2.0		1668.1		+844	-503	386,668	1,712,464	
≡	1195		323° 45'	+9.1°	6.3	TH	+6.0	-0.3		1669.8		+1063	-545	386,887	1,712,422	bridge corner

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	12/12/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	J. Cruz	PARTY NUMBER	6834	NOTES CHECKED BY	G.C. J.W.	LINE NO.	8	PAGE	38	
AREA	Oklahoma	TOPO MAP	Talaga 7 1/2'	STATE	Oklahoma	COUNTY	Dewey	TWP	18N	RANGE	17W	PPM	PARTY MANAGER	L. Davis

STATION NO.	SLOPE DISTANCE	PLOT DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1670.1						
538	1300		225° 7'	+9.1°	5.7	TH	+6.5	+0.8		1670.9	TP	+1171.3	-565.1	386,998 1,712,401	curve
538	1300				6.8	89° 40'	+7.6	+0.8			TP				
	980		181° 42.6' - 180°	+9.1°	+144	91° -	+17.1	+31.5	1702.4		BS	+963.2	+184.1		
	980				+9.6	91° 20'	+22.8	+31.4			BS				curve
539	655		186° 36'	+9.1°	13.8	91° -	-11.4	-25.2		1677.2		-631	-177	387,332 1,712,407	
540	330		"	"	13.9	"		-13.9		1688.5		-318	-89	387,645 1,712,495	
541	0				5.4	-		-5.4		1697.0	TP	0	0	387,963 1,712,584	
542	330		11° 12'	+9.1°	0.9	TH	+1.7	+0.8		1703.2		+310	+114	388,273 1,712,698	
543	660		"	"	4.3	89° -	+11.5	+7.2		1709.6		+619	+229	388,582 1,712,813	
544	990	989	"	"	11.8	88° -	+34.5	+22.7		1725.1		-928	+343	388,891 1,712,927	
545	1320	1319	"	"	3.8	88° -	+46.0	+42.2		1744.6		+1237	+458	389,200 1,713,042	
546	1650	1649	"	"	6.1	87° 40'	+67.1	+61.0		1763.4		+1547	+572	389,510 1,713,156	
547	1980	1978	11° 37.4'	+9.1°	9.3	87° 40'	+80.5	+71.2		1773.6	TP	+1850.2	+700.1	389,815 1,713,283	
547	1980				3.5	87° 50'	+74.8	+71.3			TP				
	1320		201° 45.2' - 180°	+9.1°	+10.6	91° -	+23.0	+33.6	1807.3		BS	+1133.2	+677.1		
	1320				+14.6	90° 50'	+19.2	+33.8	+33.7		BS				
548	990		204° 1'	+9.1°	11.3	91° -	-17.3	-28.6		1778.7		-829	-571	390,121 1,713,418	
549	660		"	"	12.2	91° -	-11.5	-23.7		1783.6		-553	-361	390,397 1,713,598	
550	330		"	"	11.7	91° -	-5.8	-17.5		1789.8		-276	-180	390,674 1,713,779	
551	0				5.4	-		-5.4		1801.9	TP	0	0	390,950 1,713,959	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 12/12/80	INSTRUMENT MAN G. Cotcamp		ROD MAN J. Cruz		PARTY NUMBER 6839		NOTES CHECKED BY Guc. <i>slw</i>		LINE NO. 8	PAGE 39
AREA Oklahoma	TOPO MAP Taloga 7 1/2'	STATE Oklahoma	COUNTY Dewey		TWP 18N/19N	RANGE 17W	PPM	PARTY MANAGER L Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1807.3						
552	330		30° 16'	+9.1°	2.4	88° -	+11.5	+9.1		1816.7		+255	+209	391,205	1,714,168
553	660		"	"	1.9	88° -	+23.0	+21.1		1828.4		+510	+419	391,460	1,714,378 ↑
554	990	989	"	"	8.2	87° 30'	+43.1	+34.9		1842.2		+765	+627	391,715	1,714,586 T 18N
555	1320	1319	29° 15.3'	+9.1°	9.8	87° 30'	+57.5	+47.7		1855.0	TP	+1034+2	+818-1	391,986	1,714,776 T 19N
555	1320				6.0	87° 40'	+53.7	+47.7			TP				↓
	980		186° 35.6' - 180°	+8.9°	+10.1	91° 30'	+25.6	+35.7	1890.7		BS	+944+2	+262-1		
	980				+14.1	91° 15'	+21.7	+35.8			BS				curve
556	655		182° -	+8.9°	13.0	91° -	-11.4	-24.4		1866.3		-643	-124	392,289	1,714,913
557	330		175° 42'	+8.9°	12.8	-		-12.8		1877.9		-329	-26	392,603	1,715,011
558	0				5.4	-		-5.4		1885.3	T	0	0	392,932	1,715,037
559	330		349° 40.3'	+8.9°	0.7	TH	+1.7	+1.0		1891.7		+330	-8	393,262	1,715,029
560	660		"	"	7.8	89° -	+11.5	+3.7		1894.4		+660	-16	393,592	1,715,021
561	990		349° 40.3'	+8.9°	12.4	89° 30'	+8.6	-3.8	-3.7	1887.0	TP	+990+2	-25-1	393,924	1,715,011
561	990				14.0	89° 24'	+10.4	-3.6			TP				
	990	989	171° 6' - 180°	+8.9°	+12.3	88° -	-34.5	-22.2	1864.8		BS	+989+2	0 -1		
	990				+3.7	88° 30'	-25.9	-22.2			BS				
562	660		171° 6'	+8.9°	9.7	88° -	+23.0	+13.3		1878.1		-660	0	394,255	1,715,010
563	330		"	"	1.9	89° -	+5.8	+3.9		1868.7		-330	0	394,585	1,715,010
564	0				5.4	-		-5.4		1859.4	T	0	0	394,915	1,715,010
565	330		1° 5'	+8.9°	11.7	-		-11.7		1853.1		+325	+57	395,240	1,715,067

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 12/12/80	INSTRUMENT MAN G. Cotcamp		ROD MAN J. Cruz		PARTY NUMBER 6834		NOTES CHECKED BY GWC <i>dlw</i>		LINE NO. 8	PAGE 40
AREA Oklahoma	TOPO MAP Talage 7 1/2'	STATE Oklahoma	COUNTY Noway	TWP 19N	RANGE 17W	PPM	PARTY MANAGER L Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH +	EAST +	COORDINATES		REMARKS
												SOUTH -	WEST -	Y	X	
												LAT.	DEP.			
									1864.8							
566	660		3° 29'	+8.9°	8.3	-		-8.3		1856.5		+645	+142	395,560	1,715,152	
567	985		6° 50.8'	+8.9°	7.8	-		-7.8		1857.0	TP	+948+2	+267-1	395,865	1,715,276	curve
567	985				12.7	TH	+4.9	-7.8			TP					
	1317		208° 31' -180°	+8.9°	+14.6	-		+14.6	1871.6		BS	+1046+2	+800-1			
	1317				+8.0	OH	+6.6	+14.6			BS					
568	990		211° 10'	+8.9°	6.8	91° -	-17.3	-24.1		1847.5		-758	-637	396,155	1,715,438	
569	660		"	"	8.8	91° -	-11.5	-20.3		1851.3		-505	-425	396,408	1,715,650	
570	330		"	"	9.7	-		-9.7		1861.9		-253	-212	396,660	1,715,863	
571	0				54	-		-5.4		1866.2	T	0	0	396,913	1,716,075	
572	330		33° 10'	+8.9°	4.3	-		-4.3		1867.3		+245	+221	397,158	1,716,296	
573	660		"	"	3.2	-		-3.2		1868.4		+490	+442	397,403	1,716,517	
574	990		"	"	6.9	89° -	+17.3	+10.4		1882.0		+735	+663	397,648	1,716,738	
575	1320		"	"	2.8	88° 30'	+34.5	+31.7		1903.3		+980	+884	397,893	1,716,959	
576	1650	1649	30° 24.5'	+8.9°	3.8	88° 20'	+48.0	+44.2		1915.8	TP	+1276+2	+1245	398,191	1,717,120	
576	1650				8.6	88° 10'	+52.8	+44.2			TP					
	1980		198° 57' -180°	+8.9°	+11.9	OH	+9.9	+21.8	1937.6		BS	+1751+2	+925			
	1980				+13.7	90° 14'	+8.1	+21.8			BS					
577	1650		198° 57'	+8.9°	14.7	OH	-8.3	-23.0		1914.6		-1459	-771	398,485	1,717,274	
578	1320		"	"	8.8	91° -	-23.0	-31.8		1905.8		-1167	-617	398,777	1,717,428	
579	990		"	"	9.5	91° 30'	-25.9	-35.4		1902.2		-875	-462	399,069	1,717,583	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 12/12/80	INSTRUMENT MAN G. Cotcamp	ROD MAN J. Cruz	PARTY NUMBER 5837	NOTES CHECKED BY GUC. Jdw	LINE NO. 8	PAGE 41
AREA Oklahoma	TOPO MAP Taloga 78'	STATE Oklahoma	COUNTY Dewey	TWP 19N	RANGE 16W	PPM
			PARTY MANAGER L. Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.	
									1937.6					
580	660		198°57'	+8.9°	9.6	91°30'	-17.3	-26.9		1910.7		-584	-308	399,360 1,717,737 R 16W
581	330		" "	"	14.2	84	-1.7	-15.9		1921.7		-292	-154	399,652 1,717,891 ↓
582	0				5.4	-		-5.4		1932.2	X	0	0	399,944 1,718,045
583	330		10°11'	+8.9°	3.6	89°-	+5.8	+2.2		1939.8		+312	+108	400,256 1,718,153
584	660		6°16'	+8.9°	10.2	89°-	+11.5	+1.3		1938.9		+637	+173	400,581 1,718,218
585	985		2°21'	+8.9°	10.1	89°-	+17.2	+7.1		1944.7		+966	+192	400,910 1,718,237 curve
586	1308		358°37.4'	+8.9°	11.5	89°-	+22.8	+11.3		1948.9	TP	+1297.2	+171	401,243 1,718,216
586	1308				3.9	89°20'	+15.2	+11.3			TP			
	1645		155°29.8'+180°	+8.9°	+4.6	89°-	-28.7	-24.1			BS	+1584.2	-442	curve
	1645				+9.3	88°50'	-33.5	-24.2	1924.7		BS			
587	1320		155°29.8'	+8.9°	3.0	89°-	+23.0	+20.0		1944.7		-1271	+355	401,558 1,718,129
588	990		" "	"	9.2	89°-	+17.3	+8.1		1932.8		-954	+266	401,875 1,718,040
IF	757		158°36.4'	+8.9°	1.2	-		-1.2		1923.5		-739	+164	402,090 1,717,938 402,095 + 1,717,920 T-rd (east) = 1,1922
589	660		" "	"	5.2	-		-5.2		1919.5		-644	+143	402,185 1,717,917
590	330		" "	"	9.8	-		-9.8		1914.9		-322	+71	402,507 1,717,845
591	0				5.4	-		-5.4		1917.3	X	0	0	402,829 1,717,774
592	330		350°40.6'	+8.9°	5.1	-		-5.1		1919.6		+330	-2	403,159 1,717,772
593	660		" "	"	5.0	-		-5.0		1919.7		+660	-5	403,489 1,717,769
594	990		" "	"	5.8	-		-5.8		1918.9		+990	-7	403,819 1,717,767

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 12/13/80	INSTRUMENT MAN G. Cotcamp	ROD MAN J. Cruz	PARTY NUMBER 6837	NOTES CHECKED BY G.W.C. J.W.	LINE NO. 8	PAGE 42
AREA Oklahoma	TOPO MAP Taloga 7 1/2'	STATE Oklahoma	COUNTY Dewey	TWP 19N	RANGE 17/16W	PPM
PARTY MANAGER L. Davis						

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1924.7					
595	1220		350°40.6'	+8.9°	12.2	-		-12.2		1912.5	TP	+1320	-10	404,149 1,717,764
595	1220				5.6	04	-6.6	-12.2			TP			
	2972	2969	171°39.2' +185°	+8.9°	+4.5	88°46'	-63.9	-59.4	1853.0		BS	+2969	+29	
	2972				+14.7	88°34'	-74.3	-59.6	59.5		BS			
596	2640	2639	171°39.2'	+8.9°	11.9	88°40'	+61.4	+49.5		1902.5		-2639	-25	404,479 1,717,768
597	2310			"	1.8	89°-	+40.3	+38.5		1891.5		-2310	-22	404,808 1,717,771
598	1980			"	6.5	89°-	+34.6	+28.1		1881.1		-1980	-19	405,138 1,717,774
599	1650			"	11.2	89°-	+28.8	+17.6		1870.6		-1650	-16	405,468 1,717,777
600	1320			"	3.0	89°30'	+11.5	+8.5		1861.5		-1320	-13	405,798 1,717,780
601	990			"	4.5	89°30'	+8.6	+4.1		1857.1		-990	-10	406,128 1,717,783
602	660			"	2.7	74	+3.3	+0.6		1853.6		-660	-6	406,458 1,717,787
603	330			"	2.2	-		-2.2		1850.8		-330	-3	406,788 1,717,790
604	0			"	5.4	-		-5.4		1847.6	TP	0	0	407,118 1,717,793
71	260		348°18'	+8.9°	7.4	-		-7.4		1845.6		+260	-13	407,378 1,717,780 407,380 + 1,717,790 Tied (west) el. 1845.
605	330		351°32.7'	+8.9°	8.9	-		-8.9		1844.1		+330	+3	407,448 1,717,796
606	660			"	15.2	-		-15.2		1837.8		+660	+5	407,778 1,717,798
607	990			"	15.2	04	-5.0	-20.2		1832.8		+990	+8	408,108 1,717,801
608	1320			"	9.9	91°-	-25.0	-32.1		1820.1		+1320	+10	408,438 1,717,803
609	1650			"	7.4	91°-	-28.8	-36.2		1816.8		+1650	+13	408,768 1,717,806
610	1980			"	10.0	90°30'	-17.3	-27.3		1826.7		+1980	+15	409,098 1,717,808

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	12/13/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	J. Cruz	PARTY NUMBER	6834	NOTES CHECKED BY	GWC	LINE NO.	8	PAGE	43 of 44	
AREA	Oklahoma	TOPO MAP	Taloga/Seiling	STATE	Oklahoma	COUNTY	Dewey	TWP	19N	RANGE	17/16W	PPM	PARTY MANAGER	L. Davis

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH+	EAST+	COORDINATES		REMARKS
												SOUTH-	WEST-	Y	X	
												LAT.	DEP.			
611	2310		351°32.7	+8.9°	12.7	04	-11.6	-24.3	1853.0	1828.7		+2310	+18	409,428	1,717,811	
612	2640		" "	"	9.0	04	-13.2	-22.2		1830.8		+2640	+21	409,758	1,717,814	
613	2970		351°32.7	+8.9°	5.2	04	-14.9	-20.1		1832.2	TP	+2970	+23	410,088	1,717,816	
613	2970				14.9	90°6'	-5.2	-20.1			TP					
	2310		171°51.2	+8.9°	+6.2	89°30'	-20.2	-19.0	1812.9		BS	+2310	+30			
	2310				+12.9	89°20'	-26.9	-19.0			BS					
614	1980		171°51.2	+8.9°	6.3	89°30'	+17.3	+11.0		1829.9		-1980	-26	410,418	1,717,820	↑
615	1650		" "	"	3.3	74	+8.3	+5.0		1823.9		-1650	-22	410,748	1,717,824	Taloga Quad.
616	1320		" "	"	6.3	-	-	-6.3		1812.6		-1320	-17	411,078	1,717,829	Seiling Road.
617	990		" "	"	13.8	04	-5.0	-12.2		1800.1		-990	-13	411,408	1,717,833	↓
618	660		" "	"	12.8	91°-	-14.5	-21.8		1794.6		-660	-9	411,738	1,717,837	
619	330		" "	"	14.9	04	-1.7	-13.6		1802.3		-330	-4	412,068	1,717,842	
620	0		" "	"	5.4	-	-	-5.4		1813.5	T	0	0	412,398	1,717,846	
JK JT	240		348°6'	+8.9°	1.0	-	-	-1.0		1817.9		+240	-13	412,638	1,717,833	412,645 + 1,717,825 4-Way Intersect el. 1817
621	330		351°43.2	+8.9°	0.8	-	-	-0.8		1813.7		+330	+4	412,728	1,717,850	
622	660		" "	"	3.2	74	+3.3	+0.1		1813.0		+660	+7	413,058	1,717,853	
623	990		" "	"	6.2	74	+5.0	-1.2		1817.7		+990	+11	413,388	1,717,857	
624	1320		" "	"	5.2	74	+6.6	+1.4		1820.3		+1320	+14	413,718	1,717,860	
625	1650		" "	"	3.3	74	+8.3	+5.0		1823.7		+1650	+18	414,048	1,717,864	
626	1980		" "	"	3.5	74	+7.7	+6.4		1825.3		+1980	+21	414,378	1,717,867	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 12/13/80	INSTRUMENT MAN G. Cotcamp	ROD MAN J. Cruz	PARTY NUMBER 6834	NOTES CHECKED BY G.W.C. <i>elw</i>	LINE NO. 8	PAGE 44 of 44
AREA OKLAHOMA	TOPO MAP Seiling 7 1/2'	STATE Oklahoma	COUNTY Dewey	TWP 19N	RANGE 17/16W	PPM

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1818.9					
627	2310		351° 43.2'	+8.9°	4.5	TH	+11.6	+7.1	+7.0	1825.9	TP	+2310	+25	414,708 1,717,871
627	2310				6.5	89° 40'	+13.4	+6.9			TP			
	1980		171° 40' +180°	+8.9°	+2.5	TH	-9.9	-7.4			BS	+1980	+20	
	1980				+4.2	89° 40'	-11.5	-7.3	1818.6		BS			
628	1650		171° 40'	+8.9°	7.6	89° 30'	+14.4	+6.8		1825.4		-1650	-16	415,038 1,717,875
629	1320		" "	"	5.1	TH	+6.6	+1.5		1820.1		-1320	-13	415,368 1,717,878
630	990		" "	"	9.2	-		-9.2		1809.4		-990	-10	415,698 1,717,881
631	660		" "	"	7.8	91° -	-11.5	-19.3		1799.3		-660	-7	416,028 1,717,884
632	330		" "	"	12.8	-		-12.8		1805.8		-330	-3	416,358 1,717,888
633	0				5.4	-		-5.4		1813.2	X	0	0	416,688 1,717,891
634	330		351° 19'	+8.9°	2.3	-		-2.3		1816.3		+330	+1	417,018 1,717,892
635	660		" "	"	6.2	-		-6.2		1810.4		+660	+2	417,348 1,717,893
IL TR	1212		350° 50.3'	+8.9°	1.8	-		-1.8		1816.8		+1212	-6	417,900 1,717,885
BM	1280		353° 55'	+8.9°	4.7	-		-4.7		1812.9		+1278	+63	417,966 1,717,954

horiz curved.  
y = +4  
x = -10  
**EOL #8**  
417,900 + 1,717,885  
4-Way Inverse (at 183+60)  
usc-gs. pl. 1815