

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc. Client-COCORP

DATE 10/10/80	INSTRUMENT MAN G. Cotcamp		ROD MAN D. Shabeldeen		PARTY NUMBER 6834	NOTES CHECKED BY BHL	LINE NO. 6	PAGE 1
AREA Oklahoma	TOPO MAP Cooperon 7 1/2	STATE Oklahoma	COUNTY Kiowa	TWP 5N	RANGE 16W/15W	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.				
IL				9°30'						1597.0					554,940	1,750,605	
	2840		171°14' +180°	+9.5°	+10.6	-		+10.6	1607.8		BS	+2840	+36				T-rd
	2840				+14.2	89°56'	-3.3	+10.9	1608		BS						
1	2640		171°5'	+9.5°	11.5	-		-11.5		1596.3		-2640	-27	555,190	1,750,614		
2	2310		" "	"	7.8	-		-7.8		1600.0		-2310	-24	555,470	1,750,617		
3	1980		" "	"	6.4	-		-6.4		1601.4		-1980	-20	555,800	1,750,621		
4	1650		" "	"	6.9	-		-6.9		1600.9		-1650	-17	556,130	1,750,624		
5	1320		" "	"	7.7	-		-7.7		1600.1		-1320	-13	556,460	1,750,628		
6	990		" "	"	9.3	-		-9.3		1598.5		-990	-10	556,790	1,750,631		
7	660		" "	"	8.9	-		-8.9		1598.9		-660	-7	557,120	1,750,634		
8	330		" "	"	8.4	-		-8.4		1599.4		-330	-3	557,450	1,750,638		
9	0				5.4	-		-5.4		1602.4	TP	0	0	557,780	1,750,641		
10	330		351°88'	+9.5°	5.9	-		-5.9		1601.9		+330	+4	558,110	1,750,645		
11	660		" "	"	5.8	-		-5.8		1602.0		+660	+7	558,490	1,750,648		
12	990		" "	"	6.0	-		-6.0		1601.8		+990	+11	558,770	1,750,652		
13	1320		" "	"	6.8	-		-6.8		1601.0		+1320	+15	559,100	1,750,656		
14	1650		" "	"	7.2	-		-7.2		1600.6		+1650	+19	559,430	1,750,660		
15	1980		" "	"	7.4	-		-7.4		1600.4		+1980	+22	559,760	1,750,663		
16	2310		" "	"	6.8	-		-6.8		1601.0		+2310	+26	560,090	1,750,667		
IL 7F	2450		350°52.3'	+9.5°	5.2	-		-5.2		1602.6		+2450	+16	560,230	1,750,657	560,225 + 1,750,680 4-Way Intersect. el. 1603.	
17	2640		351°8.8'	+9.5°	2.9	-		-2.9		1604.9		+2640	+30	560,420	1,750,671		

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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
7/10/80		G. Co. Camp		R. Shabeldeen		6834		AH		6	2						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Cooperon/Unap Mountain		Oklahoma	Kisawa		5N	16W/15		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.				
									1407.8								
18	2970		351° 8.8'	+9.5°	3.7	89° 38'	+1.7	-2.0		1405.8	TP	+2970	+34-2	560,750	1,750,673		
18	2970				10.7	89° 50'	+8.6	-2.1			TP						
	1980		170° 59.8' +180°	+9.5°	+6.0	TH	-9.9	-3.9			BS	+1980	+17-2				
	1980				+5.4	89° 44'	-9.2	-3.8	1402.0		BS						
19	1650		170° 59.8'	+9.5°	5.0	TH	+8.3	+3.3		1405.3		-1650	-14	561,080	1,750,674		
20	1320		" "	"	6.3	TH	+6.6	+0.3		1602.3		-1320	-11	561,410	1,750,677		
21	990		" "	"	6.6	TH	+5.0	-1.6		1600.4		-990	-9	561,740	1,750,679	↑	
22	660		" "	"	0.2	-		-0.2		1601.8		-660	-6	562,070	1,750,682	Cooperon Quad.	
23	330		" "	"	1.6	-		-1.6		1600.4		-330	-3	562,400	1,750,685	Unap Mountain Quad.	
24	0		" "	"	5.4	-		-5.4		1596.6	π	0	0	562,730	1,750,688	↓	
25	330		351° 14.3'	+9.5°	10.4	-		-10.4		1591.6		+330	+4	563,060	1,750,692		
26	660		" "	"	10.8	-		-10.8		1591.2		+660	+9	563,390	1,750,697		
27	990		" "	"	14.8	-		-14.8		1587.2		+990	+13	563,720	1,750,701		
28	1320		" "	"	13.1	-		-13.1		1588.9		+1320	+17	564,050	1,750,705		
29	1650		351° 14.3'	+9.5°	8.5	-		-8.5		1593.5	TP	+1650	+21-2	564,380	1,750,707		
30	1650		" "	"	0.3	TH	-8.3	-8.6			TP						
	2310		171° 15.5' +180°	+9.3'	+8.7	89° 20'	-26.9	-18.2	1576.3		BS	+2310	+23				
	2310		" "	"	+14.0	89° 12'	-32.2	-18.2			BS						
30	1980		171° 15.5'	+9.3'	4.5	89° 20'	+23.0	+18.5		1593.8		-1980	-19	564,710	1,750,711		
31	1650		" "	"	1.8	89° 20'	+19.2	+17.4		1592.7		-1650	-16	565,040	1,750,714		

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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
10/10/80		G. Cotcamp		D. Shahaldeen		6834		shl rlu		6	3						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Unap Mountain		Oklahoma	Kiamia		5N	16W/15W		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		
									1575.3								
32	1320		171°15.5'	+9.3°	2.8	89°20'	+15.4	+12.6		1587.9		-1320	-13	565,370	1,750,717		
32	1170		171°40'	+9.3°	0.8	89°30'	+10.2	+9.4		1584.4		-1170	-20	565,520	1,750,710	565,565 + 1,750,720 4-Way Intersect. el. 1586	
33	990		171°15.5'	+9.3°	1.5	89°30'	+8.6	+7.1		1582.4		-990	-10	565,700	1,750,720		
34	660		" "	"	0.7	TH	+3.3	+2.6		1577.9		-660	-6	566,030	1,750,724		
35	330		" "	"	4.0	-	-	-4.0		1571.3		-330	-3	566,360	1,750,727		
36	0				5.4	-	-	-5.4		1569.9	TP	0	0	566,690	1,750,730		
37	330		351°3.7'	+9.3°	12.8	-	-	-12.8		1562.5		+330	+3	567,020	1,750,733		
38	660		" "	"	11.8	91°-	-11.5	-23.3		1552.0		+660	+6	567,350	1,750,736		
39	990		" "	"	14.0	91°-	-17.3	-31.3		1544.0		+990	+9	567,680	1,750,739		
40	1320		" "	"	15.6	91°-	-23.0	-38.6		1536.7		+1320	+12	568,010	1,750,742		
41	1650		" "	"	11.8	91°-	-28.8	-40.6		1534.7		+1650	+15	568,340	1,750,745		
42	1980		" "	"	9.3	91°-	-34.6	-43.9		1531.4		+1980	+18	568,670	1,750,748		
43	2310		" "	"	2.2	91°-	-40.3	-42.5		1532.8		+2310	+21	569,000	1,750,751		
44	2640		351°13.7'	+9.3°	9.8	90°40'	-30.7	-40.5			TP	+2640	+24	569,324	1,750,754		
44	2640				14.3	90°34'	-26.1	-40.4		1534.9	TP						
	1980		171°3.1' +180°	+9.3°	9.1	TH	-9.9	-1.8			BS	+1980-5	+12				
	1980				14.1	89°50'	-5.8	-1.7	1533.2		BS						
45	1650		171°3.1'	+9.3°	7.9	TH	+8.3	+0.4		1533.6		-1650	-10	569,649	1,750,756		
46	1320		" "	"	3.0	-	-	-3.0		1530.2		-1320	-8	569,979	1,750,758		
47	990		" "	"	4.0	-	-	-4.0		1529.2		-990	-6	570,309	1,750,760		

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE 10/10/80	INSTRUMENT MAN G. Cotcamp	ROD MAN D. Shabeldeen	PARTY NUMBER 6834	NOTES CHECKED BY shl	LINE NO. 6	PAGE 4
AREA Oklahoma	TOPO MAP Unap Mountain 7 1/2'	STATE Oklahoma	COUNTY Kiowa	TWP 5N	RANGE 16/15W	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.	
									1533.2					
48	660		171° 3.1'	+9.3°	2.1	-		-2.1		1531.1		-660	-4	570,639 1,750,762
48	498		172° 12'	+9.3°	8.2	-		-8.2		1525.0		-498	-13	570,801 1,750,753 570,810 +1,750,770 4-way Intersect. el. 1532.
49	330		171° 3.1'	+9.3°	2.2	-		-2.2		1531.0		-330	-2	570,969 1,750,764
50	0				5.4	-		-5.4		1527.8	π	0	0	571,299 1,750,766
51	330		351° 25.7'	+9.3°	10.0	-		-10.0		1523.2		+330	+4	571,629 1,750,770
52	660		" "	"	12.7	OH	-3.3	-16.0		1517.2		+660	+8	571,959 1,750,774
53	990		" "	"	3.6	91°-	-17.3	-20.9		1512.3		+990	+13	572,289 1,750,779
54	1320		" "	"	2.9	91°-	-23.0	-25.9		1507.3		+1320	+17	572,619 1,750,783
55	1650		" "	"	1.9	91°-	-28.8	-30.7		1502.5		+1650	+21	572,949 1,750,787
56	1980		" "	"	11.2	90°40'	-23.0	-34.2		1499.0		+1980	+25	573,279 1,750,791
57	2310		351° 25.7'	+9.3°	11.7	90°40'	-26.9	-38.6		1494.6	TP	+2310-s	+29-s	573,604 1,750,790
57	2310				14.4	90°36'	-24.2	-38.6			TP			
	2640		171° 0.8' +180°	+9.3°	+7.5	TH	-13.2	-5.7	1488.9		BS	+2640-s	+14-s	
	2640				+14.3	89°34'	-20.0	-5.7			BS			
58	2310		171° 0.8'	+9.3°	7.7	TH	+11.6	+3.9		1492.8		-2310	-13	573,928 1,750,786
59	1980		" "	"	7.2	TH	+9.9	+2.7		1491.6		-1980	-11	574,258 1,750,788
60	1650		" "	"	7.0	TH	+8.3	+1.3		1490.2		-1650	-9	574,588 1,750,790
61	1320		" "	"	6.6	TH	+6.6	+0.0		1488.9		-1320	-7	574,918 1,750,792
62	990		" "	"	0.9	-		-0.9		1488.0		-990	-5	575,248 1,750,794
63	660		" "	"	3.0	-		-3.0		1485.9		-660	-4	575,578 1,750,795

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE 10/10/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Litzinger	PARTY NUMBER 6837	NOTES CHECKED BY BLL	LINE NO. 6	PAGE 5
AREA Oklahoma	TOPO MAP Unap Mountain	STATE Oklahoma	COUNTY Kiowa	TWP 5N	RANGE 16w/15W	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.	
									1488.9					
64	330		171° 08'	+9.3°	3.6	-		-3.6		1485.3		-330	-2	575,908 1,750,797
64	173		173° 43'	+9.3°	4.6	-		-4.6		1484.3		-173	-9	576,065 1,750,790 4-Way Intersect. el. 1485
65	0				5.4	-		-5.4		1483.5	X	0	0	576,238 1,750,799
66	330		351° 25'	+9.3°	6.4	-		-6.4		1482.5		+330	+4	576,568 1,750,803
67	660		" "	"	7.8	-		-7.8		1481.1		+660	+8	576,898 1,750,807
68	990		" "	"	9.7	-		-9.7		1479.2		+990	+12	577,228 1,750,811
69	1320		" "	"	10.2	-		-10.2		1478.7		+1320	+17	577,558 1,750,816
70	1650		" "	"	11.5	-		-11.5		1477.4		+1650	+21	577,888 1,750,820
71	1980		" "	"	12.8	-		-12.8		1476.1		+1980	+25	578,218 1,750,824
72	2310		" "	"	14.2	-		-14.2		1474.7		+2310	+29	578,548 1,750,828
73	2640		351° 25'	+9.3°	13.8	90° 4'	-3.1	-16.9	-16.8	1472.1	TP	+2640-3	+33	578,875 1,750,832
73	2640				10.5	90° 8'	-5.2	-16.7			TP			
	2970		171° 1' +180°	+9.3°	+12.2	TH	+14.9	-2.7	1469.4		BS	+2970-3	+16	
	2970				+5.9	89° 50'	-8.6	-2.7			BS			
74	2640		171° 1'	+9.3°	11.9	TH	+13.2	+1.3		1470.7		-2640	-15	579,202 1,750,833
75	2310		" "	"	9.2	TH	+11.6	+2.4		1471.8		-2310	-13	579,532 1,750,835
76	1980		" "	"	9.0	TH	+9.9	+0.9		1470.3		-1980	-11	579,862 1,750,837
77	1650		" "	"	1.9	-		-1.9		1467.5		-1650	-9	580,192 1,750,839
78	1320		" "	"	2.7	-		-2.7		1466.7		-1320	-7	580,522 1,750,841
79	990		" "	"	2.9	-		-2.9		1466.5		-990	-5	580,852 1,750,843

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE	10/28/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	G. LITZINGER	PARTY NUMBER	6834	NOTES CHECKED BY	shl rlw	LINE NO.	6	PAGE	6	
AREA	Oklahoma	TOPO MAP	Unap Mountain	STATE	Oklahoma	COUNTY	Kiowa	TWP	5N	RANGE	16W/15W	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
									1469.4						
80	660		171° 1'	+9.3	3.5	-	-3.5		1465.9			-660	-4	581,182	1,750,894
81	508		172° 6'	+9.3	3.4	-	-3.4		1466.0			-508	-12	581,334	1,750,836
81	330		171° 1'	+9.3	4.5	-	-4.5		1464.9			-330	-2	581,512	1,750,896
82	0				54	-	-5.4		1464.0	TP		0	0	581,892	1,750,898
83	330		351° 17'	+9.3	5.5	-	-5.5		1463.9			+330	+3	582,172	1,750,851
84	660		" "		6.4	-	-6.4		1463.0			+660	+7	582,502	1,750,855
85	990		" "		7.0	-	-7.0		1462.4			+990	+10	582,832	1,750,858
86	1320		" "		7.5	-	-7.5		1461.9			+1320	+13	583,162	1,750,861
87	1650		" "		8.1	-	-8.1		1461.3			+1650	+17	583,492	1,750,865
88	1980		" "		9.5	-	-9.5		1459.9			+1980	+20	583,822	1,750,868
89	2310		" "		10.8	-	-10.8		1458.6			+2310	+24	584,152	1,750,872
90	2640		351° 17'	+9.3	14.1	-	-14.1		1455.2	TP		+2640 -3	+27	584,479	1,750,875
90	2640				9.7	90° 6'	-4.6	-14.3	1452		TP				
	2640		171° 2.2' +180°	+9.3	+2.2	BH	+13.2	+15.4	145.3		BS	+2640 -3	+14		
	2640				+13.6	90° 2'	+1.5	+15.1	1470.5		BS				
91	2310		171° 2.2'	+9.3	14.4	-	-14.4		1456.1			-2310	-14	584,806	1,750,877
92	1980		" "		13.9	-	-13.9		1456.6			-1980	-12	585,136	1,750,879
93	1650		" "		12.2	-	-12.2		1458.3			-1650	-10	585,466	1,750,881
94	1320		" "		10.1	-	-10.1		1460.4			-1320	-8	585,796	1,750,883
95	990		" "		8.0	-	-8.0		1462.5			-990	-6	586,126	1,750,885

581,320 + 1750,890
4-Way Intersection Tol. 1966

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE 10/28/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY G.W.C. rldw	LINE NO. 6	PAGE 7
AREA Oklahoma	TOPO MAP Drum Mountain	STATE Oklahoma	COUNTY Kiowa	TWP 6N	RANGE 16W/15W	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.	
									1470.5					
96	660		171° 2.2'	+9.3°	6.7	-		-6.7		1463.8		-460	-4	586,456 1,750,887
JL T	508		171° 55'	+9.3°	3.5	-		-3.5		1467.0		-508	-11	586,608 1,750,880 586,595 + 1,750,980 4-Way Intersect el. 1466
97	330		171° 2.2'	+9.3°	5.5	-		-5.5		1465.0		-330	-2	586,786 1,750,889
98	0				5.4	-		-5.4		1465.1	T	0	0	587,116 1,750,891
99	330		351° 0'	+9.3°	3.8	-		-3.8		1466.7		+330	+2	587,496 1,750,893
100	660		" "	"	2.1	-		-2.1		1468.4		+660	+3	587,776 1,750,894
101	990		" "	"	1.8	-		-1.8		1468.7		+996	+5	588,106 1,750,896
102	1320		" "	"	2.0	-		-2.0		1469.5		+1320	+7	588,436 1,750,898
103	1650		" "	"	2.0	-		-2.0		1469.5		+1650	+9	588,766 1,750,900
104	1950		" "	"	0.6	-		-0.6		1469.9		+1980	+10	589,096 1,750,901
105	2310		" "	"	11.8	TH	+11.6	-0.2		1470.3		+2310	+12	589,426 1,750,903
106	2640		351° 0'	+9.3°	13.7	89°48'	+9.2	-4.5		1466.0	TP	+2640-3	+14-2	589,753 1,750,903
106	2640				12.2	89°50'	+7.7	-4.5			TP			
	1320		170° 43' +180°	+9.3°	+4.6	TH	-6.6	-2.0	1469.0		BS	+1320-3	0-2	
	1320				+5.7	89°40'	-7.7	-2.0			BS			
107	990		170° 43'	+9.3°	2.2	-		-2.2		1461.8		-990	0	590,080 1,750,901
108	660		" "	"	2.9	-		-2.9		1461.1		-660	0	590,910 1,750,901
109	330		" "	"	3.3	-		-3.3		1460.7		-330	0	590,790 1,750,901
110	0				5.4	-		-5.4		1458.6	T	0	0	591,070 1,750,901
111	325		2° 27'	+9.3°	2.9	-		-2.9		1461.1		+318	+66	591,388 1,750,967

SURVEY NOTES - HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
10/29/80		G. Cotcamp		G. Litzinger		6834		GWC rlew		6	8					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Oklahoma		Unap Mountain		Oklahoma	Kiowa		6N	16W/15W		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	X
									1464.0							
112	650		8° 2.6'	+9.3	3.5	89° 10'	+9.5	+6.0		1470.0	TP	+620-2	+194-2	591,688	1,751,093	curve
112	650				1.6	89° 20'	+7.6	+6.0			TP					T.P. opposite sta.
	642		155° 4' +180°	+9.3	+5.4	88° -	-22.4	-17.0			BS	+618-2	-173-2			
	642				+3.6	88° 10'	-20.5	-16.9	1453.1		BS					curve
113	410		154° 17'	+9.3	0.5	89° -	+7.2	+6.7		1459.8		-393	+116	591,911	1,751,034	591,895 + 16 T-rd (east)
113	325		156° 42'	+9.3	2.9	89° -	+5.7	+2.8		1455.9		-315	+79	591,989	1,750,997	
114	0				5.4	-		-5.4		1447.7	TP	0	0	592,304	1,750,918	
115	330		351° 12.4'	+9.3	8.9	-		-8.9		1444.2		+330	+3	592,634	1,750,921	
116	660		" "		12.2	-		-12.2		1440.9		+660	+6	592,964	1,750,924	
117	990		351° 12.4'	+9.3	11.0	BH	-5.0	-16.0		1437.1	TP	+990-2	+9	593,292	1,750,927	
117	990				10.2	90° 20'	-5.8	-16.0			TP					
	2640		170° 57.7' +180°	+9.3	+8.0	89° 30'	-23.0	-15.0	1422.1		BS	+2640-2	+12			
	2640				+14.1	89° 22'	-29.2	-15.1			BS					
118	2310		170° 57.7'	+9.3	7.7	89° 30'	+20.2	+12.5		1434.6		-2310	-11	593,620	1,750,928	
119	1980		" "		7.5	89° 30'	+17.3	+9.8		1431.9		-1980	-9	593,950	1,750,930	
120	1650		" "		0.8	TH	+8.3	+7.5		1429.6		-1650	-7	594,280	1,750,932	
121	1320		" "		1.1	TH	+6.6	+5.5		1427.6		-1320	-6	594,610	1,750,933	
122	990		" "		1.1	TH	+5.0	+3.9		1426.0		-990	-5	594,940	1,750,934	
123	660		" "		0.8	TH	+3.3	+2.5		1424.6		-660	-3	595,270	1,750,936	
124	330		" "		1.6	TH	+1.7	+0.1		1422.2		-330	-2	595,600	1,750,937	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	10/29/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	G. Litzinger	PARTY NUMBER	6839	NOTES CHECKED BY	G.W.C. xlw	LINE NO.	6	PAGE	9	
AREA	Oklahoma	TOPO MAP	Map Mountain	STATE	Oklahoma	COUNTY	Kiowa	TWP	6N	RANGE	16W/15W	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
									1422.1						
125	0				5.4	-		-5.4		1416.7	T	0	0	595,930	1,750,939
126	330		350°45'	+9.3°	11.7	-		-11.7		1410.4		+330	0	596,260	1,750,939
127	660		"	"	5.3	-		-5.3		1416.8		+660	+1	596,590	1,750,990
128	990		"	"	5.3	-		-5.3		1416.8		+990	+1	596,920	1,750,990
128	1235		350°35'	+9.3°	11.8	-		-11.8		1410.3		+1235	-3	597,165	1,750,936
129	1320		350°45'	+9.3°	14.7	-		-14.7		1407.4		+1320	+1	597,250	1,750,940
130	1650		"	"	12.5	90°10'	-4.8	-17.3		1404.8		+1650	+1	597,580	1,750,990
131	1980		"	"	13.7	-		-13.7		1408.4		+1980	+2	597,910	1,750,991
132	2310		350°45'	+9.3°	11.5	-		-11.5		1410.6	TP	+2310-2	+2	598,238	1,750,991
132	2310				14.4	89°56'	+2.7	-11.7			TP				
	1650		171°20' ±180'	+9.3°	+7.1	BH	+8.3	+15.4	1426.0		BS	+1650-2	+18		
	1650				+13.5	90°4'	+1.9	+15.4			BS				
133	1320		171°20'	+9.3°	9.8	BH	-6.6	-16.4		1409.6		-1320	-15	598,566	1,750,944
134	990		"	"	13.0	90°30'	-8.6	-21.6		1404.4		-990	-11	598,896	1,750,948
135	660		"	"	12.3	-		-12.3		1413.7		-660	-7	599,226	1,750,952
136	330		"	"	6.4	-		-6.4		1419.6		-330	-4	599,556	1,750,955
137	0				5.4	-		-5.4		1420.6	T	0	0	599,886	1,750,959
138	330		351°5'	+9.3°	6.9	-		-6.9		1419.1		+330	+2	600,216	1,750,961
139	660		"	"	9.2	-		-9.2		1416.8		+660	+4	600,546	1,750,963
140	990		"	"	9.8	-		-9.8		1416.2		+990	+7	600,876	1,750,966

597180 ± 1,750,905
4-Way Intersect. el. 141

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.		PAGE				
10/29/80		G. Cotcamp		G. Litzinger		6834		G.W. J.W.			6		10				
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER			
Oklahoma		Drap Mountain		Oklahoma		Kiowa		6N		16W/15W				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	
														Y	X		
									1426.0								
141	1320		351°5'	+9.3°	9.6	-		-9.6		1416.4		+1320	+9	601,206	1,750,968		
142	1650		" "	"	10.4	-		-10.4		1415.6		+1650	+11	601,536	1,750,970		
143	1980		351°5'	+9.3°	12.1	-		-12.1		1413.9	TP	+1980-2	+13	601,864	1,750,972		
143	1980				2.2	BH	-9.9	-12.1			TP						
	2310		171°12' + 180°	+9.3°	+7.4	89°20'	-26.9	-19.5	1394.4		BS	+2310-2	+20				
	2310				+3.3	89°26'	-22.8	-19.5			BS						
144	1980		171°12'	+9.3°	5.7	89°20'	+23.0	+17.3		1411.7		-1980	-17	602,192	1,750,975		
7)	1720		171°27.3'	+9.3°	3.5	89°30'	+15.0	+11.5		1405.9		-1720	-23	602,452	1,750,969	602,490 + 1,750,965 T-rd (east) pl. 1406	
145	1650		171°12'	+9.3°	0.1	TH	+8.3	+8.2		1402.6		-1650	-14	602,522	1,750,978		
146	1320		" "	"	4.7	-		-4.7		1389.7		-1320	-12	602,852	1,750,980		
147	990		" "	"	13.3	-		-13.3		1381.1		-990	-9	603,182	1,750,983		
148	660		" "	"	13.8	BH	-3.3	-17.1		1377.3		-660	-6	603,512	1,750,986		
149	330		" "	"	13.0	91°-	-5.8	-18.8		1375.6		-330	-3	603,842	1,750,989		
150	0				5.4	-		-5.4		1389.0	T	0	0	604,172	1,750,992		
151	330		351°4'	+9.3°	11.2	91°-	-5.8	-17.0		1377.4		+330	+2	604,502	1,750,994		
152	660		" "	"	10.1	91°-	-11.5	-21.6		1372.8		+660	+4	604,832	1,750,996		
153	990		350°12.8'	+9.3°	6.4	91°-	-17.3	-23.7		1370.7		+990	-8	605,162	1,750,989	Note-stn 153-160	
154	1320		" "	"	1.9	91°-	-23.0	-24.9		1369.5		+1320	-11	605,492	1,750,981	we on west side of	
155	1650		350°12.8'	+9.3°	11.5	90°30'	-14.4	-25.9		1368.5	TP	+1650-5	-14	605,817	1,750,978	road (permit).	
155	1650				6.7	90°40'	-19.2	-25.9			TP						

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 10/29/80	INSTRUMENT MAN G. Cotcamp		ROD MAN G. Litzinger		PARTY NUMBER 6834		NOTES CHECKED BY G.W.C. J.W.		LINE NO. 6	PAGE 11
AREA Oklahoma	TOPO MAP Unap Mountain	STATE Oklahoma	COUNTY Kiowa	TWP 6N	RANGE 16W/15W	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.	
155										1368.5				
	660		172° 55' +180°	+9.3°	+12.7	-		+12.7	1381.2		BS	+660	+26	
	660				+9.4	0H	+3.3	+12.7			BS			
156	330		174° 30'	+9.3°	12.0	-		-12.0		1369.2		-329	-22	606,193 1,750,982
157	0				5.4	-		-5.4		1375.8	X	0	0	606,472 1,751,004
158	330		350° 49'	+9.3°	8.3	-		-8.3		1372.9		+330	+1	606,802 1,751,005
159	660		" "	"	11.0	-		-11.0		1370.2		+660	+1	607,132 1,751,005
160	990		" "	"	13.1	-		-13.1		1368.1		+990	+2	607,462 1,751,006
TP	1258		351° 11'	+9.3°	11.6	-		-11.6		1369.6	TP	+1258	+11	607,730 1,751,015
TP	1258				5.3	0H	-6.3	-11.6			TP			607,730 + 1,751,015 4-way intersect.
	1318				+13.5	91° -	+23.0	+36.5	1406.1		BS			5,298' (stadia)
	1318				+5.8	91° 20'	+30.7	+36.5			BS			offset west
X	0				5.4	-		-5.4		1400.7	X			between 160 + 161.
TP	1480				9.1	91° -	-25.8	-34.9		1371.2	TP			
TP	1480				13.5	90° 56'	-21.5	-35.0			TP			
	1170				+4.4	-		+4.4	1375.6		BS			
	1170				+10.3	TH	-5.9	+4.4			BS			
X	0				5.4	-		-5.4		1370.2	X			
H	1280				2.6	-		-2.6		1373.0	TP			90° bend north e/l
H	1280				9.0	TH	+6.4	-2.6			TP			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 10/30/90	INSTRUMENT MAN G LITZINGER	ROD MAN G COTRANIO	PARTY NUMBER 6834	NOTES CHECKED BY GWC JAW	LINE NO. 6	PAGE 12
AREA Oklahoma	TOPO MAP Gotebo 15'	STATE Oklahoma	COUNTY Kinwa	TWP 6N	RANGE 16W	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.		Y	X
										1373.0				607760	1,745,790	
	1382		171° 58.6' +180	+9.3°	+7.6	-		+7.6	1380.6		BS					
	1382				+145	TH	-6.9	+7.6			BS	+1382	+31			
141	1320		171° 11.5'	+9.3°	7.7	-		-7.7		1372.9		-1320	-11	607822	1,745,810	
142	990		"	"	7.6	-		-7.6		1373.0		-990	-8	608152	1,745,813	
143	660		"	"	8.6	-		-8.6		1372.0		-660	-6	608982	1,745,815	
144	330		"	"	8.4	-		-8.4		1372.2		-330	-3	608812	1,745,818	
145	0				5.4	-		-5.4		1375.2	TP	0	0	609192	1,745,821	
146	330		350° 34.8'	+9.3°	1.6	-		-1.6		1379.0		+330	-1	609472	1,745,820	Bridge
147	660		"	"	6.6	-		-6.6		1379.0		+660	-1	609802	1,745,820	
148	990		"	"	9.5	-		-9.5		1371.1		+990	-2	610132	1,745,819	
149	1320		"	"	9.3	-		-9.3		1371.3		+1320	-3	610462	1,745,818	
170	1650		350° 34.8'	+9.3°	10.1	-		-10.1		1370.5	TP	+1650	-3	610792	1,745,818	
170	1450				7.2	90° 06'	-2.9	-10.1			TP					
	1450		171° 04.4' +180	+9.3°	+10.3	-		+10.3	1380.8		BS	+1450	+11			
	1450				+2.1	814	+8.3	+10.4			BS					
171	1320		171° 04.4'	+9.3°	10.2	-		-10.2		1370.6		-1320	-9	611122	1,745,820	
172	990		"	"	10.0	-		-10.0		1370.8		-990	-4	611452	1,745,823	
173	660		"	"	8.4	-		-8.4		1372.4		-660	-4	611782	1,745,825	
174	330		"	"	5.2	-		-5.2		1375.6		-330	-2	612112	1,745,827	
176	0				5.4	-		-5.4		1375.4	TP	0	0	612442	1,745,829	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 10/30/80	INSTRUMENT MAN G LITZINGER		ROD MAN G COTRAMP		PARTY NUMBER 6834		NOTES CHECKED BY Grc. shw		LINE NO. 6	PAGE 13
AREA Oklahoma	TOPO MAP Gatebo 15"	STATE Oklahoma	COUNTY KIOWA		TWP 6N	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.		Y
									1380.8						
176	330		350° 6.9'	+9.3°	3.4	-		-3.4		1377.4		+330	-3	612,772	1,745,826
177	594		349° 24.7'	+9.3°	1.2	-		-1.2		1379.6		+594	-13	613,036	1,745,816
177	660		350° 06.9'	+9.3°	1.4	-		-1.4		1379.4		+660	-7	613,102	1,745,822
178	990		"	"	4.5	TH	+5.0	+0.5		1381.3		+990	-10	613,432	1,745,819
179	1320		"	"	4.7	89° 30'	+11.5	+6.8		1387.6		+1320	-13	613,762	1,745,816
180	1650		"	"	1.0	89° 30'	+14.4	+13.4		1394.2		+1650	-17	614,092	1,745,812
181	1980		"	"	4.6	89° 20'	+23.0	+18.4		1399.2		+1980	-20	614,422	1,745,809
182	2310		350° 6.9'	+9.3°	9.0	89° 20'	+26.9	+18.9			TP	+2310	-24 +2	614,752	1,745,807
182	2310				14.9	89° 10'	+33.6	+18.7			TP				
	2310		170° 10.6' +180	+9.3°	+9.5	TH	-11.6	-3.1	1396.4		BS	+2310	-21 +2		
	2310				+3.8	89° 50'	-6.7	-2.9			BS				
183	1980		170° 10.6'	+9.3°	5.2	-		-5.2		1391.2		-1980	+19	615,082	1,745,806
184	1650		"	"	12.6	-		-12.6		1383.8		-1650	+15	615,912	1,745,803
185	1320		"	"	10.3	BH	-6.6	-16.9		1379.5		-1320	+12	615,742	1,745,800
186	990		"	"	14.4	BH	-5.0	-19.4		1377.0		-990	+9	616,072	1,745,797
187	660		"	"	14.7	BH	-3.3	-18.0		1378.4		-660	+4	616,902	1,745,794
188	330		"	"	12.4	-		-12.6		1383.8		-330	+3	616,732	1,745,791
189	0				5.4	-		-5.4		1391.0	T	0	0	617,062	1,745,788
190	330		360° 46.4'	+9.3°	8.5	-		-8.5		1387.9		+330	0	617,392	1,745,788
191	660		"	"	13.0	-		-13.0		1383.4		+660	+1	617,722	1,745,789

613,090 + 1,745,805
Trd (east) el. 1378.

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
10/30/80		GLITZINGER		G. COTUAMP		6834		Gwl. <i>dlw</i>		6		14			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Gotebo 15"		Oklahoma		KNOX		7N		16W				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
									1396.4						
192	990		350° 46.4'	+9.3°	14.2	—		-14.2		1382.2		+990	+1	618,052	1,745,789
192	1142		349° 53.6'	+9.3°	14.4	—		-14.6		1381.8		+1142	-14	618,204	1,745,772
193	1320		350° 46.4'	+9.3°	14.7	—		-14.7		1381.7		+1320	+2	618,382	1,745,790
194	1650				6.8	—		-6.8		1389.6		+1650	+2	618,712	1,745,790
195	1950				9.4	TH	+9.9	+0.5		1396.9		+1950	+3	619,042	1,745,791
196	2310		350° 46.6'	+9.3°	6.0	TH	+11.6	+5.6		1402.0	TP	+2310-3	+3+2	619,369	1,745,793
196	2310				1.0	89° 50'	+6.7	+5.7			TP				
	1650		170° 58' +180	+9.3°	+12.4	BH	+8.3	+20.7	1422.7		BS	+1650-3	+4+2		
	1650				+11.1	70° 20'	+9.6	+20.7			BS				
197	1320		170° 58'	+9.3°	10.6	BH	-6.6	-17.2		1405.5		-1320	-6	619,696	1,745,797
198	990		"		10.7	BH	-5.0	-15.7		1407.0		-940	-5	620,026	1,745,798
199	640		"		12.4	—		-12.4		1410.3		-660	-3	620,356	1,745,800
200	330		"		9.0	—		-9.0		1413.7		-330	-2	620,686	1,745,801
201	0				5.4	—		-5.4		1417.3	TP	0	0	621,016	1,745,803
202	330		350° 31.2'	+9.3°	5.9	—		-5.9		1416.8		+330	-1	621,346	1,745,802
203	640				5.5	—		-5.5		1417.2		+640	-2	621,676	1,745,801
204	790				4.3	—		-4.3		1418.4		+790	-3	622,006	1,745,800
205	1320		350° 31.2'	+9.3°	10.1	—		-10.1		1412.6	TP	+1320-3	-4+2	622,333	1,745,801
205	1320				6.2	90° 10'	-3.8	-10.0			TP				

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
10/30/90		G LITZINGER		G COTCHAMP		6834		G.M. J.W.		6	15					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Oklahoma		Gatebo 15"		OKLAHOMA	KIDWA		7N	16W		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	
205										1412.6						
	2310		171° 27.5' +180	+9.3°	+10.7	89°	-40.3	-29.6	1383.0		BS	+2310 -4	+31 +2			
	2310				+4.0	89° 10'	-33.6	-29.6			BS					
204	1980		171° 27.5'	+7.3°	14.5	89° -	+34.6	+20.1		1403.1		-1480	-26	622,659	1,745,808	
207	1660		"	"	14.4	89° -	+28.8	+14.4		1397.4		-1650	-22	622,989	1,745,812	
208	1320		"	"	13.4	89° -	+23.0	+9.6		1392.6		-1320	-17	623,319	1,745,817	
209	990		"	"	11.4	89° -	+17.3	+5.9		1388.9		-990	-13	623,649	1,745,821	
210	660		"	"	1.7	TH	+3.3	+1.6		1384.6		-660	-9	623,979	1,745,825	
211	330		"	"	2.7	-		-2.7		1380.3		-330	-4	624,309	1,745,830	
212	0				5.4	-		-5.4		1377.6	T	0	0	624,639	1,745,834	
213	330		351° 58.1'	+9.3°	6.3	-		-6.3		1376.7		+330	+7	624,969	1,745,841	
214	660		"	"	6.5	-		-6.5		1376.5		+660	+15	625,299	1,745,849	
215	990		"	"	6.4	-		-6.4		1376.6		+990	+22	625,629	1,745,856	
216	1320		"	"	2.0	-		-2.0		1381.0		+1320	+29	625,959	1,745,863	
217	1650		"	"	1.0	TH	+8.3	+7.3		1390.3		+1650	+37	626,289	1,745,871	
218	1980		"	"	4.2	89° 20'	+23.0	+18.8		1401.8		+1980	+44	626,619	1,745,878	
219	2310		351° 58.1'	+9.3°	5.2	89° 10'	+33.6	+28.4	+28.2	1411.2	TP	+2309 -4	+51 +2	626,944	1,745,887	
219	2310				12.2	89° -	+40.3	+28.1			TP					
	990		171° 10.1' +180	+9.3°	+3.2	-		+3.2	1414.4		BS	+990 -4	+8 +1			
	990				+8.2	TH	-5.0	+3.2			BS					
220	660		171° 10.1'	+9.3°	1.8	-		-1.8		1412.6		-660	-5	627,270	1,745,891	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 10/30/80	INSTRUMENT MAN G LITZINGER	ROD MAN G COTCAMP	PARTY NUMBER 6234	NOTES CHECKED BY bwc jrw	LINE NO. 6	PAGE 16
AREA OKLAHOMA	TOPO MAP GoTabo 15-11	STATE OKLAHOMA	COUNTY Kiowa	TWP 7N	RANGE 16W	PPM
PARTY MANAGER DARLIS						

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			
									1414.4									
221	330		171° 10.1'	+9.3°	4.5	-		-4.5		1409.9		-330	-3	627,600	1,745,893			
222	0				5.4	-		-5.4		1409.0	T	0	0	627,930	1,745,896			
223	330		350° 46.2'	+9.3°	8.4	-		-8.6		1405.8		+330	0	628,260	1,745,896	horiz. correct. y = -21 x = +15		
224	660		" "		0.8	-		-0.8		1413.6		+660	-1	628,590	1,745,895			
225	810		350° 38.2'	+9.3°	0.2	-		-0.2		1414.2		+810	-1	628,740	1,745,895	628,740 + 1,745,895 4 way el. 1415		
225	990		350° 46.2'	+9.3°	1.4	-		-1.6		1412.8		+990	-1	628,920	1,745,895			
224	1320		350° 46.2'	+9.3°	4.3	-		-4.3		1410.1	TP	+1320-2	+2	629,248	1,745,898	Note: sta. 225-241 are on west side of road (permit).		
	1650		170° 58' +180°	+9.3°	+10.2	-		+10.2	1420.3		BS	+1650-2	+8					
	1650				14.2	89° 52'	-3.8	+10.4			BS							
227	1320		170° 58'	+9.3°	8.3	-		-8.3		1412.0		-1320	-6	629,576	1,745,900			
228	990		" "	"	5.2	-		-5.2		1415.1		-990	-5	629,906	1,745,901			
229	660		" "	"	5.0	-		-5.0		1415.3		-660	-3	630,236	1,745,903			
230	330		" "	"	7.9	-		-7.9		1412.4		-330	-2	630,566	1,745,904			
231	0				5.4	-		-5.4		1414.9	T	0	0	630,896	1,745,906			
232	330		351° 30.6'	+9.3°	10.9	-		-10.9		1409.4		+330	+5	631,226	1,745,911			
233	660		" "	"	16.1	91°	-11.5	-21.6		1398.7		+660	+9	631,556	1,745,915			
234	990		" "	"	12.2	91°	-17.3	-29.5		1390.8		+990	+14	631,886	1,745,920			
235	1320		" "	"	10.6	91°	-23.0	-33.6		1386.7		+1320	+19	632,216	1,745,925			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 10/31/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY G.C. J.L.W.	LINE NO. 6	PAGE 17
AREA Oklahoma	TOPO MAP Gotebo 15'	STATE Oklahoma	COUNTY Kiowa	TWP 7N	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	NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.	COORDINATES		REMARKS
														Y	X	
									1420.3							
236	1650		351° 30.6'	+9.3°	11.5	90° 40'	-19.2	-30.7		1389.6	TP	+1650-2	+2.3	632,544	1,745,929	
236	1650				14.3	90° 34'	-16.3	-30.6			TP					
	660		171° 45' +180°	+9.3°	+6.6	-		+6.6	1396.2		BS	+460-2	+1.2			
	660				+9.9	TH	-3.3	+6.6			BS					
237	330		171° 45'	+9.3°	6.4	-		-6.9		1389.8		-330	-4	632,872	1,745,935	
238	0				5.9	-		-5.4		1390.8	π	0	0	633,202	1,745,941	
239	320		328° 52'	+9.3°	4.6	-		-4.6		1391.6		+297	-119	633,499	1,745,822	curve
240	612		315° 8.8'	+9.3°	5.0	-		-5.0		1391.2	TP	+498-2	-354	633,698	1,745,585	
240	612				8.0	TH	+3.1	-4.9			TP					
	340		155° 43' +180°	+9.3°	+7.8	-		+7.8	1399.0		BS	+328-3	-88			
	340				+9.5	TH	-1.7	+7.8			BS					horiz. correct. y=-13' x=0'
241	12		189° 5'	+9.3°	5.1	-		-5.1		1393.9		-11	-4	634,012	1,745,493	
π	13		157° 24'	+9.3°	5.1	-		-5.1		1393.9		-13	+3	634,010	1,745,500	634,010 + 1,745,500 T-intersect.
π	0				5.4	-		-5.4		1393.6	π	0	0	634,023	1,745,497	
TP	2000		west		8.2	89° -	+34.9	+26.7		1425.7	TP					4,830' offset
TP	2000				14.0	88° 50'	+40.7	+26.7			TP					west between
	1400		east		+8.1	-		+8.1	1433.8		BS					241 + 242.
	1400				+1.1	BH	+7.0	+8.1			BS					
π	1430		west		6.7	TH	+7.2	+0.5		1434.3	TP					4-Way Intersect. el. 1432.
π	1430				3.8	89° 50'	+4.2	+0.9			TP					Town of Gotebo

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	10/31/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	G. Litzinger	PARTY NUMBER	6834	NOTES CHECKED BY	Cuc	LINE NO.	6	PAGE	18	
AREA	Oklahoma	TOPO MAP	Gatebo 15'	STATE	Oklahoma	COUNTY	Kiowa	TWP	7N	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	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
1/1										1432.0				634,025	1,740,635	→ scaled R
	2312		171° 33.2' +180°	+9.3°	+14.7	TH	-11.6	+3.1	1435.2		BS	+2312+2	+34-3			4-Way Intersect. el. A32.
	2312				+14.1	89° 44'	-10.8	+3.3	+3.2		BS					RT. #59
242	1980		171° 27'	+9.3°	12.7	TH	+9.9	-2.8		1432.4		-1980	-24	634,359	1,740,640	↓
243	1650		" "	"	10.0	TH	+8.3	-1.7		1433.5		-1650	-21	634,689	1,740,695	
244	1320		" "	"	7.8	TH	+6.6	-1.2		1434.0		-1320	-17	635,019	1,740,649	
245	990		" "	"	5.8	TH	+5.0	-0.8		1434.4		-990	-13	635,349	1,740,653	
246	660		" "	"	3.4	TH	+3.3	-0.1		1435.1		-660	-9	635,679	1,740,657	
247	330		" "	"	1.5	TH	+1.7	+0.2		1435.4		-330	-4	636,009	1,740,662	
248	0		" "	"	5.4	-		-5.7		1429.8	TP	0	0	636,339	1,740,666	
249	330		351° 6.8'	+9.3°	11.8	91° -	-5.8	-17.6		1417.6		+330	+2	636,669	1,740,668	
250	660		" "	"	13.4	91° -	-11.5	-24.9		1410.3		+660	+5	636,999	1,740,671	
251	990		" "	"	8.1	91° -	-17.3	-25.9		1409.8		+990	+7	637,329	1,740,673	
252	1320		" "	"	10.2	90° 40'	-15.9	-25.6		1409.6		+1320	+10	637,659	1,740,676	
253	1650		" "	"	11.8	90° 30'	-14.4	-26.2		1409.0		+1650	+12	637,989	1,740,678	
254	1980		" "	"	9.3	90° 30'	-17.3	-26.6		1408.6		+1980	+14	638,319	1,740,680	
255	2310		" "	"	2.8	90° 30'	-20.2	-23.0		1412.2		+2310	+17	638,649	1,740,683	
256	2640		351° 6.8'	+9.3°	11.0	90° 10'	-7.7	-18.7		1416.5	TP	+2640	+19-3	638,979	1,740,682	
256	2640		" "	"	5.5	GH	-13.2	-18.7			TP					
	1980		171° 26.4' +180°	+9.3°	+9.0	BH	+9.9	+18.9	1435.4		BS	+1980+2	+24-3			
	1980		" "	"	+14.3	90° 8'	+4.6	+18.9			BS					

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 10/31/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY C.C. elw	LINE NO. 6	PAGE 19
AREA Oklahoma	TOPO MAP Gatch 15'	STATE Oklahoma	COUNTY Kiowa	TWP 7N	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.		Y	X
									1435.4							
257	1650		171°26.4'	+9.3°	10.7	BH	-8.3	-19.0		1416.4		-1650	-21	639,311	1,740,684	bridge
1F	1570		171°58'	+9.3°	11.0	BH	-7.9	-18.9		1416.5		-1570	-35	639,391	1,740,670	639,400+1,740,685 T-rd (east) el. 1416.0
258	1320		171°26.4'	+9.3°	14.3	BH	-6.6	-20.9		1414.5		-1320	-17	639,641	1,740,688	
259	990		" "	"	7.1	91°-	-17.3	-24.4		1411.0		-990	-13	639,971	1,740,692	
260	660		" "	"	14.0	BH	-3.3	-17.3		1418.1		-660	-9	640,301	1,740,696	
261	330		" "	"	8.1	-		-8.1		1427.3		-330	-4	640,631	1,740,701	
262	0		" "	"	5.4	-		-5.4		1430.0	T	0	0	640,961	1,740,705	
263	330		351°9'	+9.1°	9.0	-		-9.0		1426.4		+330	+1	641,291	1,740,706	
264	660		" "	"	10.8	-		-10.8		1424.6		+660	+3	641,621	1,740,708	
265	990		" "	"	0.2	-		-0.2		1435.2		+990	+4	641,951	1,740,709	
266	1320		" "	"	4.8	89°30'	+11.5	+6.7		1442.1		+1320	+4	642,281	1,740,711	
267	1650		351°9'	+9.1°	8.7	89°30'	+14.4	+5.7		1441.1	TP	+1650+1	+7 -3	642,412	1,740,709	
267	1650		" "	"	5.8	89°36'	+11.5	+5.7			TP					
	2310		171°24.8'+180°	+9.1°	+12.8	-		+12.8	1453.9		BS	+2310+1	+21 -3			
	2310		" "	"	+1.3	BH	+11.6	+12.9			BS					
268	1980		171°24.8'	+9.1°	8.4	BH	-9.9	-18.3		1435.6		-1980	-18	642,943	1,740,709	
269	1650		" "	"	9.9	BH	-8.3	-18.2		1435.7		-1650	-15	643,273	1,740,712	
270	1320		" "	"	12.9	-		-12.9		1441.0		-1320	-12	643,603	1,740,715	
271	990		" "	"	7.9	-		-7.9		1446.0		-990	-9	643,933	1,740,718	
272	660		" "	"	6.7	-		-6.7		1447.2		-660	-6	644,263	1,740,721	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	10/31/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	G. Litzinger	PARTY NUMBER	6834	NOTES CHECKED BY	G.C. rlv	LINE NO.	6	PAGE	20	
AREA	Oklahoma	TOPO MAP	Gatebo 15'	STATE	Oklahoma	COUNTY	Nowa	TWP	7N	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.	
									1453.9					
273	330		171°24.8'	+9.1°	5.7	-		-5.7		1448.2		-330	-3	644,593 1,740,724
275	300		174°32'	+9.1°	5.4	-		-5.4		1448.5		-299	-19	644,624 1,740,708 644,615 + 1,740,700 4-Way Intersect. pl. 1449
274	0				5.4	-		-5.4		1448.5	X	0	0	644,923 1,740,727
275	330		351°14.3'	+9.1°	3.8	-		-3.8		1450.1		+330	+2	645,253 1,740,729
276	660		" "	"	2.9	-		-2.9		1451.0		+660	+4	645,583 1,740,731
277	990		" "	"	1.9	-		-1.9		1452.0		+990	+6	645,913 1,740,733
278	1320		" "	"	0.5	-		-0.5		1453.4		+1320	+8	646,243 1,740,735
279	1650		" "	"	7.8	TH	+8.3	+0.5		1454.4		+1650	+10	646,573 1,740,737
280	1980		" "	"	6.0	TH	+9.9	+3.9		1457.8		+1980	+12	646,903 1,740,739
281	2310		351°14.3'	+9.1°	4.7	TH	+11.6	+6.9		1460.8	TP	+2310	+12	+14 -3 647,235 1,740,738
281	2310				13.3	89°30'	+20.2	+6.9			TP			
	1320		171°32.3'+180°	+9.1°	+11.2	90°30'	+11.5	+22.7	1483.5		BS	+1320	+11	+15 -3
	1320				+15.0	90°20'	+7.7	+22.7			BS			
282	990		171°32.3'	+9.1°	11.2	90°30'	-8.6	-19.8		1463.7		-990	-11	647,566 1,740,739
283	660		" "	"	12.0	TH	-3.3	-15.3		1468.2		-660	-7	647,896 1,740,743
284	330		" "	"	9.5	-		-9.5		1474.0		-330	-4	648,226 1,740,746
285	0				5.4	-		-5.4		1478.1	X	0	0	648,556 1,740,750
286	330		351°5'	+9.1°	1.3	-		-1.3		1482.2		+330	+1	648,886 1,740,751
287	660		" "	"	0.6	-		-0.6		1482.9		+660	+2	649,216 1,740,752
288	990		" "	"	0.1	-		-0.1		1483.4		+990	+3	649,546 1,740,753

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 10/31/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Litzinger	PARTY NUMBER 6839	NOTES CHECKED BY G.C. rlv	LINE NO. 6	PAGE 21
AREA Oklahoma	TOPO MAP Gotebo 15'	STATE Oklahoma	COUNTY Kiowa	TWP 7N	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	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
									1483.5							↑ Kiowa Co.
289	1320		351° 5'	+9.1°	0.5	-	-0.5			1483.0		+1320	+4	649,876	1,740,759	
FF	1364		350° 28'	+9.1°	3.7	89° 50'	+4.0	+0.3		1483.8		+1364	-10	649,920	1,740,740	649,920 + 1,740,740 4-way Intersect. el. 1483.
FF	1364				7.5	89° 40'	+7.9	+0.4								
																Note: 5,280' (scaled) offset east between sta. 289 and 290.

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/1/80	INSTRUMENT MAN G LITZINGER	ROD MAN G COTCAMP	PARTY NUMBER 6834	NOTES CHECKED BY SGL	LINE NO. 6	PAGE 22
AREA Oklahoma	TOPO MAP Coteco 15'	STATE Oklahoma	COUNTY Washita	TWP 8N	RANGE 16W	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.		Y
R										1457.0	R			649,910 1,746,025 → sealed	
7F	938 x 2		170° 33.7' +180	+9.1	+9.8	91°	+32.6	+42.4	1499.4		BS	+1866.5	-11		4-Way Intersect. 1957.
7F	1866				+4.5	91° 10'	+38.0	+42.5			BS				
290	1578		170° 18.7'	+9.1	11.6	91°	-27.5	-39.1		1466.3		-1578	+16	650,153 1,746,030	Washita Co.
291	1248		" "	"	11.3	91°	-21.8	-33.1		1466.3		-1248	+13	650,523 1,746,027	↓
292	918		" "	"	9.8	91°	-16.0	-25.8		1473.6		-918	+9	650,853 1,746,023	
293	588		" "	"	8.9	91°	-10.3	-19.2		1450.2		-588	+6	651,183 1,746,020	
294	258		" "	"	12.3	90° -		-12.3		1487.1		-258	+3	651,513 1,746,017	
TP	0				5.4	-		-5.4		1494.0		0	0	651,771 1,746,014	
TP	58012 1160		81° 51.9°	+9.1	7.4	8H	-5.8	-15.2		1484.2	TP	-20 -5	+1160	651,746 1,747,174	OFFSET EAST
TP	1160				11.6	91° 10'	-3.4	-15.0			TP				90° CURVE (1160)
	1074		171° 35.4' +180	+9.1	+12.3	91°	+18.7	+31.0	15131.2		BS	+1074 -5	+13		STADIA
	1074				+9.1	91° 10'	+21.9	+31.0			BS				
295	990		171° 8.3'	+9.1	8.5	91° 10'	-20.2	-28.7		1486.5		-990	-4	651,825 1,747,183	
296	660		" "	"	7.6	91° -	-11.5	-19.1		1496.1		-660	-3	652,155 1,747,184	
297	330		" "	"	8.4	-		-8.6		1506.6		-330	-1	652,445 1,747,186	
298	0				5.4	-		-5.4		1509.8	TP	0	0	652,815 1,747,187	
299	330		351° 10.7'	+9.1	5.6	-		-5.6		1509.6		+330	+2	653,145 1,747,189	
300	660		" "	"	6.1	-		-6.1		1509.6		+660	+3	653,475 1,747,190	
301	990		" "	"	6.3	-		-6.3		1508.9		+990	+5	653,805 1,747,192	
302	1320		" "	"	6.0	-		-6.0		1509.2		+1320	+6	654,135 1,747,193	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/1/80	INSTRUMENT MAN GLITZINGER		ROD MAN G. COUCHAMP		PARTY NUMBER 6834		NOTES CHECKED BY Bld slw		LINE NO. 6	PAGE 23
AREA OKLAHOMA	TOPO MAP GATEBO 15"		STATE OKLAHOMA	COUNTY WASHPITA	TWP 8N	RANGE 16W	PPM	PARTY MANAGER D. B. B. 15		

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	
									1575.2							
303	1650		351° 10.7'	+9.1°	3.0			-3.0		1572.2	TP	+1650-5	+8 +3	654,460	1747,198	
303	1650				11.2	TH	+8.3	-2.9			TP					
	1980		170° 56.3' +180°	+9.1°	+14.2	89°	-34.6	-20.4			BS	+1980-5	+1 +4			
	1980				+8.3	89° 10'	-28.8	-20.5	1491.7		BS					
304	1650		170° 56.3'	+9.1°	4.5	TH	+8.3	+3.8		1495.5		-1650	-1	654,785	1747,202	
305	1320		"		9.5	-		-8.5		1483.2		-1320	-1	653,115	1747,202	
306	990		"		13.3	-		-13.3		1478.4		-990	-1	653,444	1747,202	
1/2	712		171° 36.6'	+9.1°	10.4	-		-10.4		1481.3		-712	-9	653,723	1747,194	653,730 1747,190 INT, CL 1481
307	660		170° 56.3'	+9.1°	9.8	-		-9.8		1481.9		-660	0	653,725	1747,203	
308	330				7.1	-		-7.1		1484.6		-330	0	652,105	1747,203	
309	0				5.4	-		-5.4		1486.3	TP	0	0	652,435	1747,203	
310	330		350° 52.8'	+9.3°	14.3	92° 20'	-13.4	-27.7		1464.0		+330	+1	656,765	1747,204	
311	660	659	" "	"	13.7	93°	-34.5	-48.2		1443.5		+659	+2	657,094	1747,205	
312	990	989	" "	"	14.7	93°	-51.7	-66.4		1425.3		+989	+3	657,424	1747,206	
313	1320	1318	" "	"	9.6	93°	-69.0	-78.6		1413.1		+1318	+4	657,783	1747,207	
314	1650	1648	" "	"	10.8	92° 30'	-71.9	-82.7		1409.0		+1648	+5	658,083	1747,208	
315	1980	1978	350° 52.8'	+9.3°	10.1	92° 10'	-74.8	-84.9		1406.8	TP	+1978-4	+6 +4	658,469	1747,213	
315	1980				4.2	92° 20'	-80.5	-84.7			TP					
	2310		170° 59.3' +180°	+9.3°	+12.6	-		+12.6	1419.4		BS	+2310-4	+12 +4			
	2310				+1.1	8H	+11.6	+12.7			BS					

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/1/80	INSTRUMENT MAN GLITZINGER	ROD MAN G COTCHAMP	PARTY NUMBER 6834	NOTES CHECKED BY SHJ	LINE NO. 6	PAGE 24
AREA OKlahoma	TOPO MAP 60C60 15"	STATE OKlahoma	COUNTY WASHITA	TWP 8N	RANGE 16W	PPM
			PARTY MANAGER DALLIS			

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.	
									1419.4					
316	1980		170° 59.3'	+9.3°	13.5	-		-13.5		1405.9		-1980	-10	658,735 1747,219
317	1650				14.8	-		-14.8		1404.4		-1650	-8	659,065 1747,221
318	1540		171° 19.7'	+9.3°	4.5	BH	-7.7	-12.2		1407.2		-1540	-17	659,175 1747,222
318	1320		170° 59.3'	+9.3°	14.4	-		-14.4		1405.0		-1320	-7	659,395 1747,222
319	990		"	"	13.2	-		-13.2		1406.2		-990	-5	659,725 1747,224
320	660		"	"	11.6	-		-11.6		1407.8		-660	-3	660,055 1747,226
321	330		"	"	9.6	-		-9.6		1410.4		-330	-2	660,385 1747,227
322	0				5.4	-		-5.4		1414.0	+	0	0	660,715 1747,229
323	58		346° 38.3'	+9.3°	2.8	-		-2.8		1416.6		+58	-4	660,765 1747,210 4 way 5-A 1416
323	330		351° 14'	+9.3°	0.9	-		-0.9		1418.5		+330	+3	661,045 1747,232
324	660		"	"	1.3	TH	+3.3	+2.0		1421.4		+660	+6	661,375 1747,235
325	990		"	"	10.2	89°	+17.3	+7.1		1426.5		+990	+9	661,705 1747,238
326	1320		"	"	5.2	89°	+23.0	+17.8		1437.2		+1320	+12	662,035 1747,241
327	1650	1649	"	"	4.9	88°30'	+43.2	+38.3		1457.7		+1649	+15	662,364 1747,244
328	1980	1979	"	"	9.5	88°	+64.1	+59.6		1479.0		+1979	+18	662,694 1747,247
329	2310	2309	351° 14'	+9.3°	10.2	88°	+80.6	+70.4		1499.8		+2309	+21+4	663,024 1747,254
329	2310				3.5	88°10'	+73.9	+70.4						
	2646		170° 56.7'	+9.3°	+4.5	BH	+13.2	+17.7				+2640	+11+4	
	2640				+7.9	90°10'	+7.7	+17.6	1507.4					
330	2310		170° 56.7'	+9.3°	11.2	BH	-11.6	-22.8		1484.6		-2310	-10	663,357 1747,259

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/9/80	INSTRUMENT MAN GLITZINGER	ROD MAN G. GOTCAMP	PARTY NUMBER 6834	NOTES CHECKED BY BHL	LINE NO. 6	PAGE 25
AREA Oklahoma	TOPO MAP GATCRD	STATE Oklahoma	COUNTY WASHTA	TWP 8N	RANGE 16W	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			
									1507.4									
331	1980		170° 56.7'	+9.3°	9.6	84	-9.9	-19.5		1487.9		-1980	-8	663,684	1747,261			
332	1650		"	"	9.7	—	—	-9.7		1497.7		-1650	-7	664,014	1747,262			
333	1320		"	"	13.4	—	—	-13.4		1494.0		-1320	-6	664,344	1747,263			
334	990		"	"	13.0	84	-5.0	-18.0		1489.4		-990	-4	664,674	1747,265			
335	660		"	"	12.8	84	-3.3	-16.1		1491.3		-660	-3	665,004	1747,266			
336	330		"	"	13.6	—	—	-13.6		1493.8		-330	-1	665,334	1747,268			
337	0				5.4	—	—	-5.4		1502.0	T	0	0	665,664	1747,269			
338	330		357° 57.6'	+9.3°	3.2	88°	+11.5	+8.3		1515.7		+330	+2	665,994	1747,271			
339	410		350° 52.3'	+9.3°	0.2	88°	+14.3	+14.1		1521.5		+410	+1	666,074	1747,270	660100 1747.256 4 way @ .1524.		
339	660		351° 51.6'	+9.3°	2.4	88°	+23.0	+20.6		1528.0		+660	+5	666,324	1747,274			
340	990	989	"	"	5.7	88°	+34.5	+28.8		1534.2		+989	+7	666,653	1747,276			
341	1320	1319	"	"	5.8	88°	+46.0	+40.2		1547.6		+1319	+9	666,983	1747,278			
342	1650	1649	"	"	1.5	88°	+57.6	+56.1		1563.5		+1649	+11	667,313	1747,280			
343	1980	1979	357° 57.6'	+9.3°	6.4	87° 50'	+74.8	+68.4		1575.8	TP	+1979	+14+4	667,643	1747,287			
343	1980	1979	"	"	12.1	87° 40'	+90.5	+68.4			TP							
	1980	1979	170° 59.8' +180	+9.3°	+10.7	88° 50'	-40.3	-29.6	1576.2		BS	+1980	+10+4					
	1780		"	"	+13.6	88° 46'	-42.6	-29.5			BS							
344	1650		"	"	3.1	88° 50'	+33.6	+30.5		1576.7		-1650	-9	667,973	1747,292			
345	1320		"	"	5.8	88° 50'	+26.9	+21.1		1567.3		-1320	-7	668,303	1747,294			
346	990		"	"	10.0	89°	+17.3	+7.3		1553.5		-990	-5	668,633	1747,296			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/1/90	INSTRUMENT MAN GLITZINGER	ROD MAN G. COLEMAN	PARTY NUMBER 6834	NOTES CHECKED BY shl	LINE NO. 6	PAGE 26
AREA OKLAHOMA	TOPO MAP Goto 80	STATE Oklahoma	COUNTY WASHINGTON	TWP 8 N	RANGE 16 W	PPM
				PARTY MANAGER PAULIS		

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.	
									1546.2					
347	160		170° 59.8'	+9.3°	0.4	TH	+3.3	+2.9		1549.1		-660	-3	669,963 1747,298
348	330				9.8	—		-3.8		1542.4		-330	-2	669,998 1747,299
349	0				5.4	—		-5.4		1540.8	T	0	0	669,923 1747,301
350	330		350° 45.8'	+9.3°	3.7	—		-3.7		1542.5		+330	0	669,953 1747,301
351	660		"		2.5	—		-2.5		1543.7		+660	+1	670,283 1747,302
352	990		"		2.2	—		-2.2		1544.0		+990	+1	670,613 1747,302
353	1320		"		5.5	TH	+6.6	+1.1		1547.3		+1320	+1	670,943 1747,302 Horizontal COR Y+33 X+31
354	1650		"		13.2	TH	+8.3	-9.9		1541.3		+1650	+2	671,273 1747,303
TP	1727		350° 40'	+9.3°	13.5	89° 50'	+5.0	-8.5		1537.7	TP	+1727	-1	671,350 1747,302 4 way EL 1537
TP	1727				12.2	89° 52'	+4.0	-8.2			TP			
	1323		west		+5.3	89° -	-23.6	-17.8	-17.7		BS			
	1323				+9.3	88° 50'	-26.9	-17.4	1520.0		BS			
T	0				54	—		-5.4		1514.6	T			
TP	2540		east		10.6	91° -	-44.3	-54.9	55.7	1464.9	TP			
TP	2540				13.8	90° 56'	-41.4	-55.2			TP			
	9				+	92° 16'					BS			
	970		west		+19.4	92° 20'	+39.5	+53.9	1519.8		BS			
	970				+13.9	92° 22'	+40.0	+53.9			BS			
TL	718		east		7.7	91° -	-12.5	-20.2		1498.6	TP			T-intersect.
TL	718				13.9	90° 30'	-6.3	-20.2			TP			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
11/3/80		G. Cotcamp		G. Litzinger		6834		shl rlw		6	27					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Oklahoma		Gotebo 15'		Oklahoma	Washita		8 N	16 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	
<u>IL</u>										1498.4				671,280	1,752,870	→ scaled R.
	585		149°10' +180°	+9.3°	+10.7	91° -	+10.2	-20.9	1519.5		BS	+544-2	-215			Intersect.
	585				+14.2	90°40'	+6.8	+21.0			BS					
355	330		149°10'	+9.3°	14.5	BH	-1.7	-16.2		1503.3		-307	+121	671,575	1,752,774	
356	0				5.4	-		-5.4		1574.1	π	0	0	671,822	1,752,655	
357	330		348°17'	+9.3°	2.9	-		-2.9		1576.6		+330	-14	672,152	1,752,441	
358	660		349°19'	+9.3°	4.5	89° -	+11.5	+7.0		1526.5	π	+660-2	-16	672,480	1,752,639	
358	660				3.3	89°6'	+10.4	+7.1			π					
	2640		171°35' +180°	+9.3°	+13.5	90°59'	+41.5	+55.0	1581.5		BS	+2640	+91			
	2640				+12.0	90°56'	+43.0	+55.0			BS					
359	2310		171°35'	+9.3°	13.9	90°56'	-37.6	-51.5		1530.0		-2310	-36	672,810	1,752,644	
360	1980		"	"	15.1	90°56'	-32.3	-47.4		1534.1		-1980	-31	673,140	1,752,649	
361	1650		"	"	14.9	90°56'	-26.9	-41.8		1539.7		-1650	-25	673,420	1,752,655	
362	1320		"	"	12.8	90°56'	-21.5	-34.3		1547.2		-1320	-20	673,800	1,752,666	
363	990		"	"	12.3	90°50'	-14.4	-26.7		1554.8		-990	-15	674,130	1,752,665	
364	660		"	"	14.2	90°20'	-3.8	-18.0		1563.5		-660	-10	674,460	1,752,670	
365	330		"	"	6.5	-		-6.5		1575.0		-330	-5	674,790	1,752,675	
366	0		"	"	5.4	-		-5.4		1576.1	π	0	0	675,120	1,752,680	
367	330		351°4'	+9.3°	12.5	91° -	-5.8	-18.3		1563.2		+330	+2	675,450	1,752,682	
368	660		"	"	14.3	91° -	-11.5	-25.8		1555.7		+660	+4	675,780	1,752,684	
369	990		"	"	9.9	91°30'	-25.9	-35.8		1545.7		+990	+6	676,110	1,752,686	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
11/3/80		G. Cotcamp		G. Litzinger		6834		shl rldw		6		28			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Gotebo 15'		Oklahoma		Washita		8 N		16 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
									15815						
370	1320		351° 4'	+9.3°	10.2	91° 30'	-34.6	-47.7		1536.8		+1320	+8	674,440	1752,688
371	1450		350° 37.3'	+9.3°	8.4	91° 30'	-37.9	-46.3		1535.2		+1450	-2	674,570	1,752,478
371	1650	1649	351° 4'	+9.1°	10.2	91° 30'	-43.2	-53.4		1528.1		+1699	+5	676,764	1752,685
372	1980	1779	"	"	8.7	91° 30'	-51.8	-60.5		1521.6		+1979	+6	677,099	1752,694
373	2310	2309	"	"	5.0	91° 30'	-60.5	-65.5		1516.0		+2309	+7	677,429	1752,687
374	2640	2639	351° 4'	+9.1°	7.1	91° 20'	-61.4	-68.5		1513.0	TP	+2639-2	+8-2	677,757	1,752,684
374	2640				14.8	91° 15'	-53.8	-68.6			TP				
	990		170° 45.2' +180°	+9.1°	+10.3	89° 20'	-11.5	-1.2	1511.8		BS	+990-2	-3-2		
	990				+13.2	89° 10'	-14.4	-1.2			BS				
375	660		170° 45.2'	+9.1°	9.0	89° -	+11.5	+2.3		1574.3		-660	+2	678,085	1,752,683
376	330		"	"	2.9	89° -	+5.8	+2.9		1574.7		-330	+1	678,415	1,752,682
377	0				5.4	-		-5.4		1506.4	TP	0	0	678,745	1,752,691
378	330		354° 37'	+9.1°	13.8	BH	-1.7	-15.5	*	1496.3		+329	+21	679,074	1,752,702
378	497		352° 24'	+9.1°	2.2	91° 30'	-13.0	-15.2			TP	+497-2	+13-2	679,240	1,752,692
378	497				0.7	91° 40'	-14.4	-15.1		1496.7	TP				
	1300	1299	82° 7' +180°	+9.1°	+2.0	92° -	+45.3	+47.3	+47.4		BS	+28	-1299-2		1300' offset west
	1300				+5.9	91° 50'	+41.6	+47.5	1544.1		BS				
	0				5.4	-		-5.4		1538.7	TP	0	0	679,248	1,751,391
379	163		351° 59.8'	+9.1°	5.8	-		-5.8		1538.3		+330	+3	679,598	1,751,394
380	493		"	"	2.5	TH	+2.5	+0.0		1544.1		+660	+9	679,928	1,751,400

676,670 + 1,752,680
4-way Intersect EL (1535)

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	1/13/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	G. Litzinger	PARTY NUMBER	6834	NOTES CHECKED BY	SLP	LINE NO.	6	PAGE	29	
AREA	Oklahoma	TOPO MAP	Grotebo 15	STATE	Oklahoma	COUNTY	Washita	TWP	8N-9N	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	NORTH + SOUTH -		EAST + WEST -		COORDINATES		REMARKS
												LAT.	DEP.	Y	X			
									1544.1									
381	823		351°59.8'	+9.1°	7.2	-		-7.2		1534.9	TP	+823	+16-2	680,091	1,751,405			
381	823				11.3	TH	+4.1	-7.2			TP							
	990		171°12.3'+180°	+9.1°	+13.6	89°-	-17.3	-3.7	1533.2		BS	+990	+5-2					
	990				+7.8	89°20'	-11.5	-3.7			BS							
382	660		171°12.3'	+9.1°	6.0	89°20'	+7.7	+1.7		1534.9		-660	-4	680,421	1,751,404			
383	330		" "	"	0.8	89°20'	+3.8	+3.0		1536.2		-330	-2	680,751	1,751,404			
384	0				5.4	-		-5.4		1527.8	π	0	0	681,081	1,751,408			
385	330		351°53'	+9.1°	10.1	91°-	-5.8	-15.9		1517.3		+330	+6	681,411	1,751,414			
386	660		" "	"	12.7	91°20'	-15.4	-28.1		1505.1		+660	+11	681,741	1,751,419			
TP	801		351°10'	+9.1°	11.6	91°30'	-21.0	-32.6			TP	+801	+4	681,882	1,751,412			681,880 + 1,751,405 T-intersect. el. 1502.
TP	801				13.9	91°20'	-18.6	-32.5		1500.7	TP							T 8
	728		81°42.5'+180°	+9.0°	+4.6	89°20'	-8.5	-3.9	1496.8		BS	+9-2	-728					728' offset west
	728				+2.5	89°30'	-6.4	-3.9			BS							
TL	0				5.9	-		-5.4		1491.4	π	0	0	681,889	1,750,684			T-intersect.
387	189		351°55.3'	+9.0°	6.8	89°-	+3.3	-3.5		1493.3		+189	+3	682,078	1,750,687			T 7
388	519		" "	"	3.9	89°-	+9.1	+5.2		1502.0		+519	+8	682,408	1,750,692			
389	849		351°55.3'	+9.0°	8.0	89°-	+14.8	+6.8		1503.6	TP	+849-2	+14	682,736	1,750,698			
389	849				5.5	89°10'	+12.3	+6.8			TP							
	990		171°7'+180°	+9.0°	+0.7	89°-	-17.3	-16.6			BS	+990-3	+2					
	990				+6.5	88°40'	-23.0	-16.5	1487.1		BS							

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/3/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY Bill	LINE NO. 6	PAGE 30
AREA Oklahoma	TOPO MAP Gotebo 15'	STATE Oklahoma	COUNTY Washita	TWP 9 N	RANGE 16 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			
									1487.1									
390	660		171° 7'	+9.0°	3.9	89° -	+11.5'	+7.6		1494.7		-660	-1	683,063	1,750,699			
391	330		" "	"	4.6	89° -	+5.8'	+1.2		1488.3		-330	-1	683,393	1,750,699			
392	0				5.4	-		-5.4		1481.7	T	0	0	683,723	1,750,700			
393	330		351° 11'	+9.0°	12.1	92° -	-11.5'	-23.6		1463.5		+330	+1	684,053	1,750,701			
394	660	659	" "	"	13.1	92° 30'	-28.8'	-41.9		1445.2		+659	+2	684,382	1,750,702			
395	990	989	" "	"	9.1	92° 30'	-43.1'	-52.2		1434.9		+989	+3	684,712	1,750,703			
396	1320	1319	351° 11'	+9.0°	1.0	92° 16'	-52.2'	-53.2		1433.9	TP	+1319	+4	685,042	1,750,704			
396	1320				3.3	92° 10'	-49.9'	-53.2			TP							
	2640	2639	171° 23.8' +180°	+9.0°	+13.1	91° 34'	+72.2'	+85.3	1579.2		BS	+2639	+18					
	2640				+14.6	91° 32'	+70.6'	+85.2			BS							
397	2310	2309	171° 23.8'	+9.0°	12.6	91° 30'	-60.5'	-73.1		1446.1		-2309	-16	685,372	1,750,706			
398	1980	1979	" "	"	10.0	91° 30'	-51.8'	-61.8		1457.4		-1979	-14	685,702	1,750,708			
399	1650	1649	" "	"	11.8	91° 30'	-43.2'	-55.0		1464.2		-1649	-11	686,032	1,750,711			
400	1320		" "	"	12.9	91° 30'	-34.5'	-47.4		1471.8		-1320	-9	686,361	1,750,713			
401	990		" "	"	12.2	91° 30'	-25.9'	-38.1		1481.1		-990	-7	686,691	1,750,715			
402	660		" "	"	14.9	91° -	-11.5'	-26.4		1492.8		-660	-5	687,021	1,750,717			
IF	510		171° 51'	+9.0°	11.6	91° -	-8.9'	-20.5		1498.7		-510	-8	687,171	1,750,714	687,165 + 1,750,705 T-rod (east) el 1501.		
403	330		171° 23.8'	+9.0°	13.8	-		-13.8		1505.4		-330	-2	687,351	1,750,720			
404	0				5.4	-		-5.4		1513.8	T	0	0	687,681	1,750,722			
405	330		351° 20.4'	+9.2°	1.2	TH	+1.7'	+0.5		1519.7		+330	+3	688,011	1,750,725			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/3/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY shl	LINE NO. 6	PAGE 31
AREA Oklahoma	TOPO MAP Gatelo 15'	STATE Oklahoma	COUNTY Washita	TWP	RANGE	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.	
									1519.2					
406	660		351° 20A'	+9.2°	1.3	TH	+3.3	+2.0		1521.2		+660	+6	688,341 1,750,728
407	990		" "	"	10.2	89°-	+12.3	+7.1		1526.3		+990	+9	688,671 1,750,731
408	1320		" "	"	8.7	89°-	+23.0	+14.3		1533.5		+1320	+12	689,001 1,750,734
409	1650		" "	"	8.6	89°-	+28.8	+20.2		1539.4		+1650	+16	689,331 1,750,738
410	1980		351° 20A'	+9.2°	13.2	89°-	+34.6	+21.4		1540.6	TP	+1980	+19	689,661 1,750,741
410	1980				5.2	89°4'	+26.5	+21.3			TP			
	2310		171° 19.7' +180°	+9.2°	+15.0	89°6'	-29.6	-14.6	1526.0		BS	+2310	+21	
	2310				+12.3	89°20'	-26.9	-14.6			BS			
411	1980		171° 19.7'	+9.2°	9.4	89°30'	+17.3	+7.9		1533.9		-1980	-18	689,991 1,750,744
412	1650		" "	"	5.0	TH	+8.3	+3.3		1529.3		-1650	-15	690,321 1,750,747
413	1320		" "	"	0.5	-		-0.5		1525.5		-1320	-12	690,651 1,750,750
414	990		" "	"	4.9	-		-4.9		1521.1		-990	-9	690,981 1,750,753
415	660		" "	"	7.9	-		-7.9		1518.1		-660	-6	691,311 1,750,756
416	330		" "	"	5.3	-		-5.3		1520.7		-330	-3	691,641 1,750,759
417	0				5.4	-		-5.4		1520.6	TP	0	0	691,971 1,750,762
418	330		351° 26.2'	+9.2°	6.3	-		-6.3		1519.7		+330	+4	692,301 1,750,766
IF	500		350° 59'	+9.2°	6.4	-		-6.4		1519.4		+500	+2	692,471 1,750,769 T-rd (east) el. 1520.
419	660		351° 26.2'	+9.2°	4.9	-		-4.9		1521.1		+660	+7	692,631 1,750,769
420	990		" "	"	3.9	TH	+5.0	+1.1		1527.1		+990	+11	692,961 1,750,773
421	1320		" "	"	12.8	89°-	+23.0	+10.2		1536.2		+1320	+15	693,291 1,750,777

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/4/80	INSTRUMENT MAN G. Cotcamp		ROD MAN G. Litzinger		PARTY NUMBER 6834		NOTES CHECKED BY shl rsw		LINE NO. 6	PAGE 32
AREA Oklahoma	TOPO MAP Gotebo	STATE Oklahoma	COUNTY Washita		TWP 9 N	RANGE 15W/16 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	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1526.0						
422	1650		351°26.2'	+9.2°	10.3	89°-	+28.8	+18.5		1544.5		+1650	+18	693,621	1,750,780
423	1980		351°26.2'	+9.2°	144	89°-	+34.6	+20.2			TP	+1980	+22	693,951	1,750,784
423	1980				8.5	89°10'	+28.8	+20.3		1546.3	TP				
	2640	2639	171°1.4' +180°	+9.2°	+14.7	88°8'	-86.0	-71.3			BS	+2639	+10		
	2640				+5.5	88°20'	-76.7	-71.2	1476.1		BS				
424	2310	2309	171°1.4'	-9.2°	5.1	88°20'	+67.2	+62.1		1537.2		-2309	-9	694,281	1,750,785
425	1980	1979	" "	"	3.9	88°20'	+57.6	+53.7		1528.8		-1979	-8	694,611	1,750,786
426	1650	1649	" "	"	4.9	88°20'	+48.0	+43.1		1518.2		-1649	-6	694,941	1,750,788
427	1320	1319	" "	"	6.0	88°20'	+38.4	+32.4		1507.5		-1319	-5	695,271	1,750,789
428	990		" "	"	3.2	88°40'	+23.0	+19.8		1494.9		-990	-4	695,600	1,750,790
429	660		" "	"	2.8	89°-	+11.5	+8.7		1483.8		-660	-3	695,930	1,750,791
430	330		" "	"	2.7	-		-2.7		1472.4		-330	-1	696,260	1,750,793
431	0		" "	"	5.4	-		-5.4		1469.7	π	0	0	696,590	1,750,794
432	330		351°42.7'	+9.2°	12.6	-		-12.6		1462.5		+330	+5	696,920	1,750,799
433	660		" "	"	5.0	92°-	-23.0	-28.0		1447.1		+660	+11	697,250	1,750,805
434	990		" "	"	12.4	91°30'	-25.9	-38.3		1436.8		+990	+16	697,580	1,750,810
IF	1160		351°36.5'	+9.2°	8.2	91°30'	-30.4	-38.6		1436.5		+1160	+16	697,750	1,750,810
435	1320		351°42.7'	+9.2°	11.8	91°-	-23.0	-34.8		1440.3		+1320	+21	697,910	1,750,815
436	1660		351°42.7'	+9.2°	13.5	BH	-8.3	-21.8		1453.3	TP	+1650-9	+26	698,236	1,750,820
436	1650				14.0	90°16'	-7.7	-21.7			TP				

horiz. correct. y = -17
x = -12
697,750 + 1,750,810
Fred (east) el 14.37
paved road
↓

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/5/80	INSTRUMENT MAN G LITZINGER	ROD MAN S COTCAMP	PARTY NUMBER 6834	NOTES CHECKED BY SLL	LINE NO. 6	PAGE 33
AREA OKLAHOMA	TOPO MAP GoTebbo / Cordell	STATE OKLAHOMA	COUNTY WASHTA	TWP 9 N	RANGE 15 th 14 W	PPM
			PARTY MANAGER L PAULIS			

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.	
436										1453.3				
	660		172°06.3' + 180°	+9.2°	+12.1	91°30'	+17.3	+29.4			BS	+660-4	+15	
	660				+10.1	91°40'	+19.2	+29.3	1482.6		BS			
437	330		172°06.3'	+9.2°	13.3	—		-13.3		1469.3		-330	-8	698,562 1,750,827 GoTebbo quad
438	0				5.4	—		-5.4		1477.2	IT	0	0	699,992 1,750,835 Cordell quad
439	330		352°0.9'	+9.2°	9.7	—		-9.7		1472.9		+330	+7	699,222 1,750,842 ↓
440	660		"	"	2.6	—		-2.6		1480.0		+660	+14	699,552 1,750,849
441	990		"	"	7.0	89°-	+17.3	+10.3		1492.9		+990	+21	699,882 1,750,856
442	1320		352°0.9'	+9.2°	3.8	88°30'	+26.9	+23.1		1505.7	TP	+1320-4	+28	700,208 1,750,863
442	1320				7.5	88°40'	+30.7	+23.2			TP			
	1650	1649	171°46.4' + 180°	+9.2°	+1.7	89°-	-57.6	-55.9	1449.8		BS	+1649-4	+28	
	1650				+6.5	87°30'	-62.3	-55.8			BS			
443	726 ^{1/2} 1450	1449	172°9.5'	+9.2°	1.6	88°-	+50.6	+49.0		1498.8		-1449	-34	700,404 1,750,857 790 (east)
443	1320	1319	171°46.4'	+9.2°	3.2	88°-	+46.0	+42.8		1492.6		-1319	-22	700,534 1,750,869
444	990	989	"	"	13.0	88°-	+34.5	+21.5		1471.3		-989	-17	700,804 1,750,874
445	660		"	"	6.5	89°-	+11.5	+5.0		1454.8		-660	-11	701,193 1,750,880
446	330		"	"	4.6	89°-	+5.8	+1.2		1451.0		-330	-6	701,523 1,750,885
447	0				5.4	—		-5.4		1444.4	IT	0	0	701,853 1,750,891
448	330		352°4.0'	+8.9°	10.4	92°-	-11.5	-21.9		1427.9		+330	+6	702,183 1,750,897
449	659	658	357°35.4	+8.9°	7.5	92°-	-34.4	-41.9		1407.9		+658	+6	702,511 1,750,897 Curve
450	988	987	351°43'		9.3	92°-	-51.6	-60.9		1388.9		+988	+11	702,841 1,750,902

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
11/5/80		GLITZINGER		G. GOTCHAMP		6834		BHP		6	34						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Cordell		Oklahoma	WASHITA		9 N	15 W / 16 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		
									1499.8								
457	1320	1319	351° 43'	+8.9°	6.8	72° 32'	-58.2	-65.1		1384.7	TP	+1319.4	+14-3	703,168	1,750,902	OPP Side Road	
457	1320				14.4	88° 12'	-50.6	-65.0			TP						
	1980		172° 06.4' +180°	+8.9°	5.6	BH	+9.9	-15.5			BS	+1980.4	+40-3				
	1980				9.4	90° 10'	+5.8	+15.4	1400.1		BS						
452	1450		171° 58.4'	+8.9°	8.0	BH	-8.3	-16.3		1383.8		-1650	-25	703,494	1,750,914		
453	1320		"	"	9.0	BH	-6.6	-15.6		1384.5		-1320	-20	703,824	1,750,919		
454	996		"	"	12.4	BH	-5.0	-17.4		1382.7		-990	-15	703,154	1,750,924		
{	792		172° 52.3'	+8.9°	12.8	-	-	-12.3		1387.8		-792	-18	704,352	1,750,921	BRIDGE	
455	660		171° 54.4'	+8.9°	10.6	-	-	-10.6		1389.5		-660	-10	704,484	1,750,929		
456	830		"	"	6.1	-	-	-6.1		1394.0		-330	-5	704,814	1,750,934		
457	0				5.4	-	-	-5.4		1394.7	TP	0	0	705,144	1,750,939		
458	330		351° 50'	+8.9°	4.3	-	-	-4.3		1395.8		+330	+4	705,474	1,750,943		
459	660		"	"	2.7	-	-	-2.7		1397.4		+660	+8	705,804	1,750,947		
460	990		"	"	4.4	TH	+5.0	+0.6		1400.7		+990	+13	706,134	1,750,952		
461	1320		"	"	9.0	89°	+23.0	+14.0		1414.1		+1320	+17	706,464	1,750,956		
462	1450		351° 50'	+8.9°	14.6	89°	+28.8	+14.2		1414.3	TP	+1650.4	+21-3	706,790	1,750,957		
462	1650				9.7	89° 10'	+24.0	+14.3			TP						
	1450		172° 06.4' +180°	+8.9°	+14.3	BH	+8.3	+22.6			BS	+1650.4	+29-3				
	1650				+12.9	90° 20'	9.6	+22.5	1436.8		BS						
463	1320		172° 06.4'	+8.9°	14.1	90° 20'	-7.7	-21.8		1415.0		-1320	-23	707,116	1,750,960		

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	11/5/80	INSTRUMENT MAN	G. LITZINGER	ROD MAN	G. GOTCAMP	PARTY NUMBER	6834	NOTES CHECKED BY	SKL	LINE NO.	6	PAGE	35	
AREA	Oklahoma	TOPO MAP	Cordell	STATE	Oklahoma	COUNTY	Washita	TWP	T 9 N	RANGE	15 W / 16	PPM	PARTY MANAGER	PAVIS

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.	
									1436.8					
464	990		172° 06.4'	+8.9°	13.5	90° 20'	-5.8	-19.3		1417.5		-990	-17	707,444 1,750,964
465	660		"	"	13.0	-		-13.0		1423.8		-660	-12	707,776 1,750,971
466	330		"	"	7.5	-		-7.5		1429.3		-330	-6	708,106 1,750,977
467	156		174° 14.4'	+8.9°	6.5	-		-6.5		1430.9		-155	-14	708,281 1,750,969 708,280 + 1,750,965 Tad(CasT) el. 1430.
467	0				5.4	-		-5.4		1431.4	T	0	0	708,436 1,750,983
468	330		355° 50.4'	+8.7°	8.1	-		-8.1		1428.7		+329	+26	708,765 1,751,009
469	660		355° 50.4'	+8.7°	11.5	91°	-11.5	-23.0		1413.8	TP	+658-4	+52-3	709,090 1,751,032
469	660				9.6	91° 10'	-13.4	-23.0			TP			
	990		169° 44.3 + 180°	+8.7°	+3.2	89°	-17.3	-14.1	1399.7		BS	+990	-27-3	
	790				+0.8	89° 10'	-14.4	-14.1			BS			
470	660		168° 57'	+8.7°	2.5	-		-2.5		1397.2		-659	+27	709,421 1,751,029
471	330		167° 47.3'	+8.7°	3.8	-		-3.8		1393.9		-329	+20	709,751 1,751,022
472	0				5.4	-		-5.4		1394.3	T	0	0	710,086 1,751,002 opp STATION
473	330		1° 56.7'	+8.7°	6.5	-		-6.5		1393.2		+324	+61	710,404 1,751,063
474	655		2° 16.1'	+8.7°	5.5	-		-5.5		1394.2		+643	+125	710,723 1,751,127 S curve
475	980		0° 11.8'	+8.7°	2.5	89° 50'	+2.9	+0.4		1400.1	TP	+968-4	+152-3	711,044 1,751,151 S curve
475	980				5.4	89° 40'	+5.7	+0.3			TP			
	1650		166° 12.7' + 180°	+8.7°	+11.3	90° 20'	+9.6	+20.9	1421.0		BS	+1643-4	-146-3	
	1660				+12.3	90° 18'	+8.6	+20.9			BS			
476	1320		166° 12.7'	+8.7°	14.0	-		-14.0		1407.0		-1315	+117	711,368 1,751,119

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/5/80	INSTRUMENT MAN GLITZINGER	ROD MAN G COT CAMP	PARTY NUMBER 6834	NOTES CHECKED BY G.W.C. <i>rdw</i>	LINE NO. 6	PAGE 36
AREA OKLAHOMA	TOPO MAP Cordell	STATE OKLAHOMA	COUNTY WASHITA	TWP 9N/10W	RANGE 15W/16W	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.	
									1421.0					
477	990		166° 12.7'	+8.7°	9.3	91°	-17.3	-26.4		1394.4		-986	+88	711,697 1,751,090
478	660		"	"	7.1	91° 40'	-19.2	-24.3		1394.7		-657	+59	712,024 1,751,061
479	330		"	"	10.0	91° 40'	-9.6	-19.6		1401.4		-329	+29	712,354 1,751,031
480	0				5.4	-		-5.4		1415.4	T	0	0	712,683 1,751,002
481	330		352° 39.7'	+8.7°	1.1	-		-1.1		1419.9		+330	+8	713,013 1,751,010
482	660		"	"	3.6	TH	+3.3	-0.3		1420.7		+660	+16	713,343 1,751,018
483	770		351° 19.3'	+8.7°	1.7	89° 30'	+6.7	+5.0		1424.0		+770	0	713,463 1,751,002
old 484	928		351° 53.8'	+8.7°	1.0	89° 20'	+10.8	+9.8		1430.8		+928	+10	713,611 1,751,012
483	990		352° 39.7'	+8.9°	4.4	89°	+17.3	+12.9		1433.9		+990	+27	713,673 1,751,029
484	1320		353° 39.7'	+8.9°	2.7	89°	+23.0	+20.3		1441.3	TP	+1320-1	+36-3	714,002 1,751,030
484	1320				6.6	89° 30'	26.9	+26.3			TP			
	1450		171° 17.2' +150°	+8.9°	+8.9	-		+8.9	1450.2		BS	+1650-1	+5-2	
	1650				+0.7	BH	+8.3	+9.0			BS			
485	1320		171° 17.2'	+8.9°	14.9	BH	-6.6	-21.5		1428.7		-1320	-4	714,331 1,751,034
486	990		"	"	3.2	91°	-17.3	-20.5		1429.7		-990	-3	714,661 1,751,035
487	660		"	"	8.2	91°	-11.5	-19.7		1430.5		-660	-2	714,991 1,751,036
488	330		"	"	6.9	-		-6.9		1443.3		-330	-1	715,321 1,751,037
489	0				5.4	-		-5.4		1444.8	T	0	0	715,651 1,751,038
490	330		351° 28.3'	+8.9°	10.4	-		-10.4		1439.8		+330	+2	715,981 1,751,040
491	660		"	"	9.4	-		-9.4		1440.8		+660	+4	716,311 1,751,042

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/5/60	INSTRUMENT MAN GLITZINGER		ROD MAN G. COLCAMP		PARTY NUMBER 6834		NOTES CHECKED BY GWC		LINE NO. 6	PAGE 37
AREA 017 LAHONN B	TOPO MAP CORDILL		STATE OKLAHOMA	COUNTY WAGB, TA	TWP 10 N	RANGE 15 W / 16 W	PPM	PARTY MANAGER		

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.	
									1450.2					
492	990		351° 29.3'	+8.9°	3.6	—		-3.6		1446.6		+990	+6	716,641 1,751,044
493	1320		"	"	14.2	89°	+23.0	+8.8		1459.0		+1320	+9	716,971 1,751,047
494	1650		351° 29.3'	+8.9°	10.8	89°	+28.8	+18.0		1449.2	TP	+1650-1	+11	717,300 1,751,049
494	1650				5.9	89° 10'	+24.0	+18.1			TP			
	990		171° 19.9' +180	+8.9°	7.6	88° 30'	-25.9	-19.6	1449.5		BS	+990	+4	
	990				+3.7	88° 40'	-23.0	-19.3	1448.7		BS			
495	660		171° 19.9'	+8.9°	8.3	88° 20'	+19.2	+10.9		1459.6		-660	-3	717,630 1,751,050
496	330		"	"	6.6	TH	+1.7	+0.1		1448.8		-330	-1	717,960 1,751,052
497	0				5.4	—		-5.4		1443.3	T	0	0	718,290 1,751,053 horiz. correct. y=-47' x=-29'
498	330		351° 30.6'	+8.9°	35.3	—		-5.3		1443.4		+330	+2	718,620 1,751,055
498	530		350° 45.7'	+8.9°	5.8	—		-5.8		1442.9		+530	-3	718,820 1,751,050 718,820 + 1,751,050 11/9/ Intersect.
499	660		351° 30.6'	+8.9°	3.9	—		-3.9		1444.8		+660	+5	718,950 1,751,058
500	990		351° 30.6'	+8.9°	4.8	TH	+35.0	+0.2		1448.9	TP	+990-3	+7	719,277 1,751,060
500	990				2.7	89° 30' TH	+2.9	+0.2			TP			
	1980		171° 21' +180°	+8.9°	+12.5	91°	+34.6	+47.1	1496.0		BS	+1980-3	+9	
	1980				+14.8	90° 56'	+32.3	+47.1			BS			
501	1650		171° 21'	+8.9°	13.9	91°	-28.8	-42.7		1453.8		-1650	-7	719,604 1,751,062
502	1320		"	"	13.7	91°	-23.0	-36.7		1459.3		-1320	-6	719,934 1,751,063
503	990		"	"	8.9	91°	-17.3	-26.2		1469.8		-990	-4	720,264 1,751,065
504	660		"	"	12.7	BH	-3.3	-16.0		1480.0		-660	-3	720,594 1,751,066

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
11/6/80		G. Cotcamp		G. Litzinger		6834		CvL		6		38			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Cordell 15'		Oklahoma		Washita		10 N		15 W / 16 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
									1496.0						
505	330		171° 21'	+8.9°	9.3	-		-9.3		1486.7		-330	-1	720,924	1,751,068
506	0				5.4	-		-5.4		1490.6	π	0	0	721,254	1,751,069
507	330		351° 17.4'	+8.9°	2.0	-		-2.0		1494.0		+330	+1	721,584	1,751,070
508	660		" "	"	0.5	TH	+3.3	+2.8		1498.8		+660	+2	721,914	1,751,071
509	990		" "	"	10.0	81° -	+17.3	+7.3		1503.3		+990	+3	722,244	1,751,072
510	1320		" "	"	3.9	89° 30'	+11.5	+7.6		1503.6		+1320	+4	722,574	1,751,073
511	1650		" "	"	7.9	89° 30'	+14.4	+6.5		1502.5		+1650	+5	722,904	1,751,074
512	1980		351° 17.4'	+8.9°	8.0	89° 30'	+17.3	+9.3		1505.3	TP	+1980-3	+7	723,231	1,751,076
512	1980				14.9	89° 18'	+24.2	+9.3			TP				
	1650		171° 26.2' + 180°	+8.9°	+8.4	91° -	+28.8	+37.2	1542.5		BS	+1650-3	+10		
	1650				+14.3	90° 48'	+23.0	+37.3			BS				
513	1320		171° 26.2'	+8.9°	8.2	91° -	-23.0	-31.2		1511.3		-1320	-8	723,558	1,751,078
514	990		" "	"	8.9	91° -	-17.3	-26.2		1516.3		-990	-6	723,888	1,751,080
IF	780		172° 7'	+8.9°	7.8	91° -	-13.6	-21.4		1521.1		-780	-14	724,098	1,751,072
515	660		171° 26.2'	+8.9°	7.1	91° -	-11.5	-18.6		1523.9		-660	-4	724,218	1,751,082
516	330		" "	"	12.9	-		-12.9		1529.6		-330	-2	724,548	1,751,084
517	0				5.4	-		-5.4		1537.1	π	0	0	724,878	1,751,086
518	330		351° 22.5'	+8.9°	6.2	-		-6.2		1536.3		+330	+2	725,208	1,751,088
519	660		" "	"	9.0	-		-9.0		1533.5		+660	+3	725,538	1,751,089
520	990		" "	"	8.4	-		-8.4		1534.1		+990	+5	725,868	1,751,091

724,080 + 1,751,065
 (rod east) EL 1521

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	11/6/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	G. Litzinger	PARTY NUMBER	6834	NOTES CHECKED BY	G.M.C.	LINE NO.	6	PAGE	39	
AREA	Oklahoma	TOPO MAP	Cardell	STATE	Oklahoma	COUNTY	Washita	TWP	10 W	RANGE	15 ^W /16 ^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	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1542.5					
521	1320		351°22.5'	+8.9°	13.6	-		-13.6		1528.9		+1320	+6	726,198 1,751,092
522	1650		351°22.5'	+8.9°	14.8	BH	-8.3	-23.1		1519.4	TP	+1650-3	+8	726,525 1,751,094
522	1650				13.9	90°20'	-9.6	-23.0			TP			
	1320		171°23'+180°	+8.9°	+6.9	-		+6.9	1526.3		BS	+1320-3	+7	
	1320				+13.5	TH	-6.6	+6.9			BS			
523	990		171°23'	+8.9°	10.0	-		-10.0		1514.3		-990	-5	726,852 1,751,096
524	660		" "	"	10.0	-		-10.0		1514.3		-660	-3	727,182 1,751,098
525	330		" "	"	7.1	-		-7.1		1519.2		-330	-2	727,512 1,751,099
526	0				5.4	-		-5.4		1520.9	TP	0	0	727,892 1,751,101
527	330		351°22.8'	+8.9°	11.2	92°-	-11.5	-22.7		1503.6		+330	+2	728,172 1,751,103
528	660		" "	"	13.2	92°-	-23.0	-36.2		1490.1		+660	+3	728,502 1,751,104
529	990	989	" "	"	11.3	92°20'	-40.3	-51.6		1474.7		+989	+5	728,831 1,751,106
530	1320	1319	" "	"	2.9	92°20'	-53.7	-56.6		1469.7		+1319	+6	729,161 1,751,107
531	1527		351°8'	+8.9°	13.8	91°20'	-35.5	-49.3		1477.0		+1527	+1	729,360 + 1,751,085 4-Way Intersect. of 1476
531	1650		351°22.8'	+8.9°	8.4	91°20'	-38.4	-46.8		1479.5		+1650	+8	729,492 1,751,109
532	1980		" "	"	10.2 13.2	91°40'	-34.6	-44.8		1481.5		+1980	+10	729,822 1,751,111
533	2310		351°22.8'	+9.1°	1.4	91°-	-46.3	-41.7		1484.6	TP	+2310-3	+19	730,149 1,751,120
533	2310				14.9	90°40'	-26.9	-41.8			TP			
	2310		171°18.6'+180°	-	+1.1	-		+1.1	1485.7		BS	+2310-3	+17	
	2310				+12.7	TH	-11.6	+1.1			BS			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/6/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Hitzinger	PARTY NUMBER 6834	NOTES CHECKED BY rdw	LINE NO. 6	PAGE 40
AREA Oklahoma	TOPO MAP Cordell 15'	STATE Oklahoma	COUNTY Wash, Ta	TWP 10 N	RANGE 15W/10W	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.	
									1495.7					
534	1980		171° 18.6'	+9.1°	5.5	-		-5.5		1480.2		-1980	-14	730,476 1,751,123
535	1650		" "	"	8.9	BH	-8.3	-17.2		1468.5		-1650	-12	730,806 1,751,125
536	1320		" "	"	6.8	91°-	-23.0	-29.8		1455.9		-1320	-9	731,136 1,751,128
537	990	989	" "	"	6.7	92°-	-34.5	-41.2		1444.5		-989	-7	731,467 1,751,130
}}	830	829	171° 49'	+9.1°	14.5	92°-	-29.0	-43.5		1442.2		-829	-13	731,627 1,751,124 bridge
538	660	659	171° 18.6'	+9.1°	12.8	92° 20'	-26.8	-39.6		1446.1		-659	-5	731,797 1,751,132
539	330		" "	"	11.3	91°-	-5.8	-17.1		1468.4		-330	-2	732,126 1,751,135
540	0				5.4	-		-5.4		1480.3	X	0	0	732,456 1,751,137
541	330		351° 1'	+9.1°	2.4	-		-2.4		1483.3		+330	+1	732,786 1,751,138
542	660		" "	"	6.3	89°-	+11.5	+5.2		1490.9		+660	+1	733,116 1,751,138
543	990		" "	"	5.4	89°-	+17.3	+11.9		1497.6		+990	+2	733,446 1,751,139
544	1320		" "	"	12.2	89°-	+23.0	+10.8		1494.5		+1320	+3	733,776 1,751,140
545	1650		351° 1'	+9.1°	11.4	89° 10'	+24.0	+12.6		1499.3	TP	+1650-3	+3	734,103 1,751,140
545	1650		" "	"	14.2	89° 4'	+26.9	+12.7			TP			
	990		172° 7.5' +180'	+9.1°	+8.1	89°-	-17.3	-9.2	1489.1		BS	+990-3	+21	
	990		" "	"	+2.4	89° 20'	-11.5	-9.1			BS			
546	660		172° 7.5'	+9.1°	3.3	-		-3.3		1485.8		-660	-14	734,430 1,751,147
}}	470		173° 24'	+9.1°	10.7	-		-10.7		1479.4		-470	-21	734,620 1,751,140 734,615 + 1,751,120 4-Way Intersect.
547	330		172° 7.5'	+9.1°	14.7	BH	-1.7	-16.4		1472.7		-330	-7	734,760 1,751,154
548	0				5.4	-		-5.4		1483.7	X	0	0	735,090 1,751,161

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/6/80	INSTRUMENT MAN G. Coatscamp	ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY [Signature]	LINE NO. 6	PAGE 41
AREA Oklahoma	TOPO MAP Cordell 15	STATE Oklahoma	COUNTY Washita	TWP 10 N	RANGE 15 W / 14 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			
									1489.1									
549	330		351° 7.5'	+9.1°	12.2	-		72.2		1476.9		+330	+1	735,420	1,751,162			
550	660		" "	"	13.3	-		-13.3		1475.8		+660	+3	735,750	1,751,164			
551	990		351° 7.5'	+9.1°	4.4	91° -	-17.3	-21.7		1467.4	TP	+990-3	+4	736,077	1,751,165			
551	990				14.7	90° 24'	-6.9	-21.6			TP							
	2640		171° 9.3' +180°	+9.1°	+8.6	-		+8.6	18.7		BS	+2640-2	+12					
	2640				+15.0	89° 52'	-6.2	+8.8	1476.1		BS							
552	2310		171° 9.3'	+9.1°	6.0	BH	-11.6	-17.6		1458.5		-2310	-10	736,405	1,751,167			
553	1980		" "	"	14.8	BH	-9.9	-24.7		1451.4		-1980	-9	736,735	1,751,168			
554	1650		" "	"	14.8	90° 30'	-14.4	-29.2		1446.9		-1650	-7	737,065	1,751,170			
555	1320		" "	"	6.8	91° -	-23.6	-29.8		1446.3		-1320	-6	737,395	1,751,171			
556	990		" "	"	13.8	91° -	-17.3	-31.1		1445.0		-990	-4	737,725	1,751,173			
557	660		" "	"	11.5	91° -	-11.5	-23.0		1453.1		-660	-3	738,055	1,751,174			
558	330		" "	"	10.8	-		-10.8		1465.3		-330	-1	738,385	1,751,176			
559	0		" "	"	5.4	-		-5.4		1470.7	TP	0	0	738,715	1,751,177			
560	330		351° 14'	+9.10	2.7	89° -	+5.8	+3.1		1479.2		+330	+2	739,045	1,751,179			
561	660		" "	"	8.9	89° -	+11.5	+2.6		1478.7		+660	+4	739,375	1,751,181	horiz. correct y = -35'		
562	990		" "	"	13.2	89° -	+17.3	+4.1		1480.2		+990	+6	739,705	1,751,183	x = 0'		
IF	1180		350° 47.5'	+9.1°	14.5	89° -	+20.6	+6.1		1482.2		+1180	-2	739,895	1,751,175	739,895 + 1,751,175 4-Way Intersec.		
563	1320		351° 14'	+9.1°	11.4	89° -	+23.0	+11.6		1487.7		+1320	+8	740,035	1,751,185			
564	1650		" "	"	10.2	89° 20'	+19.2	+9.0		1495.1		+1650	+10	740,365	1,751,187			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 1/16/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY JH	LINE NO. 6	PAGE 42
AREA Oklahoma	TOPO MAP Cordell 15	STATE Oklahoma	COUNTY Washita	TWP 11N	RANGE 15W/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 TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1476.1					
565	1980		351° 14'	+9.1°	13.6	89° 20'	+23.0	+9.4		1485.5		+1980	+12	740,695 1,751,189
566	2310		351° 14'	+9.1°	11.3	89° 20'	+26.9	+15.6	+15.7	1491.8	TP	+2310-3	+13	741,022 1,751,190
566	2310				13.8	89° 16'	+29.4	+15.8		TP				
	1320		172° 5' +180°	+9.1°	+13.0	91° -	+23.0	+36.0	+36.1		BS	+1320-3	+27	
	1320				+9.3	71° 10'	+26.9	+36.2		BS				
567	990		172° 5'	+9.1°	9.4	91° -	-17.3	-26.7		1501.2		-990	-20	741,349 1,751,197
568	660		"	"	8.8	91° -	-11.5	-20.3		1507.6		-660	-14	741,679 1,751,203
569	330		"	"	8.5	-	-	-8.5		1519.4		-330	-7	742,009 1,751,210
570	0				8.4	-	-	-5.4		1522.5	TP	0	0	742,339 1,751,217
571	330		352° 6.1'	+8.9°	4.1	-	-	-4.1		1523.8		+330	+6	742,669 1,751,223
572	660		"	"	1.8	-	-	-1.5		1526.4		+660	+12	742,999 1,751,229
573	990		"	"	1.0	TH	+5.0	+4.0		1531.9		+990	+17	743,329 1,751,239
574	1320		352° 6.1'	+8.9°	5.8	TH	+6.6	+0.8		1529.7	TP	+1320-3	+23	743,656 1,751,240
574	1320				7.7	89° 40'	+7.7				TP			
	2310		171° 35.4' +190°	+8.9°	+13.6	90° 10'	+6.7	+20.3	+1549.0		BS	+2310-3	+20	
	2310				+7.0	90° 20'	+13.4	+20.4		BS				
575	1980		171° 35.4'	+8.9°	10.8	90° 50'	-28.8	-39.6		1509.4		-1980	-17	743,983 1,751,243
576	1450		"	"	10.5	91° -	-28.8	-39.3		1509.7		-1650	-14	744,313 1,751,246
577	1320		"	"	9.4	91° -	-23.0	-32.4		1516.6		-1320	-11	744,643 1,751,249
578	990		"	"	10.7	91° -	-17.3	-28.0		1521.0		-990	-8	744,973 1,751,252

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
11/7/80		G LITZINGER		G COTCHAMP		6834		Jul sduw		6	43					
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE	PPM	PARTY MANAGER				
OKLAHOMA		CORDell		Oklahoma		washita						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	X
									1549.0							
575	818		172° 21.6'	+89°	10.2	91°	-14.3	-24.5		1524.5		-818	-18	745,145	1,751,242	745,135 + 1,751,260 TWP
574	660		171° 36.4	+89°	11.5	91°	-11.5	-23.0		1526.0		-660	-6	745,303	1,751,254	
580	330		"	"	13.3	—	—	-13.3		1535.7		-330	-3	745,633	1,751,257	
581	0				5.11	—	—	-5.4		1543.6	T	0	0	745,963	1,751,260	
582	330		351° 37.8'	+89°	6.6	—	—	-6.6		1542.4		+330	+3	746,293	1,751,263	
583	660		"	"	11.3	—	—	-11.3		1537.7		+660	+6	746,623	1,751,266	
584	990		"	"	10.9	—	—	-10.9		1538.1		+990	+9	746,953	1,751,269	
585	1320		"	"	8.9	—	—	-8.9		1540.1		+1320	+12	747,283	1,751,272	
586	1660		"	"	13.6	—	—	-13.6		1535.4		+1650	+15	747,613	1,751,275	
587	1960		"	"	11.1	—	—	-11.1		1537.9		+1980	+18	747,943	1,751,278	
588	2310		351° 37.8'	+89°	12.5	—	—	-12.5		1536.6	T-P	+2310-3	+21-3	748,273	1,751,278	
588	2310				5.4	90° 10'	-6.7	-12.3	+2.4		T-P					
	2640		171° 54.7' +180	+8.7°	+7.3	90° 20'	+15.4	+22.7	+2.6		Bs	+2640-3	+28-3			
	2640				+14.7	90° 10'	+7.7	+22.4		1559.2	Bs					
589	2310		171° 54.7'	+8.7°	13.4	90° 30'	-20.2	-33.8		1525.4		-2310	-25	748,597	1,751,278	
590	1980		"	"	9.4	90° 50'	-28.8	-37.2		1522.0		-1980	-21	748,927	1,751,282	
591	1450		"	"	13.4	91°	-28.8	-42.2		1577.0		-1650	-18	749,257	1,751,285	
592	1320		"	"	12.8	91° 10'	-26.9	-39.7		1519.5		-1320	-14	749,587	1,751,289	
593	990		"	"	11.3	91°	-17.3	-28.6		1530.6		-990	-11	749,917	1,751,292	
594	660		"	"	8.7	91°	-11.5	-20.2		1539.0		-660	-7	750,247	1,751,296	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/7/90	INSTRUMENT MAN G Litzinger	ROD MAN G GOTCAMP	PARTY NUMBER 6834	NOTES CHECKED BY SM	LINE NO. 6	PAGE 44
AREA Oklahoma	TOPO MAP Cordell	STATE Oklahoma	COUNTY WAGHITA	TWP	RANGE	PPM
PARTY MANAGER						

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.	
594									1559.2					
595	474		172° 58.1'	+8.7°	13.0	89°	-2.4	-15.4		1543.8		-474	-14	750,433 1,751,289
595	330		171° 54.7'	+8.7°	11.6	-		-11.6		1547.6		-330	-4	750,577 1,751,299
596	0				5.4	-		-5.4		1553.8	T	0	0	750,907 1,751,303
597	330		351° 42.4'	+8.7°	1.4	-		-1.4		1557.8		+330	+2	751,237 1,751,305
598	660		"	"	7.5	89°	+11.5	+4.0		1543.2		+660	+5	751,567 1,751,308
BM	850		349° 15'	+8.7°	8.5	89°	+14.8	+6.3		1565.5		+849	-34	751,756 1,751,269 EL 1566 USGS 45 FT 1966
599	940		351° 42.4'	+8.7°	12.1	89°	+17.3	+5.2		1564.4		+990	+7	751,897 1,751,310
600	1320		"	"	7.1	89° 30'	+11.5	+4.4		1563.6		+1320	+9	752,227 1,751,312
601	1650		"	"	5.7	89° 30'	+14.4	+9.3		1568.5		+1650	+12	752,557 1,751,315
602	1980		"	"	5.4	89° 20'	+23.0	+17.6		1574.8		+1980	+14	752,867 1,751,317
603	2310		351° 42.4'	+8.7°	10.8	89° 20'	+26.9	+16.1		1575.3	TP	+2310-4	+16-3	753,213 1,751,316
603	2310				14.8	89° 14'	+30.9	+16.1			TP			
	2310		171° 43.3' + 180°	+8.7°	+12.7	-		+12.7	1588.0		BS	+2310-4	+17-3	
	2310				+11.1	89°	+11.6	+12.7			BS			
604	1980		171° 43.3'	+8.7°	11.2	89°	-9.9	-21.1		1566.9		-1980	-15	753,539 1,751,315
605	1650		"	"	10.0	90° 30'	-14.4	-24.4		1563.6		-1650	-12	753,869 1,751,318
606	1320		"	"	7.7	91° 20'	-30.7	-38.6		1549.4		-1320	-10	754,199 1,751,320
607	990		"	"	12.5	91° 30'	-25.9	-38.4		1549.6		-990	-7	754,529 1,751,323
608	660		"	"	8.0	91° 30'	-17.3	-25.3		1562.7		-660	-5	754,859 1,751,325
609	330		"	"	11.8	-		-11.8		1576.2		-330	-2	755,189 1,751,328

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
11/7/80		G. LITZINGER		G. COLEMAN		6834		S.H. WELLS		4		45		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PARTY MANAGER		
Oklahoma		Cordell		Oklahoma		Washington		11 N				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.	
									1588.0					
610	0				6.4	-		-5.4		1582.6	T	0	0	755,519 1,751,330
7/7	188		348° 49.7'	+8.7°	7.0	-		-7.0		1581.0		+188-2	-8-2	755,705 1,751,320
TP	870 12		WEST		9.2.7	91° 30'	-45.5	-58.2	1588.3	1529.7	TP			755,705 +1,751,320 4 way c.
TP	1740				7.8	91° 40'	-50.6	-58.4			TP			OFF SET WEST
	1230		EAST		+9.1	89° -	-21.5	-12.4	1517.3		BS			VERTICAL INVERSION 5.251 (STADIA)
	1230				+5.5	89° 10'	-17.9	-12.4			BS			
	1085		WEST		13.9	92° -	-37.8	-51.7		1465.6	TP			
	1086				10.7	92° 10'	-41.0	-51.7			TP			
	870		EAST		+3.3	72° -	+30.3	+33.6	1499.2		BS			
	870				+5.8	91° 30'	+27.8	+33.6			BS			
1/1	326				10.1	91° -	-5.7	-15.8		1483.4	TP			755,780 1,746,095 T-intersect. el. 1481 R.
1/1	326				9.1	91° 10'	-6.6	-15.7			TP			
	1792		171° 28.1' +160	+8.9°	+8.6	91° -	+31.3	+39.9			BS	+1792-3	+12	R 16 W
	1792				+3.3	91° 10'	+36.5	+39.8	1523.2		BS			
611	1650		171° 15.4	+8.9°	12.0	91° -	-28.8	-40.8		1482.4		-1650	-5	755,919 1,746,102
	1650													
612	1320				7.9	91° 20'	-30.7	-38.6		1484.6		-1320	-4	756,249 1,746,103
613	790				11.6	91° 20'	-23.0	-34.6		1494.6		-990	-3	756,579 1,746,104
614	660				13.6	91° 20'	-15.4	-29.0		1494.2		-660	-2	756,909 1,746,105
615	330				10.1	91° -	-5.8	-15.9		1507.3		-330	-1	757,239 1,746,106

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
11/7/80		G Litzinger		G COT CAMP		6984		Bul		6	47					
AREA		TOPO MAP		STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Condell		Oklahoma	WAGHITA	N N	16 W		L PAUIS							
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	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
									1529.5							
631	1320		351° 46'	+9.2°	6.3	89° 30'	+11.5	+5.2		1534.7	TP	+1320-4	+22+2	742,807	1746,152	
631	1320				10.0	89° 20'	+15.4	+5.4			TP					
	2640		171° 16' +180°	+9.2°	+13.7	90° 20'	+15.4	+29.1	1563.8		BS	+2640-4	+22+2			
	2640				+6.1	90° 30'	+23.0	+29.1			BS					
632	2310		171° 16'	+9.2°	7.1	90° 30'	-20.2	-27.3		1532.5		-2310	-19	742,893	1,746,157	
633	1980		" "	"	9.9	90° 30'	-17.3	-27.2		1536.6		-1980	-16	743,163	1,746,160	
634	1650		" "	"	14.8	90° 30'	-14.4	-29.2		1534.4		-1650	-13	743,493	1,746,163	
635	1320		" "	"	9.9	90° 50'	-19.2	-29.1		1534.7		-1320	-11	743,823	1,746,145	
636	990		" "	"	13.2	90° 50'	-14.4	-27.6		1536.2		-990	-8	744,153	1,746,168	
637	660		" "	"	13.5	90° 50'	-9.6	-23.1		1540.7		-660	-5	744,483	1,746,171	
638	330		" "	"	11.7	-		-11.7		1552.1		-330	-3	744,813	1,746,173	
639	0		" "	"	5.4	-		-5.4		1558.4	A	0	0	745,143	1,746,176	
640	330		351° 38'	+9.2°	3.2	-		-3.2		1560.6		+330	+2	745,473	1,746,178	
641	660		" "	"	2.0	-		-2.0		1561.8		+660	+3	745,803	1,746,179	
642	990		" "	"	4.6	TH	+5.0	+0.4		1564.2		+990	+5	746,133	1,746,181	
642	1210		351° 19'	+9.2°	4.3	TH	+6.1	+1.8		1565.6		+1210	+5	746,353	1,746,181	766,360+1,746,180 4-way Intersection (4) 563
643	1320		351° 38'	+9.2°	3.3	TH	+6.6	+3.3		1567.1		+1320	+6	746,463	1,746,182	
644	1650		" "	"	3.0	TH	+8.3	+5.3		1569.1		+1650	+8	746,793	1,746,184	
645	1980		" "	"	3.5	TH	+9.9	+6.4		1570.2		+1980	+9	747,123	1,746,185	
646	2310		" "	"	6.9	TH	+11.6	+5.2		1569.0		+2310	+11	747,453	1,746,187	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/7/80	INSTRUMENT MAN G LITZINGER	ROD MAN G COTCAMP	PARTY NUMBER 6434	NOTES CHECKED BY Shl	LINE NO. 6	PAGE 44
AREA Oklahoma	TOPO MAP Cordell	STATE Oklahoma	COUNTY Washington	TWP 11N	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 TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1523.2					
616	0				5.4	-		-5.4		1517.8	T	0	0	757,569 1,746,107
617	330		351° 27.2'	+8.9°	6.4	-		-6.4		1516.8		+330	+2	757,899 1,746,109
618	660		"	"	12.7	8H	-3.3	-14.0		1507.2		+660	+4	758,229 1,746,111
619	990		"	"	13.6	8H	-5.0	-18.6		1504.6		+990	+6	758,659 1,746,113
620	1320		"	"	10.0	8H	-6.6	-14.6		1504.6		+1320	+8	758,889 1,746,115
621	1650		"	"	6.6	-		-6.6		1516.6		+1650	+10	759,219 1,746,117
622	1980		351° 27.2'	+8.9°	4.8	-		-4.8		1518.4	TD	+1980-9	+12	759,645 1,746,119
622	1980				14.7	TH	+9.9	-4.8			TP			
	1650		171° 24.7' +180°	+8.9°	+11.1	-		+11.1	1529.5		BS	+1650-4	+9	
	1650				+6.3	90° 10'	+4.8	+11.1			BS			
623	1320		171° 24.7'	+8.9°	6.9	-		-6.9		1522.7		-1320	-7	759,821 1,746,121
624	990		"	"	8.6	-		-8.6		1520.9		-990	-5	760,201 1,746,123
625	660		"	"	10.4	-		-10.4		1519.1		-660	-4	740,531 1,746,124
626	330		"	"	5.8	-		-5.8		1523.7		-330	-2	740,841 1,746,126
627	93		175° 51.2'	+8.9°	8.5	-		-5.5		1524.0		-93	-8	741,098 1,746,120
627	0				5.4	-		-5.4		1524.1	T	0	0	741,191 1,746,128
628	330		351° 46'	+9.2°	3.4	-		-3.4		1526.1		+330	+6	741,521 1,746,134
629	660		"	"	1.6	-		-1.6		1527.9		+660	+11	741,851 1,746,139
630	990		"	"	3.8	TH	+5.0	+1.2		1530.7		+990	+17	742,181 1,746,145

761,110 +1,746,105
4 WAY EL 1523

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/8/80	INSTRUMENT MAN G. Cutcamp	ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY BLL	LINE NO. 6	PAGE 48
AREA Oklahoma	TOPO MAP Cordell 15'	STATE Oklahoma	COUNTY Washita	TWP 7N R	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	NORTH + SOUTH -		EAST + WEST -		COORDINATES		REMARKS
												LAT.	DEP.	Y	X			
									1563.8									
647	2640		351° 38'	+9.2°	10.8	TH	+13.2	+2.4			TP	+2640-4	+12+2	767,779	1,746,190			
647	2640				13.1	89° 40'	+15.4	+2.3		1566.1	TP							
	1320		170° 38' +180°	+9.2°	+14.3	90° 20'	+7.7	+22.0	1588.1		BS	+1320-4	-4+2					
	1320				+10.5	90° 30'	+11.5	+22.0			BS							
648	990		170° 38'	+9.2°	12.2	91° -	-17.3	-29.5		1558.6		-990	+3	768,105	1,746,191			
649	660		"	"	12.4	91° 20'	-15.4	-27.8		1540.3		-660	+2	768,435	1,746,190			
650	330		"	"	10.8	91° -	-5.8	-16.6		1571.5		-330	+1	768,765	1,746,189			
651	0				5.4	-	-	-5.4		1582.7	X	0	0	769,095	1,746,188			
652	330		350° 49.4'	+9.2°	14.1	91° -	-5.8	-19.9		1568.2		+330	0	769,425	1,746,188			
653	660		"	"	11.0	92° -	-23.0	-34.0		1554.1		+660	0	769,765	1,746,188			
654	990		"	"	15.0	92° -	-34.5	-49.5		1538.6		+990	0	770,085	1,746,188			
655	1320		"	"	13.2	91° -	-23.0	-36.2		1551.7		+1320	+1	770,415	1,746,189			
656	1650		350° 49.4'	+9.2°	11.3	-	-	-11.3		1576.8	TP	+1650-4	+1+2	770,741	1,746,191			
656	1650				3.0	BH	-8.3	-11.3			TP							
	990		170° 43.2' +180°	+9.2°	+3.2	BH	+5.0	+18.2	1595.0		BS	+990-4	-1+2					
	990				+12.4	90° 20'	+5.8	+18.2			BS							
657	660		170° 43.2'	+9.2°	8.7	-	-	-8.7		1586.3		-660	+1	771,067	1,746,193			
658	330		"	"	7.1	-	-	-7.1		1587.9		-330	0	771,397	1,746,192			
IF	142		179° 36'	+9.2°	4.6	-	-	-4.6		1590.4		-142	-9	771,585	1,746,183			
659	0				5.4	-	-	-5.4		1589.6	X	0	0	771,727	1,746,192			

771,575 + 1,746,195
T-rod (east) - EL 1589

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/8/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY shl rlu	LINE NO. 6	PAGE 49
AREA Oklahoma	TOPO MAP Cordell	STATE Oklahoma	COUNTY Washita	TWP 11 N	RANGE 16 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	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1595.0					
660	330		350° 53.7'	+9.2°	14.7	BH	-1.7	-16.4		1578.6		+330	+1	772,057 1,746,193
661	660		" "	"	13.3	91° -	-11.5	-24.8		1570.2		+660	+1	772,387 1,746,193
662	990		" "	"	12.3	91° -	-17.3	-29.6		1565.4		+990	+2	772,717 1,746,194
663	1320		350° 53.7'	+9.2°	8.0	91° -	-23.0	-31.0			TP	+1320-4	+2	773,043 1,746,194
663	1320				14.2	90° 44'	-16.9	-31.1		1323.9	TP			
	1980		170° 31.6' +180°	+9.2°	+9.0	TH	-9.9	-0.9	1563.0		BS	+1980-4	-9	
	1980				+10.7	89° 40'	-11.5	-0.8			BS			
664	1650		170° 31.6'	+9.2°	1.2	-		-1.2		1561.8		-1650	+8	773,369 1,746,193
665	1320		" "	"	4.0	-		-4.0		1559.0		-1320	+6	773,699 1,746,191
666	990		" "	"	6.7	-		-6.7		1556.3		-990	+5	774,029 1,746,190
667	660		" "	"	6.1	-		-6.1		1556.9		-660	+3	774,359 1,746,188
668	330		" "	"	5.9	-		-5.9		1557.1		-330	+2	774,689 1,746,187
669	0				5.4	-		-5.4		1557.6	π	0	0	775,019 1,746,185
670	330		351° 0'	+9.2°	13.7	BH	-1.7	-15.4		1547.6		+330	+1	775,349 1,746,186
671	660		" "	"	13.8	-		-13.8		1549.2		+660	+2	775,679 1,746,187
672	990		" "	"	5.1	-		-5.1		1557.9		+990	+3	776,009 1,746,188 WASHITA CO
673	1320		" "	"	13.9	-		-13.9		1549.1		+1320	+5	776,339 1,746,190 horiz. correct. y=-47
674	1650		" "	"	15.2	90° 10'	-4.8	-20.0		1543.0		+1650	+6	776,669 1,746,191 x=+12'
TP	1795		351° 26'	+9.2°	14.7	-		-14.7		1548.3		+1795-4	+20	776,810 1,746,205 776,810 +1,746,205 T-intersect.
3C	1800		350° 30'	+9.2°	13.3	-		-13.3		1549.7	TP	+1800	-9	776,979 1,746,176 bridge = 1547

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/8/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY [Signature]	LINE NO. 6	PAGE 50
AREA Oklahoma	TOPO MAP Cordell 15	STATE Oklahoma	COUNTY Custer	TWP 12N	RANGE R 15 W 16	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.	
										1598.0	TR			5,200' offset (scaled) east between 674+675
	1505		171° 25' +180°	+9.2°	+10.2	BH	+7.5	+17.7	1615.7		BS	+1505-3	+16+1	scaled (north zone coordinates) 90° bend north el. 1598
	1505				+14.2	90° 8'	+3.5	+17.7			BS			
675	1320		171° 0'	+9.2°	10.9	BH	-6.6	-17.5		1598.2		-1320	-5	170,987 1,757,422 Custer Co.
676	990		" "	"	11.1	-		-11.1		1604.6		-990	-3	170,917 1,757,424 ↓
677	660		" "	"	7.3	-		-7.3		1608.4		-660	-2	171,147 1,757,425
678	330		" "	"	5.4	-		-5.4		1610.3		-330	-1	171,477 1,757,426
679	0		" "	"	5.4	-		-5.4		1610.3	X	0	0	171,907 1,757,427
680	330		351° 25'	+9.2°	4.0	-		-4.0		1611.7		+330	+4	172,137 1,757,431
681	660		" "	"	1.1	-		-1.1		1614.6		+660	+7	172,467 1,757,434
682	990		" "	"	7.3	89° -	+17.3	+10.0		1625.7		+990	+11	172,797 1,757,438
683	1320		" "	"	9.5	88° 30'	+34.5	+25.0		1640.7		+1320	+14	173,127 1,757,441
684	1650	1649	" "	"	6.9	88° 30'	+43.2	+36.3		1652.0		+1649	+18	173,456 1,757,445
685	1980	1979	351° 25'	+9.2°	5.7	88° 30'	+57.8	+46.1			TP	+1979-3	+21+1	173,783 1,757,449
685	1980		" "	"	11.3	88° 20'	+57.6	+46.3		1662.0	TP			
	1980		170° 58.4' +180°	+9.2°	+10.2	BH	+9.9	+20.1	1682.1		BS	+1980-3	+6	
	1980		" "	"	+14.3	90° 10'	+5.8	+20.1			BS			
686	1650		170° 58.4'	+9.2°	7.5	BH	-8.3	-15.8		1666.3		-1650	-5	174,110 1,757,450

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.		PAGE		
11/8/80		G. Cotcamp		G. Litzinger		6834		Jal			6		51		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Cordell 15'		Oklahoma		Custer		T 12 N		R 15/16				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
									1682.1						
687	1320		171° 1'	+9.2°	12.2	-		-12.2		1669.9		-1320	-5	174,440	1,757,450
688	990		" "	"	9.0	-		-9.0		1678.1		-990	-4	174,770	1,757,457
689	660		170° 26'	+9.2°	7.5	-		-7.5		1674.6		-660	+4	175,100	1,757,459
690	330		" "		6.9	-		-6.9		1675.2		-330	+2	175,430	1,757,457
IF	190		169° 11'	+9.2°	7.9	-		-7.9		1674.2		-190	+5	175,570	1,757,460
691	0				5.4	-		-5.4		1676.7	TP	0	0	175,760	1,757,455
692	330		351° 12.9'	+9.3°	12.6	-		-12.6		1669.5		+330	+3	174,090	1,757,458
693	660		" "	"	14.2	BH	-3.3	-17.5		1669.6		+660	+6	176,920	1,757,461
694	990		" "	"	13.5	BH	-5.0	-18.5		1663.6		+990	+9	176,750	1,757,464
695	1320		" "	"	12.0	BH	-6.6	-18.6		1663.5		+1320	+12	177,080	1,757,467
696	1650		351° 12.9'	+9.3°	13.3	90° 30'	-14.4	-27.7			TP	+1650-3	+15	177,407	1,757,470
696	1650				10.5	90° 36'	-17.3	-27.8		1654.3	TP				
	1650		171° 20.4' +190	+9.3°	+10.7	89° 10'	-24.0	-13.3	1641.0		BS	+1650-3	+18		
	1650				+6.0	89° 20'	-19.2	-13.2			BS				
697	1320		171° 20.4'	+9.3°	9.0	89° 40'	+7.7	-1.3		1639.7		-1320	-15	177,734	1,757,473
698	990		" "	"	10.4	BH	-5.0	-15.4		1625.6		-990	-11	178,064	1,757,477
699	660		" "	"	10.7	91°	-11.5	-22.2		1618.8		-660	-7	178,394	1,757,481
700	330		" "	"	7.9	-		-7.9		1633.1		-330	-4	178,724	1,757,484
701	0				5.4	-		-5.4		1635.6	TP	0	0	179,054	1,757,488
702	330		861° 8.7	+9.3°	11.7	91°	-5.8	-17.5		1623.5		+330	+3	179,384	1,757,491

175,540 + 1,757,430
T-rd (east) el. 1676.

Note sta. 691-703

are on west side of
road (permit).

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/9/80	INSTRUMENT MAN G LITZINGER	ROD MAN G GOTCAMP	PARTY NUMBER 6834	NOTES CHECKED BY GAL	LINE NO. 6	PAGE 52	
AREA OKLAHOMA	TOPO MAP	STATE OKLAHOMA	COUNTY CUSTER	TWP T 12 N	RANGE 15 W / 16 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	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1641.0					
703	660		351° 27'	+9.3°	9.5	92° -	-23.0	-32.5		1609.5		+660	+5	179,714 1,751,493
704	990		351° 38.4'	+9.3°	3.2	92° -	-34.5	-37.7		1603.3		+990	+16	180,044 1,751,504
705	1320		"	"	14.0	84	-6.6	-20.6		1620.4		+1320	+22	180,374 1,751,510
706	1480		"	"	8.2	-	-	-8.2		1632.8		+1650	+27	180,704 1,751,515
IF	17.75		351° 20.3'	+9.3°	0.8	-	-	-0.8		1640.2		+1775	+20	180,929 1,751,508 180,815 + 1,751,520 TAD CHIT
707	1780		357° 38.6'	+9.3°	0.1	TH	+9.9	+9.8		1650.8		+1980	+33	181,034 1,751,521
708	2310		351° 38.4'	+9.3°	8.9	89° 10'	+33.6	+24.7	+24.6	1665.4	TP	+2310-3	+38	181,361 1,751,526
708	2310				2.4	89° 20'	+26.9	+24.5			TP			
	1320		171° 23.5' + 180	+9.3°	10.2	-	-	+10.2	1675.8		BS	+1320-3	+16	
	1320				6.4	90° 10'	+3.8	+10.2			BS			
709	990		171° 23.5'	+9.3°	4.0	-	-	-4.0		1671.8		-990	-12	181,688 1,751,430
710	660		"	"	3.5	-	-	-3.5		1672.3		-660	-8	182,018 1,751,434
711	330		"	"	3.9	-	-	-3.9		1671.9		-330	-4	182,348 1,751,438
712	0				5.4	-	-	-5.4		1670.4	T	0	0	182,678 1,751,542
713	330		351° 6.7'	+9.3°	14.2	91° -	-5.8	-20.0		1655.8		+330	+2	183,008 1,751,544
714	660	659	"	"	6.2	93° -	-34.5	-40.7		1635.1		+659	+5	183,337 1,751,547
715	990	989	"	"	10.7	92° -	-34.5	-45.2		1630.6		+989	+7	183,667 1,751,549
716	1320	1319	351° 6.7'	+9.3°	4.6	92° -	-46.0	-50.6	-50.8	1625.0	TP	+1319-2	+9	183,995 1,751,551
716	1320				12.5	91° 40'	-38.4	-50.9			TP			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/9/80	INSTRUMENT MAN G. Litziwig & A	ROD MAN G. Cotcamp	PARTY NUMBER 6834	NOTES CHECKED BY shp	LINE NO. 6	PAGE 53
AREA Oklahoma	TOPO MAP	STATE Oklahoma	COUNTY Custer	TWP 12N	RANGE 15W 14W	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.	
714										14257.0				
	1320		169° 0.8' +180°	+9.3°	7.113	89° -	-23.0	-11.77			BS	+1319	-39	
	1320				+3.6	89° 20'	-15.4	-11.8	1613.2		BS			
717	990		169° 0.8'	+9.3°	9.7	-	-	-9.7		1603.5		-990	+29	184,324 1,751,541
718	660		"	"	13.4	91° 20'	-15.4	-28.8		1584.4		-660	+19	184,604 1,751,531
719	830		"	"	11.7	93° -	-17.2	-28.9		1584.3		-330	+10	184,984 1,751,522
720	0				5.4	-	-	-5.4		1607.8	T	0	0	185,314 1,751,572
721	330		354° 19.6'	+9.3°	9.1	87° -	+17.2	+8.1		1621.3		+329	+21	185,643 1,751,533
722	660	659	" "	"	6.4	87° -	+34.5	+28.1		1641.3		+658	+42	185,972 1,751,554
723	990	989	354° 19.6'	+9.3°	9.4	87° -	+51.7	+42.3	+42.4	16537.4	TP	+987	+63	186,301 1,751,575
723	990				6.4	87° 10'	+48.9	+42.5			TP			
	1320		172° 4.4' +180	+9.3°	+12.3	-	-	+12.3	1667.9		BS	+1320	+32	
	1320				+5.7	BH	+6.6	+12.3			BS			
724	990		172° 4.4'	+9.3°	11.3	BH	-5.0	-16.3		1657.6		-990	-24	186,631 1,751,583
725	660		"	"	12.0	BH	-3.3	-15.3		1652.6		-660	-16	186,961 1,751,591
726	330		"	"	4.1	-	-	-4.1		1663.8		-330	-8	187,291 1,751,599
727	0				5.4	-	-	-5.4		1662.5	T	0	0	187,621 1,751,607
728	330		353° 40.3	+9.3°	7.9	-	-	-7.9		1660.0		+330	+17	187,951 1,751,624
729	660		"	"	13.6	-	-	-13.6		1654.3		+659	+34	188,280 1,751,641
730	990		353° 40.3'	+9.3°	2.1	-	-	-2.1		1665.8		+989	+51	188,640 1,751,658
731	1318		350° 31.7	+9.3°	12.1	89° -	+23.6	+10.9		1678.8		+1318	-4	188,939 1,751,603 CURVE

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/9/88	INSTRUMENT MAN G Litzinger	ROD MAN G COLCAMP	PARTY NUMBER 6834	NOTES CHECKED BY JHL	LINE NO. 6	PAGE 3-4
AREA Oklahoma	TOPO MAP	STATE Oklahoma	COUNTY Custer	TWP 12N	RANGE 15W 116W	PPM
PARTY MANAGER L DHUIS						

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
									1667.9						
732	1645		350° 31.7'	+9.3°	5.2	87° -	+28.7	+23.5	+23.4	1691.3	TP	+1645	-5	189,266	1,751,602
732	1645				10.2	88° 30'	+33.5	+23.3			TP				
	975		175° 02' +180 775	+9.3°	+9.3	74	-4.9	+4.4	1695.7		BS	+972	+73		
	975				+4.4	-		+4.4			BS				SEURVE horiz. correct. y=-23 x=+2
73	722		176° 40.8'	+9.3°	2.2	-		-2.2		1693.5		-718	-75	189,520	1,751,600
733	650		176° 18.9'	+9.3°	3.8	-		-3.8		1691.9		-647	-63	189,591	1,751,602
734	828		166° 40.3'	+9.3°	3.6	-		-3.6		1692.1		-327	+23	189,911	1,751,698
735	0				5.4	-		-5.4		1690.3	T	0	0	190,238	1,751,675
734	330		328° 57.3'	+9.3°	6.2	-		-6.2		1689.5		+156	-62	190,394	1,751,613
734	330		333° 5.8'	+9.3°	7.0	-		-7.0		1688.7		+315	-100	190,353	1,751,575
737	655		339° 5.4'	+9.3°	13.5	-		-13.5		1682.2		+642	-132	190,880	1,751,543
738	980		349° 1'	+9.5°	6.7	91° -	-16.6	-23.3		1678.4	TP	+950-1	-25+2	191,187	1,751,652
738	930				9.5	90° 50'	13.8	-23.3			TP				
	1650		171° 18.4' +180	+9.5°	+5.2	-		+5.2	1677.4		BS	+1650-1	+23+2		
	1660				+13.4	74	-8.3	+5.2			BS				
739	1320		171° 18.4'	+9.5°	8.6	84	-6.6	-15.2		1662.4		-1320	-19	191,516	1,751,658
74	1500		171° 40.2'	+9.5°	7.4	-		-7.4		1670.2		-1500	-31	191,336	1,751,646
740	990	989	171° 18.4'	+9.5°	7.0	92° -	-34.5	-41.5		1634.1		-989	-14	191,847	1,751,663
741	660	659	"	"	13.1	92° 30'	-28.8	-41.9		1635.7		-659	-9	192,177	1,751,669
742	330		"	"	12.4	92° 30'	-14.4	-26.8		1650.8		-330	-5	192,506	1,751,672

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.	PAGE							
11/9/88		G LITZINGER		G COTCAMP		6834		SAL			6	35							
AREA		TOPO MAP	STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER											
OKLAHOMA			OKLAHOMA	CUSTER	12 N	16 W 16 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 TP	NORTH + SOUTH -		EAST + WEST -		COORDINATES		REMARKS	
												LAT.	DEP.	Y	X				
									1477.6										
743	0				5.9	-		-3.4		1672.2	T	0	0	192,836	1,751,677				
744	330		351° 17.2'	+9.5°	14.5	-		-14.5		1663.1		+330	+5	193,164	1,751,682				
745	660		" "	"	23.4	91° 40'	-19.2	-42.6		1635.0		+660	+9	193,494	1,751,686				
746	990		" "	"	6.5	91° 40'	-28.8	-35.3		1642.3		+990	+14	193,824	1,751,691				
747	1320		" "	"	11.7	90° 30'	-11.5	-23.2		1654.4		+1320	+18	194,154	1,751,695				
748	1650		357° 17.2'	+9.5°	14.0	90° 30'	-14.4	-28.4			TP	+1650-1	+23+2	194,485	1,751,702				
749	1650				9.3	90° 40'	-19.2	-28.5		1649.1	TP								
	1650	1649	170° 33.7' +180°	+9.5°	+14.5	88° 8'	-53.7	-39.2	1609.9		BS	+1649	+2+2						
	1650				+4.9	88° 28'	-44.1	-39.2			BS								
749	1320	1319	170° 33.7'	+9.5°	5.0	88° 20'	+38.4	+33.4		1643.3		-1319	-1	194,815	1,751,705				
750	990		" "	"	9.1	88° 20'	+28.8	+19.7		1629.6		-990	-1	195,144	1,751,705				
751	660		" "	"	5.7	89° -	+11.5	+5.8		1615.7		-660	-1	195,474	1,751,705				
752	330		" "	"	7.1	-		-7.1		1602.8		-330	0	195,804	1,751,704				bridge
753	0				5.4	-		-5.4		1604.5	A	0	0	196,134	1,751,704				
754	330		351° 22'	+9.5°	8.8	88° -	+11.5	+2.7		1612.6		+330	+5	196,464	1,751,711				
IF	482		351° 6.3'	+9.5°	14.8	88° 16'	+14.6	-0.2		1609.7		+482	+5	196,416	1,751,711				196,505 + 1,751,720 T-rod (east) el. 1612
755	660		351° 22'	+9.5°	14.7	88° 14'	+26.3	+5.6		1615.5		+660	+10	196,794	1,751,714				
756	990	989	" "	"	13.2	88° 10'	+31.7	+18.5		1628.4		+989	+15	197,123	1,751,721				
757	1320	1319	" "	"	5.9	88° -	+46.0	+40.1		1650.0		-1319	+20	197,453	1,751,726				

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE				
11/10/80		G. Cotcamp		G. Litzinger		6834		[initials]		6		56				
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER		
Oklahoma		Clinton 15'		Oklahoma		Custer		12 W		75 W 14 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	X
758	1650	1649	351°22'	-2.0°	6.9	88°-	+57.6	+56.7	1666.5	1666.5	TP	+1649	+28+2	197.783	1,751,736	
758	1650				5.8	87°50'	+62.3	+36.5			TP					
	1320		171°7.8'+180°	+9.6°	+12.3	-		+12.3	1678.8		BS	+1320	+17			
	1320				+10.0	90°6'	+2.3	+12.3			BS					
759	990		171°7.8'	+9.6°	9.9	-		-9.9		1669.9		-990	-13	198.113	1,751,740	
760	660		"	"	3.1	-		-3.1		1675.7		-660	-8	198.443	1,751,745	
761	330		"	"	7.5	-		-7.5		1671.3		-330	-4	198.773	1,751,749	
762	0		"	"	5.4	-		-5.4		1673.4	TP	0	0	199.103	1,751,753	
#	320		349°56'	+9.6°	0.9	TH	+1.6	+0.7		1679.5		+320	-3	199.423	1,751,750	railroad
763	330		351°28.8'	+9.6°	0.7	TH	+1.7	+1.0		1679.8		+330	+6	199.433	1,751,759	unable to locate B.M.
764	660		"	"	4.3	89°-	+11.5	+7.2		1686.0		+660	+12	199.763	1,751,765	
765	990		"	"	4.0	88°30'	+25.9	+21.9		1700.7		+990	+19	200.093	1,751,772	
766	1320	1319	"	"	3.3	88°20'	+38.4	+35.1		1713.9		+1319	+25	200.422	1,751,778	
767	1650	1649	351°28.8'	+9.6°	7.8	88°20'	+48.0	+40.2		1719.0	TP	+1649	+31	200.752	1,751,784	
767	1650				4.9	88°26'	+45.1	+40.2			TP					
	1025		170°55.4'+180°	+9.6°	+7.6	88°50'	-20.9	-13.3			BS	+1025	+9			
	1025				+10.5	88°40'	-23.8	-13.3	1705.7		BS					
768	695		170°55.4'	+9.6°	5.0	88°30'	+18.2	+13.2		1719.9		-695	-6	201.082	1,751,787	
769	365		"	"	2.7	89°-	+6.4	+3.7		1709.4		-365	-3	201.412	1,751,790	
770	35		"	"	5.4	-		-5.4		1700.3		-35	0	201.742	1,751,793	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/10/80	INSTRUMENT MAN G. Cotcamp		ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY BHL	LINE NO. 6	PAGE 58
AREA Oklahoma	TOPO MAP Clinton	STATE Oklahoma	COUNTY Custer	TWP T 13 N	RANGE 15W 116W	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.	
									1440.9					
776	990	989	351°21.3'	+9.3°	11.0	87°26'	+44.3	+33.3		1474.2	TP	+989.4	+11	203,688 1,748,791
776	990				12.7	87°20'	+46.0	+33.3			TP			
	2970		171°15.9' +180°	+9.3°	+10.0	90°40'	+34.5	+44.5	1719.7		BS	+2970.4	+29	
	2970				+134	90°36'	+31.1	+44.5			BS			
777	2640		171°15.9'	+9.3°	6.0	90°40'	-30.7	-36.7		1482.0		-2640	-26	204,014 1,748,794
778	2310		"	"	7.8	90°40'	-26.9	-34.7		1484.0		-2310	-23	204,344 1,748,797
779	1980		"	"	7.9	90°40'	-23.0	-30.9		1487.8		-1980	-20	204,674 1,748,800
780	1650		"	"	11.1	90°30'	-14.4	-25.5		1493.2		-1650	-16	205,004 1,748,804
781	1320		"	"	10.5	90°30'	-11.5	-22.0		1496.7		-1320	-13	205,334 1,748,807
782	990		"	"	12.8	90°20'	-5.8	-18.6		1700.1		-990	-10	205,664 1,748,810
783	660		"	"	13.4	-	-	-13.4		1705.3		-660	-7	205,994 1,748,813
784	330		"	"	9.2	-	-	-9.2		1709.5		-330	-3	206,324 1,748,817
785	0		"	"	5.4	-	-	-5.4		1713.3	TP	0	0	206,654 1,748,820
786	330		351°32.6'	+9.3°	3.3	-	-	-3.3		1715.4		+330	+5	206,984 1,748,825
787	417		350°49'	+9.3°	4.1	-	-	-4.1		1714.6		+417	+1	207,071 1,748,821
787	660		351°32.6'	+9.3°	5.9	-	-	-5.9		1712.8		+660	+10	207,314 1,748,830
788	990		"	"	8.7	-	-	-8.7		1710.0		+990	+15	207,644 1,748,835
789	1320		"	"	8.5	-	-	-8.5		1710.2		+1320	+19	207,974 1,748,839
790	1650		"	"	12.1	-	-	-12.1		1706.6		+1650	+24	208,304 1,748,844
791	1980		"	"	5.8	BH	-9.9	-15.7		1703.0		-1980	+29	208,634 1,748,849

207,030 + 1,748,820
4-Way Intersect. el. 1712.

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/10/80	INSTRUMENT MAN G. Cotcamp		ROD MAN G. Litzinger		PARTY NUMBER 6834		NOTES CHECKED BY [Signature]		LINE NO. 6	PAGE 59
AREA Oklahoma	TOPO MAP Clinton 15'		STATE Oklahoma	COUNTY Custer	TWP 13N	RANGE 15/16W	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.	
									1718.7					
792	2310		351°32.6'	+9.3°	14.5	-		-14.5		1704.2		+2310	+34	208,984 1,748,854
793	2640		"	"	13.5	-		-13.5		1705.2		+2640	+39	209,294 1,748,859
794	2970		351°32.6'	+9.3°	10.3	-		-10.3	10.4	1709.3	TP	+2970.4	+44	209,620 1,748,864
799	2970				13.9	89°56'	+3.4	-10.5				TP		
	2970	2969	170°39.8'+180°	+9.3°	+13.3	91°6'	+57.0	+70.3	1718.4		BS	+2969.4	-2	
	2970				+9.8	91°10'	+40.5	+70.3				BS		
795	2640	2639	170°39.8'	+9.3°	14.5	91°16'	-53.8	-68.3		1710.3		-2639	+2	209,946 1,748,864
796	2310	2309	"	"	10.7	91°20'	-53.7	-64.4		1714.2		-2309	+1	210,276 1,748,863
797	1980	1979	"	"	13.8	91°20'	-46.1	-59.9		1718.7		-1979	+1	210,606 1,748,863
798	1650	1649	"	"	12.1	91°30'	-43.2	-55.3		1723.3		-1649	+1	210,936 1,748,863
799	1320		170°17'	+9.3°	12.3	91°30'	-34.5	-46.8		1731.8		-1320	+10	211,265 1,748,872
800	990		"	"	11.3	91°30'	-25.9	-37.2		1741.4		-990	+7	211,595 1,748,869
801	660		"	"	13.8	91°10'	-13.4	-27.2		1751.4		-660	+5	211,925 1,748,867
802	330		"	"	14.3	BH	-1.7	-16.0		1762.6		-330	+2	212,255 1,748,864
JL TF	240		169°14'	+9.3°	12.7	-		-12.7		1765.9		-240	+6	212,345 1,748,868
803	0				5.4	-		-5.4		1773.2	T	0	0	212,585 1,748,868
804	330		351°20.6'	+9.3°	8.8	-		-8.8		1769.8		+330	+4	212,915 1,748,866
805	660		"	"	12.4	BH	-3.3	-15.7		1762.9		+660	+7	213,245 1,748,869
806	990		"	"	11.0	-		-11.0		1767.6		+990	+11	213,575 1,748,873
807	1320		"	"	14.4	89°-	+23.0	+8.6		1787.2		+1320	+15	213,905 1,748,877

100' 40' + 1,748,868
 9-way Intersect. el. 1764
 Note- Sta. 803-826 are on west side of road (private).

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 11/10/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Litzinger	PARTY NUMBER 6837	NOTES CHECKED BY shl	LINE NO. 6	PAGE 60
AREA Oklahoma	TOPO MAP Clinton 15'	STATE Oklahoma	COUNTY Custer	TWP 13 N	RANGE 15 W/16 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	COORDINATES		REMARKS
												NORTH+ SOUTH- LAT.	EAST+ WEST- DEP.	
									1778.4					
808	1650		351°20.6'	+9.3°	7.6	89°-	+28.8	+19.2		1797.8		+1650	+19	214,235 1,748,881
809	1980		"	"	9.0	89°-	+34.6	+25.4		1804.2		+1980	+22	214,565 1,748,884
810	2310		"	"	11.4	89°-	+40.3	+28.9		1907.5		+2310	+26	214,895 1,748,888
811	2640		"	"	14.0	89°-	+46.1	+32.1		1810.7		+2640	+30	215,225 1,748,892
812	2970		351°20.6'	+9.3°	14.7	89°4'	+48.4	+33.7		1812.3	TP	+2970-4	+33	215,551 1,748,895
812	2370		"	"	9.5	89°12'	+43.2	+33.7			TP			
	660		171°59.5'+180°	+9.3°	+2.8	TH	-3.3	+0.5	1812.8		BS	+660-4	+15	
	660		"	"	+3.3	89°40'	-3.8	+0.4			BS			
813	330		171°59.5'	+9.3°	1.6	TH	+1.7	+0.1		1812.9		-330	-7	215,877 1,748,898
814	0		"	"	5.4	-		-5.4		1807.4	X	0	0	216,207 1,748,900
815	330		351°27.2'	+9.3°	12.6	91°-	-5.8	-18.4		1794.4		+330	+4	216,537 1,748,904
816	660		351°27.2'	+9.3°	11.5	91°30'	-17.3	-28.8		1784.0	TP	+660-4	+9	216,863 1,748,907
816	660		"	"	13.4	91°20'	-15.4	-28.8			TP			
	1650	1649	170°36.6'+180°	+9.3°	+14.4	89°2'	-56.6	-42.2	1741.8		BS	+1649	-3	
	1650		"	"	+5.9	89°20'	-49.0	-42.2			BS			
817	520		170°36.6'	+9.3°	7.0	89°30'	+34.5	+27.5		1769.3		-1320	+2	217,192 1,748,918
818	990		"	"	9.2	89°-	+17.3	+8.1		1749.9		-990	+2	217,522 1,748,922
#1	901		170°29'	+9.3°	2.1	TH	+4.5	+2.4		1744.2		-901	+3	217,611 1,748,927
819	660		170°36.6'	+9.3°	6.8	-		-6.8		1735.0		-660	+1	217,852 1,748,932
820	330		"	"	2.9	-		-2.9		1738.9		-330	+1	218,182 1,748,937

217,610 + 1,748,927
(lowest) = 1,744,537

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE	11/10/80	INSTRUMENT MAN	G. Catcamp	ROD MAN	G. Catcamp	PARTY NUMBER	6834	NOTES CHECKED BY	slh	LINE NO.	6	PAGE	61	
AREA	OKLAHOMA	TOPO MAP	State 15'	STATE	Oklahoma	COUNTY	Custer	TWP	13 W	RANGE	15 W / 14 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	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1741.8					
821	0				5.4	-		-5.4		1736.4	X	0	0	218,512 1748,916
822	330		351°4.2'	+9.3°	9.8	-		-9.8		1732.0		+330	+2	218,842 1748,918
823	660		"	"	6.3	-		-6.3		1735.5		+660	+4	219,172 1748,920
824	990		"	"	1.6	-		-1.6		1740.2		+990	+6	219,502 1748,922
825	1320		"	"	9.2	89°20'	+15.4	+6.2		1748.0		+1320	+9	219,832 1748,925
826	1650		351°4.2'	+9.3°	1.6	89°20'	+19.2	+17.4		1759.4	TP	-1650	+11	220,162 1748,927 EOL #6
826	1650				6.4	89°10'	+24.0	+17.4			TP			
	1980		351°0.3'-180°	+9.3°	+13.1	89°10'	-28.8	-15.7			BS	-1980	-11	loop traverse from
	1980				+7.4	89°20'	-23.0	-15.6	1743.8		BS			sta 826 back to Twp.
X	0				5.4	-		-5.4		1738.4	X	0	0	218,182 1748,916
5/1	572		170°15.3'	+9.3°	2.7	TH	+2.9	+0.2		1744.0		-572	+7	217,610 1748,920 217,610 + 1748,920 Twp (west) el. 1749.
5/1	572				4.8	89°30'	+5.0	+0.2						horiz. correction = 51' y = 210'

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

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2000 62 PAGES in ALL

DATE 10/28/80	INSTRUMENT MAN G. Catcamp		ROD MAN G. Litzinger		PARTY NUMBER 6834	NOTES CHECKED BY rlw		LINE NO. 6	PAGE 1-A
AREA OKLAHOMA	TOPO MAP Cooperon 7 1/2'	STATE Oklahoma	COUNTY Kiowa		TWP 5N	RANGE 16W/15W	PPM -	PARTY MANAGER LO 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	
										1571.0						vertical traverse from T-rd 1 mile east to B.O.L.
HL	2720				+9.7	-		+9.7	1580.6		BS					T-rd (north) e. 1571.
	2720				+14.3	89°54'	-4.8	+9.5	+9.6		BS					
π	0				5.4	-		-5.4			π					
HL	2560				6.0	89°30'	+22.3	+16.3			TP					T-rd (north)
HL	2560				13.4	89°20'	+29.8	+16.4		1597.0	TP					