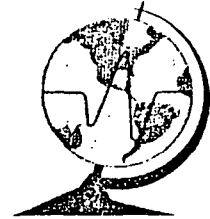


620 2372

Haskins • Pfeiffer Inc.

*International Geophysical Consultants*

1449 Denver Club Building  
Denver, Colorado 80202  
(303) 573-8958



October 7, 1980

Southland Royalty Company  
1000 Fort Worth Club Tower  
Fort Worth, Texas 76102  
Attn: Mr. Jere Denton

RE: Dixie Valley Area  
Churchhill & Pershing  
Counties, Nevada

Dear Mr. Denton:

Seismic data for the Dixie Valley Prospect Area were acquired by Petroleum Geophysical Co. party No. 302. The data were recorded in SEG-B format by Texas Instrument's DFS-5 amplifiers. An 8-128Hz filter was used on recording at a sample rate of 2 ms.

Energy source consisted of four Mertz-11 vibrators equipped with Pelten Electronics Advance 1 Model 4 instruments. Sixteen sweeps were used per V.P. with sweep pilot of 12-60Hz. V.P. interval was 220 feet with a group interval of 110 feet. Stack is 2400% from 96 trace instruments with a spread geometry 5280'-440'-0'-440'-5280'.

Data processing was performed by Western Geophysical Co. Complex and rapidly changing geologic environment introduced difficult velocity and stacking problems. These problems were resolved by Western's diligence in the analysis of the stacking velocities and design of deconvolution parameters to equalize the frequency spectrum to attenuate short period multiples. Since the dips in the area were generally less than 20 degrees, "Finite Difference" digital migration was used to collapse diffractions generated by faulting and to place reflected energy in the true time domain position.

It should be noted that any additional shooting in the area will be more effective from the standpoint of migration techniques if line orientation is designed normal to the strike shown by existing control.

From available control, three maps have been constructed. These are :

- 1) Migrated Producing Aquifer
- 2) Migrated Pluton
- 3) Non-Migrated Shallowest Flow

Identification is from a synthetic seismogram constructed using the sonic log of the Thermal Power; Dixie Fed. 66-21 in Twp. 24N, Rge. 36E, Sec. 21, or by geologic definition of the mapped event. A discussion of the maps submitted follows:

#### MIGRATED PRODUCING AQUIFER

The event identified as the producing aquifer in the Thermal Power Well Dixie Fed. 66-21 is coincident with a high amplitude event generated on the synthetic seismogram from that well. A reasonable correlation exists between the synthetic and the recorded seismic data at the well. This event, in its migrated position is the basis for the map under discussion.

Because the seismic lines cross from the sedimentary basin to positions overlying the pluton, interruptions occur in the continuity of data from the aquifer. In such cases it becomes necessary to re-establish continuity through correlation across the data gaps.

The overall configuration of the event mapped indicates the Thermal Power well encountered the aquifer in an overthrust block off the forefront of the pluton. The aquifer terminates both against the pluton and basinward. A series of events with character similar to the aquifer can be noted on the sections. Because of the limited areal extent of the individual events, the map has been constructed using the event with characteristic response in the nearest equivalent stratigraphic position. Termination of events is marked by hatchers.

#### MIGRATED PLUTON

The purpose of this map is to show the configuration of the forefront of the pluton so that the contact between the aquifer and the pluton can be viewed in perspective. The criteria used for defining the forefront is the zone of termination of coherent energy.

#### NON-MIGRATED SHALLOWEST FLOW

Since no appreciable geothermal gradient is indicated in the Thermal Power well, it is possible that any potential aquifer would be suitable for production without regard to depth of burial. This map is constructed to show the shallowest position at which an event with character similar to the identified aquifer, could be expected.

RECOMMENDATIONS

At this stage of exploration, plans should be made to increase the density of seismic control in the areas available for drilling. This additional control should use parameters compatible with the existing data. Care should be taken to keep all new lines normal to strike to aid migration. Processing should be carefully supervised so that data quality will be compatible with that now at hand.

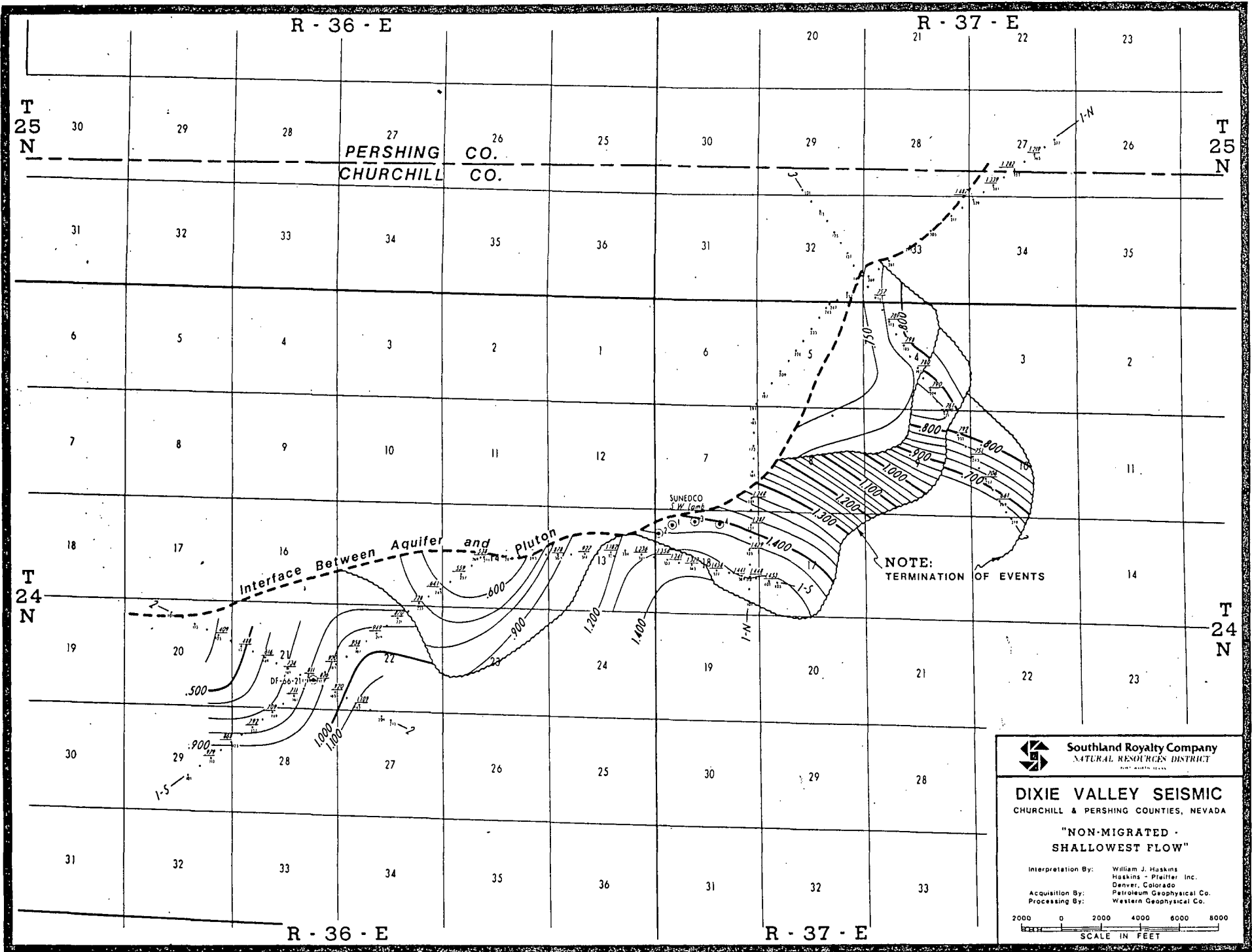
Yours truly,

Haskins-Pfeiffer, Inc.



William J. Haskins

WJH/lf



PERSHING CO.  
CHURCHILL CO.

Interface Between Aquifer and Pluton

NOTE:  
TERMINATION OF EVENTS

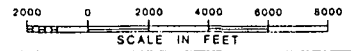
SUNEDCO  
S.W. Lease

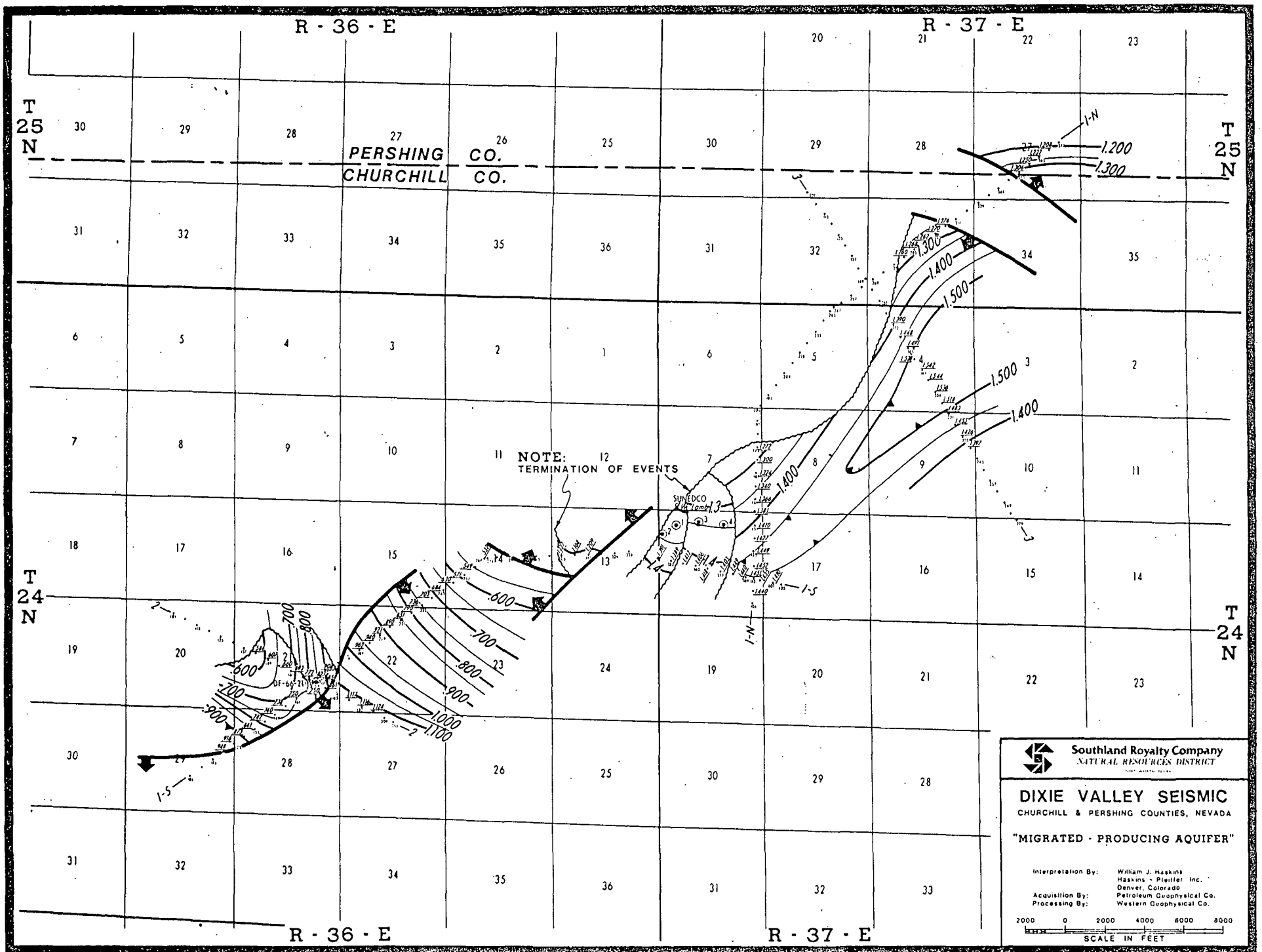
 Southland Royalty Company  
NATURAL RESOURCES DISTRICT

**DIXIE VALLEY SEISMIC**  
CHURCHILL & PERSHING COUNTIES, NEVADA

"NON-MIGRATED -  
SHALLOWEST FLOW"

Interpretation By: William J. Haskins  
Haskins - Pfeiffer Inc.  
Denver, Colorado  
Acquisition By: Petroleum Geophysical Co.  
Processing By: Western Geophysical Co.



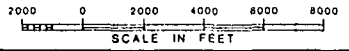


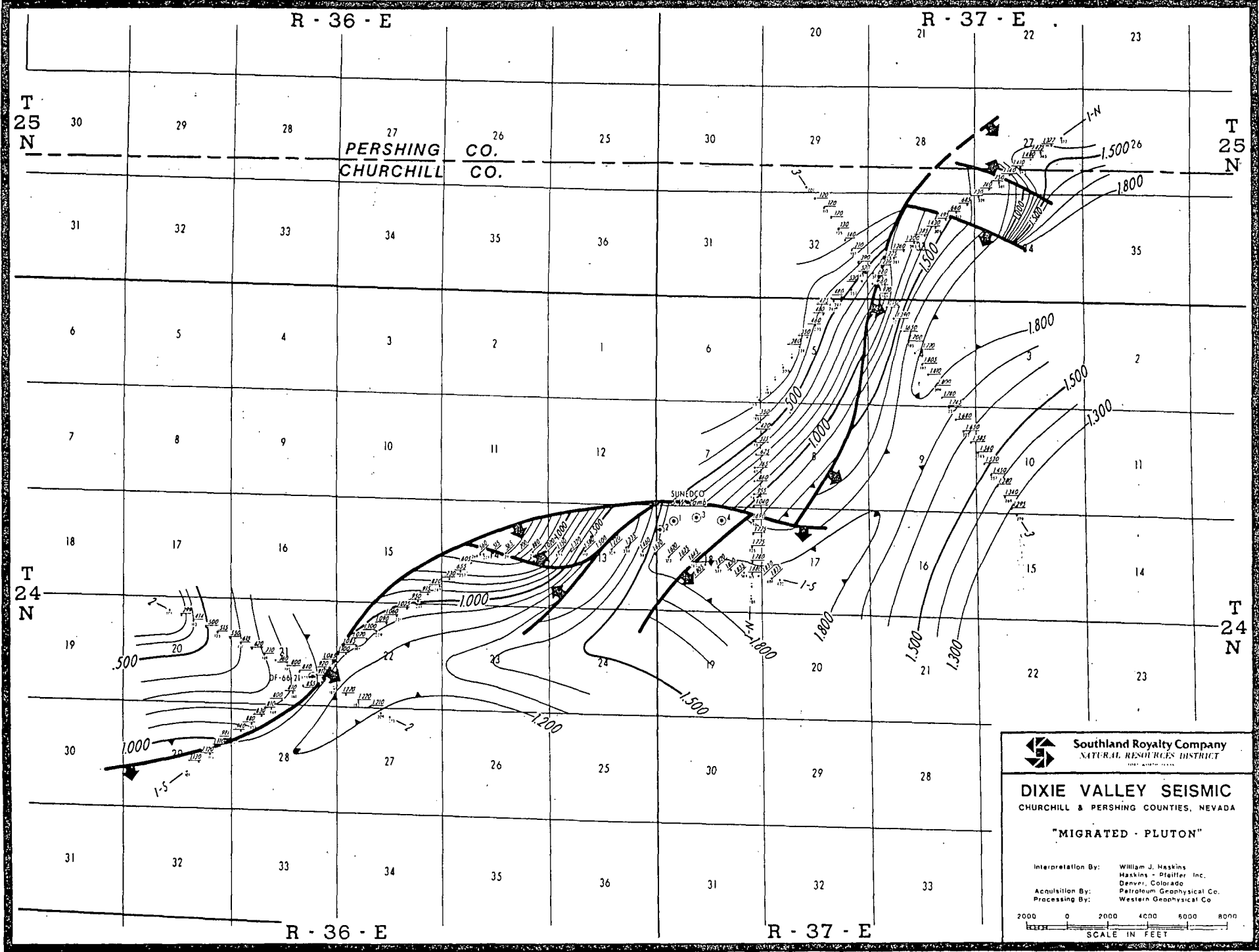
 **Southland Royalty Company**  
NATURAL RESOURCES DISTRICT

**DIXIE VALLEY SEISMIC**  
CHURCHILL & PERSHING COUNTIES, NEVADA

"MIGRATED - PRODUCING AQUIFER"

Interpretation By: William J. Haskins  
Haskins & Pfister Inc.,  
Denver, Colorado  
Acquisition By: Petroleum Geophysical Co.  
Processing By: Western Geophysical Co.



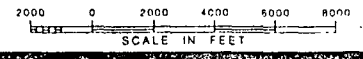


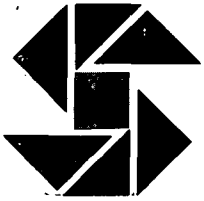
**Southland Royalty Company**  
 NATURAL RESOURCES DISTRICT

**DIXIE VALLEY SEISMIC**  
 CHURCHILL & PERSHING COUNTIES, NEVADA

"MIGRATED - PLUTON"

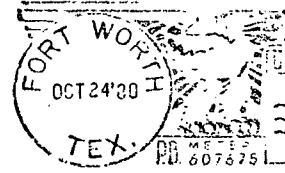
Interpretation By: William J. Haskins  
 Haskins - Pfeiffer Inc.  
 Denver, Colorado  
 Acquisition By: Petroleum Geophysical Co.  
 Processing By: Western Geophysical Co.





# Southland Royalty Company

1000 FORT WORTH CLUB TOWER, FORT WORTH, TEXAS 76102



## Southland Royalty Company

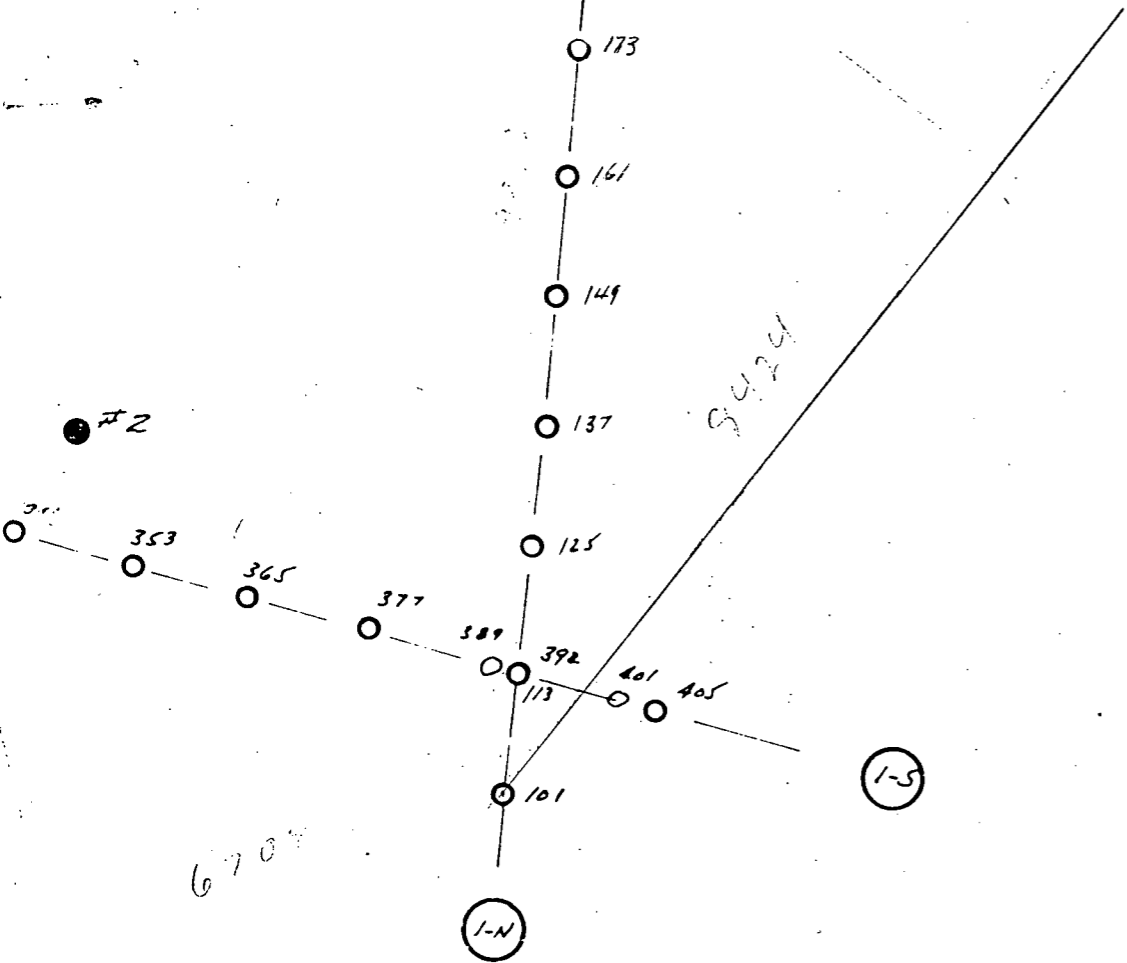
1000 FORT WORTH CLUB TOWER, FORT WORTH, TEXAS 76102

Mr. Howard P. Ross  
University of Utah Research Institute  
420 Chipeta Way, Suite 120  
Salt Lake City, UT 84108

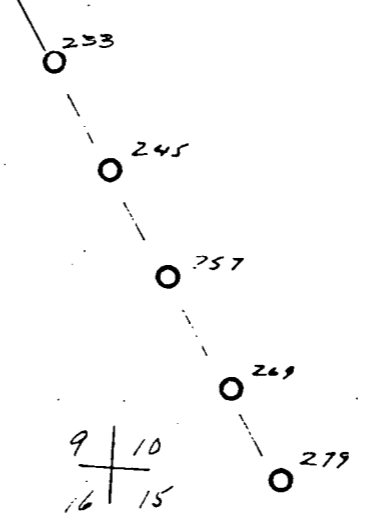
*Library*

*NV/DV/SR-14  
(companies 9 plates)  
Dixie Valley*

*~~Ross~~  
Howard P. Ross  
Salt Lake City*

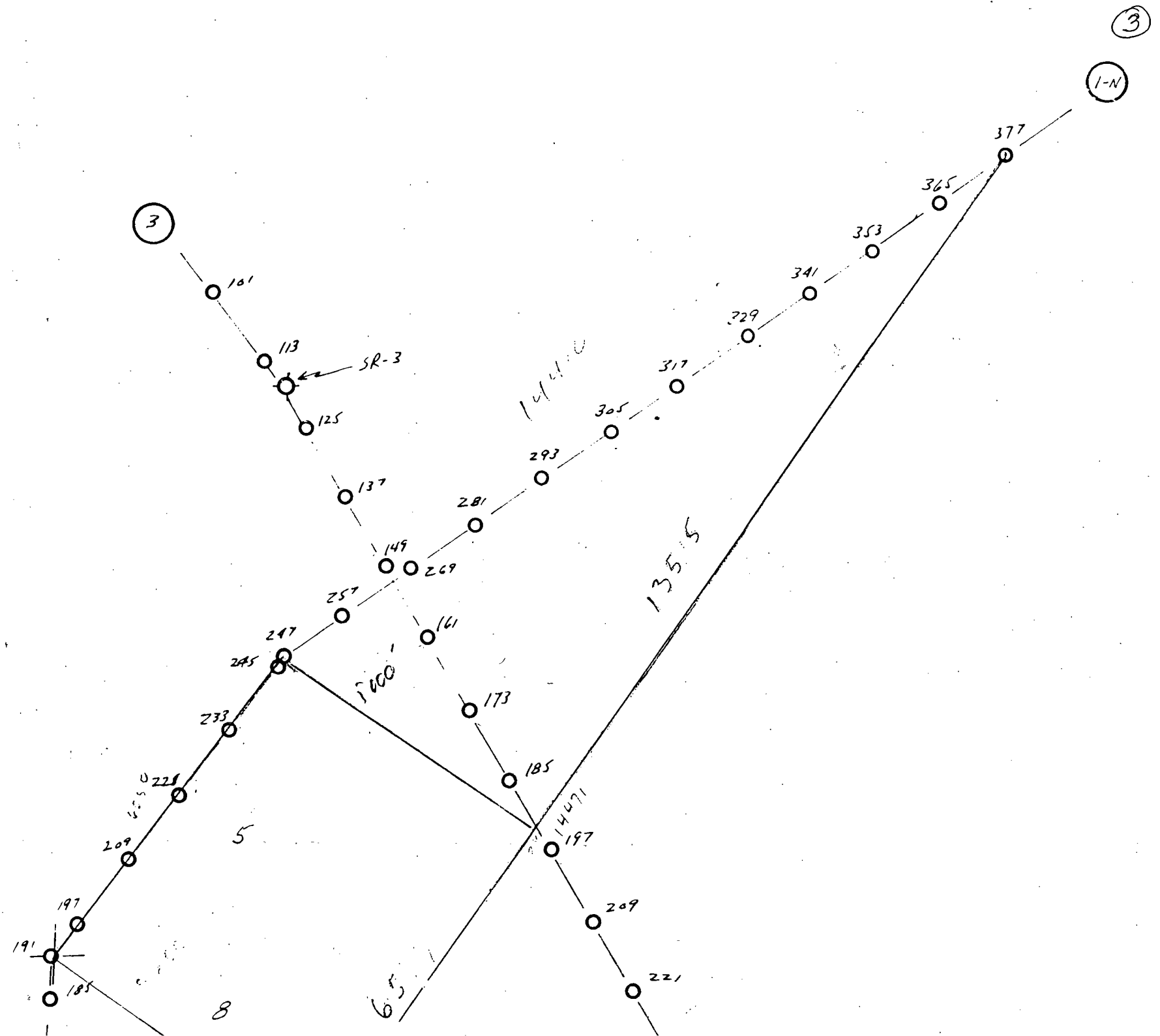


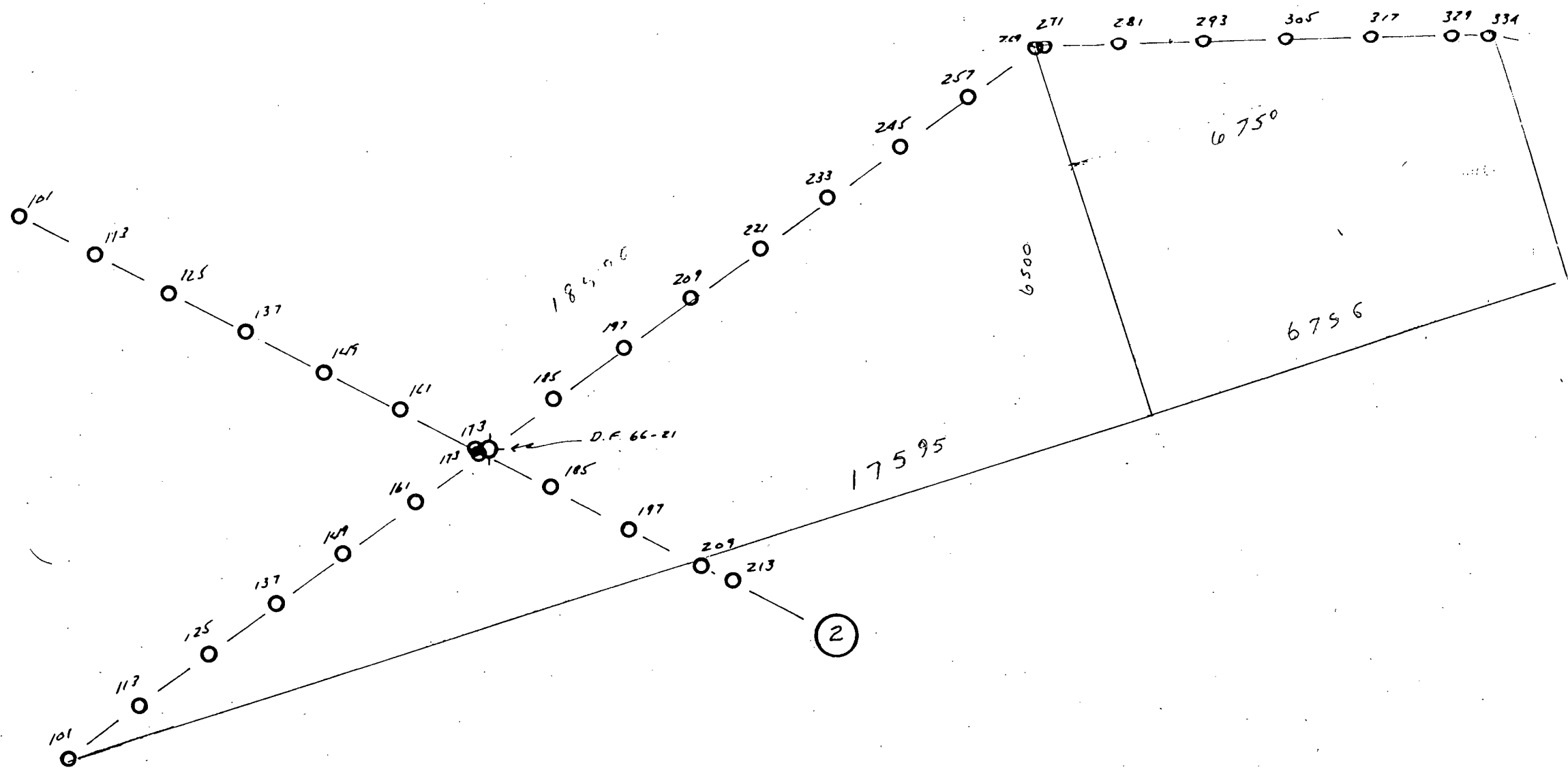
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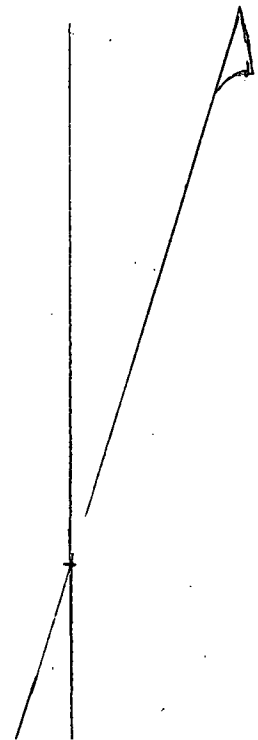


DIXIE VALLEY.  
Boyer Ranch Area  
Churchill Co., Nev  
Scale: 1" = 2000'  
110' Intervals  
6/2/80  
Reeves









- ARCO Exploration Company ↔
- ARCO Oil and Gas Company ↔

Record Of Shipment Of Confidential Information

District  
15-15389

To  
University Of Utah Research Inst.  
Earth Science Lab.  
391 Chipeta Way; Suite C  
Salt Lake City, UT 84108

From  
CHARLES SADLER  
PH. # 214-422-3170 OR 422-3402  
ARCO EXPLORATION COMPANY  
2300 WEST PLANO PARKWAY  
PLANO, TEXAS 75075

Enclosed       Under separate cover      XX Via PBA #46504334

Subject  
Dixie Valley Area      Churchill Co., NV

Lines: 1-S, 1-N, 2, & 3

Quantity	Map number & description
34	Magnetic tapes and support documentation per attached lists
	Sending tapes to you per Carol Leonard.
	cc: C. Leonard ✓

ESL  
Copy

Note—Please verify and acknowledge receipt, by signing and returning the second copy of this transmittal.

Signed by Roy Smith      Date 5-25-84

Received by Howard P. Ross, Section Head, Geophysics; ESL/WURT      Date May 30, 1984

Remarks  
*Thanks!*

GRC Trans

1980	4
81	5
82	6
83	7
84	8
85	9
86	10
87	11
88	12

# DATA TAPE LIST DIXIE VALLEY, NV

Box 1

Reel No.	Line No.	Shot Points	Process
SAC 501A	1 - South	102-138	Field
501C	}	S	}
502A		140-176	
502B			
503B		178-214	
503A		S	
505		182-298	
504B		216-254	
504A		S	
507		223-244	

Box 2

Reel No.	Line No.	Shot Points	Process	
SAC 506	1 - South	298-336	Field	
508	S	382-404	}	
SAC 101A	1 - North	102-140		
101	}	S		
102				
102B		142-180		
103		182-220		
104		222-260		
105		262-300		
106A		S		302-332

Box 3

Reel No.	Line No.	Shot Points	Process
SAC 106B	1 - North	302-332	Field
107	}	334-362	}
108		364-376	
HPF 001A	2	102-140	}
001B	}	S	
002		142-176	
003		178-200	
001C	3	101-140	
001B	}	S	
001A		S	



**NATURAL RESOURCES ENGINEERING CO.**  
CASPER, WYOMING

*WET*

AREA DIXIE VALLEY COUNTY Chuvachill STATE New LINE NO. 1-N PAGE 2  
SURVEYOR Reeder RODMEN Sartini - Goodsky DATE 5-27-80 CLIENT Sw Roy

Stadia Distance	Beamen Steps	Rod Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					34383						
880		0.6		-0.6		34377		121			
990		0.1		-0.1		34382		122			
1100	1/20	50 ± 58		+0.5		34389		123			
1210	1/20	51 ± 51		+0.9		34392		124			
1320	1/20	47 ± 55		+1.9		34402		125			
1430	1/20	46 ± 46		+2.5		34408		126			
1540	1/20	48 ± 38		+2.9		34412		127			
1650	1/20	49 ± 55		+3.3		34416		128			
1760	1/20	45 ± 48		+4.0		34423		129			
1870	1/20	52 ± 32		+4.1		34424		130			
1980	1/20	50 ± 38		+4.0		34432		131			
2090	1/20	51 ± 105		+5.4		34437		132			
2200	1/20	48 ± 118		+6.2		34445		133			
2310	1/20	53 ± 115		+6.2		34445		134			
2420	1/20	50 ± 120		+7.1		34454		135			
2530	1/20	48 ± 126		+7.8		34461		136			<i>Ro</i>
2640	1/20	47 ± 132		+8.5		34468		137			
1580		153		+153	34621						
1470		147		-147		34474		132			
1360		142		-142		34479		133			
1250		137		-137		34484		140			

*W*



NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Chubb STATE Wyo LINE NO. 1-N PAGE 3  
SURVEYOR Reed RODMEN Searles - Gush DATE 5-27-80 CLIENT Sw. Ry.

Stadia Distance	Beam Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3462.14						
1150		127		-127		34494		141			
1040		140		-120		34501		142			
930		105		-105		34516		143			
820		108		-108		34513		144			
710		100		-100		34521		145			
600		95		-95		34526		146			
490		83		-83		34538		147			
360		77		-77		34544		148			
270		76		-76		34545		149			
170		66		-66		34555		150			
60		55		-55		34566		151			
50		50		-50		34571		152			
160		37		-37		34584		153			
270		35		-35		34586		154			
380	10	62	+38 62	-24		34597		155			
490	10	61	+41 61	+12		34599		156			
600	10	65	+63 65	-05		34616		157			
710	10	70	+70 70	+01		34622		158			
820	10	75	+82 75	+07		34628		159			
930	10	82	+82 82	+11		34632		160			
1040	10	95	+95 95	+09		34630		161			

FORM NR-1 KINTZEL & CASPER

17

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Crook STATE Wyo LINE NO. 1-N PAGE 4  
SURVEYOR Reiter RODMEN Serrini - Goudsby DATE 5-27-80 CLIENT En Reg

Stadia Distance	Beamman Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3462.11						
1150	10	108	$\pm \frac{115}{108}$	+ 0.7		3462.8		162			
1260	10	110	$\pm \frac{126}{110}$	+ 1.6		3463.7		163			
1370	10	112	$\pm \frac{137}{112}$	+ 2.5		3464.9		164			
1080	10	122	$\pm \frac{108}{122}$	+ 2.6		3464.7		163			
1780		102		+ 1.0	3474.9		X				
1650		95		- 95		3465.4		166			
1540		92		- 82		3466.7		167			
1430		80		- 80		3466.9		168			
1320		82		- 82		3466.7		169			
1210		76		- 76		3467.3		170			
1100		80		- 80		3466.9		171			
990		80		- 80		3466.9		172			
880		75		- 75		3467.4		173			
770		72		- 72		3467.7		174			
660		68		- 68		3468.1		175			
550		67		- 63		3468.6		176			
440		50		- 50		3469.9		177			
330		70		- 70		3467.9		178			
220		52		- 52		3469.7		179			
110		54		- 54		3469.5		180			
0		55		- 55		3469.4		181			

FORM - NR. 1 - MINTZER - CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Cherokee STATE Nev. LINE NO. 1-N PAGE 5  
SURVEYOR Reino RODMEN Easton - Gushki DATE 5-22-80 CLIENT Sw. Ry.

Stadia Distance	Beamman Steps	Rod Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Noting	Remarks
					3474.9						
1.00		4.7		-4.7		3470.6		182			
2.10		4.0		-4.0		3470.9		183			
3.20		3.8		-3.8		3471.1		184			
4.30		3.1		-3.0		3471.9		185			
5.40		2.3		-2.3		3472.6		186			
6.50		2.0		-2.0		3472.9		187			
7.60		1.6		-1.2		3473.7		188			
8.70		0.3		-0.3		3474.6		189			
9.80		0.1		-0.1		3474.8		190			
10.90	1/2	4.1	±5.5	+1.4		3476.3		191			e fence cr.
12.00		5.2		+1.2	3481.5						
13.10		6.5		-6.5		3475.0		192			
14.20		6.8		-6.8		3474.7		193			
15.30		7.7		-7.7		3473.8		194			
16.40		7.7		-7.7		3473.9		195			
17.50		7.8		-7.8		3473.7		196			
18.60		8.5		-8.5		3473.0		197			
19.70		9.3		-9.3		3472.2		198			
20.80		9.6		-9.6		3471.9		199			
21.90		10.2		-10.2		3471.3		200			
23.00		11.0		-11.0		3470.5		201			

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Burns Road COUNTY Cherokee STATE New LINE NO. 1-N PAGE 6  
SURVEYOR Ricker RODMEN Sartin - Goolishy DATE 5-27-80 CLIENT Sam Ray

Stadia Distance	Beam Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Beering	Remarks
					3481.50						
13.16		112		-112		3470.3		202			
1320		121		-121		3468.4		203		N 35° 10' W	
20.50	70	100	-205 +105	-105	3457.9		X				
1940	70	102	+194 ±102	+92		3467.1		204			
1630	10	95	+163 ±95	+68		3466.7		205			
1720	10	90	+172 ±90	+82		3466.1		206			
1610	10	88	+161 ±88	+73		3465.6		207			
1500	10	82	+150 ±82	+68		3464.2		208			
1390	10	88	+139 ±88	+51		3463.0		209			
1280	10	87	+128 ±87	+41		3462.8		210			
1180	10	80	+118 ±80	+38		3461.7		211			
1070	10	78	+107 ±78	+29		3460.8		212			
960	10	85	+96 ±85	+11		3459.0		213			
850	10	84	+85 ±84	+0.1		3458.0		214			
740	10	77	+74 ±77	-0.3		3457.6		215			
630	10	75	+63 ±75	-12		3456.7		216			
520		20		-20		3455.9		217			
410		25		-25		3455.4		218			
300		31		-31		3454.8		219			
190		34		-34		3454.5		220			
80		34		-34		3453.5		221			

FORM-NR.1 RINTZEL'S - CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Road COUNTY Choshill STATE Wyo LINE NO. 1-N PAGE 7  
SURVEYOR Racine RODMEN Sartin - Goolsby DATE 5-27-80 CLIENT So. Ry

Station Distance	Beam Step	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					34579						
30		55		-55		34524		222			
140		107		-107		34472		223			
250		92		-92		34457		224			
360		102		-102		34477		225			
470		103		-103		34476		226			
580		111		-111		34468		227			
2200	1/2	136	$\pm 136$	+26	34494		X				
2090	1/2	140	$\pm 140$	-35		34459		228			
1980	1/2	128	$\pm 128$	-29		34465		229			
1870	1/2	126	$\pm 126$	-33		34461		230			
1760	1/2	113	$\pm 113$	-29		34465		231			
1650	1/2	108	$\pm 108$	-26		34468		232			
1540		15		-15		34479		233			
1430		24		-24		34470		234			
1320		26		-26		34468		235			
1210		28		-28		34466		236			
1100		30		-30		34464		237			
1000		32		-32		34462		238			
890		36		-36		34458		239			
780		37		-37		34457		240			
670		42		-42		34452		241			

FORM-NR-1 HINZEL'S CASPER

*Handwritten mark*



NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Bower Ranch COUNTY Chubbuck STATE N.W. LINE NO. 1-N PAGE 9  
SURVEYOR Reeves RODMEN SORTINI - GRIFFIN DATE 5-24-60 CLIENT Gov Roy

Stadia Distance	Beam Step	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3451.0		3450.3				
<del>200</del>		<del>52</del>		<del>52</del>		<del>3446.8</del>		<del>460</del>			
<del>90</del>		<del>53</del>		<del>53</del>		<del>3446.7</del>		<del>460</del>			
<del>80</del>		<del>53</del>		<del>53</del>		<del>3446.7</del>		<del>462</del>			
266.0	20	96	<sup>+133</sup> -96	+327		3455.1	3454.0	B.M.		N. 9° 0' E	EL. 3454.0 ✓
130		54		-54		3446.0	3444.9	462	247		
240		57		-57		3444.9	3444.6	444	248		
350		60		-60		3445.4	3444.3	465	249		
460		67		-67		3444.7	3443.6	466	250		
570		70		-70		3444.4	3443.3	467	251		
680		74		-74		3444.0	3442.9	468	252		
790		75		-75		3443.9	3442.8	445	253		
900		75		-75		3443.9	3442.8	470	254		
1010		76		-76		3443.8	3442.7	471	255		
1120		77		-77		3443.7	3442.6	472	256		
1230		80		-80		3443.4	3442.3	473	257		
1340		80		-80		3443.4	3442.3	474	258		
1450		80		-80		3443.4	3442.3	475	259		
1560		80		-80		3443.4	3442.3	476	260		
1670		76		-76		3443.8	3442.7	477	261		
1780		77		-77		3443.7	3442.6	478	262		
1890		75		-75		3444.2	3443.1	479	263		

FORM-NR-1 HINTZEL & CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Chishti STATE Wyo LINE NO. 1-0 PAGE 10  
SURVEYOR Rodger RODMEN Section - Fresh DATE 5-24-80 CLIENT SW Co.

Stadia Distance	Beam Step	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					34514						3450-3
2000		75		-75		34439	3442-9	480	264		
2110		75		-75		34439	3442-9	481	265		
2220		77		-77		34437	3442-9	480	266		
2330		75		-75		34439	3442-9	480	267		3450-3
2440		75		-75		34439	3442-9	484	269		
2550		73		-73		34441	3443-0	484	269		
2660		72		-72		34442	3443-1	485	270		
2770		72		-72		34442	3443-1	487	271		3443-1
2880		92		+92	34534						3452-3
2610		90		-90		34444	3443-3	488	272		
2500		83		-83		34451	3444-0	489	273		
2390		83		-83		34451	3444-0	486	274		
2280		81		-81		34452	3444-2	481	275		
2170		83		-83		34451	3444-0	482	276		
2060		80		-80		34454	3444-3	483	277		
1950		80		-80		34454	3444-3	484	278		
1840		81		-81		34453	3444-2	485	279		
1730		72		-72		34462	3445-1	484	280		
1620		70		-70		34464	3445-3	484	281		
1510		70		-70		34464	3445-3	488	282		
1400		67		-67		34467	3445-6	489	283		

FORM-NR-1 RITZEL & CASPER

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NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Chubbill STATE NW LINE NO. 1-N PAGE 11  
SURVEYOR Reeder RODMEN Sartin - Goulet DATE 5-24-80 CLIENT Sw. Roy

Stadia Distance	Beam Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3453.4						3452.3
130		62		-62		3447.2	3446.1	500	284		
119		60		-60		3447.4	3446.3	501	285		
108		60		-60		3447.4	3446.3	502	286		
97		60		-60		3447.4	3446.3	503	287		
86		60		-60		3447.4	3446.3	504	281		
75		57		-57		3447.7	3446.6	505	289		
64		57		-57		3447.7	3446.6	506	290		
53		65		-65		3446.9	3445.8	507	291		
42		70		-70		3446.0	3445.3	508	292		
31		62		-62		3447.2	3446.1	509	293		
20		60		-60		3447.0	3446.3	510	294		
9		51		-51		3448.3	3447.7	511	295		
2		52		-52		3448.2	3447.1	512	296		
12		48		-48		3448.6	3447.5	513	297		
24		46		-46		3448.8	3447.7	514	298		
35		49		-49		3449.0	3447.9	515	299		
46		42		-42		3449.2	3446.1	516	300		
57		58		-58		3448.4	3447.3	517	301		
68		55		-55		3447.7	3446.8	518	302		
79		42		-42		3447.3	3446.1	519	303		
90		31		-31		3448.6	3446.5	520	304		

FORM-NR-1-SIMTEL-9-CASPER

NATURAL RESOURCES ENGINEERING CO  
CASPER, WYOMING

AREA Boyer Road COUNTY Chubbuck STATE Wyo LINE NO. 1-N PAGE 5 12  
SURVEYOR Reavis RODMEN Sutton - Gault DATE 5-24-80 CLIENT Sm. Ray

Stadia Distance	Beam Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					34534						3452.3
1010		35		-35		34499	3448.9	521	305		
1120		33		-33		34501	3449.0	522	306		
1230		22		-32		34502	3449.1	523	307		
1340		30		-30		34504	3449.3	524	308		
1450		28		-28		34506	3449.6	525	309		
1560		29		-29		34507	3449.6	526	310		
1670		26		-26		34508	3449.7	527	311		
1780		25		-25		34509	3449.8	528	312		
1890		25		-25		34509	3449.8	529	313		
2000		26		-26		34508	3449.6	530	314		
2110		16		-16		34518	3450.7	531	315		
2220		14		-14		34520	3450.9	532	316		
2330		12		-12		34522	3451.1	533	317		
2440		18		-18		34516	3450.5	534	318		
2550		21		-21		34513	3450.2	535	319		
2660		17		-17		34517	3450.6	536	320		
2760	1/20	150	2 135 150	-120		34522	3451.1	537	321		3451.1
240		113		-113	34635		T				3462.4
2290		109		-109		34535	3452.4	538	322		
2180		110		-110		34525	3451.4	539	323		
2070		108		-108		34527	3451.6	540	324		

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Bureau Park COUNTY Chubasco STATE Wyo LINE NO. 1-N PAGE 13  
SURVEYOR Russell RODMEN W. P. ... DATE 5-24-50 CLIENT SW Roy

Stadia Distance	Beam Step	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd	Shot Point	Bearing	Remarks
					34635						3462.4
1960		102		-102		34533	3457.2	547	325		
1850		104		-104		34531	3457.0	547	326		
1740		96		-96		34539	3452.8	547	327		
1630		100		-100		34531	3452.0	547	328		
1520		91		-91		34539	3452.6	547	329		
1410		92		-92		34543	3453.2	547	330		
1300		90		-90		34545	3453.4	547	331		
1190		100		-100		34535	3452.4	547	332		
1080		88		-88		34547	3453.6	547	333		
970		85		-85		34550	3453.9	547	334		
860		86		-86		34549	3453.8	547	335		
750		85		-85		34550	3453.9	547	336		
640		93		-93		34552	3454.1	547	337		
530		81		-81		34554	3454.3	547	338		
420		80		-80		34555	3454.4	547	339		
310		76		-76		34559	3454.8	547	340		
200		73		-73		34562	3455.1	547	341		
90		61		-61		34574	3456.3	547	342		
20		62		-62		34573	3456.2	547	343		
130		73		-73		34562	3455.1	547	344		
240		70		-70		34565	3455.4	547	345		

FORM-NR-1 RINTZEL & CASPER

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NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Bones Bend COUNTY Cherokee STATE Neu. LINE NO. 1-N PAGE 23 14  
SURVEYOR Rever RODMEN S. J. W. - G. W. 156 DATE 5-24-80 CLIENT Sol Roy

Stadia Distance	Beam Step	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3463.5						3462.4
350		70		-70		3456.5	3455.4	562	346		
400		65		-65		3457.0	3456.8	563	347		
570		62		-62		3457.3	3456.2	564	348		
680		57		-57		3457.9	3456.7	565	349		
790		52		-52		3458.3	3457.2	566	350		
900		50		-50		3458.5	3457.4	567	351		
1010		42		-42		3459.3	3458.2	568	352		
1120		45		-45		3459.0	3457.9	569	353		
1230		36		-36		3459.9	3458.8	570	354		
1340		42		-42		3459.3	3458.2	571	355		
1450		37		-37		3459.7	3458.7	572	356		
1560		33		-33		3460.2	3459.1	573	357		
1671		21		-21		3461.4	3460.3	574	358		
1780		26		-26		3460.9	3459.8	575	359		
1890		24		-24		3461.1	3460.0	576	360		
2000		20		-20		3461.5	3460.4	577	361		
2110		15		-15		3462.0	3460.9	578	362		
2220		21		-21		3460.7	3459.6	579	363		
2330		30		-30		3460.5	3459.4	580	364		
2441		26		-26		3460.9	3459.8	581	365		
2550		33		-33		3461.2	3460.1	582	366		

FORM—NR-1 RINTZEL'S CASPER

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NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Chubbuck STATE Neu LINE NO. 1-N PAGE 1  
SURVEYOR Reese RODMEN Sartini - Gualsky DATE 5-27-80 CLIENT Sam King

Stadia Distance	Bowden Steps	Rod Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
		0				34294		105			L-1, 5
1430		89		+89	34383						
1720		112		-112		34271		101		S 70° W	
1210		108		-108		34275		102			
1100		102		-102		34281		107			
990		93		-93		34290		104			
890		88		-88		34295		105			
770		82		-82		34301		106			
660		77		-77		34306		107			
550		72		-72		34310		108			
440		65		-65		34315		109			
330		62		-62		34321		110			
220		58		-58		34325		111			
110		55		-55		34328		112			
00		52		-52		34331		113			Common with 392 L-15
110		48		-48		34335		114			
220		41		-41		34343		115			
330		33		-33		34350		116			
440		29		-29		34355		117			
550		24		-24		34361		118			
660		23		-23		34360		119			
770		18		-18		34375		120			

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NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Dixie Valley COUNTY Blaine STATE Nev LINE NO. 1-SOUTH PAGE 1  
SURVEYOR Reeves RODMEN Swain - Goolsby DATE 5-23-80 CLIENT Gov Roy

Stadia Distance	Booms Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
						34204		<del>S</del>	<del>172</del>	174 L-2	L 173 L-1 Commenced ✓
10		53		+53	34257		X				
110		53		-53		34204			172		
220		54		-54		34203			171		
330		56		-56		34207			170		
440		41		-41		34216			169		
550		31		-31		34227			168		
660		22		-22		34235			167		
770		21		-21		34236			166		
880		18		-18		34239			165		
990	1/2	65	+50	-15		34242			164		
1100	1/2	58	+55	-3		34254			163		
1210	1/2	55	+50	+5		34262			162		
1320	1/2	60	+66	+6		34263			161		
1420	1/2	51	+71	+20		34277			160		
1530	1/2	46	+76	+30		34287			159		
1640	1/2	48	+82	+34		34291			158		
1750	1/2	40	+87	+47		34304			157		
1860	1/2	44	+93	+49		34306			156		
1970	1/2	45	+98	+53		34310			155		
2080	1/2	60	+100	+40		34301			154		
2190	1/2	58	+108	+50		34308			153		

FORM-NR-1 KINTZEL-B-CASPER

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WYOMING SURVEYING  
**NATURAL RESOURCES ENGINEERING CO.**  
 CASPER, WYOMING

AREA Boyer Ranch COUNTY Chubbuck STATE Wyo LINE NO. 1-5 PAGE 2  
 SURVEYOR Reedus RODMEN Serrini - Goolsby DATE 5-23-80 CLIENT FRV Ray

Station Distance	Bearing	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3425.7						
2300	1/20	58 ± 115	+57	+57		34314	/	152			
2410	1/20	68 ± 120	+52	+52	(6.7)	34309		151		S 55° W	+ .5 PRODUCT
2670		118		+118		34427	π				
2570		120		-120		34307		150			
2860		120		-120		34307		149			
2750		122		-122		34305		148			
2440		120		-120		34207		147			
2130		115		-115		34312		146			
2020		120		-120		34307		145			
1910		128		-128		34299		144			
1800		129		-129		34298		143			
1690		128		-128		34299		142			
1580		118		-118		34309		141			
1470		120		-120		34307		140			
1360		110		-110		34317		139			
1250		105		-105		34322		138			
1140		113		-113		34314		137			
1030		112		-112		34315		136			
920		88		-88		34329		135			
810		75		-75		34352		134			
700		75		-75		34352		133			

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NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Big Bend Ranch COUNTY Cherokee STATE Nev LINE NO. 1-5 PAGE 3  
SURVEYOR Reiss RODMEN Sarpino - Gentry DATE: 5-23-80 CLIENT Gov. Rev.

Stadia Distance	Beamers Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3442.7						
600		68		-68		3435.9		132			
490		63		-63		3436.0		131			
380		64		-64		3436.3		130			
270		63		-63		3436.4		129			
160		55		-65		3437.2		128			
50		52		-62		3437.5		127			
60		51		-51		3437.6		126			
170		45		-45		3438.2		125			
280		42		-42		3438.5		124			
390		45		-45		3438.2		123			
500		57		-57		3437.0		122			
600		56		-56		3437.1		121			
710		58		-58		3436.9		120			
820		55		-55		3437.2		119			
930		57		-57		3437.0		118			
1040		54		-54		3437.3		117			
1150		42		-42		3438.5		116			
1260		40		-40		3438.7		115			
1370		40		-40		3438.7		114			
1480		40		-40		3438.7		113			
1590		36		-36		3439.1		112			

FORM-NR-1 KINTZLE'S - CASPER

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NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Chubbuck STATE Wyo LINE NO. 1-5 PAGE 5  
SURVEYOR Reavis RODMEN Jordan - Goshy DATE 5-23-80 CLIENT Gov Roy

Stadia Distance	Beaman Steps	Rod Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3423.4						
1030		6.8		-6.8		3416.6		194			
1140		7.0		-7.0		3416.4		195			
1250		7.1		-7.1		3416.3		196			
1360		7.0		-7.0		3416.4		197			
2500		1.8		+1.8	3418.2		A				
2390		2.4		-2.4		3415.8		198			
2280		2.8		-2.8		3415.4		199			
2170		4.0		-4.0		3414.2		200			
2060		4.1		-4.1		3414.1		201			
1950		4.1		-4.1		3414.1		202			
1840		4.5		-4.5		3413.7		203			
1730		5.4		-5.4		3412.8		204			
1620		5.0		-5.0		3413.2		205			
1510		5.1		-5.1		3413.1		206			
1400		5.1		-5.1		3413.1		207			
1290		6.0		-6.0		3412.2		208			
1180		6.2		-6.2		3412.0		209			
1070		6.0		-6.0		3412.2		210			
960		6.0		-6.0		3412.2		211			
850		6.3		-6.3		3411.9		212			
740		6.4		-6.4		3412.2		213			

FORM-NR-1 KINTZEL'S - CASPER

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NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Cherokee STATE Nev LINE NO. 1-5 PAGE 5  
SURVEYOR Reed RODMEN Sorini - Cherokee DATE 5-23-80 CLIENT Sm. Roy

Stadia Distance	Bosman Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occyp.	Station Obs'd.	Shot Point	Bearing	Remarks
						34204	✓	173			Common Station - LINE 2, 174'
121.		30		+30	34234		✓				
11.70		38		-38		34196		174			⊙ well
10.60		40		-40		34194		175			
9.50		32		-32		34202		176			
8.40		42		-42		34192		177			
7.30		45		-45		34189		178			
6.20		48		-48		34186		179			
5.10		50		-50		34184		180			
4.00		53		-53		34181		181			
2.90		52		-52		34182		182			
1.80		54		-52		34182		183			
70		50		-50		34184		184			
40		52		-52		34182		185			
150		50		-50		34184		186			
260		50		-50		34184		187			
370		52		-52		34182		188			
480		55		-55		34179		189			
590		58		-58		34176		190			
700		62		-62		34172		191			
810		64		-64		34170		192			
920		64		-64		34170		193			

FORM-NR-1 HINTZEL'S - CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Base Road COUNTY Ch. & L. W. STATE Wyo. LINE NO. 1-5 PAGE 6  
SURVEYOR Reed RODMEN S. J. T. - G. S. L. G. DATE: 5-23-80 CLIENT SW Ry.

Stadia Distance	Beam Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					34182						
630		57		-57		34125		214			
530		55		-55		34127		215			
520		52		-52		34130		216			
320		52		-52		34130		217			
210		55		-55		34127		218			
100		50		-50		34132		219			
00		52		-52	1	34130		220			
110		47		-47		34135		221			
220		42		-42		34140		222			
330		35		-35		34147		223			
440		27		-27		34155		224			
550		22		-22		34160		225			
660		21		-21		34161		226			
770	1/2	47	+35	-0.8		34173		227			
880	1/2	50	+40	-0.6		34176		228			
990	1/2	40	+50	+1.0		34182		229			
1100	1/2	39	+55	+1.6		34198		230			
1200	1/2	40	+60	+2.0		34202		231			
1310	1/2	29	+55	+3.7		34219		232			
1420	1/2	20	+70	+5.1		34233		233			
1530	1/2	14	+76	+6.2		34244		234			

FORM - NR-1 - KIMTEL & CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Bever Bend COUNTY Cherokee STATE Nev. LINE NO. 1-5 PAGE 7  
SURVEYOR Reeves ROOMEN Sartin - Gault DATE 5-23-80 CLIENT SW Co.

Stadia Distance	Beamman Stops	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					34182						
1640	1/20	12	$\pm \frac{82}{12}$	+70		34252		235			
1750	10	102	$\pm \frac{75}{102}$	+73		34255		236			
1860	10	115	$\pm \frac{106}{115}$	+71		34253		237			
1970	10	122	$\pm \frac{122}{122}$	+75		34257		238			
2070	10	138	$\pm \frac{207}{138}$	+69		34251		239			
2460	1/20	124	$\pm \frac{124}{124}$	+24.7	34498		X				
2350	1/20	130	$= \frac{130}{130}$	-24.8		34250		241			
2250	1/20	128	$= \frac{128}{128}$	-24.0		34258		241			
2140	1/20	134	$= \frac{134}{134}$	-24.1		34257		242			
2070	1/20	140	$= \frac{140}{140}$	-24.1		34257		243			
1970	1/20	105	$= \frac{96}{105}$	-24.1		34257		244			
1810	1/20	151	$= \frac{99}{151}$	-24.1		34257		245			
1700	10	75	$= \frac{75}{75}$	-24.5		34253		246			
1600	10	86	$= \frac{160}{86}$	-24.6		34252		247			
1490	10	93	$= \frac{149}{93}$	-24.2		34256		249			
1380	10	92	$= \frac{138}{92}$	-23.0		34268		249			
1270	10	98	$= \frac{127}{98}$	-22.5		34288		250			
1160	10	102	$= \frac{116}{102}$	-21.8		34280		251			
1060	10	110	$= \frac{106}{110}$	-21.6		34282		252			
950	10	110	$= \frac{95}{110}$	-20.5		34293		253			
840	10	108	$= \frac{84}{108}$	-19.2		34306		254			

FORM NR-1 KINTZEL'S - CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Beyer Ranch COUNTY Chubb STATE Nei LINE NO. 1-5 PAGE 8  
SURVEYOR Reuss RODMEN Smith - Gw 186 DATE 5-22-50 CLIENT Ev. Ray

Stadia Distance	Beamman Steps	Rod Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					34498						
730	1/20	152	= 32	-18.9		34309		255			
620	1/20	148	= 31	-180		34310		256			
510	1/20	130	= 35	-155		34343		257			
400		142		142		34356		258			
290		131		-131		34367		259			
180		98		-98		34400		260			
70		65		-65		34433		261			
40		56		-56		34442		262			
150		37		-37		34461		263			
260		12		-12		34486		264			
370		05		-05		34493		265			
480	1/20	28	+24	=04		34494		266			
590	1/20	22	+20	+08		34506		267			
700	1/20	40	+35	=05		34493		268			
800	1/20	82	+40	-12		34486		269			
910	1/20	38	+38	+07		34505		270			
1020	1/20	48	+54	+03		34501		271			
<del>1130</del>	<del>1/20</del>	<del>50</del>	<del>+57</del>	<del>+07</del>		<del>34505</del>		<del>270</del>			Note: Aborted o.d. L-1
1230	1/20	77	+61	-11		34486		273			at 272
		125		+125	34611						
		77		-113	34499			274			

FORM-NR-1 RINTZEL'S - CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Chubbuck STATE Nev LINE NO. 1-5 PAGE 9  
SURVEYOR Reeler RODMEN Sartin - Gomis DATE 5-27-80 CLIENT Sw Ray

Station Distance	Beam Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
						3450.1		271			
00		50		+5.0	3455.1		X				
110		73		-73		34478		272			
220		121		-121		34430		273			
330	X/20	120	= 120	-156		34295		274			RA
440	10	150	= 150	-194		34357		275			
550	20	113	= 113	-223		34328		276			
660	20	110	= 110	-242		34309		277			
770	20	105	= 105	-259		34292		278			
880	20	88	= 88	-264		34287		279			
990	20	75	= 75	-273		34278		280			
1100	20	50	= 50	-270		34291		281			
1210	20	36	= 36	-278		34273		282			
1320	10	150	= 150	-282		34269		283			
1430	10	142	= 142	-285		34266		284			
1540	10	105	= 105	-259		34292		285			
1650	10	90	= 90	-255		34296		286			
1760	10	76	= 76	-254		34299		287			
1870	10	56	= 56	-243		34309		288			
1980	10	35	= 35	-233		34318		289			
2090	10	11	= 11	-220		34331		290			
2200	X/20	137	= 137	-247		34304		291			

FORM-NR-1 RINTZEL & CASPER



NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Buyer Road COUNTY Churchill STATE NEV LINE NO. 1-5 PAGE 10  
SURVEYOR Reeves RODMEN Furtini - G0156 DATE 5-27-80 CLIENT En Roy

Stadia Distance	Beam Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3455.11						
2310	1/20	112	= 115	- 22.7		3432.4		292			
2420	1/20	106	= 105	- 22.6		3432.5		293			
2530	1/20	98	= 126	- 22.4		3432.7		294			
2640	1/20	78	= 132	- 22.0		3434.1		295		N 90° 06'	
2750	1/20	61	+ 121	+ 192	3452.3						
2710	1/20	52	= 115	- 16.7		3435.6		296			
2700	1/20	62	= 112	- 17.2		3435.1		297			
2090	1/20	60	= 105	- 16.5		3435.8		298			
1980	1/20	63	= 95	- 16.2		3436.1		299			
1870		148		- 14.8		3437.5		300			
1760		140		- 14.0		3438.3		301			
1650		135		- 13.5		3438.8		302			
1540		137		- 13.7		3438.6		303			
1430		125		- 12.5		3439.8		304			
1320		118		- 11.8		3440.5		305			
1210		105		- 10.5		3441.8		306			
1100		107		- 10.7		3441.6		307			
900		102		- 10.2		3442.1		308			
800		105		- 10.5		3441.8		309			
790		90		- 9.0		3443.3		310			
690		88		- 8.8		3443.5		311			

FORM-NR-1 KINTZEL'S - CASPER

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**NATURAL RESOURCES ENGINEERING CO.**  
CASPER, WYOMING

AREA Bear Bend COUNTY Chudell STATE WY LINE NO. 1-5 PAGE 11  
SURVEYOR Reaves RODMEN Sw. Roy - G. 156 DATE 5-27-90 CLIENT Sw. Roy

Stadia Distance	Beamman Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					32523						
570		87		-87		34436		312			
480		77		-77		34446		313			
351		70		-70		34453		314			
240		66		-66		34457		315			
130		60		-60		34463		316			
20		53		-53		34470		317			
90		52		-52		34471		318			
200		50		-50		34473		319			
300		40		-40		34483		320			
410		31		-31		34492		321			
520		32		-32		34491		322			
630		30		-30		34493		323			
740		28		-28		34495		324			
850		24		-24		34499		325			
960		18		-18		34505		326			
1080		10		-10		34513		327			
1190		02		-02		34521		328			
1200	1/2	55	+65	+10	✓	34533		329			
1410	1/2	60	+70	+10	✓	34523		330			
1520	1/2	65	+75	+10	✓	34534		331			
1630	1/2	70	+80	+10	✓	34534		332			

FORM-NR-1 KINTZEL'S - CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Chubbuck STATE WY LINE NO. 1-5 PAGE 12  
SURVEYOR Revas RODMEN Sarwin - Gushy DATE: 5-27-80 CLIENT Gov Roy

Stadia Distance	Beam Steps	Rod Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					34523						
1730	1/2	77	+56	+09		34532		333			
1840	1/2	98	+85	-06		34517		334			
990		46		+46	34563					N 77° 00' W	
580		50		-50		34513		335			
770		46		-46		34517		336			
660		42		-42		34521		337			
550		35		-35		34528		338			
440		36		-36		34527		339			
330		42		-42		34521		340			
220		42		-42		34521		341			
120		50		-50		34513		342			
10		52		-52		34511		343			
1300	20	102	+160	+158		34721				N 23° 00' E	SURFACE WALL 2
90		50		-50		34513		344			
200		48		-48		34515		345			
310		48		-48		34515		346			
420		55		-55		34508		347			
530		62		-62		34501		348			
640		68		-68		34495		349			
750		62		-62		34491		350			
860		70		-70		34493		351			

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Road COUNTY Choshell STATE Neu LINE NO. 1-5 PAGE 13  
SURVEYOR Reeves RODMEN Ernst - Grady DATE 5-27-80 CLIENT Saw Log

Stadia Distance	Beam Step	Rod Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					34563						
960		70		-70		34493		352			
1070		71		-71		34487		353			
1180		77		-77		34486		354			
1290		80		-80		34483		355			
1400		86		-86		34477		356			
1510		88		-88		34475		357			
1620		92		-92		34471		358			
1730		100		-100		34463		359			
1840		105		-105		34458		360			
1950		102		-102		34461		361			
2060		107		-107		34455		362			
2170		115		-115		34448		363			
2280		112		-112		34451		364			
2390		117		-117		34446		365			
2500		130		-130		34438		366			
2600		131		-131		34432		367			
1980	1/20	87	$\pm 87$	-1.6		34416					
1870	1/20	88	$\pm 88$	+0.5		34421		368			
1760	1/20	77	$\pm 77$	+1.1		34427		369			
1650	1/20	75	$\pm 75$	+0.2		34423		370			
1540	1/20	74	$\pm 74$	+0.2		34419		371			

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Bayer Ranch COUNTY Chandell STATE Wyo LINE NO. 1 PAGE 14  
SURVEYOR Rever RODMEN Scott - Kelly DATE 5-27-80 CLIENT See Map

Stadia Distance	Beamen Steps	Rod Reading	Product	Difference Elevation	H. i.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3441.2						
1430	1/2	75	± 35	-0.4		3441.2		372			
1320	1/2	70	± 30	-0.4		3441.2		373			
1210	1/2	65	± 25	-0.5		3441.1		374			
1100	1/2	60	± 20	-1.0		3440.6		375			Brushy
1000	1/2	55	± 15	-2.0		3439.6		376			"
900	1/2	50	± 10	-2.7		3439.3		377			"
800		45		-2.6		3439.0		377			"
700		40		-3.0		3438.6		379			"
590		36		-3.6		3438.0		381			"
480		30		-4.0		3437.6		381			
380		22		-4.2		3437.4		382			
270		15		-4.5		3436.8		383			
160		10		-4.3		3437.3		384			
60		5		-5.0		3436.6		385			
50		5		-5.2		3436.4		386			
160		5		-5.7		3435.9		387			
270		6		-6.3		3435.3		388			
380		7		-7.7		3433.9		389			
490		8		-7.8		3433.8		390			
600		8		-8.3		3433.3		391			
710		8		-8.5		3433.1		392			

FORM - NR-1 KIRTZEL & CASPER

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NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Choshil STATE Wyo LINE NO. 1-5 PAGE 15  
SURVEYOR Reaves RODMEN Sartin - Goulish DATE 5-27-80 CLIENT Eni Gas

Stadia Distance	Beam Staps	Red Reading	Black Reading	Difference Elevation	H.I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3441.6						
820		96		-86		3433.0		313			
930		118		-98		3432.8		314			
1040		92		-92		3432.4		315			
1150		97		-97		3431.9		316			
1260		107		-107		3430.9		317			
1370		110		-110		3430.6		318			
1480		111		-111		3430.5		319			
1590		113		-113		3430.3		400			
1700		120		-120		3429.6		401			
1810		120		-120		3429.6		402			
1920		120		-120		3429.6		413			
2030		121		-121		3429.5		404			
2140		122		-122		3429.4		405			TIES TO L-1N

FORM-NR-1 RINTZEL'S - CASPER

APPROVED [Signature]  
DATE 6/12/80



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**NATURAL RESOURCES ENGINEERING CO.**  
CASPER, WYOMING

AREA Dixie Valley COUNTY Chubbuck STATE Nev LINE NO. 2 PAGE 1  
 SURVEYOR Reeves RODMEN John - 1563 DATE: 5-22-80 CLIENT San Ray

Stadia Distance	Beam Step	Rod Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
						38427	✓	101			
290	40	35	$\frac{-116}{35}$	-8.1	38346	✓	✓			N 62° 27' 10"	
180	30	10	$\frac{+54}{10}$	+44		38390		102			
70		02		-02		38344		103			
40		92		-92		38254		104			
150	40	14.1	$\frac{-60}{14.1}$	-201		38145		105			
260	40	13.0	$\frac{-104}{13.0}$	-234		38112		106			
370	50	13.2	$\frac{-195}{13.2}$	-317		38029		107			
480	60	13.8	$\frac{-288}{13.8}$	-426		37920		108			
590	60	14.7	$\frac{-354}{14.7}$	-501		37845		109			
690	70	11.9	$\frac{-498}{11.9}$	-597		37749		110			
800	90	11.5	$\frac{-560}{11.5}$	-675		37671		111			
910	70	10.8	$\frac{-637}{10.8}$	-745		37501		112			
1020	70	9.3	$\frac{-714}{9.3}$	-807		37539		113			
1130	70	11.0	$\frac{-771}{11.0}$	-901		37445		114			
1230	70	11.5	$\frac{-861}{11.5}$	-976		37370		115			
1340	70	10.2	$\frac{-938}{10.2}$	-1040		37306		116			
1450	70	8.5	$\frac{-1045}{8.5}$	-1100		37246		117			
1560	70	7.7	$\frac{-1092}{7.7}$	-1169		37177		118			
1670	70	8.0	$\frac{-1168}{8.0}$	-1249		37097		119			
1780	70	7.3	$\frac{-1249}{7.3}$	-1317		37027		120			
1890	70	7.0	$\frac{-1383}{7.0}$	-1383		36531		121			

FORM - NR. 1 - REVISED - CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boya Road COUNTY Chundell STATE NW LINE NO. 2 PAGE 2  
SURVEYOR Reeves RODMEN So. Tin. - Goolsby DATE 5-22-80 CLIENT So. Rep.

Stake Distance	Beam Stopt	Rod Reading	Product	Difference Elevation	H. I.	Elevation	Station Occur.	Station Obs'd.	Shot Point	Bearing	Remarks
					38346						
2000	70	73	-140	-147.3		36873		122			
2110	70	82	-142	-155.9		36787		123			
2220	70	78	-154	-165.4		36692		124			
2330	70	75	-163	-172.6		36620		125			
2440	70	88	-178	-179.6		36550		126			
2540	70	112	-177	-189.4		36452		127			
2600	60	52	-120	-110.8	35304						
1890	60	48	-113	-108.6		36390		128			
1770	60	35	-108	-103.1		36340		129			
1670	60	15	-110	-98.7		36291		130			
1560	60	40	-93	-99.6		36200		131			
1450	60	38	-113	-93.5		36139		132			
1340	60	50	-104	-92.4		36058		133			
1220	60	62	-107	-87.6		35980		134			
1120	60	20	-167	-81.2		35916		135			
1020	60	61	-162	-84.6		35850		136			
910	60	32	-154	-84.4		35778		137			
800	60	37	-149	-80.2		35706		138			
690	60	30	-148	-84.4		35648		139			
580	60	60	-132	-82.2		35591		140			
470	60	58	-142	-82.4		35528		141			



AREA Boyer Ranch COUNTY Chudell STATE WY LINE NO. 2 PAGE 3  
 SURVEYOR Rever RODMEN SIRTINI - Goolsby DATE 5-22-80 CLIENT See Key

Stadia Distance	Beam Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3530.4						
76.0	50	12	= 1180	+168		35472		142			
250	50	20	= 1100	+115		35409		143			
140	40	19	= 1560	+39		35343		144			
40		33		-33		35271		145			
70		93		-93		35211		146			
180		135		-135		35169		147			
290	30	73.6	= 590	-154		35110		148			
400	30	12.4	= 120	-244		35060		149			
510	40	74.6	= 2984	-310		34994		150			
620	40	12.3	= 246	-371		34933		151			
730	40	19.0	= 292	-402		34872		152			
840	40	13.8	= 316	-471		34833		153			
950	40	74.6	= 3384	-526		34778		154			
1160	50	56	= 530	-586		34718		155			
1170	50	38	= 585	-623		34681		156			
1280	50	28	= 140	-668		34636		157			
1390	40	18.0	= 356	-706		34598		158			
1500	40	14.9	= 696	-748		34555		159			
1600	40	14.3	= 840	-783		34521		160			
1710	30	13.2	= 1116	-816		34488		161			
1820	30	12.0	= 1380	-851		34456		162			

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Chosh STATE Nev LINE NO. 2 PAGE 4  
SURVEYOR Rever RODMEN Sartin - Goolishy DATE 5-22-80 CLIENT So Key

Stadia Distance	Barometer Steps	Rod Reading	Product	Difference Elevation	N. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					35304						
1130	45	105	-775	-877		34427		163			
2040	40	93	-876	-909		34395	✓	164			
2150	40	82	-860	-942		34362	✓	165			
2260	40	60	-904	-964		34320	✓	166			
2370	40	80	-988	-986		34278	✓	167			
2470	40	67	-988	-995		34309	✓	168			
960	10	57	-583	-59	34270		✓	169			
850	10	68	-588	117		34287	✓	169			
740		03		-03		34267	✓	170			
630		2		-20		34250	✓	171			
520		40		-40		34230	✓	172			
410		57		-57		34283	✓	173			
300		66		-66		34204	✓	174			
190		74		-74		34196	✓	175			
80		90		-90		34180	✓	176			
20		51		-50		34220	✓	177			
130		102		-132		34138	✓	178			
240		148		-148		34122	✓	179			
350	100	148	-148	-162		34108	✓	180			
450	100	140	-140	-173		34097	✓	181			
560	100	150	-150	-178		34092	✓	182			

FORM-NR-1 RINTZEL-B-CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boye Ranch COUNTY Chubbuck STATE Nev LINE NO. 2 PAGE 5  
SURVEYOR Reeves RODMEN Sartin - 800/16 DATE 5-22-80 CLIENT Sun Ray

Stadia Distance	Beam Staps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					34270						
110	10	122	= <sup>166</sup> <sub>122</sub>	-188		34082		103			
770	10	125	= <sup>77</sup> <sub>125</sub>	-202		34068		180			
880	10	122	= <sup>182</sup> <sub>122</sub>	-210		34060		185			
990	10	124	= <sup>132</sup> <sub>124</sub>	-221		34049		186			
1100	10	123	= <sup>123</sup> <sub>123</sub>	-233		34037		187			
1200	10	116	= <sup>126</sup> <sub>116</sub>	-236		34034		189			
1310	10	112	= <sup>171</sup> <sub>112</sub>	-243		34027		189			
1400	10	112	= <sup>142</sup> <sub>112</sub>	-254		34016		190			
1520	10	116	= <sup>153</sup> <sub>116</sub>	-269		34001		191			
1640	10	109	= <sup>164</sup> <sub>109</sub>	-273		33997		192			
1750	10	100	= <sup>175</sup> <sub>100</sub>	-275		33995		193			
1860	10	101	= <sup>186</sup> <sub>101</sub>	-287		33983		194			
1970	10	93	= <sup>197</sup> <sub>93</sub>	-290		33980		195			
2080	10	81	= <sup>208</sup> <sub>81</sub>	-296		33974		196			
2190	10	80	= <sup>219</sup> <sub>80</sub>	-299		33971		197			
2290	10	79	= <sup>229</sup> <sub>79</sub>	-307		33963		198			
2400	10	70	= <sup>240</sup> <sub>70</sub>	-310		33960		199			
2510	10	55	= <sup>251</sup> <sub>55</sub>	-306		33964		200			
2620	10	44	= <sup>262</sup> <sub>44</sub>	-306		33964		201			
2730	10	37	= <sup>273</sup> <sub>37</sub>	-310		33960		202			
2840	10	30	= <sup>284</sup> <sub>30</sub>	-310		33956		203			


NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer's Ranch COUNTY Chubbuck STATE NeV LINE NO. 2 PAGE 6  
SURVEYOR Reel RODMEN SORTINI - GONZALEZ DATE 5-22-80 CLIENT Sm Ray

Stadia Distance	Beam Step	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3927.0						
3950	1.0	2.0	$= 20.0$	- 315		3395.5	✓	204			
3060	1.0	0.7	$= 7.0$	- 313		3395.7	✓	205			
3170	1/20	15.1	$= 15.1$	- 319		3395.1	✓	206			
3280	1/20	14.9	$= 14.9$	- 313		3395.7	✓	207			
3390	1/20	14.7	$= 14.7$	- 316		3395.4	✓	208			
3500	1/20	14.5	$= 14.5$	- 320		3395.0	✓	209			
3610	1/20	14.0	$= 14.0$	- 320		3395.0	✓	210			
3720	1/20	13.5	$= 13.5$	- 320		3395.0	✓	211			
3830	1/20	12.2	$= 12.2$	- 327		3394.3	✓	212			
3940	1/20	12.5	$= 12.5$	- 322		3394.8	✓	213			
210		80		- 80		34190	✓	-0-			Sm Ray SE/4W/SE Sec 21 DF 66-21

FORM - NRE-1 KINTZEL & CASPER

APPROVED [Signature]  
DATE 6/3/80



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NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA DIXIE VALLEY COUNTY Chubbuck STATE NeV LINE NO. 3 PAGE 1  
SURVEYOR Reed RODMEN Sorini - Gault DATE 5-21-80 CLIENT Sen Roy

Stadia Distance	Beam Sights	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
						3454.0		B.M.		S 10° 23' E	
1960	260	6.0	+490 +60	+550	3509.0		X			N 37° W	
2800	110	8.2	+200 +82	+211.8		3720.8		101			
1690	110	15.5	+207.9 -15.5	+192.4		3703.4		102			
1780	110	15.4	+185.0 -15.4	+169.6		3689.4		103			
1670	110	15.8	+183.7 -15.8	+167.9		3678.9		104			
1560	100	5.2	+156.0	+156.0		3659.8		105			
1460	100	7.5	+146.0 -7.5	+138.5		3647.5		106			
1350	100	8.0	+135.0 -8.0	+127.0	127	3636.0	3636	107			
1240	100	11.2	+124.0 -11.2	+112.8		3624.8		108			
1140	90	7.5	+102.6	+102.6		3610.1		109			
1040	90	5.2	+93.6	+90.4		3599.4		110			
930	90	8.0	+83.7	+75.7		3584.7		111			
820	90	1.2	+73.8	+69.6		3578.6		112			
720	80	1.0	+57.6	+56.5		3565.5		113			
610	80	7.9	+48.8	+46.9		3555.9		114			
510	80	4.7	+42.9	+35.3		3544.3		115			
410	70	0.2	+38.0	+27.8		3536.8		116			
300	70	1.6	+28.0	+19.4		3528.4		117			
190	60	0.1	+23.0	+17.3		3516.3		118			
80	50	2.5	+13.0	+2.5		3506.5		119			
30	40	6.7	+3.0	+6.7		3502.3		120			

FORM-NR-1 SINTER & CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Choshu STATE WV LINE NO. 3 PAGE 2  
SURVEYOR Riccas RODMEN Sartin - Grigsby DATE 5-21-88 CLIENT San Reg

Stadia Distance	Beam Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3509.0						
140		12.1		-12.1		34969		121			
250	20	13.7	<sup>-5.0</sup> -13.7	-16.7		34903		122			
360	30	14.0	<sup>-10.8</sup> -14.0	-24.8		34842		123			
470	40	12.0	<sup>-18.8</sup> -12.0	-30.8		34782		124			
580	40	14.1	<sup>-27.2</sup> -14.1	-37.9		34718	3471.7	125			
690	40	14.6	<sup>-27.6</sup> -14.6	-42.2		34668		126			
800	40	13.8	<sup>-36.0</sup> -13.8	-45.8		34652	3465.2	127			
900	40	12.1	<sup>-36.0</sup> -12.1	-48.1		34609		128			
1010	40	9.3	<sup>-43.4</sup> -9.3	-49.7		34593		129			
1120	40	6.4	<sup>-42.8</sup> -6.4	-51.2		34578		130			
1220	40	3.3	<sup>-49.8</sup> -3.3	-52.1		34569		131			
1330	30	15.0	<sup>-39.9</sup> -15.0	-54.9		34541		132			
1440	30	13.2	<sup>-43.2</sup> -13.2	-56.4		34526		133			
1550	30	12.7	<sup>-46.5</sup> -12.7	-59.2		34498		134			
1660	30	9.8	<sup>-48.8</sup> -9.8	-59.6		34494		135			
1760	30	7.5	<sup>-52.8</sup> -7.5	-60.3		34487		136			
1870	30	4.8	<sup>-56.4</sup> -4.8	-60.9		34481		137			
1980	30	2.0	<sup>-57.4</sup> -2.0	-61.4		34476		138			
2090	30	0.0	<sup>-62.7</sup> -0.0	-62.7		34463		139			
2200	200	7.5	<sup>-53.0</sup> -7.5	-62.5		34465		140			
2310	160	5.3	<sup>-57.3</sup> -5.3	-63.0		34460		141			

FORM-NR-1 RIMTEL-S-CASPER

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NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Rand COUNTY Chubbuck STATE N.V. LINE NO. 3 PAGE 3  
SURVEYOR Reavis RODMEN Sartin - Goodby DATE 5-21-81 CLIENT SW Ry

Stadia Distance	Benchmark Steps	Rod Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					35096						
2420	28.0	3.0	-65.5	-65.5		34435		142			
2530	20	1.81	-50.6	-65.7		34433		143			
2630	20	1.30	-52.6	-65.6		34434		144			
270		3.4		+3.1	34468						
280		3.5		-3.5		34433		145			
2890		3.6		-3.6		34432		146			
2780		4.0		-4.0		34428		147			
2270		4.1		-4.1		34427		148			
2170		4.2		-4.2		34426		149			
2060		4.2		-4.6		34422		150			
1950		4.0		-4.0		34428		151			
1840		4.4		-4.4		34424		152			
1730		4.5		-4.5		34423		153			
1620		4.6		-4.6		34422		154			
1510		4.8		-4.8		34420		155			
1400		5.0		-5.0		34418		156			
1290		5.0		-5.0		34418		157			
1180		5.0		-5.0		34418		158			
1070		5.0		-5.0		34418		159			
960		5.1		-5.1		34417		160			
850		5.0		-5.0		34418		161			

FORM-NR-1-RIMTEL'S-CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Bone Ranch COUNTY Cherokee STATE Nev LINE NO. 3 PAGE 4  
SURVEYOR Reeves RODMEN SORTIN - Good DATE 5-21-80 CLIENT Sev Ray

Stadia Distance	Beam Step	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3446.8						
740		65		-65		3440.3	✓	162			
600		52		-52		3441.6	✓	163			
590		53		-53		3441.5	✓	164			
420		52		-52		3441.6	✓	165			
310		53		-53		3441.5	✓	166			
200		53		-53		3441.5	✓	167			
90		50		-50		3441.8	✓	168			
20		52		-52		3441.6	✓	169			
120		53		-53		3441.5	✓	170			
240		52		-52		3441.6	✓	171			
250		57		-57		3441.1	✓	172			
460		70		-70		3439.6	✓	173			
570		57		-57		3441.1	✓	174			
680		52		-52		3441.6	✓	175			
790		53		-53		3441.5	✓	176			
900		55		-55		3441.3	✓	177			
1000		52		-52		3441.6	✓	178			
1110		57		-57		3441.1	✓	179			
1220		56		-56		3441.2	✓	180			
1330		57		-57		3441.1	✓	181			
1440		58		-58		3441.0	✓	182			



NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Road COUNTY Chubbuck STATE WV LINE NO. 3 PAGE 5  
SURVEYOR Reavis ROOMMEN Sartin - Bousley DATE 5-21-80 CLIENT Enr Co

Stadia Distance	Beaman Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					34468	✓					
1540		60		-60		34408	✓	183			
1150		62		-62		34406	✓	184			
1760		10		-10		34458	✓	181			
1860		51		-51		34417	✓	182			
1970		42		-42		34426	✓	187			
2060		46		+46	34472		π				
1950		57		-57		34415	✓	188			
1840		58		-58		34414	✓	189			
1730		60		-60		34412	✓	190			
1620		68		-68		34404	✓	191			
1510		57		-57		34415	✓	192			
1400		58		-58		34414	✓	193			
1200		52		-52		34420	✓	194			
1200		52		-52		34420	✓	195			
1090		55		-55		34417	✓	196			
980		58		-58		34414	✓	197			
880		60		-60		34412	✓	198			
780		58		-58		34414	✓	199			
670		55		-55		34417	✓	200			
560		52		-52		34420	✓	201			
450		54		-54		34418	✓	202			

FORM-NR-1 RINTZEL'S - CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Chandler STATE Nev LINE NO. 3 PAGE 6  
SURVEYOR Rowe RODMEN Sertice - Goodrich DATE 5-21-80 CLIENT SOV Ry

Stadia Distance	Boisson Steps	Rod Reading	Product	Difference Elevation	M. I.	Elevation	Station Occup.	Station Obs'd	Shot Point	Bearing	Remarks
					34472						
350		52		-52		34420		207			
250		52		-52		34420		207			
140		50		-50		34422		205			
50		50		-50		34422		206			
80		50		-50		34422		207			
190		60		-50		34422		208			
700		52		-52		34420		209			
400		50		-50		34422		210			
810		40		-40		34432		211			
620		38		-38		34434		212			
720		36		-36		34436		213			
2410		106		-106	34542						
2300		110		-110		34448		214			
2200		97		-97		34445		216			
2090		92		-92		34450		216			
1980		91		-91		34451		217			
1870		90		-90		34452		218			
1760		88		-88		34454		219			
1650		85		-85		34457		220			
1540		84		-84		34458		221			
1430		80		-80		34462		222			

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Bow River COUNTY Chubbuck STATE Nev LINE NO. 3 PAGE 7  
SURVEYOR Ross RODMEN Spitzer - Smith DATE 5-21-80 CLIENT SW Key

Stadia Distance	Beam Step	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					34542						
1320		80		-80		344624		223			
1210		75		-75		344671		224			
1100		77		-77		344697		225			
990		70		-70		344722		226			
880		70		-70		344722		227			
770		65		-65		344777		228			
670		66		-66		344766		229			
560		62		-62		344800		230			
450		60		-60		344822		231			
340		57		-57		344855		232			
230		54		-54		344888		233			
120		52		-52		344900		234			
10		52		-52		344900		235			
100		45		-45		344977		236			
210		42		-42		345000		237			
320		40		-40		345022		238			
430		38		-38		345044		239			
540		35		-35		345077		240			
640		40		-40		345022		241			
750		35		-35		345044		242			
860		37		-37		345055		243			

FORM-NR-1 KINTZEL'S - CASPER

NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Big Horn County

STATE Wyo

LINE NO. 3

PAGE 8

SURVEYOR Rettos

RODMEN Sartin - Beahly

DATE 5-21-80

CLIENT En. Co.

Stadia Distance	Beams Steps	Rod Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3454.2						
96.		30		-30		3451.2		244			
107.0		25		-25		3451.7		245			
118.0	1/20	82 ± 82		-23		3451.9		246			
129.0	1/20	86 ± 86		-21		3452.1		247			
140.0	1/20	91 ± 91		-21		3452.1		248			
150.0	1/20	95 ± 95		-20		3452.2		249			
161.0	1/20	96 ± 96		-14		3452.8		250			
172.0	1/20	98 ± 98		-12		3453.0		251			
183.0	1/20	100 ± 100		-09		3453.3		252			
194.0	1/20	102 ± 102		-05		3453.7		253			
205.0	1/20	107 ± 107		-05		3453.7		254			
216.0	1/20	108 ± 108		100		3454.2		255			
227.0	1/20	105 ± 105		+08		3455.0	3455.0	256			
238.0	1/20	105 ± 105		+14		3455.6		257			
249.0	1/20	99 ± 99		+26		3456.8		258			
		15.1		+15.1	3471.9						
		12.6		-12.6		3458.3		259			
		12.8		-12.8		3459.1		260			
		12.2		-12.2		3459.7		261			
		11.5		-11.5		3460.4		262			
		11.0		-11.0		3460.9		263			


NATURAL RESOURCES ENGINEERING CO.  
CASPER, WYOMING

AREA Boyer Ranch COUNTY Chudell STATE Ne1 LINE NO. 3 PAGE 2  
 SURVEYOR Reeder RODMEN Sutton - Gault DATE 5-21-80 CLIENT Sen Ray

Stadia Distance	Brass Steps	Red Reading	Product	Difference Elevation	H. I.	Elevation	Station Occup.	Station Obs'd.	Shot Point	Bearing	Remarks
					3471.9						
1690		106		-106		3461.3		264			
1580		100		-100		3461.9		265			
1470		95		-95		3462.1		266			
1360		96		-96		3462.3		267			
1250		92		-92		3462.7		269			
1140		81		-81		3463.1		269			
1030		81		-81		3463.8		270			
920		75		-75		3464.4		271			
810		72		-72		3464.7		272			
700		73		-73		3464.6		273			
590		65		-65		3465.4		274			
480		58		-58		3466.1		275			
370		56		-56		3466.3		276			
260		55		-55		3466.4		277			
150		50		-50		3466.9		278			
40		52		-52		3466.7		279			
520		21		-21		3469.1		Fence on S.M.		✓	
						3469.0					Tie to 1
						40.1					

FORM NR. 1 KINZEL'S - CASPER

APPROVED [Signature]  
 DATE May 28, 1980







VIBROSEIS OPERATORS REPORT

Client SOUTHLAND ROYALTY County CHURCHHILL State NEVADA Party No. # 302 Sheet No 3 of 3 Date 5-24-80  
 Area DIXIE VALLEY Operator RICK HARNISH Line No # 2 Instrument Type CDX IV OFS V Vibrator Pattern INLINE Reel No. # 003  
 Record Length 16 SEC SWEEP 4 LIS Sec. Type Cov. 24 FOLD No. Vibrators 4 Sweeps per sta 16 Dist Nr. Tr. Straddle/End On 5280-440-440-5280  
 Weather COOL, CLOUDY Detector Type L-21-A Freq 10 HZ Dets. Per Trace 12 Det. Spacing 9' INLINE Det. Pattern INLINE Group Int. 110' Trip Select \_\_\_\_\_  
 Sample rate 2 Alias Filt 128 Op Mode 1FP PGC Curve \_\_\_\_\_ AGC Speed \_\_\_\_\_ AGC Level \_\_\_\_\_ Trip time \_\_\_\_\_ AGC Sampling Tr. \_\_\_\_\_ SPC \_\_\_\_\_ ITB \_\_\_\_\_

Sw Pos	Shotpoint No	Direction & Location		Shot No	File #	Filters		Initial gain db	Final gain db	60 filt	Parity count	OD count	Time	Remarks
		N <sup>1</sup> W	S <sup>26</sup> E			low	high							
57	194	143-190	198-213	47	149	8	128		1FP	IN	0	0	5:00	RECORDER 166-167 12-60 HZ SWEEP
59	196	145-192	200-213	48	150									VIBS STUCK SALT MARSH
61	198	147-194	202-213	49	151									TO SOFT FOR VIBS VP 200-213
63	200	149-196	204-213	50	152									
													6:00	
														E.O.L.
														LAST FILE 152 VP 200 REEL #003



VIBROSEIS OPERATORS REPORT

Client Southland Royalty County Churchill State NEVADA Party No. 302 Sheet No 4 of 9 Date 5-27-80  
 Area DIXIE VALLEY Operator RICK HARNISH Line No 1 SOUTH Instrument Type SDX 4 SFS 5 Vibrator Pattern INLINE Reel No. 003 004  
 Record Length 16 Sec. Type Cov. 24 Fold No. Vibrators 4 Sweeps per sta 16' Dist Nr. Tr. Straddle/End On 5280-440-5286  
 Weather NICE Detector Type L-21-A Freq 10 Hz Dets. Per Trace 12 Det. Spacing 9' Det. Pattern inline Group Int. 110' Trip Select \_\_\_\_\_  
 Sample rate 2ms Alias Filt 128 Op Mode IFP PGC Curve \_\_\_\_\_ AGC Speed \_\_\_\_\_ AGC Level \_\_\_\_\_ Trip time \_\_\_\_\_ AGC Sampling Tr. \_\_\_\_\_ SPC \_\_\_\_\_ ITB \_\_\_\_\_

Sw Pos	Shotpoint No	Direction & Location		Shot No	File #	Filters		Initial gain db	Final gain db	60 filt	Parity count	OD count	Time	Remarks
		1	96			low	high							
11	202	151-198	206-253	1	155	8	128		IFP	in	0	0	11:00	RECORDER AT 120-121 12-60 Hz + SWEEP 16-SEC REC 4 SEC LIS REEL 003 FILE 143 U.P. 178 12-SEC SWEEP
13	204	153-200	208-255	2	156									
15	206	155-202	210-257	3	157									
17	208	157-204	212-259	4	158									
19	210	159-206	214-261	5	159									
21	212	161-208	216-263	6	160									
23	214	163-210	218-265	7	161									REEL # 004 U.P. 216 FILE 162
25	216	165-212	220-267	8	162									CONSTANTS WRONG REEL 003 FOR 004
27	218	167-214	222-269	9	163									
29	220	169-216	224-271	10	164									
31	222	171-218	226-273	11	165									
33	224	173-220	228-275	12	166									
35	226	175-222	230-277	13	167									
37	228	177-224	232-279	14	168									
39	230	179-226	234-281	15	169									
41	232	181-228	236-283	16	170									
43	234	183-230	238-285	17	171									
45	236	185-232	240-287	18	172									
47	238	187-234	242-289	19	173									RECORDER MOVES TO 156-157
13	240	189-236	244-291	20	174								2:10	
15	242	191-238	246-293	21	175									
17	244	193-240	248-295	22	176									
19	246	195-242	250-297	23	177									

VIBROSEIS OPERATORS REPORT

Client SOUTHLAND ROYALTY County Churchill Co. State NEVADA Party No. #302 Sheet No 1 of 1 Date 5-31-80

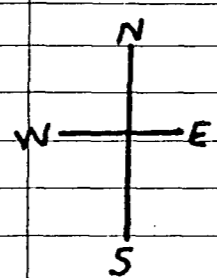
Area DIXIE VALLEY Operator RICK HARNISH Line No #1 SOUTH #1 NORTH Instrument Type SDX IV DEF V Vibrator Pattern INLINE 110' Reel No. -

Record Length 12 SEC SWEEP 16 SEC REC 4 LLS Sec. Type Cov. 24 FOLD No. Vibrators 4 Sweeps per sta 16 Dist Nr. Tr. Straddle/End On 5280-440-440-5280

Weather COOL, CLOUDY Detector Type L-21-A Freq 10 HZ Dets. Per Trace 12 Det. Spacing 9' Det. Pattern INLINE Group Int. 110' Trip Select -

Sample rate 2 Alias Filt 128 Op Mode IFP PGC Curve - AGC Speed - AGC Level - Trip time - AGC Sampling Tr. - SPC - ITB -

Sw Pos	Shotpoint No	Direction & Location 1 96	Shot No	File #	Filters low high	Initial gain db	Final gain db	60 filt	Parity count	OD count	Time	Remarks
					8 128		1FP IN					SHAKE ALL EVEN NUMBER FLAGS
<p>ORIGINAL LINE #1 VP 101 - 593 (LINE CHANGED BECAUSE FROM VP 320 - 390 NOT DRIVEABLE ROCK, FLASH FLOOD MADE NEW CANON, SO L-1 WAS SPLIT TO TWO LINES)</p> <p>L-1 SOUTH IS VP 101 TO VP 405 TURN ON VP 271 L-1 NORTH IS VP 101 TO VP 377 TURN AT VP 191 AND VP 247 - VP 247 IS COMMON TO ORIGINAL LINE 1 VP 463</p>												



VIBROSEIS OPERATORS REPORT

Client Southland Royalty County Churchill State NEVADA Party No. 302 Sheet No 1 of 7 Date 5-29-80  
 Area Dixie Valley Operator Rick Harnish Line No 1-NORTH Instrument Type CDP IV OPS V Vibrator Pattern inline Reel No. #001 #002  
 Record Length 16 Sec. Type Cov. 24 Fold No. Vibrators 2 Sweeps per sta 16 Dist Nr. Tr. Straddle/End On 5280-440-440-5280  
 Weather cloudy Detector Type L-21-A Freq 1012 Dets. Per Trace 12 Det. Spacing 9' Det. Pattern inline Group Int. 110' Trip Select \_\_\_\_\_  
 Sample rate ams Alias Filt 128 Op Mode IFP PGC Curve \_\_\_\_\_ AGC Speed \_\_\_\_\_ AGC Level \_\_\_\_\_ Trip time \_\_\_\_\_ AGC Sampling Tr. \_\_\_\_\_ SPC \_\_\_\_\_ ITB \_\_\_\_\_

Sw Pos	Shotpoint No	Direction & Location		Shot No	File #	Filters		Initial gain db	Final gain db	60 filit	Parity count	OD count	Time	RECORDED 178-179	Remarks	12-60 1+2+ SWEEP 16 SEC REC 4 SEC 11S 12 SEC SWEEP
		1	96			low	high									
193	103		106-153	1	101	8	128		11P	in	0	0	1.00	REEL #001 FILE 101-U.P. 102		
195	104		108-155	2	102									Constants Date wrong on REEL #001		
197	106	101-102	110-157	3	103									And #002 5-29-80 is right date. on		
199	108	101-104	112-159	4	104									TAPES 5-28-80		
201	110	101-106	114-161	5	105											
203	112	101-108	116-163	6	106									LINE SPLIT L-1S L-1N		
205	114	101-110	118-165	7	107									L-1 SOUTH vp 101-405		
207	116	101-112	120-167	8	108									L-1 NORTH vp 101-375 L-1 N TIES TO		
209	118	101-114	122-169	9	109									L-1 vp 464 15248 L-1N + EOL vp 581 L-1 = 375 L-1N		
211	120	101-116	124-171	10	110											
213	122	101-118	126-173	11	111											
215	124	101-120	128-175	12	112											
217	126	101-122	130-177	13	113											
219	128	101-124	132-179	14	114								2.30			
221	130	101-126	134-181	15	115											
223	132	101-128	136-183	16	116											
225	134	101-130	138-185	17	117											
226	135	101-131	139-186	18	118									135 For 136, Ditch to big to CROSS		
229	138	101-134	142-189	19	119									For Vibs. - GO AROUND		
231	140	101-36	144-191	20	120									REEL #001 ENDS FILE #101-120 V.P. 102-140		
233	142	101-138	146-193	21	121								3.30	REEL #002 FILE #121 V.P. 142		
236	145	101-141	149-196	22	122									*145 For 144 For A Ditch		
237	146	101-142	150-197	23	123											

VIBROSEIS OPERATORS REPORT

Client SOUTHLAND ROYALTY County CHURCHILL State NEVADA Party No. #302 Sheet No 2 of 7 Date 5-29-80  
 Area DIXIE VALLEY Operator RICK HARNISH Line No #1 NORTH Instrument Type COX IV DFS V Vibrator Pattern INLINE Reel No. #002 #003  
 Record Length 12 SEC SWEEP 16 SEC REL 4 LIS Sec. Type Cov. 24 FOLD No. Vibrators 4 Sweeps per sta 16 Dist Nr. Tr. Straddle/End On 5280-440-440-5280  
 Weather CLOUDY Detector Type L21-A Freq 10 Hz Dets. Per Trace 12 Det. Spacing 9' Det. Pattern INLINE Group Int. 110' Trip Select \_\_\_\_\_  
 Sample rate 2 Alias Filt 128 Op Mode 1FP PGC Curve \_\_\_\_\_ AGC Speed \_\_\_\_\_ AGC Level \_\_\_\_\_ Trip time \_\_\_\_\_ AGC Sampling Tr. \_\_\_\_\_ SPC \_\_\_\_\_ ITB \_\_\_\_\_

Sw Pos	Shotpoint No	Direction & Location		Shot No	File #	Filters		Initial gain db	Final gain db	60 filt	Parity count	OD count	Time	Remarks
		1	96			low	high							
239	148	101-144	152-199	24	124	8	128		1FP	11X	0	0	3:00	RECORDED 178-179
1	150	101-146	154-201	25	125									REEL #002 HAS REEL #001 AS CONSTANTS
3	152	101-148	156-203	26	126									
5	154	103-150	158-205	27	127									
7	156	105-152	160-207	28	128									
9	158	107-154	162-209	29	129									
11	160	109-156	164-211	30	130									
13	162	111-158	166-213	31	131								4:00	
15	164	113-160	168-215	32	132									
17	166	115-162	170-217	33	133									
20	169	118-165	173-220	34	134									
21	170	119-166	174-221	35	135									
23	172	121-168	176-223	36	136									
25	174	123-170	178-225	37	137									
27	176	125-172	180-227	38	138								5:00	
29	178	127-174	182-229	39	139									
31	180	129-176	184-231	40	140									
33	182	131-178	186-233	41	141									REEL #003 VP 182 FILE 141
35	184	133-180	188-235	42	142									
37	186	135-182	190-237	43	143									
39	188	137-184	192-239	44	144									
41	190	139-186	194-241	45	145								6:00	END OF MAT















VIBROSEIS OPERATORS REPORT

Client Southland Royalty County cheuchhill State NEVADA Party No. 302 Sheet No 6 of      Date 5-28-80  
 Area Dixie Valley Operator Rick Haenish Line No #1 South Instrument Type CDXIV Vibrator Pattern inline Reel No. #005-006  
 Record Length 16 Sec. Type Cov. 24 Fold No. Vibrators 4 Sweeps per sta 16 Dist Nr. Tr. Straddle/End On 5280-440-440-5280  
 Weather NICE Detector Type L-21-A Freq 10 Hz Dets. Per Trace 12 Det. Spacing 9' Det. Pattern inline Group Int. 110' Trip Select       
 Sample rate 2ms Alias Filt 128 Op Mode 11FP PGC Curve      AGC Speed      AGC Level      Trip time      AGC Sampling Tr.      SPC      ITB     

Sw Pos	Shotpoint No	Direction & Location		Shot No	File #	Filters		Initial gain db	Final gain db	60 filt	Parity count	OD count	Time	Remarks
		1	96			low	high							
3	278	227-279	282-289	1	193	8	128		1FP	in	0	0		REEL 005 FILE 182 U.P. 256 RECORDED 304-305 12-60 142 T SWEEP 16-SEC REC 4 SEC LIS 12 SEC SWEEP
5	280	229-276	284-331	2	194									
7	282	231-278	286-333	3	195									
9	284	233-280	288-335	4	196									
11	286	235-282	290-337	5	197									
13	288	237-284	292-339	6	198									
15	290	239-286	294-341	7	199									
17	292	241-288	296-343	8	200									
19	294	243-290	298-345	9	201									
21	296	245-292	300-347	10	202									
23	298	247-294	302-349	11	203									REEL #006 U.P. 298 FILE # 203
25	300	249-296	304-351	12	204									
27	302	251-298	306-353	13	205								12:00	
29	304	253-300	308-355	14	206									
31	306	255-302	310-357	15	207									
33	308	257-304	312-359	16	208									
35	310	259-306	314-361	17	209									
37	312	261-308	316-363	18	210									
39	314	263-310	318-365	19	211									
41	316	265-312	320-367	20	212									
43	318	267-314	322-369	21	213									
45	320	269-316	324-371	22	214									
47	322	271-318	326-373	23	215									RECORDED MOVIE 340-341





VIBROSEIS OPERATORS REPORT

Client Southern Royalty County Churchill State NEVADA Party No. 302 Sheet No 9 of 9 Date 5-29-80  
 Area DIXIE VALLEY Operator RICK HARNISH Line No #1 SOUTH Instrument Type CDX IV BFS V Vibrator Pattern INLINE Reel No. #008  
 Record Length 16 Sec. Type Cov. 24 FOLD No. Vibrators 4 Sweeps per sta 16 Dist Nr. Tr. Straddle/End On 5280-440-440-5280  
 Weather Cloudy Detector Type L-21-A Freq 10 Hz Dets. Per Trace 12 Det. Spacing 9' Det. Pattern inline Group Int. 110' Trip Select \_\_\_\_\_  
 Sample rate 2ms Alias Filt 128 Op Mode IFP PGC Curve \_\_\_\_\_ AGC Speed \_\_\_\_\_ AGC Level \_\_\_\_\_ Trip time \_\_\_\_\_ AGC Sampling Tr. \_\_\_\_\_ SPC \_\_\_\_\_ ITB \_\_\_\_\_

Sw Pos	Shotpoint No	Direction & Location		Shot No	File #	Filters		Initial gain db	Final gain db	60 ~ filt	Parity count	OD count	Time	RECORDED AT 340-#391 Remarks REEL #008 FILE 223 VP.382 12-60Hz 2 SWEEP 16-SEC REC. 4 SEC LIS 12-SEC SWEEP
		1	96			low	high							
77	388	337-384	392-405	1	248	8	128		1FP	in	0	0	11:00	
79	390	339-386	394-405	2	249									
81	392	341-388	396-405	3	250									
85	394	343-390	398-405	4	251									VOID FILE # 252-253
87	396	345-392	400-405	5	254									
89	398	347-394	402-405	6	255									
91	400	349-396	404-405	7	256									
93	402	351-398		8	257									
95	404	353-400		9	258									end of line one Going south



VIBROSEIS OPERATORS REPORT

Client Southland Royalty County Church Hill State NEVADA Party No. 302 Sheet No 2 of 9 Date 5-25-80  
 Area Dixie Valley Operator Rick Harnish Line No #1 South Instrument Type DF35 Vibrator Pattern inline Reel No. 002 003  
 Record Length 16 Sec. Type Cov. 24 Fold No. Vibrators 4 Sweeps per sta 16 Dist Nr. Tr. Straddle/End On 5280-440-440-5280  
 Weather cloudy Detector Type L-21-A Freq 10 HZ Dets. Per Trace 12 Det. Spacing 9' Det. Pattern inline Group Int. 110' Trip Select \_\_\_\_\_  
 Sample rate 2 ms Alias Filt 128 Op Mode IFP PGC Curve \_\_\_\_\_ AGC Speed \_\_\_\_\_ AGC Level \_\_\_\_\_ Trip time \_\_\_\_\_ AGC Sampling Tr. \_\_\_\_\_ SPC \_\_\_\_\_ ITB \_\_\_\_\_

Sw Pos	Shotpoint No	Direction & Location		Shot No	File #	Filters		Initial gain db	Final gain db	60 fil	Parity count	OD count	Time	RECORDED AT 172-173 FILE 122 U.P. 140	Remarks 12-60 HZ + SWEEP 16 SEC REC 4 SEC LIS 12 SEC SWEEP
		1	96			low	high								
5	148	101-144	152-199	24	128	8	128		1FP	IN	0	0		REEL 002	
7	150	101-146	154-201	25	129										
9	152	101-148	156-203	26	130										
11	154	103-150	158-205	27	131										
13	156	105-152	160-207	28	132										
15	158	107-154	162-209	29	133										
17	160	109-156	164-211	30	134										
19	162	111-158	166-213	31	135										
21	164	113-160	168-215	32	136										
23	166	115-162	170-217	33	137										
25	168	117-164	172-219	34	138										
27	170	119-166	174-221	35	139										
29	172	121-168	176-223	36	140										
31	174	123-170	178-225	37	141										
33	176	125-172	180-227	38	142										
35	178	127-174	182-229	39	143								4:06	REEL # 003 FILE 143 V.P. 178	
37	180	129-176	184-231	40	144										
39	182	131-178	186-233	41	145										
41	184	133-180	188-235	42	146										
43	186	135-182	190-237	43	147										
45	188	137-184	192-239	44	148										
47	190	139-186	194-241	45	149										
49	192	141-188	196-243	46	150										



VIBROSEIS OPERATORS REPORT

Client Southland Royalty County Church hill State NEVADA Party No. 302 Sheet No 3 of 9 Date 5-25  
 Area DIXIE VALLEY Operator PICK HARNISH Line No # 1 SOUTH Instrument Type COX4 DES5 Vibrator Pattern inline Reel No. #003  
 Record Length 16 Sec. Type Cov. 24 Fold No. Vibrators 4 Sweeps per sta 16 Dist Nr. Tr. Straddle/End On 5280-440-440-5280  
 Weather Cloudy Detector Type L-21-A Freq 10 HZ Dets. Per Trace 12 Det. Spacing 9' Det. Pattern inline Group Int. 110' Trip Select \_\_\_\_\_  
 Sample rate 2ms Alias Filt 128 Op Mode IFP PGC Curve \_\_\_\_\_ AGC Speed \_\_\_\_\_ AGC Level \_\_\_\_\_ Trip time \_\_\_\_\_ AGC Sampling Tr. \_\_\_\_\_ SPC \_\_\_\_\_ ITB \_\_\_\_\_

Sw Pos	Shotpoint No	Direction & Location		Shot No	File #	Filters		Initial gain db	Final gain db	60 filt	Parity count	OD count	Time	REMARKS
		1	96			low	high							
51	194	143-190	198-248	47	151	8	128		1FP	IN	0	0	5:00	RECORDER AT 172-173 REEL #003 FILE 143 U.P. 178
53	196	145-192	200-247	48	152									12-60 1127 SWEEP 16-SEC REC 4 SEC/LIS 12-SEC SWEEP
55	198	147-194	202-249	49	153									LAST U.P. RECORDER MOVE (200)
57	200	149-196	204-251	50	154									
END OF DAY														

VIBROSEIS OPERATORS REPORT

Client SOUTHLAND ROYALTY County CHURCHILL State NEVADA Party No. # 302 Sheet No 1 of 5 Date 5-21-80  
 Area DIXIE VALLEY Operator RICK HARNISH Line No # 3 Instrument Type CDX IV DFS V Vibrator Pattern INLINE Reel No. # 001  
 Record Length 16 SEC SWEEP 16 SEC REL 4 US Sec. Type Cov. 24 FOLD No. Vibrators 4 Sweeps per sta 16 Dist Nr. Tr. Straddle/~~End On~~ 5280-440-440-5280  
 Weather NICE Detector Type L-21-A Freq 10Hz Dets. Per Trace 12 Det. Spacing 9' Det. Pattern INLINE Group Int. 110' Trip Select \_\_\_\_\_  
 Sample rate 2 Alias Filt 128 Op Mode 1FP PGC Curve \_\_\_\_\_ AGC Speed \_\_\_\_\_ AGC Level \_\_\_\_\_ Trip time \_\_\_\_\_ AGC Sampling Tr. \_\_\_\_\_ SPC \_\_\_\_\_ ITB \_\_\_\_\_

Sw Pos	Shotpoint No	Direction & Location		Shot No	File #	Filters		Initial gain db	Final gain db	60 filt	Parity count	OD count	Time	Remarks
		N-W	S-E			low	high							
					101									12-60 ↑ SWEEP 12 SEC SWEEP 16 SEC REL 4 LIS
					102-104									PULSE TEST LAY OUT LINE
199	102		106-153	1	105	8	128	1FP	IN	0	0	2:00	DRD 20.48MV-5MV-0 3 1/2 HOUR DRIVE REEL #001 VP 102 FILE 105 FROM TOWN	
201	104		108-155	2	106									
203	106	101-102	110-157	3	107									CHECK LINE 1 1/2 hours
205	108	101-104	112-159	4	108									
207	110	101-106	114-161	5	109									
209	112	101-108	116-163	6	110									
211	114	101-110	118-165	7	111									
213	116	101-112	120-167	8	112							3:00		
215	118	101-114	122-169	9	113									50' OFFSET WEST
217	120	101-116	124-171	10	114									70' OFFSET WEST
219	122	101-118	126-173	11	115									100' OFFSET WEST
221	124	101-120	128-175	12	116									150' OFFSET WEST
223	126	101-122	130-177	13	117									75' OFFSET WEST
225	128	101-124	132-179	14	118									
227	130	101-126	134-181	15	119							4:00		
229	132	101-128	136-183	16	120									
231	134	101-130	138-185	17	121									
233	136	101-132	140-187	18	122									
235	138	101-134	142-189	19	123									
237	140	101-136	144-191	20	124									
239	142	101-138	146-193	21	125							4:40		REEL #002 VP 142 FILE 125



VIBROSEIS OPERATORS REPORT

Client SOUTHLAND ROYALTY County CHURCH HILL State NEVADA Party No. # 302 Sheet No 3 of 5 Date 5-22-80  
 Area DIXIE VALLEY Operator RICK HARNISH Line No # 3 Instrument Type COX IV DFS V Vibrator Pattern INLINE Reel No. # 002 # 003  
 Record Length 16 SEC REC Sec. Type Cov. 24 FOLD No. Vibrators 4 Sweeps per sta 16 Dist Nr. Tr. Straddle/End On 5280-440-440-5280  
 Weather NICE Detector Type L-21-A Freq 10HZ Dets. Per Trace 12 Det. Spacing 9' INLINE Det. Pattern INLINE Group Int. 110 Trip Select \_\_\_\_\_  
 Sample rate 2m Alias Filt 128 Op Mode IFP PGC Curve \_\_\_\_\_ AGC Speed \_\_\_\_\_ AGC Level \_\_\_\_\_ Trip time \_\_\_\_\_ AGC Sampling Tr. \_\_\_\_\_ SPC \_\_\_\_\_ ITB \_\_\_\_\_

Sw Pos	Shotpoint No	Direction & Location		Shot No	File #	Filters		Initial gain db	Final gain db	60 filt	Parity count	OD count	Time	Remarks
		N-W	S-E			low	high							
19	162	111-158	166-213	1	135	8	128		IFP	IN	0	0	11:00	REORDER 172-173 12 SEC SWEEP 16 SEC REC. 4 SEC. LIS.
21	164	113-160	168-215	2	136									CHECK STATIONS - REPLACE BAD CABLE 2 1/2 HOUR DRIVE TIME TO FIELD
23	166	115-162	170-217	3	137									
25	168	117-164	172-219	4	138									
27	170	119-166	174-221	5	139								11:30	
29	172	121-168	176-223	6	140									VIB STUCK 5 MIN.
31	174	123-170	178-225	7	141									
33	176	125-172	180-227	8	142								12:00	
35	178	127-174	182-229	9	143									
37	180	129-176	184-231	10	144									
39	182	131-178	186-233	11	145									REEL # 003 V.P. 182 FILE # 145
40	183	132-179	187-234	12	146									
45	<del>184</del> 186	137-184	192-239	13	147								12:30	184 FOR 186 WELL SITE UNDER SHOT
43	<del>190</del> 188	135-182	190-237	14	149									VOID FILE # 148 WRONG COP SWITCH POSITION 190 FOR 188
48	191	140-187	195-242	15	150									
49	192	141-188	196-243	16	151									
51	194	143-190	198-245	17	152								1:00	
53	196	145-192	200-247	18	153									
8	199	148-195	202-250	19	154								1:30	MOVE RECORDER 200-221
9	200	149-196	204-251	20	155								2:00	
11	202	151-198	206-253	21	156									
13	204	153-200	208-255	22	157									
13	<del>208</del> 206	153-200	208-255	23	158								2:20	V.P. 208 FOR 206



VIBROSEIS OPERATORS REPORT

Client SOUTHWAND ROYALTYS County CHURCHILL State NEVADA Party No. #302 Sheet No 5 of 5 Date 5-22-80  
 Area DIXIE VALLEY Operator RICK HARNISH Line No #3 Instrument Type LDX IV DFS V Vibrator Pattern INLINE Reel No. #004 #005  
 Record Length 16 SEC SWEEP 16 SEC REC 445 Sec. Type Cov. 24 FOLD No. Vibrators 4 Sweeps per sta 16 Dist Nr. Tr. Straddle/End on 5280'-440'-440'-5280'  
 Weather NICE Detector Type L-21-A Freq 10 Hz Dets. Per Trace 12 Det. Spacing 9' INLINE Det. Pattern INLINE Group Int. 110' Trip Select \_\_\_\_\_  
 Sample rate 2 Alias Filt 128 Op Mode IFP PGC Curve \_\_\_\_\_ AGC Speed \_\_\_\_\_ AGC Level \_\_\_\_\_ Trip time \_\_\_\_\_ AGC Sampling Tr. \_\_\_\_\_ SPC \_\_\_\_\_ ITB \_\_\_\_\_

Sw Pos	Shotpoint No	Direction & Location		Shot No	File #	Filters		Initial gain db	Final gain db	60 fil	Parity count	OD count	Time	Remarks
						low	high							
		<u>N<sup>1</sup>-W S<sup>96</sup>-E</u>												<u>RECORDER 220-221</u>
<u>63</u>	<u>254</u>	<u>203-250</u>	<u>258-277</u>	<u>47</u>	<u>182</u>	<u>8</u>	<u>128</u>		<u>IFP</u>	<u>IN</u>	<u>0</u>	<u>0</u>	<u>4:45</u>	
<u>65</u>	<u>256</u>	<u>205-252</u>	<u>260-279</u>	<u>48</u>	<u>183</u>									<u>REEL #005 VIA 258 FILE 184</u>
<u>67</u>	<u>258</u>	<u>207-254</u>	<u>262-279</u>	<u>49</u>	<u>184</u>								<u>5:30</u>	<u>VIBS STUCK "2"</u>
<u>69</u>	<u>260</u>	<u>209-256</u>	<u>264-279</u>	<u>50</u>	<u>185</u>									
<u>71</u>	<u>262</u>	<u>211-258</u>	<u>266-279</u>	<u>51</u>	<u>186</u>									
<u>73</u>	<u>264</u>	<u>213-260</u>	<u>268-279</u>	<u>52</u>	<u>187</u>									
<u>75</u>	<u>266</u>	<u>215-262</u>	<u>270-279</u>	<u>53</u>	<u>188</u>									
<u>77</u>	<u>268</u>	<u>217-264</u>	<u>272-279</u>	<u>54</u>	<u>189</u>									
<u>79</u>	<u>270</u>	<u>219-266</u>	<u>274-279</u>	<u>55</u>	<u>190</u>									
<u>81</u>	<u>272</u>	<u>221-268</u>	<u>276-279</u>	<u>56</u>	<u>191</u>									
<u>83</u>	<u>274</u>	<u>223-270</u>	<u>278-279</u>	<u>57</u>	<u>192</u>									
<u>85</u>	<u>276</u>	<u>225-272</u>	<u>279</u>	<u>58</u>	<u>193</u>									<u>279 Dred</u>
<u>87</u>	<u>278</u>	<u>227-274</u>	<u>279</u>	<u>59</u>	<u>194</u>									<u>278 Dred</u>

E.O.L. LINE 3