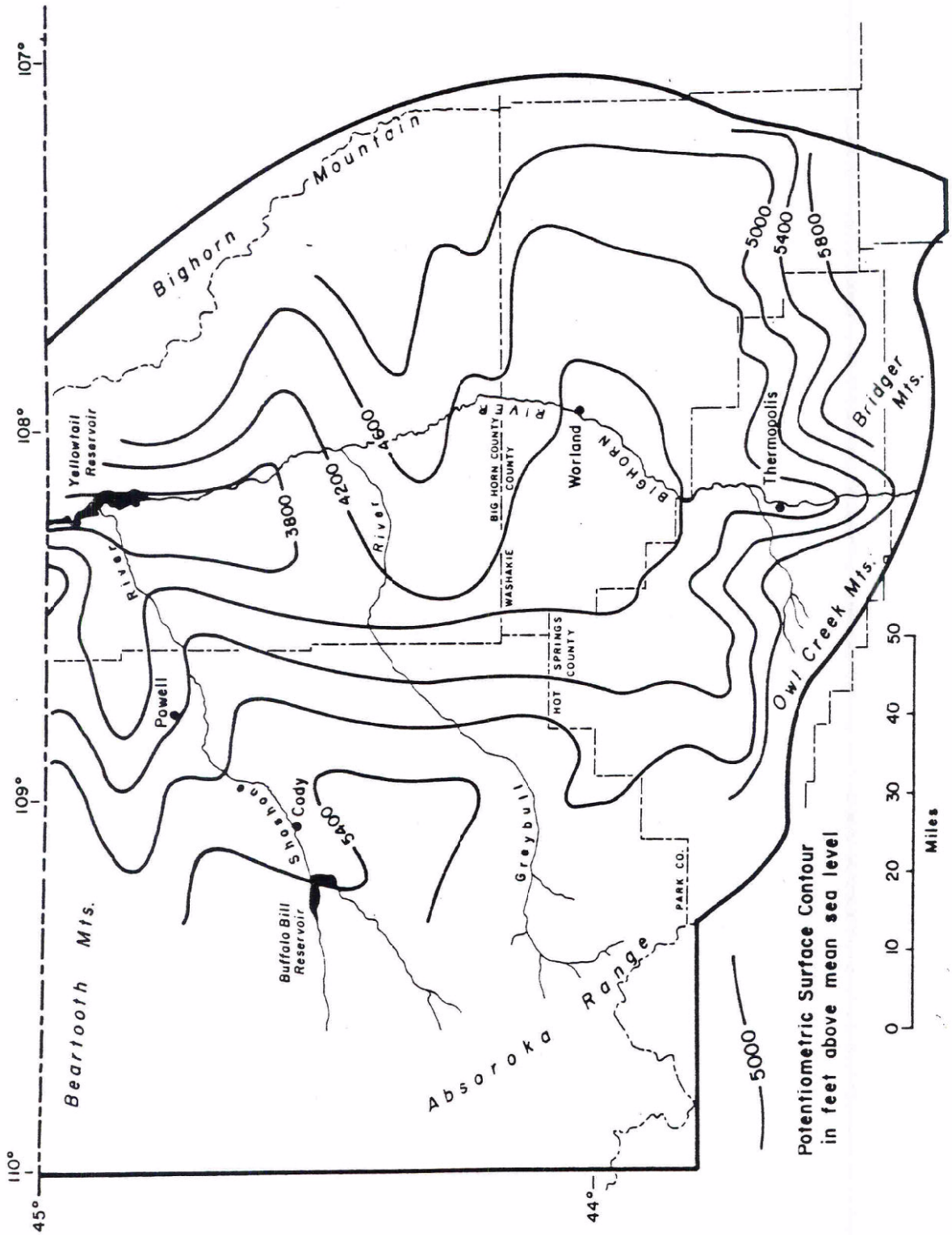
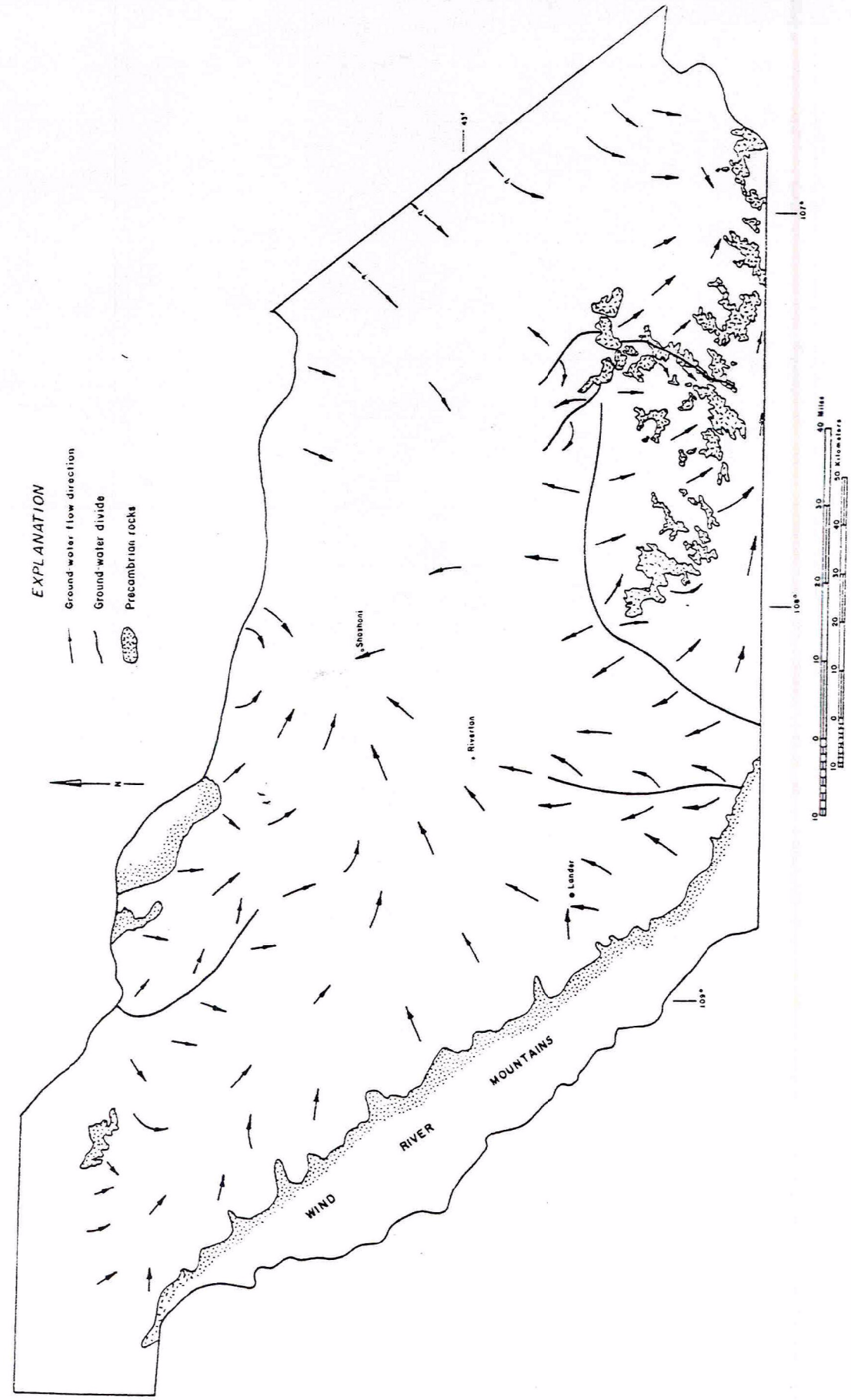
Appendix C



PROJECT: WYBRS105 DATE: 09/30/02 DRAWN: JHF CHECKED: MES REVISIONS: FILE: WYBRS105 FIGURES	**NOTES/LEGEND** FROM LIBRA AND OTHERS (1981).	Plate C.1 Potentiometric Surface of the Tensleep Aquifer in the Bighorn Basin, Wyoming	Lidstone and Associates, Inc. Engineering, Geology, & Water Resource Consulting



PROJECT: WYBRS105 DATE: 09/30/02 DRAWN: JHF CHECKED: MES REVISIONS: FILE: WYBRS105 FIGURES	**NOTES/LEGEND** FROM RICHTER (1981).	Plate C.2 Generalized Ground Water Flow Directions in the Lower Creatceous Rocks, Wind River Basin, Wyoming	Lidstone and Associates, Inc. Engineering, Geology, & Water Resource Consulting

TABLE C.1.1
Hydrologic Properties of the Major Aquifers
from Oil Fields in the Bighorn Basin

Field	Location (T/R)	Average Pay Thickness (ft)	% Porosity	Permeability (md)	Estimated Transmissivity (gpd/ft)[1]	Source[2]	Remarks.
			FRONTIER FORMATION				
Zimmerman	44N/93W	12	10	-	-	1	
Walker Dome		25	15	-	-	1	
		26	17	4	2	2	
Grass Creek	46N/98-99W	65	21	81	100	1	
		55	22	35	40	2	
		7	23	55	7	5	
		10	24	420	80	5	
		4	26	240	20	5	
		2	13	0	0	5	
		3	22	50	3	5	
		6	16	0	0	5	
		9	17	1.0	0.2		
Sand Creek	46N/91W	55	22	40	40	1	
		20	17	14	5	2	
		30	17	41	20	2	
		15	16	1.6	0.4	5	
		4	16	2.1	0.2	5	
		10	12	0.2	0.04	5	
Hidden Dome	47-48N/90-91W	18	19	80	30	2	

Worland	48N/92W	47	17	16	10	1
		51	14	13	10	1
		17	13	11	3	1
		4	18	94	7	5
		5	19	130	10	5
		4	17	9.6	1	5
		4	12	0.4	0.03	5
		4	11	3.5	0.3	5
		31	19	16	9	5
		4	18	20	2	5
		4	11	0.3	0.02	5
Torchlight	51N/92-93W	10	17	2.5	0.5	5
		11	17	8.1	2	5
		5	22	7.1	0.6	5
		6	22	4.1	0.6	5
		4	16	0.4	0.4	5
		6	19	1.5	0.03	5
Whistle Creek	56N/98W	5	14	0.3	0.03	5
		7	14	1.6	0.2	5
		8	10	0.5	0.07	5
		6	12	0	0	5
Badger Basin	57N/101W	32	21	-	-	1
Elk Basin, South	57N/99W	40	15	6	4	1
Elk Basin	57-58N/99-100W	40	26	0	0	2
Silver Tip	47-58N/100W	17	13	-	-	2
		CLOVERLY FORMATION				
Greybull, West	52N/94W	35	9	4.5	3	1

Bearcat	56N/99W	25	15	6	4	1	Upper sandstone member
Badger Basin	57N/101W	22	9	4.2	2	1	Upper sandstone member
Elk Basin South	57N/99W	25	15	120	50	1	Upper sandstone member
		35	15	9	6	1	Lower sandstone member
Silver Tip South	57-58N/100W	-	7-10	0	0	4	Upper sandstone member
		-	10-12	-	-	4	Lower sandstone member
		MORRISON FORMATION					
Garland	56N/98W	-	15	64	-	3	
		CHUGWATER FORMATION					
Hamilton Dome	44N/97-98W	15	15	40	10	1	
		14	15	20	5	2	Curtis sandstone member
Grass Creek	46N/98-99W	20	17	120	40	2	Curtis sandstone member
		-	22	105	-	3	Curtis sandstone member
		-	17	120	-	3	Curtis sandstone member
		20	17	110	40	1	
		PHOSPHORIA FORMATION					
Water Creek	43-44N/90-91W	40	5	-	-	1	
Little Sand Draw	44N/96W	76	2.1-22	0.61-3.1	0.9-4	1	
Hamilton Dome	44N/97-98W	31	24	76	40	1	
Gebo	44N/95W	104	13	-	-	1	
Zimmerman	44N/93W	12	10	-	-	1	
Walker Dome	46N/99W	60	16	-	-	1	

Grass Creek	46N/98-99W	55	17	20	20	1
Fourteen Mile	46N/94W	55	2.9-15	0.05-1.1	0.05-0.9	1
Slick Creek	46-47N/92W	20	9	6	2	2
Sunshine, North	47N/101W	22	18	5.8	2	1
Gooseberry	47N/100W	30	8	39	20	1
South Friday	47N/92W	20	8	2	3	1
Meyer Gulch	47N/90W	32	7.7	19	10	1
Cottonwood Creek	47N/90W	-	7.2	18	-	3
		20	10	16	6	2
Worland	48N/92W	70	6.5	7	9	1
Spring Creek	49N/102W	34	11.9	2.9	2	1
Meeteetse	49N/99W	35	6	2	1	1
Nerber Dome	49N/92W	35-70	2-5	0.4	0.3-0.5	1
Manderson	49-50N/92-93W	25	5	1	0.4	1
Oregon Basin	50-51-52N/100-101W	38	14	10	7	2
Alkali Anticline	55N/95W	15	14	-	-	1
Garland	56N/98W	60	24	-	-	2

[1]All transmissivities rounded to one significant figure.
Transmissivity (gpd/ft) = Average Permeability (gpd/ft^2) x Average Pay Thickness (ft).

[2]Sources are:

1. = Wyoming Geological Association, Oil and Gas Fields Symposium, 1957 (Supplemented, 1961)
2. = Biggs and Koch, 1968
3. = Wyoming State Oil and Gas Commission Files
4. = Wyoming Geological Association Guidebook, 1975
5. = Wyoming Geological Association Guidebook, 1952

From Libra and others (1981)

TABLE C.1.1.A
Hydrologic Properties of the Major Aquifers
from Oil Fields in the Bighorn Basin

Field	Location (T/R)	Average Pay Thickness (ft)	% Porosity	Permeability (md)	Estimated Transmissivity (gpd/ft)[6]	Source
		TENSLEEP SANDSTONE				
Black Mountain	42-43N/90-91W	20	14	-	-	1
Murphy Dome	44N/97-98W	180	14	99	300	1
Hamilton Dome						
Little Sand Draw	44N/96W	52	10-11	0.8-1.7	0.8-2	1
Gebo	44N/95W	105	10	8	10	1
Murphy Dome	43-44N/91-92W	113	13	48	100	1
Grass Creek	46N/98-99W	90	14	110	200	1
Sunshine North	47N/101W	100	15	88	200	1
Gooseberry	47N/100W	50	11	28	30	1
		50	12	23	20	2
Little Buffalo Basin	47-48N/100W	28	10	74	40	2
Hidden Dome	47-48N/90-91W	54	16	-	-	1
Pitch Fork	48N/102W	102	3.3-22	0.4-7.1	0.8-10	1
Nowood	48N/90W	15	17	120	30	1
Spring Creek	49N/102W	184	16	100	300	1
Bonanza	49N/91W	90	24	800	1000	1
Torchlight	51N/92-93W	23	17	200	80	2
Oregon Basin	50-52N/100-101W	60	16	150	200	2

Shoshone	53N/101W	100	26	560	1000	1
Alkali Anticline	55N/95W	18	10	-	-	1
Whistle Creek	56N/98W	71	12	61	80	1
Garland	56N/98W	59	14	53	60	2
Byron	56N/97W	70	14	-	-	1
Elk Basin, South	57N/99W	140	15	140	400	1
		77	14	120	200	2
		152	14	190	500	3
Sage Creek, West	57N/98W	10-55	16	100	20-100	1
Big Pole Cat	57N/98W	100	10-20	0.1-700	0.2-1000	1
Sage Creek	47N/97-98W	20-25	15-20	50-200	20-90	1
Deaver	57N/97W	10	15	130	20	1
		AMSDEN FORMATION				
Grass Creek*	46N/98-99W	19	7	-	-	2
Alkali Anticline*	55N/95W	70	10	-	-	1
		MADISON LIMESTONE				
Hamilton Dome	44N/97-98W	160	16	25	70	1
Walker Dome	46N/99W	25	15	-	-	1
Oregon Basin	40-51-52N/100-101W	200	13	-	-	1
Torchlight	51N/92-93W	67	21	34	40	2
Elk Basin	47-58N/99-100W	336	12	20	100	2
Sage Creek	57N/97-98W	20	10-20	20	7	1
		BIGHORN DOLOMITE				
Hamilton Dome	44N/97-98W	44	13	40	50	1

1. Wyoming Geological Association, Oil and Gas Fields Symposium, 1957 (Supplemented, 1961)
2. Biggs and Koch, 1970
3. Wyoming State Oil and Gas Commission Files

4. Wyoming Geological Association Guidebook, 1975
5. Wyoming Geological Association Guidebook, 1952
6. All transmissivities rounded to one significant digit. Transmissivity (gpd/ft) =Average Permeability (gpd/ft^2) x Average Pay Thickness (ft).
From Libra and others (1981).

TABLE C.1.2
Reported Specific Capacities and estimated Transmissivities
for the Major Aquifers from Selected Wells completed in the Bighorn Basin

Quaternary Aquifer System

Well Location (T/R-Sec.)	Yield (gpm)	Drawdown (ft)	Specific Capacity (gpm/ft)	Total Depth (ft)	Depth to Water (ft)	Test Length (hr)	Estimated Transmissivity (gpd/ft)
42N/95W-1	15	6	2.50	26	12	2	1.9×10^3
42N/95W-1	14	4	3.50	20	10	4	3.0×10^3
42N/95-1	13	2	6.50	23	10	2	3.6×10^3
42N/95W-11	20	11	1.82	28	9	3	1.6×10^3
42N/95W-11	20	0	-	30	15	2.5	-
42N/95W-13	16	0	-	20	10	3	-
42N/95W-24	15	20	0.75	45	8	1	7.0×10^2
43N/94W-4	40	0	-	28	6	1	-
43N/95W-18	8	10	0.80	45	17	1	7.5×10^2
43N/95W-24	40	9	4.40	35	10	1	4.1×10^3
43N/95W-24	10	5	2.0	45	12	24	2.4×10^3
43N/95W-24	18	17	1.06	51	17	2	9.5×10^2
43N/95W-24	25	14	1.78	52	9	4	1.5×10^3
43N/95W-24	6	1	6.00	47	10	24	7.0×10^3
43N/96W-8	20	0	-	30	15	1	-
44N/94W-31	20	4	5.00	45	25	1	6.0×10^3
44N/94W-32	20	15	1.33			1	1.9×10^3

44N/98W-17	100	40	2.50	65	12	.25	3.0×10^3
44N/98W-17	10	10	1.00	40	12	.16	9.0×10^3
46N/93W-1	15	20	0.75	25	6	2	7.0×10^2
46N/93W-1	15	8.5	1.76	25	6	2	2.1×10^3
46N/93W-1	20	25	0.80	30	12	.5	1.2×10^3
46N/93W-1	15	14	1.07	25	6	2	1.2×10^3
46N/93W-1	25	16	1.75	28	10	2	1.7×10^3
46N/93W-1	10	18	0.55	35	12	.5	4.5×10^2
46N/93W-3	5	20	0.25	60	15	.5	2.0×10^2
46N/93W-10	6	11	0.55	25	7	2	5.5×10^2
46N/93W-11	30	4	7.50	26	4	2	9.5×10^3
46N/93W-28	25	13	1.92	30	12	2	1.9×10^3
47N/87W-6	20	1.5	13.30	35	25	.5	1.1×10^4
47N/87W-6	20	.5	40.00	30	21	.5	4.1×10^4
47N/87W-6	20	12	1.67	28	6	2	1.8×10^3
47N/87W-6	40	0	-	28	9	.75	-
47N/87W-6	10	5	2.00	21	10	3	1.9×10^3
47N/92W-5	20	11	1.82	27.5	10.5	2.5	2.0×10^3
47N/92W-30	15	18	0.83	35	6	2	1.2×10^3
47N/92W-30	25	0	-	44	12	2	-
47N/92W-30	10	0	-	44.5	42	.25	-
47N/92W-30	12	5	2.40	38	12	2	2.0×10^3
47N/92W-30	6	1	6.00	17	12	4	7.5×10^3
47N/93W-23	10	4	2.50	45	6	.25	2.6×10^3
47N/93W-24	25	12	2.10	21	6	2	2.5×10^3
47N/93W-24	15	22	0.68	35	8	2	7.0×10^2
47N/93W-24	14	5	2.80	35	10	.5	2.7×10^3

47N/93W-24	15	10	1.50	38	11	2	1.6×10^3
47N/93W-25	25	5	5.00	24	12	2	6.5×10^3
47N/93W-25	25	6	4.17	28	12	2	5.5×10^3
47N/93W-25	25	0	-	18	9	4	-
47N/93W-25	10	0	-	21	16	4	-
47N/93W-25	15	6	5.83	31	14	2	7.4×10^3
47N/93W-25	15	3	5.00	20	10	1	5.8×10^3
47N/93W-25	20	6	3.33	27	12	2	4.2×10^3
47N/93W-25	30	4	7.50	29	9	8	1.0×10^4
47N/93W-25	25	6	4.17	26	9	-	-
47N/93W-25	4	5	0.80	31	10	6	1.1×10^3
47N/93W-25	25	12	2.08	34	10	2	2.5×10^3
47N/93W-25	30	5	6.00	39	16	1	7.0×10^3
47N/93W-25	17	14	1.21	34	12	1	1.4×10^3
47N/93W-25	25	6	4.17	45	16	2	4.0×10^3
47N/93W-30	30	9	3.33	33	9	2	4.2×10^3
47N/93W-30	30	14	2.14	36	10	1.5	2.6×10^3
48N/89W-33	40	7	5.70	30	9	-	-
48N/106W-8	30	10	3.00	46	15	1	3.5×10^3
48N/106W-8	50	0	-	100	70	5	-
48N/106W-8	25	5	5.00	38	12	1	6.0×10^3
48N/106W-18	25	0	-	45	30	4	-
49N/89W-6	25	10	2.50	24	6	2	2.2×10^3
49N/89W-29	20	30	0.67	50	13	1	6.5×10^3
49N/92W-7	25	3	8.30	30	25	1/6	7.6×10^3
55N/99W-14	10	0	-	25	6	24	-
55N/99W-15	12	0	0	25	8	6	-

55N/99W-15	12	1	12.00	36	9	1	1.3×10^4
55N/99W-15	16.7	1	16.70	17	4.75	-	-
55N/99W-15	41	0	-	27	12	24	-
55N/99W-15	6	1	6.00	30	6	2	7.5×10^3
55N/99W-15	5	1	5.00	25	12	2	6.5×10^3
55N/99W-15	10	1	10.00	20	8	24	1.4×10^4
55N/99W-16	40	10	4.00	30	6	2	5.0×10^3
55N/99W-16	750	18	41.70	29	8	138	7.9×10^4
55N/99W-16	25	0	-	26	10	12	-
55N/99W-17	420	8	52.50	40	9	9	8.0×10^4
55N/99W-22	12.5	1	12.50	14	10	4	1.7×10^4
55N/99W-23	15	20	0.75	50	25	6	1.0×10^3
55N/99W-23	15	10	1.50	50	10	3	2.0×10^3
55N/100W-25	10	5	2.00	42	12	2	2.5×10^3
55N/100W-25	8	10	0.8	60	40	1	9.5×10^2
55N/100W-25	25	15	1.67	40	8	2	1.9×10^3
55N/100W-25	25	15	1.67	35	8	2	1.9×10^3
55N/100W-25	20	10	2.00	45	20	1	2.0×10^3
55N/100W-25	25	0	-	52	25	1/6	-
55N/100W-25	5	-	-	40	20	24	-
55N/100W-26	25	35	0.71	50	25	2	9.5×10^2
55N/100W-31	10	0	-	35	15	24	-
56N/95W-7	25	0	-	36	10	-	-
56N/95W-17	20	8	2.50	20	10	60	2.0×10^3
56N/96W-14	8.3	2	4.15	36	10	.5	1.9×10^3
56N/96W-14	20	3	6.70	21	8	.1	2.7×10^3
56N/96W-14	20	0	-	19	11	2	-

57N/95W-33	25	1	25.00	33	27	72	2.1×10^4
57N/95W-35	25	2	12.50	30	11	168	6.0×10^3
57N/97W-32	25	25	1.00	30	11	.5	9.0×10^2
57N/97W-33	200	0	-	45	20	240	-
57N/98W-24	6	1	6.00	35	10	12	8.0×10^3
57N/101W-30	25	0	-	40	18	2	-
57N/102W-11	100	0	-	8	5	2	-
57N/102W-21	20	10	2.00	60	45	1	2.2×10^3
57N/106W-34	25	0	-	12	6	48	-
57N/106W-35	11	25	0.44	52	20	1	5.0×10^2
58N/97W-19	50	2	25.00	15	6	2	3.3×10^4
58N/97W-19	40	3	13.30	18	8	3	1.6×10^4
58N/101W-29	10	0	-	40	30	12	-

[1]Well Data obtained from the State Engineer's Office, Cheyenne.
Specific capacity (gpm/ft) = Yield (gpm) & Drawdown (ft).

From Libra and others (1981).

TABLE C.1.2.A
Reported Specific Capacities and estimated Transmissivities
for the Major Aquifers from Selected Wells completed in the Bighorn Basin

Willwood Aquifer System

Well Location (T/R-Sec.)	Yield (gpm)	Drawdown (ft)	Specific Capacity (gpm/ft)	Total Depth (ft)	Depth to Water (ft)
45N/94W-11	7	188	0.04	230	22
45N/94W-19	5	60	0.08	160	90
45N/94W-20	10	30	0.33	130	50
45N/94W-20	3	10	0.30	130	50
45N/96W-15	11	66	0.17	100	24
46N/92W-1	10	70	0.14	120	30
46N/92W-1	4	65	0.06	65	25
46N/92W-1	10	10	1.00	25	11
46N/92W-13	10	50	0.20	130	20
46N/92W-13	10	50	0.20	115	20
46N/92W-13	10	50	0.20	30	20
46N/92W-18	6	75	0.08	225	140
46N/92W-18	8	262	0.03	478	188
46N/92W-30	6	140	0.04	260	110
46N/93W-1	10	52	0.19	85	18
46N/93W-1	5	90	0.06	93	17
46N/93W-1	4	85	0.05	90	15

46N/93W-1	4	85	0.04	90	20
46N/93W-1	10	50	0.20	90	75
46N/93W-1	5	45	0.11	60	40
46N/93W-2	4	60	0.07	75	20
46N/93W-9	6	132	0.04	165	18
46N/93W-15	10	125	0.08	175	145
46N/93W-16	11.3	11	1.03	65	37
46N/93W-16	8.2	188	0.04	300	62
46N/93W-16	12	242	0.05	375	12
46N/93W-16	23	290	0.08	185	15
46N/93W-16	10	320	0.03	430	100
46N/93W-20	5	114	0.04	140	16
46N/93W-20	8	80	0.10	110	10
46N/93W-22	2	200	0.01	225	20
46N/93W-24	10	70	0.14	240	160
46N/93W-26	2	140	0.01	230	85
46N/93W-28	1.5	70	0.02	75	18
46N/93W-28	1	115	0.01	125	10
46N/93W-30	7	90	0.08	240	140
46N/94W-9	6	100	0.06	320	10
46N/102W-15	100	5	20.00	70	40
46N/92W-6	2	63	0.03	75	12
47N/92W-18	5	56	0.09	70	9
47N/92W-18	5	85	0.06	110	15
47N/92W-19	2	170	0.01	225	45
47N/92W-19	10	65	0.15	122	35
47N/92W-19	7	4	1.75	71	50

47N/92W-19	15	13	1.15	29	9
47N/92W-23	5	60	0.08	200	50
47N/93W-1	10	175	0.06	225	110
47N/93W-23	5	60	0.08	200	50
47N/93W-24	4	160	0.02	165	15
47N/93W-24	5.5	60	0.09	165	16
47N/93W-24	8	5	1.60	170	15
47N/93W-24	1.5	120	0.01	160	12
47N/93W-35	2	110	0.02	158	40
47N/93W-36	6	120	0.05	160	30
48N/92W-10	4	260	0.02	190	80
48N/93W-36	13	100	0.13	150	60
47N/97W-33	2	140	0.01	150	18
47N/97W-33	60	33	1.82	70	12
49N/92W-7	1	190	0.01	200	20
49N/92W-9	3	275	0.01	280	100
49N/100W-13	3	50	0.06	70	13
49N/100W-13	50	0	-	80	10
49N/100W-20	10	10	1.00	83	20
49N/100W-34	20	80	0.25	120	65
55N/101W-10	10	20	0.50	150	20
55N/101W-13	10	0	-	110	15
55N/101W-13	25	11	2.27	135	80
55N/101W-14	10	8	1.25	87	30
55N/101W-21	60	10	6.00	130	30
55N/101W-23	13.3	30	0.44	140	50
55N/101W-23	13.3	40	0.33	105	40

55N/101W-24	13.3	20	0.66	100	40
55N/101W-25	10	3	1.33	220	100

[1]Well Data obtained from the State Engineer's Office, Cheyenne.

TABLE C.1.2.B
Reported Specific Capacities and estimated Transmissivities
for the Major Aquifers from Selected Wells completed in the Bighorn Basin

Formation Well Owner	Location	Test Date	Duration (hrs)	Yield (gpm)	Drawdown (ft)	Transmissivity (gpd/ft)	Specific Capacity (gpm/ft)	Remarks
Frontier Formation								
	43N-93W-3	8/16/76	20	50	500		0.1	Flowing Well.
	43N-94W-5	2/60	0.25	44	6		7.3	Flowing Well.
	44N-94W-35	7/8/73	1	20	17		1.2	Flowing Well.
	46N-99W-24	10/31/55	24	64	237		0.27	
	49N-91W-4	5/20/53	0.5	5	22		0.23	
	49N-91W-4	4/30/45	0.5	20	30		0.67	
	49N-91W-4	10/52	0.5	20	30		0.67	
	49N-91W-20	4/4/74	20	20	80		0.25	Production from sand.
	51N-93W-16	9/23/76	2	20	25		0.8	Production from sand.
	51N-93W-27	4/25/78	1.5	20	10		2	Production from sand.
	51N-	4/12/65	0.5	15	20		0.75	Production from sand.

	103W-10							
	52N-93W-9	8/57	168	200	58		3.4	
	52N-102W-21	6/26/74	0.5	25	4		6.2	Production from sandstone and shale.
	52N-102W-22	11/11/74	72	50	40		1.2	
	52N-102W-30	6/16/73	0.5	30	5		6	Production from sandstone.
	52N-102W-32	11/30/78	2.5	7	25		0.28	Production from sandstone.
	52N-102W-33	2/15/71	4	15	250		0.06	
	52N-103W-34	8/1/76	2	20	2		10	
	53N-92W-33	6/22/77	0.17	10	90		0.11	
	53N-101W-27	2/24/71	2	25	18		1.4	Production from shale.
	53N-101W-27	4/22/71	2	20	9		2.2	Production from shale.
	53N-101W-27	10/72	1	20	65		0.31	Production from shale.
	56N-96W-15	5/73	2	60	2		30	Production from shale.
Cloverly Formation								
	43N-96W-24	7/19/75	1	20	70		0.29	

	52N-102W-2	4/8/78	2	12	8		1.5	Production from sandstone.
Sundance Formation								
	54N-94W-1	4/64	1	20	1		20	
	54N-94W-1	4/64	1	20	2		10	
Chugwater Group								
	52N-102W-15	3/15/78		200	16		17	Flowing well, production from sandstone.
	52N-102W-15	3/10/78	2	25	10		2.5	Production from sandstone
Tensleep Sandstone								
Orchard Ranch	42N-88W-3adc	8/19/52		35	80±		0.47	Flowing Well.
Orchard Ranch	42N-88W-21bcb		12	20	55±		0.40	Flowing Well.
	43N-91, 92W-6, 1					2×10^2		Geometric mean, 3 wells.
R.C. Mills	44N-87W-8dcd			150±	85	2.2×10^3	2.0±	
B.H. Ainsworth	44N-87W-8ddc					3.0×10^3		
	44N-95W-23, 24					1×10^2		Geometric mean, 2 wells.
	44N-					2×10^2		Geometric mean, 3 wells.

	98W-12,13,15							
	45N-92W-23					2×10^1		
	46N-98W-19					7×10^1		
	47N-89W-1	11/6/57		250	322		0.78	Flowing Well.
	47N-89W-12					1×10^3		
L.J. Davis	47N-89W-13aab			180±	182	1.2×10^3 1.1×10^3	1.0±	Drawdown test Recovery test.
	48N-102W-11, 14					2×10^2		Geometric mean, 2 wells.
	48N-103W-20					6×10^1		Geometric mean, 1 wells.
	49N-89W-21			30	60		0.5	
Hamilton Ranch	50N-90W-14bbd					1.9×10^1		Well originally drilled as an oil test.
Hamilton Ranch	50N-90W-14cac					4.5×10^2		Well originally drilled as an oil test.
	51N-93W-12					2×10^2		Geometric mean, 1 wells.
	55N-		1	25	5		5	

	95W-3							
	55N-95W-19					5×10^1		Geometric mean, 3 wells.
	56N-97W-14					3×10^2		Geometric mean, 2 wells.
	56N-101W-16					7×10^2		Geometric mean, 1 wells.
	57N-97W-18					4×10^2		Geometric mean, 2 wells.
Madison Limestone								
Taylor Brothers	46N-87W-10acb			125-	289-347		0.43	Specific capacity calculated from a static level of 416 ft. (180 lb/in^2) above land surface.
	46N-98W-16		24	166	461		0.36	
	46N-98W-18		96	36.5	62		0.59	
Mark Carter	47N-88W-5baa			1,500±	317	5.0×10^3	4.7±	Recovery test.
Town of Ten Sleep	47N-88W-16cca	2/2/55; 9/12/02	0.5	1,100; 725	311; 171	3×10^4	3.50; 4.2	Flowing well, 1955 test on Madison/Amsden producing interval. 2002 test for only 0.5 hr.
Town of Ten Sleep	47N-88W-17dad	9/21/78; 9/12/02	24; 0.5	3,300; 1,100	259; 46		12.7; 23.7	Flowing well, 2002 test completed through existing pipeline.
Homer Renner	48N-89W-4acd			1,100	132	1.4×10^4	7.6	Recovery test lasted about 10 days.
Town of Hyattville	49N-89W-6bcb	8/68; 7/25/02		28-130	381-411		0.1-0.32	Flowing well, Recent testing indicated yield has significantly declined.

Homer Renner	49N-89W-24dcb					5.4×10^3		Test was made before well was deepened to Flathead Sandstone.
Homer Renner	49N-89W-28baa					5.4×10^2		Well originally drilled as an oil test.
D.W. Straight	49N-89W-29abb					8.9×10^2		Well originally drilled as an oil test.
City of Worland	49N-91W-1cb	3/3/82	2	14,000	20.8		673	Flowing well - Worland #3. Drawdown and specific capacity estimated from limited data.
City of Worland	49N-91W-12ab	12/28/79	24	5,180	25.4		204	Flowing well - Husky #1. Drawdown and specific capacity estimated from limited data.
Hamilton Ranch	50N-90W-23cad			750 1,000	244-486	2.4×10^3 3.8×10^3	2.1-3.1	Specific capacity calculated from static level of 521 ft (231 sl/in^2) above land surface.
	50N-90W-34			1,650	518		3.2	Flowing well.
Town of Manderson	50N-91W-17cc	6/29/94	336	325	530	1.3×10^3	0.6	Flowing well - Wild Horse No. 1, Combined yield of Madison and Bighorn.
Town of Manderson	50N-91W-20ac	5/2/96	352	130	554.5		0.2	Flowing well - Wild Horse No. 2, Combined yield of Madison and Bighorn.
Town of Greybull	53N-90W-19aa	4/28/97	168	270	138	7.1×10^3	1.95	Aquifer test data following acid frac of well.
Town of Greybull	53N-91W-35aa	9/30/85	258	229	32.3	2.3×10^3	7.1	Flowing well - Shell Valley No. 1, Post frac test data.
	55N-		48	80	66		1.2	

	94W-28							
Bighorn Dolomite								
	47N-100W-1		24	94	85		1.11	
Town of Greybull	53N-91W-26dd	9/9/85	492	1,090	~280		3.9	Flowing well - Shell Valley No. 2, data reflects dual completion in Madison and Bighorn. Madison yielded 345 gpm over a 7 hour test. Most flow derived from Bighorn (800 gpm.)
Flathead Sandstone								
Anderson Ranch	47N-88W-16aba			450-1,500	859-1,207		0.52-1.25	Flowing Well.
Boyd Mills	48N-89W-25ada			900	539	7.0×10^2	1.67	Recovery test.
Homer Renner	49N-88W-29dac			775 1,730	231±-635±	1.9×10^3	2.7±-3.4±	Recover test lasted about 13 days. Specific capacity calculated from estimated static level of 693 ft. (300 lb/in^2) above land surface.

[1]Modified from Libra and others (1981); Cooley (1986); Morrison-Maierle (1986); Graham, Dietz, & Associates (1994); Nelson Engineering, Inc. (1997); and Lidstone and Associates, Inc. (2002).

TABLE C.2.1
Hydrologic Properties of Formations
from Selected Oil and Gas Fields in the Wind River Basin

Formation Name of Field	Location[b]	Thickness of Producing Interval (feet)	Porosity (%)	Permeability[c] (md)	Estimated Transmissivity[d] gal/day-ft)
WIND RIVER FORMATION					
Lost Cabin	38-90	20-80	12-20	1-16	1-30
FORT UNION FORMATION					
Cooper Reservoir	35-87	35	15-20	15	10
LANCE FORMATION					
Lost Cabin	38-90	45	20	20	15
Waltman	36&37-86&87	N.A.	15	12	N.A.
MESAVERDE FORMATION					
Beaver Creek	33&34-96	70	18	23	30
Poison Spider, West	33-84	60	16	63	70
CODY SHALE					
Boone Dome	35-85	40-55	15	25-50	20-50
Government Bridge	31-82	27	10-15	18-20	10
Pilot Butte	3-1	20-40	15	33	10-25
Raderville	34&35-88&89	50	18	15-25	15-25
Poison Spider, West	33-84	25	10	1-10	1-5
FRONTIER FORMATION					

Alkali Butte	33&34-95	10	15-20	50-70	10-15
Arminto-Lox	37-86	20	17	30-40	10-15
Beaver Creek	33&34-96	40	13	70	50
Big Sand Draw	32&33-95	40	23	63	45
Clark Ranch	35-84	50	18	45-86	40-80
Powder River	36-85	95	20	45-68	80-120
Iron Creek	32-82	30	15-20	58-65	30-35
Sand Draw - Wildcat	32-95	20	10-25	70-810	25-300
Kirby Draw	33-95	57	18	60-100	60-105
Muskrat	33&34-91&92	20-60	14	60-100	20-110
Muskrat, East	33-91	21	15-20	40-80	15-30
Pilot Butte	3-1	30	18	50-80	30-45
Poison Spider, West	33-84	117	10	1	2
Sand Draw, South	31&32-94&95	90	15	1-25	1-40
Steamboat Butte	3&4-1	80	20	40-80	60-120
Big Sand Draw	32-95	20	10-25	70-810	25-300
MUDDY SANDSTONE					
Alkali Butte	33&34-95	10	15	30	5
Beaver Creek	33&34-96	15	7	10-15	3-5
Grieve	32-85	20-65	20	15-40	5-50
Government Bridge	31-82	65	15	30-50	35-60
Iron Creek	32-82	100	10	20-30	35-55
Pilot Butte	3-1	16	11	1	1
Plunkett	1S-1E	20	18	N.A.	N.A.
Poison Spring Creek	31&32-84	15	16	4	1
Ritter	31&32-84	15	15-20	5-10	1-2
Sage Spring Creek	37&38-77&78	13	15	10-20	4-8

Sage Spring Creek, North	37&38-77&78	13	15	10-20	4-8
Sand Draw, South	31&32-94&95	22	N.A.	1-10	1-4
Poison Spider	33-82&83	10-15	15	8	1-2
Wildcat	31-82	25	11-17	10-190	5-85
CLOVERLY FORMATION - Dakota Sandstone					
Fish Creek	31-84	125	19	550-1160	1250-2640
Fish Creek	31-84	70	20	1100-1200	1400-1530
Mt. Rogers	33-94&95	60	15	350-400	380-440
Sage Creek	37&38-77&78	25	11	100-300	45-140
CLOVERLY FORMATION - Dakota Sandstone					
Beaver Creek	33&34-	40-60	15	100-300	70-330
Fish Creek	31-84	60-80	18-20	500-600	550-875
Kirby Draw	33-95	40-60	15-20	100-300	70-330
Mt Rogers	33-94&95	70-80	20-25	300-400	380-580
Steamboat Butte	3&4-1	20-40	15	50-100	20-70
MORRISON FORMATION					
Alkali Butte	33&34-95	25	10	1-5	1-2
Big Sand Draw	32&33-95	15	10	1-10	1-3
Powder River	36-85	60	15	10-20	10-20
Poison Spider, West	33-84	30	8-20	1-6	1-3
SUNDANCE FORMATION					
Poison Spider	33-82&83	25	18	100-200	45-90
Poison Spider	33-82&83	40	20	200	145
NUGGET SANDSTONE					
Steamboat Butte	3&4-1	100-130	15	100	180-240
Wildcat	2-1-18	25	10-20	1-290	1-130
CHUGWATER GROUP undivided					

Clark Ranch	35-84	20-45	15	1-15	1-10
Rolff Lake	6-3	60-70	14	15-20	15-25
Sage Creek Anticline	1-1	20	10-15	1-10	1-4
Sheldon, Northwest	6-3	40-50	14	50-130	35-120
DINWOODY FORMATION					
Rolff Lake, Northwest	6-3	30-30	15	1-15	1-10
PHOSPHORIA FORMATION					
Big Sand Draw	32&33-95	80-90	23	1	1
Circle Ridgew	6&7-2&35	40	16	25-75	20-60
Dallas	24&32-99	30-40	10-15	50	30-35
Derby	32-98	10	13	25	5
Dubois	42-107	50	10-15	1-20	1-20
Lander-Hudson	2S.,1&2E.-99	70	20	25-50	30-60
Long Creek	31-32-94	40	15	10-20	10-20
Maverick Springs	6-2	15	15	25	10
Okie Draw	37-85	20	20	25	10
Pilot Butte	3-1	30	10-20	1	1
Rolff Lake	6-3	50	15	1	1
Riverton	1&2S-4&5E.	100	N.A.	1-10	1-20
Sand Draw, South	31&32-94&95	60-70	15	1-40	1-50
Sheldon	5-2	20	10-15	1-10	1-4
Steamboat Butte	3&4-1	60	17	5-10	5-10
Winkleman Dome	2-1	70-80	15	10-25	10-35
Wildcat	2S-2E	40	18-24	1-50	1-40
TENSLEEP SANDSTONE					
Beaver Creek	33&34-95	70 51	8 10-15	7 100-680	10 90-650

Big Sand Draw	32&33-95	150	32	10-50	30-150
Big Sand Draw	32&33-95				
Circle Ridge	6&7-2&3	150	14	60-70	160-190
Lander Hudson	1&2E-99W	100	15	10-40	20-80
Notches	37-85	20	17-20	100-400	35-145
Dallas	24&32-99	25-30	15	100-200	45-110
Derby	4&5-98	5	15	100-250	10-25
Pilot Butte	3-1	150	15	80-100	220-275
Sand Draw South	31&32-94&95	70-100	15	5-300	5-550
Sheldon	5-2	20-30	5-10	1-5	1-3
Steamboat Butte	3&4-1	200	14	60	220
Winkleman Dome	2-1	160	15	50-150	145-435
DARWIN SANDSTONE					
Circle Ridge	6&7-2&3	40	11	1-50	1-35
MADISON LIMESTONE					
Circle Ridge	6&7-2&3	40-50	12-15	1-10	1-10

[a]Sources of data include Wyoming Oil and Gas Conservation Commission (various); U.S. Geological Survey (various); Wyoming Geological Association, Oil and Gas Fields Symposium (1957; supplemented 1961); Petroleum Information Corp. (various).

[b]Township (north) - range (west), unless otherwise specified.

[c]md x 18.2 x 10^{-3} = gallons/day/foot^2.

[d]Transmissivity estimated using T = (K) (.0182) (b), where T = transmissivity (gal/day-ft). K = permeability (md), and b = producing thickness (feet), and assuming a water temperature of 60ºF.

TABLE C.2.2
Hydrologic Properties of Formations
from Selected Wells completed in the Wind River Basin

Formation Well Name or Owner	Location	Test date	Duration (hrs)	Saturated Thickness (ft)	Yield (gpm)	Drawdown (ft)	Estimated Transmissivity (gpd/ft)	Estimated Permeability (gpd/ft^2)	Specific Capacity	Storage Coefficient
QUATERNARY DEPOSITS										
Quiver, N.	1N-1E-34 aa	4-25-61	N.A.	21	10	1	2×10^4	9.5×10^2	10	N.A.
USGS	1N-1E-34 bc	6-28-66	N.A.	25	60	15	8×10^3	3.2×10^2	4	N.A.
Trumball, C.	1N-1E-35 ad	4-13-61	N.A.	20	5	1	1×10^4	5×10^2	5	N.A.
Goggles, A.	1N-1E-34 bb	4-28-65	N.A.	20	10	1	2×10^4	9.5×10^2	10	N.A.
Rhodes, R	1N-1E-36 cc	5-31-61	N.A.	20	4	1	8×10^3	4×10^2	4	N.A.
USGS	1N-2E-6 aa	6-6-66	N.A.	50	25	4	1.3×10^4	2.5×10^2	6.3	N.A.
N.A.	1N-4E-31 dc	11-6-65	N.A.	9	15	13	2.4×10^3	2.7×10^2	1.2	N.A.
Ward, S.	1N-1W-5 ac	7-16-63	N.A.	40	5	14	8×10^2	2×10^1	0.4	N.A.
Ward, A.	1N-1W-5 ac	7-17-63	N.A.	35	5	13	8×10^2	2.3×10^1	0.4	N.A.
Clare, D.	1N-1W-31 cb	10-16-63	N.A.	20	10	5	4×10^3	2×10^2	2	N.A.
McAdams, B.	1N-1W-32 dd	5-28-63	N.A.	40	10	5	4×10^3	1×10^2	2	N.A.
Enos, F.	1N-2W-25 cb	6-22-63	4	25	10	2	1×10^4	4×10^2	5	N.A.
Stagner, B.	1N-2W-25 db	9-10-63	4	25	15	7	4.2×10^3	1.7×10^2	2.1	N.A.
Peahrora, S.	1N-2W-26 ad	6-21-63	1	25	10	4	5×10^3	2×10^2	2.5	N.A.
LeClair, E.	1N-2W-26 cb	6-28-63	3	19	15	5	6×10^3	3.2×10^2	3	N.A.
Compton, A.	1N-2W-26 dd	6-19-63	7	20	10	3	6.6×10^3	3.3×10^2	3.3	N.A.
Tyler, J.	1N-2W-35 ad	6-11-63	5	30	10	4	5×10^3	1.7×10^2	2.5	N.A.
Teran, B.	1N-2W-35 ad	6-11-63	4	35	18	7	5.2×10^3	1.5×10^2	2.6	N.A.
Dick, J.	1N-2W-36 cb	6-8-63	4	35	16	6	5.4×10^3	1.5×10^2	2.7	N.A.

Harris, F.	1N-2W-31 cd	7-18-63	2	35	15	2	1.5×10^4	4.3×10^2	7.5	N.A.
Harris, F.	1N-2W-31 cd	7-18-63	2	35	15	1	3×10^4	8.6×10^2	15	N.A.
USGS	4N-4W-cd	8-20-66	24	30	195	3	1.3×10^5	4.3×10^3	65	N.A.
USGS	4N-4W-22 ab	6-15-66	24	30	144	6	4.8×10^4	1.6×10^3	24	N.A.
St. Helens Church	4N-4W-24 cb	N.A.	N.A.	50	20	3	1.3×10^4	2.7×10^3	6.7	N.A.
Chavez, L.	1S-1W-3 cc	5-21-63	4	20	20	4	1×10^4	5×10^2	5	N.A.
Brown, B.	1S-1W-4 ab	5-22-63	2	20	15	9	3.4×10^3	1.7×10^2	1.7	N.A.
Herford, V.	1S-1W-4 ad	5-1-63	0.5	20	15	9	3.4×10^3	1.7×10^2	1.7	N.A.
Henan, G.	1S-1W-4 bc	5-1-63	0.5	20	20	5	8×10^3	4×10^2	4	N.A.
McAdams, L.	1S-1W-4 cb	5-4-63	0.5	30	20	6	6.6×10^3	2.2×10^2	3.3	N.A.
Hill, G.	1S-1W-4 cc	5-3-63	2	40	12	2	1.2×10^4	3×10^2	6	N.A.
Fort Washakie	1S-1W-4 cd	7-11-63	1	25	10	7	2.8×10^3	1.1×10^2	1.4	N.A.
USGS	1S-1W-4 da	7-25-66	1	45	25	4	1.3×10^4	2.8×10^2	6.3	N.A.
Twitchell, G.	1S-1W-4 da	5-24-63	7	25	15	5	6×10^3	2.4×10^2	3	N.A.
Padia, P.	1S-1W-5 cc	4-28-63	3	115	12	3	8×10^3	7×10^1	4	N.A.
Nicol, F.	1S-1W-5 db	N.A.	4	40	6	3	4×10^3	1×10^2	2	N.A.
Soonup, C.	1S-1W-6 ad	6-10-63	6	43	10	15	1.4×10^3	3.3×10^1	0.7	N.A.
Engavo, N.	1S-1W-6 ca	4-20-63	4	20	10	4	5×10^3	2.5×10^2	2.5	N.A.
Murphy, R.	1S-1W-6 cd	N.A.	0.5	58	5	31	4×10^2	0.7×10^1	0.2	N.A.
Gould, T.	1S-1W-6 dd	4-22-63	1	15	12	4	6×10^3	4×10^2	3	N.A.
Tyler, M.	1S-1W-7 dc	4-5-63	2	42	12	5	4.8×10^3	1.1×10^2	2.4	N.A.
Meyers, P.	1S-1W-7 dd	4-8-63	3	30	15	3	1×10^4	3.3×10^2	5	N.A.
St. Clair, E.	1S-1W-8 aa	N.A.	N.A.	50	20	5	8×10^3	1.6×10^2	4	N.A.
Burnett, R.	1S-1W-8 ab	5-20-63	N.A.	21	11	2	1.1×10^4	5.2×10^2	5.5	N.A.
Day, G.	1S-1W-8 ad	N.A.	N.A.	15	9	1	1.8×10^4	1.2×10^3	9	N.A.
Washakie, A.	1S-1W-8 da	4-9-63	1	35	40	1	8×10^4	2.3×10^3	40	N.A.
Pogoree, J.	1S-1W-8 dc	4-6-63	2	20	25	3	1.7×10^4	8.3×10^2	8.3	N.A.

Lebeau, M.	1S-1W-8 cc	N.A.	4	35	7	1	1.4×10^4	4×10^2	7	N.A.
Chingman, F.	1S-1W-9 bd	N.A.	1	31	10	10	2×10^3	6.4×10^1	1	N.A.
Coshen, W.	1S-1W-9 da	N.A.	1	22	15	3	1×10^4	4.5×10^2	5	N.A.
Wise, F.	1S-1W-10 bc	5-15-63	N.A.	20	20	7	5.8×10^3	2.9×10^2	2.9	N.A.
Moon, M.	1S-1W-10 cb	5-10-63	5	45	20	6	6.6×10^3	1.5×10^2	3.3	N.A.
Coulston, L.	1S-1W-10 cb	7-1-64	3	50	10	6	3.4×10^3	6.8×10^1	1.7	N.A.
Weed, S.	1S-1W-10 cd	7-1-63	3	31	15	8	3.8×10^3	1.2×10^2	1.9	N.A.
Ute, A.	1S-1W-16 bc	4-10-63	1	18	12	1	2.4×10^4	1.3×10^3	12	N.A.
Wagon, S.	1S-1W-18 ba	N.A.	2	21	15	11	2.8×10^3	1.3×10^2	1.4	N.A.
Robertson, T.	1S-1W-18 bc	4-13-63	4	27	10	10	2×10^3	7.4×10^1	1	N.A.
Posey, M.	1S-1W-19 bb	4-1-63	6	15	20	10	4×10^3	2.7×10^2	2	N.A.
Hugo, W.	1S-1W-1 cc	4-16-63	1	27	15	1	3×10^4	1.1×10^3	5	N.A.
Shoyo, D.	1S-1W-1 db	6-8-63	N.A.	51	20	4	1×10^4	2×10^2	5	N.A.
Wagon, J.	1S-1W-1 dc	4-18-63	2	21	12	2	1.2×10^4	5.7×10^2	6	N.A.
Tillman, D.	1S-1W-1 dc	N.A.	3	15	6	3	4×10^3	2.7×10^2	2	N.A.
Perry, L.	1S-1W-13 dd	4-3-63	4	61	7	31	4×10^2	0.7×10^1	0.2	N.A.
St. Stevens Mission	1S-4W-9 cd	N.A.	1	47	50	2	5×10^4	1.1×10^3	25	N.A.
Miller, L.	1S-3E-34 da	N.A.	4	85	5	57	2×10^2	0.2×10^1	0.1	N.A.
WIND RIVER FORMATION										
Cook, C.	1N-4E-21 dd	11-8-64	24	200	16	57	6×10^2	0.3×10^1	0.3	N.A.
City of Riverton	1N-4E-26 ca	N.A.	48	70	400	70	1.1×10^4	1.6×10^1	5.7	1×10^{-3}
City of Riverton	1N-4E-27 ac	N.A.	48	33	400	49	1.6×10^4	5×10^1	8.2	2.1×10^{-3}
City of Riverton 1	1N-4E-35 bb	3-16-51	48	156	N.A.	N.A.	9×10^3	N.A.	N.A.	N.A.
City of Riverton 2	1N-4E-35 bb	3-16-51	48	190	N.A.	N.A.	1×10^4	N.A.	N.A.	N.A.
City of Riverton 3	1N-4E-34 ad	3-16-51	40	40	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
City of Riverton 4	1N-4E-27 dd	3-16-51	48	8	190	0.7	6.9×10^3	8.6×10^3	271	1.1×10^{-4}
City of Riverton 5	1N-4E-27 dc	3-16-51	48	8	200	0.5	1×10^4	1.3×10^3	400	2.1×10^{-4}

City of Riverton 6	1N-4E-27 cd	3-16-51	48	N.A.	200	0.5	1×10^{4}	N.A.	N.A.	2.0×10^{-4}
City of Riverton 7	1N-4E-34 ba	3-16-51	48	8	200	0.5	1×10^{4}	1.3×10^{3}	400	1.9×10^{-4}
City of Riverton 8	1N-4E-34 bb	3-16-51	51	8	200	0.5	1×10^{4}	1.3×10^{3}	400	N.A.
City of Riverton 9	1N-4E-34 bb	3-16-51	48	8	200	0.5	1×10^{4}	1.3×10^{3}	400	2.0×10^{-4}
City of Riverton 10	1N-4E-34 ca	3-16-51	48	8	200	0.5	1×10^{4}	1.3×10^{3}	400	1.6×10^{-4}
USGS 11	1N-4E-33 dd	3-16-51	48	8	200	0.5	1×10^{4}	1.3×10^{3}	400	1.3×10^{-4}
Wyo. Game and Fish	2S-2E-4 dd	N.A.	N.A.	460	15	140	2×10^{2}	4.3×10^{-1}	0.1	N.A.
Mount Hope Church	2S-2E-18 ad	N.A.	N.A.	435	20	200	2×10^{2}	4.6×10^{-1}	0.1	N.A.
Saunders, L.	2S-2E-31 ad	8-22-66	4	230	10	30	6×10^{2}	0.3×10^{1}	0.3	N.A.
Montgomery, R.	2S-4E-12 dd	11-1-50	3	210	5	50	2×10^{2}	9.5×10^{-1}	0.1	N.A.
Pince, C.	3S-2E-3 bd	N.A.	8	210	5	75	2×10^{2}	9.5×10^{-1}	0.1	N.A.
City of Pavillion	3S-2E-7 cd	N.A.	7	500	45	220	4×10^{2}	8×10^{-1}	0.2	3.6×10^{-4}
Stearns, T.	3S-2E-33 ab	N.A.	24	485	25	16	3.2×10^{3}	0.7×10^{1}	1.6	N.A.
Mason, C.	3S-3E-36 ad	8-3-52	3	50	40	19	4.2×10^{3}	8.4×10^{1}	2.1	N.A.
City of Shoshoni	3S-6E-15 bc	12-1-51	24	495	300	194	3.2×10^{3}	0.6×10^{1}	1.6	4.2×10^{-4}
White, B.	4N-2E-29 ad	11-2-52	2	220	5	37	2.7×10^{2}	0.1×10^{1}	0.1	N.A.
Over, A.	4N-3E-5 dc	N.A.	N.A.	325	2	85	4×10^{1}	1.2×10^{-1}	0.02	N.A.
Darrington, E.	4N-3E-8 aa	N.A.	N.A.	500	10	3	6.6×10^{3}	1.3×10^{1}	3.3	N.A.
Rungle, L.	4N-3E-9 dd	N.A.	N.A.	225	2	29	4×10^{1}	1.8×10^{-1}	0.02	N.A.
Mohlman, R.	4N-3E-11 ac	N.A.	N.A.	347	2	120	4×10^{1}	1.2×10^{-1}	0.02	N.A.
Smith, M.	4N-3E-17 cc	N.A.	N.A.	135	2	15	2.6×10^{2}	0.2×10^{1}	0.13	N.A.
Fisher, H.	4N-3E-20 ab	N.A.	N.A.	112	40	25	1.3×10^{3}	1.1×10^{1}	0.63	N.A.
Trook, A.	4N-3E-21 dc	N.A.	2	329	10	118	1.6×10^{2}	4.9×10^{-1}	0.08	N.A.
Walters, M.	4N-3E-24 da	N.A.	3	490	5	255	4×10^{1}	8×10^{-2}	0.02	N.A.
Harmon, K.	4N-3E-35 ab	N.A.	3	317	1	255	8	3×10^{-2}	0.004	N.A.
Newell, F.	4N-3E-35 ad	N.A.	1	315	3	212	2×10^{1}	6×10^{-2}	0.01	N.A.

Ward, S.	1N-1W-5 ac	7-16-63	2	35	5	14	7.2×10^1	2.1×10^1	0.36	N.A.
Ward, A.	1N-1W-5 ac	7-17-63	2	30	5	13	7.8×10^1	2.6×10^1	0.39	N.A.
Quiver, R.	1N-1W-31 ad	7-3-63	4	90	10	60	3.4×10^2	0.4×10^1	0.17	N.A.
Clare, D.	1N-1W-31 cb	10-16-63	1	22	10	5	4×10^3	1.8×10^2	2	N.A.
McAdams, B.	1N-1W-32 dd	5-28-63	N.A.	35	10	5	4×10^3	1.1×10^2	2	N.A.
Amboh, N.	2N-2W-17 bc	7-23-63	N.A.	60	15	12	2.6×10^3	4.3×10^1	1.3	N.A.
Guina, J.	2N-2W-21 cd	7-26-63	N.A.	60	15	13	2.6×10^3	4.3×10^1	1.3	N.A.
Hankass, V.	2N-2W-26 ac	7-17-63	N.A.	40	6	20	6×10^2	1.5×10^1	0.3	N.A.
Roberts, D.	2N-2W-28 bc	7-18-63	N.A.	120	10	26	7.8×10^2	0.7×10^1	0.39	N.A.
Frank, V.	4N-3W-32 dc	N.A.	N.A.	100	20	40	1×10^3	1×10^3	0.5	N.A.
Urbigkit, R.	4N-4W-16 ad	N.A.	N.A.	130	7	10	1.4×10^3	1.1×10^1	0.7	N.A.
Blackburn, J.	1S-3E-13 da	9-11-64	3	80	10	40	5×10^2	0.6×10^1	0.25	N.A.
Eldridge, M.	1S-3E-14 aa	N.A.	4	40	50	25	4×10^3	4×10^2	2	N.A.
Frazier, L.	1S-3E-15 cb	N.A.	3	120	15	42	7.2×10^2	0.6×10^1	0.36	N.A.
Arapahoe Council	1S-3E-23 bc	N.A.	4	120	16	93	3.4×10^2	0.3×10^2	0.17	N.A.
Arapahoe School	1S-1E-23 bd	N.A.	24	250	25	150	3.4×10^2	0.1×10^1	0.17	N.A.
ARIKAREE FORMATION										
Sun Land & Cattle Co.	29N-87W-35 bd	4-23-59	N.A.	80	20	35	1.1×10^3	1.4×10^1	0.57	N.A.
McIntosh, B.	29N-90W-9 ab	9-15-78	N.A.	80	20	21	1.9×10^3	2.4×10^1	0.95	N.A.
Smith, M.	29-91-18 ba	4-27-79	N.A.	30	10	2	1×10^4	3.3×10^2	5	N.A.
Veach, R.	29N-91W-18 bb	5-1-79	N.A.	60	10	15	1.3×10^3	2.2×10^1	0.67	N.A.
Irvin, W.	29N-92W-10 cc	4-1-55	N.A.	30	7	12	1.2×10^3	3.8×10^2	0.58	N.A.
Green Mt. Mobile Park	29N-92W-14 bc	8-1-77	N.A.	200	145	4	7.2×10^4	3.6×10^2	36	N.A.

Green Mt. Village	29N-92W-14 bc	8-1-77	N.A.	250	175	5	7×10^4	2.8×10^2	35	N.A.
McIntosh, B.	29N-92W-33 cd	5-15-29	N.A.	250	10	1	2×10^4	8×10^1	10	N.A.
Huntsman, N.	29N-94W-5 da	6-14-79	N.A.	30	12	2	1.2×10^4	4×10^2	6	N.A.
Sandford Ranches	30N-85W-27 ba	N.A.	N.A.	200	5	1	1×10^4	5×10^1	5	N.A.
Rusco, Inc.	30N-86W-29 db	5-10-53	N.A.	25	10	2	1×10^4	4×10^2	5	N.A.
Rusco, Inc.	30N-87W-15 ab	11-5-56	N.A.	20	10	1	2×10^4	1×10^3	10	N.A.
Jamerman, C.	30N-91W-31 bb	10-1-51	N.A.	10	25	3	1.7×10^4	1.7×10^3	8.33	N.A.
Holy Cross Cattle Co.	30N-92W-35 ad	4-15-69	N.A.	15	15	1	3×10^4	2×10^3	15	N.A.
Graham, E.	30N-93W-21 dd	N.A.	N.A.	20	25	3	1.7×10^4	8.3×10^2	8.33	N.A.
Myers, A.	30N-94W-20 cb	11-1-57	N.A.	30	12	2	1.2×10^4	4×10^2	6	N.A.
Contryman, M.	30N-95W-27 ac	11-20-77	N.A.	40	10	1	2×10^4	5×10^2	10	N.A.
FORT UNION-LANCE FORMATIONS UNDIVIDED										
Lazy YK Cattle Co.	34N-93W-19 dd	11-12-73	N.A.	200	6	180	6.7×10^1	3.3×10^1	0.03	N.A.
Lazy K Cattle Co.	34N-93W-20 aa	6-28-60	N.A.	300	9	200	1×10^2	5×10^{-1}	0.05	N.A.
Miles, J.	35N-89W-29 dc	4-12-63	N.A.	325	10	241	8×10^1	2.5×10^{-1}	0.04	N.A.
Miles, J.	35N-89W-32	11-22-	N.A.	300	10	195	1×10^2	3.3×10^{-1}	0.05	N.A.

	ab	69								
M & D Land Co.	33N-86W-20 cd	N.A.	N.A.	100	5	81	1.2×10^{2}	0.2×10^{1}	0.06	N.A.
MESAVERDE FORMATION										
Arapahoe Ranch	6N-2E-32 ab	4-28-65	N.A.	90	15	2	1.5×10^{4}	1.7×10^{2}	7.5	N.A.
Rochelle Sheep Camp	37N-87W-24 ac	10-7-59	N.A.	110	5	50	2×10^{2}	0.2×10^{1}	0.1	N.A.
CIG Exploration	37N-87W-36 bd	N.A.	N.A.	500	10	300	6×10^{1}	1.2×10^{-1}	3	N.A.
CODY SHALE										
Lindaur, H.	1N-1E-3 bb	N.A.	N.A.	80	20	291	1.4×10^{2}	0.2×10^{1}	0.07	N.A.
Quiver, R.	1N-1W-31 ad	6-3-63	N.A.	90	2	60	6×10^{1}	6.7×10^{-1}	0.03	N.A.
Abeyta, G.	1S-1W-29 cc	8-13-65	N.A.	90	3	13	4.8×10^{2}	4.6×10^{1}	0.23	N.A.
Eicholtz, R.	1S-1W-30 bd	N.A.	N.A.	200	5	800	2×10^{1}	1×10^{-1}	0.04	N.A.
Nicholas, W.	33N-99W-19 ca	11-25-61	N.A.	350	120	200	1.2×10^{3}	0.3×10^{1}	0.6	N.A.
Calvert, F.	33N-99W-22 ac	9-30-63	4	240	13	120	2.2×10^{2}	9.2×10^{-1}	11	N.A.
Calvert, F.	33N-99W-22 bc	10-18-63	6	200	8	180	8×10^{1}	4×10^{-1}	0.04	N.A.
Nicholls, D.	33N-99W-27 bb	11-2-78	3	30	12	18	1.3×10^{3}	4.4×10^{1}	0.67	N.A.
FRONTIER FORMATION										
St. Michael Mission	1N-1E-33 bb	N.A.	N.A.	60	20	18	2.2×10^{3}	4.4×10^{1}	1.1	N.A.
Crowheart School	4N-4W-14 cc	11-4-65	28	400	10	100	2×10^{2}	5×10^{-1}	0.1	N.A.
Burnett, R.	4N-4W-25 da	N.A.	N.A.	212	4	145	6×10^{1}	2.8×10^{-1}	0.03	N.A.
Fike, J.	6N-3W-2 bc	N.A.	N.A.	120	3	60	1×10^{2}	8.3×10^{-1}	0.05	N.A.
Roberts Mission	1S-1W-8 cc	N.A.	N.A.	452	1	312	6	1.3×10^{-2}	0.003	N.A.

Hollings, D.	1S-1W-25 dc	7-20-65	N.A.	N.A.	4	47	1.8×10^{2}	N.A.	0.09	N.A.
Shoyo, H.	1S-2W-1 db	6-6-63	N.A.	50	5	32	3.2×10^{2}	0.6×10^{1}	0.16	N.A.
Van Hess, R.	1S-1E-15 ab	8-13-65	N.A.	38	3	12	5×10^{2}	1.3×10^{1}	0.25	N.A.
Huchinson, B.	1S-1E-16 ac	N.A.	N.A.	70	3	41	1.4×10^{2}	0.2×10^{1}	0.07	N.A.
Meyers, M.	2S-1E-7 dd	N.A.	N.A.	350	10	185	1×10^{2}	2.9×10^{-1}	0.05	N.A.
Meyers, E.	2S-1E-7 dd	N.A.	N.A.	250	10	200	1×10^{2}	0.4×10^{1}	0.05	N.A.
Knifer, D.	33N-99W-19 cd	8-25-75	N.A.	200.	25	1	5×10^{4}	2.5×10^{2}	25	N.A.
Sims, L.	33N-99W-20 dd	12-31-79	N.A.	200	15	70	4.2×10^{2}	0.2×10^{1}	0.21	N.A.
Brown, W.	33N-100W-2 aa	5-1-79	3	100	10	60	3.4×10^{2}	0.3×10^{1}	0.17	N.A.
CLOVERLY-MORRISON FORMATIONS UNDIVIDED										
Weber, J.	33N-99W-23 cd	2-12-60	N.A.	25	5	15	6.7×10^{2}	2.7×10^{1}	0.33	N.A.
Best, M.	33N-100W-11 bc	N.A.	N.A.	100	25	100	5×10^{2}	0.5×10^{-1}	0.25	N.A.
Hallett, A.	33N-100W-24 cb	6-24-78	N.A.	N.A.	20	185	2.2×10^{2}	N.A.	0.11	N.A.
Spear, K.	33N-100W-24 ad	3-1-62	N.A.	N.A.	4	1	8×10^{3}	N.A.	4	N.A.
Hitshew, D	33N-100W-24 cd	5-1-62	N.A.	N.A.	10	1	2×10^{4}	N.A.	10	N.A.
Marker, V.	30N-82W-18 bc	11-20-65	N.A.	35	15	12	2.5×10^{3}	7.1×10^{1}	1.25	N.A.
Foote, M	30N-83W-26 ca	5-24-76	N.A.	100	8	140	1.2×10^{2}	0.1×10^{1}	0.06	N.A.
Volker, E.	30N-83W-26 ca	10-1-56	N.A.	80	7	90	1.6×10^{2}	0.2×10^{1}	0.08	N.A.

Adamson, M.	30N-83W-26 bd	5-26-78	N.A.	60	5	100	1×10^2	0.2×10^1	0.05	N.A.
SUNDANCE-NUGGET FORMATIONS UNDIVIDED										
British-American Oil	3N-1W-5 ba	N.A.	N.A.	N.A.	6	N.A.	N.A.	N.A.	N.A.	N.A.
N.A.	6N-2W-22 cb	N.A.	N.A.	140	15	N.A.	N.A.	N.A.	N.A.	N.A.
Weed, H.	1S-2W-24 ad	3-29-63	N.A.	40	10	3	6.7×10^3	1.7×10^2	3.3	N.A.
Lafferty, J.	1S-2W-26 ad	3-30-63	N.A.	56	9	2	9×10^3	1.6×10^2	4.5	N.A.
Lewis, J.	33N-100W-22 cd	6-18-66	N.A.	60	10	41	4.8×10^2	0.8×10^1	0.24	N.A.
Richardson, E.	33N-100W-22 bc	7-1-69	N.A.	100	28	35	1.6×10^3	1.6×10^1	0.8	N.A.
Davis, D.	33N-100W-22 bc	4-15-68	N.A.	100	15	60	5×10^2	0.5×10^1	0.25	N.A.
Dent, H.	33N-100W-22 bc	8-27-70	N.A.	200	20	47	8.6×10^2	0.4×10^1	0.43	N.A.
Karhu, J.	33N-100W-21 bc	5-26-76	N.A.	100	12	51	4.8×10^2	0.5×10^1	0.24	N.A.
TENSLEEP SANDSTONE										
Sjostrom, R.	33N-100W-18 bb	N.A.	N.A.	400	100	1	2×10^5	5×10^2	100	N.A.
Town of Lander	33N-100W-25 ac	1-6-42	48	400	539	10	1.1×10^4	2.7×10^1	5.4	N.A.
Brodie, J.	33N-101W-35 aa	5-20-69	3	20	18	2	1.8×10^4	9×10^2	9	N.A.
Cole, R.	32N-101W-1 dd	N.A.	N.A.	50	10	5	4×10^3	8×10^1	2	N.A.
Canyon Devl. Co.	32N-100W-9 ac	8-2-78	N.A.	35	12	8	3×10^3	8.6×10^3	1.5	N.A.

Lucky Mc Uranium Co.	33N-100W-22 aa	8-21-57	24	N.A.	150	260	1.2×10^{3}	N.A.	0.58	N.A.
Pathfinder Mines	33N-90W-22 bc	6-1-68	24	N.A.	80	281	5.6×10^{2}	N.A.	0.28	N.A.
Lucky Mc Uranium Co.	33N-90W-23 ac	6-4-57	24	N.A	200	301	1.3×10^{3}	N.A.	0.66	N.A.
MADISON LIMESTONE										
Arapahoe Ranch	6N-4E-14 bb	4-28-63	N.A.	740	41	16	5.1×10^{3}	0.7×10^{1}	2.6	N.A.
N.A.	7N-1E-30 ba	3-1-61	2	306	25	3	1.7×10^{4}	5.4×10^{1}	8.3	N.A.
Arapahoe Ranch	7N-5E-22 b	3-3-65	N.A.	740	5	16	6.2×10^{2}	8.4×10^{-1}	0.31	N.A.
N.A.	6N-2E-26 db	9-17-64	N.A.	400	125	2030	1.2×10^{2}	6×10^{-2}	0.06	N.A.
N.A.	1S-1W-2 aa	N.A.	N.A.	N.A.	230	1	4.6×10^{5}	N.A.	230	N.A.
Strube Const. Co.	33N-100W-29 ad	N.A.	N.A.	250	25	200	2.6×10^{2}	0.1×10^{1}	0.13	N.A.
Scheer, L.	33N-101W-21 cb	N.A.	N.A.	180	15	30	1×10^{3}	0.6×10^{1}	0.5	N.A.
Allen, L.	39N-89W-4 dd	5-2-57	N.A.	150	300	1	6×10^{5}	4×10^{3}	300	N.A.
BIGHORN DOLOMITE										
Pan American	2N-1W-18 cc	N.A.	N.A.	422	173	1285	2.6×10^{2}	6×10^{-1}	0.13	N.A.
Chadwick, F.	33N-101W-34 bb	9-24-77	N.A.	80	25	10	5×10^{3}	6.3×10^{1}	2.5	N.A.
Wyo. Rec.Comm.	32N-100W-18 dd	N.A.	N.A.	50	25	6	8.3×10^{3}	1.7×10^{2}	4.2	N.A.