

Open-file Report MBMG 493-A

Spring Inventory and Other Water Data,  
Custer National Forest—Ashland Ranger District, Montana

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Produced in cooperation with the  
U. S. Department of Agriculture Forest Service  
Custer National Forest

2004

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# **Spring Inventory and Other Water Data, Custer National Forest—Ashland Ranger District, Montana**

## **Introduction**

Production of coalbed methane (CBM) began in Montana during 1998 in the Squirrel Creek drainage near Decker. The potential for CBM production covers portions of southeastern Montana, including the Ashland Ranger District, Custer National Forest (Van Voast, 2001). Due to the quantity and quality of water released, the development of CBM resources can have a significant impact on ground and surface water resources. The objective of this study is to provide information to the USDA Forest Service that can be used in decision-making processes concerning hydrologic issues related to CBM development on the Custer National Forest.

The Custer National Forest—Ashland Ranger District (District) is located in southeastern Montana. The area within the District boundary is comprised of approximately 435,000 acres. Ashland, located near the west-central boundary of the Forest, is the nearest community with available services and is the site of the Ashland Ranger District Headquarters. Coal deposits within the District have been used locally since the time the area was first settled. Currently there is no commercial coal mining within the District. The potential exists for future development of coal resources either on, or adjacent to the District, for solid fuel or coalbed methane.

## **Acknowledgments**

Appreciation is extended for assistance and support that were received during this project. Many landowners adjacent to the Ashland Ranger District allowed welcome access across their property. The USDA Forest Service, Custer National Forest and the Montana Bureau of Mines and Geology provided financial, logistical and operational support; the hospitality of the staff at Fort Howes was especially appreciated. Dan Stanley and Jody Larned provided valuable guidance and quality control on the computer

databases, as well as making suggestions on the text. Wayne Van Voast assigned the geologic associations and susceptibility ratings for the springs, based on coal data and his numerous years of experience in the Powder River Basin.

## **Geology**

The area encompassing the Custer National Forest near Ashland is underlain by non-marine sedimentary rocks of the Paleocene Fort Union Formation. The District is near the northern edge of the Powder River Basin, a southward-plunging regional syncline that extends from near Miles City, Montana southward into east-central Wyoming. It is bounded on the west by the Big Horn uplift, on the east by the Black Hills uplift, and on the north by the Miles City Arch. The axis of the Powder River Basin is west of the District and roughly parallels the Tongue River (Figure 1). A gentle, asymmetrical northeast-plunging syncline of local extent defines the structure of the project area. In most places the sedimentary beds are nearly flat lying. Regionally the topographic slope is downward toward the north; this beveling across the southward-plunging Powder River Basin results in the older rocks being exposed at the north end of the basin, and becoming progressively younger to the south.

Most outcrops in the area are inter-bedded pale-yellow to gray sandstone and mudstone, coalbeds, and carbonaceous shale of the Tongue River member of the Fort Union Formation. Much of the near-surface coal has been burned by natural causes. The burning of the coal has baked and thermally metamorphosed overlying sediments, forming clinker beds of variable thickness. The orange-red clinker beds often form prominent cliff faces and are used as stratigraphic marker horizons for the surface mapping of coal. Overlying the Fort Union Formation, in the southwest corner of the District, are sandstone and mudstone units of the Eocene Wasatch Formation.

The coalbeds in the area have been mapped and studied by investigators from the U. S. Geological Survey and Montana Bureau of Mines and Geology. A bibliography of applicable publications is provided in Appendix A. Strippable coal resources in southeastern Montana total more than 32,000,000,000 tons (Matson and Blumer, 1973). These reserves are contained in 27 separately defined and mapped units. In some areas

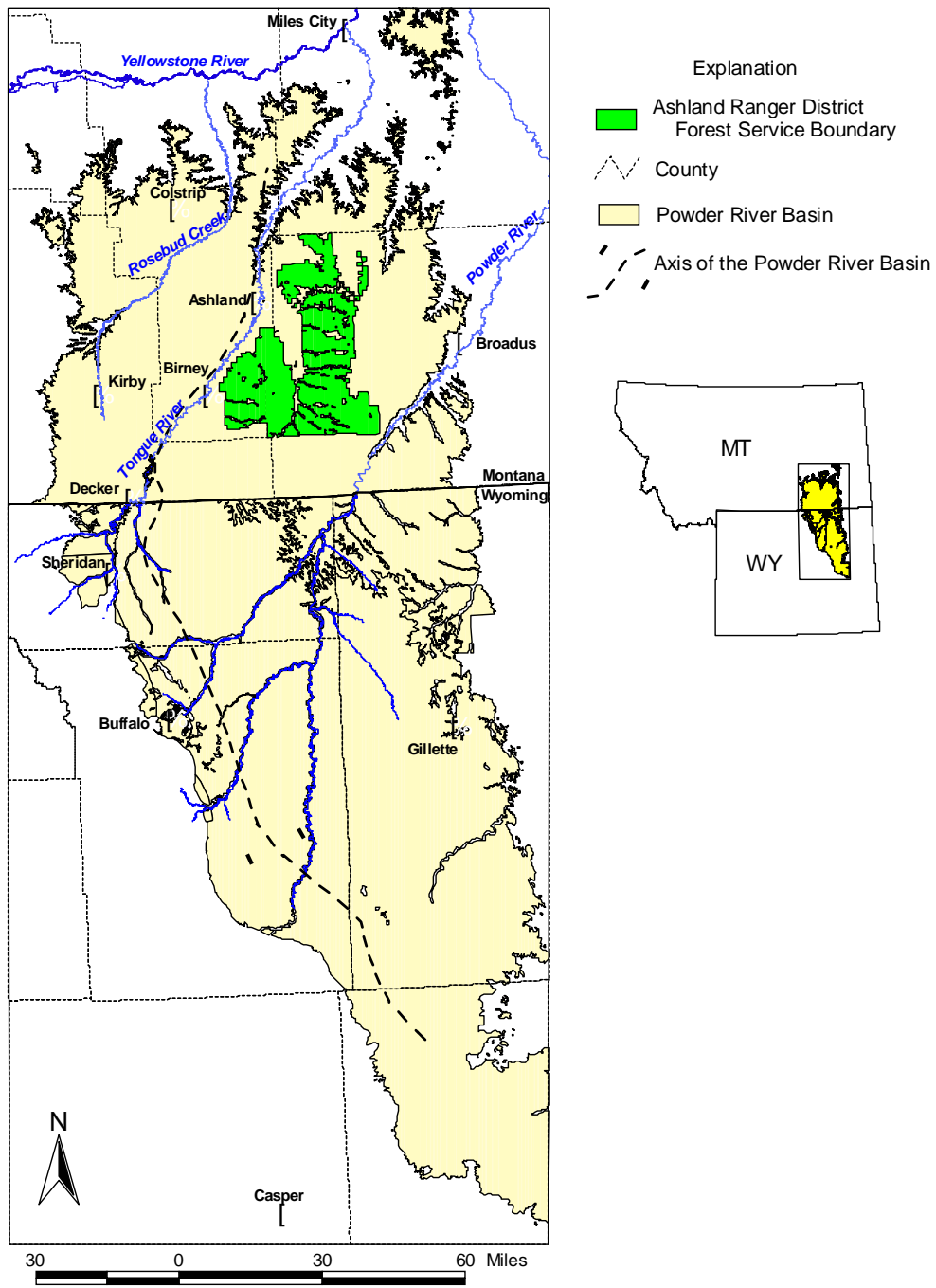


Figure 1. Map shows the axis of the Powder River Basin and the location of the Ashland Ranger District.

the correlations between these coal units have been well defined by previous investigators. In other areas the correlation is ambiguous at best. The lowest exposed principle coal bed in the District is the Knobloch and the upper-most is the Anderson. The intervening section is approximately 1,000 feet thick (Heffrin and others, 1993).

## **Field Procedures**

An inventory of springs and wells within the District boundary began in 2002 and continued through July, 2003. Probable spring and well locations were first determined from USGS 1:24,000 topographic quadrangle maps, the USDA Forest Service 1:126,720 Custer National Forest Ashland Ranger District map, and Bureau of Land Management (BLM) 1:100,000 Surface Management Status topographic maps. In addition, the District provided locations of springs and wells previously inventoried by Forest Service personnel. Each site was visited and, where possible, physical and chemical attributes were measured and noted. Spring discharge rates were determined by the bucket-stopwatch (volumetric) method and, where flow was observed, specific conductance and temperature were measured using hand-held field meters. In addition, on approximately half of the springs with measurable flow, the pH and oxidation-reduction potential (ORP) were determined. On a few selected springs field determinations of total iron and ferrous iron were made using a portable spectrophotometer, and field titration for hardness and alkalinity was performed. Latitude and longitude coordinates were obtained for each site using GPS units, and a photographic point of the site was established and photograph taken. The area surrounding the site was inspected and notes were made on geologic associations and the nature and condition of any development.

## **Database**

Hydrogeologic data for the District are presented in one plate with five appendices, and are stored in the Montana Ground-Water Information Center (GWIC) database (<http://mbmgwic.mtech.edu/>). A GIS compilation of spring and well locations, geology, clinker outcrops, forest boundary, roads, and drainages is shown on Plate 1. Appendices B, C, D, E and F contain data collected during the 2002 and 2003 field



## Spring Hydrology

Springs typically issue from clinker beds, sandstones and coalbeds near their contacts with confining underlying mudstone or shale units. In valleys the sources of springs are commonly obscured by alluvial or colluvial deposits. The District contains some of the highest elevations in the Powder River Basin, and is most likely the local recharge region for many of the area springs. However, some of the more persistent springs in the area may be the result of ground water migrating some distance along regional flow paths that intersect the surface where the beds are exposed by erosion.

A total of 409 springs, 21 wells and 2 man-made catchments were visited and inventoried (Appendices B and C). Of the 409 springs, 286 had measurable discharge. Discharge rates ranged from 0.01 to 15 gallons per minute. A total of 62 springs had a discharge rate of 1 gallon per minute or greater. Specific conductance values ranged from 245  $\mu\text{mhos/cm@25C}$  to 6,242  $\mu\text{mhos/cm@25C}$  and pH values ranged from 6.25 to 8.97. Oxidation-reduction potential (ORP) was measured at 153 springs and ranged from -147 to +201 millivolts.

Those springs with the lowest total dissolved solid (TDS) contents (as indicated by low specific-conductance values) are usually associated with clinker beds high in the stratigraphic section. Regionally, ground water in the Powder River Basin has a moderate TDS content and is chemically very soft. Therefore, those springs having TDS values of about 1,500 to 2,000 milligrams per liter, and Ca plus Mg hardness values less than about 100 milligrams per liter may represent springs that have the longest flow paths from recharge areas, perhaps of regional scale.

Thirty-one samples were analyzed for total iron (Fe) and ferrous iron (Fe+2) (Appendix D). The values ranged from 0.01 to 3.9 mg/L Fe and <0.01 to 2.64 mg/L Fe+2. Of those analyzed for iron, only one spring (USFS 138) had a total iron budget represented as the ferrous ion (reduced species). This spring also recorded the lowest ORP value (-147mV). Twenty-seven samples were analyzed for alkalinity (Appendix D). The values ranged from 178 to 966 mg/L as  $\text{CaCO}_3$ . Total hardness, Ca hardness and Mg hardness were determined for 27 samples by sequential titration. Total hardness values ranged from 112 to 1,060 mg/L as  $\text{CaCO}_3$ ; Ca hardness ranged from 112 to 740 mg/L as



CaCO<sub>3</sub>, and Mg hardness ranged from <1 to 320 mg/L as CaCO<sub>3</sub>. Twenty-one wells located in the District (Appendix C) were visited. If a well was pumping and a discharge point close to the wellhead was accessible, field parameters were collected. If it was clear that the well had not been used for some time, and the wellhead was accessible, a static water level was obtained.

## **Vulnerability to Development**

Of special note on Appendix B are judgments of possible source coalbeds, based on Matson and Blumer (1973) and Van Voast and Thale (2001), and estimated proximities of recharge for each spring. These will be key indicators of spring-flow vulnerability to developments of mining or coalbed methane production. Both types of development are known to disrupt ground-water flow, but differing conditions of topography and geology characteristic of each type can create differing impacts.

In the case of mining, springs having local sources of recharge may be the most vulnerable to nearby development, while those fed by more regional recharge may be in less danger. Coal mines operate in areas of least overburden and would be comparatively local developments in the rugged terrain of the Ashland Ranger District. Regional flows characterize deeper aquifers farther from the outcrop areas that are attractive to mining.

In the case of coalbed methane development, springs fed by the regional flow system will be the most vulnerable. Methane does not occur in local flow systems because of the attendant oxidizing conditions and presence of sulfate. Gas production will be more remote from recharge areas, tapping deeper aquifers where chemical-ly reducing conditions encourage the stability and growth of methanogenic bacteria. In the Powder River Basin of Montana these conditions are optimum in Townships 8 and 9 South (Van Voast and Thale, 2001) which are south of the District boundary, and only moderate in Township 7 South (see Plate). Development that may impact District springs is most likely to occur south of the District, and to a somewhat lesser degree along its southernmost extreme. Of the more-than-400 springs inventoried in this investigation (Appendix B), 24 are judged to have some level of vulnerability to coalbed methane

development through geologic associations, topographic conditions, and positions in the regional ground-water flow system.

### **Ongoing Work**

The data collected during the study are being further evaluated and compared to data from the surrounding region. Information obtained from this evaluation will be used to help refine the sources determined for ground water issuing from the springs, develop a hydrologic model for the District and surrounding areas, and make recommendations for future studies. Flow measurements and field parameters from approximately 20 spring sites are being obtained on a monthly basis as part of a basin-wide long-term monitoring program. This information will be used to narrow the final population of springs selected for more extensive chemical analysis and long-term monitoring.

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Appendix B. Spring Inventory Data for the Ashland Ranger District, 2002 and 2003

Site Number (see map)	Spring Name	Township	Range	Section	Tract	GWIC ID	Longitude	Latitude	Altitude (feet)	USGS Quadrangle	Inventory Date
572	SPUKE SPRING	01S	46E	10	DDAC	204995	-106.02895	45.75729	3490	HAYES POINT	5/20/2003
602	PRIMROSE SPRING	01S	46E	11	CDDD	205025	-106.01668	45.75601	3595	HAYES POINT	6/27/2003
225	SHEERING PIN SPRING	01S	46E	12	CBBB	199638	-106.00558	45.76209	3420	HAYES POINT	8/30/2002
223		01S	46E	13	BBCA	199636	-106.00400	45.74784	3580	BEAVER CREEK SCHOOL	8/30/2002
569	LITTLE WONDER SPRING	01S	46E	15	BBBD	204992	-106.04449	45.75285	3305	HAYES POINT	5/18/2003
571	DEVAULT SPRING	01S	46E	16	BADC	204994	-106.05901	45.75252	3250	HAYES POINT	5/20/2003
564	SAWMILL SPRING	01S	46E	23	DABB	204987	-106.01079	45.73249	3390	BEAVER CREEK SCHOOL	5/16/2003
221	WONDER SPRING	01S	46E	24	ACAD	199633	-105.99079	45.73638	3820	STACEY	8/30/2002
222	SURPRISE SPRING	01S	46E	24	BAAA	199635	-105.99659	45.74043	3840	STACEY	8/30/2002
570	NORTH SARTIN SPRING	01S	46E	25	BBDB	204993	-105.98589	45.72155	3650	HAYES POINT	5/18/2003
181	SCHILLER SPRING	01S	46E	31	DCCC	199614	-106.09766	45.69973	3260	BEAVER CREEK SCHOOL	10/28/2002
177	SARTIN DRAW SPRING	01S	46E	36	BBDA	199610	-106.00272	45.70948	3480	BEAVER CREEK SCHOOL	10/27/2002
226		01S	47E	6	BABA	199639	-105.97852	45.78348	3540	NORTH STACEY SCHOOL	8/30/2002
227	RED SHALE SPRING	01S	47E	6	DABB	199640	-105.97100	45.77690	3600	NORTH STACEY SCHOOL	8/30/2002
228	LISCOM MOUNTAIN SPRING	01S	47E	18	ACAA	199641	-105.97027	45.75136	3620	NORTH STACEY SCHOOL	8/30/2002
230	LISCOM BUTTE SPRING	01S	47E	18	DACD	199643	-105.96892	45.74582	3820	STACEY	8/30/2002
220	SARTIN DRAW SPRING	01S	47E	30	BDAC	199632	-105.97745	45.72173	3740	STACEY	8/30/2002
178	NORTH STACEY SPRING	01S	47E	32	CCAC	199611	-105.96116	45.70062	3660	STACEY	10/27/2002
669	BRIDGE CREEK SPRING	01S	48E	30	CDCD	205072	-105.85381	45.71388	3375	ELK RIDGE	7/18/2003
655		02S	45E	3	DBBB	205060	-106.15940	45.68905	3390	COOK CREEK RESERVOIR	7/16/2003
657	JO SPRING	02S	45E	4	ABCD	205061	-106.17985	45.69362	3520	COOK CREEK RESERVOIR	7/16/2003
658		02S	45E	4	CADB	205062	-106.18346	45.68702	3440	COOK CREEK RESERVOIR	7/16/2003
660	BRINGOFF SPRING	02S	45E	9	BCBC	205063	-106.19029	45.67731	3515	COOK CREEK RESERVOIR	7/16/2003
662	CLIFF SPRING	02S	45E	11	DADD	205065	-106.13382	45.67212	3570	COOK CREEK RESERVOIR	7/16/2003
157	MAIN ASH SPRING	02S	45E	12	ABDA	198853	-106.11609	45.68007	3390	BEAVER CREEK SCHOOL	10/9/2002
156	ASH CREEK 2 SPRING	02S	45E	12	ACCC	198851	-106.11837	45.67475	3460	BEAVER CREEK SCHOOL	10/9/2002
155	ASH CREEK 1 SPRING	02S	45E	12	CDAB	198849	-106.12073	45.67020	3490	BEAVER CREEK SCHOOL	10/9/2002
653	CUTBANK SPRING	02S	45E	16	AAAC	205059	-106.17208	45.66591	3640	COOK CREEK RESERVOIR	7/16/2003
652	COOK SPRING	02S	45E	21	ADDB	205058	-106.17324	45.64719	3590	COOK CREEK RESERVOIR	7/16/2003
661		02S	45E	21	BCAA	205064	-106.18661	45.64912	3600	COOK CREEK RESERVOIR	7/16/2003
190	DAILY SPRING	02S	45E	23	DDAB	199623	-106.13144	45.64169	3680	COOK CREEK RESERVOIR	11/7/2002
154	PROVOST SPRING	02S	45E	25	BBCA	199594	-106.10934	45.63683	3540	BEAVER CREEK SCHOOL	10/9/2002
566	GENTRY SPRING	02S	45E	26	BDAC	204989	-106.14211	45.63742	3625	COOK CREEK RESERVOIR	5/17/2003
66	COAL CREEK SPRING	02S	45E	33	CADA	197843	-106.18198	45.61530	3340	WILLOW CROSSING	7/24/2002
187	WEST FORK 1 SPRING	02S	45E	35	BBCD	199620	-106.14792	45.62168	3540	WILLOW CROSSING	11/7/2002
188	WEST FORK 2 SPRING	02S	45E	35	BCAA	199621	-106.14701	45.62070	3520	WILLOW CROSSING	11/7/2002
172	BOTTOM CRIB SPRING	02S	46E	1	DABA	199605	-105.98591	45.68883	3560	STACEY	10/21/2002
186		02S	46E	5	CDCA	199619	-106.07861	45.68323	3410	BEAVER CREEK SCHOOL	11/6/2002
185		02S	46E	8	BABC	199618	-106.08009	45.67999	3460	BEAVER CREEK SCHOOL	11/6/2002
184		02S	46E	8	BBDA	199617	-106.08094	45.67933	3460	BEAVER CREEK SCHOOL	11/6/2002
167	MAXWELL SPRING	02S	46E	10	DBAD	7247	-106.02932	45.67246	3470	BEAVER CREEK SCHOOL	10/20/2002
171	STRAIGHT CREEK SPRING	02S	46E	12	ADCA	199603	-105.98603	45.67573	3520	STACEY	10/21/2002
168		02S	46E	13	BACD	199600	-105.99662	45.66381	3520	STACEY	10/20/2002
567	SHEEP CREEK 2 SPRING	02S	46E	13	BDCC	204990	-105.99785	45.66040	3520	STACEY	5/17/2003
164	UPPER BEAVER CREEK SPRING	02S	46E	14	BDAD	199597	-106.01363	45.66194	3495	BEAVER CREEK SCHOOL	10/20/2002
165	LOWER BEAVER CREEK SPRING	02S	46E	14	BDAD	204932	-106.01360	45.66228	3505	BEAVER CREEK SCHOOL	10/20/2002

Appendix B. Spring Inventory Data for the Ashland Ranger District, 2002 and 2003

Site Number (see map)	Spring Name	Township	Range	Section	Tract	GWIC ID	Longitude	Latitude	Altitude (feet)	USGS Quadrangle	Inventory Date
563	DEER CREEK 2 SPRING	02S	46E	16	BDDD	204986	-106.05472	45.65964	3550	BEAVER CREEK SCHOOL	5/16/2003
176		02S	46E	17	ADAC	199609	-106.06626	45.66213	3605	BEAVER CREEK SCHOOL	10/27/2002
182	CABIN CREEK SPRING	02S	46E	17	BBAA	7246	-106.08165	45.66714	3590	BEAVER CREEK SCHOOL	11/6/2002
183	UPPER CABIN CREEK SPRING	02S	46E	17	BBDA	199616	-106.08042	45.66652	3610	BEAVER CREEK SCHOOL	11/6/2002
565	CABIN SPRING	02S	46E	17	CDDDB	204988	-106.07802	45.65384	3860	BEAVER CREEK SCHOOL	5/17/2003
560	PASTURE SPRING	02S	46E	20	DDCD	204983	-106.06784	45.63905	3665	BEAVER CREEK SCHOOL	5/15/2003
189	DEER CREEK SPRING	02S	46E	21	BDAB	199622	-106.05595	45.64898	3700	BEAVER CREEK SCHOOL	11/7/2002
166	MAXWELL CREEK SPRING	02S	46E	22	AAAB	199598	-106.02604	45.65189	3490	BEAVER CREEK SCHOOL	10/20/2002
153	DARLING DRAW SPRING	02S	46E	22	DBDB	7249	-106.03131	45.64314	3960	BEAVER CREEK SCHOOL	10/9/2002
562	FUNNEL DRAW SPRING	02S	46E	23	ADCB	204985	-106.00798	45.64642	3740	BEAVER CREEK SCHOOL	5/16/2003
143	EAST FORK SPRING	02S	46E	25	ACBA	198777	-105.99103	45.63373	3890	STACEY	10/7/2002
557	SECTION 26 SPRING	02S	46E	26	DBBC	204980	-106.01046	45.63073	3660	BEAVER CREEK SCHOOL	5/15/2003
561	HORSEHEAD SPRING	02S	46E	28	BBAD	204984	-106.06085	45.63705	3660	BEAVER CREEK SCHOOL	5/15/2003
558	DARLING DRAW SLUMP 1 SPRING	02S	46E	28	DAAD	204981	-106.04556	45.63065	3570	BEAVER CREEK SCHOOL	5/15/2003
559	CORAL CREEK SPRING	02S	46E	29	BADA	204982	-106.07635	45.63558	3620	BEAVER CREEK SCHOOL	5/15/2003
549	BARREL SPRING	02S	46E	36	DACD	204973	-105.98594	45.61305	3660	HOME CREEK BUTTE	5/13/2003
170		02S	47E	17	ABDD	199602	-105.94893	45.66510	3790	STACEY	10/21/2002
568	SHEEP CREEK 1 SPRING	02S	47E	18	BBCD	204991	-105.98151	45.66491	3670	STACEY	5/17/2003
169		02S	47E	18	CCAD	199601	-105.97795	45.65585	3560	STACEY	10/20/2002
148	BIDWELL SPRING SOUTH PIPE	02S	47E	19	CCCC	198817	-105.96278	45.64039	3895	STACEY	10/8/2002
149	BIDWELL SPRING NORTH PIPE	02S	47E	19	CCCC	198819	-105.96278	45.64039	3895	STACEY	10/8/2002
152	HOLIDAY SPRING	02S	47E	19	CDDDB	7253	-105.97421	45.63929	3975	STACEY	10/8/2002
150	SUTTON SPRING TOP PIPE	02S	47E	30	ADCA	198821	-105.96544	45.63215	4000	STACEY	10/8/2002
151	SUTTON SPRING BOTTOM PIPE	02S	47E	30	ADCA	198822	-105.96544	45.63215	3900	STACEY	10/8/2002
144		02S	47E	30	BBDD	198810	-105.97770	45.63469	3990	STACEY	10/7/2002
192	THOMAS SPRING	02S	47E	30	DCDA	199624	-105.96795	45.62502	3920	STACEY	11/8/2002
667	BUCKBERRY SPRING	02S	48E	6	CBBC	205070	-105.86001	45.68978	3570	ELK RIDGE	7/18/2003
668	ELK RIDGE SPRING	02S	48E	8	BBDC	205071	-105.83580	45.68030	3795	ELK RIDGE	7/18/2003
664	CAMERON SPRING	02S	48E	17	ABDC	205067	-105.82500	45.66559	3600	ELK RIDGE	7/17/2003
665	CAMERON RESERVOIR SPRING	02S	48E	17	ADDA	205068	-105.81860	45.66310	3490	ELK RIDGE	7/17/2003
666		02S	48E	17	DADA	205069	-105.81892	45.65803	3550	ELK RIDGE	7/17/2003
663	MANNING SPRING	02S	48E	31	ABDC	205066	-105.84666	45.62155	3660	SAMUELSON RANCH	7/17/2003
538	NECESSITY 2 SPRING	03S	46E	2	ABBB	204963	-106.01204	45.60864	3575	COLEMAN DRAW	4/27/2003
533	PASS RESERVOIR SPRING	03S	46E	4	BDDC	204959	-106.05515	45.60112	3480	COLEMAN DRAW	4/27/2003
532	PASS SPRING	03S	46E	4	CDBB	7565	-106.05812	45.59717	3490	COLEMAN DRAW	4/27/2003
574	RANDEL SPRING	03S	46E	5	CABA	204997	-106.07743	45.60051	3320	COLEMAN DRAW	4/26/2003
534	SAND SPRING	03S	46E	10	DCBC	204960	-106.03151	45.58191	3340	COLEMAN DRAW	4/27/2003
535	GILPATRICK SPRING	03S	46E	13	BBBB	204961	-106.00090	45.57833	3410	COLEMAN DRAW	4/27/2003
536	NEW GILPATRICK SPRING	03S	46E	14	DDBB	204962	-106.00672	45.57674	3385	COLEMAN DRAW	4/27/2003
179	GASKILL SPRING	03S	46E	17	AABA	199612	-106.06606	45.57903	3290	COLEMAN DRAW	10/27/2002
180	COAL BANK SPRING	03S	46E	18	BDAD	7418	-106.09590	45.57397	3220	COLEMAN DRAW	10/27/2002
556	UD SPRING SPRING	03S	46E	31	AADC	204979	-106.08645	45.53275	3320	COLEMAN DRAW	5/15/2003
573	BEAR DEN SPRING	03S	46E	33	CCBA	204996	-106.06180	45.52440	3400	COLEMAN DRAW	5/20/2003
554	JELLISON SPRING	03S	46E	34	BDDB	204977	-106.03772	45.53136	3770	COLEMAN DRAW	5/14/2003
296	STAFFORD #1	03S	46E	34	DDDC	199700	-106.02515	45.52138	3460	COLEMAN DRAW	11/7/2002
297	STAFFORD SPRING	03S	46E	34	DDDC	7422	-106.02506	45.52163	3460	COLEMAN DRAW	11/7/2002

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Site Number (see map)	Spring Name	Township	Range	Section	Tract	GWIC ID	Longitude	Latitude	Altitude (feet)	USGS Quadrangle	Inventory Date
551	SCHOOLMARM SPRING	03S	46E	36	BBAA	204975	-105.99696	45.53527	3595	HOME CREEK BUTTE	5/13/2003
542	PAIN SPRING	03S	47E	5	BBAC	204966	-105.95812	45.60767	4020	HOME CREEK BUTTE	4/28/2003
174	LOWER HANSON SPRING	03S	47E	5	DABA	199607	-105.94423	45.60052	3920	HOME CREEK BUTTE	10/26/2002
175	UPPER HANSON SPRING	03S	47E	5	DABA	199608	-105.94369	45.60173	3980	HOME CREEK BUTTE	10/26/2002
173	FISH POND SPRING	03S	47E	5	DBDA	199606	-105.94660	45.59841	3870	HOME CREEK BUTTE	10/26/2002
541	BULL FROG SPRING	03S	47E	6	CCCC	204965	-105.98123	45.59424	3670	HOME CREEK BUTTE	4/28/2003
145	FRARY SPRING	03S	47E	7	AADC	198811	-105.96308	45.59050	3680	HOME CREEK BUTTE	10/7/2002
540	WILBUR SPRING	03S	47E	7	BACB	204964	-105.97551	45.59156	3665	HOME CREEK BUTTE	4/28/2003
146		03S	47E	8	ADCB	198812	-105.94524	45.58732	3840	HOME CREEK BUTTE	10/7/2002
147	EAST SPRING	03S	47E	9	BCAA	198813	-105.93619	45.58923	3950	HOME CREEK BUTTE	10/7/2002
64	UPPER CABIN SPRING	03S	47E	9	CCDB	197841	-105.93713	45.57929	3920	HOME CREEK BUTTE	7/24/2002
650	CAIN SPRING	03S	47E	12	CDCA	205057	-105.87319	45.58161	3710	SAMUELSON RANCH	7/15/2003
62		03S	47E	15	DADD	197839	-105.89940	45.56890	3970	HOME CREEK BUTTE	7/24/2002
61	LOGGING CREEK SPRING	03S	47E	15	DDAA	197838	-105.89970	45.56830	3930	HOME CREEK BUTTE	7/23/2002
60	FLY CREEK 1 SPRING	03S	47E	16	AAAA	197738	-105.92060	45.57810	3980	HOME CREEK BUTTE	7/24/2002
65	CABIN SPRING	03S	47E	17	BCDD	197842	-105.95580	45.57262	3650	HOME CREEK BUTTE	7/24/2002
543	CABIN 2 SPRING	03S	47E	17	BDBC	204967	-105.95522	45.57415	3660	HOME CREEK BUTTE	4/28/2003
59	FLY CREEK 2 SPRING	03S	47E	21	BBCC	197735	-105.93860	45.56220	3720	HOME CREEK BUTTE	7/24/2002
51	HIGHWAY 212 SPRING	03S	47E	21	DDCC	197711	-105.92360	45.55140	3620	HOME CREEK BUTTE	7/22/2002
63	LOGGING SPRING	03S	47E	22	BAAD	197840	-105.90991	45.56317	3875	HOME CREEK BUTTE	7/24/2002
550	LOGGING CREEK 3 SPRING	03S	47E	22	BCCA	204974	-105.91213	45.56381	3890	HOME CREEK BUTTE	5/13/2003
50	HOUGHLAN SPRING	03S	47E	23	CAAA	197710	-105.88830	45.55720	3750	HOME CREEK BUTTE	7/22/2002
191		03S	47E	28	ABAB	199625	-105.92643	45.55024	3615	HOME CREEK BUTTE	11/7/2002
141	LEMONADE SPRING	03S	47E	28	ACAA	198766	-105.92551	45.54553	3635	HOME CREEK BUTTE	10/6/2002
194	WESCO SPRING	03S	47E	28	BCAA	199627	-105.93880	45.54571	3595	HOME CREEK BUTTE	11/8/2002
193		03S	47E	29	ADBD	199626	-105.94272	45.54531	3585	HOME CREEK BUTTE	11/8/2002
195	LITTLE TOBIN SPRING	03S	47E	29	DCBD	199628	-105.94861	45.53766	3685	HOME CREEK BUTTE	11/9/2002
552	PRIVATE SPRING	03S	47E	31	BBAD	204976	-105.97239	45.52656	3710	HOME CREEK BUTTE	5/13/2003
235	KING CREEK SPRING	04S	44E	23	DACC	198798	-106.25995	45.47362	3340	GREEN CREEK	5/9/2002
236	PASS SPRING	04S	44E	24	ABBB	7405	-106.24330	45.48278	3540	KING MOUNTAIN	5/9/2002
589	MCKELVEY SPRING	04S	44E	35	DCBA	205012	-106.26617	45.45348	3530	GREEN CREEK	6/4/2003
233		04S	44E	36	ACDB	198793	-106.24168	45.44867	3680	KING MOUNTAIN	5/9/2002
239		04S	45E	30	AADA	198967	-106.21333	45.46623	3320	KING MOUNTAIN	9/5/2002
240		04S	45E	30	AADA	198969	-106.21381	45.46606	3330	KING MOUNTAIN	9/5/2002
241	GENE CREEK SPRING	04S	45E	30	DDBB	7598	-106.21723	45.45786	3460	KING MOUNTAIN	9/5/2002
636	CAPRA SPRING	04S	45E	32	CADD	205056	-106.20635	45.44262	3385	KING MOUNTAIN	7/16/2003
555	TUCKER SPRING	04S	46E	3	BBBA	204978	-106.05100	45.52126	3425	COLEMAN DRAW	5/14/2003
292	HARRIET 2 SPRING	04S	46E	14	BBBD	199694	-106.03083	45.49066	3380	YAGER BUTTE	10/28/2002
293	HARRIET 1 SPRING	04S	46E	15	ADCC	199695	-106.03679	45.48544	3405	YAGER BUTTE	10/28/2002
597	POTHOLE SPRING	04S	46E	17	ACAA	205020	-106.07895	45.48846	3320	YAGER BUTTE	6/23/2003
585	MCBRIDE SPRING	04S	46E	22	BDBD	205008	-106.04536	45.47304	3560	YAGER BUTTE	6/2/2003
584	DD SPRING	04S	46E	22	CBAA	205007	-106.05015	45.47040	3660	YAGER BUTTE	6/2/2003
295		04S	46E	22	DABB	199697	-106.03670	45.47033	3550	YAGER BUTTE	10/30/2002
265		04S	46E	23	ABBA	199667	-106.01951	45.47706	3550	YAGER BUTTE	10/4/2002
294		04S	46E	23	CBCB	199696	-106.03120	45.46829	3590	YAGER BUTTE	10/30/2002
263	WATT DRAW 1 SPRING	04S	46E	24	CCCC	199665	-106.01083	45.46436	3640	YAGER BUTTE	10/3/2002

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Site Number (see map)	Spring Name	Township	Range	Section	Tract	GWIC ID	Longitude	Latitude	Altitude (feet)	USGS Quadrangle	Inventory Date
264		04S	46E	26	AACA	199666	-106.01490	45.46096	3690	YAGER BUTTE	10/4/2002
275		04S	46E	27	BABC	199677	-106.04940	45.46214	3540	YAGER BUTTE	10/18/2002
575	COAL BANK SPRING	04S	46E	28	BACD	204998	-106.06635	45.46000	3560	YAGER BUTTE	5/30/2003
273	MINERAL YAGER SPR ING	04S	46E	28	DAAB	7606	-106.05491	45.45578	3480	YAGER BUTTE	10/18/2002
271	OTTESEN SPRING	04S	46E	29	BABD	199673	-106.08590	45.46230	3440	YAGER BUTTE	10/18/2002
270	COAL CREEK SPRING	04S	46E	29	CBBD	7607	-106.09195	45.45504	3340	YAGER BUTTE	10/18/2002
247		04S	46E	31	ABBB	199649	-106.10235	45.44880	3320	YAGER BUTTE	9/16/2002
249		04S	46E	33	BDCC	199654	-106.06737	45.44152	3310	YAGER BUTTE	9/16/2002
274	ERICKSON SPRING	04S	46E	35	BADA	199676	-106.02263	45.44706	3660	YAGER BUTTE	10/6/2002
266	OLE SPRING	04S	46E	36	ADBA	199668	-105.99415	45.44506	3555	THREEMILE BUTTES	10/6/2002
251	SPIKE CAMP SPRING	04S	46E	36	BCDB	199653	-106.00746	45.44338	3510	YAGER BUTTE	9/16/2002
47	FEAR SPRING	04S	47E	4	CCBA	197707	-105.94690	45.51060	3920	HOME CREEK BUTTE	7/22/2002
49	BUFFALO HEAD SPRING	04S	47E	5	DBBC	197709	-105.95780	45.51250	3780	HOME CREEK BUTTE	7/22/2002
48		04S	47E	8	ABBB	197708	-105.95890	45.50670	3660	HOME CREEK BUTTE	7/22/2002
158	DOONAN GULCH SPRING	04S	47E	10	BACD	199595	-105.92052	45.50343	3940	HOME CREEK BUTTE	10/10/2002
159	KNUDSON SPRING	04S	47E	11	CBAC	198862	-105.90399	45.49860	3745	THREEMILE BUTTES	10/10/2002
161	LOWER KNUDSON SPRING	04S	47E	11	CDBC	198888	-105.90153	45.49501	3700	THREEMILE BUTTES	10/10/2002
160	KNUDSON 2 SPRING	04S	47E	14	BBBB	199596	-105.90724	45.49232	3730	THREEMILE BUTTES	10/10/2002
288	MCCLENNAN 2 SPRING	04S	47E	21	DCAC	199690	-105.93607	45.46593	3690	THREEMILE BUTTES	10/27/2002
163		04S	47E	22	AACA	198890	-105.91064	45.47597	3980	THREEMILE BUTTES	10/10/2002
162	DOONAN SPRING	04S	47E	23	ABAA	198889	-105.89380	45.47791	3830	THREEMILE BUTTES	10/10/2002
277	SKINNER GULCH 2 SPRING	04S	47E	26	ABCA	199679	-105.89925	45.46166	3990	THREEMILE BUTTES	10/19/2002
278	SKINNER GULCH 1 SPRING	04S	47E	26	BCCD	199680	-105.89647	45.45682	3870	THREEMILE BUTTES	10/19/2002
289		04S	47E	27	DABB	199691	-105.91238	45.45583	3890	THREEMILE BUTTES	10/27/2002
290		04S	47E	28	AADA	199699	-105.93009	45.46113	3715	THREEMILE BUTTES	10/27/2002
291	MCCLENNAN 1 SPRING	04S	47E	28	BBAA	199693	-105.94555	45.46297	3720	THREEMILE BUTTES	10/27/2002
285	BLUE BORE SPRING	04S	47E	30	CCBC	199687	-105.97000	45.45280	3650	THREEMILE BUTTES	10/21/2002
286		04S	47E	31	BDAD	199698	-105.98167	45.44405	3550	THREEMILE BUTTES	10/26/2002
267	ABBOTT SPRING	04S	47E	33	CCBA	199669	-105.94810	45.43799	3735	THREEMILE BUTTES	10/6/2002
268	JOE SPRING	04S	47E	33	CCDA	199670	-105.94636	45.43595	3695	THREEMILE BUTTES	10/6/2002
519		05S	43E	13	CBAC	204947	-106.37543	45.40023	3530	BIRNEY DAY SCHOOL	4/11/2003
510		05S	43E	26	BDCA	204940	-106.39605	45.37854	3350	BIRNEY DAY SCHOOL	4/10/2003
509		05S	43E	27	BACA	204939	-106.41233	45.37466	3340	BROWNS MOUNTAIN	4/10/2003
508		05S	43E	28	ADDC	204938	-106.42085	45.37332	3335	BROWNS MOUNTAIN	4/10/2003
57	GOOD SPRING	05S	44E	1	BBBC	197726	-106.25390	45.43810	3720	GREEN CREEK	7/23/2002
232		05S	44E	1	BBCD	198789	-106.25298	45.43674	3750	GREEN CREEK	9/5/2002
590	TWIN SPRING	05S	44E	1	CADD	205013	-106.24491	45.42938	3970	KING MOUNTAIN	6/4/2003
74	EAST FORK 2 SPRING	05S	44E	10	AADD	197878	-106.27489	45.42229	3490	GREEN CREEK	8/15/2002
73	EAST FORK 1 SPRING	05S	44E	10	ADCB	197879	-106.27920	45.41950	3430	GREEN CREEK	8/15/2002
520		05S	44E	20	ABDC	204948	-106.32312	45.39272	3470	GREEN CREEK	4/11/2003
58	BRIAN 1 SPRING	05S	44E	24	BADD	197733	-106.24440	45.39280	3950	KING MOUNTAIN	7/23/2002
43	PERRY (NEW) SPRING	05S	44E	25	DCDC	197609	-106.24144	45.36675	3710	FORT HOWES	7/23/2002
91	- PERRY SPRING	05S	44E	25	DDBB	197861	-106.23699	45.36780	3600	FORT HOWES	8/19/2002
55	PERRY (OLD) SPRING	05S	44E	25	DDCC	197720	-106.23970	45.36690	3680	FORT HOWES	7/23/2002
72	HAY CREEK SPRING	05S	44E	27	ADCA	197880	-106.27914	45.37496	3470	POKER JIM BUTTE	8/15/2002
609	GREEN CREEK 2 SPRING	05S	44E	29	BDCD	205032	-106.33180	45.37449	3875	POKER JIM BUTTE	6/29/2003

Appendix B. Spring Inventory Data for the Ashland Ranger District, 2002 and 2003

Site Number (see map)	Spring Name	Township	Range	Section	Tract	GWIC ID	Longitude	Latitude	Altitude (feet)	USGS Quadrangle	Inventory Date
605	UPPER GREEN CREEK SUMP SPRING	05S	44E	30	ACCC	205028	-106.34778	45.37451	3830	POKER JIM BUTTE	6/28/2003
32		05S	44E	33	CCAA	197544	-106.31280	45.35440	3860	POKER JIM BUTTE	7/20/2002
27		05S	44E	34	AAAC	197513	-106.27839	45.36470	3540	POKER JIM BUTTE	7/19/2002
56		05S	44E	35	AAAA	197722	-106.25780	45.36580	3895	POKER JIM BUTTE	7/23/2002
580	LOWER BIG SPRING	05S	44E	35	BBAD	205003	-106.27308	45.35462	3635	POKER JIM BUTTE	6/1/2003
579	OLD ROAD SPRING	05S	44E	35	BDAC	205002	-106.26865	45.36155	3660	POKER JIM BUTTE	6/1/2003
54	BUTCH SPRING	05S	44E	36	ADDC	197717	-106.23688	45.35952	3720	FORT HOWES	7/23/2002
287	CHROMO SPRING	05S	45E	6	DABC	7757	-106.21811	45.42940	3420	KING MOUNTAIN	10/27/2002
80	BADGET SPRING	05S	45E	7	DDBC	197872	-106.21679	45.41168	3420	KING MOUNTAIN	8/16/2002
96	BRIAN 3 SPRING	05S	45E	8	CBAC	197846	-106.21179	45.41594	3390	KING MOUNTAIN	8/20/2002
79		05S	45E	8	CCDD	197873	-106.21038	45.41042	3365	KING MOUNTAIN	8/16/2002
75	LOWER BRIAN 2 SPRING	05S	45E	18	AACC	7767	-106.21769	45.40665	3425	KING MOUNTAIN	8/15/2002
76	LITTLE BRIAN SPRING	05S	45E	18	ACAA	7766	-106.21860	45.40661	3435	KING MOUNTAIN	8/15/2002
95	UPPER BRIAN SPRING	05S	45E	18	BDBD	7769	-106.22605	45.40448	3590	KING MOUNTAIN	8/20/2002
93	FIRST SPRING	05S	45E	29	BDDD	197859	-106.20548	45.37437	3395	FORT HOWES	8/19/2002
90	PRONGHORN SPRING	05S	45E	29	CCCC	197862	-106.21339	45.36651	3450	FORT HOWES	8/19/2002
94	PAGET 2 SPRING	05S	45E	29	DAAB	7788	-106.19652	45.37294	3370	FORT HOWES	8/19/2002
92	LOWER PERRY	05S	45E	30	CACC	197860	-106.22862	45.37007	3550	FORT HOWES	8/19/2002
245		05S	45E	33	AACD	199647	-106.17789	45.36292	3310	FORT HOWES	9/14/2002
243	DUNNING SPRING	05S	45E	33	AADA	199645	-106.17426	45.36380	3290	FORT HOWES	9/14/2002
244		05S	45E	33	AADB	199646	-106.17651	45.36325	3310	FORT HOWES	9/14/2002
246		05S	45E	34	BBAA	199648	-106.17010	45.36517	3255	FORT HOWES	9/14/2002
242		05S	45E	34	BBBA	199644	-106.17272	45.36513	3285	FORT HOWES	9/5/2002
281	COOMBE SPRING	05S	46E	9	CBCC	7795	-106.05177	45.41318	3420	YAGER BUTTE	10/21/2002
282		05S	46E	10	DABD	199684	-106.03519	45.41489	3420	YAGER BUTTE	10/21/2002
284	MIDDLE CREEK SPRING	05S	46E	12	DAAC	199686	-105.99281	45.41467	3540	THREEMILE BUTTES	10/21/2002
142	FIFTEEN MILE SPRING	05S	46E	16	CADB	198768	-106.06452	45.39980	3600	YAGER BUTTE	10/6/2002
138	WILEY USE SPRING	05S	46E	20	ABAC	7796	-106.08089	45.39274	3370	YAGER BUTTE	9/28/2002
603	JACOBS SPRING	05S	46E	24	CACC	205026	-106.00574	45.38364	3495	YAGER BUTTE	6/27/2003
139	SMITH SPRING	05S	46E	27	CADA	7800	-106.04250	45.37998	3395	YAGER BUTTE	9/28/2002
256	- OVERALL SPRING	05S	46E	29	DDAB	199658	-106.07471	45.36879	3325	GOODSPEED BUTTE	9/26/2002
257		05S	46E	34	AADD	199659	-106.03220	45.36202	3450	GOODSPEED BUTTE	9/27/2002
259	PIERCE SPRING	05S	46E	35	ADAC	199661	-106.01399	45.36029	3570	GOODSPEED BUTTE	10/2/2002
260		05S	46E	36	BCCB	199662	-106.00973	45.35990	3630	GOODSPEED BUTTE	10/2/2002
261	ELK CREEK SPRING	05S	46E	36	DBDB	199663	-105.99830	45.35635	3550	PHILLIPS BUTTE	10/2/2002
45	QUEBBEMAN SPRING	05S	47E	2	DDDB	197704	-105.88920	45.42175	3995	THREEMILE BUTTES	7/21/2002
283	POTTER SPRING	05S	47E	7	AADB	199685	-105.97179	45.41854	3620	THREEMILE BUTTES	10/21/2002
576	NO NAME SPRING	05S	47E	9	ADCB	204999	-105.93344	45.41526	3740	THREEMILE BUTTES	5/31/2003
130	TENMILE SPRING	05S	47E	10	BBDA	199583	-105.92389	45.41771	3700	THREEMILE BUTTES	9/25/2002
131	DOTY SPRING	05S	47E	10	DACC	199584	-105.90975	45.41134	3770	THREEMILE BUTTES	9/26/2002
578	COLLINGE SPRING	05S	47E	11	ABCA	205001	-105.89664	45.41794	3950	THREEMILE BUTTES	5/31/2003
46		05S	47E	11	ABDD	197706	-105.89280	45.41780	4060	THREEMILE BUTTES	7/21/2002
44	MONTGOMERY SPRING	05S	47E	16	CDDC	197610	-105.94102	45.39202	3720	THREEMILE BUTTES	7/21/2002
41	UPPER FIFTEEN MILE SPRING	05S	47E	16	DCDC	197607	-105.93720	45.39202	3760	THREEMILE BUTTES	7/21/2002
132	LOWER SPRING CREEK SPRING	05S	47E	17	DABD	199585	-105.95208	45.39758	3720	THREEMILE BUTTES	9/26/2002
133	UPPER SPRING CREEK SPRING	05S	47E	17	DABD	199586	-105.95159	45.39784	3725	THREEMILE BUTTES	9/26/2002
140	DEAD HORSE SPRING	05S	47E	18	BDDD	199593	-105.98122	45.39911	3695	THREEMILE BUTTES	9/29/2002



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Site Number (see map)	Spring Name	Township	Range	Section	Tract	GWIC ID	Longitude	Latitude	Altitude (feet)	USGS Quadrangle	Inventory Date
42	DALZELLS SPRING	05S	47E	21	ABBB	197608	-105.93797	45.39119	3730	THREEMILE BUTTES	7/21/2002
577	MCCOLLUGH SPRING	05S	47E	22	BDAD	205000	-105.91885	45.38635	3805	THREEMILE BUTTES	5/31/2003
129	MANKAMEYER SPRING	05S	47E	22	DACC	199582	-105.91038	45.38238	3770	THREEMILE BUTTES	9/25/2002
586	ANCHOR SPRING	05S	47E	28	BAAA	205009	-105.94034	45.37645	3775	THREEMILE BUTTES	6/2/2003
604	CARL SPRING	05S	47E	31	ADBD	205027	-105.97288	45.35751	3675	PHILLIPS BUTTE	6/27/2003
300	SCHWIND SPRING	05S	47E	31	DDCD	204935	105.97420	45.34830	3670	PHILLIPS BUTTE	7/21/2002
26	ROUGH PRONG SPRING	06S	43E	1	DDBA	197512	-106.40330	45.34140	3860	BROWNS MOUNTAIN	7/19/2002
23	BLACK EAGLE 1 SPRING	06S	43E	2	DBDC	197509	-106.42720	45.34080	3970	BROWNS MOUNTAIN	7/19/2002
22	BLACK EAGLE 2 SPRING	06S	43E	3	DABC	197508	-106.44220	45.34285	3920	BROWNS MOUNTAIN	7/19/2002
514	HACKLEY SPRING	06S	43E	10	BBBB	204944	-106.45902	45.33584	3895	BROWNS MOUNTAIN	4/10/2003
513		06S	43E	10	BDDC	204943	-106.45171	45.32979	3900	BROWNS MOUNTAIN	4/10/2003
20	TIMBER L SPRING	06S	43E	12	BDBB	197505	-106.40314	45.32646	3890	BROWNS MOUNTAIN	7/19/2002
512		06S	43E	12	DABB	204942	-106.40023	45.32861	3920	BROWNS MOUNTAIN	4/10/2003
30	PRUNE SPRING LOWER	06S	43E	13	AABD	197516	-106.40008	45.32030	3820	BROWNS MOUNTAIN	7/20/2002
31	PRUNE SPRING UPPER	06S	43E	13	AADA	197517	-106.39869	45.32006	3820	BROWNS MOUNTAIN	7/20/2002
511	COTTONWOOD SPRING	06S	43E	14	BBCA	204941	-106.41884	45.31904	3790	BROWNS MOUNTAIN	4/10/2003
522	ROBERTS SPRING	06S	43E	15	ADCD	204950	-106.45119	45.31469	3500	BROWNS MOUNTAIN	4/9/2003
29	TIMBER CREEK SPRING 1	06S	43E	24	AABB	197515	-106.40170	45.30690	3940	BROWNS MOUNTAIN	7/20/2002
672	WILCOX SPRING	06S	43E	27	CCCA	205075	-106.45664	45.28061	3760	BROWNS MOUNTAIN	7/23/2003
209	PASTURE 2 SPRING	06S	43E	34	DDDD	198985	-106.43872	45.26464	3800	BROWNS MOUNTAIN	8/15/2002
210		06S	43E	35	BDCD	198986	-106.43193	45.27218	3980	BROWNS MOUNTAIN	8/15/2002
607	PENN AND PASTURE SPRING	06S	43E	36	BCAC	205030	-106.41489	45.27390	3800	BROWNS MOUNTAIN	6/28/2003
205		06S	43E	36	DCAC	198981	-106.40540	45.26643	3850	BROWNS MOUNTAIN	8/15/2002
203	BREWSTER GULCH SPRING	06S	43E	36	DDDC	198979	-106.40032	45.26445	3730	BROWNS MOUNTAIN	8/15/2002
202		06S	43E	36	DDDD	199630	-106.39806	45.26471	3760	BROWNS MOUNTAIN	8/15/2002
521		06S	44E	2	CBDB	204949	-106.31761	45.34403	3890	POKER JIM BUTTE	4/11/2003
24		06S	44E	7	ACAA	197510	-106.38619	45.33479	3940	BROWNS MOUNTAIN	7/19/2002
25		06S	44E	7	ADCB	197511	-106.38470	45.33390	3920	BROWNS MOUNTAIN	7/19/2002
516		06S	44E	21	BCAB	204945	-106.35889	45.30545	3860	POKER JIM BUTTE	4/11/2003
517		06S	44E	21	BCCC	204946	-106.36102	45.30340	3845	POKER JIM BUTTE	4/11/2003
10		06S	44E	21	DABA	198974	-106.34398	45.30210	3860	POKER JIM BUTTE	7/12/2002
9		06S	44E	24	ACBA	198973	-106.28750	45.30528	4140	POKER JIM BUTTE	7/12/2002
608	JACKSON SPRING	06S	44E	29	ADCD	205031	-106.36528	45.28830	3685	POKER JIM BUTTE	6/28/2003
606	WILD HOG 1 SPRING	06S	44E	29	CACC	205029	-106.37627	45.28523	3660	BROWNS MOUNTAIN	6/28/2003
631	WATER GAPS SPRING	06S	44E	31	ABCD	205052	-106.39073	45.27869	3790	BROWNS MOUNTAIN	7/15/2003
600	JACKSON 2 AND JACKSON HOLE SPRING	06S	44E	32	ACAD	205023	-106.36876	45.27635	3790	POKER JIM BUTTE	6/26/2003
601	WILD HOG 2 SPRING	06S	44E	32	BAAB	205024	-106.37375	45.28007	3720	POKER JIM BUTTE	6/27/2003
599	SQUIRREL SPRING	06S	44E	33	CBDD	205022	-106.35718	45.27060	3905	POKER JIM BUTTE	6/26/2003
598	3XBAR SPRING	06S	44E	34	CDAB	205021	-106.33304	45.26956	3870	POKER JIM BUTTE	6/26/2003
19		06S	44E	36	AAAA	197504	-106.27923	45.27923	3870	POKER JIM BUTTE	7/18/2002
18	EMMA KRAFT SPRING	06S	44E	36	ABAA	197500	-106.28440	45.28117	3890	POKER JIM BUTTE	7/18/2002
137	GATE SPRING	06S	45E	1	CBBD	199590	-106.17717	45.34388	3360	FORT HOWES	9/27/2002
135	GATE CREEK 2 SPRING	06S	45E	2	DCCA	199588	-106.18850	45.33947	3530	FORT HOWES	9/27/2002
134	PAGET 1 SPRING	06S	45E	3	CACC	199587	-106.21135	45.34208	3920	FORT HOWES	9/27/2002
136	ROCK JOB SPRING	06S	45E	3	DADD	199589	-106.19891	45.34201	3770	FORT HOWES	9/27/2002
40	PADGETT SPRING THREE	06S	45E	4	CDBB	197606	-106.23394	45.34118	3930	FORT HOWES	7/21/2002

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Site Number (see map)	Spring Name	Township	Range	Section	Tract	GWIC ID	Longitude	Latitude	Altitude (feet)	USGS Quadrangle	Inventory Date
37	COIL SPRING	06S	45E	5	ACCD	197603	-106.24940	45.34535	3990	FORT HOWES	7/21/2002
38	LOST SPRING	06S	45E	5	ADCB	197604	-106.24440	45.34610	3980	FORT HOWES	7/21/2002
583	BIG SPRING	06S	45E	6	AABD	205006	-106.26481	45.35044	3990	POKER JIM BUTTE	6/1/2003
581	HAGEN 2 SPRING	06S	45E	6	ACDC	205004	-106.26879	45.34499	3830	POKER JIM BUTTE	6/1/2003
582	HAGEN 1 SPRING	06S	45E	8	CABA	205005	-106.25472	45.33050	4000	POKER JIM BUTTE	6/1/2003
39	PAGET 4 SPRING	06S	45E	9	ACAB	197605	-106.22671	45.33423	3940	FORT HOWES	7/21/2002
53	FIRST CREEK SPRING	06S	45E	9	DDDD	197715	-106.22032	45.32423	4005	FORT HOWES	7/23/2002
52	STAG ROCK 2 SPRING	06S	45E	10	CADA	197712	-106.21030	45.32810	3955	FORT HOWES	7/23/2002
67	STAG ROCK SPRING 2	06S	45E	10	CADB	197714	-106.21060	45.32813	3975	FORT HOWES	7/24/2002
33	PEGGY SPRING	06S	45E	11	DADD	205094	-106.17920	45.32728	3450	FORT HOWES	7/20/2002
34	STAG ROCK SPRING	06S	45E	11	DBCA	197601	-106.18643	45.32830	3490	FORT HOWES	7/20/2002
6	COW CREEK 2 SPRING	06S	45E	17	DCBA	198972	-106.24887	45.31186	3910	FORT HOWES	7/12/2002
7		06S	45E	17	DDDD	197456	-106.24046	45.30928	3840	FORT HOWES	7/12/2002
8		06S	45E	20	AAAA	204931	-106.24097	45.30846	3835	FORT HOWES	7/12/2002
1	COW CREEK 1 SPRING	06S	45E	20	ABBC	7909	-106.25010	45.30792	3940	FORT HOWES	7/11/2002
14		06S	45E	23	CCBC	197396	-106.19810	45.29673	3540	FORT HOWES	7/18/2002
13		06S	45E	23	DCDC	197395	-106.18504	45.29533	3490	FORT HOWES	7/18/2002
36	CY SPRING	06S	45E	27	DCBD	197459	-106.20421	45.28089	3730	FORT HOWES	7/18/2002
17	MORRIS SPRING	06S	45E	31	BABD	197498	-106.27172	45.27867	3830	POKER JIM BUTTE	7/18/2002
16	MOONSHINE SPRING	06S	45E	32	CDAD	197471	-106.25061	45.26720	3930	POKER JIM BUTTE	7/18/2002
15		06S	45E	33	BCBC	197469	-106.23949	45.27533	3690	FORT HOWES	7/18/2002
595	ASH SPRING	06S	46E	2	BADA	205018	-106.06667	45.34915	3640	GOODSPEED BUTTE	6/20/2003
280		06S	46E	3	DCBA	199682	-106.08411	45.33988	3470	GOODSPEED BUTTE	10/20/2002
547	GOODSPEED 2 SPRING	06S	46E	13	DCAC	204971	-106.04492	45.31042	3620	GOODSPEED BUTTE	5/7/2003
548	OLE SPRING	06S	46E	14	BAAD	204972	-106.06858	45.32142	3440	GOODSPEED BUTTE	5/7/2003
35	GUMBO POINT SPRING	06S	46E	18	CBDB	197602	-106.15253	45.31284	3285	FORT HOWES	7/20/2002
125		06S	46E	21	DDCC	199567	-106.10295	45.29427	3710	GOODSPEED BUTTE	9/23/2002
123	DRY GULCH WEST SPRING	06S	46E	22	CCBB	199578	-106.09791	45.29639	3585	GOODSPEED BUTTE	9/23/2002
124	DRY GULCH SOUTH SPRING	06S	46E	22	CCBB	199579	-106.09791	45.29639	3585	GOODSPEED BUTTE	9/24/2002
545	HEDUM 3 SPRING	06S	46E	23	DCCC	204969	-106.06770	45.29463	3900	GOODSPEED BUTTE	5/7/2003
546	GOODSPEED SPRING	06S	46E	24	BBAD	204970	-106.05390	45.30636	3660	GOODSPEED BUTTE	5/7/2003
89	KELTY SPRING	06S	46E	25	CCAB	197863	-106.05409	45.28182	3715	GOODSPEED BUTTE	8/18/2002
126	HEDUM SPRING	06S	46E	26	CDBA	199568	-106.07098	45.28231	3680	GOODSPEED BUTTE	9/23/2002
544	HEDUM 2 SPRING	06S	46E	26	DBBA	204968	-106.06634	45.28558	3710	GOODSPEED BUTTE	5/7/2003
526	FORK SPRING	06S	46E	28	BBBA	204953	-106.11787	45.29323	3610	GOODSPEED BUTTE	4/10/2003
111	SNELL SPRING	06S	47E	2	DCCC	198891	-105.93025	45.33755	3805	PHILLIPS BUTTE	9/10/2002
258	CANYON SPRING	06S	47E	5	CACA	199660	-105.99701	45.34219	3710	PHILLIPS BUTTE	10/2/2002
594	MUD AND MUD OVERFLOW SPRING	06S	47E	6	CADD	205017	-106.01503	45.34116	3895	GOODSPEED BUTTE	6/20/2003
113	ROCK SPRING	06S	47E	9	BBAC	198893	-105.97833	45.33541	3885	PHILLIPS BUTTE	9/10/2002
110	TWO TROUGH SPRING	06S	47E	14	BDCC	199566	-105.93507	45.31576	3950	PHILLIPS BUTTE	9/10/2002
112	COAL MINE SPRING	06S	47E	15	ABAB	198892	-105.94879	45.32207	3965	PHILLIPS BUTTE	9/10/2002
105		06S	47E	16	CCDA	197657	-105.97772	45.30938	3750	PHILLIPS BUTTE	8/29/2002
596	COAL HOLLOW SPRING	06S	47E	17	BBAD	205019	-105.99865	45.32092	3700	PHILLIPS BUTTE	6/20/2003
104	RED SHALE SPRING	06S	47E	17	DDDD	197663	-105.98341	45.30940	3750	PHILLIPS BUTTE	8/29/2002
253		06S	47E	18	DABB	199655	-106.01915	45.31343	3640	GOODSPEED BUTTE	9/25/2002
524	PIPER DRAW SPRING	06S	47E	19	DACD	204951	-106.01122	45.29899	3775	GOODSPEED BUTTE	4/10/2003
593	SOUTH LYON CREEK SPRING	06S	47E	20	BBAD	205016	-105.99818	45.30734	3700	PHILLIPS BUTTE	6/20/2003

Appendix B. Spring Inventory Data for the Ashland Ranger District, 2002 and 2003

Site Number (see map)	Spring Name	Township	Range	Section	Tract	GWIC ID	Longitude	Latitude	Altitude (feet)	USGS Quadrangle	Inventory Date
109	UPPER LYON CREEK SPRING	06S	47E	22	ACCA	199565	-105.94925	45.30264	3935	PHILLIPS BUTTE	9/10/2002
108	LYON CREEK SPRING	06S	47E	22	ACCC	199569	-105.95004	45.30200	3920	PHILLIPS BUTTE	9/10/2002
119		06S	47E	25	ABAA	199574	-105.90653	45.29295	4090	PHILLIPS BUTTE	9/12/2002
103	PIERCE SPRING	06S	47E	27	BCBC	197665	-105.96113	45.28866	3900	PHILLIPS BUTTE	8/29/2002
128	MUD TURTLE SPRING	06S	47E	28	DCAB	199581	-105.96914	45.28271	3940	PHILLIPS BUTTE	9/24/2002
88	SHEEP SPRING	06S	47E	31	AAAA	197864	-106.00704	45.27279	3745	GOODSPEED BUTTE	8/18/2002
525	COAL BANK SPRING	06S	47E	31	BBBB	204952	-106.03175	45.27729	3715	GOODSPEED BUTTE	4/10/2003
588	JOE ANDERSON SPRING	06S	47E	34	CABA	205011	-105.95470	45.27145	4030	PHILLIPS BUTTE	6/4/2003
98	UPPER SKULL SPRING	06S	47E	36	ADCC	197668	-105.90182	45.27223	3935	PHILLIPS BUTTE	8/28/2002
99	UPPER SKULL 2 SPRING	06S	47E	36	ADDD	197669	-105.90085	45.27191	3915	PHILLIPS BUTTE	8/28/2002
97	MASON PRONG SPRING	06S	47E	36	CDAD	197666	-105.91104	45.26731	4085	PHILLIPS BUTTE	8/20/2002
587	NORTH FORK SPRING	06S	48E	20	BDCA	205010	-105.87358	45.29962	3950	HODSON FLATS	6/4/2003
115	RED SHALE SPRING	06S	48E	28	CDDD	199570	-105.84813	45.27694	3735	HODSON FLATS	9/12/2002
116		06S	48E	29	ADAC	199571	-105.86124	45.28586	3830	HODSON FLATS	9/12/2002
117	DEAD MAN SPRING	06S	48E	29	BABB	199572	-105.87433	45.29032	3940	HODSON FLATS	9/12/2002
118	WILLOW SPRING	06S	48E	30	DBBA	199573	-105.88789	45.28307	3910	PHILLIPS BUTTE	9/12/2002
100	SKULL SPRING	06S	48E	31	BCAB	197670	-105.89559	45.27114	3900	PHILLIPS BUTTE	8/28/2002
591	COAL DRAW SPRING	06S	48E	32	AADA	205014	-105.85892	45.27383	3750	HODSON FLATS	6/19/2003
592	FENCE CORNER SPRING	06S	48E	32	CDBB	205015	-105.87258	45.26503	3725	HODSON FLATS	6/19/2003
102	MASON SPRING	06S	48E	32	DDAB	197845	-105.86056	45.26427	3710	HODSON FLATS	8/28/2002
204		07S	43E	1	AAAB	199631	-106.40062	45.26416	3720	BROWNS MOUNTAIN	8/15/2002
206		07S	43E	1	CBAA	204933	-106.41473	45.25694	3550	BROWNS MOUNTAIN	8/15/2002
207		07S	43E	1	CBBB	198983	-106.41689	45.25632	3530	BROWNS MOUNTAIN	8/15/2002
208		07S	43E	2	DDAB	198984	-106.42061	45.25301	3495	BROWNS MOUNTAIN	8/15/2002
106		07S	43E	14	DAAB	197654	-106.42071	45.22759	3500	STROUD CREEK	8/30/2002
528	RIMROCK SPRING	07S	43E	15	DADD	204955	-106.43944	45.22497	3635	STROUD CREEK	4/25/2003
530	CLARK DRAW 2 SPRING	07S	43E	24	BCAA	204957	-106.41474	45.21624	3670	STROUD CREEK	4/25/2003
529	CLARK DRAW 1 SPRING	07S	43E	24	CADA	204956	-106.40957	45.21106	3765	STROUD CREEK	4/25/2003
201	UPPER BREWSTER SPRING	07S	44E	6	BBBB	199629	-106.39680	45.26569	3770	BROWNS MOUNTAIN	8/15/2002
634	BREWSTER GULCH 1 SPRING	07S	44E	6	CDAB	205054	-106.39487	45.25345	3800	BROWNS MOUNTAIN	7/15/2003
633	BREWSTER GULCH 2 SPRING	07S	44E	6	DBBD	205053	-106.39140	45.25614	3880	BROWNS MOUNTAIN	7/15/2003
68	HOLBROOK DRAW SPRING 2	07S	44E	9	ABAC	199558	-106.34684	45.24862	3780	HAMILTON DRAW	8/13/2002
69	FOSSIL SPRING	07S	44E	9	ADAB	199559	-106.34220	45.24832	3720	HAMILTON DRAW	8/13/2002
70	HOLBROOK DRAW 3 SPRING	07S	44E	9	DABB	199560	-106.34464	45.24439	3755	HAMILTON DRAW	8/13/2002
71		07S	44E	9	DACC	199561	-106.34578	45.24190	3745	HAMILTON DRAW	8/13/2002
238	BOYCE MEADOW SPRING	07S	44E	13	BBCB	204934	-106.29884	45.23578	3880	HAMILTON DRAW	8/14/2002
624	WASHOUT SPRING	07S	44E	13	DDDD	205045	-106.27999	45.22339	3870	HAMILTON DRAW	7/13/2003
627	WOLF SPRING	07S	44E	14	ABBB	205048	-106.30988	45.23756	3880	HAMILTON DRAW	7/14/2003
531	NORTH LEE SPRING	07S	44E	15	CDBA	204958	-106.33362	45.22606	3830	HAMILTON DRAW	4/25/2003
505		07S	44E	17	BCAA	204936	-106.37843	45.23326	3550	STROUD CREEK	4/10/2003
506		07S	44E	17	BDCD	204937	-106.37540	45.23117	3535	STROUD CREEK	4/10/2003
527	STOCKER DRAW SPRING	07S	44E	19	CDCC	204954	-106.39490	45.20897	3715	STROUD CREEK	4/24/2003
628	CHIPMUNK SPRING	07S	44E	21	CCBB	205049	-106.36105	45.21198	3640	HAMILTON DRAW	7/14/2003
12		07S	45E	9	DDDD	197394	-106.21949	45.23750	3645	OTTER	7/18/2002
11		07S	45E	15	ACAA	197393	-106.20450	45.23260	3550	OTTER	7/18/2002
625	TOOLEY CREEK SPRING	07S	45E	18	DCAB	205046	-106.26768	45.22639	3860	HAMILTON DRAW	7/14/2003

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Site Number (see map)	Spring Name	Township	Range	Section	Tract	GWIC ID	Longitude	Latitude	Altitude (feet)	USGS Quadrangle	Inventory Date
626	MARY SPRING	07S	45E	18	DCDD	205047	-106.26533	45.22376	3790	HAMILTON DRAW	7/14/2003
4		07S	45E	26	DCBC	197454	-106.18719	45.19617	3620	OTTER	7/11/2002
629	BECKY SPRING	07S	45E	30	CACD	205050	-106.27410	45.19817	3835	HAMILTON DRAW	7/14/2003
673	DYNAMITE SPRING	07S	45E	31	CCAB	205076	-106.27679	45.18307	3790	HAMILTON DRAW	7/24/2003
5	HANDLEY SPRING	07S	45E	31	DBCA	8013	-106.26584	45.18524	3850	HAMILTON DRAW	7/11/2002
3		07S	45E	36	BACA	197453	-106.17045	45.19144	3870	OTTER	7/11/2002
120	GRIFFIN COULEE SPRING	07S	46E	4	BDBA	199575	-106.11054	45.26066	3495	GOODSPEED BUTTE	9/13/2002
127	WILBER SPRING	07S	46E	9	AADD	199580	-106.09685	45.25088	3630	GOODSPEED BUTTE	9/24/2002
618	SEYMOUR SPRING	07S	46E	12	CACD	205039	-106.04885	45.24336	3695	REANUS CONE	7/12/2003
623	RENI SPRING	07S	46E	14	BDCA	205044	-106.07077	45.23221	3600	REANUS CONE	7/13/2003
674	SCHOOL SECTION SPRING	07S	46E	16	DBDC	205077	-106.10359	45.22710	3470	REANUS CONE	7/24/2003
677	HIGH TRAIL SPRING	07S	46E	23	DDDD	205080	-106.05544	45.21053	3650	REANUS CONE	7/24/2003
676	POLYWOG SPRING	07S	46E	26	CCBB	205079	-106.07479	45.19880	3570	REANUS CONE	7/24/2003
675	REANUS SPRING	07S	46E	27	BBBC	205078	-106.09576	45.20762	3580	REANUS CONE	7/24/2003
2		07S	46E	31	BACD	197452	-106.15005	45.19141	3470	OTTER	7/11/2002
630	CONE SPRING	07S	46E	33	CBAA	205051	-106.11216	45.18804	3755	REANUS CONE	7/14/2003
671	CHARLIE KRAFT SPRING	07S	46E	35	DACC	205074	-106.05987	45.18408	3730	REANUS CONE	7/23/2003
622	SCHOOL SECTION 36 SPRING	07S	46E	36	BCAB	205043	-106.05136	45.19142	3595	REANUS CONE	7/13/2003
121		07S	47E	2	AACD	199576	-105.92070	45.26121	4100	PHILLIPS BUTTE	9/13/2002
87	SLOUGH GRASS CREEK SPRING	07S	47E	3	BBCB	197865	-105.95458	45.26260	4040	PHILLIPS BUTTE	8/18/2002
122	MAY SPRING	07S	47E	5	ACDA	199577	-105.99905	45.26115	3855	PHILLIPS BUTTE	9/14/2002
86	TAYLOR CREEK SAWMILL SPRING	07S	47E	5	BCDC	197866	-106.01131	45.25831	3840	GOODSPEED BUTTE	8/18/2002
85	STANLEY SPRING	07S	47E	6	BABB	197867	-106.02973	45.26426	3735	GOODSPEED BUTTE	8/18/2002
81	YONKEE SPRING	07S	47E	13	DCBB	197871	-105.90343	45.22677	3850	SAYLE	8/17/2002
83	PLUM CREEK CORRAL SPRING	07S	47E	25	DCAD	197869	-105.90375	45.19660	3965	SAYLE	8/17/2002
670	RIZOR SPRING	07S	47E	29	ADBD	205073	-105.99699	45.20469	3890	SAYLE	7/23/2003
621	YONKEE DRAW SPRING	07S	47E	30	BDCC	205042	-106.02980	45.20191	3695	REANUS CONE	7/13/2003
620	SCHOOL HOUSE SPRING	07S	47E	32	BABA	205041	-106.00808	45.19444	3695	REANUS CONE	7/13/2003
619	LOWER SCHOOL HOUSE SPRING	07S	47E	32	BABD	205040	-106.00766	45.19369	3695	REANUS CONE	7/13/2003
114		07S	47E	34	ACCA	205093	-105.94661	45.18850	3970	SAYLE	9/12/2002
615	LOWER MAVERICK SPRING	07S	48E	2	DCCD	205036	-105.80440	45.24687	3615	BLOOM CREEK	7/12/2003
616	STUDINER SPRING	07S	48E	2	DDCA	205037	-105.79990	45.24778	3635	BLOOM CREEK	7/12/2003
614	BOG HOLE SPRING	07S	48E	10	CBAC	205035	-105.83457	45.23818	3520	BLOOM CREEK	7/12/2003
613	WATER GAP SPRING	07S	48E	17	AADB	205034	-105.85939	45.22991	3600	BLOOM CREEK	7/12/2003
612	BULL 2 SPRING	07S	48E	17	BCDD	205033	-105.87483	45.22508	3755	BLOOM CREEK	7/12/2003
82	HAILSTONE SPRING	07S	48E	18	CAAC	197870	-105.88824	45.22349	3840	SAYLE	8/17/2002
84	WOLF DEN SPRING	07S	48E	29	DBCC	197868	-105.86749	45.19265	3730	BLOOM CREEK	8/17/2002
617	PEAYS SPRING	07S	48E	29	DDCC	205038	-105.86221	45.18875	3730	BLOOM CREEK	7/12/2003
635	BOUNDRY SPRING	07S	48E	33	CCDD	205055	-105.85337	45.17491	3850	BLOOM CREEK	7/15/2003

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572		NO FLOW					COAL	SAWYER	LOCAL	NOT MAINTAINED
602	0.10		ESTIMATED	7.40	13.9	853	CLINKER	SAWYER	LOCAL	DEVELOPED
225	0.20		VOLUMETRIC		16.1	2740	SANDSTONE	SAWYER	LOCAL	
223		DRY					SANDSTONE	SAWYER	LOCAL	
569	0.20		VOLUMETRIC	7.57	11.4	3511	CLINKER	SAWYER	LOCAL	DEVELOPED
571	0.90		VOLUMETRIC	7.01	9.3	3292	COLLUVIUM	KNOBLOCH	LOCAL	DEVELOPED
564	1.50		VOLUMETRIC	7.23	9.8	2375	ALLUVIUM	SAWYER	LOCAL	DEVELOPED
221	0.10		VOLUMETRIC			2740	SANDSTONE	NONE	LOCAL	
222	0.10		VOLUMETRIC		17.1	3060	SANDSTONE	NONE	LOCAL	
570		NOT MEASURABLE					ALLUVIUM	NONE	LOCAL	UNDEVELOPED
181	0.30		VOLUMETRIC	7.20	10.0	2512	SILTSTONE	NONE	LOCAL	DEVELOPED
177	0.04		VOLUMETRIC	6.76	11.1	1905		NONE	LOCAL	DEVELOPED
226		DRY						NONE	LOCAL	NOT MAINTAINED
227		NO FLOW						NONE	LOCAL	
228	0.40		VOLUMETRIC		14.2	4367	SANDSTONE	NONE	LOCAL	
230	0.30		VOLUMETRIC		15.5	2226	COAL	SAWYER	LOCAL	
220	0.20		VOLUMETRIC			4517	COAL	SAWYER	LOCAL	
178		DRY						NONE	LOCAL	NOT MAINTAINED
669		NO FLOW					COAL	NONE	LOCAL	DEVELOPED
655		NO FLOW					COLLUVIUM	NONE	LOCAL	NOT MAINTAINED
657		NO FLOW					SANDSTONE	NONE	LOCAL	NOT MAINTAINED
658		NO FLOW					ALLUVIUM	NONE	LOCAL	UNDEVELOPED
660		NO FLOW					COAL	SAWYER	LOCAL	NOT MAINTAINED
662	1.10		VOLUMETRIC	7.40	11.2	1828	CLINKER	SAWYER	LOCAL	
157		NOT MEASURABLE						NONE	LOCAL	UNDEVELOPED
156		NOT MEASURABLE						NONE	LOCAL	UNDEVELOPED
155		NO FLOW						NONE	LOCAL	UNDEVELOPED
653	0.80		VOLUMETRIC	6.84	11.6	2694	ALLUVIUM	NONE	LOCAL	DEVELOPED
652	0.30		VOLUMETRIC	7.08	11.5	1162	COLLUVIUM	NONE	LOCAL	DEVELOPED
661		NO FLOW					SANDSTONE	NONE	LOCAL	DEVELOPED
190	0.20		VOLUMETRIC	6.97	9.8	2762	SANDSTONE	NONE	LOCAL	DEVELOPED
154	0.60		VOLUMETRIC	6.99	11.9	2592		NONE	LOCAL	DEVELOPED
566		NO FLOW						NONE	LOCAL	NOT MAINTAINED
66	0.40		VOLUMETRIC			4228	SANDSTONE	NONE	LOCAL	
187		NO FLOW					COAL	SAWYER	LOCAL	UNDEVELOPED
188		DRY					SANDSTONE	NONE	LOCAL	DEVELOPED
172		NO FLOW					ALLUVIUM	NONE	LOCAL	
186	0.40		VOLUMETRIC	8.97	6.4	2196	CLINKER	SAWYER	LOCAL	UNDEVELOPED
185		NO FLOW						SAWYER	LOCAL	UNDEVELOPED
184	0.30		VOLUMETRIC	8.82	5.7	3633		SAWYER	LOCAL	UNDEVELOPED
167	0.10		VOLUMETRIC	6.95	9.4	2190		NONE	LOCAL	DEVELOPED
171	0.10		VOLUMETRIC	7.06	8.5	2303	SANDSTONE	CANYON/FERRY	LOCAL	
168	1.10		VOLUMETRIC	7.12	10.5	1928		CANYON/FERRY	LOCAL	DEVELOPED
567	0.30		VOLUMETRIC	6.97	10.0	2585	SANDSTONE	CANYON/FERRY	LOCAL	DEVELOPED
164	0.20		VOLUMETRIC	7.59	10.0	2701	ALLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED
165	1.20		VOLUMETRIC		10.3	2364	ALLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED

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563	1.10		VOLUMETRIC	7.16	8.9	2343	ALLUVIUM	SAWYER	LOCAL	DEVELOPED
176	0.20		VOLUMETRIC	7.08	8.0	1584		SAWYER	LOCAL	DEVELOPED
182	0.70		VOLUMETRIC	6.97	8.4	1571	ALLUVIUM	SAWYER	LOCAL	DEVELOPED
183		NO FLOW					ALLUVIUM	SAWYER	LOCAL	UNDEVELOPED
565		NOT MEASURABLE					COLLUVIUM	SAWYER	LOCAL	DEVELOPED
560	0.30		VOLUMETRIC	6.93	11.9	1619	SANDSTONE	SAWYER	LOCAL	DEVELOPED
189	0.30		VOLUMETRIC	6.99	7.7	1505		SAWYER	LOCAL	DEVELOPED
166	0.10		VOLUMETRIC	7.59	6.2	1918		SAWYER	LOCAL	
153	1.30		VOLUMETRIC	7.61	9.1	589	SANDSTONE	SAWYER	LOCAL	DEVELOPED
562	0.20		VOLUMETRIC	7.31	8.5	2094	ALLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED
143	0.30		VOLUMETRIC	7.26	10.5	1534		CANYON/FERRY	LOCAL	DEVELOPED
557		DRY					SANDSTONE	CANYON/FERRY	LOCAL	DEVELOPED
561	0.40		VOLUMETRIC	7.02	12.0	2252	SANDSTONE	SAWYER	LOCAL	DEVELOPED
558	3.50		VOLUMETRIC	7.31	9.9	2057	ALLUVIUM	SAWYER	LOCAL	DEVELOPED
559	1.80		VOLUMETRIC	6.96	11.0	2276	ALLUVIUM	SAWYER	LOCAL	DEVELOPED
549	7.50		VOLUMETRIC	6.95	8.2	1284	ALLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED
170	0.20		VOLUMETRIC	6.76	10.9	1003		CANYON/FERRY	LOCAL	
568	0.30		VOLUMETRIC	7.66	11.2	1684	CLINKER	CANYON/FERRY	LOCAL	DEVELOPED
169	1.20		VOLUMETRIC	7.32	9.3	1618	ALLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED
148	0.60		VOLUMETRIC	6.87	10.7	1615		CANYON/FERRY	LOCAL	DEVELOPED
149	0.30		VOLUMETRIC	7.05	8.7	1447		CANYON/FERRY	LOCAL	DEVELOPED
152	0.50		VOLUMETRIC	7.27	9.7	245	CLINKER	CANYON/FERRY	LOCAL	DEVELOPED
150	0.70		VOLUMETRIC	7.30	8.9	1914		CANYON/FERRY	LOCAL	DEVELOPED
151	0.10		VOLUMETRIC	7.90	10.3	1331		CANYON/FERRY	LOCAL	DEVELOPED
144	0.60		VOLUMETRIC	7.35	9.2	1180		CANYON/FERRY	LOCAL	DEVELOPED
192		DRY						CANYON/FERRY	LOCAL	DEVELOPED
667	0.40		VOLUMETRIC	6.86	11.9	3610	COLLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED
668								SAWYER	LOCAL	
664								SAWYER	LOCAL	
665								SAWYER	LOCAL	
666	0.20		VOLUMETRIC		14.8	5300	COAL	SAWYER	LOCAL	DEVELOPED
663	0.10		ESTIMATED			3246	COAL	SAWYER	LOCAL	DEVELOPED
538		NOT MEASURABLE					ALLUVIUM	NONE	LOCAL	DEVELOPED
533	0.10		ESTIMATED				ALLUVIUM	NONE	LOCAL	
532	0.08		VOLUMETRIC	7.38	9.6	5309	COAL	SAWYER	LOCAL	
574	5.50		VOLUMETRIC	6.81	13.3	1961		SAWYER	LOCAL	
534		NOT MEASURABLE					COAL	SAWYER	LOCAL	DEVELOPED
535	0.40		VOLUMETRIC	7.22	12.4	3686	SANDSTONE	NONE	LOCAL	
536	0.10		VOLUMETRIC	7.16	13.1	1828	SANDSTONE	SAWYER	LOCAL	
179	0.30		ESTIMATED	6.99	10.3	5257	COAL	SAWYER	LOCAL	DEVELOPED
180	0.50		VOLUMETRIC	6.87	11.3	5384	SILTSTONE	WALL	LOCAL	DEVELOPED
556		NOT MEASURABLE						WALL	LOCAL	DEVELOPED
573	0.90		VOLUMETRIC	7.01	10.6	6242	SANDSTONE	WALL	LOCAL	DEVELOPED
554		NOT MEASURABLE					SANDSTONE	WALL	LOCAL	NOT MAINTAINED
296		NOT MEASURABLE						WALL	LOCAL	
297	0.40		ESTIMATED		4.6	2576	SANDSTONE	WALL	LOCAL	

Appendix B. Spring Inventory Data for the Ashland Ranger District, 2002 and 2003

Site Number (see map)	Measured Discharge (gpm)	Discharge Notes	Discharge Method	pH	Temperature (Degrees C)	Specific Conductance (umhos/cm @ 25 C)	Source Lithology	Nearest Overlying Coalbed Association	Recharge Origin	Site Status
551	0.10		VOLUMETRIC	7.16	10.0	1258	ALLUVIUM	WALL	LOCAL	DEVELOPED
542	0.30		VOLUMETRIC	7.30	7.4	1390	CLINKER	CANYON/FERRY	LOCAL	DEVELOPED
174		NO FLOW						CANYON/FERRY	LOCAL	NOT MAINTAINED
175	0.30		VOLUMETRIC	7.78	8.0	1433		CANYON/FERRY	LOCAL	DEVELOPED
173	0.06		VOLUMETRIC	7.05	6.1	1775	SILTSTONE	CANYON/FERRY	LOCAL	DEVELOPED
541	0.10		VOLUMETRIC	7.26	8.9	2293	SANDSTONE	CANYON/FERRY	LOCAL	DEVELOPED
145	1.50		VOLUMETRIC	7.23	11.8	1717		CANYON/FERRY	LOCAL	DEVELOPED
540	0.40		VOLUMETRIC	6.98	8.6	3073	COLLUVIUM	CANYON/FERRY	LOCAL	
146		DRY					SANDSTONE	CANYON/FERRY	LOCAL	DEVELOPED
147	0.80		VOLUMETRIC	7.69	12.2	1334		CANYON/FERRY	LOCAL	DEVELOPED
64	0.60		VOLUMETRIC		13.5	1516	SANDSTONE	CANYON/FERRY	LOCAL	DEVELOPED
650	0.90		VOLUMETRIC	6.56	11.5	2955	COLLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED
62		NOT MEASURABLE			16.5	1546	ALLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED
61	0.20		VOLUMETRIC		13.8	2034	ALLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED
60	0.05		VOLUMETRIC		17.7	1824	SANDSTONE	CANYON/FERRY	LOCAL	DEVELOPED
65	0.40		VOLUMETRIC		16.8	2082	COLLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED
543		NOT MEASURABLE					COLLUVIUM	CANYON/FERRY	LOCAL	NOT MAINTAINED
59		NOT MEASURABLE					SANDSTONE	CANYON/FERRY	LOCAL	NOT MAINTAINED
51	0.30		VOLUMETRIC		13.5	3400	ALLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED
63	0.40		VOLUMETRIC		19.9	2431	COLLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED
550	0.50		VOLUMETRIC	6.77	10.5	2794	COLLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED
50	0.30		VOLUMETRIC		12.2	1643	COLLUVIUM	CANYON/FERRY	LOCAL	DEVELOPED
191	2.00		ESTIMATED	7.91	2.8	2600	ALLUVIUM	CANYON/FERRY	LOCAL	UNDEVELOPED
141	1.50		VOLUMETRIC	6.78	10.0	2114		CANYON/FERRY	LOCAL	DEVELOPED
194		NOT MEASURABLE					SANDSTONE	CANYON/FERRY	LOCAL	UNDEVELOPED
193	1.20		VOLUMETRIC	7.12	4.8	3099	SANDSTONE	CANYON/FERRY	LOCAL	DEVELOPED
195	0.10		VOLUMETRIC	6.70	5.3	2761	SANDSTONE	CANYON/FERRY	LOCAL	DEVELOPED
552	0.50		VOLUMETRIC	7.11	9.6	2210	SANDSTONE	CANYON/FERRY	LOCAL	DEVELOPED
235	1.10		VOLUMETRIC		18.5	2728	COLLUVIUM	CANYON	LOCAL	DEVELOPED
236		NOT MEASURABLE					SANDSTONE	CANYON	LOCAL	NOT MAINTAINED
589	1.30		VOLUMETRIC	7.31	12.3	3032	SANDSTONE	CANYON	LOCAL	DEVELOPED
233		NOT MEASURABLE			14.8	1610	CLINKER	CANYON	LOCAL	
239		NO FLOW					COAL	CANYON	LOCAL	UNDEVELOPED
240		NO FLOW					COAL	CANYON	LOCAL	NOT MAINTAINED
241	0.80		VOLUMETRIC		15.2	1965	SANDSTONE	CANYON	LOCAL	
636		DRY					SANDSTONE	CANYON	LOCAL	DEVELOPED
555		NOT MEASURABLE					SANDSTONE	WALL	LOCAL	DEVELOPED
292	0.10		VOLUMETRIC		7.6	2808	SANDSTONE	WALL	LOCAL	
293	0.60		VOLUMETRIC		8.7	2537	COAL	WALL	LOCAL	
597	1.80		VOLUMETRIC	6.90	16.1	3958	COAL	WALL	LOCAL	DEVELOPED
585	0.50		VOLUMETRIC	6.97	13.1	3652	SANDSTONE	WALL	LOCAL	DEVELOPED
584	0.20		VOLUMETRIC	6.96	10.7	2525	SANDSTONE	CANYON	LOCAL	DEVELOPED
295			VOLUMETRIC					CANYON	LOCAL	
265		DRY						WALL	LOCAL	NOT MAINTAINED
294		NOT MEASURABLE						CANYON	LOCAL	DEVELOPED
263		NO FLOW						CANYON	LOCAL	DEVELOPED

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Site Number (see map)	Measured Discharge (gpm)	Discharge Notes	Discharge Method	pH	Temperature (Degrees C)	Specific Conductance (umhos/cm @ 25 C)	Source Lithology	Nearest Overlying Coalbed Association	Recharge Origin	Site Status
264		NOT MEASURABLE						CANYON	LOCAL	UNDEVELOPED
275		NO FLOW						WALL	LOCAL	UNDEVELOPED
575	0.06		VOLUMETRIC	6.97		4185	COAL	WALL	LOCAL	DEVELOPED
273	0.30		VOLUMETRIC		11.3	4236	SANDSTONE	WALL	LOCAL	
271		NO FLOW					SANDSTONE	WALL	LOCAL	
270	0.10		VOLUMETRIC		11.4	5400		CANYON	LOCAL	
247		NO FLOW					ALLUVIUM	CANYON	LOCAL	UNDEVELOPED
249							SANDSTONE	CANYON	LOCAL	DEVELOPED
274		NO FLOW					SANDSTONE	WALL	LOCAL	DEVELOPED
266	0.30		VOLUMETRIC		11.7	4146		WALL	LOCAL	
251		NO FLOW					ALLUVIUM	WALL	LOCAL	DEVELOPED
47	0.40		VOLUMETRIC		15.9	3070	COLLUVIUM	WALL	LOCAL	NOT MAINTAINED
49	0.10		VOLUMETRIC			2685	SANDSTONE	WALL	LOCAL	NOT MAINTAINED
48		DRY					SANDSTONE	WALL	LOCAL	NOT MAINTAINED
158		NO FLOW					ALLUVIUM	CANYON	LOCAL	UNDEVELOPED
159	0.80		VOLUMETRIC	7.02	10.5	3193		WALL	LOCAL	DEVELOPED
161		DRY					SANDSTONE	WALL	LOCAL	DEVELOPED
160	0.10		VOLUMETRIC	7.14	12.3	3476	ALLUVIUM	WALL	LOCAL	DEVELOPED
288	0.50		VOLUMETRIC		9.1	2693		WALL	LOCAL	
163		DRY					ALLUVIUM	CANYON	LOCAL	NOT MAINTAINED
162	0.60		VOLUMETRIC	7.37	11.0	2325	SANDSTONE	WALL	LOCAL	DEVELOPED
277	0.70		VOLUMETRIC		9.9	1471		WALL	LOCAL	
278	0.70		VOLUMETRIC		13.3	3111		WALL	LOCAL	
289		NO FLOW					ALLUVIUM	CANYON	LOCAL	UNDEVELOPED
290		NO FLOW					ALLUVIUM	CANYON	LOCAL	UNDEVELOPED
291	0.60		VOLUMETRIC		7.2	3431		CANYON	LOCAL	
285	0.60		VOLUMETRIC		10.2	2669		CANYON	LOCAL	
286		DRY					CLINKER	WALL	LOCAL	NOT MAINTAINED
267	0.90		VOLUMETRIC		11.2	3092	SANDSTONE	WALL	LOCAL	
268	0.50		VOLUMETRIC		13.7	3715	SANDSTONE	WALL	LOCAL	
519		NO FLOW					SANDSTONE	CANYON	LOCAL	NOT MAINTAINED
510	0.80		ESTIMATED		8.1	2085	COAL	SAWYER	LOCAL	
509	1.90		VOLUMETRIC		10.5	1691	COAL	SAWYER	LOCAL	DEVELOPED
508	1.50		ESTIMATED		7.6	2186	SANDSTONE	SAWYER	LOCAL	NOT MAINTAINED
57	1.80		VOLUMETRIC		16.6	1738	ALLUVIUM	CANYON	LOCAL	
232		NOT MEASURABLE			19.2	1642	CLINKER	CANYON	LOCAL	
590	1.10		VOLUMETRIC	7.68	10.8	586		ANDERSON/DIETZ	LOCAL	DEVELOPED
74		DRY					ALLUVIUM	CANYON	LOCAL	UNDEVELOPED
73	0.90		VOLUMETRIC	7.33	16.6	4015		CANYON	LOCAL	DEVELOPED
520	1.00		ESTIMATED		7.4	2454	CLINKER	CANYON	LOCAL	DEVELOPED
58	1.50		VOLUMETRIC		9.5	521	ALLUVIUM	ANDERSON/DIETZ	LOCAL	NOT MAINTAINED
43	0.40		VOLUMETRIC		18.4	2060	SANDSTONE	CANYON	LOCAL	DEVELOPED
91	0.10		VOLUMETRIC	7.85	18.9	2366	SANDSTONE	CANYON	LOCAL	
55	0.30		VOLUMETRIC			2238	CLINKER	CANYON	LOCAL	DEVELOPED
72	0.30		VOLUMETRIC	7.06	16.8	4735		CANYON	LOCAL	DEVELOPED
609	0.80		VOLUMETRIC	6.70	10.8	727	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED



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Site Number (see map)	Measured Discharge (gpm)	Discharge Notes	Discharge Method	pH	Temperature (Degrees C)	Specific Conductance (umhos/cm @ 25 C)	Source Lithology	Nearest Overlying Coalbed Association	Recharge Origin	Site Status
605		NOT MEASURABLE					ALLUVIUM	ANDERSON/DIETZ	LOCAL	UNDEVELOPED
32	0.20		VOLUMETRIC		10.4	441	COLLUVIUM	ANDERSON/DIETZ	LOCAL	DEVELOPED
27	0.30		VOLUMETRIC		16.7	3043	SANDSTONE	CANYON	LOCAL	DEVELOPED
56		DRY						ANDERSON/DIETZ	LOCAL	DEVELOPED
580		NOT MEASURABLE						CANYON	LOCAL	NOT MAINTAINED
579	0.30		VOLUMETRIC	7.39	12.1	2720	CLINKER	CANYON	LOCAL	DEVELOPED
54	0.90		VOLUMETRIC		16.3	930	COLLUVIUM	CANYON	LOCAL	DEVELOPED
287							ALLUVIUM	PAWNEE	LOCAL	
80	0.40		VOLUMETRIC	7.44	18.0	1677	SANDSTONE	PAWNEE	LOCAL	DEVELOPED
96		DRY					ALLUVIUM	PAWNEE	LOCAL	UNDEVELOPED
79	0.70		VOLUMETRIC	7.41	18.3	2632		PAWNEE	LOCAL	DEVELOPED
75	0.90		VOLUMETRIC	6.87	17.4	2641	ALLUVIUM	PAWNEE	LOCAL	DEVELOPED
76	0.60		VOLUMETRIC	7.08	16.8	2670	ALLUVIUM	PAWNEE	LOCAL	DEVELOPED
95		DRY					COLLUVIUM	PAWNEE	LOCAL	NOT MAINTAINED
93	0.50		VOLUMETRIC	7.46	17.1	2124	ALLUVIUM	PAWNEE	LOCAL	DEVELOPED
90		NO FLOW					SANDSTONE	PAWNEE	LOCAL	DEVELOPED
94	0.20		VOLUMETRIC	7.76		2802	SANDSTONE	PAWNEE	LOCAL	DEVELOPED
92	0.20		VOLUMETRIC	7.96	19.4	2889	SANDSTONE	PAWNEE	LOCAL	NOT MAINTAINED
245		NO FLOW					ALLUVIUM	PAWNEE	LOCAL	
243	0.10		VOLUMETRIC			3162		PAWNEE	LOCAL	
244		NOT MEASURABLE			18.8	454	ALLUVIUM	PAWNEE	LOCAL	
246		NO FLOW					ALLUVIUM	PAWNEE	LOCAL	
242							ALLUVIUM	SAWYER	LOCAL	UNDEVELOPED
281	0.10		VOLUMETRIC		9.8	1554	SANDSTONE	SAWYER	LOCAL	DEVELOPED
282								SAWYER	LOCAL	
284	1.30		VOLUMETRIC		10.6	2259		PAWNEE	LOCAL	
142	0.30		VOLUMETRIC	7.55	11.9	830	SANDSTONE	PAWNEE	LOCAL	DEVELOPED
138	0.20		VOLUMETRIC	6.88	13.1	3821	SANDSTONE	SAWYER	LOCAL	DEVELOPED
603	0.40		VOLUMETRIC	7.16	14.3	2312	SANDSTONE	SAWYER	LOCAL	DEVELOPED
139	0.30		VOLUMETRIC	7.00	14.2	5123		SAWYER	LOCAL	DEVELOPED
256	1.40		VOLUMETRIC		15.0	2700	ALLUVIUM	SAWYER	LOCAL	
257	0.40		VOLUMETRIC		14.8	2328	COAL	SAWYER	LOCAL	
259	1.40		VOLUMETRIC		11.8	1648		SAWYER	LOCAL	
260	0.10		VOLUMETRIC		11.4	2545	SANDSTONE	SAWYER	LOCAL	
261	0.50		VOLUMETRIC		10.0	2885	SANDSTONE	SAWYER	LOCAL	
45		NOT MEASURABLE				3357	COLLUVIUM	CANYON	LOCAL	DEVELOPED
283	0.60		VOLUMETRIC		12.2	2433		PAWNEE	LOCAL	
576	0.40		VOLUMETRIC	7.32	12.1	3775	CLINKER	PAWNEE	LOCAL	DEVELOPED
130	0.40		VOLUMETRIC	7.19	14.6	2732	SANDSTONE	PAWNEE	LOCAL	DEVELOPED
131	1.60		VOLUMETRIC	7.07	11.8	2536	SANDSTONE	PAWNEE	LOCAL	DEVELOPED
578		DRY						CANYON	LOCAL	NOT MAINTAINED
46		NO FLOW					COLLUVIUM	CANYON	LOCAL	NOT MAINTAINED
44	0.10		VOLUMETRIC		19.2	2771		PAWNEE	LOCAL	DEVELOPED
41	1.40		VOLUMETRIC		14.7	2591	COLLUVIUM	PAWNEE	LOCAL	DEVELOPED
132	1.80		VOLUMETRIC	7.12	11.6	3583	SANDSTONE	PAWNEE	LOCAL	
133	1.00		VOLUMETRIC	7.11	11.1	3565	SANDSTONE	PAWNEE	LOCAL	DEVELOPED
140		DRY					ALLUVIUM	PAWNEE	LOCAL	NOT MAINTAINED

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Site Number (see map)	Measured Discharge (gpm)	Discharge Notes	Discharge Method	pH	Temperature (Degrees C)	Specific Conductance (umhos/cm @ 25 C)	Source Lithology	Nearest Overlying Coalbed Association	Recharge Origin	Site Status
42	0.50		VOLUMETRIC		19.2	2527		PAWNEE	LOCAL	DEVELOPED
577	1.00		VOLUMETRIC	7.55	10.9	791	CLINKER	PAWNEE	LOCAL	DEVELOPED
129	1.00		VOLUMETRIC	7.16	11.5	1752	SANDSTONE	PAWNEE	LOCAL	DEVELOPED
586	0.60		VOLUMETRIC	7.70	9.6	1110	SANDSTONE	PAWNEE	LOCAL	DEVELOPED
604	0.20		VOLUMETRIC	7.81	12.8	2621	CLINKER	PAWNEE	LOCAL	DEVELOPED
300		NO FLOW					CLINKER	PAWNEE	LOCAL	
26		DRY								
23		DRY					CLINKER	ANDERSON/DIETZ	LOCAL	
22	0.30		VOLUMETRIC		9.2	446	COLLUVIUM	ANDERSON/DIETZ	LOCAL	NOT MAINTAINED
514	1.10		VOLUMETRIC		5.9	1056	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
513	0.50		ESTIMATED		10.1	718	SANDSTONE	ANDERSON/DIETZ	LOCAL	
20		NO FLOW					SANDSTONE	ANDERSON/DIETZ	LOCAL	
512		NO FLOW					SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
30	0.60		VOLUMETRIC		19.7	616	COLLUVIUM	ANDERSON/DIETZ	LOCAL	DEVELOPED
31	1.40		VOLUMETRIC		15.3	513	CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
511	0.30		VOLUMETRIC		11.3	860	SANDSTONE	CANYON	LOCAL	DEVELOPED
522		NO FLOW					SANDSTONE	CANYON	LOCAL	
29	0.40		VOLUMETRIC		12.2	544	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
672	0.20		VOLUMETRIC	6.95	16.1	1085	CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
209	0.60		VOLUMETRIC	7.00	14.8	887	COAL	CANYON	LOCAL	DEVELOPED
210		NO FLOW						NONE	NONE	
607	0.90		VOLUMETRIC	7.28	12.4	1040	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
205		NO FLOW					COAL	ANDERSON/DIETZ	LOCAL	NOT MAINTAINED
203	0.80		VOLUMETRIC	7.00	14.1	1238	COAL	ANDERSON/DIETZ	LOCAL	DEVELOPED
202	0.30		VOLUMETRIC	7.00	11.8	2760	COAL	ANDERSON/DIETZ	LOCAL	UNDEVELOPED
521	0.50		ESTIMATED			422	CLINKER	ANDERSON/DIETZ	LOCAL	UNDEVELOPED
24	0.80		VOLUMETRIC		17.0	635	ALLUVIUM	ANDERSON/DIETZ	LOCAL	DEVELOPED
25	12.00		VOLUMETRIC			601	COLLUVIUM	ANDERSON/DIETZ	LOCAL	
516	1.40		VOLUMETRIC		4.3	445	CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
517	3.00		ESTIMATED		4.3	440	ALLUVIUM	ANDERSON/DIETZ	LOCAL	UNDEVELOPED
10	2.50		VOLUMETRIC		17.0	490	CLINKER	ANDERSON/DIETZ	LOCAL	UNDEVELOPED
9	0.10		VOLUMETRIC		17.5	1342	COAL	CANYON	LOCAL	DEVELOPED
608	0.20		VOLUMETRIC	7.14	12.5	1121	CLINKER	CANYON	LOCAL	DEVELOPED
606	0.60		VOLUMETRIC	6.80	14.5	1668	SANDSTONE	CANYON	LOCAL	DEVELOPED
631	0.20		VOLUMETRIC	7.08	12.5	1223		ANDERSON/DIETZ	LOCAL	DEVELOPED
600	0.50		VOLUMETRIC	7.30	14.7	1166	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
601	0.10		VOLUMETRIC	6.95	14.0	1614	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
599	0.30		VOLUMETRIC	7.45	11.7	750	CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
598	2.70		VOLUMETRIC	6.95	13.3	1382		ANDERSON/DIETZ	LOCAL	DEVELOPED
19		DRY					ALLUVIUM	ANDERSON/DIETZ	LOCAL	NOT MAINTAINED
18	3.00		VOLUMETRIC		10.8	1321	ALLUVIUM	ANDERSON/DIETZ	LOCAL	DEVELOPED
137	0.80		VOLUMETRIC	7.18	12.2	3704		CANYON	LOCAL	DEVELOPED
135	0.90		VOLUMETRIC	7.41	13.4	3832	COAL	CANYON	LOCAL	DEVELOPED
134	1.20		VOLUMETRIC	7.34	10.8	454	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
136	0.30		VOLUMETRIC	6.83	14.5	1942	SANDSTONE	CANYON	LOCAL	DEVELOPED
40		DRY						ANDERSON/DIETZ	LOCAL	

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37		DRY					ALLUVIUM	ANDERSON/DIETZ	LOCAL	
38	1.20		VOLUMETRIC		11.4	509	COLLUVIUM	ANDERSON/DIETZ	LOCAL	DEVELOPED
583		NOT MEASURABLE		7.90	10.0	430	SANDSTONE	ANDERSON/DIETZ	LOCAL	
581	0.70		VOLUMETRIC	7.36	11.8	915	CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
582		NOT MEASURABLE					SANDSTONE	ANDERSON/DIETZ	LOCAL	
39		NOT MEASURABLE			19.1	545	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
53	0.10		VOLUMETRIC		14.3	532	CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
52	3.50		VOLUMETRIC		13.6	401	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
67	1.50		VOLUMETRIC		16.4	469	SANDSTONE	ANDERSON/DIETZ	LOCAL	NOT MAINTAINED
33	0.20		VOLUMETRIC			2816	COLLUVIUM	CANYON	LOCAL	
34	0.30		VOLUMETRIC		20.0	2420	SANDSTONE	CANYON	LOCAL	DEVELOPED
6	0.50		VOLUMETRIC		10.3	397	ALLUVIUM	ANDERSON/DIETZ	LOCAL	UNDEVELOPED
7	14.30		VOLUMETRIC		12.2	635	SANDSTONE	ANDERSON/DIETZ	LOCAL	NOT MAINTAINED
8	0.30		VOLUMETRIC		14.2	1042	SANDSTONE	ANDERSON/DIETZ	LOCAL	UNDEVELOPED
1	13.30		VOLUMETRIC		9.9	490	CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
14		NO FLOW					SANDSTONE	COOK	LOCAL	
13	7.50		VOLUMETRIC		10.8	1252	SANDSTONE	COOK	LOCAL	DEVELOPED
36	0.10		VOLUMETRIC		17.0	3866	SANDSTONE	CANYON	LOCAL	DEVELOPED
17	0.70		VOLUMETRIC		15.5	2430	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
16	0.90		VOLUMETRIC		11.9	526	CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
15	2.70		VOLUMETRIC		12.1	2072	SANDSTONE	CANYON	LOCAL	UNDEVELOPED
595	2.60		VOLUMETRIC	7.47	11.5	1241	SANDSTONE	COOK	LOCAL	DEVELOPED
280	0.10		VOLUMETRIC		11.5	1189	SANDSTONE	COOK	LOCAL	DEVELOPED
547	0.20		VOLUMETRIC	7.28	9.5	2325	SANDSTONE	COOK	LOCAL	DEVELOPED
548		DRY						COOK	LOCAL	DEVELOPED
35	0.30		VOLUMETRIC		19.8	4656	COLLUVIUM	SAWYER	REGIONAL	NOT MAINTAINED
125	0.20		VOLUMETRIC	6.73	12.9	2448	COAL	CANYON	LOCAL	DEVELOPED
123	0.10		VOLUMETRIC	6.97	11.1	3929	SANDSTONE	COOK	LOCAL	DEVELOPED
124	0.10		VOLUMETRIC	7.55	11.3	3225	SANDSTONE	COOK	LOCAL	DEVELOPED
545	0.20		VOLUMETRIC	6.98	9.8	2115	SANDSTONE	CANYON	LOCAL	DEVELOPED
546	1.20		VOLUMETRIC	7.84	6.3	1092	CLINKER	COOK	LOCAL	DEVELOPED
89	0.40		VOLUMETRIC	7.20	14.5	2674	SANDSTONE	COOK	LOCAL	
126	1.00		VOLUMETRIC	7.00	11.5	3830	SANDSTONE	COOK	LOCAL	DEVELOPED
544	0.50		VOLUMETRIC	6.79	8.9	3671	SANDSTONE	COOK	LOCAL	NOT MAINTAINED
526	0.50		VOLUMETRIC	7.18	7.9	3556	SANDSTONE	COOK	LOCAL	DEVELOPED
111	1.10		VOLUMETRIC	7.22	15.1	3365	SANDSTONE	CANYON	LOCAL	DEVELOPED
258	0.70		VOLUMETRIC		10.7	3409	CLINKER	CANYON	LOCAL	
594	0.60		VOLUMETRIC	7.06	14.1	1475	SANDSTONE	CANYON	LOCAL	DEVELOPED
113	0.40		VOLUMETRIC	7.22	18.3	3416	SANDSTONE	CANYON	LOCAL	DEVELOPED
110	0.80		VOLUMETRIC	7.22	15.1	2061	SANDSTONE	CANYON	LOCAL	DEVELOPED
112	0.20		VOLUMETRIC	7.00	15.7	2085	SANDSTONE/COAL	CANYON	LOCAL	DEVELOPED
105		NO FLOW					SANDSTONE	COOK	LOCAL	UNDEVELOPED
596	1.00		VOLUMETRIC	7.66	13.1	3846	CLINKER	COOK	LOCAL	DEVELOPED
104	0.20		VOLUMETRIC	7.33	17.8	2942	SANDSTONE	COOK	LOCAL	DEVELOPED
253		DRY					SANDSTONE	COOK	LOCAL	DEVELOPED
524	1.00		VOLUMETRIC	7.04	5.2	3209	SANDSTONE	CANYON	LOCAL	
593		DRY					ALLUVIUM	COOK	LOCAL	DEVELOPED

Appendix B. Spring Inventory Data for the Ashland Ranger District, 2002 and 2003

Site Number (see map)	Measured Discharge (gpm)	Discharge Notes	Discharge Method	pH	Temperature (Degrees C)	Specific Conductance (umhos/cm @ 25 C)	Source Lithology	Nearest Overlying Coalbed Association	Recharge Origin	Site Status
109	0.70		VOLUMETRIC	6.98	14.0	2023		CANYON	LOCAL	DEVELOPED
108	0.20		VOLUMETRIC	7.04	12.6	1846	SANDSTONE	CANYON	LOCAL	DEVELOPED
119		DRY					SANDSTONE	ANDERSON/DIETZ	LOCAL	NOT MAINTAINED
103	0.20		VOLUMETRIC	7.19	15.6	1708	SANDSTONE	CANYON	LOCAL	DEVELOPED
128	0.20		VOLUMETRIC	6.86	12.6	1532	SANDSTONE	CANYON	LOCAL	DEVELOPED
88	0.80		VOLUMETRIC	7.57	15.2	2382	ALLUVIUM	COOK	LOCAL	DEVELOPED
525	0.70		VOLUMETRIC	6.72	7.4	2960	COAL	COOK	LOCAL	
588	15.00		VOLUMETRIC	6.99	12.0	680		ANDERSON/DIETZ	LOCAL	DEVELOPED
98		NOT MEASURABLE						CANYON	LOCAL	UNDEVELOPED
99		NOT MEASURABLE					ALLUVIUM	CANYON	LOCAL	UNDEVELOPED
97	0.40		VOLUMETRIC	7.16	18.5	758	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
587	0.90		VOLUMETRIC	6.91	8.3	3600		CANYON	LOCAL	DEVELOPED
115	0.80		VOLUMETRIC	7.26	13.8	2520	CLINKER	KNOBLOCH	REGIONAL	DEVELOPED
116		NO FLOW					ALLUVIUM	CANYON	LOCAL	
117	0.60		VOLUMETRIC	6.86	14.6	3344	SANDSTONE	CANYON	LOCAL	DEVELOPED
118	0.70		VOLUMETRIC	6.83	13.1	2490	SANDSTONE	CANYON	LOCAL	DEVELOPED
100	0.60		VOLUMETRIC	7.62	16.3	1963	SANDSTONE	CANYON	LOCAL	DEVELOPED
591	0.20		VOLUMETRIC	7.78		2877	SANDSTONE	KNOBLOCH	REGIONAL	DEVELOPED
592	0.80		VOLUMETRIC	7.81	11.0	2402	COLLUVIUM	COOK	REGIONAL	DEVELOPED
102	0.10		VOLUMETRIC	7.92		2188	CLINKER	KNOBLOCH	REGIONAL	DEVELOPED
204		NOT MEASURABLE					COAL	ANDERSON/DIETZ	LOCAL	UNDEVELOPED
206		NO FLOW					ALLUVIUM	CANYON	LOCAL	DEVELOPED
207		NO FLOW					ALLUVIUM	CANYON	LOCAL	DEVELOPED
208		DRY					ALLUVIUM	CANYON	LOCAL	DEVELOPED
106		DRY						CANYON	REGIONAL	DEVELOPED
528	0.50		VOLUMETRIC	6.84	9.2	2815	CLINKER	CANYON	REGIONAL	NOT MAINTAINED
530	1.30		VOLUMETRIC	6.96	10.1	2171	SANDSTONE	ANDERSON/DIETZ	LOCAL	
529	1.70		VOLUMETRIC	6.98	8.7	1920	CLINKER	ANDERSON/DIETZ	LOCAL	
201		NO FLOW					COAL/SANDSTONE	ANDERSON/DIETZ	LOCAL	
634	0.20		VOLUMETRIC	7.39	19.7	1137	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
633	0.20		VOLUMETRIC	7.78	16.4	658		ANDERSON/DIETZ	LOCAL	DEVELOPED
68	0.30		VOLUMETRIC	7.90	18.0	2181	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
69	0.30		VOLUMETRIC	7.19	14.8	1595	CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
70	0.30		VOLUMETRIC	7.07	16.2	2763	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
71	0.80		VOLUMETRIC	7.68	16.0	2460	SANDSTONE	ANDERSON/DIETZ	LOCAL	PARTIALLY DEVELOPED
238		NO FLOW					CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
624		DRY					CLINKER	ANDERSON/DIETZ	LOCAL	NOT MAINTAINED
627		NOT MEASURABLE						ANDERSON/DIETZ	LOCAL	DEVELOPED
531		DRY						ANDERSON/DIETZ	LOCAL	
505		NOT MEASURABLE			5.8	1598	ALLUVIUM	CANYON	LOCAL	UNDEVELOPED
506		NOT MEASURABLE			7.3	2680	ALLUVIUM	CANYON	LOCAL	UNDEVELOPED
527	6.70		VOLUMETRIC	7.08	8.5	1530	SANDSTONE	ANDERSON/DIETZ	LOCAL	
628	0.60		VOLUMETRIC	7.65	18.4	3495	SANDSTONE	ANDERSON/DIETZ	LOCAL	DEVELOPED
12		NO FLOW					SANDSTONE	CANYON	LOCAL	
11	0.60		VOLUMETRIC		19.8	3895	CLINKER	CANYON	LOCAL	
625	0.60		VOLUMETRIC	7.72	12.8	2374	CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED

Appendix B. Spring Inventory Data for the Ashland Ranger District, 2002 and 2003

Site Number (see map)	Measured Discharge (gpm)	Discharge Notes	Discharge Method	pH	Temperature (Degrees C)	Specific Conductance (umhos/cm @ 25 C)	Source Lithology	Nearest Overlying Coalbed Association	Recharge Origin	Site Status
626	0.90		VOLUMETRIC	7.43	13.1	2557	CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
4	0.20		VOLUMETRIC		17.8	3526	SANDSTONE	CANYON	REGIONAL	DEVELOPED
629		DRY						ANDERSON/DIETZ	LOCAL	DEVELOPED
673		DRY					ANDERSON COAL CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
5		DRY					CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
3		NO FLOW						NONE	NONE	
120	0.20		VOLUMETRIC	6.76	12.9	3206	SANDSTONE	CANYON	LOCAL	DEVELOPED
127	0.40		VOLUMETRIC	6.53	8.6	1954	SANDSTONE	CANYON	LOCAL	DEVELOPED
618	0.20		VOLUMETRIC	6.91	15.9	2887	SANDSTONE	CANYON	LOCAL	DEVELOPED
623	0.20		VOLUMETRIC	7.05	16.4	3597	CLINKER	CANYON	LOCAL	DEVELOPED
674	0.06		VOLUMETRIC				COLLUVIUM	COOK	REGIONAL	DEVELOPED
677	0.30		VOLUMETRIC	6.80	11.5	2465	SANDSTONE	CANYON	LOCAL	DEVELOPED
676	1.80		VOLUMETRIC	6.85	13.4	2535	SANDSTONE	COOK	REGIONAL	DEVELOPED
675	0.30		VOLUMETRIC	6.97	12.8	2865	COAL	COOK	REGIONAL	DEVELOPED
2	0.90		VOLUMETRIC		12.2	2770	COAL	COOK	REGIONAL	DEVELOPED
630	0.10		VOLUMETRIC	7.11		3051	SANDSTONE	CANYON	LOCAL	DEVELOPED
671	0.30		VOLUMETRIC	6.76	11.2	4649	SANDSTONE	CANYON	REGIONAL	DEVELOPED
622	0.90		VOLUMETRIC	7.28	16.4	4130	SANDSTONE	COOK	REGIONAL	DEVELOPED
121	1.30		VOLUMETRIC	6.87	13.2	635	COAL	ANDERSON/DIETZ	LOCAL	DEVELOPED
87		NO FLOW						ANDERSON/DIETZ	LOCAL	
122	0.30		VOLUMETRIC	7.00	12.4	2833	SANDSTONE	CANYON	LOCAL	DEVELOPED
86	0.60		VOLUMETRIC	7.38	14.0	1438		CANYON	LOCAL	DEVELOPED
85	0.80		VOLUMETRIC	7.25	15.4	2995	SANDSTONE	CANYON	LOCAL	DEVELOPED
81	0.80		VOLUMETRIC	7.37	12.4	3204	SANDSTONE	CANYON	REGIONAL	
83		DRY					CLINKER	ANDERSON/DIETZ	LOCAL	
670		DRY					CLINKER	ANDERSON/DIETZ	LOCAL	DEVELOPED
621	0.60		VOLUMETRIC	7.47	16.1	3245	SANDSTONE	CANYON	LOCAL	DEVELOPED
620	1.10		VOLUMETRIC	7.20	12.4	2585	SANDSTONE	CANYON	LOCAL	DEVELOPED
619	1.00		VOLUMETRIC	7.21	16.4	2634	SANDSTONE	CANYON	LOCAL	
114	0.40		VOLUMETRIC	6.25	11.7	1123	CLINKER	CANYON	REGIONAL	DEVELOPED
615	0.10		VOLUMETRIC	7.50		2780	COLLUVIUM	COOK	LOCAL	DEVELOPED
616	0.10		VOLUMETRIC	7.47		5336	CLINKER	COOK	LOCAL	DEVELOPED
614	0.20		VOLUMETRIC	7.61	19.8	3207	COAL	KNOBLOCH	REGIONAL	DEVELOPED
613	0.70		VOLUMETRIC	6.91	12.5	3670	COLLUVIUM	KNOBLOCH	REGIONAL	DEVELOPED
612		NOT MEASURABLE					SANDSTONE	CANYON	REGIONAL	NOT MAINTAINED
82	0.60		VOLUMETRIC	7.42	13.0	2585		CANYON	REGIONAL	DEVELOPED
84	0.60		VOLUMETRIC	7.31	14.5	3071	CLINKER	CANYON	REGIONAL	
617	0.60		VOLUMETRIC	7.28	12.8	4040	CLINKER	CANYON	REGIONAL	DEVELOPED
635	0.01		ESTIMATED	8.15		2864		CANYON	REGIONAL	DEVELOPED

Appendix C–Well Inventory Data for the Ashland Ranger District, 2002 and 2003

Site Number (see map)	Well Name	Township	Range	Section	Tract	GWIC ID	Latitude	Longitude	Altitude (ft)	Site Number (see map)
697	COTTONWOOD WELL	02S	45E	3	BBBC	98567	45.69835	-106.16999	3350	697
692	WHITETAIL WELL	02S	47E	20	CBBB	205090	45.64436	-105.96245	3850	692
698	MANNING WELL	02S	48E	19	BCCA	98663	45.64847	-105.85740	3550	698
694	EAST FORK WELL	03S	45E	10	BACD	100472	45.59349	-106.16425	3210	694
693	WEST HOME WELL	03S	46E	6	AADA	205091	45.60566	-106.08473	3265	693
691	LOWER HOME WELL	03S	46E	14	DBBB	205089	45.57130	-106.01218	3355	691
690	SCHOOL HOUSE WELL	03S	46E	23	AAAC	205088	45.56373	-106.00357	3345	690
680	LEMONADE WELL	03S	47E	28	ACAC	205081	45.54526	-105.92670	3605	680
699	KING CREEK WELL	04S	44E	23	DACC	101944	45.47243	-106.25936	3635	699
701		04S	44E	32	ABAA	199563	45.44016	-106.32175	3265	701
689	NEWELL WELL	04S	45E	19	DADD	7589	45.47275	-106.21431	3290	689
688	TENMILE WELL	04S	46E	31	CBCA	161284	45.43997	-106.11218	3215	688
700		04S	46E	35	BADA	199674	45.44707	-106.02258	3660	700
695	PADGET CREEK WELL	05S	44E	22	BBBD	103155	45.39398	-106.29401	3385	695
696	CHROMO WELL	05S	45E	5	AAAA	205092	45.43798	-106.19566	3295	696
686	WATT WELL	05S	46E	21	CDGD	205087	45.38027	-106.06660	3295	686
687	SKINNER GULCH WELL	05S	47E	3	CBAC	183565	45.42755	-105.91705	3725	687
681	SPRING CREEK PIPELINE WELL	05S	47E	20	ACAC	205082	45.38829	-105.95375	3630	681
682	MASON WELL	06S	48E	32	DDBC	205083	45.26370	-105.86149	3680	682
683	INDIAN WELL	07S	46E	10	AADD	205084	45.24936	-106.07604	3615	683
684	STEWART WELL	07S	46E	10	ADAD	205085	45.24777	-106.07581	3505	684
685	TAYLOR CREEK WELL	07S	47E	16	CCCB	205086	45.22624	-105.99395	3770	685

Appendix C–Well Inventory Data for the Ashland Ranger District, 2002 and 2003

Site Number (see map)	USGS Quadrangle	Inventory Date	Measured Discharge (gpm)	pH	Temperature (Degrees C)	Specific Conductanc e (umhos/ cm @25 C)	Oxygen Reduction Potential (mv)	Measuring Point Description
697	COOK CREEK RESERVOIR	7/16/2003	3.0	7.01	13.3	<sup>2</sup> 1955		
692	STACEY	6/22/2003						
698	ELK RIDGE	7/15/2003						TOP OF CASING
694	WILLOW CROSSING	6/22/2003		8.69	16.8	1650	58	
693	BEAVER CREEK SCHOOL	6/22/2003						
691	HOME CREEK BUTTE	6/21/2003		7.67	11.8	3025	25	
690	HOME CREEK BUTTE	6/21/2003						
680	HOME CREEK BUTTE	6/2/2003						TOP OF CASING
699	GREEN CREEK	9/5/2002	2.0		15.3	3070		
701	GREEN CREEK	8/16/2002	NO FLOW					
689	KING MOUNTAIN	6/21/2003		7.80		219	88	
688	YAGER BUTTE	6/21/2003						
700	YAGER BUTTE	10/7/2002						
695	GREEN CREEK	6/26/2003						
696	KING MOUNTAIN	7/16/2003						TOP OF CASING
686	YAGER BUTTE	6/21/2003						TOP OF CASING
687	THREEMILE BUTTES	6/21/2003						TOP OF CASING
681	THREEMILE BUTTES	6/2/2003						
682	HODSON FLAT	6/19/2003						TOP OF CASING
683	REANUS CONE	6/20/2003						
684	REANUS CONE	6/20/2003						
685	SAYLE	6/20/2003						

Appendix C–Well Inventory Data for the Ashland Ranger District, 2002 and 2003

Site Number (see map)	Static Water Level (ft)	Site Number (see map)	Measuring Point Above Land Surface (ft)	Casing Diameter (inches)	Site Notes
697		697		4.00	STOCK WELL. WINDMILL AND GAS PUMP JACK.
692		692			PUMPING. NO DISCHARGE POINT NEAR WELL.
698	97.35	698	2.00	4.00	NOT PUMPING. WINDMILL
694		694			PUMPING. DISCHARGE TO TANK 50 FEET WEST
693		693			WELL HEAD INACCESSIBLE.
691		691			PUMPING. DISCHARGE TO TANK NEAR WELL
690		690			PUMPING. NO DISCHARGE POINT NEAR WELL
680	8.70	680	0.80		ELECTRIC PPUMP, NOT CURRENTLY PUMPING.
699		699			WINDMILL. NO TD MEASUREMENT.
701		701			SANDSTONE OUTCROP ON CLIFF TO NORTH
689		689			PUMPING. DISCHARGE TO TANK NEAR WELL
688		688		8.00	DEPTH TO WATER EXCEEDS PROBE LENGTH.
700		700			STOCK WELL WITH PUMP AND TANK, NEAR
695		695			PUMPING. NO DISCHARGE POINT NEAR WELL
696	179.97	696	1.79	4.00	CURRENTLY NOT BEING PUMPED.
686	9.49	686	1.20	8.00	WELL IS FENCED NEXT TO TANK.
687	51.79	687	3.12		WELL IS FENCED.
681		681		8.50	WELL WAS BEING PUMPED.
682		682	1.80		WELL WAS BEING PUMPED. PUMPING WATER
683		683			WINDMILL. WELL HEAD INACCESSIBLE.
684		684			WINDMILL. DISCONNECTED. WELL HEAD
685		685			WINDMILL. PUMPING. WELL HEAD



Appendix D—Additional field-water-quality data for selected springs on the Ashland Ranger District, 2002

Site Number (see map)	Discharge (gpm)	Oxygen Reduction Potential (mv)	Iron, Total (mg/L)	Iron, ferrous (mg/L)	Alkalinity (mg/L as CaCO <sub>3</sub> )	Calcium Hardness (mg/L as CaCO <sub>3</sub> )	Total Hardness (mg/L as CaCO <sub>3</sub> )	Magnesium Hardness (mg/L as CaCO <sub>3</sub> )	GWIC ID
72	0.3		0.07	0.01					197880
75	0.9		1.48	0.36					7767
81	0.8		0.01						197871
85	0.8		0.04	0.02					197867
103	0.2	137							197665
104	0.2	160							197663
108	0.2	159	0.03	0.01	522	396	496	100	199569
109	0.7	53	0.85	0.08	502	368	380	12	199565
110	0.8	18	0.56	0.1	630	325	635	210	199566
111	1.1	163	0.02	0.02	526	380	700	320	198891
112	0.2	162	0.05	0.02	690	372	464	92	198892
113	0.4	175	0.02	0.02	862	544	808	264	198893
114	0.4	110	1.42	0.01	282	200	182	<1.0	205093
115	0.8	157	0.01	<0.01	496	368	680	312	199570
117	0.6	75	0.63	0.01	740	480	576	96	199572
118	0.7	50	3.9	<0.01	616	380	380	<1.0	199573
120	0.2	165	0.04	<0.01	620	740	1060	320	199575
121	1.3	54	0.7	0.27	284	152	120	<1.0	199576
122	0.3	103	0.02	<0.01	480	468	612	144	199577
123	0.1	106	0.01	<0.01	430	328	612	284	199578
124	0.1	94	0.08	<0.01	322	674	1952	1278	199579
125	0.2	157	0.04	0.01	341	500	872	372	199567
126	1.0	177	0.01	<0.01	294	556	1404	848	199568
127	0.4	201	0.01	<0.01	588	384	944	560	199580
128	0.2	112	0.41	0.02	410	308	500	192	199581
129	1.0	169	0.02		310	264	332	68	199582
130	0.4	161	0.02		604	312	660	348	199583
131	1.6	111			606				199584
132	1.8	161			898				199585
133	1.0	130			898				199586
134	1.2	131	0.21	<0.01	178	112	112		199587
135	0.9	180	0.05	0.01	966	304	812	508	199588
136	0.3	129	0.11	0.04	658	350	350	<1.0	199589
137	0.8	183		<0.01	546	440	920	480	199590
138	0.2	-147	2.64	2.64	868	636			7796
139	0.3	119	0.02	<0.01	922	676			7800
141	1.5	84			540				198766
142	0.3	85							198768

Appendix D—Additional field-water-quality data for selected springs on the Ashland Ranger District, 2002

Site Number (see map)	Discharge (gpm)	Oxygen Reduction Potential (mv)	Iron, Total (mg/L)	Iron, ferrous (mg/L)	Alkalinity (mg/L as CaCO <sub>3</sub> )	Calcium Hardness (mg/L as CaCO <sub>3</sub> )	Total Hardness (mg/L as CaCO <sub>3</sub> )	Magnesium Hardness (mg/L as CaCO <sub>3</sub> )	GWIC ID
143	0.3	151			570				198777
144	0.6	157							198810
145	1.5	16			581				198811
147	0.8	111			432				198813
148	0.6	166							198817
149	0.3	27							198819
150	0.7	144	0.01		442				198821
151	0.1	108			472				198822
152	0.5	148							7253
153	1.3	55			358				7249
154	0.6	87			540				199594
159	0.8	87							198862
160	0.1	110							199596
162	0.6	103							198889
164	0.2	58							199597
165	1.2	90							204932
166	0.1	145							199598
167	0.1	178							7247
168	1.1	184							199600
169	1.2	177							199601
170	0.2	124							199602
171	0.1	194							199603
173	0.06	136							199606
175	0.3	107							199608
176	0.2	125							199609
177	0.04	181							199610
179	0.3	66							199612
180	0.5	154							7418
181	0.3	131							199614
182	0.7	142							7246
184	0.3	103							199617
186	0.4	89							199619
189	0.3	55							199622
190	0.2	58							199623
191	2.0	134							199625
193	1.2	90							199626
195	0.1	180							199628
524	1.0	-35							204951

Appendix D—Additional field-water-quality data for selected springs on the Ashland Ranger District, 2002

Site Number (see map)	Discharge (gpm)	Oxygen Reduction Potential (mv)	Iron, Total (mg/L)	Iron, ferrous (mg/L)	Alkalinity (mg/L as CaCO <sub>3</sub> )	Calcium Hardness (mg/L as CaCO <sub>3</sub> )	Total Hardness (mg/L as CaCO <sub>3</sub> )	Magnesium Hardness (mg/L as CaCO <sub>3</sub> )	GWIC ID
525	0.7	81							204952
526	0.5	124							204953
527	6.7	156							204954
528	0.5	136							204955
529	1.7	-35							204956
530	1.3	1							204957
532	0.08	35							7565
535	0.4	106							204961
536	0.1	114							204962
540	0.4	25							204964
541	0.1	119							204965
542	0.3	77							204966
544	0.5	24							204968
545	0.2	43							204969
546	1.2	29							204970
547	0.2	60							204971
549	7.5	113							204973
550	0.5	68							204974
551	0.1	73							204975
552	0.5	63							204976
558	3.5	58							204981
559	1.8	84							204982
560	0.3	68							204983
561	0.4	70							204984
562	0.2	63							204985
563	1.1	66							204986
564	1.5	73							204987
567	0.3	146							204990
568	0.3	118							204991
569	0.2	131							204992
571	0.9	65							204994
573	0.9	119							204996
574	5.5	29							204997
575	0.06	172							204998
576	0.4	120							204999
577	1.0	109							205000
579	0.3	102							205002
581	0.7	106							205004

Appendix D—Additional field-water-quality data for selected springs on the Ashland Ranger District, 2002

Site Number (see map)	Discharge (gpm)	Oxygen Reduction Potential (mv)	Iron, Total (mg/L)	Iron, ferrous (mg/L)	Alkalinity (mg/L as CaCO <sub>3</sub> )	Calcium Hardness (mg/L as CaCO <sub>3</sub> )	Total Hardness (mg/L as CaCO <sub>3</sub> )	Magnesium Hardness (mg/L as CaCO <sub>3</sub> )	GWIC ID
583		91							205006
584	0.2	54							205007
585	0.5	60							205008
586	0.6	68							205009
587	0.9	-10							205010
588	15.0	117							205011
589	1.3	86							205012
590	1.1	82							205013
591	0.2	53							205014
592	0.8	78							205015
594	0.6	100							205017
595	2.6	79							205018
596	1.0	102							205019
597	1.8	156							205020
598	2.7	126							205021
599	0.3	108							205022
600	0.5	150							205023
601	0.1	138							205024
602	0.1	121							205025
603	0.4	127							205026
604	0.2	95							205027
606	0.6	140							205029
607	0.9	34							205030
608	0.2	98							205031
609	0.8	31							205032
613	0.7	36							205034
614	0.2	-54							205035
615	0.1	75							205036
616	0.1	-40							205037
617	0.6	130							205038
618	0.2	173							205039
619	1.0	23							205040
620	1.1	30							205041
621	0.6	47							205042
622	0.9	36							205043
623	0.2	134							205044
625	0.6	112							205046
626	0.9	112							205047

Appendix D—Additional field-water-quality data for selected springs on the Ashland Ranger District, 2002

Site Number (see map)	Discharge (gpm)	Oxygen Reduction Potential (mv)	Iron, Total (mg/L)	Iron, ferrous (mg/L)	Alkalinity (mg/L as CaCO <sub>3</sub> )	Calcium Hardness (mg/L as CaCO <sub>3</sub> )	Total Hardness (mg/L as CaCO <sub>3</sub> )	Magnesium Hardness (mg/L) as CaCO <sub>3</sub> )	GWIC ID
628	0.6	111							205049
630	0.1	-30							205051
631	0.2	153							205052
633	0.2	132							205053
634	0.2	139							205054
635	0.01	118							205055

Appendix E--Site Descriptions for Wells and Springs Inventoried on the Ashland Ranger District, 2002 and 2003

Site Number	Site Notes
1	3 DEVELOPMENTS ON WEST SLOPE COMBINE TO FORM STREAM.
2	2 TANKS OF W SIDE OF OTTER CK RD. BASE OF SANDSTONE CLIFF IN COAL OUTCROP BELOW COAL BED.
3	STOCK WATER CATCHMET BASIN, WITH POOL IN SHELTER
4	ISSUES FROM SANDSTONE ON SW SIDE OF VALLEY 100 FEET FROM STOCK TANK. BELOW CLINKER RIDGE TOP.
5	DRY; DEVELOPMENT IS ABOUT 50 FEET W OF TANK; SOURCE WAS CLINKER ON RIDGE TOP.
6	NORTH BRANCH TO RESERVOIR. SEEP FROM BANK IN TERRACE FED BY CLINKER RIDGES TO N AND W. FORMS POOLS.
7	MINOR OLD WORK. SPRING ISSUES FROM SLUMP OF OUTCROP OF SANDSTONE BELOW CLINKER RIDGE.
8	ISSUES FROM SLOPE - SANDSTONE FLOAT - CLINKER ON RIDGE -
9	ISSUES FROM COAL SEAM. MUD INDICATES ADDITIONAL SEEPAGE NOT IN DEVELOPED FLOW. IRON RICH.
10	3 SEEPAGE POINTS ON NORTH BANK OF STREAM VALLEY. ISSUING FROM CLINKER HILLSIDE AND LOOSE SLOPE WASH.
11	V-SHAPED DRAINAGE; SOURCE IS ALLUVIUM BELOW CLINKER. SUPPORTS WET SPOT IN CREEK.
12	SPRING IS MINOR SEEPAGE FROM SANDSTONE BELOW COAL. BLACK WATER WITH OILY SHEEN. SEVERAL SMALL SEEPS.
13	AT BERM OF COW CREEK RD. FLOW MEASURED FROM SMALL CHANNEL NEXT TO PIPE. SANDSTONE IN ROAD CUT.
14	SIDE DRAINAGE TO COW CREEK. SPRING AT THE BASE OF SANDSTONE. DRY. WATER IN COW TRACKS.
15	AT BASE OF SANDSTONE. SEVERAL SEEPS WHERE SANDSTONE SUBCROP CROSSES CREEK.
16	STEEP V-SHAPED DRAINAGE. OLD BOARDS AND PIPE. SERIOUS LEAFY SPURGE - KNAPWEED AND THISTLE PROBLEM.
17	DEVELOPED. SANDSTONE SUBCROP ABOVE COLLECTION POINT. CLINKER ABOVE SANDSTONE.
18	SPRING ABOVE RESERVOIR; 2 TANKS. COLLECTION PIPES IN ALLUVIUM. SMALL DAM ABOVE SITE IS DRY.
19	BELOW RESERVOIR FOR 18 IN ALLUVIAL BOTTOM. TANK IS RUSTED OUT. OLD STEEL PIPE SYSTEM BROKEN. NO WATER.
20	SITE IS BELOW CLINKER AND SANDSTONE. TWO POOLS IN DRAINAGE BOTTOM; NO FLOW.
22	COLLAPSED WOODEN STOCK TANK. SIGN ON TREE. COWS DRINK FROM DISCHARGE. WOODEN SPRING BOX. COLLUVIUM.
23	DRY; LARGE COVERED FIBERGLASS TANK AT FORK IN CREEK. WET AREA IN CREEK BOTTOM; DAMP; NO FLOW.
24	WESTERN OF TWO SPRINGS (24-25). COLLUVIUM/ALLUVIUM; NOT MAINTAINED. OLD WOODEN COLLECTION DAMS.
25	EASTERN OF 2 SPRINGS AT SITE. 300 FT SEEP AREA IN CREEK BOTTOM. GOOD FLOW. COLLUVIUM W/SANDSTONE FLOAT.
26	DRY. CLINKER AT TOP OF DRAINAGE; SANDSTONE ABOVE SPRING SITE. NO WATER. (MAY HAVE MISSED THE SPRING)
27	ON ODELL CREEK RD. SPRING IS AT THE BASE OF SANDSTONE.
29	WOODEN TANK, GOOD CONDITION; NOT USED. 200 FEET LONG SEEP IN CREEK ABOVE TANK. SOURCE IS SANDSTONE.
30	LOWER OF 2 SPRINGS (30, 31). STOCK TANK ON COLLUVIAL SLOPE. CLINKER FLOAT. MAY BE FROM UPPER SPRING.
31	UPPER OF 2 SPRINGS. RECENTLY REBUILT W/18 INCH PVC COLLECTOR. COAL AND CLINKER IN EXCAVATION.
32	NOT MAINTAINED. COLLAPSED WOODEN STOCK TANK. SANDSTONE. CLINKER OUTCROP LESS THAN 100 FEET ABOVE.
33	SPRING IS FROM A SIDE DRAINAGE TO STAG ROCK CREEK. NO SURFACE FLOW. BELOW CLINKER RIDGE.
34	RECENT REDEVELOPMENT; ALL WATER COLLECTED. FLOW FROM SANDSTONE. STOCK TANK/18 INCH STANDPIPE PVC.
35	BURIED WOODEN STOCK TANK FULL OF CATTAILS. SOURCE IS FROM MOUND BUILT UP IN COLLUVIUM AND SANDSTONE.
36	SANDSTONE ABOVE SPRING. COLLUVIUM AT SPRING. LOW FLOW; TANK IS ONLY 1/4 FULL. STAGNANT H2S ODOR.
37	1 FOOT DEEP HOLES IN CREEK BOTTOM ARE DRY; SITE IS IMMEDIATELY BELOW RIDGETOP CLINKER.
38	REBUILT W/18-IN COLLECTOR. COLLECTION GALLERY ALONG COLLUVIAL SLOPE. CLINKER AND SANDSTONE IN COLLUVIUM.
39	SANDSTONE. STEEP DRAINAGE. BURIED WOODEN TANK IN CREEK BOTTOM--NOT ALL FLOW CAPTURED.

Appendix E– Site Descriptions for Wells and Springs Inventoried on the Ashland Ranger District, 2002 and 2003

40	ONLY SITE LOCATED IS A DAMP SPOT BELOW CLINKER AND SANDSTONE. STEEP DRAINAGE. (MAY HAVE MISSED SITE)
41	SITES 41, 42, 44. UPPER MOST SPRING. PROBABLY SUPPLIES MIDDLE TANK. COLLUVIUM SOURCE.
42	SITES 41, 42, 44. HIGHEST ELEVATION STOCK TANK- BUT 2D HIGHEST SPRING AT SITE.
43	OLDER TANK SITS ON SANDSTONE AT BASE OF CLINKER FROM RIDGETOP. SPRING FLOWS FROM ABOVE SANDSTONE.
44	SITES USFS 41, 42, 44. 3D STOCK TANK DOWN DRAINAGE LOWEST SITE. VERY LOW FLOW TO TANK.
45	COLLUVIUM SOURCE. NOT ALL FLOW CAPTURED; 300 FEET OF MUDDY CREEK BOTTOM ABOVE TANK. LITTLE FLOW.
46	STOCK TANK IS BROKEN. FLOW FROM COLLUVIAL HILLSIDE ON SILT AND CLINKER RIDGES. WATER IN COW PRINTS.
47	COLLAPSED WOODEN TANK; 18 INCH STANDPIPE. DAMMED DISCHARGE FLOW ABOVE TANK. SANDSTONE IN COLLUVIUM.
48	WOODEN STOCK TANK IN GOOD CONDITION BUT OVERGROWN. PIPE NOT CONNECTED TO TANK. NO FLOW. VERY DRY.
49	OLD WOODEN TANK; ABANDONED. SPRING ON SLOPES ABOVE CREEK BOTTOM. COLLUVIUM BELOW SANDSTONE.
50	SITE IS WELL-MAINTAINED AND IN GOOD CONDITION. COLLUVIUM.
51	24 INCH PVC STANDPIPE VISIBLE FROM HIGHWAY. PUMP INSIDE STANDPIPE. STOCK TANK IS ABOVE SITE ABOUT 50 YDS.
52	STREAM FLOW IN CREEK BOTTOM ABOVE TANK. STEEP DRAINAGE BELOW CLINKER. SANDSTONE FLOAT.
53	PIPE BROKEN. SITE AT BASE OF 1ST CLINKER RIDGE; CHANNEL ABOVE IS DEEPLY INCISED INTO CLINKER.
54	SPRING DEVELOPED IN COLLUVIUM ALONG CREEK BANK; 2 STOCK TANKS FULL. ALL FLOW CAPTURED. GOOD CONDITION.
55	OLD WOODEN STOCK TANK COLLAPSED AND BURNED. 2 SOURCES, (NEW TANK USFS-43 IS UPPERMOST IN DRAINAGE).
56	FIBERGLASS TANK DRY; DRAINAGE BELOW SITE IS DRY. CORRUGATED METAL COVER OVER FENCED SPRING BOX.
57	DRAINAGE BADLY WASHED OUT FROM FIRES; SITE IS BELOW BURNED AREA. SPRING IS WHERE ROAD CROSSES CREEK.
58	BURNED AREA. TANK AND PIPE BROKEN AT SOURCE. STOCK TANK AT FENCELINE. GOOD FLOW FROM PIPE.
59	SEEP FROM HILLSIDE 15 FEET ABOVE CREEK BOTTOM. SANDSTONE. COLLAPSED WOODEN STOCK TANK NEAR ROAD.
60	FIBERGLASS STOCKTANK. STEEP DRAINAGE. VERY LOW FLOW. COLLECTION PIPE IN COLLUVIUM AT FORK IN DRAINAGE.
61	DEVELOPED SPRING; NEWER INSTALLATION. TANK IS FULL; WATER IN STANDPIPE IS CLEAR. LOWER OF 2 AT SITE.
62	OVAL CORRUGATED STEEL STANDPIPE; 36 INCH WIDE- RUSTY. WATER APPEARS STAGNANT. UPPER OF 2 AT SITE.
63	WOODEN STOCK TANK DRY. WET AROUND TANK. BROKEN POLY PIPE RUNNING ON GROUND. SPRING ABOVE CREEK.
64	STOCK TANK ON ROAD; GOOD CONDITION- IN USE. SANDSTONE; SILTY OUTCROP ON BANK ABOVE COLLECTION AREA.
65	STOCK TANK IN GOOD CONDITION. SANDSTONE AT ROAD ABOVE SPRING. SOURCE IS ALLUVIUM AND COLLUVIUM.
66	UNDERCUT- LEDGE FORMING SANDSTONE AT SPRING 3-4 FOOT OVERHANG. 3 SPRING SEEPS.
67	UPPER SITE TO 52. WOODEN STOCK TANK- GOOD CONDITION; SANDSTONE AT BASE OF CLINKER. FLOW NOT CAPTURED.
68	STOCK SPRING ISSUING FROM SANDSTONE. DEVELOPMENT IS 100 FEET NORTH OF TANK ON WEST SIDE OF DRAW.
69	DEVELOPED STOCK SPRING ISSUING AT BASE OF CLINKER. DEVELOPMENT APPEARS TO BE 20 FEET SE OF TANK.
70	DEVELOPED STOCK SPRING ISSUING FROM SANDSTONE BELOW CLINKER.
71	PARTIALLY DEVELOPED STOCK SPRING ISSUING FROM SANDSTONE BELOW CLINKER AND ALLUVIUM FED BY SANDSTONE.
72	SPRING DEVELOPED IN HAY CREEK ALLUVIUM. SANDSTONE ON VALLEY WALLS TOPPED BY THIN CLINKER BED.
73	SPRING DEVELOPED IN COLLUVIUM. YELLOW TO LT. TAN SANDSTONE BEDS IN OUTCROP ABOVE SPRING.
74	UNDEVELOPED. AT HEAD OF DRY WASH. SANDSTONE ON EITHER SIDE OF CREEK.
75	STREAM DEVELOPED IN ALLUVIAL BOTTOM FILL. SANDSTONE TO NW ABOVE COAL.
76	STREAM DEVELOPED IN ALLUVIAL BOTTOM FILL. SANDSTONE TO NW ABOVE COAL.
79	.5 MILE DOWNSTREAM FROM BRIAN SPRING 2. SANDSTONE NORTH OF SPRING. SPRING IN ALLUVIAL VALLEY FILL.
80	SANDSTONE NORTH OF HOLDING TANK NEAR WHERE SPRING IS DEVELOPED.

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81	SANDSTONE. 1000 FEET TO SW OF SPRING ARE COAL OUTCROPS, 20-40 FEET TOPOGRAPHICALLY ABOVE SPRING.
82	SANDSTONE NORTH OF SPRING. SPRING DEVELOPED IN ALLUVIAL VALLEY FILL.
83	CLINKER BEDS OUTCROP TO SE OF SPRING.
84	CLINKER BED OUTCROPS AS RIDGE ABOVE SPRING. SANDSTONE BELOW.
85	SANDSTONE ON VALLEY WALLS. SPRING DEVELOPED IN ALLUVIAL FILL.
86	SANDSTONE OUTCROPS IN VALLEY WALLS. SPRING DEVELOPED IN ALLUVIAL FILL ABOVE COAL.
87	SEEP BELOW SLOUGH GRASS RESERVOIR. DESIGNATED BY SPRING SYMBOL ON USFS MAP AND TOPO SHEET.
88	SANDSTONE TO THE NE OF SPRING. SPRING DEVELOPED IN ALLUVIAL FILL.
89	SPRING APPEARS TO BE LOCALIZED AT CONTACT BETWEEN MUDSTONE AND SANDSTONE BEDS.
90	SPRING BOX IS DRY. SPRING RUN WET, STANDING WATER IN PLACES. SANDSTONE AND MUDSTONE FORM VALLEY WALL.
91	SANDSTONE LEDGE CUTTING STEEP-SIDED VALLEY. OLD PLASTIC PIPE AND BOARDS BELOW SPRING.
92	UNMAPPED SPRING .5 MILE BELOW PERRY SPRING. OLD COLLAPSED STEEL TANK. SANDSTONE ALONG WALLS.
93	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL. SANDSTONE UNDERLYING CLINKER ABOVE SPRING.
94	SPRING DEVELOPED ON HILLSIDE. SANDSTONE AND CLINKER ABOVE SPRING.
95	SPRING DRY. PIECES OF OLD WOODEN TANK AND PILE OF EXCAVATED DIRT MARK SITE. SOME WATER IN THALWEG.
96	DRY SPRING. SANDSTONE ABOVE SPRING. SANDSTONE ON HILL TOP. (MAY HAVE MISSED THE SITE.)
97	SANDSTONE OUTCROPS ON HILLSIDES. TANK NEARLY EMPTY.
98	LOW HILLS- NO OUTCROPS. AREA OF GROUNDWATER SEEPS APPROX 25 FEET IN DIAMETER. NO DESCRIBABLE FLOW.
99	SEEPS ALONG STREAM BOTTOM. STANDING WATER IN DEPRESSIONS FOR 400 FEET. NO MEASURABLE FLOW.
100	SPRING BOX 50 FEET DUE SOUTH OF SPRING. SANDSTONE ON HILLSIDE.
102	SPRING BOX BELOW CLINKER. NEW RESERVOIR 300 FEET WEST OF SPRING WITH SOLAR-POWER PUMP STATION.
103	SPRING BOX NEAR CONTACT OF SANDSTONE OVERLAYING MUDSTONE.
104	SPRING DEVELOPED BELOW CLINKER- SANDSTONE AND MUDSTONE ABOVE CLINKER.
105	SPRING ISSUES FROM SANDSTONE. SMALL POOL AND WET GROUND FOR 100 FEET BELOW SPRING.
106	SPRING BOX AND TANK ARE DRY. DEVELOPED IN ALLUVIAL VALLEY FILL. CLINKER BEDS WITH SANDSTONE BELOW.
108	SPRING DEVELOPED BELOW OUTCROP OF SANDSTONE.
109	SPRING DEVELOPED IN VALLEY BOTTOM ALLUVIAL FILL BELOW OUTCROPS OF SANDSTONE.
110	DEVELOPED BELOW SANDSTONE NEAR CONTACT WITH MUDSTONE.
111	SANDSTONE OUTCROPS NEAR SPRING . WOODEN TANK.
112	DEVELOPED NEAR SANDSTONE OVERLYING MUDSTONE, WITH THIN COAL SEAMS. WOODEN AND FIBERGLASS TANKS.
113	SPRING DEVELOPED AT HEAD OF COULIE FORMED BY SANDSTONE. FIBERGLASS TANK 350 FEET BELOW OUTCROP.
114	SPRING DEVELOPED NEAR VALLEY WALL WHERE CLINKER AND SANDSTONE OUTCROP.
115	SPRING DEVELOPED BELOW CONTACT BETWEEN CLINKER AND SANDSTONE. WET 500 FT BELOW SPRING BOX.
116	STANDING WATER IN DEPRESSIONS ALONG SPRING RUN. NO OUTCROPS IN AREA.
117	SPRING DEVELOPED BELOW SANDSTONE. STOCK TANK 150 FEET BELOW SPRING BOX.
118	SPRING DEVELOPED ALONG HILLSIDE. NO OUTCROPS, HILL UNDERLAIN BY SANDSTONE AND MUDSTONE.
119	NO MEASURABLE FLOW ALTHOUGH GROUND WET. LOW OUTCROP OF SANDSTONE AND MUDSTONE NEAR SPRING AREA.
120	SPRING DEVELOPED BELOW CLIFF OF SANDSTONE.
121	SPRING DEVELOPED BELOW LOW HILL OF MUDSTONE WITH THIN COAL BEDS BELOW SPRING.



Appendix E--Site Descriptions for Wells and Springs Inventoried on the Ashland Ranger District, 2002 and 2003

122	SPRING DEVELOPED ALONG VALLEY WALL NEAR OUTCROP OF SANDSTONE
123	SPRING DEVELOPED IN A STEEP GULCH. SANDSTONE OUTCROPS NEAR SPRING. FLOW FROM TWO PIPES. 123 IS WEST.
124	SPRING DEVELOPED IN A STEEP GULCH. SANDSTONE NEAR SPRING. FLOW IS FROM TWO PIPES. 124 IS SOUTH.
125	SPRING DEVELOPED BELOW OUTCROP OF UNBURNED COAL UNDERLYING SANDSTONE.
126	SPRING DEVELOPED BELOW SANDSTONE. CLINKER EXPOSED ALONG STREAM BANK 200 FEET UPSTREAM.
127	SPRING DEVELOPED BELOW BAKED SANDSTONE INTERBEDDED WITH THIN BEDS OF CLINKER.
128	SPRING DEVELOPED BELOW MUDSTONE AND SILTSTONE INTERBEDDED WITH THIN LAYERS OF SANDSTONE.
129	SPRING DEVELOPED BELOW LOW RIDGE OF SANDSTONE.
130	SPRING DEVELOPED BELOW SLABS OF SANDSTONE. GROUND AROUND SPRING WET - NOT ALL FLOW DIVERTED TO TANK.
131	CLIFFS OF MUDSTONE CAPPED BY SANDSTONE WEST OF SPRING. SPRING BOX 200 FEET UPSTREAM FROM SPRING.
132	SANDSTONE FORMS VALLEY WALLS.
133	SANDSTONE FORMS VALLEY WALLS.
134	SPRING DEVELOPED BELOW POORLY EXPOSED OUTCROP SANDSTONE.
135	SPRING IN VALLEY WITH SANDSTONE, MUDSTONE AND CLINKER BEDS ABOVE. UNBURNED COAL AT SOURCE.
136	SPRING DEVELOPED NEAR THIN SLABS OF SANDSTONE INTERBEDDED WITH MUDSTONE.
137	SPRING DEVELOPED IN ALLUVIUM. HILLS OF SANDSTONE, MUDSTONE CAPPED BY CLINKER. NO OUTCROPS NEARBY.
138	SPRING DEVELOPED IN ALLUVIAL FILL BELOW SANDSTONE OUTCROPS. IRON PRECIPITATES IN TANK. SULFUR SMELL.
139	SPRING DEVELOPED BELOW HILLS OF POORLY EXPOSED SILTSTONE AND MUDSTONE CAPPED BY CLINKER.
140	SPRING ABANDONED AND DRY. REMNANTS OF OLD WOODEN TANK MARK APPROXIMATE LOCATION IN VALLEY BOTTOM.
141	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL. HILLS SURROUNDING VALLEY HAVE OUTCROPS OF COAL AND CLINKER.
142	SPRING DEVELOPED IN STEEP VALLEY, SANDSTONE OUTCROPS. SPRING BOX LOCATED 325 FEET UPSTREAM FROM TANK.
143	SPRING DEVELOPED IN ALLUVIAL FILL. A FEW THIN BEDS OF SANDSTONE AND SILTSTONE NORTH OF SPRING.
144	SPRING DEVELOPED BELOW OUTCROP OF CLINKER AND UNBURNED COAL
145	SPRING DEVELOPED IN ALLUVIAL FILL . NO OUTCROPS NEAR. SPRING BOX LOCATED 300 FEET UPSTREAM FROM TANK.
146	SPRING DEVELOPED BUT CURRENTLY DRY. TANK LOCATED BELOW SANDSTONE LEDGE.
147	SPRING DEVELOPED NEAR SIDE OF VALLEY. BOULDERS OF CLINKER FLOAT ABOVE SPRING.
148	SPRING DEVELOPED IN COLLUVIUM ON WEST SIDE OF CHANNEL. NORTHERN OF TWO PIPES LEAD TO TANK.
149	SPRING DEVELOPED IN COLLUVIUM ON WEST SIDE OF CHANNEL. SOUTHERN OF TWO PIPES LEAD TO TANK.
150	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL. TOP OF TWO PIPES. OLD ABANDONED WOODEN TANK 100 FEET UPSTREAM.
151	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL. BOTTOM OF TWO PIPES ENTERING TANK.
152	SPRING FREE FLOWS THROUGH PUMP HOUSE TO CONCRETE TANK WITH OVERFLOW TO WOODEN TANK. ALLUVIUM.
153	OLDER DEVELOPMENT WITH WOODEN TANK. INTERBEDDED SANDSTONE, MUDSTONE AND CLINKER
154	SPRING DEVELOPED BELOW EARTH DAM IN ALLUVIAL VALLEY FILL. NO APPARENT SPRING BOX AND NO OUTCROPS IN AREA.
155	UNDEVELOPED. STANDING WATER IN DEPRESSIONS IN CHANNEL BOTTOM.
156	UNDEVELOPED- 100 FEET SLOUGH WITH STANDING WATER UP TO 1 FOOT DEEP IN PLACES. SAME GEOLOGY AS USFS155.
157	UNDEVELOPED SPRING ISSUES FROM BANK IN COLLUVIAL MATERIAL. RUN HAS STANDING WATER FOR SEVERAL 100 FEET.
158	SPRING ABOVE EARTH DAM. STANDING WATER BELOW SPRING AND ABOVE DAM. SANDSTONE NORTHWEST OF SPRING.
159	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL BELOW HILLS UNDERLAIN BY SANDSTONE AND CAPPED BY CLINKER.
160	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL BELOW HILLS UNDERLAIN BY SANDSTONE AND MUDSTONE, CLINKER CAP.

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161	DEVELOPED BELOW SANDSTONE THAT OUTCROPS TO NORTH. SPRING AND TANK ARE DRY. CAPPED BY CLINKER.
162	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL BELOW SANDSTONE CAPPED BY CLINKER BEDS.
163	ABANDONED DEVELOPED SPRING. DRY. REMNANTS OF WOODEN TANK. ALLUVIAL VALLEY FILL.
164	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL. SURROUNDING HILLS CAPPED CLINKER.
165	100 FEET SOUTH OF USFS 164. GEOLOGIC DESCRIPTION SAME AS FOR USFS 164
166	BELOW HILLS CAPPED BY CLINKER BEDS.
167	SPRING DEVELOPED. SOURCE MAY BE CLINKER. WATER IS COFFEE COLORED.
168	SPRING DEVELOPED BELOW MUDSTONE OUTCROP.
169	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL. TWO TANKS - OLDER WOODEN TANK AND NEWER FIBERGLASS TANK.
170	NO OUTCROPS IN AREA OF SPRING.
171	FIBERGLASS TANK BROKEN PIPE RUNNING ON GROUND. SPRING RUN WET SOME WATER . SANDSTONE ABOVE SPRING.
172	SPRING ISSUES IN VALLEY BOTTOM ALLUVIUM. CHANNEL WET FOR SEVERAL HUNDRED FEET. NO MEASURABLE FLOW.
173	SPRING DEVELOPED BELOW EARTH DAM. OUTCROPS OF MUDSTONE AND SILTSTONE EXPOSED ALONG VALLEY WALLS.
174	ABANDONED. SEVERAL OLD TIMBERS AND BOARDS MARK LOCATION. STANDING WATER FOR SEVERAL FEET IN CHANNEL.
175	SPRING DEVELOPED ALONG SIDE OF STREAM CHANNEL 200 FEET ABOVE USFS174. CLINKER FLOAT IN STREAM CHANNEL.
176	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL. NO OUTCROPS IN AREA OF SPRING.
177	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL. BELOW CLINKER INTERBEDDED WITH SANDSTONE. COFFEE COLORED.
178	SPRING ABANDONED. METAL PIPES METAL TANK MARK LOCATION. GROUND AROUND TANK WET, NO MEASURABLE FLOW.
179	SPRING DEVELOPED BELOW COAL UNDERLAIN BY SANDSTONE, OVERLAIN BY MUDSTONE. PIPE BROKEN ABOVE TANK.
180	SPRING DEVELOPED BELOW OUTCROP OF SILTSTONE AND MUDSTONE. EVAPORITIC SALT DEPOSITS BELOW SPRING.
181	SPRING DEVELOPED BELOW RESERVOIR TANK LOCATED 100 FEET NORTH OF FS BOUNDARY ON STATE LAND.
182	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL.
183	SPRING 500 FT ABOVE 182. STANDING WATER IN RUN. NO MEASURABLE FLOW. ISSUES FROM UNCONSOLIDATED ALLUVIUM.
184	UNDEVELOPED SPRING . WEST OF THE SPRING HILLS ARE CAPPED BY THIN CLINKER BEDS.
185	UNDEVELOPED SPRING 300 FEET BELOW 184. SPRING ISSUES FROM UNCONSOLIDATED COLLUVIUM ON EAST BANK.
186	SPRING 1/2 MILE BELOW USFS185. APPEARS TO BE CLINKER.
187	SPRING ISSUES FROM THIN COAL BED. GROUND AROUND SPRING WET AND FROZEN/ NO MEASURABLE FLOW.
188	OLDER DEVELOPED SPRING- CURRENTLY DRY. WOODEN TANK WITH PIPE ENTERING FROM BELOW OUTCROP OF SANDSTONE.
189	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL . RIDGE 200 FEET ABOVE SPRING CAPPED BY THICK CLINKER BED.
190	SPRING DEVELOPED WITH FOUR PIPES ENTERING TANK. IN BAD REPAIR. SPRING ISSUES FROM AREA OF SANDSTONE.
191	UNDEVELOPED SPRING ADJACENT TO HWY 212. ISSUES FROM EARTHEN DAM. FROZEN, UNABLE TO MEASURE FLOW.
192	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL. CURRENTLY DRY. CLINKER FLOAT ALONG STREAM CHANNEL.
193	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL BELOW SANDSTONE. TWO PIPES. PARAMETERS AVERAGE OF TWO PIPES.
194	SPRING ISSUING FROM BOTH SIDES OF DRAINAGE. NO MEASURABLE FLOW. FREE FLOWING WATER ABOVE SEEP.
195	SPRING DEVELOPED IN ALLUVIAL VALLEY FILL BELOW OUTCROP OF MUDSTONE UNDERLYING SANDSTONE.
201	SOURCE MAY BE COAL OR SANDSTONE AND COAL TO N; LARGE CLINKER RIDGE TO N.
202	UNDEVELOPED SPRING, 3 SEEPS FROM COAL IN SOUTH BANK BETWEEN 2 SHALE LAYERS.
203	DEVELOPED; ISSUE POINT NOT CLEAR; MAY BE N65E- 250 FEET. APPEARS TO BE FROM SANDSTONE OR COAL AS AT 204.
204	UNDEVELOPED SPRING; SEEP FROM SOUTH BANK COAL.

Appendix E--Site Descriptions for Wells and Springs Inventoried on the Ashland Ranger District, 2002 and 2003

205	ABANDONED DUGOUT SPRING; SEEPS FROM NE BANK FROM COAL BELOW SANDSTONE. SAME COAL AS 204.
206	DUGOUT SPRING- SOURCE IS ALLUVIUM. NO DISCHARGE.
207	DUGOUT SPRINGS; SOURCE IS ALLUVIUM. NO DISCHARGE. UPPER DUGOUT IS PRIMARY MEASUREMENTS TAKEN THERE.
208	DUGOUT SPRING; DRY. CLINKER RIDGE TOP AND SANDSTONE AND COAL ARE FORMING AN ACTIVE HYDROLOGIC SYSTEM.
209	DEVELOPED SPRING ISSUING FROM EXPOSED COAL BED. ABOVE COAL IS SANDSTONE THEN CLINKER.
210	STOCK WATER CATCHMENT BASIN, VERY SMALL POOL IN SHELTER.
220	SOURCE IS A 2-3 FEET COAL SEAM 15 FEET BELOW UPPER COAL SEAM. 1 CLINKER BED AT TOP OF RIDGE.
221	SOURCE IS GULLY SIDEWALLS COMPRISED OF FRACTURED SANDSTONE AND POSSIBLY CLINKER ON BENCH ABOVE.
222	SOURCE IS A SIDE RIDGE WITH SANDSTONE BEDS AND POSSIBLY CLINKER UNDERNEATH.
223	DRIP ONLY. HORIZONTAL WELL. SOURCE IS SANDSTONE BELOW 3D CLINKER BED BELOW RIDGE TOP.
225	SOURCE IS COHESIVE SANDSTONE BED ABOVE.
226	ABANDONED SPRING.
227	NO FLOW MEASURED.
228	SOURCE IS SANDSTONE UNDERNEATH THE 2D MAJOR CLINKER BED UNDER RIDGE.
230	SOURCE IS THIN COAL SEAM AND SANDSTONE.
232	SOURCE IS CLINKER BED IN SOUTH HILLSLOPE OVERLAYING SANDSTONE.
233	SPRING IS POTHOLE SCOURED IN SHALE SUBSTRATE BY EPHEMERAL FLOWS. SOURCE IS CLINKER ABOVE ON RIDGE.
235	SOURCE IS COLLUVIUM AND ALLUVIUM. ESTIMATED SOURCE LOCATION BASED ON PROXIMITY OF OLD STOCK TANK.
236	ABANDONED STOCK TANK. SOURCE IS SANDSTONE ABOVE THE SPRING AND POSSIBLY A THIN CLINKER. LITTLE FLOW.
238	DUGOUT SPRING IN ALLUVIUM ADJACENT TO CLINKER. CLINKER TO SOUTH AND EAST SHOULD PROVIDE RECHARGE.
239	FORMS AT HEADCUT IN THALWEG. ALLUVIUM IN DRAINAGE. SOURCE IS PROBABLY ADJACENT COAL SEAM.
240	SOURCE IS COAL. FIRST BELOW RIDGE AND CLINKER ADJACENT TO COAL OUTCROP. SC/TEMP TAKEN IN POOL.
241	SOURCE IS SANDSTONE. WATER ISSUES FROM FRACTURES AT BASE AT UNCONFORMING CONTACT WITH SHALE.
242	SEEP. DRAINAGE COMPRISED OF ALLUVIUM AND LARGE BOULDER-SIZED SANDSTONE.
243	HORIZONTAL WELL LOCATED IN A DRAINAGE COMPRISED OF ALLUVIUM.
244	SOURCE APPEARS TO BE ALLUVIUM OVERLAYING FRACTURED SANDSTONE BEDS IN THE STEEP V-DRAINAGE.
245	ALLUVIUM AND BOULDER-SIZED FRACTURED SANDSTONE.
246	SOURCE IS ALLUVIUM AND PROBABLE FRACTURED SANDSTONE.
247	SPRING IN CHANNEL OF PARABOLIC DRAINAGE. SOURCE IS SANDSTONE AND CLINKER. SC- TEMP FROM POOL.
249	SPRING BOX; NORTH OF YAGER WELL. SANDSTONE BED ADJACENT TO CLINKER RIDGES. SC- TEMP TAKEN IN POOL.
251	SPRING HAS BEEN BULLDOZED. CREATED DEEPER HOLES. LOCATED IN NARROW DRAINAGE. CLINKER BEDS CAP RIDGES.
253	TANK IS DRY. SOURCE IS FRACTURED SANDSTONE BEDS ON RIDGES ABOVE WATERSHED CAPPED BY CLINKER.
256	SOURCE IS CLINKER RIDGE OVERLAYING SANDSTONE AND CLINKER ALLUVIUM. LARGE AMOUNT OF SALT AROUND TANK.
257	SPRING FROM COAL SEAM; OUTCROPS UP CHANNEL IN GULLY 50 FEET. SANDSTONE OVERLIES CLINKER IN RIDGES.
258	HIGHLY FRACTURED CLINKER BEDS; AND SANDSTONE TO ENE.
259	FRACTURED CLINKER RIDGES ABOVE; TANK IN A NARROW V-SHAPED DRAINAGE.
260	SPRING IN BOTTOM OF NARROW DRAINAGE; SANDSTONES BEDS CAP RIDGES ABOVE.
261	FRACTURED SANDSTONE BEDS IN ADJACENT HILLS; SPRING IS AT BASE OF STEEP HILLS IN A CHANNEL BOTTOM.
262	UNDEVELOPED; VERY NARROW V-SHAPED DRAINAGE; COHESIVE CLINKER BEDS ON RIDGES WNW OF SPRING.

Appendix E--Site Descriptions for Wells and Springs Inventoried on the Ashland Ranger District, 2002 and 2003

263	SPRING HAS BEEN BULLDOZED TO WIDEN DEEPEN CHANNEL AND CREATE A BERM. UPLAND VEGETATION DAMAGED.
264	SEEP UPCHANNEL FROM WATT DRAW #1. UNDEVELOPED. IN NARROW V-SHAPED DRAINAGE WITH MINIMAL ET.
265	ABANDONED WOODEN TANK MID-WAY DOWNSLOPE IN A WIDE PARABOLIC DRAINAGE. CLINKER ALLUVIUM IN DRAINAGE.
266	SANDSTONE, CLINKER ALLUVIUM IN DRAINAGE BOTTOM. NORTHERN ASPECT.
267	RIDGES ABOVE COMPRISED OF SANDSTONE- HIGHLY WEATHERED. NARROW DRAINAGE.
268	SANDSTONE- HIGHLY WEATHERED. NARROW DRAINAGE.
270	CLINKER ALLUVIUM IN RIDGES AND CHANNEL. SPRING IS AT THE CONFLUENCE OF 2 NARROW DRAINAGES.
271	SOURCE IS SANDSTONE IN STEEP DRAINAGE.
273	SANDSTONE FROM HIGHLY FRACTURED BEDS BELOW CLINKER BED ON RIDGE. VERY NARROW DRAINAGE.
274	OLD WOODEN TANK. SANDSTONE BEDS ON RIDGES; CLINKER TO N; TANK IS APPROX. 2 CLINKER BEDS DOWN.
275	SEEP ONLY; NO FLOW.
277	LOCATED IN NARROW DRAINAGE; SANDSTONE BEDS OVERLAYING CLINKER IN RIDGES; CLINKER ALLUVIUM.
278	SANDSTONE RIDGES CAPPING CLINKER. CLINKER COLLUVIUM AT BASE OF BEDS; ALLUVIUM IN DRAINAGE.
280	AT BASE OF 100-120 FEET OF COHESIVE SANDSTONE; DRAINAGE NARROWS ABOVE SPRING. TALL VEGETATION.
281	DEVELOPED SPRING IN MED- PARABOLIC DRAINAGE; SANDSTONE ALLUVIUM IN DRAINAGE.
282	SPRING IS 2 CLINKER UNITS FROM RIDGETOP; CLINKER ALLUVIUM IN WIDE DRAINAGE.
283	SANDSTONE CAPPING CLINKER BEDS IN RIDGES; CLINKER ALLUVIUM AND COLLUVIUM IN GULLY SIDEWALLS.
284	MEDIUM- PARABOLIC DRAINAGE COMPRISED OF SANDSTONE AND CLINKER ALLUVIUM
285	SPRING IS BELOW RIDGETOP IN A NARROW V-SHAPED DRAINAGE COMPRISED OF SANDSTONE ALLUVIUM.
286	OLD WOODEN TANK IN DRAINAGE COMPRISED OF CLINKER COLLUVIUM AND ALLUVIUM. CLINKER BEDS ON RIDGES.
287	UNDEVELOPED SPRING; CLINKER ALLUVIUM. SANDSTONE SUBSTRATE. (MAY HAVE MISSED THE SITE.)
288	WIDE- PARABOLIC DRAINAGE- 2 CLINKER BEDS ABOVE ON RIDGES; UPPER BED CAPPED WITH SANDSTONE.
289	SEEP IN A NARROW V-SHAPED DRAINAGE COMPRISED OF SANDSTONE ALLUVIUM.
290	SPRING LOCATED MID-CHANNEL IN AN EPHEMERAL STREAM. SANDSTONE ALLUVIUM. SANDSTONE BEDS W OF SPRING.
291	MEDIUM- PARABOLIC DRAINAGE COMPRISED OF SANDSTONE ALLUVIUM. SANDSTONE BEDS IN RIDGES ABOVE.
292	SPRING AT BASE OF RIDGE IN WIDE- PARABOLIC DRAINAGE WITH SANDSTONE ALLUVIUM. SANDSTONE BEDS IN RIDGES.
293	SOURCE IS COAL SEAM. SPRING LOCATED IN MEDIUM PARABOLIC DRAINAGE COMPRISED OF SANDSTONE ALLUVIUM.
294	SPRING IN CHANNEL- BROAD DRAINAGE; BERMED TO CAPTURE FLOW. SOURCE IS SANDSTONE AND CLINKER.
295	TWO POSTS SUNK IN SOIL. MEDIUM PARABOLIC DRAINAGE WITH SANDSTONE ALLUVIUM. NO FIELD PARAMETERS.
296	SPRING IS CLINKER DOWN IN V-SHAPED NARROW DRAINAGE COMPRISED OF SANDSTONE ALLUVIUM. WATER IS FROZEN.
297	PIPE SUBMERGED, FLOW IS ESTIMATED. SPRING IS CLINKER IN DRAINAGE COMPRISED OF SANDSTONE ALLUVIUM.
300	DAMP SPOT IN DRAINAGE BELOW CLINKER AT SANDSTONE. UNDEVELOPED/UNUSED. WATER IN ANIMAL PRINTS.
505	SOURCE IS ALLUVIUM JUST BELOW CLINKER. MAJOR CLINKER IN UPLAND AREAS UNDERLAIN BY MASSIVE SANDSTONE.
506	ISSUES FROM SEVERAL DIFFUSE COLLUVIAL SOURCES ABOUT 40 FEET BELOW CLINKER. SOURCE IS ON PRIVATE.
508	TANK BOTTOM BROKEN, FLOW BYPASSING. SOURCE IS ALLUVIUM AND SANDSTONE FROM EAST.
509	SOURCE IS THIN COALBED AT BASE OF SANDSTONE. SOME FLOW BYPASSING SYSTEM.
510	SOURCE IS THIN COAL UNDER SANDSTONE BLUFF, SAME AS USFS508 AND USFS509. DISCHARGE IS IN STREAM CHANNEL.
511	STOCK SPRING. WOODEN TANK. SOURCE IS SANDSTONE BELOW CLINKER KNOB.
512	STOCK SPRING. TWO TANKS. SOURCE IS SANDSTONE. FLOW FROM NORTH SIDE OF DRAW. SOME STANDING WATER.

Appendix E--Site Descriptions for Wells and Springs Inventoried on the Ashland Ranger District, 2002 and 2003

513	STOCK SPRING. SOURCE IS SANDSTONE NEAR SLOPE BREAK.
514	STOCK SPRING. WOODEN TANK. SOURCE IS SANDSTONE BELOW CLINKER ON RIDGE TO NORTH.
516	STOCK SPRING. SOURCE IS MASSIVE CLINKER ABOUT 100 FEET THICK.
517	SPRING. ALLUVIUM. SANDSTONE AND CLINKER BOULDERS IN HEADCUT. SUPPORTS OVER 100 YARDS OF LIVE STREAM.
519	STOCK SPRING. SOME BROKEN PIPES AND A WET SPOT. SOURCE IS SANDSTONE.
520	DUGOUT STOCK SPRING. FLOW FROM SOUTH BANK. SOURCE IS CLINKER UNDER SANDSTONE.
521	SPRING. SOURCE IS CLINKER ON RIDGE CAP. ROAD CULVERT NOT SEALED. ALL FLOW SEEPS UNDER CULVERT.
522	FROZEN WATER BELOW SANDSTONE OUTCROP. 1500 FEET UPSTREAM IS POSSIBLE DRY SPRING HEAD.
524	SPRING SOURCE IS SANDSTONE. WATER CONDITION CLEAR - COLORLESS - ODORLESS.
525	SPRING ORIGINATES FROM COAL BED WHICH IS OVERLAIN BY MUDSTONE AND SANDSTONE.
526	SPRING BOX 30 FEET UPSTREAM FROM TANK. SOURCE IS SANDSTONE.
527	SPRING ISSUES FROM SANDSTONE. WATER CONDITION CLEAR - COLORLESS - ODORLESS.
528	SPRING FROM CLINKER OVERLAIN BY MUDSTONE AND SANDSTONE. STOCKS TANK ARE DRY. ONE IS WOOD.
529	SOURCE APPEARS TO BE CLINKER OVERLAIN BY SANDSTONE AND MUDSTONE. POOR OUTCROP EXPOSURE.
530	ISSUES FROM SANDSTONE.
531	SOURCE APPEARS TO BE ALLUVIUM.
532	SOURCE FROM LOWER CONTACT BETWEEN 10 FEET THICK COAL BED OVERLAIN BY MUDSTONE AND SANDSTONE.
533	UNABLE TO GET FLOW OR FIELD PARAMETER. AREA AROUND DISCHARGE POINT FLOODED. ALLUVIUM BELOW RESERVOIR.
534	OLD WOODEN TANK, NO INFLOW PIPE. SEVERAL SEEPS IN AREA BUT NO MEASURABLE FLOW. ORIGINATES BELOW COAL.
535	SOURCE IS SANDSTONE INTERBEDDED WITH MUDSTONE. HIGHLY DISSECTED TOPOGRAPHY.
536	SPRING ISSUES FROM BELOW OUTCROP OF SANDSTONE.
538	STOCK TANK FULL. INLET PIPE COMES IN FROM BOTTOM. NO FLOW OR FIELD PARAMETERS COULD BE OBTAINED.
540	SOURCE IS COLLUVIUM BELOW HILL OF SANDSTONE CAPPED BY CLINKER.
541	OLD WOODEN TANK SOURCE IS BELOW SANDSTONE OUTCROP.
542	TWO TANKS UPPER TANK CASCADES TO LOWER TANK. SPRING ORIGINATES IN CLINKER NEAR TOP OF HILL.
543	COLLUVIAL SOURCE. OLD WOODEN TANK. PIPE BROKEN, WATER SEEPING AROUND PIPE. NO FIELD PARAMETERS.
544	SPRING ORIGINATES IN SANDSTONE. OLD WOODEN TANK 100 FEET UPSTREAM.
545	ORIGINATES BELOW CLIFF OF SANDSTONE.
546	ORIGINATES FROM CLINKER NEAR BASE OF COAL.
547	IN VALLEY FLOOR BELOW CLIFF OF SANDSTONE WITH SANDY MUDSTONE.
548	ALLUVIAL VALLEY FILL. SPRING DRY. TWO PIPES. WOOD TANK.
549	IN ALLUVIAL VALLEY FILL. SURROUNDED BY HILLS COVERED BY CLINKER.
550	WOODEN TANK PARTIALLY COLLAPSED. SOURCE IS COLLUVIUM BELOW CLINKER CAPPED HILL.
551	SPRING ORIGINATES IN VALLEY FILL ALLUVIUM BELOW SANDSTONE.
552	SPRING BELOW HILL CAPPED BY SANDSTONE. OLD WOODEN TANK. SPRING IS ABOVE UNMAPPED RESERVOIR.
554	SLABBY SANDSTONE OVERLAIN BY CLINKER. OLD METAL TANK ABANDONED AND FILLED WITH VEGETATION.
555	FIBERGLASS TANK FILLED WITH SEDIMENT. NO MEASURABLE FLOW. GROUND AROUND TANK WET.
556	DEVELOPED. POOR REPAIR. MINIMAL FLOW. UNABLE TO GET DISCHARGE OR FIELD PARAMETERS.
557	NO DISCHARGE TO TANK. SPRING RUN WET. TWO TANKS - FIBERGLASS AND WOODEN. BELOW SANDSTONE LEDGE.

Appendix E--Site Descriptions for Wells and Springs Inventoried on the Ashland Ranger District, 2002 and 2003

558	SPRING BELOW SMALL RESERVOIR. TANK BROKEN. SOURCE ALLUVIAL MATERIAL.
559	ON PRAIRIE DOG CREEK. SOURCE ALLUVIAL VALLEY FILL.
560	OLD DEVELOPMENT. WOOD TANK. SPRING ORIGINATES BELOW SANDSTONE.
561	BROKEN FIBERGLASS TANK, SMALLER TANK INSIDE. ORIGINATES IN ALLUVIAL FILL BELOW SANDSTONE AND RESERVOIR.
562	SOURCE IS ALLUVIUM BELOW HILL OF SANDSTONE AND CLINKER. POOR EXPOSURE.
563	SOURCE IS ALLUVIAL VALLEY FILL
564	TWO TANKS. DIFFICULT TO GET FLOW. SOURCE IS ALLUVIUM.
565	OLD DEVELOPMENT. WOOD TANK BELOW SMALL RESERVOIR IN STREAM CHANNEL. STANDING WATER ONLY.
566	DEVELOPED. ABANDONED. OLD WOOD TANK. STANDING WATER NEAR TANK BUT NO MEASURABLE FLOW.
567	SPRING SOURCE FROM HILLSIDE COMPOSED OF CRUMBLY CLINKER AND BAKED SANDSTONE.
568	BAD REPAIR SOURCE IS CLINKER AND SANDSTONE FORMING A LOW HILL TO SOUTHEAST.
569	SPRING BOX 150 FEET UPSTREAM BELOW HILL COMPOSED OF CLINKER AND YELLOW ORANGE SANDSTONE.
570	UNDEVELOPED SPRING. STANDING WATER IN LOW SPOTS BUT NO MEASURABLE FLOW. SOURCE IS ALLUVIUM
571	DEVELOPED SOURCE IS ALLUVIAL VALLEY FILL.
572	ABANDONED WOOD TANK. WET AREA AND STANDING WATER BELOW MUDSTONE BANK WITH THIN COAL SEAM.
573	DEVELOPED SOURCE IS LOW HILL COMPOSED OF INTERBEDDED SANDSTONE AND MUDSTONE CAPPED BY CLINKER.
574	SPRING ISSUES FROM HILLSIDE WEST OF RESERVOIR FROM MUDSTONE.
575	NO TANK GALV PIPE. SPRING ISSUES FROM COAL BANK overlain BY MUDSTONE WITH SANDY CLINKER ABOVE.
576	SOURCE IS ALLUVIAL VALLEY FILL BELOW CLIFF OF BLOCKY SANDSTONE AND SANDY CLINKER
577	AREA IS OVERGROWN. SOURCE IS BELOW HILL OF SANDY CLINKER.
578	ABANDONED, TWO METAL TANKS.
579	DEVELOPED TANK MOSTLY BURIED IN MUD SOURCE IS CLINKER.
580	ABANDONED, PARTS OF WOOD TANK. FLOW NOT MEASURABLE.
581	DEVELOPED SOURCE IS CLINKER AND SANDY CLINKER
582	SEEPAGE AROUND ABANDONED STOCK TANK FLOW UNMEASURABLE EXPOSURE OF SANDSTONE ABOVE SPRING AREA.
583	ESTIMATED FLOW OF GREATER THAN 1 GPM FROM SEVERAL SEEPS BELOW SANDSTONE overlain BY CLINKER.
584	SOURCE IS BELOW POOR EXPOSURE OF SANDSTONE
585	SOURCE IS SANDSTONE
586	SOURCE IS SANDSTONE
587	DEVELOPED APPEARS ORIGINATE IN ALLUVIAL MATERIAL. LOW ORP INDICATES A DEEPER SOURCE.
588	DEVELOPED ALONG ALLUVIAL VALLEY - SMALL OUTCROP OF SANDSTONE NEARBY
589	SOURCE IS SANDSTONE
590	DEVELOPED IN NARROW VALLEY.
591	SOURCE IS BELOW OUTCROP OF SANDSTONE.
592	SOURCE IS COLLUVIUM
593	DRY, APPARENT SOURCE IS ALLUVIUM.
594	SPRING BOX 150 FEET UPSTREAM FROM TANKS. 2 TANKS. ONLY ONE SPRING SOURCE IS BELOW SANDSTONE.
595	SOURCE IS THIN BEDDED LIGHT YELLOW TO GRAY SANDSTONE
596	SOURCE IS CLINKER AND THIN BEDDED SANDY CLINKER.

Appendix E--Site Descriptions for Wells and Springs Inventoried on the Ashland Ranger District, 2002 and 2003

597	NO TANK. PIECES OF TANK SEEN DOWNSTREAM. SOURCE IS COAL BED overlain BY MUDSTONE.
598	DEVELOPED. SOURCE APPEARS TO BE COLLUVIUM
599	SOURCE IS CLINKER. SPRING NEAR TOP OF HILL.
600	UPPER SITE HAS FIBERGLASS TANK WITH OVERFLOW PIPE TO LOWER SITE WITH NO TANK. SOURCE IS SANDSTONE.
601	SOURCE IS SANDSTONE.
602	SOURCE IS CLINKER, LITTLE FLOW.
603	SOURCE IS SANDSTONE overlain BY MUDSTONE.
604	SOURCE IS SANDY CLINKER.
605	SERIES OF SMALL CHANNEL DAMS. NO MEASURABLE FLOW. STANDING WATER BEHIND DAMS AND IN LOW SPOTS.
606	BELOW THIN RIDGE OF SANDSTONE.
607	OLD SITE, PART OF WOODEN TANK NEAR SPRING BOX. FIBERGLASS TANK 105 FEET DOWN CHANNEL. SANDSTONE.
608	SOURCE IS SANDY CLINKER. SPRING IS ON HILLSIDE.
609	TWO PIPES. OLD WOOD TANK. SOURCE IS SANDSTONE.
612	UNABLE TO OBTAIN FLOW. TANK ABANDONED. GROUND WET. SOURCE IS BELOW SANDSTONE.
613	SPRING ORIGINATED IN COLLUVIUM BELOW RIDGE OF CLINKER.
614	SPRING IS THIN COAL SEAMS capped BY RIDGE FORMING SANDSTONE.
615	SOURCE IS COLLUVIUM BELOW CLIFF OF CLINKER AND SANDY CLINKER.
616	SOURCE IS BELOW CLIFF COMPOSED OF CLINKER AND SANDY CLINKER.
617	SOURCE IS BELOW LOW RIDGE OF SANDY CLINKER.
618	SOURCE IS SANDSTONE.
619	MAY BE ON PRIVATE LAND. SOURCE IS SAME AS USFS 620 ON FOREST. SANDSTONE.
620	SAME SOURCE AS USFS 619. SANDSTONE.
621	SANDSTONE.
622	SOURCE IS SANDSTONE.
623	SOURCE IS SANDY CLINKER UNDERLAIN BY MUDSTONE.
624	ABANDONED. WET AREA AROUND TANK BELOW RIDGE OF CLINKER.
625	SOURCE IS BELOW CLINKER RIDGE.
626	SOURCE IS CLINKER.
627	TANK FULL, NO INLET PIPE TO SAMPLE WATER COMES THROUGH HYDRANT VALVE UNABLE TO GET PARAMETERS.
628	SOURCE IS INTERBEDDED MUDSTONE AND SANDSTONE.
629	DEVELOPED. DRY.
630	SOURCE IS SANDSTONE LEDGE.
631	DEVELOPED. TIRE FOR TANK. OVERGROWN.
633	DEVELOPED. NO OUTCROP NEARBY.
634	SOURCE IS SANDSTONE overlying MUDSTONE.
635	DEVELOPED. ABANDONED OLD WOODEN TANK. OVERGROWN.
636	DRY. APPARENT SOURCE IS FROM SANDSTONE.
650	STOCK SPRING. SOURCE IS COLLUVIUM. SPRING IS BELOW THICK CLINKER.
652	STOCK SPRING. SOURCE IS COLLUVIUM.

Appendix E--Site Descriptions for Wells and Springs Inventoried on the Ashland Ranger District, 2002 and 2003

653	STOCK SPRING. SOURCE IS ALLUVIUM. ADJACENT TO THIN COAL.
655	STOCK SPRING. SOME WATER BY PASSING TANK. MUDDY SMALL POOLS. SOURCE IS SANDSTONE FEEDING COLLUVIUM.
657	STOCK SPRING. NO FLOW. SOME WATER STANDING IN COW TRACKS. SOURCE IS SANDSTONE BELOW COAL.
658	SPRING IN ALLUVIUM. ADJACENT TO SANDSTONE BELOW COAL. WATER SLIGHTLY MURKY.
660	STOCK SPRING. COLLAPSED WOODEN TANK. WET SOIL ADJACENT TO TANK. SOURCE IS COAL.
661	WET AREA WITH BROKEN PIPES AND ABANDONED TANK. SOURCE COLLUVIUM. ADJACENT TO SANDSTONE.
662	STOCK SPRING. SOURCE IS CLINKER. APPEARS TO BE CLINKER.
663	DEVELOPED BUT POORLY MAINTAINED STOCK SPRING. SOURCE IS THICK COAL, PARTLY BURNED.
664	BUFFALO IN THIS PASTURE PRECLUDED DIRECT SITE VISIT. DISCUSSED WITH STOCK GROWER.
665	PRESENCE OF BUFFALO PRECLUDED HIKING TO SITE. LOCAL GROWER REPORTS THAT A SPRING FEEDS THIS RESERVOIR.
666	STOCK SPRING. DEVELOPMENT AS HORIZONTAL WELL. SOURCE IS COAL.
667	STOCK SPRING. STOCK GROWER REPORTS THIS SPRING IS ACTUALLY ON PRIVATE LAND.
668	DUE TO BUFFALO AT SPRING COULD NOT COMPLETE SITE INVENTORY. DISCUSSED WITH STOCK GROWER.
669	STOCK SPRING. NO LONGER MAINTAINED. SOME WATER STANDING IN THALWAG. SOURCE IS COAL.
670	STOCK SPRING. NO FLOW, COLLECTION BOX IS DRY. SOURCE IS CLINKER.
671	STOCK SPRING. SOURCE IS SANDSTONE.
672	STOCK SPRING. SOURCE IS CLINKER.
673	STOCK SPRING. DRY. SOURCE IS CLINKER.
674	STOCK SPRING. SOURCE IS COLLUVIUM.
675	STOCK SPRING. SOURCE IS COAL.
676	STOCK SPRING. SOURCE IS SANDSTONE.
677	STOCK SPRING. SOURCE IS SANDSTONE.
680	ELECTRIC PUMP, NOT CURRENTLY PUMPING.
681	WELL WAS BEING PUMPED.
682	WELL WAS BEING PUMPED. PUMPING WATER LEVEL 3.17 FT BELOW TOC.
683	WINDMILL. WELL HEAD INACCESSIBLE.
684	WINDMILL. DISCONNECTED. WELL HEAD INACCESSIBLE.
685	WINDMILL. PUMPING. WELL HEAD INACCESSIBLE.
686	WELL IS FENCED NEXT TO TANK.
687	WELL IS FENCED.
688	DEPTH TO WATER EXCEEDS PROBE LENGTH.
689	PUMPING. DISCHARGE TO TANK NEAR WELL SITE.
690	PUMPING. NO DISCHARGE POINT NEAR WELL
691	PUMPING. DISCHARGE TO TANK NEAR WELL PUMP HOUSE
692	PUMPING. NO DISCHARGE POINT NEAR WELL. WELL HEAD INACCESSIBLE.
693	WELL HEAD INACCESSIBLE.
694	PUMPING. DISCHARGE TO TANK 50 FEET WEST OF WELL.
695	PUMPING. NO DISCHARGE POINT NEAR WELL
696	CURRENTLY NOT BEING PUMPED.



Appendix E--Site Descriptions for Wells and Springs Inventoried on the Ashland Ranger District, 2002 and 2003

697	STOCK WELL. WINDMILL AND GAS PUMP JACK.
698	NOT PUMPING. WINDMILL
699	WINDMILL. NO DEPTH MEASUREMENT.
700	STOCK WELL WITH PUMP AND TANK, NEAR ERICKSON SPRING.
701	SANDSTONE OUTCROP ON CLIFF TO NORTH.

Appendix F—Photographs of springs inventoried on the Ashland Ranger District, 2002 and 2003. The numbers on the thumbnails, correspond to the GWIC ID number. To view full size image, click on file in the Appendix F Photos folder on the CD.



[7246.jpg](#)



[7247.jpg](#)



[7249.jpg](#)



[7253.jpg](#)



[7418.jpg](#)



[7422.jpg](#)



[7565.jpg](#)



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198768.jpg



198777.jpg



198810.jpg



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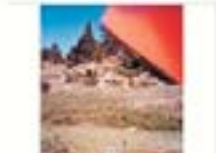
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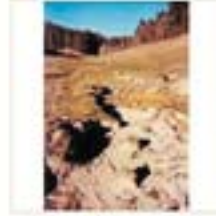
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b\_205072.jpg

Appendix G—Regular monitoring sites on the Ashland Ranger District

Site Number (see map)	Spring Name	Township	Range	Section	Tract	GWIC ID	Latitude	Longitude	USGS Quadrangle
571	DEVAULT SPRING	01S	46E	16	BADC	204994	45.75252	-106.05901	HAYES POINT
168		02S	46E	13	BACD	199600	45.66381	-105.99662	STACEY
149	BIDWELL SPRING NORTH PIPE	02S	47E	19	CCCC	198819	45.64039	-105.96278	STACEY
152	HOLIDAY SPRING	02S	47E	19	CDDB	7253	45.63929	-105.97421	STACEY
180	COAL BANK SPRING	03S	46E	18	BDAD	7418	45.57397	-106.09590	COLEMAN DRAW
145	FRARY SPRING	03S	47E	7	AADC	198811	45.59050	-105.96308	HOME CREEK BUTTE
141	LEMONADE SPRING	03S	47E	28	ACAA	198766	45.54553	-105.92551	HOME CREEK BUTTE
273	MINERAL YAGER SPRING	04S	46E	28	DAAB	7606	45.45578	-106.05491	YAGER BUTTE
75	LOWER BRIAN 2 SPRING	05S	45E	18	AACC	7767	45.40665	-106.21769	KING MOUNTAIN
143	EAST FORK SPRING	05S	46E	16	ACBA	198777	45.63373	-105.99103	STACEY
138	WILEY USE SPRING	05S	46E	20	ABAC	7796	45.39274	-106.08089	YAGER BUTTE
136	ROCK JOB SPRING	06S	45E	3	DADD	199589	45.34201	-106.19891	FORT HOWES
581	HAGEN 2 SPRING	06S	45E	6	ACDC	205004	45.34499	-106.26879	POKER JIM BUTTE
13		06S	45E	23	DCDC	197395	45.29533	-106.18504	FORT HOWES
126	HEDUM SPRING	06S	46E	26	CDBA	199568	45.28231	-106.07098	GOODSPEED BUTTE
110	TWO TROUGH SPRING	06S	47E	14	BDCC	199566	45.31576	-105.93507	PHILLIPS BUTTE
524	PIPER DRAW SPRING	06S	47E	19	DACD	204951	45.29899	-106.01122	GOODSPEED BUTTE
588	JOE ANDERSON SPRING	06S	47E	34	CABA	205011	45.27145	-105.95470	PHILLIPS BUTTE
587	NORTH FORK SPRING	06S	48E	20	BDCA	205010	45.29962	-105.87358	HODSON FLATS
118	WILLOW SPRING	06S	48E	30	DBBA	199573	45.28307	-105.88789	PHILLIPS BUTTE
530	CLARK DRAW 2 SPRING	07S	43E	24	BCAA	204957	45.21624	-106.41474	STROUD CREEK
529	CLARK DRAW 1 SPRING	07S	43E	24	CADA	204956	45.21106	-106.40957	STROUD CREEK
527	STOCKER DRAW SPRING	07S	44E	19	CDCC	204954	45.20897	-106.39490	STROUD CREEK
628	CHIPMUNK SPRING	07S	44E	21	CCBB	205049	45.21198	-106.36105	HAMILTON DRAW
2		07S	46E	31	BACD	197452	45.19141	-106.15005	OTTER
121		07S	47E	2	AACD	199576	45.26121	-105.92070	PHILLIPS BUTTE
620	SCHOOL HOUSE SPRING	07S	47E	32	BABA	205041	45.19444	-106.00808	REANUS CONE
613	WATER GAP SPRING	07S	48E	17	AADB	205034	45.22991	-105.85939	BLOOM CREEK
84	WOLF DEN SPRING	07S	48E	29	DBCC	197868	45.19265	-105.86749	BLOOM CREEK

Appendix G—Regular monitoring sites on the Ashland Ranger District

<b>Photo Point</b>
S85W, 25 FT FROM TANK
S80W, 50 FT FROM TANK
N30E, 50 FT FROM TANK
S70E, 25 FT FROM CONCRETE TANK
S25W, 25 FT FROM TANK
S75E, 25 FT FROM TANK
S15W, 50 FT FROM TANK
S65E, 50 FT FROM TANK
S70E, 50 FT FROM TANK
S45W, 50 FT FROM TANK
N30E, 100 FT FROM TANK
S80W, 25 FT FROM TANK
S, 10 FT FROM THALWEG
S85E, 50 FT FROM TANK
N, 50FT FROM TANK
N25W, 25 FT FROM TANK
S60E, 25 FT FROM TANK
N70W, 25 FT FROM TANK
S55E, 125 FT FROM TANK
N10E, 50 FT FROM TANK
N5E, 50 FT FROM TANK
E, 50 FT FROM TANK
N, 25 FT FROM TANK
E, 50 FT OF SOURCE AREA, 2ND PHOTO SW, 75 FT FROM TANK
S75E, 50 FT FROM TANK
S60E, 25 FT FROM TANK
N70E, 25 FT FROM TANK
N35W, 75 FT FROM TANK

Appendix H–Spring and Well Data on File for the Ashland Ranger District for Sites not Inventoried During the 2002-2003

GWIC ID	Site Name	Latitude	Longitude	Geomethod	Township	Range	Section	Tract	Site Type
160991	USDA CUSTER NATIONAL FOREST	45.78040	-106.02380	MAP	01S	46E	2	DB	WELL
94661	CUSTER NATIONAL FOREST LISCOM WELL	45.77820	-106.03230	NAV-GPS	01S	46E	3	DBAA	WELL
94662	CUSTER NATIONAL FOREST*WELL#4	45.78070	-106.05030	MAP	01S	46E	4	AD	WELL
160988	USDA FOREST SERVICE	45.77270	-106.05680	MAP	01S	46E	4	DC	WELL
160989	USDA FOREST SERVICE	45.78600	-106.07950	MAP	01S	46E	5	BA	WELL
94664	GRISH RANCHS INC	45.76130	-106.07520	MAP	01S	46E	8	DBA	WELL
160990	USDA FOREST SERVICE	45.76410	-106.03510	MAP	01S	46E	10	AC	WELL
94665	CUSTER NATIONAL FOREST*WELL#1	45.75280	-106.00330	MAP	01S	46E	13	BB	WELL
94666	CUSTER NATIONAL FOREST COYOTE WELL	45.75240	-106.05050	NAV-GPS	01S	46E	16	AACC	WELL
94668	ROONEY INC.	45.73620	-106.04700	TRS-TWN	01S	46E	22	CAA	WELL
94694	L J GREEN RANCH	45.75220	-105.97960	MAP	01S	47E	18	BAC	WELL
94716	WILSTE GARY L	45.71110	-105.95890	TRS-TWN	01S	47E	32	A	WELL
94717	WILSTE GARY	45.71110	-105.95890	TRS-TWN	01S	47E	32	A	WELL
94740	GASKILL DICK	45.71930	-105.85290	MAP	01S	48E	30	CA	WELL
94741	MERCHANT DALLAS AND SON	45.70520	-105.82820	TRS-TWN	01S	48E	32	DA	WELL
98566	TERRETT JULIAN	45.69570	-106.15020	TRS-TWN	02S	45E	2	B	WELL
98571	TERRETT JULIAN JR.	45.67630	-106.14650	MAP	02S	45E	11	BC	WELL
7239	USFS COLBERT COULEE* .5 MI W SHY RESERVOIR	45.65970	-106.20970	MAP	02S	45E	17	CBBB	WELL
7240	COOK CREEK * 6.5 MI SW BEAVER CK SCHOOL	45.64500	-106.18470	MAP	02S	45E	21	CABC	STREAM
7244	*GASKILL R. * 5.1 M NW HOME CREEK SCHOOL	45.61910	-106.11860	MAP	02S	45E	36	ACBA	SPRING
98583	KOLKA RANCH	45.68990	-106.01240	MAP	02S	46E	2	AC	WELL
98584	U S FOREST SERVICE * CUSTER	45.68990	-106.01240	MAP	02S	46E	2	AC	WELL
98585	U S FOREST SERVICE * CUSTER	45.68720	-106.03680	MAP	02S	46E	3	CA	WELL
7245	USFS * 2.5 M SW BEAVER CREEK SCHOOL	45.69190	-106.06880	MAP	02S	46E	5	AACB	WELL
98586	U S FOREST SERVICE * CUSTER WELL 1	45.69170	-106.08380	TRS-TWN	02S	46E	5		WELL
98587	GASKILL RAY	45.69450	-106.09480	TRS-TWN	02S	46E	6	ADA	WELL
98588	U S FOREST SERVICE * CUSTER NO 4	45.67880	-106.05290	MAP	02S	46E	9	AB	WELL
98589	WOODS O.C. & ELVY M.*WELL 1	45.68280	-106.03110	TRS-TWN	02S	46E	11	BB	WELL
98590	U S FOREST SERVICE * CUSTER	45.66410	-106.03220	MAP	02S	46E	15	AB	WELL
7248	USFS * 4.2 M S BEAVER CREEK SCHOOL	45.66500	-106.07750	MAP	02S	46E	17	BACA	SPRING
98592	DOUBLE H. RANCH*WELL 8	45.62460	-106.05110	TRS-TWN	02S	46E	27	CC	WELL
898395	OTTER CREEK #2	45.62130	-106.06500	MAP	02S	46E	33	BAAC	PETWELL
98596	HANSON DARREL	45.62020	-106.04450	TRS-TWN	02S	46E	34	BAD	WELL
98597	DOUBLE H. RANCH	45.61720	-106.05100	TRS-TWN	02S	46E	34	BC	WELL
98598	DOUBLE H. RANCH*WELL 5	45.61720	-106.05100	TRS-TWN	02S	46E	34	BC	WELL
98633	BUTTS CALVIN	45.66620	-105.93530	TRS-TWN	02S	47E	16	A	WELL
98634	BUTTS CALVIN*2	45.66620	-105.93530	TRS-TWN	02S	47E	16	A	WELL
98636	KOLKA CATTLE CO.*5	45.66230	-105.94070	TRS-TWN	02S	47E	16		WELL
898413	N P RY CO. #1-A	45.64090	-105.97930	MAP	02S	47E	19	CC	PETWELL
183564	CUSTER NATIONAL FOREST WHITETAIL RANGER STATION	45.64040	-105.97580	NAV-GPS	02S	47E	19	CDCA	WELL
129980	USDA FOREST SERVICE	45.64220	-105.97310	TRS-TWN	02S	47E	19	DDA	WELL
98639	KOLKA RANCH	45.64430	-105.95020	TRS-TWN	02S	47E	21	CBC	WELL
98644	HANSON DELBERT*4	45.61490	-105.95350	TRS-TWN	02S	47E	32	DA	WELL
98673	GASKILL ANDY	45.63450	-105.81820	TRS-TWN	02S	48E	28	BD	WELL
191032	GOLD JOHN H.	45.61550	-105.84260	MAP	02S	48E	31	DA	SPRING
7364	CUSTER NAT'L FOREST * ASHLAND RANGER STAT.	45.59330	-106.27130	MAP	03S	44E	11	BCAB	WELL
7375	SCHOENOVER JOHN	45.60660	-106.16050	MAP	03S	45E	3	BADD	WELL
7386	U S FOREST SERVICE * CUSTER	45.56940	-106.14770	UNKNOWN	03S	45E	14	CCAC	WELL

Appendix H - Spring and Well Data on File for the Ashland Ranger District for Sites not Inventoried During the 2002-2003

GWIC ID	Site Name	Latitude	Longitude	Geomethod	Township	Range	Section	Tract	Site Type
100474	F.H. RANCH CO.	45.57060	-106.14370	TRS-TWN	03S	45E	14		WELL
100492	PHILLIPS JAMES JR.	45.55770	-106.11560	TRS-TWN	03S	45E	24	AD	WELL
911415	USA MT-035009 #24X-1	45.59600	-105.99490	MAP	03S	46E	1	CD	PETWELL
7406	DOUBLE H RANCH INC	45.60740	-106.06720	MAP	03S	46E	5	AAB	WELL
920893	OTTER CREEK UNIT 1-5	45.59500	-106.08150	MAP	03S	46E	5	CCD	PETWELL
7409	U S FOREST SERVICE * CUSTER	45.59000	-106.08880	MAP	03S	46E	7	ADBB	WELL
7410	GOV NO. 35-46 * DST NO. 1 * BOTTOM SAMPLE*	45.58800	-106.07580	UNKNOWN	03S	46E	8	BD	WELL
895007	ANSCHUTZ DRILLING CO.- ANSCHUTZ NO. 1 GO	45.58800	-106.07630	MAP	03S	46E	8	BD	PETWELL
895023	ANSCHUTZ DRILLING CO.-ANSCHUTZ NO. 1 GOV'T	45.59190	-106.07580	MAP	03S	46E	8	BD	PETWELL
895271	ANSCHUTZ DRILLING CO * ANSCHUTZ NO. 1 GO	45.58800	-106.07630	MAP	03S	46E	8	BD	PETWELL
911155	GOVT. #35-46	45.58660	-106.08590	TRS-TWN	03S	46E	8	BD	PETWELL
100506		45.57820	-106.07420	TRS-TWN	03S	46E	8	DDD	WELL
100507	TRUSSLER TOM	45.57420	-106.00150	TRS-TWN	03S	46E	13	ACB	WELL
133487	TRUSSLER TOM	45.57220	-105.99480	MAP	03S	46E	13		WELL
100509	HANIC ANTHONY	45.56520	-106.03070	TRS-TWN	03S	46E	14	CC	WELL
7416	U S FOREST SERVICE * CUSTER	45.57300	-106.04690	MAP	03S	46E	16	ADCB	WELL
100513		45.57340	-106.06760	MAP	03S	46E	17	ADB	WELL
100515	WIECHMAN W.C.	45.56460	-106.08060	TRS-TWN	03S	46E	17	DC	WELL
899021	GOVT.MULLINNIX #1	45.56840	-106.09320	MAP	03S	46E	18	DBBD	PETWELL
7419	U S FOREST SERVICE * CUSTER	45.56020	-106.09220	MAP	03S	46E	19	ADBA	WELL
100519	U S FOREST SERVICE * CUSTER	45.55570	-106.07200	MAP	03S	46E	20	DBAB	WELL
100521	U S FOREST SERVICE * SHEEP WAGON WELL	45.55300	-106.05820	MAP	03S	46E	21	CACD	WELL
100520	U S FOREST SERVICE * CUSTER	45.55560	-106.06100	MAP	03S	46E	21	CBBA	WELL
100522	WIECHMAN W.C.	45.55980	-106.03780	TRS-TWN	03S	46E	22	A	WELL
100523	CUSTER NATIONAL FOREST	45.56190	-106.00560	MAP	03S	46E	23	AA	WELL
100524	U S FOREST SERVICE * CUSTER	45.56190	-106.00560	MAP	03S	46E	23	AA	WELL
7421	U S FOREST SERVICE * THOMAS DRAW WELL	45.54220	-106.10660	MAP	03S	46E	30	BCDC	WELL
100526	CAIN OSCAR	45.60620	-105.88320	TRS-TWN	03S	47E	1	B	WELL
100529	KNUDSON RANCH CO.	45.55540	-105.98360	TRS-TWN	03S	47E	19	CAA	WELL
155049	MT DEPT OF HWYS * CAMPS PASS-EAST #2	45.55670	-105.98200	TRS-TWN	03S	47E	19		BOREHOLE
155047	MT DEPT OF HWYS * CAMPS PASS-EAST #1	45.55750	-105.89820	TRS-TWN	03S	47E	23		BOREHOLE
100530	SAMUELSON BROS.	45.55540	-105.87490	TRS-TWN	03S	47E	24	DB	WELL
100532	FORTNER TIM	45.54540	-105.93280	MAP	03S	47E	28	BDA	WELL
122348	KNUDSON RANCH CO	45.54070	-105.93090	TRS-TWN	03S	47E	28	DAA	WELL
100533	CUSTER N.F.	45.54050	-105.96880	MAP	03S	47E	30	DB	WELL
917555	GOVT. #35-47	45.52080	-105.93220	TRS-TWN	03S	47E	33	DD	PETWELL
100535	KNUDSON RANCH CO.	45.53270	-105.92200	TRS-TWN	03S	47E	34	BA	WELL
101937	US DEPT OF AGRICULTURE*USFS	45.50390	-106.25140	TRS-TWN	04S	44E	12	B	WELL
101936	MCKELVEY GLEN	45.50820	-106.24850	MAP	04S	44E	12	BA	WELL
101938	SCHAUDEL ROBERT G. AND MARGIE B.	45.48650	-106.28760	TRS-TWN	04S	44E	15		WELL
101943	CUSTER NATIONAL FOREST	45.48200	-106.28030	MAP	04S	44E	22	ABA	WELL
101945	U S FOREST SERVICE	45.46360	-106.30890	TRS-TWN	04S	44E	28	BADA	WELL
101962	BADGETT KIRK	45.48030	-106.21730	TRS-TWN	04S	45E	18	DD	WELL
101963	BADGETT KIRK & WALLACE	45.48030	-106.21730	TRS-TWN	04S	45E	18	DD	WELL
101965	CAPRA LOUIS	45.46890	-106.21580	TRS-TWN	04S	45E	19	DAD	WELL
101966	USFS*CUSTER NF	45.46610	-106.21720	TRS-TWN	04S	45E	19	DD	WELL
7590	THEX-GASKILL SARA	45.46630	-106.21060	TRS-TWN	04S	45E	20	CCAD	WELL
7599	CUSTER NF * 19 MI E SONNETTE MT.	45.44220	-106.20750	MAP	04S	45E	32	CADC	WELL
101974	USFS * CUSTER NF * NORTH FORK THREE MILE WELL	45.50820	-105.99270	MAP	04S	46E	1	DD	WELL



Appendix H - Spring and Well Data on File for the Ashland Ranger District for Sites not Inventoried During the 2002-2003

GWIC ID	Site Name	Latitude	Longitude	Geomethod	Township	Range	Section	Tract	Site Type
174014	POWDER RIVER COUNTY*S9-B9-38	45.51190	-106.00760	TRS-TWN	04S	46E	1		WELL
101976		45.51510	-106.09300	TRS-TWN	04S	46E	5	BCB	WELL
7600	USFS * CUSTER NF * THREE MILE WELL	45.51610	-106.09270	MAP	04S	46E	5	BCBC	WELL
101978	TARTER DH	45.50980	-106.10720	TRS-TWN	04S	46E	6	CAC	WELL
7602	USFS * CUSTER NF * MCLATCHY DRAW WELL	45.49670	-106.09280	MAP	04S	46E	8	CBCC	WELL
898347	G.A.R.FEDERAL #1-8	45.49410	-106.09000	MAP	04S	46E	8	CCA	PETWELL
7603	USFS * CUSTER NF * MIDDLE PASTURE WELL	45.50360	-106.07050	MAP	04S	46E	9	BBCA	WELL
161285	USFS * CUSTER NF	45.49740	-106.03350	MAP	04S	46E	10	DA	WELL
7604	USFS * CUSTER NF * NUTTER WELL	45.49790	-106.03520	MAP	04S	46E	10	DABC	WELL
149839	USFS * CUSTER NF * STAFFORD WELL	45.50930	-106.02820	MAP	04S	46E	11	BBBA	WELL
101983	SHY GEORGE	45.50580	-106.00780	MAP	04S	46E	12	BBA	WELL
921039	TRUSLER #1-13	45.47850	-106.01010	TRS-TWN	04S	46E	13	CD	PETWELL
101985	CUSTER NATIONAL FOREST	45.47990	-106.04870	MAP	04S	46E	15	CC	WELL
101986	USFS * CUSTER NF * SHORTY RIDGE WELL	45.47990	-106.04870	MAP	04S	46E	15	CC	WELL
921170	ATLANTIC-FED #1-20	45.46820	-106.09190	TRS-TWN	04S	46E	20	CB	PETWELL
101987	USFS * CUSTER NF * LOWER 3 MILE WELL	45.45780	-106.04860	TRS-TWN	04S	46E	27	BD	WELL
101988		45.45680	-106.11010	MAP	04S	46E	30	BCD	WELL
101990	NEWCOMER EARL & OLA LUE*WELL#2	45.44180	-106.10380	TRS-TWN	04S	46E	31		WELL
101991	NEWCOMER EARL & OLA LUE*WELL#3	45.44180	-106.10380	TRS-TWN	04S	46E	31		WELL
101992	NEWCOMER EARL & OLA LUE*WELL#5	45.44180	-106.10380	TRS-TWN	04S	46E	31		WELL
101993	NEWCOMER EARL & OLA LUE	45.44210	-106.08420	TRS-TWN	04S	46E	32		WELL
101994	USFS*CUSTER	45.43640	-106.07270	TRS-TWN	04S	46E	33	CC	WELL
101995	CUSTER NATIONAL FOREST	45.43640	-106.07270	TRS-TWN	04S	46E	33	CC	WELL
149840	ROONEY LEWIS	45.44210	-106.06500	TRS-TWN	04S	46E	33		WELL
7611	USFS * CUSTER NF * NEWCOMER SPRING	45.44630	-106.03800	MAP	04S	46E	34	ABDB	SPRING
102003	KNUDSEN RANCH CO.	45.46160	-105.94370	TRS-TWN	04S	47E	28	BB	WELL
915376	MONT. 3260 #28-13	45.45030	-105.94370	TRS-TWN	04S	47E	28	CC	PETWELL
898919	CALVERT-FED 12-14	45.40330	-106.39500	MAP	05S	43E	14	BCDB	PETWELL
103153	U S FOREST SERVICE	45.42680	-106.33440	TRS-TWN	05S	44E	5	C	WELL
103154	U S FOREST SERVICE	45.41430	-106.31070	TRS-TWN	05S	44E	9	CA	WELL
134022	U S FOREST SERVICE * ASHLAND DISTRICT	45.40820	-106.30670	TRS-TWN	05S	44E	16	ABB	WELL
204776	BULL GARY	45.39620	-106.30540	TRS-TWN	05S	44E	16	DC	WELL
921523	FEDERAL 1-19	45.38360	-106.35510	TRS-TWN	05S	44E	19	C	PETWELL
921264	TRI-COUNTY-1	45.38540	-106.27440	TRS-TWN	05S	44E	23	CB	PETWELL
103156	U S FOREST SERVICE	45.37840	-106.27910	TRS-TWN	05S	44E	27	AA	WELL
897434	M-4212-1	45.36910	-106.35660	MAP	05S	44E	30	CCAB	PETWELL
897421	MT. 3-4210-1	45.36410	-106.25300	MAP	05S	44E	36	BB	PETWELL
103158	U S FOREST SERVICE	45.43260	-106.19930	TRS-TWN	05S	45E	5	A	WELL
7757	USFS FOREST SERVICE - CHROMO SPRING	45.42940	-106.21810	NAV-GPS	05S	45E	6	DABC	SPRING
103159	U S FOREST SERVICE	45.41680	-106.22220	TRS-TWN	05S	45E	7	AC	WELL
7758	BR. SPRING * 20 MI SW SONNETTE MT.	45.41750	-106.20550	MAP	05S	45E	8	BDDD	SPRING
7770	USGS RESEARCH WELL WO-08	45.39220	-106.14110	MAP	05S	45E	23	ABCA	WELL
7772	USGS OBS WELL * WO #9 ON USFS LAND	45.39250	-106.14190	MAP	05S	45E	23	ABCA	WELL
7775	USGS RESEARCH WELL WO-10	45.39250	-106.14300	MAP	05S	45E	23	ABCB	WELL
7780	USGS OBS WELL * WO NO. 1 ON USFS LAND	45.39470	-106.14940	MAP	05S	45E	23	BBAA	WELL
7781	USGS OBS WELL * WO NO. 2 ON USFS LAND	45.39470	-106.14940	MAP	05S	45E	23	BBAA	WELL
7782	USGS OBS WELL * WO NO. 3 ON USFS LAND	45.39470	-106.14940	MAP	05S	45E	23	BBAA	WELL
7786	USFS * CUSTER NF * LOWER PADGET WELL	45.37440	-106.16690	MAP	05S	45E	27	BDDB	WELL
7787	USFS * CUSTER NF * UPPER PADGET WELL	45.38020	-106.19270	MAP	05S	45E	28	BBBA	WELL

Appendix H - Spring and Well Data on File for the Ashland Ranger District for Sites not Inventoried During the 2002-2003

GWIC ID	Site Name	Latitude	Longitude	Geomethod	Township	Range	Section	Tract	Site Type
103173	DUNNING SIDNEY F	45.37270	-106.22450	TRS-TWN	05S	45E	30		WELL
103174	USFS * CUSTER NF * PERRY WELL	45.36380	-106.20730	TRS-TWN	05S	45E	32	BA	WELL
103179	TRUSLER W.C.	45.42610	-106.02990	MAP	05S	46E	2	CB	WELL
103181	WATT WINSTON DAVID & RUTH	45.42610	-106.05780	TRS-TWN	05S	46E	4	DA	WELL
103183	U S FOREST SERVICE * CUSTER	45.43140	-106.08940	TRS-TWN	05S	46E	5	B	WELL
7794	* CUSTER NF * 1.3 M W SONNETTE MT	45.43250	-106.08690	MAP	05S	46E	5	BDCB	WELL
103184	HORSE CREEK RANCH	45.41060	-106.08130	MAP	05S	46E	8	DC	WELL
103185	SHOCKEY ARTHUR	45.41830	-106.03610	MAP	05S	46E	10	AC	WELL
103186	SHOCKEY ARTHUR	45.41830	-106.03610	MAP	05S	46E	10	AC	WELL
103187	SHOCKEY ARTHUR	45.41830	-106.03610	MAP	05S	46E	10	AC	WELL
897826	FED.MONT.065073 1-15	45.39940	-106.04380	MAP	05S	46E	15	DBBD	PETWELL
103188		45.39630	-106.06100	MAP	05S	46E	16	DCC	WELL
159928	USDA FOREST SERVICE	45.39840	-106.08180	TRS-TWN	05S	46E	17	DB	WELL
918942	USA M-5276 10 MILE	45.40540	-106.11100	TRS-TWN	05S	46E	18	BB	PETWELL
103197	LEI JOHN*WELL #1	45.38480	-106.03820	TRS-TWN	05S	46E	22	DA	WELL
103196	SMITH GEORGE D.	45.38480	-106.04320	TRS-TWN	05S	46E	22	DB	WELL
103198	PHILLIPS H.I.*WELL #2	45.38840	-106.01900	TRS-TWN	05S	46E	23	AD	WELL
103200	SMITH GEORGE D.	45.38690	-106.02620	TRS-TWN	05S	46E	23		WELL
103203	SMITH AMANDA*WELL #1	45.38520	-105.99940	MAP	05S	46E	24	DB	WELL
144965	DUNNING SIDNEY	45.38060	-105.99240	MAP	05S	46E	24	DD	WELL
7801	FIFTEEN-MILE CREEK*14 MI SW SONNETTE MT.	45.38000	-106.07940	MAP	05S	46E	29	ABAA	STREAM
103205	SMITH STEPHEN	45.42050	-105.93650	TRS-TWN	05S	47E	4	CDD	WELL
103207	SMITH STEPHEN B.* WELL #1	45.42140	-105.96020	TRS-TWN	05S	47E	5	CD	WELL
103208	SMITH STEPHEN B. * WELL #3	45.42140	-105.96020	TRS-TWN	05S	47E	5	CD	WELL
103210	SMITH STEPHEN B.*WELL #6	45.43260	-105.97670	TRS-TWN	05S	47E	6	AB	WELL
103211	CUSTER NAT. FOREST * WELL #4	45.41370	-105.92100	MAP	05S	47E	10	BD	WELL
103221	CUSTER NAT. FOREST*WELL #1	45.38940	-105.98810	TRS-TWN	05S	47E	19	BB	WELL
155743	SMITH GEORGE	45.38290	-105.96940	TRS-TWN	05S	47E	19	DAA	WELL
897778	GOV. 1-29	45.37610	-105.95070	MAP	05S	47E	29	AAAC	PETWELL
103230	PHILLIPS CARL	45.35410	-105.96710	TRS-TWN	05S	47E	32	CBB	WELL
104218	TAKENAKA KISAKA	45.33060	-106.45510	TRS-TWN	06S	43E	10		WELL
179228	US FOREST SERVICE * BLACKS POND	45.34860	-106.28560	NAV-GPS	06S	44E	1	ACAC	POND
915596	CANYON CREEK #1	45.34150	-106.30330	TRS-TWN	06S	44E	2	DAC	PETWELL
915785	MT 5096 FED #1	45.31980	-106.33610	TRS-TWN	06S	44E	15	B	PETWELL
7908	JACKSON A.J. *	45.28270	-106.39160	UNKNOWN	06S	44E	30	BD	WELL
897497	USA M-5164-A#1	45.26880	-106.29520	MAP	06S	44E	36	CC	PETWELL
897564	USA M4018 #1	45.35050	-106.23720	MAP	06S	45E	4	BBB	PETWELL
897661	USA M-4188-1	45.33520	-106.24080	MAP	06S	45E	8	AA	PETWELL
911352	FED M-4098 1-10	45.33510	-106.21090	TRS-TWN	06S	45E	10	BA	PETWELL
179229	US FOREST SERVICE * COW CREEK	45.31130	-106.24640	MAP	06S	45E	17	DCDB	POND
161366	USDA FOREST SERVICE	45.28920	-106.26080	TRS-TWN	06S	45E	30	ADB	WELL
104226	U.S.D.A.*2	45.26800	-106.18230	TRS-TWN	06S	45E	35	D	WELL
104235	FLETCHER RANCHES*5	45.33340	-106.15360	TRS-TWN	06S	46E	7	B	WELL
104237	U.S.D.A.*2	45.33330	-106.10300	TRS-TWN	06S	46E	9	A	WELL
104238	U.S.D.A.*6	45.31120	-106.12300	TRS-TWN	06S	46E	17	D	WELL
104246	U.S.D.A.*1	45.27490	-106.13280	TRS-TWN	06S	46E	32	B	WELL
191422	HOWES LEVI S.*5	45.27110	-106.12760	TRS-TWN	06S	46E	32		SPRING
104247	STEVENS MARCUS*2	45.27030	-106.08760	TRS-TWN	06S	46E	34		WELL
191423	PHILLIPE CARL	45.34200	-105.94170	TRS-TWN	06S	47E	2		WELL

Appendix H - Spring and Well Data on File for the Ashland Ranger District for Sites not Inventoried During the 2002-2003

GWIC ID	Site Name	Latitude	Longitude	Geomethod	Township	Range	Section	Tract	Site Type
898932	USA VINCENT L.WHITE1	45.31050	-105.96900	MAP	06S	47E	16	DCAC	PETWELL
104252	KAPESAK FRANK*1	45.30330	-105.92860	TRS-TWN	06S	47E	24	BB	WELL
911328	KOHLMAN FEDERAL #1	45.28170	-105.95430	MAP	06S	47E	27	CD	PETWELL
922633	USA M-3253-A 1	45.28290	-106.02810	MAP	06S	47E	30	CC	PETWELL
104253	LEI JOHN*2	45.26990	-105.93570	MAP	06S	47E	35	CB	WELL
104262	LEVEQUE P.V.*8	45.29020	-105.90410	TRS-TWN	06S	48E	19	CC	WELL
104999	FOREST SERVICE USDA	45.23970	-106.44770	MAP	07S	43E	10	DBCD	WELL
897493	U.S. WILD HOG #1	45.25440	-106.31580	MAP	07S	44E	2	CC	PETWELL
204832	HOOVER LOIS	45.23590	-106.34670	TRS-TWN	07S	44E	16	AB	WELL
8008	HOOVER DONALD * HOOVER NO. 02	45.19580	-106.27940	MAP	07S	44E	25	DDDA	SPRING
195293	BC-01	45.18480	-106.27560	TRS-TWN	07S	44E	36	DADB	WELL
196305	BC-02 (WELL NO. 0-6)	45.18480	-106.27560	TRS-TWN	07S	44E	36	DADB	WELL
144971	HAGGN DOROTHY *FRANK HAGGN	45.25500	-106.27030	TRS-TWN	07S	45E	6	CAC	WELL
105004	FOREST SERVICE U.S.D.A. *NO.1	45.24730	-106.23150	TRS-TWN	07S	45E	9	B	WELL
897562	USA M-4095-A #1	45.23860	-106.23360	MAP	07S	45E	9	CC	PETWELL
159800	OTTER NORTH AND SOUTH *1076E	45.25130	-106.16330	MAP	07S	45E	12	AAB	WELL
159802	MDOT * OTTER NORTH AND SOUTH *1076E	45.25130	-106.16330	MAP	07S	45E	12	AAB	BOREHOLE
159801	MDOT * OTTER NORTH AND SOUTH *1076E	45.25130	-106.16330	MAP	07S	45E	12	AAB	BOREHOLE
105007	USFS * CUSTER NATIONAL FOREST TOOLEY CREEK WELL	45.21530	-106.26970	NAV-GPS	07S	45E	19	CAAA	WELL
159805	MDOT * OTTER NORTH AND SOUTH *1076E	45.21490	-106.18220	TRS-TWN	07S	45E	23	DBA	BOREHOLE
105009	HOWARD INGBORG E. AND ROBERT L. *NO.2	45.21950	-106.17140	TRS-TWN	07S	45E	24	B	WELL
105010	HOWARD INGBORG E ANDROBERT L. *NO.1	45.21950	-106.17140	TRS-TWN	07S	45E	24	B	WELL
105013	FLETCHER RANCHES *NO.3	45.20740	-106.17360	TRS-TWN	07S	45E	25	BB	WELL
196306	LBC-21 (WELL NO. 0-7)	45.18960	-106.25310	MAP	07S	45E	32	BDAB	WELL
105018	WHITHAM JOHN L.	45.18410	-106.22980	TRS-TWN	07S	45E	33	C	WELL
105019	WHITHAM JOHN L. *NO.2	45.18410	-106.22980	TRS-TWN	07S	45E	33	C	WELL
105020	HORSE CREEK RANCH *HAGEN DORTHY AND BARBARA AND FRANK	45.18970	-106.20760	TRS-TWN	07S	45E	34	BD	WELL
105021	RIESEBERG FREEDO V. AND BARBARA H.	45.19060	-106.20630	TRS-TWN	07S	45E	34	BDA	WELL
921733	USA M-3819 #1	45.26350	-106.12020	MAP	07S	46E	5	AA	PETWELL
105023	STEVENS HOWES DOROTHY *NO.2	45.24320	-106.12330	TRS-TWN	07S	46E	8		WELL
105024	FOREST SERVICE U.S.D.A. *NO.3	45.24590	-106.07940	TRS-TWN	07S	46E	10	A	WELL
105025	FOREST SERVICE U.S.D.A. *NO.6	45.24590	-106.07940	TRS-TWN	07S	46E	10	A	WELL
192994	HEINSCH KEN *FTY RANCH	45.24410	-106.08190	TRS-TWN	07S	46E	10	AC	WELL
897614	USA MT.042657-1	45.23770	-106.09250	MAP	07S	46E	10	CCBD	PETWELL
161401	FOREST SERVICE U.S.D.A.	45.24060	-106.07690	TRS-TWN	07S	46E	10	DA	WELL
105027	BURNSDIES HARRY M. *NO.4	45.23470	-106.12870	TRS-TWN	07S	46E	17	BB	WELL
105028	BURNSIDES HARRY M. *NO.3	45.23150	-106.14290	TRS-TWN	07S	46E	18	BD	WELL
105029	BURNSIDES HARRY M. *NO.2	45.23150	-106.14290	TRS-TWN	07S	46E	18	BD	WELL
899759	USA M-3891-1	45.21210	-106.12110	MAP	07S	46E	20	DD	PETWELL
105033	BLANKENSHIP BUD	45.21790	-106.04850	TRS-TWN	07S	46E	24	B	WELL
105034	KRAFT CHARLES M. AND DANIEL R. *NO.3	45.20340	-106.06140	MAP	07S	46E	26	AC	WELL
105035	KRAFT CHARLES M. AND DANIEL R. *NO.4	45.20340	-106.06140	MAP	07S	46E	26	AC	WELL
105036	KRAFT CHARLES M. AND DANIEL R. *NO.2	45.20640	-106.06840	TRS-TWN	07S	46E	26	BB	WELL
105037	BURNSIDES HARRY M. *NO.1	45.20660	-106.08700	TRS-TWN	07S	46E	27	BB	WELL
899622	GOVT 32-4	45.25630	-105.97720	MAP	07S	47E	4	AC	PETWELL
898624	MT.07286-C 1	45.24970	-105.98250	MAP	07S	47E	4	CD	PETWELL
191016	WOODS MERLE	45.25200	-105.97070	MAP	07S	47E	4	DAD	WELL
124995	LEI JIM	45.24380	-106.01450	MAP	07S	47E	7	ACA	WELL
898665	FED.036457-1	45.23970	-105.97110	MAP	07S	47E	9	DA	PETWELL

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GWIC ID	Site Name	Latitude	Longitude	Geomethod	Township	Range	Section	Tract	Site Type
903063	US-M3128A-PAM-AM 6-1	45.24960	-105.94180	MAP	07S	47E	10	AA	PETWELL
898713	MONT.06732-1	45.22900	-105.93140	MAP	07S	47E	14	CACD	PETWELL
105038	LEI JAMES	45.23440	-106.01030	MAP	07S	47E	17	BCB	WELL
145511	LEI JIM	45.23490	-106.02090	MAP	07S	47E	18	ABC	WELL
105041	HUEFFER JOHN A. *NO.3	45.21580	-105.97250	TRS-TWN	07S	47E	21	AC	WELL
105042	HUEFFER JOHN A. *NO.1	45.21580	-105.96740	TRS-TWN	07S	47E	21	AD	WELL
105043	FOREST SERVICE U.S.D.A. *NO.4	45.21950	-105.95380	MAP	07S	47E	22	B	WELL
174026	POWDER RIVER COUNTY	45.21780	-105.93000	MAP	07S	47E	23	BDDDB	WELL
105044	FOREST SERVICE U.S.D.A. *NO.5	45.19700	-105.94910	TRS-TWN	07S	47E	27	D	WELL
902897	USA M-3132-1	45.20620	-106.02840	MAP	07S	47E	30	BB	PETWELL
905804	USA M-3132 OIL INC	45.20620	-106.02840	MAP	07S	47E	30	BB	PETWELL
903026	GOVT TAYLOR CR.24-35	45.18180	-105.93610	TRS-TWN	07S	47E	35	CD	PETWELL
105045	GAY H.H.	45.22150	-105.82980	MAP	07S	48E	15	AC	WELL
8017	GAY H.H. * 9.5 MI E SAYLE MONTANA	45.22770	-105.82330	MAP	07S	48E	15	ACAB	WELL
898655	MT014032GOVT H.GAY#1	45.20020	-105.80080	MAP	07S	48E	25	BBC	PETWELL
105047	FOREST SERVICE U.S.D.A. *NO.3	45.19270	-105.87310	MAP	07S	48E	29	C	WELL
898729	MCALISTER ETAL#34-14	45.17440	-105.83470	MAP	07S	48E	34	CDDC	PETWELL



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<b>USGS Quadrangle</b>
WILLOW CROSSING
COLEMAN DRAW
HOME CREEK BUTTE
COLEMAN DRAW
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COLEMAN DRAW
HOME CREEK BUTTE
HOME CREEK BUTTE
HOME CREEK BUTTE
HOME CREEK BUTTE
SAMUELSON RANCH
HOME CREEK BUTTE
HOME CREEK BUTTE
HOME CREEK BUTTE
HOME CREEK BUTTE
HOME CREEK BUTTE
HOME CREEK BUTTE
ASHLAND
WILLOW CROSSING
GREEN CREEK
GREEN CREEK
GREEN CREEK
KING MOUNTAIN
KING MOUNTAIN
KING MOUNTAIN
KING MOUNTAIN
KING MOUNTAIN
KING MOUNTAIN
KING MOUNTAIN
HOME CREEK BUTTE

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USGS Quadrangle
HOME CREEK BUTTE
COLEMAN DRAW
COLEMAN DRAW
COLEMAN DRAW
YAGER BUTTE
YAGER BUTTE
COLEMAN DRAW
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YAGER BUTTE
COLEMAN DRAW
COLEMAN DRAW
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YAGER BUTTE
YAGER BUTTE
THREEMILE BUTTES
THREEMILE BUTTES
BIRNEY DAY SCHOOL
GREEN CREEK
GREEN CREEK
GREEN CREEK
GREEN CREEK
GREEN CREEK
GREEN CREEK
GREEN CREEK
GREEN CREEK
POKER JIM BUTTE
POKER JIM BUTTE
KING MOUNTAIN
KING MOUNTAIN
KING MOUNTAIN
KING MOUNTAIN
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KING MOUNTAIN
KING MOUNTAIN
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KING MOUNTAIN
KING MOUNTAIN
KING MOUNTAIN
FORT HOWES
KING MOUNTAIN

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<b>USGS Quadrangle</b>
FORT HOWES
FORT HOWES
YAGER BUTTE
YAGER BUTTE
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THREEMILE BUTTES
THREEMILE BUTTES
PHILLIPS BUTTE
BROWNS MOUNTAIN
POKER JIM BUTTE
POKER JIM BUTTE
POKER JIM BUTTE
BROWNS MOUNTAIN
POKER JIM BUTTE
FORT HOWES
FORT HOWES
FORT HOWES
FORT HOWES
POKER JIM BUTTE
FORT HOWES
FORT HOWES
GOODSPEED BUTTE
FORT HOWES
FORT HOWES
FORT HOWES
GOODSPEED BUTTE
PHILLIPS BUTTE



Appendix H - Spring and Well Data on File for the Ashland Ranger District for Sites not Inventoried During the 2002-2003

<b>USGS Quadrangle</b>
PHILLIPS BUTTE
PHILLIPS BUTTE
PHILLIPS BUTTE
GOODSPEED BUTTE
PHILLIPS BUTTE
PHILLIPS BUTTE
STROUD CREEK
POKER JIM BUTTE
HAMILTON DRAW
HAMILTON DRAW
HAMILTON DRAW
HAMILTON DRAW
POKER JIM BUTTE
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OTTER
FORT HOWES
FORT HOWES
FORT HOWES
HAMILTON DRAW
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HAMILTON DRAW
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GOODSPEED BUTTE
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REANUS CONE
REANUS CONE
PHILLIPS BUTTE
PHILLIPS BUTTE
PHILLIPS BUTTE
REANUS CONE
SAYLE

Appendix H - Spring and Well Data on File for the Ashland Ranger District for Sites not Inventoried During the 2002-2003

<b>USGS Quadrangle</b>
SAYLE
SAYLE
REANUS CONE
REANUS CONE
SAYLE
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SAYLE
REANUS CONE
REANUS CONE
SAYLE
BLOOM CREEK
BLOOM CREEK
BLOOM CREEK
BLOOM CREEK
BLOOM CREEK