# Mineral Resources of the Stratified Primitive Area Wyoming

GEOLOGICAL SURVEY BULLETIN 1230-E

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## STUDIES RELATED TO WILDERNESS

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*An evaluation of the mineral potential of the area*

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# STUDIES RELATED TO WILDERNESS

The Wilderness Act (Public Law 88–577, Sept. 3, 1964) and the Conference Report on Senate bill 4, 88th Congress, direct the U.S. Geological Survey and the U.S. Bureau of Mines to make mineral surveys of wilderness and primitive areas. Areas officially designated as "wilderness," "wild," or "canoe" when the act was passed, were incorporated into the National Wilderness Preservation System. Areas classed as "primitive" were not included in the Wilderness System, but the act provided that each primitive area should be studied for its suitability for incorporation into the Wilderness System. The mineral surveys constitute one aspect of the suitability studies. This bulletin reports the results of a mineral survey in the Stratified Primitive Area, Wyoming. The area discussed in the report corresponds to the area under consideration for wilderness status.

This bulletin is one of a series of similar reports on primitive areas.

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# MINERAL RESOURCES OF THE STRATIFIED PRIMITIVE AREA, WYOMING

By K. B. KETNER, W. R. KEEFER, F. S. FISHER, and D. L. SMITH, U.S. Geological Survey, and R. G. RAABE, U.S. Bureau of Mines

## SUMMARY

The principal rock formations of the Stratified Primitive Area are grouped into two broad categories. An older group of formations composed of limestone, sandstone, and shale crops out only in two of the deeper valleys. These formations were intricately folded, faulted, and deeply eroded 70 million years ago, then covered by a younger group of formations. The younger formations are composed of volcanic rocks plus sandstones and conglomerates derived from volcanic rocks. It is the younger group, uplifted and deeply carved by glaciers and streams, which constitutes the Absaroka Mountains.

Mineral deposits were searched for visually by means of closely spaced ground traverses and geochemically by means of 579 analyzed samples of stream sediments and altered rocks. A small part of the primitive area, southeast of the Kirwin mining district, totaling about 10 square miles and extending along the north boundary between Dollar Mountain and Dundee Mountain, was found to be sporadically mineralized. Altered rocks in the scattered areas of mineralization contain lead, zinc, copper, silver, and molybdenum in amounts several times the content normal for rocks of the rest of the primitive area. No mineral deposits were found in the mineralized area, but mining claims, some of them patented, are located there. This part of the primitive area has a potential for concealed deposits and is worthy of further exploration.

Deposits of coal, bentonite, and phosphate are found outside the primitive area in the same sedimentary formations that underlie parts of the primitive area. If deposits of these materials exist within the bounds of the primitive area, they are so deeply buried under a thick blanket of younger barren rocks that they would be uneconomic to mine at the present time.

Older rock formations, from which oil is produced in areas adjacent to the Stratified Primitive Area, extend beneath the primitive area as do structural features such as anticlines which favor the accumulation of oil and gas. However, intrusive magmas have penetrated these formations in all parts of the primitive area, and the intrusions have greatly reduced the possibility of the area ever becoming a source of oil and gas.

Surficial deposits of materials such as sand and gravel in the primitive area are small and of poor quality. Much better material is available in terraces of the trunk streams of major valleys outside the primitive area.

# GEOLOGY AND MINERAL RESOURCES

By K. B. Ketner, W. R. Keefer, F. S. Fisher, and D. L. Smith, U.S. Geological Survey

## INTRODUCTION

### LOCATION AND GEOGRAPHY

The Stratified Primitive Area is in the Shoshone National Forest, in parts of Fremont, Hot Springs, and Park Counties, Wyo. It extends along the south edge of the Absaroka Mountains for about 40 miles from east to west and is about 5 to 10 miles wide (fig. 1). The area is characterized by extremely rugged topography, with altitudes that range from 8,000 to 12,000 feet above sea level. Chief scenic features are the rocky flat-topped buttes that rise as much as 1,500 feet above timberline, glacial cirques, permanent snowfields, and white-water streams. Northern headwaters of the Wind River have cut deeply into the south edge of the Absarokas and canyon walls reveal the remarkable layering of volcanic sediments that has given rise to the name "Stratified" (fig. 2).

The area may be reached over gravel or unimproved roads from Meeteetse, 33 miles to the northeast, and Dubois, 28 miles to the south. There are no roads in the primitive area, and wheeled vehicles are not usable. Travel on foot or horseback in the west half of the area is difficult, even under the best of conditions, because of thickly wooded valleys and steep cliffs. When snow covers the ground or when streams are swollen with melt water, travel becomes nearly impossible. The east half of the area is more easily accessible because some valleys are less heavily forested and slopes are more gentle.

### ACKNOWLEDGMENTS

Cooperation of Wyoming State Geologist, Horace D. Thomas, is gratefully acknowledged. Published reports of field investigations in and near the Stratified Primitive Area by W. H. Wilson of the Geological Survey of Wyoming were especially helpful in planning and executing our investigation. Semiquantitative spectrographic analyses of samples were made in the field by G. C. Curtin and D. A. Grimes under the direction of A. L. Marranzino. Colorimetric field tests for zinc, copper, and molybdenum and spectrophotometric tests for gold were made by C. L. Whittington. We are grateful to our helicopter pilot, Gene Wallace, and mechanic, John Perdue, for their skill and resourcefulness in maintaining safe, efficient service under difficult conditions.

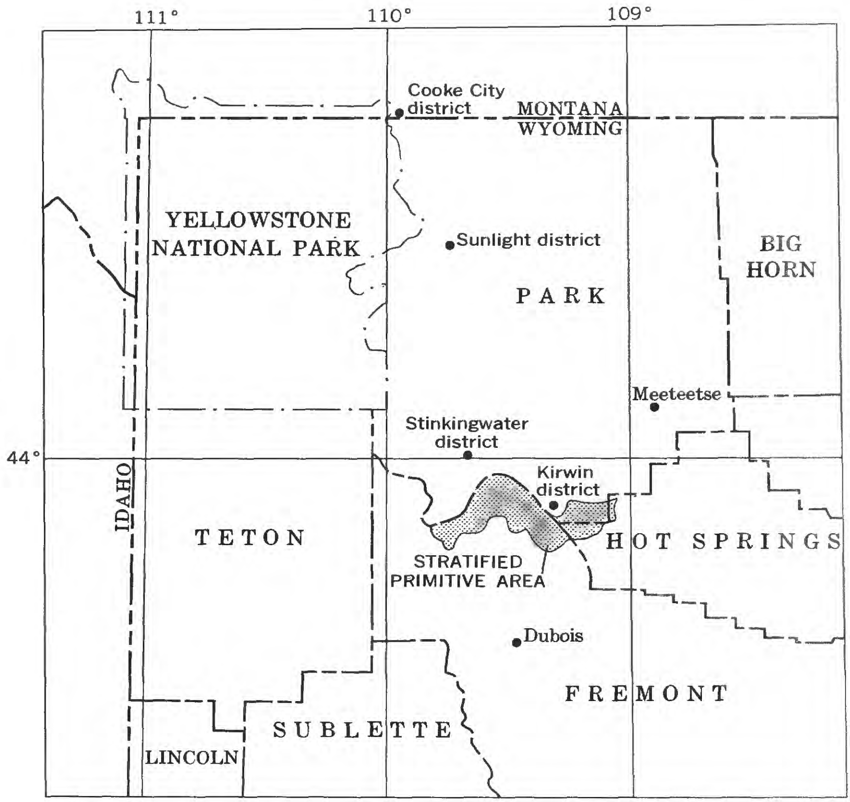


FIGURE 1.—Location of the Stratified Primitive Area.

## PREVIOUS STUDIES

Geologic maps of parts of the area or adjoining areas by Keefer (1957), Love (1939), Wilson (1964a, b), and Masursky (1952) were helpful in constructing a geologic map of the entire Stratified Primitive Area. Wilson's map (1964a) was especially useful because of its great detail on an important part of the area. Hewett (1914) and Wilson (1964b) discuss mineralization in the Kirwin district, which adjoins the Stratified Primitive Area on the northeast.

## PRESENT STUDY

This report describes a survey of the mineral resources of the Stratified Primitive Area made during July and August 1965. A geologic map was prepared and samples taken of stream sediments, intrusive rocks, contact zones at the edges of intrusives, and all other rocks which seemed to be altered or mineralized. Ground traverses made at close intervals permitted visual coverage of all principal ridges and

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FIGURE 2.—Typical terrain in the central part of the Stratified Primitive Area. Mount Burwell on skyline, center.

valleys. Daily use of a helicopter for transportation to and from field locations and for reconnaissance made thorough coverage of the area possible in a short time.

There were 351 samples of stream sediments analyzed (table 5). These samples were composed of mud obtained from active streams draining all parts of the primitive area. Also analyzed were 228 samples of visibly altered rocks within the primitive area and, for comparison, 116 samples of altered rock and veins from the neighboring Stinkingwater mining district; 69 control samples of unaltered rock from the primitive area and nearby areas were analyzed in the Washington laboratories, but the remainder of the samples were analyzed in mobile laboratories in the field.

Spectrographic analyses for 30 elements and colorimetric field tests for copper, zinc, and molybdenum were made on all samples. Methods used are described by Ward, Lakin, Canney, and others (1963). In addition, spectrophotometric tests for gold were made on selected samples. The procedure used is described by Lakin and Nakagawa (1965, p. C168). All samples were scanned for radioactivity by means of a portable scintillation counter.

## GEOLOGY

### GEOLOGIC SETTING

The Stratified Primitive Area comprises parts of two superposed mountain ranges of contrasting rock types. The older range, the Washakie Range, is composed of rocks of Precambrian, Paleozoic, and Mesozoic ages which were folded and dissected by erosion at the beginning of the Tertiary Period, 70 million years ago. Rocks composing the Washakie Range are exposed along the south border of the primitive area near Horse Creek and Wiggins Fork (pl. 1). The Absaroka Mountains are composed of volcanic and sedimentary rocks of Tertiary age. These rocks filled the valleys of the Washakie Range and overtopped the highest peaks, forming a high plateau. Modern streams have carved canyons in this plateau, producing striking scenery, and have exposed parts of the buried Washakie Range. Figure 3 shows these relations in cross section.

### OLDER ROCKS

Granitic rocks of Precambrian age are deeply buried in the Stratified Primitive Area but are clearly exposed at many places south of the area (Love, 1939). The oldest rocks exposed within the area are sandstone, limestone, and shale of Paleozoic age. These crop out along the south boundary of the area near Horse Creek, Frontier Creek, and Wiggins Fork. A large block of Paleozoic rocks is

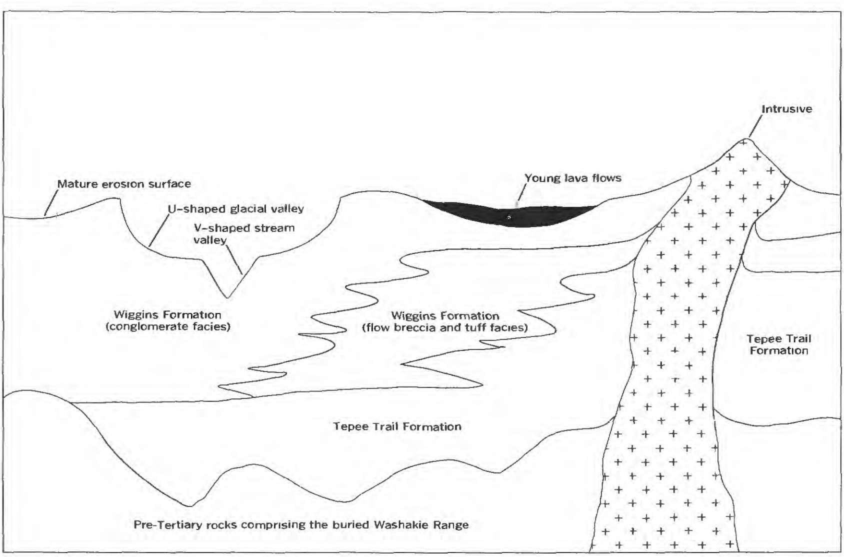


FIGURE 3.—Diagrammatic cross section showing physical features and relations of principal rock formations, Stratified Primitive Area.

exposed in the headwater area of Caldwell Creek. This block lies above 10,000 feet and seems to have been lifted from a lower level probably during the forceful upward movement of the rhyolite intrusive over which it lies. Formations in the block ranging from Cambrian to Pennsylvanian in age were identified by J. T. Rouse (1940, p. 1424). The steeply inclined stratification shows that the Paleozoic rocks have been tightly folded. The erosional surface between Paleozoic and overlying younger rocks cuts across underlying strata discordantly, evidence indicating a long period of erosion prior to deposition of younger rocks.

### TERTIARY ROCKS

The Tepee Trail Formation named and described by Love (1939, p. 73) and the similar Pitchfork Formation (Wilson, 1964a) crop out in the deeper valleys. These formations are composed mainly of sandstone and conglomerate beds whose constituent particles are andesitic material derived from volcanic ash beds and lava flows. Textural features such as grain rounding and sorting and bedding features indicate that the sandstone and conglomerate were deposited on the beds and flood plains of ancient streams (fig. 4). Abundant unoxidized iron compounds give some beds a striking blue-green color, but more thorough oxidation of the bulk of the formations gives them a characteristic olive-drab color.

The Tepee Trail Formation is absent in parts of Horse Creek Valley but attains a thickness of at least 1,500 feet in Bear Creek and East Fork Valleys. Differences in thickness are due partly to the hills and valleys of the terrain on which the formation was deposited and partly to irregularities of the upper surface. Relief on the upper surface is thought to be due more to uneven buildup of the formation than to irregular erosion following deposition.

Fossil plants and animals in the Tepee Trail Formation show it to have been deposited in Eocene time (Love, 1939, p. 78), at the beginning of the age of mammals.

The Wiggins Formation, named and described by Love (1939, p. 79), crops out more widely in the primitive area than any other formation. The spectacular cliffs which are characteristic of the primitive area are carved from the Wiggins Formation, and the prominent stratification displayed on the cliffs gives the Stratified Primitive Area its name.

The Wiggins is a mixed unit of conglomerate, sandstone, lava, flow breccia, and intrusive breccias. West of Mount Kent it is characteristically composed of conglomerate and sandstone; east of Mount Kent it contains a large proportion of lavas and igneous breccias. Unlike those of the Tepee Trail, many of the conglomerate beds in the

FIGURE 4.—Exposure of Tepee Trail Formation, here composed of water-laid volcanic detritus.

Wiggins are of completely unsorted material and contain boulders weighing several tons. Conglomerates of this type are thought to be solidified mudflows (fig. 5). Owing to their high specific gravity, thick mud slurries can hold large boulders in suspension and can flow for great distances over surfaces of low gradient. The maximum thickness of the Wiggins Formation is about 4,000 feet.

Petrified tree stumps, standing in their place of growth, and fallen trunks are common at all levels in the Wiggins Formation including the highest ridges 1,500 feet above present timberline. They are most abundant between Frontier and Caldwell Creeks in the central part of the Stratified Primitive Area at altitudes above 8,500 feet. Most of the trees grew to 1–2 feet in diameter before burial, but some reached a diameter of 6 feet; species were mainly subtropical varieties such as magnolia. Cross sections of many stumps and logs show a complete absence of growth rings, which indicates a lack of seasonal changes in temperature and rainfall at the time of growth. Fossil magnolia leaves collected near Burwell Creek, about 1,500 feet above the base of the formation, are of early Oligocene age (H. G. MacGinitie, written commun., 1965).

An area along Frontier Creek above the mouth of Cougar Creek has been designated "Petrified Forest" on recent maps. Although petrified stumps and logs are abundant in the area, the term "forest" may be misleading in that it conveys an image of a thick stand of trees in a single stratum. Actually, stumps are widely scattered, occur in various strata, and few are more than 3 feet tall. Most of them are exposed high on inaccessible cliffs.

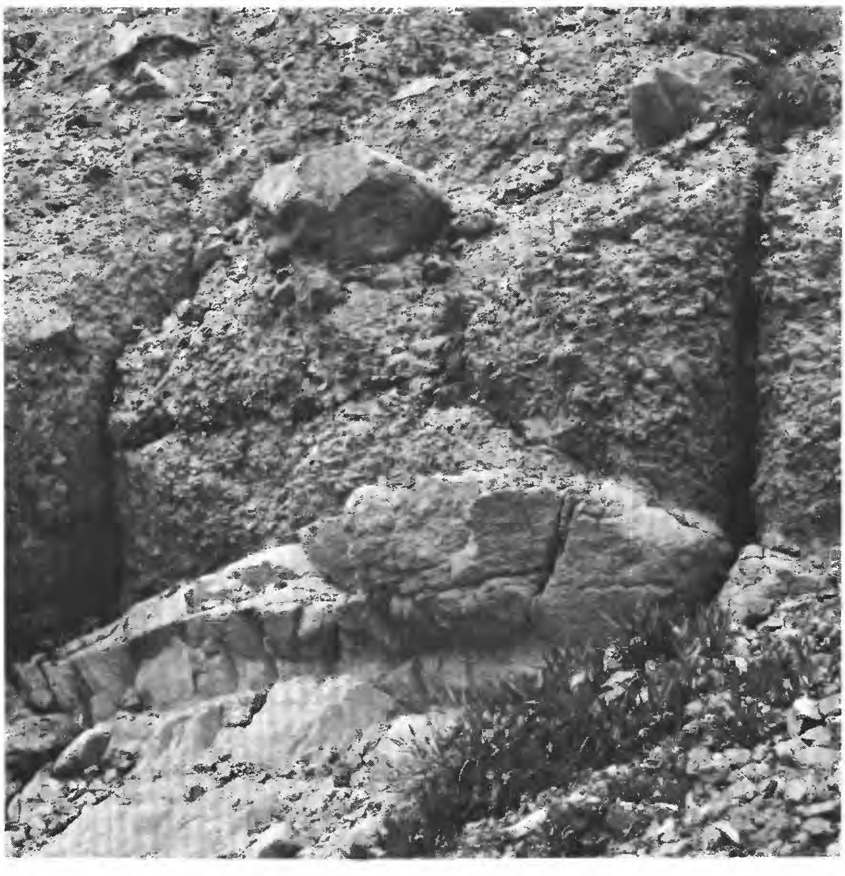

FIGURE 5.—Intrusive contact between andesite porphyry stock (below) and mudflow conglomerate of Wiggins Formation (above). Boulder in mudflow is 2 feet long.

## INTRUSIVE ROCKS

Magmas have intruded the Wiggins Formation where they were consolidated in the form of dikes and small stocks composed of andesite, dacite, and rhyolite porphyry. Intrusives now exposed by erosion are concentrated mainly along the north border of the primitive area and around the Kirwin mineral district. Many of the dikes in the primitive area radiate from the central part of the Kirwin district. Another, smaller group of intrusives in the Emerald Lake area are oriented more toward the northwest, and dikes of this group probably emanate from the Needle Mountain stocks in the Stinkingwater mining district.

Most of the intrusive rocks are gray to brown and dense and are commonly spotted with black and white crystals. Microscopic examination shows that the larger crystals in the andesites are composed of zoned plagioclase of intermediate composition, biotite, and hornblende in a fine-grained matrix of unidentified minerals. The dacite differs from andesite in that it contains a moderate amount of partly resorbed quartz crystals, and the single specimen of rhyolite examined differs from andesite mainly in having potassium feldspar phenocrysts, abundant quartz, and very little biotite or other dark minerals. Alteration by deuteric or hydrothermal solutions is conspicuously absent from most intrusives.

Major constituents of 13 intrusive rocks are given in table 1. Sample numbers correspond to those shown on plate 1.

TABLE 1.—*Chemical analyses of intrusive rocks, Stratified Primitive Area, Wyoming*

[Results are in percent. Methods used were similar to those described by Shapiro and Brannock (1962). Analysts: Paul Elmore, Sam Botts, Lowell Artis, H. Smith, and John Glenn]

| Constituent | Andesite (Samples 636, 651, 682, 693, 761, 776, 796, 807, 822, and 880) | | | Dacite (Sample 765) | Dacite (Sample 187) | Rhyolite (Sample 762) |
|---|---|---|---|---|---|---|
| | Minimum | Arithmetic Average | Maximum | | | |
| $SiO_2$ | 59.5 | 62.9 | 65.4 | 68.8 | 67.4 | 72.6 |
| $Al_2O_3$ | 15.8 | 16.8 | 18.2 | 15.5 | 16.2 | 16.0 |
| $Fe_2O_3$ | 1.9 | 2.6 | 3.4 | 1.4 | 1.0 | .53 |
| FeO | .1 | 1.2 | 2.1 | .36 | .60 | .08 |
| MgO | .2 | 1.2 | 2.8 | .0 | .4 | .0 |
| CaO | 3.3 | 4.6 | 5.4 | 3.0 | 3.4 | 1.1 |
| $Na_2O$ | 3.8 | 4.2 | 4.6 | 4.0 | 4.2 | 3.6 |
| $K_2O$ | 2.3 | 2.6 | 3.4 | 3.1 | 2.8 | 4.2 |
| $H_2O^-$ | .2 | 1.3 | 2.5 | 1.4 | 2.0 | 1.0 |
| $H_2O^+$ | .3 | 1.1 | 2.2 | 1.2 | 1.0 | .80 |
| $TiO_2$ | .36 | .48 | .70 | .23 | .30 | .05 |
| $P_2O_5$ | .20 | .29 | .39 | .12 | .22 | .02 |
| MnO | .04 | .05 | .08 | .04 | .02 | .04 |
| $CO_2$ | $<.05$ | $<.07$ | .30 | .28 | .10 | $<.05$ |

### YOUNG LAVA FLOWS

Remnants of an erosion surface of subdued relief are preserved on ridges of the western and central parts of the area. Young lava flows, probably of late Tertiary age, lie on parts of this surface. The flows are black to brown, dense, finely crystalline rocks probably of basaltic composition, and different from the volcanic rocks of which the Tepee Trail and Wiggins Formations are composed.

The flows are generally only a few feet thick, but, near Raggedtop Mountain, beds aggregating several hundred feet are exposed in what may be the remains of a volcanic cone.

### CALDWELL CANYON VOLCANICS OF LOVE (1939)

In the headwater area of Wiggins Fork and Caldwell Creek and on Wiggins Peak, small patches of very young volcanic rocks lie unconformably on the Wiggins Formation. These rocks were first described by Love (1939, p. 85) and discussed further by Wilson (1964a, p. 69). They are composed mainly of light-colored ash beds and lava flows. They are known to be younger than the dark-colored lava flows mentioned in the previous paragraph because some of them were deposited on the sides of canyons which cut the mature erosion surface on which the dark lavas lie. The presence of some of the light-colored ash beds in valleys carved by glacial ice indicates that they are of Quaternary age.

## STRUCTURE

Structural features, or dislocations, in rocks of the Stratified Primitive Area are of two widely diverse ages. The older ones consist of faults and tight folds in buried pre-Tertiary rocks. The younger ones are faults of minor displacement and very gentle folds in Tertiary rocks.

### OLDER STRUCTURAL FEATURES

Structural features in the older strata can be seen among the foothills along the south margin of the Absarokas where the older rocks are now exposed to view. The most conspicuous evidences of deformation are the steeply inclined beds of limestone, shale, and sandstone, which were nearly horizontal at the time they were deposited. In figure 6 contour lines are drawn on an erosion surface which, before deformation, was nearly horizontal. The structural features thus shown are a series of folds and faults which project northwestward into the Stratified Primitive Area. Oil and gas tend to accumulate in some folds near the Stratified Primitive Area, and the possibility of oil pools beneath the primitive area is discussed on page E24.

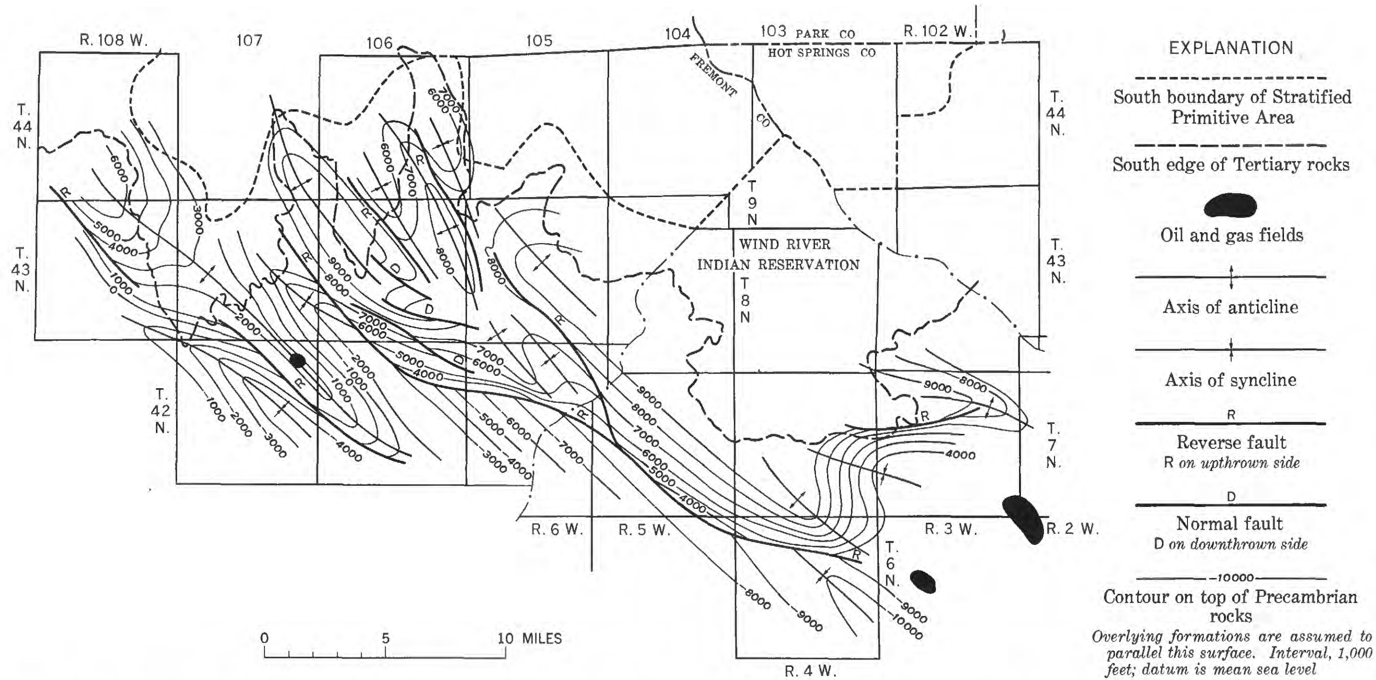


FIGURE 6.—Generalized structure map of south margin of Stratified Primitive Area. Contours, drawn on top of Precambrian rocks, show configuration of overlying Paleozoic and Mesozoic rocks. Adapted from Love (1939) and Keefer (1957).

### YOUNGER STRUCTURAL FEATURES

The Wiggins Formation is gently arched in areas where it has been intruded by igneous rocks. The largest of these folds is a broad gentle anticline which extends between exposed intrusives near Emerald Lake and Caldwell Creek. In only a few places do the strata on its flanks dip more than 5°. A smaller dome-shaped structure is centered on Wiggins Peak, and the rhyolite intrusive of Dunrud Peak is surrounded by a ring of steeply inclined strata apparently turned up by the forceful intrusion of the rhyolite.

Many of the dikes extending into the Stratified Primitive Area radiate from the vicinity of a large granodiorite intrusive north of Kirwin (Wilson, 1964a, pl. 1). Aerial reconnaissance indicates that dikes near Emerald Lake extend along a fracture zone that leads to a large intrusive in the Stinkingwater district.

The association of structural features in the Wiggins Formation with igneous bodies suggests that intrusive forces may have been the immediate cause of deformation in the younger rocks. The anticline and many of the dikes in the Wiggins Formation have dominant trends which are subparallel to dominant structural trends in Paleozoic and Mesozoic rocks of the Wind River Basin (fig. 6) and to some major trends in the Owl Creek Mountains (Masursky, 1952). The parallelism is sufficiently close to suggest that the structural features in the older rocks may have influenced the locations of some of the younger structural features in the Wiggins Formation.

## LANDFORMS

Development of present landforms began after deposition of the Wiggins Formation when streams eroded away the higher strata and produced a mature topography of broad valleys and low divides. Lava poured out of this surface, partly filling some of the valleys. Remnants of this erosion surface and some of the lava flows are well preserved on the buttes between DuNoir and Emerald Creeks at altitudes between 11,000 and 11,500 feet. Regional uplift and the cold, wet climate of Pleistocene time accelerated erosion. Glaciers formed in the high areas and carved the shallow valleys into cirques and deep U-shaped troughs. These are still preserved in the headwaters of Horse, Emerald, Sheep, Burwell, Wiggins, and Caldwell Creeks (fig. 7). Small permanent icefields still persist on some of the higher ridges. Streams are now eroding narrow V-shaped troughs in the bottoms of the old U-shaped valleys.

Although the geologic history of the entire Stratified Primitive Area is uniform, there are local variations in terrain caused by differing rock types. The steepest cliffs and greatest relief are in the west-

FIGURE 7.—Glacier-carved terrain, Stratified Primitive Area. Remnants of the old smooth surface are visible in profile near top of photograph. Ice-covered Emerald Lake in foreground.

ern and central part of the Stratified Primitive Area where conglomerate is the dominant rock type in the Wiggins Formation. The more subdued topography in the eastern part of the area reflects rock types in the Wiggins having higher proportions of ash and flow breccia. The Tepee Trail Formation contains a high proportion of volcanic ash that is partly altered to slippery clay. As a result, some areas underlain by this formation along the south edge of the primitive area have a subdued topography commonly displaying ponds and a hummocky surface caused by landslides and soil creep.

## MINERAL RESOURCES

In this report the term "resources" applies to materials in the ground that are known to be minable now, plus materials that are likely to become minable at some time in the future. Mineral resources that might be expected to occur in the Stratified Primitive Area are similar to those already known in surrounding regions. They can be grouped into four categories: (1) Metallic mineral deposits such as lead, zinc, silver, copper, and molybdenum which are associated with intrusive rocks in the Absaroka Mountains, (2) bedded deposits of nonmetallic minerals such as coal, bentonite, and phosphate in pre-Tertiary rocks, (3) oil and gas in pre-Tertiary rocks, and (4) surficial deposits such as sand and gravel.

### SETTING OF METALLIC MINERAL DEPOSITS

Four mining districts are known in the Absaroka Mountains, but only the Cooke City district (Lovering, 1930), on the north edge of the mountains (fig. 1), has produced significant amounts of metal (lead, silver, and gold). The Sunlight and Stinkingwater districts have produced no ore commercially. A shipment of ore from the Kirwin district is discussed on page E55 of this report. All three latter areas are mining districts only in the sense of being mineralized sufficiently to have attracted intermittent prospecting and development during the past 75 years.

The northeast boundary of the primitive area crosses part of the Kirwin mining district (fig. 16). This district is mineralized with lead, zinc, copper, molybdenum, and silver. It has been explored repeatedly, and an intensely altered ore was being thoroughly drilled in 1965 (see "Economic Appraisal" section of this report). Mining claims extend into the primitive area as far as the Middle Fork of Wood River.

### INTRUSIVE ROCKS COMPARED

Metallic mineral deposits in the Absaroka Mountains and commonly elsewhere are associated with intrusive rocks. The presence of intrusive bodies in the Stratified Primitive Area suggests the possibility of associated mineral deposits there also. As table 2 indicates, intrusive rocks of the primitive area resemble somewhat those of the neighboring Stinkingwater and Kirwin districts but differ in both composition and texture from those of the more distant Cooke City and Sunlight districts. They differ most markedly from intrusives of the Cooke City area.

### ALTERED ROCKS COMPARED

In this discussion the term "altered rock" means rock which has been chemically changed in any way. This category includes mineralized rock, which herein means rock to which valuable minerals have been added. Halos of intensely altered rocks around intrusive bodies and mineral deposits are common in most productive metal-mining districts. Although large areas of altered rock are common in the four previously mentioned mining districts of the Absaroka Moun-

TABLE 2.—*Comparison of intrusive rocks*

| District | Principal intrusive rocks | Alteration of intrusive rocks |
|---|---|---|
| Stratified Primitive Area | Andesite, dacite, and rhyolite porphyry. | Minor. |
| Kirwin (Wilson, 1964a, p. 69) | Grandiorite, quartz monzonite, andesite, dacite, and rhyolite porphyry. | Locally intense. |
| Stinkingwater (F. S. Fisher, unpub. data). | Diorite, andesite, and dacite porphyry. | Moderate. |
| Sunlight (Parsons, 1937, p. 837). | Basalt porphyry, gabbro, syenite, and diorite. | Commonly intense. |
| Cooke City (Lovering, 1930, p. 32). | Monzonite, gabbro, and syenite. | Locally intense. |

tains, only scattered small patches of weakly altered rock are present in the Stratified Primitive Area.

Some types of alteration common in the Stratified Primitive Area are unrelated to metal deposits. Rocks immediately underlying lava flows and flow breccias throughout the area are commonly altered conspicuously to red or reddish brown. This type of alteration is due merely to oxidation of soils over which the lava flowed rather than to mineralizing solutions. Volcanic ash and petrified wood commonly are stained yellow by hydrous iron oxides and probably by the mineral jarosite. These yellow stains are unrelated to hydrothermal activity and are barren. Many beds of the Tepee Trail Formation are pigmented conspicuously with blue-green mineral matter. Although this color suggests the presence of green copper minerals, chemical analyses show only iron in unusual concentrations.

An arcuate strip centering on Kirwin and including Dollar Mountain, Dunrud Peak, Spar Mountain, Bald Mountain, and Dundee Mountain contains patches of rock that have been slightly altered by mineral-bearing solutions. Wilson (1964a, p. 61) mentions bleached, silicified, and iron-stained rocks in the Paleozoic block of Dollar Mountain. Dunrud Peak is composed of rhyolite that is somewhat bleached. The small patches and strips of altered rocks and veinlets scattered over Spar, Bald, and Dundee Mountains contain higher-than-average concentrations of valuable metals. The comparatively weak alteration evident in the Stratified Primitive

Area suggests that the area may not be mineralized as much as the Cooke City, Sunlight, Stinkingwater, and Kirwin mining districts.

### INTENSITY OF MINERALIZATION

Analyses of stream sediments and altered rocks throughout the Stratified Primitive Area reveal that the concentration of metals rises sharply above normal in the area southeast of the Kirwin mining district (pl. 1, figs. 8–12, table 5). The normal level of metal content in the primitive area was determined by averaging the abundance in stream sediments and rocks, excluding those samples from the mineralized strip near Kirwin. These averages are comparable with those of similar rocks elsewhere (table 3). Abundances of two or more times greater than normal are considered significant. The high-level concentration in the Stratified Primitive Area near Kirwin indicates an intensity of mineralization worthy of further exploration but does not necessarily indicate the presence of deposits of commercial grade. The most intensely mineralized rocks obtained from the Stratified Primitive Area are of lower grade than the best mineralized rock obtainable in the Stinkingwater and Kirwin districts (tables 3 and 6).

TABLE 3.—*Abundance of metallic elements, in parts per million, in rocks of the Stratified Primitive Area compared with the abundance in similar rocks of the world and in neighboring mineral districts*

| | Average abundance | | Maximum abundance | | |
|---|---|---|---|---|---|
| | | | Selected samples of mineralized rock and vein material | | |
| | Intermediate rocks of the world (Turekian and Wedepohl, 1961, table 2) | Nonmineralized rocks of the Stratified Primitive Area | Stratified Primitive Area | Kirwin district outside Stratified Primitive Area (Wilson, 1964b) | Stinkingwater district (table 6) |
| Lead | 15 | 20–30 | 3,000 (mineralized rock from dump of prospect pit). | 618,000 (grab sample from shaft). | >5,000 (veins and mineralized rocks from dumps). |
| Zinc | 60 | 25–50 | 1,000 (mineralized rock at surface). | 12,000 (bulk sample from dump). | >10,000 (veins and mineralized rocks from dumps). |
| Copper | 30 | 30 | 3,000 (mineralized rock at surface). | 23,300 (grab sample from dump). | 150,000 (vein from dump). |
| Molybdenum | 1 | 2 | 100 (small vein at surface). | 5,500 (grab sample from dump). | >2,000 (veins and mineralized rocks from dumps and outcrops). |
| Silver | .05 | <1 | 300 (mineralized rock at surface). | 3,835 (bulk sample from dump). | 1,000 (vein from dump). |

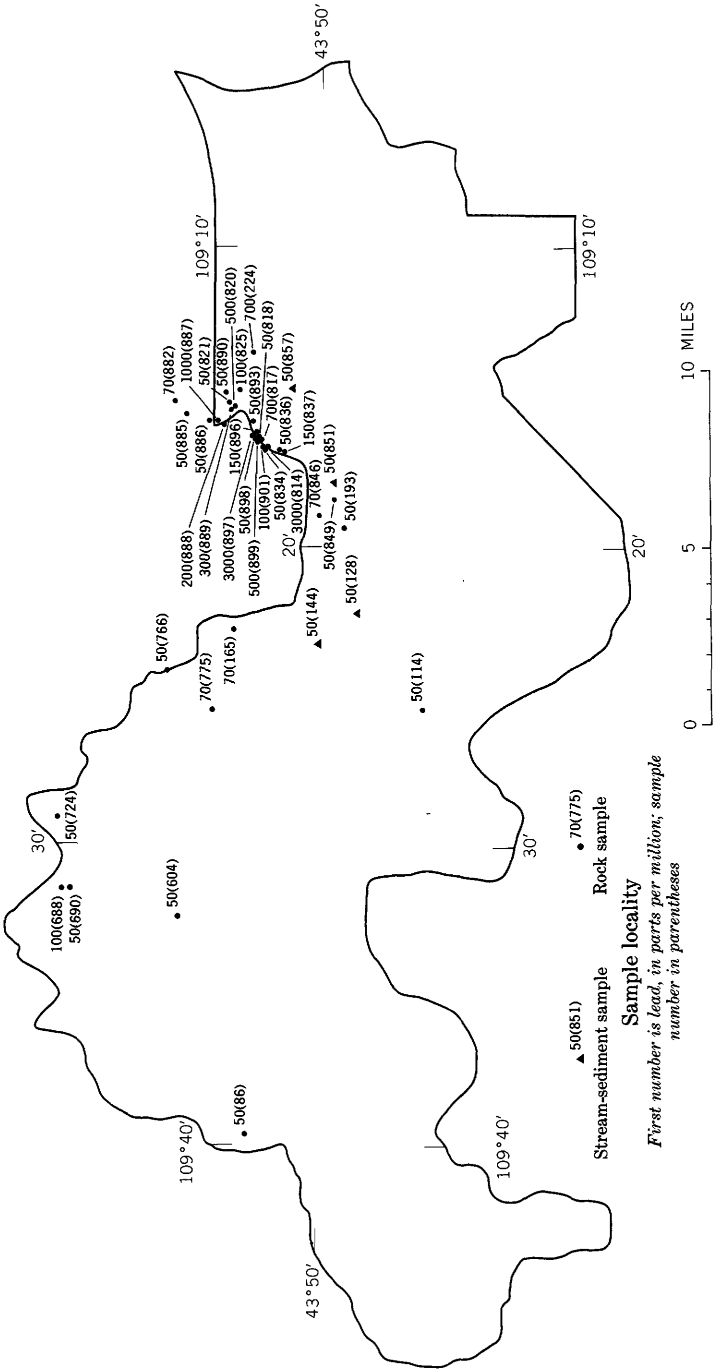


FIGURE 8.—Samples having at least twice the normal amount of lead.

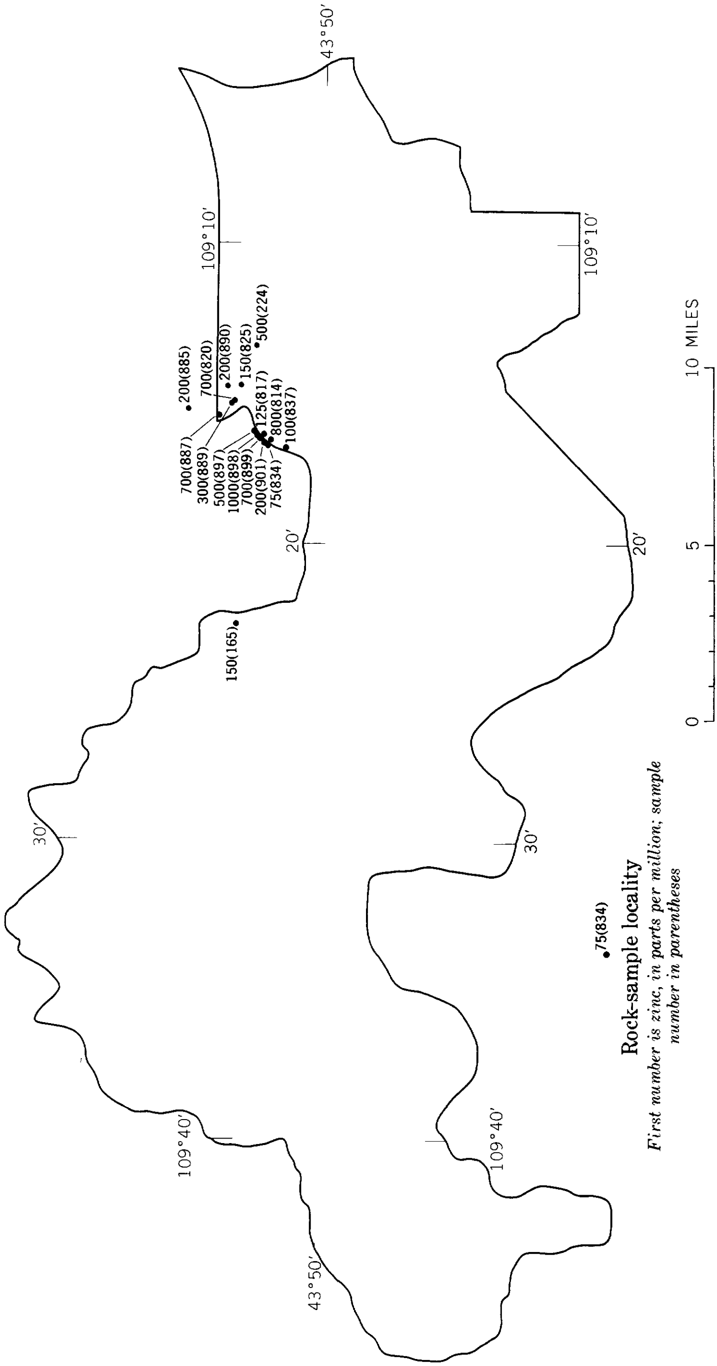


**FIGURE 9.—Samples having at least twice the normal amount of zinc.**

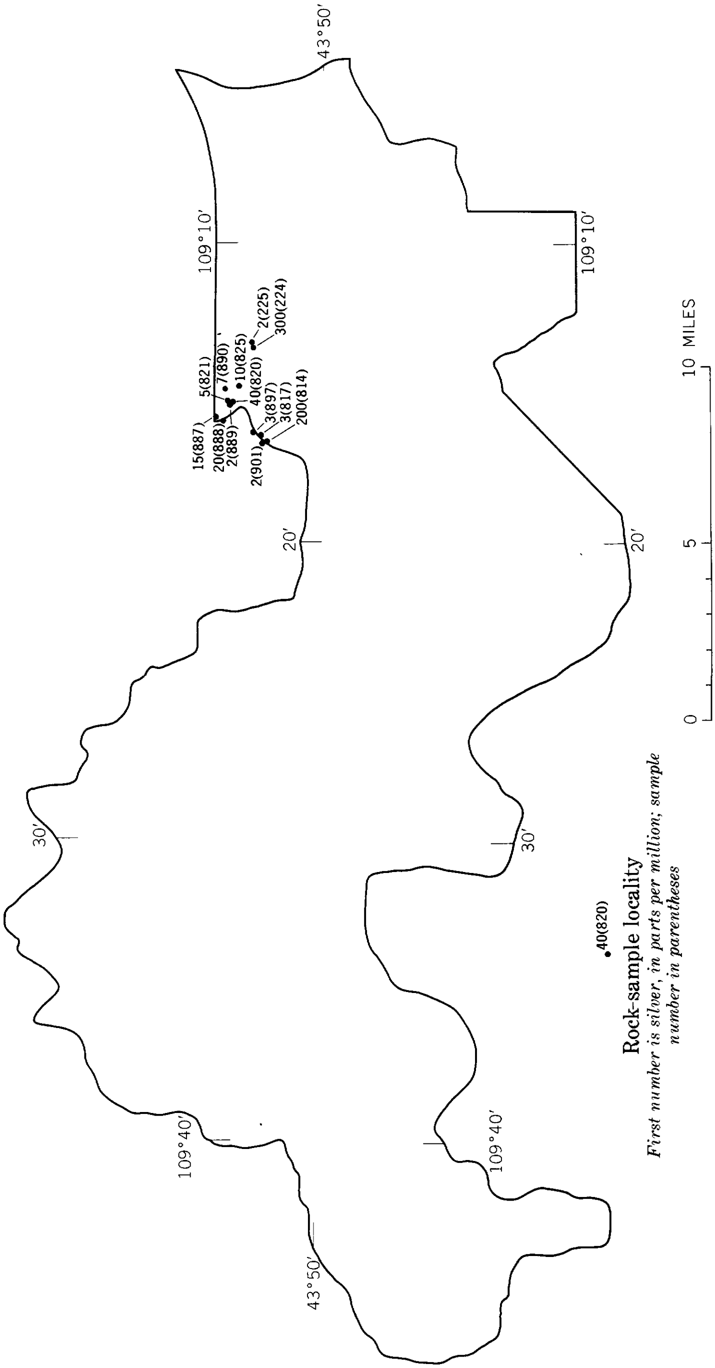


**FIGURE 10.—Samples having at least twice the normal amount of silver.**

216-442 O—66——4

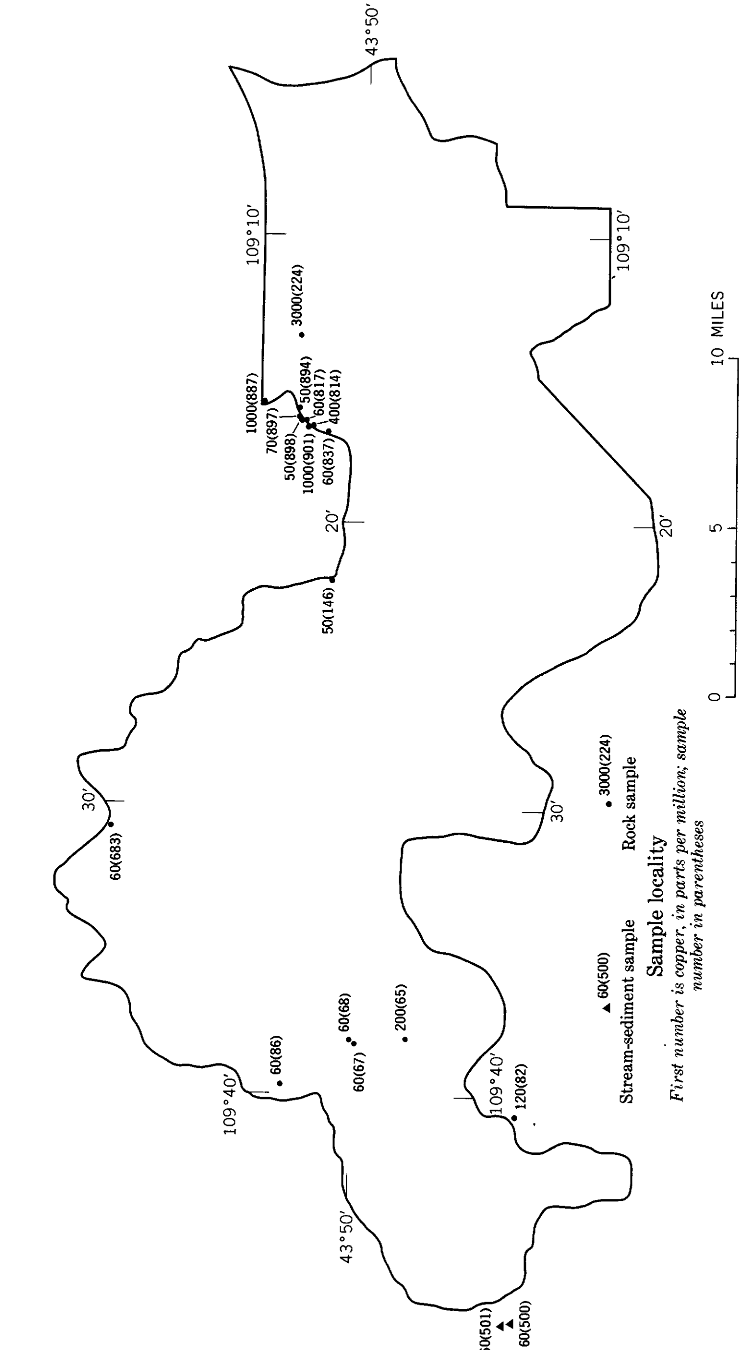


**FIGURE 11.**—Samples having at least twice the normal amount of copper.

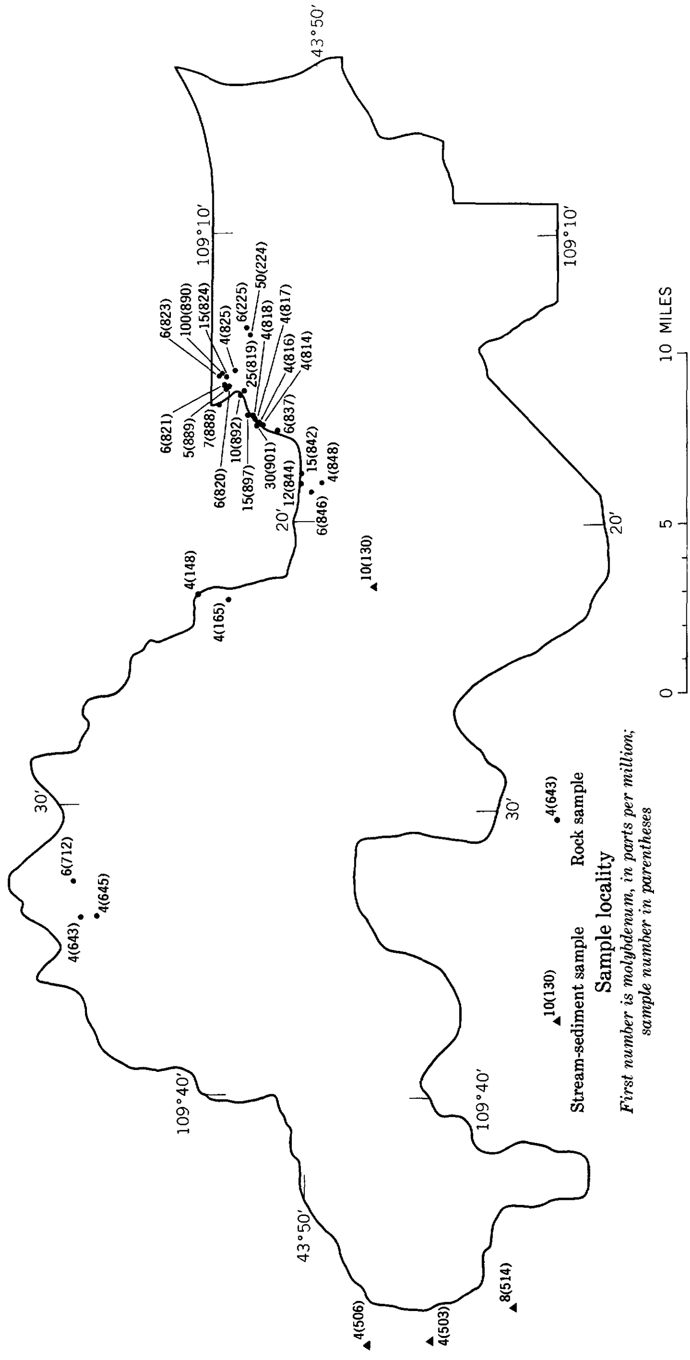


FIGURE 12.—Samples having at least twice the normal amount of molybdenum.

## METALLIC MINERAL POTENTIAL

### LEAD, ZINC, AND SILVER

Lead, zinc, and silver commonly occur together in mineral deposits and tend to be somewhat concentrated in areas of intrusives. The area of most intense concentration is near the Kirwin mining district where dikes emanating from the centers of intrusive rocks in the Kirwin area enter the Stratified Primitive Area. Samples of brown, iron-stained rocks, which occur in small scattered patches and in narrow strips along dikes, are high in lead, zinc, and silver. The highest values found (table 3) are not very high grade material in comparison with selected samples from the Stinkingwater and Kirwin districts. The volume of mineralized rock appears to be small, and because bedrock in the area of anomalous values is well exposed, it is unlikely that large volumes of mineralized rock are concealed by soil. The high values shown in figures 8, 9, and 10 and table 5 therefore indicate areas worthy of further prospecting but do not necessarily indicate the presence of minable ore.

### COPPER AND MOLYBDENUM

Copper and molybdenum are concentrated in altered rocks near dikes emanating from the Kirwin district (figs. 11 and 12). The basaltic lava flows on highlands between Horse Creek and Frontier Creek contain concentrations of copper which are slightly higher than are normal for most rocks of the area, but these concentrations are normal for basaltic lava flows (Turekian and Wedepohl, 1961, table 2). Sediments in streams draining the west edge of the Stratified Primitive Area contain anomalous concentrations which cannot be explained by the presence of intrusives or basaltic rocks. One sediment sample (No. 514, fig. 12) contains 8 parts per million of molybdenum. A sample containing more than 4 parts per million is generally considered worthy of investigation. Although mineralized rocks in the area bordering the Kirwin district contain enough copper and molybdenum to warrant further investigation, the known concentrations are not high in comparison with those in neighboring areas (table 3) and the volume of mineralized rock is small.

### GOLD

Selected samples of mineralized rock near the Kirwin district were analyzed for gold (table 5). Only one sample contains as much as 1 part per million, the content of which would be worth about $1 per ton. Wind River gravels downstream from tributaries draining the western two-thirds of the Stratified Primitive Area are practically devoid of gold. Schrader (1915, p. 144) gave the values in table 4 for samples of gravel obtained below the mouth of "North Fork"

(East Fork), which drains the Stratified Primitive Area, but above Dinwoody Creek, which drains a large area of slightly auriferous Precambrian rocks in the Wind River Range. The analyses (tables 4 and 5) show that significant concentrations of gold are not present in the Stratified Primitive Area.

TABLE 4.—*Gold values in stream sediments*

[Schrader (1915, p. 144)]

| *Sample No.* | *Value of gold, in cents per cubic yard of gravel* | *Sample No.* | *Value of gold, in cents per cubic yard of gravel* |
|---|---|---|---|
| 65 | 0 | 68 | 0 |
| 66 | 4 | 69 | 0 |
| 67 | 0 | 70 | 0 |

## SETTING OF NONMETALLIC MINERAL DEPOSITS

Bedded deposits of nonmetallic minerals such as coal, bentonite, and phosphate are found in Paleozoic and Mesozoic Formations which are exposed around the east and south edges of the Stratified Primitive Area. Because deposits of this type are rather extensive and common, it is possible that some underlie the primitive area. However, the faults and folds of rocks in which these deposits are enclosed make it difficult to determine exactly what parts of the area might be underlain by deposits. The cover of Tertiary rocks, which is 4,000 feet thick in some parts of the area, prevents direct observation and would make extraction of the deposits prohibitively expensive.

## NONMETALLIC MINERAL POTENTIAL

### BENTONITE

Bentonite in Cretaceous and Tertiary rocks crops out extensively in parts of Wyoming (Osterwald and Osterwald, 1952, p. 10). Formations containing bentonite probably extend into the Stratified Primitive Area. One bed 11 feet thick in the Wind River Formation crops out near the southwest border of the area (T. 42 N., R. 108 W.) just below the base of the Tepee Trail Formation (Keefer, 1957, p. 192). Within the Stratified Primitive Area, however, the Wind River Formation and older bentonitic beds are too deeply buried by the Tepee Trail and Wiggins Formations to be economically minable.

### COAL

Coal deposits of rather low quality are common in Cretaceous rocks of northwestern Wyoming adjacent to the Stratified Primitive Area (Hewett, 1926, p. 92; Keefer, 1957, p. 216). Coal-bearing beds probably underlie parts of the primitive area, but these beds are too deeply buried to be mined economically.

### PHOSPHATE

Permian rocks south of the Stratified Primitive Area contain a 1-foot bed of phosphorite (Keefer, 1957, p. 174), too thin to be minable at the outcrop. Although Permian rocks probably extend under parts of the primitive area, exploitation of possible phosphatic beds would be extremely difficult owing to the thick cover of barren beds.

### JADE

An outcrop of jade reportedly found somewhere on East Fork northeast of Dubois (Osterwald and Osterwald, 1952, p. 114) cannot be within the Stratified Primitive Area. In Wyoming, jade is associated with Precambrian metamorphic rocks which, in the Stratified Primitive Area, are deeply buried.

### PETRIFIED WOOD

Petrified tree stumps and logs are rather common constituents of the Wiggins Formation in the area between Frontier and Caldwell Creeks. Stream erosion and rockfalls from cliffs supply petrified wood to the creeks which move it downstream and out of the Stratified Primitive Area during spring floods. In this process, weakly indurated wood quickly disintegrates, leaving a residue composed of comparatively well silicified, durable pieces scattered on streambeds and in gravel bars.

The attractive texture of petrified wood has led collectors to remove small quantities of it from canyon walls, streambeds, and gravel bars. Although some petrified wood is said to have been gathered for sale by mineral dealers, most of it has been used by collectors themselves in pursuit of their hobbies. Continued collection of stumps and logs from cliffs will soon deplete the accessible supply.

Only a small proportion of the petrified wood of the area is completely silicified or "agatized." The remainder is of poor to mediocre quality for making decorative slabs and gems. The aesthetic value of petrified trees in natural exposures on cliffs therefore is probably greater than the value of the cut and polished wood.

### OIL AND GAS

Paleozoic and Mesozoic formations from which oil and gas are produced in the nearby Wind River and Bighorn Basins, and structural features in these formations favorable to the accumulation of oil and gas extend into the Stratified Primitive Area (fig. 6, and section on "Structure"). If one assumes that oil pools underlie the Absaroka Mountains as thickly as beneath surrounding areas (McGrew, 1955), the primitive area could be thought to contain considerable oil and gas resources. However, in all parts of the primitive area, intrusive magmas must have had severely adverse effects on oil and gas accumulations and on potentially favorable structural features. Magmas broke through to the surface and formed lava flows in the east half of the primitive area during deposition of the Wiggins Formation. Again, following deposition of the Wiggins, magmas irrupted in the central part of the area and formed the stocks and dikes shown on plate 1. Still later, magma broke through to the surface and formed the basaltic lava flows in the western part of the primitive area. It is unlikely that any oil and gas pools could have survived the repeated exposure to magmatic heat and the disruption of structural traps.

### SAND AND GRAVEL

In general, sand and gravel deposits suitable for use as aggregate are commonly found in terraces along trunk streams, especially those draining terranes composed of hard, siliceous rocks.

In the primitive area, sand and gravel deposits, which are found along the lower courses of some tributary streams, tend to be small, poorly sorted, and composed of rocks usually considered unsuitable for aggregate material.

### CONCLUSIONS

Except for the area between Dollar and Dundee Mountains, the Stratified Primitive Area has little potential for producing valuable minerals now or in the near future. This evaluation is based on the following findings:

1. No minable concentrations of minerals were discovered during the present investigation.
2. No minable concentrations of minerals have been discovered by prospectors over a 75-year period.
3. No significant amount of ore has been mined elsewhere in the southern Absarokas.
4. Extensive zones of highly altered rock, commonly associated with ore in most productive districts, are lacking in the primitive area.
5. Possible deposits of bedded nonmetallic minerals such as coal and phosphate in the primitive area would be too deeply buried by barren rock to be exploitable now or in the near future.
6. Intrusive rocks are likely to have rendered any possible oil and gas reservoirs unproductive.
7. Sand and gravel deposits are small and of poor quality.

An area of about 10 square miles along the border of the Stratified Primitive Area between Dollar and Dundee Mountains has a significant potential for producing metallic minerals and is therefore worthy of further exploration.

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*

[Analyses by G. C. Curtin, D. A. Grimes, and C. L. Whittington]

| Sample No. | Semiquantitative spectrographic analyses | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ti | Zn | Mn | V | Zr | La | Ni | Cu | Cd | Pb | B | Y | Mo | Sn | Co | Ag | Be | Bi | Ga |
| 8002 | 7,000 | <200 | 1,000 | 100 | 150 | 70 | 100 | 50 | <20 | 20 | 10 | 7 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8002a | 300 | <200 | 700 | 10 | 20 | <20 | 10 | 10 | <20 | 30 | 10 | 20 | <2 | <10 | <5 | <1 | 1 | <10 | 20 |
| 8004 | 5,000 | <200 | 700 | 150 | 70 | 30 | 30 | 20 | <20 | 20 | <10 | 7 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8007 | 5,000 | <200 | 1,000 | 200 | 70 | 30 | 30 | 20 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8008 | 5,000 | <200 | 1,000 | 200 | 70 | 30 | 30 | 15 | <20 | 15 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8010 | 3,000 | <200 | 1,000 | 150 | 70 | 20 | 30 | 30 | <20 | 15 | <10 | 7 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8011 | 5,000 | <200 | 1,000 | 300 | 100 | 20 | 50 | 20 | <20 | 10 | <10 | 5 | <2 | <10 | 50 | <1 | <1 | <10 | 20 |
| 8012 | 5,000 | <200 | 1,000 | 200 | 50 | 20 | 50 | 20 | <20 | 20 | <10 | 5 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8013 | 3,000 | <200 | 700 | 100 | 70 | 30 | 30 | 20 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8014 | 5,000 | <200 | 700 | 200 | 50 | 20 | 30 | 30 | <20 | 20 | <10 | 5 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8016 | 3,000 | <200 | 1,000 | 200 | 70 | 20 | 50 | 15 | <20 | 15 | <10 | 7 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8016a | 5,000 | <200 | 500 | 50 | 70 | 30 | 10 | 3 | <20 | 20 | 10 | 10 | <2 | <10 | 7 | <1 | 1 | <10 | 15 |
| 8016b | 30 | <200 | 1,500 | <10 | <5 | <20 | <2 | 5 | <20 | <10 | <10 | 5 | <2 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8017 | 5,000 | <200 | 700 | 150 | 70 | 30 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8018 | 3,000 | <200 | 700 | 150 | 70 | 30 | 30 | 20 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8019 | 5,000 | <200 | 700 | 300 | 50 | 30 | 50 | 20 | <20 | 20 | <10 | 5 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8020 | 5,000 | <200 | 700 | 200 | 50 | 30 | 20 | 20 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8021 | 5,000 | <200 | ·700 | 200 | 100 | 30 | 50 | 20 | <20 | 15 | <10 | 7 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8022 | 5,000 | <200 | 1,000 | 200 | 100 | 30 | 30 | 20 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8024 | 5,000 | <200 | 1,000 | 300 | 100 | 20 | 50 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 30 | <1 | <1 | <10 | 15 |
| 8025 | 5,000 | <200 | 1,000 | 200 | 70 | 30 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8026c | 5,000 | <200 | 500 | 100 | 100 | 20 | 20 | 10 | <20 | 10 | <10 | 10 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8027 | 5,000 | <200 | 1,000 | 200 | 70 | 30 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8028 | 5,000 | <200 | 700 | 200 | 100 | 30 | 30 | 20 | <20 | 30 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8029 | 3,000 | <200 | 700 | 200 | 70 | 20 | 30 | 20 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8030 | 5,000 | <200 | 700 | 200 | 30 | 20 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8031 | 5,000 | <200 | 700 | 150 | 50 | 20 | 50 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8032 | 7,000 | <200 | 1,000 | 200 | 50 | 20 | 30 | 15 | <20 | 10 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8033 | 7,000 | <200 | 700 | 300 | 70 | 20 | 50 | 15 | <20 | 15 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8035 | 7,000 | <200 | 1,500 | 200 | 70 | 20 | 30 | 20 | <20 | 15 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8036a | 5,000 | <200 | 700 | 150 | 100 | 70 | 20 | 10 | <20 | 15 | <10 | 7 | <2 | <10 | 20 | <1 | 1 | <10 | 30 |
| 8038 | 7,000 | <200 | 1,500 | 200 | 70 | 20 | 30 | 30 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8039 | 7,000 | <200 | 700 | 300 | 70 | 20 | 30 | 30 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8040 | 7,000 | <200 | 1,000 | 200 | 100 | 20 | 30 | 30 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8041 | 5,000 | <200 | 1,000 | 200 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8044 | 5,000 | <200 | 1,000 | 150 | 70 | 20 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8046 | 7,000 | <200 | 1,500 | 200 | 50 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8047 | 7,000 | <200 | 1,000 | 200 | 50 | <20 | 50 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8048 | 7,000 | <200 | 1,500 | 300 | 70 | <20 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8049 | 10,000 | <200 | 700 | 200 | 100 | 20 | 30 | 20 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8050 | 7,000 | <200 | 700 | 200 | 100 | <20 | 50 | 20 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8051 | 5,000 | <200 | 700 | 150 | 50 | 20 | 50 | 20 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8053 | 5,000 | <200 | 700 | 200 | 50 | 30 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8054 | 5,000 | <200 | 700 | 150 | 70 | 20 | 30 | 30 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8055 | 5,000 | <200 | 700 | 200 | 50 | 20 | 30 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8056 | 5,000 | <200 | 700 | 150 | 50 | 20 | 20 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8057 | 7,000 | <200 | 1,500 | 150 | 70 | 20 | 30 | 2 | <20 | 15 | <10 | 5 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8058 | 10,000 | <200 | 1,500 | 150 | 70 | 20 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8059 | 5,000 | <200 | 200 | 200 | 100 | 50 | 15 | 15 | <20 | 15 | <10 | 10 | <2 | <10 | 10 | <1 | <1 | <10 | 20 |
| 8060 | 10,000 | <200 | 1,500 | 200 | 70 | 30 | 30 | 15 | <20 | 15 | <10 | 7 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8061 | 7,000 | <200 | 700 | 100 | 70 | 30 | 50 | 10 | <20 | 15 | <10 | 5 | <2 | <20 | 15 | <1 | <1 | <10 | 20 |
| 8062 | 7,000 | <200 | 1,500 | 150 | 70 | 20 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <20 | 15 | <1 | <1 | <10 | 20 |
| 8063 | 7,000 | <200 | 1,000 | 150 | 100 | 20 | 30 | 20 | <20 | 20 | <10 | 5 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8065c | 3,000 | <200 | 1,000 | 70 | 200 | 50 | 70 | 150 | <20 | 20 | 15 | 7 | <2 | <10 | 15 | <1 | 3 | <10 | 20 |
| 8067a | 5,000 | <200 | 700 | 150 | 150 | 100 | 70 | 20 | <20 | 20 | 10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 30 |
| 8067b | 5,000 | <200 | 700 | 150 | 150 | 100 | 70 | 20 | <20 | 20 | 10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 30 |
| 8067c | 5,000 | <200 | 500 | 150 | 150 | 70 | 70 | 30 | <20 | 30 | 40 | 10 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8068a | 100 | <200 | 200 | 20 | 50 | <20 | 15 | 7 | <20 | <10 | 15 | <5 | <2 | <10 | 5 | <1 | 1 | <10 | <10 |
| 8068a1 | 50 | <200 | 100 | 100 | 7 | <20 | 15 | 5 | <20 | <10 | <10 | <5 | <2 | <10 | 5 | <1 | <1 | <10 | <10 |
| 8068a2 | 100 | <200 | 200 | 20 | 50 | <20 | 15 | 7 | <20 | <10 | 15 | <5 | <2 | <10 | 5 | <1 | 1 | <10 | <10 |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | As | Sb | W | Sc | Cr | Ba | Sr | Percent Fe | Percent Mg | Percent Ca | Chemical analyses Cu | Chemical analyses Zn | Chemical analyses Mo | Chemical analyses Au | Chemical analyses Ag | Sample Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8002 | <500 | <50 | <50 | 10 | 300 | 1,000 | 1,000 | 5. | 2. | 3. | 40 | 25 | <2 | | | Altered rock |
| 8002a | <500 | <50 | <50 | 5 | 10 | 70 | <50 | .5 | .1 | .3 | | | | | | Volcanic glass |
| 8004 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 3. | 2. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8007 | <500 | <50 | <50 | 10 | 150 | 1,500 | 1,500 | 5. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8008 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 7. | 2. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8010 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 5. | 1.5 | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8011 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,500 | 7. | 2. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8012 | <500 | <50 | <50 | 10 | 150 | 700 | 1,000 | 7. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8013 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,000 | 3. | 1.5 | 2. | 40 | 25 | 2 | | | Stream sediment |
| 8014 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,500 | 7. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8016 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,500 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8016a | <500 | <50 | <50 | <5 | 20 | 1,000 | 500 | 2. | 1.5 | 2. | <5 | 25 | <2 | | | Altered rock |
| 8016b | <500 | <50 | <50 | <5 | 5 | 150 | 200 | .2 | 7. | 20. | <5 | 50 | <2 | | | Altered rock |
| 8017 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 5. | 2. | 3. | 5 | 25 | <2 | | | Stream sediment |
| 8018 | <500 | <50 | <50 | 10 | 100 | 700 | 1,000 | 5. | 2. | 2. | 30 | 25 | 2 | | | Stream sediment |
| 8019 | <500 | <50 | <50 | 15 | 150 | 700 | 1,000 | 7. | 3. | 3. | 10 | 50 | <2 | | | Stream sediment |
| 8020 | <500 | <50 | <50 | 10 | 50 | 1,000 | 1,000 | 5. | 2. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8021 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,500 | 7. | 2. | 3. | 10 | 25 | <2 | | | Stream sediment |
| 8022 | <500 | <50 | <50 | 10 | 70 | 1,000 | 1,500 | 7. | 2. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8024 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,000 | 7. | 3. | 3. | 5 | 50 | <2 | | | Stream sediment |
| 8025 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 5. | 2. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8026c | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,000 | 7. | 2. | 3. | 5 | <25 | <2 | | | Altered rock |
| 8027 | <500 | <50 | <50 | 10 | 70 | 1,000 | 1,000 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8028 | <500 | <50 | <50 | 10 | 70 | 1,000 | 1,500 | 7. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8029 | <500 | <50 | <50 | 10 | 70 | 700 | 1,000 | 5. | 2. | 2. | 20 | 25 | <2 | | | Stream sediment |
| 8030 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 7. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8031 | <500 | <50 | <50 | 7 | 150 | 700 | 700 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8032 | <500 | <50 | <50 | 10 | 70 | 700 | 700 | 7. | 2. | 2. | 10 | 25 | <2 | | | Stream sediment |
| 8033 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,000 | 10. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8035 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 7. | 2. | 3. | 5 | 25 | <2 | | | Stream sediment |
| 8036a | <500 | <50 | <50 | 15 | 100 | 1,000 | 2,000 | 5. | 2. | 3. | 20 | 25 | <2 | | | Altered rock |
| 8038 | <500 | <50 | <50 | 10 | 70 | 700 | 700 | 7. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8039 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 10. | 3. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8040 | <500 | <50 | <50 | 10 | 70 | 1,000 | 1,000 | 10. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8041 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8044 | <500 | <50 | <50 | 7 | 100 | 1,000 | 700 | 7. | 2. | 3. | 10 | 25 | <2 | | | Stream sediment |
| 8046 | <500 | <50 | <50 | 15 | 100 | 1,000 | 1,000 | 10. | 2. | 2. | 30 | 25 | 2 | | | Stream sediment |
| 8047 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,500 | 10. | 3. | 3. | 10 | 25 | <2 | | | Stream sediment |
| 8048 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,000 | 10. | 3. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8049 | <500 | <50 | <50 | 10 | 100 | 1,000 | 700 | 7. | 2. | 3. | 10 | 25 | <2 | | | Stream sediment |
| 8050 | <500 | <50 | <50 | 10 | 150 | 1,000 | 700 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8051 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 7. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8053 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 7. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8054 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 7. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8055 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 5. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8056 | <500 | <50 | <50 | 7 | 70 | 1,000 | 700 | 5. | 1.5 | 3. | 10 | 25 | <2 | | | Stream sediment |
| 8057 | <500 | <50 | <50 | 10 | 150 | 1,500 | 1,000 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8058 | <500 | <50 | <50 | 15 | 150 | 1,500 | 1,500 | 7. | 3. | 3. | 15 | 50 | 2 | | | Stream sediment |
| 8059 | <500 | <50 | <50 | 5 | 20 | 1,500 | 1,500 | 5. | .7 | 2. | 20 | 25 | <2 | | | Altered rock |
| 8060 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 10. | 3. | 3. | 10 | 25 | <2 | | | Stream sediment |
| 8061 | <500 | <50 | <50 | 5 | 150 | 1,500 | 1,500 | 5. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8062 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 7. | 2. | 3. | 5 | 25 | <2 | | | Stream sediment |
| 8063 | <500 | <50 | <50 | 10 | 150 | 1,500 | 1,500 | 7. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8065c | <500 | <50 | <50 | 5 | 30 | 1,000 | 200 | 3. | .7 | 1.5 | 200 | 25 | <2 | | | Altered rock |
| 8067a | <500 | <50 | <50 | 15 | 500 | 2,000 | 3,000 | 5. | 2. | 3. | 60 | 25 | 2 | | | Dike rock |
| 8067b | <500 | <50 | <50 | 10 | 300 | 2,000 | 2,000 | 5. | 2. | 3. | 30 | 25 | <2 | | | Altered rock |
| 8067c | <500 | <50 | <50 | 10 | 200 | 1,500 | 1,500 | 3. | 2. | 2. | | | | | | Dike rock |
| 8068a | <500 | <50 | <50 | <5 | <5 | 300 | <50 | 2. | .2 | .7 | | | | | | Altered rock |
| 8068a1 | <500 | <50 | <50 | <5 | <5 | 70 | <50 | 2. | .1 | .1 | 15 | <25 | 2 | | | Altered rock |
| 8068a2 | <500 | <50 | <50 | <5 | <5 | 300 | <50 | 2. | .2 | .7 | 10 | <25 | <2 | | | Altered rock |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | Semiquantitative spectrographic analyses | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ti | Zn | Mn | V | Zr | La | Ni | Cu | Cd | Pb | B | Y | Mo | Sn | Co | Ag | Be | Bi | Ga |
| 8068b | 7,000 | <200 | 700 | 200 | 150 | 70 | 100 | 50 | <20 | 20 | 10 | 10 | <2 | <10 | 20 | <1 | <1 | <10 | 30 |
| 8069b | 5,000 | <200 | 200 | 100 | 100 | 30 | 50 | 15 | <20 | 20 | 20 | 5 | <2 | <10 | 10 | <1 | 1 | <10 | 20 |
| 8069c | 7,000 | <200 | 500 | 200 | 150 | 70 | 50 | 30 | <20 | 20 | 15 | 10 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8071 | 10,000 | <200 | 1,500 | 150 | 100 | 30 | 30 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8072 | 7,000 | <200 | 1,500 | 200 | 100 | 30 | 30 | 15 | <20 | 15 | 10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8073 | 10,000 | <200 | 1,500 | 150 | 100 | 30 | 50 | 20 | <20 | 20 | 10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8074 | 1,000 | <200 | 100 | 70 | 50 | <20 | 20 | 20 | <20 | <10 | <10 | <5 | <2 | <10 | 15 | <1 | <1 | <10 | <20 |
| 8075 | 7,000 | <200 | 1,500 | 100 | 70 | 30 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 10 |
| 8076 | 10,000 | <200 | 1,500 | 200 | 70 | 20 | 30 | 30 | <20 | 15 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8077 | 10,000 | <200 | 1,500 | 300 | 70 | 20 | 50 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8080 | 7,000 | <200 | 1,000 | 200 | 70 | 30 | 30 | 20 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8081 | 1,500 | <200 | 200 | 30 | 30 | 20 | 30 | 10 | <20 | 10 | <10 | 5 | <2 | <10 | 10 | <1 | <1 | <10 | 10 |
| 8082 | 200 | <200 | 100 | 30 | <5 | <20 | 15 | 70 | <20 | <10 | <10 | <5 | <2 | <10 | 5 | <1 | <1 | <10 | <10 |
| 8083 | 100 | <200 | <20 | <10 | 70 | <20 | <2 | 2 | <20 | <10 | <10 | <5 | <2 | <10 | <5 | <1 | 2 | <10 | <10 |
| 8086a | 5,000 | <200 | 500 | 200 | 100 | 100 | 100 | 30 | <20 | 50 | <10 | <2 | <2 | <10 | 20 | <1 | <1 | <10 | 30 |
| 8087 | 7,000 | <200 | 1,500 | 150 | 100 | 30 | 30 | 20 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8088 | 7,000 | <200 | 1,500 | 200 | 100 | 30 | 30 | 20 | <20 | 15 | 10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8089 | 7,000 | <200 | 1,000 | 150 | 100 | 30 | 20 | 20 | <20 | 15 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8090 | 7,000 | <200 | 1,500 | 150 | 70 | 20 | 20 | 15 | <20 | 15 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8091 | 10,000 | <200 | 1,500 | 200 | 100 | 20 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8092 | 7,000 | <200 | 1,500 | 150 | 70 | 30 | 30 | 20 | <20 | 20 | <10 | 5 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8093 | 7,000 | <200 | 1,500 | 200 | 100 | 30 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8094 | 7,000 | <200 | 1,000 | 200 | 70 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8095a | 5,000 | <200 | 300 | 300 | 100 | 50 | 70 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 30 |
| 8095b | 3,000 | <200 | 200 | 150 | 100 | 50 | 15 | 7 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8096 | 7,000 | <200 | 1,000 | 200 | 70 | 30 | 30 | 20 | <20 | 30 | <10 | 7 | <2 | <10 | 30 | <1 | 1 | <10 | 20 |
| 8097 | 5,000 | <200 | 1,000 | 150 | 100 | 30 | 30 | 20 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8098 | 7,000 | <200 | 1,000 | 200 | 150 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8099 | 7,000 | <200 | 1,500 | 200 | 100 | 30 | 30 | 20 | <20 | 20 | 10 | 5 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8100 | 7,000 | <200 | 1,000 | 200 | 100 | 30 | 30 | 20 | <20 | 20 | <10 | 7 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8101 | 7,000 | <200 | 1,000 | 200 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8102 | 7,000 | <200 | 1,000 | 200 | 100 | 30 | 30 | 20 | <20 | 20 | 10 | 7 | <2 | <10 | 30 | <1 | 1 | <10 | 20 |
| 8103 | 7,000 | <200 | 700 | 150 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 30 | <1 | 1 | <10 | 20 |
| 8104 | 7,000 | <200 | 1,000 | 150 | 100 | 30 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 30 | <1 | 1 | <10 | 20 |
| 8105 | 7,000 | <200 | 1,000 | 150 | 70 | 30 | 15 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8106 | 7,000 | <200 | 1,000 | 150 | 70 | 30 | 15 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8107 | 7,000 | <200 | 700 | 150 | 70 | 20 | 20 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8108 | 5,000 | -200 | 1,000 | 150 | 100 | 30 | 20 | 15 | <20 | 30 | 10 | 5 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8113 | 7,000 | <200 | 500 | 150 | 70 | 30 | 20 | 15 | <20 | 20 | 10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8114a | 500 | <200 | 300 | 15 | 50 | <20 | 10 | 2 | <20 | 50 | 10 | 7 | <2 | <10 | <5 | <1 | <1 | <10 | 15 |
| 8115a | 2,000 | <200 | 100 | 70 | 70 | 20 | 30 | 7 | <20 | 10 | <10 | 5 | <2 | <10 | 10 | <1 | 1 | <10 | 20 |
| 8115b | 2,000 | <200 | 100 | 100 | 70 | 20 | 20 | 5 | <20 | 20 | <10 | 7 | <2 | <10 | 5 | <1 | 5 | <10 | 15 |
| 8117 | 300 | <200 | 50 | <10 | 20 | <20 | 3 | 2 | <20 | 30 | <10 | <5 | <2 | <10 | <5 | <1 | <1 | <10 | 15 |
| 8118 | 5,000 | <200 | 1,000 | 200 | 70 | 30 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8118a | 3,000 | <200 | 700 | 100 | 70 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8119 | 5,000 | <200 | 700 | 150 | 50 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8120 | 7,000 | <200 | 700 | 100 | 50 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8121 | 7,000 | <200 | 700 | 150 | 150 | 30 | 30 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8122 | 7,000 | <200 | 700 | 150 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8123 | 7,000 | <200 | 700 | 200 | 100 | 20 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8124 | 7,000 | <200 | 700 | 200 | 70 | 30 | 20 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8125 | 5,000 | <200 | 500 | 100 | 100 | 30 | 20 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8126 | 5,000 | <200 | 700 | 150 | 150 | 30 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8127 | 5,000 | <200 | 700 | 200 | 100 | 30 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8128 | 3,000 | <200 | 500 | 100 | 100 | 30 | 20 | 15 | <20 | 50 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8129 | 5,000 | <200 | 300 | 100 | 70 | 30 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8130 | 5,000 | <200 | 500 | 150 | 100 | 30 | 30 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 15 |
| 8131 | 5,000 | <200 | 700 | 150 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8132 | 5,000 | <200 | 700 | 200 | 150 | 30 | 50 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8133 | 5,000 | <200 | 700 | 150 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample | | | | | | | | Percent | | | Chemical analyses | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | As | Sb | W | Sc | Cr | Ba | Sr | Fe | Mg | Ca | Cu | Zn | Mo | Au | Ag | Sample Description |
| 8068b | <500 | <50 | <50 | 10 | 300 | 1,500 | 2,000 | 7. | 3. | 3. | 60 | 50 | <2 | | | Altered rock |
| 8069b | <500 | <50 | <50 | 5 | 100 | 2,000 | 1,000 | 2. | 1.5 | 2. | 20 | 25 | <2 | | | Tuff |
| 8069c | <500 | <50 | <50 | 15 | 500 | 1,500 | 1,500 | 7. | 1.5 | 3. | 30 | 50 | <2 | | | Altered rock |
| 8071 | <500 | <50 | <50 | 15 | 100 | 1,000 | 1,000 | 7. | 3. | 3. | 10 | 25 | <2 | | | Stream sediment |
| 8072 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 7. | 3. | 3. | 20 | 25 | 2 | | | Stream sediment |
| 8073 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 10. | 3. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8074 | <500 | <50 | <50 | <5 | 30 | 1,000 | 300 | 2. | .7 | 1.5 | 30 | <25 | <2 | | | Altered rock |
| 8075 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 7. | 2. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8076 | <500 | <50 | <50 | 10 | 150 | 1,000 | 700 | 7. | 3. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8077 | <500 | <50 | <50 | 15 | 200 | 1,000 | 1,500 | 15. | 5. | 3. | 10 | 50 | <2 | | | Stream sediment |
| 8080 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 7. | 3. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8081 | <500 | <50 | <50 | <5 | 70 | 1,000 | 700 | 1.5 | 1.5 | 2. | 10 | <25 | <2 | | | Altered rock |
| 8082 | <500 | <50 | <50 | <5 | 7 | 200 | 300 | .3 | 7. | >20. | 120 | <25 | <2 | | | Limestone |
| 8083 | <500 | <50 | <50 | <5 | <5 | 50 | <50 | <.1 | .1 | .1 | 5 | <25 | <2 | | | Concretion |
| 8086a | <500 | <50 | <50 | 15 | 500 | 2,000 | 2,000 | 7. | 3. | 3. | 60 | 25 | <2 | | | Altered rock |
| 8087 | <500 | <50 | <50 | 10 | 150 | 1,500 | 1,500 | 10. | 3. | 3. | 40 | 25 | <2 | | | Stream sediment |
| 8088 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,500 | 10. | 3. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8089 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 10. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8090 | <500 | <50 | <50 | 10 | 150 | 1,000 | 700 | 10. | 3. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8091 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 15. | 3. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8092 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 10. | 2. | 3. | 10 | 50 | <2 | | | Stream sediment |
| 8093 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 7. | 3. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8094 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 7. | 3. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8095a | <500 | <50 | <50 | 15 | 150 | 2,000 | 2,000 | 7. | 2. | 3. | 15 | 25 | <2 | | | Altered rock |
| 8095b | <500 | <50 | <50 | 5 | 50 | 1,500 | 1,500 | 3. | 1.5 | 2. | 20 | 25 | <2 | | | Altered rock |
| 8096 | <500 | <50 | <50 | 10 | 70 | 1,000 | 1,000 | 10. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8097 | <500 | <50 | <50 | 7 | 70 | 1,000 | 1,500 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8098 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 7. | 2. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8099 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 10. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8100 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 10. | 2. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8101 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 10. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8102 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 10. | 3. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8103 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 10. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8104 | <500 | <50 | <50 | 10 | 70 | 1,000 | 1,000 | 7. | 2. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8105 | <500 | <50 | <50 | 10 | 50 | 1,000 | 1,000 | 7. | 3. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8106 | <500 | <50 | <50 | 10 | 30 | 1,000 | 1,000 | 7. | 2. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8107 | <500 | <50 | <50 | 10 | 50 | 1,000 | 1,000 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8108 | <500 | <50 | <50 | 10 | 50 | 1,000 | 1,000 | 7. | 2. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8113 | <500 | <50 | <50 | 5 | 100 | 1,000 | 1,500 | 5. | 1. | 3. | 20 | 25 | 2 | | | Stream sediment |
| 8114a | <500 | <50 | <50 | <5 | 7 | 1,000 | 500 | 1. | .5 | .7 | | | | | | Altered rock |
| 8115a | <500 | <50 | <50 | <5 | 50 | 700 | 1,000 | 7. | .5 | 3. | | | | | | Altered rock |
| 8115b | <500 | <50 | <50 | <5 | 50 | 700 | 700 | 5. | .7 | 2. | | | | | | Altered rock |
| 8117 | <500 | <50 | <50 | <5 | <5 | 1,000 | 100 | 1. | .1 | .1 | | | | | | Altered rock |
| 8118 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 7. | 2. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8118a | <500 | <50 | <50 | 5 | 150 | 1,000 | 2,000 | 3. | 1. | 2. | 15 | 25 | <2 | | | Altered rock |
| 8119 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 7. | 2. | 3. | 10 | 50 | <2 | | | Stream sediment |
| 8120 | <500 | <50 | <50 | 5 | 100 | 1,000 | 1,000 | 5. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8121 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,500 | 7. | 2. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8122 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,000 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8123 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 5. | 3. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8124 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,500 | 7. | 2. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8125 | <500 | <50 | <50 | 5 | 100 | 1,000 | 1,000 | 5. | 2. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8126 | <500 | <50 | <50 | 7 | 100 | 1,500 | 1,000 | 5. | 1.5 | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8127 | <500 | <50 | <50 | 10 | 200 | 1,000 | 1,500 | 7. | 2. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8128 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 5. | 1.5 | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8129 | <500 | <50 | <50 | 7 | 70 | 1,000 | 1,000 | 3. | 2. | 3. | 10 | 25 | <2 | | | Stream sediment |
| 8130 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 3. | 2. | 3. | 30 | 25 | 10 | | | Stream sediment |
| 8131 | <500 | <50 | <50 | 7 | 100 | 1,500 | 1,500 | 5. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8132 | <500 | <50 | <50 | 10 | 50 | 1,000 | 1,500 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8133 | <500 | <50 | <50 | 7 | 70 | 1,000 | 1,000 | 5. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |

216-442 O—66——5

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | Semiquantitative spectrographic analyses | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ti | Zn | Mn | V | Zr | La | Ni | Cu | Cd | Pb | B | Y | Mo | Sn | Co | Ag | Be | Bi | Ga |
| 8134 | 7,000 | <200 | 700 | 200 | 100 | 50 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8135 | 3,000 | <200 | 500 | 150 | 100 | 30 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8136 | 5,000 | <200 | 700 | 150 | 150 | 30 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8137 | 7,000 | <200 | 700 | 150 | 150 | 30 | 50 | 20 | <20 | 20 | 10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8138 | 5,000 | <200 | 700 | 200 | 100 | 50 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8139 | 5,000 | <200 | 700 | 200 | 100 | 30 | 30 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8140 | 500 | <200 | 300 | 10 | 30 | <20 | 10 | 3 | <20 | 15 | 10 | 10 | <2 | <10 | <5 | <1 | 1 | <10 | 20 |
| 8140b | 300 | <200 | 200 | 10 | 50 | <20 | <2 | 2 | <20 | 30 | 10 | 5 | <2 | <10 | <5 | <1 | 1 | <10 | 20 |
| 8140d | 3,000 | <200 | 300 | 100 | 70 | 30 | 30 | 7 | <20 | 20 | 10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8143 | 1,000 | <200 | 300 | 50 | 30 | <20 | 30 | 7 | <20 | 30 | <10 | 5 | <2 | <10 | 10 | <1 | 1 | <10 | 20 |
| 8144a1 | 5,000 | <200 | 700 | 200 | 150 | 30 | 50 | 15 | <20 | 20 | 10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8144a2 | 5,000 | <200 | 700 | 150 | 150 | 30 | 30 | 15 | <20 | 20 | 10 | 7 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8144c | 500 | <200 | 300 | 15 | 20 | <20 | 2 | 3 | <20 | 50 | 10 | 7 | <2 | <10 | <5 | <1 | 1 | <10 | 20 |
| 8145 | 1,500 | <200 | 5,000 | 100 | 30 | 50 | 10 | 3 | <20 | 30 | <10 | 15 | <2 | <10 | 10 | <1 | | <10 | 15 |
| 8146a | 300 | <200 | 500 | 20 | 5 | 30 | 5 | 5 | <20 | <10 | <10 | 50 | 2 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8146 | 500 | <200 | 200 | 10 | 30 | <20 | <2 | 2 | <20 | 30 | <10 | 5 | <2 | <10 | <5 | <1 | 1 | <10 | 20 |
| 8146b | 1,000 | <200 | 2,000 | 70 | 30 | 20 | 15 | 15 | <20 | 10 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | <10 |
| 8146c | 50 | <200 | 100 | 15 | <5 | <20 | <2 | <2 | <20 | <10 | <10 | <5 | <2 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8147 | 5,000 | <200 | 700 | 100 | 100 | 30 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8148 | 5,000 | <200 | 300 | 150 | 150 | 30 | 20 | 7 | <20 | 10 | <10 | 10 | <2 | <10 | 10 | <1 | 1 | <10 | 20 |
| 8148a | 5,000 | <200 | 100 | 100 | 100 | 30 | 2 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | <5 | <1 | <1 | <10 | 20 |
| 8148b | 7,000 | <200 | 150 | <5 | 100 | <20 | 7 | 3 | <20 | <10 | <10 | 7 | 2 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8149 | 3,000 | <200 | 100 | 50 | 150 | 50 | 15 | 15 | <20 | 15 | <10 | 5 | 5 | <10 | 15 | <1 | <1 | <10 | 10 |
| 8149a | 3,000 | <200 | 300 | 100 | 150 | 50 | 30 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8150 | 5,000 | <200 | 500 | 100 | 70 | 30 | 20 | 15 | <20 | 15 | <10 | 7 | <2 | <10 | 15 | <1 | 1 | <10 | 15 |
| 8150a | 3,000 | <200 | 300 | 70 | 100 | 50 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8151 | 5,000 | <200 | 700 | 150 | 150 | 50 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8152 | 5,000 | <200 | 700 | 150 | 200 | 30 | 50 | 20 | <20 | 20 | <10 | 5 | 3 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8153a | 50 | <200 | 300 | 15 | <5 | <20 | 2 | 2 | <20 | <10 | <10 | <5 | <2 | <10 | <5 | <1 | 1 | <10 | <10 |
| 8153b | 3,000 | <200 | 500 | 100 | 100 | 50 | 50 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8154 | 1,500 | <200 | 500 | 100 | 70 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8154a | 50 | <200 | 70 | 10 | <5 | <20 | <2 | <2 | <20 | 10 | <10 | <5 | <2 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8155 | 5,000 | <200 | 700 | 100 | 150 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | 1 | <10 | 15 |
| 8156 | 1,000 | <200 | 500 | 30 | 30 | 20 | 10 | 7 | <20 | 20 | <10 | 5 | <2 | <10 | <5 | <1 | 1 | <10 | 20 |
| 8157 | 5,000 | <200 | 700 | 200 | 150 | 20 | 20 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 30 | <1 | 1 | <10 | 20 |
| 8158 | 2,000 | <200 | 700 | 50 | 70 | 20 | 15 | 5 | <20 | 15 | <10 | 7 | <2 | <20 | 10 | <1 | 1 | <10 | 10 |
| 8159 | 5,000 | <200 | 200 | 200 | 100 | 50 | 15 | 15 | <20 | 15 | <10 | 10 | <2 | <10 | 10 | <1 | <1 | <10 | 20 |
| 8160 | 2,000 | <200 | 700 | 50 | 30 | 20 | 15 | 5 | <20 | 30 | 10 | 5 | <5 | <10 | 5 | <1 | 1 | <10 | 20 |
| 8161 | 500 | <200 | 700 | 30 | 20 | <20 | 10 | 5 | <20 | 20 | <10 | 5 | <2 | <10 | 5 | <1 | 2 | <10 | 15 |
| 8161a | 5,000 | <200 | 300 | 70 | 150 | 70 | 30 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8162 | 3,000 | <200 | 700 | 100 | 70 | 20 | 20 | 7 | <20 | 20 | <10 | 7 | <2 | <20 | 15 | <1 | 1 | <10 | 20 |
| 8163 | 3,000 | <200 | 1,000 | 100 | 70 | 20 | 30 | 5 | <20 | 20 | <10 | 5 | <2 | <20 | 15 | <1 | 1 | <10 | 20 |
| 8164 | 150 | <200 | 300 | <10 | 20 | <20 | <2 | 5 | <20 | <10 | 10 | <5 | <5 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8164a | 100 | <200 | 50 | 30 | 5 | <20 | <2 | 2 | <20 | <10 | <10 | <5 | <2 | <10 | <5 | <1 | 1 | <10 | <10 |
| 8165 | 300 | <200 | 200 | 10 | 30 | <20 | 10 | 3 | <20 | <10 | <10 | <5 | <2 | <10 | <5 | <1 | 1 | <10 | <10 |
| 8165a | 2,000 | <200 | 300 | 70 | 100 | 70 | 30 | 5 | <20 | 15 | <10 | 5 | <2 | <10 | 10 | <1 | <1 | <10 | 15 |
| 8165b | 100 | <200 | 3,000 | 70 | <5 | <20 | 70 | 3 | <20 | 70 | <10 | 5 | <2 | <10 | 150 | <1 | <1 | <10 | <10 |
| 8165c | 700 | <200 | 100 | 30 | 50 | <20 | 10 | 3 | <20 | <10 | 10 | 5 | <2 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8165d | 200 | <200 | 200 | 10 | 10 | <20 | 5 | 5 | <20 | 10 | <10 | <5 | <2 | <10 | <5 | <1 | 1 | <10 | <10 |
| 8166 | 3,000 | <200 | 1,000 | 100 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <20 | <5 | <1 | <1 | <10 | 20 |
| 8167 | 5,000 | <200 | 1,500 | 300 | 100 | 20 | 30 | 15 | <20 | 15 | <10 | 7 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8168 | 7,000 | <200 | 1,000 | 200 | 100 | 20 | 30 | 20 | <20 | 20 | <10 | 7 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8169 | 5,000 | <200 | 700 | 200 | 100 | 20 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <20 | 20 | <1 | 1 | <10 | 20 |
| 8170 | 7,000 | <200 | 700 | 200 | 100 | 20 | 30 | 20 | <20 | 20 | <10 | 7 | <2 | <20 | 30 | <1 | 1 | <10 | 20 |
| 8171 | 7,000 | <200 | 700 | 300 | 100 | 30 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <20 | 20 | <1 | 1 | <10 | 20 |
| 8172 | 7,000 | <200 | 1,000 | 200 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8173 | 7,000 | <200 | 700 | 200 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <20 | 30 | <1 | <1 | <10 | 20 |
| 8174 | 7,000 | <200 | 1,000 | 200 | 70 | 30 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <20 | 30 | <1 | <1 | <10 | 20 |
| 8175 | 7,000 | <200 | 1,000 | 300 | 150 | 30 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <20 | 20 | <1 | 1 | <10 | 30 |
| 8177a | 5,000 | <200 | 100 | 150 | 100 | 50 | 10 | 10 | <20 | 15 | <10 | 7 | <2 | <10 | 5 | <1 | 1 | <10 | 20 |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | As | Sb | W | Sc | Cr | Ba | Sr | Percent Fe | Mg | Ca | Chemical analyses Cu | Zn | Mo | Au | Ag | Sample Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8134 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8135 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 5. | 2. | 3. | 10 | 25 | <2 | | | Stream sediment |
| 8136 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8137 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 7. | 2. | 3. | 10 | 50 | <2 | | | Stream sediment |
| 8138 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 7. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8139 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 7. | 2. | 3. | 10 | 25 | <2 | | | Stream sediment |
| 8140 | <500 | <50 | <50 | <5 | 30 | 1,500 | 700 | 1. | .2 | 1. | | | | | | Altered rock |
| 8140b | <500 | <50 | <50 | <5 | 7 | 1,000 | 300 | 1. | .2 | .7 | | | | | | Altered rock |
| 8140d | <500 | <50 | <50 | 5 | 70 | 1,000 | 2,000 | 3. | .7 | 2. | 15 | 50 | <2 | | | Altered rock |
| 8143 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,000 | 3. | .7 | 2. | | | | | | Altered rock |
| 8144a1 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 7. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8144a2 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8144c | <500 | <50 | <50 | <5 | <5 | 1,500 | 500 | .7 | .5 | 1. | | | | | | Altered rock |
| 8145 | <500 | <50 | <50 | 10 | 70 | 1,000 | 1,500 | 3. | 1.5 | 15. | 15 | 25 | <2 | | | Vein |
| 8146a | <500 | <50 | <50 | <5 | 100 | 150 | 150 | .3 | 1.5 | 15. | 50 | 25 | <2 | | | Altered rock |
| 8146 | <500 | <50 | <50 | <5 | <5 | 700 | 300 | .3 | .2 | 1.5 | 5 | <25 | <2 | | | Altered rock |
| 8146b | <500 | <50 | <50 | <5 | 20 | 1,500 | 1,000 | 3. | 5. | 5. | 40 | 25 | <2 | | | Altered rock |
| 8146c | <500 | <50 | <50 | <5 | 30 | 10 | 200 | <.1 | 2. | 20. | <5 | <25 | <2 | | | Altered rock |
| 8147 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 5. | 3. | 3. | 40 | 25 | <2 | | | Stream sediment |
| 8148 | <500 | <50 | <50 | 7 | 70 | 500 | 700 | 5. | 2. | 1.5 | 5 | 25 | <2 | | | Altered rock |
| 8148a | <500 | <50 | <50 | 5 | 50 | 500 | 200 | 5. | 1. | .1 | | | | | | Clay |
| 8148b | <500 | <50 | <50 | <5 | 20 | 1,500 | <50 | .5 | .3 | 1.5 | 30 | <25 | 4 | | | Altered rock |
| 8149 | <500 | <50 | <50 | <5 | 50 | 1,500 | 70 | 2. | .5 | .2 | 30 | 25 | 2 | | | Altered rock |
| 8149a | <500 | <50 | <50 | 7 | 150 | 2,000 | 1,500 | 3. | 2. | 3. | | | | | | Altered rock |
| 8150 | <500 | <50 | <50 | 7 | 50 | 1,000 | 500 | 3. | 2. | 2. | 30 | 50 | <2 | | | Intrusive contact |
| 8150a | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 3. | 1.5 | 2. | 40 | 25 | <2 | | | Intrusive contact |
| 8151 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 7. | 2. | 2. | 40 | 50 | <2 | | | Stream sediment |
| 8152 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 5. | 2. | 2. | 40 | 50 | <2 | | | Stream sediment |
| 8153 | <500 | <50 | <50 | <5 | 5 | <10 | 100 | .5 | 7. | 15. | <5 | <25 | <2 | | | Limestone |
| 8153b | <500 | <50 | <50 | 7 | 200 | 1,500 | 2,000 | 3. | 2. | 3. | | | | | | Intrusive rock |
| 8154 | <500 | <50 | <50 | 5 | 70 | 700 | 500 | 2. | 7. | 7. | 20 | 25 | <2 | | | Stream sediment |
| 8154a | <500 | <50 | <50 | <5 | <5 | 10 | 70 | 1. | 7. | 15. | <5 | <25 | <2 | | | Limestone |
| 8155 | <500 | <50 | <50 | 7 | 100 | 1,000 | 700 | 2. | 1.5 | 3. | 30 | 50 | 2 | | | Stream sediment |
| 8156 | <500 | <50 | <50 | <5 | 10 | 700 | 1,000 | 1. | 1. | 1.5 | | | | | | Altered rock |
| 8157 | <500 | <50 | <50 | 10 | 50 | 1,000 | 1,500 | 7. | 1.5 | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8158 | <500 | <50 | <50 | <5 | 20 | 700 | 500 | 2. | .7 | 2. | 20 | 25 | <2 | | | Stream sediment |
| 8159 | <500 | <50 | <50 | 5 | 20 | 1,500 | 1,500 | 5. | .7 | 2. | | | | | | Altered rock |
| 8160 | <500 | <50 | <50 | 5 | 30 | 700 | 500 | 3. | 1.5 | 2. | | | | | | Altered rock |
| 8161 | <500 | <50 | <50 | <5 | 20 | 700 | 1,000 | 1.5 | 2. | 3. | | | | | | Altered rock |
| 8161a | <500 | <50 | <50 | 5 | 100 | 2,000 | 1,500 | 2. | 1.5 | 2. | | | | | | Altered rock |
| 8162 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,000 | 3. | 1.5 | 2. | 20 | 25 | <2 | | | Stream sediment |
| 8163 | <500 | <50 | <50 | 5 | 70 | 1,000 | 700 | 5. | 1.5 | 2. | 15 | 25 | <2 | | | Stream sediment |
| 8164 | <500 | <50 | <50 | <5 | <5 | 50 | <50 | .1 | .1 | .1 | | | | | | Altered rock |
| 8164a | <500 | <50 | <50 | <5 | 5 | 10 | 1,000 | .2 | 1. | >20. | 5 | <25 | <2 | | | Limestone |
| 8165 | <500 | <50 | <50 | <5 | 5 | 70 | <50 | .5 | .1 | 3. | 5 | 25 | <2 | | | Altered rock |
| 8165a | <500 | <50 | <50 | 5 | 70 | 1,000 | 1,000 | 2. | 1. | 2. | | | | | | Altered rock |
| 8165b | <500 | <50 | <50 | <5 | 30 | 500 | 200 | 2. | 10 | 20. | 5 | 150 | 2 | | | Altered rock |
| 8165c | <500 | <50 | <50 | <5 | 20 | 70 | 70 | 1. | 5. | 7. | 10 | <25 | <2 | | | Altered rock |
| 8165d | <500 | <50 | <50 | <5 | <5 | 20 | 200 | 2. | 7. | 15. | <5 | <25 | 4 | | | Altered rock |
| 8166 | <500 | <50 | <50 | 5 | 70 | 700 | 700 | 5. | 2. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8167 | <500 | <50 | <50 | 10 | 150 | 700 | 1,000 | 10. | 2. | 3. | 40 | 25 | 2 | | | Stream sediment |
| 8168 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 7. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8169 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8170 | <500 | <50 | <50 | 15 | 100 | 700 | 1,000 | 10. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8171 | <500 | <50 | <50 | 15 | 200 | 700 | 1,500 | 10. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8172 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,500 | 7. | 3. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8173 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 7. | 3. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8174 | <500 | <50 | <50 | 15 | 150 | 700 | 1,000 | 10. | 3. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8175 | <500 | <50 | <50 | 15 | 200 | 1,000 | 1,500 | 10. | 3. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8177a | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,500 | 5. | .7 | 1. | | | | | | Altered rock |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | Semiquantitative spectrographic analyses | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ti | Zn | Mn | V | Zr | La | Ni | Cu | Cd | Pb | B | Y | Mo | Sn | Co | Ag | Be | Bi | Ga |
| 8177b | 3,000 | <200 | 500 | 100 | 100 | 50 | 20 | 15 | <20 | 10 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8177c | 3,000 | <200 | 500 | 150 | 150 | 70 | 20 | 15 | <20 | 10 | <10 | 10 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8181a | 3,000 | <200 | 200 | 50 | 100 | 50 | 15 | 7 | <20 | 20 | <10 | 5 | <2 | <10 | 5 | <1 | 3 | <10 | 20 |
| 8181b | 3,000 | <200 | 700 | 100 | 50 | 30 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8182 | 5,000 | <200 | 500 | 100 | 100 | 30 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8183 | 3,000 | <200 | 500 | 100 | 100 | 30 | 20 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8185 | 5,000 | <200 | 700 | 100 | 100 | 30 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8186 | 5,000 | <200 | 500 | 100 | 100 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8186a | 5,000 | <200 | 500 | 100 | 100 | 30 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8188 | 3,000 | <200 | 500 | 100 | 100 | 30 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8189 | 3,000 | <200 | 500 | 70 | 100 | 20 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8190 | 3,000 | <200 | 300 | 70 | 70 | 30 | 20 | 7 | <20 | 20 | <10 | 5 | <2 | <10 | 10 | <1 | <1 | <10 | 20 |
| 8191 | 3,000 | <200 | 700 | 70 | 100 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8193a | 2,000 | <200 | 100 | 50 | 70 | 20 | 20 | 10 | <20 | 15 | <10 | <5 | <2 | <10 | 10 | <1 | <1 | <10 | 15 |
| 8193b | 3,000 | <200 | 300 | 70 | 100 | 30 | 30 | 10 | <20 | 20 | <10 | <5 | <5 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8193c | 3,000 | <200 | 500 | 100 | 100 | 30 | 30 | 15 | <20 | 30 | <10 | 5 | <5 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8193d | 3,000 | <200 | 100 | 50 | 70 | 30 | 20 | 15 | <20 | 50 | <10 | 5 | 30 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8195 | 5,000 | <200 | 700 | 150 | 150 | 50 | 50 | 30 | <20 | 20 | <10 | 5 | <5 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8200a | 3,000 | <200 | 1,000 | 100 | 70 | 50 | 50 | 15 | <20 | 30 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8202 | 5,000 | <200 | 300 | 100 | 150 | 30 | 30 | 10 | <20 | 20 | <10 | 5 | <5 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8203 | 5,000 | <200 | 700 | 100 | 100 | 30 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8204 | 5,000 | <200 | 700 | 150 | 150 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8206 | 3,000 | <200 | 500 | 70 | 100 | 20 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 15 |
| 8207 | 5,000 | <200 | 700 | 100 | 100 | 30 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8208 | 3,000 | <200 | 500 | 100 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8214 | 5,000 | <200 | 700 | 200 | 100 | 30 | 30 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8215 | | | | | | | | | | | | | | | | | | | |
| 8216a | 5,000 | <200 | 700 | 100 | 150 | 30 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8216b | 3,000 | <200 | 500 | 100 | 100 | 30 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8217 | 5,000 | <200 | 700 | 150 | 100 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8218 | 5,000 | <200 | 500 | 100 | 150 | 30 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8219 | 5,000 | <200 | 500 | 100 | 100 | 30 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8220 | 5,000 | <200 | 500 | 150 | 100 | 20 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8221 | 2,000 | <200 | 200 | 50 | 100 | 30 | 30 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8222 | 3,000 | <200 | 50 | 30 | 100 | 50 | 15 | 10 | <20 | 30 | <10 | 5 | <2 | <10 | 5 | <1 | 1 | <10 | 15 |
| 8223a | 2,000 | <200 | 300 | 70 | 70 | 50 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8223b | 5,000 | <200 | 300 | 70 | 150 | 50 | 50 | 30 | <20 | 30 | <10 | 5 | <5 | <10 | 20 | <1 | 1 | <10 | 15 |
| 8224 | 2,000 | <200 | 20 | 30 | 100 | 50 | 15 | 5 | <20 | 15 | <10 | 5 | <2 | <10 | <5 | 2 | <1 | 10 | 10 |
| 8224a | 500 | 300 | 100 | 20 | 30 | 30 | 20 | 1500 | <20 | 700 | 10 | 5 | 30 | 50 | <5 | 300 | <1 | >1000 | 30 |
| 8225 | 3,000 | <200 | 70 | 70 | 150 | 20 | 15 | 5 | <20 | 10 | <10 | 5 | 20 | <10 | <5 | 2 | <1 | 20 | 10 |
| 8226a | 3,000 | <200 | 70 | 50 | 150 | 30 | 10 | 10 | <20 | 10 | <10 | 5 | 5 | <10 | <5 | 1 | 1 | 10 | 15 |
| 8226b | 3,000 | <200 | 300 | 70 | 100 | 30 | 20 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 10 | <1 | <1 | <10 | 20 |
| 8227 | 5,000 | <200 | 500 | 150 | 100 | 30 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8228 | 3,000 | <200 | 500 | 100 | 100 | 30 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8229 | 5,000 | <200 | 700 | 150 | 200 | 30 | 50 | 50 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8230 | 5,000 | <200 | 700 | 150 | 150 | 30 | 70 | 20 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8231 | 5,000 | <200 | 1,000 | 100 | 100 | 30 | 50 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8232 | | | | | | | | | | | | | | | | | | | |
| 8233 | 5,000 | <200 | 700 | 200 | 50 | 30 | 30 | 7 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8234 | 5,000 | <200 | 500 | 100 | 70 | 30 | 20 | 15 | <20 | 20 | 10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8500 | 5,000 | <200 | 500 | 100 | 150 | 20 | 50 | 20 | <20 | 30 | 10 | 7 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8501 | 7,000 | <200 | 1,000 | 200 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 10 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8502 | 5,000 | <200 | 700 | 150 | 100 | 30 | 50 | 20 | <20 | 20 | 10 | 7 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8503 | 5,000 | <200 | 700 | 100 | 70 | 30 | 30 | 15 | <20 | 30 | <10 | 7 | <2 | <10 | 30 | <1 | 1 | <10 | 20 |
| 8504 | 5,000 | <200 | 1,000 | 200 | 100 | 30 | 70 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8505 | 5,000 | <200 | 700 | 150 | 70 | 30 | 70 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8506 | 5,000 | <200 | 700 | 150 | 100 | 50 | 50 | 20 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8507 | 5,000 | <200 | 700 | 100 | 70 | 20 | 70 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8508 | 5,000 | <200 | 700 | 150 | 70 | 30 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 30 |
| 8509 | 1,000 | <200 | 150 | 100 | 5 | <20 | 20 | 1 | <20 | 15 | <10 | <5 | <2 | <20 | 15 | <1 | <1 | <10 | 20 |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | As | Sb | W | Sc | Cr | Ba | Sr | Percent Fe | Percent Mg | Percent Ca | Chemical analyses Cu | Chemical analyses Zn | Chemical analyses Mo | Chemical analyses Au | Chemical analyses Ag | Sample Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8177b | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,500 | 3. | 1. | 1.5 | | | | | | Altered rock |
| 8177c | <500 | <50 | <50 | 10 | 100 | 1,500 | 2,000 | 5. | 1.5 | 2. | | | | | | Altered rock |
| 8181a | <500 | <50 | <50 | <5 | 20 | 1,500 | 1,500 | 2. | 1. | 1.5 | | | | | | Altered rock |
| 8181b | <500 | <50 | <50 | 7 | 100 | 1,500 | 1,000 | 3. | 2. | 2. | | | | | | Altered rock |
| 8182 | <500 | <50 | <50 | 7 | 70 | 1,000 | 1,000 | 3. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8183 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 2. | 1.5 | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8185 | <500 | <50 | <50 | 5 | 70 | 1,500 | 1,000 | 3. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8186 | <500 | <50 | <50 | 5 | 70 | 1,000 | 700 | 3. | 1.5 | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8186e | <500 | <50 | <50 | 7 | 150 | 1,500 | 1,000 | 3. | 1.5 | 2. | | | | | | Intrusive rock |
| 8188 | <500 | <50 | <50 | 5 | 70 | 1,000 | 700 | 3. | 1.5 | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8189 | <500 | <50 | <50 | 5 | 70 | 1,000 | 700 | 3. | 1.5 | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8190 | <500 | <50 | <50 | 5 | 30 | 1,000 | 1,000 | 3. | 1. | 2. | 10 | 25 | <2 | | | Stream sediment |
| 8191 | <500 | <50 | <50 | 5 | 50 | 1,500 | 1,500 | 3. | 1.5 | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8193a | <500 | <50 | <50 | 5 | 70 | 700 | 1,000 | 3. | 1. | 1.5 | | | | | | Altered rock |
| 8193b | <500 | <50 | <50 | <5 | 70 | 1,000 | 1,000 | 5. | 1.5 | 3. | | | | | | Altered rock |
| 8193c | <500 | <50 | <50 | <5 | 70 | 1,000 | 700 | 5. | 2. | 3. | | | | | | Altered rock |
| 8193d | <500 | <50 | <50 | 5 | 70 | 1,000 | 1,000 | 2. | .7 | 1.5 | | | | | | Altered rock |
| 8195 | <500 | <50 | <50 | <5 | 150 | 1,500 | 1,000 | 5. | 2. | 3. | | | | | | Altered rock |
| 8200a | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 3. | 2. | 2. | | | | | | Altered rock |
| 8202 | <500 | <50 | <50 | 5 | 50 | 1,500 | 1,000 | 3. | 1. | 3. | | | | | | Altered rock |
| 8203 | <500 | <50 | <50 | 5 | 150 | 1,000 | 1,000 | 3. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8204 | <500 | <50 | <50 | 5 | 150 | 1,500 | 1,000 | 5. | 1.5 | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8206 | <500 | <50 | <50 | 10 | 100 | 1,000 | 700 | 3. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8207 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 3. | 2. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8208 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 3. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8214 | <500 | <50 | <50 | 7 | 200 | 1,000 | 1,500 | 5. | 2. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8215 | | | | | | | | | | | 15 | 50 | <2 | | | Stream sediment |
| 8216a | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 3. | 2. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8216b | <500 | <50 | <50 | 5 | 100 | 1,500 | 1,000 | 3. | 1.5 | 3. | | | | | | Stream sediment |
| 8217 | <500 | <50 | <50 | 5 | 100 | 1,500 | 1,500 | 3. | 2. | 3. | 10 | 50 | <2 | | | Stream sediment |
| 8218 | <500 | <50 | <50 | 7 | 100 | 1,500 | 1,000 | 3. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8219 | <500 | <50 | <50 | 7 | 100 | 1,500 | 1,500 | 3. | 2. | 2. | 10 | 25 | <2 | | | Stream sediment |
| 8220 | <500 | <50 | <50 | 7 | 100 | 1,500 | 1,500 | 3. | 1.5 | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8221 | <500 | <50 | <50 | 5 | 70 | 2,000 | 500 | 2. | .2 | 1. | 15 | 25 | 2 | | | Altered rock |
| 8222 | <500 | <50 | <50 | 5 | 100 | 2,000 | 100 | 1.5 | .1 | .1 | 10 | 25 | <2 | | | Altered rock |
| 8223e | <500 | <50 | <50 | 7 | 150 | 2,000 | 1,500 | 3. | 2. | 2. | | | | | | Dike rock |
| 8223b | <500 | <50 | <50 | 5 | 50 | 1,000 | 200 | 3. | 1.5 | 2. | | | | | | Intrusive contact |
| 8224 | 500 | <50 | <50 | <5 | 50 | 3,000 | 100 | .5 | .05 | .02 | <5 | <25 | 50 | | | Altered rock |
| 8224a | 1,500 | 1,000 | <50 | <5 | 30 | >5,000 | 1,500 | 10. | .02 | .05 | 3,000 | 500 | 25 | | | Altered rock |
| 8225 | 500 | <50 | <50 | 5 | 100 | 2,000 | 150 | 1. | .05 | .1 | 5 | <25 | 6 | | | Altered rock |
| 8226a | <500 | <50 | <50 | 5 | 30 | 300 | 100 | 1. | .05 | .1 | <5 | <25 | <2 | | | Altered rock |
| 8226b | <500 | <50 | <50 | 5 | 50 | 700 | 1,000 | 2. | 1. | 2. | 5 | 25 | <2 | | | Dike rock |
| 8227 | <500 | <50 | <50 | 5 | 150 | 1,500 | 1,000 | 3. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8228 | <500 | <50 | <50 | 5 | 100 | 1,500 | 1,500 | 2. | 1.5 | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8229 | <500 | <50 | <50 | 7 | 150 | 1,500 | 1,500 | 5. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8230 | <500 | <50 | <50 | 5 | 150 | 1,500 | 2,000 | 5. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8231 | <500 | <50 | <50 | 7 | 150 | 1,500 | 1,500 | 5. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8232 | | | | | | | | | | | 5 | 50 | <2 | | | Stream sediment |
| 8233 | <500 | <50 | <50 | 7 | 150 | 1,500 | 2,000 | 5. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8234 | <500 | <50 | <50 | 7 | 100 | 1,500 | 1,000 | 3. | 2. | 3. | 5 | 25 | <2 | | | Stream sediment |
| 8500 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 5. | 2. | 3. | 60 | 50 | <2 | | | Stream sediment |
| 8501 | <500 | <50 | <50 | 15 | 200 | 1,000 | 1,000 | 7. | 3. | 3. | 60 | 50 | <2 | | | Stream sediment |
| 8502 | <500 | <50 | <50 | 10 | 100 | 700 | 700 | 7. | 3. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8503 | <500 | <50 | <50 | 7 | 100 | 700 | 1,000 | 5. | 2. | 3. | 10 | 25 | 4 | | | Stream sediment |
| 8504 | <500 | <50 | <50 | 10 | 200 | 700 | 1,500 | 7. | 3. | 3. | 40 | 25 | 2 | | | Stream sediment |
| 8505 | <500 | <50 | <50 | 10 | 200 | 700 | 1,500 | 5. | 2. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8506 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 7. | 2. | 3. | 30 | 25 | 4 | | | Stream sediment |
| 8507 | <500 | <50 | <50 | 7 | 200 | 1,000 | 1,000 | 5. | 2. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8508 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 7. | 3. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8509 | <500 | <50 | <50 | <5 | 100 | 500 | 1,000 | 1.5 | 2. | 2. | 20 | <25 | 2 | | | Stream sediment |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample | Semiquantitative spectrographic analyses | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Ti | Zn | Mn | V | Zr | La | Ni | Cu | Cd | Pb | B | Y | Mo | Sn | Co | Ag | Be | Bi | Ga |
| 8510 | 5,000 | <200 | 700 | 100 | 30 | 20 | 100 | 15 | <20 | 20 | <10 | 5 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8511 | 5,000 | <200 | 500 | 100 | 70 | 20 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <20 | 15 | <1 | 1 | <10 | 20 |
| 8512 | 5,000 | <200 | 700 | 70 | 100 | 20 | 30 | 15 | <20 | 15 | 10 | 10 | <2 | <20 | 15 | <1 | 1 | <10 | 15 |
| 8513 | 5,000 | <200 | 700 | 100 | 50 | 20 | 70 | 15 | <20 | 15 | <10 | 7 | <2 | <20 | 20 | <1 | 1 | <10 | 20 |
| 8514 | 5,000 | <200 | 1,000 | 70 | 100 | 20 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <20 | 15 | <1 | 1 | <10 | 20 |
| 8515 | 5,000 | <200 | 700 | 70 | 100 | 20 | 20 | 15 | <20 | 20 | 10 | 7 | <2 | <20 | 15 | <1 | 1 | <10 | 20 |
| 8516 | 5,000 | <200 | 700 | 100 | 70 | 20 | 70 | 15 | <20 | 15 | <10 | 5 | <2 | <20 | 20 | <1 | 1 | <10 | 20 |
| 8517 | 5,000 | <200 | 1,500 | 100 | 100 | 30 | 20 | 15 | <20 | 20 | 10 | 7 | <2 | <20 | 15 | <1 | 1 | <10 | 20 |
| 8518 | 5,000 | <200 | 700 | 100 | 50 | 30 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <20 | 15 | 1 | 1 | <10 | 20 |
| 8519 | 5,000 | <200 | 500 | 100 | 50 | 20 | 30 | 10 | <20 | 15 | <10 | 5 | <2 | <20 | 15 | <1 | 1 | <10 | 20 |
| 8520 | 3,000 | <200 | 500 | 100 | 70 | 20 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <20 | 15 | <1 | 1 | <10 | 20 |
| 8521 | 5,000 | <200 | 700 | 150 | 100 | 20 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <20 | 20 | <1 | 1 | <10 | 20 |
| 8522 | 5,000 | <200 | 700 | 150 | 150 | 30 | 30 | 10 | <20 | 20 | 10 | 7 | <2 | <20 | 15 | <1 | <1 | <10 | 20 |
| 8523 | 5,000 | <200 | 700 | 200 | 100 | 30 | 70 | 15 | <20 | 20 | <10 | 5 | <2 | <20 | 20 | <1 | 1 | <10 | 20 |
| 8524 | 5,000 | <200 | 500 | 150 | 70 | 30 | 20 | 10 | <20 | 15 | <10 | 5 | <2 | <20 | 15 | <1 | 1 | <10 | 15 |
| 8526 | 2,000 | <200 | 300 | 70 | 100 | 20 | 15 | 10 | <20 | 15 | 10 | 5 | <2 | <20 | 10 | <1 | 1 | <10 | 15 |
| 8528 | 5,000 | <200 | 500 | 200 | 100 | 20 | 30 | 10 | <20 | 20 | <10 | 7 | <2 | <20 | 20 | <1 | 1 | <10 | 15 |
| 8529 | 3,000 | <200 | 300 | 100 | 70 | 30 | 20 | 15 | <20 | 20 | <10 | 7 | <2 | <20 | 20 | <1 | 1 | <10 | 20 |
| 8530 | 5,000 | <200 | 500 | 150 | 100 | 30 | 50 | 15 | <20 | 15 | <10 | 5 | <2 | <20 | 20 | <1 | 1 | <10 | 20 |
| 8531 | 5,000 | <200 | 500 | 100 | 70 | 30 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8534 | 5,000 | <200 | 500 | 150 | 100 | 30 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 30 |
| 8535 | 5,000 | <200 | 700 | 200 | 100 | 50 | 70 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8536 | 3,000 | <200 | 300 | 150 | 100 | 30 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 30 |
| 8537 | 3,000 | <200 | 500 | 100 | 150 | 30 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8539 | 5,000 | <200 | 700 | 200 | 100 | 30 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8540 | 5,000 | <200 | 700 | 200 | 100 | 30 | 30 | 15 | <20 | <20 | <10 | 7 | <2 | <10 | 30 | <1 | <1 | <10 | 40 |
| 8541 | 50 | <200 | 70 | <10 | 15 | <20 | <2 | 7 | <20 | 15 | <10 | <5 | <2 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8542 | 200 | <200 | 50 | 40 | 15 | <20 | 30 | 15 | <20 | <10 | <10 | 7 | <5 | <10 | 20 | <1 | <1 | <10 | <10 |
| 8543 | 5,000 | <200 | 700 | 150 | 100 | 50 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8544 | 5,000 | <200 | 700 | 150 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8545 | 5,000 | <200 | 500 | 100 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 10 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8546 | 5,000 | <200 | 500 | 200 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 10 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8547 | 5,000 | <200 | 1,000 | 150 | 70 | 30 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8548 | 300 | <200 | 1,000 | 20 | 15 | <20 | 10 | 5 | <20 | <10 | <10 | 5 | <2 | <10 | <5 | <1 | <1 | <10 | 10 |
| 8549 | 5,000 | <200 | 700 | 200 | 70 | 30 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8550 | 5,000 | <200 | 700 | 150 | 70 | 30 | 50 | 15 | <20 | 20 | 10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8551 | 5,000 | <200 | 700 | 150 | 70 | 30 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8552 | 3,000 | <200 | 500 | 150 | 50 | 20 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8553 | 5,000 | <200 | 700 | 200 | 70 | 30 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8554 | 2,000 | <200 | 200 | 200 | 70 | 50 | 15 | 15 | <20 | 30 | 20 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8556 | 5,000 | <200 | 500 | 150 | 100 | 30 | 20 | 15 | <20 | 15 | 10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8557 | 3,000 | <200 | 500 | 150 | 70 | 30 | 20 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8559 | 100 | <200 | 200 | 10 | 30 | <20 | 2 | 5 | <20 | <10 | <10 | <5 | <2 | <10 | <5 | <1 | 1 | <10 | <10 |
| 8560 | 1,500 | <200 | 100 | 50 | 30 | <20 | 50 | 10 | <20 | 15 | <10 | <5 | <2 | <10 | 10 | <1 | <1 | <10 | 10 |
| 8561 | 3,000 | <200 | 500 | 100 | 70 | 30 | 50 | 15 | <20 | 20 | 10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8562 | 700 | <200 | 150 | 30 | 20 | <20 | 10 | 15 | <20 | <10 | <10 | <5 | <2 | <10 | <5 | <1 | 1 | <10 | 10 |
| 8566 | 5,000 | <200 | 700 | 150 | 100 | 100 | 70 | 15 | <20 | 30 | 10 | 10 | <2 | <10 | 30 | <1 | 1 | <10 | 30 |
| 8568 | 3,000 | <200 | 500 | 100 | 70 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8569 | 5,000 | <200 | 700 | 200 | 70 | 50 | 20 | 10 | <20 | 20 | 10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8570 | 5,000 | <200 | 1,000 | 300 | 100 | 50 | 20 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8571 | 5,000 | <200 | 700 | 200 | 70 | 30 | 30 | 10 | <20 | 15 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8572 | 5,000 | <200 | 1,000 | 200 | 50 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8574 | 5,000 | <200 | 1,000 | 200 | 50 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8575 | 3,000 | <200 | 700 | 150 | 70 | 30 | 20 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8578 | 3,000 | <200 | 500 | 150 | 70 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8579 | 5,000 | <200 | 1,000 | 100 | 70 | 20 | 20 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8580 | 7,000 | <200 | 1,000 | 150 | 70 | 20 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8581 | 3,000 | <200 | 1,500 | 100 | 50 | 30 | 15 | 15 | <20 | 20 | 10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8582 | 5,000 | <200 | 1,000 | 150 | 70 | 20 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | As | Sb | W | Sc | Cr | Ba | Sr | Percent | | | Chemical analyses | | | | | Sample Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Fe | Mg | Ca | Cu | Zn | Mo | Au | Ag | |
| 8510 | <500 | <50 | <50 | 10 | 200 | 700 | 1,000 | 5. | 2. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8511 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 5. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8512 | <500 | <50 | <50 | 5 | 100 | 1,000 | 700 | 5. | 2. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8513 | <500 | <50 | <50 | 10 | 200 | 1,000 | 1,500 | 3. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8514 | <500 | <50 | <50 | 10 | 150 | 700 | 700 | 3. | 2. | 3. | 20 | 25 | 8 | | | Stream sediment |
| 8515 | <500 | <50 | <50 | 5 | 70 | 1,000 | 1,000 | 3. | 1.5 | 2. | 30 | 50 | 2 | | | Stream sediment |
| 8516 | <500 | <50 | <50 | 10 | 200 | 1,000 | 1,000 | 5. | 3. | 3. | 40 | 50 | <2 | | | Stream sediment |
| 8517 | <500 | <50 | <50 | 5 | 100 | 1,000 | 1,000 | 3. | 2. | 2. | 40 | 50 | <2 | | | Stream sediment |
| 8518 | <500 | <50 | <50 | 5 | 150 | 1,000 | 1,500 | 3. | 3. | 3. | 40 | 50 | <2 | | | Stream sediment |
| 8519 | <500 | <50 | <50 | 5 | 100 | 1,000 | 1,500 | 3. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8520 | <500 | <50 | <50 | 15 | 50 | 700 | 1,000 | 3. | 1.5 | 2. | 30 | 50 | <2 | | | Stream sediment |
| 8521 | <500 | <50 | <50 | 10 | 200 | 1,000 | 1,500 | 5. | 3. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8522 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 3. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8523 | <500 | <50 | <50 | 7 | 300 | 1,000 | 1,500 | 7. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8524 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 3. | 1.5 | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8526 | <500 | <50 | <50 | 7 | 50 | 1,000 | 500 | 2. | 1. | 2. | 30 | 50 | <2 | | | Stream sediment |
| 8528 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,500 | 3. | 1.5 | 2. | 30 | 50 | <2 | | | Stream sediment |
| 8529 | <500 | <50 | <50 | 5 | 150 | 1,000 | 1,500 | 2. | 1.5 | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8530 | <500 | <50 | <50 | 7 | 200 | 1,000 | 1,500 | 3. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8531 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,500 | 3. | 2. | 2. | 30 | 25 | <2 | | | Stream sediment |
| 8534 | <500 | <50 | <50 | 10 | 200 | 1,000 | 1,500 | 5. | 1.5 | 2. | 40 | 50 | <2 | | | Stream sediment |
| 8535 | <500 | <50 | <50 | 15 | 200 | 1,500 | 2,000 | 5. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8536 | <500 | <50 | <50 | 7 | 200 | 1,500 | 1,500 | 3. | 1.5 | 2. | 40 | 50 | <2 | | | Stream sediment |
| 8537 | <500 | <50 | <50 | 10 | 150 | 1,500 | 1,500 | 3. | 1.5 | 2. | 30 | 25 | <2 | | | Stream sediment |
| 8539 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 5. | 2. | 2. | 30 | 50 | 2 | | | Stream sediment |
| 8540 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,500 | 5. | 3. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8541 | <500 | <50 | <50 | <5 | <5 | 20 | <50 | .01 | .05 | .1 | | | | | | Stream sediment |
| 8542 | <500 | <50 | <50 | 5 | 5 | 500 | <50 | 1. | .2 | .7 | | | | | | Stream sediment |
| 8543 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 5. | 3. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8544 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 5. | 2. | 2. | 30 | 25 | <2 | | | Stream sediment |
| 8545 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 5. | 2. | 2. | 40 | 50 | <2 | | | Stream sediment |
| 8546 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,500 | 5. | 3. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8547 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 3. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8548 | <500 | <50 | <50 | <5 | 30 | 50 | 300 | .5 | 1.5 | >20. | <10 | <25 | <2 | | | Stream sediment |
| 8549 | <500 | <50 | <50 | 15 | 150 | 1,500 | 2,000 | 5. | 3. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8550 | <500 | <50 | <50 | 15 | 150 | 1,500 | 2,000 | 5. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8551 | <500 | <50 | <50 | 15 | 200 | 1,500 | 2,000 | 5. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8552 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 3. | 2. | 2. | 15 | 25 | <2 | | | Stream sediment |
| 8553 | <500 | <50 | <50 | 15 | 100 | 1,000 | 1,500 | 5. | 2. | 2. | 15 | 25 | <2 | | | Stream sediment |
| 8554 | <500 | <50 | <50 | 7 | 50 | 1,500 | 1,000 | 3. | .7 | 1.5 | 20 | <25 | <2 | | | Altered rock |
| 8556 | <500 | <50 | <50 | 10 | 70 | 1,000 | 1,500 | 5. | 2. | 2. | 20 | 25 | 2 | | | Stream sediment |
| 8557 | <500 | <50 | <50 | 10 | 50 | 1,500 | 1,500 | 5. | 2. | 3. | 20 | <25 | <2 | | | Stream sediment |
| 8559 | <500 | <50 | <50 | <5 | <5 | 300 | <50 | 1. | .3 | .2 | <10 | <25 | <2 | | | Spring deposit |
| 8560 | <500 | <50 | <50 | 5 | 70 | 1,000 | 500 | 2. | 1.5 | 2. | 10 | <25 | <2 | | | Spring deposit |
| 8561 | <500 | <50 | <50 | 10 | 150 | 700 | 1,500 | 3. | 2. | 2. | 15 | <25 | <2 | | | Spring deposit |
| 8562 | <500 | <50 | <50 | <5 | 20 | 500 | 300 | 3. | .7 | .7 | 10 | <25 | <2 | | | Altered tuff |
| 8566 | <500 | <50 | <50 | 10 | 150 | 2,000 | 2,000 | 5. | 2. | 3. | 15 | <25 | 2 | | | Altered rock |
| 8568 | <500 | <50 | <50 | 7 | 100 | 700 | 1,000 | 3. | 1.5 | 2. | 20 | <25 | <2 | | | Stream sediment |
| 8569 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,500 | 5. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8570 | <500 | <50 | <50 | 15 | 100 | 1,000 | 1,500 | 7. | 3. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8571 | <500 | <50 | <50 | 15 | 150 | 1,000 | 2,000 | 5. | 2. | 3. | 15 | <25 | <2 | | | Stream sediment |
| 8572 | <500 | <50 | <50 | 10 | 70 | 1,000 | 2,000 | 5. | 2. | 3. | 10 | <25 | <2 | | | Stream sediment |
| 8574 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,500 | 7. | 3. | 3. | 20 | 25 | 2 | | | Straam sediment |
| 8575 | <500 | <50 | <50 | 7 | 50 | 1,000 | 1,000 | 5. | 1.5 | 2. | 30 | <25 | <2 | | | Stream sediment |
| 8578 | <500 | <50 | <50 | 7 | 50 | 1,000 | 1,000 | 5. | 1.5 | 2. | 20 | 25 | <2 | | | Stream sediment |
| 8579 | <500 | <50 | <50 | 10 | 70 | 1,000 | 500 | 7. | 3. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8580 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 7. | 3. | 3. | 20 | <25 | <2 | | | Stream sediment |
| 8581 | <500 | <50 | <50 | 7 | 100 | 1,500 | 1,000 | 3. | 1.5 | 10. | 15 | <25 | <2 | | | Vein |
| 8582 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 7. | 3. | 3. | 20 | <25 | <2 | | | Stream sediment |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | Semiquantitative spectrographic analyses | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ti | Zn | Mn | V | Zr | La | Ni | Cu | Cd | Pb | B | Y | Mo | Sn | Co | Ag | Be | Bi | Ga |
| 8583 | 5,000 | <200 | 700 | 200 | 70 | 20 | 20 | 20 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8584 | 3,000 | <200 | 700 | 150 | 70 | 30 | 20 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8585 | 3,000 | <200 | 700 | 100 | 70 | 20 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 10 | <1 | <1 | <10 | 15 |
| 8586 | 3,000 | <200 | 500 | 100 | 70 | 20 | 20 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8587 | 1,500 | <200 | 50 | 20 | 30 | <20 | <2 | 7 | <20 | <10 | <10 | <5 | 3 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8588 | 5,000 | <200 | 1,000 | 200 | 70 | 20 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8589 | 3,000 | <200 | 1,000 | 100 | 50 | 20 | 20 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8590 | 3,000 | <200 | 1,000 | 100 | 50 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8591 | 700 | <200 | 1,500 | 30 | 10 | <20 | 15 | 5 | <20 | 10 | <10 | <5 | <2 | <10 | 10 | <1 | <1 | <10 | <10 |
| 8592 | 5,000 | <200 | 700 | 150 | 70 | 30 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8593 | 5,000 | <200 | 700 | 200 | 70 | 30 | 20 | 50 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8594 | 5,000 | <200 | 200 | 150 | 100 | 70 | 15 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8595 | 3,000 | <200 | 300 | 100 | 70 | 50 | 15 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8596 | 5,000 | <200 | 500 | 200 | 70 | 50 | 30 | 15 | <20 | 20 | 10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 30 |
| 8597 | 5,000 | <200 | 700 | 200 | 70 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8598 | 5,000 | <200 | 1,000 | 150 | 70 | 30 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8599 | 5,000 | <200 | 1,000 | 200 | 70 | 30 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8600 | 5,000 | <200 | 100 | 200 | 70 | 50 | 15 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 10 | <1 | <1 | <10 | 20 |
| 8602 | 3,000 | <200 | 500 | 100 | 70 | 30 | 20 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8603 | 3,000 | <200 | 500 | 150 | 50 | 30 | 50 | 10 | <20 | 15 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8604 | 5,000 | <200 | 300 | 150 | 70 | 70 | 50 | 15 | <20 | 50 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 30 |
| 8605 | 5,000 | <200 | 700 | 150 | 50 | 30 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8606 | 5,000 | <200 | 1,000 | 200 | 100 | 30 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8608 | 3,000 | <200 | 700 | 150 | 70 | 20 | 70 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8609 | 3,000 | <200 | 700 | 150 | 50 | 20 | 50 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8610 | 3,000 | <200 | 500 | 100 | 50 | 20 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8611 | 5,000 | <200 | 1,000 | 150 | 70 | 20 | 70 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8612 | 5,000 | <200 | 700 | 200 | 100 | 30 | 70 | 20 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8613 | 5,000 | <200 | 500 | 100 | 70 | 30 | 30 | 20 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8614 | 3,000 | <200 | 500 | 100 | 70 | 30 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8615 | 5,000 | <200 | 700 | 200 | 70 | 30 | 30 | 10 | <20 | 15 | 10 | 5 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8616 | 5,000 | <200 | 700 | 150 | 70 | 30 | 30 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8617 | 5,000 | <200 | 700 | 150 | 70 | 50 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8618 | 5,000 | <200 | 500 | 150 | 70 | 50 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8619 | 5,000 | <200 | 700 | 150 | 70 | 30 | 20 | 10 | <20 | 15 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8620 | 5,000 | <200 | 700 | 150 | 70 | 50 | 20 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8622 | 3,000 | <200 | 700 | 100 | 70 | 30 | 20 | 20 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8623 | 5,000 | <200 | 500 | 100 | 70 | 30 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8624 | 5,000 | <200 | 700 | 300 | 150 | 30 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8626 | 5,000 | <200 | 700 | 150 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8627 | 5,000 | <200 | 1,000 | 150 | 70 | 50 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8628 | 5,000 | <200 | 700 | 150 | 100 | 50 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8629 | 5,000 | <200 | 700 | 150 | 70 | 50 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8630 | 5,000 | <200 | 700 | 150 | 100 | 30 | 20 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8631 | 7,000 | <200 | 700 | 300 | 100 | 50 | 30 | 20 | <20 | 20 | <10 | 7 | <2 | <10 | 30 | <1 | <1 | <10 | 50 |
| 8632 | 5,000 | <200 | 200 | 100 | 70 | 70 | 15 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8633a | 3,000 | <200 | 300 | 100 | 100 | 70 | 10 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 10 | <1 | 1 | <10 | 20 |
| 8633b | 2,000 | <200 | 300 | 70 | 100 | 50 | 10 | 7 | <20 | 20 | <10 | 5 | <2 | <10 | 10 | <1 | 1 | <10 | 20 |
| 8634 | 2,000 | <200 | 300 | 70 | 50 | 30 | 15 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8635 | 3,000 | <200 | 300 | 100 | 70 | 50 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8637 | 3,000 | <200 | 500 | 100 | 100 | 50 | 15 | 7 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8638 | 3,000 | <200 | 700 | 100 | 70 | 50 | 50 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8639 | 1,500 | <200 | 500 | 70 | 70 | 30 | 15 | 7 | <20 | 20 | <10 | 5 | <2 | <10 | 10 | <1 | <1 | <10 | 15 |
| 8640 | 2,000 | <200 | 200 | 100 | 70 | 30 | 20 | 10 | <20 | 30 | <10 | <5 | <5 | <10 | 10 | <1 | 1 | <10 | 15 |
| 8641 | 5,000 | <200 | 500 | 150 | 100 | 30 | <2 | 10 | <20 | 20 | <10 | 5 | <5 | <10 | <5 | <1 | <1 | <10 | 20 |
| 8643 | 1,000 | <200 | 300 | 150 | 10 | <20 | 15 | 10 | <20 | <10 | <10 | <5 | 10 | <10 | 10 | <1 | <1 | <10 | <10 |
| 8644 | 2,000 | <200 | 300 | 200 | 50 | 20 | 70 | 20 | <20 | 20 | 10 | 5 | <5 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8645 | 5,000 | <200 | 700 | 100 | 70 | 30 | 20 | 15 | <20 | 30 | <10 | 7 | <5 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8646 | 1,500 | <200 | 100 | 10 | 100 | 20 | 2 | 5 | <20 | 20 | 10 | 5 | <2 | <10 | <5 | <1 | 1 | <10 | 10 |
| 8647 | 1,500 | <200 | 300 | 100 | 30 | 20 | 10 | 5 | <20 | 15 | <10 | 5 | <2 | <10 | 5 | <1 | <1 | <10 | <10 |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample | | | | | | | | Percent | | | Chemical analyses | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | As | Sb | W | Sc | Cr | Ba | Sr | Fe | Mg | Ca | Cu | Zn | Mo | Au | Ag | Sample Description |
| 8583 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 10. | 2. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8584 | <500 | <50 | <50 | 7 | 70 | 1,000 | 1,000 | 7. | 2. | 3. | 20 | <25 | <2 | | | Stream sediment |
| 8585 | <500 | <50 | <50 | 5 | 30 | 1,000 | 700 | 5. | 2. | 3. | 20 | <25 | <2 | | | Stream sediment |
| 8586 | <500 | <50 | <50 | 5 | 30 | 700 | 700 | 5. | 2. | 3. | 20 | <25 | <2 | | | Stream sediment |
| 8587 | <500 | <50 | <50 | <5 | <5 | 50 | <50 | 1.5 | .2 | .3 | 5 | <25 | <2 | | | Stream sediment |
| 8588 | <500 | <50 | <50 | 10 | 100 | 1,000 | 700 | 7. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8589 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,000 | 5. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8590 | <500 | <50 | <50 | 5 | 100 | 1,000 | 1,000 | 5. | 2. | 3. | 30 | <25 | <2 | | | Stream sediment |
| 8591 | <500 | <50 | <50 | <5 | 50 | >5,000 | 1,000 | 1.5 | 1. | 20. | 10 | <25 | <2 | | | Stream sediment |
| 8592 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 5. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8593 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 7. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8594 | <500 | <50 | <50 | 10 | 50 | 1,500 | 2,000 | 5. | 1. | 2. | 20 | 25 | <2 | | | Altered rock |
| 8595 | <500 | <50 | <50 | 7 | 20 | 1,000 | 1,500 | 3. | 1.5 | 2. | 15 | 25 | 2 | | | Altered rock |
| 8596 | <500 | <50 | <50 | 15 | 70 | 1,500 | 2,000 | 5. | 2. | 3. | 20 | <25 | 2 | | | Altered rock |
| 8597 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 7. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8598 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 10. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8599 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 10. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8600 | <500 | <50 | <50 | 15 | 70 | 1,000 | 1,000 | 5. | 2. | 1.5 | 10 | | <2 | | | Vein |
| 8602 | <500 | <50 | <50 | 7 | 70 | 1,000 | 1,000 | 5. | 2. | 3. | 10 | 25 | <2 | | | Stream sediment |
| 8603 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,000 | 5. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8604 | <500 | <50 | <50 | 15 | 150 | 2,000 | 3,000 | 5. | 3. | 3. | 15 | 25 | <2 | | | Intrusive contact |
| 8605 | <500 | <50 | <50 | 7 | 150 | 1,000 | 700 | 5. | 3. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8606 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 5. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8608 | <500 | <50 | <50 | 7 | 200 | 1,000 | 1,500 | 5. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8609 | <500 | <50 | <50 | 7 | 200 | 1,000 | 1,500 | 5. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8610 | <500 | <50 | <50 | 7 | 200 | 1,000 | 1,000 | 3. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8611 | <500 | <50 | <50 | 7 | 200 | 1,000 | 1,500 | 5. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8612 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 5. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8613 | <500 | <50 | <50 | 15 | 200 | 1,000 | 1,000 | 5. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8614 | <500 | <50 | <50 | 15 | 200 | 1,000 | 1,000 | 5. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8615 | <500 | <50 | <50 | 10 | 200 | 1,000 | 1,000 | 7. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8616 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 7. | 3. | 3. | 15 | 25 | 2 | | | Stream sediment |
| 8617 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 5. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8618 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 5. | 2. | 2. | 20 | 25 | <2 | | | Stream sediment |
| 8619 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 5. | 2. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8620 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 5. | 2. | 2. | 20 | 50 | <2 | | | Stream sediment |
| 8622 | <500 | <50 | <50 | 10 | 50 | 1,000 | 1,000 | 5. | 1.5 | 2. | 20 | 50 | 2 | | | Stream sediment |
| 8623 | <500 | <50 | <50 | 10 | 70 | 1,000 | 1,000 | 5. | 2. | 2. | 20 | 50 | <2 | | | Stream sediment |
| 8624 | <500 | <50 | <50 | 10 | 150 | 1,500 | 1,500 | 5. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8626 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 5. | 2. | 3. | 20 | 50 | 2 | | | Stream sediment |
| 8627 | <500 | <50 | <50 | 10 | 100 | 1,500 | 1,000 | 7. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8628 | <500 | <50 | <50 | 10 | 150 | 1,500 | 1,000 | 5. | 2. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8629 | <500 | <50 | <50 | 10 | 150 | 1,500 | 1,500 | 5. | 2. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8630 | <500 | <50 | <50 | 10 | 100 | 1,500 | 1,000 | 7. | 2. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8631 | <500 | <50 | <50 | 15 | 200 | 2,000 | 2,000 | 3. | 3. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8632 | <500 | <50 | <50 | 10 | 50 | 2,000 | 1,500 | 3. | 2. | 3. | 30 | 25 | <2 | | | Intrusive contact |
| 8633a | <500 | <50 | <50 | 5 | 30 | 2,000 | 2,000 | 3. | 1.5 | 2. | 5 | 25 | <2 | | | Intrusive contact |
| 8633b | <500 | <50 | <50 | 5 | 20 | 1,500 | 1,500 | 1.5 | 1. | 2. | | | | | | Intrusive contact |
| 8634 | <500 | <50 | <50 | 5 | 30 | 1,000 | 1,000 | 3. | 1. | 1.5 | 30 | 25 | <2 | | | Intrusive contact |
| 8635 | <500 | <50 | <50 | 10 | 100 | 1,500 | 1,500 | 2. | 1. | 2. | 20 | 25 | <2 | | | Intrusive contact |
| 8637 | <500 | <50 | <50 | 7 | 70 | 1,500 | 1,000 | 2. | 1. | 2. | 15 | 25 | <2 | | | Intrusive contact |
| 8638 | <500 | <50 | <50 | 15 | 200 | 1,500 | 2,000 | 2. | 2. | 3. | 20 | 25 | <2 | | | Intrusive contact |
| 8639 | <500 | <50 | <50 | <5 | 30 | 1,000 | 1,000 | 2. | 1. | 2. | 15 | 25 | 2 | | | Intrusive contact |
| 8640 | <500 | <50 | <50 | 10 | 30 | 1,000 | 1,000 | 3. | 1. | 2. | 10 | 25 | <2 | | | Intrusive contact |
| 8641 | <500 | <50 | <50 | 5 | <5 | 1,000 | 1,000 | 5. | 1.5 | 3. | 10 | 25 | <2 | | | Altered rock |
| 8643 | <500 | <50 | <50 | 5 | <5 | 30 | <50 | 5. | .2 | .2 | <5 | <25 | 4 | | | Petrified wood |
| 8644 | <500 | <50 | <50 | <5 | 70 | 700 | 700 | 7. | 1. | 2. | 30 | 25 | <2 | | | Yellow soil |
| 8645 | <500 | <50 | <50 | <5 | 30 | 1,000 | 1,000 | 7. | 2. | 3. | 20 | 25 | 4 | | | Altered rock |
| 8646 | <500 | <50 | <50 | <5 | <5 | 700 | 200 | 10. | .03 | 1. | 15 | <25 | <2 | | | Altered rock |
| 8647 | <500 | <50 | <50 | <5 | 30 | 1,000 | 700 | 3. | .7 | 1.5 | 20 | 25 | <2 | | | Altered rock |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | Semiquantitative spectrographic analyses | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ti | Zn | Mn | V | Zr | La | Ni | Cu | Cd | Pb | B | Y | Mo | Sn | Co | Ag | Be | Bi | Ga |
| 8648 | 3,000 | <200 | 300 | 70 | 70 | 30 | 10 | 10 | <20 | 20 | <10 | 5 | <5 | <10 | 7 | <1 | 1 | <10 | 15 |
| 8649 | 5,000 | <200 | 700 | 150 | 70 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <5 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8650 | 2,000 | <200 | 150 | 100 | 100 | 30 | 20 | 5 | <20 | 20 | 10 | 5 | <2 | <10 | 7 | <1 | 1 | <10 | 20 |
| 8654 | 5,000 | <200 | 200 | 200 | 70 | 30 | 10 | 10 | <20 | 20 | <10 | 5 | <5 | <10 | 5 | <1 | <1 | <10 | 15 |
| 8655 | 3,000 | <200 | 500 | 100 | 50 | 30 | 20 | 10 | <20 | 20 | <10 | <5 | <5 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8656 | 2,000 | <200 | 500 | 70 | 70 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8660 | 50 | <200 | >5,000 | 20 | <5 | <20 | 2 | 3 | <20 | 10 | 10 | <5 | <5 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8661 | 2,000 | <200 | 1,000 | 100 | 50 | 20 | 150 | 30 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8662 | 50 | <200 | 200 | 10 | 5 | <20 | 10 | 5 | <20 | <10 | <10 | <5 | <5 | <10 | <5 | <1 | 1 | <10 | <10 |
| 8663 | 300 | <200 | 150 | 10 | <5 | <20 | 10 | 2 | <20 | 10 | <10 | <5 | <2 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8665 | 2,000 | <200 | 500 | 100 | 70 | 20 | 50 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8666 | 2,000 | <200 | 500 | 70 | 100 | 30 | 50 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8667 | 3,000 | <200 | 300 | 100 | 70 | 30 | 30 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8667a | 3,000 | <200 | 500 | 100 | 100 | 30 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8668 | 5,000 | <200 | 700 | 100 | 100 | 30 | 30 | 20 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8669 | 5,000 | <200 | 500 | 150 | 70 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8670 | 5,000 | <200 | 500 | 150 | 70 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8671 | 3,000 | <200 | 500 | 100 | 50 | 30 | 20 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 10 |
| 8671a | 5,000 | <200 | 500 | 150 | 70 | 30 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8672 | 3,000 | <200 | 300 | 70 | 70 | 30 | 70 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8673 | | | | | | | | | | | | | | | | | | | |
| 8674 | 5,000 | <200 | 1,000 | 150 | 70 | 50 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8675 | 5,000 | <200 | 700 | 100 | 70 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8676 | 5,000 | <200 | 500 | 100 | 70 | 30 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8677 | 5,000 | <200 | 500 | 100 | 100 | 50 | 20 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8678 | 5,000 | <200 | 700 | 70 | 70 | 50 | 70 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8679 | 3,000 | <200 | 300 | 70 | 70 | 20 | 50 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8680 | 5,000 | <200 | 1,000 | 150 | 50 | 20 | 70 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8681 | 3,000 | <200 | 700 | 150 | 70 | 20 | 20 | 7 | <20 | 20 | 10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 10 |
| 8683 | 2,000 | <200 | 500 | 100 | 70 | 50 | 100 | 70 | <20 | 20 | 10 | 7 | <20 | <10 | 50 | <1 | <1 | <10 | 20 |
| 8685 | 2,000 | <200 | 500 | 70 | 70 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 10 | <1 | <1 | <10 | 10 |
| 8686 | 2,000 | <200 | 200 | 70 | 50 | 30 | 15 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8687b | 5,000 | <200 | 500 | 200 | 70 | 50 | 15 | 10 | <20 | 20 | <10 | 10 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8688 | 3,000 | <200 | 700 | 100 | 50 | 30 | 20 | 5 | <20 | 100 | <10 | 5 | <2 | <10 | 10 | <1 | 1 | <10 | 10 |
| 8689 | 5,000 | <200 | 700 | 150 | 50 | 20 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8690 | 5,000 | <200 | 1,000 | 150 | 50 | 20 | 5 | 5 | <20 | 50 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 10 |
| 8691 | 3,000 | <200 | 200 | 200 | 70 | 50 | 15 | 10 | <20 | 30 | <10 | 7 | <5 | <10 | 7 | <1 | <1 | <10 | 20 |
| 8692 | 3,000 | <200 | 200 | 100 | 70 | 30 | 5 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | 7 | <1 | <1 | <10 | 15 |
| 8694 | 2,000 | <200 | 150 | 150 | 70 | 30 | 20 | 5 | <20 | 15 | <10 | 5 | <2 | <10 | 10 | <1 | <1 | <10 | 15 |
| 8695 | 5,000 | <200 | 700 | 100 | 50 | 20 | 15 | 10 | <20 | 10 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8696 | 5,000 | <200 | 700 | 100 | 50 | 20 | 20 | 15 | <20 | 15 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8697 | 5,000 | <200 | 1,000 | 200 | 70 | 20 | 30 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8698 | 3,000 | <200 | 700 | 100 | 50 | 20 | 20 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | 1 | <10 | 15 |
| 8699 | 5,000 | <200 | 1,000 | 200 | 50 | 20 | 20 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8700 | 2,000 | <200 | 500 | 100 | 50 | 30 | 20 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8700a | 5,000 | <200 | 1,500 | 200 | 100 | 30 | 20 | 20 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8701 | 5,000 | <200 | 700 | 150 | 70 | 50 | 10 | 10 | <20 | 15 | <10 | 10 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8702 | 1,500 | <200 | 100 | 50 | 50 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 10 |
| 8703 | 3,000 | <200 | 700 | 150 | 70 | 30 | 30 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8704 | 5,000 | <200 | 700 | 200 | 100 | 20 | 30 | 10 | <20 | 15 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8705 | 3,000 | <200 | 700 | 150 | 100 | 30 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8705a | 5,000 | <200 | 700 | 150 | 50 | 20 | 30 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8706 | 5,000 | <200 | 500 | 100 | 100 | 20 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8707 | 5,000 | <200 | 700 | 200 | 100 | 20 | 50 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8708 | 2,000 | <200 | 700 | 100 | 50 | 20 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8708a | 3,000 | <200 | 300 | 150 | 100 | 50 | 10 | 5 | <20 | 30 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8709 | 2,000 | <200 | 500 | 150 | 50 | 30 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8710 | 3,000 | <200 | 200 | 100 | 70 | 50 | 30 | 15 | <20 | 30 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8711 | 3,000 | <200 | 300 | 100 | 150 | 50 | 15 | 3 | <20 | 20 | <10 | 7 | 2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8712d | 3,000 | <200 | 300 | 100 | 100 | 50 | 20 | 10 | <20 | 30 | <10 | 5 | 3 | <10 | 15 | <1 | <1 | <10 | 15 |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | As | Sb | W | Sc | Cr | Ba | Sr | Fe (Percent) | Mg (Percent) | Ca (Percent) | Cu (Chemical analyses) | Zn (Chemical analyses) | Mo | Au | Ag | Sample Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8648 | <500 | <50 | <50 | 5 | 20 | 1,000 | 700 | 2. | 1.5 | 2. | 15 | 25 | <2 | | | Altered rock |
| 8649 | <500 | <50 | <50 | 5 | 30 | 1,000 | 700 | 5. | 2. | 2. | 20 | 50 | <2 | | | Intrusive contact |
| 8650 | <500 | <50 | <50 | <5 | 5 | 700 | 200 | 1. | .2 | 1. | 15 | <25 | <2 | | | Vein |
| 8654 | <500 | <50 | <50 | 5 | 20 | 2,000 | 1,500 | 5. | 1.5 | 2. | 10 | 25 | <2 | | | Altered rock |
| 8655 | <500 | <50 | <50 | <5 | 150 | 1,000 | 1,000 | 5. | 2. | 2. | 15 | <25 | <2 | | | Altered rock |
| 8656 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,000 | 5. | 1.5 | 3. | 10 | 25 | <2 | | | Altered rock |
| 8660 | <500 | <50 | <50 | 7 | <5 | 300 | 300 | 2. | 2. | 20. | <5 | <25 | <2 | | | Vein |
| 8661 | <500 | <50 | <50 | 7 | 300 | 700 | 700 | 5. | 3. | 3. | 40 | 25 | <2 | | | Altered rock |
| 8662 | <500 | <50 | <50 | 7 | <5 | 70 | <50 | 5. | 1. | 7. | <5 | <25 | <2 | | | Vein |
| 8663 | <500 | <50 | <50 | <5 | 10 | 70 | 50 | 15. | 2. | .3 | 15 | <25 | <2 | | | Green altered rock |
| 8665 | <500 | <50 | <50 | 10 | 300 | 1,500 | 1,000 | 3. | 2. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8666 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,500 | 5. | 2. | 2. | 40 | 25 | 2 | | | Stream sediment |
| 8667 | <500 | <50 | <50 | 5 | 150 | 1,000 | 1,500 | 7. | 2. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8667a | <500 | <50 | <50 | 10 | 200 | 1,000 | 1,500 | 5. | 2. | 3. | | | | | | Stream sediment |
| 8668 | <500 | <50 | <50 | 10 | 150 | 2,000 | 1,500 | 5. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8669 | <500 | <50 | <50 | 10 | 150 | 1,500 | 2,000 | 5. | 2. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8670 | <500 | <50 | <50 | 10 | 150 | 1,500 | 1,500 | 5. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8671 | <500 | <50 | <50 | 5 | 70 | 1,000 | 1,000 | 5. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8671a | <500 | <50 | <50 | 7 | 150 | 700 | 1,500 | 3. | 2. | 3. | | | | | | Stream sediment |
| 8672 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,000 | 5. | 2. | 2. | 40 | 25 | 2 | | | Stream sediment |
| 8673 | | | | | | | | | | | 15 | 50 | <2 | | | Stream sediment |
| 8674 | <500 | <50 | <50 | 7 | 200 | 1,000 | 1,000 | 5. | 1.5 | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8675 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 5. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8676 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 5. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8677 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,500 | 5. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8678 | <500 | <50 | <50 | 7 | 200 | 1,500 | 1,500 | 5. | 3. | 3. | 40 | 25 | 2 | | | Stream sediment |
| 8679 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 3. | 2. | 2. | 30 | 50 | <2 | | | Stream sediment |
| 8680 | <500 | <50 | <50 | 10 | 200 | 1,500 | 1,500 | 7. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8681 | <500 | <50 | <50 | <5 | 30 | 1,000 | 700 | 5. | 1.5 | 2. | 5 | 25 | <2 | | | Intrusive contact |
| 8683 | <500 | <50 | <50 | 10 | 200 | 1,000 | 1,000 | 5. | 1.5 | 2. | 60 | 50 | <2 | | | Altered rock |
| 8685 | <500 | <50 | <50 | <5 | 30 | 1,000 | 700 | 3. | 1. | 2. | 15 | 25 | <2 | | | Intrusive contact |
| 8686 | <500 | <50 | <50 | <5 | 50 | 1,500 | 1,500 | 2. | 1.5 | 1.5 | 20 | 25 | <2 | | | Intrusive contact |
| 8687b | <500 | <50 | <50 | 10 | 30 | 1,000 | 1,500 | 10. | 1.5 | 3. | 15 | 50 | <2 | | | Altered rock |
| 8688 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,000 | 7. | 1.5 | 3. | 15 | 25 | <2 | | | Intrusive contact |
| 8689 | <500 | <50 | <50 | 10 | 70 | 1,500 | 1,500 | 5. | 1.5 | 2. | 20 | 50 | <2 | | | Stream sediment |
| 8690 | <500 | <50 | <50 | <5 | <5 | 700 | 700 | 10. | 1. | 3. | 20 | 50 | <2 | | | Intrusive contact |
| 8691 | <500 | <50 | <50 | <5 | 30 | 1,000 | 1,500 | 5. | 1. | 2. | 15 | 50 | <2 | | | Intrusive contact |
| 8692 | <500 | <50 | <50 | <5 | <5 | 1,000 | 1,000 | 3. | .7 | 2. | 15 | 50 | 2 | | | Intrusive contact |
| 8694 | <500 | <50 | <50 | 5 | 70 | 1,000 | 1,500 | 3. | 1.5 | 2. | 15 | <25 | <2 | | | Intrusive contact |
| 8695 | <500 | <50 | <50 | 7 | 50 | 1,000 | 1,000 | 5. | 1.5 | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8696 | <500 | <50 | <50 | 10 | 70 | 1,000 | 1,000 | 5. | 2. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8697 | <500 | <50 | <50 | 15 | 200 | 1,000 | 1,500 | 7. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8698 | <500 | <50 | <50 | 10 | 50 | 1,000 | 1,000 | 5. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8699 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 7. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8700 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,500 | 3. | 1. | 2. | 15 | 25 | <2 | | | Intrusive contact |
| 8700a | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,500 | 7. | 2. | 3. | | | | | | Intrusive contact |
| 8701 | <500 | <50 | <50 | 7 | 5 | 700 | 1,500 | 3. | 1. | 3. | 20 | 50 | <2 | | | Intrusive contact |
| 8702 | <500 | <50 | <50 | <5 | 50 | 1,000 | 1,500 | 2. | 1. | 1.5 | 20 | 50 | <2 | | | Intrusive contact |
| 8703 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,500 | 5. | 2. | 3. | 20 | <25 | <2 | | | Intrusive contact |
| 8704 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 5. | 3. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8705 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,500 | 3. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8705a | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 5. | 3. | 3. | | | | | | Stream sediment |
| 8706 | <500 | <50 | <50 | 7 | 100 | 1,500 | 1,500 | 5. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8707 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,500 | 7. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8708 | <500 | <50 | <50 | <5 | 100 | 1,000 | 1,000 | 5. | 3. | 2. | 15 | 25 | <2 | | | Altered rock |
| 8708a | <500 | <50 | <50 | <5 | <5 | 700 | 1,000 | 5. | .7 | 2. | | | | | | Altered rock |
| 8709 | <500 | <50 | <50 | 7 | 150 | 1,500 | 1,500 | 2. | .5 | 2. | 30 | 50 | <2 | | | Altered rock |
| 8710 | <500 | <50 | <50 | 7 | 150 | 1,500 | 1,500 | 3. | 2. | 3. | 20 | 25 | <2 | | | Altered rock |
| 8711 | <500 | <50 | <50 | 5 | 50 | 1,500 | 1,500 | 3. | 1.5 | 2. | 15 | 25 | 2 | | | Altered rock |
| 8712d | <500 | <50 | <50 | 7 | 50 | 1,500 | 3,000 | 3. | 1.5 | 2. | 20 | 25 | 6 | | | Altered rock |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | Semiquantitative spectrographic analyses | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ti | Zn | Mn | V | Zr | La | Ni | Cu | Cd | Pb | B | Y | Mo | Sn | Co | Ag | Be | Bi | Ga |
| 8713 | 500 | <200 | 1,000 | 20 | 10 | 20 | 10 | 20 | <20 | 30 | <10 | 10 | <2 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8714 | 5,000 | <200 | 700 | 200 | 150 | 30 | 50 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8715 | 5,000 | <200 | 500 | 150 | 100 | 20 | 30 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8716 | 5,000 | <200 | 200 | 100 | 150 | 70 | 20 | 5 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8717 | 1,500 | <200 | 1,000 | 50 | 50 | 30 | 15 | 5 | <20 | 15 | <10 | 5 | <2 | <10 | 7 | <1 | <1 | <10 | 10 |
| 8718 | 2,000 | <200 | 700 | 50 | 30 | <20 | 30 | 7 | <20 | 20 | <10 | <5 | <2 | <10 | 10 | <1 | <1 | <10 | 15 |
| 8719 | 5,000 | <200 | 300 | 150 | 100 | 70 | 70 | 30 | <20 | 20 | 10 | 5 | <2 | <10 | 20 | <1 | 1 | <10 | 20 |
| 8720 | 2,000 | <200 | 300 | 100 | 70 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 15 |
| 8721 | 2,000 | <200 | 200 | 70 | 100 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 15 |
| 8722 | 3,000 | <200 | 300 | 150 | 100 | 50 | 20 | 10 | <20 | 30 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8723 | 3,000 | <200 | 700 | 150 | 50 | 20 | 20 | 10 | <20 | 30 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8724 | 3,000 | <200 | 300 | 100 | 70 | 30 | 20 | 15 | <20 | 50 | 10 | 5 | <5 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8725 | 2,000 | <200 | 300 | 150 | 50 | 30 | 10 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8726 | 2,000 | <200 | 1,500 | 150 | 70 | 30 | 20 | 15 | <20 | 20 | <10 | 5 | 2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8727 | | | | | | | | | | | | | | | | | | | |
| 8728 | | | | | | | | | | | | | | | | | | | |
| 8734 | 2,000 | <200 | 200 | 100 | 70 | 30 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8736 | 2,000 | <200 | 300 | 70 | 50 | 30 | 20 | 7 | <20 | 20 | <10 | <5 | <2 | <10 | 10 | <1 | <1 | <10 | 15 |
| 8737 | 1,000 | <200 | 3,000 | 20 | 15 | <20 | 10 | 10 | <20 | 10 | <10 | <5 | <2 | <10 | 5 | <1 | <1 | <10 | 20 |
| 8738 | | | | | | | | | | | | | | | | | | | |
| 8739 | 3,000 | <200 | 200 | 150 | 100 | 30 | 10 | 5 | <20 | 20 | <10 | 5 | <2 | <10 | 10 | <1 | <1 | <10 | 20 |
| 8740 | 2,000 | <200 | 200 | 100 | 50 | 30 | 20 | 10 | <20 | 30 | 10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8741 | 3,000 | <200 | 300 | 150 | 70 | 30 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8743 | 300 | <200 | 200 | 150 | 50 | 30 | 70 | 20 | <20 | 15 | <10 | 5 | 2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8744 | 2,000 | <200 | 1,500 | 70 | 20 | 30 | 150 | 20 | <20 | 20 | 10 | 5 | <5 | <10 | 70 | <1 | <1 | <10 | 15 |
| 8746 | 3,000 | <200 | 300 | 70 | 100 | 20 | 20 | 7 | <20 | 10 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 10 |
| 8747 | 2,000 | <200 | 500 | 70 | 100 | 30 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8748 | 5,000 | <200 | 500 | 100 | 50 | 20 | 15 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8749 | 3,000 | <200 | 1,000 | 100 | 70 | 20 | 20 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8750 | 3,000 | <200 | 700 | 150 | 70 | 30 | 20 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8751 | 5,000 | <200 | 700 | 100 | 70 | 30 | 20 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8752 | 700 | <200 | 700 | 30 | 5 | <20 | 10 | 5 | <20 | 10 | <10 | 7 | <2 | <10 | <5 | <1 | <1 | <10 | 15 |
| 8753 | 5,000 | <200 | 700 | 150 | 70 | 30 | 20 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8754 | 3,000 | <200 | 700 | 100 | 100 | 20 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8755 | 700 | <200 | 100 | 30 | 7 | <20 | 7 | 3 | <20 | 10 | <10 | <5 | <2 | <10 | 5 | <1 | <1 | <10 | 10 |
| 8756 | 2,000 | <200 | 150 | 50 | 5 | 30 | 10 | 5 | <20 | 15 | <10 | <5 | <2 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8757 | 5,000 | <200 | 700 | 150 | 70 | 30 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8758 | 3,000 | <200 | 700 | 100 | 70 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8759 | 1,500 | <200 | 200 | 50 | 50 | 20 | 20 | 15 | <20 | 30 | 10 | <5 | <2 | <10 | 10 | <1 | <1 | <10 | 15 |
| 8760 | 2,000 | <200 | 200 | 70 | 50 | 30 | 20 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8764 | 1,000 | <200 | 1,000 | 150 | 30 | <20 | 15 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8766 | 1,500 | <200 | 100 | 30 | 50 | 20 | 10 | 3 | <20 | 50 | <10 | 5 | <2 | <10 | 5 | <1 | <1 | <10 | 15 |
| 8768 | 5,000 | <200 | 700 | 200 | 70 | 50 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8769 | 3,000 | <200 | 500 | 100 | 100 | 50 | 30 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8770 | 5,000 | <200 | 1,000 | 200 | 100 | 30 | 30 | 10 | <20 | 15 | <10 | 7 | <2 | <10 | 10 | <1 | <1 | <10 | 20 |
| 8771 | 5,000 | <200 | 1,000 | 150 | 70 | 50 | 20 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 30 | <1 | <1 | <10 | 20 |
| 8772 | 3,000 | <200 | 700 | 150 | 70 | 50 | 50 | 20 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8773 | 5,000 | <200 | 700 | 100 | 100 | 30 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8775 | 1,500 | <200 | >5,000 | 50 | 50 | <20 | 15 | 15 | <20 | 70 | <10 | 7 | 3 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8777 | 3,000 | <200 | 150 | 70 | 150 | 50 | 20 | 15 | <20 | 20 | 10 | 5 | <2 | <10 | 10 | <1 | 1 | <10 | 20 |
| 8779 | 3,000 | <200 | 700 | 100 | 100 | 70 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8780 | 1,000 | <200 | 1,000 | 30 | 100 | 20 | 10 | 10 | <20 | 30 | 10 | 10 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8781 | 2,000 | <200 | 700 | 100 | 70 | 30 | 15 | 5 | <20 | 20 | <10 | 7 | <2 | <10 | 5 | <1 | <1 | <10 | 20 |
| 8782 | 3,000 | <200 | 700 | 100 | 100 | 50 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 15 |
| 8783 | 3,000 | <200 | 500 | 150 | 100 | 50 | 20 | 30 | <20 | 30 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8784 | 3,000 | <200 | 500 | 150 | 100 | 50 | 20 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8785 | 3,000 | <200 | 500 | 150 | 100 | 50 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8786 | 2,000 | <200 | 500 | 100 | 70 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8787 | 5,000 | <200 | 700 | 150 | 100 | 30 | 20 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 10 | <1 | <1 | <10 | 20 |
| 8788 | 5,000 | <200 | 500 | 100 | 150 | 30 | 20 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | As | Sb | W | Sc | Cr | Ba | Sr | Percent Fe | Percent Mg | Percent Ca | Chemical analyses Cu | Chemical analyses Zn | Chemical analyses Mo | Chemical analyses Au | Chemical analyses Ag | Sample Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8713 | <500 | <50 | <50 | <5 | 5 | 150 | 500 | 3. | 3. | 15. | 30 | 25 | 2 | | | Vein |
| 8714 | <500 | <50 | <50 | 10 | 200 | 1,500 | 2,000 | 5. | 3. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8715 | <500 | <50 | <50 | 7 | 100 | 1,500 | 2,000 | 5. | 1.5 | 2. | 30 | 25 | <2 | | | Stream sediment |
| 8716 | <500 | <50 | <50 | 5 | 70 | 1,500 | 2,000 | 2. | 1.5 | 2. | 15 | 25 | <2 | | | Intrusive contact |
| 8717 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,500 | 2. | 1. | 3. | 15 | 25 | <2 | | | Altered rock |
| 8718 | <500 | <50 | <50 | <5 | 70 | 700 | 1,000 | 3. | 1. | 1.5 | 30 | 25 | <2 | | | Intrusive contact |
| 8719 | <500 | <50 | <50 | 10 | 300 | 1,500 | 1,500 | 3. | 2. | 2. | 40 | 50 | <2 | | | Intrusive contact |
| 8720 | <500 | <50 | <50 | 5 | 70 | 1,500 | 1,000 | 2. | 1. | 3. | 15 | 25 | <2 | | | Vein |
| 8721 | <500 | <50 | <50 | 5 | 70 | 1,500 | 1,000 | 3. | 1.5 | 2. | 15 | 25 | <2 | | | Altered rock |
| 8722 | <500 | <50 | <50 | 10 | 70 | 1,500 | 1,500 | 3. | 2. | 3. | 15 | 25 | <2 | | | Altered rock |
| 8723 | <500 | <50 | <50 | 5 | 70 | 1,500 | 1,000 | 3. | 1.5 | 3. | 30 | 50 | <2 | | | Altered rock |
| 8724 | <500 | <50 | <50 | 5 | 70 | 1,000 | 1,500 | 5. | 2. | 3. | 20 | 25 | <2 | | | Altered rock |
| 8725 | <500 | <50 | <50 | 5 | 10 | 1,000 | 1,500 | 5. | 1.5 | 3. | 15 | 50 | <2 | | | Intrusive contact |
| 8726 | <500 | <50 | <50 | 5 | 50 | 1,500 | 1,000 | 5. | 1.5 | 2. | 15 | 25 | <2 | | | Altered rock |
| 8727 | | | | | | | | | | | 30 | 25 | 2 | | | Stream sediment |
| 8728 | | | | | | | | | | | 30 | 50 | <2 | | | Stream sediment |
| 8734 | <500 | <50 | <50 | 10 | 150 | 1,500 | 1,500 | 3. | 1.5 | 3. | 20 | 25 | <2 | | | Intrusive contact |
| 8736 | <500 | <50 | <50 | <5 | 50 | 700 | 1,000 | 3. | 1.5 | 2. | 15 | 25 | <2 | | | Intrusive contact |
| 8737 | <500 | <50 | <50 | <5 | 30 | 700 | 500 | 2. | 1. | 5. | 15 | 25 | <2 | | | Vein |
| 8738 | | | | | | | | | | | 30 | 25 | <2 | | | Stream sediment |
| 8739 | <500 | <50 | <50 | 5 | 20 | 700 | 1,000 | 3. | 1. | 2. | 15 | 25 | <2 | | | Intrusive contact |
| 8740 | <500 | <50 | <50 | 5 | 70 | 1,000 | 1,500 | 3. | 1. | 1.5 | 20 | 25 | <2 | | | Intrusive contact |
| 8741 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,500 | 3. | 1.5 | 3. | 30 | 50 | <2 | | | Intrusive contact |
| 8743 | <500 | <50 | <50 | 10 | 300 | 1,000 | 700 | 3. | 1.5 | 2. | 40 | 50 | <2 | | | Altered rock |
| 8744 | <500 | <50 | <50 | 5 | 200 | 500 | 500 | 5. | 3. | 15. | 30 | 25 | <2 | | | Altered rock |
| 8746 | <500 | <50 | <50 | 5 | 70 | 1,000 | 700 | 3. | .7 | 1.5 | 40 | 25 | <2 | | | Stream sediment |
| 8747 | <500 | <50 | <50 | 5 | 100 | 1,500 | 1,500 | 3. | 1. | 2. | 20 | 25 | <2 | | | Stream sediment |
| 8748 | <500 | <50 | <50 | 5 | 70 | 1,500 | 1,500 | 5. | 1. | 2. | 40 | 25 | <2 | | | Stream sediment |
| 8749 | <500 | <50 | <50 | 10 | 50 | 1,000 | 700 | 5. | 1.5 | 2. | 20 | 25 | 2 | | | Stream sediment |
| 8750 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 5. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8751 | <500 | <50 | <50 | 7 | 70 | 1,000 | 1,000 | 3. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8752 | <500 | <50 | <50 | <5 | 10 | 300 | 300 | 3. | 1. | 15. | 15 | <25 | <2 | | | Vein |
| 8753 | <500 | <50 | <50 | 10 | 70 | 1,000 | 1,000 | 5. | 2. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8754 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,000 | 5. | 2. | 2. | 30 | 25 | <2 | | | Stream sediment |
| 8755 | <500 | <50 | <50 | <5 | 10 | 200 | 500 | 2. | .5 | 20. | <5 | <25 | <2 | | | Vein |
| 8756 | <500 | <50 | <50 | <5 | 15 | 700 | 2,000 | 1. | 1.5 | 15. | 10 | <25 | <2 | | | Vein |
| 8757 | <500 | <50 | <50 | 10 | 150 | 1,500 | 1,000 | 5. | 2. | 3. | 20 | 50 | <2 | | | Stream sediment |
| 8758 | <500 | <50 | <50 | 10 | 70 | 1,000 | 700 | 3. | 1.5 | 2. | 30 | 25 | 2 | | | Stream sediment |
| 8759 | <500 | <50 | <50 | <5 | 50 | 700 | 1,000 | 2. | 1.5 | 1.5 | 15 | <25 | | | | Altered rock |
| 8760 | <500 | <50 | <50 | 5 | 70 | 1,000 | 1,500 | 3. | 1.5 | 1.5 | 15 | 25 | <2 | | | Altered rock |
| 8764 | <500 | <50 | <50 | 10 | 70 | 1,000 | 1,000 | 7. | .7 | 3. | 30 | 25 | <2 | | | Altered rock |
| 8766 | <500 | <50 | <50 | <5 | 10 | 1,000 | 500 | 1. | .7 | 1. | 5 | 25 | <2 | | | Altered rock |
| 8768 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 5. | 2. | 2. | 15 | 25 | <2 | | | Stream sediment |
| 8769 | <500 | <50 | <50 | 7 | 150 | 1,500 | 1,500 | 3. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8770 | <500 | <50 | <50 | 15 | 150 | 1,000 | 1,500 | 5. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8771 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 5. | 2. | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8772 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 3. | 3. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8773 | <500 | <50 | <50 | 10 | 100 | 1,000 | 1,500 | 3. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8775 | <500 | <50 | <50 | 5 | 50 | 3,000 | 700 | 2. | .3 | 1.5 | 20 | 25 | <2 | | | Vein |
| 8777 | <500 | <50 | <50 | 5 | 100 | 500 | 1,000 | 3. | 1.5 | 2. | 20 | 25 | 2 | | | Altered rock |
| 8779 | <500 | <50 | <50 | 7 | 70 | 1,000 | 1,500 | 3. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8780 | <500 | <50 | <50 | <5 | 15 | 1,000 | 300 | 1.5 | .7 | 2. | 20 | 25 | <2 | | | Stream sediment |
| 8781 | <500 | <50 | <50 | 5 | 20 | 1,000 | 700 | 2. | 1. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8782 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,500 | 3. | 1.5 | 3. | 30 | 25 | 2 | | | Stream sediment |
| 8783 | <500 | <50 | <50 | 7 | 150 | 1,000 | 2,000 | 3. | 1.5 | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8784 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,500 | 3. | 1.5 | 3. | 20 | 25 | 2 | | | Stream sediment |
| 8785 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,500 | 3. | 1.5 | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8786 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,500 | 3. | 1.5 | 2. | 30 | 25 | <2 | | | Stream sediment |
| 8787 | <500 | <50 | <50 | 5 | 70 | 1,000 | 1,000 | 3. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8788 | <500 | <50 | <50 | 5 | 70 | 1,000 | 1,500 | 5. | 1.5 | 3. | 20 | <25 | 2 | | | Stream sediment |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | Semiquantitative spectrographic analyses | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ti | Zn | Mn | V | Zr | La | Ni | Cu | Cd | Pb | B | Y | Mo | Sn | Co | Ag | Be | Bi | Ag |
| 8789 | 5,000 | <200 | 700 | 150 | 100 | 30 | 20 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 30 |
| 8790 | | | | | | | | | | | | | | | | | | | |
| 8791 | 3,000 | <200 | 700 | 100 | 100 | 50 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8792 | 3,000 | <200 | 700 | 100 | 30 | 20 | 20 | 15 | <20 | 10 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8793 | 7,000 | <200 | 1,000 | 150 | 100 | 30 | 20 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8794 | 5,000 | <200 | 700 | 100 | 50 | 20 | 20 | 15 | <20 | 10 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8795 | 3,000 | <200 | 700 | 70 | 50 | 20 | 15 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8800 | 5,000 | <200 | 700 | 100 | 70 | 30 | 20 | 20 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8801 | 3,000 | <200 | 700 | 70 | 70 | 30 | 20 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8802 | 5,000 | <200 | 700 | 100 | 100 | 30 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8804 | 5,000 | <200 | 700 | 100 | 100 | 20 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8806 | 2,000 | <200 | 200 | 100 | 100 | 50 | 30 | 30 | <20 | 15 | <10 | 5 | <2 | <10 | 10 | 1 | <1 | 20 | 20 |
| 8809 | 3,000 | <200 | 700 | 100 | 50 | 30 | 30 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 7 | <1 | 1 | <10 | 15 |
| 8812 | 2,000 | <200 | 1,000 | 70 | 150 | 30 | 20 | 20 | <20 | 15 | <10 | 5 | <2 | <10 | 10 | <1 | 1 | <10 | 15 |
| 8814 | 1,500 | 700 | >5,000 | 70 | 70 | 30 | 10 | 100 | <20 | 3000 | <10 | 5 | 5 | <10 | <5 | 200 | <1 | 30 | 20 |
| 8716 | 2,000 | <200 | 50 | 50 | 100 | 30 | 20 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | <5 | 1 | 1 | 10 | 10 |
| 8817 | 5,000 | 300 | 700 | 70 | 100 | 20 | 30 | 30 | <20 | 700 | 10 | 5 | <2 | <10 | 10 | 5 | 1 | 10 | 20 |
| 8818 | 1,000 | <200 | 2,000 | 50 | 15 | 20 | 30 | 15 | <20 | 50 | <10 | 7 | <2 | <10 | 15 | <1 | 1 | <10 | 15 |
| 8819 | 5,000 | <200 | 300 | 70 | 100 | 50 | 30 | 10 | <20 | 30 | 10 | 5 | 30 | <10 | 30 | <1 | 1 | <10 | 30 |
| 8820 | 3,000 | 500 | 100 | 70 | 100 | 50 | 30 | 15 | <20 | 500 | 10 | 5 | 3 | <10 | 5 | 7 | 1 | <10 | 20 |
| 8821 | 5,000 | <200 | 200 | 70 | 100 | 50 | 20 | 10 | <20 | 50 | <10 | 5 | 5 | <10 | 10 | 2 | 2 | <10 | 15 |
| 8823 | 7,000 | <200 | 500 | 100 | 150 | 70 | 30 | 15 | <20 | 20 | <10 | 5 | 5 | <10 | 10 | <1 | 1 | <10 | 15 |
| 8824 | 3,000 | <200 | 1,000 | 100 | 70 | 50 | 100 | 7 | <20 | 20 | 10 | 5 | 15 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8825 | 1,500 | 500 | 1,500 | 30 | 50 | 20 | 15 | 7 | <20 | 100 | <10 | 5 | <2 | <10 | 10 | 5 | 1 | <10 | 10 |
| 8827 | 700 | <200 | 1,500 | 10 | 50 | 20 | 5 | 7 | <20 | <10 | <10 | <5 | <2 | <10 | <5 | <1 | 1 | <10 | <10 |
| 8829 | 5,000 | <200 | 500 | 100 | 150 | 30 | 30 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8830 | 7,000 | <200 | 700 | 100 | 150 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8831 | 7,000 | <200 | 700 | 200 | 100 | 30 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8832 | 5,000 | <200 | 500 | 100 | 100 | 30 | 30 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 30 |
| 8833 | 7,000 | <200 | 500 | 100 | 100 | 30 | 20 | 15 | <20 | 15 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8834 | 7,000 | <200 | 2,000 | 100 | 200 | 30 | 70 | 20 | <20 | 50 | 10 | 5 | <2 | <10 | 30 | <1 | <1 | <10 | 30 |
| 8835 | 5,000 | <200 | 1,000 | 100 | 150 | 20 | 50 | 10 | <20 | 30 | <10 | <5 | <2 | <10 | 15 | <1 | <1 | <10 | 30 |
| 8836 | 7,000 | <200 | 1,500 | 150 | 150 | 50 | 50 | 20 | <20 | 50 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 50 |
| 8837 | 5,000 | 300 | 300 | 100 | 150 | 50 | 30 | 20 | <20 | 150 | 10 | <5 | <2 | <10 | 15 | 1 | 1 | <10 | 30 |
| 8838 | 5,000 | <200 | 150 | 100 | 100 | 30 | 30 | 10 | <20 | 20 | 40 | <5 | <2 | <10 | 10 | <1 | <1 | <10 | 20 |
| 8839 | 1,000 | <200 | 70 | 15 | 30 | 20 | 7 | 2 | <20 | <10 | <10 | <5 | <2 | <10 | <5 | <1 | <1 | <10 | 10 |
| 8840 | 5,000 | <200 | 500 | 150 | 100 | 50 | 15 | 7 | <20 | 20 | 40 | 5 | <2 | <10 | 20 | <1 | 1 | <10 | 50 |
| 8841 | 5,000 | <200 | 500 | 100 | 100 | 30 | 15 | 5 | <20 | 20 | <10 | <5 | <2 | <10 | 15 | <1 | <1 | <10 | 30 |
| 8842 | 5,000 | <200 | 50 | 10 | 150 | 30 | 15 | 5 | <20 | 20 | 10 | <5 | 7 | <10 | <5 | <1 | 1 | <10 | 10 |
| 8843 | 3,000 | <200 | 70 | 100 | 100 | 30 | 5 | 5 | <20 | 30 | <10 | <5 | <2 | <10 | <5 | <1 | <1 | <10 | 30 |
| 8844 | 5,000 | <200 | 50 | 70 | 100 | 70 | <2 | 3 | <20 | 15 | <10 | <5 | 5 | <10 | <5 | <1 | <1 | <10 | 20 |
| 8845 | 2,000 | <200 | 200 | 70 | 70 | 30 | 15 | 3 | <20 | 20 | <10 | <5 | <2 | <10 | 7 | <1 | <1 | <10 | 20 |
| 8846 | 3,000 | <200 | 100 | 100 | 70 | 20 | 15 | 3 | <20 | 70 | <10 | <5 | <2 | <10 | <5 | <1 | <1 | <10 | 20 |
| 8847 | 7,000 | <200 | 1,000 | 150 | 150 | 50 | 20 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8848 | 5,000 | <200 | 70 | 70 | 100 | 30 | 2 | 5 | <20 | 20 | <10 | 7 | <2 | <10 | <5 | <1 | 1 | <10 | 20 |
| 8849 | 5,000 | <200 | 100 | 70 | 150 | 30 | 7 | 15 | <20 | 50 | 70 | 7 | <2 | <10 | 5 | 1 | 1 | <10 | 20 |
| 8850 | 5,000 | <200 | 150 | 70 | 100 | 30 | 7 | 10 | <20 | 30 | <10 | 5 | <2 | <10 | <5 | <1 | 1 | <10 | 20 |
| 8851 | 5,000 | <200 | 300 | 70 | 100 | 50 | 5 | 10 | <20 | 50 | <10 | 5 | <2 | <10 | <5 | <1 | 1 | <10 | 20 |
| 8852 | 7,000 | <200 | 700 | 150 | 100 | 50 | 30 | 30 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8853 | 5,000 | <200 | 500 | 150 | 150 | 50 | 30 | 20 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8854 | 7,000 | <200 | 500 | 150 | 100 | 30 | 30 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8855 | 5,000 | <200 | 500 | 100 | 150 | 20 | 20 | 15 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8856 | 3,000 | <200 | 50 | 50 | 100 | 30 | 5 | 10 | <20 | 30 | <10 | 5 | <2 | <10 | <5 | <1 | 1 | <10 | 20 |
| 8857 | 7,000 | <200 | 500 | 150 | 150 | 30 | 30 | 15 | <20 | 50 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8858 | 2,000 | <200 | 300 | 70 | 70 | 20 | 20 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 10 | <1 | <1 | <10 | 20 |
| 8859 | 5,000 | <200 | 700 | 150 | 70 | 20 | 50 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8860 | 7,000 | <200 | 1,000 | 100 | 200 | 30 | 50 | 15 | <20 | 15 | <10 | 7 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8861 | 5,000 | <200 | 1,000 | 100 | 150 | 30 | 20 | 20 | <20 | 20 | 10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8862 | 5,000 | <200 | 700 | 150 | 100 | 30 | 30 | 30 | <20 | 10 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8864 | 100 | <200 | 100 | 30 | 50 | <20 | 7 | 3 | <20 | <10 | <10 | <5 | <2 | <10 | 5 | <1 | <1 | <10 | <10 |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | As | Sb | W | Sc | Cr | Ba | Sr | Percent Fe | Percent Mg | Percent Ca | Chemical analyses Cu | Chemical analyses Zn | Chemical analyses Mo | Chemical analyses Au | Chemical analyses Ag | Sample Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8789 | <500 | <50 | <50 | 5 | 70 | 1,000 | 1,000 | 5. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8790 | | | | | | | | | | | 30 | 25 | 2 | | | Stream sediment |
| 8791 | <500 | <50 | <50 | 5 | 100 | 1,000 | 1,000 | 3. | 1.5 | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8792 | <500 | <50 | <50 | 5 | 70 | 700 | 700 | 5. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8793 | <500 | <50 | <50 | 10 | 100 | 1,500 | 1,500 | 3. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8794 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,000 | 5. | 1.5 | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8795 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,000 | 3. | 1.5 | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8800 | <500 | <50 | <50 | 5 | 100 | 1,000 | 1,000 | 3. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8801 | <500 | <50 | <50 | 5 | 70 | 1,000 | 1,000 | 5. | 1.5 | 2. | 30 | <25 | <2 | | | Stream sediment |
| 8802 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,500 | 5. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8804 | <500 | <50 | <50 | 5 | 100 | 1,500 | 1,500 | 5. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8806 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,000 | 1.5 | 1.5 | 2. | 10 | <25 | <2 | | | Vein |
| 8809 | <500 | <50 | <50 | 5 | 70 | 700 | 700 | 2. | 1. | 3. | | | | .05 | | Altered rock |
| 8812 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,000 | 2. | 1. | 1.5 | 15 | <25 | 2 | | | Altered rock |
| 8814 | 500 | <50 | <50 | 5 | 30 | 5,000 | 200 | 3. | .5 | .05 | 400 | 800 | 4 | | | Altered rock |
| 8716 | <500 | <50 | <50 | 5 | 70 | 1,000 | <50 | 1.5 | .05 | .05 | 30 | <25 | 4 | | | Altered rock |
| 8817 | 500 | <50 | <50 | 5 | 50 | 1,500 | 200 | 3. | .5 | .1 | 60 | 125 | 4 | | 3 | Altered rock |
| 8818 | <500 | <50 | <50 | 5 | 20 | >5,000 | >5,000 | 7. | .7 | .20 | 30 | 25 | 4 | | | Altered rock |
| 8819 | <500 | <50 | <50 | <5 | 30 | 700 | 50 | 7. | 1. | .5 | 15 | <25 | 25 | | | Altered rock |
| 8820 | <500 | <50 | <50 | <5 | 30 | >5,000 | 300 | 7. | .3 | .7 | 20 | 700 | 6 | | 40 | Altered rock |
| 8821 | 700 | <50 | <50 | <5 | 50 | >5,000 | 300 | 5. | .3 | .2 | 15 | 25 | 6 | | 5 | Altered rock |
| 8823 | <500 | 50 | <50 | <5 | 100 | 500 | 100 | 2. | .2 | .7 | 15 | <25 | 6 | | | Altered rock |
| 8824 | <500 | <50 | <50 | 5 | 50 | 2,000 | 500 | 5. | 1. | 15. | 10 | <25 | 15 | | | Altered rock |
| 8825 | 1,500 | <50 | <50 | 5 | 20 | >5,000 | 300 | 3. | .3 | 10. | <10 | 150 | 4 | | 10 | Altered rock |
| 8827 | <500 | <50 | <50 | 7 | <5 | 300 | 200 | .2 | .2 | 10. | 5 | <25 | <2 | | | Vein |
| 8829 | <500 | <50 | <50 | 5 | 100 | 1,000 | 700 | 5. | 2. | 2. | 30 | 25 | 2 | | | Stream sediment |
| 8830 | <500 | <50 | <50 | 7 | 150 | 1,000 | 700 | 5. | 2. | 2. | 30 | 25 | <2 | | | Stream sediment |
| 8831 | <500 | <50 | <50 | 7 | 200 | 1,000 | 1,500 | 3. | 2. | 3. | 20 | 25 | 2 | | | Stream sediment |
| 8832 | <500 | <50 | <50 | 5 | 100 | 1,000 | 700 | 3. | 1.5 | 2. | 30 | 25 | <2 | | | Stream sediment |
| 8833 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 5. | 2. | 3. | 20 | 25 | 2 | | | Stream sediment |
| 8834 | <500 | 50 | <50 | 5 | 150 | 500 | 200 | 5. | 2. | 5. | 20 | 75 | 2 | | | Altered rock |
| 8835 | <500 | 50 | <50 | 7 | 150 | 700 | 1,500 | 5. | 3. | .7 | 15 | <25 | 2 | | | Altered rock |
| 8836 | <500 | <50 | <50 | 7 | 150 | 700 | 700 | 5. | 5. | 3. | 20 | <25 | 2 | | | Altered rock |
| 8837 | <500 | <50 | <50 | <5 | 100 | 700 | 500 | 3. | .2 | .5 | 60 | 100 | 6 | | | Altered rock |
| 8838 | <500 | <50 | <50 | 10 | 150 | 300 | 50 | 3. | .2 | 1. | 20 | 50 | <2 | | | Altered rock |
| 8839 | <500 | <50 | <50 | 7 | 10 | 200 | <50 | .5 | .1 | .2 | 5 | <25 | 2 | | | Altered rock |
| 8840 | <500 | <50 | <50 | <5 | 150 | 700 | 1,500 | 3. | 2. | 3. | 15 | 25 | <2 | | | Altered rock |
| 8841 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 3. | 2. | 3. | 20 | 25 | <2 | | | Altered rock |
| 8842 | <500 | <50 | <50 | 5 | 5 | 1,000 | 150 | 1. | .1 | .1 | 15 | <25 | 15 | | | Altered rock |
| 8843 | <500 | <50 | <50 | 5 | 30 | 1,000 | 1,000 | 3. | .5 | 1. | 15 | <25 | 2 | | | Altered rock |
| 8844 | <500 | <50 | <50 | 5 | 30 | 500 | 1,500 | .7 | .1 | .2 | <5 | <25 | 12 | | | Altered rock |
| 8845 | <500 | <50 | <50 | 5 | 20 | 1,000 | 700 | 2. | .7 | .5 | 15 | 25 | <2 | | | Altered rock |
| 8846 | <500 | <50 | <50 | 7 | 100 | 1,500 | 200 | 1.5 | 1.5 | .2 | 10 | 25 | 6 | | | Altered rock |
| 8847 | <500 | <50 | <50 | 5 | 100 | 1,000 | 1,000 | 5. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8848 | <500 | <50 | <50 | 5 | 30 | 5,000 | 1,000 | 1.5 | .3 | 1. | 10 | <25 | 4 | | | Altered rock |
| 8849 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,000 | 2. | .5 | 1.5 | 10 | 25 | 2 | | | Altered rock |
| 8850 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,000 | 2. | .7 | 1.5 | 20 | 25 | 2 | | | Stream sediment |
| 8851 | <500 | <50 | <50 | 5 | 30 | 1,500 | 1,000 | 1.5 | .5 | 1.5 | 20 | 25 | 2 | | | Stream sediment |
| 8852 | <500 | <50 | <50 | 5 | 150 | 1,500 | 1,000 | 5. | 3. | 3. | 20 | 25 | 2 | | | Stream sediment |
| 8853 | <500 | <50 | <50 | 5 | 150 | 1,000 | 1,500 | 5. | 2. | 2. | 30 | 25 | <2 | | | Stream sediment |
| 8854 | <500 | <50 | <50 | 5 | 150 | 1,000 | 1,000 | 3. | 2. | 3. | 15 | 25 | <2 | | | Altered rock |
| 8855 | <500 | <50 | <50 | 5 | 100 | 1,000 | 1,500 | 5. | 2. | 2. | 30 | 25 | 2 | | | Stream sediment |
| 8856 | <500 | <50 | <50 | <5 | 70 | 2,000 | 1,500 | 3. | .2 | .7 | 15 | 25 | 2 | | | Stream sediment |
| 8857 | <500 | <50 | <50 | 5 | 100 | 1,000 | 1,000 | 3. | 2. | 2. | 30 | 50 | <2 | | | Stream sediment |
| 8858 | <500 | <50 | <50 | 5 | 50 | 1,000 | 1,500 | 3. | 1.5 | 2. | 20 | 25 | <2 | | | Stream sediment |
| 8859 | <500 | <50 | <50 | 5 | 150 | 1,000 | 1,000 | 7. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8860 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 5. | 2. | 3. | 20 | 25 | 2 | | | Stream sediment |
| 8861 | <500 | <50 | <50 | 5 | 100 | 1,000 | 700 | 5. | 1.5 | 2. | 30 | 50 | <2 | | | Stream sediment |
| 8862 | <500 | <50 | <50 | 5 | 150 | 1,000 | 1,000 | 5. | 2. | 2. | 20 | 25 | <2 | | | Stream sediment |
| 8864 | <500 | <50 | <50 | <5 | 10 | 700 | 300 | 1. | .7 | 1.5 | | | | | | Vein |

**TABLE 5.**—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample No. | Semiquantitative spectrographic analyses | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ti | Zn | Mn | V | Zr | La | Ni | Cu | Cd | Pb | B | Y | Mo | Sn | Co | Ag | Be | Bi | Ga |
| 8865 | 2,000 | <200 | 300 | 70 | 70 | 20 | 20 | 5 | <20 | 10 | <10 | 5 | <2 | 10 | 15 | <1 | <1 | <10 | 15 |
| 8866 | 3,000 | <200 | 300 | 70 | 50 | 30 | 20 | 7 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8867 | 2,000 | <200 | 500 | 150 | 70 | 20 | 30 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8868 | 2,000 | <200 | 200 | 100 | 50 | 20 | 20 | 5 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8869 | 5,000 | <200 | 700 | 70 | 100 | 50 | 50 | 15 | <20 | 20 | 10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8870 | 5,000 | <200 | 500 | 70 | 150 | 50 | 50 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 20 |
| 8871 | 7,000 | <200 | 300 | 150 | 100 | 50 | 20 | 15 | <20 | 20 | 10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 30 |
| 8872 | 5,000 | <200 | 300 | 100 | 100 | 30 | 15 | 10 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8873 | 5,000 | <200 | 500 | 150 | 70 | 30 | 50 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8874 | 5,000 | <200 | 300 | 200 | 100 | 30 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8875 | 3,000 | <200 | 300 | 100 | 70 | 30 | 70 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | <1 | <10 | 15 |
| 8876 | 5,000 | <200 | 700 | 200 | 70 | 20 | 30 | 10 | <20 | 20 | 10 | 7 | <2 | <10 | 20 | <1 | <1 | <10 | 20 |
| 8877 | 3,000 | <200 | 500 | 100 | 70 | 30 | 15 | 10 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | 1 | <10 | 15 |
| 8878 | 2,000 | <200 | 300 | 50 | 50 | 20 | 15 | 7 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 15 |
| 8879 | 2,000 | <200 | 300 | 50 | 150 | 70 | 2 | 10 | <20 | 30 | <10 | 7 | <2 | <10 | 5 | <1 | 1 | <10 | 15 |
| 8879a | 5,000 | <200 | 300 | 200 | 100 | 70 | 50 | 30 | <20 | 20 | <10 | 7 | <2 | <10 | 15 | <1 | <1 | <10 | 20 |
| 8879b | 3,000 | <200 | 300 | 70 | 150 | 70 | 10 | 5 | <20 | 30 | <10 | 10 | <2 | <10 | 5 | <1 | <1 | <10 | 15 |
| 8881 | 500 | <200 | 500 | 20 | 10 | <20 | 10 | 7 | <20 | 15 | <10 | <5 | <2 | <10 | <5 | <1 | <1 | <10 | <10 |
| 8882 | 700 | <200 | 1,000 | 50 | 30 | 20 | 20 | 3 | <20 | 70 | <10 | <5 | <2 | <10 | 5 | <1 | <1 | <10 | 10 |
| 8883 | 2,000 | <200 | 300 | 70 | 70 | 50 | 10 | 15 | <20 | 20 | <10 | 5 | <2 | <10 | 5 | <1 | <1 | <10 | <10 |
| 8884 | 2,000 | <200 | 700 | 50 | 70 | 20 | 15 | 10 | <20 | 30 | <10 | 5 | <2 | <10 | 5 | 1 | <1 | <10 | <10 |
| 8885 | 3,000 | 200 | 300 | 100 | 100 | 70 | 15 | 10 | <20 | 50 | <10 | 7 | <2 | <10 | 10 | <1 | <1 | <10 | 10 |
| 8886 | 3,000 | <200 | 300 | 70 | 100 | 70 | 70 | 10 | <20 | 50 | <10 | 7 | <2 | <10 | 10 | <1 | <1 | <10 | 15 |
| 8887 | 1,500 | 700 | 100 | 70 | 70 | 30 | 10 | 1000 | <20 | 1000 | 10 | 5 | <2 | <10 | <5 | 15 | 1 | <10 | 50 |
| 8888 | 3,000 | <200 | 20 | 70 | 100 | 70 | <2 | 20 | <20 | 200 | 10 | 5 | 7 | <10 | <5 | 20 | <1 | <10 | 10 |
| 8889 | 1,000 | 300 | 50 | 30 | 50 | 30 | 20 | 30 | <20 | 300 | 10 | 5 | 5 | <10 | 5 | 2 | <1 | <10 | <10 |
| 8890 | 1,000 | 200 | 150 | 50 | 70 | 50 | 30 | 50 | <20 | 50 | 20 | 10 | 100 | <10 | 5 | 7 | 3 | <10 | 20 |
| 8891 | 2,000 | <200 | 100 | 100 | 70 | 50 | 30 | 20 | <20 | 20 | <10 | 7 | 2 | <10 | 7 | <1 | <1 | <10 | 15 |
| 8892 | 700 | <200 | 100 | 15 | 50 | 20 | 7 | 30 | <20 | 20 | <10 | 5 | 10 | <10 | <5 | 1 | 1 | <10 | <10 |
| 8893 | 2,000 | <200 | 500 | 70 | 100 | 50 | 50 | 20 | <20 | 50 | <10 | 10 | 2 | <10 | 10 | <1 | 1 | <10 | 10 |
| 8894 | 2,000 | <200 | 300 | 70 | 70 | 50 | 30 | 50 | <20 | 30 | <10 | 7 | 2 | <10 | 7 | <1 | 1 | <10 | 10 |
| 8895 | 2,000 | <200 | 100 | 70 | 100 | 70 | 20 | 15 | <20 | 30 | <10 | 5 | <2 | <10 | 7 | <1 | 1 | <10 | 10 |
| 8896 | 1,500 | <200 | 200 | 50 | 70 | 70 | 15 | 10 | <20 | 150 | <10 | 5 | <2 | <10 | 10 | <1 | 1 | <10 | 10 |
| 8897 | 2,000 | 500 | 700 | 70 | 70 | 50 | 10 | 70 | <20 | 3000 | 10 | 5 | 15 | <10 | 5 | 3 | 1 | <10 | 10 |
| 8898 | 2,000 | 1,000 | 700 | 50 | 70 | 50 | 15 | 50 | <20 | 50 | <10 | 5 | <2 | <10 | 5 | <1 | 1 | <10 | <10 |
| 8899 | 2,000 | 700 | 300 | 70 | 70 | 70 | 15 | 30 | <20 | 500 | <10 | 5 | <2 | <10 | <5 | 1 | 1 | <10 | 10 |
| 8900 | 2,000 | <200 | 200 | 70 | 70 | 70 | 20 | 10 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 | 1 | <10 | 10 |
| 8901 | 1,500 | 200 | 70 | 70 | 70 | 70 | 7 | 1000 | <20 | 100 | 10 | 7 | 30 | <10 | <5 | 2 | 1 | <10 | 15 |
| 8904 | 5,000 | <200 | 1,000 | 200 | 70 | 30 | 30 | 15 | <20 | 15 | 10 | 5 | <2 | <20 | 20 | <1 | <1 | <10 | 20 |
| 8906 | | | | | | | | | | | | | | | | | | | |

TABLE 5.—*Analytical data, Stratified Primitive Area, Wyo.*—Continued

| Sample | | | | | | | | Percent | | | Chemical analyses | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | As | Sb | W | Sc | Cr | Ba | Sr | Fe | Mg | Ca | Cu | Zn | Mo | Au | Ag | Sample Description |
| 8865 | <500 | <50 | <50 | 5 | 70 | 1,000 | 1,500 | 2. | 1. | 2. | 15 | 50 | <2 | | | Stream sediment |
| 8866 | <500 | <50 | <50 | 5 | 150 | 1,000 | 1,000 | 2. | 2. | 1. | 20 | 25 | <2 | | | Stream sediment |
| 8867 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,500 | 3. | 1.5 | 2. | 20 | 25 | <2 | | | Stream sediment |
| 8868 | <500 | <50 | <50 | 5 | 150 | 700 | 1,500 | 2. | 1. | 1. | 15 | 25 | <2 | | | Stream sediment |
| 8869 | <500 | <50 | <50 | 7 | 150 | 1,500 | 1,000 | 5. | 2. | 3. | 20 | 50 | 2 | | | Stream sediment |
| 8870 | <500 | <50 | <50 | 7 | 100 | 1,500 | 1,000 | 5. | 2. | 3. | 30 | 25 | <2 | | | Stream sediment |
| 8871 | <500 | <50 | <50 | 10 | 200 | 1,500 | 1,500 | 7. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8872 | <500 | <50 | <50 | 7 | 150 | 1,000 | 1,500 | 3. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8873 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,500 | 5. | 2. | 3. | 15 | 50 | <2 | | | Stream sediment |
| 8874 | <500 | <50 | <50 | 10 | 200 | 1,000 | 1,500 | 5. | 2. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8875 | <500 | <50 | <50 | 5 | 100 | 1,000 | 1,000 | 3. | 1.5 | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8876 | <500 | <50 | <50 | 10 | 300 | 1,000 | 1,500 | 10. | 3. | 3. | 15 | 25 | <2 | | | Stream sediment |
| 8877 | <500 | <50 | <50 | 7 | 100 | 1,000 | 1,000 | 5. | 2. | 3. | 30 | 50 | <2 | | | Stream sediment |
| 8878 | <500 | <50 | <50 | <5 | 50 | 1,000 | 1,000 | 5. | .2 | 2. | | | | | | Stream sediment |
| 8879 | <500 | <50 | <50 | <5 | 5 | 1,000 | 700 | 1.5 | .5 | 2. | | | | <.05 | | Stream sediment |
| 8879a | <200 | <50 | <50 | 10 | 70 | 1,000 | 1,500 | 5. | 1.5 | 3. | | | | <.05 | | Altered rock |
| 8879b | <200 | <50 | <50 | 5 | 15 | 1,000 | 1,000 | 2. | .7 | 3. | | | | <.05 | | Altered rock |
| 8881 | <200 | <50 | <50 | <5 | 10 | 300 | 200 | 1.5 | .7 | 20. | | | | <.05 | | Vein |
| 8882 | <200 | <50 | <50 | <5 | 30 | 150 | 300 | 2. | .3 | 15. | | | | <.05 | | Vein |
| 8883 | <200 | <50 | <50 | 5 | 50 | 700 | 150 | 1. | .2 | 7. | | | | <.05 | | Vein |
| 8884 | <200 | <50 | <50 | 7 | 70 | 300 | 200 | 1.5 | 1. | 7. | | | | <.05 | | Vein |
| 8885 | 300 | <50 | <50 | 7 | 100 | 200 | 50 | 1.5 | .2 | 1. | | | | <.05 | | Vein |
| 8886 | <200 | <50 | <50 | 7 | 100 | 1,500 | 300 | 2. | 1.5 | 2. | | | | <.05 | | Vein |
| 8887 | 500 | <50 | <50 | 7 | 30 | 700 | 70 | 7. | .2 | .1 | | | | <.05 | | Altered rock |
| 8888 | <200 | <50 | <50 | 7 | 50 | 5,000 | 300 | 1. | .2 | .1 | | | | <.05 | | Altered rock |
| 8889 | 1,000 | <50 | <50 | <5 | 30 | >5,000 | 700 | 7. | .2 | .1 | | | | 1. | | Altered rock |
| 8890 | 700 | 50 | <50 | 7 | 50 | 1,000 | 150 | 15. | .1 | .1 | | | | .5 | | Vein |
| 8891 | <200 | <50 | <50 | 7 | 70 | 1,500 | 500 | 3. | 1.5 | .3 | | | | .05 | | Altered rock |
| 8892 | <200 | <50 | <50 | <5 | 15 | 1,500 | 700 | 1. | .1 | 1. | | | | <.05 | | Altered rock |
| 8893 | <200 | <50 | <50 | 7 | 70 | 700 | 500 | 2. | .7 | 3. | | | | .05 | | Altered rock |
| 8894 | <200 | <50 | <50 | 7 | 70 | 1,500 | 500 | 2. | .7 | 2. | | | | <.05 | | Altered rock |
| 8895 | <200 | <50 | <50 | 5 | 50 | 1,500 | 700 | 1.5 | .7 | .7 | | | | <.05 | | Altered rock |
| 8896 | <200 | <50 | <50 | <5 | 30 | 1,500 | 700 | 2. | .7 | 5. | | | | <.05 | | Altered rock |
| 8897 | <200 | <50 | <50 | 7 | 70 | 700 | 150 | 2. | .3 | 1.5 | | | | .05 | | Vein |
| 8898 | <200 | <50 | <50 | 5 | 50 | 1,000 | 70 | 1.5 | .3 | .2 | | | | .05 | | Altered rock |
| 8899 | <200 | <50 | <50 | 5 | 70 | 200 | <50 | 1.5 | .3 | .3 | | | | .05 | | Altered rock |
| 8900 | <200 | <50 | <50 | 5 | 70 | 1,000 | 300 | 1.5 | .7 | 1.5 | | | | <.05 | | Altered rock |
| 8901 | <200 | <50 | <50 | 5 | 70 | 500 | 50 | 2. | .2 | .1 | | | | .05 | | Vein |
| 8904 | <500 | <50 | <50 | 10 | 150 | 1,000 | 1,000 | 7. | 2. | 3. | 20 | 25 | <2 | | | Stream sediment |
| 8906 | | | | | | | | | | | 30 | 25 | <2 | | | Stream sediment |

TABLE 6.—*Analytical data, Stinkingwater mining district, Wyoming*

[Analyses by G. C. Curtin, D. A. Grimes, and C. L. Whittington]

| Sample No. | Semiquantitative spectrographic analyses | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ti | Zn | Mn | V | Zr | La | Ni | Cu | Cd | Pb | B | Y | Mo | Sn | Co | Ag |
| 1 | 3,000 | <200 | 50 | 50 | 100 | 30 | 10 | 50 | <20 | 10 | <10 | <5 | 5 | <10 | 20 | <1 |
| 2 | 3,000 | <200 | 20 | 100 | 100 | 20 | 20 | 15 | <20 | 15 | <10 | <5 | 2 | <10 | 10 | <1 |
| 3 | 3,000 | <200 | <20 | 100 | 50 | 20 | 15 | 20 | <20 | <10 | <10 | <5 | >2,000 | 15 | 15 | <1 |
| 4 | 1,500 | <200 | <20 | 30 | 50 | 30 | 15 | 70 | <20 | <10 | <10 | <5 | 1,500 | 10 | 15 | 1 |
| 5 | 3,000 | <200 | 100 | 100 | 100 | 50 | 20 | 150 | <20 | <10 | <10 | 5 | 30 | 40 | 20 | 1 |
| 6 | 3,000 | <200 | <20 | 50 | 70 | 30 | 20 | 70 | <20 | <10 | <10 | <5 | 300 | <10 | 20 | <1 |
| 7 | 3,000 | <200 | <20 | 150 | 70 | 20 | 5 | 5 | <20 | <10 | <10 | <5 | 70 | 10 | 15 | <1 |
| 8 | 1,500 | <200 | 70 | 70 | 50 | 30 | 15 | 70 | <20 | 15 | <10 | <5 | 15 | <10 | 5 | 1 |
| 9 | 3,000 | <200 | <20 | 100 | 100 | 30 | 15 | 50 | <20 | <10 | <10 | <5 | 3 | <10 | 20 | <1 |
| 10 | 5,000 | <200 | 100 | 100 | 70 | 20 | 15 | 300 | <20 | <10 | <10 | 5 | 2 | <10 | 20 | 1 |
| 11 | 2,000 | <200 | 200 | 70 | 30 | 30 | 20 | 200 | <20 | 30 | <10 | 7 | <2 | <10 | 15 | <1 |
| 12 | 3,000 | <200 | <20 | 30 | 100 | <20 | <2 | 15 | <20 | <10 | <10 | <5 | <2 | <10 | 10 | <1 |
| 13 | 2,000 | <200 | 70 | 70 | 50 | 20 | 30 | 2,000 | <20 | 20 | <10 | 5 | 5 | <10 | 15 | 1 |
| 14 | 2,000 | <200 | <20 | 100 | 70 | 20 | 15 | 1,000 | <20 | <10 | <10 | 5 | 15 | <10 | 20 | <1 |
| 15 | 2,000 | <200 | 100 | 70 | 50 | <20 | 30 | 1,000 | <20 | 20 | <10 | 5 | 20 | <10 | 20 | <1 |
| 16 | 1,500 | <200 | 100 | 50 | 30 | 20 | 15 | >5,000 | <20 | 20 | <10 | 5 | 100 | <10 | 30 | 2 |
| 17 | 500 | <200 | 100 | 15 | 100 | <20 | 5 | 3,000 | <20 | <10 | <10 | 5 | 15 | 10 | 50 | <1 |
| 18 | 1,500 | <200 | 70 | 100 | 50 | 20 | 20 | 500 | <20 | 10 | <10 | <5 | 700 | <10 | 30 | 2 |
| 19 | 2,000 | <200 | 50 | 70 | 70 | 30 | 15 | 70 | <20 | 10 | <10 | <5 | <2 | <10 | 20 | <1 |
| 20 | 2,000 | <200 | <20 | 100 | 70 | 70 | 2 | 5 | <20 | <10 | <10 | 5 | 2 | <10 | 20 | <1 |
| 21 | 1,500 | <200 | <20 | 70 | 70 | 20 | <2 | 5 | <20 | <10 | <10 | <5 | <2 | <10 | 15 | <1 |
| 22 | 2,000 | <200 | <20 | 150 | 70 | 30 | 2 | 10 | <20 | 10 | <10 | 5 | 10 | <10 | 20 | <1 |
| 23 | 5,000 | <200 | <20 | 100 | 100 | 30 | 2 | 50 | <20 | <10 | <10 | 5 | <2 | <10 | 20 | <1 |
| 24 | 3,000 | <200 | 200 | 100 | 30 | 20 | 20 | 200 | <20 | 15 | <10 | <5 | <2 | <10 | 15 | <1 |
| 25 | 3,000 | <200 | <20 | 70 | 30 | 20 | 20 | 70 | <20 | 10 | <10 | <5 | 2 | <10 | 15 | <1 |
| 26 | 3,000 | <200 | <20 | 70 | 100 | 20 | 15 | 50 | <20 | <10 | <10 | <5 | | <10 | 30 | <1 |
| 27 | 2,000 | <200 | 750 | 70 | 70 | 30 | 20 | 100 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 |
| 28 | 1,000 | <200 | <20 | 15 | 20 | <20 | <2 | 10 | <20 | 15 | 10 | <5 | <2 | <10 | 30 | <1 |
| 29 | 3,000 | <200 | 70 | 50 | 70 | 20 | 15 | 300 | <20 | 10 | <10 | <5 | <2 | <10 | 30 | <1 |
| 30 | 3,000 | <200 | 300 | 50 | 70 | 20 | 15 | 50 | <20 | 20 | <10 | <5 | 10 | <10 | 15 | <1 |
| 31 | 5,000 | <200 | 50 | 70 | 70 | <20 | 20 | 100 | <20 | <10 | <10 | <5 | <2 | <10 | 15 | <1 |
| 32 | 3,000 | <200 | <20 | 70 | 70 | 20 | 15 | 15 | <20 | <10 | <10 | <5 | 300 | <10 | 15 | <1 |
| 33 | 5,000 | <200 | 70 | 100 | 70 | 20 | 20 | 70 | <20 | <10 | <10 | <5 | <2 | <10 | 15 | <1 |
| 34 | 1,500 | <200 | 2,000 | 70 | 30 | <20 | 10 | 1,500 | <20 | 50 | 10 | <5 | 15 | <10 | 15 | 7 |
| 35 | 5,000 | <200 | 1,500 | 100 | 50 | 30 | 20 | 15 | <20 | 200 | <10 | 5 | <2 | <10 | 15 | <1 |
| 36 | 1,500 | <200 | 1,000 | 50 | 20 | <20 | 15 | 200 | <20 | 10 | <10 | 5 | 100 | <10 | 30 | <1 |
| 37 | 2,000 | <200 | 300 | 100 | 50 | 70 | 20 | 3,000 | <20 | 15 | <10 | 5 | 1,500 | 10 | 20 | 2 |
| 38 | 1,500 | <200 | 20 | 30 | 30 | <20 | 10 | 2,000 | <20 | 15 | <10 | <5 | 500 | <10 | 30 | <1 |
| 39 | 2,000 | <200 | <20 | 50 | 30 | <20 | 10 | 1,500 | <20 | 15 | 10 | <5 | 150 | <10 | 20 | <1 |
| 40 | 3,000 | <200 | 300 | 50 | 50 | 20 | 20 | 500 | <20 | 50 | <10 | <5 | <2 | <10 | 15 | 1 |
| 41 | 2,000 | <200 | 20 | 30 | 50 | 20 | 15 | 2,000 | <20 | <10 | <10 | <5 | <2 | <10 | 15 | 1 |
| 42 | 3,000 | <200 | <20 | 100 | 70 | <20 | <2 | 30 | <20 | 40 | <10 | <5 | 20 | <10 | 15 | <1 |
| 43 | 2,000 | <200 | 200 | 50 | 70 | 20 | 20 | 5 | <20 | 20 | <10 | <5 | 10 | <10 | 20 | <1 |
| 44 | 3,000 | <200 | <20 | 70 | 100 | 20 | 15 | 30 | <20 | <10 | <10 | <5 | 20 | <10 | 30 | <1 |
| 45 | 2,000 | <200 | 200 | 30 | 50 | 20 | 15 | 7 | <20 | 20 | <10 | <5 | <2 | <10 | 15 | <1 |
| 46 | 2,000 | <200 | 2,000 | 50 | 50 | 20 | 15 | 700 | <20 | 30 | 10 | <5 | 20 | <10 | 15 | 5 |
| 47 | 2,000 | <200 | 20 | 70 | 20 | 20 | 5 | 30 | <20 | 20 | <10 | <5 | 100 | <10 | 15 | 1 |
| 48 | 2,000 | <200 | 300 | 70 | 20 | 20 | 10 | 500 | <20 | 50 | <10 | <5 | 200 | <10 | 15 | 2 |
| 49 | 3,000 | <200 | <20 | 70 | 100 | 30 | 20 | 500 | <20 | 20 | <10 | <5 | 100 | <10 | 20 | 3 |
| 50 | 2,000 | <200 | 20 | 100 | 50 | 20 | 3 | 20 | <20 | 15 | <10 | <5 | 50 | <10 | 15 | <1 |
| 51 | 3,000 | <200 | 50 | 70 | 100 | 30 | 20 | 300 | <20 | 10 | <10 | 5 | <2 | <10 | 20 | <1 |
| 52 | 3,000 | <200 | 200 | 50 | 70 | <20 | 20 | 500 | <20 | 10 | <10 | <5 | <2 | <10 | 15 | <1 |
| 53 | 3,000 | <200 | 700 | 100 | 30 | <20 | 20 | 500 | <20 | 20 | <10 | 5 | 50 | <10 | 20 | 1 |
| 54 | 3,000 | <200 | 500 | 70 | 50 | 30 | 20 | 200 | <20 | 30 | <10 | 5 | <2 | <10 | 15 | <1 |
| 55 | 3,000 | <200 | 200 | 70 | 30 | 20 | 15 | 2,000 | <20 | 20 | <10 | 5 | 50 | <10 | 30 | 2 |
| 56 | 2,000 | <200 | 300 | 70 | 30 | 50 | 20 | 200 | <20 | 30 | <10 | 7 | <2 | <10 | 20 | <1 |
| 57 | 3,000 | <200 | 100 | 70 | 100 | 50 | 20 | 500 | <20 | 10 | <10 | 5 | <2 | <10 | 15 | <1 |
| 58 | 3,000 | <200 | 100 | 70 | 50 | 30 | 20 | 300 | <20 | 10 | <10 | 10 | <2 | <10 | 15 | <1 |
| 59 | 3,000 | <200 | 100 | 70 | 70 | 50 | 20 | 300 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | <1 |
| 60 | 2,000 | <200 | 200 | 70 | 50 | 20 | 15 | 100 | <20 | 20 | <10 | 5 | <2 | <10 | 20 | <1 |

TABLE 6—*Analytical data, Stinkingwater mining district, Wyoming*—Continued

| Sample No. | Be | Bi | Ga | As | Sb | W | Sc | Cr | Ba | Sr | Percent Fe | Mg | Ca | Chemical Analyses Cu | Sample Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | <10 | 15 | <500 | <50 | 200 | <5 | 50 | 500 | 500 | 1. | 1. | .5 | 60 | Altered rock |
| 2 | <1 | <10 | 30 | <500 | <50 | 150 | <5 | 70 | 1,000 | 100 | 3. | .7 | .1 | 15 | Altered rock |
| 3 | <1 | <10 | 20 | <500 | <50 | 100 | 5 | 50 | 700 | <50 | 2. | .5 | .1 | 30 | Altered rock |
| 4 | <1 | <10 | 15 | <500 | <50 | 200 | <5 | 20 | 1,000 | <50 | 1. | .2 | .1 | 120 | Altered rock |
| 5 | <1 | <10 | 20 | <500 | <50 | 200 | 5 | 70 | 200 | 700 | 2. | 2. | 2. | | Altered rock |
| 6 | <1 | <10 | 15 | <500 | <50 | 150 | <5 | 30 | 1,000 | 50 | 2. | .3 | .1 | 60 | Altered rock |
| 7 | <1 | <10 | 20 | <500 | <50 | 200 | 5 | 50 | 1,500 | 200 | 1.5 | .2 | .05 | 15 | Altered rock |
| 8 | <1 | <10 | 20 | <500 | <50 | 150 | <5 | 50 | 700 | 1,500 | 10. | .7 | 1. | | Altered rock |
| 9 | <1 | <10 | 20 | <500 | <50 | 200 | 5 | 70 | 1,500 | <50 | 3. | .3 | .01 | 30 | Altered rock |
| 10 | <1 | <10 | 20 | <500 | <50 | 200 | 5 | 70 | 700 | 1,000 | 3. | 2. | 1.5 | 500 | Altered rock |
| 11 | <1 | <10 | 20 | <500 | <50 | 150 | <5 | 30 | 1,500 | 1,500 | 2. | 1.5 | 3. | 400 | Altered rock |
| 12 | <1 | <10 | 20 | <500 | <50 | 200 | <5 | 15 | 300 | 300 | .5 | .1 | .1 | | Altered rock |
| 13 | <1 | <10 | 20 | <500 | <50 | 150 | 5 | 70 | 500 | 300 | 5. | 1.5 | .1 | 2,500 | Altered rock |
| 14 | <1 | <10 | 30 | <500 | <50 | 300 | 5 | 30 | 1,500 | 100 | 3. | .5 | <.01 | | Altered rock |
| 15 | 2 | <10 | 20 | <500 | <50 | 150 | 5 | 50 | 700 | 500 | 3. | 1. | .7 | | Altered rock |
| 16 | <1 | <10 | 15 | <500 | <50 | 300 | <5 | 30 | 500 | 300 | 1. | .5 | .2 | 12,000 | Altered rock |
| 17 | <1 | <10 | <10 | <500 | <50 | 2,000 | <5 | 15 | 500 | <50 | .2 | .1 | .05 | 6,000 | Altered rock |
| 18 | <1 | <10 | 20 | <500 | <50 | 300 | 5 | 70 | 700 | 300 | 1. | .7 | .05 | | Altered rock |
| 19 | <1 | <10 | 20 | <500 | <50 | 200 | <5 | 30 | 500 | 1,000 | 2. | .7 | 1. | | Altered rock |
| 20 | <1 | <10 | 20 | <500 | <50 | 300 | 5 | 50 | 1,000 | 50 | 1. | .5 | .02 | 30 | Altered rock |
| 21 | 1 | <10 | 20 | <500 | <50 | 1,000 | <5 | 30 | 1,000 | 100 | 1.5 | .3 | .01 | | Altered rock |
| 22 | <1 | <10 | 20 | <500 | <50 | 2,000 | 7 | 150 | 1,500 | 2,000 | .5 | .5 | .01 | | Altered rock |
| 23 | <1 | <10 | 15 | <500 | <50 | 200 | 5 | 30 | 1,000 | 50 | 1.5 | .5 | .01 | 40 | Altered rock |
| 24 | <1 | <10 | 15 | <500 | <50 | 150 | <5 | 50 | 2,000 | 500 | 3. | 1.5 | 1.5 | 200 | Altered rock |
| 25 | <1 | <10 | 15 | <500 | <50 | 200 | <5 | 50 | 700 | <50 | 7. | .2 | <.01 | | Altered rock |
| 26 | <1 | <10 | 20 | <500 | <50 | 150 | <5 | 50 | 1,000 | 50 | 5. | .2 | .01 | | Altered rock |
| 27 | <1 | <10 | 15 | <500 | <50 | 150 | <5 | 70 | 1,000 | 1,000 | 3. | 1.5 | 3. | 120 | Altered rock |
| 28 | <1 | <10 | 10 | <500 | <50 | 500 | <5 | 10 | 1,000 | <50 | 1.5 | .1 | .02 | | Altered rock |
| 29 | <1 | <10 | 15 | <500 | <50 | 200 | <5 | 20 | 1,000 | 300 | 3. | 1.5 | 1.5 | | Altered rock |
| 30 | <1 | <10 | 15 | <500 | <50 | 150 | <5 | 20 | 1,000 | 500 | 2. | 1.5 | 2. | | Altered rock |
| 31 | <1 | <10 | 20 | <500 | <50 | 150 | <5 | 50 | 1,000 | 100 | 3. | 1.5 | .7 | 150 | Altered rock |
| 32 | <1 | <10 | 15 | <500 | <50 | 200 | <5 | 50 | 1,500 | <50 | 2. | .5 | .2 | 20 | Altered rock |
| 33 | <1 | <10 | 15 | <500 | <50 | 100 | <5 | 50 | 1,000 | 200 | 3. | 1.5 | 1. | 100 | Altered rock |
| 34 | <1 | <10 | 15 | <500 | <50 | 200 | <5 | 20 | 1,000 | 200 | .7 | 1. | 1.5 | 1,500 | Altered rock |
| 35 | <1 | <10 | 20 | <500 | <50 | 150 | 5 | 70 | 100 | 500 | 3. | 1.5 | 3. | | Altered rock |
| 36 | <1 | <10 | 10 | <500 | <50 | [illegible] | <5 | [illegible] | 1,000 | 200 | 1. | .7 | 1. | 400 | Altered rock |
| 37 | <1 | <10 | 15 | <500 | <50 | 200 | 5 | 30 | 2,000 | 500 | 1.5 | .7 | .5 | 7,000 | Altered rock |
| 38 | <1 | <10 | 10 | <500 | <50 | 500 | <5 | 20 | 1,500 | 200 | .5 | .5 | .2 | 4,000 | Altered rock |
| 39 | <1 | <10 | <10 | <500 | <50 | 500 | <5 | 70 | 1,000 | 300 | .5 | .2 | .1 | 1,500 | Altered rock |
| 40 | <1 | <10 | 15 | <500 | <50 | 200 | <5 | 50 | 1,000 | 700 | 3. | 1.5 | 2. | | Altered rock |
| 41 | <1 | <10 | 15 | <500 | <50 | 150 | 5 | 30 | 700 | 50 | 3. | 1.5 | .1 | 6,000 | Altered rock |
| 42 | <1 | <10 | 20 | <500 | <50 | 300 | <5 | 20 | 1,000 | <50 | 1.5 | .2 | <.01 | 50 | Altered rock |
| 43 | <1 | <10 | 20 | <500 | <50 | 100 | <5 | 50 | 1,000 | 1,000 | 3. | .7 | 2. | 15 | Altered rock |
| 44 | <1 | <10 | 20 | <500 | <50 | 200 | 5 | 30 | 700 | <50 | 5. | .2 | <.01 | 20 | Altered rock |
| 45 | <1 | <10 | 15 | <500 | <50 | 200 | <5 | 30 | 700 | 500 | 1.5 | .3 | 2. | 10 | Altered rock |
| 46 | <1 | <10 | 10 | 500 | <50 | 150 | <5 | 30 | 700 | 100 | 2. | .5 | 1. | 1,500 | Altered rock |
| 47 | <1 | <10 | 10 | <500 | <50 | 200 | <5 | 50 | 1,500 | 200 | 1. | .2 | .1 | | Altered rock |
| 48 | <1 | <10 | <10 | 500 | <50 | 200 | <5 | 20 | 500 | 100 | 1. | .5 | 1. | 1,200 | Altered rock |
| 49 | <1 | <10 | 10 | <500 | <50 | 200 | <5 | 30 | 1,000 | 50 | 2. | .2 | .05 | 1,200 | Altered rock |
| 50 | <1 | <10 | 10 | <500 | <50 | 150 | <5 | 50 | 300 | 300 | 1.5 | .2 | .1 | 70 | Altered rock |
| 51 | <1 | <10 | 15 | <500 | <50 | 150 | <5 | 50 | 1,000 | 1,000 | 2. | 1.5 | 2. | 800 | Altered rock |
| 52 | 1 | <10 | 10 | <500 | <50 | 150 | <5 | 30 | 2,000 | <50 | 3. | 1.5 | .2 | | Altered rock |
| 53 | <1 | <10 | 10 | <500 | <50 | 150 | <5 | 30 | 500 | 300 | 2. | 1.5 | 1.5 | 1,400 | Altered rock |
| 54 | 1 | <10 | 15 | <500 | <50 | 150 | <5 | 100 | 1,000 | 200 | 5. | 1.5 | 2. | | Altered rock |
| 55 | 1 | <10 | 20 | <500 | <50 | 200 | <5 | 30 | 1,500 | 300 | 3. | .5 | .7 | 5,000 | Altered rock |
| 56 | <1 | <10 | 20 | <500 | <50 | 100 | <5 | 70 | 1,500 | 700 | 3. | 2. | 1.5 | | Altered rock |
| 57 | 1 | <10 | 10 | <500 | <50 | 200 | <5 | 50 | 300 | 700 | 3. | 2. | 1. | 1,500 | Altered rock |
| 58 | 1 | <10 | 10 | <500 | <50 | 150 | 5 | 50 | 200 | 1,000 | 5. | 2. | 1.5 | 1,500 | Altered rock |
| 59 | 1 | <10 | 10 | <500 | <50 | 150 | <5 | 50 | 300 | 1,000 | 2. | 1.5 | 1.5 | 1,500 | Altered rock |
| 60 | <1 | <10 | 10 | <500 | <50 | 200 | <5 | 30 | 1,000 | 1,500 | 3. | 1. | 1.5 | 100 | Altered rock |

TABLE 6—*Analytical data, Stinkingwater mining district, Wyoming*—Continued

| Sample No. | Semiquantitative spectrographic analyses | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ti | Zn | Mn | V | Zr | La | Ni | Cu | Cd | Pb | B | Y | Mo | Sn | Co | Ag |
| 61 | 3,000 | <200 | 300 | 100 | 30 | 30 | 20 | 300 | <20 | 20 | <10 | <5 | <2 | <10 | 15 | <1 |
| 62 | 1,500 | <200 | 150 | 70 | 30 | 30 | 10 | 200 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | 1 |
| 63 | 3,000 | <200 | 500 | 70 | 100 | 30 | 20 | 7 | <20 | 20 | <10 | 5 | <2 | <10 | 15 | <1 |
| 64 | 3,000 | <200 | 200 | 70 | 30 | 30 | 15 | 300 | <20 | 15 | <10 | 5 | <2 | <10 | 15 | 1 |
| 65 | 2,000 | <200 | 300 | 50 | 50 | 20 | 20 | 70 | <20 | 50 | <10 | 5 | <2 | <10 | 15 | <1 |
| 66 | 3,000 | <200 | 300 | 100 | 30 | 30 | 20 | 200 | <20 | 100 | <10 | 5 | <2 | <10 | 15 | <1 |
| 67 | 3,000 | <200 | 200 | 50 | 50 | 20 | 20 | 150 | <20 | 30 | <10 | <5 | <2 | <10 | 20 | 1 |
| 68 | 3,000 | <200 | 700 | 50 | 100 | 30 | 20 | 300 | <20 | 30 | <10 | 5 | <2 | <10 | 15 | 1 |
| 69 | 3,000 | <200 | 300 | 100 | 30 | 30 | 20 | 150 | <20 | 10 | <10 | 5 | <2 | <10 | 15 | <1 |
| 70 | 2,000 | <200 | 70 | 30 | 30 | 20 | 15 | 30 | <20 | 300 | 10 | <5 | <2 | <10 | 15 | 3 |
| 71 | 3,000 | 1,500 | 2,000 | 100 | 100 | 50 | 30 | 200 | <20 | 300 | 10 | 5 | <2 | <10 | 20 | 2 |
| 72 | 3,000 | <200 | 70 | 100 | 100 | 50 | 30 | 3,000 | <20 | 15 | <10 | <5 | 30 | <10 | 30 | 2 |
| 73 | 2,000 | 200 | 1,500 | 100 | 70 | 50 | 20 | 5,000 | <20 | 300 | <10 | 5 | <2 | 10 | 20 | 30 |
| 74 | 2,000 | <200 | 20 | 70 | 50 | <20 | 15 | 2,000 | <20 | <10 | <10 | 5 | <2 | <10 | 10 | <1 |
| 75 | 2,000 | 200 | 1,000 | 100 | 150 | 20 | 20 | 150 | <20 | 100 | <10 | 5 | 10 | <10 | 15 | <1 |
| 76 | 3,000 | <200 | 30 | 100 | 150 | 20 | 10 | 70 | <20 | 20 | <10 | <5 | 2 | 15 | 15 | <1 |
| 77 | 2,000 | 1,500 | 30 | 50 | 50 | 30 | 10 | 1,500 | <20 | 15 | <10 | <5 | <2 | <10 | 20 | 5 |
| 78 | 3,000 | 200 | 200 | 70 | 70 | 20 | 30 | 200 | <20 | 100 | <10 | <5 | 2 | <10 | 15 | <1 |
| 79 | 2,000 | <20 | 200 | 100 | 30 | <20 | 20 | 200 | <20 | 10 | <10 | 5 | <2 | <10 | 15 | <1 |
| 80 | 1,000 | <20 | 100 | 15 | 10 | 20 | <2 | 3,000 | <20 | <10 | <10 | <5 | 10 | <10 | 20 | <1 |
| 81 | 1,500 | <20 | 70 | 30 | 30 | 20 | 7 | 500 | <20 | <10 | <10 | <5 | 300 | <10 | 20 | 7 |
| 82 | 150 | <20 | <20 | <10 | <5 | 300 | 7 | 200 | <20 | 10 | <10 | 20 | >2,000 | 50 | 50 | 2 |
| 83 | 3,000 | 700 | 500 | 150 | 100 | 30 | 30 | 700 | <20 | 150 | <10 | 5 | 10 | <10 | 20 | 2 |
| 84 | 3,000 | 300 | 700 | 150 | 100 | 20 | 50 | 1,000 | <20 | 100 | 10 | 5 | 5 | <10 | 20 | 1 |
| 85 | 2,000 | <200 | 20 | 50 | 50 | <20 | 10 | 200 | <20 | <10 | <10 | <5 | 2 | <10 | 10 | <1 |
| 86 | 2,000 | <200 | 300 | 100 | 50 | 30 | 20 | 5 | <20 | <10 | <10 | 5 | <2 | <10 | 20 | 5 |
| 87 | 3,000 | <200 | 300 | 150 | 30 | 20 | 70 | 70 | <20 | 10 | <10 | 5 | 2 | <10 | 20 | 5 |
| 88 | 2,000 | <200 | 300 | 50 | 30 | 20 | 15 | 10 | <20 | 10 | <10 | <5 | 2 | <10 | 15 | 3 |
| 89 | 1,500 | <200 | 700 | 70 | 30 | 20 | 30 | 15 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 |
| 90 | 1,500 | <200 | 300 | 50 | 50 | 30 | 10 | 100 | <20 | 50 | <10 | 5 | 2 | <10 | 20 | <1 |
| 91 | 2,000 | <200 | 500 | 70 | 50 | 20 | 20 | 10 | <20 | 70 | <10 | <5 | <2 | <10 | 15 | 1 |
| 92 | 2,000 | <200 | 100 | 70 | 70 | 30 | 20 | 200 | <20 | 15 | <10 | 5 | <2 | <10 | 20 | <1 |
| 93 | 1,500 | <200 | 1,500 | 50 | 30 | 20 | 10 | 1,500 | <20 | 20 | <10 | <5 | 50 | <10 | 15 | 5 |
| 94 | 1,500 | <200 | 70 | 70 | 30 | <20 | 10 | 70 | <20 | 10 | <10 | <5 | <2 | <10 | 15 | <1 |
| 95 | 150 | 500 | 5,000 | 10 | <5 | 150 | 15 | >5,000 | <20 | 70 | 20 | >200 | 70 | <10 | 200 | <1 |
| 96 | <10 | >10,000 | 200 | <10 | <5 | <20 | <2 | >5,000 | 50 | >5,000 | <10 | <5 | 3 | <10 | <2 | 700 |
| 97 | 1,500 | <200 | 300 | 50 | 50 | 20 | 20 | 100 | <20 | 70 | <10 | <5 | <2 | <10 | 30 | 1 |
| 98 | 20 | 500 | 3,000 | 10 | <5 | <20 | 15 | >5,000 | <20 | 200 | 20 | 7 | 5 | <10 | 2 | 1,000 |
| 99 | 100 | 500 | 50 | 10 | <5 | 150 | 10 | 200 | <20 | 70 | <10 | 200 | >2,000 | 20 | 20 | 2 |
| 100 | 100 | >10,000 | 1,000 | <10 | <5 | <20 | 15 | >5,000 | 300 | >5,000 | 10 | <5 | 10 | <10 | 5 | 100 |
| 101 | <10 | >10,000 | 5,000 | <10 | <5 | <20 | 2 | 300 | 500 | >5,000 | <10 | <5 | <2 | <10 | <2 | 30 |
| 102 | 2,000 | 10,000 | 200 | 70 | 100 | 50 | 20 | 500 | 20 | 1,000 | 10 | <5 | 7 | <10 | 15 | 1 |
| 103 | <10 | >10,000 | 100 | <10 | <5 | <20 | <2 | 150 | 70 | >5,000 | <10 | 5 | <2 | <10 | <2 | 500 |
| 104 | <10 | 700 | 1,500 | <10 | 5 | <20 | 150 | 70 | <20 | 100 | 50 | <5 | 20 | <10 | 300 | 1 |
| 105 | 1,000 | >10,000 | 300 | 20 | 50 | 20 | 15 | 5,000 | 100 | >5,000 | <10 | >200 | <2 | <10 | 2 | 300 |
| 106 | 300 | 500 | 500 | 10 | <5 | <20 | 20 | >5,000 | <20 | 1,500 | 30 | <5 | 7 | <10 | 70 | 700 |
| 107 | <10 | >10,000 | 100 | <10 | <5 | <20 | <2 | 150 | 100 | >5,000 | <10 | <5 | <2 | <10 | <2 | 1,000 |
| 108 | <10 | >10,000 | 150 | <10 | <5 | <20 | <2 | 150 | 200 | >5,000 | <10 | <5 | <2 | <10 | <2 | 300 |
| 109 | 10 | >10,000 | 3,000 | <10 | <5 | <20 | 15 | 1,500 | >500 | >5,000 | <10 | <5 | <2 | <10 | <2 | 50 |
| 110 | 150 | 200 | 150 | <10 | 5 | <20 | 20 | 1,000 | <20 | 70 | 20 | 5 | 15 | <10 | 15 | 2 |
| 111 | 1,500 | <200 | 500 | 30 | 5 | <20 | 15 | 500 | <20 | 50 | <10 | <5 | >2,000 | 20 | 15 | <1 |
| 112 | 1,500 | <200 | 2,000 | 30 | 10 | <20 | 10 | 500 | <20 | 50 | <10 | <5 | >2,000 | 10 | 15 | 3 |
| 113 | 500 | >10,000 | 2,000 | 30 | <5 | <20 | 20 | 200 | 150 | >5,000 | 10 | <5 | 5 | <10 | 15 | 10 |
| 114 | <10 | 1,500 | 20 | <10 | <5 | 20 | <2 | 200 | <20 | >5,000 | <10 | <5 | <2 | <10 | <5 | 700 |
| 115 | <10 | 7,000 | 50 | <10 | <5 | <20 | <2 | 750 | <20 | >5,000 | <10 | <5 | <2 | <10 | <5 | 700 |
| 116 | <10 | 5,000 | 50 | <10 | <5 | <20 | <2 | 20 | <20 | >5,000 | <10 | <5 | <1 | <10 | <5 | 500 |

TABLE 6.—*Analytical data, Stinkingwater mining district, Wyoming*—Continued

| Sample No. | Be | Bi | Ga | As | Sb | W | Sc | Cr | Ba | Sr | Percent Fe | Mg | Ca | Chemical Analyses Cu | Sample Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 61 | <1 | <10 | 20 | <500 | <50 | 150 | <5 | 100 | 1,500 | 1,500 | 1.5 | 1.5 | 2. | 250 | Alterad rock |
| 62 | <1 | <10 | 15 | <500 | <50 | 150 | 5 | 30 | 700 | 1,000 | 2. | .5 | 2. | 200 | Altered rock |
| 63 | 1 | <10 | 10 | <500 | <50 | 150 | <5 | 70 | 1,500 | 1,500 | 2. | 1.5 | 2. | 10 | Altered rock |
| 64 | 1 | <10 | 20 | <500 | <50 | 100 | 5 | 70 | 1,000 | 1,500 | 2. | 1.5 | 2. | 1,000 | Altered rock |
| 65 | <1 | <10 | 15 | <500 | <50 | 150 | <5 | 70 | 1,000 | 1,000 | 2. | 1.5 | 2. | | Altered rock |
| 66 | <1 | <10 | 15 | <500 | <50 | 150 | <5 | 70 | 700 | 1,000 | 2. | 1.5 | 2. | 300 | Altered rock |
| 67 | <1 | <10 | 15 | <500 | <50 | 300 | <5 | 50 | 500 | 500 | 2. | 1.5 | 1.5 | 200 | Altered rock |
| 68 | <1 | <10 | 15 | <500 | <50 | 200 | <5 | 30 | 1,000 | 700 | 3. | 1.5 | 2. | | Altered rock |
| 69 | <1 | <10 | 20 | <500 | <50 | 150 | <5 | 70 | 1,000 | 1,000 | 3. | 1.5 | 2. | | Altered rock |
| 70 | <1 | <10 | 10 | 500 | <50 | 150 | <5 | 20 | 200 | <50 | 2. | .2 | <.01 | 60 | Altered rock |
| 71 | <1 | <10 | 20 | <500 | <50 | 200 | 5 | 100 | 200 | 50 | 5. | 1.5 | 2. | | Altered rock |
| 72 | <1 | <10 | 15 | <500 | <50 | 200 | 5 | 100 | 1,000 | 50 | 3. | 1.5 | .02 | 6,000 | Altered rock |
| 73 | 1 | <10 | 20 | <500 | <50 | 200 | <5 | 70 | 1,000 | 50 | 5. | 1. | 2. | 7,000 | Altered rock |
| 74 | <1 | <10 | 15 | <500 | <50 | 150 | <5 | 30 | 1,000 | <50 | 5. | 1. | .01 | | Altered rock |
| 75 | <1 | <10 | 15 | <500 | <50 | 200 | <5 | 100 | 1,500 | 300 | 3. | 1. | 3. | 200 | Altered rock |
| 76 | <1 | <10 | 20 | <500 | <50 | 500 | <5 | 30 | 2,000 | <50 | 5. | .3 | .3 | | Altered rock |
| 77 | 1 | <10 | 15 | 700 | <50 | 300 | <5 | 30 | 1,500 | <50 | 3. | .3 | <.01 | | Altered rock |
| 78 | <1 | <10 | 15 | <500 | <50 | 150 | <5 | 100 | 1,000 | 300 | 3. | 1. | 1.5 | 15,000 | Altered rock |
| 79 | 1 | <10 | 20 | <500 | <50 | 100 | <5 | 100 | 1,000 | 1,000 | 3. | 1.5 | 1.5 | | Altered rock |
| 80 | <1 | <10 | <10 | <500 | <50 | 1,000 | <5 | 10 | 500 | <50 | .2 | .05 | .05 | 8,000 | Altered rock |
| 81 | <1 | <10 | 10 | 700 | <50 | 500 | <5 | 30 | 700 | <50 | 2. | .5 | .1 | | Altered rock |
| 82 | <1 | <10 | <10 | 500 | <50 | 500 | <5 | 20 | 50 | <50 | .1 | .02 | .1 | | Altered rock |
| 83 | 1 | <10 | 20 | <500 | <50 | 70 | 10 | 200 | 700 | 200 | 5. | 2. | 1.5 | 1,500 | Altered rock |
| 84 | 1 | <10 | 20 | <500 | <50 | 70 | 5 | 150 | 700 | 500 | 5. | 2. | 2. | 1,000 | Altered rock |
| 85 | 1 | <10 | 15 | <500 | <50 | 200 | <5 | 30 | 1,000 | <50 | 2. | .7 | <.01 | 600 | Altered rock |
| 86 | <1 | <10 | 20 | <500 | <50 | 100 | 5 | 100 | 700 | 1,000 | 3. | 1.5 | 3. | | Altered rock |
| 87 | <1 | <10 | 15 | <500 | <50 | 70 | 10 | 200 | 500 | 1,000 | 3. | 2. | 2. | 150 | Altered rock |
| 88 | <1 | <10 | 15 | <500 | <50 | 100 | <5 | 70 | 500 | 500 | 2. | 1. | 1. | 20 | Altered rock |
| 89 | <1 | <10 | 20 | <500 | <50 | 150 | <5 | 50 | 700 | 500 | 3. | 1. | 1.5 | | Altered rock |
| 90 | 1 | <10 | 15 | <500 | <50 | 300 | <5 | 15 | 1,000 | 700 | 2. | .5 | 2. | 150 | Altered rock |
| 91 | 1 | <10 | 15 | <500 | <50 | 100 | <5 | 30 | 500 | 300 | 2. | 1. | 2. | | Altered rock |
| 92 | 1 | <10 | 15 | <500 | <50 | 200 | <5 | 50 | 700 | 700 | 2. | 1. | 1.5 | 800 | Altered rock |
| 93 | <1 | <10 | 10 | 700 | 50 | 150 | <5 | 20 | 500 | 100 | 1. | .5 | 1. | 2,000 | Altered rock |
| 94 | <1 | <10 | 15 | <500 | <50 | 200 | <5 | 30 | 500 | 500 | 1.5 | .5 | 1. | 200 | Altered rock |
| 95 | 7 | <10 | 20 | <500 | <50 | <50 | <5 | <5 | 50 | 100 | >20. | .1 | 1. | | Sediment in adit |
| 96 | <1 | <10 | 10 | 1,000 | 1500 | <50 | <5 | <5 | 150 | 50 | 10. | <.01 | <.01 | 150,000 | Vein |
| 97 | <1 | <10 | <10 | <500 | <50 | 500 | <5 | 20 | 200 | <50 | 5. | .1 | .1 | 100 | Vein |
| 98 | <1 | 15 | 15 | 3,000 | 50 | 70 | <5 | 5 | 700 | 50 | 20. | 1. | 3. | 100,000 | Vein |
| 99 | 1 | <10 | <10 | <500 | <50 | 300 | <5 | 7 | 50 | <50 | 3. | .05 | .3 | 200 | Vein |
| 100 | <1 | <10 | 20 | <500 | 70 | 100 | <5 | 7 | 20 | <50 | 10. | .2 | 1. | 25,000 | Vein |
| 101 | 1 | <10 | 15 | <500 | <50 | 50 | <5 | <5 | 30 | 200 | 2. | 7. | 10. | 1,500 | Altered rock |
| 102 | <1 | <10 | 20 | <500 | <50 | 200 | <5 | 70 | 700 | 70 | 3. | .7 | 1.5 | 2,000 | Altered rock |
| 103 | <1 | 700 | <10 | <500 | 500 | <50 | <5 | <5 | 10 | 50 | .5 | <.01 | <.01 | 250 | Vein |
| 104 | 2 | <10 | 20 | <500 | <50 | <50 | <5 | <5 | 50 | <50 | >20. | <.01 | .1 | 125 | Altered rock |
| 105 | 1 | <10 | 15 | <500 | 100 | 100 | <5 | 30 | 300 | <50 | 2. | .7 | 1. | | Vein |
| 106 | <1 | 20 | 20 | <500 | 50 | 150 | <5 | 20 | 300 | <50 | 20. | .3 | .3 | 60,000 | Vein |
| 107 | <1 | >1,000 | <10 | <500 | 500 | 50 | <5 | <5 | 10 | <50 | .5 | <.01 | <.01 | 250 | Vein |
| 108 | <1 | 500 | <10 | <500 | 300 | 150 | <5 | <5 | 150 | <50 | .5 | <.01 | <.01 | 300 | Vein |
| 109 | 1 | <10 | 30 | <500 | <50 | 150 | <5 | 5 | 1,000 | 500 | 5. | 5. | 10. | 2,500 | Vein |
| 110 | <1 | <10 | 20 | <500 | <50 | 200 | <5 | 5 | 500 | <500 | >20. | .2 | 1. | 1,500 | Vein |
| 111 | <1 | <10 | <10 | <500 | <50 | 100 | <5 | 20 | 700 | 200 | 1. | .7 | .2 | 1,000 | Altered rock |
| 112 | <1 | <10 | 10 | <500 | <50 | 200 | <5 | 30 | 500 | 100 | 1. | .7 | 1. | 1,000 | Altered rock |
| 113 | <1 | <10 | 10 | <500 | <50 | 150 | <5 | 30 | 100 | <50 | 20. | 1.5 | 3. | 100 | Vein |
| 114 | <1 | >1,000 | <10 | <500 | 300 | <50 | <5 | <5 | 10 | <50 | 1. | <.01 | <.01 | 300 | Vein |
| 115 | <1 | >1,000 | <10 | <500 | 300 | <50 | <5 | <5 | <5 | <50 | .1 | <.01 | <.01 | 200 | Vein |
| 116 | <1 | 700 | <10 | <500 | 200 | <50 | <5 | <5 | 10 | <50 | .05 | <.01 | <.01 | 50 | Vein |

## ECONOMIC APPRAISAL

By R. G. Raabe, U.S. Bureau of Mines

### INTRODUCTION

This report describes the mineral-occurrence investigations made by the U.S. Bureau of Mines in the Stratified Primitive Area. R. G. Raabe, Area V Mineral Resource Office, Bureau of Mines, Denver, conducted the field investigation. Helicopters, under contract to the U.S. Geological Survey, were used in the survey for reconnaissance and to drop and pick up field personnel, who conducted actual examination work on foot (fig. 13). Preliminary work consisted of gathering all available information on record of any private or Government exploration activities in or adjacent to the reserved area, including data on mining claims and Federal oil and gas leases, and any other published data. The records and personnel of the Wyoming State Geologist's office, county courthouses, and field offices of the Indian Service, Forest Service, and Bureau of Land Management were consulted. Local residents were questioned on past mineral exploration in the area, especially clues to possible activities not on record.

Acknowledgments are made to the Wyoming State Office of the U.S. Bureau of Land Management and to H. D. Thomas of the Geo-

FIGURE 13.—Typical alpine topography at higher altitudes in the mineralized part of the Stratified Primitive Area.

logical Survey of Wyoming. Bureau of Land Management title plats and a claim map in Wyoming Geological Survey Preliminary Report 2 by W. H. Wilson (1946b, pl. 1) were the basis for the maps in this report.

## MINERAL APPRAISAL

To evaluate the primitive area proper, a much larger region consisting of 2,880 square miles in 80 townships, including the Wind River Indian Reservation, was studied (figs. 14 and 15).

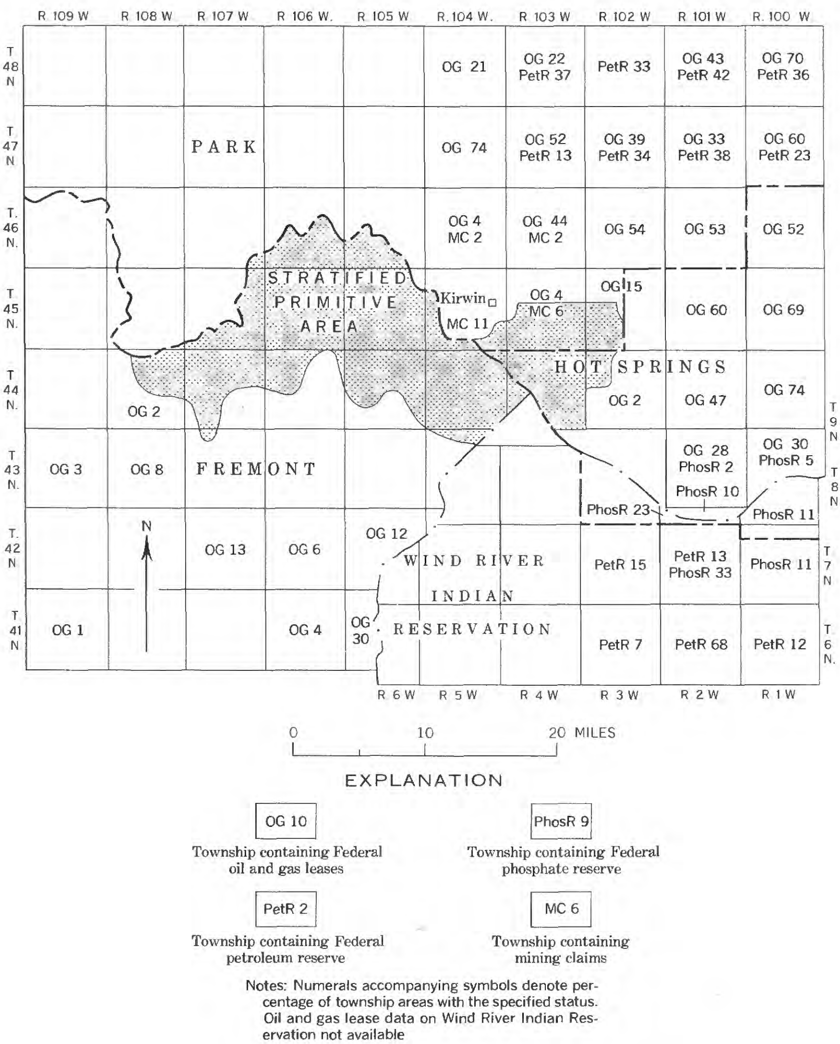


FIGURE 14.—Status of public domain land surrounding the Stratified Primitive Area.

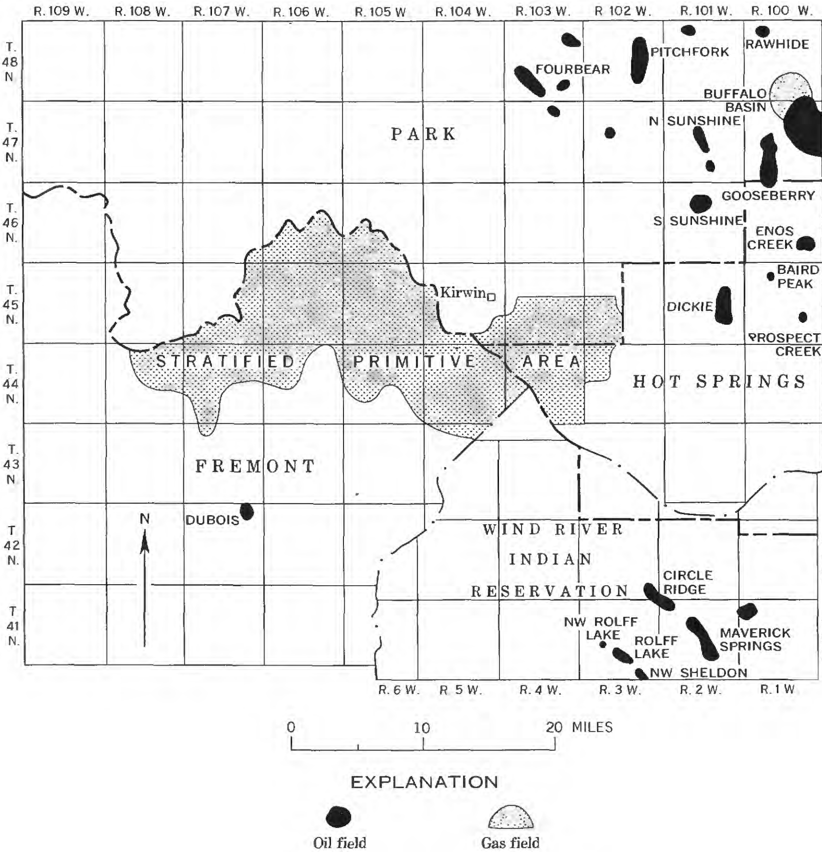


**FIGURE 15.—Map of principal oil and gas fields adjacent to Stratified Primitive Area.**

There has been no Federal oil and gas leasing activity nor have any petroleum or phosphate reserves been established in the Stratified Primitive Area. More than half the townships in the larger area studied have been covered in part by Federal oil and gas leases (fig. 14); 20 oil fields and 1 gas field have been established by drilling; parts of 8 townships in the extreme northeast corner and 5 in the extreme southeast corner contain Federal petroleum reserves; and parts of 5 townships east of the primitive area straddling the northern boundary of the Wind Indian Reservation contain Federal phosphate reserves (fig. 14). However, there is no evidence that any of these reserves extend into the primitive area.

## HISTORY

The area surrounding the townsite of Kirwin contains 205 patented claims (195 lode, 5 placer, and 5 millsite claims) and 116 located lode claims, some of which have been surveyed for patent, as shown on figure 16. Of these, 49 patented claims, 25 surveyed for patent, and 11 located claims (table 7), lie wholly or partly within the primitive area, depending on where the boundary is finally established. Many of the claims, including those along the Wood River downstream from Kirwin are owned by Duke Wilson, a rancher. One group of 156 claims in the Kirwin area is controlled by American Metal Climax, Inc.

Ownership of mining claims in detail and validity of claims were not determined during this investigation.

No record of mineral production within the Stratified Primitive Area was found. The only evidence of exploration activity within the area is mining claims that have been located within the boundary adjoining the old Kirwin mining district, the center of which lies about 1 mile north of the area (fig. 16). There has been no production on claims that extend into the primitive area.

TABLE 7.—*Mining claims in the Stratified Primitive Area*

[Compiled from map by Wilson (1964b, pl. 1) and from Bureau of Land Management Status of Public Domain Plats]

| Patented or surveyed for patent | |
|---|---|
| Dundee No. 1 | 259 A & B |
| Dundee No. 2 | 259 A & B |
| Dundee No. 8 | 414 A & B |
| K. of P | 414 A & B |
| Elkton | 259 A |
| Oneida | 414 A & B |
| No. 10 (AM) | 414 A & B |
| Silver Cliff | 259 A & B |
| Olymphia | 259 A & B |
| Portland | 259 A & B |
| Connecticut | 259 A & B |
| Concord | 415 |
| Merrimac | 410 |
| Keister | 410 |
| Eldora | 410 |
| Eldora No. 2 | 410 |
| Eldora No. 3 | 410 |
| Eldora No. 4 | 410 |
| Yreka | 410 |
| Yreka No. 2 | 410 |
| Yreka No. 3 | 410 |
| Pilot No. 2 | 410 |
| Pilot No. 3 | 410 |
| Porto Rico | 410 |
| Pearcy Chester | 328 |
| Oskaloosa | 328 |
| Best Friend | 328 |
| Fearless | 328 |
| Dauntless | 328 |
| Burro | 328 |
| Chrysolite | 328 |
| Smuggler | 328 |
| Mystic | 328 |
| Golden Wedge | 328 |
| Camp Bird | 328 |
| Maid of the Mist | 328 |
| Rubye | 328 |
| January | 251 |
| Iron Clad | 251 |
| File Closer | 251 |
| Philip | 251 |
| Christian | 251 |
| Kay See | 251 |
| Bentley | 251 |
| Atlantic | 251 |

| Patented or surveyed for patent | |
|---|---|
| Pete | 251 |
| Red Cloud | 251 |
| Albert | 251 |
| Burdett | 251 |
| Henry | 251 |
| Washakie | 251 |
| Washakie No. 1 | 251 |
| Washakie No. 2 | 251 |
| High Tide | 321 |
| Belmont | 321 |
| Titon | 321 |
| Tamarack | 408 |
| Mecur | 408 |
| Anelbert No. 1 | 408 |
| Anelbert No. 2 | 408 |
| Doctor | 408 |
| Middle Fork | 408 |
| Esmeralda | 408 |
| Singue | 408 |
| Crawford No. 1 | 408 |
| Crawford No. 2 | 408 |
| Granite | 408 |
| Bushwacher No. 2 | 408 |
| Stone | 408 |
| Rubber Neck | 408 |
| Parrot | 408 |
| Cyanide No. 4 | 408 |
| Cyanide No. 5 | 408 |
| Bartlett | 408 |

| Located |
|---|
| Ellen No. 1. |
| Ellen No. 2. |
| Garfield No. 1. |
| Garfield No. 2. |
| Garfield No. 3. |
| Garfield No. 4. |
| Garfield No. 5. |
| Garfield No. 6. |
| Garfield No. 7. |
| Garfield No. 8. |
| Fraction (not named). |


**FIGURE 16.—Claims near Kirwin mining district.**

The existence of mineral deposits at Kirwin has been known since the 1890's. According to Hewett (1914, p. 131) a carload of gold-silver-(copper?) ore that returned $65 per ton after freight and treatment charges were deducted was shipped prior to 1900. These early mining operations on small vein deposits were abandoned before 1907. Currently (1965), American Metal Climax, Inc., is exploring for disseminated molybdenum-copper ore by diamond drilling near Kirwin (fig. 17), outside the primitive area.

## CONCLUSIONS

The investigation of the Stratified Primitive Area by the Bureau of Mines did not disclose any evidence of significant mineral occurrences within the area. There were no deposits found as a result of Geological Survey work, and consequently no evaluations of mineral potential were made.

There are no recorded Federal oil and gas leases nor any Federal petroleum or phosphate reserve lands within the primitive area.

Exploration activities of American Metal Climax, Inc., in the Kirwin area could possibly result in discovery of significant minerals that conceivably could extend into the adjacent primitive area. The company's results are confidential, and at this stage there is no basis for making such a projection.

FIGURE 17.—Diamond drill site, American Metal Climax Inc., southeast of Kirwin near the primitive area.

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