BIBLIOGRAPHY
OF
UTAH COAL
1869 THROUGH 1982

By Dan A. Foster and Archie D. Smith
Compilers

UTAH GEOLOGICAL AND MINERAL SURVEY
a division of
Utah Department of Natural Resources
Bulletin 120       June 1984
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INTRODUCTION

The Bibliography of Utah Coal has been compiled in recognition of a need for many individuals to know where to find basic geologic and coal information. The bibliography was compiled under a cooperative grant with the Department of Energy, Grant No. DE-FG21-80MC14257, and under the direction of Dan A. Foster and Archie D. Smith. Diane J. Reeves, Darryl L. Chapman, and Sue A. Juch of the Utah Geological and Mineral Survey staff assisted in checking citations.

The compilation process utilized citations from computerized printouts from GEOREF, NTIS, GEOARCHIVE, ENERGYLINE, COMPENDEX, and Department of Energy, as well as Federal and State government reports, and graduate theses.

This bibliography contains 1406 citations to literature published from 1869 through 1982. Considerable effort has been expended to insure accuracy, consistency and completeness of the citations. However, users may note some errors and omissions. Users are encouraged to submit errors and omissions to the Survey for inclusion in future supplements.

A listing of abbreviations is included for clarity. Two index maps are included for use by state land managers as well as for geologists.

It is our hope this bibliography will serve as a useful aid to the professional geologist as well as be informative to the public and to industrial and academic researcher.

CROSS-REFERENCING

Each of the listings are considered by author, location, and subject descriptors.

Author - citations are arranged alphabetically according to the author(s) name followed by the year and title of the publication.

Location - location is designated by county, coal field and quadrangle where available and applicable. A separate listing of citations by county has been prepared.

Subject Descriptors - as applicable and possible, each citation has been scanned for informational content and key descriptors listed.

Computer Search - the data base for the bibliography is retained on file at Utah Geological and Mineral Survey and may be searched for unique subject matter, phrases, and descriptors. For information concerning fees and/or charges contact the UGMS (801) 581-6831 during business hours.

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1 Earth Science Specialist, Utah Geological and Mineral Survey.
ABBREVIATIONS

Abstr. — Abstracts
Acad. — Academy
Am. — America, American
Ann. — Annual
Assoc. — Association
Bull. — Bulletin
Bur. — Bureau
Circ. — Circular
Comm. — Commission
Conf. — Conference
Congr. — Congress, Congressional
Conserv. — Conservation
Dept. — Department
Div. — Division
et al. — and others
Eng. — Engineering
Geochem. — Geochemical
Geol. — Geology, Geological, Geologists
Geophys. — Geophysics
Hist. — History, Historical
Inf. — Information
Inst. — Institute, Institution
Int. — International
Inv. — Investigation, Investigations
Intermt. — Intermountain
Jour. — Journal
Mem. — Memoirs
Min. — Mineral, Mineralogical
Misc. — Miscellaneous
Mon. — Monograph

Nat. — Natural, National
No. — Number
p. — Page, Pages
Pac. — Pacific
Pal. — Paleontology, Paleontological
Pet. — Petroleum
Petr. — Petrology, Petrologists
Proc. — Proceedings
Prof. — Professional
Publ. — Publication
Quart. — Quarterly
Recl. — Reclamation
Res. — Resource, Resources
Sch. — School
Sci. — Science, Sciences
Sec. — Section
Sed. — Sedimentary, Sedimentologist
Ser. — Series
Soc. — Society
Spec. — Special
StUd. — Studies
Surv. — Survey
Tech. — Technical
Transp. — Transportation
U.S. — United States
USGS — United States Geological Survey
Univ. — University
Unpubl. — Unpublished
Vol. — Volume
Figure 1. 
MAP OF UTAH COUNTIES and PRINCIPAL COAL AREAS

Principal Coal Area  Fillmore  County Seat  *Indicates Counties With No References
Figure 1.
INDEX TO TOPOGRAPHIC MAPS OF UTAH
(north half)
D. A. Foster and A. D. Smith, Bibliography of Utah Coal

AUTHOR INDEX

Descriptors: Utah; Sanpete and Sevier Counties; economic geology; coal; maps; organic residues; deposits; resources; economic geology maps; explanatory text; Heliotrope Mountain Quadrangle; USGS.

AAA Engineering and Drafting, Inc., 1979b, Coal resources of the Hilgard Mountain Quadrangle, Sevier County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-1014, 19 p. Sevier County; Salina Canyon Coal Field; Hilgard Mountain Quadrangle.
Descriptors: coal; Sevier County; technical production management; reserve estimation; materials distribution maps and surveys; Utah.

AAA Engineering and Drafting, Inc., 1979c, Coal resources of the Joes Valley Reservoir Quadrangle, Sanpete and Emery Counties, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-1002, 24 p. Sanpete and Emery Counties; Wasatch Plateau Coal Field; Joes Valley Reservoir Quadrangle.
Descriptors: Utah; Sanpete and Emery Counties; economic geology; coal; maps; organic residues; deposits; resources; economic geology maps; explanatory text; Joes Valley Reservoir Quadrangle; USGS.

AAA Engineering and Drafting, Inc., 1979d, Coal resources of the Kyune Quadrangle, Carbon County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-150, 18 p. Carbon and Utah Counties; Book Cliffs Coal Field; Kyune Quadrangle.
Descriptors: Carbon and Utah Counties; coal resource occurrence; coal development potential maps; Kyune Quadrangle; physiography; climate; stratigraphy; structure; coal geology; mining operations; coal data map; columnar sections.

AAA Engineering and Drafting, Inc., 1979e, Coal resources of the Matts Summit Quadrangle, Carbon County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-151, 14 p. Duchesne, Utah, and Carbon Counties; Book Cliffs Coal Field; Matts Summit Quadrangle.
Descriptors: economic geology; coal; maps; Carbon, Duchesne, and Utah Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Matts Summit Quadrangle; physiography; climate; land status; stratigraphy; coal geology; chemical analyses; mining operations; development potential; surface mining; subsurface mining; in situ gasification; coal data map; columnar section.

AAA Engineering and Drafting, Inc., 1979f, Coal resources of the Minnie Maud Creek East Quadrangle, Carbon County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-488, 18 p. Duchesne and Carbon Counties; Book Cliffs Coal Field; Minnie Maud Creek East Quadrangle.
Descriptors: economic geology; coal; maps; Carbon and Duchesne Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Minnie Maud Creek East Quadrangle.

AAA Engineering and Drafting, Inc., 1979g, Coal resources of the NE quarter of the Woodside 15-min. Quadrangle, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-896, 16 p. Emery County; Book Cliffs Coal Field; NE quarter of the Woodside 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Emery County; organic residues; deposits; resources; explanatory text; economic geology maps; Woodside Quadrangle.
Emery and Carbon Counties; Book Cliffs Coal Field; NW quarter Woodside 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Emery County; organic residues; deposits; resources; explanatory text; economic geology maps; Wasatch Plateau Coal Field.

Emery County; Book Cliffs Coal Field; SE quarter of the Range Creek 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Emery County; organic residues; deposits; resources; economic geology maps; explanatory text; Range Creek Quadrangle; USGS.

Emery County; Book Cliffs Coal Field; SW quarter of the Range Creek 15-min. Quadrangle.
Descriptors: Utah; economic geology; coal; maps; Emery County; organic residues; deposits; resources; economic geology maps; explanatory text; Range Creek Quadrangle.

Utah and Carbon Counties; Wasatch Plateau Coal Field; SW quarter of the Soldier Summit 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Utah and Carbon Counties; organic residues; deposits; resources; economic geology maps; explanatory text; Soldier Summit Quadrangle.

Sevier and Emery Counties; Emery Coal Field; Walker Flat Quadrangle.
Descriptors: Utah; economic geology; coal; maps; Sevier and Emery Counties; organic residues; deposits; resources; economic geology maps; explanatory text; Walker Flat Quadrangle; USGS.

Sevier County; Wasatch Plateau Coal Field; Water Hollow Ridge Quadrangle.
Descriptors: economic geology; coal; maps; Sevier County; organic residues; deposits; resources; economic geology maps; explanatory text; Water Hollow Ridge Quadrangle.

Sevier County; Salina Canyon Coal Field; Yogo Creek Quadrangle.
Descriptors: economic geology; coal; maps; Sevier County; organic residues; deposits; resources; economic geology maps; explanatory text; Yogo Creek Quadrangle.

Sevier County; Wasatch Plateau Coal Field; Acord Lakes Quadrangle.
Descriptors: economic geology; coal; maps; Sevier County; organic residues; deposits; resources; explanatory text; economic geology maps; Acord Lakes Quadrangle.

Carbon County; Book Cliffs Coal Field; Deadman Canyon Quadrangle.
Descriptors: coal resource occurrence; coal development potential maps; Deadman Canyon Quadrangle; Carbon county; physiography; climate; land status; stratigraphy; structure; coal geology; mining operations; in situ gasification; coal data map, columnar sections.

Uintah County; Vernal Coal Field; Dinosaur Quadrangle.
Descriptors: Uintah County; economic geology; coal; maps; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Dinosaur Quadrangle.

Sevier and Emery Counties; Emery Coal Field; Emery West Quadrangle.
Descriptors: economic geology; coal; maps; Sevier County; organic residues; deposits; resources; economic geology maps; explanatory text; Emery West Quadrangle.
and Emery Counties; organic residues; deposits; resources; economic geology maps; explanatory text; Emery West Quadrangle.

Sanpete and Emery Counties; Wasatch Plateau Coal Field; Ferron Canyon Quadrangle.
Descriptors: economic geology; coal; maps; Sanpete and Emery Counties; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Ferron Canyon Quadrangle.

Sanpete, Sevier, and Emery Counties; Flagstaff Peak Quadrangle.
Descriptors: economic geology; coal; maps; Sanpete, Emery, and Sevier Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Flagstaff Peak Quadrangle.

Carbon County; Book Cliffs Coal Field; Woodside Quadrangle.
Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Helper Quadrangle.

Sevier County; Emery Coal Field; John's Peak Quadrangle.
Descriptors: Utah; economic geology; coal; maps; Sevier County; organic residues; deposits; resources; economic geology maps; explanatory text; Johns Peak Quadrangle; USGS.

Carbon County; Book Cliffs Coal Field; Mount Bartles Quadrangle.
Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Mount Bartles Quadrangle.

Carbon County; Wasatch Plateau Coal Field; NE quarter of the Hiawatha 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; economic geology maps; explanatory text; Hiawatha Quadrangle.

Emery, Carbon, and Sanpete Counties; Wasatch Plateau Coal Field; NE quarter of the Scofield 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Emery, Carbon, and Sanpete Counties; coal resource occurrence; coal development potential maps; Quadrangle; physiography; climate; land status; stratigraphy; structure; coal geology; mining operations; in situ gasification; coal data map; columnar section.

Emery County; Book Cliffs Coal Field; NE quarter of the Woodside 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Emery County; organic residues; deposits; resources; explanatory text; economic geology maps; Woodside Quadrangle.

Emery County; Wasatch Plateau Coal Field; NW quarter of the Castlegate 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Emery County; organic residues; deposits; resources; explanatory text; economic geology maps; Castle Dale Quadrangle.

Carbon County; Wasatch Plateau Coal Field; NW quarter of Hiawatha 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Emery County; organic residues; deposits; resources; ex-
planetary text; economic geology maps; Hiawatha Quadrangle.

AAA Engineering and Drafting, Inc., 1979cc, Coal resource occurrence and coal development potential maps of the NW quarter of the Scofield 15-min. Quadrangle, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-483, 17 p. Carbon County; Wasatch Plateau Coal Field; NW quarter of the Scofield 15-min. Quadrangle. Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Scofield Quadrangle.

AAA Engineering and Drafting, Inc., 1979dd, Coal resource occurrence and coal development potential maps of the Old Woman Plateau, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-1012, 22 p. Sevier County; Salina Canyon Coal Field; Old Woman Plateau. Descriptors: economic geology; coal; maps; Sevier County; organic residues; deposits; resources; economic geology maps; explanatory text; Old Woman Plateau Quadrangle; USGS.

AAA Engineering and Drafting, Inc., 1979ee, Coal resource occurrence and coal development potential maps of the Patmos Head Quadrangle, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-492, 17 p. Carbon County; Book Cliffs Coal Field; Patmos Head Quadrangle. Descriptors: economic geology; coal; maps; Carbon County; deposits; resources; explanatory text; economic geology maps; Patmos Head Quadrangle.

AAA Engineering and Drafting, Inc., 1979ff, Coal resource occurrence and coal development potential maps of the Pine Canyon Quadrangle, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-489, 18 p. Carbon County; Book Cliffs Coal Field; Pine Canyon Quadrangle. Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Pine Canyon Quadrangle.

AAA Engineering and Drafting, Inc., 1979gg, Coal resource occurrence and coal development potential maps of the SE quarter of the Hiawatha 15-min. Quadrangle, Emery County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-1001, 15 p. Emery County; Wasatch Plateau Coal Field; SE quarter of the Hiawatha 15-min. Quadrangle. Descriptors: economic geology; coal; maps; Emery County; organic residues; deposits; resources; explanatory text; economic geology maps; Hiawatha Quadrangle.

AAA Engineering and Drafting, Inc., 1979hh, Coal resource occurrence and coal development potential maps of the SE quarter of the Scofield 15-min. Quadrangle, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-486, 17 p. Carbon, Emery, and Sanpete Counties; Wasatch Plateau Coal Field; SE quarter of the Scofield 15-min. Quadrangle. Descriptors: coal resource occurrence; coal development potential maps; Emery, Carbon, and Sanpete Counties; Wattis Quadrangle; climate; land status; stratigraphy; structure; coal geology; mining operations; in situ gasification; coal data map; columnar section.

AAA Engineering and Drafting, Inc., 1979ii, Coal resource occurrence and coal development potential maps of the SE quarter of the Soldier Summit 15-min. Quadrangle, Carbon County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-482, 12 p. Carbon County; Wasatch Plateau Coal Field; SE quarter of the Soldier Summit 15-min. Quadrangle. Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Soldier Summit Quadrangle.

AAA Engineering and Drafting, Inc., 1979jj, Coal resource occurrence and coal development potential maps of the SE quarter of the Woodside 15-min. Quadrangle, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-898, 16 p. Emery County; Book Cliffs Coal Field; SE quarter of the Woodside 15-min. Quadrangle. Descriptors: economic geology; coal; maps; Emery County; organic residues; deposits; resources; explanatory text; economic geology maps; Woodside Quadrangle.

AAA Engineering and Drafting, Inc., 1979kk, Coal resource occurrence and coal development potential maps of the SW quarter of the Castledale 15-min. Quadrangle, Emery County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-1005, 12 p. Emery County; Wasatch Plateau Coal Field; SW quarter of the Castledale 15-min. Quadrangle. Descriptors: economic geology; coal; maps; Emery County; organic residues; deposits; resources; explanatory text; economic geology maps; Castledale Quadrangle.

AAA Engineering and Drafting, Inc., 1979ll, Coal resource occurrence and coal development potential maps of the SW quarter of the Hiawatha 15-min. Quadrangle, Emery County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-900, 16 p. Emery County; Wasatch Plateau Coal Field; SW quarter of the Hiawatha 15-min. Quadrangle. Descriptors: economic geology; coal; maps; Emery County; organic residues; deposits; resources; explanatory text; economic geology maps; Hiawatha Quadrangle.

AAA Engineering and Drafting, Inc., 1979mm, Coal resource occurrence and coal development potential
Emery, Carbon, and Sanpete Counties; Wasatch Plateau Coal Field; SW quarter of the Scofield 15-min. Quadrangle.

Descriptors: economic geology; coal; maps; Emery, Carbon, and Sanpete Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Candland Mountain Quadrangle; coal resource occurrence; coal development potential; physiography; climate; land status; stratigraphy; structure; coal geology; mining operations; surface mining; in situ coal gasification; coal data map; composite columnar section.

Carbon County; Book Cliffs Coal Field; Standardville Quadrangle.

Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Standardville Quadrangle.

Carbon County; Wasatch Plateau Coal Field; Sunnyside Quadrangle.

Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Sunnyside Quadrangle.

Emery County; Wasatch Plateau Coal Field; The Cap and Mahogany Point Quadrangles.

Descriptors: well-logging; mining geology; economic geology; general; evaluation; coal; Emery County; organic residues; deposits; exploration; drilling; The Cap Quadrangle; Mahogany Point Quadrangle.

Emery County; Wasatch Plateau Coal Field; The Cap and Mahogany Point Quadrangles.

Descriptors: well-logging; economic geology; mining geology; interpretation; evaluation; coal; Emery County; The Cap Quadrangle; Mahogany Point Quadrangle; general; organic residues; deposits; boreholes.

Emery County; Wasatch Plateau Coal Field.

Descriptors: well-logging; mining geology; economic geology; general; geology; evaluation; coal; Emery County; organic residues; deposits; exploration; drilling.

Emery County; Wasatch Plateau Coal Field.

Descriptors: well-logging; mining geology; economic geology; interpretation; evaluation; coal; Emery County; North Horn Mountain; general; organic residues; deposits; boreholes.

Duchesne and Uintah Counties.

Descriptors: Uinta Basin; Tertiary rocks; geology; stratigraphy; lithologic descriptions; isopach maps.

Carbon and Emery Counties; Book Cliffs Coal Field.

Descriptors: coal; flame photometry; ash constituents; slag properties; coal fusibility; Utah coals; tables.

Descriptors: coal; spectrochemical analysis; trace elements; ash; western states; coal zones; tables.

Descriptors: high pressure; cellulose; anhydrous glucose; xylose; inositol; yellow pine; reaction monitoring device; exothermic pyrolytic transformations; carbohydrates; thermal stability; heat of reaction; maximum evolution of gas product; char stability; Kilzer and Broido scheme; catalyst; coal origin and composition; rank; heating rate; furnace design; pressure.

Emery County; Book Cliffs Coal Field.

Descriptors: coal mines; electromagnetic noise; mines; excavations; measurement; electromagnetic interference; magnetic fields; atmospherics; spectral energy distribution; radio beacons; rescue beacons; Utah.


Emery County; Emery Coal Field.

Descriptors: sedimentation; paleogeography; sedimentary rocks; stratigraphy; Cretaceous; economic geology; environment; organic residues; coal; deltas; Emery County; Mancos Shale; Ferron Sandstone Member; organic residues; deposits; geochemistry; chemical composition; data; shale; clastic rocks; coal fields; Cretaceous; Mesozoic.


Kane and Garfield Counties.

Descriptors: economic geology; coal; Kane and Garfield Counties; Dakota Formation; Straight Cliffs Formation; Cretaceous; Mesozoic; geochemistry; organic residues; deposits; chemical; composition.


Descriptors: associated strata; mining; nonmetallic ores; accidents; roof falls; coal rib falls; mining operations; machinery; efficient roof control systems; design; mine researchers; U.S.; Europe; U.A.R.; phosphate; sonic techniques; microseismic methods; photostress; rock pressure; roof bolts; steel arches; hydraulic props.


Descriptors: Late Cretaceous; palynomorphs; Dakota Sandstone; Mancos Shale; stratigraphy; paleo-environmental conditions; systematic palynology.


Emery County; Book Cliffs Coal Field; Range Creek and Woodside Quadrangles.

Descriptors: well-logging; economic geology; interpretation; coal; Emery County; Book Cliffs; Woodside Quadrangle; Range Creek Quadrangle; organic residues; coal fields; deposits; lithology; geophysical methods; boreholes.


Grand County; Sego Coal Field; Sego Canyon Quadrangle.

Descriptors: well-logging; economic geology; interpretation; coal; organic residues; Grand County; Sego Canyon Quadrangle; coal fields; Book Cliffs; deposits; boreholes; lithology.


Carbon County; Book Cliffs Coal Field; Deadman Canyon Quadrangle.

Descriptors: well-logging; economic geology; interpretation; coal; organic residues; Carbon County; Book Cliffs; Deadman Canyon Quadrangle; deposits; coal fields; geophysical methods; lithology; boreholes.


Sevier County; Wasatch Plateau Coal Field; Acord Lakes Quadrangle.

Descriptors: well-logging; economic geology; interpretation; coal; Sevier County; USGS; Acord Lakes Quadrangle; boreholes; organic residues.


Sevier County; Wasatch Plateau Coal Field; Acord Lakes and Emery West Quadrangles.

Descriptors: well-logging; economic geology; interpretation; coal; Sevier County; USGS; Acord Lakes Quadrangle; Emery West Quadrangle; boreholes; organic residues.


Kane and Garfield Counties; Kaiparowits Plateau Coal Field.

Descriptors: Colorado, Utah, and Wyoming; environmental geology; ecology; conservation; Garfield

Descriptors: coal deposits; cannel coal; chemical analysis; Utah.


Descriptors: coal; mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; Coalville, Henrys Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; maps; tables.


Descriptors: lumber; copper; coal; mining towns; industrial communities; community planning; housing; welfare; management; economics; paternalism; politics; scrip; Utah, Oregon, Washington, and Wyoming.


Descriptors: classification of cross-stratified units; origin of each kind; observational, experimental and theoretical studies; genetic classification; physical properties; block diagrams; descriptive terms; grouping; magnitude; environment; lower bounding surface; angular relation; lithology; nomenclature; alpha-, beta-, gamma cross stratification.


Descriptors: coal; chemical composition; melting; sampling; plasticity; coking; Arkansas, Colorado, New Mexico, Oklahoma, and Utah.


Descriptors: coal seams; degassing; methane; recovery; commercialization; desorption; drill cores; gamma logging; resource assessment; resource development; water influx.


American Institute of Mining and Metallurgical Engineers, 1925, One hundred thirty-second meeting: Grocer Printing Company, Salt Lake City, Ut., 163 p.


Descriptors: standard; adoption; revision; classification of coals by rank; lignite to anthracite; applicable documents; significance and use; basis of classification; fixed carbon and calorific value; symbols; sampling; methods of analysis and testing; calculation of mineral matter free basis; appendix.


Descriptors: coal by rank; standards; designation; revision; adoption; reapproval; scope; applicable documents; significance and use; basis of classification; categories of coal; metamorphism; physical and chemical characteristics; fixed carbon; calorific value; classification by rank; symbols; sampling; methods of analysis and testing; appendix; nonmandatory classification.


Descriptors: coal by rank; standards; designation; revision; adoption; reapproval; scope; applicable documents; significance and use; basis of classification; categories of coal; metamorphism; physical and chemical characteristics; fixed carbon; calorific value; classification by rank; symbols; sampling; methods of analysis and testing; appendix; nonmandatory classification.


Kane County; Alton Coal Field.

Descriptors: coal; strip mine; mine-mouth plants; socioeconomic impact assessment; environmental constraints; railroad planning; water quality standards; air quality standards; ambient; public
lands; federal coal leasing; coal transport; generating capacity; water supply; industrial; 491 Electric Co.; Utah.


Descriptors: energy source development; environmental impacts; coal; fossil-fuel power plants; ground water; nature reserves; noise pollution; surface mining; Utah.


Descriptors: coal reserves; mineral resources; Colorad o, Kentucky, Michigan, Montana, North Dakota, Ohio, South Dakota, Tennessee, Utah, and Wyoming; resources; maps; tables.

Anderson, L. L., 1964, Basic principles and apparatus of gas chromatography with particular application to coal research: Univ. of Utah Engineering Experiment Station, Bulletin 130.

Descriptors: instruction manual; gas chromatography; technicians; students; analysts; practices; applications; analytical method; publication rate; journals; theory; apparatus; methods; results; calibration; qualitative and quantitative analyses.


Descriptors: Utah; coal; economic geology; California; deposits; utilization; power plants.


Descriptors: electric power generation; fossil-fuel power plants; energy policy; coal; water resources; air pollution; environmental impacts; social effect; economic impact; energy transport; planning; site selection; Colorado River Basin; Utah and California.

Anderson, O. L., and M. Rogozen, 1977, Role of transportation of energy in the development of the southwest: Univ. of California, Los Angeles.


Kane County; Kaiparowits Plateau Coal Field.

Descriptors: environmental geology; land use; Lake Powell; regional planning; coal; production; water resources; deserts.

Carbon County; Book Cliffs Coal Field; Pine Canyon Quadrangle.

Descriptors: sedimentation; sedimentary rocks; economic geology; stratigraphy; environment; organic residues; coal; Cretaceous; coastal environment; Carbon County; Blackhawk Formation; Kenilworth Tongue; Pine Canyon Quadrangle; Meso zoic; cores; deposits; resources; coal seams; lithofacies; marine environment; brackish-water environment; barriers; thickness; lithostratigraphy; paleoenvironment.

Carbon County; Book Cliffs Coal Field; Pine Canyon Quadrangle.

Descriptors: economic geology; coal; Carbon County; Pine Canyon Quadrangle; sedimentary rocks; stratigraphy; lithostratigraphy; Cretaceous; Eocene; Paleogene; Tertiary; structure; sedimentation; nearshore environment; deltas; coal seams; organic residues; deposits; rank; resources.


Descriptors: coal fields; Arizona, California, Idaho, Nevada, and Oregon; production; distribution; use; mine samples; analyses of mine, tipple and delivered samples; volatile matter; fixed carbon; rank; agglomerating index; ash; description of mine samples.


Descriptors: energy source development; regional planning; crude oil; natural gas; oil shale; uranium; coal; hydroelectric power; energy policy; government policies; national government; economic impact; environmental impact; social effect; Arizona, Colorado, Utah, New Mexico, Montana, Nevada, North Dakota, South Dakota, Idaho, and Wyoming.


Descriptors: coal mining; productivity; surface mining; reclamation; feasibility studies; forecasting;
Descriptors: coal; coal industry; oil sands industry; oil shale industry; reviews; legal aspects; synthetic fuels; legislation; oil shale; coal gasification; synthetic fuels: economics; energy policy; maps; research programs; reserves; USSR; Colorado, Wyoming, and Utah.

Descriptors: coal collection; physical properties; proximate analysis; ultimate analysis; coking characteristics; grindability index; mine samples; nation wide analyses; fiscal year 1952; tables.

Descriptors: coal collection; physical properties; proximate analysis; ultimate analysis; calorific value; grindability index; mine samples; coking characteristics; nation wide analyses; fiscal year 1952; tables.

Descriptors: coal collection; physical properties; proximate analysis; ultimate analysis; coking characteristics; grindability index; mine samples; nation wide analyses; fiscal year 1953; tables.

Descriptors: coal collection; physical properties; proximate analysis; ultimate analysis; coking characteristics; grindability index; mine samples; nation wide analyses; fiscal year 1954; tables.

Descriptors: coal collection; physical properties; proximate analysis; ultimate analysis; coking characteristics; grindability index; mine samples; nation wide analyses; fiscal year 1954; tables.

Descriptors: coal collection; physical properties; proximate analysis; ultimate analysis; coking characteristics; grindability index; mine samples; nation wide analyses; fiscal year 1957; tables.

Descriptors: coal collection; physical properties; proximate analysis; ultimate analysis; coking characteristics; grindability index; mine samples; nation wide analyses; fiscal year 1958; tables.

Descriptors: coal collection; physical properties; proximate analysis; ultimate analysis; coking characteristics; grindability index; mine samples; nation wide analyses; fiscal year 1959; tables.
Descriptors: coal collection; physical properties; proximate analysis; ultimate analysis; coking characteristics; grindability index; mine samples; nation-wide analyses; fiscal year 1966; tables.

Descriptors: coal collection; physical properties; proximate analysis; ultimate analysis; coking characteristics; grindability index; mine samples; nation-wide analyses; fiscal year 1955; tables.

Descriptors: coal collection; physical properties; proximate analysis; ultimate analysis; coking characteristics; grindability index; mine samples; nation-wide analyses; fiscal year 1962; tables.

Descriptors: coal collection; physical properties; proximate analysis; ultimate analysis; coking characteristics; grindability index; mine samples; nation-wide analyses; fiscal year 1963; tables.

Descriptors: coal; hydraulic transport; slurry pipelines; fossil-fuel power plants; water requirements; Nevada; Utah.

Kane County; Alton Coal Field. 
Descriptors: coal slurry pipelines; pipeline construction; coal-fired power plants; environmental impact assessment; Utah; Nevada.

Descriptors: Utah’s “coal road”; railroads; Union Pacific; Utah Eastern; coal mining; transportation; market; monopolies; economic factors; history.

Iron, Washington, Garfield, and Kane Counties; Kolob Coal Field. 
Descriptors: cannel coal; physical properties; physical and chemical composition; analyses; origin; use; mining; value; distribution; subbituminous; Kolob Coal Field; Cannel King prospect.

Asplund, W., 1976, Severance Tax and Impact Trust Funds in Utah; Report to the Legislature (42nd): Utah Office of Legislative Research, Salt Lake City, UT., Rept., No. RR-12, 54 p. 
Descriptors: taxes; mining; nonmetalliferous minerals; revenue; rates; costs; design; coal; marketing; legislation; local government; state government; allocations; government policies.

Descriptors: coal; compression strength; rock mechanics; sampling; stresses; Montana, New Mexico, Pennsylvania, Utah, West Virginia, and Wyoming.

Descriptors: energy resources; coal gasification; oil shale; uranium resources; Los Alamos Scientific Lab; Arizona, Colorado, Montana, Nevada, New Mexico, Utah, and Wyoming.

Descriptors: surface mining; coal mining; Arizona, New Mexico, North Dakota, Utah, and Wyoming; coal reserves; water resources; availability; climates; economics; environmental effects; geological surveys; geology; variations.

Descriptors: bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.

Iron County; Kolob Coal Field; Cedar Mountain Quadrangle. 
Descriptors: coal; Utah; Cretaceous; Jurassic; Triassic; faults; stratigraphy; shear zones; economic geology; structural geology; volcanology; Hurricane fault zone; Cedar Mountain Quadrangle; Triassic-Cretaceous basalt flows; Iron County; Kolob Coal Field; Hurricane Cliffs; Kolob Terrace; physiography; drainage changes; rank and quality of coal; history of mining; production; methods; reserves; gypsum; uranium.

Averitt, P., 1964a, Coal, in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.
Sanpete County; Sterling Coal Field.

Sevier and Sanpete Counties; Wasatch Plateau Coal Field.

Descriptors: batch hydrogenation; coal tar; High volatile bituminous coal; carbonization; temperature; pressure; contact time; catalyst; gasoline; aromatics; molybdenum trioxide; first-order rate equation; enthalpy of activation; entropy of activation; chemisorption.


Baker, A. A., 1946, Geology of the Green River Desert -

Emery, Wayne, and Garfield Counties.


Utah County.


Descriptors: coal mines; structural analysis; excavation; rock bolts; geological surveys; finite element analysis; computer programming; Utah.


Carbon County: Book Cliffs Coal Field.

Descriptors: sedimentation; economic geology; environment; coal; deltas; Sunnyside Formation; Mancos Shale; Blackhawk Formation; Sunnyside coal; Book Cliffs; Cretaceous; Mesozoic; organic residues; sandstone; clastic rocks.


San Juan County; San Juan Coal Field.

Descriptors: coal; economic geology; San Juan Basin; Colorado, Utah, New Mexico, and Arizona; Colorado Plateau; occurrence; genesis; sedimentation; shorelines; Cretaceous; Gallup Sandstone; Crevasse Canyon Formation; Menefee Formation; Fruitland Formation; Dakota Sandstone.


Descriptors: coal; Paleozoic; Cretaceous; Tertiary; paleogeography; sedimentary petrology; deposition; Gallup; San Juan Basin; New Mexico, Arizona, and Utah; Book Cliffs; Black Mesa; genesis; environment; paludal; controls; stratidynamics; Carboniferous; Permian; Paleocene.
Emery County; Emery Coal Field; Emery 7 Quadrangle.

Summit and Duchesne Counties.
Descriptors: Uinta Mountains; mineral resources; prospecting; coal occurrence; tar sands.

Descriptors: leasing; oil sands; resource development; government policies; hydrocarbons; coal; natural gas; oil shale; petroleum; state government; Utah.

Descriptors: coal mining; recommendations; Alberta, and British Columbia; Colorado, Montana, Utah, and Wyoming; economics; mining equipment; safety; spontaneous combustion.

Descriptors: coal industry; oil shale industry; natural gas industry; petroleum industry; thermal power plants; water resources; energy sources; Utah and Colorado.

Descriptors: Union Pacific railroad; railroad interests; Wyoming Coal and Mining Co.; Mormon interest in coal; coal mining in the Salt Lake valley; Coalville and Echo railroad; Summit County railroad; Salt Lake and Echo railroad; Utah Eastern railroad; The Coal War of 1874; Denver and Rio Grande railroad; economics; competition; history.


Descriptors: Utah, Arizona, and Nevada corner; geology; Cretaceous; Tertiary; stratigraphy; thickness; lithologic descriptions; depositional environment; paleogeology; charts.

Wasatch County; Tabby Mountain Coal Field; NE Strawberry Valley Quadrangle.
Descriptors: Wasatch Mountains; Uinta Mountains; Uinta Basin; stratigraphy; volcanics; drift; alluvium; structure; lithology; overthrust; Laramide orogeny; location of area; summary of previous work; maps; sections; paleogeography; paleotectonics; sequence of geologic events.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.
Descriptors: Kaiparowits region; Kane and Garfield Counties; structural features; stratigraphy; East Kaibab monocline; Jurassic, Cretaceous, Tertiary formations; oil and gas possibilities.

Wasatch County; Tabby Mountain Coal Field.
Descriptors: sedimentation; tectonics; Uinta Mountains; Wasatch Mountains; Uinta Basin; structure; stratigraphy; shelf; craton; miogeosyncline; hinge-line belts; Cordilleran; stresses; Wasatch Line; oil and gas possibilities; general geology.

Blakey, R. C., 1969, Geologic map of the Paria NW Quadrangle, Kane County, Utah: M.S. thesis, Univ. of Utah.
Kane County; Kaiparowits Plateau Coal Field; Paria NW Quadrangle.

Emery and Sevier Counties; Emery and Wasatch Plateau Coal Fields; Johns Peak and Old Woman Plateau Quadrangles.
Descriptors: well-logging; geophysical surveys; general; logs; Sevier County; Johns Peak Quadrangle; Old Woman Plateau Quadrangle; data; Wasatch Plateau; Emery Coal Field; coal; organic residues; exploration.

Sevier County; Emery Coal Field; Johns Peak Quadrangle.
**Descriptors:** economic geology; coal; maps; Sevier County; Johns Peak Quadrangle; organic residues; deposits; geologic maps; sections.


Carbon County; Wasatch Plateau Coal Field.

**Descriptors:** Utah; sedimentary rocks; economic geology; stratigraphy; lithostratigraphy; coal; maps; Cretaceous; Carbon County; Mesaverde Group; Blackhawk Formation; Star Point Sandstone; USGS; Wasatch Plateau; stratigraphic wedges; Mesozoic; organic residues; sandstone; clastic rocks; lithofacies.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

**Descriptors:** Utah; well-logging; Cretaceous; coal; geophysical surveys; applications; Carbon County; Emery County; Sevier County; Blackhawk Formation; Wasatch Plateau; stratigraphy; sedimentary rocks; sandstone; shale; deposits; exploration; geophysical methods; electrical; radioactivity; gamma ray; data.


Sevier County; Wasatch Plateau Coal Field; Old Woman Plateau Quadrangle.

**Descriptors:** well-logging; interpretation; geophysical surveys; general; boreholes; Sevier County; Old Woman Plateau; Wasatch Plateau Coal Field; lithostratigraphy; coal; organic residues; deposits.


**Descriptors:** clastic quartz grains; mean size; standard deviation; massive plutonic rocks; gneisses; schists; monocrystalline; undulatory extinction; c-axes; indicators of provenance; polycrystalline; preferred orientation; intragranular suturing; grain elongation; first-cycle quartz; mature sandstone; methods of study; non-undulatory; histograms; cumulative size frequency.

**Bliss, J. D., 1982,** Coal references index for the Navajo Indian Reservation, Arizona, New Mexico, and Utah: U.S. Geol. Surv., Open-File Rept., No. 82-0281, 16 p.

**Descriptors:** Arizona, New Mexico, and Utah; economic geology; coal; bibliography; USGS; Navajo Indian Reservation; sedimentary rocks; organic residues.

**Boeing Engineering and Construction Co., 1980,** A 750 million dollar project to carry coal from Utah to Japan, Korea, and Taiwan: Chemical Engineering, 28 Jan. 1980, New York.

**Descriptors:** slurry pipelines; cost; California; coal; fuel slurries; Japan; pumping; Republic of Korea; storage; Taiwan; terminal facilities; transport; Utah; water removal.


Carbon County; Book Cliffs Coal Field.

**Descriptors:** bituminous coal; coking; chars; carbonization; coke; physical properties; lignite; coking; bench-scale experiments; coal; particle size; pilot plants; storage; volatility; Utah.


**Descriptors:** planning; coal research program; reserves; present volume; trends in utilization; future production; major consumers; electrical power; steel industries; market; U.S. Bur. Mines; characteristics of ash; combustion; drying; carbonization; gasification; pulverization; storage; non-fuel uses; project areas; pulse-jet engine; freeze proofing; taconite pellets; carbon disulfide; drilling mud additive.

**Boley, C. C., and W. R. Kube, 1966b,** Western coals, some trends in utilization and research: Western Resources Paper.


**Descriptors:** clay mineralogy; Wyoming, Utah, and Colorado; mineral data; engineering geology; areal studies; slope stability; slumgullion; Jackson; Casper; Powder River Basin.


**Descriptors:** gilsonite; ozokerite; Uinta Basin; soil samples; productive veins; Cowboy vein; Chepeta lode; Carbon lode; Rainbow vein; Pariette vein; Soldier Summit; specific gravity; tetrabromoethane; benzene; carbon tetrachloride; panning; analyses; geochemical anomalies; dispersion halos.

**Bowen, C. F., 1913,** Lignite in the Goose Creek district, Cassia County, Idaho: U.S. Geol. Surv., Bull., No. 531H.

**Descriptors:** Goose Creek Lignite Field.
Descriptors: coal; lignite; location; extent; field work; land surveys; map; topography; stratigraphy; structure; occurrence; Worthington Mine; earthy matter; Barrett bed; sections; properties; analyses of lignite.

Bowers, W. E., 1968a, Preliminary geologic map of the Griffin Point Quadrangle, Garfield County, Utah: U.S. Geol. Surv., Open-File Map. Garfield County; Kaiparowits Plateau Coal Field; Griffin Point Quadrangle.


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Bowers, W. E., 1973c, Geologic map and coal resources of the Upper Valley Quadrangle, Garfield County, Utah: U.S. Geol. Surv., Coal Inv. Map C-60. Garfield County; Kaiparowits Plateau Coal Field; Upper Valley Quadrangle. Descriptors: Utah; maps; economic geology; Garfield County; coal; Upper Valley Quadrangle; geologic; deposits; resources.


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Bowers, W. E., 1981, Geologic map and coal deposits of the Canaan Peak Quadrangle, Garfield and Kane Counties, Utah: U.S. Geol. Surv., Coal Inv. Map C-0090, 1 sheet. Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Canaan Peak Quadrangle. Descriptors: Utah; economic geology; coal; maps; Garfield and Kane Counties; Straight Cliffs Formation; Henderson coal zone; USGS; Canaan Peak Quadrangle; geologic maps; organic residues; sections; explanatory text; structure contour maps; Upper Cretaceous.


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Descriptors: Green River Formation; Uinta Basin; paleoclimate; drainage; topography; varves; occurrence; depositional environment; salt deposition; oil shale.


Descriptors: mudcracks; differential compaction; Green River Formation; sandy fillings; protrude; small dike-like ridges; marlstone; beidellite; dolomite; grain size; carbonate grains; grain shape; wind-blown sand grains; density; depth; Eocene; pressure; saline water; flocculation; uniform distribution; porosity; thickening versus flexing; laboratory experiments; capillary force; shrinkage; swelling.


Descriptors: Green River Formation; Uinta Basin; oil shale; microfossils; Piceance Basin; stratigraphy; structure; depositional environments; fossils.


Descriptors: evolutionary stages; lake; stratigraphic record; chemical and mineralogical composition; lacustrine sediments; ontogeny; climate; deformation; antecedent geologic history; fossil organisms; descriptions of ancient lakes; varied deposits; organic matter; Flagstaff Lake; Lake Uinta; Gosiute Lake; duration; genesis of lake basins; morphometry; waves; biology; productivity; energy relations; ecology of the fauna; Lake Bonneville.


Descriptors: geology; Green River and Wasatch formations; Eocene; Tertiary; topography; structure; faults; interpretation of structure; structural effect of original dip and compaction; stratigraphy; measured sections; deformation; fluvial and lacustrine rocks; Gosiute Lake; trona; shertite; salt beds; paleoclimate; volcanic activity; Daggett and Summit Counties; earlier surveys; analysis of cannell coal; faunal lists; tuffs; table of boreholes drilled for oil and gas.


Descriptors: tropical lakes; copropel; oil shale; lacustrine; Eocene Green River Formation; organic ooze; present-day processes; precursors of rich oil shale; shallow; algal; fecal pellets; microorganisms; resistant to decay; spores; anerobic decay; fatty acids; n-alkanes; qualitative analyses; carotenoid pigments; terpenes; chlorophyll molecule; crustaceans; phytol; oxygenated; change metabolic pattern; digestive processes; calorific value; organic chemistry of algal ooze.


Descriptors: Utah No. 2 mine; Coalville; proximate and ultimate analyses; ash percent; steaming tests; data tables; furnace and boiler efficiencies; rate of combustion; effect of heat evolution; gases; fuel-testing plant.


Descriptors: Israel; organic materials; Utah; geochemistry; genesis; distribution; Green River Formation; Middle East; bitumens; asphalt; coal; organic residues; natural gas; oil shale; Uinta Basin; occurrence.


Descriptors: concurrent downflow; gas-solids transport reactors; pyrolysis; pressure drop; rate of convective heat transfer; Reynolds number; heat and momentum transport; wall-to-gas coefficient; particle velocity; single-particle equation of motion; slip phenomena; frictional pressure drop; gas-to-particle heat transfer; thermocouple; Nusselt number; turbulence; solids loading.


Descriptors: Mesaverde group; Sunnyside; stratigraphy; Blackhawk and Price River formations; unconformities; age; terminology; lithology; Mancos Shale tongues; Aberdeen and Kenilworth members; depositional history; structure; coal beds; splits and variation in thickness; petrography; sedimentology; fence diagram of coal; coal structure.


Descriptors: coal; taxes; coal mining; energy source development; reviewing; recommendations; Arizona, Colorado, Montana, North Dakota, South Dakota, Nebraska, Nevada, New Mexico, Utah, and Wyoming.


Descriptors: coal mining; taxes; surface mining; un-
Brown, D. T., and A. L. Hales, 1974, Velocity Structure
San Juan County; San Juan Coal Field.
Descriptors: crust; seismology; Colorado Plateau; New Mexico; Farmington; Navajo coal mine; Utah; Salt Lake; structure; velocity; profiles; phases; San Juan County.

Garfield, Kane, Iron, and Washington Counties.
Descriptors: Cretaceous and Tertiary flora additions.

Book Cliffs and Wasatch Plateau Coal Fields.
Descriptors: low temperature carbonization; tar; composition; steam carbonization; tar fractions; oils; waxes; resin; chemical analyses; composition; heavy portion; Mesaverde coals; Book Cliffs; Wasatch Plateau; charts.

Book Cliffs and Wasatch Plateau Coal Fields.
Descriptors: low temperature carbonization; light oils; tars; distillation; coke gas; Mesaverde coals; Book Cliffs; Wasatch Plateau; retort; yield; fractions; utilization; charts.

Descriptors: southwestern Colorado; Cretaceous plants; geology; age; significance; systematic descriptions; fossil diagrams.

Descriptors: Cretaceous and Tertiary floras; fossil plant collections; dating of the strata; concept of species; descriptions of new species.


Descriptors: coal mining; oil shales; power generation; synthetic fuels; environmental effects; Utah; industry; synthetic fuels; energy transport; income; industrial plants; land reclamation; legislation; occupations; pipelines; production; regulation; site selection; slurries; sociology; taxes; Uinta Basin.

Descriptors: economic geology; minerals; coal; mining engineering; commerce; geological survey; industries; maps; graphics; Utah, Colorado, North Dakota, South Dakota, Montana, New Mexico, Washington, and Wyoming.

Emery County; Wasatch Plateau and Emery Coal Fields.
Descriptors: coal reserves; late Cretaceous; stratigraphic units; Hiawatha coal seam; high-volatile C bituminous; sulfur; ash; resin.

Sevier and Emery Counties; Wasatch Plateau Coal Field.
Descriptors: economic geology; stratigraphy; coal; Cretaceous; Paleocene; Mancos Shale; Mesaverde Group; North Horn Formation; Flaggstaff Limestone; Star Point Sandstone; Blackhawk Formation; Castle Gate Sandstone; Price River Formation; Wasatch Plateau; organic residues; Cretaceous; Coloradoan;

Descriptors: fossil flora; species of plants; taxonomy; localities; changes in name; new combinations; systematic descriptions; plates.

Sevier and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: sedimentation; stratigraphy; economic geology; environment; Cretaceous; coal; deltas; Sanpete and Sevier Counties; Mesaverde Group; Star Point Sandstone; Blackhawk Formation; Price River Formation; Castlegate Sandstone; Wasatch Plateau; Mesozoic; organic residues; deposits; production; chemical properties; coal seams; thickness; marine environment; shallow-water environment; sandstone; clastic rocks.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: coal-produced power; joint planning among utilities; electrical generating capacity; Four Corners Power Plant; Navajo mine; Navajo reservation; strippable seam; sub-bituminous; heating value; ash moisture; sulfur; Kayenta mine; slurry pipe line; Kaiparowits Plateau; Navajo plant; Lake Powell; Mohave project; south-central Utah; water resources; development; large economic size threshold; exploration program; high volatile bituminous C; Cretaceous; Straight Cliffs; drilling; coal reserves; cost of boiler fuel; liquefaction processes; air pollution; high hydrogen fuel.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: Utah; coal; economic geology; Kane and Garfield Counties; Kaiparowits Plateau; Straight Cliffs Formation; mining; methods; reclamation; environmental geology.


Carbon County; Book Cliffs Coal Field.


Emery and Sevier Counties; Wasatch Plateau and Salina Canyon Coal Fields.


Descriptors: resin; coal; Salina Canyon; Huntington Canyon; varnishes; lacquers; Paleozoic plants; lignite; subbituminous; Cretaceous; Tertiary; conifers; analyses; Byron Howard mine; bug dust; American Fuel mine; Emery County; Ivie, Sevier, and Wilson beds.


Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: geology; stratigraphy; Cretaceous; Wasatch Plateau and Book Cliffs Coal Fields; depositional environments; lithology; formations.


Descriptors: coal; coal mining; history; growth; deposits; demand; production; mining equipment; uses.


Descriptors: energy; environmental constraints; oil shale; coal gasification; lifestyles; politics; economic growth; environment; Arizona, Colorado, Idaho, Montana, New Mexico, Utah, Wyoming, and Nevada.


Descriptors: monosilicate; high silicate ash; finely divided silica; limestone; clinker formation; control.
Descriptors: coal production; coal mining; strip mining; coal; underground mining; steam; Utah.


Descriptors: Arizona; coal mining; fossil-fuel power plants; economic impact; social impact; comparative evaluations; education; electric power; energy source development; migrations; occupations; population dynamics; power generation; rural areas; socioeconomic factors; surface mining; Utah.


Descriptors: coal deposits; coal mining; Book Cliffs, Emery, Kolob, Kanab, and Coalville Coal Fields; production; tonnage; supply; resource development; manufacturing; local economy.


Descriptors: oil shale industry; legal aspects; research programs; shale oil; transport; Bronc event; coal industry; economics; gasification; government policies; hydrogenation; in-situ processing; land leasing; lignite; maps; Piceance Creek Basin; pipelines; processing; Colorado and Utah.


Descriptors: coal industry; oil sand industry; oil shale industry; reviews; legal aspects; research programs; land leasing; maps; planning; lignite; Canada; Utah.


Descriptors: coal industry; reviews; oil sands deposits; maps; oil sand industry; reviews; oil shale industry; legal aspects; oil shale; research programs; Utah; oil sand deposits; oil shale deposits; in-situ retorting; drill cores; land leasing; oil yields; water resources.


Descriptors: coal industry; oil sand industry; oil shale industry; reviews; legal aspects; research programs; coal; dawsonite; in-situ retorting; land leasing; maps; nahcolite; reserves; Utah, Wyoming, and Colorado.


Descriptors: coal industry; oil sand industry; oil shale industry; legal aspects; research programs; reviews; oil sand deposits; maps; coal reserves; hot-water process; oil yields; Kansas, Missouri, Oklahoma, Wyoming, Colorado, and Utah.


Descriptors: coal industry; oil sand industry; oil shale industry; reviews; legal aspects; research programs; Piceance Creek Basin; hydrology; synthetic fuels; reviews; coal reserves; in-situ retorting; land leasing; maps; Washakie Basin; water resources; Montana, Utah, Colorado, and Wyoming; Alberta; Australia.


Descriptors: coal industry; oil sand industry; oil shale industry; reviews; legal aspects; research programs; synthetic fuels; production; chemical analysis; dawsonite; fragmentation; hydrogenation; in-situ retorting; land leasing; maps; nahcolite; oil yields; pressure dependence; water resources; Utah, Wyoming, and Colorado; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; reviews; legal aspects; research programs; dawsonite; land leasing; maps; nahcolite; production; synthetic fuels; waste disposal; water resources; Colorado, Wyoming, and Utah; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; reviews; legal aspects; research programs; Piceance Creek Basin; drill cores; land leasing; maps; synthetic fuels; production; synthetic fuels; water resources; Colorado and Utah; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; reviews; legal aspects; land leasing; maps; production; synthetic fuels; water resources; Colorado and Utah; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; reviews; legal aspects; research programs; Uinta Basin; drill cores; land leasing; maps; synthetic fuels; water resources; Colorado, Utah, and Wyoming; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; reviews; legal aspects; research programs; synthetic fuels; water resources; Colorado, Utah, and Wyoming; Alberta.

Descriptors: coal industry; oil sand industry; oil shale industry; review; legal aspects; research programs; dawsonite; economics; environmental effects; land leasing; maps; synthetic fuels; water resources; Colorado, Utah, and Wyoming.


Descriptors: coal industry; oil sand industry; oil shale industry; reviews; legal aspects; research programs; Bronco event; economics; land leasing; maps; nahcolite; Tosco process; water resources; Colorado, Utah, and Wyoming; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; reviews; legal aspects; research programs; coal gasification; environmental effects; land leasing; maps; water resources; New Mexico, Colorado, Utah, and Wyoming; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; reviews; legal aspects; research programs; environmental effects; land leasing; maps; water resources; Colorado, Utah, and Wyoming; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; review; legal aspects; research programs; dawsonite; land leasing; mining; nahcolite; production; retorting; synthetic fuels; water resources; Montana, Colorado, Utah, and Wyoming; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; review; legal aspects; research programs; dawsonite; land leasing; mining; nahcolite; production; retorting; synthetic fuels; water resources; Montana, Colorado, Utah, and Wyoming; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; review; legal aspects; research programs; economics; environmental effects; land leasing; maps; Piceance Creek Basin; retorting; water resources; Montana, Colorado, Utah, and Wyoming; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; review; legal aspects; research programs; land leasing; maps; Piceance Creek Basin; water resources; Colorado, Utah, and Wyoming; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; review; legal aspects; research programs; energy supplies; planning; physical properties of oil shales; land leasing; maps; petrology; Colorado, Utah, and Wyoming; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; review; legal aspects; research programs; energy supplies; planning; physical properties of oil shales; land leasing; maps; petrology; Colorado, Utah, and Wyoming; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; review; legal aspects; research programs; carcinogenesis; waste disposal; sand tailings; water resources; land leasing; nahcolite; maps; Colorado, Utah, and Wyoming; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; review; legal aspects; research programs; water resources; planning; legal aspects; research programs; oil sand industry; oil shale industry; review; legal aspects; research programs; water resources; Colorado, Utah, and Wyoming; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; review; legal aspects; research programs; land leasing; nahcolite; stratigraphy; water resources; Colorado, Utah, and Wyoming; Alberta.


Descriptors: coal industry; oil sand industry; oil shale industry; review; legal aspects; research programs; land leasing; nahcolite; stratigraphy; water resources; Colorado, Utah, and Wyoming; Alberta.

Descriptors: coal industry; oil sand industry; oil shale industry; review; legal aspects; research programs; coal gasification; land leasing; maps; production; synthetic fuels; water resources; Colorado, Montana, Utah, and Wyoming; Alberta.

Cameron Engineers Inc., 1975a, Oil shale, coal, oil sands. Quarterly report: Synthetic Fuels, Sept. 1975. Descriptors: coal; coal industry; sand industry; oil shale industry; reviews; legal aspects; Alberta; coal gasification; economics; environmental effects; government policies; in-situ processing; land leasing; Lurgi process; maps; Paraho process; research programs; Rio Blanco event; synthane process; Utah; water resources.

Cameron Engineers Inc., 1975b, Oil shale, coal, oil sands. Quarterly report: Synthetic Fuels, Dec. 1975. Descriptors: coal; coal industry; sand industry; oil shale industry; reviews; legal aspects; Alberta; coal gasification; economics; environmental effects; government policies; in-situ processing; land leasing; Lurgi process; maps; Paraho process; research programs; Rio Blanco event; synthane process; Utah; water resources.

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Campbell, E., 1979, Palynology and paleoecology of the Miocene lignites of the Goose Creek Basin, Idaho, Utah, and Nevada: M.S. thesis, Univ. of Utah. Descriptors: pollen flora; Cassia County, Idaho; tuffaceous shales and ash; strata; Beaverdams Formation of Idavada Group; Payette Formation; Jenny Creek Formation; Salt Lake Formation; Cougar Point Formation; conifers; deciduous hardwood genera; spores; aquatic plants; conifer-deciduous forest ecotone; temperate climate; precipitation; R-mode factor analysis; pollen diagram; grant lignite; climatic analysis; Tertiary vegetational development; angular unconformity; Sucker Creek flora of southeastern Oregon.

Campbell, J. A., 1969, Upper Valley oil field, Garfield County, Utah: Four Corners Geol. Soc. Guidebook., p. 195-200. Garfield County; Kaiparowits Plateau Coal Field. Descriptors: Upper Valley oil field; Garfield County; Kaiparowits basin; structural setting; stratigraphy; tectonic-location map; reservoir; Kaibab Limestone; well data; history of development; subsurface structure map; correlated resistivity logs.


Caplan, W. M., 1964, In eastern Arkansas exploration is shifting to Paleozoic prospects: World Oil Vol. 158, No. 4, p. 72, 75-76, 84. Descriptors: coal; Utah and Arkansas; petroleum; economic geology; maps; Uinta basin; exploration; Paleozoic; Cretaceous.


Carter, G. W., 1939, Engineering factors relating to the production of smokeless fuel, oil, and gas from Rocky Mountain coals by low temperature carbonization: Utah Conservation and Research Foundation.
Salt Lake County.

Descriptors: Great Salt Lake; Emigration Canyon; smoke; atmosphere; polluted; soot; noxious vapors; bituminous coal; combustion; carbon; tars.

Descriptors: coal preparation plants; design; coal mining; underground mining; Utah.

Descriptors: longwall mining; mine haulage; coal mining; conveyors; underground mining; Utah.

San Juan County; La Sal Coal Field; La Sal Quadrangle.
Descriptors: geology; uranium; La Sal Quadrangle; San Juan County; vanadium; Salt Wash member; Jurassic; structure; plastic evaporite masses; laccolithic complexes; salt anticlines; ore; discovery; lithology; paleostream channels; sedimentary structures; mines; exploration drilling; roll deposits; replacement bodies; localization of minerals; exploration guides; stratigraphy; low-rank bituminous coal; thin seams; Dakota Sandstone; Cretaceous; occurrence; Mitchell's coal mine; physical characteristics; ash; fusain; resin; peat; marcasite; coal beds of economic interest.

Descriptors: energy source development; economic impact; social impact; environmental impact; Colorado River Basin; coal gasification; forecasting; power generation; production; shale oil; coal; uranium; Arizona, Colorado, New Mexico, Utah, and Wyoming.

Kane County; Kolob Coal Field.
Descriptors: coal; Utah; economic geology; maps; Orderville-Glendale area; geologic and structural.

Kane County; Kolob Coal Field.

Determines: Green River Formation; southeast Uinta Basin; fuel resources; geology; geography; stratigraphy; lithologic descriptions; economic geology; oil shale; gismonite; bituminous sandstones; oil and gas; reserves.

San Juan County; San Juan Coal Field.
Descriptors: quantitative studies; Bridge Creek flora; paleobotanist; climate; topography; sedimentation; volcanic shales; modern redwood forest; species list; description of fossil locality; relative abundance; comparison with modern environment and plants; correlation formula; statistics; error of prediction; dominance.

Descriptors: Utah; automated data processing; sedimentary rocks; economic geology; organic residues; coal; Ferron Sandstone Member; Mancos Shale; coal rank; automated image analysis; Cretaceous; Mesozoic; petrography.

Descriptors: solvents; leaching; extractive process; coal composition; properties; organic chemicals; dissolution process; equations; boiling point; exhaustion; kinetic properties; mechanism; government sponsored project.

Descriptors: microwave pyrolysis; poly-nuclear aromatic compounds; rapid gasification process; rapid vaporization; thermal decomposition; volatility; hydrocarbons; thermodynamics; equilibrium reactions; gases; semi-coke; thermal rupture of lamellae; high temperature carbonization tar; Le Chatelier's principle; secondary discharge reactions; coals.

Descriptors: kinetics of coal extraction; tetralin; ultrasonic waves; Spring Canyon Mine; first-order rate equation; enthalpy of activation; free energy of activation; ultrasonic irradiation; decomposition.


Clark, F. R., 1918, Geology of the Lost Creek Coal Field, Morgan County, Utah: U.S. Geol. Surv., Bull., No. 691-L, p. 311-312. Morgan County; Coalville Coal Field.

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Descriptors: economic geology; coal; Farnham area; Carbon County; topography; physiography; stratigraphy; lithologic descriptions; maps.


Descriptors: Castlegate, Wellington, Sunnyside Quadrangles; Carbon County; economic geology; physiography; geology; stratigraphy; structure; coal; physical and chemical characteristics; coal contracts; reserves; history; tonnage estimates; section; maps.


Carbon County; Book Cliffs Coal Field.

Descriptors: longwall mining; coal mines; mine haulage; ventilation; safety; Utah.


Emery Coal Field.

Descriptors: open-marine; interdistributary plain; barrier island; lagoon; lower deltaic plain; sedimentary rocks; sedimentary structures; sedimentary petrology; environmental analysis; biogenic structures; Emery County; Emery Sandstone; shale; coquina; mudstone; coal; marine; barrier; Ferron Sandstone; Ichnofossils; Cretaceous; Turonian.


Coal Age, 1980, Longwall mining has come on strong: Coal Age, May 80, Vol. 85, No. 5, pt. 141, 4 p.

Descriptors: longwall mining; coal production; coal mining equipment; Utah and Colorado.


Descriptors: legislative production management; reserve estimation; coal; Utah.


Descriptors: coal; legislation; exploration; management.


Descriptors: coal seams; degassing; methane; recovery; chemical composition; depth; desorption; drill cores; feasibility studies; hydraulic fracturing; permeability; Utah.

Descriptors: acetylene; production; coal gasification; temperature effects; ethylene; production; methane; production; bituminous coal; coal fines; entrainment; hydrogen; medium pressure; nitrogen; very high temperature; volatility; Utah.


Descriptors: Cretaceous formations; boundaries and major divisions; historical background of classification; standard reference sequence; zonal indices; fossils; faunal relations; stratigraphy; map; sedimentary; correlation charts; lexicon; nomenclature; chronologic relations; sources.

Cohenour, R. E., 1963a, Coal resources of part of the Alton area, Kane County, Utah: Utah Geol. and Min. Surv., Rept. Inv., No. 2, 23 p., maps.
Kane County; Alton Coal Field.

Descriptors: coal resources; Alton Coal Field; Kane County; Tropic Shale; Cretaceous; upper zone; lower zone; subbituminous A; indicated and measured reserves; overburden; open pit mine; underground operation; yield per acre; oxidation factor (burn out); slurry pipeline; water; electric generating plant; exploration; lieu lands; mineral lands; Smirl mine; geography and geology; stratigraphy; coal bed data; thickness estimates; resource tabulation; maps.

Cohenour, R. E., 1963b, Coal resources of the Antimony-John's Valley area, Garfield County, Utah: Utah Geol. and Min. Surv., Open-File Rept., No. 1, 10 p., maps.
Garfield County; Kaiparowits Plateau Coal Field.

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Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

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Emery County; Wasatch Plateau and Emery Coal Fields.

Cohenour, R. E., 1966a, Appraisal of a proposed selection of coal lands, Book Cliffs area between Whitmore Canyon and Soldier Creek, Carbon County, Utah: Utah Geol. and Min. Surv., Rept. Inv., No. 25.
Carbon County; Book Cliffs Coal Field.

Cohenour, R. E., 1966b, Appraisal of a proposed selection of coal lands in the Emery Coal Field of Emery and Sevier Counties, also appraisal of selected phosphate lands in Rich and Uintah Counties, Utah: Utah Geol. and Min. Surv., Rept. Inv., No. 28, 11 p., maps.
Emery, Sevier, Rich, and Uintah Counties.


Descriptors: coal; mining; pollution; land reclamation.


Descriptors: U.S. Fuels magazine; coal production; market; home uses; comparison; economic value.

Washington County; Harmony Coal Field.

Descriptors: economic geology; coal; Harmony Coal Field; Grant Ranch field; descriptive geology; chemical analysis; tables.

Washington County.

Descriptors: Utah geology; stratigraphy; Cretaceous; Tropic Formation; descriptive geology.

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Descriptors: palm scene; palm classification; palm pioneers; crown; trunk; root; spine; inflorescence; flower; fruit; structure and anatomy; seed and seedling; rattans; geography; evolution; generic notes.

Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: Ferron Sandstone; Castle Valley; paleogeography; depositional environment; fluvial facies; estimation of fluvial characteristics; sedimentation.

Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: Utah; sedimentation; Cretaceous; sedimentary rocks; sedimentary petrology; deposition; environmental analysis; Mancos Shale; Ferron Sand-
stone Member; Castle Valley; Last Chance Delta; deltas; channels; prodelta; cyclic; shale; carbonaceous shale; coal; siltstone; sandstone; lithostratigraphy; lithofacies; bioturbation.


Descriptors: Utah; sedimentary rocks; sedimentation; Cretaceous; sedimentary petrology; environment; environmental analysis; Mancos Shale; Ferron Sandstone Member; Castle Valley; deltas; marshes; swamps; deposition; coal; sandstone; Last Chance Delta; Vernal Delta.


Descriptors: Arizona, New Mexico, Utah, and Colorado; environmental geology; reclamation; surface mines; Indian lands; controls; legislation; programs; coal; organic residues; deposits; production.


Descriptors: coal mining; forecasting; legislation; government policies; leasing; profits; Montana, Arizona, Utah, Wyoming, New Mexico, North Dakota, and Colorado.


Descriptors: Asphalt Ridge area; Vernal area; bituminous sandstones; physiography; geology; stratigraphy; asphalt saturation; origin and time of accumulation; economics; mining methods.


Descriptors: bituminous sands; Uinta Basin; Sunnyside area; stratigraphy; structure; nature; deposits; tables; charts.


Descriptors: Uinta Basin; bituminous sandstones; Sunnyside area; Asphalt Ridge; White Rocks area; P. R. Springs deposit; Chapita wells area; Dragon-Asphalt wash area; Deep Creek area; mining economics; methods.


Descriptors: Uinta Basin; bituminous sandstone; thermal recovery method; fire flooding; steamaustic injections; production; Sunnyside; Asphalt Ridge; Whiterocks; Green River desert; reserves.

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Descriptors: bituminous sandstone; thermal recovery; Sunnyside; Asphalt Ridge; Whiterocks; Green River Desert; P.R. Springs; Chapita Wells; Dragon-Asphalt Wash; Uinta Basin; production.


Descriptors: resin-bearing coals; Salina Canyon; Huntington Canyon; Cretaceous plants; lump resin; Byron Howard mine; bug dust; American Fuel mine; Ivie bed; Sevier bed; Wilson bed; tables; comparisons.


Descriptors: sedimentary rocks; economic geology; organic residues; deposits; coal; coal seams; Cretaceous; Mesozoic; resinite; macerals; optical properties; fluorescence; reflectance.


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Descriptors: Utah; sedimentation; Colorado; sedimentary rocks; paleogeography; sedimentary petrology; environment; organic residues; Cretaceous; lagoonal environment; coal; Colorado Plateau; Mesozoic; lagoons; Mancos Sea; Rocky Mountain Sea way; transgression; regression; deltas; palynomorphs; distribution.


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Dames and Moore, 1980d, Coal resource occurrence and coal development potential maps of the NE quarter Wagon Box Mesa Quadrangle, Garfield County, Utah: U.S. Geol. Surv., Open-File Rept., No. 80-122, 42 p.

Descriptors: economic geology; coal; maps; Wayne and Garfield Counties; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Mount Ellen Quadrangle.

Descriptors: economic geology; coal; maps; Wayne and Garfield Counties; organic residues; resources; economic geology maps; explanatory text; inventory; Wagon Box Mesa Quadrangle.

Descriptors: coal; combustion; desulfurization; coal mining; land reclamation; air pollution; chemical analysis; coal preparation; coal reserves; fly ash; legislation; Arizona, Colorado, Montana, New Mexico, North Dakota, Oregon, South Dakota, Utah, and Washington; sulfur; sulfur dioxide; surface mining; trace amounts; transport; underground mining.

D'alesio, G. J., 1977, Western energy/environment monitoring study; Planning and Coordination summary: Environmental Protection Agency, Rept., No. EPA/600/7-77/024, 25 p.


Sanpete and Iron Counties; Cedar City and Kanara (Kolob-Harmony) Coal Fields.


Sanpete and Iron Counties; Cedar City and Kanara (Kolob-Harmony) Coal Fields.

Descriptors: analyses; calorific values; Cedar City and Kanara (Kolob-Harmony) Coal Fields; iron deposits; Cretaceous; Tertiary; description of mines and coal beds; coal sections; Grass Creek mine; Pleasant Valley; Sanpete and Iron Counties.

Descriptors: analyses; calorific values; Cedar City and Kanara (Kolob-Harmony) Coal Fields; iron deposits; Cretaceous; Tertiary; description of mines and coal beds; coal sections; Grass Creek mine; Pleasant Valley; Sanpete and Iron Counties.

Descriptors: economic geology; coal; maps; Wayne and Garfield Counties; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Mount Ellen Quadrangle.

Descriptors: economic geology; maps; coal; Garfield County; organic residues; resources; economic geology maps; explanatory text; inventory; Wagon Box Mesa Quadrangle.


Garfield County; Henry Mountains Coal Field; NE quarter Mt. Pennell 15-min. Quadrangle.

Descriptors: coal; lithostratigraphy; geochemistry; fossil fuels; Utah.

Descriptors: economic geology; coal; maps; Wayne and Garfield Counties; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Notom Quadrangle.

Descriptors: economic geology; maps; coal; Garfield County; organic residues; resources; economic geology maps; explanatory text; inventory; Wagon Box Mesa Quadrangle.


Wayne County; Henry Mountains Coal Field; NW quarter Factory Butte 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Wayne County; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Factory Butte Quadrangle.

Wayne and Garfield Counties; Henry Mountains Coal Field; NW quarter Mt. Ellen 15-min. Quadrangle.
Descriptors: Utah; economic geology; coal; maps; Wayne and Garfield Counties; organic residues; economic geology maps; explanatory text; inventory; Mt. Ellen Quadrangle.

Garfield County; Henry Mountains Coal Field; NW quarter Mt. Pennell 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Garfield County; organic residues; resources; economic geology maps; explanatory text; inventory; Mount Pennell Quadrangle.

Wayne and Garfield County; Henry Mountains Coal Field; NW quarter Notom 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Garfield County; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Notom Quadrangle.

Garfield County; Henry Mountains Coal Field; SE quarter Mt. Ellen 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Garfield County; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Mount Ellen Quadrangle.

Garfield County; Kaiparowits Plateau Coal Field; SE quarter Mt. Pennell 15-min. Quadrangle.
Descriptors: economic geology; maps; coal; Garfield County; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Mount Pennell Quadrangle; thenardite-glauberite group.

Garfield County; Henry Mountains Coal Field; SE quarter Notom 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Garfield County; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Notom Quadrangle.

Garfield County; Henry Mountains Coal Field; SW quarter Mt. Ellen 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Garfield County; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Mount Ellen Quadrangle.

Garfield County; Henry Mountains Coal Field; SW quarter Mt. Pennell 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Garfield County; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Mount Pennell Quadrangle.

Duchesne, Uintah, and Wasatch Counties.
Descriptors: stratigraphic and facies relationships; Green River Formation; Uinta Formation; Duchesne, Uintah, and Wasatch Counties; correlation; tuff beds; lacustrine; playa; mud-flat; saline facies; Eocene; oil shale; lateral facies changes; correlated columnar sections; description of members; lithology.

Dane, C. H., 1955, Stratigraphic and facies relationships of the upper part of the Green River Formation and the lower part of the Uinta Formation in Duchesne,
Uintah, and Wasatch Counties, Utah: U.S. Geol. Surv., Oil and Gas Inv., Chart OC 52, 2 sheets.
Duchesne, Uintah, and Wasatch Counties.

Daniel, R. G., 1980, Markets for western coal: Rocky Mountain Coal Mining Institute, Vail, CO, Proceedings of the 76th regular meeting, p. 31-45.

Descriptors: coal; production; reserves; transport; deposits; bituminous; subbituminous; supply and demand; thickness; slurry pipelines; market; Montana, Colorado, Arizona, New Mexico, North Dakota, Wyoming, and Utah.

Daughters of Utah Pioneers, 1939, Mining in the West: Daughters of Utah Pioneers Historical Pamphlet.
Wasatch, Sanpete, and Iron Counties.

Descriptors: Coalville discovery; church mines; Scofield; Winter Quarters; Wales; Sanpete and Iron Counties; coking; Deseret Iron Co.; prospecting; Park City; Tintic.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: Circle Cliffs; Garfield and Kane Counties; geology; physiography; stratigraphy; lithologic descriptions; structure; uranium deposits; prospects; metalliferous deposits; maps; tables.


Duchesne and Uintah Counties.

Descriptors: Uinta Basin; Green River Formation; algal fossils; petrographic studies; algal diversity; oil shale.

Davis, F. D., and H. H. Doelling, 1976a, Drilling of low sulfur bituminous coals in several areas of the Wasatch Plateau Coal Field: Utah Geol. and Min. Surv., Open-File Rept., No. 17, 71 p., maps, logs.
Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Wasatch Plateau coal drilling; stratigraphy; structure; lithologic descriptions; lithologic logs; coal zone descriptions; maps.


Descriptors: Utah coal fields; geology; stratigraphy; structure; depositional environment; coal samples; gas desorption; coal rank; chemical analysis; core data; maps.

Emery County; Wasatch Plateau Coal Field.

Descriptors: sedimentary rocks; tectonics; economic geology; areal geology; lithostratigraphy; structure; Emery County; Masuk Shale; Star Point Sandstone; Flagstaff Formation; Price River Formation; North Horn Formation; Blackhawk Formation; coal; maps; Cretaceous; sedimentary cover; Wasatch Plateau; Johns Peak; North Horn Mountain; Trail Mountain; organic residues; deposits; resources; geologic maps; stratigraphy; Mesozoic; Paleocene; Paleogene; Tertiary; Cenozoic; quality; reserves; faults; folds.

Carbon and Emery Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Utah coals; methane content; Sunnyside No. 1 & 3 mines; Wasatch Plateau and Book Cliffs Coal Fields; coal beds; thickness; gas content; rank; chemical analysis; core samples; maps.

Carbon and Emery Counties.

Descriptors: coal; physical properties; coking characteristics; geology; petrography; carbonization; chemical analysis; tests; Carbon and Emery Counties; tables.

Carbon County; Book Cliffs Coal Field.

Descriptors: coal; chemical analysis; plasticity; sample preparation; swelling; coal gas; coal tar; coal tar oils; coke; chemical analyses; coke; physical properties; Alaska, Washington, and Utah; British Columbia; geology; mixtures; Volatile matter.

Wasatch Plateau Coal Field.
**Descriptive:** Ferron Sandstone; stratigraphy; Wasatch Plateau; measured sections; cores; natural gas exploration; descriptions of formations; depositional environment; paleogeography.


**Descriptors:** coal; sulfur content; coke use; reserves; rank; production; utilization; nationwide analyses; tables; graphs; charts.


**Descriptors:** Wyoming, Colorado, and Utah; uranium; petroleum; natural gas; coal; economic geology; mineral resources; guidebook.


Emery County; Emery Coal Field; Emery 2 Quadrangle.


Carbon County; Wasatch Plateau Coal Field.

**Descriptors:** coal mining; history; Scofield No. 4 mine; Winter Quarters; explosion; disaster.


Garfield County; Kaiparowits Plateau Coal Field.

**Descriptors:** coal; Cretaceous; Jurassic; economic geology; maps; mineral resources; stratigraphy; Escalante-Upper Valley area; occurrence; Straight Cliffs sandstone coal sections.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

**Descriptors:** Straight Cliffs Formation; coal; Cretaceous; Carcass Canyon; Kaiparowits Plateau; outcrops; zones; seams; mineable thickness; reconnaissance; coal sections; samples; recovery; High Volatile C bituminous.


San Juan County; San Juan Coal Field.

**Descriptors:** San Juan County; mineral resources; coal; low-rank bituminous; Dakota Sandstone.


Kane and Garfield Counties; Alton Coal Field.

**Descriptors:** Alton Coal Field; location; geography; physiography; stratigraphy; structure; coal deposits; mining; exploration; production; reserves; quadrangle descriptions; maps; tables.


Carbon County; Book Cliffs Coal Field.

**Descriptors:** Book Cliffs Coal Field; location; geography; geology; mineral resources; stratigraphy; structure; coal deposits; mining; proposals; reserves; chemical analysis; physical properties; land control; lithologic descriptions; quadrangle reports.


Sevier, Carbon, Emery, and Sanpete Counties; Wasatch Plateau, Book Cliffs, and Emery Coal Fields.

**Descriptors:** coal; economic geology; Sevier, Carbon, Emery, and Sanpete Counties; Wasatch Plateau, Book Cliffs, and Emery Coal Fields; central; reserves; production; chemical properties.


Sevier and Sanpete Counties; Salina Canyon, Sterling, and Wasatch Plateau Coal Fields.

**Descriptors:** Utah; coal; economic geology; Sevier and Sanpete Counties; Wasatch Plateau; occurrence; stratigraphy; quality; production; reserves; mines.


Summit, Morgan, and Salt Lake Counties; Coalville Coal Field.

**Descriptors:** Coalville Coal Field; location; geography; physiography; stratigraphy; structure; coal deposits; mining; proposals; reserves; chemical analysis; physical properties; land control; lithologic descriptions; quadrangle reports.

Box Elder County; Goose Creek Lignite Field.
Descriptors: Goose Creek Lignite Field; location; geography; physiography; stratigraphy; structure; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; lithologic descriptions; quadrangle reports.

Emery, Wayne, and Garfield Counties; Henry Mountains Coal Field.
Descriptors: Henry Mountains Coal Field; location; geography; physiography; stratigraphy; structure; coal deposits; mining; exploration; production; reserves; chemical analysis; physical properties; land control; lithologic descriptions; quadrangle reports.

Iron, Washington, and Kane Counties; Kolob-Harmony Coal Field.
Descriptors: Kolob-Harmony Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; maps.

San Juan County; La Sal-San Juan Coal Fields.
Descriptors: La Sal-San Juan Coal Fields; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; maps.

Morgan County; Lost Creek Coal Field.
Descriptors: Lost Creek Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; maps.

Wales, Mt Pleasant, Sterling, and Salina Canyon Coal Fields.
Descriptors: Sevier-Sanpete Region; Wales, Mt Pleasant, Sterling, and Salina Canyon Coal Fields; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; maps.

Emery and Grand Counties; Sego Coal Field.
Descriptors: Sego Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; quadrangle reports; maps.

Uintah County; Vernal Coal Field.
Descriptors: Vernal Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; quadrangle reports; maps.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.
Descriptors: Wasatch Plateau Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; quadrangle reports; maps.

Sevier and Emery Counties; Emery Coal Field.
Descriptors: coal; Cretaceous; economic geology; Sevier and Emery Counties; Ferron Sandstone; Blackhawk Formation; Emery Coal Field; deposits; reserves; composition; moisture content.

Descriptors: coal; economic geology; reserves; production; chemical properties.


Descriptors: Rocky Mountains; Utah; economic geology; coal; organic residues; resources; reserves; production.

Doelling, H. H., 1977b, Occurrence of petrified wood in coal, Kane County, Utah: Utah Geol. and Min. Surv., Utah Geol., 4: 1, p. 29-34.

Kane County.

Descriptors: Utah; Plantae; Cretaceous; paleobotany; occurrence; Kane County; Dakota Formation; fossil wood; Kaiparowits Plateau; sedimentary rocks; coal; silification; anomalies.


Descriptors: coal; sedimentary rocks; economic geology; environmental analysis; regional; Green River Basin; Uinta Basin; Wasatch Plateau; Kaiparowits Plateau; Henry Mountains; Paunsaugunt Plateau; Kolob Plateau; deposits; distribution; composition; ash; sulfur; mining geology; Mississippian; Cretaceous; Tertiary; paralic environment; swamps; transgression; cyclic processes; lithofacies; clastic rocks; terrigenous.


Descriptors: coal deposits; ash; chemical composition; coal; degassing; leading abstract; methane; quantity ratio; core samples; coal fields; gas content; direct methods; High Volatile A or B rank; lower ranked coals; coal desorption; outcrops; mined areas; encasing rock; Book Cliffs; aeromagnetic contours; Wasatch Plateau.

Doelling, H. H., 1980, Geology and mineral resources of Box Elder County, Utah: Utah Geol. and Surv., Rept. Inv., No. 120, 6 p., maps.

Emery County; Wasatch Plateau Coal Field.

Descriptors: sedimentary rocks; economic geology; clastic rocks; coal; sandstone; organic residues; Trail Mountain coal mine; Emery County; genesis.


Descriptors: coal fields; historic growth of coal industry; production; location; reserves; quality; Utah's coal budget.


Emery and Sevier Counties; Emery Coal Field.

Descriptors: Emery Coal Field; state coal land acquisition; coal resources; coal quality; resource evaluation; chemical analysis; recoverable reserves.


Book Cliffs, Wasatch Plateau, Emery, Sego, Kaiparowits Plateau, and Alton Coal Fields.

Descriptors: Utah coals; methane content; gas composition; coal analysis; Book Cliffs, Wasatch Plateau, Emery, Sego, Kaiparowits Plateau and Alton Coal Fields; Sunnyside coal zone; physical properties; depositional environment; maps.


Carbon, Emery, and Sevier Counties; Wasatch Plateau Coal Field.

Descriptors: coal deposits; ash; chemical composition; coal; degassing; leading abstract; methane; quantity ratio; core samples; coal fields; gas content; direct methods; High Volatile A or B rank; lower ranked coals; coal desorption; outcrops; mined areas; encasing rock; Book Cliffs; aeromagnetic contours; Wasatch Plateau.


Carbon County; Book Cliffs Coal Field.

Descriptors: economic geology; coal; Carbon County; Blackhawk Formation; organic residues; lithostratigraphy; deposits; horizontal drilling tests; methane drainage; coal seam study; coal bed characteristics; gas desorption anomalies; coal bed discontinuities; separate gas reservoirs; subseams; faults; proximate and ultimate heat value; Geneva, Columbia, and Sunnyside mines; U.S. Steel.


Descriptors: economic geology; coal; organic residues; methane; organic materials.

Descriptors: contour strip mining proposal; Clear Creek area; reclamation proposals; economic considerations; precipitation tables; environmental concerns.


Descriptors: Rocky Mountain coal; geology; depositional environments; mining; engineering; computer applications; coal petrology; coal resources; reserves; field trip; symposium.


Descriptors: Rocky Mountain coal; geology; depositional environments; mining; engineering; computer applications; coal petrology; coal resources; reserves; field trip; symposium.


Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry's Fork, and Lost Creek Coal Fields; Goose Creek lignite field.

Descriptors: Cretaceous; coal; lignite; economic geology; lithostratigraphy; Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry's Fork, and Lost Creek Coal Fields; Goose Creek lignite field; occurrence.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.


Descriptors: coal; economic geology; lithostratigraphy; Alton, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; properties; reserves.


Uintah County; Vernal Coal Field.


Emery and Sanpete Counties; Wasatch Plateau Coal Field; Rilda Canyon Quadrangle.

Descriptors: well-logging; economic geology; coal; Emery and Sanpete Counties; Rilda Canyon Quadrangle; Wasatch Plateau; organic residues; coal fields; sections; USGS.


Duchesne and Uintah Counties.

Descriptors: Green River Formation; intracratonic lakes; Uinta Basin; Piceance basin; stratigraphy; depositional environment; oil shale resources.


Descriptors: coal liquefaction; coed process; production; synthetic petroleum; chemical composition; fractionation; coal; distillation; diagrams; tables; Utah.

Dorman, J. E., 1974, The Pleasant Valley Coal Company store and office building: Castle Gate, Utah.

Carbon County; Book Cliffs Coal Field.

Descriptors: Pleasant Valley Coal Company Store; history; historical building; restoration; mining history.


Descriptors: coal; origin; petrography; resources; properties; reactions; constitution; changes on heating; commercial importance; analysis and general testing; classification systems; mining; preparation; storage; transport; uses; world trade; bibliography; graphs; charts; map.


Descriptors: public highways; traffic volume; road.
surfacting; new products; crude oil; smokeless fuel; industry; low temperature carbonization; analysis.


**Duncan, D. C.,** 1944b, The Mt. Pleasant Coal Field, Sanpete County, Utah: U.S. Geol. Surv., coal map. Sanpete County; Wasatch Plateau Coal Field.


Descriptors: petroleum; natural gas; coal; oil shale; economic geology; energy sources; regional; resources; research; technology; stimulation; programs; federal; policy; Hanna; gasification; in situ; processes; experimental studies; Colorado, Wyoming, and Utah.


Descriptors: engineering geology; land subsidence; causes; underground installations; mines; coal; rates; Utah, Colorado, and Wyoming, Powder River Basin.


Carbon County.

Descriptors: Utah and Colorado; mining geology; engineering geology; evaluation; land subsidence; Carbon County; coal; organic residues; mines; controls; Somerset; Geneva mine; overburden; stress.


Carbon and Emery Counties; Book Cliffs Coal Field.


Carbon and Emery Counties; Book Cliffs Coal Field.


Carbon and Emery Counties; Book Cliffs Coal Field.


Carbon and Emery Counties; Book Cliffs Coal Fields.

**Dutton, C. E.,** 1880, The geology of the high plateaus of Utah: U.S. Geog. and Geol. Surv., Rocky Mountain Region.


Carbon and Emery Counties; Book Cliffs Coal Field.

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**Eardley, A. J., and R. E. Cohenour,** 1963, Coal resources of the Antimony, John's Valley area, Garfield County, Utah (northwest extension of Kaiparowits Coal Field): Utah Geol. and Min. Surv., Rept. Inv., No. 1.

Garfield County; Kaiparowits Plateau Coal Field.


Descriptors: coal; transportation systems; comparative evaluations; computer calculations; cost; data; pipelines; slurries; systems analysis; Arizona, Colorado, Montana, New Mexico, North Dakota, South Dakota, Utah, and Wyoming.

**Economic Development Administration, Program Analysis Div.,** 1977, Title IX program evaluation, Baseline case study of the Price River Water Improvement

Descriptors: federal assistance programs; economic development; grants; Counties; problem solving; profiles; economic factors; employment; investments; government policies; economic impact; evaluation; commerce; water supply; assessments: population growth; coal deposits; Utah.


Carbon County; Wasatch Plateau Coal Field.

Descriptors: Clear Creek gas field; Carbon and Emery Counties; early coal exploration; stratigraphy; Cretaceous; correlations; structure; natural gas exploration; drilling techniques; production; estimated reserves.


Emery and Sevier Counties; Willow Spring Quadrangle.


Sevier and Emery Counties; Emery Coal Field; Willow Springs Quadrangle.


Descriptors: catalyst temperature; pressure; variation of coal-oil ratio; particle size; products distribution; kinetic study; acidic and basic components; fractional distillation; aromatics; olefins; saturates; conversion yield; Gerland; Rock Spring; Spring Canyon; Wellington; Coal Basin; North Thompson Creek; catalyst effectiveness; cobalt molybdate/cobalt nickel tungsten sulfide; iodine; hydrogen pressure; second-order rate equation; time-yield curves; activation energy; C1-C4; asphaltene.


Descriptors: thermal decomposition; Spring Canyon coal; helium atmosphere; thermogravimetric balance; Volatile matter evolution; tar; second-order equations; activation energies; entropy; surface site reactions; weight loss-time curves; non-Arrhenius relation; differential thermal analysis curve; chemical analysis; chromatographic analysis of pyrolysis.


Descriptors: fossil-fuel power plants; planning; fuel; cost; coal; legal aspects; operation; ownership; Utah.


Emery County; Emery Coal Field; Emery East Quadrangle.

Descriptors: well-logging; economic geology; applications; coal; Emery County; general; organic residues; radioactivity; gravity methods; geophysical methods; density; deposits; sections; boreholes; Emery East Quadrangle; exploration.


Emery County; Wasatch Plateau Coal Field; The Cap Quadrangle.

Descriptors: stratigraphy; economic geology; Cretaceous; coal; Emery County; Blackhawk Formation; Mesozoic; The Cap Quadrangle; sections; organic residues; deposits.

Ellis, E. G., 1981a, Geologic map and coal sections of The Cap Quadrangle, Emery County, Utah: U.S. Geol. Surv., Open-File Rept., No. 81-0612, 3 sheets.

Emery County; Wasatch Plateau Coal Field; The Cap Quadrangle.

Descriptors: Utah; economic geology; coal; maps; Emery County; USGS; The Cap Quadrangle; organic residues; sections; geologic maps; explanatory text.


Sanpete and Emery Counties; Wasatch Plateau Coal Field; Ferron Canyon Quadrangle.

Descriptors: Utah; economic geology; coal; maps; Sanpete County; Emery County; USGS; Ferron Canyon Quadrangle; sections; geologic maps; organic residues.


Emery County; Wasatch Plateau Coal Field; Mahogany Point Quadrangle.

Descriptors: well-logging; economic geology; coal; Emery County; Wasatch Plateau; organic residues; coal fields; sections; Mahogany Point Quadrangle; USGS.

Western States Water Council, Salt Lake City.


Descriptors: coal mining; oil shale industry; environmental impacts; water quality; monitoring; air pollution abatement; Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.


Descriptors: coal mining; environmental impacts; oil shale industry; environmental impacts; water quality; monitoring; air pollution abatement; ground water; Colorado, North Dakota, South Dakota, Utah, and Wyoming.


Descriptors: coal industry; environmental impacts; aerosol monitoring; air pollution; air quality; rural areas; seasonal variations; Utah, Colorado, and New Mexico.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.


Book Cliffs and Sego Coal Fields.

Descriptors: Book Cliffs Coal Field; Garfield County; location; geography; geomorphology; physiography; stratigraphy; outcrops; Cretaceous; Tertiary; structure; natural gas; coal; occurrence; depositional environment; Anchor, Palisade, and Carbonera coal zones; physical characteristics; chemical analyses; quantity; mining; development; production; township descriptions; lithologic descriptions; reserves; tables; graphs; charts.


Descriptors: coal mines; uranium ore deposits; phosphate deposits; surface mining; site surveys; environmental impacts; land reclamation; vegetation; government policies; legislation; geologic maps; water quality; topography; land use; Arizona, New Mexico, Utah, Wyoming, Idaho, North Dakota, and South Dakota.

Descriptors: nuclear fission; electric power generation; technology; commercial plants; coal-fired thermal power plants; demand; fuel costs; economics; fuel reserves; socioeconomic factors; depressed areas; future demand.


Descriptors: energy sources; water resources; environmental geology; economic geology; pollution; Great Basin; Colorado River Basin; Colorado, Utah, New Mexico, Arizona, Nevada, Idaho, and California; hydroelectric power; coal; natural gas; petroleum; nuclear power; production; requirements; utilization; processing; water; thermal pollution; solid waste; ash slurry; causes.


Descriptors: geology; engineering; rock mechanics; petrology; petrography; coal mines; mining; Utah.


Descriptors: mining engineering; position finding; radio communication; coal mines; radio transmitters; radio receivers; safety engineering; electromagnetic fields; Utah.


Descriptors: Cretaceous; Tertiary; sedimentary rocks; mineral resources; stratigraphy; lithofacies; Colorado Plateau; Colorado, Utah, New Mexico, and Arizona; lithostratigraphy; biostratigraphy; environmental analysis; petroleum; gas; coal; water resources.


Garfield and Kane Counties; Kaiparowits Plateau.

Descriptors: power demand; fossil-fuel power plants; economics; feasibility studies; forecasting; Arizona, California, and Utah; coal; experimental demand; power generation.

mining; Colorado, Idaho, Montana, New Mexico, North Dakota, South Dakota, Wyoming, and Utah.


Descriptors: economic geology; coal; proximate analysis; ultimate analysis; nationwide analyses; calorific value; physical properties; rank; coal fields; tables.


Carbon, Emery, Sevier, Summit, Uintah, and Wasatch Counties.
Descriptors: sampling and analytical methods; car samples; mine sampling; determination of ash, moisture, Volatiles, carbon, sulfur, hydrogen, nitrogen and calorific values; proximate and ultimate analyses; descriptions of samples; Carbon, Emery, Sevier, Summit, Uintah, and Wasatch Counties; Hiawatha, Knight, Sunnyside, Browning, Casper, Williams, Hogan, Kearns and Duggins, Rees-Grass, Superior, Wasatch, Blue Bell, Green, Reynolds, Winchester, and Cummings Mines; sections.

Carbon, Emery, Grand, Morgan, Sanpete, and Summit Counties.
Descriptors: coal analyses; mine samples; car samples; fiscal year; proximate and ultimate analyses; Carbon, Emery, Grand, Morgan, Sanpete, and Summit Counties; lithologic descriptions; tables.

Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kawai parowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities, tables.


Fife, Arthur, 1922, Duty-of-water investigations on Coal Creek, Utah: Utah State Agricultural College Agricultural Experiment Station, Bull., No. 181.
Carbon County; Book Cliffs Coal Field.
Descriptors: water investigations; Coal Creek; stream flow fluctuation; soil properties; precipitation; experimental crops; profitability; grains; irrigation; Carbon County.

Descriptors: West Virginia, Illinois, Pennsylvania, and Utah; economic geology; coal; economic agreements; mining licence; organic residues; reserves; company diversification; U.S. Steel; Standard Oil of Ohio; news; economics.

Descriptors: energy demand; energy supplies; water resources; Utah; coal gasification; Colorado River Basin; fossil fuels; geothermal power plants; industry; natural gas; nuclear power plants; oil shale; power generation.

Descriptors: coal mining; environmental impacts; energy source development; management; planning; ecology; fish; wildlife; Colorado, Utah, Arizona, New Mexico, Wyoming, Montana, and North Dakota.

Emery and Grand Counties; Book Cliffs Coal Field.
Descriptors: Book Cliffs Coal Field; Emery, Grand, and Carbon Counties; geography; physiography; stratigraphy; Neslen Formation; structure; economic geology; coal occurrence; physical properties; chemical analysis; tonnage reserves; development; township descriptions; coal thickness; lithologic descriptions; coal rank; maps; tables.

Carbon, Emery, and Grand Counties; Book Cliffs and Sego Coal Fields.

Descriptors: Book Cliffs Coal Field; Carbon, Emery, and Grand Counties; Cretaceous; Tertiary; formations; description; geology; lithology; stratigraphic sections; paleontology; tables.


Descriptors: economic geology; coal; lignite; organic residues; possibilities; economics; resources; reserves; Texas, Wyoming, Montana, Colorado, Utah, New Mexico, and North Dakota; legislation; policy; Gulf Coastal Plain.


Descriptors: Wyoming; Utah; paleoecology; sedimentation; stratigraphy; Tertiary; environment; terrestrial environment; Tongue River Member; Fort Union Formation; Powder River Basin; Wasatch Plateau; Cenozoic; Cretaceous; Mesozoic; coal; organic residues.


Wasatch Plateau Coal Field.

Descriptors: sedimentary rocks; Utah; sedimentation; Wyoming; environmental analysis; sedimentary petrology; deposition; models; Tongue River Member; Fort Union Formation; Star Point Formation; coal; organic residues; Tertiary; Cenozoic; Cretaceous; Mesozoic; Powder River Basin; Wasatch Plateau; thickness; environment; deltas; alluvial plains; economic geology; coal fields.


Wasatch Plateau Coal Field.

Descriptors: western interior; sedimentation; economic geology; deposition; ichnofossils; occurrence; coal; models; Tongue River Member; Fort Union Formation; Blackhawk Formation; Fruitland Formation; Vermejo Formation; Almond Formation; Rock Springs Uplift; Pictured Cliffs Sandstone; Montana, Wyoming, Utah, Colorado, and New Mexico; Tertiary; Mesozoic; Cretaceous; organic residues; lithostratigraphy; environment; Powder River Basin; Wasatch Plateau; San Juan Basin; Raton Basin; deltas; deposits; coastal environment; terrestrial environment; Ophiomorpha.


Sevier and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: sedimentary rocks; stratigraphy; economic geology; lithostratigraphy; Cretaceous; coal; Star Point Sandstone; Blackhawk Formation; Wasatch Plateau; Mesozoic; organic residues; deposits; coal seams; correlation; sandstone; clastic rocks.


Sevier, Sanpete, Emery, and Carbon Counties; Wasatch Plateau Coal Field.

Descriptors: western U.S.; stratigraphy; economic geology; Cretaceous; coal; Emery County; Blackhawk Formation; Star Point Sandstone; Emery; Mesozoic; organic residue; deposits; coal seams; correlation.


Emery County; Emery Coal Field.

Descriptors: western U.S.; stratigraphy; economic geology; Cretaceous; coal; Emery County; Blackhawk Formation; Star Point Sandstone; Emery; Mesozoic; organic residue; deposits; coal seams; correlation.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: faults; sedimentation; economic geology; displacements; environment; coal; normal faults; paleochannels; Sevier County; Blackhawk Formation; Star Point Sandstone; Mancos Shale; Ferron Sandstone Member; organic residues;
Wasatch Plateau; Johns Peak Quadrangle; Emery; Last Chance Creek; Upper Last Chance Creek.


Descriptors: surface mining; design; mining equipment; economics; cost; energy demand; geology; mathematical models; overburden; Arizona, Colorado, New Mexico, and Utah.


Descriptors: grain size; mineral composition; sedimentary rock nomenclature; textural groups; gravel; sand; silt; clay; triangular diagram; rock types; orthoquartzite; arkose; graywacke; clay content; tripartite name, grain size, textural maturity, mineral maturity; stability of depositional site; input of modifying energy; homogeneity; thickness and type of bedding; orientation of grain; particle shapes; mineralogical approach.


Descriptors: petrographic classification of limestones; laboratory; field; transported allochems, microcrystalline calcite ooze matrix; sparry calcite cement; intraclasts; pellets; oolites; fossils; structural framework; triangular diagrams; families; biosparite; biomicrite; dismicrite; biolithite; dolomite; recrystallization; sedimentary rocks; grain size scale for carbonates; graphic classification table; characteristics of rock types; calcilithes.

Ford, A., 1979, New look at small power plants: Los Alamos Scientific Lab., Los Alamos, N.M.

Descriptors: fossil-fuel power plants; economic analysis; feasibility studies; capacity; coal; comparative evaluations; environmental effects; Los Angeles; Utah.


Descriptors: power plant construction; environmental impact assessment; socioeconomic impact assessment; health; environment; water supply; coal mining; boom towns; Utah.


Emery County; Wasatch Plateau Coal Field.

Descriptors: Blackhawk mine; Emery County; geology; description; outcrop; coal thickness; chemical analysis; mining operations; equipment; inspections.


Grand County; Sego Coal Field.

Descriptors: economic geology; Utah and Colorado; coal; Book Cliffs; interpretation; Mesozoic; Cenozoic; Grand County.


Sanpete, Iron, Kane, Utah, Summit, and Emery Counties; Wasatch Plateau, Wales, Coalville, Cedar City, Kanarra, Kanab, and New Harmony Coal Fields.

Descriptors: coal industry; imports of coal into the Territory; patents; transportation; analyses; Springville; Grass Creek and Chalk Creek; Castlegate mines; Winter Quarters mine; Pleasant Valley mines.


Emery, Carbon, and Utah Counties; Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: Utah; petroleum; economic geology; North Horn Formation; Green River Formation; Price River Canyon; Willow Creek Canyon; Soldier Summit; exploration; possibilities; source rocks; detection; non-marine environment; terrestrial environment; sedimentary rocks; coal; wackestone; Paleocene; Eocene.


Descriptors: western U.S.; sedimentary rocks; economic geology; sedimentary petrology; organic residues; North Horn Formation; Green River Formation; Flagstaff Member; petroleum; coal; exploration; source rocks; environmental analysis; Cretaceous; Mesozoic; Paleocene; Paleogene; Tertiary; Cenozoic; Eocene; biostratigraphy; palynomorphs; Mollusca; geochemistry; organic materials.

Descriptors: coal mining; oil shale; spoil; plant growth; land reclamation; grasses; soils; survival; sand; clay soils; loams; arid land; seeds; planting; shrubs; irrigation; fertilizers; sludge; mulches; field tests; Utah and Colorado.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: Utah; engineering geology; slope stability; maps; Garfield County; Kane County; USGS; Kaiparowits Plateau; coal; organic residues; landslides; debris flows; geologic hazards.


Descriptors: coal liquefaction; Office of Coal Research; gasoline; demand for petroleum products; commercially competitive prices; growing market; coal consumption; petroleum industry; transport; reserves; nuclear research; Fischer-Tropsch; history of research; processes for conversion; removal of ash; carbon-hydrogen properties; carbonization; catalytic hydrogenation; catalysts; residual coal; boiler fuel.


Descriptors: coal leasing; Department of the Interior; public lands; land use classification; environmental impact statement; coal reserves; policy; planning; economics; coal exploration; Utah.


Summit and Daggett Counties; Henry’s Fork Coal Field.

Descriptors: economic geology; coal; maps; Utah and Colorado; coal fields; Henry’s Fork field; location; structure; stratigraphy; Mesaverde Formation; sections; Tertiary coal; thin beds; subbituminous; analyses; Uinta Basin.


Descriptors: coal; investigations; geology; stratigraphy; coal fields; coke; lignite; peat; mines; descriptions; Colorado, Utah, Oregon, and Virginia; tables; maps.


Summit and Daggett Counties; Henry’s Fork and Vernal Coal Fields.

Descriptors: economic geology; coal fields; location; accessibility; development; personnel; mapping; land surveys; Colorado Plateau; stratigraphy; structure; Vernal; Yampa; Henry’s Fork; coal quality; comparisons; physical properties; chemical analyses; fuel ratio; coking tests; maps; tables; charts.


Summit and Daggett Counties; Henry’s Fork Coal Field.

Descriptors: coal; location; structure; stratigraphy; sections; quality.


Descriptors: coal; calorific value; chemical composition; liquefaction; chemical reactors; catalytic effects; gases; high-pressure; high-temperature; liquids; zinc chlorides; petrology; Utah.


Descriptors: energy; community relations; economic impact; social effect; surveys; regions; data acquisition; data tables; urbanization; federal assistance programs; counties; strip mining; oil shale; uranium ores; projects; geothermal prospecting; coal mines; Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.


Wasatch and Duchesne Counties; Tabby Mountain Coal Field.
Descriptors: stratigraphy; economic significance; tectonic history; Tabby Mountain; Uinta Mountains anticline; oil-impregnated sandstones; petroleum; stratigraphic sections; geologic maps; Cretaceous; Wasatch and Duchesne Counties; correlation; lithology; location; topography; glacial; landslides; sedimentary textures and structures; fossils; well data; structure.


Descriptors: natural gas; natural gas industry; coal seams; energy supplies; exploration; market research; methane; production; recovery; underground storage; well drilling; Wyoming and Utah.


Carbon County; Book Cliffs Coal Field.

Descriptors: Kenilworth; Carbon County; Helper; Denver and Rio Grande Railroad; Western Fuel Co.; Cretaceous; Tertiary; Quaternary; Mancos Shale; Wasatch Formation; Eocene; terrace gravels; alluvium; coal-bearing strata; faults; mining operations; bituminous; Castlegate A; Castlegate B; Royal Blue; Castlegate C; Kenilworth; room and pillar mining.


Descriptors: coal; density; washing; chemical composition; Idaho, Oregon, Utah, Washington, and Wyoming.


Descriptors: leasing; land use; coal mines; public administration; exchange; planning; U.S. Government; resources; electrical industry; Utah.


Descriptors: economic geology; metal ores; coal; organic residues; iron ores; uranium ores; General Electric; Utah International.

Gertsch, W. D., 1977, Assessment of water resources in Utah and Nevada for a proposed electric-power generating station: Energy Research and Development Administration, 38 p.

Descriptors: water resources; availability; coal; cooling systems; fossil-fuel power plants; site selection; Nevada and Utah; water resources.


Descriptors: U.S. Steel News magazine; Geneva plant; Salt Lake Valley; history of settlement; plant construction; operations; Geneva mine; coking coals; mining operations; equipment.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: geology; structure; detailed description of the mountains; laccolite; intrusives; land sculpture; economic; Waterpocket Flexure; dikes; folds; illustrations; stereograms; hydrostatic equilibrium; limited area and thickness; coal.


Sanpete County; Sterling Coal Field; Gunnison Quadrangle.


Sanpete and Sevier Counties.


Descriptors: tectonic evolution; radiometric dates; geological history; Cordillera; Antler, Nevadan, and Laramide orogenies; geosynclines; Colorado Plateau; Basin Range; transient faults; volcanic history; Phanerozoic plutonism; Pacific littoral; maps.

Gilluly, J., and J. B. Reeside, Jr., 1928, Sedimentary rocks of the San Rafael Swell and some adjacent areas of eastern Utah: U.S. Geol. Surv., Prof. Paper, No. 150-D.

Emery County.

Descriptors: topography; sedimentary rocks; stratigraphy; fossils; lithology; distribution; depositional environment; correlated columnar sections; local sections; San Rafael Swell; Carbon, Sevier, Emery, and Grand Counties.


Descriptors: coal industry; oil shale industry; socioeconomic factors; economic impact; energy source development; financing; land use; public utilities; rural areas; social impact; Utah, Colorado, and Wyoming.

Given, P. H., 1974, Relation of coal characteristics to coal liquefaction; The Pennsylvania State Univ., University Park, Pa.

Gluskoter, H. J., et al., 1977, Trace elements in water resources hydrologic cycle; western Kane County; Alton and Kaiparowits Plateau Coal Fields.


Descriptors: coal mining; petroleum industry; environmental impacts; wildlife; ecology; fish; government policies; information; decision making; data acquisition; oil shale; land; protection; resources; opinions; management planning; Colorado, Montana, New Mexico, Utah, and Wyoming.


Descriptors: energy source development; environmental impacts; environmental policy; information; coal mining; data acquisition; decision making; ecology; government policy; land use; management; petroleum industry; oil shale; planning; resources; wild animals; Montana, Wyoming, Utah, Colorado, and New Mexico.


Carbon County; Book Cliffs Coal Field.

Descriptors: central Utah; Sunnyside; coal deposits; rank; Ferron Sandstone; coal samples; palynology; stratigraphic correlation.


Carbon County; Book Cliffs Coal Field.


Descriptors: energy sources; energy source development; environmental impacts; socioeconomic factors; Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming; air pollution; coal industry; nuclear industry; natural gas and petroleum industries; oil shale industry; geothermal energy; EPA; water pollution.


Descriptors: Utah; mineral resources; energy sources; economic geology; regional; metals; nonmetals; resources; production; data; economics; petroleum; natural gas; coal.


Descriptors: coal mines; dust; explosions; probability; causes; gas; coal rank; dust/gas mixtures; dust size; shale dust; coal/water mixtures; tests; firedamp; tables; charts.


San Juan County; La Sal Coal Field.

Descriptors: San Juan County; geography; geology; reconnaissance surveys; physiography; water supply; stock ranching; mineral resources; sedimentary rock; igneous rocks; structure; Abajo Mountains; Comb anticline; maps; inhabitants; stratigraphy; sections; petrography; economic geology; copper; gold; vanadium-uranium; coal seams; Dakota Shale; bituminous; no deposits of large economic value; domestic value; ash; bone; characteristics of coal beds; coal sections; Rasmussen and Pendergraff mines; table of analyses.


Washington and Kane Counties.

Descriptors: geology; Zion National Park region; coal; distribution; stratigraphy; mine descriptions; coal quality; use; chemical analysis; tables.


Iron County; Kolob Coal Field.

Descriptors: geology; eastern Iron County; stratigraphy; structure; physiography; economic geology; coal deposits; mining; development; coal quality; use; lithology; tables.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: Garfield and Kane Counties; Kaiparowits Plateau; geology.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: Kaiparowits region; geologic


Kane and Garfield Counties; Kaiparowits Plateau Coal Field.


Iron, Kane, and Garfield Counties; Kolob, Kanab, and Kaiparowits Plateau Coal Fields.


Gualtieri, J. L., 1980a, Geologic strip map of parts of Antone Canyon, Cisco Spring, Dry Canyon, and Flume Canyon Quadrangles showing coal zones and adjacent rocks, Utah: U.S. Geol. Surv., Open-File Rept., No. 80-1227, 1 sheet.

Grand County; Sego Coal Field; Antone Canyon, Cisco Spring, Dry Canyon, and Flume Canyon Quadrangles.


Grand County; Sego Coal Field; Bar X Wash, Bryson Canyon, Jim Canyon, and San Arroyo Ridge Quadrangles.


Grand County; Sego Coal Field; Sego Canyon and Thompson Quadrangles.


Garfield and Grand Counties; Book Cliffs Coal Field.

Gualtieri, J. L., 1982, Geologic map of parts of Crescent Junction and Floy Canyon Quadrangles, Utah, showing coal zones and adjacent rocks: U.S. Geol. Surv., Open-File Rept., No. 82-584.

Grand County; Sego Coal Field.


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Descriptors: economic geology; coal; maps; Garfield and Kane Counties; Kaiparowits Plateau Coal Field.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: productivity levels; in-depth field research; hypotheses; case studies; interviews; mine tours; firm-specific data; industrial relations; unions; UMW; work ethic; motivation; mine ownership patterns; interregional comparisons; surface mining.


Duchesne and Uintah Counties.

Descriptors: Uinta Basin; structure; stratigraphy; depositional environments; tectonism; interpretation.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: economic geology; coal; maps; Garfield and Kane Counties; organic residues; deposits; resources; Kaiparowits Plateau; production; mining geology; overburden.


Descriptors: productivity levels; in-depth field research; hypotheses; case studies; interviews; mine tours; firm-specific data; industrial relations; unions; UMW; work ethic; motivation; mine ownership patterns; interregional comparisons; surface mining.


Descriptors: productivity levels; in-depth field research; hypotheses; case studies; interviews; mine tours; firm-specific data; industrial relations; unions; UMW; work ethic; motivation; mine ownership patterns; interregional comparisons; surface mining.


Descriptors: drilling records; petroleum exploration; Colorado River Basin; tables.


Daggett County; Henry’s Fork Coal Field.

Descriptors: coal; Rock Springs Formation; mine; stratigraphy; bituminous; Frontier Formation; thin beds; lack potential for production; geologic history; structure; mineral resources.

Hantschel, W., 1962, Trace fossils and problematica, in Treatise on Invertebrate Paleontology, part W, Miscellaneous: p. 177-245.

Descriptors: trace fossils; problematica; glossary of terms; significance; stratigraphy; tectonics; use in structural geology; fossilization; preservation; exogenic and endogenic traces; classification; morphological descriptive; ethological aspects; nomenclature; sedimentology; paleo environmental; borings; coprolites; body fossils; Lebensspuren; invalid names.


Sanpete and Sevier Counties.


Sanpete County; Sterling Coal Field.

Descriptors: Gunnison Plateau; geologic features; topography; drainage; stratigraphic section; lithologic units; structure; geologic history; description; correlation; maps; tables.


Descriptors: coal extraction; kinetics; solvent; experiments; first-order reactions; activation energy; reaction rates; random state; negative entropy; positive entropy of activation; hydrogen pressure; yield; decomposition of tetralin; naphthenic; aromatic hydrocarbons; distillation.


Descriptors: sedimentary structures; flow phenomena; bed forms; geometry; flow regime; deposits; stratification; fluvial depositional environment.


Carbon County; Book Cliffs Coal Field.


Descriptors: coal; coal mining; history; production; transportation; lithologic descriptions; Independent Coal and Coke Co.; Castlegate Mine; Sunnyside Mine; Pleasant Valley Mine; Winter Quarters Mine; production tonnage; charts; tables.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: coal; sedimentary geochemistry; fossil fuels; carbonaceous sediments; Utah.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: ashes; chemical analysis; coal; chemical composition; emission spectroscopy; coal deposits; experimental data; geology; maps; Utah.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: economic geology; coal; Wayne and Garfield Counties; Mancos Shale; Ferron Sandstone Member; Emery Sandstone Member; Cretaceous; Mesozoic; Henry Mountains Field; coal fields; organic residues; deposits; geochemistry; chemical composition.


Descriptors: coal; Rocky Mountains; trace element analysis; coal use; environmental implications; chemical composition; comparison; tables.


Summit and Wasatch Counties.

Descriptors: Summit and Wasatch Counties; back valleys; geography; climate; agriculture; mining; subbituminous noncoking coal; Coalville; economic base.
logic maps; economic geology maps; organic residues; deposits; resources.


Descriptors: geology; mineral resources; engineering geology characteristics; environmental geochemistry; east-central Utah; coal development; stratigraphy; Henry Mountains, Emery, Wasatch Plateau, Book Cliffs, and Sego Coal Fields; coal quality and composition; oil and gas; non-petroleum gases; oil shale; bituminous sandstone; uranium; base metals; clays; underground coal mining; coal mine subsidence; earthquakes; maps; stratigraphic correlations.


Descriptors: coal; economic geology; reserves; production; quality; evaluation; mineral economics; legislation.

Helper Public Library, 1922, Scrapbook on coal strike, 1922: Utah Coal Miners.

Descriptors: coal mining; history; safety; unions; strikes; legislation; housing; socioeconomic impacts; quality-of-life; lifestyles; education; mining today; women miners.


Wayne County; Henry Mountains Coal Field; Mt. Ellen Quadrangle.


San Juan County; San Juan Coal Field.


Descriptors: oil shale; engineering geology; coal; oil sands; materials; properties; Canada; Colorado, Utah, and Wyoming; Green River Basin; Washakie Basin; Piceance Creek Basin; Uinta Basin; shale; physical properties; strength; hardness; kerogen; chemical composition; retorting; sandstone; rock mechanics; elastic constants; Alberta; gasification; methods; engineering properties; liquefaction; genesis; geochemistry; trace elements; Green River Formation.


Descriptors: U.S. Fuel Co. magazine; coal mining; safety record; equipment; mining methods; coal preparation; transportation; housing; quality-of-life; company towns; office news, dinosaur tracks.


Washington and Kane Counties.

Descriptors: mineral resources; economic geology; Boulder Dam area; coal; Kane and Iron Counties; road logs.


Descriptors: drilling records; petroleum exploration.


Emery County; Wasatch Plateau Coal Field.

Higgins, W. C., 1911b, Success of the Consolidated Fuel Co.: The Salt Lake Mining Review, Vol. 13, No. 1, Apr. 15, 1911.


Emery County; Wasatch Plateau Coal Field.

Descriptors: Castle Valley Coal Co.; history; formation; incorporation; railroad; equipment; mining operations; coal analysis; market; property valuation; reserves.


Daggett and Uintah Counties.

Descriptors: coal mining; feasibility studies; bituminous coal; coal reserves; cost; economics; productivity; Utah.


Carbon and Emery Counties.

Descriptors: Project Western Coal; coal; flash heating; plasma pyrolysis; gas chromatography; catalytic hydrogenation; batch hydrogenation; coal

Descriptors: coal hydrogenation; coal liquefaction; diesel fuels; production; gasoline; production; chemical reaction kinetics; pyrolysis; synthetic fuels; production; bituminous coal; catalysis; tetralin; tin chlorides; Utah.


Descriptors: power plant cancellations; Southern California Edison; power plant emissions; coal-fired power plants; environmental impact assessment; Utah.


Descriptors: energy source development; air quality; coal gasification plants; fossil-fuel power plants; environmental impacts; oil shale industry; Arizona, Colorado, New Mexico, and Utah; ambient temperature; coal; construction; economics; energy conversion; energy facilities; land use; public opinion; standards.


Descriptors: Utah; paleogeography; structural history; depositional environments; orogenic episodes; physiography.


Descriptors: environmental geology; impact statements; Appalachians; Montana, Wyoming, South Dakota, Arizona, Colorado, New Mexico, Utah, Illinois, Indiana, and Kentucky; Powder River Basin, Fort Union; Four Corners; coal; organic residues; power plants.

Hobson, G. C., 1932, Coal and iron ore in the relation to the development of iron and steel industry in Utah: M.S. thesis, Univ. of Utah.

Descriptors: raw materials; fuels; refine quality; impurities; cost; commercial value; fluxes; products; smelting; high-temperature process; blast furnace; coking coal; transportation; electricity; industrial heating; markets.


Descriptors: soils; hydrology; ground water; environmental geology; surveys; reclamation; Emery County; Mancos Shale; Ferron Sandstone Member; Emery Field; coal; organic residues; deposits; resources; impact statements; land use; Cretaceous; lithostratigraphy.


Summit County; Coalville Coal Field.

Descriptors: coal beds; railroad; Union Pacific; coke; physical character; calorific power; forge-fire; fuel for locomotives and domestic purposes; lignites; analyses; Coalville; description of localities; iron pyrites; slate; Sprague's, Robinson, and Crissman's Mines.


Descriptors: Rocky Mountains; symposia; economic geology; coal; Colorado, Utah, Texas, and New Mexico; organic residues; coal seams; automatic data processing; methods; mining geology; mines; natural resources; planning; geologists; structural geology; structural analysis; stratigraphy; lithostratigraphy; biostratigraphy; sedimentation; environment; deltas; petrology; sedimentary rocks.


Descriptors: sulfur containing fuels; high sulfur coal; low sulfur coal; air pollution abatement; Rocky Mountain States.


Carbon County; Book Cliffs Coal Field.


Carbon County; Book Cliffs Coal Field.

Descriptors: Sunnyside area; Carbon County; bituminous sandstone deposits; geology; stratigraphy; lithologic descriptions; structure; grade; origin; reserves; mining methods.

Hoover, R. N., J. F. Fraumeni, Jr. and E. T. Creagan, 1974, Mortality from stomach cancer in coal mining

Descriptors: health; safety; occupational; environment; carcinogenic agents; computer applications; coal mining; respirable dust; Utah.


Descriptors: ground water; hydrology; economic geology; environmental geology; surveys; water resources; coal; reclamation; management; organic residues; mining; water supply; water quality; impoundment ponds; Colorado River; aquifers; Blackhawk Formation; Star Point Sandstone; Tuscher Formation; North Horn Formation; Wasatch Formation; Castlegate Sandstone; sedimentation; sediments; discharge.

Howard, J. D., 1966a, Characteristic trace fossils in Upper Cretaceous sandstones of the Book Cliffs and Wasatch Plateau; in Central Utah coals; a guidebook prepared for the Geological Society of America and associated societies: Utah Geol. and Min. Surv., No. 80, p. 35-53.

Sanpete, Sevier, Carbon, Emery, and Grand Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Book Cliffs and Wasatch Plateau Coal Fields; sandstones; characteristic trace fossils; Upper Cretaceous; descriptions of trace fossils; depositional environment; facies fauna; subdivisions of wave and energy; in situ; ethological classification; bedding planes.


Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: nearshore depositional environments; Cretaceous; Book Cliffs and Wasatch Plateau Coal Fields; lithology; sedimentary structures; geometry; trace fossils assemblages; bar; backbar; longshore bar; forebar; marine transgression; erosional surface.

Howard, J. D., 1966c, Sedimentation of the Panther Sandstone Tongue, in Central Utah coals: Utah Geol. and Min. Surv., Bull., No. 80, p. 23-33, plus 1 folded plate.

Book Cliffs Coal Field.

Descriptors: coal; geology; Star Point Formation; Panther tongue; Book Cliffs, stratigraphy; lithology; facies; depositional environment interpretation; tables.

Howard, J. D., 1969a, Depositional control of Upper Cretaceous coal units: Mt. Geol. 6: 3: Guidebook issue, Raton Basin, Colorado and New Mexico, Sept. 3-6, p. 143-146.

Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Coal; Utah and Colorado; Cretaceous; Economic geology; Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields; deposits; genesis; controls; environment; lagoons; barrier islands; sedimentary rocks.


Descriptors: coal; genesis; Cretaceous; mineral deposits; mining geology; economic geology; geological hazards; channel-fill deposits.


Carbon County; Book Cliffs Coal Field.

Descriptors: coal mines; openings; Utah.


Descriptors: Basin Range system; eastern Utah; mountain ranges; valleys; water supply; structure; volcanic phenomena; thermal springs; lithologic character; economic geology; mining; silver; iron; coke from coal; Cretaceous rocks; stratigraphy; sections.


Descriptors: mineral industry; production value; copper; silver; vanadium; iron; uranium; lead; zinc; gold; molybdenum; mineral fuels; coal; manufacturing steel; nonmetals; employment and injuries; legislation and government programs; review by mineral commodities; coal tonnage; Sunnyside, Columbia, Geneva, Castlegate, Clear Creek, Kenilworth, O'Connor, and King Mines; Carbon, Emery, Iron, Sevier, and Summit Counties.


Descriptors: Utah; organic materials; geochemistry; methane; hydrocarbons; coal; organic residues; in situ.


Duchesne County.


Hunt, C. B., 1946, Guidebook to the geology and geography of the Henry Mountains region: Utah Geol. Soc. Guidebook 1. Wayne and Garfield Counties; Henry Mountains Coal Field. Descriptors: Henry Mountains; geology; geography; stratigraphy; lithologic descriptions; physiography; tectonic history; resources; coal; high volatile bituminous; transportation; economics.

Hunt, C. B., 1956, Cenozoic geology of the Colorado Plateau: U.S. Geol. Surv., Prof. Paper, No. 279, 99 p. Descriptors: Cenozoic history; Colorado Plateau; shelf area; Uinta Basin; San Juan Basin; folding; Cretaceous; lacustrine; fluvial; igneous activity; uplift; laccolithic mountains; volcanoes; petrographic province; subprovinces; piedmont; orogenetic structures; Colorado River; antecedence; superposition; stratigraphy; structure; physiography; San Francisco Mountain; Quaternary deposits.

Hunt, C. B., 1958, Structural and igneous geology of the La Sal Mountains, Utah: U.S. Geol. Surv., Prof. Paper, No. 294-I. San Juan County; La Sal Coal Field. Descriptors: structure; igneous geology; La Sal Mountains; laccolithic; stock; sedimentary rocks; salt anticlines; plastic deformation of salt beds; diorite porphyry; monzonite; hydrothermal activity; explosion breccias; volcanoes; magmatic sequence; stratigraphy; intrusive structures; origin and evolution of magmas; economic geology; hydrothermal metals; gold placer; uranium-vanadium; manganese; shaly coal; Dakota Sandstone.


Wayne and Garfield Counties; Henry Mountains Coal Field. Descriptors: Henry Mountains; geology; geography; physiography; stratigraphy; lithologic descriptions; structure; igneous intrusions; geomorphology; Tertiary folding history; resources; coal; Ferron Sandstone; Dugout Creek semianthracite; coal map.

Hunt, J. M., F. Stewart, and P. A. Dickey, 1954, Origin of hydrocarbons of Uinta Basin, Utah: Am. Assoc. Pet. Geol. Bull., Vol. 38, p. 1671-1698. Duchesne and Uintah Counties. Descriptors: origin of hydrocarbons; Uinta Basin; Eocene; fluvial; deltaic; shales; sands; bituminous siliceous dolomites; oil shale; salt lake; chemically stratified; asphalts; stratigraphic units; source rock; field geology; organic solvents; chemical data; geologic data; changes in lithology; chemical character of hydrocarbons and depositional environment; no evidence of metamorphism, catalytic cracking or depth of burial; subsurface samples; organic matter; stagnant; saline; sulfides; Wasatch, Green River, and Uinta formations; sections; petrography of sediments; composition of hydrocarbons; infrared spectograms; frequency distribution of refractive indices; chromatography; infrared optical densities; stages of development of lake.


Carbon County; Book Cliffs Coal Field.
Descriptors: economic geology; coal; Carbon County; Sunnyside Mine; organic residues; deposits; Cretaceous; Mesozoic.

Hyder, C. L., 1971, Pollutant transport and accumulation processes in our environment. I. A case study of mercury from the Four Corners Electric Power Plants found in Navajo Lake, New Mexico and in Lake Powell, Utah; Goddard Space Flight Center, Greenbelt, Ma.
Descriptors: coal; waste management; fossil-fuel power plants; environmental effects; mercury; measuring methods; air pollution; electric power; water pollution; fish; Utah and New Mexico.

I

Independent Coal and Coke Co., 1915, General Manager's Report, for the years 1914 and 1915: Independent Coal and Coke Co.
Descriptors: Independent Coal and Coke Co.; managers report; financial statement; production figures; mine improvements; developments.

Descriptors: land reclamation; geosensing; coal; Utah and New Mexico.

Descriptors: coal; coke; mining; Utah.

Descriptors: political poster; labor organization; legal rights; protest meeting; International Labor Defense.

Descriptors: Upper Colorado River Basin; water resources; technical report; surface water resources; appraisal; Grand, Green, and San Juan divisions; geology; hydrologic units; physiography; climate; population; water utilization, supply, budget, and quality; fluvial sediment; tables; charts; illustrations; graphs.

Descriptors: Upper Colorado River Basin; water resources; technical report; surface water resources; appraisal; Grand, Green, and San Juan divisions; geology; hydrologic units; physiography; climate; population; water utilization, water supply; budget; quality; fluvial sediments; tables; charts; illustrations; graphs.

Descriptors: Utah; coal mining; coal deposits; surface mining; geologic deposits.

Kane County; Kaiparowits Plateau Coal Field.
Descriptors: Arizona; Utah; boom towns; coal industry; economic impact; coal; electric power; human populations; planning; regional analysis.

Descriptors: organic sulfur compounds; aerosol monitoring; sulfates; sulfites; sulfur dioxide; air pollution; aqueous solutions; calorimetry; coal; copper complexes; electron spectroscopy; fossil-fuel power plants; hydrolysis; iron complexes; lead complexes; particle size; plumes; zinc complexes; Utah.
Carbon County; Book Cliffs Coal Field.
Descriptors: Sunnyside mine; unit trains; output; demand; storage capacity; longwall mining; loading facility; stockpile; facts and figures; diagrams; coal size; sulfur; ash; volatile; conveyor way; tunnel; steel cones; loading tower; chute; three stage; preparation plant capacity; railroad track.

Descriptors: coal mines; mine haulage; diesel engines; Utah.

Descriptors: coal mines; underground mining; blowers; diesel engines; transportation systems; Utah.

Carbon County; Book Cliffs Coal Field.
Descriptors: coal mines; planning; preparation plants; construction; flowsheets; productivity; Utah.

Descriptors: coal mines; longwall mining; Utah.

Jackson, D., 1979, Prep plant raises mine production: Coal Age, Vol. 84, No. 5, p. 70-73.
Descriptors: coal mines; production; coal preparation plants; underground mining; Utah.

Emery County; Emery Coal Field.
Descriptors: longwall mining; Utah; underground mining.

Descriptors: coal preparation plants; flowsheets; coal; coal mining; coal mines; longwall mining; rail transport; room and pillar mining; Utah.

Carbon and Sanpete Counties; Book Cliffs and Wasatch Plateau Coal Fields.
Descriptors: Utah; economic geology; coal; Sanpete and Carbon Counties; Eccles Canyon; Scofield; Skyline Project; organic residues; production; economics; mining.

Descriptors: mine haulage; diesel engines; underground mining; coal; coal miners; coal mines; coal seams; inclined strata; Utah.

Carbon County; Book Cliffs Coal Field.
Descriptors: coal mining; water infusion; coal moisture content; dust suppression; Kenilworth mine; dust formation; particle size; cleat planes; boreholes; shale dust; tables; illustrations.

Carbon, Iron, and Uintah Counties; Book Cliffs, Kolob-Harmony, and Vernal Coal Fields.
Descriptors: carbonaceous materials; solid fuels; oil products; commercial uses; oil shale; economic factors; low-temperature carbonization; plant and refinery; Carbon County; power; smokeless fuels; rock asphalt; Vernal; paraffin; road oil; gasoline; diesel fuel; Cedar City; Utah markets; engineering experiments; heat requirements; distillation; burning properties.

Jensen, G. F., 1976, Utah's potential in the manufacturing and servicing of mining equipment: Univ. of Utah.
Descriptors: mining equipment; forecasting; maintenance; manufacturing; coal; coal mining; coal reserves; cost; production.

Descriptors: zinc chloride on silica gel; starting model compounds; alkylbenzenes with branched alkyl groups; n-alkylbenzenes; diarylkanes; product composition; reaction temperature; reaction time; hydrogen pressure; micro-autoclave; nitrogen atmosphere; mechanistic aspects.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

**Descriptors:** fossil-fuel power plants; economics; environmental aspects; political aspects; coal; combustion; energy supplies; environmental impact statements; regulations; Utah.


**Descriptors:** H-coal process; performance; bench-scale experiments; coal; economics; Utah, Arizona, and Wyoming.


Emery County; Wasatch Plateau Coal Field.

**Descriptors:** sedimentary rocks; stratigraphy; lithostratigraphy; Cretaceous; Emery County; Blackhawk Formation; Wasatch Plateau; North Horn Mountains; Mesozoic; Montanan; coal; organic residues; measured sections.


Garfield County; Kaiparowits Coal Field.


Carbon and Emery Counties.

**Descriptors:** economic geology; coal; Utah; Colorado; regional; bituminous; genesis; alteration; ground water; chemical analysis; physical tests; vadose zone; Carbon and Emery Counties; ground water distribution.


Grand County; Sego Coal Field.

**Descriptors:** map, cross-sections; upper Cretaceous stratigraphy; correlation; Castle Valley-western Colorado, Mesaverde Group.


Duchesne and Uintah Counties.

**Descriptors:** Uinta Basin; structure; geosynclinal nature; intracratonic basins; depositional environment; subsidence.


Duchesne and Uintah Counties.

**Descriptors:** non-marine Cenozoic; correlation table; research project; petroleum project; petroleum activity; Uinta Basin; stratigraphic successions; lithology; lacustrine; fluvial; terrestrial; pyroclastic; diastrophism; vertebrate faunas; mammalian; invertebrates; age determination; depositional environments; glacial; alluvial; playa; algal biotherms.


Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields.

**Descriptors:** Utah coal fields; Carboniferous; Cretaceous; Coalville; Castlegate; Book Cliffs and Wasatch Plateau Coal Fields; physical characteristics; mining; location; production; tonnage; chemical analysis.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

**Descriptors:** power plant construction; coal-fired power plants; power plant emissions; Four Corners; environmental impact statements; state government; local government; Utah.

Descriptors: mining geology; economic geology; technology; coal dust; methane; inflammability; minimum explosive concentrations; small laboratory explosion gallery; ignition; electrical spark; change in pressure; transducer; oscilloscope; photoelectric cell; light source; dust concentrations; platinum wire; calibration tests; stage of equilibrium.


Descriptors: longwall mining; pumps; performance; seals; coal mines; removal; underground mining; water; Utah.


Descriptors: Utah; mineral resources; energy sources; sedimentary rocks; Eocene; economic geology; lithostratigraphy; Green River Formation; Green River Basin; deposits; salt; phosphate; potash; distribution; oil shale; coal; uranium; sandstone; claystone; argillite; limestone.


Wasatch Plateau Coal Field.

Descriptors: short contact time thermal reactions; tetratilin; bituminous coal; hydrogen atmosphere; nature of reaction; mechanisms; labile functional structures; hydrogen transfer reactions; kinetics; infrared spectra; extracts; phenolic OH; carbonyl ether; chelated quinoid carbonyl; coals; Hiawatha; Kentucky f14; stabilization; yield; kinetic data; kinetic model.


Descriptors: petroleum production; mineral fuels exploration; diminishing supplies; coal; coal oils; smokeless fuel production; oil shale feasibility; labor force.


Emery County; Emery Coal Field.

Descriptors: Tempskya; occurrence; lower Cretaceous; Castle Dale; Emery County; trunk of fern; fresh-water pelecypod; Dakota Formation; Thompsons; new species; fossil specimen.


Carbon and Sanpete Counties; Wasatch Plateau and Salina Canyon Coal Fields.

Descriptors: source direction; Ferron Sandstone; Clear Creek Gas Field; Carbon County; Cretaceous stratigraphy; Mancos Shale; shoreline; paleo-geographic map; marine basin; peninsula-like accumulation of sand in shallow parts; Castle Valley; Manti; Allen Valley Dhale; diagnostic ammonite; correlation; cross-bedding analysis; coal; faunal zones; fluvial; Wasatch Plateau and Salina Canyon Coal Fields; central Utah.


Sanpete, Sevier, Carbon, Garfield, Kane, and Emery Counties; Book Cliffs, Henry Mountains, and Wasatch Plateau Coal Fields.

Descriptors: Wasatch Plateau; stratigraphy; Cretaceous; Tertiary; correlation; facies; sequences; San Rafael Swell; Kaiparowits Plateau; Henry Mountains; Book Cliffs; depositional environment; formation renaming; fossil evidence; formation dating.


Carbon and Grand Counties; Book Cliffs and Sego Coal Fields.

Descriptors: Cretaceous faunas; Mancos Shale; Dakota Sandstone; Mesaverde Group; stratigraphy; ammonites; correlation; Price to Grand Junction; occurrence of fossil species; coal bearing rocks.


Descriptors: southeastern Utah; Cretaceous stratigraphy; Burro Canyon Formation; Dakota Sandstone; Mancos Shale; paleogeography.

Keeney, R. L., 1981, Decision framework for technology choice. Volume 1: A case study of one utility’s coal-

Descriptors: electric utilities; fossil-fuel power plants; nuclear power plants; decision making; mathematical models; comparative evaluation; socio economic factors; market; public opinion; coal; Utah.


Descriptors: economic geology; water resources; petroleum; oil shale; natural gas; coal; economics; production; possibilities; irrigable land; refining; efficiency; ground water; organic residues; resources; generator plants; abundance; energy sources; refineries; equations; models.


Descriptors: coal; hydrogenation; pyrolysis; chemical reaction kinetics; High volatile bituminous coal; nitrogen; quartz spring; kinetic models; first order decrease of surface sites; pyrolyzed; activation energy and entropy; gas analysis; lithium metal in ethylenediamine; reduction; fractional weight loss; time curves; surface site model; batch hydrogenation; experimental results.


Descriptors: anthracite; bituminous coal; chemical analysis; mass spectrometry; quantitative chemical analysis; research programs; Colorado, Utah, Pennsylvania, West Virginia, and Virginia.


Descriptors: energy consumption; energy sources; Arizona, Colorado, New Mexico, Utah, Idaho, and Wyoming; buildings; coal; diagrams; energy supplies; hydroelectric power; industry; natural gas; petroleum; power generation; transportation systems; uranium ores.


Descriptors: coal liquids; enthalpy; coed process; comparative evaluations; distillates; forecasting; petroleum; planning; viscosity; Utah and Kentucky.


Descriptors: coal mines; production; Colorado, Utah, Wyoming, North Dakota, and Montana.


Emery and Grand Counties; Sego Coal Field.

Descriptors: Green River Coal Basin; Coalville; Lost Creek; coal mines; Cretaceous; mining industry; Mormons; physiography; quality; yield per acre; table of analyses; fossils.

Kinney, D. M., 1951, Geology of the Uinta River and Brush Creek-Diamond Mountain areas, Duchesne and Uintah Counties, Utah: U.S. Geol. Surv., Oil and Gas Inv., Map OM 123.

Duchesne and Uintah Counties.


Duchesne and Uintah Counties.

Descriptors: Brush Creek area; Uintah and Duchesne Counties; geology; stratigraphy; Mississippian coals; Cretaceous coals; structure; geomorphology; economic geology; coal deposits; petroleum; natural gas; coal; reserves; tonnage; physical properties; chemical analysis; production; tables.


Uintah County.


Carbon County; Book Cliffs Coal Field.

Descriptors: the direct method; methane content of coal beds; ventilation design; laboratory feasibility tests; vertical borehole cores; field tests; results from direct versus indirect methods; emissions from mines; measuring technique; desorption rate curves; emissions rate curves; exploration site; Price; Castle Gate bed.


Emery and Sanpete Counties; Wasatch Plateau Coal Field.

Descriptors: Triassic sedimentation; intertonguing complex of continental red beds and tholeiitic basalt; conglomerates; basin margin; floodplain; alluvial fan; lacustrine; above and below wave base; primary sedimentary structures; depositional environment; geographic distribution; pre-Triassic geology; provenance control; rather than tectonics; sandstone composition; stratigraphy; petrology; triangular diagrams; current direction.


Descriptors: energy source development; air pollution; stationary pollutant sources; evaluation; Clean Air Act; coal; coal gasification plants; environmental impacts; environmental policy; fossil-fuel power plants; legal aspects; visibility; water demand; water resources; Utah.


Descriptors: physiographic map; Green River Basin; Wyoming and Utah; Uinta Mountains; Wind River Range; Wasatch Mountains.


Descriptors: Green River Formation; fossil flora; additions; descriptions of new species; oil shale.


Descriptors: energy sources; natural gas; petroleum; coal; uranium; Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming; data compilation; economics; electricity; energy consumption; market; regional analysis; statistics; transport; wood.


Carbon County; Book Cliffs Coal Field.

Descriptors: organic materials; economic geology; hydrocarbons; natural gas; methane; Carbon County; Book Cliffs; coal fields; recovery; engineering geology; mining geology.


Carbon County; Book Cliffs Coal Field.

Descriptors: coal; preparation; nonmetallic ores; separation; mixtures; strength; density; furnaces; Utah.


Carbon County; Book Cliffs Coal Field.

Descriptors: chars; coke quality; anti-fissurants; coal source; coal analysis; Hanson carbonizer; BM-AGA carbonizer; lower Sunnyside coal; blends; coke breeze; coke strength; tables.


Emery County; Wasatch Plateau Coal Field.

Descriptors: Huntington Canyon anticline; Emery County; wells drilled; Castle Valley; Dakota Sandstone; structure; map stratigraphy; shows of oil and gas; Ferron Sandstone; oil staining.


Descriptors: petroleum upgrading; refining process; fixed-bed mode; catalyst; excessive pressure drop; fluidized bed reactor; isothermal conditions; experimental program; vapor phase; fluidized bed hydrodesulfurization of commercial feedstocks; coal; petroleum; oil shale; tar sand bitumens; kinetics of sulfur removal; solvent refined coal liquids; cobalt molybdenum oxides; fluidization velocities; piston flow; pseudo second-order rate equation.


Grand County; Sego Coal Field.

Descriptors: coal seams; Grand Junction; geography; Book Cliffs; oil; bituminous shale; asphalt; gas; Laramie; Cretaceous sandstones; Montana and Colorado groups; structure; depositional environment; "horses"; mining; sandstone dikes.


Summit County; Coalville Coal Field.
Descriptors: Grass Creek; Weber Canyon; thick veins of lignitic coal; faults; coal mines; outcrops; structure; analysis; Grass Creek (Church) coal mine; description of coal beds; mining methods; accidents market; domestic fuel; deposition.

Grand County; Sego Coal Field.
Descriptors: economic geology; coal; Utah and Colorado; Grand County; Book Cliffs; deposits; metamorphism; combustion; spontaneous.

Carbon and Emery Counties; Book Cliffs Coal Field.
Descriptors: bituminous coal; coking; chars; coal; volatility; lower Sunnyside coal; coking properties; blends; rank; quality; Carbon and Emery Counties; tonnage reserves; Sunnyside-Castlegate field; carbonization procedure; tables; graphs.

Garfield and Wayne Counties; Henry Mountains Coal Field.
Descriptors: Utah; well-logging; geophysical surveys; applications; Garfield and Wayne Counties; Henry Mountains Coal Field; caliper; electrical; radioactivity; gamma ray; data; logs; exploration; deposits; distribution; depth; thickness; coal seams; correlation.

Wayne and Garfield Counties; Henry Mountains Coal Field.
Descriptors: sedimentary rocks; sedimentation; economic geology; organic residues; deposition; coal; pattern; Emery Sandstone Member; Mancos Shale; Henry Mountains; coal fields; coal seams; structure; thickness; synclines; folds; anticlines; faults; barriers; compaction; diagenesis; deposits; Cretaceous.

Garfield and Wayne Counties; Henry Mountains Coal Field.
Descriptors: economic geology; coal; maps; Garfield and Wayne Counties; Henry Mountains; Emery coal zone; organic residues; deposits; coal fields; economic geology maps.

Garfield and Wayne Counties; Henry Mountains Coal Field.
Descriptors: economic geology; coal; organic residues; Garfield and Wayne Counties; Henry Mountains; Emery coal zone; deposits; coal fields; sections.

Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: Utah; coal reserves; oil shale deposits; water reserves; Colorado River; Colorado River Basin; energy sources; legal aspects; water rights.

Garfield, Kane, and Iron Counties.
Descriptors: southern Utah; Dakota Formation; Tropic Formation; stratigraphy; Cretaceous; Garfield, Kane, and Iron Counties; lithologic descriptions; nomenclature; correlation; depositional environment; tectonic history; Cashion coal zone; Culver coal zone.

Descriptors: coal deposits; mineral resources; petroleum deposits; Colorado, New Mexico, Utah, and Arizona; economic development.


Iron County; Harmony and Kolob Coal Fields.

Descriptors: economic geology; coal; Iron County Coal Field; stratigraphy; structure; coal resources; quality; chemical analysis; development; transportation; market; use; maps; tables.


Carbon County; Book Cliffs Coal Field.

Descriptors: lignitic formation; fossil flora; Cretaceous; Dakota Formation; Coalville; basins; productive capacity; combustible mineral; sections; Green River Station; bituminous matter; Eocene; Europe; Union Pacific Railroad; analyses of coal; descriptive flora list.


Kane and San Juan Counties.

Descriptors: Kaiparowits basin; Black Mesa basin; stratigraphy; structure; geologic history; formations; depositional environment; isopach maps; diagrams.


Descriptors: solvent extraction; ether; aqueous sulfuric acid; sodium hydroxide; coal hydrogenation oil; infrared spectroscopy; gel permeation chromatography; gas chromatography; solvent fractionation; condensation; complex aromatic substitutions; selectivity of polarity; purity; coal oils; Orangeville; char; Last Chance; catalysts; amphoteric fraction; weak acid.


Sanpete and Emery Counties.


Descriptors: western interior; sedimentation; Utah and Wyoming; sedimentary rocks; sedimentary structures; sedimentary petrology; clastic rocks; environment; environmental analysis; sandstone; deltas; Mesaverde Group; Rock Spring Formation; Blackhawk Formation; Cretaceous; petroleum; natural gas; coal; organic residues; deposits; exploration; high-energy environment; graded bedding; turbidity current structures; channels; textures; delta plains; blanket sandstone.


Duchesne, Wasatch, and Utah Counties.

Descriptors: Slab Mountain Anticline; structure; Duchesne, Wasatch, and Utah Counties; Soldier Summit; stratigraphy; Tertiary Flagstaff, Colton, Green River Formations; history of exploration; photogeologic; surface geology; seismic exploration; fracture reservoir; gas; oil; form line map; lithology.


Descriptors: coal mining; history; coal industry; wages; management; transportation rates; economics; labor relations; mechanization; unions; substitutes; housing; economic law; American law.


Descriptors: Emery, Wasatch Plateau, Book Cliffs and Sego Coal Fields; Sevier, Sanpete, Carbon, Emery, and Grand Counties; Wasatch Plateau; Castle Valley; Book Cliffs; geology; sections; Mancos Shale; Mesaverde Formation; Wasatch Formation; lithology; description of coal; mining; engineering; production; transportation; descriptions of mines by company; analyses of coals.


Descriptors: Emery, Wasatch Plateau, Book Cliffs and Sego Coal Fields; Sevier, Sanpete, Carbon, Emery, and Grand Counties; Wasatch Plateau; Castle Valley; Book Cliffs; geology; sections; Mancos Shale; Mesaverde Formation; Wasatch Formation; lithology; description of coal; mining; engineering; production; transportation; descriptions of mines by company; analyses of coals.


Kolob, Kaiparowits Plateau, Alton, and Henry Mountains Coal Fields.

Descriptors: Utah; Arizona; environmental geology; land use; Kolob, Kaiparowits Plateau, Alton, and Henry Mountains Coal Fields; coal; organic residues; development; pollution; water resources.


Descriptors: substitute natural gas; methane; catalyst; temperature; pressure; reaction time; hydrogasification; fixed catalytic bed; feed stock; yield.


Lin, Y., 1974, Coal tar autoxidation kinetics studies by viscometric and refractometric methods: Ph.D. dissertation, Univ. of Utah.

Descriptors: coal tars; bituminous coal; hydrogenation; carbonization; viscosity; refraction; infrared spectra; double bonds; iodine number; rate of oxidation; oxygen partial pressure; reaction time; diffusion; activation energy; neutral oils; tar acids; tar bases.


Descriptors: underground water; flood plains; coal; geology; hydrology; bibliography; Utah.


Emery County; Emery and Wasatch Plateau Coal Fields.

Descriptors: Utah; ground water; environmental geology; surveys; impact statements; Emery County; Mancos Shale; Ferron Sandstone Member; USGS; Castle Valley; Cretaceous; sandstone; clastic rocks; aquifers; transmissivity; water supply; water quality; automatic data processing; digital simulation; coal; organic residues; surface mining; Emery coal field; water resources; hydrogeologic maps; maps.


Descriptors: Utah; hydrology; hydrogeology; surveys; USGS; coal fields; coal; organic residues.


Descriptors: coal gasification plants; environmental impacts; coal mining; fossil-fuel power plants; socio economic factors; climates; erosion; licensing; planning; urban areas; New Mexico, Utah, and Wyoming.


Carbon County; Book Cliffs Coal Field.

Descriptors: methane; broken coal; contemporary literature sources; direct and indirect methods; test measurement procedures; equipment descriptions; data interpretations; coal mines; Sunnyside; Price River No. 3; West German analyses.

Little, L. R., 1975, Rural industrialization: the case of Four Corners: Utah State Univ., Logan, Utah.

Descriptors: energy sources; socio economic factors; Arizona, New Mexico, Utah, and Colorado; age groups; coal; economics; planning; production; public relations; tables.


Garfield County; Kaiparowits Plateau Coal Field.


Descriptors: coal industry; taxes; government policies; reserves; Arizona, Colorado, New Mexico, North Dakota, Utah, Wyoming, Montana, Nevada, Nevada, and South Dakota; comparative evaluations; economics; environmental effects; income; production; regional analysis; surface mining.


Descriptors: coal collection; mine samples; field samples; descriptions; physical properties; chemical analysis; nationwide analyses; tables.


Descriptors: energy consumption; energy source development; population dynamics; population regulations; Arizona, Colorado, Montana, New Mexico, Utah, and Wyoming; waste management; pollution regulations; air quality; animals; climate; coal; data compilation; employment; endangered
species; energy analysis; government policies; hazardous materials; land use; LPG; natural gas; petroleum; power plants; public health; pumped storage; radioactive wastes; rate structure; shale oil; solar energy; solid wastes; topography; uranium; water quality; wind power.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: energy source development; electric power generation; environmental impacts; economic impact; social effect; employment; sociopsychological surveys; public opinion; coal; Utah and Arizona.


Descriptors: resource assessment; bibliographies; coal deposits; resource assessment; Utah; animals; geologic structures; plants.


Descriptors: origin; petrography; classification of coals; physical properties; mechanical properties; plastic properties; coal analysis and mineral matter; chemical constitution and reactions of coal; storage; handling; transportation; cleaning and preparation; pyrolytic reactions; low and high temperature tar; light oil; briquetting; thermodynamics and kinetics; combustion processes; coal ash; boiler availability; gasification; hydrogenation of coal and tar; nonfuel uses of coal; graphs; diagrams; equations; analyses.


Uintah County; Vernal Coal Field.

Descriptors: Deep Creek district; Vernal Coal Field; Uintah County; location; physiography; geology; stratigraphy; structure; lithologic descriptions; coal; occurrence; quality; physical properties; chemical analysis; reserves; tonnage; recoverable reserves; maps; tables; figures.


Wasatch County; Tabby Mountain Coal Field.


Carbon, Emery, and Sevier Counties; Wasatch Plateau Coal Field.

Descriptors: Castle Valley; geology; coal resources; history; geography; physiography; Wasatch Plateau; San Rafael Swell; stratigraphy; structure; coal-bearing formations; occurrence; physical properties; chemical analysis; development; transportation; reserves; charts; tables; maps.


Descriptors: bonding and functional groups; aliphatic, cyclic and aromatic components; coal matrix; volatile matter; micropores; waxy and resinous benzene soluble compounds; phenolic and alcoholic hydroxyls; ether; epoxide; carbonyl; carboxyl; heterocyclic; unsaturation; structure; peripheral sites; rings.


Descriptors: conversion; hydrogenation; short residence time; small tube reactor; “free-fall” reactor concept; continuous system; temperature; hydrogen pressure; reactor space rate utilization; metallic salts; zinc chloride; catalysts.

Lytle, J., 1979, A kinetic study of the liquefaction by catalytic hydrogenation of various Utah coals: Ph.D. dissertation, Univ. of Utah.

Descriptors: coal liquefaction; entrained flow reactor; zinc chloride; catalyst; hydrogen; plastic; sticky; conversion; High volatile bituminous coals; free-radicals; unreacted-core-shrinking model; extrapolations of data; residence time measurement; magnetic field; resonant frequency; literature survey.


Descriptors: Eocene Green River flora; northeastern Utah; previous work; geology; stratigraphic relations; correlation; systematic lists of families and species; leaf counts; environmental conditions; climates; paleogeography; floral age; Bonanza; ecology; lacustrine; oil shale; Uinta Basin; plates.

Machlin, P. R., J. A. Cooper and D. Malek, 1981, Resi-
dental solid fuels in the Environmental Protection Agency Region VIII states, environmental impacts and solutions: Oregon Graduate Center, Beaverton, OR, Environmental Protection Agency, Denver, CO, Rept. No. CONF-810674, p. 1197-1215.

Descriptors: coal burning appliances; air pollution control; environmental impacts; wood burning appliances; carbon monoxide; health hazards; ozone; particulates; pollution regulations; solid fuels; EPA; Colorado, Montana, North Dakota, Utah, and Wyoming.


Descriptors: coal; mines; efficiency; surface mining; management; computerized simulation; cost; materials handling; mining equipment; Arizona, New Mexico, and Utah.


Descriptors: coal mining; open-pit mining; mining equipment; mathematical models; surface mining; materials handling; draglines; excavating equipment; production management; cost analysis; computerized simulation; Illinois, Utah, New Mexico, Arizona, and Ohio.


Box Elder County; Goose Creek Lignite Field.

Descriptors: stratigraphy; Goose Creek district; Box Elder County; sedimentary; pyroclastic; Tertiary; geologic map; structure; field relations; lithology; tectonic events; fossil plants; correlated columnar sections; lignite; Fayette Formation; carbonaceous shale; section.


Box Elder County; Goose Creek Lignite Field.

Descriptors: Goose Creek district; Tertiary rocks; stratigraphy; sedimentology; volcanic; structure; lignite; local use; ash; little commercial value; Salt Lake Formation; mineral resources; Box Elder County; geography; sections; surficial deposits; Fayette Formation; fuel analyses of lignite and lignitic shale; analyses for uranium.


Uintah County; Vernal Coal Field.

Descriptors: tar sands; Three Mile Canyon area; P. R. Spring deposit; analyses; cores; oil zone; average
properties; saturation; permeability; thickness; Uinta Basin; oil resource; recovery; technology; geography; stratigraphy; analytical procedures; results.


Descriptors: fossil-fuel power plants; constraints; surface mining; air pollution; coal; Utah and Nevada.


Emery, Sanpete, and Sevier Counties; Emery and Wasatch Plateau Coal Fields; Emery West and Flagstaff Peak Quadrangles.


Sanpete, Sevier, Carbon, and Emery Counties; Emery and Wasatch Plateau Coal Fields.

Descriptors: sedimentation; sedimentary rocks; stratigraphy; environment; lithofacies; Cretaceous; coastal environment; environmental analysis; Blackhawk Formation; Star Point Sandstone; Emery and Wasatch Plateau Coal Fields; Mesozoic; lithostratigraphy; sandstone; clastic rocks; fine-grained materials; deltas; floodplains; channels; coal; organic residue; brackish-water environment; paleoenvironment.


Emery County; Emery Coal Field.

Descriptors: sedimentation; sedimentary rocks; economic geology; sedimentary petrology; environment; clastic rocks; coal; coastal environment; sandstone; Blackhawk Formation; Star Point Formation; organic residues; Cretaceous; Emery; deltas; lagoons; lithostratigraphy; Mesozoic; angiosperms; Drophylium subfalcatum; ichnofossils; biogenic structures; sedimentary structures; Ophiomorpha; Malacostraca; Crustacea; Arthropoda; Thalassinoides.


Duchesne and Uintah Counties.
McCulloch, C. M., M. Duel and P. W. Jeran, 1974a, Descriptors: coal; mining geology; economic geology; production control; West Virginia, Pennsylvania, Virginia, Utah, and Oklahoma; bituminous; fractures; cleat; face cleat; butt cleat; mining; direction; controls; genesis; tectonic; permeability.


McCullough, T., 1956, Hydrocarbons and other compounds obtained from gilsonite: Ph.D. dissertation, Univ. of Utah.


McCulloch, C. M., M. Duel and P. W. Jeran, 1974a, Descriptors: fractures; structural geology; Oklahoma, Pennsylvania, Utah, Virginia, and West Virginia; joints; vertical; cleat; occurrence; seams; coal; bituminous; orientation; controls; tectonics; uplifts; erosion.


McCullough, T., 1956, Hydrocarbons and other compounds obtained from gilsonite: Ph.D. dissertation, Univ. of Utah.


McCulloch, C. M., M. Duel and P. W. Jeran, 1974a, Descriptors: coal; mining geology; economic geology; production control; West Virginia, Pennsylvania, Virginia, Utah, and Oklahoma; bituminous; fractures; cleat; face cleat; butt cleat; mining; direction; controls; genesis; tectonic; permeability.


Descriptors: High volatile bituminous coal; Spring Canyon mine; energy input; benzene; acetone; hydrogen; carbon monoxide; acetylene; infrared spectra; aromatic/aliphatic hydrogen ratios; West Virginia; thermodynamics; thin-film resistance thermometry; platinum film; oscilloscope trace; heat flux; heat capacity; heat transfer theory.


Descriptors: types of bedding; Colorado River Delta; texture; structure; deposition; low-river stage; cross stratification; current ripples; mud; flat-bedded; foreset beds; estuary; erosion channels; tide waters; pseudobedding; character of delta; map; histograms of grain size; methods of study.


Descriptors: terminology for stratification and cross-stratification in sedimentary rocks; qualitative terms; quantitative terms (thickness of strata); quantitative terms (thickness into which rock splits); lower bounding surface of a set of cross-strata; erosion or non-deposition; plane or curved; shape of set; attitude of axis; symmetry; arching; dip and length; simple, planar and trough cross-stratification; high angle; low angle.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: environmental surveys; coal deposits; arid land; geology; soil conservation; chemical properties; land reclamation; ground water; land use; vegetation; hydrology; environmental impacts; wildlife; Utah.


Descriptors: land reclamation; revegetation; surface mining; arid lands; boron; coal mining; fertilizers; irrigation; preferred species; surface mining; Utah.


Descriptors: environmental geology; reclamation; oil shale; coal; organic residues; environment; arid environment; revegetation; northeastern Utah; south-central Utah; deposits; field studies; surface mining.


Descriptors: vegetation; oil shale; land reclamation; arid land; field tests; coal mining; greenhouses; planting; containers; volume; growth; summer; plant reproduction; shrubs; plant hormones; Utah.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: environmental geology; reclamation; Henry Mountain Field; coal; organic residues; deposits; land use; impact statements.

McKell, C. M., et al., undated, Energy mineral rehabilitation inventory and analysis, Henry Mountains Coal Field: Utah State Univ.

Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: environmental surveys; coal deposits; land reclamation; inventories; overburden; coal mining; stratigraphy; cores; surface mining; geophysical prospecting; maps; licences; coring; water quality; vegetation; wildlife; irrigation; soil conservation; Utah.


Descriptors: mineral resources; economics; production; data compilation; employment; fossil fuels; income; legislation; metals; mineral industry; mining; raw materials; sand; values; Utah.

McMartin, W., 1979, Western coal; energy vs. agriculture: North Dakota Farm Resources, Jan. 1979.

Descriptors: agriculture; coal mining; surface mining; cost benefit analysis; Great Plains; Rocky Mountain area; coal reserves; land use; energy.
source development; resource assessment; land reclamation; Arizona, New Mexico, Montana, Colorado, Utah, Wyoming, North Dakota, and South Dakota.

Meek, F. B., and F. V. Hayden, 1861, Descriptions of new Lower Silurian, Jurassic, Cretaceous and Tertiary fossils collected in Nebraska Territory (with some of the rocks from which they were obtained): Proc. Acad. Nat. Sci., Phila., Vol. 13, p. 415-447.

Descriptors: descriptions of fossils; age succession of fossils; Silurian; Jurassic; Cretaceous; Tertiary; Uintah and Weber Rivers; stratigraphical evidence; general sections; descriptions of formations and outcrops; Dakota group; geographic distribution; relationship to eastern U.S. and European strata.


Kane County; Alton Coal Field; Alton Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Alton Quadrangle.


Kane County; Alton Coal Field; Bald Knoll Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Bald Knoll Quadrangle; USGS.


Kane County; Kolob Coal Field; SE Orderville 15-min. Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Orderville Quadrangle; USGS.


Kane and Garfield Counties; Alton Coal Field; Bryce Point Quadrangle.

Descriptors: economic geology; coal; maps; Kane and Garfield Counties; organic residues; resources; economic geology maps; explanatory text; inventory; Bryce Point Quadrangle; USGS.


Kane County; Alton Coal Field; Deer Springs Point Quadrangle.

Descriptors: economic geology; coal; maps; organic residues; Kane County; resources; economic geology maps; explanatory text; inventory; Deer Spring Point Quadrangle.


Kane County; Alton Coal Field; NE quarter of the Orderville 15-min. Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Orderville Quadrangle.


Kane County; Alton Coal Field; Podunk Creek Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Podunk Creek Quadrangle; USGS.


Kane County; Alton Coal Field; Rainbow Point Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Rainbow Point Quadrangle; USGS.


Kane County; Alton Coal Field; Skutumpah Creek Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Skutumpah Creek Quadrangle; USGS.

**Descriptive terms:** survey organizations; Western U.S.; economic geology; USGS; coal; organic residues; North Dakota, Montana, Wyoming, Colorado, Utah, and New Mexico; resources; evaluation; geochemistry; hydrology.


Uintah County; Vernal Coal Field.

**Descriptors:** Colorado, Utah, and Wyoming; environmental geology; impact statements; Uintah County; White River Basin; Yampa River Basin; resources; water quality; energy sources; pollution; coal; organic residues; oil shale.


**Descriptors:** coal mines; environmental impact statements; coal deposits; fossil-fuel power plants; land reclamation; planning; socio economic factors; water requirements; Utah.


**Descriptors:** coal deposits; exploration; coal mines; environmental impact statements; geology; ground subsidence; Utah.


Emery County; Wasatch Plateau Coal Field.

**Descriptors:** Utah; economic geology; coal; Emery County; Blackhawk Formation; organic residues; Wasatch Plateau; Colorado Plateau; mines; strength; water; mining.

Merritts, W. M., 1958, Allaying of coal dust by water infusion of coal in place in the leading coal producing countries of the world: M.S. thesis, Univ. of Utah.

Carbon County; Book Cliffs Coal Field.

**Descriptors:** coal dust; mining operations; coal mines; water infiltration method; water injection; wetting agent; abate dust; dust counts; pillar heating; degassing working faces; Kenilworth; lower Sunnyside; Hiawatha; Adaville; Beckley; Utah, Wyoming, and West Virginia.


**Descriptors:** underground mining; mining equipment; coal mining; dusts; control; Utah.


**Descriptors:** coal; production; management; Utah.


**Descriptors:** coal; mining; Utah.


Iron, Washington, and Kane Counties; Kolob Coal Field.

**Descriptors:** landslides; Utah; engineering geology; Kolob Coal Field.


**Descriptors:** coiled-tube, short residence time hydroliquefaction reactor; separations; HPLC; gas chromatography; infrared spectroscopy; GC/Mass spectroscopy; heptane soluble fraction; saturated and aromatic hydrocarbons; polar and nonpolar molecules; functional groups; alkylbenzene; alkyl tetralin; phenols; naphthols.


**Descriptors:** radio isotope XRF probe; solids concentrations; coal slurries; on-line probe placements; pyrite; calcite; sulfur content; ash content; linear regression models; fluorescence intensities; density gauge; flotation tests; particle size.


**Descriptors:** mineral assemblages; Green River Formation; shortite; new mineral species; sedimentary minerals; soda; hydrocarbons; saline beds; sedimentation and diagenesis; phase-rules; experimental data; geologic conditions; carbonates; trona; nahcolite; geochemical data and calculations; phase diagrams; eitelite; dawsonite; chlorides; analcide boron, iron, magnesium, titanium, and zirconium silicates; sulfides; phosphates; sulfates; fluorides.


**Descriptors:** coal; economic geology; underground mining; Utah.


**Descriptors:** coal; energy policy; Utah.
Descriptors: production management; coal; mining; Utah.

Descriptors: coal; mining organizations; iron ores; economic geology; economic production management; Utah.

Descriptors: legislative production management; coal; mining; Utah.

Descriptors: coal; coal mining; economic geology; Utah.

Descriptors: coal; strip mining; mining equipment; Utah.

San Juan County.
Descriptors: San Juan Canyon; southeastern Utah; water; geography; hydrographic study; climate; geology; structure; tributary streams; sediment load; transport; water supplies; tables; graphs; charts.

Descriptors: sedimentation; sedimentary petrology; environment; sedimentary rocks; Cretaceous; rivers; lagoons; swamps; marine; coastal; interpretation; current directions; lithofacies; coal; sandstone; limestone; petrography; heavy minerals; provenance; controls.

Duchesne and Uintah Counties.

Descriptors: subsidence; coal mining; underground mining; environmental impacts; hydrology; ground water; surface waters; Montana, Wyoming, Colorado, Arizona, New Mexico, Idaho, and Utah.

Emery County; Emery Coal Field.
Descriptors: ground water; water flow; aquifers; water supply; mathematical models; three-dimensional flow; surface mining; coal; dewatering; water wells; drawdown; computer programs; hydraulic conductivity; Utah.

Descriptors: ground water; environmental geology; economic geology; surveys; pollution; coal; Ferron Sandstone; Mancos Shale; organic residues; deposits.


Descriptors: hydrogen transfer properties; zinc chloride; coal hydrogenation catalyst; deuterium labeling; solid acidic catalysts; zinc chloride/coal combination; amorphous silica-alumina; reduced nickel catalyst; reduced zinc metal; weak Lewis acid; paraffin; olefin; weak Bronsted acid; carbonium ion; hydride.

Carbon, Emery, and Utah Counties; Book Cliffs Coal Field.

Descriptors: central Utah; northeast Wasatch Plateau; southwestern edge of the Uinta Basin; stratigraphic section; upper Cretaceous; lower Cenozoic non-marine; Colton; Green River and Uinta Formations; Blackhawk; Castlegate sandstone; Price River; North Horn; Flagstaff; Bennion Creek; mountain building; facies; structure; Clear Creek anticline; Beaver Creek syncline; Tie Fork syncline; faults; Pleasant Valley; Starvation Creek; disconformity; gravity; geomorphology; graben; fault scarp; ridge; canyon; hogback; crustal movements; early Laramide orogeny; folding and faulting; late Eocene; Miocene; floodplain; lacustrine; Flagstaff Lake; Uinta Lake; fluvial facies; Duchesne River; present drainage system.

Descriptors: Utah and West Virginia; engineering geology; rock mechanics; pressure changes in coal; measurement methods; coal mines.

Muir, D. D., 1928, Utah operations of the U.S. Smelting,


Descriptors: Emery County; Wasatch Plateau Coal Field.


Mutual Coal Company, 1925, Mutual coal company: an organization created to serve the interests of the fuel consumer: Mutual Coal Company.


Nebrook, A. D. Smith, Bibliography of Utah Coal


Descriptors: energy sources; water resources; environmental geology; symposia; economic geology; conservation; regional; coal; oil shale; petroleum; natural gas; effects; pollution; industrial; municipal; impact statements; policy; concepts; objectives; management; federal; state; reserves; development; Utah.


Descriptors: southwestern U.S.; environmental geology; economic geology; pollution; coal; energy
sources; organic residues; nuclear energy; resources; Wyoming, Utah, Arizona, Colorado, and New Mexico; Colorado River Basin; development; effect; power plants; economics.

San Juan County.
Descriptors: lignites; plant beds; fossil flora; Cretaceous; angiosperms; San Juan Basin; mollus­cus and vertebrate remains; Utah, Colorado, and New Mexico; paleontology; age of strata; Europe; paleogeography; climate; vegetation.

Carbon County; Book Cliffs Coal Field.
Descriptors: deformation; seismology; mining geology; field studies; geophysical observations; rockbursts; seismic characteristics; coal mines; Price; earthquakes; Sunnyside; Castlegate; strain energy; frequency; seasonal variation; rainfall; coal production; cause-effect relationships; rockburst and earthquake epicenter map; earth crustal model; velocities; P-direct; Love; Rayleigh waves; amplitude.

Descriptors: coal; mining; coal exploration; Utah.

Descriptors: jet engine fuels; performance testing; production; aromatics; coal; coal liquefaction; coed process; comparative evaluations; hydrogenation; refining; synthetic fuels; Utah and Kentucky.

Descriptors: economics; coal; coal leasing; taxation; coal production; mineral leasing; uranium resources; oil resources; Colorado, Montana, North Dakota, New Mexico; coal mining; Colorado River Basin; development; effect; power plants; economics.

Sanpete County; Wasatch Plateau Coal Field; Fairview Lakes Quadrangle.

Sanpete County; Wasatch Plateau Coal Field; Fairview Lakes Quadrangle.
Descriptors: Utah; faults; geomorphology; areal geology; systems; fluvial features; stratigraphy; maps; grabens; drainage patterns; lithostratigraphy; Sanpete County; Blackhawk Formation; Castlegate Sandstone; Price River Formation; Flagstaff Limestone; geologic maps; Fairview Lakes Quadrangle; Cretaceous; Mesozoic; Tertiary; Cenozoic; glaciation; economic geology; coal; organic residues; fuel resources; petroleum; natural gas; construction materials; water resources; structure contour maps; Goniobasis tenera; Lioplacodes marian.


Descriptors: coal gasification; reviews; liquefaction; pilot plants; coal preparation plants; design; cost estimates; water resources; Arizona, Colorado, New Mexico; Utah; Montana; North Dakota; and Wyoming.

Descriptors: coal mining; environmental impacts; surface mining; air quality; coal; ground water; land use; plants; soils; topography; water quality; Utah.

Descriptors: coal; production; coal deposits; leases; resource potential; coal mining; data compilation; environmental impacts; land reclamation; productivity; resource development; socio economic factors; theoretical data; transport; Colorado, Montana, North Dakota, Oklahoma, Utah, and Wyoming.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: bituminous coal; hydrogenation; pyrolysis; subbituminous coal; zinc chlorides; catalytic effects; bench-scale experiments; chemical reactions; Montana and Utah.


Olsen, R. W., 1980, Intensive use of diesels underground as support units for electric face equipment in American Mining Congress international coal show 1980: American Mining Congress, Washington, D.C.

Descriptors: diesel engines; exhaust gases; maintenance; underground mining equipment; ventilation systems; air pollution; coal mines; coal miners; education; hydraulic equipment; inspection; lubrication; mine roadways; monitoring; safety; Utah.


Descriptors: brakes; performance; coal mining; transportation systems; control systems; design; Utah.


Duchesne and Uintah Counties.

Descriptors: stream deposits; stream table experiments; stratigraphic records; stream descriptions and features; discharge; terminology; statistical methods; physical characteristics; grain size distribution; rose diagrams.


Emery County; Emery Coal Field; Emery 1 Quadrangle.


Garfield County.

Descriptors: palynology; Cretaceous; Straight Cliffs Formation; Garfield County; stratigraphy; depositional environment; lithology; correlations; geology.


Duchesne and Uintah Counties.

Descriptors: Uinta Basin; tectonic history; depositional environments; paleogeography; isopach maps.


Duchesne and Uintah Counties.

Osterwald, F. W., 1961, Preliminary lithologic and structural map of the Sunnyside No. 1 mine area, Carbon County, Utah, showing coal outcrops, coal mine workings, mined-out areas, overburden thickness contours, and subsidence cracks: U.S. Geol. Surv., Coal Inv., Map C - 50, (2 sheets).

Carbon County; Book Cliffs Coal Field.

Descriptors: coal; Utah; economic geology; maps; Sunnyside No. 1 mine; outcrop map; outcrops; lithologic and structural.

Osterwald, F. W., 1962a, Map of preliminary lithology and structure of Sunnyside No. 1 mine area, Carbon County, Utah: U.S. Geol. Surv., scale 1:6,000.

Carbon County; Book Cliffs Coal Field.

Osterwald, F. W., 1962b, U.S. Geol. Surv., relates geologic structures to bumps and deformation in coal mine workings at Sunnyside No. 1 mine: Mining Eng., Vol. 14, No. 4, p. 63-68.

Carbon County; Book Cliffs Coal Field.

Descriptors: mining geology; Utah; technology; engineering geology; structural geology; coal mines; rock bursts; rock mechanics; Book Cliffs Coal Field; mine bumps; Sunnyside No. 1 mine; relation to mine bumps.


Descriptors: engineering geology; earthquakes; coal mining areas.


Carbon and Emery Counties; Book Cliffs Coal Field.

Descriptors: Utah; fractures; structural analysis; mining geology; fossil man; sedimentation; economic geology; style; interpretation; production control; occurrence; environment; coal; joints; Quaternary; deltaic environment; Carbon and Emery Counties; USGS; Sunnyside district; bedrock; surficial geology; organic residues; bituminous coal; gypsum deposits;
natural gas; bitumens; organic materials; Cretaceous; Cenozoic; faults; geomorphology; cleavage; deformation; stress; coal seams; deltaic sedimentation; landform description.


Carbon and Emery Counties; Book Cliffs Coal Field.

**Descriptors:** coal mine bumps; geology; Sunnyside; Carbon and Emery Counties; structure; stratigraphy; stress accumulation along faults; mining; friction properties of bedding planes; lithology; sedimentary structures; roof conditions; diagrams.


Carbon County; Book Cliffs Coal Field.

**Descriptors:** engineering geology; economic geology; mining geology; seismic surveys; rock mechanics; geophysical surveys; coal mine bumps; research; Sunnyside coal district; tremors.


Carbon County; Book Cliffs Coal Field.

**Descriptors:** coal mining; mine bumps; rockbursts; instrumentation study; Sunnyside district; shear failure; seismic investigations; tiltmeter investigations; maps.


Carbon County; Book Cliffs Coal Field.

**Descriptors:** Crinoidea; Silurian; Utah and Kentucky; engineering geology; Utah; *Eucalyptocrinus foersteri*, coal mine bumps; paleontology; Brassfield Limestone; Estill County; Sunnyside District.


Emery and Carbon Counties; Book Cliffs Coal Field; Woodside Quadrangle.

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Emery County; Wasatch Plateau Coal Field.

**Pan, L. S.,** 1967, Pressure effects on laboratory coalification processes: Ph.D. dissertation, Univ. of Utah.

**Descriptors:** artificial coalification; high volatile bituminous coal; atmospheric pressure; rank; ultimate analysis; X-ray spectroscopy; IR spectroscopy; electrical resistivity; tests; high pressure; low pressure heating; coke; thermal decomposition; activation energy.


Carbon County; Book Cliffs Coal Field.

**Descriptors:** rock mechanics; Utah; materials; properties; engineering geology; finite element analysis; sandstone; mathematical models; statistical methods; longwall mining; Sunnyside Mine; pressure; elasticity; strain; deformation; elastic rocks; coal; organic residues.


**Descriptors:** coal; transport; coal miners; mortality; coal mines; safety; accidents; comparative evaluation; Utah.


**Descriptors:** coal mines; explosions; accidents; hazards; safety; Utah.


**Descriptors:** coal mines; accidents; explosions; chemical explosives; safety; Utah.


**Descriptors:** coal; oil shale; environmental geology; economic geology; land use; deposits; resources; deposits; reserves; exploration; development; methods; remote sensing; Colorado, Utah, and Wyoming; regional planning; conservation; erosion.

Descriptors: paleoecology; coal; Spermatophyta; epi-continental environments; lithostratigraphic units; deltas; Cretaceous; Utah.


Descriptors: coal; coking; coke; production; data compilation; Utah.


Descriptors: coal; reserves; demand factors; calorific value; mines; comparative evaluations; energy demand; energy source development; energy sources; production; Arizona, California, Utah, Colorado, New Mexico, Idaho, Montana, Oregon, Texas, Washington, and Wyoming.


Pashley, E. F., 1956, The geology of the western slope of the Wasatch Plateau between Spring City and Fairview, Utah: M.S. thesis, Ohio State Univ.
Sanpete County; Wasatch Plateau Coal Field.

Pearce, L. P., 1970a, Coal deposits in Summit, Morgan and Rich Counties to the west and south of the Wyoming boundaries: Utah Geol. and Min. Surv., Rept.
Summit, Morgan, and Rich Counties; Coalville Coal Field.

Pearce, L. P., 1970b, San Juan-La Sal Mountains Coal Fields, San Juan County, Utah: Utah Geol. and Min. Surv., Unpubl. Inf.
San Juan County; San Juan and La Sal Coal Fields.

Wasatch and Duchesne Counties; Tabby Mountain Coal Field.

Grand County; Sego Coal Field.

Summit and Daggett Counties; Henry's Fork Coal Field.

Wayne and Garfield Counties; Henry Mountains Coal Field.

Sanpete County; Mt. Pleasant-Fairview Coal Field.

Sevier County; Salina Canyon Coal Field.

Uintah County; Vernal Coal Field.

Sanpete County; Wales Coal Field.


Descriptors: aerosols; monitoring; air pollution; Arizona, Utah, Colorado, Montana, New Mexico, North Dakota, and Wyoming; nitrates; particles; quality assurance; sulfates; tables.

Peperakis, J., 1958, Mountain bumps at the Sunnyside mines (Utah), in (Spindler and Pace, chrm.) Bump symposium: Mining Eng., Vol. 10, No. 9, p. 982-986.
Carbon County; Book Cliffs Coal Field.

Descriptors: mountain bumps; Sunnyside mines; pillar mining; virgin development; loss of life; destruction of workings; coking coal; economic conditions; cleaning plant facilities; large reserves; re-treating pillar lines in old first-mined areas; abutment pressures; squeeze conditions; cover; failure; loading; subsidence movements; disturbances; difficult roof; roof falls; geology and fault structure; Book Cliffs; relation of fault structure to bumps; earth tremors; unusual bump occurrences; rib sloughage; measures to minimize hazards.

Descriptors: coal; coking; Utah.

Carbon County; Book Cliffs Coal Field.

Descriptors: organic materials; hydrocarbons; economic geology; methane; coal; Sunnyside coal bed; detection; occurrence.

Peterson, F., 1967, Preliminary geologic map and coal deposits of the northwest quarter of the Gunsight Butte Quadrangle, Kane County, Utah: Utah Geol. and Min. Surv., Map 24E.
Kane County; NW Gunsight Butte Quadrangle.

Descriptors: coal; economic geology; maps; geologic; stratigraphy.

Kane County; Kaiparowits Plateau Coal Field.

Descriptors: Cretaceous; coal; titanium; petroleum; natural gas; stratigraphy; possibilities.

Kane County; Kaiparowits Plateau Coal Field.


Descriptors: Utah; coal; sedimentary rocks; Cretaceous; sedimentation; economic geology; organic residues; cyclic; environmental analysis; Straight Cliffs Formation; paleoecology; paleogeography; transgression; regression; shorelines; changes of level; environment; swamps; controls; deposits; thickness; genesis.

Peterson, F., 1980, Geologic map and coal deposits of the Big Hollow Wash Quadrangle, Kane County, Utah: U.S. Geol. Surv., Coal Inv., Map C-84, 1 sheet.
Kane County; Kaiparowits Plateau Coal Field; Big Hollow Wash Quadrangle.

Descriptors: economic geology; maps; coal; Kane County; Morrison Formation; Big Hollow Wash Quadrangle; Jurassic; geologic maps; sections; structure contour maps; correlation; diagrams; explanatory text; organic residues; deposits.

Peterson, F., and B. E. Barnum, 1973a, Geologic map and coal resources of the northeast quarter of the Cum­mings Mesa Quadrangle, Kane County, Utah: U.S. Geol. Surv., Coal Inv., Map C-63.
Kane County; Kaiparowits Plateau Coal Field; NE Cummings Mesa Quadrangle.

Descriptors: Utah; maps; economic geology; Kane County; coal; Cummings Mesa Quadrangle; geologic; deposits; resources.

Peterson, F., and B. E. Barnum, 1973b, Geologic map and coal resources of the northwest quarter of the Cum­mings Mesa Quadrangle, Kane County, Utah: U.S. Geol. Surv., Coal Inv., Map C-64.
Kane County; Kaiparowits Plateau Coal Field; NW Cummings Mesa Quadrangle.

Descriptors: Utah; maps; economic geology; Kane County; coal; Cummings Mesa Quadrangle; geologic; deposits; resources.

Peterson, F., and G. W. Horton, 1966, Preliminary geologic map and coal deposits of the northeast quarter of the Gunsight Butte Quadrangle, Kane County, Utah: Utah Geol. and Min. Surv., Map 24F.
Kane County; NE Gunsight Butte Quadrangle.

Descriptors: coal; economic geology; maps; geologic; stratigraphy; NE quarter Gunsight Butte Quadrangle; Mesozoic; Quaternary.

Kane County; Kaiparowits Plateau Coal Field; Nipple Butte and Gunsight Butte Quadrangles.

Descriptors: coal; Cretaceous; Jurassic; stratigraphy; economic geology; Kaiparowits Plateau; resources; formation descriptions; Straight Cliff Formation; Dakota Formation; chemical analysis; rank; thickness; maps.

Peterson, F., and H. A. Waldrop, 1966, Preliminary geologic map and coal deposits of the southeast quarter of Gunsight Butte Quadrangle, Kane and San Juan Counties, Utah, and Coconino County, Arizona: Utah Geol. and Min. Surv., Map 24G.
Kane and San Juan Counties; Kaiparowits Plateau Coal Field; SE quarter Gunsight Butte Quadrangle.

Descriptors: coal; economic geology; maps; geologic; stratigraphy; Mesozoic; Quaternary.

Emery, Wayne, and Garfield Counties; Henry Mountains Coal Field.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: coal; Cretaceous; maps; structure; stratigraphy; Straight Cliffs Formation; coal beds; El Dorado Oil Field.


Carbon and Emery Counties.

Descriptors: Mounds and Farnham area; San Rafael Swell; Carbon and Emery Counties; faulted anticline; geophysical methods; seismic data; wells drilled; oil and gas; Moenkopi Formation; dome; structure; cross-section; carbon dioxide gas field.


Descriptors: origin; texture; composition; structure; classification; nomenclature; gravels, conglomerates, breccias, sandstones, shales, siltstones, limestones, and dolomites; nonclastic sediments; mineral stability; environments; lithification and diagenesis; historical geology.

Phillips Petroleum, 1977, Treasure for the taking; boom days are back at Four Corners: Phillips Shield, 1977.

Descriptors: coal deposits; natural gas deposits; petroleum deposits; uranium deposits; oil sands deposits; Utah, Arizona, New Mexico, and Colorado.


Duchesne and Uintah Counties.

Descriptors: subsurface stratigraphy; lithology; Green River Formation; Uinta Basin; microscopic studies; well samples; lacustrine environment; fluvial; Lake Uinta; paleogeography; main events; transgression; stability; regression; stratigraphy; black shale facies; formational contact; paleontologic content; age relationships; delta facies; tuff beds; time-equivalence; saline depositional environment; oil, tectonic framework; hydrocarbons; oil exploration history; oil production by field; geologic summary of oil and gas fields; cross-sections; well log.


Duchesne and Uintah Counties.

Descriptors: Uinta Basin; subsurface stratigraphy; Green River Formation; Uinta Formation; structure; lithology; correlation; paleogeography; depositional environment; facies; petroleum exploration; isopach maps; diagrams.


Descriptors: green shale facies; Green River Formation; delta facies; change in terminology; sediment type; environment; subsurface stratigraphy; field-trip guidebook; core; section; ostracod zones; coloration; oxidation state; lacustrine; fluvial; formal stratigraphic designation; gradational boundaries; isopaching; descriptive terminology.


Utah, Wasatch, Duchesne, and Carbon Counties.

Descriptors: Green River Formation; Uinta Formation; subsurface stratigraphy; western Uinta Basin; oil and gas; previous work and nomenclature; structural elements; petroleum geology; paleogeography; correlation; water depth chart; lithologic logs; general stratigraphy; cross-sections; source beds; Utah, Wasatch, Duchesne, and Carbon Counties.


Duchesne and Uintah Counties.

Descriptors: paleocurrents; shoreline orientations; Green River Formation; Eocene; Raven Ridge and Red Wash areas; northeastern Uinta Basin; ripplesmarks; cross-stratification; sandstone-body trends; lacustrine; fluvial; vertical stratigraphic variation; asymmetric and symmetric; axes of azimuths; stable current system; exploration for oil and gas; regional structure; stratigraphy; maximum inclination of foresets; description of structures used; directional results; rose diagrams; regional map.


Wayne and Garfield Counties; Henry Mountains Coal Field.


Deserters: sedimentary rocks; economic geology; organic residues; coal; Garfield and Wayne Counties; Emery Sandstone Member; Ferron Sandstone Member; Mancos Shale; Henry Mountains; Cretaceous; geochemistry; chemical composition; coal fields.

Deserters: modernization; locomotives; coal extraction; mining methods; natural gas; labor; rapid development; high output; wages; time-saving equipment; hand loading; mule haulage; roof; floor; pitch; height; water conditions; self-loading.

Deserters: modern industrialized world; fuel;
power; bituminous coal; petroleum; natural gas; anthracite coal; reserves; thin seams; mining process; recovery; future supply; settlement; nonferrous metal industry; smelting; interests; Geneva Steel plant; employment; Carbon and Emery Counties; production; transportation problems; economic competition; market; human factor; union wages and benefits; government regulation and supervision; depression; geography; areal relations.


Descriptors: coal; stratigraphy; Manning Canyon Shale; Mississippian; Soldier Canyon; coal cyclothsms; section.


Descriptors: coal mining; economics; Arizona, Arkansas, California, Colorado, Kansas, Montana, New Mexico, North Dakota, Oklahoma, Texas, Utah, Washington, and Wyoming; coal; coking; production.


Uintah County; Vernal Coal Field.

Descriptors: coal deposits; natural gas reserves; oil shale deposits; petroleum deposits; phosphates reserves; sandstone reserves; copper; lead; silver; mineral resources; Uintah County; Mesaverde Group; Frontier Formation; chemical analysis.


Uintah County; Vernal Coal Field.


Descriptors: coal-fired power plants; power plant construction; Utah.


Descriptors: research; pulverized coal; coal stoker; feed region; experimental study; vertical tube furnace; flue gas composition measurements; burn rate; nitrogen conversion; mathematical model; three second-order differential equations; gas phase kinetics.


San Juan County; San Juan Coal Field.

Descriptors: mining; production; history; reserve estimation; resources; coal production statistics; ore genesis; Utah.


Q


Descriptors: coal; desulfurization; hydrogenation; coal tar oils; refining; coal liquefaction; economics; efficiency; fractionation; Utah.


Descriptors: coal mining; underground mining.

R


Descriptors: coal industry; oil shale industry; geothermal resources; petroleum industry; environmental effects; air pollution; water pollution; uranium mines; Arizona, Colorado, New Mexico, Utah,
Montana, North Dakota, and Wyoming.


Descriptors: coal industry; energy sources; geothermal resources; oil shale industry; petroleum industry; environmental effects; air pollution; uranium; Arizona, Colorado, New Mexico, Utah, Montana, North Dakota, and Wyoming.


Descriptors: air pollution; regulations; coal deposits; oil shale deposits; water pollution; regulations; water resources; availability; Arizona, Colorado, Montana, New Mexico, North Dakota, Utah, and Wyoming; environmental effects; regional analysis.


Descriptors: coal industry; oil shale industry; geothermal energy; natural gas industry; petroleum industry; environmental effects; land use; water quality; Arizona, New Mexico, Colorado, Utah, Montana, North Dakota, and Wyoming.


Descriptors: coal liquids; heavy oils; C2-C4 gaseous products; thermal hydrocracking; starting feeds; normal paraffins; n-hexadecane; polycyclic napthenes; decalin; structure; experimental conditions.


Descriptors: 9-BTHC; bituminous coal; isothermal; closed-tube-vapor-phase pyrolysis; kinetics; reaction tubes; product identification; quantitative analysis; second-order rate equation; energy of activation; hydroaromatic portion; free radicals; hydrogen abstraction.


Descriptors: surface mining; cost; mathematical models; coal mining; computer codes; management; materials handling; mining equipment; Arizona, Illinois, New Mexico, Ohio, and Utah.


Descriptors: coal mining; mining equipment; computer codes; cost; excavation; management; materials handling; mathematical models; surface mining; Arizona, New Mexico, Ohio, and Utah.


Descriptors: surface mining; mathematical models; coal mining; computerized simulation; excavation; management; mining equipment; materials handling; Arizona, New Mexico, Illinois, Ohio, Utah.


Descriptors: boreholes; three-dimensional calculations; coal mines; longwall mining; closure; roof bolts; simulation; stresses; Utah.


Carbon County; Book Cliffs Coal Field.

Descriptors: longwall mining systems; single and double entry; Sunnyside mine; Kaiser Steel; depth; production; cost; ground control; longwall panels; theoretical investigations; instrumentation; field measurements; data processing; in-situ tests; rock types; physical and mechanical properties; stress; displacement; failure zones; finite element technique.


Descriptors: coal; hydraulic transport; coal slurry pipelines; design; cost; coal mines; California and Utah.


Descriptors: coal; hydraulic transport; coal slurry pipelines; design; cost; coal mines; California and Utah.


Carbon County; Book Cliffs Coal Field.

Descriptors: economic geology; Carbon County; organic residues; economics; Larson; Centennial Development Company; leasing.


Iron, Washington, and Kane Counties; Kolob Coal Field.

Descriptors: geology; Upper Cretaceous; Kolob Plateau; southwest Utah; Iron, Washington, and Kane Counties; stratigraphic sections; fossils; geography; coal outcrops; coal-bearing zone; local sections; Colorado and Montana groups.


Descriptors: air quality; mathematical models; coal industry; environmental impacts; resource development; visibility; air pollution; Utah.


Utah and Carbon Counties; Book Cliffs Coal Field.

Descriptors: fieldtrip guide; Book Cliffs Coal Field; Provo; Price; Sunnyside; mileage; index map showing route and location of stops; stratigraphic sections; road log.


Carbon and Sanpete Counties; Book Cliffs, Emery, and Wasatch Plateau Coal Fields.

Descriptors: Cretaceous; east-central Utah; facies change; cyclic sedimentation; intertonguing marine and nonmarine coal-bearing sediments; continental; littoral; marine; depositional environment; field trip; Price River; North Horn and Blackhawk Formations; Sunnyside mine; recent work in the area; local geologic history.


Descriptors: liquids; gases; continuous coal hydrogenation reactor; catalytic processing; fuel; catalysts; amorphous silica-alumina; zeolites; commercial cracking catalysts; ion exchange crystalline zeolite catalysts; cumene; acidity; Linde-Y ion exchange; gas-oil cracking; equilibrium; prepoisoning method; n-hexane; radical nature; nitric oxide; thermal cracking; reaction mechanisms.


Daggett County; Henry’s Fork Coal Field.

Descriptors: geology; geography; physiography; stratigraphy; lithology; structure; geomorphology; economic geology; deposits; coal; resources; Cretaceous; Mesaverde Formation; Frontier Member; Mancos Shale; Manning Canyon Shale; market; transportation.


Summit and Daggett Counties; Henry’s Fork Coal Field.

Descriptors: Uinta Mountain; tectonic history; Uinta anticline; folding; faulting; tectonic controls; structural chronology.


Uintah County.


Uintah and Daggett Counties; Henry’s Fork Coal Field.

Descriptors: Uinta Mountain; north flank; faulting; Henry’s Fork Fault; Uinta Fault; Spurks Fault; displacement; dip; faulting history; petroleum exploration.


Descriptors: economic geology; mineral resources; legislation; economics; production; energy sources; petroleum; natural gas; organic residues.


Kane and San Juan Counties.

Descriptors: Arizona and Utah; coal mining; fossil-fuel power plants; economic impact; social impact; electric power; energy source development; environmental impact; power generation; regional analysis; rural areas; socio economic factors.


Descriptors: southwestern Utah; coal resources; geology; stratigraphy; Henry Mountains, Kaiparowits Plateau, Kanab, Kolob, and Harmony Coal Fields; location; occurrence; rank; reserves; development; economic factors.

Descriptors: Utah and Arizona; coal; coal fields; Cretaceous; economic geology; gravity sliding; maps; orogeny; southeastern mountains; tectonics.


Descriptors: coal; chemical analyses; economic geology; resources; field investigation; Kanab and Kaiparowits Plateaus; coal sections; Federal coal prospecting; permits; exploratory drilling; coal reserves; Iron, Washington, Garfield, Kane, Wayne Counties; subbituminous A; High volatile bituminous C; ash; sulfur; local domestic fuel requirements.


Iron, Washington, Garfield, Kane, and Wayne Counties.

Descriptors: coal; chemical analyses; economic geology; resources; field investigation; Kanab and Kaiparowits Plateaus; coal sections; Federal coal prospecting; permits; exploratory drilling; coal reserves; Iron, Washington, Garfield, Kane, Wayne Counties; subbituminous A; High volatile bituminous C; ash; sulfur; local domestic fuel requirements.


Garfield County; Alton Coal Field.

Descriptors: coal; economic geology; areal geology; Tropic area; resources; Straight Cliffs sandstone; stratigraphy; Garfield County; structure; Dakota Formation; Henderson coal zone; coal quality; rank; reserves; state land.

Rocky Mountain Institute for Policy Research, 1975, Financing infrastructure in energy development areas in the west: Rocky Mountain Institute for Policy Research, Logan, Utah.

Descriptors: Arizona, Colorado, Idaho, Montana, Utah, Wyoming, South Dakota, North Dakota, Nevada, and New Mexico; economics; energy sources; financing; communities; energy transport; industrial plants; nuclear energy; petroleum industry; power generation; transportation systems; coal gasification; fossil-fuel power plants; geothermal; natural gas; oil sands; oil shales; processing; production; public relations; solar energy.


Descriptors: slurry pipelines; water resources; availability; coal; fuel slurrers; laws; legal aspects; mixtures; state governments; surveys; transport; water; water rights; Alaska, Arizona, Colorado, Illinois, Montana, New Mexico, Pennsylvania, South Dakota, Tennessee, Utah, and Wyoming.


Descriptors: coal; hydraulic transport; rail transport; slurry pipelines; environmental impacts; land use; rural areas; urban areas; water requirements; California and Utah.


Descriptors: bronchitis; epidemiology; dusts; chronic exposure; pneumoconiosis; biomedical radiography; coal miners; smokers; underground mining; X radiation; Utah.


Descriptors: coal miners; medical surveillance; occupational safety; health hazards; bronchitis; fibrosis; pneumoconiosis; statistics; smokers; pathologic changes; respirable dust; Utah.


Descriptors: Utah and California; fossil-fuel power plants; nuclear power plants; comparative evaluations; economics; site selection; coal; cost-demand factors; energy sources; energy supplies; environmental effects; forecasting; nuclear power; power plants.


Descriptors: coal-fired power plants; coal demand; industrial; supply-demand forecasting; Federal Energy Administration; boiler convertability; air quality standards; ambient; land reclamation; Utah.


Descriptors: longwall mining; optimization; coal mines; economics; fire-resistance; roof bolts; ventilation; sandstone; Utah.


Descriptors: history; coal mining; British mining practices; labor forces; legislation; protection; accidents; U.S. mining history; organization; catastrophes; the Molly Maguires; mine inspection; unionization; strikes; presidential intervention; UMWA; strike commission.


Descriptors: asphaltene hydrogenation; isolation of acid and base fractions; gel permeation chromatography; ultimate analysis; infrared spectroscopy; vapor pressure osmetry; NMR; aliphatic chains; hydroaromatic structures; phenolic; methylene bonds; side chains; phenolic hydroxyl; acid: base complexing; ring nitrogen.

Emery and Sevier Counties; Emery Coal Field.

Descriptors: sedimentary rocks; stratigraphy; lithostratigraphy; Cretaceous; Emery and Sevier Counties; Mancos Shale; Ferron Sandstone; USGS; Mesozoic; Emery Coal Field; coal; organic residues; sections; sandstone; clastic rocks.


Emery County; Emery Coal Field.

Descriptors: western interior; sedimentary rocks; sedimentation; Utah; economic geology; clastic rocks; environment; coal; sandstone; deltas; Ferron Sandstone Member; Mancos Shale; organic residues; Emery Coal Field; Castle Valley; deposition; models; deposits.


Descriptors: Utah; stratigraphy; economic geology; Cretaceous; coal; Mancos Shale; Ferron Sandstone Member; Mesozoic; organic residues.


Descriptors: Utah; diagenesis; economic geology; processes; coal; compaction; USGS; Ferron Sandstone Member; Mancos Shale; Cretaceous; organic residues.


Descriptors: coal; coal exploration; transgression; regression; Utah.


Emery County; Emery Coal Field.

Descriptors: coal; sedimentary rocks; well-logging; stratigraphy; organic residues; interpretation; Cretaceous; coal; Emery County; Ferron Sandstone Member, Mancos Shale; USGS; cores; coal fields; programs; Muddy Project; Quitchupah Project; correlation; clastic rocks; Mesozoic.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Emery Coal Fields.

Descriptors: sedimentation; economic geology; environment; coal; deltas; organic residues; deposits; Emery; Wasatch Plateau; Cretaceous.

Descriptors: Utah; sedimentation; geochronology; clay mineralogy; stratigraphy; cyclic processes; tephrchronology; experimental studies; Cretaceous; delta; coal seams; Mancos Shale; Ferron Sandstone Member; lithostratigraphy; claystone; clastic rocks; kaolinite; sheet silicates; ash falls; correlation; X-ray data; SEM data; partings; Mesozoic.


Descriptors: coal; organic geochemistry; fossil fuels; diagenesis; bituminous coal; coalification; peat; calculation methods; Cretaceous; erosion; thickness; Utah.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: economic geology; coal; maps; Garfield and Kane Counties; organic residues; deposits; resources; economic geology maps; Kaiparowits Plateau.


Kane County; Alton Coal Field.

Descriptors: hydrology; environmental geology; surveys; reclamation; Kane County; Alton; Alton Coal Field; organic residues; deposits; coal fields; water resources; site evaluation.


Descriptors: coal; automatic data processing; economic geology; deposits; reserves; exploration; evaluation; data base; Colorado, Utah, and New Mexico; Kanab; Navajo Indian Reservation.


Descriptors: coal; transport; coal mines; economic impact; environmental impact; social impact; coal preparation; feed material plants; uranium; transport; aesthetics; comparative evaluations; cost benefit analysis; health hazards; land requirements; water requirements; Arizona, Montana, California, New Mexico, Utah, Colorado, Wyoming, Oregon, and Washington.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: geomorphology; fluvial features; environmental geology; drainage patterns; land use; Kaiparowits Plateau; evolution; controls; coal; organic residues; production.


Iron and Washington Counties; Alton and Kolob Coal Fields; Cedar City 1 X 2 degree Quadrangle.

Descriptors: Utah; economic geology; coal; Dakota Formation; Straight Cliffs Formation; Cretaceous; Mesozoic; organic residues.


Descriptors: coal deposits; geochemistry; mineral resources; elements; stratigraphy; trace amounts; geology; Utah.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: Utah; geomorphology; maps; landform descriptions; Garfield and Kane Counties; Kaiparowits Plateau; coal; organic residues; deposits; coal basins; geomorphologic maps.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: western U.S.; mining geology; environmental geology; economic geology; evaluation; maps; coal; Garfield and Kane Counties; Kaiparowits Plateau; land use; resources; management; natural resources; organic residues; deposits; mapping; geologic maps; hydrogeologic maps.


Emery and Grand Counties; Book Cliffs and Sego Coal Fields; Woodside and Green River Quadrangles.

Descriptors: microfossil zonation; depositional environment; continental, brackish, shallow-water sediments; stratigraphic problems; spores; pollen; acid-insoluble animal fossils; Book Cliffs; phosphoric and hydrofluoric acids; hystrichospherids; dinoflagellates; microforaminifers; population variation; climatic changes; correlation; time lines; statistical method; preparation of samples; marker species; Woodside and Green River sections.


Descriptors: resource development; planning; water resources; allocations; coal mining; Colorado River; fossil-fuel power plants; oil shale industry; socio economic factors; water requirements; water rights; Utah.

Descriptors: energy source development; Colorado River Basin; coal; forecasting; energy demand; power generation; production; coal; shale oil; synthetic fuels industry; water resources; uranium; Arizona, Colorado, New Mexico, Utah, and Wyoming.


Descriptors: coal; lignite; oil shales; solvent extraction; oils; organic chlorine compounds; residues; waxes; Utah.


Carbon County; Book Cliffs Coal Field.

Descriptors: underground mining; geology; mine roadways; deformation; drill cores; finite element method; mechanical properties; rocks; stability; supports; Utah.


Duchesne and Uintah Counties; Tabby Mountain, Book Cliffs, and Vernal Coal Fields.

Descriptors: Uinta Basin; coal; resources; stratigraphy; Blackhawk coal zones; Neslen Formation; Frontier Sandstone; coal rank; mining methods; room and pillar; longwall.


Daggett County; Henry's Fork Coal Field.

Descriptors: Daggett County; Sheep Creek Canyon; geology; stratigraphy; structure; lithologic descriptions; mineral resources.


Daggett County; Henry's Fork Coal Field.

Descriptors: Daggett County; Carboniferous plant spores; lithologic correlation; systematic descriptions; petrographic rock composition.


Sanpete County.


Juab, Utah, and Sanpete Counties.

Descriptors: Cedar Hills; Sanpete, Juab, and Utah Counties; geology; physiography; stratigraphy; lithologic descriptions; structure; orogenic episodes; Cretaceous; Tertiary.


Descriptors: western U.S.; environmental geology; waste disposal; Arizona, Colorado, Montana, New Mexico, North Dakota, South Dakota, Utah, Wyoming, and Washington; coal mines; strip mining; spoils; industrial waste; oil shale.


Descriptors: classification of alluvial river channels; independent variables; discharge; sediment load; size of channel; channel stability; shape and sinuosity; stable; eroding; depositing; exponential correlation; bedload; suspended load; mixed load; sediment transport.


Descriptors: Utah and California; coal reserves; energy policy; state government; coal deposits; leasing; regulations; slurry pipelines; water requirements.


Descriptors: San Juan Basin; Cretaceous deposits; transgressive-regressive cycles; Mesaverde Group; Mancos Shale; depositional environments; lithologic descriptions; charts; tables.


Descriptors: soils; composition; San Juan River watershed; coal mine waste; land reclamation; New Mexico, Colorado, and Utah.


Descriptors: economic geology; energy sources; metals; guidebook; ore deposits; petroleum; natural gas; coal; organic residues; oil shale; eastern Utah; western Colorado; southwestern Colorado; central Colorado.


Summit County; Coalville Coal Field.

Descriptors: Summit County; Coalville anticline; regional structure; local structure; stratigraphy; lithologic descriptions; economic history; petroleum exploration.


Descriptors: taxation; state; local; coal production; coal prices; Arizona, Colorado, Montana, New Mexico, Utah, and Wyoming.


Descriptors: sedimentary structures; alluvial channels; flow regimes; flow generation; sediment movement; stratification; determining factors.


Descriptors: alluvial channels; depth-discharge relations; bed roughness effects; flow studies; flow resistance; flow regimes; influence factors; charts; tables.


Descriptors: channel flow; flume studies; grain size; river competence; medium sand grain experiments; velocity; suspended load; flow regimes; charts.


Sanpete, Iron, and Wasatch Counties.

Descriptors: White Clay Creek coal; Sanpete County; bituminous coal; Weber River; Cedar City coal; history of exploration; meterological observations; table of distances and altitude of routes; magnetic observations; railroad routes; geologic report; economical geology; stratigraphy; structure; lithology; lignite; formations; agriculture; building materials; fossils; paleontological collections; ornithology; ichthyology; botany; Indians; languages; population and resources of eastern Utah.


Descriptors: coal; legislation; exploration; management.


Emery County; Wasatch Plateau Coal Field.

Descriptors: Utah; economic geology; coal; Emery County; Wasatch Group; Mesaverde Group; organic residues; drilling; North Horn Mountain; East Mountain; Wasatch Plateau; Colorado Plateau; reserves; chemical composition; exploration; Manti-La Sal National Forest.


Book Cliffs, Sego, Emery, and Wasatch Plateau Coal Fields.

Descriptors: Book Cliffs, Sego, Emery, and Wasatch Plateau Coal Fields; drill core samples; methane content of coal; methane extraction; coal analysis; coal beds; tables.


Sanpete, Sevier, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Sanpete, Sevier, and Emery Counties; drill holes; Blackhawk Formation; coal beds; stratigraphy; methane content of coal; methane extraction; coal analysis; high volatile C bituminous; illustrations; tables; appendices.


Emery County; Wasatch Plateau Coal Field.

Descriptors: Utah; economic geology; coal; Emery County; Wasatch Group; Mesaverde Group; organic residues; drilling; North Horn Mountain; East Mountain; Wasatch Plateau; Colorado Plateau; reserves; chemical composition; exploration; Manti-La Sal National Forest.

Garfield County; Henry Mountains Coal Field; SE quarter Notom Quadrangle.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: Capital Reef area; Wayne and Garfield Counties; geology; stratigraphy; lithologic descriptions; physiography; structure; economic geology; uranium; deposits; prospects; maps; tables.

Smith, L. C., 1980, Solving OSM permitting problems; Two case histories: Rocky Mountain Coal Mining Institute, Vail, CO., Proceedings of the 76th regular meeting, p. 51-60.

Descriptors: coal deposits; leasing; permit applications; regulations; lignite; surface mining; underground mining; Texas and Utah.


Descriptors: Utah; economic geology; mineral resources; economics; production; history; metal ores; coal; organic residues; natural gas; construction materials; salt; gypsum; sulfates; fuel resources; oil sands; oil shale; geothermal energy.


Descriptors: earthquakes; mining; microseisms; mining; geologic faults; tectonics; coal; seismic waves; spectral energy distribution; stresses; Utah.


Descriptors: decomposition; coke quality; volatile matter; bituminous coal; blast furnace; drop, shatter and tumbler tests; statistical correlation; reactivity; density; combustibility; absorbity; electrical conductivity; compression strength; fumes; Geisler; plastometer; dilatometer; infrared spectrophotometric data; X-ray diffraction.


Descriptors: coal; government purchased; chemical analysis; nationwide analyses; coal contracts; delivered tonnage; specifications; tables.


Descriptors: coal; government purchased; physical properties; rank; specifications; chemical analysis; nationwide analyses; tables.


Descriptors: coal; reserves; coal gasification; in-situ gasification; natural gas reserves; oil shale reserves; fossil fuels; availability; environment; nuclear energy; pollution; Colorado, Utah, and Wyoming.

Sommer, S. N., H. H. Doelling and A. D. Smith, 1982a, Land control and coal reserves of the Kaiparowits Plateau, Alton, and east half Kolob Coal Fields, Utah: Utah Geol. and Min. Surv., Map 65, 2 sheets.

Kaiaporwits Plateau, Alton, and east half Kolob Coal Fields.


Wasatch Plateau and Emery Coal Fields.


Book Cliffs Coal Field.

Sorensen, D., 1955a, Acidic and basic compounds in gilsonite: Ph.D. dissertation, Univ. of Utah.

Uintah County.

Descriptors: hydrocarbons; asphaltite; carbon disulfide; carbon tetrachloride; nonpolar organic solvents; Uinta Basin; Uintah County; vertical fissures; Green River Formation; calcareous shales; commercial development; paraffins; naphthenes; nitrogen containing compounds; acid extraction; pyrolytic degradation; alkylated pyridines; fractional distillation.

Sorensen, W., 1955b, Engineering design of coal mine pillars: M.S. thesis, Univ. of Utah.

Emery County; Wasatch Plateau Coal Field.

Descriptors: one-dimensional analysis of a three-dimensional design problem; coal test specimens; compressive testing; axisymmetric finite element codes; plates; triaxial stress state; ultimate strength; Young's modulus; elastic brittle material model; progressive failure; calculated stress-strain curves; specimen geometries; gravity loading analyses; roof-floor convergence; Beehive Mine.


Descriptors: fossil-fuel power plants; environmental effects; surface mining; land use; Arizona, California, Nevada, New Mexico, Utah, and Wyoming; coal rank; Colorado River Basin.
Sanpete, Sevier, and Emery Counties; Wasatch Plateau Coal Field.


Descriptors: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields.

Sanpete and Sevier Counties.

Descriptors: Manti-Salina area; structure; Wasatch Plateau Coal Field; central Utah; geography; sequence of tectonic events; folding; compression; angular unconformity; normal faulting; monocline; transverse faults; fresh rifts and scarps; surface phenomena; tilted fault block.

Carbon, Sanpete, Emery, and Sevier Counties; Wasatch Plateau Coal Field.

Descriptors: coal fields; Wasatch Plateau; history; geography; physiography; geology; stratigraphy; structure; altitude; coal; distribution; physical properties; chemical analysis; coking quality; geographic subdivisions; lithologic descriptions; reserves; tonnage; charts; maps; tables.


Descriptors: Mesozoic and Cenozoic history; orogenicic epochs; Great Basin; Laramide folding; stratigraphy; dinosaurian fauna; unconformities; conglomerates; Cretaceous-Tertiary boundary problem; Cordilleran; fossils; correlation; paleogeographic reconstruction; block diagrams; depositional environment; extensive coal beds; Wasatch Plateau; sedimentation; transgression-regression; stratigraphy; lithology; cross-sections.


Descriptors: central and eastern Utah; sedimentary facies; Upper Cretaceous; stratigraphy; lithologic descriptions; depositional environment; facies intertonguing; orogenic effects; nomenclature.


Descriptors: location and nature of area; field work; map; stratigraphy; structure; diastrophic history; logs of tour; Jurassic to Tertiary; description of formations; structure cross-sections; Colorado Plateau-Great Basin transition area; physiography.


Descriptors: structure; Colorado Plateau; monoclines; stratigraphy; flexures; faulting; history; formations; correlations; uplift; Colorado River.

Sevier County; Salina Canyon Coal Field.

Descriptors: Salina Canyon; Sevier County; geography; geology; stratigraphy; Cretaceous; Tertiary; Mesaverde Group; structure; coal; occurrence; quality; physical properties; chemical analysis; reserves; maps; charts.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Wasatch Plateau; Cretaceous; Tertiary; location; physiography; structure; Mancos Shale; Mesaverde Group; lithology; depositional environment; paleogeography.


Descriptors: upper Cretaceous shoreline; depositional environment; paleogeography; stratigraphy; Manti-Salina region; biostratigraphy; historical geology.

Kane County; Kaiparowits Plateau Coal Field.

Descriptors: water pollution; mercury; ecological concentration; coal; Colorado River; fish; lakes; plants; quantity ratio; sampling; sediments; tables; thermal power plants; Utah.

Descriptors: samples; coal mining areas; gases; crude tar-oils; smokeless fuel; analyses; oil refinery; U.S. Bureau of Mines; oil shale; coal.


Descriptors: stoker coal-fired systems; technology; medium-capacity steam generation; pollutant control; nitrogen oxides; overall furnace stoichiometry; distribution of combustion air; superficial heat-release rate; oxidizable species residence time; fuel-inch zone; removable reactor-drawer assembly; batch mode; Lagrangian simulation; effluent gases; southern Utah bituminous coal; exhaust concentrations; overfire-air height.


Descriptors: economic geology; coal; lignite; Vernal; Blacktail (Tabby) Mountain; coal fields; stratigraphy; structure; lithologic descriptions; coal occurrence; quality; maps; tables.


Descriptors: annual reports; statements of coal cash entries; coal filings; production; mines; fatal and non-fatal accidents; description of mines; analysis of coal laws of Utah; tables; correspondence.


Stephens, E. V., 1973, Geologic map and coal resources of the Wide River Reservoir Quadrangle, Garfield County, Utah: U.S. Geol. Surv., Coal Inv., Map C-55. Garfield County; Kaiparowits Plateau Coal Field; Wide Hollow Reservoir Quadrangle.

Descriptors: maps; economic geology; Garfield County; coal; Wide River Reservoir Quadrangle; geologic; deposits; resources.


Descriptors: coal mining; ecology; environmental impacts; management planning; fish; wildlife; water pollution; land use; government policies; Wyoming, North Dakota, Montana, Utah, Colorado, and New Mexico.


Descriptors: coal mining; economic effect; social impact; energy source development; local government; taxes; mineral resources; exploitation; economic development; evaluation; financing; population dynamics; production; rural areas; North Dakota, Wyoming, and Utah.


Descriptors: Colorado Plateau; Morrison Formation; stratigraphic dispute; stratigraphic section; paleogeography; lithogenesis; correlation; lithologic units; maps.


Uintah, Emery, and Grand Counties.

Descriptors: Cretaceous; Colorado Plateau; fossil collections; non-marine microfossils; plants and mollusks; Cedar Mountain Formation; Burro Canyon Formation; Uinta, Emery, and Grand Counties; description of fossil localities; columnar section; criteria for correlation; Morrison Formation; contacts and thickness; sections; regional implications; stratigraphy; Dakota Formation.


Descriptors: Colorado Plateau; continental sediments; tectonic history; physiography; climate; paleogeography; depositional environment.

Stokes, W. L., 1962, Geologic map of Utah, northwest quarter: Utah State Land Board. Box Elder County; Goose Creek Lignite Field.


Descriptors: Uinta Mountains; geological exploration; history; J. W. Powell, F. V. Hayden, and Clarence King; geological expeditions; 40th parallel survey; glaciation; geomorphology.


Descriptors: correlation chart; Mesozoic; stratigraphic and physiographic provinces; subsurface correlation; sedimentation; marine carbonates; red beds; paleontologic evidence; boundaries; orogenic
activities; index maps; type sections locations; measured sections.


Descriptors: mineral resources; energy sources; catalogs; economic geology; mines; oil and gas fields; companies; annual report; metals; nonmetals; production; coal; petroleum; natural gas; uranium.


Descriptors: coal; production; mineral industries; directory; natural gas; petroleum; production; metals; nonmetals; uranium; Utah.


Descriptors: Utah; economic geology; mineral resources; fuel resources; exploration; Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties; production; Uinta Basin; Basin-and-Range Province; Wasatch Plateau; San Rafael Swell; asphalt; bitumens; organic materials; beryl; ring silicates; construction materials; coal; organic residues; metal ores; gams; uranium ores.


Descriptors: bituminous coal; underground mining; labor; efficiency; manpower; comparative evaluations; demand factors; human populations; production; sociology; work; Utah.


Descriptors: coal structure; coal reactions; conversion ash determination; hydroliquefaction char; stepwise multilinear regression; hydrogen content; zinc chloride catalyst content; aliphatic hydrogen; aromatic hydrogen; oxygen bonding.


Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: ground water; hydrogeology; surveys; springs; aquifers; Book Cliffs, Wasatch Plateau; Mesaverde Group; North Horn Formation; Flagstaff Limestone; Cretaceous; Tertiary; water quality; coal fields.


Sanpete, Emery, and Grand Counties; Wasatch Plateau, Book Cliffs, and Sebo Coal Fields.

Descriptors: ground water; economic geology; surveys; coal; Sanpete, Emery, and Grand Counties; Wasatch Plateau; Book Cliffs; organic residues; deposits.


Uintah County.

Descriptors: Uinta Basin; ostracod fossils; early Tertiary; Colton Formation; Green River Formation; Uinta Formation; biostratigraphy; depositional environment; statistical analysis.


Descriptors: catalytic cracking; hydro treated coal-derived liquids; flow reactor; zeolite containing catalysts; starting feedstocks; product composition; experimental variables; temperature; space; velocity; catalyst type; cracking reactions.


Descriptors: guidelines; sample collecting; analytical methods; chemical composition of coal; metric-English equivalents; major, minor, trace elements; analysis of coal ash; atomic absorption spectroscopy; X-ray fluorescence; emission spectroscopy; analyses of mercury, antimony, arsenic, fluorine, selenium and uranium in coal; flow chart; sequence of chemical analysis; proximate; ultimate; forms of sulfur and Btu determinations.


Descriptors: Utah, New Mexico, Arizona, Colorado, and Wyoming; coal; environmental geology; pollution; composition; trace-element analyses; Cretaceous; Paleocene.


Descriptors: coal; economic geology; deposits; resources; economics; production; technology; gasification; liquefaction; environmental geology; Alaska, California, Oregon, Washington, Utah, Nevada, Colorado, and Montana.


Carbon and Emery Counties; Book Cliffs Coal Field.

Descriptors: Book Cliffs; economic geology; coal; location; extent; surficial features; stratigraphy; lithology; structure; chemical analyses; coal beds; mine descriptions; map; tables.


Coalville Coal Field.

Descriptors: Book Cliffs; economic geology; coal; location; extent; surficial features; stratigraphy; lithology; structure; coal beds; chemical analyses; mine descriptions; map; tables.


Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Field.

Descriptors: Book Cliffs and Wasatch Plateau Coal Fields; Pleasant Valley; coal; economic geology; Carbon and Emery Counties; location; extent; topography; stratigraphy; structure; Pleasant Valley anticline and fault; Joe’s Valley fault; coal mining; coal section descriptions; quality; development; transportation; potential; map; tables.


Sanpete County; Wales Coal Field.


Carbon County; Book Cliffs Coal Field.

Descriptors: lower Sunnyside coal; petrographic composition; origin; geology; macroscopic appearance; microscopic constituents; maceral identification; chemical analysis.


Descriptors: San Rafael Group; stratigraphy; southwest and south-central Utah; lithologic descriptions;
Carbon and Emery Counties; Book Cliffs Coal Field.

**Descriptors:** coal; mining; methods; bed thickness; eastern Utah; lower Sunnyside; physical properties; chemical analysis; mine formations; mine characteristics; development; mining equipment; haulage; room-and-pillar; labor; production; Book Cliffs Mines; charts; tables.


Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields.

**Descriptors:** roof falls; Book Cliffs and Wasatch Plateau Coal Fields; Carbon and Emery Counties; coal mine accidents; fatalities; description of district; coal beds; thickness of cover; mining methods; roof testing; support of roof; accident prevention; physical characteristics; cleavage planes; working faces; diagrams of methods; supervision.

Townsend, R. C., 1964, Report on coal reserves, Kaiparowits project, Kane County, Utah: Unpubl. Inf. Kane County; Kaiparowits Plateau Coal Field.


**Descriptors:** Colorado Plateau; environmental geology; reclamation; maps; Four Corners area of Arizona, Colorado, Utah, and New Mexico; climate; strip mining; coal; organic residues; deposits; feasibility studies.


**Descriptors:** Colorado, Utah, and Wyoming; environmental geology; reclamation; maps; Green River Basin; White River Basin; strip mining; coal; organic residues; deposits; mining geology; climate; environmental geology maps.


Wayne County.

**Descriptors:** coal; gerns; jet; economic geology; Wayne County; gern properties; aberrant properties.

Trexler, D. W., 1966, Stratigraphy and structure of the Coalville area, northeastern Utah: Colorado School of Mines Prof. Contr., No. 2. Summit County; Coalville Coal Field.

**Descriptors:** coal; /economic geology/; Wayne County; gern properties; aberrant properties.

Emery County.

Descriptors: Utah; sedimentary rocks; stratigraphy; lithostratigraphy; Cretaceous; Emery County; Ferron Sandstone member; Mancos Shale; C coal bed; USGS; Upper Cretaceous; Mesozoic; key beds; volcanic ash; pyroclastics and glasses; diagenesis; partings; sandstone; clastic rocks; coal; organic residues; coal seams; correlation; index maps; maps.


Descriptors: temperature; products; continuous hydrogenation process; Coalville; gas chromatography; gel permeation chromatography; tetrahydrofuran; aromatic hydrocarbons; tar acids; tar bases.

Descriptors: coal mining; environmental impacts; fossil-fuel power plants; air quality; archaeological sites; coal; construction; cost benefit analysis; electric utilities; erosion; fish; land use; sensitivity; site selection; slurries; water reservoirs; Utah.


Descriptors: underground mining; environmental impacts; coal; coal mining; construction; dams; ground water; irrigation systems; land leasing; land transport; land use; overhead power transmission; plants; roads; salinity; soils; wildlife; Utah.


Descriptors: Utah; environmental geology; impact statements; southwestern Utah; Uinta Basin; coal; organic residues; Colorado Plateau.


Duchesne County; Tabby Mountain Coal Field.

Descriptors: fossil-fuel power plants; environmental impacts; agriculture; air pollution; air quality; aquatic ecosystems; archaeological sites; coal; construction; electric utilities; overhead power transmission lines; pipelines; power transmission towers; rights-of-way; site selection; terrestrial ecosystems; Water; Utah.


Descriptors: coal mining; environmental aspects; Utah.


Descriptors: mineral resource classification system; definition of mineral and energy resources; philosophic basis; glossary; areas of responsibility and operational procedures.


Sanpete County; Wasatch Plateau Coal Field.


Descriptors: economic geology; coal; coke; coal chemicals; production; consumption; employment trends; capacity; mechanization; economics; mine output classification; mining methods; nationwide; comparisons; tables.


Descriptors: synthetic liquid fuels; hearings; testimony; industry; research and development.


Descriptors: in-situ gasification; planning; bore-hole linking; coal gasification; environmental effects; ground water; hydrology; measuring instruments; Utah.


Descriptors: coal; fossil-fuel power plants; air quality; Clean Air Act; coal gasification; coal reserves; combined-cycle power plants; environmental effects; desulfurization; energy policy; filters; financing; flue gas; fluidized-bed combustion; legislation; meetings; public opinion; rail transport; regulations; site selection; solid wastes; waste disposal; water requirements; Utah.

**Descriptors:** coal mining; production; Alaska, Arizona, Arkansas, Colorado, Iowa, Kansas, Louisiana, Missouri, Montana, New Mexico, North Dakota, Montana, Oklahoma, Texas, Utah, Washington, and Wyoming; contracts; planning; underground mining.


**Descriptors:** coal mining; coal resources; coal leasing; underground mining; coal; strip mining; coal production; data; surveys; Texas, Montana, Utah, Washington, and Wyoming.


**Descriptors:** coal mining; contracts; planning; production; surface mining; underground mining; Alaska, Arizona, Arkansas, Colorado, Iowa, Kansas, Louisiana, Missouri, Montana, New Mexico, North Dakota, Oklahoma, Texas, Utah, Washington, and Wyoming.


**Descriptors:** coal; mining; capacity; data compilation; forecasting; production; regional analysis; surveys; Alaska, Arizona, Arkansas, Colorado, Iowa, Kansas, Louisiana, Missouri, Montana, New Mexico, North Dakota, Oklahoma, Texas, Utah, Washington, and Wyoming.

**U.S. Dept. Interior, 1963, Interior Department Territorial papers, Utah, 1850-1902, letters received relating to inspection of coal mines, November 12, 1892-February 7, 1896: National Archives.**


**Descriptors:** Project Independence; coal; production; consumption; transportation; manpower; material; environmental impacts; production factors; financing; water resources; water pollution; air pollution; leasing policies; health; safety; recoverable reserves; mining costs; selling costs; maps; charts; tables.


**Descriptors:** synthetic fuels; coal gasification; coal liquefaction; technology; history; research and development; processes; economics; results; financing; costs; commercial applications; engineering; construction; plant impacts; environmental; political; social; economic; taxation; pricing; production scenarios; utility gas; pipeline gas; illustrations; charts; tables; figures.


**Descriptors:** coal; subsidence; geologic hazards; Colorado and Utah.


**Descriptors:** environmental geology; coal; Utah.


**Descriptors:** coal; mining; pollution; Utah.


**Descriptors:** coal; environmental geology; Utah.


**Descriptors:** Utah; environmental geology; impact statements; southern Utah; mining; coal; organic residues; management; legislation; conservation.

**U.S. Forest Service, 1980, Forest planning unit: U.S. Forest Service, 23 p.**

**Descriptors:** mining; coal mines; coal leases; environmental aspects; forest reserves; Utah.


**Descriptors:** U.S. Fuel Co. magazine; coal; production; market; home use; suggestions; comparisons; economic value.


Descriptors: coal deposits; geochemical surveys; chemical composition; Arizona, Colorado, New Mexico, North Dakota, South Dakota, Utah, and Wyoming; surface waters; uranium deposits; rocks; soils; coal mines; energy sources; environmental effects; exploration; fly ash; fossil-fuel power plants; regional analysis; sampling; solid wastes; variations.


Descriptors: environmental geology; impact statements; maps; Grand, Wayne, Emery, Sanpete, and Sevier Counties.


Descriptors: resource development; coal mines; environmental impacts; air pollution; economic impacts; erosion; fossil-fuel power plants; ground subsidence; habitat; land use; power transmission lines; railways; roads; Utah.


Descriptors: coal mines; environmental impacts; air pollution; economic impact; employment; erosion; fossil-fuel power plants; ground subsidence; habitat; land pollution; land use; water pollution.


Descriptors: coal mining; environmental aspects; coal leases; mining; public lands; aesthetics; resource development; coal preparation plants; air quality; fossil-fuel power plants; ground subsidence; land use; power transmission lines; socio economic factors; Utah.


Sevier County; Salina Canyon Coal Field; Yogo Creek Quadrangle.

Descriptors: coal; technical production management; reserve estimation; materials distribution maps and surveys; Utah.


Sevier County; Emery Coal Field; John's Peak Quadrangle.

Descriptors: coal; technical production management; reserve estimation; resources; materials distribution maps and surveys; Utah.


Descriptors: transportation costs; rates; inquiry; monopolies; operating conditions; Ballard and Thompson Railroad; Union Pacific; Denver and Rio Grande; testimonies; discriminatory practice.


Descriptors: western coal transportation rates; costs; competition; Wyoming coal production; Utah destination; unfair market competition; operating conditions; tonnage.

U.S. Interstate Commerce Commission, 1923b, Before the Interstate Commerce Commission . . . Western points; rates; tonnage; competition; pricing; tonnage; transportation; market; destination; points; rates; tonnage; competition; investigation; Interstate Commerce Commission.


Carbon County; Book Cliffs Coal Field.

Descriptors: western coal rates; transportation; costs; competition; pricing; tonnage; production points; Rock Springs; Kemmerer; Kenilworth; Castlegate; western rail routes.


Descriptors: coal; transportation; rates; cost; market; tonnage shipments; price increases.


Descriptors: Pleasant Valley Coal Co.; testimony; court statements.


Descriptors: coal; coke; methods of analyzing; proximate and ultimate analyses; determination of sulfur, chlorine, carbon dioxide, and calorific value; physical tests; plastic properties of coal; assay methods; petrography; classification; ash; slag; clinker analyses.

U.S. President's Commission on Coal, 1980, The American coal miner; a report on community and living conditions in the coal fields: President's Commission on Coal.

Descriptors: coal mining; safety; unions; strikes; legislation; housing; socioeconomic impacts; quality-of-life; lifestyles; educational opportunities; women miners; charts; photographs.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: environmental impact assessment; coal-fired power plants; socioeconomic impact assessment; power plant emission control; power plant design; coal mining; power plant siting; transmission lines; resource management; regional planning; climatology; geology; 491 Electric Co.; Utah.

Ulbrich, D. M., 1975, Shovels; western coal’s “all season” mining tool: Meeting of the Society of Mining Engineers, Salt Lake City.

Descriptors: coal mining; surface mining; mining equipment; Arizona, Colorado, New Mexico, Utah, Wyoming, North Dakota, and Montana.

Union Coal Miners of Utah, 1923, Utah statement and brief concerning the campaign of the coal operators of Utah against organized labor and the unionizing of the Utah coal fields: Union Coal Miners of Utah.


Descriptors: Union Pacific coal mines; background; history; building; early fuel supply; Rock Springs; Chinese riot; Hanna; Cumberland; Superior; Reliance; mining methods; politics; mine safety.

Univ. of Utah, 1977, Selected research projects leading to the development of Utah coal, tar sands and oil shale. Phase I research for the 1975-1976 period: Univ. of Utah, Salt Lake City, Utah.

Descriptors: coal mining; solution mining; fossil-fuels; research programs; oil sands; processing; pyrolysis; in-situ combustion; retorting; asphalts; bitumens; chemical feedstocks; evaluation; feasibility studies; planning; solvent extraction; Utah.

Univ. of Utah, College of Mines and Mineral Industries, 1978, Final report on selected research projects leading to the development of Utah coal, tar sands and oil shale: Univ. of Utah, Utah Engineering Experiment Station, 197 p.

Descriptors: economic geology; energy sources; coal; organic residues; oil sands; oil shale; current research; associations; resource recovery; industrial chemical potential; solution mining; solvent extraction of bitumen from oil shale; combustion; rapid pyrolysis; Uinta tar sands bitumen; premium grade asphalt; in-situ recovery; adiabatic oil shale retort; gas flare; microwave processing techniques.


Daggett and Uintah Counties.
Descriptors: economic geology; coal; Frontier Formation.


Descriptors: Uinta Mountain and Basin region; structure; Wasatch Mountains; Cretaceous; stratigraphy; geologic map; geological history; correlated columnar section.


Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties.

Descriptors: high temperature carbonization; low temperature carbonization; smoke elimination; technology; products; problems; industry status; Utah coals; types; producing counties; geology; physical properties; chemical analyses; coking capabilities; coking constituents; briquetting; semi-coke; laboratory investigations; properties; rank; test results; products; tars; gases; oils; blends; reactions; Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties; tables.


Descriptors: fossil-fuel power plants; coal gasification plants; oil shale processing plants; oil sand processing plants; coal; energy facilities; Great Basin; site selection; air quality; water quality; water resources; socio economic factors; institutional factors; compliance; pollution regulations; electric power; energy demand; economics; Clean Air Act.


Descriptors: Utah; energy sources; economic geology; petroleum; natural gas; coal; uranium; geothermal energy; oil shale; oil sands; resources; data.


Utah Geol. and Min. Surv., 1963, Transportation of energy from coal, Utah to California. Symposium 1963: Utah Geol. and Min. Surv., Circ., No. 44.

Wasatch Plateau, Kaiparowits, and Kolob Coal Fields.

Descriptors: coal mining; sources; Wasatch Plateau, Kaiparowits, and Kolob Coal Fields; coal slurry pipelines; high voltage transmission lines; Los Angeles; power costs; coal-fired power plants; tables.

Utah Geol. and Min. Surv., 1975a, Energy resources map of Utah: Utah Geol. and Min. Surv., Map 36, scale 1:500,000.

Descriptors: coal mines; geothermal fields; oil shale deposits; petroleum deposits; natural gas deposits; power systems; uranium mines; maps; Utah.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Fields.

Descriptors: coal; coal exploration; Utah.

Utah Geol. and Min. Surv., 1978, Land control and coal reserves of the Book Cliffs Coal Field: Utah Geol. and Min. Surv., Map 48 A, 1 sheet.

Carbon and Emery Counties; Book Cliffs Coal Field.

Descriptors: economic geology; coal; maps; Utah, Emery, Carbon, and Duchesne County; organic residues; economic geology maps; reserves; Book Cliffs Coal Field.


Utah Geol. and Min. Surv., 1979b, Land control and coal reserves of the Wasatch Plateau Coal Field and Emery Coal Field: Utah Geol. and Min. Surv., Map 48B.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Emery Coal Fields.

Descriptors: economic geology; maps; coal; organic residues; Wasatch Plateau and Emery Coal Field.

Utah Geol. and Min. Surv., 1980a, Coal exploration drilling (Utah, 1979-80): Utah Geol. and Min. Surv., Notes, Vol. 14, No. 4, p. 4.

Carbon County; Book Cliffs Coal Field.
Descriptors: coal mines; structural analysis; excavation; underground supporting; rock bolts; geological surveys; finite element analysis; computer programming; Utah.

Carbon County; Book Cliffs Coal Field.


Descriptors: southwestern Utah; Upper Cretaceous; stratigraphy; lithologic descriptions; stratigraphic nomenclature; depositional environment; transgressive-regressive cycles.

Kane County; Kaiparowits Plateau Coal Field.
Descriptors: Utah; coal; Cretaceous; sedimentation; sedimentary rocks; economic geology; environment; organic residues; Kane County; Straight Cliffs Formation; John Henry Member; Kaiparowits Plateau; coal seams; paleoenvironment; correlation; stratigraphy; swamps; environmental analysis; deposits; complexes.

San Juan, Kane, Emery, and Sanpete Counties; Kaiparowits Plateau, Wasatch Plateau, and San Juan Coal Fields.
Descriptors: economic geology; coal; Star Point Sandstone; Blackhawk Formation; organic residues; exploration; Montana, Wyoming, Utah, Colorado, Arizona, and New Mexico; coal fields; San Juan Basin; Powder River Basin; Wasatch Plateau; Kaiparowits Plateau; concepts; practice.

Kane County; Kaiparowits Plateau Coal Field.
Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: economic geology; coal; organic residues; exploration; Kaiparowits Plateau; Cretaceous; Mesoico; stratigraphy; lithostatigraphy; coal seams; deposits.

Kane and Garfield Counties; Kaiparowits Plateau Coal Field.

Descriptors: sedimentation; palaeogeography; economic geology; environment; Cretaceous; coal; coastal environment; Kane and Garfield Counties; Straight Cliffs Formation; John Henry Member; Kaiparowits Plateau; organic residues; deposits; coal fields; barrier islands; deltas; progradation; swamps; marine transport; longshore currents; transgression; Mesoico.

Emery County; Wasatch Plateau Coal Field.

Descriptors: sedimentation; mining geology; economic geology; deposition; production control; coal; Emery County; Blackhawk Formation; Hiawatha Seam; Blind Canyon Seam; organic residues; isopach maps; paleocurrents; slickensides; fuel quality; roof control; underground installations; mines; deposits.


Descriptors: Utah; sedimentation; stratigraphy; economic geology; environment; Cretaceous; coal; paludal environment; Kane County; Straight Cliffs Formation; John Henry Member; Kaiparowits Plateau; Upper Cretaceous; Mesoico; organic residues; coal seams; thickness; paludal sedimentation.


Descriptors: hydrogenation reactions; sulfided catalyst systems; condensed polycyclic hydrocarbons; nitrogen containing heterocyclics; product composition; molecular structure; experimental conditions.


Descriptors: vertical profile; environmental reconstruction; depositional environment patterns; Walther's Law of Facies; sedimentary processes; models; stratigraphic section; regressive marine; fluvial; deltaic; transgressive marine; bathyal-abyssal; lacustrine; time breaks; aspects of sedimentary sequences; physical; biological paleoecology; sedimentary breaks; geomorphic settings of models.


Descriptors: Appalachia; coal deposits; resource assessment; geothermal energy; Idaho, Utah, and Wyoming; resource assessments and deposits.

Voelker, A. H., H. Wedow, E. Oakes and P. K. Scheffler, 1979b, Systematic method for resource rating with two applications to potential wilderness areas: Oak Ridge National Lab., TN.

Descriptors: nature reserves; coal reserves; resource assessment; geothermal resources; natural gas and petroleum reserves; Idaho, Utah, Wyoming, Kentucky, North Carolina, Virginia, and West Virginia.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Utah; hydrology; hydrogeology; surveys; USGS; Wasatch Plateau and Book Cliffs Coal Fields; coal; organic residues; ground water; surface water; dissolved materials; hydrographs; maps.

Sanpete, Emery, and Grand Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: hydrology; hydrogeology; surveys; Sanpete, Emery, and Grand Counties; Wasatch Plateau and Book Cliffs Coal Fields; coal; organic residues; deposits; coal fields; water resources.


Carbon and Emery Counties; Wasatch Plateau and Book Cliffs Coal Fields.


Carbon, Emery, Sanpete, and Sevier Counties; Wasatch Plateau and Book Cliffs Coal Fields.


Descriptors: taxes; energy sources; geothermal resources; Arizona; coal; comparative evaluations; economic policy; energy policy; energy source development; government policies; legal aspects; minerals; natural gas; oil shales; petroleum; regulation; resource conservation; uranium; California, Hawaii, Idaho, Nevada, Utah, Colorado, and New Mexico.


Waldrop, H. A., and F. Peterson, 1967, Preliminary geologic map of the southeast quarter of the Nipple Butte Quadrangle, Kane County, Utah, and Coconino County, Arizona: Utah Geol. and Min. Surv., Map 24C.

Kane County; SE quarter of the Nipple Butte Quadrangle.

Descriptors: coal; economic geology; maps; stratigraphic; SE quarter Nipple Butte Quadrangle; Cretaceous; Quaternary.

Waldrop, H. A., and R. L. Sutton, 1967a, Preliminary geologic map and coal deposits of the northeast quarter of the Nipple Butte Quadrangle, Kane County, Utah: Utah Geol. and Min. Surv., Map 24B.

Kane County; NE quarter of Nipple Butte Quadrangle.

Descriptors: coal; economic geology; maps; stratigraphic; NE quarter Nipple Butte Quadrangle; Cretaceous; Quaternary.

Waldrop, H. A., and R. L. Sutton, 1967b, Preliminary geologic map and coal deposits of the northwest quarter of the Nipple Butte Quadrangle, Kane County, Utah: Utah Geol. and Min. Surv., Map 24A.

Kane County; NW quarter of Nipple Butte Quadrangle.

Descriptors: coal; economic geology; maps; stratigraphic; NW quarter Nipple Butte Quadrangle; Mesozoic; Quaternary.


Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties.

Descriptors: coals; sulfur content; pyritic; organic; sulfate; chemical analysis; rank; sample site; mines; Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties; tables.


Descriptors: coal; physical properties; plasticity; agglutination; swelling properties; tests; methods; chemical analysis; nationwide analyses; tables.


Kane County; Kaiparowits Plateau Coal Field.

Descriptors: air pollution; monitoring; thermal power plants; coal; combustion products; industrial wastes; lakes; meteorology; numerical analysis; plumes; pollution control equipment; Utah.


Kane County; Kaiparowits Plateau Coal Field.

Descriptors: Utah; air quality; air pollution; automobiles; exhaust gases; thermal power plants; coal.


Duchesne and Uintah Counties; Vernal and Tabby Mountain Coal Fields.
Descriptors: geology; Cretaceous; Uinta Basin; stratigraphy; igneous rocks; structure; folding; faulting; structural history; Dakota Sandstone; Mancos Shale; Mesaverde Group; lithologic facies; Vernal and Tabby Mountain Coal Fields; Laramide folding; regional Cretaceous correlation diagram; sections; age and correlation; fossils; lithology.


Descriptors: Wasatch Plateau gas fields; Clear Creek; further exploratory drilling; structure; Cretaceous; Paleocene; sedimentary strata; history; coal deposits; stratigraphy; structure map; composite log; self-potential and resistivity; age of faults and folding; cross-section; causes and time of gas accumulation; Ferron Sandstone; depositional environment; Flat Canyon; Gordon Creek; producing formations.


Descriptors: Wasatch Plateau; natural gas fields; exploration activity; stratigraphy; formations; lithologic log; geophysical log; stratigraphic correlation; structure; causes; age; structural traps; stratigraphic traps; hydrocarbon accumulation; gas analysis; production; drilling practices; charts; diagrams.


Descriptors: Salt Valley; Cisco area; Grand County; geology; structure; map; local structural features; folds.


Descriptors: Uinta Basin; stratigraphy; Cretaceous; topography; lithology; sedimentation factors; petroleum exploration.


Descriptors: Soldier Summit area; Wasatch, Carbon, and Duchesne Counties; structure map; regional setting and tectonic history; regional and local structural elements; influence of structural history on local stratigraphy; gas and oil exploration; drilled wells.


Descriptors: natural gas; Clear Creek; Wasatch Plateau and Book Cliffs Coal Fields; stratigraphy; Mesaverde Group; economic geology.


Descriptors: Cretaceous; Paleocene; conglomerates; margin of Uinta Basin; age and correlation; outcrop map; Uintah, Carbon, Duchesne, Sanpete, Utah, and Wasatch Counties; geologic cross-sections; stratigraphy; structure.


Descriptors: water supply; assessments; oil shale; coal gasification; surface waters; ground water; water quality; water law; irrigation; Colorado River Basin; water consumption; Colorado, Arizona, Utah, New Mexico, and Wyoming.

Watts, A. C., 1916, Coal mining methods in Utah: Coal Age 10, Colorado School of Mines Mag. 16.


Descriptors: bounces; virgin territory; fault; Utah Fuel mines; sloughing of coal from the ribs; heavy cover; nature of cover; hard brittle coal; butt cleavage of the coal; pillar workings; tension; slippage plane; unsupported block; stresses; bending action; Book Cliffs; plan of workings; dome theory of faults; synclinal theory.


Descriptors: 491 Electric Co.; electric power; emissions; coal; energy planning; Utah.


Descriptors: coal industry; permits; administrative procedures; Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming.
Emery County; Wasatch Plateau Coal Field.

Descriptors: catalyst system; yield; methane; High volatile bituminous; single-stage process; oxygen; thermal neutrality; conventional gasification systems; continuous flow; Hiawatha coal; tetralin; fixed-bed reactor; hydrogenation; hydrocracking; cracking; conversion; char; reactor.


Descriptors: natural resources; high grade bituminous coal; underground fuel; natural gas; industry; consumption; coke ovens; plastics; detergents; synthetic rubber; chemicals.

Summit County; Coalville Coal Field.


Descriptors: stratigraphy; Cretaceous; Rocky Mountains; economic deposits; basins; sedimentary history; lithologic correlation; formation names; paleogeography; transgressive-regressive cycles; diagrams.


Descriptors: vegetable origin; forests; woody fiber; carbon; devolatilization; transformation; bacterial fermentation; cellulose; peat evolution; age; lignites; rank; fuel; industry; public.

Westerberg, C. S., 1970a, A coal deposit near Sterling, Sanpete County, Utah: Utah Geol. and Min. Surv., unpubl. rept.
Sanpete County; Sterling Coal Field.

Iron County; Kolob and New Harmony Coal Fields.

Westerberg, C. S., 1970c, Lost Creek Coal Field, Utah: Utah Geol. and Min. Surv., unpubl. rept.
Morgan County; Coalville Coal Field.

Box Elder County; Goose Creek Lignite Field.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.


Descriptors: energy supplies; planning; power generation; air quality; coal; energy consumption; energy management; energy policy; forecasting; nuclear power plants; operation; radioactive wastes; site selection; solar energy; transportation systems; tables; Alaska, Arizona, New Mexico, Colorado, Utah, California, Idaho, Hawaii, North Dakota, South Dakota, Montana, Wyoming, Washington, and Nevada.

Summit County; Coalville Coal Field.


Descriptors: energy source development; technology assessment; water requirements; energy policy; environmental impacts; environmental policy; evaluation; geothermal energy; natural gas; petroleum; oil shale; uranium; research programs; social impact; Utah, Wyoming, New Mexico, Arizona, Colorado, North Dakota, and South Dakota.


Descriptors: energy sources; coal; petroleum; oil shale; natural gas; geothermal energy; uranium; energy policy; planning; technology assessment; environmental impacts; government policies; scenarios; Arizona, Colorado, New Mexico, Utah, Wyoming, North Dakota, South Dakota, and Montana.


Descriptors: energy sources; environmental effects; socio-economic factors; Arizona, New Mexico, North Dakota, South Dakota, Utah, Montana, and Wyoming; coal; energy policy; fossil fuels; geothermal energy; government policy; natural gas; petroleum; oil shale; uranium.


Descriptors: energy source development; coal; geothermal; petroleum; natural gas; oil shale; oil sands; uranium; environmental impacts; electric power; water supply; social effect; economic impact; air pollution; water pollution; noise pollution; ecology; energy transport; public health; Arizona, Montana, New Mexico, Colorado, Utah, North Dakota, South Dakota, and Wyoming.


Descriptors: energy source development; environmental impacts; government policy; petroleum; natural gas; uranium; coal; geothermal resources; oil shale; Colorado, Utah, Arizona, New Mexico, Wyoming, North Dakota, and South Dakota.


Descriptors: government policies; regional planning; water quality; land use; land reclamation; housing studies; population growth; fixed investment; site surveys; transportation; environmental impacts; air pollution; water pollution; solid wastes; economics; national government; state government; local government; coal; natural gas; crude oil; oil shale; uranium; Arizona, Colorado, Montana, New Mexico, North Dakota, Utah, and Wyoming.


Descriptors: energy source development; environmental impacts; coal; petroleum; natural gas; oil shale; uranium; geothermal resources; Arizona, Colorado, New Mexico, Utah, Wyoming, North Dakota, and South Dakota.


Descriptors: energy source development; environmental impacts; coal; petroleum; natural gas; uranium; geothermal resources; Colorado, Utah, New Mexico, Arizona, Wyoming, North Dakota, and South Dakota.


Descriptors: environmental geology; impact statements; economic geology; energy sources; resources; reserves; production; exploration; economics; Arizona, Colorado, Montana, New Mexico, North Dakota, South Dakota, Utah, and Wyoming; technology; effects; coal; organic residues; uranium; oil shale; petroleum; geothermal energy.


Descriptors: coal industry; economic impact; environmental impacts; social impact; natural gas industry; oil shale industry; petroleum industry; uranium mining; ecology; land use; employment; population dynamics; Utah, Arizona, Colorado, Montana, New Mexico, Wyoming, North Dakota, and South Dakota.


Descriptors: coal; oil shale; crude oil; natural gas; legislation; regulations; environmental impacts; air pollution; water pollution; exploration; leasing; mining; water quality; water consumption; solid waste disposal; noise pollution; transportation; distribution; forecasting; Arizona, Colorado, New Mexico, Utah, North Dakota, South Dakota, and Wyoming.

Descriptors: energy source development; air pollution; Arizona, Colorado, Utah, New Mexico, Wyoming, North Dakota, and South Dakota; coal; distribution; environmental impacts; exploration; forecasting; leasing; legislation; mining; natural gas; petroleum; oil shale; uranium; noise pollution; regulations; transport; waste disposal; water quality; water pollution.


Descriptors: energy source development; government policies; air pollution; coal; environmental impacts; Arizona, Utah, Colorado, New Mexico, Montana, Wyoming, and South Dakota; economics; land use; local and national government; natural gas; oil shales; petroleum; regional analysis; solid waste; uranium; water quality; water pollution.


Duchesne and Uintah Counties.

Descriptors: Utah; energy sources; economic geology; Uinta Basin; maps; coal; gilsonite; petroleum; natural gas; oil shale; oil sands; water resources.


San Juan County; San Juan Coal Field.

Descriptors: coal; Cretaceous; economic geology; Fruitland Formation; Colorado, Utah, Arizona, and New Mexico; San Juan Basin; resources; depth; composition; production; gasification; liquefaction; possibilities; sedimentary rocks; regression.


Summit County; Coalville Coal Field.

Descriptors: Cretaceous stratigraphy; Coalville area; lithologic descriptions.


Sanpete County; Sterling Coal Field.


Descriptors: economic geology; metals; nonmetals; energy sources; mineral resources; coal; organic residues; natural gas; petroleum; production; economics.


Descriptors: Utah and Colorado; economic geology; stratigraphy; coal; Cretaceous; Dakota Sandstone; Sage Plain; southwestern Colorado; southeastern Utah; organic residues; mesozoic; resources; lithostratigraphy; deposits.


Descriptors: coal; caloric value; market; transport; Utah and Montana; coal deposits; comparative evaluations; cost; subbituminous coal; Wyoming.


Kane County.

Descriptors: economic geology; shale samples; dry distillation; cannel coal; Kane County; lithologic descriptions; oil shale.


Duchesne and Uintah Counties.

Descriptors: oil shale; history and methods; testing apparatus; physical and chemical character; distribution; geology; shale oil; Green River Formation; Uinta Basin; geography; stratigraphy; structure; sections; developments.


Carbon County; Book Cliffs Coal Field.

Descriptors: microearthquake activity; Sunnyside mining district; Price; mining hazards; portable high-gain, high-sensitivity seismographs; multichannel magnetic tape; Geneva and Columbia mines; epicenters; hypocenters; fault plane solutions; seismic moment; source dimension; stress drop; fault dislocation; local well logs; saturated sandstone; Mancos Shale; room and pillar mining; compressive principal stress axis; spectral analysis; direct shear waves; maximum ground acceleration; failures; caving; heaving.


Sanpete, Carbon, Iron, and Kane Counties.

Descriptors: coal mining; history; southern Utah coal fields; Sanpete, Carbon, Iron, and Kane


San Juan County; San Juan Coal Field.

Descriptors: Abajo Mountains; San Juan County; sedimentary rocks; surface deposits; intrusions; igneous rocks; laccoliths; quartz diorite porphyry; ore deposits; uranium-vanadium; gold; silver; test wells for oil and gas; water; stratigraphy; structure; geologic history; copper; road metal; riprap; low grade coal beds; Dakota Sandstone.


Henry Mountains, Kaiparowits Plateau, and Kolob Harmony Coal Fields.

Descriptors: coal deposits; oil shale deposits; sandstone; uranium; sampling; chemical analysis; exploration; maps; mineralization; Kaiparowits Plateau; Henry Mountains; Kolob Terrace; lithologic descriptions; tables.


Garfield County; Kaiparowits Plateau Coal Field; Canaan Creek Quadrangle.


Garfield County; Kaiparowits Plateau Coal Field; Carcass Canyon Quadrangle.


Garfield County; Kaiparowits Plateau Coal Field; Dave Canyon Quadrangle.


Garfield County; Kaiparowits Plateau Coal Field; Death Ridge Quadrangle.

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Garfield County; Kaiparowits Plateau Coal Field; Canaan Creek Quadrangle.

Descriptors: maps; economic geology; Garfield County; coal; petroleum; Canaan Creek Quadrangle; geologic; deposits; resources.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Carcass Canyon Quadrangle.

Descriptors: maps; economic geology; Garfield and Kane Counties; coal; Carcass Canyon Quadrangle; geologic; deposits; resources.


Garfield County; Kaiparowits Plateau Coal Field; Dave Canyon Quadrangle.

Descriptors: maps; economic geology; Garfield County; coal; Dave Canyon Quadrangle; geologic; deposits; resources.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Death Ridge Quadrangle.

Descriptors: maps; economic geology; Garfield and Kane Counties; Death Ridge Quadrangle; geologic; deposits; resources.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.


Kane County; Kaiparowits Plateau Coal Field; Collet Top Quadrangle.

Descriptors: maps; areal geology; Kane County; Collet Top Quadrangle; geologic; coal; deposits.


Kane County; Kaiparowits Plateau Coal Field; Collet Top Quadrangle.

Descriptors: areal geology; economic geology; maps; coal; Kane County; Straight Cliffs Formation; organic residues; deposits; resources; distribution; Collet Top Quadrangle; explanatory text; Alvey Zone; structure contours; Cretaceous; Mesozoic.


Garfield County; Kaiparowits Plateau Coal Field.

Descriptors: well-logging; economic geology; mining geology; interpretation; coal; Garfield County; Kaiparowits Plateau; lithology; geophysical methods; organic residues; deposits; boreholes; drilling; coal fields; exploration.
Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Seep Flat Quadrangle.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Seep Flat Quadrangle.

Descriptors: Utah; maps; economic geology; Garfield and Kane Counties; coal; Seep Flat Quadrangle; geologic; deposits; resources.
COUNTY INDEX
Box Elder

Bowen, C. F., 1913, Lignite in the Goose Creek district, Cassia County, Idaho: U.S. Geol. Surv., Bull., No. 531H.

Box Elder County; Goose Creek Lignite Field.

Descriptors: coal; lignite; location; extent; field work; land surveys; map; topography; stratigraphy; structure; occurrence; Worthington Mine; earthy matter; Barrett bed; sections; properties; analyses of lignite.


Descriptors: pollen flora; Cassia County, Idaho; tuffaceous shales and ash; strata; Beaver Dam Formation of Idavada Group; Payette Formation; Jenny Creek Formation; Salt Lake Formation; Cougar Point Formation; conifers; deciduous hardwood genera; spores; aquatic plants; conifer-deciduous forest ecotone; temperate climate; precipitation; R-mode factor analysis; pollen diagram; grant lignite; climatic analysis; Tertiary vegetational development; angular unconformity; Sucker Creek flora of southeastern Oregon.


Box Elder County; Goose Creek Lignite Field.

Descriptors: Goose Creek Lignite Field; location; geography; stratigraphy; coal deposits; mines; prospects; production; reserves; chemical analysis; land control; quadrangle reports.

Doelling, H. H., 1980, Geology and mineral resources of Box Elder County, Utah: Utah Geol. and Surv., Bull., No. 115, 3 maps.

Box Elder County; Goose Creek Lignite Field.

Descriptors: cross sections; geologic maps.


Box Elder County; Goose Creek Lignite Field.

Descriptors: stratigraphy; Goose Creek district; Box Elder County; sedimentary; pyroclastic; Tertiary; geologic map; structure; field relations; lithology; tectonic events; fossil plants; correlated columnar sections; lignite; Payette Formation; carbonaceous shale; section.

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Box Elder County; Goose Creek Lignite Field.

Descriptors: Goose Creek district; Tertiary rocks; stratigraphy; sedimentology; volcanic; structure; lignite; local use; ash; little commercial value; Salt Lake Formation; mineral resources; Box Elder County; geography; sections; surficial deposits; Payette Formation; fuel analyses of lignite and lignitic shale; analyses for uranium.


Goose Creek Lignite Field.

Descriptors: Cassia County, Idaho; Goose Creek Basin; water resources; geology; geography; physiography; stratigraphy; structure; climate; surface and ground water; lithology; aquifers; artesian water.


Box Elder County; Goose Creek Lignite Field.


Box Elder County; Goose Creek Lignite Field.

Cache


Cache County.
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Carbon and Utah Counties; Book Cliffs Coal Field; Kyune Quadrangle.
Descriptors: Carbon and Utah Counties; coal resource occurrence; coal development potential maps; Kyune Quadrangle; physiography; climate; stratigraphy; structure; coal geology; mining operations; coal data map; columnar sections.

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Duchesne and Carbon Counties; Book Cliffs Coal Field; Matts Summit Quadrangle.
Descriptors: economic geology; coal; maps; Carbon, Duchesne, and Utah Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Matts Summit Quadrangle; physiography; climate; land status; stratigraphy; coal geology; chemical analyses; mining operations; development potential; surface mining; subsurface mining; in situ gasification; coal data map; columnar section.

Duchesne and Carbon Counties; Book Cliffs Coal Field; Minnie Maud Creek East Quadrangle.
Descriptors: economic geology; coal; maps; Carbon and Duchesne Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Minnie Maud Creek East Quadrangle.

Emery and Carbon Counties; Book Cliffs Coal Field; NW 1/4 Woodside 15-minute Quadrangle.
Descriptors: economic geology; coal; maps; Emery and Carbon Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Woodside Quadrangle.

Utah and Carbon Counties; Wasatch Plateau Coal Field; SW quarter of the Soldier Summit 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Emery, Carbon, and Sanpete Counties; organic residues; deposits; resources; economic geology maps; explanatory text; Soldier Summit Quadrangle.

Carbon County; Book Cliffs Coal Field; Deadman Canyon Quadrangle.
Descriptors: coal resource occurrence; coal development potential maps; Deadman Canyon Quadrangle; Carbon county; physiography; climate; land status; stratigraphy; structure; coal geology; mining operations; in situ gasification; coal data map; columnar sections.

Carbon County; Book Cliffs Coal Field; Helper Quadrangle.
Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Helper Quadrangle.

Carbon County; Book Cliffs Coal Field; Mount Bartles Quadrangle.
Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Mount Bartles Quadrangle.

Emery, Carbon, and Sanpete Counties; Wasatch Plateau Coal Field; NE quarter of the Scofield 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Emery, Carbon, and Sanpete Counties; coal resource occurrence; coal development potential maps; Jump Creek Quadrangle; physiography; climate; land status; stratigraphy; structure; coal geology; mining operations; in situ gasification; coal data map; columnar section.

Carbon County; Wasatch Plateau Coal Field; NW quarter of the Scofield 15-min. Quadrangle.

Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Scofield Quadrangle.


Carbon County; Book Cliffs Coal Field; Patmos Head Quadrangle.

Descriptors: economic geology; coal; maps; Carbon County; deposits; resources; explanatory text; economic geology maps; Patmos Head Quadrangle.


Carbon County; Book Cliffs Coal Field; Pine Canyon Quadrangle.

Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Pine Canyon Quadrangle.


Carbon, Emery, and Sanpete Counties; Wasatch Plateau Coal Field; SE quarter of the Scofield 15-min. Quadrangle.

Descriptors: coal resource occurrence; coal development potential maps; Emery, Carbon, and Sanpete Counties; Watis Quadrangle; climate; land status; stratigraphy; structure; coal geology; mining operations; in situ gasification; coal data map; columnar section.


Carbon County; Wasatch Plateau Coal Field; SE quarter of the Soldier Summit 15-min. Quadrangle.

Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Soldier Summit Quadrangle.


Emery, Carbon, and Sanpete Counties; Wasatch Plateau Coal Field; SW quarter of the Scofield 15-min. Quadrangle.

Descriptors: economic geology; coal; maps; Emery, Carbon, and Sanpete Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Candland Mountain Quadrangle; coal resource occurrence; coal development potential; physiography; climate; land status; stratigraphy; structure; coal geology; mining operations; surface mining; in situ coal gasification; coal data map; composite columnar section.


Carbon County; Book Cliffs Coal Field; Standardville Quadrangle.

Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Standardville Quadrangle.


Carbon County; Book Cliffs Coal Field; Standardville Quadrangle.

Descriptors: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; explanatory text; economic geology maps; Standardville Quadrangle.


Carbon and Emery Counties; Book Cliffs Coal Field.


Carbon County; Book Cliffs Coal Field; Deadman Canyon Quadrangle.

Descriptors: well-logging; economic geology; interpretation; coal; organic residues; Carbon County; Book Cliffs; Deadman Canyon Quadrangle; deposits; coal fields; geophysical methods; lithology; boreholes.


Averitt, P., 1964, Coal, in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.


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Averitt, P., 1964, Coal, in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.
Descriptors: Utah; sedimentary rocks; economic geology; stratigraphy; lithostratigraphy; coal; maps; Cretaceous; Carbon County; Mesaverde Group; Blackhawk Formation; Star Point Sandstone; USGS; Wasatch Plateau; stratigraphic wedges; Mesozoic; organic residues; sandstone; clastic rocks; lithofacies.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Utah; well-logging; Cretaceous; coal; geophysical surveys; applications; Sanpete, Sevier, Carbon, and Emery Counties; Blackhawk Formation; Wasatch Plateau; stratigraphy; sedimentary rocks; sandstone; shale; deposits; exploration; geophysical methods; electrical; radioactivity; gamma ray; data.


Carbon County; Book Cliffs Coal Field.

Descriptors: bituminous coal; coking; chars; carbonization; coke; physical properties; lignite; coking; bench-scale experiments; coal; particle size; pilot plants; storage; volatility; Utah.


Carbon County; Book Cliffs Coal Field.


Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: low temperature carbonization; light oils; tars; distillation; coke gas; Mesaverde coals; Book Cliffs; Wasatch Plateau; retort; yield; fractions; utilization; charts.


Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: low temperature carbonization; tar; composition; steam carbonization; tar fractions; oils; waxes; resin; chemical analyses; composition; heavy portion; Mesaverde coals; Book Cliffs; Wasatch Plateau; charts.


Carbon County; Book Cliffs Coal Field.


Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: geology; stratigraphy; Cretaceous; Wasatch Plateau and Book Cliffs Coal Fields; depositional environments; lithology; formations.


Emery, Carbon, Summit, and Iron Counties; Book Cliffs, Emery, Kolob, Kanab, and Coalville Coal Fields.

Descriptors: coal deposits; coal mining; Book Cliffs, Emery, Kolob, Kanab, and Coalville Coal Fields; production; tonnage; supply; resource development; manufacturing; local economy.


Carbon, Emery, and Summit Counties.

Descriptors: economic geology; petroleum; natural gas; coal; lignite; mineral fuels; mines; prospects; Carbon, Emery, and Summit Counties; maps; charts; tables.


Carbon, Grand, and Sanpete Counties.

Descriptors: economic geology; coal; chemical analysis; calorific value; Carbon, Grand, and Sanpete Counties; lithologic descriptions; coal thickness; quality; reserves; tonnage; tables.


Vernal, Coalville, Book Cliffs, Kaiparowits Plateau, and Kolob Coal Fields.

Descriptors: southwestern Utah; map of coal fields; estimate of coal reserves of different rank; heat efficiency; classification of coal areas; San Juan, Kaiparowits Plateau, Vernal, Wasatch Plateau, Emery, Kolob, and Coalville Coal Fields.


Carbon County; Book Cliffs Coal Field.

Descriptors: economic geology; coal; Farnham area; Carbon County; topography; physiography; stratigraphy; lithologic descriptions; maps.


Carbon County; Book Cliffs Coal Field; Castlegate, Wellington and Sunnyside Quadrangles.

Carbon County; Book Cliffs Coal Field.

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Carbon County; Book Cliffs Coal Field.

Descriptors: Ferron Sandstone; Castle Valley; paleogeography; depositional environment; fluvial facies; estimation of fluvial characteristics; sedimentation.


Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: Ferron Sandstone; Castle Valley; paleogeography; depositional environment; fluvial facies; estimation of fluvial characteristics; sedimentation.


Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: Utah; sedimentation; Cretaceous; sedimentary rocks; sedimentary petrology; deposition; environmental analysis; Mancos Shale; Ferron Sandstone Member; Castle Valley; Last Chance Delta; deltas; channels; prodelta; cyclic; shale; carbonaceous shale; coal; siltstone; sandstone; lithostratigraphy; lithofacies; bioturbation.

Covington, R. E., 1964, Thermal recovery may bring industry’s quiet revolution: Oil and Gas Jour., Nov. 23, 1964, p. 112-18.

Duchesne, Uintah, and Carbon Counties; Vernal and Book Cliffs Coal Fields.

Descriptors: Uinta Basin; bituminous sandstone; thermal recovery method; fire flooding; steam-caustic injections; production; Sunnyside; Asphalt Ridge; Whiterocks; Green River desert; reserves.


Duchesne, Uintah, and Carbon Counties; Vernal and Book Cliffs Coal Fields.

Descriptors: bituminous sandstone; thermal recovery; Sunnyside; Asphalt Ridge; Whiterocks; Green River Desert; P.R. Springs; Chapita Wells; Dragon-Asphalt Wash; Uinta Basin; production.


Book Cliffs and Wasatch Plateau Coal Fields.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Book Cliffs.


Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: Utah; Cretaceous; paleoecology; palynomorphs; sedimentary rocks; stratigraphy; organic residues; Ferron Sandstone Member; Mancos Shale; Blackhawk Formation; Price River Formation; biostratigraphy; Book Cliffs; Wasatch Plateau; coal; bogs; marshes; lagoons; swamps; genesis; assemblages; angiosperms; environmental analysis; indicators.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Wasatch Plateau coal drilling; stratigraphy; structure; lithologic descriptions; lithologic logs; coal zone descriptions; maps.


Carbon and Emery Counties.

Descriptors: coal; physical properties; coking characteristics; geology; petrography; carbonization; chemical analysis; tests; Carbon and Emery Counties; tables.

Carbon County; Book Cliffs Coal Field.

**Descriptors:** coal; chemical analysis; plasticity; sample preparation; swelling; coal gas; coal tar; coal tar oils; coke; chemical analyses; coke; physical properties; Alaska, Washington, and Utah; British Columbia; geology; mixtures; Volatile matter.


Carbon County; Wasatch Plateau Coal Field.

**Descriptors:** coal mining; history; Scofield No. 4 mine; Winter Quarters; explosion; disaster.

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Carbon County; Book Cliffs Coal Field.

**Descriptors:** Book Cliffs Coal Field; location; geography; physiography; stratigraphy; structure; coal deposits; mining; proposals; reserves; chemical analysis; physical properties; land control; lithologic descriptions; quadrangle reports.

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Sevier, Carbon, Emery, and Sanpete Counties; Wasatch Plateau, Book Cliffs, and Emery Coal Fields.

**Descriptors:** coal; economic geology; Sevier, Carbon, Emery, and Sanpete Counties; Wasatch Plateau, Book Cliffs, and Emery Coal Fields; central; reserves; production; chemical properties.

**Doelling, H. H., 1972c, Wasatch Plateau Coal Field, in Central Utah coal fields:** Utah Geol. and Min. Surv., Mon. Ser., No. 3, p. 59-244.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

**Descriptors:** Wasatch Plateau Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; quadrangle reports; land control; maps.


Carbon, Emery, and Sevier Counties; Wasatch Plateau Coal Field.

**Descriptors:** coal deposits; ash; chemical composition; coal; degassing; leading abstract; methane; quantity ratio; core samples; coal fields; gas content; direct methods; High Volatile A or B rank; lower ranked coals; coal desorption; outcrops; mined areas; encasing rock; Book Cliffs; aeromagnetic contours; Wasatch Plateau.


Carbon County; Book Cliffs Coal Field.

**Descriptors:** economic geology; coal; Carbon and Emery Counties; Blackhawk Formation; organic residues; lithostratigraphy; deposits; horizontal drilling tests; methane drainage; Sunnyside mines; coal seam study; coal bed characteristics; gas desorption anomalies; coal bed discontinuities; separate gas reservoirs; subsaems; faults; proximate and ultimate heat value; Geneva mine; Columbia mine; U.S. Steel.

**Dorman, J. E., 1974, The Pleasant Valley Coal Company store and office building:** Castle Gate, Utah.

Carbon County; Book Cliffs Coal Field.

**Descriptors:** Pleasant Valley Coal Company Store; history; historical building; restoration; mining history.


Carbon County.

**Descriptors:** Utah and Colorado; mining geology; engineering geology; evaluation; land subsidence; Carbon County; coal; organic residues; mines; controls; Somerset; Geneva mine; overburden; stress.


Carbon and Emery Counties; Book Cliffs Coal Field.


Carbon and Emery Counties; Book Cliffs Coal Field.


Carbon and Emery Counties; Book Cliffs Coal Field.


Carbon and Emery Counties; Book Cliffs, Wasatch Plateau, and Emery Coal Fields.
Descriptive: coal mine bumps; seismic surveys; Sunnyside district; Carbon and Emery Counties; Book Cliffs Coal Field; seismic study; epicenters; coking coal; hazards; daily records of tremors caused by bumps; seasonal patterns; maxima; prediction of location; releases of strain energy; surface and subsurface mapping; structural and lithological conditions in coal and associated rocks; instruments; interpretation; geologic and topographic setting.

Carbon and Emery Counties; Book Cliffs Coal Field.

Carbon County; Wasatch Plateau Coal Field.

Book Cliffs and Sego Coal Fields.

Carbon County; Wasatch Plateau Coal Field.


Fife, Arthur, 1922, Duty-of-water investigations on Coal Creek, Utah: Utah State Agricultural College Agricultural Experiment Station, Bull., No. 181.
Carbon County; Book Cliffs Coal Field.

Carbon, Emery, and Grand Counties; Book Cliffs and Sego Coal Fields.


Sevier, Sanpete, Emery, and Carbon Counties; Wasatch Plateau Coal Field.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: faults; sedimentation; economic geology; displacements; environment; coal; normal faults; paleochannels; Sevier County; Blackhawk Formation; Star Point Sandstone; Mancos Shale; Ferron Sandstone Member; organic residues; Wasatch Plateau; John's Peak Quadrangle; Emery; Last Chance Creek; Upper Last Chance Creek.


Descriptors: Utah; petroleum; economic geology; North Horn Formation; Green River Formation; Price River Canyon; Willow Creek Canyon; Soldier Summit; exploration; possibilities; source rocks; detection; non-marine environment; terrestrial environment; sedimentary rocks; coal; wackestone; Paleocene; Eocene.


Descriptors: Kenilworth; Carbon County; Helper; Denver and Rio Grande Railroad; Western Fuel Co.; Cretaceous; Tertiary; Quaternary; Mancos Shale; Wasatch Formation; Eocene; terrace gravels; alluvium; coal-bearing strata; faults; mining operations; bituminous; Castlegate A; Castlegate B; Royal Blue; Castlegate C; Kenilworth; room and pillar mining.


Descriptors: central Utah; Sunnyside; coal deposits; rank; Ferron Sandstone; coal samples; palynology; stratigraphic correlation.


Descriptors: coal preparation techniques; sieve; fluxing; binders; briquetting; retorts; proximate and ultimate analysis; Sunnyside; Hiawatha; Blind Canyon; Castlegate A; Pittsburg seam coal; Carbon and Emery Counties; Utah; Lincoln County; Wyoming; Allegheny County; Pennsylvania.


Descriptors: ashes; chemical analysis; coal; chemical composition; emission spectroscopy; coal deposits; experimental data; geology; maps; Utah.


Descriptors: geology; surface features; classification; strata; topography; structure; material resources; correlations of stratigraphy; lithology; metalliferous deposits; volcanic and plutonic eruptives; arable and pasture lands; irrigation; grazing lands; archaeology and ethnology; paleontology; zoology; analyses of Colorado coal; sections; Book Cliffs.


Descriptors: geology; mineral resources; engineering geology characteristics; environmental geochemistry; east-central Utah; coal development; stratigraphy; Henry Mountains, Emery, Wasatch Plateau, Book Cliffs, and Sego Coal Fields; coal quality and composition; oil and gas; non-petroleum gases; oil shale; bituminous sandstone; uranium; base metals; clays; underground coal mining; mine subsidence; earthquakes; maps; stratigraphic correlations.


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Carbon and Sanpete Counties; Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: Utah; economic geology; coal; Sanpete and Carbon Counties; Eccles Canyon; Scofield; Skyline Project; organic residues; production; economics; mining.


Carbon County; Book Cliffs Coal Field.

Descriptors: coal mining; water infusion; coal moisture content; dust suppression; Kenilworth mine; dust formation; particle size; cleat planes; boreholes; shale dust; tables; illustrations.


Carbon, Iron, and Uintah Counties; Book Cliffs, Kolob-Harmony, and Vernal Coal Fields.

Descriptors: carbonaceous materials; solid fuels; oil products; commercial uses; oil shale; economic factors; low-temperature carbonization; plant and refinery; Carbon County; power; smokeless fuels; rock asphalt; Vernal; paraffin; road oil; gasoline; diesel fuel; Cedar City; Utah markets; engineering experiments; heat requirements; distillation; burning properties.


Carbon and Emery Counties.

Descriptors: economic geology; coal; Utah; Colorado; regional; bituminous; genesis; alteration; ground water; chemical analysis; physical tests; vadose zone; Carbon and Emery Counties; ground water distribution.


Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: Utah Coal Fields; Carboniferous; Cretaceous; Coalville; Castlegate; Book Cliffs; Wasatch Plateau; physical characteristics; mining; location; production; tonnage; chemical analysis.


Carbon and Sanpete Counties; Wasatch Plateau and Salina Canyon Coal Fields.

Descriptors: source direction; Ferron Sandstone; Clear Creek Gas Field; Carbon County; Cretaceous stratigraphy; Mancos Shale; shoreline; paleo-geographic map; marine basin; peninsula-like accumulation of sand in shallow parts; Castle Valley; Manti; Allen Valley Shale; diagnostic ammonite; correlation; cross-beding analysis; coal; faunal zones; fluvial; Wasatch Plateau and Salina Canyon Coal Fields; central Utah.


Sanpete, Sevier, Carbon, Garfield, Kane, and Emery Counties; Book Cliffs, Henry Mountains, and Wasatch Plateau Coal Fields.

Descriptors: Wasatch Plateau; stratigraphy; Cretaceous; Tertiary; correlation; facies; sequences; San Rafael Swell; Kaiparowits Plateau; Henry Mountains; Book Cliffs; depositional environment; formation renaming; fossil evidence; formation dating.


Carbon and Grand Counties; Book Cliffs and Sego Coal Fields.

Descriptors: Cretaceous faunas; Mancos Shale; Dakota Sandstone; Mesaverde Group; stratigraphy; ammonites; correlation; Price to Grand Junction; occurrence of fossil species; coal-bearing rocks.


Carbon County; Book Cliffs Coal Field.

Descriptors: the direct method; methane content of coal beds; ventilation design; laboratory feasibility tests; vertical borehole cores; field tests; results from direct versus indirect methods; emissions from mines; measuring technique; desorption rate curves; emissions rate curves; exploration site; Price; Castlegate bed.


Carbon County; Book Cliffs Coal Field.

Descriptors: organic materials; economic geology; hydrocarbons; natural gas; methane; Carbon County; Book Cliffs; coal fields; recovery; engineering geology; mining geology.

Kovalik, M. J., D. W. Wolfson, F. Fischler and L. Mafritca, 1969, Use of antifissurants in making better

Descriptors: coal; preparation; nonmetallic ores; separation; mixtures; strength; density; furnaces; Utah.

Lesquereux, L., 1872, Lignitic formation and fossil flora: Lewis, R.


Descriptors: bituminous coal; coking; chars; coal; volatility; lower Sunnyside coal; coking properties; blends; rank; quality; Carbon and Emery Counties; tonnage reserves; Sunnyside-Castlegate field; carbonization procedure; tables; graphs.


Descriptors: methane; broken coal; contemporary literature sources; direct and indirect methods; test measurement procedures; equipment descriptions; data interpretations; coal mines; Sunnyside; Price River No. 3; West German analyses.


Descriptors: Castle Valley; geology; coal resources; history; geography; physiography; Wasatch Plateau; San Rafael Swell; stratigraphy; structure; coal-bearing formations; occurrence; physical properties; chemical analysis; development; transportation; reserves; charts; tables; maps.


Descriptors: methane; broken coal; contemporary literature sources; direct and indirect methods; test measurement procedures; equipment descriptions; data interpretations; coal mines; Sunnyside; Price River No. 3; West German analyses.


Descriptors: Castle Valley; geology; coal resources; history; geography; physiography; Wasatch Plateau; San Rafael Swell; stratigraphy; structure; coal-bearing formations; occurrence; physical properties; chemical analysis; development; transportation; reserves; charts; tables; maps.


Descriptors: sedimentation; sedimentary rocks; stratigraphy; environment; lithofacies; Cretaceous; coastal environment; environmental analysis; Blackhawk Formation; Star Point Sandstone; Emery and Wasatch Plateau Coal Fields; Mesozoic lithostratigraphy; sandstone; clastic rocks; fine-grained materials; deltas; floodplains; channels; coal; organic residue; brackish-water environment; paleoenvironment.


Descriptors: instrument installations; study of coal; mine bumps; Sunnyside; seismic; tiltmeter; paper charts; magnetic tape; triangulation; anchored to bedrock; Willmore seismometer; stratigraphic position of seismometer stations; sketches; concrete shelters; earth tremors; epicenters; foci.

Descriptors: sedimentary structures; trace fossils; stratigraphy; sedimentation; coal mine bumps; rock mechanics; Sunnyside district; Blackhawk Formation; Cretaceous; economic geology; mining geology; engineering geology.


Carbon, Emery, and Grand Counties; Book Cliffs and Sego Coal Fields.

Descriptors: coal; economic geology; Colorado and Utah; Book Cliffs Coal Field; Colorado Plateau; resources; reserves; production; genesis; sedimentation; cyclic; Cretaceous.

Merritts, W. M., 1958, Allaying of coal dust by water infusion of coal in place in the leading coal producing countries of the world: M.S. thesis, Univ. of Utah.

Carbon County; Book Cliffs Coal Field.

Descriptors: coal dust; mining operations; coal mines; water infiltration method; water injection; wetting agent; abate dust; dust counts; pillar heating; degassing working faces; Kenilworth; lower Sunnyside; Hiawatha; Adaville; Beckley; Utah, Wyoming, and West Virginia.


Carbon, Emery, and Utah Counties; Book Cliffs Coal Field.

Descriptors: central Utah; northeast Wasatch Plateau; southwestern edge of the Uinta Basin; stratigraphic section; upper Cretaceous; lower Cenozoic non-marine; Colton; Green River and Uinta Formations; Blackhawk; Castlegate sandstone; Price River; North Horn; Flagstaff; Bennion Creek; mountain building; facies; structure; Clear Creek anticline; Beaver Creek syncline; Tic Fork syncline; faults; Pleasant Valley; Starvation Creek; disconformity; gravity; geomorphology; graben; fault scarp; ridge; canyon; hogback; crustal movements; early Laramide orogeny; folding and faulting; late Eocene; Miocene; floodplain; lacustrine; Flagstaff Lake; Uinta Lake; fluvial facies; Duchesne River; present drainage system.


Carbon County; Book Cliffs Coal Field.

Descriptors: Sunnyside, Castlegate, Geneva, Kenilworth, Stansbury, Imperial, and Eagle mines; Utah, Wyoming, and Colorado; Reliance; stratigraphy; geology; mining methods; economics; safety; recovery; production; room and pillar mining; shaking conveyors; mobile loaders.

Mutual Coal Company, 1925, Mutual coal company: an organization created to serve the interests of the fuel consumer: Mutual Coal Company.

Carbon County; Book Cliffs Coal Field.

Descriptors: Mutual Coal Co.; Carbon County; production statistics; stockholder numbers; lease acreage; financial statement; map.


Carbon County; Book Cliffs Coal Field.

Descriptors: deformation; seismology; mining geology; field studies; geophysical observations; rockbursts; seismic characteristics; coal mines; Price; earthquakes; Sunnyside; Castlegate; strain energy; frequency; seasonal variation; rainfall; coal production; cause-effect relationships; rockburst and earthquake epicenter map; earth crustal model; velocities; P-direct; Love; Rayleigh waves; amplitude.

Osterwald, F. W., 1961, Preliminary lithologic and structural map of the Sunnyside No. 1 mine area, Carbon County, Utah, showing coal outcrops, coal mine workings, mined-out areas, overburden thickness contours, and subsidence cracks: U.S. Geol. Surv., Coal Inv., Map C - 50, (2 sheets).

Carbon County; Book Cliffs Coal Field.

Descriptors: coal; Utah; economic geology; maps; Sunnyside No. 1 mine; outcrop map; outcrops; lithologic and structural.

Osterwald, F. W., 1962a, Map of preliminary lithology and structure of Sunnyside No. 1 mine area, Carbon County, Utah: U.S. Geol. Surv., scale 1:6,000.

Carbon County; Book Cliffs Coal Field.

Osterwald, F. W., 1962b, U.S. Geol. Surv., relates geologic structures to bumps and deformation in coal mine workings at Sunnyside No. 1 mine: Mining Eng., Vol. 14, No.4, p. 63-68.

Carbon County; Book Cliffs Coal Field.

Descriptors: mining geology; Utah; technology; engineering geology; structural geology; coal mines; rock bursts; rock mechanics; Book Cliffs Coal Field; mine bumps; Sunnyside No. 1 mine; relation to mine bumps.


Carbon and Emery Counties; Book Cliffs Coal Field.

Descriptors: Utah; fractures; structural analysis; mining geology; fossil man; sedimentation; economic geology; style; interpretation; production control; occurrence; environment; coal; joints; Quaternary; deltaic environment; Carbon and Emery Counties; USGS; Sunnyside District; bedrock; surficial geology; organic residues; bituminous coal; gypsum deposits; natural gas; bitumens; organic materials; Cretaceous; Cenozoic; faults; geomorphology; cleavage; deformation; stress; coal seams; deltaic sedimentation; landform description.

Carbon and Emery Counties; Book Cliffs Coal Field.

Descriptors: coal mine bumps; geology; Sunnyside; Carbon and Emery Counties; structure; stratigraphy; stress accumulation along faults; mining; friction properties of bedding planes; lithology; sedimentary structures; roof conditions; diagrams.

Osterwald, F. W., and C. R. Dunrud, 1966a, Geologic research on coal mine bumps: Coal, Vol. 20, No. 5, p. 3-8, illus.

Carbon County; Book Cliffs Coal Field.

Descriptors: engineering geology; economic geology; mining geology; seismic surveys; rock mechanics; geophysical surveys; coal mine bumps; research; Sunnyside coal district; tremors.


Carbon County; Book Cliffs Coal Field.

Descriptors: coal mining; mine bumps; rockbursts; instrumentation study; Sunnyside district; shear failure; seismic investigations; tiltmeter investigations; maps.


Carbon County; Book Cliffs Coal Field.

Descriptors: Crinoidea; Silurian; Utah and Kentucky; engineering geology; Utah; Eucalyptocrinus foerstleri; coal mine bumps; paleontology; Braggfield Limestone; Estill County; Sunnyside District.


Emery and Carbon Counties; Book Cliffs Coal Field; Woodside Quadrangle.


Carbon County; Book Cliffs Coal Field.

Descriptors: rock mechanics; Utah; materials; properties; engineering geology; finite element analysis; sandstone; mathematical models; statistical methods; longwall mining; Sunnyside Mine; pressure; elasticity; strain; deformation; clastic rocks; coal; organic residues.

Peperakis, J., 1958, Mountain bumps at the Sunnyside mines (Utah), in (Spindler and Pace, chrm.) Bump symposium: Mining Eng., Vol. 10, No. 9, p. 982-986.

Carbon County; Book Cliffs Coal Field.

Descriptors: mountain bumps; Sunnyside mines; pillar mining; virgin development; loss of life; destruction of workings; coking coal; economic conditions; cleaning plant facilities; large reserves; re-treating pillar lines in old first-mined areas; abutment pressures; squeeze conditions; cover; failure; loading; subsidence movements; disturbances; difficult roof; roof falls; geology and fault structure; Book Cliffs; relation of fault structure to bumps; earth tremors; unusual bump occurrences; rib sloughage; measures to minimize hazards.


Carbon County; Book Cliffs Coal Field.

Descriptors: organic materials; hydrocarbons; economic geology; methane; coal; Sunnyside coal bed; detection; occurrence.


Carbon and Emery Counties.

Descriptors: Mounds and Farnham area; San Rafael Swell; Carbon and Emery Counties; faulted anticline; geophysical methods; seismic data; wells drilled; oil and gas; Moenkopi Formation; dome; structure; cross-section; carbon dioxide gas field.


Utah, Wasatch, Duchesne, and Carbon Counties.

Descriptors: Green River Formation; Uinta Formation; subsurface stratigraphy; western Uinta Basin; oil and gas; previous work and nomenclature; structural elements; petroleum geology; paleogeography; correlation; water depth chart; lithologic logs; general stratigraphy; cross-sections; source beds; Utah, Wasatch, Duchesne, and Carbon Counties.


Carbon County; Book Cliffs Coal Field.

Descriptors: coal mining; caving mining; roof bolts; excavation; underground supporting; rock mechanics; tunneling; Utah.
Carbon County; Book Cliffs Coal Field.

Carbon and Emery Counties.
Descriptors: modern industrialized world; fuel; power; bituminous coal; petroleum; natural gas; anthracite coal; reserves; thin seams; mining process; recovery; future supply; settlement; nonferrous metal industry; smelting; interests; Geneva Steel plant; employment; Carbon and Emery Counties; production; transportation problems; economic competition; market; human factor; union wages and benefits; government regulation and supervision; depression; geography; areal relations.

Carbon County; Book Cliffs Coal Field.
Descriptors: longwall mining systems; single and double entry; Sunnyside mine; Kaiser Steel; depth; production; cost; ground control; longwall panels; theoretical investigations; instrumentation; field measurements; data processing; in-situ tests; rock types; physical and mechanical properties; stress; displacement; failure zones; finite element technique.

Carbon County; Book Cliffs Coal Field.
Descriptors: economic geology; Carbon County; organic residues; economics; Larson; Centennial Development Company; leasing.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Grand, Carbon, Duchesne, and Uintah Counties; Book Cliffs, Sego, and Vernal Coal Fields.
Descriptors: American Gilsonite Company; Grand Junction; hydrocarbon; gasoline; carbon-coke; Bonanza; Book Cliffs; refinery; pipeline; blacksmith; Whiterocks Indian Agency; bitumen; grahamite; glance pitch; Uinta Basin; history; industry; origin; characteristics; uses; Rector; mining camp; White River.

Carbon, Emery, Iron, Kane, Sanpete, Sevier, and Washington Counties.
Descriptors: western coals; carbonizing properties; physical properties; rank; lower Sunnyside; Carbon, Emery, Iron, Kane, Sanpete, Sevier, and Washington Counties; chemical analyses; sulfur content; tables.

Uintah and Carbon Counties; Book Cliffs Coal Field.
Descriptors: economic geology; coal; Utah and Colorado; Mesa County; Grand County; Grand River District; Sunnyside; Book Cliffs; maps; deposits; exploration; evaluation; geologic.

Utah and Carbon Counties; Book Cliffs Coal Field.
Descriptors: fieldtrip guide; Book Cliffs Coal Field; Provo; Price; Sunnyside; mileage; index map showing route and location of stops; stratigraphic sections; road log.

Carbon and Sanpete Counties; Book Cliffs, Emery, and Wasatch Plateau Coal Fields.
Descriptors: Cretaceous; east-central Utah; facies change; cyclic sedimentation; intertonguing marine and nonmarine coal-bearing sediments; continental; littoral; marine; depositional environment; field trip; Price River; North Horn and Blackhawk Formations; Sunnyside mine; recent work in the area; local geologic history.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Emery Coal Fields.
Descriptors: sedimentation; economic geology; environment; coal; deltas; organic residues; deposits; Emery; Wasatch Plateau; Cretaceous.

Book Cliffs Coal Field.
Descriptors: three genetic types of dolomite grains; Cretaceous sandstones; detrital-sediment source terrain, relict internal structure, secondary- after deposition, replaced calcite cement, primary- within depositional basin, prior to burial; fabric relationships; lithology; dolomite identification techniques; classification of sedimentary dolomite; size comparison; photomicrographs; Book Cliffs.

Salt Lake Mining Review, 1912, New railroads for eastern Utah coal fields: Salt Lake Mining Review, Mar. 15, 1912, p. 16-17.
Carbon County; Book Cliffs Coal Field.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Utah; economic geology; stratigraphy; coal; Cretaceous; Star Point Sandstone; Blackhawk Formation; Mesozoic; organic residues.

Carbon County; Book Cliffs Coal Field.

Descriptors: underground mining; geology; mine roadways; deformation; drill cores; finite element method; mechanical properties; rocks; stability; supports; Utah.

Book Cliffs, Sego, Emery, and Wasatch Plateau Coal Fields.

Descriptors: Book Cliffs, Sego, Emery, and Wasatch Plateau Coal Fields; drill core samples; methane content of coal; methane extraction; coal analysis; coal beds; tables.

Sommer, S. N., H. H. Doelling and A. D. Smith, 1982a, Land control and coal reserves of the Wasatch Plateau Coal Field and Emery Coal Field, Utah: Utah Geol. and Min. Surv., Map 65, 2 sheets.
Wasatch Plateau and Emery Coal Fields.

Book Cliffs Coal Field.


Descriptors: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.

Carbon, Sanpete, Emery, and Sevier Counties; Wasatch Plateau Coal Field.

Descriptors: coal fields; Wasatch Plateau; history; geography; physiography; geology; stratigraphy; structure; altitude; coal; distribution; physical properties; chemical analysis; coking quality; geographic subdivisions; lithologic descriptions; reserves; tonnage; charts; maps; tables.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Wasatch Plateau; Cretaceous; Tertiary; location; physiography; structure; Mancos Shale; Mesaverde Group; lithology; depositional environment; paleogeography.

Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: ground water; hydrogeology; surveys; springs; aquifers; Book Cliffs; Wasatch Plateau; Mesaverde Group; North Horn Formation; Flagstaff Limestone; Cretaceous; Tertiary; water quality; coal fields.

Carbon and Emery Counties; Book Cliffs Coal Field.

Descriptors: Book Cliffs; economic geology; coal; location; extent; surficial features; stratigraphy; lithology; structure; chemical analyses; coal beds; mine descriptions; map; tables.

Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Field.

Descriptors: Book Cliffs and Wasatch Plateau Coal Fields; Pleasant Valley; coal; economic geology;
Carbon and Emery Counties; location; extent; topography; stratigraphy; structure; Pleasant Valley anticline and fault; Joe's Valley fault; coal mining; coal section descriptions; quality; development; transportation; potential; map; tables.


Carbon County; Book Cliffs Coal Field.

Descriptors: lower Sunnyside coal; petrographic composition; origin; geology; macroscopic appearance; microscopic constituents; maceral identification; chemical analysis.


Carbon County; Book Cliffs Coal Field.

Descriptors: Sunnyside; seismic refraction measurements; mine bumps; geology; physiography; seismic profiles; earth tremors; correlations; diagrams.


Carbon and Emery Counties; Book Cliffs Coal Field.

Descriptors: coal; mining; methods; bed thickness; eastern Utah; lower Sunnyside; physical properties; chemical analysis; mine formations; mine characteristics; development; mining equipment; haulage; room-and-pillar; labor; production; Book Cliffs Mines; charts; tables.


Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: roof falls; Book Cliffs and Wasatch Plateau Coal Fields; Carbon and Emery Counties; coal mine accidents; fatalities; description of district; coal beds; thickness of cover; mining methods; roof testing; support of roof; accident prevention; physical characteristics; cleavage planes; working faces; diagrams of methods; supervision.


Sanpete and Carbon Counties; Wasatch Plateau Coal Field.

Descriptors: environmental surveys; electric power generation; thermal power plants; construction; combustion products; fly ash; coal; ecology; air pollution; coal mining; sulfur dioxide; water pollution; reservoirs; power transmission lines; Utah.


Sanpete and Carbon Counties; Wasatch Plateau Coal Field.

Descriptors: geothermal resources; Utah; thermal power plants; coal; environmental effects; environmental impact statements; planning; waste disposal; water quality.


Carbon County; Book Cliffs Coal Field.

Descriptors: western coal rates; transportation; costs; competition; pricing; tonnage; production points; Rock Springs; Kemmerer; Kenilworth; CastleGate; western rail routes.


Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties.

Descriptors: high temperature carbonization; low temperature carbonization; smoke elimination; technology; products; problems; industry status; Utah coals; types; producing counties; geology; physical properties; chemical analyses; coking capabilities; coking constituents; briquetting; semi-coke; laboratory investigations; properties; rank; test results; products; tars; gases; blends; reactions; Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties; tables.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Fields.

Descriptors: coal; coal exploration; Utah.

Utah Geol. and Min. Surv., 1978, Land control and coal reserves of the Book Cliffs Coal Field: Utah Geol. and Min. Surv., Map 48 A, 1 sheet.

Carbon and Emery Counties; Book Cliffs Coal Field.

Descriptors: economic geology; coal; maps; Emery and Carbon Counties; organic residues; economic geology maps; reserves; Book Cliffs Coal Field.

Utah Geol. and Min. Surv., 1979, Land control and coal reserves of the Wasatch Plateau Coal Field and Emery Coal Field: Utah Geol. and Min. Surv., Map 48B.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Emery Coal Fields.
DAGGETT


Descriptors: coal; mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; Coalville, Henrys Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields.


Carbon County; Book Cliffs Coal Field.

Descriptors: coal mines; structural analysis; excavation; underground supporting; rock bolts; geological surveys; finite element analysis; computer programming; Utah.


Carbon County; Book Cliffs Coal Field.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Utah; hydrology; hydrogeology; surveys; USGS; Wasatch Plateau and Book Cliffs Coal Fields; coal; organic residues; ground water; surface water; dissolved materials; hydrographs; maps.
Descriptors: Cretaceous; coal; lignite; economic geology; lithostratigraphy; Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry’s Fork, and Lost Creek Coal Fields; Goose Creek lignite field; occurrence.

Summit and Daggett Counties; Henry’s Fork Coal Field.
Descriptors: Henry’s Fork Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; maps.

Descriptors: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities, tables.

Summit and Daggett Counties; Henry’s Fork Coal Field.
Descriptors: economic geology; coal; maps; Utah and Colorado; coal fields; Henry’s Fork field; location; structure; stratigraphy; Mesaverde Formation; sections; Tertiary coal; thin beds; subbituminous; analyses; Uinta Basin.

Summit and Daggett Counties; Henry’s Fork and Vernal Coal Fields.
Descriptors: economic geology; coal fields; location; accessibility; development; personnel; mapping; land surveys; Colorado Plateau; stratigraphy; structure; Vernal; Yampa; Henry’s Fork; coal quality; comparisons; physical properties; chemical analyses; fuel ratio; coking tests; maps; tables; charts.

Summit and Daggett Counties; Henry’s Fork Coal Field.
Descriptors: coal; location; structure; stratigraphy; sections; quality.

Daggett County; Henry’s Fork Coal Field.
Descriptors: coal; Rock Springs Formation; mine; stratigraphy; bituminous; Frontier Formation; thin beds; lack potential for production; geologic history; structure; mineral resources.

Daggett and Uintah Counties.
Descriptors: coal mining; feasibility studies; bituminous coal; coal reserves; cost; economics; productivity; Utah.

Summit and Daggett Counties; Henry’s Fork Coal Field.

Daggett County; Henry’s Fork Coal Field.
Descriptors: Daggett County; geology; geography; physiography; stratigraphy; lithology; structure; geomorphology; economic geology; deposits; coal; resources; Cretaceous; Mesaverde Formation; Frontier Member; Mancos Shale; Manning Canyon Shale; market; transportation.

Summit and Daggett Counties; Henry’s Fork Coal Field.
Descriptors: Uinta Mountain; tectonic history; Uinta anticline; folding; faulting, tectonic controls; structural chronology.

Uintah and Daggett Counties; Henry’s Fork Coal Field.
Descriptors: Uinta Mountain; north flank; faulting; Henry’s Fork Fault; Uinta Fault; Spurks Fault; displacement; dip; faulting history; petroleum exploration.

Uintah and Daggett Counties; Henry’s Fork Coal Field.
Descriptors: Uinta Mountains; Carboniferous formations; biostratigraphic studies; tectonic history;
Mississippian; Pennsylvanian; fossil record; lithologic correlation.


Daggett County; Henry’s Fork Coal Field.

**Descriptors:** Daggett County; Sheep Creek Canyon; geology; stratigraphy; structure; lithologic descriptions; mineral resources.

**Schemel, M. P., 1950,** Carboniferous plant spores from Daggett County, Utah: Jour. Pal., Vol. 24, p. 232-244.

Daggett County; Henry’s Fork Coal Field.

**Descriptors:** Daggett County; Carboniferous plant spores; lithologic correlation; systematic descriptions; petrographic rock composition.


**Descriptors:** coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.


Daggett and Uintah Counties.

**Descriptors:** Uinta Mountain and Basin region; structure; Wasatch Mountains; Cretaceous; stratigraphy; geologic map; geological history; correlated columnar section.


Daggett and Uintah Counties.

**Descriptors:** economic geology; coal; Uintah County; Frontier Formation.


Carbon and Emery Counties; Wasatch Plateau and Book Cliffs Coal Fields.


Carbon, Emery, Sanpete, and Sevier Counties; Wasatch Plateau and Book Cliffs Coal Fields.


Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties.

**Descriptors:** coals; sulfur content; pyritic; organic; sulfate; chemical analysis; rank; sample site; mines; Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties; tables.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

**Descriptors:** Wasatch Plateau gas fields; Clear Creek; further exploratory drilling; structure; Cretaceous; Paleocene; sedimentary strata; history; coal deposits; stratigraphy; structure map; composite log- self-potential and resistivity; age of faults and folding; cross-section; causes and time of gas accumulation; Ferron Sandstone; depositional environment; Flat Canyon; Gordon Creek; producing formations.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

**Descriptors:** Wasatch Plateau; natural gas fields; exploration activity; stratigraphy; formations; lithologic log; geophysical log; stratigraphic correlation; structure; causes; age; structural traps; stratigraphic traps; hydrocarbon accumulation; gas analysis; production; drilling practices; charts; diagrams.


Wasatch, Carbon, and Duchesne Counties; Wasatch Plateau Coal Field.

**Descriptors:** Soldier Summit area; Wasatch, Carbon, and Duchesne Counties; structure map; regional setting and tectonic history; regional and local structural elements; influence of structural history on local stratigraphy; gas and oil exploration; drilled wells.


Carbon County; Wasatch Plateau and Book Cliffs Coal Fields.

**Descriptors:** natural gas; Clear Creek; Wasatch Plateau and Book Cliffs Coal Fields; stratigraphy; Mescal Group; economic geology.

Carbon, Wasatch, Utah, Sanpete, Duchesne, and Uintah Counties.

Descriptors: Cretaceous; Paleocene; conglomerates; margin of Uinta Basin; age and correlation; outcrop map; Uintah, Carbon, Duchesne, Sanpete, Utah, and Wasatch Counties; geologic cross-sections; stratigraphy; structure.


Carbon and Emery Counties; Book Cliffs Coal Field.

Descriptors: bounces; virgin territory; fault; Utah Fuel mines; sloughing of coal from the ribs; heavy cover; nature of cover; hard brittle coal; butt cleavage of the coal; pillar workings; tension; slippage plane; unsupported block; stresses; bending action; Book Cliffs; plan of workings; dome theory of faults; synclinal theory.


Carbon County; Book Cliffs Coal Field.

Descriptors: microearthquake activity; Sunnyside mining district; Price; mining hazards; portable high-gain, high-sensitivity seismographs; multichannel magnetic tape; Geneva and Columbia mines; epicenters; hypocenters; fault plane solutions; seismic moment; source dimension; stress drop; fault dislocation; local well logs; saturated sandstone; Mancos Shale; room and pillar mining; compressive principal stress axis; spectral analysis; direct shear waves; maximum ground acceleration; failures; caving; heaving.


Sanpete, Carbon, Iron, and Kane Counties.

Descriptors: coal mining; history; southern Utah coal fields; Sanpete, Carbon, Iron, and Kane Counties; Union Pacific railroad; mine explosions.


Carbon, Emery, and Grand Counties; Book Cliffs and Sego Coal Fields.

Descriptors: sedimentary facies; intertonguing; Cretaceous; Book Cliffs; marine and nonmarine; continental; lagoon; littoral; depositional environment; stratigraphy; coal-bearing facies; cyclic; shallow basin; subsidences; shale; sandstone; offshore bars; classification and nomenclature.


Carbon County; Book Cliffs Coal Field.

Descriptors: cyclic deposits; Cretaceous; Book Cliffs; depositional environment; lithofacies; depositional sequence; cyclothem; Blackhawk Formation; correlations; diagrams.


Carbon County; Book Cliffs Coal Field.

Descriptors: Book Cliffs; stratigraphy; coal; paleogeography; depositional environment; Blackhawk Formation; lithologic descriptions; depositional history; maps.


Carbon and Emery Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Cretaceous; coal; economic geology; Blackhawk Formation; Price River Formation; paleoenvironment; deposits; genesis.
**Descriptrors:** economic geology; coal; maps; Carbon and Duchesne Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Minnie Maid Creek East Quadrangle.


Duchesne and Uintah Counties.

**Descriptrors:** Uinta Basin; Tertiary rocks; geology; stratigraphy; lithologic descriptions; isopach maps.


**Descriptrors:** coal; mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; Coalville, Henrys Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; maps; tables.


**Descriptrors:** bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.

**Averitt, P.,** 1964, Coal, in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.

Henry’s Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.

**Descriptrors:** Utah, mineral fuels; coal resources; rank; production; market; Henry’s Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields; stratigraphy; structure; lithology.


Summit and Duchesne Counties.

**Descriptrors:** Uinta Mountains; mineral resources; prospecting; coal occurrence; tar sands.


Duchesne and Wasatch Counties.

**Descriptrors:** Green River Formation; southeast Uinta Basin; fuel resources; geology; geography; stratigraphy; lithologic descriptions; economic geology; oil shales; gilsonite; bituminous sandstones; oil and gas; reserves.


Duchesne and Uintah Counties.

**Descriptrors:** Asphalt Ridge area; Vernal area; bituminous sandstones; physiography; geology; stratigraphy; asphalt saturation; origin and time of accumulation; economics; mining methods.

**Covington, R. E.,** 1963, Bituminous sandstone and limestone deposits of Utah, in Oil and gas possibilities of Utah, re-evaluated: Utah Geol. and Min. Surv., Bull., No. 54, p. 225-47.

Duchesne and Uintah Counties.

**Descriptrors:** bituminous sands; Uinta Basin; Sunny­side area; stratigraphy; structure; nature; deposits; tables; charts.


Duchesne and Uintah Counties.

**Descriptrors:** Uinta Basin; bituminous sandstones; Sun­ny­side area; Asphalt Ridge; White Rocks area; P. R. Springs deposit; Chapells wells area; Dragon-­Asphalt wash area; Deep Creek area; mining economics; methods.

**Covington, R. E.,** 1964b, Thermal recovery may bring industry’s quiet revolution: Oil and Gas Jour., Nov. 23, 1964, p. 112-18.

Duchesne, Uintah, and Carbon Counties; Vernal and Book Cliffs Coal Fields.

**Descriptrors:** Uinta Basin; bituminous sandstone; thermal recovery method; fire flooding; steama­caustic injections; production; Sun­ny­side; Asphalt Ridge; Whiterocks; Green River desert; reserves.

**Covington, R. E.,** 1965, Bituminous sands and viscous crude oils; in First Intermountain Symposium on Fossil Hydrocarbons: Brigham Young Univ. Center, Salt Lake City, Proceed., p. 364-74.

Duchesne, Uintah, and Carbon Counties; Vernal and Book Cliffs Coal Fields.
Descriptors: bituminous sandstone; thermal recovery; Sunnyside; Asphalt Ridge; Whiterocks; Green River Desert; P.R. Spring; Chapita Wells; Dragon-Asphalt Wash; Uinta Basin; production.


Descriptors: stratigraphic and facies relationships; Green River Formation; Uinta Formation; Duchesne, Uintah, and Wasatch Counties; correlation; tuff beds; lacustrine; playa; mud-flat; saline facies; Eocene; oil shale; lateral facies changes; correlated columnar sections; description of members; lithology.

Dane, C. H., 1955, Stratigraphic and facies relationships of the upper part of the Green River Formation and the lower part of the Uinta Formation in Duchesne, Uintah, and Wasatch Counties, Utah: U.S. Geol. Surv., Oil and Gas Inv., Chart OC 52, 2 sheets. Duchesne, Uintah, and Wasatch Counties.


Descriptors: Uinta Basin; Green River Formation; algal fossils; petrographic studies; algal diversity; oil shale.


Descriptors: Cretaceous; coal; lignite; economic geology; lithostratigraphy; Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry's Fork, and Lost Creek Coal Fields; Goose Creek lignite field; occurrence.


Descriptors: Green River Formation; intracratonic lakes; Uinta Basin; Piceance basin; stratigraphy; depositional environment; oil shale resources.


Descriptors: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities, tables.


Descriptors: stratigraphic; economic significance; tectonic history; Tabby Mountain; Uinta Mountains anticline; oil-impregnated sandstones; petroleum; stratigraphic sections; geologic maps; Cretaceous; Wasatch and Duchesne Counties; correlation; lithology; location; topography; glacial; landslides; sedimentary textures and structures; fossils; well data; structure.


Descriptors: Uinta Basin; Mesaverde Group; stratigraphy; physiography; structure; lithology; nomenclature; facies descriptions; Star Point Sandstone; Blackhawk Formation; Price River Formation; depositional environment; correlation.


Descriptors: oil shale; processing techniques; Green River Formation; mining retorting; gas combustion; Union Oil process; Tosco process; in-situ retorting.


Descriptors: Uinta Basin; structure; stratigraphy; depositional environments; tectonism; interpretation.
Duchesne and Uintah Counties.
Descriptors: Utah; paleogeography; structural history; depositional environments; orogenic episodes; physiography.

Howard, J. D., 1969, Depositional control of Upper Cretaceous coal units: Mt. Geol. 6: 3. Guidebook issue, Raton Basin, Colorado and New Mexico, Sept. 3-6, p. 143-146.
Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields.
Descriptors: Coal; Utah and Colorado; Cretaceous; Economic geology; Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields; deposits; genesis; controls; environment; lagoons; barrier islands; sedimentary rocks.

Duchesne County.

Wasatch and Duchesne Counties; Tabby Mountain Coal Field.

Duchesne County.

Duchesne and Uintah Counties.
Descriptors: origin of hydrocarbons; Uinta Basin; Eocene; fluvial; deltaic; shales; sands; bituminous siliceous dolomites; oil shale; salt lake; chemically stratified; asphalts; stratigraphic units; source rock; field geology; organic solvents; chemical data; geologic data; changes in lithology; chemical character of hydrocarbons and depositional environment; no evidence of metamorphism, catalytic cracking or depth of burial; subsurface samples; organic matter; stagnant; saline; sulfides; Wasatch, Green River, and Uinta formations; sections; petrography of sediments; composition of hydrocarbons; infrared spectograms; frequency distribution of refractive indices; chromatography; infrared optical densities; stages of development of lake.

Duchesne and Uintah Counties.
Descriptors: Uinta Basin; structure; geosynclinal nature; intracratonic basins; depositional environment; subsidence.

Duchesne and Uintah Counties.
Descriptors: non-marine Cenozoic; correlation table; research project; petroleum project; petroleum activity; Uinta Basin; stratigraphic successions; lithology; lacustrine; fluvial; terrestrial; pyroclastic; diastrophism; vertebrate faunas; mammalian; invertebrates; age determination; depositional environments; glacial; alluvial; playa; algal biotherms.

Kinney, D. M., 1951, Geology of the Uinta River and Brush Creek-Diamond Mountain areas, Duchesne and Uintah Counties, Utah: U.S. Geol. Surv., Oil and Gas Inv., Map OM 123.
Duchesne and Uintah Counties.

Duchesne and Uintah Counties.
Descriptors: Brush Creek area; Uintah and Duchesne Counties; geology; stratigraphy; Mississippian coals; Cretaceous coals; structure; geomorphology; economic geology; coal deposits; petroleum; natural gas; coal; reserves; tonnage; physical properties; chemical analysis; production; tables.

Duchesne, Wasatch, and Utah Counties.
Descriptors: Slab Mountain Anticline; structure; Duchesne, Wasatch, and Utah Counties; Soldier Summit; stratigraphy; Tertiary Flagstaff, Colton, Green River Formations; history of exploration; photogeologic; surface geology; seismic exploration; fracture reservoir; gas; oil; form line map; lithology.

Duchesne and Uintah Counties.
Descriptors: Uinta Basin; geomorphology; topography; climate; physiography; landscape districts; plateaus.

Duchesne and Uintah Counties.


Duchesne and Uintah Counties.


Duchesne and Uintah Counties.

Descriptors: stream deposits; stream table experiments; stratigraphic records; stream descriptions and features; discharge; terminology; statistical methods; physical characteristics; grain size distribution; isopach maps.


Duchesne and Uintah Counties.


Wasatch and Duchesne Counties; Tabby Mountain Coal Field.


Duchesne and Uintah Counties.


Duchesne and Uintah Counties.

Descriptors: Uinta Basin; subsurface stratigraphy; Green River Formation; Uinta Formation; structure; lithology; correlation; paleogeography; depositional environment; facies; petroleum exploration; isopach maps; diagrams.


Utah, Wasatch, Duchesne, and Carbon Counties.

Descriptors: Green River Formation; Uinta Formation; subsurface stratigraphy; western Uinta Basin; oil and gas; previous work and nomenclature; structural elements; petroleum geology; paleogeography; correlation; water depth chart; lithologic logs; general stratigraphy; cross-sections; source beds; Utah, Wasatch, Duchesne, and Carbon Counties.


Duchesne and Uintah Counties.

Descriptors: paleocurrents; shoreline orientations; Green River Formation; Eocene; Raven Ridge and Red Wash areas; northeastern Uinta Basin; ripplemarks; cross-stratification; sandstone-body trends; lacustrine; fluvial; vertical stratigraphic variation; asymmetric and symmetric; arcs of azimuths; stable current system; exploration for oil and gas; regional structure; stratigraphy; maximum inclination of foresets; description of structures used; directional results; rose diagrams; regional map.


Duchesne and Uintah Counties.

Descriptors: Uinta Basin; Green River Formation; stratigraphy; petroleum accumulation possibilities; depositional environment; structure; facies; oil occurrence; exploration.


Duchesne and Uintah Counties.


Grand, Carbon, Duchesne, and Uintah Counties; Book Cliffs, Sego, and Vernal Coal Fields.

Descriptors: American Gilsonite Company; Grand Junction; hydrocarbon; gasoline; carbon-coke; Bonanza; Book Cliffs; refinery; pipeline; blacksmith;
D. A. Foster and A. D. Smith, Bibliography of Utah Coal

Whiterocks Indian Agency; bitumen; grahamite; glance pitch; Uinta Basin; history; industry; origin; characteristics; uses; Rector; mining camp; White River.

Duchesne and Uintah Counties.
Descriptors: asphalts; hydrocarbons; carbon disulfide; metamorphic products; Gilsonite; glance pitch; grahamite; Uinta Basin; Colorado; vertical veins; economic importance; paraffin; naphthenes; fractional distillation.


Duchesne and Uintah Counties; Uinta Basin.
Descriptors: Uinta Basin; coal; Tabby Mountain, Book Cliffs and Vernal Coal Fields; resources; stratigraphy; Blackhawk coal zones; Neslen Formation; Frontier Sandstone; coal rank; mining methods; room and pillar; longwall.

Descriptors: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.

Duchesne and Uintah Counties; Tabby Mountain and Vernal Coal Fields.
Descriptors: economic geology; coal; lignite; Vernal, Blacktail (Tabby) Mountain; coal fields; stratigraphy; structure; lithologic descriptions; coal occurrence; quality; maps; tables.

Duchesne and Uintah Counties.
Descriptors: Uinta Mountains; geological exploration; history; J. W. Powell, F. V. Hayden, and Clarence King; geological expeditions; 40th parallel survey; glaciation; geomorphology.

Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties.
Descriptors: Utah; economic geology; mineral resources; fuel resources; exploration; Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties; production; Uinta Basin; Basin-and-Range Province; Wasatch Plateau; San Rafael Swell; asphalt; bitumens; organic materials; beryl; ring silicates; construction materials; coal; organic residues; metal ores; gems; uranium ores.

Duchesne County; Tabby Mountain Coal Field.
Descriptors: fossil-fuel power plants; environmental impacts; agriculture; air pollution; air quality; aquatic ecosystems; archaeological sites; coal; construction; electric utilities; overhead power transmission lines; pipelines; power transmission towers, rights-of-way; site selection; terrestrial ecosystems; Water; Utah.

Utah Geol. and Min. Surv., 1978, Land control and coal reserves of the Book Cliffs Coal Field: Utah Geol. and Min. Surv., Map 48 A, 1 sheet.
Utah, Duchesne, Carbon, and Emery Counties; Book Cliffs Coal Field.
Descriptors: economic geology; coal; maps; Utah, Emery, Carbon, and Duchesne Counties; organic residues; economic geology maps; reserves; Book Cliffs Coal Field.

Duchesne and Uintah Counties.
Descriptors: geology; Cretaceous; Uinta Basin; stratigraphy; igneous rocks; structure; folding; faulting; structural history; Dakota Sandstone; Mancos Shale; Mesaverde Group; lithologic facies; Vernal; Tabby Mountain; Laramide folding; regional Cretaceous correlation diagram; sections; age and correlation; fossils; lithology.

Duchesne and Uintah Counties.
Descriptors: Uinta Basin; stratigraphy; Cretaceous; topography; lithology; sedimentation factors; petroleum exploration.

Wasatch, Carbon, and Duchesne Counties; Wasatch Plateau Coal Field.

Descriptors: Soldier Summit area; Wasatch, Carbon, and Duchesne Counties; structure map; regional setting and tectonic history; regional and local structural elements; influence of structural history on local stratigraphy; gas and oil exploration; drilled wells.


Carbon, Wasatch, Utah, Sanpete, Duchesne, and Uintah Counties.

Descriptors: economic geology; coal; maps; organic residues; deposits; physical and chemical apparatus; testing apparatus; history and methods; oil; shale; oil sands; water resources.


Duchesne and Uintah Counties.

Descriptors: oil shale; history and methods; testing apparatus; physical and chemical character; distribution; geology; shale oil; Green River Formation; Uinta Basin; geography; stratigraphy; structure; sections; developments.

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Sanpete and Emery Counties; Wasatch Plateau Coal Field; Joes Valley Reservoir Quadrangle.

Descriptors: Utah; Sanpete and Emery Counties; economic geology; coal; maps; organic residues; deposits; economic geology maps; explanatory text; Joe's Valley Reservoir Quadrangle; USGS.


Emery County; Book Cliffs Coal Field; NE quarter of the Woodside 15-min. Quadrangle.

Descriptors: economic geology; coal; maps; Emery County; organic residues; deposits; resources; explanatory text; economic geology maps; Woodside Quadrangle.


Emery and Carbon Counties; Book Cliffs Coal Field; NW 1/4 Woodside 15-minute Quadrangle.

Descriptors: economic geology; coal; maps; Emery and Carbon Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Woodside Quadrangle.


Emery County; Book Cliffs Coal Field; SE quarter of the Range Creek 15-min. Quadrangle.

Descriptors: economic geology; coal; maps; Emery and Grand Counties; organic residues; deposits; resources; economic geology maps; explanatory text; Range Creek Quadrangle; USGS.


Emery County; Book Cliffs Coal Field; SW quarter of the Range Creek 15-min. Quadrangle.

Descriptors: Utah; economic geology; coal; maps; Emery County; organic residues; deposits; resources; economic geology maps; explanatory text; Range Creek Quadrangle.


Sevier and Emery Counties; Emery Coal Field; Walker Flat Quadrangle.
Descriptive: Utah; economic geology; coal; maps; Sevier and Emery Counties; organic residues; deposits; resources; economic geology maps; explanatory text; Walker Flat Quadrangle; USGS.

Sevier and Emery Counties; Emery Coal Field; Emery West Quadrangle.

Descriptive: economic geology; coal; maps; Sevier and Emery Counties; organic residues; deposits; resources; economic geology maps; explanatory text; Emery West Quadrangle.

Sanpete and Emery Counties; Wasatch Plateau Coal Field; Ferron Canyon Quadrangle.

Descriptive: economic geology; coal; maps; Sanpete and Emery Counties; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Ferron Canyon Quadrangle.

Sanpete, Sevier, and Emery Counties; Wasatch Plateau Coal Field; Flagstaff Peak Quadrangle.

Descriptive: economic geology; coal; maps; Sanpete, Emery, and Sevier Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Flagstaff Peak Quadrangle.

Carbon County; Wasatch Plateau Coal Field; NE quarter of the Hiawatha 15-min. Quadrangle.

Descriptive: economic geology; coal; maps; Carbon County; organic residues; deposits; resources; economic geology maps; explanatory text; Hiawatha Quadrangle.

Emery, Carbon, and Sanpete Counties; Wasatch Plateau Coal Field; NE quarter of the Scofield 15-min. Quadrangle.

Descriptive: economic geology; coal; maps; Emery, Carbon, and Sanpete Counties; coal resource occurrence; coal development potential maps; Jump Creek Quadrangle; physiography; climate; land status; stratigraphy; structure; coal geology; mining operations; in situ gasification; coal data map; columnar section.

Emery County; Book Cliffs Coal Field; NE quarter of the Woodside 15-min. Quadrangle.

Descriptive: economic geology; coal; maps; Carbon County; Emery County; organic residues; deposits; resources; explanatory text; economic geology maps; Woodside Quadrangle.

Emery County; Wasatch Plateau Coal Field; NW quarter of the Castlegate 15-min. Quadrangle.

Descriptive: economic geology; coal; maps; Emery County; organic residues; deposits; resources; explanatory text; economic geology maps; Castlegate Quadrangle.

Carbon County; Wasatch Plateau Coal Field; NW quarter of the Hiawatha 15-min. Quadrangle.

Descriptive: economic geology; coal; maps; Emery County; organic residues; deposits; resources; explanatory text; economic geology maps; Hiawatha Quadrangle.

Emery County; Wasatch Plateau Coal Field; SE quarter of the Hiawatha 15-min. Quadrangle.

Descriptive: economic geology; coal; maps; Emery County; organic residues; deposits; resources; explanatory text; economic geology maps; Hiawatha Quadrangle.


Carbon, Emery, and Sanpete Counties; Wasatch Plateau Coal Field; SE quarter of the Scofield 15-min. Quadrangle.

Descriptors: coal resource occurrence; coal development potential maps; Emery, Carbon, and Sanpete Counties; Wattis Quadrangle; climate; land status; stratigraphy; structure; coal geology; mining operations; in situ gasification; coal data map; composite columnar section.


Emery County; Wasatch Plateau Coal Field; The Cap and Mahogany Point Quadrangles.

Descriptors: well-logging; mining geology; economic geology; general; evaluation; coal; Emery County; organic residues; deposits; exploration; drilling; The Cap Quadrangle; Mahogany Point Quadrangle.


Emery County; Wasatch Plateau Coal Field; The Cap and Mahogany Point Quadrangles.

Descriptors: well-logging; economic geology; mining geology; interpretation; evaluation; coal; Emery County; The Cap Quadrangle; Mahogany Point Quadrangle; general; organic residues; deposits; boreholes.


Emery County; Wasatch Plateau Coal Field.

Descriptors: well-logging; mining geology; economic geology; general; geology; evaluation; coal; Emery County; organic residues; deposits; exploration; drilling.


Emery County; Wasatch Plateau Coal Field.

Descriptors: well-logging; mining geology; economic geology; interpretation; evaluation; coal; Emery County; North Horn Mountain; general; organic residues; deposits; boreholes.


Carbon and Emery Counties; Book Cliffs Coal Field.

Bibliography of Utah Coal


Emery County; Emery Coal Field.

Descriptors: sedimentation; paleogeography; sedimentary rocks; stratigraphy; Cretaceous; economic geology; environment; organic residues; coal; deltas; Emery County; Mancos Shale; Ferron Sandstone Member; organic residues; deposits; geochemistry; chemical composition; data; shale; clastic rocks; coal fields; Cretaceous; Mesozoic.


Emery County; Book Cliffs Coal Field; Range Creek and Woodside Quadrangles.

Descriptors: well-logging; economic geology; interpretation; coal; Emery County; Book Cliffs; Woodside Quadrangle; Range Creek Quadrangle; organic residues; coal fields; deposits; lithology; geophysical methods; boreholes.


Descriptors: coal; mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; maps; tables.


Carbon, Emery and Grand Counties; Book Cliffs and Sego Coal Field.


Descriptors: bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; coal; world coal reserves.

Averitt, P., 1964, Coal, in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.

Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.

Descriptors: Utah, mineral fuels; coal resources; rank; production; market; Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields; stratigraphy; structure; lithology.


Emery, Wayne and Garfield Counties.


Emery County; Emery Coal Field; Emery 7 Quadrangle.


Emery and Sevier Counties; Emery and Wasatch Plateau Coal Fields; John's Peak and Old Woman Plateau Quadrangles.

Descriptors: well-logging; geophysical surveys; general; logs; Sevier County; John's Peak Quadrangle; Old Woman Plateau Quadrangle; data; Wasatch Plateau; Emery Coal Field; coal; organic residues; exploration.


Sanpete, Sevier, Carbon and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Utah; well-logging; Cretaceous; coal; geophysical surveys; applications; Carbon, Emery, and Sevier Counties; Blackhawk Formation;
Wasatch Plateau; stratigraphy; sedimentary rocks; sandstone; shale; deposits; exploration; geophysical methods; electrical; radioactivity; gamma ray; data.


Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: low temperature carbonization; light oils; tar; distillation; coke gas; Mesaverde coals; Book Cliffs; Wasatch Plateau; retort; yield; fractions; utilization; charts.


Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: low temperature carbonization; tar; composition; steam carbonization; tar fractions; oils; waxes; resin; chemical analyses; composition; heavy portion; Mesaverde coals; Book Cliffs; Wasatch Plateau; charts.


Emery County; Wasatch Plateau and Emery Coal Fields.

Descriptors: coal reserves; late Cretaceous; stratigraphic units; Hiawatha coal seam; high-volatile C bituminous; sulfur; ash; resin.


Sevier and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: economic geology; stratigraphy; coal; Cretaceous; Paleocene; Mancos Shale; Mesaverde Group; North Horn Formation; Flagstaff Limestone; Star Point Sandstone; Blackhawk Formation; Castlegate Sandstone; Price River Formation; Wasatch Plateau; organic residues; Cretaceous; Coloradoan; Paleogene; Tertiary; biostatigraphy; Ostrea; Ostridae; Bivalvia; Mollusca; Thalassinoides; ichnofossils; sandstone; clastic rocks; mining; biogenic structures; sedimentary structures.


Sevier and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: sedimentation; stratigraphy; economic geology; environment; Cretaceous; coal; deltas; Mesaverde Group; Star Point Sandstone; Blackhawk Formation; Price River Formation; Castlegate Sandstone; Wasatch Plateau; Mesozoic; organic residues; deposits; production; chemical properties; coal seams; thickness; marine environment; shallow-water environment; sandstone; clastic rocks.


Emery and Sevier Counties; Wasatch Plateau and Salina Canyon Coal Fields.


Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: geology; stratigraphy; Cretaceous; Wasatch Plateau and Book Cliffs Coal Fields; depositional environments; lithology; formations.


Emery, Carbon, Summit, and Iron Counties.

Descriptors: coal deposits; coal mining; Book Cliffs; production; tonnage; supply; Emery; Kolob; Kanab; Coalville; resource development; manufacturing; local economy.


Carbon, Emery, and Summit Counties.

Descriptors: economic geology; petroleum; natural gas; coal; lignite; mineral fuels; mines; prospects; Carbon, Emery, and Summit Counties; maps; charts; tables.


Descriptors: southwestern Utah; map of coal fields; estimate of coal reserves of different rank; heat efficiency; classification of coal areas; Vernal, Wasatch Plateau, Kaiparowits Plateau, San Juan, Emery, Kolob, and Coalville Coal Fields.


Emery Coal Field.

Descriptors: open-marine; interdistributary plain; barrier island; lagoon; lower deltaic plain; sedimentary rocks; sedimentary structures; sedimentary petrology; environmental analysis; biogenic structures; Emery County; Emery Sandstone; shale; coquina; mudstone; coal; marine; barrier; Ferron Sandstone; Ichnofossils; Cretaceous; Turonian.
Cohenour, R. E., 1965, Coal lands west of the towns Huntington and Emery, Emery County, Utah: Utah Geol. and Min. Surv., Rept. Inv., No. 20, 1 p., maps.
Emery County; Wasatch Plateau and Emery Coal Fields.

Emery, Sevier, Rich, and Uintah Counties.

Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields.
Descriptors: Ferron Sandstone; Castle Valley; paleogeography; depositional environment; fluvial facies; estimation of fluvial characteristics; sedimentation.

Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields.
Descriptors: Utah; sedimentation; Cretaceous; sedimentary rocks; sedimentary petrology; deposition; environmental analysis; Mancos Shale; Ferron Sandstone Member; Castle Valley; Last Chance Delta; deltas; channels; prodelta; cyclic; shale; carbonaceous shale; coal; siltstone; sandstone; lithostratigraphy; lithofacies; bioturbation.

Emery County; Wasatch Plateau and Book Cliffs Coal Fields.
Descriptors: Utah; sedimentary rocks; sedimentation; Cretaceous; sedimentary petrology; environment; environmental analysis; Mancos Shale; Ferron Sandstone Member; Castle Valley; deltas; marshes; swamps; deposition; coal; sandstone; Last Chance Delta; Vernal Delta.

Sevier and Emery Counties; Salina Canyon and Wasatch Plateau Coal Fields.
Descriptors: resin-bearing coals; Salina Canyon; Huntington Canyon; Cretaceous plants; lump resin; Byron Howard mine; bug dust; American Fuel mine; livie bed; Sevier bed; Wilson bed; tables; comparisons.

Book Cliffs and Wasatch Plateau Coal Fields.

Sanpete, Sevier, Carbon and Emery Counties; Wasatch Plateau and Book Cliffs.

Book Cliffs and Wasatch Plateau Coal Fields.
Descriptors: Utah; Cretaceous; paleocology; palynomorphs; sedimentary rocks; stratigraphy; organic residues; Ferron Sandstone Member; Mancos Shale; Blackhawk Formation; Price River Formation; biostratigraphy; Book Cliffs; Wasatch Plateau; coal; bogs; marshes; lagoons; swamps; genesis; assemblages; angiosperms; environmental analysis; indicators.

Davis, F. D., and H. H. Doelling, 1976, Drilling of low sulfur bituminous coals in several areas of the Wasatch Plateau Coal Field: Utah Geol. and Min. Surv., Open-File Rept., No. 17, 71 p., maps, logs.
Sanpete, Sevier, Carbon and Emery Counties; Wasatch Plateau Coal Field.
Descriptors: Wasatch Plateau coal drilling; stratigraphy; structure; lithologic descriptions; lithologic logs; coal zone descriptions; maps.

Emery County; Wasatch Plateau Coal Field.
Descriptors: sedimentary rocks; tectonics; economic geology; areal geology; lithostratigraphy; structure; Emery County; Masuk Shale; Star Point Sandstone; Flagstaff Formation; Price River Formation; North Horn Formation; Blackhawk Formation; coal; maps; Cretaceous; sedimentary cover; Wasatch Plateau; John's Peak; North Horn Mountain; Trail Mountain; organic residues; deposits; resources; geologic maps; stratigraphy; Mesozoic; Paleocene; Paleogene; Tertiary; Cenozoic; quality; reserves; faults; folds.

Carbon and Emery Counties.
Descriptors: coal; physical properties; coking characteristics; geology; petrography; carbonization; chemical analysis; tests; Carbon and Emery Counties; tables.


Descriptors: coal; economic geology; Sevier, Carbon, Emery, and Sanpete Counties; Wasatch Plateau, Book Cliffs, and Emery Coal Fields; central; reserves; production; chemical properties.


Descriptors: Emery Coal Field; location; geography; physiography; stratigraphy; structure; coal deposits; mining; proposals; reserves; chemical analysis; physical properties; land control; lithologic descriptions; quadrangle reports.


Descriptors: Henry Mountains Coal Field; location; geography; physiography; stratigraphy; structure; coal deposits; mining; proposals; reserves; chemical analysis; physical properties; land control; lithologic descriptions; quadrangle reports.


Descriptors: Sego Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; quadrangle reports; maps.


Descriptors: Wasatch Plateau Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; quadrangle reports; land control; maps.


Sevier and Emery Counties; Emery Coal Field.

Descriptors: coal; Cretaceous; economic geology; Sevier County; Emery County; Ferron Sandstone; Blackhawk Formation; Emery Coal Field; deposits; reserves; composition; moisture content.

Doelling, H. H., 1979, Sandstone spar in the Trail Mountain coal mine, Emery County, Utah: Utah Geol. and Min. Surv., Rept. Inv., No. 120, 6 p., maps. Emery County; Wasatch Plateau Coal Field.

Descriptors: sedimentary rocks; economic geology; clastic rocks; coal; sandstone; organic residues; Trail Mountain coal mine; Emery County; genesis.


Emery and Sevier Counties; Emery Coal Field.

Descriptors: Emery Coal Field; state coal land acquisition; coal resources; coal quality; resource evaluation; chemical analysis; recoverable reserves.


Descriptors: Utah coals; methane content; gas composition; coal analysis; Book Cliffs, Wasatch Plateau, Emery, Sego, Kaiparowits Plateau and Alton Coal Fields; Sunnyside coal zone; physical properties; depositional environment; maps.

Carbon, Emery and Sevier Counties; Wasatch Plateau Coal Field.

Descriptors: coal deposits; ash; chemical composition; coal; degassing; leading abstract; methane; quantity ratio; core samples; coal fields; gas content; direct methods; High Volatile A or B rank; lower ranked coals; coal desorption; outcrops; mined areas; encasing rock; Book Cliffs; aeromagnetic contours; Wasatch Plateau.


Emery County; Wasatch Plateau Coal Field.

Descriptors: contour strip mining proposal; Clear Creek area; reclamation proposals; economic considerations; precipitation tables; environmental concerns.


Emery and Sanpete Counties; Wasatch Plateau Coal Field; Rilda Canyon Quadrangle.

Descriptors: well-logging; economic geology; coal; Emery and Sanpete Counties; Rilda Canyon Quadrangle; Wasatch Plateau; organic residues; coal fields; sections; USGS.


Carbon, Emery Counties; Book Cliffs Coal Field.


Carbon and Emery Counties; Book Cliffs Coal Field.


Carbon, Emery Counties; Book Cliffs Coal Field.


Carbon and Emery Counties; Book Cliffs, Wasatch Plateau, and Emery Coal Fields.

Descriptors: coal mine bumps; seismic surveys; Sunnyside district; Carbon and Emery Counties; Book Cliffs Coal Field; seismic study; epicenters; coking coal; hazards; daily records of tremors caused by bumps; seasonal patterns; maxima; prediction of location; releases of strain energy; surface and subsurface mapping; structural and lithological conditions in coal and associated rocks; instruments; interpretation; geologic and topographic setting.


Carbon and Emery Counties; Book Cliffs Coal Field.


Emery and Sevier Counties; Willow Spring Quadrangle.


Sevier and Emery Counties; Emery Coal Field; Willow Springs Quadrangle.


Emery County; Emery Coal Field; Emery East Quadrangle.

Descriptors: well-logging; economic geology; coal; Emery County; general; organic residues; radioactivity; gravity methods; geophysical methods; density; deposits; sections; boreholes; Emery East Quadrangle; exploration.


Emery County; Wasatch Plateau Coal Field; The Cap Quadrangle.

Descriptors: stratigraphy; economic geology; Cretaceous; coal; Emery County; Blackhawk Formation; Mesozoic; The Cap Quadrangle; sections; organic residues; deposits.

Ellis, E. G., 1981a, Geologic map and coal sections of The Cap Quadrangle, Emery County, Utah: U.S. Geol. Surv., Open-File Rept., No. 81-0612, 3 sheets.

Emery County; Wasatch Plateau Coal Field; The Cap Quadrangle.

Descriptors: Utah; economic geology; coal; maps; Emery County; USGS; The Cap Quadrangle; organic residues; sections; geologic maps; explanatory text.

Ellis, E. G., 1981b, Geologic map and coal sections of the Ferron Canyon Quadrangle, Sanpete and Emery
Counts, Utah: U.S. Geol. Surv., Open-File Rept., No. 81-0319, 2 sheets.
Sanpete and Emery Counties; Wasatch Plateau Coal Field; Ferron Canyon Quadrangle.
Descriptors: Utah; economic geology; coal; maps; Sanpete County; Emery County; USGS; Ferron Canyon Quadrangle; sections; geologic maps; organic residues.

Emery County; Wasatch Plateau Coal Field; Mahogany Point Quadrangle.
Descriptors: well-logging; economic geology; coal; Emery County; Wasatch Plateau; organic residues; coal fields; sections; Mahogany Point Quadrangle; USGS.

Emery County; Wasatch Plateau Coal Field; Mahogany Point Quadrangle.
Descriptors: Utah; economic geology; coal; maps; Emery County; USGS; Mahogany Point Quadrangle; geologic maps; coal deposits; maps; organic residues; coal seams; sections; explanatory text.

Emery County; Wasatch Plateau Coal Field; Red Point Quadrangle.
Descriptors: Utah; economic geology; coal; maps; Emery County; USGS; Red Point Quadrangle; organic residues; sections; geologic maps.

Emery County.


Carbon, Emery, Sevier, Summit, Uintah, and Wasatch Counties.
Descriptors: sampling and analytical methods; car samples; mine sampling; determination of ash, moisture, Volatiles, carbon, sulfur, hydrogen, nitrogen and calorific values; proximate and ultimate analyses; descriptions of samples; Carbon, Emery, Sevier, Summit, Uintah, and Wasatch Counties; Hiawatha, Knight, Sunnyside, Browning, Casper, Williams, Hogan, Kearns and Duggins, Rees-Grass, Superior, Wasatch, Blue Bell, Green, Reynolds, Winchester, and Cummings mines., sections.

Carbon, Emery, Grand, Morgan, Sanpete, and Summit Counties.
Descriptors: coal analyses; mine samples; car samples; fiscal year; proximate and ultimate analyses; Carbon, Emery, Grand, Morgan, Sanpete, and Summit Counties; lithologic descriptions; tables.

Descriptors: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities, tables.

Emery and Grand Counties; Book Cliffs Coal Field.
Descriptors: Book Cliffs Coal Field; Emery, Grand, and Carbon Counties; geology; physiography; stratigraphy; Neslen Formation; structure; economic geology; coal occurrence; physical properties; chemical analysis; tonnage reserves; development; township descriptions; coal thickness; lithologic descriptions; coal rank; maps; tables.

Carbon, Emery, and Grand Counties; Book Cliffs and Sego Coal Fields.
Descriptors: Book Cliffs Coal Field; Carbon, Emery, and Grand Counties; Cretaceous; Tertiary; formations; description; geology; lithology; stratigraphic sections; paleontology; tables.

Flores, R. M., 1978, Tertiary and Cretaceous environments of coal deposition in the Powder River basin,

D. A. Foster and A. D. Smith, Bibliography of


Descriptors: Wyoming; Utah; paleoecology; sedimentation; stratigraphy; Tertiary; environment; terrestrial environment; Tongue River Member; Fort Union Formation; Powder River Basin; Wasatch Plateau; Cenozoic; Cretaceous; Mesozoic; coal; organic residues.


Descriptors: western interior; sedimentation; economic geology; deposition; ichnofossils; occurrence; coal; models; Tongue River Member; Fort Union Formation; Blackhawk Formation; Fruitland Formation; Vermejo Formation; Almond Formation; Rock Springs Uplift; Pictured Cliffs Sandstone; Montana, Wyoming, Utah, Colorado, and New Mexico; Tertiary; Mesozoic; Cretaceous; organic residues; lithostratigraphy; environment; Powder River Basin; Wasatch Plateau; San Juan Basin; Raton Basin; delts; deposits; coastal environment; terrestrial environment; Ophiomorpha.


Sevier and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: sedimentary rocks; stratigraphy; economic geology; lithostratigraphy; Cretaceous; coal; Star Point Sandstone; Blackhawk Formation; Wasatch Plateau; Mesozoic; organic residues; deposits; coal seams; correlation; sandstone; clastic rocks.


Sevier, Sanpete, Emery, and Carbon Counties; Wasatch Plateau Coal Field.


Emery County; Emery Coal Field.

Descriptors: western U.S.; stratigraphy; economic geology; Cretaceous; coal; Emery County; Blackhawk Formation; Star Point Sandstone; Emery; Mesozoic; organic residue; deposits; coal seams; correlation.


Sanpete, Sevier, Carbon and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: faults; sedimentation; economic geology; displacements; environment; coal; normal faults; paleochannels; Sevier County; Blackhawk Formation; Star Point Sandstone; Mancos Shale; Ferron Sandstone Member; organic residues; Wasatch Plateau; Johns Peak Quadrangle; Emery; Last Chance Creek; Upper Last Chance Creek.


Emery County; Wasatch Plateau Coal Field.

Descriptors: Blackhawk mine; Emery County; geology; description; outcrop; coal thickness; chemical analysis; mining operations; equipment; inspections.


Sanpete, Iron, Kane, Utah, Summit, and Emery Counties; Wasatch Plateau, Wales, Coalville, Cedar City, Kanarra, Kanab, and New Harmony Coal Fields.

Descriptors: coal industry; imports of coal into the Territory; patents; transportation; analyses; Springville; Grass Creek and Chalk Creek; Castlegate mines; Winter Quarters mine; Pleasant Valley mines.

Gilluly, J., and J. B. Reeside, Jr., 1928, Sedimentary rocks of the San Rafael Swell and some adjacent areas of eastern Utah: U.S. Geol. Surv., Prof. Paper, No. 150-D.

Emery County.


Sevier, Emery, and Wayne Counties.


Carbon and Emery Counties.


Sanpete, Sevier, Carbon and Emery Counties; Wasatch Plateau Coal Field.


Emery County; Wasatch Plateau Coal Field.


Emery County; Wasatch Plateau Coal Field.

Descriptors: Project Western Coal; coal; flash heating; plasma pyrolysis; gas chromatography; catalytic hydrogenation; batch hydrogenation; coal liquids; reactions; solvent extraction; ultrasonic extraction; evaluation; kinetics; microwave irradiation; Carbon and Emery Counties; charts; tables.


Emery County; Emery Coal Field.

Descriptors: soils; hydrology; ground water; environmental geology; surveys; reclamation; Emery County; Mancos Shale; Ferron Sandstone Member; Emery Field; coal; organic residues; deposits; resources; impact statements; land use; Cretaceous; lithostratigraphy.


Sanpete, Sevier, Carbon, Emery and Grand Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Book Cliffs and Wasatch Plateau Coal Fields; sandstones; characteristic trace fossils; upper Cretaceous; descriptions of trace fossils; depositional environment; facies fauna; subdivisions of wave and energy; in situ, ethological classification; bedding planes.


Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: nearshore depositional environments; Cretaceous; Book Cliffs and Wasatch Plateau Coal Fields; lithology; sedimentary structures; geometry; trace fossils assemblages; bar; backbar; longshore bar; forebar; marine transgression; erosional surface.

Howard, J. D., 1969, Depositional control of upper Cretaceous coal units: Mt. Geol. 6: 3: Guidebook issue, Raton Basin, Colorado and N.M., Sept. 3-6, p. 143-146.

Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Coal; Utah and Colorado; Cretaceous; Economic geology; Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields; deposits; genesis; controls; environment; lagoons; barrier islands; sedimentary rocks.


Descriptors: mineral industry; production value; copper; silver; vanadium; iron; uranium; lead; zinc; gold; molybdenum; mineral fuels; coal; manufacturing steel; nonmetals; employment and injuries; legislation and government programs; review by mineral commodities; coal tonnage; Sunnyside, Columbia, Geneva, Castlegate, Clear Creek, Kenilworth, O'Connor, and King mines; Carbon, Emery, Iron, Sevier, and Summit Counties.


Emery County; Emery Coal Field.

Descriptors: longwall mining; Utah; underground mining.


Emery County; Wasatch Plateau Coal Field.

Descriptors: sedimentary rocks; stratigraphy; lithostratigraphy; Cretaceous; Emery County; Blackhawk Formation; Wasatch Plateau; North Horn Mountains; Mesozoic; Montanan; coal; organic residues; measured sections.


Carbon and Emery Counties.

Descriptors: economic geology; coal; Utah; Colorado; regional; bituminous; genesis; alteration; ground water; chemical analysis; physical tests; vadose zone; Carbon and Emery Counties; ground water distribution.


Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: Utah coal fields; Carboniferous; Cretaceous; Coalville; Castlegate; Book Cliffs and Wasatch Plateau Coal Fields; physical characteristics; mining; location; production; tonnage; chemical analysis.

**Wasatch Plateau Coal Field.**

**Descriptors:** short contact time thermal reactions; tetralin; bituminous coal; hydrogen atmosphere; nature of reaction; mechanisms; labile functional structures; hydrogen transfer reactions; kinetics; infrared spectra; extracts; phenolic OH; carboxyl; ether; chelated quinoid carbonyl; coals; Hiawatha; Kentucky f 14; stabilization; yield; kinetic data; kinetic model.


Emery County; Emery Coal Field.

**Descriptors:** Tempskya; occurrence; lower Cretaceous; Castle Dale; Emery County; trunk of fern; fresh-water pelecypod; Dakota Formation; Thompsons; new species; fossil specimen.


Sanpete, Sevier, Carbon, Garfield, Kane, and Emery Counties; Book Cliffs, Henry Mountains, and Wasatch Plateau Coal Fields.

**Descriptors:** Wasatch Plateau; stratigraphy; Cretaceous; Tertiary; correlation; facies; sequences; San Rafael Swell; Kaiparowits Plateau; Henry Mountains; Book Cliffs; depositional environment; formation renaming; fossil evidence; formation dating.


Emery and Grand Counties; Sego Coal Field.

**Descriptors:** Green River Coal Basin; Coalville; Lost Creek; coal mines; Cretaceous; mining industry; Mormons; physiography; quality; yield per acre; table of analyses; fossils.


Emery and Sanpete Counties; Wasatch Plateau Coal Field.


Emery County; Wasatch Plateau Coal Field.

**Descriptors:** Huntington Canyon anticline; Emery County; wells drilled; Castle Valley; Dakota Sandstone; structure; map stratigraphy; shows of oil and gas; Ferron Sandstone; oil staining.


Carbon and Emery Counties; Book Cliffs Coal Field.

**Descriptors:** bituminous coal; coking; chars; coal; volatilily; lower Sunnyside coal; coking properties; blends; rank; quality; Carbon and Emery Counties; tonnage reserves; Sunnyside-Castlegate field; carbonization procedure; tables; graphs.


Sanpete and Emery Counties.


Sevier, Sanpete, Carbon, Emery, and Grand Counties; Emery, Wasatch Plateau, Book Cliffs and Sego Coal Fields.

**Descriptors:** Emery, Wasatch Plateau, Book Cliffs and Sego Coal Fields; Sevier, Sanpete, Carbon, Emery, and Grand Counties; Emery, Wasatch Plateau; Book Cliffs; geology; sections; Mancos Shale; Mesaverde Formation; Wasatch Formation; lithology; description of coal; mining; engineering; production; transportation; descriptions of mines by company; analyses of coals.


Sevier, Sanpete, Carbon, Emery, and Grand Counties; Emery, Wasatch Plateau, Book Cliffs and Sego Coal Fields.

**Descriptors:** Emery, Wasatch Plateau, Book Cliffs and Sego Coal Fields; Sevier, Sanpete, Carbon, Emery, and Grand Counties; Wasatch Plateau; Castle Valley; Book Cliffs; geology; sections; Mancos Shale; Mesaverde Formation; Wasatch Formation; lithology; description of coal; mining; engineering; production; transportation; descriptions of mines by company; analyses of coals.


Emery County; Emery and Wasatch Plateau Coal Fields.

**Descriptors:** Utah; ground water; environmental geology; surveys; impact statements; Emery County; Mancos Shale; Ferron Sandstone Member; USGS; Castle Valley; Cretaceous; sandstone; clastic rocks; aquifers; transmissivity; water supply; water quality; automatic data processing; digital simulation; coal; organic residues; surface mining; Emery Coal Field; water resources; hydrogeologic maps; maps.
Carbon, Emery and Sevier Counties; Wasatch Plateau Coal Field.

Descriptors: Castle Valley; geology; coal resources; history; geography; physiography; Wasatch Plateau; San Rafael Swell; stratigraphy; structure; coal-bearing formations; occurrence; physical properties; chemical analysis; development; transportation; reserves; charts; tables; maps.

Emery, Sanpete, and Sevier Counties; Emery and Wasatch Plateau Coal Fields; Emery West and Flagstaff Peak Quadrangles.

Descriptors: sedimentation; sedimentary rocks; stratigraphy; environment; lithofacies; Cretaceous; coastal environment; environmental analysis; Blackhawk Formation; Star Point Sandstone; Emery and Wasatch Plateau Coal Fields; Mesozoic; lithostratigraphy; sandstone; clastic rocks; fine-grained materials; deltas; floodplains; channels; coal; organic residue; brackish-water environment; paleoenvironment.

Emery County; Emery Coal Field.

Descriptors: sedimentation; sedimentary rocks; economic geology; sedimentary petrology; environment; clastic rocks; coal; coastal environment; sandstone; Blackhawk Formation; Star Point Formation; organic residues; Cretaceous; Emery; deltas; lagoons; lithostratigraphy; Mesozoic; angiosperms; Drophyllum subfalcatum; ichnofossils; biogenic structures; sedimentary structures; Ophiomorpha; Malacostaeca; Crustacea; Arthropoda; Thalassinoidea.


Carbon, Emery and Grand Counties; Book Cliffs and Sego Coal Fields.

Descriptors: coal; economic geology; Colorado and Utah; Book Cliffs Coal Field; Colorado Plateau; resources; reserves; production; genesis; sedimentation; cyclic; Cretaceous.


Emery County; Wasatch Plateau Coal Field.

Descriptors: Utah; economic geology; coal; Emery County; Blackhawk Formation; organic residues; Wasatch Plateau; Colorado Plateau; mines; strength; water; mining.

Emery County; Emery Coal Field.

Descriptors: ground water; water flow; aquifers; water supply; mathematical models; three-dimensional flow; surface mining; coal; dewatering; water wells; drawdown; computer programs; hydraulic conductivity; Utah.

Carbon, Emery, and Utah Counties; Book Cliffs Coal Field.

Descriptors: central Utah; northeast Wasatch Plateau; southwestern edge of the Uinta Basin; stratigraphic section; upper Cretaceous; lower Cenozoic non-marine; Colton; Green River and Uinta Formations; Blackhawk; Castlegate sandstone; Price River; North Horn; Flagstaff; Bennion Creek; mountain building; facies; structure; Clear Creek anticline; Beaver Creek syncline; Tuc Frog syncline; faults; Pleasant Valley; Starvation Creek; disconformity; gravity; geomorphology; graben; fault scarp; ridge; canyon; hogback; crustal movements; early Laramide orogeny; folding and faulting; late Eocene; Miocene; floodplain; lacustrine; Flagstaff Lake; Uinta Lake; fluvial facies; Duchesne River; present drainage system.

Emery County; Wasatch Plateau Coal Field.
Descriptors: Utah; sedimentary rocks; sedimentation; paleoecology; stratigraphy; economic geology; clastic rocks; processes; environment; Mollusca; Cretaceous; coal; environmental analysis; lagoonal sedimentation; nearshore environment; Emery County; Blackhawk Formation; Star Point Sandstone; Mesozoic; organic residues; Wasatch Plateau; Ferron; lithofacies; brackish-water environment; bivalves; mollusks; genesis; ichnofossils; biogenic structures; sedimentary structures; Colorado Plateau.


Sanpete, Sevier, Carbon and Emery Counties; Book Cliffs Coal Field; Ferron Canyon, Ferron, The Cap, Flagstaff Peak, and Mahogany Point Quadrangles.


Emery County; Emery Coal Field; Emery 1 Quadrangle.


Carbon and Emery Counties; Book Cliffs Coal Field.

Descriptors: Utah; fractures; structural analysis; mining geology; fossil fern; sedimentation; economic geology; style; interpretation; production control; occurrence; environment; coal; joints; Quaternary, deltaic environment; Carbon County; Emery County; USGS; Sunnyside District; bedrock; surficial geology; organic residues; bituminous coal; gypsum deposits; natural gas; bitumen; organic materials; Cretaceous; Cenozoic; faults; geomorphology; cleavage; deformation; stress; coal seams; deltaic sedimentation; landform description.


Carbon and Emery Counties; Book Cliffs Coal Field.

Descriptors: coal mine bums; geology; Sunnyside; Carbon and Emery Counties; structure; stratigraphy; stress accumulation along faults; mining; friction properties of bedding planes; lithology; sedimentary structures; roof conditions; diagrams.


Emery and Carbon Counties; Book Cliffs Coal Field; Woodside Quadrangle.


Emery County; Wasatch Plateau Coal Field.


Emery, Garfield, and Wayne Counties; Henry Mountains Coal Field.


Carbon and Emery Counties.

Descriptors: Mounds and Farnham area; San Rafael Swell; Carbon and Emery Counties; faulted anticline; geophysical methods; seismic data; wells drilled; oil and gas; Moenkopi Formation; dome; structure; cross-section; carbon dioxide gas field.


Carbon and Emery Counties.

Descriptors: modern industrialized world; fuel; power; bituminous coal; petroleum; natural gas; anthracite coal; reserves; thin seams; mining process; recovery; future supply; settlement; nonferrous metal industry; smelting; interests; Geneva Steel plant; employment; Carbon and Emery county area; production; transportation problems; economic competition; market; human factor; union wages and benefits; government regulation and supervision; depression; geography; areal relations.


Sanpete, Sevier, Carbon and Emery Counties; Wasatch Plateau Coal Field.


Carbon, Emery, Iron, Kane, Sanpete, Sevier, and Washington Counties.

Descriptors: western coals; carbonizing properties; physical properties; rank; lower Sunnyside; Carbon, Emery, Iron, Kane, Sanpete, Sevier, and Washington Counties; chemical analyses; sulfur content; tables.

Ryer, T. A., 1979a, Deltaic coals of Ferron Sandstone Member of Mancos Shale; predictive model for Cre-

Emery County; Wasatch Plateau and Emery Coal Fields.

Descriptors: Western Interior; Utah; sedimentation; sedimentary rocks; paleogeography; economic geology; cyclic processes; environmental analysis; Cretaceous; coal; deltaic sedimentation; deltaic environment; Emery County; Ferron Sandstone; Mancos Shale; clastic rocks; organic residues; exploration; prediction; Mesozoic.

Ryer, T. A., 1981a, Cross section of the Ferron Sandstone, Emery County; Wasatch Plateau and Emery Coal Fields.

Descriptors: sedimentation; economic geology; cyclic processes; coal; deltas; Emery County; Ferron Sandstone Member; Mancos Shale; Castle Valley; Cretaceous; organic residues; deposits; coal seams; swamps; exploration; channels; lithofacies; progradation.


Emery and Sevier Counties; Emery Coal Field.

Descriptors: sedimentary rocks; stratigraphy; lithostratigraphy; Cretaceous; Emery and Sevier Counties; Mancos Shale; Ferron Sandstone; USGS; Mesozoic; Emery Coal Field; coal; organic residues; sections; sandstone; clastic rocks.


Emery County; Emery Coal Field.

Descriptors: Utah; sedimentary rocks; well-logging; stratigraphy; organic residues; interpretation; Cretaceous; coal; Emery County; Ferron Sandstone Member; Mancos Shale; USGS; cores; coal fields; programs; Muddy Project; Quitchupah Project; correlation; clastic rocks; Mesozoic.


Sanpete, Sevier, Carbon and Emery Counties; Wasatch Plateau and Emery Coal Fields.

Descriptors: sedimentation; economic geology; environment; coal; deltas; organic residues; deposits; Emery; Wasatch Plateau; Cretaceous.


Sanpete, Sevier, Carbon and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Utah; economic geology; stratigraphy; coal; Cretaceous; Star Point Sandstone; Blackhawk Formation; Mesozoic; organic residues.


Emery County; Wasatch Plateau Coal Field; Flagstaff Peak Quadrangle.


Emery, Sanpete and Sevier Counties; Wasatch Plateau Coal Field; Flagstaff Peak Quadrangle.

Descriptors: economic geology; coal; maps; Emery, Sanpete, and Sevier Counties; Flagstaff Peak Quadrangle; organic residues; deposits; economic geology maps; geologic maps.


Emery and Grand Counties; Book Cliffs and Sego Coal Fields; Woodside and Green River Quadrangles.

Descriptors: microfossil zonation; depositional environment; continental, brackish, shallow-water sediments; stratigraphic problems; spores; pollen; acid-insoluble animal fossils; Book Cliffs; phosphoric and hydrofluoric acids; hystrixospherids; dinoflagellates; microforaminifera; population variation; climatic changes; correlation; time lines; statistical method; preparation of samples; marker species; Woodside and Green River sections.


Emery County; Wasatch Plateau Coal Field.

Descriptors: Utah; economic geology; coal; Emery County; Wasatch Group; Mesaverde Group; organic residues; drilling; North Horn Mountain; East Mountain; Wasatch Plateau; Colorado Plateau.
reserves; chemical composition; exploration; Manti-La Sal National Forest.


Book Cliffs, Sego, Emery, and Wasatch Plateau Coal Fields.

Descriptors: Book Cliffs, Sego, Emery, and Wasatch Plateau Coal Fields; drill core samples; methane content of coal; methane extraction; coal analysis; coal beds; tables.


Sanpete, Sevier, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Sanpete, Sevier, and Emery Counties; drill holes; Blackhawk Formation; coal beds; stratigraphy; structure; methane content of coal; methane extraction; coal analysis; high volatile C bituminous; illustrations; tables; appendices.


Emery County; Wasatch Plateau Coal Field.

Descriptors: Utah; economic geology; coal; Emery County; Wasatch Group; Mesaverde Group; organic residues; drilling; North Horn Mountain; East Mountain; Wasatch Plateau; Colorado Plateau; reserves; chemical composition; exploration; Manti-La Sal National Forest.

Sommer, S. N., H. H. Doelling and A. D. Smith, 1982a, Land control and coal reserves of the Wasatch Plateau Coal Field and Emery Coal Field, Utah: Utah Geol. and Min. Surv., Map 65, 2 sheets.

Wasatch Plateau and Emery Coal Fields.


Book Cliffs Coal Field.


Emery County; Wasatch Plateau Coal Field.

Descriptors: one-dimensional analysis of a three-dimensional design problem; coal test specimens; compressive testing; axisymmetric finite element codes; plates; triaxial stress state; ultimate strength; Young's modulus; elastic brittle material model; progressive failure; calculated stress-strain curves; specimen geometries; gravity loading analyses; roof-floor convergence; Beehive Mine.


Sanpete, Sevier, and Emery Counties; Wasatch Plateau and southern part of the Wasatch Plateau Coal Fields.


Descriptors: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.


Carbon, Sanpete, Sevier and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: coal fields; Wasatch Plateau; history; geography; physiography; geology; stratigraphy; structure; altitude; coal; distribution; physical properties; chemical analysis; coking quality; geographic subdivisions; lithologic descriptions; reserves; tonnage; charts; maps; tables.


Sanpete, Sevier, Carbon and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Wasatch Plateau; Cretaceous; Tertiary; location; physiography; structure; Mancos Shale; Mesaverde Group; lithology; depositional environment; paleogeography.


Uinta, Emery, and Grand Counties.

Descriptors: Cretaceous; Colorado Plateau; fossil collections; non-marine microfossils; plants and mollusks; Cedar Mountain Formation; Burro Canyon Formation; Uinta, Emery, and Grand Counties; description of fossil localities; columnar section; criteria for correlation; Morrison Formation; contacts and thickness; sections; regional implications; stratigraphy; Dakota Formation.


Emery County; Emery, Wasatch Plateau, and Book Cliffs Coal Fields.

Descriptors: geology; Emery County; geomorphology; stratigraphy; structure; economic geology; coal
geology; coal resources; Mesaverde Group; Emery, Wasatch Plateau, and Book Cliffs Coal Fields; mining; production; tonnage price; value; tables.

Sumsion, C. T., 1978, Spring discharge and water-quality data on coal areas of east-central Utah: U.S. Geol. Surv., Prof. Paper, No. 1100, 123 p. Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Fields. Descriptors: ground water; hydrogeology; surveys; springs; aquifers; Book Cliffs; Wasatch Plateau; Mesaverde Group; North Horn Formation; Flagstaff Limestone; Cretaceous; Tertiary; water quality; coal fields.


Taff, J. A., 1906, Book Cliffs Coal Field, Utah, west of the Green River: U. S. Geol. Surv., Bull., No. 285., p. 289-302. Carbon and Emery Counties; Book Cliffs Coal Field. Descriptors: Book Cliffs; economic geology; coal; location; extent; surficial features; stratigraphy; lithology; structure; chemical analyses; coal beds; mine descriptions; map; tables.

Taff, J. A., 1907, Pleasant Valley coal district, Carbon and Emery Counties, Utah: U.S. Geol. Surv., Bull., No. 316., p. 338-358. Carbon and Emery Counties; Book Cliffs and Wasatch Plateau Coal Field. Descriptors: Book Cliffs and Wasatch Plateau Coal Fields; Pleasant Valley; coal; economic geology; Carbon and Emery Counties; location; extent; topography; stratigraphy; structure; Pleasant Valley anticline and fault; Joe’s Valley fault; coal mining; coal section descriptions; quality; development; transportation; potential; map; tables.

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Tomlinson, H., 1930, Method of mining a thick coal bed in eastern Utah: U.S. Bur. Mines, Inf. Circ., No. 6376, 12 p. Carbon and Emery Counties; Book Cliffs Coal Field. Descriptors: coal; mining; methods; bed thickness; eastern Utah; lower Sunnyside; physical properties; chemical analysis; mine formations; mine characteristics; development; mining equipment; haulage; room-and-pillar; labor; production; Book Cliffs Mines; charts; tables.

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Carson, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties.

Descriptors: high temperature carbonization; low temperature carbonization; smoke elimination; technology; products; problems; industry status; Utah coals; types; producing counties; geology; physical properties; chemical analyses; coking capabilities; coking constituents; briquetting; semi-coke; laboratory investigations; properties; rank; test results; products; tars; gases; oils; blends; reactions; Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties: tables.

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Sanpete, Sevier, Carbon and Emery Counties; Wasatch Plateau and Emery Coal Fields.

Descriptors: economic geology; maps; coal; organic residues; Wasatch Plateau and Emery Coal Field.

San Juan, Kane, Emery, and Sanpete Counties; Kaiparowits Plateau, Wasatch Plateau, and San Juan Coal Fields.

Descriptors: economic geology; coal; Star Point Sandstone; Blackhawk Formation; organic residues; exploration; Montana, Wyoming, Utah, Colorado, Arizona, and New Mexico; coal fields; San Juan Basin; Powder River Basin; Wasatch Plateau; Kaiparowits Plateau; concepts; practice.

Emery County; Wasatch Plateau Coal Field.

Descriptors: sedimentation; mining geology; economic geology; deposition; production control; coal; Emery County; Blackhawk Formation; Hiawatha Seam; Blind Canyon Seam; organic residues; isopach maps; paleocurrents; slickensides; fuel quality; roof control; underground installations; mines; deposits.

Sanpete, Sevier, Carbon and Emery Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Utah; hydrology; hydrogeology; surveys; USGS; Wasatch Plateau and Book Cliffs Coal Fields; coal; organic residues; ground water; surface water; dissolved materials; hydrographs; maps.

Sanpete, Emery, and Grand Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: hydrology; hydrogeology; surveys; Sanpete, Emery, and Grand Counties; Wasatch Plateau and Book Cliffs Coal Fields; coal; organic residues; deposits; coal fields; water resources.

Carbon and Emery Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Carbon, Emery, Sanpete, Sevier Counties; Wasatch Plateau, Book Cliffs Coal Fields.

Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties.

Descriptors: coals; sulfur content; pyritic; organic; sulfate; chemical analysis; rank; sample site; mines; Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties; tables.

Sanpete, Sevier, Carbon and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Wasatch Plateau gas fields; Clear Creek; further exploratory drilling; structure; Cretaceous; Paleocene; sedimentary strata; history; coal deposits; stratigraphy; structure map; composite log- self-potential and resistivity; age of faults and folding; cross-section; causes and time of gas accumulation; Ferron Sandstone; depositional environment; Flat Canyon; Gordon Creek; producing formations.

Sanpete, Sevier, Carbon and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Wasatch Plateau; natural gas fields; exploration activity; stratigraphy; formations; lithologic log; geophysical log; stratigraphic correlation; structure; causes; age; structural traps; stratigraphic traps; hydrocarbon accumulation; gas analysis; production; drilling practices; charts; diagrams.

Carbon and Emery Counties; Book Cliffs Coal Field.
Descriptors: bounces; virgin territory; fault; Utah Fuel mines; sloughing of coal from the ribs; heavy cover; nature of cover; hard brittle coal; butt cleavage of the coal; pillar workings; tension; slippage plane; unsupported block; stresses; bending action; Book Cliffs; plan of workings; dome theory of faults; synclinal theory.

Emery County; Wasatch Plateau Coal Field.

GARFIELD

Kane and Garfield Counties.
Descriptors: economic geology; coal; Kane and Garfield Counties; Dakota Formation; Straight Cliffs Formation; Cretaceous; Mesozoic; geochemistry; organic residues; deposits; chemical; composition.

Kane and Garfield Counties; Kaiparowits Plateau Coal Field.
Descriptors: Colorado, Utah, and Wyoming; environmental geology; ecology; conservation; Garfield and Kane Counties; Project Rio Blanco; Kaiparowits Plateau; Battle Springs Draw; energy sources; ore deposits; uranium; coal; organic residues; deposits; nuclear facilities; impact statements; inventory; ecosystems; ground motion; faunal studies; floral studies.

Descriptors: catalyst system; yield; methane; High volatile bituminous; single-stage process; oxygen; thermal neutrality; conventional gasification systems; continuous flow; Hiawatha coal; tetralin; fixed-bed reactor; hydrogenation; hydrocracking; cracking; conversion; char; reactor.

Carbon, Emery, and Grand Counties; Book Cliffs and Sego Coal Fields.
Descriptors: sedimentary facies; intertonguing; Cretaceous; Book Cliffs; marine and nonmarine; continental; lagoon; littoral; depositional environment; stratigraphy; coal-bearing facies; cyclic; shallow basin; subsidences; shale; sandstone; offshore bars; classification and nomenclature.

Carbon and Emery Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Wayne and Garfield Counties.
Descriptors: energy source development; environmental impacts; coal; fossil-fuel power plants; ground water; nature reserves; noise pollution; surface mining; Utah.

Wayne and Garfield Counties; Henry Mountains Coal Field.

Iron, Washington, Garfield, and Kane Counties; Kolob Coal Field.
Descriptors: cannel coal; physical properties; physical and chemical composition; analyses; origin; use; mining; value; distribution; subbituminous; Kolob Coal Field; Cannel King prospect.

Garfield, Iron, and Kane Counties; Kaiparowits Plateau, Kanab, Kolob Terrace, and Harmony Coal Fields.

Descriptors: coal; economic geology; production and exploration history; southwestern Utah; Garfield, Iron and Kane Counties; Kaiparowits Plateau, Kanab, Kolob Terrace, and Harmony Coal Fields; Pacific southwest electricity demand.


Descriptors: bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.

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Henry’s Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Emery, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.

Descriptors: coal; coal reserves; economic geology; Garfield and Kane Counties; Alton Coal Field; Garfield County; Kaiparowits Plateau Coal Field; Griffin Point Quadrangle.


Garfield County; Kaiparowits Plateau Coal Field; Upper Valley Quadrangle.


Garfield County; Kaiparowits Plateau Coal Field; Griffin Point Quadrangle.


Garfield County; Kaiparowits Plateau Coal Field; Pine Lake Quadrangle.

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Garfield County; Kaiparowits Plateau Coal Field; Upper Valley Quadrangle.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Henrieville Quadrangle.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Henrieville Quadrangle.


Kane and Garfield Counties; Alton Coal Field.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Canaan Peak Quadrangle.

Descriptors: Utah; well-logging; coal; geophysical surveys; applications; Garfield County; Kane County; Alton-Kanab Coal Field; caliper; radioactivity; gamma ray; data; logs; exploration; deposits; distribution; depth; thickness; quality.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: coal produced power; joint planning among utilities; electrical generating capacity; Four Corners Power Plant; Navajo mine; Navajo reservation; strippable seam; sub-bituminous; heating value; ash moisture; sulfur; Kayenta mine; slurry pipe line; Kaiparowits Plateau; Navajo plant; Lake Powell; Mohave project; south-central Utah; water resources; development; large economic size threshold; exploration program; high volatile bituminous C; Cretaceous; Straight Cliffs; drilling; coal reserves; cost of boiler fuel; liquefaction processes; air pollution; high hydrogen fuel.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: Utah; coal; economic geology; Kane County; Garfield County; Kaiparowits Plateau; Straight Cliffs Formation; mining; methods; reclamation; environmental geology.


Garfield County; Kaiparowits Plateau Coal Field.

Descriptors: Upper Valley oil field; Garfield County; Kaiparowits basin; structural setting; stratigraphy; tectonic-location map; reservoir; Kaibab Limestone; well data; history of development; subsurface structure map; correlated resistivity logs.


Descriptors: southwestern Utah; map of coal fields; estimate of coal reserves of different rank; heat efficiency; classification of coal areas; Vernal, Wasatch Plateau, Kaiparowits Plateau, San Juan, Emery, Kolob, and Coalville Coal Fields.

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Garfield County; Kaiparowits Plateau Coal Field.

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Garfield and Kane Counties; Kaiparowits Plateau Coal Field.


Wayne and Garfield Counties; Henry Mountains Coal Field; NE quarter Mt. Ellen 15-min. Quadrangle.

Descriptors: economic geology; coal; maps; Wayne and Garfield Counties; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Mount Ellen Quadrangle.


Garfield County; Henry Mountains Coal Field; NE quarter Mt. Pennell 15-min. Quadrangle.

Descriptors: coal; lithostratigraphy; geochemistry; fossil fuels; Utah.


Wayne and Garfield Counties; Henry Mountains Coal Field; NE quarter Notom 15-min. Quadrangle.
Descriptive: economic geology; coal; maps; Wayne and Garfield Counties; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Notom Quadrangle.

Dames and Moore, 1980d, Coal resource occurrence and coal development potential maps of the NE quarter Wagon Box Mesa Quadrangle, Garfield County, Utah: U.S. Geol. Surv., Open-File Rept., No. 80-122, 42 p.

Garfield County; Henry Mountains Coal Field; NE quarter Wagon Box Mesa Quadrangle.

Descriptive: economic geology; maps; coal; Garfield County; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Wagon Box Mesa Quadrangle.


Wayne and Garfield Counties; Henry Mountains Coal Field; NW quarter Notom 15-min. Quadrangle.

Descriptive: economic geology; coal; maps; Garfield County; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Notom Quadrangle.


Wayne and Garfield Counties; Henry Mountains Coal Field; NW quarter Notom 15-min. Quadrangle.

Descriptive: Utah; economic geology; coal; maps; Wayne and Garfield Counties; organic residues; economic geology maps; explanatory text; inventory; Mt. Ellen Quadrangle.


Garfield County; Henry Mountains Coal Field; NW quarter Mt. Pennell 15-min. Quadrangle.

Descriptive: economic geology; coal; maps; Garfield County; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Mount Pennell Quadrangle.


Garfield County; Henry Mountains Coal Field; SE quarter Mt. Pennell 15-min. Quadrangle.

Descriptive: economic geology; coal; maps; Garfield County; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Mount Pennell Quadrangle.


Garfield County; Henry Mountains Coal Field; SE quarter Mt. Pennell 15-min. Quadrangle.

Descriptive: economic geology; coal; maps; Garfield County; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Mount Pennell Quadrangle.


Garfield County; Henry Mountains Coal Field; SW quarter Mt. Pennell 15-min. Quadrangle.

Descriptive: economic geology; coal; maps; Garfield County; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Mount Pennell Quadrangle.


Garfield County; Henry Mountains Coal Field; SW quarter Mt. Pennell 15-min. Quadrangle.

Descriptive: economic geology; coal; maps; Garfield County; organic residues; deposits; resources; economic geology maps; inventory; Mount Pennell Quadrangle.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptive: Circle Cliffs; Garfield and Kane Counties; geology; physiography; stratigraphy; lithologic descriptions; structure; uranium deposits; prospects; metalliferous deposits; maps; tables.

Garfield County; Kaiparowits Plateau Coal Field.

Descriptors: coal; Cretaceous; Jurassic; economic geology; maps; mineral resources; stratigraphy; Escalante-Upper Valley area; occurrence; Straight Cliffs sandstone coal sections.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: Straight Cliffs Formation; coal; Cretaceous; Carcass Canyon; Kaiparowits Plateau; outcrops; zones; seams; mineable thickness; reconnaissance; coal sections; samples; recovery; High Volatile C bituminous.


Kane and Garfield Counties; Alton Coal Field.

Descriptors: Alton Coal Field; location; geography; physiography; stratigraphy; structure; coal deposits; mining; exploration; production; reserves; quadrangle descriptions; maps; tables.


Emery, Wayne, and Garfield Counties; Henry Mountains Coal Field.

Descriptors: Henry Mountains Coal Field; location; geography; physiography; stratigraphy; structure; coal deposits; mining; proposals; reserves; chemical analysis; physical properties; land control; lithologic descriptions; quadrangle reports.


Book Cliffs, Wasatch Plateau, Emery, Sego, Kaiparowits Plateau, and Alton Coal Fields.

Descriptors: Utah coals; methane content; gas composition; coal analysis; Book Cliffs, Wasatch Plateau, Emery, Sego, Kaiparowits Plateau, and Alton Coal Fields; Sunnyside coal zone; physical properties; depositional environment; maps.


Garfield County; Kaiparowits Plateau Coal Field.

Descriptors: Utah; economic geology; coal; Garfield County; organic residues; John's Valley; drilling; Colorado Plateau; exploration; structure.


Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry's Fork, and Lost Creek Coal Fields; Goose Creek lignite field.

Descriptors: Cretaceous; coal; lignite; economic geology; lithostratigraphy; Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry's Fork, and Lost Creek Coal Fields; Goose Creek lignite field; occurrence.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.


Descriptors: coal; economic geology; lithostratigraphy; Alton, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; properties; reserves.


Garfield County; Kaiparowits Plateau Coal Field.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.


Garfield and Kane Counties; Kaiparowits Plateau.

Descriptors: power demand; fossil-fuel power plants; economics; feasibility studies; forecasting; Arizona, California, and Utah; coal; experimental demand; power generation.


Descriptive: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptive: Utah; engineering geology; slope stability; maps; Garfield and Kane Counties; USGS; Kaiparowits Plateau; coal; organic residues; landslides; debris flows; geologic hazards.

Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptive: geology; structure; detailed description of the mountains; laccolite; intrusives; land sculpture; economic; Waterpocket Flexure; dikes; folds; illustrations; stereograms; hydrostatic equilibrium; limital area and thickness; coal.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptive: fossil-fuel power plants; capital; planning; Clean Air Act; coal reserves; Colorado River; economics; environmental effects; environmental impact statements; exploration; geology; government policies; land use; laws; power generation; public relations; public utilities; resource conservation; steam generation; water resources; water rights.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptive: Garfield and Kane Counties; geography; sedimentary rocks; stratigraphic sections; igneous rocks; structure; physiography; economic geology; coal occurrence; Dakota Sandstone; Tropic Shale; Straight Cliffs Sandstone; Cretaceous; commercial value; quality; lignite; subbituminous; bituminous; analyses.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptive: Kaiparowits region; geologic reconnaissance; geography; history; topography; climate; stratigraphy; lithologic descriptions; paleontology; structure; physiography; geomorphology; economic geology; coal; Dakota Sandstone; Tropic Shale; Straight Cliffs Sandstone.

Kane and Garfield Counties; Kaiparowits Plateau Coal Field.

Descriptive: coal; economic geology; Kane and Garfield Counties; Kaiparowits Plateau; deposits; resources; evaluation; development; feasibility; water resources.

Iron, Kane, and Garfield Counties; Kolob, Kanab, and Kaiparowits Plateau Coal Fields.

Descriptive: coal; economic geology; Kolob, Kanab, and Kaiparowits Coal Fields; market; transportation; power plants; coal resources; regional setting; thickness; structure; mining methods; development; chemical analysis; rank; cost; maps; tables.

Garfield and Grand Counties; Book Cliffs Coal Field.

Descriptive: well-logging; economic geology; interpretation; coal; Garfield County; Grand County; organic residues; deposits; exploration; drilling.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptive: economic geology; coal; maps; Garfield and Kane Counties; organic residues; deposits; resources; Kaiparowits Plateau; production; mining geology; overburden.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.
Descriptors: economic geology; coal; maps; Garfield and Kane Counties; Kaiparowits Plateau; economic geology maps; organic residues; deposits; coal seams; thickness; coal basins.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: coal; sedimentary geochemistry; fossil fuels; carbonaceous sediments; Utah.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: economic geology; coal; Wayne and Garfield Counties; Mancos Shale; Ferron Sandstone Member; Emery Sandstone Member; Cretaceous, Mesozoic; Henry Mountains Field; coal fields; organic residues; deposits; geochemistry; chemical composition.


Descriptors: geology; mineral resources; engineering geology characteristics; environmental geochemistry; east-central Utah; coal development; stratigraphy; Henry Mountains, Emery, Wasatch Plateau, Book Cliffs, and Sego Coal Fields; coal quality and composition; oil and gas; non-petroleum gases; oil shales; bituminous sandstone; uranium; base metals; clays; underground coal mining; coal mine subsidence; earthquakes; maps; stratigraphic correlations.

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Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Coal; Utah and Colorado; Cretaceous; Economic geology; Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields; deposits; genesis; controls; environment; lagoons; barrier islands; sedimentary rocks.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: Henry Mountains; geology; geography; stratigraphy; lithologic descriptions; physiography; tectonic history; resources; coal; high volatile bituminous; transportation; economics.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: Henry Mountains; geology; geography; physiography; stratigraphy; lithologic descriptions; structure; igneous intrusions; geomorphology; Tertiary folding history; resources; coal; Ferron Sandstone; Dugout Creek semianthracite; coal map.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: fossil-fuel power plants; economics; environmental aspects; political aspects; coal; combustion; energy supplies; environmental impact statements; regulations; Utah.


Garfield County; Kaiparowits Coal Field.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: power plant construction; coal-fired power plants; power plant emissions; Four Corners; environmental impact statements; state government; local government; Utah.


Sanpete, Sevier, Carbon, Garfield, Kane, and Emery

Descriptors: Utah, well-logging; geophysical surveys; applications; Garfield and Wayne Counties; Henry Mountains Coal Field; caliper; electrical; radioactivity; gamma ray; data; logs; exploration; deposits; distribution; depth; thickness; coal seams; correlation.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: sedimentary rocks; sedimentation; economic geology; organic residues; deposition; coal; pattern; Garfield County; Emery Sandstone Member; Mancos Shale; Henry Mountains; coal fields; coal seams; structure; thickness; synclines; folds; anticlines; faults; barriers; compaction; diagenesis; deposits; Cretaceous.


Garfield and Wayne Counties; Henry Mountains Coal Field.

Descriptors: economic geology; coal; maps; Garfield and Wayne Counties; Henry Mountains; Emery coal zone; organic residues; deposits; coal fields; economic geology maps.


Garfield and Wayne Counties; Henry Mountains Coal Field.

Descriptors: economic geology; coal; organic residues; Garfield County; Wayne County; Henry Mountains; Emery coal zone; deposits; coal fields; sections.


Wayne and Garfield Counties; Henry Mountains Coal Field.


Descriptors: Utah; coal reserves; oil shale deposits; water reserves; Colorado River; Colorado River Basin; energy sources; legal aspects; water rights.


Garfield, Kane, and Iron Counties.

Descriptors: southern Utah; Dakota Formation; Tropic Formation; stratigraphy; Cretaceous; Garfield, Kane, and Iron Counties; lithologic descriptions; nomenclature; correlation; depositional environment; tectonic history; Cashion coal zone; Culver coal zone.


Kolob, Kaiparowits Plateau, Alton, and Henry Mountains Coal Fields.

Descriptors: Utah; Arizona; environmental geology; land use; Kolob, Kaiparowits Plateau, Alton, and Henry Mountains Coal Fields; coal; organic residues; development; pollution; water resources.


Garfield County; Kaiparowits Plateau Coal Field.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: energy source development; electric power generation; environmental impacts; economic impact; social effect; employment; sociopsychological surveys; public opinion; coal; Utah and Arizona.


Garfield and Kane Counties; Alton and Wasatch Plateau Coal Fields.

Descriptors: coal; strip mining; coal-fired power plants; water pollution; noise pollution; air pollution;
damage; Southern California Edison; policy; planning; regional energy demand; Utah.


Garfield and Kane Counties.


Wayne and Garfield Counties; Henry Mountains Coal Field.


Wayne and Garfield Counties; Henry Mountains Coal Field.

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Wayne and Garfield Counties; Henry Mountains Coal Field.


Kane and Garfield Counties; Alton Coal Field; Bryce Point Quadrangle.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.


Garfield County.


Emery, Garfield, and Wayne Counties; Henry Mountains Coal Field.


Wayne and Garfield Counties; Henry Mountains Coal Field.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.


Garfield, Iron, Washington, and Kane Counties; Alton-Kolob Coal Field.


Iron, Washington, Garfield, Kane, and Wayne Counties.


Garfield County; Alton Coal Field.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: Utah; geomorphology; maps; landform descriptions; Garfield and Kane Counties; Kaiparowits Plateau; coal; organic residues; deposits; coal basins; geomorphic maps.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: western U.S.; mining geology; environmental geology; economic geology; evaluation; maps; coal; Garfield and Kane Counties; Kaiparowits Plateau; land use; resources; management; natural resources; organic residues; deposits; mapping; geologic maps; hydrogeologic maps.


Garfield County; Henry Mountains Coal Field; SE quarter Notom Quadrangle.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: Capital Reef area; Wayne and Garfield Counties; geology; stratigraphy; lithologic descriptions; physiography; structure; economic geology; uranium; deposits; prospects; maps; tables.


Kaiparowits Plateau, Alton, and east half Kolob Coal Fields.


Descriptors: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.

Garfield County; Kaiparowits Plateau Coal Field; Wide Hollow Reservoir Quadrangle.

Descriptors: maps; economic geology; Garfield County; coal; Wide River Reservoir Quadrangle; geologic; deposits; resources.


Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties.

Descriptors: Utah; economic geology; mineral resources; fuel resources; exploration; Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: fossil-fuel power plants; environmental impact statements; air quality; ash; availability; building materials; coal; coal mines; electrostatic precipitators; fly ash; government policies; limestone; monitoring; nitrogen oxides; particles; power transmission; removal; scrubbers; site selection; sludges; socio-economic factors; stack disposal; sulfur dioxide; transport; underground mining; waste disposal; water resources; Utah.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: environmental impact assessment; coal-fired power plants; socioeconomic impact assessment; power plant emission control; power plant design; coal mining; power plant siting; transmission lines; resource management; regional planning; climatology; geology; 491 Electric Co.; Utah.


Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties.

Descriptors: high temperature carbonization; low temperature carbonization; smoke elimination; technology; products; problems; industry status; Utah coals; types; producing counties; geology; physical properties; chemical analyses; coking capabilities; coking constituents; briquetting; semi-coke; laboratory investigations; properties; rank; test results; products; tars; gases; oils; blends; reactions; Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties; tables.

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Wasatch Plateau, Kaiparowits, and Kolob Coal Fields.

Descriptors: coal mining; sources; coal slurry pipelines; high voltage transmission lines; Los Angeles; power costs; coal-fired power plants; tables.


Kane, Garfield, and Iron Counties; Kolob and Kaiparowits Plateau Coal Fields.

Descriptors: tectonic history; stratigraphy; economic geology; coal; Kolob and Kaiparowits Plateau Coal Fields; coal-fired power plants; water resources; Kane, Garfield, and Iron Counties; maps; road logs.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: economic geology; coal; organic residues; exploration; Kaiparowits Plateau; Cretaceous; Mesozoic; stratigraphy; lithostratigraphy; coal seams; deposits.


Kane and Garfield County; Kaiparowits Plateau Coal Field.

Descriptors: sedimentation; paleogeography; economic geology; environment; Cretaceous; coal; coastal environment; Kane and Garfield Counties; Straight Cliffs Formation; John Henry Member; Kaiparowits Plateau; organic residues; deposits; coal fields; barrier islands; deltas; progradation; swamps; marine transport; longshore currents; transgression; Mesozoic.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Henry Mountains, Kaiparowits Plateau, and Kolob Harmony Coal Fields.

Descriptors: coal deposits; oil shale deposits; sandstone; uranium; sampling; chemical analysis; exploration; maps; mineralization; Kaiparowits Plateau; Henry Mountains; Kolob Terrace; lithologic descriptions; tables.

Garfield County; Kaiparowits Plateau Coal Field; Canaan Creek Quadrangle.

Zeller, H. D., 1967b, Preliminary geologic map and coal section of the Carcass Canyon Quadrangle, Garfield County, Utah: U.S. Geol. Surv., Open-File Rept. Garfield County; Kaiparowits Plateau Coal Field; Carcass Canyon Quadrangle.

Garfield County; Kaiparowits Plateau Coal Field; Dave Canyon Quadrangle.

Garfield County; Kaiparowits Plateau Coal Field; Death Ridge Quadrangle.

Garfield County; Kaiparowits Plateau Coal Field; Dave Canyon Quadrangle.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Death Ridge Quadrangle.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Seep Flat Quadrangle.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Seep Flat Quadrangle.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Seep Flat Quadrangle.

Descriptors: Utah; maps; economic geology; Garfield and Kane Counties; coal; Seep Flat Quadrangle; geologic; deposits; resources.

Grand County; Sego Coal Field; Sego Canyon Quadrangle.

Descriptors: well-logging; economic geology; interpretation; coal; organic residues; Grand County; Sego Canyon Quadrangle; coal fields; Book Cliffs; deposits; boreholes; lithology.


Descriptors: coal; mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; Coalville, Henrys Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; maps; tables.


Carbon, Emery, and Grand Counties; Book Cliffs and Sego Coal Field.


Descriptors: bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.

Averitt, P., 1964, Coal, in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.

Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.

Descriptors: Utah, mineral fuels; coal resources; rank; production; market; Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields; stratigraphy; structure; lithology.


Carbon, Grand, and Sanpete Counties.

Descriptors: economic geology; coal; chemical analysis; calorific value; Carbon, Grand, and Sanpete Counties; lithologic descriptions; coal thickness; quality; reserves; tonnage; tables.


Descriptors: southwestern Utah; map of coal fields; estimate of coal reserves of different rank; heat efficiency; classification of coal areas; Emery, Vernal, Wasatch Plateau, San Juan, Coalville, Kaiparowits Plateau, and Kolob Coal Fields.


Grand County; Sego Coal Field; Thompson Quadrangle.


Book Cliffs, Wasatch Plateau, Emery, Sego, Kaiparowits Plateau, and Alton Coal Fields.

Descriptors: Utah coals; methane content; gas composition; coal analysis; Book Cliffs, Wasatch Plateau, Emery, Sego, Kaiparowits Plateau and Alton Coal Fields; Sunnyside coal zone; physical properties; depositional environment; maps.


Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry's Fork, and Lost Creek Coal Fields; Goose Creek lignite field.

Descriptors: Cretaceous; coal; lignite; economic geology; lithostratigraphy; Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry's Fork, and Lost Creek Coal Fields; Goose Creek lignite field; occurrence.

Emery and Grand Counties; Sego Coal Field.

Descriptors: Sego Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; quadrangle reports; maps.


Book Cliffs and Sego Coal Fields.

Descriptors: Book Cliffs Coal Field; Garfield County; location; geography; geomorphology; physiography; stratigraphy; outcrops; Cretaceous; Tertiary; structure; natural gas; coal; occurrence; depositional environment; Anchor, Palisade, Cameo, and Carbonera coal zones; physical characteristics; chemical analyses; quantity; mining; development; production; township descriptions; lithologic descriptions; reserves; tables; graphs; charts.


Carbon, Emery, Grand, Morgan, Sanpete, and Summit Counties.

Descriptors: coal analyses; mine samples; car samples; fiscal year; proximate and ultimate analyses; Carbon, Emery, Grand, Morgan, Sanpete, and Summit Counties; lithologic descriptions; tables.


Descriptors: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities, tables.


Emery and Grand Counties; Book Cliffs Coal Field.

Descriptors: Book Cliffs Coal Field; Emery, Grand, and Carbon Counties; geography; physiography; stratigraphy; Neslen Formation; structure; economic geology; coal occurrence; physical properties; chemical analysis; tonnage reserves; development; township descriptions; coal thickness; lithologic descriptions; coal rank; maps; tables.


Carbon, Emery, and Grand Counties; Book Cliffs and Sego Coal Fields.

Descriptors: Book Cliffs Coal Field; Carbon, Emery, and Grand Counties; Cretaceous; Tertiary; formations; description; geology; lithology; stratigraphic sections; paleontology; tables.


Grand County; Sego Coal Field.

Descriptors: economic geology; Utah; Colorado; coal; Book Cliffs interpretation; Mesozoic; Cenozoic; Grand County; Mesa County.


Garfield and Grand Counties; Book Cliffs Coal Field.

Descriptors: well-logging; economic geology; interpretation; coal; Garfield County; Grand County; organic residues; deposits; exploration; drilling.

Gualtieri, J. L., 1980a, Geologic strip map of parts of Antone Canyon, Cisco Spring, Dry Canyon, and Flume Canyon Quadrangles showing coal zones and adjacent rocks, Utah: U.S. Geol. Surv., Open-File Rept., No. 80-1227, 1 sheet.

Grand County; Sego Coal Field; Antone Canyon, Cisco Spring, Dry Canyon, and Flume Canyon Quadrangles.

Descriptors: Utah; areal geology; maps; Antone Canyon Quadrangle; Cisco Spring Quadrangle; Dry Canyon Quadrangle; Flume Canyon Quadrangle; geologic maps; coal; organic residues.


Grand County; Sego Coal Field; Bar X Wash, Bryson Canyon, Jim Canyon, and San Arroyo Ridge Quadrangles.

Descriptors: Utah; Colorado; economic geology; coal; maps; Grand County; Mesa County; Garfield County; organic residues; geologic maps; USGS.

Gualtieri, J. L., 1981a, Geologic map of parts of Sego Canyon and Thompson Quadrangles, Utah, showing
coal zones and adjacent rocks: U.S. Geol. Surv., Open-File Rept., No. 81-553.

Grand County; Sego Coal Field; Sego Canyon and Thompson Quadrangles.

Descriptors: Utah; economic geology; coal; maps; Grand County; USGS; Sego Canyon Quadrangle; Thompson Quadrangle; organic residues; geologic maps.


Grand County; Sego and Book Cliffs Coal Fields.

Descriptors: well-logging; economic geology; interpretation; coal; Grand County; Book Cliffs; organic residues; exploration; coal fields; USGS.

Gaultieri, J. L., 1982, Geologic map of parts of Crescent Junction and Floy Canyon Quadrangles, Utah, showing coal zones and adjacent rocks: U.S. Geol. Surv., Open-File Rept., No. 82-584.

Grand County; Sego Coal Field.


Carbon, Emery, and Grand Counties; Book Cliffs and Sego Coal Fields.

Descriptors: geology; surface features; classification; strata; topography; structure; material resources; correlations of stratigraphy; lithology; metalliferous deposits; volcanic and plutonic eruptives; arable and pasture lands; irrigation; grazing lands; archaeology and ethnology; paleontology; zoology; analyses of Colorado coal; sections; Book Cliffs.


Descriptors: geology; mineral resources; engineering geology characteristics; environmental geochemistry; east-central Utah; coal development; stratigraphy; Henry Mountains, Emery, Wasatch Plateau, Book Cliffs, and Sego Coal Fields; coal quality and composition; oil and gas; non-petroleum gases; oil shale; bituminous sandstone; uranium; base metals; clays; underground coal mining; coal mine subsidence; earthquakes; maps; stratigraphic correlations.


Sanpete, Sevier, Carbon, Emery, and Grand Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Book Cliffs and Wasatch Plateau Coal Fields; sandstones; characteristic trace fossils; Upper Cretaceous; descriptions of trace fossils; depositional environment; facies; waves; subdivision of wave and energy; in situ, ethological classification; bedding planes.


Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: nearshore depositional environments; Cretaceous; Book Cliffs and Wasatch Plateau Coal Fields; lithology; sedimentary structures; geometry; trace fossils assemblages; bar; backbar; longshore bar; forebar; marine transgression; erosional surface.


Grand County; Sego Coal Field.

Descriptors: map, cross-sections; upper Cretaceous stratigraphy; correlation; Castle Valley-western Colorado, Mesaverde Group.


Carbon and Grand Counties; Book Cliffs and Sego Coal Fields.

Descriptors: Cretaceous faunas; Mancos Shale; Dakota Sandstone; Mesaverde Group; stratigraphy; ammonites; correlation; Price to Grand Junction; occurrence of fossil species; coal-bearing rocks.


Emery and Grand Counties; Sego Coal Field.

Descriptors: Green River Coal Basin; Coalville; Lost Creek; coal mines; Cretaceous; mining industry; Mormons; physiography; quality; yield per acre; table of analyses; fossils.


Grand County; Sego Coal Field.

Descriptors: coal seams; Grand Junction;
geography; Book Cliffs; oil; bituminous shale; asphalt; gas; Laramie; Cretaceous sandstones; Montana and Colorado groups; structure; depositional environment; “horses”; mining; sandstone dikes.


Grand County; Sego Coal Field.

Descriptors: economic geology; coal; Utah and Colorado; Grand County; mining; characteristics; uses; Rector; mining camp; White River.


Grand County; Sego and Book Cliffs Coal Fields.

Descriptors: economic geology; coal; Utah and Colorado; Book Cliffs Coal Field; occurrence; deposits; mining geology; evaluation; Grand County; Mesa County; Sunnyside; stratigraphy; thickness; lithologic descriptions; physical properties; chemical analyses; prospects; mines; charts; tables.


Uintah, Grand, and Carbon Counties; Sego and Book Cliffs Coal Fields.

Descriptors: economic geology; coal; Utah and Colorado; Grand River District; Sunnyside; Book Cliffs; maps; deposits; exploration; evaluation; geologic.


Emery and Grand Counties; Book Cliffs and Sego Coal Fields; Woodside and Green River Quadrangles.

Descriptors: microfossil zonation; depositional environment;continental, brackish, shallow-water sediments; stratigraphic problems; spores; pollen; acid-insoluble animal fossils; Book Cliffs; phosphoric and hydrofluoric acids; hystrichospherids; dinoflagellates; microforaminifera; population variation; climatic changes; correlation; time lines; statistical method; preparation of samples; marker species; Woodside and Green River sections.


Book Cliffs, Sego, Emery, and Wasatch Plateau Coal Fields.

Descriptors: Book Cliffs, Sego, Emery, and Wasatch Plateau Coal Fields; drill core samples; methane content of coal; methane extraction; coal analysis; coal beds; tables.


Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery,

Uinta, Emery, and Grand Counties.

Descriptors: Cretaceous; Colorado Plateau; fossil collections; non-marine microfossils; plants and mollusks; Cedar Mountain Formation; Burro Canyon Formation; Uinta; Emery, and Grand Counties; description of fossil localities; columnar section; criteria for correlation; Morrison Formation; contacts and thickness; sections; regional implications; stratigraphy; Dakota Formation.


Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties.

Descriptors: Utah; economic geology; mineral resources; fuel resources; exploration; Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties; production; Uinta Basin; Basin-and-Range Province; Wasatch Plateau; San Rafael Swell; asphalt; bitumens; organic materials; beryl; ring silicates; construction materials; coal; organic residues; metal ores; gems; uranium ores.


Sanpete, Emery, and Grand Counties; Wasatch Plateau, Book Cliffs, and Sego Coal Fields.

Descriptors: ground water; economic geology; surveys; coal; Sanpete, Emery, and Grand Counties; Wasatch Plateau; Book Cliffs; organic residues; deposits.


Grand, Wayne, Emery, Sanpete, and Sevier Counties.

Descriptors: environmental geology; impact statements; maps; Grand, Wayne, Emery, Sanpete, and Sevier Counties; environmental geology maps; coal; organic residues.


Sanpete, Emery, and Grand Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: hydrology; hydrogeology; surveys; Sanpete, Emery, and Grand Counties; Wasatch Plateau and Book Cliffs Coal Fields; coal; organic residues; deposits; coal fields; water resources.


Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties.

Descriptors: coals; sulfur content; pyritic; organic; sulfate; chemical analysis; rank; sample site; mines; Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties; tables.


Grand County; Sego Coal Field.

Descriptors: Salt Valley; Cisco area; Grand County; geology; structure; map; local structural features, folds.


Carbon, Emery, and Grand Counties; Book Cliffs and Sego Coal Fields.

Descriptors: sedimentary facies; intertonguing; Cretaceous; Book Cliffs; marine and nonmarine; continental; lagoon; littoral; depositional environment; stratigraphy; coal-bearing facies; cyclic; shallow basin; subsidesences; shale; sandstone; offshore bars; classification and nomenclature.
Iron


Descriptors: coal; mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; Coalville, Henrys Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; maps; tables.


Iron, Washington, Garfield, and Kane Counties; Kolob Coal Field.

Descriptors: cannel coal; physical properties; physical and chemical composition; analyses; origin; use; mining; value; distribution; subbituminous; Kolob Coal Field; Canel King prospect.


Garfield, Iron, and Kane Counties; Kaiparowits Plateau, Kanab, Kolob Terrace, and Harmony Coal Fields.

Descriptors: coal; economic geology; production and exploration history; southwestern Utah; Garfield, Iron and Kane Counties; Kaiparowits Plateau, Kanab, Kolob Terrace, and Harmony Coal Fields; Pacific southwest electricity demand.


Descriptors: bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.


Iron County; Kolob Coal Field; Cedar Mountain Quadrangle.

Descriptors: coal; Utah; Cretaceous; Jurassic; Triassic; faults; stratigraphy; shear zones; economic geology; structural geology; volcanology; Hurricane fault zone; Cedar Mountain Quadrangle; Triassic-Cretaceous basalt flows; Iron County; Cedar City Coal Field; Hurricane Cliffs; Kolob Terrace; physiography; drainage changes; rank and quality of coal; history of mining; production; methods; reserves; gypsum; uranium.

Averitt, P., 1964, Coal, in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.

Henry’s Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.

Descriptors: Utah, mineral fuels; coal resources; rank; production; market; Henry’s Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields; stratigraphy; structure; lithology.


Descriptors: western states; manufacture of metallurgical coke; geology; coal resources; steel industry; low-volatile bituminous; quality; nonferrous smelting; phosphorus; refining of sugar; typical analyses; production; Carbon, Sanpete, Iron, Washington, and Kane Counties.


Iron and Washington Counties; Kolob Coal Field.


Descriptors: Utah; Cretaceous; sedimentary rocks; petroleum; stratigraphy; lithostratigraphy; Colorado Plateau; lithofacies; Kaiparowits Plateau; sandstone; conglomerate; mudstone; coal; Dakota Formation; possibilities; reservoirs.

Emery, Carbon, Summit, and Iron Counties.

Descriptors: coal deposits; coal mining; Book Cliffs; production; tonnage; supply; Emery; Kolob; Kanab; Coalville; resource development; manufacturing; local economy.


Descriptors: southwestern Utah; map of coal fields; estimate of coal reserves of different rank; heat efficiency; classification of coal areas; Vernal, Wasatch Plateau, Coalville, Kaiparowits Plateau, Emery, San Juan, and Kolob Coal Fields.


Sanpete and Iron Counties; Cedar City and Kanara (Kolob-Harmony) Coal Fields.

Descriptors: analyses; calorific values; Cedar City and Kanara (Kolob-Harmony) Coal Fields; iron deposits; Cretaceous; Tertiary; description of mines and coal beds; coal sections; Grass Creek mine; Pleasant Valley; Sanpete and Iron Counties.

Daughters of Utah Pioneers, 1939, Mining in the West: Daughters of Utah Pioneers Historical Pamphlet.

Wasatch, Sanpete, and Iron Counties.

Descriptors: Coalville discovery; church mines; Scofield; Winter Quarters; Wales; Sanpete and Iron Counties; coking; Deseret Iron Co.; prospecting; Park City; Tintic.


Iron, Washington, and Kane Counties; Kolob-Harmony Coal Field.

Descriptors: Kolob-Harmony Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; maps.


Descriptors: coal; economic geology; lithostratigraphy; Alton, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; properties; reserves.


Iron and Sanpete Counties; Kolob and Wales Coal Fields.

Descriptors: brown coals; Reese's mine; railroads; Cretaceous; physical properties; lignites; chemical characteristics; coke; ash; fixed carbon; Coal Creek; Cedar City; sand-coal; gas-producer; gaseous fuel; experiments; tests; coking; stone-coal; Appoldt vertical oven; tar; briquettes; moisture.


Descriptors: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities, tables.


Sanpete, Iron, Kane, Utah, Summit, and Emery Counties; Wasatch Plateau, Wales, Coalville, Cedar City, Kanarra, Kanab, and New Harmony Coal Fields.

Descriptors: coal industry; imports of coal into the Territory; patents; transportation; analyses; Springville; Grass Creek and Chalk Creek; Castlegate mines; Winter Quarters mine; Pleasant Valley mines.


Iron County; Kolob Coal Field.

Descriptors: geology; eastern Iron County; stratigraphy; structure; physiography; economic geology; coal deposits; mining; development; coal quality; use; lithology; tables.


Iron, Kane, and Garfield Counties; Kolob, Kanab, and Kaiparowits Plateau Coal Fields.

Descriptors: coal; economic geology; Kolob, Kanab, and Kaiparowits Coal Fields; market; transportation; power plants; coal resources; regional setting; thickness; structure; mining methods; development; chemical analysis; rank; cost; maps; tables.


Descriptors: mineral industry; production value; copper; silver; vanadium; iron; uranium; lead; zinc; gold; molybdenum; mineral fuels; coal; manufacturing steel; nonmetals; employment and injuries; legislation and government programs; review by mineral commodities; coal tonnage; Sunnyside, Columbia, Geneva, Castlegate, Clear Creek, Kenilworth, O'Connor, and King mines; Carbon, Emery, Iron, Sevier, and Summit Counties.

Kane, Sanpete, Sevier, Iron, Wasatch, and Summit Counties; Coalville, Pleasant Valley, Sanpete, and Castle Valley Coal Fields.

Descriptors: precious metal mining; ore analyses; descriptions of mines by district; production methods; coal fields; Kane, Sanpete, Sevier, Iron, Wasatch, and Summit Counties; Coalville, Pleasant Valley, Sanpete, and Castle Valley Coal Fields; coal sections; coal analyses.

Carbon, Iron, and Uintah Counties; Book Cliffs, Kolob-Harmony, and Vernal Coal Fields.

Descriptors: carbonaceous materials; solid fuels; oil products; commercial uses; oil shale; economic factors; low-temperature carbonization; plant and refinery; Carbon County; power; smokeless fuels; rock asphalt; Vernal; paraffin; road oil; gasoline; diesel fuel; Cedar City; Utah markets; engineering experiments; heat requirements; distillation; burning properties.

Garfield, Kane, and Iron Counties.

Descriptors: southern Utah; Dakota Formation; Tropic Formation; stratigraphy; Cretaceous; Garfield, Kane, and Iron Counties; lithologic descriptions; nomenclature; correlation; depositional environment; tectonic history; Cashion coal zone; Culver coal zone.

Iron County; Harmony and Kolob Coal Fields.

Descriptors: economic geology; coal; Iron County Coal Field; stratigraphy; structure; coal resources; quality; chemical analysis; development; transportation; market; use; maps; tables.


Kolob, Kaiparowits Plateau, Alton, and Henry Mountains Coal Fields.

Descriptors: Utah and Arizona; environmental geology; land use; Kolob, Kaiparowits Plateau, Alton, and Henry Mountains Coal Fields; coal; organic residues; development; pollution; water resources.

Iron, Washington, and Kane Counties; Kolob Coal Field.

Descriptors: landslides; Utah; engineering geology; Kolob Coal Field.

Garfield, Iron, Washington, and Kane Counties; Alton-Kolob Coal Field.

Descriptors: Utah; ground water; hydrogeology; surveys; maps; Kane, Garfield, Iron, and Washington Counties; Tropic Shale; Carmel Formation; Moenkopi Formation; Chinle Formation; Navajo Sandstone; USGS; Alton; Kolob; coal fields; geochemistry; hydrochemistry; water quality; coal; organic residues; water resources; Triassic; Mesozoic; Jurassic; Cretaceous; aquifers; dissolved materials; hydrogeologic maps.

Carbon, Emery, Iron, Kane, Sanpete, Sevier, and Washington Counties.

Descriptors: western coals; carbonizing properties; physical properties; rank; lower Sunnyside; Carbon, Emery, Iron, Kane, Sanpete, Sevier, and Washington Counties; chemical analyses; sulfur content; tables.


Descriptors: Mormons; small mines; transportation; location and topography; geology; stratigraphy; structure; occurrence of coal; quality; analyses; Jones, Wood, Corry, Culver, and Kanarra Mines; Cannel King prospect; Muddy prospect; measured sections; Kanab Field; Johnson prospect (No.18).

Iron, Washington, and Kane Counties; Kolob Coal Field.

Descriptors: geology; Upper Cretaceous; Kolob Plateau; southwest Utah; Iron, Washington, and...
Kane Counties; stratigraphic sections; fossils; geography; coal outcrops; coal-bearing zone; local sections; Colorado and Montana groups.

Iron, Washington, Garfield, Kane, and Wayne Counties.

Descriptors: coal; chemical analyses; economic geology; resources; field investigation; Kanab and Kaiparowits Plateaus; coal sections; Federal coal prospecting; permits; exploratory drilling; coal reserves; Iron, Washington, Garfield, Kane, Wayne Counties; subbituminous A; High volatile bituminous C; ash; sulfur; local domestic fuel requirements.

Iron and Washington Counties; Alton and Kolob Coal Fields; Cedar City 1 X 2 degree Quadrangle.

Descriptors: Utah; economic geology; coal; Dakota Formation; Straight Cliffs Formation; Cretaceous; Mesozoic; organic residues.

Sanpete, Iron, and Wasatch Counties.

Descriptors: White Clay Creek coal; Sanpete County; bituminous coal; Weber River; Cedar City coal; history of exploration; meteorological observations; table of distances and altitude of routes; magnetic observations; railroad routes; geologic report; economical geology; stratigraphy; structure; lithology; lignite; formations; agriculture; building materials; fossils; paleontological collections; ornithology; ichthyology; botany; Indians; languages; population and resources of eastern Utah.


Descriptors: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.

Iron County.

Descriptors: Parowan Gap; Iron County; stratigraphy; angular unconformities; Red Hills; structure; folding; faulting; petroleum possibilities.

Iron County.

Descriptors: Colorado Plateau; margin; structure; Cedar City; Hurricane fault; Hurricane Cliffs; fault zones; stratigraphy; lithology; Paleogene volcanics; Neogene basalts; geomorphology; Kanarra fold; monoclines.

Iron, Washington, and Kane County.

Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties.

Descriptors: high temperature carbonization; low temperature carbonization; smoke elimination; technology; products; problems; industry status; Utah coals; types; producing counties; geology; physical properties; chemical analyses; coking capabilities; coking constituents; briquetting; semi-coke; laboratory investigations; properties; rank; test results; products; tars; gases; oils; blends; reactions; Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties; tables.

Utah Geol. and Min. Surv., 1963, Transportation of energy from coal, Utah to California. Symposium 1963: Utah Geol. and Min. Surv., Circ., No. 44.
Wasatch Plateau, Kaiparowits, and Kolob Coal Fields.

Descriptors: coal mining; sources; Wasatch Plateau, Kaiparowits, and Kolob Coal Fields; coal slurry pipelines; high voltage transmission lines; Los Angeles; power costs; coal-fired power plants; tables.

Iron County; Kolob and New Harmony Coal Fields.

Sanpete, Carbon, Iron, and Kane Counties.

Descriptors: coal mining; history; southern Utah coal fields; Sanpete, Carbon, Iron, and Kane Counties; Union Pacific railroad; mine explosions.
Henry Mountains, Kaiparowits Plateau, and Kolob Harmony Coal Fields.

**Juab**

Juab, Utah, and Sanpete Counties.
**Descriptors:** Cedar Hills; Sanpete, Juab, and Utah Counties; geology; physiography; stratigraphy; lithologic descriptions; structure; orogenic episodes; Cretaceous; Tertiary.

Juab County.

**Descriptors:** Utah, California, Nevada, and Wyoming; environmental geology; impact statements; Wayne County; Millard County; power plants; policy; management; coal; organic residues; Salt Wash; Lyndyl; Colorado Plateau; Basin and Range Province.

**Kane**

Kane and Garfield Counties.
**Descriptors:** economic geology; coal; Kane and Garfield Counties; Dakota Formation; Straight Cliffs Formation; Cretaceous; Mesozoic; geochemistry; organic residues; deposits; chemical; composition.

Kane and Garfield Counties; Kaiparowits Plateau Coal Field.
**Descriptors:** Colorado, Utah, and Wyoming; environmental geology; ecology; conservation; Garfield and Kane Counties; Project Rio Blanco; Kaiparowits Plateau; Battle Springs Draw; energy sources; ore deposits; uranium; coal; organic residues; deposits; nuclear facilities; impact statements; inventory; ecosystems; ground motion; faunal studies; floral studies.

**Descriptors:** coal; mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; Coalville, Henrys Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; maps; tables.

Kane County; Alton Coal Field.
**Descriptors:** coal; strip mine; mine-mouth plants; socioeconomic impact assessment; environmental constraints; railroad planning; water quality standards; air quality standards; ambient; public lands; federal coal leasing; coal transport; generating capacity; water supply; industrial; 491 Electric Co.; Utah.

Kane County; Kaiparowits Plateau Coal Field.
**Descriptors:** environmental geology; land use; Lake Powell; regional planning; coal; production; water resources; deserts.

Kane County; Alton Coal Field.

Descriptors: coal slurry pipelines; pipeline construction; coal-fired power plants; environmental impact assessment; Utah; Nevada.


Iron, Washington, Garfield, and Kane Counties; Kolob Coal Field.

Descriptors: cannel coal; physical properties; physical and chemical composition; analyses; origin; use; mining; value; distribution; subbituminous; Kolob Coal Field; Cannel King prospect.


Garfield, Iron, and Kane Counties; Kaiparowits Plateau, Kanab, Kolob Terrace, and Harmony Coal Fields.

Descriptors: coal; economic geology; production and exploration history; southwestern Utah; Garfield, Iron and Kane Counties; Kaiparowits Plateau, Kanab, Kolob Terrace, and Harmony Coal Fields; Pacific southwest electricity demand.


Descriptors: bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.

Averitt, P., 1964, Coal, in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.

Henry’s Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.

Descriptors: Utah, mineral fuels; coal resources; rank; production; market; Henry’s Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields; stratigraphy; structure; lithology.


Descriptors: western states; manufacture of metallurgical coke; geology; coal resources; steel industry; low-volatile bituminous; quality; nonferrous smelting; phosphorus; refining of sugar; typical analyses; production; Carbon, Sanpete, Iron, Washington, and Kane Counties.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: Kaiparowits region; Kane and Garfield Counties; structural features; stratigraphy; East Kaibab monoclone; Jurassic, Cretaceous, Tertiary formations; oil and gas possibilities.

Blakey, R. C., 1969, Geologic map of the Paria NW Quadrangle, Kane County, Utah: M.S. thesis, Univ. of Utah.

Kane County; Kaiparowits Plateau Coal Field; Paria NW Quadrangle.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Henrieville Quadrangle.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Henrieville Quadrangle.

Descriptors: coal; coal reserves; economic geology; geologic maps; Kane and Garfield Counties; Kaiparowits Plateau; materials distribution surveys; Utah.


Kane and Garfield Counties; Alton Coal Field.

Descriptors: Utah; well-logging; coal; geophysical surveys; applications; Garfield and Kane Counties; Alton-Kanab Coal Field; caliper; radioactivity; gamma ray; data; logs; exploration; deposits; distribution; depth; thickness; quality.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Canaan Peak Quadrangle.
Descriptors: Utah; economic geology; coal; maps; Garfield and Kane Counties; Straight Cliffs Formation; Henderson coal zone; USGS; Canaan Peak Quadrangle; geologic maps; organic residues; sections; explanatory text; structure contour maps; Upper Cretaceous.

Kane County; Alton Coal Field.
Descriptors: coal; mining; maps; coal reserves; Utah.

Kane County; Kolob Coal Field.
Descriptors: well-logging; geophysical surveys; general; data; Kane County; Kolob Coal Field; exploration; coal; organic residues.

Garfield, Kane, Iron, and Washington Counties.
Descriptors: Utah; Cretaceous; sedimentary rocks; petroleum; stratigraphy; lithostratigraphy; Colorado Plateau; lithofacies; Kaiparowits Plateau; sandstone; conglomerate; mudstone; coal; Dakota Formation; possibilities; reservoirs.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.
Descriptors: coal-produced power; joint planning among utilities; electrical generating capacity; Four Corners Power Plant; Navajo mine; Navajo reservation; strippable seam; sub-bituminous; heating value; ash moisture; sulfur; Kayenta mine; slurry pipe line; Kaiparowits Plateau; Navajo plant; Lake Powell; Mohave project; south-central Utah; water resources; development; large economic size threshold; exploration program; high volatile bituminous C; Cretaceous; Straight Cliffs; drilling; coal reserves; cost of boiler fuel; liquefaction processes; air pollution; high hydrogen fuel.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.
Descriptors: Utah; coal; economic geology; Kane and Garfield Counties; Kaiparowits Plateau; Straight Cliffs Formation; mining; methods; reclamation; environmental geology.

Kane and San Juan Counties.
Descriptors: Arizona; coal mining; fossil-fuel power plants; economic impact; social impact; comparative evaluations; education; electric power; energy source development; migrations; occupations; population dynamics; power generation; rural areas; socio-economic factors; surface mining; Utah.

Descriptors: southwestern Utah; map of coal fields; estimate of coal reserves of different rank; heat efficiency; classification of coal areas; Vernal, Wasatch Plateau, Coalville, San Juan, Kaiparowits Plateau, Emery, and Kolob Coal Fields.

Kane County; Kaiparowits Plateau Coal Field.
Descriptors: Utah; coal deposits; energy source development; coal industry; geology; leasing; maps.

Kane County; Kolob Coal Field.
Descriptors: coal; Utah; economic geology; maps; Orderville-Glendale area; geologic and structural.

Kane County; Kolob Coal Field.

Cohenour, R. E., 1963, Coal resources of part of the Alton area, Kane County, Utah: Utah Geol. and Min. Surv., Rept. Inv., No. 2, 23 p., maps.
Kane County; Alton Coal Field.
Descriptors: coal resources; Alton area; Kane County; Kanab Coal Field; Tropic Shale; Cretaceous; upper zone; lower zone; subbituminous A; indicated and measured reserves; overburden; open pit mine; underground operation; yield per acre; oxidation factor ( burn out); slurry pipeline; water; electric generating plant; exploration; lieu lands; mineral
lands; Smirl mine; geography and geology; stratigraphy; coal bed data; thickness estimates; resource tabulation; maps.

Cohenour, R. E., 1964, Lieu land acquisition Kaiparowits coal reserves, Kane County, Utah: Utah Geol. and Min. Surv., Rept. Inv., No. 18, 2 p., maps.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: Carcass Canyon; Garfield and Kane Counties; geology; physiography; stratigraphy; lithologic descriptions; structure; uranium deposits; prospects; metalliferous deposits; maps.

Doelling, H. H., 1972a, Alton Coal Field, in Southwestern Utah coal fields: Alton, Kolob-Harmony, and Kaiparowits Fields; location; occurrence; structure; lithologic descriptions; maps; tables.

Descriptive: Alton Coal Field; location; geography; physiography; stratigraphy; structure; coal deposits; mining; exploration; production; reserves; quadrangle descriptions; maps; tables.


Iron, Washington, and Kane Counties; Kolob-Harmony Coal Field.

Descriptors: Kolob-Harmony Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; maps.

Doelling, H. H., 1977, Occurrence of petrified wood in coal, Kane County, Utah: Utah Geol. and Min. Surv., Utah Geol., 4: 1, p. 29-34.

Kane County.

Descriptors: Utah; Plantae; Cretaceous; paleobotany; occurrence; Kane County; Dakota Formation; fossil wood; Kaiparowits Plateau; sedimentary rocks; coal; silicification; anomalies.


Book Cliffs, Wasatch Plateau, Emery, Sego, Kaiparowits Plateau, and Alton Coal Fields.

Descriptors: Utah coals; methane content; gas composition; coal analysis; Book Cliffs, Wasatch Plateau, Emery, Sego, Kaiparowits Plateau and Alton Coal Fields; Sunnyside coal zone; physical properties; depositional environment; maps.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.


Garfield and Kane Counties; Kaiparowits Plateau.

Descriptors: power demand; fossil-fuel power plants; economics; feasibility studies; forecasting; Arizona, California, and Utah; coal; experimental demand; power generation.


Descriptors: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.
Sanpete, Iron, Kane, Utah, Scofield and Emery Counties; Wasatch Plateau, Wales, Coalville, Cedar City, Kanarra, Kanab, and New Harmony Coal Fields.
Descriptors: coal industry; imports of coal into the Territory; patents; transportation; analyses; Springville; Grass Creek and Chalk Creek; Castlegate mines; Winter Quarters mine; Pleasant Valley mines.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.
Descriptors: Utah; engineering geology; slope stability; maps; Garfield and Kane Counties; USGS; Kaiparowits Plateau; coal; organic residues; landslides; debris flows; geologic hazards.

Kane County.
Descriptors: reconnaissance study; western Kane County; development of coal deposits; electricity; water supplies; well water; chemical analysis; sedimentary and volcanic rocks; Triassic to Recent; lithologies and water bearing properties; yields; potentials; structure; stratigraphy; Paunsaugunt and Markagunt plateaus; precipitation; physiography; water resources hydrologic cycle; ground water; surface water; records of selected wells; reservoirs; industry; maps.

Kane County; Alton and Kaiparowits Plateau Coal Fields.
Descriptors: coal fired power plants; water resources; Kane County; Lake Powell; aquifers; regional geology; hydrology; Navajo Sandstone; maps.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.
Descriptors: fossil-fuel power plants; capital; planning; Clean Air Act; coal reserves; Colorado River; economics; environmental effects; environmental impact statements; exploration; geology; government policies; land use; laws; power generation; public relations; public utilities; resource conservation; steam generation; water resources; water rights.

Washington and Kane Counties.
Descriptors: geology; Zion National Park region; coal; distribution; stratigraphy; mine descriptions; coal quality; use; chemical analysis; tables.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.
Descriptors: Garfield and Kane Counties; geography; geologic reconnaissance; parts of Utah and Arizona: U.S. Geol. Surv., Prof. Paper, No. 164.
Garfield and Kane Counties; Kaiparowits Plateau Coal Field.
Descriptors: Kaiparowits region; geologic reconnaissance; maps; tables.

Kane and Garfield Counties; Kaiparowits Plateau Coal Field.
Descriptors: coal; economic geology; Kane and Garfield Counties; Kaiparowits Plateau; deposits; resources; evaluation; development; feasibility; water resources.

Iron, Kane, and Garfield Counties; Kolob, Kanab, and Kaiparowits Plateau Coal Fields.
Descriptors: coal; economic geology; Kolob, Kanab, and Kaiparowits Coal Fields; market; transportation; power plants; coal resources; regional setting; thickness; structure; mining methods; development; chemical analysis; rank; cost; maps; tables.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: economic geology; coal; maps; Garfield and Kane Counties; organic residues; deposits; resources; Kaiparowits Plateau; production; mining geology; overburden.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: economic geology; coal; maps; Garfield and Kane Counties; Kaiparowits Plateau; economic geology maps; organic residues; deposits; coal seams; thickness; coal basins.

Washington and Kane Counties.

Descriptors: mineral resources; economic geology; Boulder Dam area; coal; Kane and Iron Counties; road logs.

Kane, Sanpete, Sevier, Iron, Wasatch, and Summit Counties; Coalville, Pleasant Valley, Sanpete, and Castle Valley Coal Fields.

Descriptors: precious metal mining; ore analyses; descriptions of mines by district; production methods; coal fields; Kane, Sanpete, Sevier, Iron, Wasatch, and Summit Counties; Coalville, Pleasant Valley, Sanpete, and Castle Valley Coal Fields; coal sections; coal analyses.

Kane County; Kaiparowits Plateau Coal Field.

Descriptors: Arizona; Utah; boom towns; coal industry; economic impact; coal; electric power; human populations; planning; regional analysis.

Sanpete, Sevier, Carbon, Garfield, Kane, and Emery Counties; Book Cliffs, Henry Mountains, and Wasatch Plateau Coal Fields.

Descriptors: Wasatch Plateau; stratigraphy; Cretaceous; Tertiary; correlation; facies; sequences; San Rafael Swell; Kaiparowits Plateau; Henry Mountains; Book Cliffs; depositional environment; formation renaming; fossil evidence; formation dating.

Garfield, Kane, and Iron Counties.

Descriptors: southern Utah; Dakota Formation; Tropic Formation; stratigraphy; Cretaceous; Garfield, Kane, and Iron Counties; lithologic descriptions; nomenclature; correlation; depositional environment; tectonic history; Cashion coal zone; Culver coal zone.

Kane and San Juan Counties.

Descriptors: Kaiparowits basin; Black Mesa basin; stratigraphy; structure; geologic history; formations; depositional environment; isopach maps; diagrams.

Kolob, Kaiparowits Plateau, Alton, and Henry Mountains Coal Fields.

Descriptors: Utah and Arizona; environmental geology; land use; Kolob, Kaiparowits Plateau, Alton, and Henry Mountains Coal Fields; coal; organic residues; development; pollution; water resources.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: energy source development; electric power generation; environmental impacts; economic impact; social effect; employment; sociopsychological surveys; public opinion; coal; Utah and Arizona.

Kane County.

Descriptors: environmental geology; pollution; air quality; Utah, Arizona, New Mexico, and Colorado; Lake Powell; mining; coal; effect.

Garfield and Kane Counties; Alton and Wasatch Plateau Coal Fields.

Descriptors: coal; strip mining; coal-fired power plants; water pollution; noise pollution; air pollution; damage; Southern California Edison; policy; planning; regional energy demand; Utah.


Garfield and Kane Counties.


Kane County; Alton Coal Field; Alton Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Alton Quadrangle.


Kane County; Alton Coal Field; Bald Knoll Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Bald Knoll Quadrangle; USGS.


Kane County; Kolob Coal Field; SE Orderville 15-min. Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Orderville Quadrangle; USGS.


Kane and Garfield Counties; Alton Coal Field; Bryce Point Quadrangle.

Descriptors: economic geology; coal; maps; Kane and Garfield Counties; organic residues; resources; economic geology maps; explanatory text; inventory; Bryce Point Quadrangle; USGS.


Kane County; Alton Coal Field; Deer Springs Point Quadrangle.

Descriptors: economic geology; coal; maps; organic residues; Kane County; resources; economic geology maps; explanatory text; inventory; Deer Spring Point Quadrangle.


Kane County; Alton Coal Field; NE quarter of the Orderville 15-min. Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Orderville Quadrangle.


Kane County; Alton Coal Field; Podunk Creek Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Podunk Creek Quadrangle; USGS.


Kane County; Alton Coal Field; Rainbow Point Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Rainbow Point Quadrangle; USGS.


Kane County; Alton Coal Field; Skutumpah Creek Quadrangle.

Descriptors: economic geology; coal; maps; Kane County; organic residues; resources; economic geology maps; explanatory text; inventory; Skutumpah Creek Quadrangle; USGS.

Iron, Washington, and Kane Counties; Kolob Coal Field.

Descriptors: landslides; Utah; engineering geology; Kolob Coal Field.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Peterson, F., and B. E. Barnum, 1973a, Geologic map and coal resources of the northeast quarter of the Cummings Mesa Quadrangle, Kane County, Utah: U.S. Geol. Surv., Coal Inv., Map C-63.

Kane County; Kaiparowits Plateau Coal Field; NE Cummings Mesa Quadrangle.

Descriptors: Utah; maps; economic geology; Kane County; coal; Cummings Mesa Quadrangle; geologic; deposits; resources.

Peterson, F., and B. E. Barnum, 1973b, Geologic map and coal resources of the northwest quarter of the Cummings Mesa Quadrangle, Kane County, Utah: U.S. Geol. Surv., Coal Inv., Map C-64.

Kane County; Kaiparowits Plateau Coal Field; NW Cummings Mesa Quadrangle.

Descriptors: Utah; maps; economic geology; Kane County; coal; Cummings Mesa Quadrangle; geologic; deposits; resources.

Peterson, F., and G. W. Horton, 1966, Preliminary geologic map and coal deposits of the northeast quarter of the Gunsight Butte Quadrangle, Kane County, Utah: U.S. Geol. and Min. Surv., Map 24F.

Kane County; NE Gunsight Butte Quadrangle.

Descriptors: coal; economic geology; maps; geologic; stratigraphy; NE quarter Gunsight Butte Quadrangle; Mesozoic; Quaternary.


Kane County; Kaiparowits Plateau Coal Field; Nipple Butte and Gunsight Butte Quadrangles.

Descriptors: coal; Cretaceous; Jurassic; stratigraphy; economic geology; Kaiparowits Plateau; resources; formation descriptions; Straight Cliffs Formation; Dakota Formation; chemical analysis; rank; thickness; maps.

Peterson, F., and H. A. Waldrop, 1966, Preliminary geologic map and coal deposits of the southeast quarter of Gunsight Butte Quadrangle, Kane and San Juan Counties, Utah, and Coconino County, Arizona: Utah Geol. and Min. Surv., Map 24G.

Kane and San Juan Counties; Kaiparowits Plateau Coal Field; SE quarter Gunsight Butte Quadrangle.

Descriptors: coal; economic geology; maps; geologic; stratigraphy; Mesozoic; Quaternary.


Kane and Garfield Counties; Kaiparowits Plateau Coal Field.

Descriptors: coal; Cretaceous; maps; structure; stratigraphy; Straight Cliffs Formation; coal beds; El Dorado oil field.

Peterson, F., 1967, Preliminary geologic map and coal deposits of the northwest quarter of the Gunsight Butte Quadrangle, Kane County, Utah: U.S. Geol. and Min. Surv., Open-File Rept.

Kane County; NW Gunsight Butte Quadrangle.

Descriptors: coal; economic geology; maps; geologic; stratigraphy.


Kane County; Kaiparowits Plateau Coal Field.

Descriptors: Cretaceous; coal; titanium; petroleum; natural gas; stratigraphy; possibilities.


Kane County; Kaiparowits Plateau Coal Field.

Descriptors: Cretaceous; coal; titanium; petroleum; natural gas; stratigraphy; possibilities.


Kane County; Kaiparowits Plateau Coal Field.

Peterson, F., 1980, Geologic map and coal deposits of the Big Hollow Wash Quadrangle, Kane County, Utah: U.S. Geol. Surv., Coal Inv., Map C-84, 1 sheet.

Kane County; Kaiparowits Plateau Coal Field; Big Hollow Wash Quadrangle.

Descriptors: economic geology; maps; coal; Kane County; Morrison Formation; Big Hollow Wash Quadrangle; Jurassic; geologic maps; sections; structure contour maps; correlation; diagrams; explanatory text; organic residues; deposits.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.


Garfield, Iron, Washington, and Kane Counties; Alton-Kolob Coal Field.

Descriptors: Utah; ground water; hydrogeology; surveys; maps; Kane, Garfield, Iron, and Washington Counties; Tropic Shale; Carmel Formation; Moenkopi Formation; Chinle Formation; Navajo Sandstone; USGS; Alton; Kolob; coal fields; geochemistry; hydrochemistry; water quality; coal; organic residues; water resources; Triassic; Mesozoic; Jurassic; Cretaceous; aquifers; dissolved materials; hydrogeologic maps.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: energy policy; environmental geology; fossil-fuel power plants; coal; legislative production management; Utah.


Carbon, Emery, Iron, Kane, Sanpete, Sevier, and Washington Counties.

Descriptors: western coals; carbonizing properties; physical properties; rank; lower Sunnyside; Carbon, Emery, Iron, Kane, Sanpete, Sevier, and Washington Counties; chemical analyses; sulfur content; tables.


Descriptors: Mormons; small mines; transportation; location and topography; geology; stratigraphy; structure; occurrence of coal; quality; analyses; Jones, Wood, Corry, Culver, and Kanarra Mines; Cannel King prospect; Muddy prospect; measured sections; Kanab Field; Johnson prospect (No.18).


Iron, Washington, and Kane Counties; Kolob Coal Field.

Descriptors: geology; Upper Cretaceous; Kolob Plateau; southwest Utah; Iron, Washington, and Kane Counties; stratigraphic sections; fossils; geography; coal outcrops; coal-bearing zone; local sections; Colorado and Montana groups.


Kane and San Juan Counties.

Descriptors: Arizona and Utah; coal mining; fossil-fuel power plants; economic impact; social impact; electric power; energy source development; environmental impact; power generation; regional analysis; rural areas; socio-economic factors.


Iron, Washington, Garfield, Kane, and Wayne Counties.

Descriptors: coal; chemical analyses; economic geology; resources; field investigation; Kanab and Kaiparowits Plateaus; coal sections; Federal coal prospecting; permits; exploratory drilling; coal reserves; Iron, Washington, Garfield, Kane, Wayne Counties; subbituminous A; High volatile bituminous C; ash; sulfur; local domestic fuel requirements.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: economic geology; coal; maps; Garfield and Kane Counties; organic residues; deposits; resources; economic geology maps; Kaiparowits Plateau.


Kane County; Alton Coal Field.

Descriptors: hydrology; environmental geology; surveys; reclamation; Kane County; Alton; Alton Coal Field; organic residues; deposits; coal fields; water resources; site evaluation.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: geomorphology; fluvial features; environmental geology; drainage patterns; land use; Kaiparowits Plateau; evolution; controls; coal; organic residues; production.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.
Descriptive: Utah; geomorphology; maps; landform descriptions; Garfield and Kane Counties; Kaiparowits Plateau; coal; organic residues; deposits; coal basins; geomorphologic maps.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.
Descriptors: western U.S.; mining geology; environmental geology; economic geology; evaluation; maps; coal; Garfield and Kane Counties; Kaiparowits Plateau; land use; resources; management; natural resources; organic residues; deposits; mapping; geologic maps; hydrogeologic maps.

Kaiparowits Plateau, Alton, and east half Kolob Coal Fields.

Descriptors: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.

Kane County; Kaiparowits Plateau Coal Field.
Descriptors: water pollution; mercury; ecological concentration; coal; Colorado River; fish; lakes; plants; quantity ratio; sampling; sediments; tables; thermal power plants; Utah.

Kane and Garfield Counties; Kaiparowits Plateau Coal Field.

Kane County; Kaiparowits Plateau Coal Field.

Kane County; Alton Coal Field.

Kane County; Alton Coal Field.
Descriptors: soils; environmental geology; surveys; reclamation; Kane County; Alton Field; evaluation; natural resources; Kanab; mines; coal; organic residues; deposits; maps; geologic maps.

Kane County; Alton Coal Field.
Descriptors: environmental geology; reclamation; Kane County; Alton Coal Field; environment; mines; vegetation; hydrology; ground water; soils; land use; surface mining; economic geology; coal; organic residues.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.
Descriptors: fossil-fuel power plants; environmental impact statements; air quality; ash; availability; building materials; coal; coal mines; electrostatic precipitators; fly ash; government policies; limestone; monitoring; nitrogen oxides; particles; power transmission; removal; scrubbers; site selection; sludges; socio-economic factors; stack disposal; sulfur dioxide; transport; underground mining; waste disposal; water resources; Utah.

Iron, Washington and Kane County.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.
Descriptors: environmental impact assessment; coal-fired power plants; socioeconomic impact assessment; power plant emission control; power plant design; coal mining; power plant siting; transmission lines; resource management; regional planning; climatology; geology; 491 Electric Co.; Utah.

Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties.

Descriptors: high temperature carbonization; low temperature carbonization; smoke elimination; technology; products; problems; industry status; Utah coals; types; producing counties; geology; physical properties; chemical analyses; coking capabilities; coking constituents; briquetting; semi-coke; laboratory investigations; properties; rank; test results; products; tars; gases; oils; blends; reactions; Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties; tables.

Utah Geol. and Min. Surv., 1963, Transportation of energy from coal, Utah to California. Symposium 1963: Utah Geol. and Min. Surv., Circ., No. 44.

Wasatch Plateau, Kaiparowits, and Kolob Coal Fields.

Descriptors: coal mining; sources; Wasatch Plateau, Kaiparowits, and Kolob Coal Fields; coal slurry pipelines; high voltage transmission lines; Los Angeles; power costs; coal-fired power plants; tables.


Kane, Garfield, and Iron Counties; Kolob, Kanab, and Kaiparowits Plateau Coal Fields.

Descriptors: tectonic history; stratigraphy; economic geology; coal; coal fields; Kolob; Kanab; Kaiparowits Plateau; coal-fired power plants; water resources; Kane, Garfield, and Iron Counties; maps; road logs.


Kane County; Kaiparowits Plateau Coal Field.

Descriptors: Utah; coal; Cretaceous; sedimentation; sedimentary rocks; economic geology; environment; organic residues; Kane County; Straight Cliffs Formation; John Henry Member; Kaiparowits Plateau; coal seams; paleoenvironment; correlation; stratigraphy; swamps; environmental analysis; deposits; complexes.


San Juan, Kane, Emery, and Sanpete Counties; Kaiparowits Plateau, Wasatch Plateau, and San Juan Coal Fields.

Descriptors: economic geology; coal; Star Point Sandstone; Blackhawk Formation; organic residues; exploration; Montana, Wyoming, Utah, Colorado, Arizona, and New Mexico; coal fields; San Juan Basin; Powder River Basin; Wasatch Plateau; Kaiparowits Plateau; concepts; practice.


Kane County; Kaiparowits Plateau Coal Field.

Descriptors: Utah; sedimentation; stratigraphy; economic geology; environment; Cretaceous; coal; paludal environment; Kane County; Straight Cliffs Formation; John Henry Member; Kaiparowits Plateau; Upper Cretaceous; Mesozoic; organic residues; coal seams; thickness; paludal sedimentation.


Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Descriptors: economic geology; coal; organic residues; exploration; Kaiparowits Plateau; Cretaceous; Mesozoic; stratigraphy; lithostratigraphy; coal seams; deposits.


Kane and Garfield County; Kaiparowits Plateau Coal Field.

Descriptors: sedimentation; paleogeography; economic geology; environment; Cretaceous; coal; coastal environment; Kane and Garfield Counties; Straight Cliffs Formation; John Henry Member; Kaiparowits Plateau; organic residues; deposits; coal fields; barrier islands; deltas; progradation; swamps; marine transport; longshore currents; transgression; Mesozoic.

Waldrop, H. A., and F. Peterson, 1967, Preliminary geologic map of the southeast quarter of the Nipple Butte Quadrangle, Kane County, Utah, and Coconino County, Arizona: Utah Geol. and Min. Surv., Map 24C.

Kane County; SE quarter of the Nipple Butte Quadrangle.

Descriptors: coal; economic geology; maps; stratigraphic; SE quarter Nipple Butte Quadrangle; Cretaceous; Quaternary.

Waldrop, H. A., and R. L. Sutton, 1966, Preliminary geologic map and coal deposits of the southwest quarter of the Nipple Butte Quadrangle, Kane County, Utah, and Coconino County, Arizona: Utah Geol. and Min. Surv., Map 24D.
Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties.
Descriptors: coals; sulfur content; pyritic; organic; sulfate; chemical analysis; rank; sample site; mines; Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties; tables.

Kane County; Kaiparowits Plateau Coal Field.
Descriptors: air pollution; monitoring; thermal power plants; coal; combustion products; industrial wastes; lakes; meteorology; numerical analysis; plumes; pollution control equipment; Utah.

Kane County; Kaiparowits Plateau Coal Field.
Descriptors: Utah; air quality; air pollution; automobiles; exhaust gases; thermal power plants; coal.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Kane County.
Descriptors: economic geology; shale samples; dry distillation; cannel coal; Kane County; lithologic descriptions; oil shale.

Sanpete, Carbon, Iron, and Kane Counties.
Descriptors: coal mining; history; southern Utah coal fields; Sanpete, Carbon, Iron, and Kane Counties; Union Pacific railroad; mine explosions.

Henry Mountains, Kaiparowits Plateau, and Kolob Harmony Coal Fields.
Descriptors: coal deposits; oil shale deposits; sandstone; uranium; sampling; chemical analysis; exploration; maps; mineralization; Kaiparowits Plateau; Henry Mountains; Kolob Terrace; lithologic descriptions; tables.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field.

Kane County; Kaiparowits Plateau Coal Field; Collet Top Quadrangle.
Descriptors: maps; areal geology; Kane County; Collet Top Quadrangle; geologic; coal; deposits.

Kane County; Kaiparowits Plateau Coal Field; Collet Top Quadrangle.
Descriptors: areal geology; economic geology; maps; coal; Kane County; Straight Cliffs Formation; organic residues; deposits; resources; distribution; Collet Top Quadrangle; explanatory text; Alvey Zone; structure contours; Cretaceous; Mesozoic.

Garfield and Kane Counties; Kaiparowits Plateau Coal Field; Seep Flat Quadrangle.

Garfield and Kane Counties; Kaiparowits Plateau

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**MILLARD**


Juab, Wayne, and Millard Counties.

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**MORGAN**


Descriptors: coal; mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; Coalville, Henrys Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields.


Descriptors: bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.

Averitt, P., 1964, Coal, in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.

Henry’s Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.

Descriptors: Utah; mineral fuels; coal resources; rank; production; market; Henry’s Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields; stratigraphy; structure; lithology.


Descriptors: southwestern Utah; map of coal fields; estimate of coal reserves of different rank; heat efficiency; classification of coal areas; Vernal, Wasatch Plateau, Coalville, San Juan, Kaiparowits Plateau, Emery, and Kolob Coal Fields.


Morgan County; Coalville Coal Field.

Descriptors: Lost Creek Coal Field; Morgan County; geology; stratigraphy; mapping; sections; structure; coal; Robinson mine; Smith mine; transportation; physical and chemical characteristics; subbituminous; development.


Morgan County; Coalville Coal Field.

Summit, Morgan, and Salt Lake Counties; Coalville Coal Field.

Descriptors: Coalville Coal Field; location; geography; physiography; stratigraphy; structure; coal deposits; mining; proposals; reserves; chemical analysis; physical properties; land control; lithologic descriptions; quadrangle reports.


Summit and Morgan Counties; Lost Creek Coal Field.

Descriptors: Lost Creek Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; maps.


Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry’s Fork, and Lost Creek Coal Fields; Goose Creek lignite field.

Descriptors: Cretaceous; coal; lignite; economic geology; lithostratigraphy; Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry’s Fork, and Lost Creek Coal Fields; Goose Creek lignite field; occurrence.


Carbon, Emery, Grand, Morgan, Sanpete, and Summit Counties.

Descriptors: coal analyses; mine samples; car samples; fiscal year; proximate and ultimate analyses; Carbon, Emery, Grand, Morgan, Sanpete, and Summit Counties; lithologic descriptions; tables.


Descriptors: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.


Sanpete, Iron, Kane, Utah, Summit and Emery Counties; Wasatch Plateau, Wales, Coalville, Cedar City, Kanara, Kanab, and New Harmony Coal Fields.

Descriptors: coal industry; imports of coal into the Territory; patents; transportation; analyses; Springville; Grass Creek and Chalk Creek; Castlegate mines; Winter Quarters mine; Pleasant Valley mines.


Rich, Morgan, and Summit Counties; Coalville Coal Field.


Morgan and Summit Counties; Coalville Coal Field.


Summit, Morgan and Rich Counties; Coalville Coal Field.


Descriptors: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.


Morgan County; Coalville Coal Field.

Descriptors: Lost Creek Coal Field; Morgan County; subbituminous; much moisture; impurities; bone; shale; Jurassic; Tertiary; Wasatch Formation; unconformity; structure; too thin to be economic.


Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties.

Descriptors: Utah; economic geology; mineral resources; fuel resources; exploration; Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties; production; Uinta Basin; Basin-and-Range Province; Wasatch Plateau; San Rafael Swell; asphalt; bitumens; organic materials; beryl; ring silicates; construction materials; coal; organic residues; metal ores; gems; uranium ores.
RICH


Salt Lake

Carter, G. W., 1939, Engineering factors relating to the production of smokeless fuel, oil, and gas from Rocky Mountain coals by low temperature carbonization: Utah Conservation and Research Foundation.

Salt Lake County.

Descriptors: Great Salt Lake; Emigration Canyon; smoke; atmosphere; polluted; soot; noxious vapors; bituminous coal; combustion; carbon; tars.

SAN JUAN


Descriptors: bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.

Averitt, P., 1964, Coal, in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.

Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.

Descriptors: Utah, mineral fuels; coal resources; rank; production; market; Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields; stratigraphy; structure; lithology.

San Juan County; San Juan Coal Field.

Descriptors: coal; economic geology; Colorado, Utah, New Mexico, and Arizona; Colorado Plateau; San Juan Basin; occurrence; sedimentation; shorelines; genesis; Cretaceous; Gallup Sandstone; Crevasse Canyon Formation; Menefee Formation; Fruitland Formation; Dakota Sandstone.


Kane and San Juan Counties.

Descriptors: Arizona; coal mining; fossil-fuel power plants; economic impact; social impact; comparative evaluations; education; electric power; energy source development; migrations; occupations; population dynamics; power generation; rural areas; socio-economic factors; surface mining; Utah.


San Juan County; La Sal Coal Field; La Sal Quadrangle.

Descriptors: geology; uranium; La Sal Quadrangle; San Juan County; vanadium; Salt Wash member; Jurassic; structure; plastic evaporite masses; laccolith complexes; salt anticlines; ore; discovery; lithology; paleostream channels; sedimentary structures; mines; exploration drilling; roll deposits; replacement bodies; localization of minerals; exploration guides; stratigraphy; low-rank bituminous coal; thin seams; Dakota Sandstone; Cretaceous; occurrence; Mitchell's coal mine; physical characteristics; ash; fusain; resin; peat; marcasite; coal beds of economic interest.


San Juan County; San Juan Coal Field.

Descriptors: quantitative studies; Bridge Creek flora; paleobotanist; climate; topography; sedimentation; volcanic shales; modern redwood forest; species list; description of fossil locality; relative abundance; comparison with modern environment and plants; correlation formula; statistics; error of prediction; dominance.


San Juan County; San Juan Coal Field.

Descriptors: San Juan County; mineral resources; coal; low-rank bituminous; Dakota Sandstone.


San Juan County; La Sal-San Juan Coal Fields.

Descriptors: La Sal-San Juan Coal Fields; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; maps.


Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry's Fork, and Lost Creek Coal Fields; Goose Creek Lignite Field.

Descriptors: Cretaceous; coal; lignite; economic geology; lithostratigraphy; Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry's Fork, and Lost Creek Coal Fields; Goose Creek Lignite Field; occurrence.


San Juan County.

Descriptors: botany; San Juan River watershed; coal mines; mining; environmental aspects; plant-soil relationships; land reclamation; soils; chemical analysis; Colorado, Utah, and New Mexico.


San Juan County; La Sal Coal Field.

Descriptors: San Juan County; geography; geology; reconnaissance surveys; physiography; water supply; stock ranching; mineral resources; sedimentary rock; igneous rocks; structure; Abajo Mountains; Comb anticline; maps; inhabitants; stratigraphy; sections; petrography; economic geology; copper; gold; vanadium-uranium; coal seams; Dakota Shales; bituminous; no deposits of large economic value; domestic value; ash; bone; characteristics of coal beds; coal sections; Rassmussen and Pendergraft mines; table of analyses.


San Juan County; San Juan Coal Field.

San Juan County; La Sal Coal Field.

Descriptors: structure; igneous geology; La Sal Mountains, laccolithic; stock; sedimentary rocks; salt anticlines; plastic deformation of salt beds; diorite porphyry; monzonite; hydrothermal activity; explosion breccias, volcanoes; magmatic sequence; stratigraphy; intrusive structures; origin and evolution of magmas; economic geology; hydrothermal metals; gold placer; uranium-vanadium; manganese; shaly coal; Dakota Sandstone.


Kane and San Juan Counties.

Descriptors: Kaiparowits basin; Black Mesa basin; stratigraphy; structure; geologic history; formations; depositional environment; isopach maps; diagrams.


San Juan County.

Descriptors: San Juan Canyon; southeastern Utah; water; geography; hydrographic study; climate; geology; structure; tributary streams; sediment load; transport; water supplies; tables; graphs; charts.


San Juan County.

Descriptors: lignites; plant beds; fossil flora; Cretaceous; angiosperms; San Juan Basin; molluscous and vertebrate remains; Utah, Colorado, and New Mexico; paleontology; age of strata; Europe; paleogeography; climate; vegetation.


San Juan County; San Juan and La Sal Coal Fields.

Peterson, F., and H. A. Waldrop, 1966, Preliminary geologic map and coal deposits of the southeast quarter of Gunsight Butte Quadrangle, Kane and San Juan Counties, Utah, and Coconino County, Arizona: Utah Geol. and Min. Surv., Map 24G.

Kane and San Juan Counties; Kaiparowits Plateau Coal Field; SE quarter Gunsight Butte Quadrangle.

Descriptors: coal; economic geology; maps; geologic; stratigraphy; Mesozoic; Quaternary.


San Juan County; San Juan Coal Field.

Descriptors: mining; production; history; reserve estimation; resources; coal production statistics; ore genesis; Utah.


Kane and San Juan Counties.

Descriptors: Arizona and Utah; coal mining; fossil-fuel power plants; economic impact; social impact; electric power; energy source development; environmental impact; power generation; regional analysis; rural areas; socio-economic factors.


Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties.

Descriptors: Utah; economic geology; mineral resources; fuel resources; exploration; Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties; production; Uinta Basin; Basin-and-Range Province; Wasatch Plateau; San Rafael Swell; asphalt; bitumens; organic materials; beryl; ring silicates; construction materials; coal; organic residues; metal ores; gems; uranium ores.


San Juan County; San Juan Coal Field.

Descriptors: coal; legislation; production; management; Utah.


San Juan, Kane, Emery, and Sanpete Counties; Kaiparowits Plateau, Wasatch Plateau, and San Juan Coal Fields.

Descriptors: economic geology; coal; Star Point Sandstone; Blackhawk Formation; organic residues; exploration; Montana, Wyoming, Utah, Colorado, Arizona, and New Mexico; coal fields; San Juan Basin; Powder River Basin; Wasatch Plateau; Kaiparowits Plateau; concepts; practice.


San Juan County; San Juan Coal Field.

Descriptors: coal; Cretaceous; economic geology; Fruitland Formation; Colorado, Utah, Arizona, and New Mexico; San Juan Basin; resources; depth; composition; production; gasification; liquefaction; possibilities; sedimentary rocks; regression.
Sanpete and Sevier Counties; Wasatch Plateau Coal Field; Heliotrope Mountain Quadrangle.
Descriptors: Utah; Sanpete and Sevier Counties; economic geology; coal; maps; organic residues; deposits; resources; economic geology maps; explanatory text; Heliotrope Mountain Quadrangle; USGS.

Sanpete and Emery Counties; Wasatch Plateau Coal Field; Joes Valley Reservoir Quadrangle.
Descriptors: Utah; Sanpete and Emery Counties; economic geology; coal; maps; organic residues; deposits; resources; economic geology maps; explanatory text; Joes Valley Reservoir Quadrangle; USGS.

Sanpete and Emery Counties; Wasatch Plateau Coal Field; Ferron Canyon Quadrangle.
Descriptors: economic geology; coal; maps; Sanpete and Emery Counties; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Ferron Canyon Quadrangle.

Sanpete, Sevier, and Emery Counties; Wasatch Plateau Coal Field; Flagstaff Peak Quadrangle.
Descriptors: economic geology; coal; maps; Sanpete, Emery, and Sevier Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Flagstaff Peak Quadrangle.

Emery, Carbon, and Sanpete Counties; Wasatch Plateau Coal Field; NE quarter of the Scofield 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Emery, Carbon and Sanpete Counties; coal resource occurrence; coal development potential maps; Jump Creek Quadrangle; physiography; climate; land status; stratigraphy; structure; coal geology; mining operations; in situ gasification; coal data map; columnar section.

Carbon, Emery, and Sanpete Counties; Wasatch Plateau Coal Field; SE quarter of the Scofield 15-min. Quadrangle.
Descriptors: coal resource occurrence; coal development potential maps; Emery, Carbon, and Sanpete Counties; Watts Quadrangle; climate; land status; stratigraphy; structure; coal geology; mining operations; in situ gasification; coal data map; columnar section.

Emery, Carbon, and Sanpete Counties; Wasatch Plateau Coal Field; SW quarter of the Scofield 15-min. Quadrangle.
Descriptors: economic geology; coal; maps; Emery, Carbon, and Sanpete Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Candland Mountain Quadrangle; coal resource occurrence; coal development potential; physiography; climate; land status; stratigraphy; structure; coal geology; mining operations; surface mining; in situ coal gasification; coal data map; composite columnar section.

Descriptors: coal; mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; maps; tables.


Descriptors: bituminous, subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.

Averitt, P., 1964, Coal in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.
Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.

Descriptors: Utah, mineral fuels; coal resources; rank; production; market; Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields; stratigraphy; structure; lithology.

Sanpete County; Sterling Coal Field.

Sevier and Sanpete Counties; Wasatch Plateau Coal Field.

Sevier and Sanpete Counties; Wasatch Plateau Coal Field.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Utah; well-logging; Cretaceous; coal; geophysical surveys; applications; Carbon, Emery, and Sevier Counties; Blackhawk Formation; Wasatch Plateau; stratigraphy; sedimentary rocks; sandstone; shale; deposits; exploration; geophysical methods; electrical; radioactivity; gamma ray; data.

Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: low temperature carbonization; light oils; tars; distillation; coke gas; Mesaverde coals; Book Cliffs; Wasatch Plateau; retort; yield; fractions; utilization; charts.

Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: low temperature carbonization; tar; composition; steam carbonization; tar fractions; oils; waxes; resin; chemical analyses; composition; heavy portion; Mesaverde coals; Book Cliffs; Wasatch Plateau; charts.

Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: geology; stratigraphy; Cretaceous; Wasatch Plateau and Book Cliffs Coal Fields; depositional environments; lithology; formations.

Carbon, Grand, and Sanpete Counties.

Descriptors: economic geology; coal; chemical analysis; calorific value; Carbon, Grand, and Sanpete Counties; lithologic descriptions; coal thickness; quality; reserves; tonnage; tables.


Descriptors: southwestern Utah; map of coal fields; estimate of coal reserves of different rank; heat efficiency; classification of coal areas; Vernal, Wasatch Plateau, Coalville, San Juan, Kaiparowits Plateau, Emery, and Kolob Coal Fields.
Sanpete County; Wales Coal Field.

Sanpete County; Wales Coal Field.

Descriptors: economic geology; coal; Wales Coal Field; Sanpete County; Thompson; stratigraphy; structure; lithologic descriptions; chemical analyses; estimated reserves; maps; tables.

Cohenour, R. E., 1966b, Appraisal of a proposed selection of coal lands in the Emery Coal Field of Emery and Sevier Counties, also appraisal of selected phosphate lands in Rich and Uintah Counties, Utah: Utah Geol. and Min. Surv., Rept. Inv., No. 28, 11 p., maps.
Emery, Sevier, Rich, and Uintah Counties.

Sanpete and Sevier Counties; Wasatch Plateau and Salina Canyon Coal Fields.

Book Cliffs and Wasatch Plateau Coal Fields.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Book Cliffs.

Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: Utah; Cretaceous; paleoecology; palynomorphs; sedimentary rocks; stratigraphy; organic residues; Ferron Sandstone Member; Mancos Shale; Blackhawk Formation; Price River Formation; biostratigraphy; Book Cliffs; Wasatch Plateau; coal; bogs; marshes; lagoons; swamps; genesis; assemblages; angiosperms; environmental analysis; indicators.

Sanpete and Iron Counties; Cedar City and Kanara (Kolob-Harmony) Coal Fields.

Descriptors: analyses; caloric values; Cedar City and Kanara (Kolob-Harmony) Coal Fields; iron deposits; Cretaceous; Tertiary; description of mines and coal beds; coal sections; Grass Creek mine; Pleasant Valley; Sanpete and Iron Counties.

Davis, F. D., and H. H. Doelling, 1976, Drilling of low sulfur bituminous coals in several areas of the Wasatch Plateau Coal Field: Utah Geol. and Min. Surv., Open-File Rept., No. 17, 71 p., maps, logs.
Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Wasatch Plateau coal drilling; stratigraphy; structure; lithologic descriptions; lithologic logs; coal zone descriptions; maps.

Wasatch Plateau Coal Field.

Descriptors: Ferron Sandstone; stratigraphy; Wasatch Plateau; measured sections; cores; natural gas exploration; descriptions of formations; depositional environment; paleogeography.

Sevier, Carbon, Emery, and Sanpete Counties; Wasatch Plateau, Book Cliffs, and Emery Coal Fields.

Descriptors: coal; economic geology; Sevier, Carbon, Emery, and Sanpete Counties; Wasatch Plateau, Book Cliffs, and Emery Coal Fields; central reserves; production; chemical properties.

Sevier and Sanpete Counties; Salina Canyon, Sterling and Wasatch Plateau Coal Fields.

Descriptors: Utah; coal; economic geology; Sevier, Sanpete, Wasatch Plateau; occurrence; stratigraphy; quality; production; reserves; mines.

Wales, Mt Pleasant, Sterling, and Salina Canyon Coal Fields.

Descriptors: Sevier-Sanpete Region; Wales, Mt Pleasant, Sterling, and Salina Canyon Coal Fields; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; maps.

Doelling, H. H., 1972d, Wasatch Plateau Coal Field, in
Central Utah coal fields: Utah Geol. and Min. Surv., Mon. Ser., No. 3, p. 59-244.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Wasatch Plateau Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; quadrangle reports; land control; maps.


Book Cliffs, Wasatch Plateau, Emery, Sego, Kaiparowits Plateau, and Alton Coal Fields.

Descriptors: Utah coals; methane content; gas composition; coal analysis; Book Cliffs, Wasatch Plateau, Emery, Sego, Kaiparowits Plateau and Alton Coal Fields; Sunnyside coal zone; physical properties; depositional environment; maps.


Emery and Sanpete Counties; Wasatch Plateau Coal Field; Rilda Canyon Quadrangle.

Descriptors: well logging; economic geology; coal; Emery and Sanpete Counties; Rilda Canyon Quadrangle; Wasatch Plateau; organic residues; coal fields; sections; USGS.


Sanpete County; Wasatch Plateau Coal Field.


Sanpete County; Wasatch Plateau Coal Field.


Sanpete and Emery Counties; Wasatch Plateau Coal Field; Ferron Canyon Quadrangle.

Descriptors: Utah; economic geology; coal; maps; Sanpete County; Emery County; USGS; Ferron Canyon Quadrangle; sections; geologic maps; organic residues.


Iron and Sanpete Counties; Kolob and Wales Coal Fields.

Descriptors: brown coals; Reese’s mine; railroads; Cretaceous; physical properties; lignites; chemical characteristics; coke; ash; fixed carbon; Coal Creek; Cedar City; sand-coal; gas-producer; gaseous fuel; experiments; tests; coking; stone-coal; Appolt vertical oven; tar; briquettes; moisture.


Carbon, Emery, Grand, Morgan, Sanpete, and Summit Counties.

Descriptors: coal analyses; mine samples; car samples; fiscal year; proximate and ultimate analyses; Carbon, Emery, Grand, Morgan, Sanpete, and Summit Counties; lithologic descriptions; tables.


Descriptors: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.


Wasatch Plateau Coal Field.

Descriptors: sedimentary rocks; Utah; sedimentation; Wyoming; environmental analysis; sedimentary petrology; deposition; models; Tongue River Member; Fort Union Formation; Star Point Formation; coal; organic residues; Tertiary; Cenozoic; Cretaceous; Mesozoic; Powder River Basin; Wasatch Plateau; thickness; environment; deltas; alluvial plains; economic geology; coal fields.


Wasatch Plateau Coal Field.

Descriptors: western interior; sedimentation; economic geology; deposition; ichnofossils; occurrence; coal; models; Tongue River Member; Fort Union Formation; Blackhawk Formation; Fruitland Formation; Vermejo Formation; Almond Formation; Rock Springs Uplift; Pictured Cliffs

Sanpete County; Sterling Coal Field; Gunnison Quadrangle.


Sanpete and Sevier Counties.


Sanpete and Sevier Counties.


Sanpete County; Sterling Coal Field.

Descriptors: Gunnison Plateau; geologic features; topography; drainage; stratigraphic section; lithologic units; structure; geologic history; description; correlation; maps; tables.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: ashes; chemical analysis; coal; chemical composition; emission spectroscopy; coal deposits; experimental data; geology; maps; Utah.


Emery, Sanpete, and Sevier Counties; Wasatch Plateau Coal Field; Wasatch Plateau, and Flagstaff Peak Quadrangles.


Descriptors: geology; mineral resources; engineering geology characteristics; environmental geochemistry; east-central Utah; coal development; stratigraphy; Henry Mountains, Emery, Wasatch Plateau, Book Cliffs, and Sego Coal Fields; coal quality and composition; oil and gas; non-petroleum gases; oil shale; bituminous sandstone; uranium; base metals; clays; underground coal mining; coal mine subsidence; earthquakes; maps; stratigraphic correlations.

Howard, J. D., 1966a, Characteristic trace fossils in Upper Cretaceous sandstones of the Book Cliffs and

Sanpete, Sevier, Carbon, Emery, and Grand Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Book Cliffs and Wasatch Plateau Coal Fields; sandstones; characteristic trace fossils; upper Cretaceous; descriptions of trace fossils; depositional environment; facies fauna; subdivisions of wave and energy; in situ, ethological classification; bedding planes.


Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: nearshore depositional environments; Cretaceous; Book Cliffs and Wasatch Plateau Coal Fields; lithology; sedimentary structures; geometry; trace fossils assemblages; bar; backbar; longshore bar; forebar; marine transgression; erosional surface.

Howard, J. D., 1969, Depositional control of Upper Cretaceous coal units: Mt. Geol. 6:3: Guidebook issue, Raton Basin, Colorado and New Mexico, Sept. 3-6, p. 143-146.

Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Coal; Utah and Colorado; Cretaceous; Economic geology; Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields; deposits; genesis; controls; environment; lagoons; barrier islands; sedimentary rocks.


Sanpete County; Sterling Coal Field.


Sanpete County; Wales Coal Field.


Kane, Sanpete, Sevier, Iron, Wasatch, and Summit Counties; Coalville, Pleasant Valley, Sanpete, and Castle Valley Coal Fields.

Descriptors: precious metal mining; ore analyses; descriptions of mines by district; production methods; coal fields; Kane, Sanpete, Sevier, Iron, Wasatch, and Summit Counties; Coalville, Pleasant Valley, Sanpete, and Castle Valley Coal Fields; coal sections; coal analyses.

Jackson, D., 1982, E-seam mine to be West’s largest: Coal Age Vol. 87, No. 3, p. 88-91, 93.

Carbon and Sanpete Counties; Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: Utah; economic geology; coal; Sanpete and Carbon Counties; Eccles Canyon; Scofield; Skyline Project; organic residues; production; economics; mining.


Wasatch Plateau Coal Field.

Descriptors: short contact time thermal reactions; tetralin; bituminous coal; hydrogen atmosphere; nature of reaction; mechanisms; labile functional structures; hydrogen transfer reactions; kinetics; infrared spectra; extracts; phenolic OH; carboxylic ether; sheltered quinoid carbonyl; coals; Hiawatha; Kentucky ff 14; stabilization; yield; kinetic data; kinetic model.


Carbon and Sanpete Counties; Wasatch Plateau and Salina Canyon Coal Fields.

Descriptors: source direction; Ferron Sandstone; Clear Creek Gas Field; Carbon County; Cretaceous stratigraphy; Mancos Shale; shoreline; paleo-geographic map; marine basin; peninsula-like accumulation of sand in shallow parts; Castle Valley; Manti; Allen Valley shale; diagnostic ammonite; correlation; cross-bedding analysis; coal; faunal zones; fluvial; Wasatch Plateau and Salina Canyon Coal Fields; central Utah.


Sanpete, Sevier, Carbon, Garfield, Kane, and Emery Counties; Book Cliffs, Henry Mountains, and Wasatch Plateau Coal Fields.

Descriptors: Wasatch Plateau; stratigraphy; Cretaceous; Tertiary; correlation; facies; sequences; San Rafael Swell; Kaiparowits Plateau; Henry Mountains; Book Cliffs; depositional environment; formation renaming; fossil evidence; formation dating.

Emery and Sanpete Counties; Wasatch Plateau Coal Field.

Sanpete and Emery Counties.

Sevier, Sanpete, Carbon, Emery, and Grand Counties; Emery, Wasatch Plateau, Book Cliffs and Sego Coal Fields.

Descriptors: Emery, Wasatch Plateau, Book Cliffs and Sego Coal Fields; Sevier, Sanpete, Carbon, Emery, and Grand Counties; Wasatch Plateau; Castle Valley; Book Cliffs; geology; sections; Mancos Shale; Mesaverde Formation; Wasatch Formation; lithology; description of coal; mining; engineering; production; transportation; descriptions of mines by company; analyses of coals.

Sevier, Sanpete, Carbon, Emery, and Grand Counties; Emery, Wasatch Plateau, Book Cliffs and Sego Coal Fields.

Descriptors: Emery, Wasatch Plateau, Book Cliffs and Sego Coal Fields; Sevier, Sanpete, Carbon, Emery, and Grand Counties; Wasatch Plateau; Castle Valley; Book Cliffs; geology; sections; Mancos Shale; Mesaverde Formation; Wasatch Formation; lithology; description of coal; mining; engineering; production; transportation; descriptions of mines by company; analyses of coals.

Emery, Sanpete, and Sevier Counties; Emery and Wasatch Plateau Coal Fields; Emery West and Flagstaff Peak Quadrangles.

Sanpete, Sevier, Carbon, and Emery Counties; Emery and Wasatch Plateau Coal Fields.

Descriptors: sedimentation; sedimentary rocks; stratigraphy; environment; lithofacies; Cretaceous; coastal environment; environmental analysis; Blackhawk Formation; Star Point Sandstone; Emery and Wasatch Plateau Coal Fields; Mesozoic; lithostratigraphy; sandstone; clastic rocks; fine-grained materials; deltas; floodplains; channels; coal; organic residue; brackish-water environment; paleoenvironment.

Sanpete, Sevier, and Emery Counties; Wasatch Plateau Coal Field; Ferron Canyon, Ferron, The Cap, Flagstaff Peak, and Mahogany Point Quadrangles.

Sanpete County; Wasatch Plateau Coal Field; Fairview Lakes Quadrangle.

Oberhansley, G. G., 1980b, Geology of the Fairview Lakes Quadrangle, Sanpete County, Utah: Brigham Young University Geology Studies, No. 27, part 3, p. 73-95.
Sanpete County; Wasatch Plateau Coal Field; Fairview Lakes Quadrangle.

Descriptors: Utah; faults; geomorphology; areal geology; systems; fluvial features; stratigraphy; maps; grabens; drainage patterns; lithostratigraphy; Sanpete County; Blackhawk Formation; Castlegate Sandstone; Price River Formation; Flagstaff Limestone; geologic maps; Fairview Lakes Quadrangle; Cretaceous; Mesozoic; Tertiary; Cenozoic; glaciation; economic geology; coal; organic residues; fuel resources; petroleum; natural gas; construction materials; water resources; structure contour maps; Goniobasis tenera; Lioplacodes marian.

Pashley, E. F., 1956, The geology of the western slope of the Wasatch Plateau between Spring City and Fairview, Utah: M.S. thesis, Ohio State Univ.
Sanpete County; Wasatch Plateau Coal Field.

Sanpete County; Mt. Pleasant-Fairview Coal Field.

Sanpete County; Wales Coal Field.

Sanpete County.

Descriptors: economic geology; mineral resources; Sanpete County; coal; lignite; Gunnison Plateau; Milburn Lignite Field; stratigraphy; prospects mining.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.


Descriptors: western coals; carbonizing properties; physical properties; rank; lower Sunnyside; Carbon, Emery, Iron, Kane, Sanpete, Sevier, and Washington Counties; chemical analyses; sulfur content; tables.


Descriptors: coal; location; thickness; quality; physical properties; chemical analysis; geology; stratigraphy; Sanpete County; Wasatch Plateau; tables.


Descriptors: Cretaceous; east-central Utah; facies change; cyclic sedimentation; intertonguing marine and nonmarine coal-bearing sediments; continental; littoral; marine; depositional environment; field trip; Price River; North Horn and Blackhawk Formations; Sunnyside mine; recent work in the area; local geologic history.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Emery Coal Fields.

Descriptors: sedimentation; economic geology; environment; coal; deltas; organic residues; deposits; Emery; Wasatch Plateau; Cretaceous.


Sevier County; Wasatch Plateau Coal Field; Emery West, Flagstaff Peak, and Acord Lakes quadrangles.

Descriptors: well-logging; economic geology; interpretation; coal; lithology; Sevier County; Wasatch Plateau; Emery West, Flagstaff Peak, and Acord Lakes quadrangles; organic residues; deposits; boreholes; coal fields.


Descriptors: Utah; economic geology; stratigraphy; coal; Cretaceous; Star Point Sandstone; Blackhawk Formation; Mesozoic; organic residues.


Emery, Sanpete, and Sevier Counties; Wasatch Plateau Coal Field; Flagstaff Peak Quadrangle.

Descriptors: economic geology; coal; maps; Emery, Sanpete, and Sevier Counties; Flagstaff Peak Quadrangle; organic residues; deposits; economic geology maps; geologic maps.


Juab, Utah, and Sanpete Counties.

Descriptors: Cedar Hills; Sanpete, Juab, and Utah Counties; geology; physiography; stratigraphy; lithologic descriptions; structure; orogenic episodes; Cretaceous; Tertiary.


Descriptors: White Clay Creek coal; Sanpete County; bituminous coal; Weber River; Cedar City coal; history of exploration; meterological observations; table of distances and altitude of routes; magnetic observations; railroad routes; geologic report; economical geology; stratigraphy; structure; lithology; lignite; formations; agriculture; building materials; fossils; paleontological collections; ornithology; ichthyology; botany; Indians; languages; population and resources of eastern Utah.


Book Cliffs, Sego, Emery, and Wasatch Plateau Coal Fields.

Descriptors: Book Cliffs, Sego, Emery, and Wasatch Plateau Coal Fields; drill core samples; methane content of coal; methane extraction; coal analysis; coal beds; tables.


Sanpete, Sevier, and Emery Counties; Wasatch Plateau Coal Field.
Descriptors: Sanpete, Sevier, and Emery Counties; drill holes; Blackhawk Formation; coal beds; stratigraphy; structure; methane content of coal; methane extraction; coal analysis; high volatile C bituminous; illustrations; tables; appendices.

Sanpete, Sevier, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.

Sanpete and Sevier Counties.
Descriptors: Manti-Salina area; structure; Wasatch Plateau Coal Field; central Utah; geography; sequence of tectonic events; folding; compression; angular unconformity; normal faulting; monocline; transverse faults; fresh rifts and scarps; surface phenomena; tilted fault block.

Carbon, Sanpete, Emery, and Sevier Counties; Wasatch Plateau Coal Field.
Descriptors: coal fields; Wasatch Plateau; history; geography; physiography; geology; stratigraphy; structure; altitude; coal; distribution; physical properties; chemical analysis; coking quality; geographic subdivisions; lithologic descriptions; reserves; tonnage; charts; maps; tables.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.
Descriptors: Wasatch Plateau; Cretaceous; Tertiary; location; physiography; structure; Mancos Shale; Mesaverde Group; lithology; depositional environment; paleogeography.

Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties.
Descriptors: Utah; economic geology; mineral resources; fuel resources; exploration; Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties; production; Uinta Basin; Basin-and-Range Province; Wasatch Plateau; San Rafael Swell; asphalt; bitumens; organic materials; beryl; ring silicates; construction materials; coal; organic residues; metal ores; gems; uranium ores.

Sanpete, Emery, and Grand Counties; Wasatch Plateau, Book Cliffs, and Sego Coal Fields.
Descriptors: ground water; economic geology; surveys; coal; Sanpete, Emery, and Grand Counties; Wasatch Plateau; Book Cliffs; organic residues; deposits.

Sanpete County; Wales Coal Field.

Thompson, K. C., 1970, Coal data, Sterling and Wales, Sanpete County, Utah: Utah Geol. and Min. Surv., unpubl. data.
Sanpete County; Sterling and Wales Coal Fields.

Sanpete County; Wasatch Plateau Coal Field.

Grand, Wayne, Emery, Sanpete, and Sevier Counties.
Descriptors: environmental geology; impact statements; maps; Grand, Wayne, Emery, Sanpete, and Sevier Counties; environmental geology maps; coal; organic residues.

Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties.
Descriptors: high temperature carbonization; low temperature carbonization; smoke elimination; technology; products; problems; industry status; Utah coals; types; producing Counties; geology; physical properties; chemical analyses; coking capabilities; coking constituents; briquetting; semi-coke; laboratory investigations; properties; rank; test results; products; tars; gases; oils; blends; reactions; Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties; tables.
Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Emery Coal Field.
Descriptors: economic geology; maps; coal; organic residues; Wasatch Plateau and Emery Coal Field.

Sanpete, Sevier, Carbon, and Emery Counties; Kaiparowits Plateau, Wasatch Plateau, and San Juan Coal Fields.
Descriptors: economic geology; coal; Star Point Sandstone; Blackhawk Formation; organic residues; exploration; Montana, Wyoming, Utah, Colorado, Arizona, and New Mexico; coal fields; San Juan Basin; Powder River Basin; Wasatch Plateau; Kaiparowits Plateau; concepts; practice.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Book Cliffs Coal Fields.
Descriptors: Utah; hydrology; hydrogeology; surveys; USGS; Wasatch Plateau and Book Cliffs Coal Fields; coal; organic residues; ground water; surface water; dissolved materials; hydrographs; maps.

Sanpete, Emery, and Grand Counties; Wasatch Plateau and Book Cliffs Coal Fields.
Descriptors: hydrology; hydrogeology; surveys; Sanpete, Emery, and Grand Counties; Wasatch Plateau and Book Cliffs Coal Fields; coal; organic residues; deposits; coal fields; water resources.

Carbon, Emery, Sanpete, Sevier Counties; Wasatch Plateau, Book Cliffs Coal Fields.

Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties.
Descriptors: coals; sulfur content; pyritic; organic; sulfate; chemical analysis; rank; sample site; mines; Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties; tables.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.
Descriptors: Wasatch Plateau gas fields; Clear Creek; further exploratory drilling; structure; Cretaceous; Paleocene; sedimentary strata; history; coal deposits; stratigraphy; structure map; composite log- self-potential and resistivity; age of faults and folding; cross-section; causes and time of gas accumulation; Ferron Sandstone; depositional environment; Flat Canyon; Gordon Creek; producing formations.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.
Descriptors: Wasatch Plateau gas fields; exploration activity; stratigraphy; formations; lithologic log; geophysical log; stratigraphic correlation; structure; causes; age; structural traps; stratigraphic traps; hydrocarbon accumulation; gas analysis; production; drilling practices; charts; diagrams.

Carbon, Wasatch, Utah, Sanpete, Duchesne, and Uintah Counties.
Descriptors: Cretaceous; Paleocene; conglomerates; margin of Uinta Basin; age and correlation; outcrop map; Uintah, Carbon, Duchesne, Sanpete, Utah, and Wasatch Counties; geologic cross-sections; stratigraphy; structure.

Wilson, M. D., 1949, Geology of upper Sixmile Canyon area, central Utah: M.S. thesis, Ohio State Univ. Sanpete County; Sterling Coal Field.


Descriptors: coal mining; history; southern Utah coal fields; Sanpete, Carbon, Iron, and Kane Counties; Union Pacific railroad; mine explosions.

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AAA Engineering and Drafting, Inc., 1979a, Coal resources of the Heliotrope Mountain Quadrangle, Sanpete and Sevier Counties, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-1006, 20 p. Sanpete and Sevier Counties; Wasatch Plateau Coal Field; Heliotrope Mountain Quadrangle. Descriptors: Utah; Sanpete and Sevier Counties; economic geology; coal; maps; organic residues; deposits; resources; economic geology maps; explanatory text; Heliotrope Mountain Quadrangle; USGS.

AAA Engineering and Drafting, Inc., 1979b, Coal resources of the Heliotrope Mountain Quadrangle, Sevier County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-1014, 19 p. Sevier County; Salina Canyon Coal Field; Hilgard Mountain Quadrangle. Descriptors: coal; Sevier County; technical production management; reserve estimation; materials distribution maps and surveys; Utah.

AAA Engineering and Drafting, Inc., 1979c, Coal resources of the Walker Flat Quadrangle, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-1013, 21 p. Sevier and Emery Counties; Emery Coal Field; Walker Flat Quadrangle. Descriptors: Utah; economic geology; coal; maps; Sevier and Emery Counties; organic residues; deposits; resources; economic geology maps; explanatory text; Walker Flat Quadrangle; USGS.

AAA Engineering and Drafting, Inc., 1979d, Coal resources of the Water Hollow Ridge Quadrangle, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-1008, 20 p. Sevier County; Wasatch Plateau Coal Field; Water Hollow Ridge Quadrangle. Descriptors: economic geology; coal; maps; Sevier County; organic residues; deposits; resources; economic geology maps; explanatory text; Water Hollow Ridge Quadrangle.

AAA Engineering and Drafting, Inc., 1979e, Coal resources of the Yogo Creek Quadrangle, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-1011, 20 p. Sevier County; Salina Canyon Coal Field; Yogo Creek Quadrangle. Descriptors: economic geology; coal; maps; Sevier County; organic residues; deposits; resources; economic geology maps; explanatory text; Yogo Creek Quadrangle.

AAA Engineering and Drafting, Inc., 1979f, Coal resource occurrence and coal development potential maps of the Acord Lakes Quadrangle, Sevier County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-1009, 24 p. Sevier County; Wasatch Plateau Coal Field; Acord Lakes Quadrangle. Descriptors: economic geology; coal; maps; Sevier County; organic residues; deposits; resources; explanatory text; economic geology maps; Acord Lakes Quadrangle.

AAA Engineering and Drafting, Inc., 1979g, Coal resource occurrence and coal development potential maps of the Emery West Quadrangle, Sevier and Emery Counties, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-1010, 23 p. Sevier and Emery Counties; Emery Coal Field; Emery West Quadrangle. Descriptors: economic geology; coal; maps; Sevier and Emery Counties; organic residues; deposits; resources; economic geology maps; explanatory text; Emery West Quadrangle.

AAA Engineering and Drafting, Inc., 1979h, Coal resource occurrence and coal development potential maps of the Flagstaff Peak Quadrangle, Sanpete, Sevier and Emery Counties, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-1007, 19 p. Sanpete, Sevier, and Emery Counties; Wasatch Plateau Coal Field; Flagstaff Peak Quadrangle. Descriptors: economic geology; coal; maps; Sanpete, Emery, and Sevier Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Flagstaff Peak Quadrangle.

AAA Engineering and Drafting, Inc., 1979i, Coal resource occurrence and coal development potential maps of the John’s Peak Quadrangle, Sevier County,

Henry’s Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.

Descriptive: Utah, economic geology; coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.


Descriptors: bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.


Emery and Sevier; Emery and Wasatch Quadrangles; data; Wasatch Plateau; Emery Coal Field; coal; organic residues; exploration.


Sevier County; Johns Peak Quadrangle; organic residues; deposits; geologic maps; sections.

Blanchard, L. F., E. G. Ellis and J. V. Roberts, 1977, Lithologic and geophysical logs of holes drilled in the

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Utah; well-logging; Cretaceous; coal; geophysical surveys; applications; Carbon County; Emery County; Sevier County; Blackhawk Formation; Wasatch Plateau; stratigraphy; sedimentary rocks; sandstone; shale; deposits; exploration; geophysical methods; electrical; radioactivity; gamma ray; data.


Sevier County; Wasatch Plateau Coal Field; Old Woman Plateau Quadrangle.

Descriptors: well-logging; interpretation; geophysical surveys; general; boreholes; Sevier County; Old Woman Plateau; Wasatch Plateau Coal Field; lithostratigraphy; coal; organic residues; deposits.


Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: low temperature carbonization; light oils; tars; distillation; coke gas; Mesaverde coals; Book Cliffs; Wasatch Plateau; retort; yield; fractions; utilization; charts.


Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: low temperature carbonization; tar; composition; steam carbonization; tar fractions; oils; waxes; resin; chemical analyses; composition; heavy portion; Mesaverde coals; Book Cliffs; Wasatch Plateau; charts.


Sevier and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: sedimentation; stratigraphy; economic geology; environment; Cretaceous; coal; deltas; Sanpete County; Mesaverde Group; Star Point Sandstone; Blackhawk Formation; Price River Formation; Castlegate Sandstone; Wasatch Plateau; Mesozoic; organic residues; deposits; production; chemical properties; coal seams; thickness; marine environment; shallow-water environment; sandstone; clastic rocks.


Emery and Sevier Counties; Wasatch Plateau and Salina Canyon Coal Fields.


Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: geology; stratigraphy; Cretaceous; Wasatch Plateau and Book Cliffs Coal Fields; depositional environments; lithology; formations.


Descriptors: southwestern Utah; map of coal fields; estimate of coal reserves of different rank; heat efficiency; classification of coal areas; Vernal, Wasatch Plateau, Coalville, San Juan, Kaiparowits Plateau, Emery, and Kolob Coal Fields.


Emery, Sevier, Rich, and Uintah Counties.


Sevier and Emery Counties; Salina Canyon and Wasatch Plateau Coal Fields.

Descriptors: resin-bearing coals; Salina Canyon; Huntington Canyon; Cretaceous plants; lump resin; Byron Howard mine; bug dust; American Fuel mine; Ivie bed; Sevier bed; Wilson bed; tables; comparisons.

Crawford, A. L., and A. M. Buranek, 1943, The resinous-bearing coals of Salina and Huntington canyons,

Book Cliffs and Wasatch Plateau Coal Fields.

Cross, A. T., and H. H. Doelling, 1972, Suggestion for state coal land as part of lieu land exchange in Sevier and Sanpete Counties; Emery and Sanpete Counties; central Utah coal fields: Utah Geol. and Min. Surv., Mon. Ser., No. 3, p. 59-244.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Wasatch Plateau Coal Field; location; geography; physical properties; production; reserves; chemical analysis; land control; geology; Sevier; Carbon; Emery; Sanpete Counties; Wasatch Plateau.


Descriptors: Emery County; Emery Coal Field; location; geology; physical properties; production; reserves; chemical analysis; land control; stratigraphic descriptions; quadrangle reports; paleogeography; paleoenvironments.

Wales, Mt Pleasant, Sterling, and Salina Canyon Coal Fields.

Descriptors: Sevier-Sanpete Region; location; geology; physiography; stratigraphy; lithologic properties; land control; chemical analysis; reserves; exploration; production; coal deposits; mining; paleoecology; palynology; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; maps.

Utah Geological and Mineral Survey, Bulletin 120, 1984

Emery and Sevier Counties; Emery Coal Field.

**Descriptors**: Emery Coal Field; state coal land acquisition; coal resources; coal quality; resource evaluation; chemical analysis; recoverable reserves.


Book Cliffs, Wasatch Plateau, Emery, Sego, Kaiparowits Plateau, and Alton Coal Fields.

**Descriptors**: Utah coals; methane content; gas composition; coal analysis; Book Cliffs, Wasatch Plateau, Emery, Sego, Kaiparowits Plateau and Alton Coal Fields; Sunnyside coal zone; physical properties; depositional environment; maps.


Carbon, Emery, and Sevier Counties; Wasatch Plateau Coal Field.

**Descriptors**: coal deposits; ash; chemical composition; coal; degassing; leading abstract; methane; quantity ratio; core samples; coal fields; gas content; direct methods; High Volatile A or B rank; lower ranked coals; coal desorption; outcrops; mined areas; encasing rock; Book Cliffs; aeromagnetic contours; Wasatch Plateau.


Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry’s Fork, and Lost Creek Coal Fields; Goose Creek Lignite Field.

**Descriptors**: Cretaceous; coal; lignite; economic geology; lithostratigraphy; Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry’s Fork, and Lost Creek Coal Fields; Goose Creek Lignite Field; occurrence.


Sevier and Emery Counties; Emery Coal Field; Willow Springs Quadrangle.


Carbon, Emery, Sevier, Summit, Uintah, and Wasatch Counties.

**Descriptors**: sampling and analytical methods; car samples; mine sampling; determination of ash, moisture, Volatiles, carbon, sulfur, hydrogen, nitrogen and calorific values; proximate and ultimate analyses; descriptions of samples; Carbon, Emery, Sevier, Summit, Uintah, and Wasatch Counties; Hiawatha, Knight, Sunnyside, Browning, Casper, Williams, Hogan, Kearns and Duggins, Rees-Grass, Superior, Wasatch, Blue Bell, Green, Reynolds, Winchester, and Cummings mines.; sections.


**Descriptors**: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields.


Wasatch Plateau Coal Field.

**Descriptors**: sedimentary rocks; Utah; sedimentation; Wyoming; environmental analysis; sedimentary petrology; deposition; models; Tongue River Member; Fort Union Formation; Star Point Formation; coal; organic residues; Tertiary; Cenozoic; Cretaceous; Mesozoic; Powder River Basin; Wasatch Plateau; thickness; environment; deltas; alluvial plains; economic geology; coal fields.


Wasatch Plateau Coal Field.

**Descriptors**: western interior; sedimentation; economic geology; deposition; ichnofossils; occurrence; coal; models; Tongue River Member; Fort Union Formation; Blackhawk Formation; Fruita­land Formation; Vermejo Formation; Almond Formation; Rock Springs Uplift; Pictured Cliffs Sandstone; Montana, Wyoming, Utah, Colorado, and New Mexico; Tertiary; Mesozoic; Cretaceous; organic residues; lithostratigraphy; environment; Powder River Basin; Wasatch Plateau; San Juan Basin; Raton Basin; deltas; deposits; coastal
environment; terrestrial environment; Ophiomorpha.


Sevier and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: sedimentary rocks; stratigraphy; economic geology; lithostratigraphy; Cretaceous; coal; Star Point Sandstone; Blackhawk Formation; Wasatch Plateau; Mesozoic; organic residues; deposits; coal seams; correlation; sandstone; clastic rocks.


Sevier, Sanpete, Emery, and Carbon Counties; Wasatch Plateau Coal Field.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: faults; sedimentation; economic geology; displacements; environment; coal; normal faults; paleochannels; Sevier County; Blackhawk Formation; Star Point Sandstone; Mancos Shale; Ferron Sandstone Member; organic residues; Wasatch Plateau; Johns Peak Quadrangle; Emery; Last Chance Creek; Upper Last Chance Creek.


Sanpete and Sevier Counties.


Sevier County; Salina Canyon Coal Field; Salina Quadrangle.

Descriptors: maps; areal geology; Salina Quadrangle; geologic; coal; thickness; overburden.


Sevier, Emery, and Wayne Counties.


Sanpete and Sevier Counties.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: ashes; chemical analysis; coal; chemical composition; emission spectroscopy; coal deposits; experimental data; geology; maps; Utah.


Emery and Sevier Counties; Emery and Wasatch Plateau Coal Fields; Emery West Quadrangle.


Emery, Sanpete, and Sevier Counties; Wasatch Plateau Coal Field; Flagstaff Peak Quadrangles.

Hayes, P. T., and J. D. Sanchez, 1979, Geologic map and coal resources of the Emery West Quadrangle, Emery and Sevier Counties, Utah: U.S. Geol. Surv., Coal Inv., Map C-82, 2 sheets.

Emery and Sevier Counties; Emery Coal Field; Emery West Quadrangle.

Descriptors: economic geology; coal; maps; Emery County; Sevier County; Emery West Quadrangle; geologic maps; economic geology maps; organic residues; deposits; resources.


Descriptors: geology; mineral resources; engineering geology characteristics; environmental geochemistry; east-central Utah; coal development; stratigraphy; Henry Mountains, Emery, Wasatch Plateau, Book Cliffs, and Sego Coal Fields; coal quality and composition; oil and gas; non-petroleum gases; oil shale; bituminous sandstone; uranium; base metals; clays; underground coal mining; coal mine subsidence; earthquakes; maps; stratigraphic correlations.

Sanpete, Sevier, Carbon, Emery, and Grand Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Book Cliffs and Wasatch Plateau Coal Fields; sandstones; characteristic trace fossils; Upper Cretaceous; descriptions of trace fossils; depositional environment; facies fauna; subdivisions of wave and energy; in situ, ethological classification; bedding planes.


Book Cliffs and Wasatch Plateau Coal Fields.

Descriptors: nearshore depositional environments; Cretaceous; Book Cliffs and Wasatch Plateau Coal Fields; lithology; sedimentary structures; geometry; trace fossils assemblages; bar; background; longshore bar; forebar; marine transgression; erosional surface.

Howard, J. D., 1966c, Sedimentation of the Panther Sandstone Tongue, in Central Utah coals: Utah Geol. and Min. Surv., Bull., No. 80, p. 23-33, plus 1 folded plate.

Book Cliffs Coal Field.

Descriptors: coal; geology; Star Point Formation; Panther tongue; Book Cliffs; stratigraphy; lithology; facies; depositional environment interpretation; tables.


Descriptors: mineral industry; production value; copper; silver; vanadium; iron; uranium; lead; zinc; gold; molybdenum; mineral fuels; coal; manufacturing steel; nonmetals; employment and injuries; legislation and government programs; review by mineral commodities; coal tonnage; Sunnyside, Columbia, Geneva, Castle Gate, Clear Creek, Kenilworth, O'Connor, and King mines; Carbon, Emery, Iron, Sevier, and Summit Counties.


Kane, Sanpete, Sevier, Iron, Wasatch, and Summit Counties; Coalville, Pleasant Valley, Sanpete, and Castle Valley Coal Fields.

Descriptors: precious metal mining; ore analyses; descriptions of mines by district; production methods; coal fields; Kane, Sanpete, Sevier, Iron, Wasatch, and Summit Counties; Coalville, Pleasant Valley, Sanpete, and Castle Valley Coal Fields; coal sections; coal analyses.


Wasatch Plateau Coal Field.

Descriptors: short contact time thermal reactions; tetraim; bituminous coal; hydrogen atmosphere; nature of reaction; mechanisms; labile functional structures; hydrogen transfer reactions; kinetics; infrared spectra; extracts; phenolic OH; carbonyl; ether; chelated quinoid carbonyl; coals; Hiawatha; Kentucky ff 14; stabilization; yield; kinetic data; kinetic model.


Sanpete, Sevier, Carbon, Garfield, Kane, and Emery Counties; Book Cliffs, Henry Mountains, and Wasatch Plateau Coal Fields.

Descriptors: Wasatch Plateau; stratigraphy; Cretaceous; Tertiary; correlation; facies; sequences; San Rafael Swell; Kaiparowits Plateau; Henry Mountains; Book Cliffs; depositional environment; formation renaming; fossil evidence; formation dating.


Descriptors: Emery, Wasatch Plateau, Book Cliffs and Sego Coal Fields; Sevier, Sanpete, Carbon, Emery, and Grand Counties; Wasatch Plateau; Castle Valley; Book Cliffs; geology; sections; Mancos Shale; Mesaverde Formation; Wasatch Formation; lithology; description of coal; mining; engineering; production; transportation; descriptions of mines by company; analyses of coals.


Sevier, Sanpete, Carbon, Emery, and Grand Counties; Emery, Wasatch Plateau, Book Cliffs and Sego Coal Fields.

Descriptors: Emery, Wasatch Plateau, Book Cliffs and Sego Coal Fields; Sevier, Sanpete, Carbon, Emery, and Grand Counties; Wasatch Plateau; Castle Valley; Book Cliffs; geology; sections; Mancos Shale; Mesaverde Formation; Wasatch Formation; lithology; description of coal; mining; engineering; production; transportation; descriptions of mines by company; analyses of coals.

Carbon, Emery, and Sevier Counties; Wasatch Plateau Coal Field.

Descriptors: Castle Valley; geology; coal resources; history; geography; physiography; Wasatch Plateau; San Rafael Swell; stratigraphy; structure; coal-bearing formations; occurrence; physical properties; chemical analysis; development; transportation; reserves; charts; tables; maps.


Emery, Sanpete, and Sevier Counties; Emery and Wasatch Plateau Coal Fields; Emery West and Flagstaff Peak Quadrangles.


Sanpete, Sevier, Carbon, and Emery Counties; Emery and Wasatch Plateau Coal Fields.

Descriptors: sedimentation; sedimentary rocks; stratigraphy; environment; lithofacies; Cretaceous; coastal environment; environmental analysis; Blackhawk Formation; Star Point Sandstone; Emery and Wasatch Plateau Coal Fields; Mesozoic; lithostratigraphy; sandstone; clastic rocks; fine-grained materials; deltas; floodplains; channels; coal; organic residue; brackish-water environment; paleoenvironment.


Sevier County; Salina Canyon Coal Field.

Descriptors: coal; maps; economic geology; Sevier County; resources; coal-bearing units.

Maurer, R. E., 1966b, The coal fields of eastern Sevier County, Utah, in Central Utah coals: Utah Geol. and Min. Surv., Bull., No. 80, p. 111-119, plus 1 folded map.

Sevier County; Salina Canyon and Wasatch Plateau Coal Fields.

Descriptors: coal; economic geology; maps; Sevier County; Castle Valley; Salina Canyon; Wasatch Plateau Coal Field; coal bearing units; development; chemical analyses; rank; production; reserves; tables.


Sanpete, Sevier, and Emery Counties; Wasatch Plateau Coal Field; Ferron Canyon, Ferron, The Cap, Flagstaff Peak, and Mahogany Point Quadrangles.


Sevier County; Salina Canyon Coal Field.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.


Carbon, Emery, Iron, Kane, Sanpete, Sevier, and Washington Counties.

Descriptors: western coals; carbonizing properties; physical properties; rank; lower Sunnyside; Carbon, Emery, Iron, Kane, Sanpete, Sevier, and Washington Counties; chemical analyses; sulfur content; tables.


Emery and Sevier Counties; Emery Coal Field.

Descriptors: sedimentary rocks; stratigraphy; lithostratigraphy; Cretaceous; Emery and Sevier Counties; Mancos Shale; Ferron Sandstone; USGS; Mesozoic; Emery Coal Field; coal; organic residues; sections; sandstone; clastic rocks.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Emery Coal Fields.

Descriptors: sedimentation; economic geology; environment; coal; deltas; organic residues; deposits; Emery; Wasatch Plateau; Cretaceous.


Sevier County; Wasatch Plateau Coal Field; Emery West, Flagstaff Peak, and Acord Lakes Quadrangles.

Descriptors: well-logging; economic geology; interpretation; coal; lithology; Sevier County.

Descriptors: economic geology; coal; maps; Emery, Sanpete, and Sevier Counties; Flagstaff Peak Quadrangle; organic residues; deposits; economic geology maps; geologic maps.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Utah; economic geology; stratigraphy; coal; Cretaceous; Star Point Sandstone; Blackhawk Formation; Mesozoic; organic residues.


Sanpete County; Salina Canyon Coal Field.

Descriptors: Salina Canyon; Sevier County; geography; geology; stratigraphy; Cretaceous; Tertiary; Mesaverde Group; structure; coal; occurrence; quality; physical properties; chemical analysis; reserves; tonnage; charts; maps; tables.


Wasatch Plateau and Emery Coal Fields.


Sanpete, Sevier, and Emery Counties; Wasatch Plateau Coal Field.


Descriptors: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.


Sanpete and Sevier Counties.

Descriptors: Manti-Salina area; structure; Wasatch Plateau Coal Field; central Utah; geography; sequence of tectonic events; folding; compression; angular unconformity; normal faulting; monocline; transverse faults; fresh rifts and scarp; surface phenomena; tilted fault block.


Carbon, Sanpete, Emery, and Sevier Counties; Wasatch Plateau Coal Field.

Descriptors: coal fields; Wasatch Plateau; history; geography; physiography; geology; stratigraphy; structure; altitude; coal; distribution; physical properties; chemical analysis; coking quality; geographic subdivisions; lithologic descriptions; reserves; tonnage; charts; maps; tables.


Sevier County; Salina Canyon Coal Field.

Descriptors: Salina Canyon; Sevier County; geo­graphy; geology; stratigraphy; Cretaceous, Tertiary; Mesaverde Group; structure; coal; occurrence; quality; physical properties; chemical analysis; reserves; maps; charts.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Wasatch Plateau; Cretaceous, Tertiary; location; physiography; structure; Mancos Shale; Mesaverde Group; lithology; depositional environment; paleogeography.


Grand, Wayne, Emery, Sanpete, and Sevier Counties.

Descriptors: environmental geology; impact statements; maps; Grand, Wayne, Emery, Sanpete, and Sevier Counties; environmental geology maps; coal; organic residues.


Sevier County; Salina Canyon Coal Field; Yogo Creek Quadrangle.

Descriptors: coal; technical production management; reserve estimation; materials distribution maps and surveys; Utah.

Sevier County; Emery Coal Field; Johns Peak Quadrangle.

Descriptors: coal; technical production management; reserve estimation; resources; materials distribution maps and surveys; Utah.


Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties.

Descriptors: high temperature carbonization; low temperature carbonization; smoke elimination; technology; products; problems; industry status; Utah coals; types; producing Counties; geology; physical properties; chemical analyses; coking capabilities; coking constituents; briquetting; semicoke; laboratory investigations; properties; rank; test results; products; tars; gases; oils; blends; reactions; Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties; tables.

Utah Geol. and Min. Surv., 1963, Transportation of energy from coal, Utah to California. Symposium 1963: Utah Geol. and Min. Surv., Circ., No. 44.

Wasatch Plateau, Kaiparowits, and Kolob Coal Fields.

Descriptors: coal mining; sources; Wasatch Plateau, Kaiparowits, and Kolob Coal Fields; coal slurry pipelines; high voltage transmission lines; Los Angeles; power costs; coal-fired power plants; tables.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Fields.

Descriptors: coal; coal exploration: Utah.

Utah Geol. and Min. Surv., 1979, Land control and coal reserves of the Wasatch Plateau Coal Field and Emery Coal Field: Utah Geol. and Min. Surv., Map 48B.

Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Emery Coal Fields.

Descriptors: economic geology; maps; coal; organic residues; Wasatch Plateau and Emery Coal Fields.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Utah; hydrology; hydrogeology; surveys; USGS; Wasatch Plateau and Book Cliffs Coal Fields; coal; organic residues; ground water; surface water; dissolved materials; hydrographs; maps.


Carbon, Emery, Sanpete, and Sevier Counties; Wasatch Plateau, Book Cliffs Coal Fields.


Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties.

Descriptors: coals; sulfur content; pyritic; organic; sulfate; chemical analysis; rank; sample site; mines; Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties; tables.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Wasatch Plateau gas fields; Clear Creek; further exploratory drilling; structure; Cretaceous; Paleocene; sedimentary strata; history; coal deposits; stratigraphy; structure map; composite log- self-potential and resistivity; age of faults and folding; cross-section; causes and time of gas accumulation; Ferron Sandstone; depositional environment; Flat Canyon; Gordon Creek; producing formations.


Sanpete, Sevier, Carbon, and Emery Counties; Wasatch Plateau Coal Field.

Descriptors: Wasatch Plateau; natural gas fields; exploration activity; stratigraphy; formations; lithologic log; geophysical log; stratigraphic correlation; structure; causes; age; structural traps; stratigraphic traps; hydrocarbon accumulation; gas analysis; production; drilling practices; charts; diagrams.
SUMMIT

Descriptors: coal; mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; Coalville, Henrys Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; maps; tables.

Descriptors: bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.

Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.
Descriptors: Utah, mineral fuels; coal resources; rank; production; market; Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields; stratigraphy; structure; lithology.

Summit and Duchesne Counties.
Descriptors: Uinta Mountains; mineral resources; prospecting; occurrence; tar sands.

Daggett and Summit Counties.
Descriptors: geology; Green River and Wasatch formations; Eocene; Tertiary; topography; structure; faults; interpretation of structure; structural effect of original dip and compaction; stratigraphy; measured sections; deformation; fluvial and lacustrine rocks; Gosiute Lake; trona; shertite; salt beds; paleoclimate; volcanic activity; Daggett and Summit Counties; earlier surveys; analysis of cannel coal; faunal lists; tuffs; table of boreholes drilled for oil and gas.

Emery, Carbon, Summit, and Iron Counties; Book Cliffs, Emery, Kolob, Kanab, and Coalville Coal Fields.
Descriptors: coal deposits; coal mining; Book Cliffs, Emery, Kolob, Kanab, and Coalville Coal Fields; production; tonnage; supply; resource development; manufacturing; local economy.

Carbon, Emery, and Summit Counties.
Descriptors: economic geology; petroleum; natural gas; coal; lignite; mineral fuels; mines; prospects; Carbon, Emery, and Summit Counties; maps; charts; tables.

Descriptors: southwestern Utah; map of coal fields; estimate of coal reserves of different rank; heat efficiency; classification of coal areas; Vernal, Wasatch Plateau, Coalville, San Juan, Kaiparowits Plateau, Emery, and Kolob Coal Fields.

Summit, Morgan, and Salt Lake Counties; Coalville Coal Field.
Descriptors: Coalville Coal Field; location; geography; physiography; stratigraphy; structure; coal deposits; mining; proposals; reserves; chemical analysis; physical properties; land control; lithologic descriptions; quadrangle reports.

Summit and Daggett Counties; Henry's Fork Coal Field.
Summit and Morgan Counties; Lost Creek Coal Field.
Descriptors: Lost Creek Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; maps.

Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry’s Fork, and Lost Creek Coal Fields; Goose Creek Lignite Field.
Descriptors: Cretaceous; coal; lignite; economic geology; lithostratigraphy; Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry’s Fork, and Lost Creek Coal Fields; Goose Creek Lignite field; occurrence.

Carbon, Emery, Sevier, Summit, Uintah, and Wasatch Counties.
Descriptors: sampling and analytical methods; car samples; mine sampling; determination of ash, moisture, Volatiles, carbon, sulfur, hydrogen, nitrogen and calorific values; proximate and ultimate analyses; descriptions of samples; Carbon, Emery, Sevier, Summit, Uintah, and Wasatch Counties; Hiawatha, Knight, Sunnyside, Browning, Casper, Williams, Hogan, Kearns and Duggins, Rees-Grass, Superior, Wasatch, Blue Bell, Green, Reynolds, Winchester, and Cummings mines,; sections.

Carbon, Emery, Grand, Morgan, Sanpete, and Summit Counties.
Descriptors: coal analyses; mine samples; car samples; fiscal year; proximate and ultimate analyses; Carbon, Emery, Grand, Morgan, Sanpete, and Summit Counties; lithologic descriptions; tables.

Descriptors: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities, tables.

Sanpete, Iron, Kane, Utah, Summit and Emery Counties; Wasatch Plateau, Wales, Coalville, Cedar City, Kanarra, Kanab, and New Harmony Coal Fields.
Descriptors: coal industry; imports of coal into the Territory; patents; transportation; analyses; Springville; Grass Creek and Chalk Creek; Castlegate mines; Winter Quarters mine; Pleasant Valley mines.

Summit and Daggett Counties; Henry’s Fork Coal Field.
Descriptors: economic geology; coal; maps; Utah and Colorado; coal fields; Henry’s Fork field; location; structure; stratigraphy; Mesaverde Formation; sections; Tertiary coal; thin beds; subbituminous; analyses; Uinta Basin.

Summit and Daggett Counties; Henry’s Fork and Vernal Coal Fields.
Descriptors: economic geology; coal fields; location; accessibility; development; personnel; mapping; land surveys; Colorado Plateau; stratigraphy; structure; Vernal; Yampa; Henry’s Fork; coal quality; comparisons; physical properties; chemical analyses; fuel ratio; coking tests; maps; tables; charts.

Summit and Daggett Counties; Henry’s Fork Coal Field.
Descriptors: coal; location; structure; stratigraphy; sections; quality.

Rich, Morgan, and Summit Counties; Coalville Coal Field.

Descriptors: Summit and Wasatch Counties; back valleys; geography; climate; agriculture; mining; sub-bituminous noncoking coal; Coalville; economic base.

Summit County; Coalville Coal Field.

Descriptors: coal beds; railroad; Union Pacific; coke; physical character; calorific power; forge-fire; fuel for locomotives and domestic purposes; lignites; analyses; Coalville; description of localities; iron pyrites; slate; Sprague's, Robinson, and Crissman's mines.


Descriptors: mineral industry; production value; copper; silver; vanadium; iron; uranium; lead; zinc; gold; molybdenum; mineral fuels; coal; manufacturing steel; nonmetals; employment and injuries; legislation and government programs; review by mineral commodities; coal tonnage; Sunnyside, Columbia, Geneva, Castlegate, Clear Creek, Kenilworth, O'Connor, and King mines; Carbon, Emery, Iron, Sevier, and Summit Counties.

Kane, Sanpete, Sevier, Iron, Wasatch, and Summit Counties; Coalville, Pleasant Valley, Sanpete, and Castle Valley Coal Fields.

Descriptors: precious metal mining; ore analyses; descriptions of mines by district; production methods; coal fields; Kane, Sanpete, Sevier, Iron, Wasatch, and Summit Counties; Coalville, Pleasant Valley, Sanpete, and Castle Valley Coal Fields; coal sections; coal analyses.

Summit County; Coalville Coal Field.

Descriptors: Grass Creek; Weber Canyon; thick veins of lignitic coal; faults; coal mines; outcrops; structure; analysis; Grass Creek (Church) coal mine; description of coal beds; mining methods; accidents market; domestic fuel; deposition.

Morgan and Summit Counties; Coalville Coal Field.

Summit, Morgan, and Rich Counties; Coalville Coal Field.

Summit and Daggett Counties; Henry's Fork Coal Field.

Summit and Daggett Counties; Henry's Fork Coal Field.

Descriptors: Uinta Mountain; tectonic history; Uinta anticline; folding; faulting; tectonic controls; structural chronology.

Summit County; Coalville Coal Field.

Descriptors: Summit County; Coalville anticline; regional structure; local structure; stratigraphy; lithologic descriptions; economic history; petroleum exploration.


Descriptors: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.

Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties.

Descriptors: Utah; economic geology; mineral resources; fuel resources; exploration; Rich, Morgan, Summit, Grand, San Juan, Uinta, Duchesne, Garfield, and Sanpete Counties; production; Uinta Basin; Basin-and-Range Province; Wasatch Plateau; San Rafael Swell; asphalt; bitumens; organic materials; beryl; ring silicates; con-
struction materials; coal; organic residues; metal ores; gems; uranium ores.


Coalville Coal Field.

Descriptors: Book Cliffs; economic geology; coal; location; extent; surficial features; stratigraphy; lithology; structure; coal beds; chemical analyses; mine descriptions; map; tables.

Trexler, D. W., 1966, Stratigraphy and structure of the Coalville area, northeastern Utah: Colorado School of Mines Prof. Contr., No. 2. Summit County; Coalville Coal Field.


Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties.

Descriptors: high temperature carbonization; low temperature carbonization; smoke elimination; technology; products; problems; industry status; Utah coals; types; producing Counties; geology; physical properties; chemical analyses; coking capabilities; coking constituents; briquetting; semi-coke; laboratory investigations; properties; rank; test results; products; tars; gases; oils; blends; reactions; Carbon, Emery, Sevier, Sanpete, Iron, Summit, Kane, and Garfield Counties; tables.


Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties.

Descriptors: coals; sulfur content; pyritic; organic; sulfate; chemical analysis; rank; sample site; mines; Carbon, Emery, Grand, Kane, Sevier, Sanpete, and Summit Counties; tables.


Summit County; Coalville Coal Field.


Summit County; Coalville Coal Field.

Descriptors: Cretaceous stratigraphy; Coalville area; lithologic descriptions.


Summit County; Coalville Coal Field.

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**UINTAH**


Uintah County; Vernal Coal Field; Dinosaur Quadrangle.

Descriptors: Colorado: Rio Blanco County, Moffat County; Utah: Uintah County; economic geology; coal; maps; organic residues; deposits; resources; economic geology maps; explanatory text; inventory; Dinosaur Quadrangle.


Duchesne and Uintah Counties.

Descriptors: Uinta Basin; Tertiary rocks; geology; stratigraphy; lithologic descriptions; isopach maps.


Descriptors: coal; mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; Coalville, Henrys Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; maps; tables.


Descriptors: bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classifica-
tion by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.

Averitt, P., 1964, Coal, in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.

Henry’s Fork, Tabby Mountain, Vernal, Book Cliffs, Wasatch, Salina Canyon, Henry Mountains, Kolob, Kayapawits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.

Descriptors: Utah, mineral fuels; coal resources; rank; production; market; Henry’s Fork, Tabby Mountain, Vernal, Book Cliffs, Wasatch, Salina Canyon, Henry Mountains, Kolob, Kayapawits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields; stratigraphy; structure; lithology.


Uintah County.

Descriptors: Green River Formation; Uinta Basin; fossil flora additions.


Descriptors: southwestern Utah; map of coal fields; estimate of coal reserves of different rank; heat efficiency; classification of coal areas; Vernal, Wasatch Plateau, Coalville, San Juan, Kayapawits Plateau, Emery, and Kolob Coal Fields.


Emery, Sevier, Rich, and Uintah Counties.


Duchesne and Uintah Counties.

Descriptors: Asphalt Ridge area; Vernal area; bituminous sandstones; physiography; geology; stratigraphy; asphalt saturation; origin and time of accumulation; economics; mining methods.


Duchesne and Uintah Counties.

Descriptors: bituminous sands; Uinta Basin; Sunnyside area; stratigraphy; structure; nature; deposits; tables; charts.


Duchesne and Uintah Counties.

Descriptors: Uinta Basin; bituminous sandstones; Sunnyside area; Asphalt Ridge; White Rocks area; P. R. Springs deposit; Chapita wells area; Dragon-Asphalt wash area; Deep Creek area; mining economics; methods.

Covington, R. E., 1964b, Thermal recovery may bring industry’s quiet revolution: Oil and Gas Jour., Nov. 23, 1964, p. 112-18.

Duchesne, Uintah, and Carbon Counties; Vernal and Book Cliffs Coal Fields.

Descriptors: Uinta Basin; bituminous sandstone; thermal recovery method; fire flooding; steam-caustic injections; production; Sunnyside; Asphalt Ridge; White Rocks; Green River desert; reserves.


Duchesne, Uintah, and Carbon Counties; Vernal and Book Cliffs Coal Fields.

Descriptors: bituminous sandstone; thermal recovery; Sunnyside; Asphalt Ridge; White Rocks; Green River Desert; P. R. Springs; Chapita Wells; Dragon-Asphalt Wash; Uinta Basin; production.


Duchesne, Uintah, and Wasatch Counties.

Descriptors: stratigraphic and facies relationships; Green River Formation; Uinta Formation; Duchesne, Uintah, and Wasatch Counties; correlation; tuff beds; lacustrine; playa; mud-flat; saline facies; Eocene; oil shale; lateral facies changes; correlated columnar sections; description of members; lithology.

Dane, C. H., 1955, Stratigraphic and facies relationships of the upper part of the Green River Formation and the lower part of the Uinta Formation in Duchesne, Uintah, and Wasatch Counties, Utah: U.S. Geol. Surv., Oil and Gas Inv., Chart OC 52, 2 sheets.

Duchesne, Uintah, and Wasatch Counties.


Duchesne and Uintah Counties.

Descriptors: Uinta Basin; Green River Formation;
algal fossils; petrographic studies; algal diversity; oil shale.


Descriptors: Vernal Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; quadrangle reports; maps.


Descriptors: Cretaceous; coal; lignite; economic geology; lithostratigraphy; Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry's Fork, and Lost Creek Coal Fields; Goose Creek lignite field; occurrence.


Descriptors: Green River Formation; intracratonic lakes; Uinta Basin; Piccanis basin; stratigraphy; depositional environment; oil shale resources.


Descriptors: sampling and analytical methods; car samples; mine sampling; determination of ash, moisture, Volatiles, carbon, sulfur, hydrogen, nitrogen and calorific values; proximate and ultimate analyses; descriptions of samples; Carbon, Emery, Sevier, Summit, Uintah, and Wasatch Counties; Hiawatha, Knight, Sunnyside, Browning, Casper, Williams, Hogan, Kearns and Duggins, Rees-Grass, Superior, Wasatch, Blue Bell, Green, Reynolds, Winchester, and Cummings mines.; sections.


Descriptors: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.


Descriptors: Uinta Basin; Mesaverde Group; stratigraphy; physiography; structure; lithology; nomenclature; facies descriptions; Star Point Sandstone; Blackhawk Formation; Price River Formation; depositional environment; correlation.


Descriptors: oil shale; processing techniques; Green River Formation; mining retorting; gas combustion; Union Oil process; Tosco process; in-situ retorting.


Descriptors: Uinta Basin; structure; stratigraphy; depositional environments; tectonism; interpretation.


Descriptors: coal mining; feasibility studies; bituminous coal; coal reserves; cost; economics; productivity; Utah.


Descriptors: Utah; paleogeography; structural history; depositional environments; orogenic episodes; physiography.

Howard, J. D., 1969, Depositional control of Upper Cretaceous coal units: Mt. Geol. 6: 3: Guidebook issue,
Raton Basin, Colorado and New Mexico, Sept. 3-6, p. 143-146.
Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields.
Descriptors: Coal; Utah and Colorado; Cretaceous; Economic geology; Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields; deposits; genesis; controls; environment; lagoons; barrier islands; sedimentary rocks.

Duchesne and Uintah Counties.
Descriptors: origin of hydrocarbons; Uinta Basin; Eocene; fluvial; deltaic; shales; sands; bituminous siliceous dolomites; oil shale; Salt Lake; chemically stratified; asphalts; stratigraphic units; source rock; field geology; organic solvents; chemical data; geologic data; changes in lithology; chemical character of hydrocarbons and depositional environment; no evidence of metamorphism, catalytic cracking or depth of burial; subsurface samples; organic matter; stagnant; saline; sulfides; Wasatch, Green River, and Uinta formations; sections; petrography of sediments; composition of hydrocarbons; infrared spectrograms; frequency distribution of refractive indices; chromatography; infrared optical densities; stages of development of lake.

Carbon, Iron, and Uintah Counties; Book Cliffs, Kolob-Harmony, and Vernal Coal Fields.
Descriptors: carbonaceous materials; solid fuels; oil; products; commercial uses; oil shale; economic factors; low-temperature carbonization; plant and refinery; Carbon County; power; smokeless fuels; rock asphalt; Vernal; paraffin; road oil; gasoline; diesel fuel; Cedar City, Utah markets; engineering experiments; heat requirements; distillation; burning properties.

Duchesne and Uintah Counties.
Descriptors: Uinta Basin; structure; geosynclinal nature; intracratonic basins; depositional environment; subsidence.

Duchesne and Uintah Counties.
Descriptors: non-marine Cenozoic; correlation table; research project; petroleum project; petroleum activity; Uinta Basin; stratigraphic successions; lithology; lacustrine; fluvial; terrestrial; pyroclastic; diastrophism; vertebrate faunas; mammalian; invertebrates; age determination; depositional environments; glacial; alluvial; playa; algal biotherms.

Kinney, D. M., 1951, Geology of the Uinta River and Brush Creek-Diamond Mountain areas, Duchesne and Uintah Counties, Utah: U.S. Geol. Surv., Oil and Gas Inv., Map OM 123.
Duchesne and Uintah Counties.

Duchesne and Uintah Counties.
Descriptors: Brush Creek area; Uintah and Duchesne Counties; geology; stratigraphy; Mississippian coals; Cretaceous coals; structure; geomorphology; economic geology; coal deposits; petroleum; natural gas; coal; reserves; tonnage; physical properties; chemical analysis; production; tables.

Uintah County.

Uintah County; Vernal Coal Field.
Descriptors: Deep Creek district; Vernal Coal Field; Uintah County; location; physiography; geology; stratigraphy; structure; lithologic descriptions; coal; occurrence; quality; physical properties; chemical analysis; reserves; tonnage; recoverable reserves; maps; tables; figures.

Uintah County.
Descriptors: eastern Uinta Mountains; Frontier Sandstone; stratigraphy; depositional environment; lithology; correlation; paleogeography; facies; biostratigraphy; zircon-tourmaline ratios.

Uintah County; Vernal Coal Field.
Descriptors: tar sands; Threemile Canyon area; P. R. Spring deposit; analyses; cores; oil zone; average properties; saturation; permeability; thickness; Uinta

Descriptors: Uinta Basin; geomorphology; topography; climate; physiography; landscape districts; plateaus.

McCullough, T., 1956, Hydrocarbons and other compounds obtained from gilsonite: Ph.D. dissertation, Univ. of Utah. Uintah County; Vernal Coal Field. 

Descriptors: Uinta Basin; Utah and Colorado; vertical veins; mining operations; asphaltite class; specific gravity; fixed carbon content; black inks; paints; varnishes; nonconductivity; thermal and electrical insulation; street and highway surfacing; gasoline; metallurgical coke; pyrolysis; sulfuric acid; paraffinic; pyridines; quinolines; distillate; naphthenes; olefins; phenols; chromatography; bitumens; resins; oils.


Descriptors: asphaltite; early settlers; Vintaite; commercial utility; Uinta Basin; Colorado; vertical beds; glance pitch; grahamite; petroleum metamorphosis; hardness; organic dyes; bituminous; ether extracts; spectra; porphyrins; isolation; hemin; alkylated pyrroles; structure.


Descriptors: Colorado, Utah, and Wyoming; environmental geology; impact statements; White River Basin; Yampa River Basin; resources; water quality; energy sources; pollution; coal; organic residues; oil shale.


Descriptors: Uinta Basin; Wasatch Formation; lithology; contacts; correlation; distribution; thickness; provenance; depositional environment; economic geology; exploration.


Descriptors: stream deposits; stream table experiments; stratigraphic records; stream descriptions and features; discharge; terminology; statistical methods; physical characteristics; grain size distribution; rose diagrams.


Descriptors: Uinta Basin; tectonic history; depositional environments; paleogeography; isopach maps.


Pearce, L. P., 1970, The Vernal Coal Field, Uintah County, Utah, Deep Creek District: Unpubl. Utah Geol. and Min. Surv., Rept. Uintah County; Vernal Coal Field.


Descriptors: subsurface stratigraphy; lithology; Green River Formation; Uinta Basin; microscopic studies; well samples; lacustrine environment; fluvial; Lake Uinta; paleogeography; main events; transgression; stability; regression; stratigraphy; black shale facies; formation contact; paleontologic content; age relationships; delta facies; tuff beds; time-equivalence; saline depositional environment; oil; tectonic framework; hydrocarbons; oil exploration history; oil production by field; geologic summary of oil and gas fields; cross-sections; well log.


Descriptors: Uinta Basin; subsurface stratigraphy; Green River Formation; Uinta Formation; structure; lithology; correlation; paleogeography; depositional environment; facies; petroleum exploration; isopach maps; diagrams.

Duchesne and Uintah Counties.

Descriptors: paleocurrents; shoreline orientations; Green River Formation; Eocene; Raven Ridge and Red Wash areas; northeastern Uinta Basin; ripplemarks; cross-stratification; sandstone-body trends; lacustrine; fluvial; vertical stratigraphic variation; asymmetric and symmetric; arcs of azimuths; stable current system; exploration for oil and gas; regional structure; stratigraphy; maximum inclination of foresets; description of structures used; directional results; rose diagrams; regional map.


Duchesne and Uintah Counties.

Descriptors: Uinta Basin; Green River Formation; stratigraphy; petroleum accumulation possibilities; depositional environment; structure; facies; oil occurrence; exploration.


Uintah County; Vernal Coal Field.

Descriptors: coal deposits; natural gas reserves; oil shale deposits; petroleum deposits; phosphates reserves; sandstone reserves; copper; lead; silver; mineral resources; Uintah County; Mesaverde Group; Frontier Formation; chemical analysis.


Uintah County; Vernal Coal Field.


Duchesne and Uintah Counties.


Grand, Carbon, Duchesne, and Uintah Counties; Book Cliffs, Sego, and Vernal Coal Fields.

Descriptors: American Gilsonite Company; Grand Junction; hydrocarbon; gasoline; carbon-coke; Bonanza; Book Cliffs; refinery; pipeline; blacksmith; Whiterocks Indian Agency; bitumen; grahamite; glance pitch; Uinta Basin; history; industry; origin; characteristics; uses; Rector; mining camp; White River.


Duchesne and Uintah Counties.

Descriptors: asphalts; hydrocarbons; carbon disulfide; metamorphic products; gilsonite; glance pitch; grahamite; Uinta Basin; Colorado; vertical veins; economic importance; paraffin; naphthenes; fractional distillation.


Uintah, Grand, and Carbon Counties; Sego and Book Cliffs Coal Fields.

Descriptors: economic geology; coal; Utah and Colorado; Grand River District; Sunnyside; Book Cliffs; maps; deposits; exploration; evaluation; geologic.


Uintah County.


Uintah and Daggett Counties; Henry’s Fork Coal Field.

Descriptors: Uinta Mountain; north flank; faulting; Henry’s Fork Fault; Uinta Fault; Sparks Fault; displacement; dip; faulting history; petroleum exploration.


Uintah and Daggett Counties; Henry’s Fork Coal Field.

Descriptors: Uinta Mountains; Carboniferous formations; biostratigraphic studies; tectonic history; Mississippian; Pennsylvanian; fossil record; lithologic correlation.


Duchesne and Uintah Counties; Tabby Mountain, Book Cliffs, and Vernal Coal Fields.

Descriptors: Uinta Basin; coal; resources; stratigraphy; Blackhawk coal zones; Neslen Formation; Frontier Sandstone; coal rank; mining methods; room and pillar; longwall.

Uintah County.

Descriptors: hydrocarbons; asphaltite; carbon disulfide; carbon tetrachloride; nonpolar organic solvents; Uinta Basin; Uintah County; vertical fissures; Green River Formation; calcareous shales; commercial development; paraffins; naphthenes; nitrogen containing compounds; acid extractions; pyrolytic degradation; alkylated pyridines; fractional distillation.


Duchesne and Uintah Counties.

Descriptors: geology; Uinta Basin; stratigraphy; igneous rocks; structure; folding; faulting; structural history; Dakota Sandstone; Mancos Shale; Mesaverde Group; lithologic facies; Vernal, and Tabby Mountain Coal Fields; Laramide folding; regional Cretaceous correlation diagram; sections; age and correlation; fossilists; lithology.


Duchesne and Uintah Counties.

Descriptors: Uinta Basin; stratigraphy; Cretaceous; topography; lithology; sedimentation factors; petroleum exploration.


Uintah County.

Descriptors: Uinta Basin; ostracod fossils; early Tertiary; Colton Formation; Green River Formation; Uinta Formation; biostratigraphy; depositional environment; statistical analysis.


Daggett and Uintah Counties.

Descriptors: economic geology; coal; Uintah County; Frontier Formation.


Uintah County; Vernal Coal Field.


Descriptors: Uinta Mountain and Basin region; structure; Wasatch Mountains; Cretaceous; stratigraphy; geologic map; geological history; correlated columnar section.


Duchesne and Uintah Counties; Vernal and Tabby Mountain Coal Fields.

Descriptors: geology; Cretaceous; Uinta Basin; stratigraphy; igneous rocks; structure; folding; faulting; structural history; Dakota Sandstone; Mancos Shale; Mesaverde Group; lithologic facies; Vernal, and Tabby Mountain Coal Fields; Laramide folding; regional Cretaceous correlation diagram; sections; age and correlation; fossilists; lithology.


Duchesne and Uintah Counties.

Descriptors: Uinta Basin; stratigraphy; Cretaceous; topography; lithology; sedimentation factors; petroleum exploration.

Walton, P. T., 1964, Late Cretaceous and early Paleocene conglomerates along the margin of the Uinta Basin. in Guidebook to the geology and mineral resources.
AAA Engineering and Drafting, Inc., 1979a, Coal resources of the Kyune Quadrangle, Carbon County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-150, 18 p.

Carbon and Utah Counties; Book Cliffs Coal Field; Kyune Quadrangle.

Descriptors: Carbon and Utah Counties; coal resource occurrence; coal development potential; Kyune Quadrangle; physiography; climate; stratigraphy; structure; coal geology; mining operations; coal data map; columnar sections.

AAA Engineering and Drafting, Inc., 1979b, Coal resources of the Matts Summit Quadrangle, Carbon County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-151, 14 p.

Duchesne, Utah, and Carbon Counties; Book Cliffs Coal Field; Matts Summit Quadrangle.

Descriptors: economic geology; coal; maps; Carbon, Duchesne, and Utah Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Matts Summit Quadrangle; physiography; climate; land status; stratigraphy; coal geology; chemical analyses; mining operations; development potential; surface mining; subsurface mining; in situ gasification; coal data map; columnar section.


Utah and Carbon Counties; Wasatch Plateau Coal Field; SW quarter of the Soldier Summit 15-min. Quadrangle.

Descriptors: economic geology; coal; maps; Utah and Carbon Counties; organic residues; deposits; resources; economic geology maps; explanatory text; Soldier Summit Quadrangle.


Carbon, Wasatch, Utah, Sanpete, Duchesne, and Uintah Counties.

Descriptors: Cretaceous; Paleocene; conglomerates; margin of Uinta Basin; age and correlation; outcrop map; Uintah, Carbon, Duchesne, Sanpete, Utah, and Wasatch Counties; geologic cross-sections; stratigraphy; structure.


Duchesne and Uintah Counties.

Descriptors: Utah; energy sources; economic geology; Uinta Basin; maps; coal; gilsonite; petroleum; natural gas; oil shale; oil sands; water resources.


Duchesne and Uintah Counties.

Descriptors: oil shale; history and methods; testing apparatus; physical and chemical character; distribution; geology; shale oil; Green River Formation; Uinta Basin; geography; stratigraphy; structure; sections; developments.

Utah

AAA Engineering and Drafting, Inc., 1979a, Coal resources of the Kyune Quadrangle, Carbon County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-150, 18 p.

Carbon and Utah Counties; Book Cliffs Coal Field; Kyune Quadrangle.

Descriptors: Carbon and Utah Counties; coal resource occurrence; coal development potential maps; Kyune Quadrangle; physiography; climate; stratigraphy; structure; coal geology; mining operations; coal data map; columnar sections.

AAA Engineering and Drafting, Inc., 1979b, Coal resources of the Matts Summit Quadrangle, Carbon County, Utah: U.S. Geol. Surv., Open-File Rept., No. 79-151, 14 p.

Duchesne, Utah, and Carbon Counties; Book Cliffs Coal Field; Matts Summit Quadrangle.

Descriptors: economic geology; coal; maps; Carbon, Duchesne, and Utah Counties; organic residues; deposits; resources; explanatory text; economic geology maps; Matts Summit Quadrangle; physiography; climate; land status; stratigraphy; coal geology; chemical analyses; mining operations; development potential; surface mining; subsurface mining; in situ gasification; coal data map; columnar section.


Utah and Carbon Counties; Wasatch Plateau Coal Field; SW quarter of the Soldier Summit 15-min. Quadrangle.

Descriptors: economic geology; coal; maps; Utah and Carbon Counties; organic residues; deposits; resources; economic geology maps; explanatory text; Soldier Summit Quadrangle.


Carbon, Wasatch, Utah, Sanpete, Duchesne, and Uintah Counties.

Descriptors: Cretaceous; Paleocene; conglomerates; margin of Uinta Basin; age and correlation; outcrop map; Uintah, Carbon, Duchesne, Sanpete, Utah, and Wasatch Counties; geologic cross-sections; stratigraphy; structure.


Duchesne and Uintah Counties.

Descriptors: Utah; energy sources; economic geology; Uinta Basin; maps; coal; gilsonite; petroleum; natural gas; oil shale; oil sands; water resources.


Duchesne and Uintah Counties.

Descriptors: oil shale; history and methods; testing apparatus; physical and chemical character; distribution; geology; shale oil; Green River Formation; Uinta Basin; geography; stratigraphy; structure; sections; developments.


Vernal, Coalville, Book Cliffs, Wasatch Plateau, Kaiparowits Plateau, and Kolob Coal Fields. Descriptors: southwestern Utah; map of coal fields; estimate of coal reserves of different rank; heat efficiency; classification of coal areas; Vernal, Wasatch Plateau, Coalville, San Juan, Kaiparowits Plateau, Emery, and Kolob Coal Fields.

Cross, A. T., and H. P. Singh, 1975, Palynologic indicators of paleoenvironments of upper Cretaceous coals: Geol. Soc. Am., Abstr. Programs 7: 7, p. 1042. Book Cliffs and Wasatch Plateau Coal Fields. Descriptors: Utah; Cretaceous; palaeoecology; palynomorphs; sedimentary rocks; stratigraphy; organic residues; Ferron Sandstone Member; Mancos Shale; Blackhawk Formation; Price River Formation; biostatigraphy; Book Cliffs; Wasatch Plateau; coal; bogs; marshes; lagoons; swamps; genesis; assemblages; angiosperms; environmental analysis; indicators.


Flores, R. M., 1979, Coal depositional models in some Tertiary and Cretaceous coal fields in the U.S. Western Interior, in Proceedings of the Symposium on Sedimentary basins and the origin of fossil fuels (Part 1): Org. Geochem. 1: 4, 225-235 p. Wasatch Plateau Coal Field. Descriptors: sedimentary rocks; Utah; sedimentation; Wyoming; environmental analysis; sedimentary petrology; deposition; models; Tongue River Member; Fort Union Formation; Star Point Formation; coal; organic residues; Tertiary; Cenozoic; Cretaceous; Mesozoic; Powder River Basin; Wasatch Plateau; thickness; environment; deltas; alluvial plains; economic geology; coal fields.

Flores, R. M., 1980, Comparison of depositional models of Tertiary and Upper Cretaceous coal-bearing rocks in some Western Interior basins of the United States, in Proceedings of the Fourth Symposium on the Geology of Rocky Mountain Coal: Colo. Geol. Surv., Resour. Ser., No. 10, 17-20 p. Wasatch Plateau Coal Field. Descriptors: western interior; sedimentation; economic geology; deposition; ichnofossils; occurrence; coal; models; Tongue River Member; Fort Union Formation; Blackhawk Formation; Fruitland Formation; Vermijo Formation; Almond Formation; Rock Springs Uplift; Pictured Cliffs Sandstone; Montana, Wyoming, Utah, Colorado, and New Mexico; Tertiary; Mesozoic; Cretaceous; organic residues; lithostratigraphy; environment; Powder River Basin; Wasatch Plateau; San Juan Basin; Raton Basin; deltas; deposits; coastal environment; terrestrial environment; Ophiomorpha.

Forrester, R., 1892,Coal fields of Utah: U.S. Geol. Surv., Min. Res. 1892. Sanpete, Iron, Kane, Utah, Summit, and Emery Counties; Wasatch Plateau, Wales, Coalville, Cedar City, Kanarra, Kanab, and New Harmony Coal Fields. Descriptors: coal industry; imports of coal into the Territory; patents; transportation; analyses; Springville; Grass Creek and Chalk Creek; Castle Gate mines; Winter Quarters mine; Pleasant Valley mines.


Descriptive: geology; mineral resources; engineering geology characteristics; environmental geochemistry; east-central Utah; coal development; stratigraphy; Henry Mountains, Emery, Wasatch Plateau, Book Cliffs, and Sego Coal Fields; coal quality and composition; oil and gas; non-petroleum gases; oil shale; bituminous sandstone; uranium, base metals; clays; underground coal mining; coal mine subsidence; earthquakes; maps; stratigraphic correlations.

Howard, J. D., 1969, Depositional control of Upper Cretaceous coal units: Mt. Geol. 6: 3: Guidebook issue, Raton Basin, Colorado and New Mexico, Sept. 3-6, p. 143-146.

Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptive: Coal; Utah and Colorado; Cretaceous; Economic geology; Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields; deposits; genesis; controls; environment; lagoons; barrier islands; sedimentary rocks.


Duchesne, Wasatch, and Utah Counties.

Descriptive: Slab Mountain Anticline; structure; Duchesne, Wasatch, and Utah Counties; Soldier Summit; stratigraphy; Tertiary Flagstaff, Colton, Green River Formations; history of exploration; photogeologic; surface geology; seismic exploration; fracture reservoir; gas; oil; form line map; lithology.


Carbon, Emery, and Utah Counties; Book Cliffs Coal Field.

Descriptive: central Utah; northeast Wasatch Plateau; southwestern edge of the Uinta Basin; stratigraphic section; upper Cretaceous; lower Cenozoic non-marine; Colton; Green River and Uinta Formations; Blackhawk; Castlegate sandstone; Price River; North Horn; Flagstaff; Bennion Creek; mountain building; facies; structure; Clear Creek anticline; Beaver Creek syncline; Tic Fork syncline; faults; Pleasant Valley; Starvation Creek; disconformity; gravity; geomorphology; graben; fault scarp; ridge; canyon; hogsback; crustal movements; late Laramide orogeny; folding and faulting; late Eocene; Miocene; floodplain; lacustrine; Flagstaff Lake; Uinta Lake; fluvial facies; Duchesne River; present drainage system.


Utah, Wasatch, Duchesne, and Carbon Counties.

Descriptive: Green River Formation; Uinta Formation; subsurface stratigraphy; western Uinta Basin; oil and gas; previous work and nomenclature; structural elements; petroleum geology; paleogeography; correlation; water depth chart; lithologic logs; general stratigraphy; cross-sections; source beds; Utah, Wasatch, Duchesne, and Carbon Counties.


Utah and Carbon Counties; Book Cliffs Coal Field.

Descriptive: fieldtrip guide; Book Cliffs Coal Field; Provo; Price; Sunnyside; mileage; index map showing route and location of stops; stratigraphic sections; road log.


Juab, Utah, and Sanpete Counties.

Descriptive: Cedar Hills; Sanpete, Juab, and Utah Counties; geology; physiography; stratigraphy; lithologic descriptions; structure; orogenic episodes; Cretaceous; Tertiary.


Descriptive: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.

Utah Geol. and Min. Surv., 1963, Transportation of energy from coal, Utah to California. Symposium 1963: Utah Geol. and Min. Surv., Circ., No. 44.

Wasatch Plateau, Kaiparowits, and Kolob Coal Fields.

Descriptive: coal mining, sources; Wasatch Plateau, Kaiparowits, and Kolob Coal Fields; coal slurry pipelines; high voltage transmission lines; Los Angeles; power costs; coal-fired power plants; tables.


Descriptors: coal, mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; Coalville, Henrys Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields.


Descriptors: bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.

Averitt, P., 1964, Coal, in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.

Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.

Descriptors: Utah; mineral fuels; coal resources; rank; production; market; Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields; stratigraphy; structure; lithology.


Wasatch County; Tabby Mountain Coal Field; NE Strawberry Valley Quadrangle.

Descriptors: Wasatch Mountains; Uinta Mountains; Uinta Basin; stratigraphy; volcanics; drift; alluvium; structure; lithology; overthrust; Laramide orogeny; location of area; summary of previous work; maps; sections; paleogeography; paleotectonics; sequence of geologic events.


Wasatch County; Tabby Mountain Coal Field.

Descriptors: sedimentation; tectonics; Uinta Mountains; Wasatch Mountains; Uinta Basin; structure; stratigraphy; shelf; craton; miogeosyncline; hinge-line belts; Cordilleran; stresses; Wasatch Line; oil and gas possibilities; general geology.


Duchesne and Wasatch Counties.

Descriptors: Green River Formation; southeast Uinta Basin; fuel resources; geology; geography; stratigraphy; lithologic descriptions; economic geology; oil shale; gilsonite; bituminous sandstones; oil and gas; reserves.


Duchesne, Uintah, and Wasatch Counties.

Descriptors: stratigraphic and facies relationships; Green River Formation; Uinta Formation; Duchesne, Uintah, and Wasatch Counties; correlation; tuff beds; lacustrine; playa; mud-flat; saline facies; Eocene; oil shale; lateral facies changes; correlated columnar sections; description of members; lithology.

Dane, C. H., 1955, Stratigraphic and facies relationships of the upper part of the Green River Formation and the lower part of the Uinta Formation in Duchesne, Uintah, and Wasatch Counties, Utah: U.S. Geol. Surv., Oil and Gas Inv., Chart OC 52, 2 sheets.

Duchesne, Uintah, and Wasatch Counties.

Daughters of Utah Pioneers, 1939, Mining in the West: Daughters of Utah Pioneers Historical Pamphlet.

Wasatch, Sanpete, and Iron Counties.

Descriptors: Coalville discovery; church mines; Scofield; Winter Quarters; Wales; Sanpete and Iron Counties; coking; Deseret Iron Co.; prospecting; Park City; Tintic.


Vernal, Henry Mountains, Sego, La Sal-San Juan,
Tabby Mountain, Coalville, Henry’s Fork, and Lost Creek Coal Fields; Goose Creek lignite field.

Descriptors: Cretaceous; coal; lignite; economic geology; lithostratigraphy; Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry’s Fork, and Lost Creek Coal Fields; Goose Creek lignite field; occurrence.


Carbon, Emery, Sevier, Summit, Uintah, and Wasatch Counties.

Descriptors: sampling and analytical methods; car samples; mine sampling; determination of ash, moisture, Volatiles, carbon, sulfur, hydrogen, nitrogen and calorific values; proximate and ultimate analyses; descriptions of samples; Carbon, Emery, Sevier, Summit, Uintah, and Wasatch Counties; Hiawatha, Knight, Sunnyside, Browning, Casper, Williams, Hogan, Kearns and Duggins, Rees-Grass, Superior, Wasatch, Blue Bell, Green, Reynolds, Winchester, and Cummings mines; sections.


Descriptors: coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses;oking capabilities, tables.


Wasatch and Duchesne Counties; Tabby Mountain Coal Field.

Descriptors: stratigraphy; economic significance; tectonic history; Tabby Mountain; Uinta Mountains anticline; oil-impregnated sandstones; petroleum; stratigraphic sections; geologic maps; Cretaceous; Wasatch and Duchesne Counties; correlation; lithology; location; topography; glacial; landslides; sedimentary textures and structures; fossils; well data; structure.


Summit and Wasatch Counties.

Descriptors: Summit and Wasatch Counties; back valleys; geography; climate; agriculture; mining; sub-bituminous noncoking coal; Coalville; economic base.

Howard, J. D., 1969, Depositional control of Upper Cretaceous coal units. Mt. Geol. 6: 3: Guidebook issue, Raton Basin, Colorado and New Mexico, Sept. 3-6, p. 143-146.

Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields.

Descriptors: Coal; Utah and Colorado; Cretaceous; Economic geology; Sanpete, Carbon, Emery, Utah, Wasatch, Duchesne, Uintah, and Garfield Counties; Wasatch Plateau and Book Cliffs Coal Fields; deposits; genesis; controls; environment; lagoons; barrier islands; sedimentary rocks.


Wasatch and Duchesne Counties; Tabby Mountain Coal Field.


Kane, Sanpete, Sevier, Iron, Wasatch, and Summit Counties; Coalville, Pleasant Valley, Sanpete, and Castle Valley Coal Fields.

Descriptors: precious metal mining; ore analyses; descriptions of mines by district; production methods; coal fields; Kane, Sanpete, Sevier, Iron, Wasatch, and Summit Counties; Coalville, Pleasant Valley, Sanpete, and Castle Valley Coal Fields; coal sections; coal analyses.


Duchesne, Wasatch, and Utah Counties.

Descriptors: Slab Mountain Anticline; structure; Duchesne, Wasatch, and Utah Counties; Soldier Summit; stratigraphy; Tertiary Flagstaff, Colton, Green River Formations; history of exploration; photogeologic; surface geology; seismic exploration; fracture reservoir; gas; oil; form line map; lithology.


Wasatch County; Tabby Mountain Coal Field.


Wasatch and Duchesne Counties; Tabby Mountain Coal Field.

Picard, M. D., 1959, Green River and Lower Uinta Formation subsurface stratigraphy in western Uinta Basin,

Utah, Wasatch, Duchesne, and Carbon Counties.

Descriptors: Green River Formation; Uinta Formation; subsurface stratigraphy; western Uinta Basin; oil and gas; previous work and nomenclature; structural elements; petroleum geology; paleogeography; correlation; water depth chart; lithologic logs; general stratigraphy; cross-sections; source beds; Utah, Wasatch, Duchesne, and Carbon Counties.


Descriptors: White Clay Creek coal; Sanpete County; bituminous coal; Weber River; Cedar City coal; history of exploration; meteorological observations; table of distances and altitude of routes; magnetic observations; railroad routes; geologic report; economical geology; stratigraphy; structure; lithology; lignite; formations; agriculture; building materials; fossils; paleontological collections; ornithology; ichthyology; botany; Indians; languages; population and resources of eastern Utah.


Descriptors: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.


Descriptors: coal; mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; maps; tables.


Iron, Washington, Garfield, and Kane Counties; Kolob Coal Field.

Descriptors: cannel coal; physical properties; physical and chemical composition; analyses; origin; use; mining; value; distribution; subbituminous; Kolob Coal Field; Cannel King prospect.

Averitt, P., 1964, Coal, in Mineral and water resources of Utah: Utah Geol. and Min. Surv., Bull., No. 73.

Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields.

Descriptors: Utah, mineral fuels; coal resources; rank; production; market; Henry's Fork, Tabby Mountain, Vernal, Book Cliffs, Wales, Salina Canyon, Henry Mountains, Kolob, Kaiparowits, San Juan, Lost Creek, Coalville, and Harmony Coal Fields; stratigraphy; structure; lithology.


Descriptors: western states; manufacture of metallurgical coke; geology; coal resources; steel industry; low-volatile bituminous; quality; nonferrous smelting; phosphorus; refining of sugar; typical analyses; production; Carbon, Sanpete, Iron, Washington, and Kane Counties.

Iron and Washington Counties; Kolob Coal Field.


Garfield, Kane, Iron, and Washington Counties.

**Descriptors:** Utah; Cretaceous; sedimentary rocks; petroleum; stratigraphy; lithostratigraphy; Colorado Plateau; lithofacies; Kaiparowits Plateau; sandstone; conglomerate; mudstone; coal; Dakota Formation; possibilities; reservoirs.

**Campbell, M. R.,** 1917, Coal fields of the United States, general introduction: U.S. Geol. Surv., Prof. Paper, No. 100-A.


**Descriptors:** southwestern Utah; map of coal fields; estimate of coal reserves of different rank; heat efficiency; classification of coal areas; Vernal, Wasatch Plateau, Coalville, San Juan, Kaiparowits Plateau, Emery, and Kolob Coal Fields.

**Cook, E. F.,** 1957, Geology of the Pine Valley Mountains, Utah: Utah Geol. and Min. Surv., Bull., No. 58.

Washington County; Harmony Coal Field.

**Descriptors:** economic geology; coal; Harmony Coal Field; Grant Ranch field; descriptive geology; chemical analysis; tables.

**Cook, E. F.,** 1960, Geologic atlas of Utah-Washington County; Utah Geol. and Min. Surv., Bull., No. 70.

Washington County.

**Descriptors:** Utah geology; stratigraphy; Cretaceous; Tropic Formation; descriptive geology.


Iron, Washington, and Kane Counties; Kolob-Harmony Coal Field.

**Descriptors:** Kolob-Harmony Coal Field; location; geography; physiography; stratigraphy; lithologic descriptions; coal deposits; mining; exploration; production; chemical analysis; reserves; land control; maps.


**Descriptors:** coal; economic geology; lithostratigraphy; Alton, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; properties; reserves.


**Descriptors:** coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.


Washington and Kane Counties.

**Descriptors:** geology; Zion National Park region; coal; distribution; stratigraphy; mine descriptions; coal quality; use; chemical analysis; tables.


Washington and Kane Counties.

**Descriptors:** mineral resources; economic geology; Boulder Dam area; coal; Kane and Iron Counties; road logs.


Kolob, Kaiparowits Plateau, Alton, and Henry Mountains Coal Fields.

**Descriptors:** Utah and Arizona; environmental geology; land use; Kolob, Kaiparowits Plateau, Alton, and Henry Mountains Coal Fields; coal; organic residues; development; pollution; water resources.


Iron, Washington and Kane Counties; Kolob Coal Field.

**Descriptors:** landslides; Utah; engineering geology; Kolob Coal Field.


Garfield, Iron, Washington, and Kane Counties; Alton-Kolob Coal Field.

**Descriptors:** Utah; ground water; hydrogeology; surveys; maps; Kane, Garfield, Iron, and Washington Counties; Tropic Shale; Carmel Formation; Moenkopi Formation; Chinle Formation; Navajo Sandstone; USGS; Alton; Kolob; coal fields;

Washington County.

Descriptors: stratigraphy; Washington County; petroleum; climate; structure; local sections; fossil lists; lithology.


Carbon, Emery, Iron, Kane, Sanpete, Sevier, and Washington Counties.

Descriptors: western coals; carbonizing properties; physical properties; rank; lower Sunnyside; Carbon, Emery, Iron, Kane, Sanpete, Sevier, and Washington Counties; chemical analyses; sulfur content; tables.


Descriptors: Mormons; small mines; transportation; location and topography; geology; stratigraphy; structure; occurrence of coal; quality; analyses; Jones, Wood, Corry, Culver, and Kanarra Mines; Cannel King prospect; Muddy prospect; measured sections; Kanab Field; Johnson prospect (No.18).


Iron, Washington, and Kane Counties; Kolob Coal Field.

Descriptors: geology; Upper Cretaceous; Kolob Plateau; southwest Utah; Iron, Washington, and Kane Counties; stratigraphic sections; fossils; geography; coal outcrops; coal-bearing zone; local sections; Colorado and Montana groups.


Iron, Washington, Garfield, Kane, and Wayne Counties.

Descriptors: coal; chemical analyses; economic geology; resources; field investigation; Kanab and Kaiparowits Plateaus; coal sections; Federal coal prospecting; permits; exploratory drilling; coal reserves; Iron, Washington, Garfield, Kane, Wayne Counties; subbituminous A; High volatile bituminous C; ash; sulfur; local domestic fuel requirements.


Iron and Washington Counties; Alton and Kolob Coal Fields; Cedar City 1 X 2 degree Quadrangle.

Descriptors: Utah; economic geology; coal; Dakota Formation; Straight Cliffs Formation; Cretaceous; Mesozoic; organic residues.


Descriptors: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.


Iron, Washington, and Kane County.

Utah Geol. and Min. Surv., 1963, Transportation of energy from coal, Utah to California. Symposium 1963: Utah Geol. and Min. Surv., Circ., No. 44.

Wasatch Plateau, Kaiparowits, and Kolob Coal Fields.

Descriptors: coal mining; sources; Wasatch Plateau, Kaiparowits, and Kolob Coal Fields; coal slurry pipelines; high voltage transmission lines; Los Angeles; power costs; coal-fired power plants; tables.


Henry Mountains, Kaiparowits Plateau, and Kolob Harmony Coal Fields.

Descriptors: coal deposits; oil shale deposits; sandstone; uranium; sampling; chemical analysis; exploration; maps; mineralization; Kaiparowits Plateau; Henry Mountains; Kolob Terrace; lithologic descriptions; tables.

Descriptive: coal; mining; history; resources; properties; mining methods; development; market; transportation; coking capability; production; coal field geology; chemical analysis; coal mining; Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields.


Descriptive: energy source development; environmental impacts; coal; fossil-fuel power plants; ground water; nature reserves; noise pollution; surface mining; Utah.


Descriptive: Wayne and Garfield Counties, Utah.


Descriptive: bituminous; subbituminous coal; estimate of reserves; source of estimate; table; classification by characteristics; reserves, original, remaining, recoverable; mining; distribution; coking coal; strippable coal; production; use; uranium; ownership of coal lands; peat; world coal reserves.


Descriptive: Utah, mineral fuels; coal resources; rank; production; market; Henry’s Fork, Tabby Mountain, Vernal, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits Plateau, and Kolob-Harmony Coal Fields; stratigraphy; structure; lithology.


Descriptive: Emery, Wayne, and Garfield Counties.


Descriptive: Wayne and Garfield Counties; Henry Mountains Coal Field; NE quarter Mt. Ellen 15-min. Quadrangle.


Descriptive: Wayne and Garfield Counties; Henry Mountains Coal Field; NE quarter Notom 15-min. Quadrangle.


Descriptive: Wayne and Garfield Counties; Henry Mountains Coal Field; NW quarter Notom 15-min. Quadrangle.


Descriptive: Wayne County; Henry Mountains Coal Field; NW quarter Factory Butte 15-min. Quadrangle.

Wayne and Garfield Counties; Henry Mountains Coal Field; NW quarter Mt. Ellen 15-min. Quadrangle.

Descriptors: Utah; economic geology; coal; maps; Wayne and Garfield Counties; organic residues; economic geology maps; explanatory text; inventory; Mt. Ellen Quadrangle.


Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry's Fork, and Lost Creek Coal Fields; Goose Creek lignite field.

Descriptors: Cretaceous; coal; lignite; economic geology; lithostratigraphy; Vernal, Henry Mountains, Sego, La Sal-San Juan, Tabby Mountain, Coalville, Henry's Fork, and Lost Creek Coal Fields; Goose Creek lignite field; occurrence.


Descriptors: coal; geology; Coalville, Henry's Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities, tables.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: geology; structure; detailed description of the mountains; laccolite; intrusives; land sculpture; economic; Waterpocket Flexure; dikes; folds; illustrations; stereograms; hydrostatic equilibriums; limited area and thickness; coal.


Sevier, Emery, and Wayne Counties.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: coal; sedimentary geochemistry; fossil fuels; carbonaceous sediments; Utah.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: economic geology; coal; Wayne and Garfield Counties; Mancos Shale; Ferron Sandstone Member; Emery Sandstone Member; Cretaceous; Mesozoic; Henry Mountains Coal Field; organic residues; deposits; geochemistry; chemical composition.


Descriptors: geology; mineral resources; engineering geology characteristics; environmental geochemistry; east-central Utah; coal development; stratigraphy; Henry Mountains, Emery, Wasatch Plateau, Book Cliffs, and Sego Coal Fields; coal quality and composition; oil and gas; non-petroleum gases; oil shale; bituminous sandstone; uranium; base metals; clays; underground coal mining; coal mine subsidence; earthquakes; maps; stratigraphic correlations.


Wayne County; Henry Mountains Coal Field; Mt. Ellen Quadrangle.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: Henry Mountains; geology; geography; stratigraphy; lithologic descriptions; physiography; tectonic history; resources; coal; high volatile bituminous; transportation; economics.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: Henry Mountains; geology; geography; physiography; stratigraphy; lithologic descriptions; structure; igneous intrusions; geomorphology; Terti-
ary folding history; resources; coal; Ferron Sandstone; Dugout Creek semianthracite; coal map.


Garfield and Wayne Counties; Henry Mountains Coal Field.

Descriptors: Utah; well-logging; geophysical surveys; applications; Garfield and Wayne Counties; Henry Mountains Coal Field; caliper; electrical; radioactivity; gamma ray; data; logs; exploration; deposits; distribution; depth; thickness; coal seams; correlation.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: sedimentary rocks; sedimentation; economic geology; organic residues; deposition; coal; pattern; Garfield County; Emery Sandstone Member; Ferron Sandstone Member; Emery Sandstone; Ferron Sandstone; Henry Mountains; coal fields; coal seams; structure; thickness; synclines; folds; anticlines; faults; barriers; compaction; diagenesis; deposits; Cretaceous.


Garfield and Wayne Counties; Henry Mountains Coal Field.

Descriptors: economic geology; coal; maps; Garfield and Wayne Counties; Henry Mountains; Emery coal zone; organic residues; deposits; coal fields; economic geology maps.


Garfield and Wayne Counties; Henry Mountains Coal Field.

Descriptors: economic geology; coal; organic residues; Garfield and Wayne Counties; Henry Mountains; Emery coal zone; deposits; coal fields; sections.


Wayne and Garfield Counties; Henry Mountains Coal Field.


Kolob, Kaiparowits Plateau, Alton, and Henry Mountains Coal Fields.

Descriptors: Utah and Arizona; environmental geology; land use; Kolob, Kaiparowits Plateau, Alton, and Henry Mountains Coal Fields; coal; organic residues; development; pollution; water resources.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: environmental surveys; coal deposits; arid land; geology; soil conservation; chemical properties; land reclamation; ground water; land use; vegetation; hydrology; environmental impacts; wildlife; Utah.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: environmental geology; reclamation; Henry Mountain Coal Field; organic residues; deposits; land use; impact statements.

McKell, C. M., et al., undated, Energy mineral rehabilitation inventory and analysis, Henry Mountains Coal Field: Utah State Univ.

Wayne and Garfield Counties; Henry Mountains Coal Field.


Emery, Garfield, and Wayne Counties; Henry Mountains Coal Field.


Wayne and Garfield Counties; Henry Mountains Coal Field.

Descriptors: sedimentary rocks; economic geology; organic residues; coal; Garfield and Wayne Counties; Emery Sandstone Member; Ferron Sandstone Member; Ferron Sandstone; Henry Mountains; Cretaceous; geochemistry; chemical composition; coal fields.

Iron, Washington, Garfield, Kane, and Wayne Counties.

**Descriptors:** coal; chemical analyses; economic geology; resources; field investigation; Kanab and Kaiparowits Plateaus; coal sections; Federal coal prospecting; permits; exploratory drilling; coal reserves; Iron, Washington, Garfield, Kane, Wayne Counties; subbituminous A; High volatile bituminous C; ash; sulfur; local domestic fuel requirements.


Wayne and Garfield Counties; Henry Mountains Coal Field.

**Descriptors:** Capital Reef area; Wayne and Garfield Counties; geology; stratigraphy; lithologic descriptions; physiography; structure; economic geology; uranium; deposits; prospects; maps; tables.


**Descriptors:** coal; geology; Coalville, Henry’s Fork, Vernal, Blacktail (Tabby) Mountain, Book Cliffs, Wasatch Plateau, Emery, Henry Mountains, Kaiparowits, Kolob, Kanab, and Harmony Coal Fields; location; occurrence; structure; lithologic descriptions; chemical analyses; coking capabilities; tables.


Wayne County.

**Descriptors:** coal; gems; jet; economic geology; Wayne County; gem properties; aberrant properties.


Grand, Wayne, Emery, Sanpete, and Sevier Counties.

**Descriptors:** environmental geology; impact statements; maps; Grand, Wayne, Emery, Sanpete, and Sevier Counties; environmental geology maps; coal; organic residues.


Wayne County; Henry Mountains Coal Field.

**Descriptors:** sedimentary rocks; sedimentary petrology; environmental analysis; lithofacies; Wayne County; Ferron Sandstone; Mancos Shale; Caineville; Cretaceous; Mesozoic; Blue Gate Tongue; angiosperms; sandstone; clastic rocks; deposition; coal; organic residues; natural gas; petroleum.


Henry Mountains, Kaiparowits Plateau, and Kolob Harmony Coal Fields.

**Descriptors:** coal deposits; oil shale deposits; sandstone; uranium; sampling; chemical analysis; exploration; maps; mineralization; Kaiparowits Plateau; Henry Mountains; Kolob Terrace; lithologic descriptions; tables.
UTAH GEOLOGICAL AND MINERAL SURVEY

606 Black Hawk Way
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THE UTAH GEOLOGICAL AND MINERAL SURVEY is a Division of the Utah Department of Natural Resources and operates under the guidance of a Board appointed by the Governor from industry and the public-at-large. The Survey is instructed by law to collect and distribute reliable information concerning the mineral resources, topography, and geology of the state, to investigate areas of geologic and topographic hazards that could affect the citizens of Utah, and to support the development of natural resources within the state. The Utah Code annotated, 1953 Replacement Volume 5, Chapter 36, 53-36-1 through 12, describes the Survey and its functions.

The Survey publishes bulletins, maps, a quarterly newsletter, and other publications that describe the geology of Utah. Write for the latest list of publications available.

THE SAMPLE LIBRARY is maintained to preserve well cuttings, drill cores, stratigraphic sections, and other geological samples. Files of lithologic, electrical, and mechanical logs of oil and gas wells drilled in the state are also maintained. The library’s collections have been obtained by voluntary donation and are open to public use, free of charge.

THE UTAH GEOLOGICAL AND MINERAL SURVEY adopts as its official policy the standard proclaimed in the Governor’s Code of Fair Practices that it shall not, in recruitment, appointment, assignment, promotion, and discharge of personnel, discriminate against any individual on account of race, color, religious creed, ancestry, national origin, or sex. It expects its employees to have no interest, financial or otherwise, that is in conflict with the goals and objectives of the Survey and to obtain no personal benefit from information gained through their work as employees of the Survey. For permanent employees this restriction is lifted after a two-year absence, and for consultants the same restriction applies until publication of the data they have acquired.