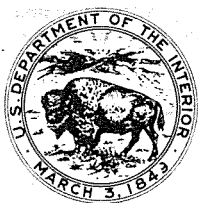


Minerals Yearbook

1986

Volume I

METALS AND MINERALS



Prepared by staff of the

BUREAU OF MINES

Contents

	<i>Page</i>
Foreword, by David S. Brown.....	iii
Acknowledgments, by Julie N. Walker.....	v
Nonfuel minerals survey methods, by William R. Vogel.....	1
Mining and quarrying trends in the metals and industrial minerals industries, by Arnold O. Tanner.....	7
Statistical summary, by Stephen D. Smith.....	47
Abrasive materials, by Gordon T. Austin.....	77
Aluminum, by Patricia A. Plunkert and Deborah A. Kramer.....	91
Antimony, by Patricia A. Plunkert.....	115
Asbestos, by Robert L. Virta.....	125
Barite, by Sarkis G. Ampian.....	133
Bauxite and alumina, by Luke H. Baumgardner and Ruth A. Hough.....	145
Beryllium, by Deborah A. Kramer.....	157
Bismuth, by James F. Carlin, Jr., and Robert D. Brown, Jr.....	163
Boron, by Phyllis A. Lyday.....	167
Bromine, by Phyllis A. Lyday.....	177
Cadmium, by Patricia A. Plunkert.....	185
Calcium and calcium compounds, by Lawrence Pelham.....	191
Cement, by Wilton Johnson.....	197
Chromium, by John F. Papp.....	225
Clays, by Sarkis G. Ampian.....	245
Cobalt, by William S. Kirk.....	281
Columbium and tantalum, by Larry D. Cunningham.....	291
Copper, by Janice L. W. Jolly and Daniel Edelstein.....	303
Diatomite, by A. C. Meisinger.....	361
Feldspar, nepheline syenite, and aplite, by Michael J. Potter.....	365
Ferroalloys, by Gerald F. Murphy.....	373
Fluorspar, by Lawrence Pelham.....	395
Gallium, by Deborah A. Kramer.....	405
Gem stones, by Gordon T. Austin.....	411
Gold, by John M. Lucas.....	421
Graphite, by Harold A. Taylor, Jr.....	459
Gypsum, by Lawrence L. Davis.....	471
Helium, by William D. Leachman.....	481
Iodine, by Phyllis A. Lyday.....	489
Iron ore, by Peter H. Kuck.....	495
Iron oxide pigments, by Donald P. Mickelsen.....	529
Iron and steel, by Frederick J. Schottman.....	539
Iron and steel scrap, by Raymond E. Brown.....	555
Kyanite and related materials, by Michael J. Potter.....	573

	<i>Page</i>
Lead, by William D. Woodbury	577
Lime, by Lawrence Pelham	609
Lithium, by Joyce A. Ober	619
Magnesium, by Deborah A. Kramer	627
Magnesium compounds, by Deborah A. Kramer	635
Manganese, by Thomas S. Jones	643
Mercury, by Linda C. Carrico	659
Mica, by Lawrence L. Davis	667
Molybdenum, by John W. Blossom	677
Nickel, by Peter G. Chamberlain	685
Nitrogen, by Charles L. Davis	703
Peat, by Charles L. Davis	711
Perlite, by A. C. Meisinger	719
Phosphate rock, by William F. Stowasser	723
Platinum-group metals, by J. Roger Loebenstein	741
Potash, by James P. Searls	755
Pumice and pumicite, by A. C. Meisinger	767
Rare-earth minerals and metals, by James B. Hedrick	771
Salt, by Dennis S. Kostick	783
Sand and gravel, by Valentin V. Tepordei	801
Silicon, by Clark R. Neuharth	825
Silver, by Robert G. Reese, Jr.	837
Slag—iron and steel, by Peter J. Linstrom	857
Sodium compounds, by Dennis S. Kostick	869
Stone, crushed, by Valentin V. Tepordei	877
Stone, dimension, by Harold A. Taylor, Jr.	883
Sulfur, by David E. Morse	895
Talc and pyrophyllite, by Robert L. Virta	917
Thorium, by James B. Hedrick	925
Tin, by James F. Carlin, Jr.	931
Titanium, by Langtry E. Lynd and Ruth A. Hough	945
Tungsten, by Gerald R. Smith	963
Vanadium, by Henry E. Hilliard	981
Vermiculite, by Arthur C. Meisinger	995
Zinc, by James H. Jolly	999
Zirconium and hafnium, by W. Timothy Adams	1027
Other industrial minerals (asphalt-native, greensand, meerschaum, quartz crystal, staurolite, strontium, wollastonite, zeolites), by Staff, Division of Industrial Minerals	1035
Other metals (arsenic, cesium and rubidium, germanium, indium, rhenium, scandium, selenium, tellurium, thallium), by Staff, Divisions of Nonferrous and Ferrous Metals	1045