Data Set of World Phosphate Mines, Deposits, and Occurrences—Part A. Geologic Data

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INTRODUCTION

An inventory of more than 1,600 world phosphate mines, deposits, and occurrences was compiled from smaller data sets collected as part of multiple research efforts by Carlotta Chernoff, University of Arizona, and Greta Orris, U.S. Geological Survey. These data have been utilized during studies of black shale depositional environments and to construct phosphate deposit models. The compiled data have been edited for consistency and additional location information has been added where possible. The database of compiled phosphate information is being released in two sections; the geologic data in one section and the location and mineral economic data in the second. This report, U.S. Geological Survey Open-File Report 02–156–A contains the geologic data and is best used with the complimentary data contained in OF02–156–B. U.S. Geological Survey OF02–156–B contains commodity data, location and analytical data, a variety of mineral economic data, reference information, and pointers to related records in the U.S. Geological Survey National mineral databases—MASMILS and MRDS.

DATA SOURCES, PROCESSING, AND ACCURACY

Data on more than 1,600 phosphate deposits, mines, and occurrences were compiled from a variety of sources, including earlier compilations. The geologic data from the database comprise this report, Open-File Report 02–156–A; the location, commodity, and mineral economic data can be found in Open-File Report 02–156–B. Although more complete than any other phosphate compilation the authors could identify, this phosphate database has all of the standard data compilation problems and compromises. Perhaps the most frustrating problem is that of names. It is commonly unclear in the literature, especially for foreign countries, if a given name refers to a mine or deposit, a nearby location or administrative area, a geologic formation, or a company involved in the exploration/development of a site. Frequently, multiple names may be used to refer to a single deposit or mine. For large deposits or mineralized areas, a

single name might be used to refer to diverse sites or deposits within these areas or to the area as a whole. The authors of this compilation have tried to deal with the naming difficulties as consistently and completely as possible, especially within individual countries; however, naming problems and inconsistencies, as well as duplicate records are still likely to be present in the database.

For many of the sites, the geologic data were compiled from multiple sources. For the most part, geologic data were recorded as reported in the references. Where information reported from two or more sources were in conflict, the authors recorded the information believed to be the most up-to-date or, if this determination could not be made, made note of the differing information within the record. All of the records were classified by deposit type, except where no data were available.

DATA

The geologic data from the phosphate database are listed in Appendix A. The data are sorted in the following order: country, state/principal administrative area, third order administrative area, basin/formation/region(area)/deposit, and deposit/site name. Guano and guano-derived deposits are listed at the end of the table, but sorted in the same order.

Data fields in this report include: deposit number, country, state/principal administrative area, third order administrative area, basin/formation/region(area)/deposit, deposit/site name, deposit type, type of phosphorite, general age of mineralization, specific age of mineralization, magmatic/host rock age, host/associated lithology, host formation, mineralization, geologic comments/deposit description, age references, general comments, and general references. Names used in the country and state/principal administrative area fields are compliant with Federal Information Processing Standards (National Institute of Standards and Technology, 1995). Third order administrative areas, such as counties in the United States, are listed if specified

in the original source materials or if easily determined from other sources considered to be reliable by the authors.

The information in the next two fields, .Basin/Fmt/Region (area)/Deposit and Deposit/Site_Name, is meant to identify the area, deposit, district, mine, or occurrence to which the geologic, economic, and location data apply. While we have tried to avoid duplicates, for some areas we report information for a district or area, as well as for specific deposits or mines within those larger areas. The exact level of information in these 2 fields may very between countries; but we have tried to utilize these fields consistently within a given country.

The next 9 fields are used to classify and describe the deposit and its geology. These fields include: Deposit Type, Type of Phosphorite, General Age of Mineralization, Specific Age of Mineralization, Magmatic/Host Rock Age, Host/Associated Lithology, Host Formation/Complex, Minerals, and Geologic Comments/Deposit Description. These fields are largely self-explanatory.

The remaining fields include Age Reference, which gives the reference or references used for any of the geologic age information in the table. General Comments includes information of interest, including economic information that does not fit in other table fields. The General References field lists references that were used to compile the geologic and economic data for each site.

The data in Appendix A may be obtained in digital format in the following ways:

1. Download the digital files from the USGS public access World Wide Web site on the internet: http://geopubs.wr.usgs.gov/open-file/of02-156a/

or

2. Anonymous FTP from geopubs.wr.usgs.gov, in the directory
   pub/open-file/of02-156a/

The data are also available in Excel 97 (OF02156A.xls).

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APPENDIX A

World Phosphate Deposits: Geologic Data

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1	Afghanistan	Herat		Kotalj-I-Sebzak		Marine chemical sediment	nodules, bedded	Late Cretaceous		
2	Albania			Fush-Bardhe (Fushebardha)		Marine chemical sediment	bedded; phosphatic limestone	Late Cretaceous; Jurassic		
3	Albania			Nivice (Nivica)		Marine chemical sediment	bedded; phosphatic limestone	Late Cretaceous; Jurassic		
4	Albania			Plloce		Marine chemical sediment	bedded; phosphatic limestone	Late Cretaceous; Jurassic		
5	Algeria				Bled Djemidma	Marine chemical sediment				
6	Algeria				Djebel Dyr	Marine chemical sediment				
7	Algeria				Djebel Djerissa	Marine chemical sediment				
8	Algeria				Dra Abiod					
9	Algeria				Kef Afoul					
10	Algeria				Kef es Sennoun	Marine chemical sediment				
11	Algeria				Oued Gueddooul					
12	Algeria				Oued Noual					
13	Algeria				Oum El Adame					
14	Algeria				Rass Mergueb	Marine chemical sediment				
15	Algeria				Tir	Marine chemical sediment				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1	clay, sandstone, limestone			Bed is 0.3-1.0 m thick.	ESCAP, 1995		ESCAP, 1995
2	phosphatic limestone; limestone			Two stratigraphic horizons with phosphorite, most important is Late Cretaceous with 10-12% P2O5.	British Sulphur Corporation, 1987; Pumo and others, 1982		Pumo and others, 1982
3	phosphatic limestone; limestone			Two stratigraphic horizons with phosphorite, most important is Late Cretaceous with 10-12% P2O5.	British Sulphur Corporation, 1987; Pumo and others, 1982		Pumo and others, 1982
4	phosphatic limestone; limestone				British Sulphur Corporation, 1987; Pumo and others, 1982		Pumo and others, 1982
5						Lower grade reserves.	de Kun, 1987
6							Arab Organisation for Mineral Resources, 1987
7						Strippable beds are 30 m thick.	de Kun, 1987
8							Arab Organisation for Mineral Resources, 1987
9							Arab Organisation for Mineral Resources, 1987
10						Overburden to ore ratio of 2:1	de Kun, 1987
11							Arab Organisation for Mineral Resources, 1987
12							Arab Organisation for Mineral Resources, 1987
13							Arab Organisation for Mineral Resources, 1987
14						Strippable beds are >30 m thick.	de Kun, 1987
15						Strippable beds are >30 m thick.	de Kun, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
16	Algeria				Znadia					
17	Algeria	Bedjaia Setif		Bordj Redir		Marine chemical sediment	bedded	Early Eocene		
18	Algeria	Bone		Djebel Onk	Djebel Onk	Marine chemical sediment	bedded with fish remains and coprolites; phosphatic limestone; pelletal; granular; pseudoollitic phosphate	Late Paleocene	Thanetian	
19	Algeria	Bone			Djebel Kouif	Marine chemical sediment	bedded with fish remains and coprolites; phosphatic limestone; pelletal; granular; pseudoollitic phosphate	Late Paleocene	Thanetian	
20	Algeria	Bedjaia Setif		Mzaita		Marine chemical sediment	bedded	Eocene		
21	Algeria	Midiya Sour El Ghozl		Bou Saada		Marine chemical sediment	bedded	Early Eocene		
22	Algeria	Tebessa			Tebessa	Marine chemical sediment				
23	Angola	Bengo		Sassolemba		Marine chemical sediment		Late Cretaceous-Early Eocene		
24	Angola	Bié		Chilesso		Carbonatite				
25	Angola	Cabinda		Cabinda	Cácata	Marine chemical sediment	bedded with coprolites; phosphatic limestone	Late Cretaceous	Maastrichtian	
26	Angola	Cabinda		Cabinda	Cambota	Marine chemical sediment	bedded; phosphatic sand	Late Cretaceous	Maastrichtian	
27	Angola	Cabinda		Cabinda	Chibuete	Marine chemical sediment	phosphatic sand in phosphatic shale	Late Cretaceous	Maastrichtian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
16							Arab Organisation for Mineral Resources, 1987
17	limestone				British Sulphur Corporation, 1964		Arab Organisation for Mineral Resources, 1987
18	shale; limestone; marl				Chabou-Mostefai and Flicoteaux, 1989		Harben and Kuzvart, 1996; Industrial Minerals, 1999; Commission for Geological Map of the World, 1976; Arab Organisation for Mineral Resources, 1987; S. Jasinski, written commun., 2001
19	shale; limestone; marl				Chabou-Mostefai and Flicoteaux, 1989		Harben and Kuzvart, 1996; Arab Organisation for Mineral Resources, 1987
20	limestone				Notholt and others, 1989c; British Sulphur Corporation, 1987		de Kun, 1987; Commission for Geological Map of the World, 1976; Arab Organisation for Mineral Resources, 1987
21				No information about associated sediments, however, regions to the north consist of phosphate beds in limestone.	British Sulphur Corporation, 1987		
22							Notholt and others, 1989c
23	marine sediments				Premoli, 1994		Notholt, 1994
24							Premoli, 1994
25	limestone; marine sediments				Premoli, 1994; British Sulphur Corporation, 1964		Notholt, 1994; Mew, 1980
26	marine sediments				Premoli, 1994; British Sulphur Corporation, 1964		Notholt, 1994
27	marine sediments			Deposit is on the NE limb of an anticlinal structure.	British Sulphur Corporation, 1964		Premoli, 1994; Mew, 1980

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
28	Angola	Cabinda		Cabinda	Chivovo (Tchivovo)	Marine chemical sediment	sandy phosphate	Early Eocene (Cretaceous per Premoli)		
29	Angola	Cabinda		Cabinda	Mongo Tango (Mongo-Tanda, Mongo Tando, Cacongo)	Marine chemical sediment	bedded with coprolites; phosphatic limestone	Late Cretaceous	Maastrichtian	
30	Angola	Cabinda		Cabinda	Seva	Marine chemical sediment				
31	Angola	Cabinda		Cabinda	Ueca	Marine chemical sediment				
32	Angola	Huambo		Longonjo (Chibilundo Mountain)		Carbonatite		Cretaceous		
33	Angola	Uige		Pedra do Feitico		Marine chemical sediment		Late Cretaceous-Early Eocene		
34	Angola	Zaire		Coco Grande		Marine chemical sediment		Late Cretaceous-Early Eocene		
35	Angola	Zaire		Coluge; Tando		Marine chemical sediment	bedded with coprolites; pelletal; phosphatic limestone	Early Eocene (Cretaceous per Premoli)		
36	Angola	Zaire		Kondonakaski		Marine chemical sediment; residual enrichment	bedded with coprolites; pelletal; phosphatic limestone	Early Eocene		
37	Angola	Zaire		Lacunga River (Lucunga River)		Marine chemical sediment	bedded with coprolites; pelletal; nodular; phosphatic limestone	Early Eocene		
38	Angola	Zaire		Lendiacolo		Marine chemical sediment	bedded with coprolites; pelletal; phosphatic limestone	Early Eocene (Cretaceous per Premoli)		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
28	marine sediments				Premoli, 1994; British Sulphur Corporation, 1964		Notholt, 1994; British Sulphur Corporation, 1964
29	limestone; marine sediments				Premoli, 1994; British Sulphur Corporation, 1964		Notholt, 1994; British Sulphur Corporation, 1964; de Kun, 1987
30							Mew, 1980
31							Mew, 1980
32	dolomite carbonatite, feldspathic breccias		apatite, barite, fluorite, magnetite, parisite, synchysite, quartz, Fe oxide		Alberti and others, 1999		Premoli, 1994; Mew, 1980; Alberti and others, 1999, Woolley, 2001
33	marine sediments				Premoli, 1994		Notholt, 1994
34	marine sediments				Premoli, 1994		Notholt, 1994
35	limestone; marine sediments			Lacunga River deposit; Beds average 0.58 m thick and occur over an area of 4.2 sq km.	Premoli, 1994; British Sulphur Corporation, 1964		Notholt, 1994; British Sulphur Corporation, 1964; Mew, 1980
36	limestone; marine sediments			Also called Lacunga River; average thickness of phosphate bed 0.58 m.	Notholt and others, 1989c; British Sulphur Corporation, 1987	May be duplicate with Quindonacache.	Notholt, 1994; British Sulphur Corporation, 1987; S. Jasinski, written commun., 2001
37	limestone; marine sediments				Notholt and others, 1989c; British Sulphur Corporation, 1987		Mew, 1980; British Sulphur Corporation, 1987
38	limestone; marine sediments			Lacunga River deposit. Phosphate occurs in 2 areas--area 1 averages 0.40 m thick over an area of 1.7 sq km; area 2 averages 0.25 m thick over an area of 1.0 sq km.	Premoli, 1994; British Sulphur Corporation, 1964		Notholt, 1994; Mew, 1980; British Sulphur Corporation, 1964

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
39	Angola	Zaire		Quindonacache		Marine chemical sediment, residual enrichment	bedded with coprolites; pelletal; phosphatic limestone	Early Eocene (Cretaceous per Premoli); Pleistocene		
40	Argentina	Chubut		Bajo Hondo		Marine chemical sediment		Eocene-Oligocene		
41	Argentina	Chubut		Busnadiego		Marine chemical sediment		Eocene-Oligocene		
42	Argentina	Chubut		Cerro Chenque		Marine chemical sediment		Eocene-Oligocene		
43	Argentina	Chubut		Golfo de San Jorge Basin/Zanjon de Lema Area		Marine chemical sediment	Pelletal; pelletal associated with glauconite	Early Paleocene		
44	Argentina	Chubut		Pico Salamanda		Marine chemical sediment		Eocene-Oligocene		
45	Argentina	Chubut		Punta Loma		Marine chemical sediment		Eocene-Oligocene		
46	Argentina	Jujuy/Salta		Rio Capillas Area		Marine chemical sediment	bedded; lenticular biostromes	Middle-Late Ordovician		
47	Argentina	Mendoza		Cerro Cacheuta (Cerro Cachenta)	Los Apires, El Risco	Continental sediment	Concretionary lenses	Triassic		
48	Argentina	Neuquen		Bajada del Agrio		Marine chemical sediment	clastics, nodules, fossils, oolites	Late Jurassic-Early Cretaceous	Lower Thithonian - Berrisian	
49	Argentina	Neuquen		La Porfia (La Purtia)		Marine chemical sediment	micrite, oolites, pelletal, fossils, clastics	Late Jurassic-Early Cretaceous	Lower Thithonian Berrisian	
50	Argentina	Neuquen		Mallin Quemado (Mollin Quemado)		Marine chemical sediment	micrite, oolites, pelletal, fossils, clastics	Late Jurassic-Early Cretaceous	Lower Thithonian Berrisian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
39	limestone; marine sediments			This is largest deposit in Angola. Lacunga River deposit; Beds average 0.58 m thick and occur over an area of 16.5 sq km.	Premoli, 1994; British Sulphur Corporation, 1964	May be duplicate with Kondonakaski.	Premoli, 1994; Notholt, 1994; Mew, 1980; British Sulphur Corporation, 1964
40		Patagonia Formation		Marine transgressive, shallow, low energy.	Leanza and others, 1989		Leanza and others, 1989
41		Patagonia Formation			Leanza and others, 1989		Leanza and others, 1989
42		Patagonia Formation			Leanza and others, 1989		Leanza and others, 1989
43	sandstone; siltstone	Salamanca Formation	apatite, soddyte, glauconite, pyrolusite, goethite, magnetite, opal	Phosphates are radioactive. Salamanca Formation contains 3 beds of phosphate rock. Phosphate formed in shallow water on stable platform.	Leanza and others, 1989		
44		Patagonia Formation			Leanza and others, 1989		Leanza and others, 1989
45		Patagonia Formation		Marine transgressive, shallow, low energy.	Leanza and others, 1989		Leanza and others, 1989
46	sandstone; conglomerates				Leanza and others, 1989		Leanza and others, 1989
47	black bituminous shales; schist, limestone	Cacheuta Formation		In continental Cacheuta Basin. 5 concretionary lenses, each up to 30 cm thick.	Leanza and others, 1989		Notholt, 1994; Mew, 1980; Leanza and others, 1989
48	calcareous phosphorite and phosphatic sandstone	Vaca Muerta Formation	collophane	In Neuquen Basin. 6 beds ranging in thickness from 0.2 - 4.0 m.	Argentina National Mining Secretariat, 1994		Argentina National Mining Secretariat, 1994; Angelelli and others, 1976; Leanza and others, 1989
49	limestone, phosphatic calcareous sandstone	Vaca Muerta Formation		5 beds ranging in thickness from 0.15 - 0.3 m.	Argentina National Mining Secretariat, 1994: Leanza and others, 1989		Leanza and others, 1989
50	limestone, phosphatic calcareous sandstone	Vaca Muerta Formation		12 beds ranging in thickness from 0.3 - 0.9 m.	Argentina National Mining Secretariat, 1994: Leanza and others, 1989		Leanza and others, 1989

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
51	Argentina	Rio Negro		Sierra Grande		Marine chemical sediment	bedded	Silurian-Early Devonian		
52	Argentina	San Juan		Quebrada de Talacasto Area		Marine chemical sediment	bedded; pelletal; apatite-cemented arenite	Silurian-Early Devonian		
53	Argentina	Santa Cruz		Bahia Langara		Marine chemical sediment		Eocene-Oligocene		
54	Argentina	Santa Cruz		Cabo Blanco		Marine chemical sediment		Eocene-Oligocene		
55	Argentina	Santa Cruz		Cerro Gruta Lourdes		Marine chemical sediment		Eocene-Oligocene		
56	Argentina	Santa Cruz		Gran Bajo de San Julian		Marine chemical sediment	phosphatic limestone with pelletal, granular, fossiliferous; phosphatic tuffs	Eocene-Oligocene		
57	Argentina	Santa Cruz		La Aurora		Marine chemical sediment		Eocene-Oligocene		
58	Argentina	Santa Cruz		Lago Argentino		Marine chemical sediment	phosphatic limestone	Late Cretaceous		
59	Argentina	Santa Cruz		Monte Entrance		Marine chemical sediment		Eocene-Oligocene		
60	Argentina	Santa Cruz		Monte Leon		Marine chemical sediment		Eocene-Oligocene		
61	Argentina	Santa Cruz		Rada Tilly		Marine chemical sediment		Eocene-Oligocene		
62	Argentina	Santa Cruz		Tres Lagos		Marine chemical sediment	bedded	Late Cretaceous		
63	Argentina	Santa Cruz		Valle de Cisma		Marine chemical sediment		Eocene-Oligocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
51	orthareniteSierra Grande Formation				Leanza and others, 1989		Leanza and others, 1989
52	quartz arenite; shale; siltstone	Los Espejos and Talacasto Formation.	apatite, chert	The main phosphatic bed has an average thickness between 0.1 and 0.65 m. Approximately 8 small mineralized bodies in the area.	Leanza and others, 1989		
53		Patagonia Formation			Leanza and others, 1989		Leanza and others, 1989
54		Patagonia Formation			Leanza and others, 1989		Leanza and others, 1989
55		Patagonia Formation			Leanza and others, 1989		Leanza and others, 1989
56	fossiliferous limestone; tuff	Patagonia Formation - San Julian Member		At least 2 phosphatic beds present in the tuff; 1.2 m and 0.95 m thick, respectively. High probability that onshore deposit is preserved seaward on the adjacent inner shelf area. Depositional environment- marine littoral, restricted sea, shallow water, low energy, some local fluviatile conditions.	Leanza and others, 1989		Leanza and others, 1989; NIMA
57		Patagonia Formation			Leanza and others, 1989		Leanza and others, 1989
58	black shale	Las Hayas Formation			Leanza and others, 1989	Previous resource estimates stated 15% P2O5.	
59		Patagonia Formation			Leanza and others, 1989		Leanza and others, 1989
60		Patagonia Formation			Leanza and others, 1989		Leanza and others, 1989
61		Patagonia Formation			Leanza and others, 1989		Leanza and others, 1989
62	marine sediments			Boundary between Piedra Clavada and Mata Amarilla Formations.	Leanza and others, 1989		
63		Patagonia Formation			Leanza and others, 1989		Leanza and others, 1989

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
64	Australia	New South Wales		Batemans Bay		Marine chemical sediment	nodular	Ordovician		
65	Australia	New South Wales		Continental margin		Marine chemical sediment	nodular	Late Quaternary		
66	Australia	New South Wales		Continental margin		Marine chemical sediment	nodular	Holocene		
67	Australia	New South Wales		Continental margin		Marine chemical sediment	nodular	Quaternary	Younger than 800,000	
68	Australia	New South Wales		Mootwingee		Marine chemical sediment	nodular	Cambrian-Ordovician		
69	Australia	New South Wales		Offshore Guyots		Replacement	phosphatized limestone	Holocene (?)		
70	Australia	New South Wales		Sydney Basin/Mona Vale		Marine chemical sediment	nodular	Triassic		
71	Australia	New South Wales		Tasman Basin/Moruya		Marine chemical sediment	nodular	Cambrian (?)		
72	Australia	Northern Territory		Amadeus Basin/George Gill Range		Marine chemical sediment	nodular; pelletal	Ordovician		
73	Australia	Northern Territory		Amadeus Basin/McDonnell Range		Marine chemical sediment	nodular; pelletal	Ordovician		
74	Australia	Northern Territory		Amadeus Basin/Ringwood		Marine chemical sediment	microphosphorite	Late Proterozoic		
75	Australia	Northern Territory		Bathurst Island		Marine chemical sediment	pelletal; nodular; concretionary phosphate	Cretaceous		
76	Australia	Northern Territory		Fannie Bay		Marine chemical sediment	nodular	Cretaceous		
77	Australia	Northern Territory		Georgina Basin/Alexandria		Marine chemical sediment	mudstone phosphorite	Early Middle Cambrian	Ordian-Templetonian	
78	Australia	Northern Territory		Georgina Basin/Alroy		Marine chemical sediment	mudstone phosphorite	Early Middle Cambrian	Ordian-Templetonian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
64	black shale				Cook, 1980		
65	glauconitic, foraminiferal grainstones and packstones				Cook and O'Brien, 1990		
66	glauconitic, foraminiferal grainstones and packstones				Cook and O'Brien, 1990		
67	glauconitic, foraminiferal grainstones and packstones				Cook and O'Brien, 1990		
68	black shale				Cook, 1980		
69	limestone				Cook, 1980; Cook and O'Brien, 1990		
70	black shale				Cook, 1980		
71	black shale				Cook, 1980		
72	sandstone; siltstone	Stairway Sandstone			Cook, 1980;		
73	sandstone; siltstone	Stairway Sandstone			Cook, 1980; Notholt and others, 1989e		
74	No data	Areyonga Formation			Cook, 1980; Notholt and others, 1989e		
75	phosphatized limestone				Cook, 1980; Lee, 1980; Notholt and others, 1989e		
76	glauconitic sandstone				Cook, 1980; Notholt and others, 1989e		
77	siltstone; chert; sandstone	Burton Beds		Thickness 1.5-6 m.	Cook, 1980,1989		Cook, 1989; Scott and Duchateau, 1998
78	limestone; chert	Beatle Creek Fmt-Burton Beds			Cook, 1980,1989		Scott and Duchateau, 1998

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
79	Australia	Northern Territory		Georgina Basin/Amaroo (Ammaroo)		Marine chemical sediment	pelletal; nodular	Early Cambrian	Ordian-Undillan	
80	Australia	Northern Territory		Georgina Basin/Carrarra Ranch		Sedimentary	No data	Early Middle Cambrian	Ordian-Templetonian	
81	Australia	Northern Territory		Lee Point		Marine chemical sediment	nodular	Cretaceous		
82	Australia	Northern Territory		Mud Tank		Magmatic	apatite	Precambrian		
83	Australia	Northern Territory		Rum Jungle		Metasedimentary, residual weathering	bedded	Precambrian		
84	Australia	Northern Territory		Georgina Basin/Wonarah		Marine chemical sediment	granular; mudstone phosphorite; minor pelletal	Early Middle Cambrian	Ordian-Templetonian	
85	Australia	Northern Territory		Wiso Basin/Lady Judith		Marine chemical sediment		Early Cambrian	Ordian	
86	Australia	Northern Territory/ Queensland		Georgina Basin/Highland Plains		Marine chemical sediment	mudstone phosphorite; replacement phosphorite	Early Middle Cambrian	Ordian-Templetonian	
87	Australia	Queensland		Banana-Cracow		Sedimentary	No data	Permian		
88	Australia	Queensland		Continental Shelf		Marine chemical sediment	nodular	Miocene-Holocene		
89	Australia	Queensland		Georgina Basin/Ardmore		Marine chemical sediment	granular	Early Middle Cambrian	Ordian-Templetonian	
90	Australia	Queensland		Georgina Basin/Babbling Brook Hill		Marine chemical sediment	mudstone phosphorite (strongly ferruginous in places); replacement phosphorite (strongly ferruginous in places)	Early Middle Cambrian	Ordian-Templetonian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
79	siltstone; chert; limestone	Arthur Creek Formation			Cook, 1980; Howard, 1990		Howard, 1990
80	No data	Beetle Creek Formation			Cook, 1980		
81	glauconitic sandstone				Cook, 1980; Notholt and others, 1989e		
82	No data				Cook, 1980		
83	hematitic siltstone; quartz-breccia hematitic sandstone; conglomerate; dolomite; lenses of chlorite-schists		fluorapatite, wavellite, millisite, dufrenite, specular hematite, goethite,quartz, kaolinite	Deposit has high iron oxide and aluminum oxide levels.	Cook, 1980; Notholt and others, 1989e	Resource estimates from Notholt and others 1989a. Up to 15 different deposits in this area.	Mew, 1980
84	siltstone; chert; dolomite; limestone (fossilferous)	Gum Ridge Fmt	carbonate fluorapatite, quartz, chert, clay, mica, goethite		Howard, 1989		Howard and Hough, 1979; Mew, 1980; Scott and Duchateau, 1998
85	siltstone, chert, carbonate	Montejinni Limestone		Associated with volcanic rocks and intercalated with carbonates.	Howard, 1990		Howard, 1990
86	siltstone; chert; limestone	Border Waterhole Formation	collophane, calcite, silica		Cook, 1980,1989		Mew, 1980; Cook, 1989; Scott and Duchateau, 1998
87	No data				Cook, 1980		
88	glauconitic, foraminiferal grainstones and packstones			Host lithology interpreted from New South Wales continental deposits to south	Cook, 1980		
89	siltstone; chert; shale; conglomerate; limestone	Beetle Creek Formation			Cook, 1980,1989		Mew, 1980; Cook, 1989
90	siltstone; chert	Border Waterhole Formation		Average thickness 4.6 m but up to 13.7 m thickness.	Cook, 1980,1989		Cook, 1989

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
91	Australia	Queensland		Georgina Basin/D-Tree		Marine chemical sediment, replacement	mudstone phosphorite; granular; replacement phosphorite; minor pelletal	Early Middle Cambrian	Ordian-Templetonian	
92	Australia	Queensland		Georgina Basin/Duchess	Phosphate Hill	Marine chemical sediment	siliceous phosphorite; calcareous phosphorite; phosphatic siltstone	Early Middle Cambrian	Ordian-Templetonian	
93	Australia	Queensland		Georgina Basin/Engine Creek		Marine chemical sediment		Early Middle Cambrian	Ordian-Templetonian	
94	Australia	Queensland		Georgina Basin/Lady Anne (Annie)-Lady Jane		Marine chemical sediment	granular; pelletal; muds locally present	Early Middle Cambrian	Ordian-Templetonian	
95	Australia	Queensland		Georgina Basin/Lily Creek		Marine chemical sediment	mudstone phosphorite; microphosphorite	Early Middle Cambrian	Ordian-Templetonian	
96	Australia	Queensland		Georgina Basin/Mt. Jennifer		Marine chemical sediment	mudstone phosphorite; replacement phosphorite	Early Middle Cambrian	Ordian-Templetonian	
97	Australia	Queensland		Georgina Basin/Mt. O'Connor		Marine chemical sediment	mudstone phosphorite (strongly ferruginous in places); replacement phosphorite (strongly ferruginous in places)	Early Middle Cambrian	Ordian-Templetonian	
98	Australia	Queensland		Georgina Basin/Phantom Hills		Marine chemical sediment	mudstone phosphorite; replacement phosphorite	Early Middle Cambrian	Ordian-Templetonian	
99	Australia	Queensland		Georgina Basin/Quita Creek (Quite Creek)		Marine chemical sediment	granular	Early Middle Cambrian	Ordian-Templetonian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
91	siltstone; chert; limestone	Beetle Creek Formation	carbonate fluorapatite, collophane, quartz, chert, clay, mica, goethite		Cook, 1989		Howard and Hough, 1979; Mew, 1980; Cook, 1989
92	phosphatic mudstone; chert; limestone	Beetle Creek Formation			Cook, 1989	Also called Burke River. Most sources treat Phosphate Hill and Duchess interchangeably, but 2 treat as separate sites.	Industrial Minerals, 1998b; Jasinski, 2000; Mew, 1980; S. Jasinski, written commun., 2001; Dreissen, 1990
93	siltstone; chert; shale	Beetle Creek Formation			Cook, 1989		Mew, 1980
94	limestone, chert, siltstone, mudstone	Beetle Creek Formation			Cook, 1980, 1989	Lady Anne also called Thorntonia. Lady Jane is a northern extension of Lady Annie.	Mew, 1980; Cook and Elgueta, 1986; Cook, 1989; Dreissen, 1990
95	Beatle Creek Fmt-siltstone; chert; shale	Beetle Creek Formation			Cook, 1980,1989		Mew, 1980; Cook, 1989
96	Beatle Creek Fmt-brecciated phosphatic siltstone; nodular chert; limestone; volcanics	Border Waterhole Formation		Average thickness 6 m, but up to 15 m thickness.	Cook, 1980,1989		Cook, 1989
97	Beatle Creek Fmt-siltstone; chert; limestone; volcanics	Border Waterhole Formation			Cook, 1980,1989		Mew, 1980; Cook, 1989
98	Beatle Creek Fmt-phosphatic mudstone; chert; limestone	Border Waterhole Formation		Average thickness 9 m but up to 35 m thickness.	Cook, 1980,1989		Mew, 1980; Cook, 1989
99	Beatle Creek Fmt-siltstone; chert; shale; sandstone; limestone	Beetle Creek Formation			Cook, 1980,1989		Mew, 1980; Cook, 1989

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
100	Australia	Queensland		Georgina Basin/Riversleigh		Marine chemical sediment	mudstone phosphorite; replacement phosphorite	Early Middle Cambrian	Ordian-Templetonian	
101	Australia	Queensland		Georgina Basin/Sherrin Creek		Marine chemical sediment	mudstone phosphorite; microphosphorite	Early Middle Cambrian	Ordian-Templetonian	
102	Australia	Queensland		St. Ann's		Sedimentary	No data	Devonian-Carboniferous		
103	Australia	South Australia		Angaston		Residual enrichment	nodular; anhydrous lime phosphate; locally aluminous phosphate where shale and slate replaced	Tertiary		Proterozoic-Cambrian
104	Australia	South Australia		Kapunda - Moculta		Residual enrichment	nodular; anhydrous lime phosphate; locally aluminous phosphate where shale and slate replaced	Tertiary		Proterozoic-Cambrian
105	Australia	South Australia		Orroroo		Replacement	biogenic phosphate replacing igneous rock	Holocene		
106	Australia	Tasmania		Continental Shelf		Marine chemical sediment	nodular; conglomeritic nodules	Holocene		
107	Australia	Tasmania		Tasman Basin/Mathinna		Marine chemical sediment	phosphatic limestone	Cambrian (?)		
108	Australia	Tasmania		Tasman Basin/Railton		Marine chemical sediment	phosphatic limestone	Cambrian (?)		
109	Australia	Tasmania		Tasman Basin/Smithton		Marine chemical sediment	phosphatic limestone	Cambrian (?)		
110	Australia	Tasmania		Tasman Basin/St. Mary's		Marine chemical sediment	phosphatic limestone	Cambrian (?)		
111	Australia	Victoria		Bass Basin (Torquay Embayment)	Geelong	Marine chemical sediment	nodular, shells, shark teeth	Neogene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
100	Beatle Creek Fmt-nodular and bedded chert; mudstone; limestone	Border Waterhole Formation		Average thickness 2.4 m, but up to 7.6 m thickness.	Cook, 1980,1989		Mew, 1980; Cook, 1989
101	Beatle Creek Fmt-siltstone; chert; shale	Beetle Creek Formation	carbonate fluorapatite, quartz, chert, clay, mica, goethite		Cook, 1980,1989		Howard and Hough, 1979; Mew, 1980; Cook, 1989
102	No data				Cook, 1980		
103	limestone; shale; slate				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
104	limestone; shale; slate				British Sulphur Corporation, 1987		Mew, 1980
105	igneous rocks				Cook, 1980; Lee, 1980		
106	carbonate nodules; carbonate packstones				Cook, 1980; Cook and O'Brien, 1990		
107	limestone				Cook, 1980; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
108	limestone				Cook, 1980; British Sulphur Corporation, 1987	Grade is low.	Mew, 1980; British Sulphur Corporation, 1987
109	limestone				Cook, 1980; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
110	limestone				Cook, 1980; British Sulphur Corporation, 1987	Large reserves of material grading 5% P2O5.	Mew, 1980
111	limestone; claystone; black shale				Cook and O'Brien, 1990		

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
112	Australia	Victoria		Bulumwaal		Marine chemical sediment	nodular	Ordovician		
113	Australia	Victoria		Gippsland Basin	Beaumaris	Marine chemical sediment	nodular, bryozoans	Miocene		
114	Australia	Victoria		Gippsland Basin	Lakes Entrance	Marine chemical sediment	nodular	Neogene		
115	Australia	Victoria		Howquahiver		Marine chemical sediment	nodular	Ordovician		
116	Australia	Victoria		Killawarra		Marine chemical sediment		Ordovician-Early Devonian		
117	Australia	Victoria		Murray Basin	Murrayville	Marine chemical sediment	granular; fish bones and teeth; nodular	Neogene		
118	Australia	Victoria		Otaway Basin	Hamilton	Marine chemical sediment	nodular	Neogene		
119	Australia	Victoria		Otaway Basin	Mansfield (Phosphate Hill)	Marine chemical sediment	nodular	Ordovician		
120	Australia	Victoria		Otaway Basin	Princetown	Marine chemical sediment	nodular; fossil fragments-- teeth, bones, corals, pelecypods	Late Miocene		
121	Australia	Victoria		Waratah Bay		Marine chemical sediment	nodular	Ordovician		
122	Australia	Western Australia		Little Rocky Inlet		Marine chemical sediment, secondary enrichment	Insular phosphorite	Late Holocene		
123	Australia	Western Australia		Mount Weld (Laverton)	includes Swan deposit	Magmatic, carbonatite/alkalic; residual enrichment	apatite	Proterozoic, Neogene-Quaternary		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
112	black shale				Cook, 1980; British Sulphur Corporation, 1987		
113	limestone; claystone				Cook and O'Brien, 1990; Lee, 1980		
114	sandstone; calcareous argillite				Cook and O'Brien, 1990		
115	black shale				Cook, 1980; British Sulphur Corporation, 1987		
116					Mew, 1980		Mew, 1980
117	glauconitic sands		glauconite		Cook and O'Brien, 1990		
118	clay; limestone				Cook and O'Brien, 1990		
119	black shale; slate; calcareous clay				Cook, 1980; British Sulphur Corporation, 1987	Aluminum phosphate with 1-23% P2O5 worked between 1916 and 1926.	Mew, 1980
120	limestone		collophane	Bed is thin with relatively low phosphate content.	Cook and O'Brien, 1990; Lee, 1980		Mew, 1980
121	black shale				Cook, 1980; British Sulphur Corporation, 1987		Mew, 1980
122	carbonate grainstone and rudstone; marine storm deposits				Dix, 1988	Small occurrence may be indicative of now eroded larger deposit	
123	carbonatite		calcite, dolomite, apatite, monazite, churchite, xenotime, cerianite, florencite, goyazite		Notholt and others, 1989e		Western Australia Website, 2000; Harben and Kuzvart, 1996; O'Driscoll, 1988; Duncan and Willet, 1990; Mariano, 1989; Griffiths, 1992; Fetherston and others, 1997; Western Australia Website, 2000; Dreissen, 1990

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
124	Australia	Western Australia		Murchison River		Marine chemical sediment	No data	Cretaceous		
125	Australia	Western Australia		Perth Basin/Dandaragan		Marine chemical sediment	bedded; nodular; phosphatized wood	Cretaceous		
126	Austria			Linz						
127	Belgium			Beaudour, Tertre		Marine chemical sediment				
128	Belgium			Demer		Marine chemical sediment				
129	Belgium			Nethe (Fleuve) Petite et Grande		Marine chemical sediment				
130	Belgium	Hainaut		Mons Basin/Baudour area		Marine chemical sediment	bedded; granular; phosphatic calcarenite produced by leaching of phosphatic chalk buy meteoric waters	Late Cretaceous	Early Maastrichtian	
131	Belgium	Hainaut		Mons Basin/Ciply area		Marine chemical sediment; local residual enrichment	bedded; granular; pebbles (locally)	Late Cretaceous	Early Maastrichtian	
132	Belgium	Hainaut		Mons Basin/Saint Symphorien; Spiennes		Marine chemical sediment; local residual enrichment	granular; pebbles (locally)	Late Cretaceous	Early Maastrichtian	
133	Belgium	Hesbaye		Momalle, Rocour		Marine chemical sediment; secondary enrichment	bedded; granular; nodular; fossiliferous	Late Cretaceous	Maastrichtian	
134	Belgium	Liége		Liége- Meuse Valley		Marine chemical sediment		Cretaceous		
135	Belarus	Mogilev Oblast		Krichev		Marine chemical sediment	black phosphatic nodules	Late Cretaceous	Cenomanian	
136	Benin	Mono		Athieme		Marine chemical sediment			Lutetian?	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
124	No data				Cook, 1980; Lee, 1980		
125	glauconitic chalk; greensand			2 beds of phosphate nodules. Less than m of overburden.	Cook, 1980; British Sulphur Corporation, 1987; Lee, 1980		Mew, 1980; British Sulphur Corporation, 1987
126							British Sulphur Corporation, 1987
127							
128							
129							
130	phosphatic chalk; chalk; chert	Ciply Phosphatic Chalk		Generally whole phosphatic succession is bioturbated	Robaszynski, 1989		
131	phosphatic chalk; chalk	Ciply Phosphatic Chalk		Generally whole phosphatic succession is bioturbated. Resources 6-10 m thick.	Robaszynski, 1989	Production ceased in 1968.	British Sulphur Corporation, 1987
132	phosphatic chalk; chalk	Ciply Phosphatic Chalk		Generally whole phosphatic succession is bioturbated	Robaszynski, 1989		
133	sandy-clayey groundmass				Dejonghe, 1986		
134							Mew, 1980; British Sulphur Corporation, 1987
135					British Sulphur Corporation, 1987		Harben and Kuzvart, 1996; British Sulphur Corporation, 1987
136							de Kun, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
137	Benin	Borgou		Mekrou		Marine chemical sediment; residual enrichment	bedded; lenticular; granular and oolitic; phosphatic siltstone	Proterozoic		
138	Bhutan, India	Dagana		Mauree-Kalikhola area		Marine chemical sediment; metamorphosed	bedded	Early Permian (?)		
139	Bolivia	Santa Cruz	Velasco	Cerro Manomo		Magmatic, carbonatite/alkalic	apatite	Cretaceous		
140	Bolivia	Cochabamba		Capinota		Marine chemical sediment	bedded; phosphatized shells and pellets	Ordovician	Caradocian	
141	Bolivia	La Paz		Caranavi		Marine chemical sediment	bedded	Ordovician		
142	Bolivia	Potosi		Chacarilla		Marine chemical sediment	bedded	Ordovician		
143	Bolivia	Potosi		Sud Chichas area		Marine chemical sediment	bedded	Ordovician		
144	Brazil			Caiapo		Magmatic, carbonatite/alkalic; residual enrichment		post-Devonian		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
137	chert; dolomitic limestone; tillite	Mekrou Bend Group		Deposit has been laterized.	Trompette, 1989		de Kun, 1987; Mew, 1980; Slansky, 1986; Lucas and others, 1986
138	black ironstone shale; carbonaceous phyllite			Found at the Gondwana-Siwaliks contact; believed Gondwana rocks are Damuda Formation and Early Permian in age. More than 25 m mineralized shale with a phosphorite horizon 6.75-20.76 m thick.	ESCAP, 1991		ESCAP, 1991
139	silicified carbonatite		apatite, dahllite, francolite, collophane, barite, Th, U, bastnäsite, monazite, cerianite, La-Nd phosphates and silicates	Part of the Velasco Alkaline Province of eastern Bolivia.	British Sulphur Corporation, 1987	Up to 25% P2O5 locally, up to 0.12% U.	Litherland and others, 1986; Woolley, 1987; British Sulphur Corporation, 1987
140	No data	Anzaldo Formation	apatite, goethite, chert, meta-autunite	There are 15 phosphate-bearing zones.	British Sulphur Corporation, 1987	Only about 20% of resource could be mined by surface methods.	Arduz and others, 1991; Notholt, 1994; Appleton, 1994; British Sulphur Corporation, 1987
141	sandstone; shale			Some 55 phosphate beds of variable thickness (2 to 20 cm) found in a zone 3 km long on both flanks of a NW-SE syncline.	U.S. Geological Survey Mineral Resources Data System, 2000		U.S. Geological Survey Mineral Resources Data System, 2000
142	fossiliferous ferruginous limestone			Thin beds of phosphate with up to 24% P2O5.	Notholt, 1994		Notholt, 1994
143	fossiliferous ferruginous limestone				Notholt, 1994	Very small production in 1952.	Notholt, 1994
144				Anomalous Sr, Ba, REE in the lateritic cover.			USGS files; Woolley, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
145	Brazil			Jaquia		Magmatic, carbonatitic/alkalic		127 Ma		
146	Brazil	Bahia		Campo Alegre de Lourdes		Magmatic, carbonatite				
147	Brazil	Bahia	Ipirá	Panelas (Ipira)		Magmatic, pegmatite	apatite			
148	Brazil	Bahia		Irece		Marine chemical sediment	stromatolitic phosphate	Late Proterozoic	Late Proterozoic (550-600 Ma)	
149	Brazil	Bahia	Itambe	Lorena I, II		Metasedimentary				
150	Brazil	Ceara		Itataia		Marine chemical sediment; secondary replacement	stockworks and massive ore bodies filling voids in limestone	Early Proterozoic		
151	Brazil	Goias		Cabeceiras		Marine chemical sediment; residual enrichment		Middle-Late Proterozoic		
152	Brazil	Goias		Campos Belos - Monte Alegre		Marine chemical sediment; residual enrichment		Middle-Late Proterozoic		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
145							USGS files
146			apatite				Industrial Minerals, 1987; Industrial Minerals, 1988
147	alkaline granite (alaskite)						Lima, 1976; MASMILS, 2000; British Sulphur Corporation, 1964
148	dolostone			Shallow-water deposition; abundant sulfide minerals reflect replacement of evaporitic sulfates	Kyle and Misi, 1997		CPRM, 1999
149	calcsilicates						Azevedo Branco, 1984
150	limestone; gneiss			Transgressive meta-sedimentary sequence.	Pouba, 1994		CPRM, 1999
151	shale, siltstone, dolomite	Bambui Group - Sierra da Saudade Formation		Shallow basin deposits. Deposit has been laterized.	Dardenne and others, 1986	Of probable limited economic interest.	Dardenne and others, 1986
152	shale, marl	Bambui Group - Sete Lagoas Formation	apatite, wavellite	Shallow basin deposits. At Campos Belos, phosphorite forms lenses a few tens of meters in length an 2 meters thick. Deposits have been laterized.	Dardenne and others, 1986	Of probable limited economic interest.	Dardenne and others, 1986

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
153	Brazil	Goias	Ouvidor	Catalao I		Magmatic, carbonatite/alkalic; residual enrichment	lateritic phosphate residuum associated with supergene formation processes (fluorapatite and dahllite)	Cretaceous, post-Tertiary		82.9±4.2 Ma (K/Ar on alkali syenite)
154	Brazil	Goias	Catalão-Ouvidor	Catalao II						
155	Brazil	Goias	Catalão-Ouvidor	Chapadao						
156	Brazil	Goias		Formosa		Marine chemical sediment; residual enrichment		Middle-Late Proterozoic		
157	Brazil	Goias		Nova Roma		Marine chemical sediment; residual enrichment		Middle-Late Proterozoic		
158	Brazil	Goias		Ouvidor		Magmatic, carbonatite/alkalic; residual enrichment				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
153	carbonatite veins; phlogopite glimmerites; weathered peroxenite; peridotite		pyrochlore, goethite, apatite, barite, hematite, magnetite, gibbsite, böhmite, kaolinite, ilmenite, fluorapatite, svanbergite, goyazite, vivianite, hinsdalite, collophane, lusungite, cahnite, vermiculite, perovskite, pyrite		Carvalho and Bressan, 1989		Azevedo Branco, 1984; Gierth and Baecker, 1986; Woolley, 1987; Morteani and Preinfalk, 1996; Azevedo Branco, 1984; S. Jasinki, written commun., 2001
154							USGS files
155							Lima, 1976; Russell, 1987; S. Jasinski, written commun., 2001
156	shale, marl	Bambui Group - Sete Lagoas Formation		Shallow basin deposits. Deposit has been laterized.	Dardenne and others, 1986	Of probable limited economic interest.	Dardenne and others, 1986
157	shale, marl	Bambui Group - Sete Lagoas Formation	apatite, wavellite	Shallow basin deposits. Deposit has been laterized.	Dardenne and others, 1986	Of probable limited economic interest.	Dardenne and others, 1986
158						Production for fertilizers and STPP for detergents. Mine plus processing plant.	Griffiths, 1995b; Kendall, 1996

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
159	Brazil	Minas Gerais	Araxa	Araxa	Barreiro	Magmatic, carbonatite/alkalic; residual enrichment	residuum from leached carbonatite composed of apatite	Cretaceous, post-Tertiary	87.2 +/- 4.4 Ma	Middle Precambrian
160	Brazil	Minas Gerais	Abaeté	Cedro do Abaete		Marine chemical sediment; residual enrichment	brown, poorly crystallized apatite	Middle-Late Proterozoic; Cretaceous	Middle-Late Proterozoic (950-650); Cretaceous	
161	Brazil	Minas Gerais	Patos de Minas	Patos de Minas		Marine chemical sediment, residual enrichment	laminated; pelletal	Late Proterozoic	Late Proterozoic (600±50 Ma; Rb/Sr	
162	Brazil	Minas Gerais	Patos de Minas	Patos de Minas	Lagamar Mine (Lanamar)	Marine chemical sediment, residual enrichment	Banded, stromatolites, laminated	Middle-Late Proterozoic		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
159	calcitic and dolomitic carbonatite; pyroxenite; glimmerite, silexite; peridotite		apatite, pyrochlore, barite, magnetite, monazite, bariopyrochlore, goyazite, ancylite, ceriopyrochlore, goethite, limonite, gorceixite, ilmenite, hematite, gibbsite, kaolinite, böhmite, pandaite, vermiculite, isokite, pyrite	Mineralization age from K-Ar on biotite from glimmerite. Weathered carbonatite with 3 separate areas of mineralization.	Notholt and others, 1989b	This is the world's largest Nb reserve. Also produces Nb.	Harben and Kuzvart, 1996; Silva, 1986; Woolley, 1987; Castor, 1994; Morteani and Preinfalk, 1996; Azevedo Branco, 1984; S. Jasinski, written commun., 2001; CPRM, 1999
160	shale, argillite, siltstone, sandstone, limestone	Bambui Group-Lagoa do Jacare and Serra da Saudade Formations	apatite, fluorapatite, wavellite, illite, smectite, chlorite	Deposit formed on stable platform, shallow water.	Foose, 1993; Dardenne and others, 1986	Resource estimates from Dardenne and others (1986).	Azevedo Branco, 1984; Foose, 1993; Notholt and others, 1989b
161	shale, siltstone, carbonate, schist, conglomerate	Bambui Group	fluorapatite, francolite, wavellite, quartz, hematite, limonite, illite, mica	Bambui Group sediments are folded and metamorphosed to low grade in this area.	Damasceno, 1989		Notholt, 1994; Dardenne and others, 1986; Cook and O'Brien, 1990
162	shale, siltstone, carbonate, slate	Bambui Group-Vazante Formation	apatite	Deposit formed in transitional environment- shallow to deep water.	Dardenne and others, 1986	May be an extension of Rocinha mineralization.	Russell, 1987, Mew, 1980; Dardenne and others, 1986; McClellan and Saavedra, 1986; S. Jasinski, written commun., 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
163	Brazil	Minas Gerais		Patos de Minas	Rocinha Mine	Marine chemical sediment, residual enrichment	Laminated	Middle-Late Proterozoic		
164	Brazil	Minas Gerais	Patrocino	Patrocino	Salitre I	Magmatic, carbonatite/alkalic; residual enrichment		Cretaceous		
165	Brazil	Minas Gerais	Patrocino	Patrocino	Serra Negra	Magmatic, carbonatite/alkalic; residual enrichment		Cretaceous		
166	Brazil	Minas Gerais		Tapira		Magmatic, carbonatite/alkalic; residual enrichment	residuum from leached carbonatite composed of apatite	Post-Tertiary		Late Cretaceous
167	Brazil	Para		Itacupim		Metasedimentary; residual enrichment		Proterozoic-Paleozoic, Quaternary		
168	Brazil	Paraiba		Alhandra-Conde		Marine chemical sediment		Cretaceous		
169	Brazil	Paraiba		Joao Pessoa - Rio Tinto		Marine chemical sediment	phosphocalcareous sandstones; bedded; granular; nodules; microfossils and shell debris	Late Cretaceous	Maastrichtian	
170	Brazil	Paraiba	Monteiro	Diversos (Monteiro)		Magmatic, pegmatite	apatite			

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
163	shale, siltstone	Bambui Group - Paraopeba Formation	carbonate fluorapatite (francolite), wavellite, quartz, calcite, dolomite, pyrite, illite, hematite, limonite	Deposit formed in relatively deep, quiet, water with reducing zones.	Dardenne and others, 1986		Notholt, 1994; Azevedo Branco, 1984; Dardenne and others, 1986; Damasceno, 1989; S. Jasinski, written commun., 2001
164	carbonatite, dunite				Azevedo Branco, 1984		Azevedo Branco, 1984; CPRM, 1999
165	carbonatite, dunite				Azevedo Branco, 1984		Azevedo Branco, 1984; CPRM, 1999
166	carbonatite, weathered ultramafics		apatie, pyrochlore, REE minerals, vermiculite, magnetite, anatase		Notholt and others, 1989b	Concentrate reported as 36% P2O5 (1980).	Harben and Kuzvart, 1996; Harben and Bates, 1990; Harben, 1984; Woolley, 1987; Azevedo Branco, 1984; S. Jasinski, written commun., 2001; CPRM, 1999
167	laterized schist, phyllite	Piria Formation			Azevedo Branco, 1984		Azevedo Branco, 1984
168		Gramame Formation		Transgressive terrigenous sediments in marginal basin.	Azevedo Branco, 1984		Azevedo Branco, 1984; Foose, 1993; CPRM, 1999
169	clayey sandstone; sandy limestone; calcarenites; calcareous sandstones	Gramame Formation		Transgressive terrigenous sediments in marginal basin.	Albuquerque and Giannerini, 1989		Azevedo Branco, 1984; Foose, 1993; CPRM, 1999
170	limestone						Lima, 1976; MASMILS, 2000; British Sulphur Corporation, 1964

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
171	Brazil	Paraiba	Sume	Sume	Olho d'Agua	Skarn, magmatic, pegmatite	apatite	Middle-Late Proterozoic	Middle-Late Proterozoic (950-650)	
172	Brazil	Paraiba or Pernambuco		Paulista		Marine chemical sediment	phosphocalcareous sandstones; bedded; granular; nodules; microfossils and shell debris	Late Cretaceous	Maastrichtian	
173	Brazil	Pernambuco		Goiania		Marine chemical sediment		Cretaceous		
174	Brazil	Pernambuco		Olinda		Marine chemical sediment	phosphocalcareous sandstones; bedded; granular; nodules; microfossils and shell debris	Late Cretaceous	Maastrichtian	
175	Brazil	Piura		Picos		Marine chemical sediment		Devonian		
176	Brazil	Piura		Pimenteiras		Marine chemical sediment		Devonian		
177	Brazil	Piura	Sao Joao Do Piaui	Sao Joao Do Piaui		Marine chemical sediment		Devonian		
178	Brazil	Rio Grande Do Norte		Macau		Marine chemical sediment				
179	Brazil	Santa Catarina	Anitapolis	Anitapolis		Magmatic carbonatite/alkalic; residual enrichment	residuum from leached carbonatite composed of apatite	Cretaceous, post-Tertiary		Early Cretaceous
180	Brazil	Sao Paulo		Cajati	Cajati	Unknown				
181	Brazil	Sao Paulo	Ipero	Ipanema (Morro de Arocoiba)		Magmatic, carbonatite/alkalic; residual enrichment	apatite	Post-Tertiary		Late Jurassic-Early Cretaceous

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
171	limestone				Foose, 1993		Azevedo Branco, 1984
172	clayey sandstone; sandy limestone; calcarenites; calcareous sandstones	Gramame Formation			Albuquerque and Giannerini, 1989		Albuquerque and Giannerini, 1989
173		Gramame Formation		Transgressive terrigenous sediments in marginal basin.	Azevedo Branco, 1984		Azevedo Branco, 1984; Foose, 1993; CPRM, 1999
174	clayey sandstone; sandy limestone; calcarenites; calcareous sandstones	Gramame Formation			Albuquerque and Giannerini, 1989		Azevedo Branco, 1984; MASMILS
175	sandstone, siltstone	Pimentaeira Formation			Azevedo Branco, 1984		Foose, 1993; Azevedo Branco, 1984
176	sandstone, siltstone				Azevedo Branco, 1984		Foose, 1993; Azevedo Branco, 1984
177	sandstone, siltstone	Pimentaeira Formation			Azevedo Branco, 1984		Foose, 1993; Azevedo Branco, 1984
178		Gramame Formation					
179	alkaline igneous complex				Notholt and others, 1989b		Azevedo Branco, 1984; Mariano, 1989
180						Production used for fertilizers.	Griffiths, 1995b; Kendall, 1996
181	alkaline igneous complex with glimmerite, fenites, ultramafics		apatite, magnetite		Born, 1989b		Harben and Kuzvart, 1996; MASMILS; Acevedo Branco, 1984; Mew, 1980; Born, 1989b; CPRM, 1999

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
182	Brazil	Sao Paulo	Registro, Juquia	Morro Do Serrote (Serrote Complex)	Guaviruva Mine	Magmatic, carbonatite/alkalic	apatite			
183	Brazil	Sao Paulo	Registro, Juquia	Morro Do Serrote (Serrote Complex)	Serrote	Magmatic, carbonatite/alkalic	no data	Cretaceous		
184	Brazil	Sao Paulo	Ribeira	Barra de Itapirapuã		Magmatic, carbonatitic/alkalic		103 Ma		
185	Brazil	Sao Paulo	Jacupiranga	Jacupiranga Complex		Magmatic, alkalic; residual enrichment	apatite	Late Jurassic-Early Cretaceous		Late Jurassic-Early Cretaceous
186	Bulgaria			Tchechliantzi		Marine chemical sediment				
187	Bulgaria			Provadija		Marine chemical sediment		Jurassic-Oligocene		
188	Bulgaria			Pleven		Marine chemical sediment	bedded	Jurassic-Oligocene		
189	Burkina Faso (Upper Volta)			Aloub Djouana (Abobo-Djuana)		Marine chemical sediment; residual enrichment	pelletal phospharenites containing beds and lenses of granular and nodular phosphate; phosphatic sandstones; pseudo oolites	Middle-Late Proterozoic	Late Voltaian (993±63 Ma to 660±8 Ma)	
190	Burkina Faso (Upper Volta)			Arli (Arly)		Marine chemical sediment; residual enrichment	ovules, grains, aggregates, poorly sorted and bedded	Late Proterozoic	Vendian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
182	alkaline igneous complex--nepheline syenite, dolomite, pyroxenite					Open pit has been flooded.	Mew, 1980
183	nepheline syenite		apatite, magnesite, barite	Irregular mass of interwoven mineralized veins (stockworks), stock, chimneys and deposits of irregular or undefined shape. Mass of apatite-magnesite-barite is 1.8 km long and 10-15 m wide.	Foose, 1993		Harben and Kuzvart, 1996; Mew, 1980; Azevedo Branco, 1984
184							USGS files
185	alkaline intrusive complex, ultrabasics				Born, 1989a	Complex covers an area of 65 sq km.	Harben and Kuzvart, 1996; Born, 1989a; Azevedo Branco, 1984; S. Jasinski, written commun., 2001: CPRM, 1999
186							
187							
188							Mew, 1980
189	pellites, quartzite, phyllite; limestone; chert		apatite, iron oxides, quartz; minor kaolinite, sericite	Deposit is structurally complex. 2 facies of phosphorite, one with less than 1% quartz and one with 25-30% detrital quartz. Local lateritic alteration of phosphatic formations.	Maurin and others, 1989	Questionable economic potential.	de Kun, 1987; Notholt, 1994; Slansky, 1986; Lucas and others, 1986; Trompette, 1989
190	limestone, chert, siltstone	Kodjari Formation	fluorapatite, quartz, crandallite, wavellite, calcite, kaolinite; also minor organic, pyrite, vivianite, barite	Phosphate horizon is only about 10 m thick.			de Kun, 1987; Notholt, 1994; Slansky, 1986; Lucas and others, 1986; Trompette, 1989

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
191	Burkina Faso (Upper Volta)			Diapega		Marine chemical sediment		Late Precambrian		
192	Burkina Faso (Upper Volta)	Niamey		Kodjari		Marine chemical sediment; residual enrichment	bedded; lenticular; granular and oolitic; phosphatic siltstone	Middle-Late Proterozoic	Late Voltaian 993±63 Ma to 660±8 Ma (avg. 675 Ma)	
193	Burundi			Matongo (Upper Ruvubu complex)		Carbonatite, weathered carbonatite	Carbonatite has weathered to a phosphate sand.		739 +/- 7 Ma	
194	Cambodia	Battambang		Phnom Ban Teay Neang		Secondary replacement	fracture fillings; accumulations of phosphatic debris; conglomeritic in north; manganiferous phosphorite lenses in south	Quaternary		Permian
195										
196	Cambodia	Battambang		Phnom Sampeou		Secondary replacement; residual enrichment	concretionary phosphate; phosphate-cemented limestone breccias; conglomeritic; in-filling, pocket filling; botryoidal phosphate; crustified phosphate	Quaternary		Permian
197	Cambodia	Battambang		Phnom Thoch		Secondary replacement	fracture fillings; conglomeritic; crustified or sponge-like phosphate; botryoidal	Quaternary		Permian

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
191		Upper Volta Group		Upper Volta Group sediments.			Mew, 1980
192	siltstone; chert; dolomitic limestone; tillite	Kodjari Formation	fluorapatite, quartz, crandallite, wavellite, calcite, illite, kaolinite; also minor organic, pyrite, vivianite, barite	Passive margin sequence. Ore has mean thickness of 10 m. Deposit has been locally laterized.	Trompette, 1989		de Kun, 1987; Mew, 1980; Notholt, 1994; Slansky, 1986; Lucas and others, 1986; Maurin and others, 1989
193	carbonatite, syenite		apatite, biotite, cancrinite, pyrochlore, molybdenite, crandallite, monazite, pyrite, magnetite, pyrrhotite				de Kun, 1987; Woolley, 2001
194	limestone			Phosphate enrichment produced by weathering of marine limestone; mineralization age based on age for Phnom Sampeou	ESCAP, 1993a		ESCAP, 1993a
195							
196	limestone				U.S. Geological Survey Mineral Resources Data System, 2000; British Sulphur Corporation, 1987; Lee, 1980; ESCAP, 1993a		ESCAP, 1993a; British Sulphur Corporation, 1987
197	limestone			Phosphate enrichment produced by weathering of marine limestone; mineralization age based on age for Phnom Sampeou	ESCAP, 1993a		ESCAP, 1993a

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
198	Cambodia	Battambang		Phnom Thom and Prasat		Secondary replacement	conglomeritic; botryoidal phosphate; crustified phosphate	Quaternary		Permian
199	Cambodia	Battambang		Sisophon area/Phnom Bak I and II		Secondary replacement; residual enrichment	in-filling; cavity filling; massive phosphorite; conglomeritic; crustified, sponge-like phosphorite	Quaternary		Permian
200	Cambodia	Battambang		Sisophon area/Phnom Chung Chiang		Secondary replacement; residual enrichment	in-filling; filling fissures and cavities; earthy phosphorite mass	Quaternary		Permian
201	Cambodia	Kampot		Phnom Bak		Residual enrichment	in-filling; filling fissures and cavities; brecciated phosphorite; silty phosphorite	Quaternary		Permian
202	Cambodia	Kampot		Phnom Kanlang		Residual enrichment	in-filling; filling fissures and cavities; brecciated phosphorite; silty phosphorite	Quaternary		Permian
203	Cambodia	Kampot		Phnom Loang		Residual enrichment	in-filling; filling fissures and cavities; brecciated phosphorite; silty phosphorite	Quaternary		Permian
204	Cambodia	Kampot		Phnom Totung		Residual enrichment	in-filling; concretionary; brecciated phosphorite; silty phosphorite; conglomeritic	Quaternary		Permian

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
198	limestone			Phosphate enrichment produced by weathering of marine limestone; mineralization age based on age for Phnom Sampeou	ESCAP, 1993a		ESCAP, 1993a
199	limestone; gravels of limestone, phosphorite and quartz			2 deposits. Phosphate enrichment produced by weathering of marine limestone; mineralization age based on age for Phnom Sampeou. Phnom Bak I has a clayey ore; Phnom Bak II an encrusted ore. Residual ores largely in steeply-dipping north-south fissures.	ESCAP, 1993a		ESCAP, 1993a
200	limestone			Phosphate enrichment produced by weathering of marine limestone; mineralization age based on age for Phnom Sampeou. Ore is earthy. Residual ores largely in steeply-dipping north-south fissures.	ESCAP, 1993a		ESCAP, 1993a
201	limestone			Phosphate enrichment produced by weathering of marine limestone	ESCAP, 1993a		ESCAP, 1993a
202	limestone			Phosphate enrichment produced by weathering of marine limestone. P-enriched area 40-70m long, 2-8m wide	ESCAP, 1993a		ESCAP, 1993a
203	limestone			Phosphate enrichment produced by weathering of marine limestone	ESCAP, 1993a		ESCAP, 1993a
204	limestone			Phosphate enrichment produced by weathering of marine limestone. Deposits are 40-80m in length,1-4m thick.	ESCAP, 1993a		ESCAP, 1993a

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
205	Cambodia	Kampot		Tuk Meas (Tuk Teas)		Secondary replacement	in-filling; filling fissures and cavities; brecciated phosphorite; silty phosphorite; concretionary	Neogene-Quaternary		Permian
206	Cambodia	Pursat		Phnom Cheam		Secondary replacement; residual enrichment	in-filling; pocket fillings; karst phosphorite	Quaternary		Permian
207	Canada			Burritt Island		Magmatic, carbonatite/alkalic				
208	Canada			Callender Bay		Magmatic, carbonatite/alkalic				
209	Canada			Clay-Howells		Magmatic, carbonatite/alkalic				
210	Canada			Crevier		Magmatic, carbonatite/alkalic				
211	Canada			Firesand		Magmatic, carbonatite/alkalic				
212	Canada			Iron Island		Magmatic, carbonatite/alkalic				
213	Canada			Kirkland Lake		Magmatic, carbonatite/alkalic				
214	Canada			Mercier		Magmatic, carbonatite/alkalic				
215	Canada			Prairie		Magmatic, carbonatite/alkalic				
216	Canada			Schryburt Lake		Magmatic, carbonatite/alkalic				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
205	limestone			Filling a fault zone; phosphate enrichment produced by weathering of marine limestone. Deposit is 210m long, 150m wide and 3-4m thick.	U.S. Geological Survey Mineral Resources Data System, 2000; Lee, 1980; ESCAP, 1993a	Production in the 1920's and from 1961-1980 or later.	ESCAP, 1993a; Mew, 1980
206	marble; limestone			Marbles from contact metamorphism of Permian limestones	U.S. Geological Survey Mineral Resources Data System, 2000; British Sulphur Corporation, 1987; Lee, 1980; ESCAP, 1993a		ESCAP, 1993a; British Sulphur Corporation, 1987
207							USGS files
208							USGS files
209	magnetite-calcite carbonatite						British Sulphur Corporation, 1987
210	carbonatite						British Sulphur Corporation, 1987
211	calcite carbonatite, dolomitic carbonatite, mafic rocks						British Sulphur Corporation, 1987
212				P, Ni, and Cu occur in pyroxenite; U, Nb, Ba, and F occur in carbonatite			USGS files
213							
214	calcite carbonatite						British Sulphur Corporation, 1987
215	calcite carbonatite, ijolite						British Sulphur Corporation, 1987
216	calcite carbonatite, mafic calcite carbonatite, leached carbonatite						British Sulphur Corporation, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
217	Canada			Seabrook		Magmatic, carbonatite/alkalic				
218	Canada			St. Veronique		Magmatic, carbonatite/alkalic				
219	Canada			Township 107		Magmatic, carbonatite/alkalic				
220	Canada	British Columbia		Fernie Formation		Marine chemical sediment	pelletal; oolitic (minor)	Early Jurassic	Sinemurian	
221	Canada	New Brunswick		McKeel Lake		Magmatic, alkalic				Devonian
222	Canada	New Brunswick		McQuade Brook		Nonmarine sedimentary	pelletal; grains	Early Carboniferous		
223	Canada	Ontario		Argor (James Bay)		Magmatic, carbonatite/alkalic				
224	Canada	Ontario		Big Beaver House		Magmatic, carbonatite/alkalic				
225	Canada	Ontario		Carb Lake		Magmatic, carbonatite/alkalic				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
217	calcite carbonatite, mafic rocks						British Sulphur Corporation, 1987
218	biotitite, pyroxenite, shonkinite						British Sulphur Corporation, 1987
219	biotite-calcite carbonatite						British Sulphur Corporation, 1987
220	shale; calcareous shale; sandstone; siltstone; limestone	Fernie Formation			Christie, 1989	Complex geology and beneficiation problems have hindered development.	Notholt and others, 1989a
221	syenite, aplitic granite, alkali granite	Welsford Complex	apatite, fluorite, hematite, cassiterite, uraninite, Zr, Nb				New Brunswick Department of Natural Resources and Energy, 2001, accessed at URL http://www.gnb.ca/0078/minerals/index.asp
222	dolomitic siltstone	Albert Formation	dahllite, calcite, fluorite, fluorapatite, britholite, pyrite	Thin phosphate bed several centimeters thick.			New Brunswick Department of Natural Resources and Energy, 2001, accessed at URL http://www.gnb.ca/0078/minerals/index.asp
223	biotite-calcite carbonatite		apatite				USGS files; British Sulphur Corporation, 1987
224	biotite pyroxenite, calcite carbonatite		apatite				USGS files; British Sulphur Corporation, 1987
225	calcite carbonatite		apatite				USGS files; British Sulphur Corporation, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
226	Canada	Ontario		Cargill		Magmatic, carbonatite/alkalic; residual enrichment	apatite; residuum from leached carbonatite composed of apatite	Early Cretaceous		1823 Ma (K/Ar)
227	Canada	Ontario		Kapuskasing	Kapuskasing Mine	Magmatic?				
228	Canada	Ontario		Lackner Lake/Nemegos (Multi-Minerals)		Magmatic, carbonatite/alkalic; metasomatic, residual enrichment?	apatite	Middle Proterozoic	1090 Ma (1963); 1000-1015 +/- 65 Ma (1989)	
229	Canada	Ontario		Manitou Islands Complex		Magmatic, carbonatite/alkalic				
230	Canada	Ontario		Martison Lake		Magmatic, carbonatite/alkalic; residual enrichment	apatite; residuum from leached carbonatite composed of apatite, francolite, florencite and other phases	Proterozoic		
231	Canada	Ontario		Nemegosenda Complex (Dominion Gulf)		Magmatic, carbonatite/alkalic				
232	Canada	Quebec		Baie-Comeau		Magmatic, carbonatite/alkalic				
233	Canada	Quebec		Buckingham Area		Magmatic-related	no data	Middle Proterozoic	Neohelikian (1300-1000 Ma)	
234	Canada	Quebec		Ile Bizard		Magmatic, carbonatite/alkalic		Early Cretaceous		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
226	carbonatite; quartz diorite; pyroxenite-amphibolite	Cargill Alkaline Complex- calcite carbonatite, leached carbonatite, residium	apatite, goethite, crandallite, vermiculite		Erdosh, 1989		Erdosh, 1979; Dawson and Currie, 1984; British Sulphur Corporation, 1987
227				Deposit composed of 3 orebodies. Ore is relatively unconsolidated.		Anticipated to come on stream in late 1999. Will supply Redwater, Alberta plant.	Agrium Website; Jasinski, 1998, 2000; S. Jasinski, written commun., 2001
228	apatite-magnetite rock, ultramafics		apatite, titaniferous magnetite, pyrochlore		Erdosh, 1979; Notholt and others, 1989a		Harben and Kuzvart, 1996; Pell, 1996; British Sulphur Corporation, 1987; Notholt and others, 1989a
229			apatite, biotite, calcite, pyrochlore	5 deposits; largest is on Newman Island.			USGS files; British Sulphur Corporation, 1987
230	carbonatite; ultrabasic kimberlites and porphyry diatreme breccias		apatite, magnetite, phlogopite, biotite, pyrochlore, francolite, florencite, iron oxides, clay	Residium is a coarse gray apatite sand up to 170 m thick.	Notholt and others, 1989a	Development hampered by lack of all weather access.	Guillet, 1985; Jasinski, 2000; Potapoff, 1989
231	calcite carbonatite, mafic rocks		pyrochlore, apatite, magnetite				British Sulphur Corporation, 1987
232							USGS files
233	no data				Foose, 1993		
234							USGS files

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
235	Canada	Quebec		Oka		Magmatic, carbonatite/alkalic			117 Ma	
236	Canada	Quebec		Sept-Iles		Magmatic			544-565 Ma	
237	Canada	Quebec	Simard Township	St. Honoré (Chicoutimi, SOQUEM)		Magmatic, carbonatite/alkalic			629-656 Ma	
238	Canada	Quebec	Hull Township		McClelland Mine	Metamorphic		Precambrian		
239	Canada	Quebec	Hull Township		Scott Mine	Metamorphic		Precambrian		
240	Canada	Quebec	Templeton Township		Rainville Mine	Metamorphic		Precambrian		
241	Canada	Quebec	Bowman Township		High Falls Mine	Metamorphic		Precambrian		
242	Canada	Quebec	Templeton Township		Blackburn Mine	Metamorphic		Precambrian		
243	Central African Republic			Bakouma		Sedimentary, secondary enrichment	bedded; nodular; calcareous or aluminum phosphates; lenticular zones where weathered	Eocene		
244	Chile			Bahia Inglesia (Bahia Inglesa)		Marine chemical sediment		Tertiary		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
235	carbonatite		pyrochlore, apatite, ceriopyrochlore, britholite, magnetite, melilite, perovskite, niocalite, pyrite, pyrrhotite, perovskite, okaite, wollastonite, latrappite			Past production of Nb.	Notholt and others, 1989a; Woolley, 1987; Pell, 1996; Mariano, 1989; Chakhmouradian, 1996; Moller, 1989; British Sulphur Corporation, 1987
236	gabbro, olivine gabbro, nelsonite, troctolite		apatite, ilmenite, magnetite		McCann and Cimon, 2001		Jasinski, 1998; McCann, 1998; McCann and Cimon, 2001
237	carbonatite		bastnasite, monazite, pyrochlore, apatite, pyrite, monticellite, sphene, barite, cancrinite, melanite, phlogopite			Deposit is mined for Nb.	Notholt and others, 1989a; Harben and Kuzvart, 1996; Singer, 1998; Woolley, 1987; Pell, 1996; USGS files; British Sulphur Corporation, 1987
238	pyroxenite		apatite				British Sulphur Corporation, 1987
239	pyroxenite		apatite				British Sulphur Corporation, 1987
240	pyroxenite		apatite				British Sulphur Corporation, 1987
241	pyroxenite		apatite				British Sulphur Corporation, 1987
242	pyroxenite		apatite				British Sulphur Corporation, 1987
243	clays	M'Patou Formation	autunite, meta-autunite, pyrite, clay, lignite		Slansky, 1986		de Kun, 1987; British Sulphur Corporation, 1987; Slansky, 1986
244						Reserves are of questionable quality. Site is 70 km N of Copiapo.	Industrial Minerals, 1987b; Notholt, 1994

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
245	Chile			Bahia Salado		Marine chemical sediment		Tertiary		
246	Chile			Bahia Tongoy-Guenaqueros		Marine chemical sediment		Tertiary		
247	Chile			La Serena		Marine chemical sediment		Cretaceous - Jurassic		
248	Chile	Atacama or Antofagasto		Le Soledad		Volcanic?		Early Cretaceous		
249	Chile	Atacama		Infiernillo		metamorphic?				
250	Chile	Atacama		Cielo		metamorphic?				
251	Chile	Atacama		Arrayan		metamorphic?				
252	Chile	Atacama		El Pingo		metamorphic?				
253	Chile	Atacama		Pirina		metamorphic?				
254	Chile	Atacama			Victoria Mine	metamorphic?				
255	Chile	Antofagasta		Mejillones deposit		Marine chemical sediment	phosphatic sandstone; pelletal; oolitic	Middle-Late Miocene		
256	Chile	Coquimbo		Escobas		metamorphic?				
257	Chile	Coquimbo		Fósiles	Reserva, Veta 30, Veta 10	metamorphic?				
258	Chile	Coquimbo		Hornos		metamorphic?				
259	Chile	Coquimbo		Lagunillas		metamorphic?				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
245							Notholt, 1994
246							Notholt, 1994
247				Main phosphate bed is only 0.6 m thick	Notholt, 1994		Notholt, 1994
248	volcanics, marine sediments	Aeropuerto Formation		Irregular bodies of apatite.	Naranjo and Puig, 1984		Naranjo and Puig, 1984
249			apatite, magnetite, amphiboles			Production was subsidized.	Mew, 1980
250			apatite, magnetite, amphiboles			Production was subsidized.	Mew, 1980
251			apatite, magnetite, amphiboles			Production was subsidized.	Mew, 1980
252			apatite, magnetite, amphiboles			Production was subsidized.	Mew, 1980
253			apatite, magnetite, amphiboles			Production was subsidized.	Mew, 1980
254			apatite, magnetite, amphiboles			Production was subsidized.	Mew, 1980
255	shelly sandstone; shelly and sandy limestone; clayey sandstone; mudstone	Caleta Herradura Formation			Valdebenito M., 1989	Ore is of questionable quality.	Notholt, 1994; Mew, 1980
256			apatite, magnetite, amphiboles			Production was subsidized.	Mew, 1980
257			apatite, magnetite, amphiboles			Production was subsidized.	Mew, 1980
258			apatite, magnetite, amphiboles			Production was subsidized.	Mew, 1980
259			apatite, magnetite, amphiboles			Production was subsidized.	Mew, 1980

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
260	Chile	Coquimbo		Las Choros	Gilda, California, Berenguela, Zapallo	metamorphic?				
261	Chile	Coquimbo		Las Lajas		metamorphic?				
262	Chile	Coquimbo		Mathilde		metamorphic?				
263	China	Anhui		Feng-T'ai (Fengtai)		Marine chemical sediment	phosphatic limestone; nodular; oolitic; conglomeratic phosphate	Early Cambrian		
264	China	Anhui			Dahengshan Phosphate Mine	Unknown				
265	China	Anhui			Nanchong Phosphate Mine	Unknown				
266	China	Guangdong		Chanchiang (Zhanjiang)		Marine chemical sediment	no data	post-Paleozoic		
267	China	Guangxi		Balong		Unknown				
268	China	Guangxi		Du'an	Du'an	Residual enrichment	laminated and banded; clayey phosphorite	Tertiary and younger		
269	China	Guangxi	Baise	Yilong		Unknown				
270	China	Guangxi	Wengyuan			Unknown				
271	China	Guizhou		Kaiyang	Kaiyang, Fuchan?	Marine chemical sediment	bedded; granular; pelletal; shaley phosphatic partings; local stromatolites	Late Proterozoic	Late Sinian	
272	China	Guizhou		Xifeng		Marine chemical sediment	pelletal, psammitic phosphorite; jelly phosphorite	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
273	China	Guizhou		Zunyi		Marine chemical sediment	bedded; lenticular; jelly phosphorite	Late Proterozoic	Middle-Late Sinian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
260			apatite, magnetite, amphiboles			Production was subsidized.	Mew, 1980
261			apatite, magnetite, amphiboles			Production was subsidized.	Mew, 1980
262			apatite, magnetite, amphiboles			Production was subsidized.	Mew, 1980
263	calcareous conglomerate; shale	Xinji Formation		Phosphorite horizon 0.5-1.0 thick.	Li, 1986; British Sulphur Corporation, 1987	Average content of 20% P2O5.	British Sulphur Corporation, 1987
264							
265							
266	no data				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
267							
268	surface elluvium; clay				Li and others, 1996	Chemical composition information from Li and others (1996)	
269							
270							
271	dolomite, limestone, siliceous rock		collophane, dolomite, quartz, clay		Li, 1986; British Sulphur Corporation, 1987	Integrated producer. First production in the 1960's.	Fountain, 1999; Wen Lu, 1998; Griffiths, 1995a; British Sulphur Corporation, 1987; McClellan and Saavedra, 1986
272	dolomite?			Age, phosphate type and associated lithology inferred from association with nearby deposits	Inferred from Li, 1986 and Li and others, 1996		Wen Lu, 1998; Griffiths, 1995a
273	black shale; argillaceous dolomite; jelly phosphorite with quartz, glauconite and calcite	Sung Ling Suite	quartz, glauconite, calcite with pyrite	Phosphatic lenses up to 0.5 m thick.	British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Li, 1986

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
274	China	Guizhou	Fuquan	Wengfu/Fuquan/Gaoping	Yingping Mine	Marine chemical sediment	pelletal; psammitic phosphorite; dolomitic jelly phosphorite (amorphous carbonate-fluorapatite)	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
275	China	Guizhou	Fuquan	Wengfu/Fuquan/Gaoping	includes Yingping, Lanmaao and Mo Fang Mines	Marine chemical sediment	psammitic phosphorite; pebbly; lenticular; psephitic phosphorite; jelly phosphorite	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
276	China	Guizhou	Weng'an	Wenfu/Weng'an	Beidoushan (Weng'an Mine)	Marine chemical sediment	pelletal; psammitic phosphorite; jelly phosphorite	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
277	China	Guizhou	Weng'an	Wenfu/Weng'an/Baiyan	includes Datang, Chaoyanpo, and Nanpu mines	Marine chemical sediment	pelletal; psammitic and rudaceous phosphorite; banded and laminated jelly phosphorite	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
278	China	Guizhou	Zhijin	Xinhua	Xinhua	Marine chemical sediment	bedded; granular; skeletal; phosphatic sandstone and pebbly phosphorites	Early Cambrian		
279	China	Hainan			Damao Mine	Marine chemical sediment	bedded	Middle Cambrian		
280	China	Hebei		Chingshan (Jingshan)		Marine chemical sediment	bedded; thin laminae	Late Proterozoic		
281	China	Hebei		Heishan		Magmatic, basic/ultrabasic	apatite			
282	China	Hebei		Maying		Magmatic, basic/ultrabasic	apatite			

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
274	claystone; dolomite	Doushantou Formation	collophane, dolomite, quartz, clay	Contains iodine-bearing apatite.	Li and others, 1996; Li, 1986; British Sulphur Corporation, 1987	Contains iodine-bearing apatite allowing a 65-70% recovery of iodine	Fountain, 1999; British Sulphur Corporation, 1987
275	dolomite		collophane, dolomite, quartz, clay				..
276	limestone; dolomite; argillaceous sandstone		collophane, dolomite, quartz, clay		Li, 1986	Record information specific to Yingping mine.	Griffiths, 1995a
277	limestone; dolomite; argillaceous sandstone	Doushantuo Formation	collophane, dolomite, quartz, clay	≥30% P2O5 in psammitic phosphorite, beds with 15-20 m thickness with 22-27% P2O5 in jelly phosphorite	Li, 1986	Annual production information from Griffiths (1995)	Wen Lu, 1998; Li and others, 1996
278	black shale; siliceous sediments; carbonate		collophane, monazite	Rare earths are present as isomorphous replacements in collophane.	Li and others, 1996		Wen Lu, 1998; Li and others, 1996
279	quartz sandstone; siliceous sediments; shale; dolomite		collophane, calcite, guano, clays	Floor of phosphate bed is a manganese deposit of mostly manganese carbonate	Li and others, 1996		
280	micaceous shale; dolomite				U.S. Geological Survey Mineral Resources Data System, 2000		
281	basic-ultrabasic complex-- anorthosite, gabbro, pyroxenite		apatite, ilmenite, magnetite, titanomagnetite, V				Li and others, 1996
282	basic-ultrabasic complex-- anorthosite, gabbro, pyroxenite		apatite, ilmenite, magnetite, titanomagnetite, V				Li and others, 1996

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
283	China	Hebei	Chengde	Luoguozigou		Magmatic, basic/ultrabasic	apatite			
284	China	Hebei	Fengning	Zhaobingou		Magmatic, alkaline?; Metamorphic	apatite	Archean		
285	China	Hebei	Yangyuan	Yaojiazhuang		Magmatic, ultrabasic/alkaline	apatite			
286	China	Hebei	Zhuolu	Fanshan (Fangshan)	Fanshan	Magmatic, carbonatite/alkalic	apatite	Triassic (205-222 Ma)		Triassic (205-222 Ma)
287	China	Henan	Lushan	Xinji		Marine chemical sediment	oolitic, sandy pebbly phosphorite; phosphatic cement; phosphate conglomerate	Early Cambrian		
288	China	Hubei			Dayukou Phosphate Mine	Marine chemical sediment	granular; nodular; bedded; stromatolitic phosphorite; jelly phosphorite (amorphous carbonate-fluorapatite)	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
289	China	Hubei		Chunghsiang		Marine chemical sediment	bedded; thin laminae	Late Proterozoic		
290	China	Hubei		Hefeng		Marine chemical sediment				
291	China	Hubei	Baokang	Baizhu		Sedimentary				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
283	basic-ultrabasic complex--anorthosite, gabbro, pyroxenite		apatite, ilmenite, magnetite, titanomagnetite, V				Wen Lu, 1998; Li and others, 1996
284	hornblende-biotite leptite; amphibolite; magnetite quartzite; apatite-titanomagnetite amphibolite				Li and others, 1996		Wen Lu, 1998; Li and others, 1996
285	basic-ultrabasic complex		apatite, ilmenite, magnetite				Wen Lu, 1998
286	subalkaline ultramafic complex; pyroxene syenite, pyroxenite, syenite		magnetite, apatite, schorl, bastnäsite, phlogopite, K-feldspar, biotite, V, Ti, Co, Ni		Li and others, 1996	Produces relatively low grade ore at relatively high cost for Hubei Province fertilizer producers.	Fountain, 1999; Wen Lu, 1998; Griffiths, 1995a; British Sulphur Corporation, 1987; McClellan and Saavedra, 1986
287	sandy limestone; sandstone; shale	Xinji Formation.			Li, 1986; Li and others, 1996		Li and others, 1996
288	claystone; dolomite				Li and others, 1996		British Sulphur Corporation, 1987; S. Jasinski, written commun., 2001
289	micaceous shale; dolomite				U.S. Geological Survey Mineral Resources Data System, 2000		ISMI
290							Wen Lu, 1998
291						Large mine in district is Baizhu	Wen Lu, 1998

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
292	China	Hubei	Dawu	Huangmailing	Huangmailing Phosphate Mine	Metasedimentary	bedded; phosphatic carbonate; manganiferous phosphate ore	Early Proterozoic (2000-1700 Ma)		
293	China	Hubei	Yichang	Huaguoshu	Dianziping + Shukongping	Marine chemical sediment	dolomitic phosphorite	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
294	China	Hubei	Yichang	Lixi-Dingjiahe		Marine chemical sediment		Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
295	China	Hubei	Yichang	Xiaofeng		Marine chemical sediment		Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
296	China	Hubei	Yichang	Yichang		Marine chemical sediment		Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
297	China	Hubei	Yichang-Yuan'an	Yanchihe		Marine chemical sediment		Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
298	China	Hubei	Yuan'an		Wanji Phosphate Mine	Unknown				
299	China	Hubei	Zhongxiang	Huji	Zhongxiang Phosphate Mine	Marine chemical sediment	bedded; dolomitic phosphorite	Late Proterozoic-Early Cambrian	Middle Sinian-Early Cambrian	
300	China	Hubei	Zhongxiang	Jingxiang	Jingxiang phosphate Mine	Marine chemical sediment	bedded	Late Proterozoic-Early Cambrian	Middle Sinian-Early Cambrian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
292	carbonate; argillaceous sediments; sandstone	Hutuo Group	apatite, quartz, dolomite, calcite, mica, manganese minerals	Greenschist facies	Li and others, 1996	Chemical composition information from Li and others (1996)	Fountain, 1999; Wen Lu, 1998; Griffiths, 1995a; British Sulphur Corporation, 1987; McClellan and Saavedra, 1986; Industrial Minerals, 2000b
293	limestone; dolomite; shale	Doushantuo Formation.			Li, 1986	There are 2 large mining areas-- Dianziping and one other not named by Fountain.	Fountain, 1999
294					Li, 1986		Wen Lu, 1998
295					Li, 1986		Wen Lu, 1998
296					Li, 1986	Project has received China government approval.	Jasinski, 2000
297					Li, 1986		Wen Lu, 1998
298							Griffiths, 1995a; S. Jasinski, written commun., 2001
299	dolomite micaceous shale; dolomitic marl	Doushantou Formation	phosphate rock; dolomite	Early Cambrian beds are thin and of no significance; Middle Sinian Doushantou Formation (Doushantuo period, 700-650 Ma) contains four phosphate beds of economic significance.	Li, 1986; British Sulphur Corporation, 1987	Annual production information from Griffiths (1995); resource information from World Survey of Phosphate Deposits (1987)	Wen Lu, 1998; Griffiths, 1995a
300	micaceous shale; dolomitic marl	Doushantou Formation		Early Cambrian beds are thin and of no significance; Middle Sinian Doushantou Formation (Doushantuo period, 700-650 Ma) contains four phosphate beds of economic significance.	British Sulphur Corporation, 1987		Griffiths, 1995a; Li and others, 1996

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
301	China	Hunan			Huaquiao	Unknown				
302	China	Hunan			Matian	Marine chemical sediment		Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
303	China	Hunan			Pushi	Marine chemical sediment	dolomitic phosphorite; argillaceous phosphorite	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
304	China	Hunan			Xixi Phosphate Mine	Unknown				
305	China	Hunan	Liuyang	Chayuanpo (Chayuanpu, Liuyang, Changsha, Yonghe?)	Liuyang Phosphate Mine	Marine chemical sediment	granular; nodular; bedded; stromatolitic phosphorite; jelly phosphorite (amorphous carbonate-fluorapatite)	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
306	China	Hunan	Shimen	Dongshanfeng	Dongshanfeng phosphate Mine	Marine chemical sediment	stromatolitic, dolomitic phosphorite	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
307	China	Hunan	Xiangtan	Huangjingping	Huangjingping	Weathering, secondary enrichment	colloform; microcrystalline granular; sandy; pebbly; metasomatic-rimmed textures	Quaternary		
308	China	Jiangsu		Lianyungang (Tung-Hai, Lienyunkang, Donghai, Chu Shan)	Lianyungang Mine	Metasedimentary	phosphate-bearing metamorphic dolomite; bedded	Early Proterozoic (2000-1700 Ma)		
309	China	Jiangsu		Lianyungang (Tung-Hai, Lienyunkang, Donghai, Chu Shan)	Jingping Phosphate Mine (Jiansu Haizhou)	Metasedimentary	phosphate-bearing metamorphic dolomite; bedded	Early Proterozoic (2000-1700 Ma)		
310	China	Jiangsu		Meishan		Magmatic, Intermediate/Acid	apatite			

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
301							British Sulphur Corporation, 1987
302					British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
303	dolomite; limestone shale				Li and others, 1996		British Sulphur Corporation, 1987
304							Griffiths, 1995a
305	argillaceous shale; black limestone and dolomite; sandstone			In Nan-chung depression.	Li and others, 1996; Li, 1986	Deposit is fairly low grade, commonly <20% P2O5. Mine does not export production.	Fountain, 1999; Griffiths, 1995a; British Sulphur Corporation, 1987
306	limestone; dolomite; shale	Doushantuo Formation			Li, 1986		Wen Lu, 1998; Fountain, 1999
307	eluvial sediments including clays, carbonate and other minerals	Dengying Formation	collophane, apatite, wavellite, variscite	Ore bodies hosted in Quaternary eluvium on bedrock weathering surface of the Dengying Formation. Ore structures are typically earthy, massive, and brecciated masses.	Li and others, 1996		British Sulphur Corporation, 1987; Li and others, 1996
308	mica-quartz schist; quartzite; dolomitic marble; dolomite-plagioclase gneiss; apatitolite	Haizhou Group, Yung Tai Suite		Thickness of phosphatic horizon in this area as much as 15O m.			Wen Lu, 1998
309	mica-quartz schist; quartizite; dolomitic marble; dolomite-plagioclase gneiss; apatitolite	Yung Tai Suite, Haizhou Group, Jingping Formation	fluorapatite, calcite, dolomite, mica, quartz		Li and others, 1996		Griffiths, 1995a; Li and others, 1996; S. Jasinski, written commun., 2001
310	pyroxene diorite porphyrite; magnetitite, magnetite apatitolite		apatite; magnetite	Source of igneous material from subducted oceanic crust; formed along passive margin of continental plate			Li and others, 1996

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
311	China	Jiangsu		Nantung (Nantong, Jinsha)		Marine chemical sediment	no data	Proterozoic (?)		
312	China	Jiangxi	Shangrao	Chaoyang	Chaoyang Mine	Metasedimentary	psammitic and rudaceous phosphorite; dolomitic phosphorite	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
313	China	Jilin		Shangquinggou		Magmatic; metamorphic	apatite	Archean		
314	China	Jilin		Shuidong		Marine chemical sediment	phosphatic conglomerate	Early Cambrian		
315	China	Liaoning		Tianshui		Metasedimentary	phosphate-bearing carbonaceous slate and dolomitic marble	Early Proterozoic (2000-1700 Ma)		
316	China	Liaoning	Fuxin	Gongguanyingzi		Magmatic, alkaline?; metamorphic	apatite	Archean		
317	China	Liaoning	Jianping	Baojishan		Magmatic, alkaline?; Metamorphic	apatite	Archean		
318	China	Liaoning	Jianping	Ulanwusu		Magmatic, alkaline?; Metamorphic	apatite	Archean		
319	China	Nei Monggol	Darhan Muminggan Liamheqi	Bulongtu	Bulongtu Phosphate Mine	Metasedimentary	phosphate-bearing metasediments	Early Proterozoic (2000-1700 Ma)		
320	China	Ningxia		Helanshan		Marine chemical sediment	ferruginous phosphatic conglomerate; pebbly; bedded	Early Cambrian		
321	China	Shaanxi		Chadian		Marine chemical sediment	pelletal; psammitic; micrite; fine-grained crystalline; phosphate-bearing manganese carbonate with oolitic texture	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
311	no data			Age based on ages of other deposits in this region, very little information available about this deposit	British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
312	limestone; dolomite; sandstone; shale	Doushantuo Formation			Li, 1986		Wen Lu, 1998; Griffiths, 1995a
313	plagioclase-hornblende-apatite ore			Greenstone belt phosphate deposit	Li and others, 1996		Li and others, 1996
314	siliceous rock				Li, 1986		Li, 1986
315	slate; marble				Li and others, 1996		Li and others, 1996
316	titanomagnetite-hornblende apatite ore			Greenstone belt phosphate deposit	Li and others, 1996		Li and others, 1996
317	greenstones; metamorphosed basic-acid volcanics; metamorphosed clastic sediments and rare carbonate	Fuping Group			Li and others, 1996		Wen Lu, 1998
318	titanomagnetite-hornblende apatite ore			Greenstone belt phosphate deposit	Li and others, 1996		Li and others, 1996
319	schist; gneiss; marble				Li and others, 1996		Wen Lu, 1998; Li and others, 1996
320	sandy marl; cherty limestone				Li, 1986; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
321	black phyllite; dolostone; manganese carbonate			Phosphorous-manganese ores deposited in shallow-water, high energy environments in transitional zone between reducing and slightly oxidizing waters	Liu and others, 1996		Wen Lu, 1998; Liu and others, 1996

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
322	China	Shaanxi		Hejiayan		Marine chemical sediment	pelletal; psammitic; micrite; fine-grained crystalline	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
323	China	Shaanxi		Jinjiahe		Marine chemical sediment	pelletal; psammitic; micrite; fine-grained crystalline		Late Sinian (Doushantuo period, 700-650 Ma)	
324	China	Shaanxi	Fanzhi	Puzigou		Magmatic, alkaline?				
325	China	Shaanxi	Fengxian	Caoliangyi		Sedimentary or Magmatic, basic/ultrabasic				
326	China	Shaanxi	Hanzhong	Tiantaishan		Marine chemical sediment	pelletal; psammitic; micrite; fine-grained crystal	Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
327	China	Shaanxi	Laochuan	Qishan		Marine chemical sediment	oolitic, sandy pebbly phosphorite; phosphatic cement; phosphate conglomerate	Early Cambrian		
328	China	Shaanxi	Lingqiu	Pingxingguan		Magmatic, alkaline?; Metamorphic				
329	China	Shaanxi	Longxi County	Jingfoshan		Marine chemical sediment	oolitic, sandy pebbly phosphorite; phosphatic cement; phosphate conglomerate	Early Cambrian		
330	China	Shandong		Laiwu		Unknown				
331	China	Shandong		Yexian		Magmatic; Metamorphic	apatite			

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
322	black phyllite; dolostone; manganese carbonate			Phosphorous-manganese ores deposited in shallow-water, high energy environments in transitional zone between reducing and slightly oxidizing waters	Liu and others, 1996		Liu and others, 1996
323	black phyllite; dolostone; manganese carbonate			Phosphorous-manganese ores deposited in shallow-water, high energy environments in transitional zone between reducing and slightly oxidizing waters	Liu and others, 1996; Li, 1986		Liu and others, 1996
324							Wen Lu, 1998
325	basic-ultrabasic complex						Wen Lu, 1998
326	black phyllite; dolostone; manganese carbonate			Phosphorous-manganese ores deposited in shallow-water, high energy environments in transitional zone between reducing and slightly oxidizing waters.	Liu and others, 1996; Li, 1986	Mine does not export production.	Fountain, 1999; Wen Lu, 1998
327	argillaceous limestone	Xinji Formation			Li, 1986		Li, 1986
328							Wen Lu, 1998
329	argillaceous limestone; calcareous sandstone; chert	Xinji Formation			Li, 1986		Li, 1986
330							
331	biotite-hornblende-apatite ore			Greenstone belt phosphate deposit.	Li and others, 1996		Li and others, 1996

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
332	China	Shandong	Laizhou	Jiangjia	Jiangjia, others	Magmatic	apatite	Archean		
333	China	Shandong	Qixia	Guanli		Magmatic	apatite	Archean		
334	China	Shandong	Zaozhuang	Shagou	Shagou, others	Magmatic	apatite	Archean		
335	China	Shanxi		Ruicheng		Marine chemical sediment	phosphatic conglomerate	Early Cambrian		
336	China	Sichuan		Emei (Omei)		Marine chemical sediment	bedded; granular	Early Cambrian		
337	China	Sichuan		Guanshan		Marine chemical sediment		Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
338	China	Sichuan		Jingbing Phosphate Mine		Unknown				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
332	greenstones; metamorphosed basic-acid volcanics; metamorphosed clastic sediments and rare carbonate	Fuping Group		Li and others (1996) say this deposit is metamorphic.	Li and others, 1996	Large mine in district is Jiangjia.	Wen Lu, 1998
333	greenstones; metamorphosed basic-acid volcanics; metamorphosed clastic sediments and rare carbonate	Fuping Group		Li and others (1996) say this deposit is metamorphic.	Li and others, 1996		Wen Lu, 1998
334	greenstones; metamorphosed basic-acid volcanics; metamorphosed clastic sediments and rare carbonate	Fuping Group		Li and others (1996) say this deposit is metamorphic.	Li and others, 1996	Large mine in district is Shagou.	Wen Lu, 1998
335	shale and argillaceous shale; calcareous sandstone; limestone; marl				Li, 1986		Li, 1986
336	chert; dolomitic limestone; siliceous dolomite	Lei Po Suite		Phosphates contained in basin of Middle Cambrian sediments rimmed almost entirely by Cretaceous sediments.	Chen and Li, 1991; British Sulphur Corporation, 1987; Li and others, 1996		British Sulphur Corporation, 1987
337					Li and others, 1996		Li and others, 1996
338							

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
339	China	Sichuan		Shifang	Chinho (Jin He, Jinhe)	Weathering, "resedimented"	bedded	Middle-Late Devonian		
340	China	Sichuan		Shifang	Chingping (Zingping, Qingping)	Weathering, "resedimented"	bedded, pebbly	Middle-Late Devonian		
341	China	Sichuan		Shuitonggou Phosphate Mine		Unknown				
342	China	Sichuan		Yangjiaba		Marine chemical sediment		Late Proterozoic	Late Sinian (Doushantuo period, 700-650 Ma)	
343	China	Sichuan	Hanyuan	Fuquan		Marine chemical sediment	glauconitic phosphorite	Early Cambrian		
344	China	Sichuan	Huidong	Tangfang		Marine chemical sediment	glauconitic phosphorite	Early Cambrian		
345	China	Sichuan	Leibo	Majingzi		Marine chemical sediment	bedded; granular	Early Cambrian		
346	China	Sichuan	Leibo	Niuniuzhai		Marine chemical sediment	bedded; granular	Early Cambrian		
347	China	Sichuan	Mabian	Laoheba		Marine chemical sediment	bedded; granular; skeletal; phosphatic sandstone and pebbly phosphorites	Early Cambrian		
348	China	Sichuan	Mianzhu	Macaotan		Residual enrichment	phosphate-bearing sandstone and claystone; pebbly phosphorite	Middle-Late Devonian		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
339	chert; dolomitic limestone	Lei Po Suite	collophane, hydromica, pyrite, organic matter		Wen Lu, 1998; British Sulphur Corporation, 1987		Wen Lu, 1998; Griffiths, 1995a; British Sulphur Corporation, 1987
340	chert; dolomitic limestone	Lei Po Suite	carbonate-fluorapatite, svanbergite		U.S. Geological Survey Mineral Resources Data System, 2000; British Sulphur Corporation, 1987; Li and others, 1996		Wen Lu, 1998; Griffiths, 1995a; British Sulphur Corporation, 1987; Li and others, 1996
341							
342					Li and others, 1996		Li and others, 1996
343	glauconitic claystone; argillaceous siltstone	Zhongyicun Member of Yuhucun Formation		Meishucun Stage sediments.	Li and others, 1996		Wen Lu, 1998
344	glauconitic claystone; argillaceous siltstone	Zhongyicun Member of Yuhucun Formation		Meishucun Stage sediments.	Li and others, 1996		Wen Lu, 1998
345	chert; dolomitic limestone; siliceous dolomite	Lei Po Suite			Lee, 1980; British Sulphur Corporation, 1987		Wen Lu, 1998; British Sulphur Corporation, 1987
346	chert; dolomitic limestone; siliceous dolomite	Lei Po Suite			Lee, 1980; British Sulphur Corporation, 1987		Wen Lu, 1998; British Sulphur Corporation, 1987
347	black shale; siliceous sediments; carbonate	Zhongyicun Member of Yuhucun Formation		Meishucun Stage sediments.	Li and others, 1996	Deposit is high grade.	Wen Lu, 1998; Fountain, 1999
348	sandstone; claystone; dolomite				Li and others, 1996	Chemical data from Li and others (1996)	Wen Lu, 1998

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
349	China	Sichuan	Mianzhu	Wangjiaping		Residual enrichment	phosphate-bearing sandstone and claystone; pebbly phosphorite	Middle-Late Devonian		
350	China	Xinjiang	Yuli	Qieganblak		Magmatic, ultrabasic/alkaline				
351	China	Yunnan		Anning		Marine chemical sediment				
352	China	Yunnan		Jianshan Phosphate Mine		Unknown				
353	China	Yunnan		Jingning Phosphate Mine		Unknown				
354	China	Yunnan		Xianfeng		Marine chemical sediment	dolomitic phosphorite; greyish-black phosphorite	Early Cambrian		
355	China	Yunnan	Huaning	Huote		Marine chemical sediment	bedded; siliceous phosphorite	Early Cambrian		
356	China	Yunnan	Huize	Wuxing		Marine chemical sediment	bedded; siliceous phosphorite	Early Cambrian		
357	China	Yunnan	Jinning	Jinning Erjie Phosphate Mine		Marine chemical sediment	bedded; siliceous phosphorite	Early Cambrian		
358	China	Yunnan	Jinning	Jinning Huale Town Phosphate Mine		Marine chemical sediment	bedded; siliceous phosphorite	Early Cambrian		
359	China	Yunnan	Jinning	Jinning Liujie Phosphate Mine		Marine chemical sediment	bedded; siliceous phosphorite	Early Cambrian		
360	China	Yunnan	Jinning	Jinning Shangsuan Phosphate Mine		Marine chemical sediment	bedded; siliceous phosphorite	Early Cambrian		
361	China	Yunnan	Jinning	Kunming		Marine chemical sediment	bedded; siliceous phosphorite; dolomitic phosphorite	Early Cambrian		
362	China	Yunnan	Jinning	Kunming	Jinning Phosphate Mine	Marine chemical sediment	granular; nodular; bedded; skeletal/fossiliferous	Early Cambrian		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
349	sandstone; claystone; dolomite				Li and others, 1996	Chemical data from Li and others (1996).	Wen Lu, 1998
350	ultrabasic - alkaline complex		apatite				Wen Lu, 1998
351							Wen Lu, 1998
352							
353							Wen Lu, 1998
354	dolomite			Major ore bed 7 m thick on average.	British Sulphur Corporation, 1987	Major ore bed averages greater than 30% P2O5.	British Sulphur Corporation, 1987
355	siliceous rock; carbonate			Age and lithologies inferred from nearby phosphorites in Jinning and Kunming.	Li and others, 1996		Wen Lu, 1998
356	siliceous rock; carbonate			Age and lithologies inferred from phosphorites to south in Jinning and Kunming and a map in Li, 1986.	Li, 1986; Li and others, 1996		Wen Lu, 1998
357	siliceous rock; carbonate			Age inferred from descriptions of general Jinning deposit.	Li and others, 1996		Wen Lu, 1998
358	siliceous rock; carbonate			Age inferred from descriptions of general Jinning deposit.	Li and others, 1996		Wen Lu, 1998
359	siliceous rock; carbonate			Age inferred from descriptions of general Jinning deposit.	Li and others, 1996		Wen Lu, 1998
360	siliceous rock; carbonate			Age inferred from descriptions of general Jinning deposit.	Li and others, 1996		Wen Lu, 1998
361	dolomite; dolomitic limestone; black chert	Meishucun Formation			Notholt and others, 1989d; Li, 1986; British Sulphur Corporation, 1987		Wen Lu, 1998
362	carbonate; siliceous sediments			Meishucun Stage sediments.	Li and others, 1996		Fountain, 1999; Griffiths, 1995a

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
363	China	Yunnan	Jinning	Kunyang	Kunyang Mine	Marine chemical sediment	bedded; granular; glauconitic phosphorite (nodular); dolomitic phosphorite; siliceous phosphorite	Early Cambrian		
364	China	Yunnan	Kunming	Haikou	Haikou	Marine chemical sediment	bedded; argillaceous phosphorite	Early Cambrian		
365	China	Yunnan	Kunming	Haikou	Pointed Peak	Marine chemical sediment	bedded; argillaceous phosphorite	Early Cambrian		
366	China	Yunnan	Kunming	Xishan		Marine chemical sediment	bedded; siliceous phosphorite	Early Cambrian		
367	China	Yunnan	Qujing	Deze		Marine chemical sediment	bedded; granular; skeletal; phosphatic sandstone and pebbly phosphorites	Early Cambrian		
368	Colombia	Boyaca	Boyaca Nuevo Colon	Mesa Alta		Marine chemical sediment				
369	Colombia	Boyaca	Iza Cuitiva Tota	Iza		Marine chemical sediment				
370	Colombia	Boyaca		Pesca/Iza Deposits		Marine chemical sediment				
371	Colombia	Boyaca	Mongua	Cuchilla de Balcones		Marine chemical sediment				
372	Colombia	Boyaca	Mongua	El Pico de Tijeras-La Pena de Los Viles		Marine chemical sediment				
373	Colombia	Boyaca	Mongua	Loma de Cruz Alta		Marine chemical sediment				
374	Colombia	Boyaca	Mongui	Cuchilla Pena Negra-Oseta		Marine chemical sediment				
375	Colombia	Boyaca	Mongui	Cuchilla Tembladar-La Sarna		Marine chemical sediment				
376	Colombia	Boyaca	Mongui	El Cerro Diagua		Marine chemical sediment				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
363	dolomite; chert; glauconitic clay	Zhongyicun Member of Yuhucun Formation.		Meishucun Stage sediments	Li and others, 1996; Yeh Lientsun and others, 1986	Deposit is high grade.	Wen Lu, 1998; Fountain, 1999; Yeh Lientsun and others, 1986
364	argillaceous shale; dolomite				Yeh Lientsun and others, 1986; Bushinskii, 1969	Ore typically runs 24-25% P2O5.	Fountain, 1999
365	argillaceous shale; dolomite		collophane, dolomite, quartz, clay		Inferred from nearby mine	Ore typically runs 30-31% P2O5.	Fountain, 1999
366	siliceous rock; carbonate			Age and lithologies inferred from description of phosphorites in Kunming in Li and others, 1996.	Li and others, 1996		Wen Lu, 1998
367	black shale; siliceous sediments; carbonate	Zhongyicun Member of Yuhucun Formation.		Meishucun Stage sediments	Li and others, 1996		Wen Lu, 1998; Li and others, 1996
368				Phosphate ore 2.30 m thick.			Mutis Jurado, 1982
369				Deposit averages 1.8 m thick and averages about 21% P2O5 (1982).			Mutis Jurado, 1982
370							Appleton, 1994
371				Deposit is 2 m thick.			Mutis Jurado, 1982
372				Deposit is 1 m thick.			Mutis Jurado, 1982
373				Deposit is 0.8 m thick.			Mutis Jurado, 1982
374				Deposit is 1.8 m thick.			Mutis Jurado, 1982
375				Deposit is 1.4 m thick.			Mutis Jurado, 1982
376				Deposit is 1.7 m thick.			Mutis Jurado, 1982

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
377	Colombia	Boyaca	Pesca	La Conejera area		Marine chemical sediment	bedded, sandy phosphorite, forams, pellets, irregular nodules	Late Cretaceous		
378	Colombia	Boyaca	Samaca	La Parroquia		Marine chemical sediment				
379	Colombia	Boyaca		La Cascajera (Pesca)		Marine chemical sediment	bedded; apatite-quartz sandstone	Late Cretaceous		
380	Colombia	Boyaca	Tumeque Ventaquemada	La Cascajera (Turmeque)		Marine chemical sediment	bedded; apatite-quartz sandstone; pelletal	Late Cretaceous		
381	Colombia	Boyaca	Tunja	Tunja		Marine chemical sediment	bedded; phosphorite sand	Late Cretaceous	Santonian-Campanian	
382	Colombia	Boyaca		Pesca Sogamoso		Marine chemical sediment	bedded	Late Cretaceous	Santonian-Campanian	
383	Colombia	Boyaca	Sogamosa	Ombachita-El Pilar						
384	Colombia	Boyaca	Sogamosa	Sogamoso area		Marine chemical sediment	bedded; phosphatic sandstone	Late Cretaceous	Santonian-Campanian	
385	Colombia	Boyaca	Ventaquemada	Pirachon		Marine chemical sediment				
386	Colombia	Cundinamarca		Alto De Mesa		Marine chemical sediment	no data	Late Cretaceous		
387	Colombia	Cundinamarca		Nueva Vizcaya		Marine chemical sediment	no data	Late Cretaceous		
388	Colombia	Cundinamarca		Serrania De Perico		Marine chemical sediment	no data	Late Cretaceous		
389	Colombia	Cundinamarca		Sueva		Marine chemical sediment	no data	Late Cretaceous		
390	Colombia	Cundinamarca	Caparappi	Caparappi (La Palma)		Marine chemical sediment	phosphatic sand?			
391	Colombia	Cundinamarca	Macheta	Macheta (Guateque)		Marine chemical sediment	bedded; phosphorite sand	Late Cretaceous	Santonian-Campanian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
377	chert, clay, sandstone	Plaeners Formation or La Luna Formation - Galembo member	fluorapatite, quartz, feldspar, pyrite, iron oxide, organic material, muscovite, minor wavellite	2-4 m thick.			Mew, 1980; Ministerio de Minas y Petroleos de Colombia and others, 1968; British Sulphur Corporation, 1987; Mutis Jurado, 1982
378				1.3 m thick.			Mutis Jurado, 1982
379	sandstone; siltstone; shale	Guadalupe Formation.		Phosphate bed has average thickness of 2.8 m. Ore is composed of poorly-cemented grains of apatite.	Cathcart and Zambrano, 1969	For production of direct application phosphate fertilizer.	Mew, 1980; British Sulphur Corporation, 1987
380	sandstone; siltstone; shale	Guadalupe Group		Phosphate ore 3.6 m thick and extends 9 kms.	Cathcart and Zambrano, 1969		Ministerio de Minas y Petroleos de Colombia and others, 1968; Mutis Jurado, 1982
381	shale; siltstone; sandstone	Guadalupe Group			Cathcart and Zambrano, 1969		Mutis Jurado, 1982
382	black shale; sandstone; chert	La Luna Formation			Notholt and others, 1989b		Russell, 1987
383				0.8-1.6 m thick.			Mutis Jurado, 1982
384	siltstone; shale; sandstone	Guadalupe Group		4 m thick.	Cathcart and Zambrano, 1969		Mutis Jurado, 1982
385				Phosphate horizon 0.7-1.5 m thick localized in the Pirachon Syncline..			Mutis Jurado, 1982
386	no data				Cathcart and Zambrano, 1969		
387	no data				Cathcart and Zambrano, 1969		
388	no data				Cathcart and Zambrano, 1969		
389	no data				Cathcart and Zambrano, 1969		
390		La Luna Formation - Galembo member		Phosphate bed up to 1 m thick.			Mew, 1980; Mutis Jurado, 1982
391	shale; siltstone; sandstone	Guadalupe Group		0.5 m thick with 19.6% P2O5.	Cathcart and Zambrano, 1969		Mutis Jurado, 1982

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
392	Colombia	Cundinamarca	Pandi	Rio Sumapaz area (Pandi-Cunday-Icononzo)		Marine chemical sediment				
393	Colombia	Cundinamarca	Quipile	Alto del Triga - La Sierra		Marine chemical sediment				
394	Colombia	Cundinamarca	Ubate	Ubate		Marine chemical sediment	bedded; phosphatic sandstone	Late Cretaceous	Santonian-Campanian	
395	Colombia	Huila	Aipe	La Canada		Marine chemical sediment				
396	Colombia	Huila	Aipe, Praga	Aipe - Mapata		Marine chemical sediment	no data	Late Cretaceous	Probably Santonian-Campanian	
397	Colombia	Huila	Baraya	La Troja						
398	Colombia	Huila	Baraya, Tello	Baraya - Tello		Marine chemical sediment	no data	Late Cretaceous	Probably Santonian-Campanian	
399	Colombia	Huila	Elias, Timana	Elias-Timana		Marine chemical sediment	bedded	Late Cretaceous	Coniacian-Campanian (Santonian-Campanian)	
400	Colombia	Huila	Palermo	Buenos Aires area		Marine chemical sediment				
401	Colombia	Huila	Palermo	Llano Verde		Marine chemical sediment				
402	Colombia	Huila	Tesalia	La Juanita	La Juanita	Marine chemical sediment	bedded	Late Cretaceous	Santonian-Campanian	
403	Colombia	Huila	Tesalia	Pacarni-Iquira		Marine chemical sediment	bedded	Late Cretaceous	Santonian-Campanian	
404	Colombia	Huila	Yaguara	El Cucharon		Marine chemical sediment	bedded	Late Cretaceous	Santonian-Campanian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
392		Guadalupe Formation.		Thin beds (0.6 m thick) with a high grade (27.9% P2O5). Described by Mew as 27.9% P2O5 over 0.5 m or 21.4% P2O5 over 1.0 m of same bed.			Mew, 1980; Mutis Jurado, 1982
393		La Luna Formation - Galembo member		Narrow beds (most 0.3 m thick) of phosphate.			Mew, 1980; Mutis Jurado, 1982
394	sandstone; chert; shale; minor limestone	Guadalupe Group			Cathcart and Zambrano, 1969		Mutis Jurado, 1982
395				Phosphate is 0.8 to 1.2 m thick.			Mutis Jurado, 1982
396	no data			Phosphate is 0.6 to 1 m thick.	Foose, 1993		Mutis Jurado, 1982
397							Mutis Jurado, 1982
398	no data				Foose, 1993		
399	chert; shale; sandstone	La Luna Formation [Mew says Guadalup Fmt]		Mineralization in the 2 municipios is very similar. At Quebrada El Tobo in Timana, there is 16-19.3% P2O5 in beds 0.6-0.65 m thick. In Elias, a bed 0.38 m thick contains 18.8% P2O5 (1982).	Cathcart and Zambrano, 1969		Mew, 1980; Mutis Jurado, 1982
400							Mutis Jurado, 1982
401							Mutis Jurado, 1982
402	black shale; sandstone; chert	La Luna Formation [Mew says Guadalup Fmt]		Bed averages 1.4 m thick.	Notholt and others, 1989b	Used as direct application fertilizer.	Appleton, 1994; Mew, 1980; Notholt and others, 1989b; Ministerio de Minas y Petroleos de Colombia and others, 1968; Russell, 1987; Mutis Jurado, 1982
403	black shale; sandstone; chert	La Luna Formation		Mineralization extends over 5 km along the road between Pacarni and Iquira.	Notholt and others, 1989b		Mutis Jurado, 1982
404	black shale; sandstone; chert	La Luna Formation			Notholt and others, 1989b		Mutis Jurado, 1982

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
405	Colombia	Huila	Yaguara	Yaguara-Llanoverde		Marine chemical sediment	bedded, pellets, bone fragments	Late Cretaceous	Santonian-Campanian	
406	Colombia	Magdalena	Cienaga	Quebrada del Hierro area		Unknown				
407	Colombia	Norte de Santander		Bachalema		Marine chemical sediment	no data	Late Cretaceous	Probably Santonian-Campanian	
408	Colombia	Norte de Santander		Pamplona		Marine chemical sediment	bedded; phosphatic limestone	Late Cretaceous	Santonian-Campanian	
409	Colombia	Norte de Santander	Gramalote, Arboledas	Gramalote-Arboledas area		Marine chemical sediment		Late Cretaceous	Santonian-Campanian	
410	Colombia	Norte de Santander	Lourdes	Rio Riecitos-Lourdes		Marine chemical sediment		Late Cretaceous	Santonian-Campanian	
411	Colombia	Norte de Santander	San Calixto	Oru		Marine chemical sediment	bedded; pelletal; fish fossils	Late Cretaceous	Santonian-Campanian	
412	Colombia	Norte de Santander	Sardinata	Sardinata	Sardinata, La Leche, San Miguel, Lourdes	Marine chemical sediment	sandy phosphorite; irregular nodules	Late Cretaceous	Santonian-Campanian	
413	Colombia	Santander		Palmira		Marine chemical sediment	no data	Late Cretaceous		
414	Colombia	Santander	California	California		Marine chemical sediment		Late Cretaceous	Santonian-Campanian	
415	Colombia	Santander	Lebrija	La Azufrada (Quebrada la Sorda)		Marine chemical sediment	bedded; pelletal	Late Cretaceous	Santonian-Campanian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
405	black shale; sandstone; chert	La Luna Formation		Phosphate bed is 1.2 m thick.	Notholt and others, 1989b	Resource estimate is for 15 sq km area.	Mew, 1980
406	anorthosite with mafic dikes		apatite, ilmenite, magnetite				Ministerio de Minas y Petroleos de Colombia and others, 1968; Mutis Jurado, 1982
407	no data				Foose, 1993		
408	black shale; chert; limestone	La Luna Formation			Cathcart and Zambrano, 1969		
409	black shale; sandstone; chert; limestone	La Luna Formation		Up to 3.5 m thick.	Cathcart and Zambrano, 1969		Ministerio de Minas y Petroleos de Colombia and others, 1968; Mutis Jurado, 1982
410	black shale; sandstone; chert; limestone	La Luna Formation			Cathcart and Zambrano, 1969		Mutis Jurado, 1982
411	black shale; sandstone; chert	La Luna Formation			Cathcart and Zambrano, 1969		Ministerio de Minas y Petroleos de Colombia and others, 1968
412	black shale; sandstone; chert; limestone	La Luna Formation	fluorapatite, quartz, organic material, feldspar, clay	Phosphate is at depth of 0.5-5.0 m. The phosphate bed is 0.5-3.5 (average 1.5 m) m thick and weathered.	Cathcart and Zambrano, 1969		Russell, 1987; Appleton, 1994; Notholt, 1994; Mew, 1980; Ministerio de Minas y Petroleos de Colombia and others, 1968
413	no data				Cathcart and Zambrano, 1969		
414		La Luna Formation-Galembo Member		An 80 cm bed outcrops on both limbs of a syncline.	Cathcart and Zambrano, 1969		Mew, 1980; Mutis Jurado, 1982
415	chert	La Luna Formation		2 phosphate beds with a combined thickness of 1.3-2.2 m separated by chert.	Cathcart and Zambrano, 1969	Upper bed contains 24% P2O5 over 1.4 m.	Mew, 1980; Ministerio de Minas y Petroleos de Colombia and others, 1968; Mutis Jurado, 1982

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
416	Colombia	Santander	Lebrija	Vanegas		Marine chemical sediment	no data	Late Cretaceous		
417	Colombia	Santander	San Andres	Hato Caballero (San Andres)		Marine chemical sediment	bedded, pellets	Late Cretaceous		
418	Colombia	Santander	San Vicente	San Vicente		Marine chemical sediment	bedded; pelletal; nodules; fish remains	Late Cretaceous	Santonian-Campanian	
419	Colombia	Santander	Surata	Surata		Marine chemical sediment		Late Cretaceous	Santonian-Campanian	
420	Colombia	Tolima		Girardot (Ortega-Girardot)		Marine chemical sediment	bedded, sandy phosphorite	Late Cretaceous	Santonian-Campanian	
421	Colombia	Tolima		Pandi		Marine chemical sediment	bedded; apatite-quartz sand	Late Cretaceous	Santonian-Campanian	
422	Colombia	Tolima	Icononzo, Pandi	Icononzo, Pandi		Marine chemical sediment				
423	Congo	Kivu		Bingo (Bingu)		Magmatic carbonatite/alkalic; residual enrichment	apatite			

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
416	no data	La Luna Formation-Galembo Member		Persistent phosphate horizon 1-4 m thick.	Cathcart and Zambrano, 1969	Phosphate horizon has up to 13.6-29.9% P2O5.	Notholt, 1994; Mutis Jurado, 1982
417	limestone			2 beds. The best bed is 2.5 m thick with 25.4% P2O5.	Cathcart and Zambrano, 1969		Ministerio de Minas y Petroleos de Colombia and others, 1968; Mutis Jurado, 1982
418	black shale; sandstone; chert; limestone	La Luna Formation-Galembo Member	apatite, quartz, glauconite	Persistent phosphate horizon 0.5-4 m thick.	Cathcart and Zambrano, 1969		Notholt, 1994; Mew, 1980; Ministerio de Minas y Petroleos de Colombia and others, 1968
419		La Luna Formation-Galembo Member		Phosphate bed is vertical ad about 2 m thick.	Cathcart and Zambrano, 1969	Probably not economic beyond direct application use.	Mew, 1980; Mutis Jurado, 1982
420	black chert; limestone; shale	Guadalupe Group.		Phosphorite bed is about 0.8 m thick; beds are steeply dipping at this location.	Cathcart and Zambrano, 1969		Mew, 1980
421	sandstone; siltstone; shale; chert	Guadalupe Group			Cathcart and Zambrano, 1969		
422							Mutis Jurado, 1982
423	carbonatite, ijolite, nepheline syenite, fenite		apatite, pyrochlore; lesser wollastonite, titanite, bioite, melanite, lfuorite, gotzenite, zircon, eudialyte, pectolite, fayalite				Woolley, 2001; Mew, 1980

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
424	Congo (Zaire)			Holle	Tchivoula	Marine chemical sediment	lenticular; bedded; nodular; siliceous phosphate rock; sandy phosphate; clayey ferruginous phosphatic sandstone	Late Cretaceous-Early Eocene	Maastrichtian-Early Eocene	
425	Congo (Zaire)			Kitanzi		Marine chemical sediment				
426	Congo (Zaire)			Loufika		Marine chemical sediment	lenticular; bedded; nodular; siliceous phosphate rock; sandy phosphate; clayey ferruginous phosphatic sandstone	Late Cretaceous-Early Eocene	Maastrichtian-Early Eocene	
427	Congo (Zaire)	Kivu		Lueshe		Magmatic, carbonatite/alkalic, residual enrichment	apatite		822 +/- 120 Ma (Rb-Sr)	
428	Congo (Zaire)			Sintou-Kola		Marine chemical sediment	bedded; phosphatic sandstone; phosphatic marl	Late Cretaceous-Early Eocene	Maastrichtian-Early Eocene	
429	Cuba	Havana		Guines Pipian District	Biyakhaka	Marine chemical sediment; residual enrichment	bedded	Miocene		
430	Cuba	Havana		Guines Pipian District	Katalina	Marine chemical sediment; residual enrichment	bedded	Miocene		
431	Cuba	Havana		Guines Pipian District	Loma Candela	Marine chemical sediment; residual enrichment	pelletal, bedded	Miocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
424	quartz sandstone with coprolites			1.2-5.5 thick beds	Sustrac and others, 1990; British Sulphur Corporation, 1987		de Kun, 1987; Mew, 1980; Nguelongo, 1990; British Sulphur Corporation, 1987
425							Nguelongo, 1990
426	quartz sandstone with coprolites			1.2-5.5 thick beds	Sustrac and others, 1990; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
427	cancrinite syenite, dolomitic carbonatite, pyroxenite, fenite		cancrinite, sodalite, calcite, biotite, aegirine, apatite, garnet, pyrochlore, zircon, vermiculite, pyrrhotite, feldspar		Woolley, 2001	Past producer of Nb.	MASMILS, 2000; Mew, 1980; Woolley, 2001
428	fossiliferous marly sandstone			Average thickness of 2.2 m.	Sustrac and others, 1990; British Sulphur Corporation, 1987		Mew, 1980; British Sulphur Corporation, 1987
429	phosphorite; glauconitic sandstone; limestone; marl		carbonate fluorapatite, calcite, glauconite	Phosphate bed is 0.2-3.5 m thick (mean 1.5 m).	Ilyin and Ratnikova, 1990	Deposit is small.	Ilyin and Ratnikova, 1990
430	phosphorite, phosphatic conglomerate; glauconitic sandstone; limestone; marl		carbonate fluorapatite, calcite, glauconite	Phosphate bed is 0.2-3.5 m thick (mean 1.5 m).	Ilyin and Ratnikova, 1990	Deposit is small.	Ilyin and Ratnikova, 1990
431	phosphorite, phosphatic conglomerate; glauconitic sandstone; limestone; marl		carbonate fluorapatite, calcite, glauconite	Phosphate bed is 0.2-3.5 m thick (mean 1.5 m).	Ilyin and Ranikova, 1990	Deposit is small.	Ilyin and Ratnikova, 1990; Notholt, 1994

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
432	Cuba	Havana		Guines Pipian District	Meseta Rokha	Marine chemical sediment; residual enrichment	pelletal, bedded	Miocene		
433	Cuba	Havana		Guines Pipian District	Pipian	Marine chemical sediment; residual enrichment	bedded	Miocene		
434	Denmark	Bornhom		Arnager			nodules	Late Cretaceous	Cenomanian	
435	Ecuador			Lumbaqui		Marine chemical sediment	bedded	Late Cretaceous		
436	Ecuador			Rio Chingual		Marine chemical sediment		Cretaceous		
437	Egypt				El-Eweniya					
438	Egypt				Nag' Selim					
439	Egypt				Naser					
440	Egypt				Sabona					
441	Egypt				Wadi Helal					
442	Egypt			Abu Bayan Area/Dungul and Kurkur		Marine chemical sediment	no data	Late Cretaceous		
443	Egypt			Aswan		Marine chemical sediment				
444	Egypt			Nile Valley (Idfu-Qena district)		Marine chemical sediment; residual enrichment	bedded; pelletal; phosphatized organic debris; lower member contains conglomeratic or bone breccia beds.	Late Cretaceous	Late Campanian-Early Maastrichtian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
432	phosphorite; phosphatic calcarenite; glauconitic sandstone; limestone; marl		carbonate fluorapatite, calcite, glauconite	Phosphate bed is 0.2-3.5 m thick (mean 1.5 m).	Ilyin and Ranikova, 1990	Deposit is small.	Ilyin and Ratnikova, 1990; Notholt, 1994
433	phosphorite; glauconitic sandstone; limestone; marl		carbonate fluorapatite, calcite, glauconite	Phosphate bed is 0.2-3.5 m thick (mean 1.5 m).	Ilyin and Ranikova, 1990	Deposit is small and grade is poor.	Ilyin and Ratnikova, 1990; Notholt, 1994
434				Phosphatic nodules form a bed 30-60 cm thick.	Sorensen and others, 1978		Sorensen and others, 1978
435	phosphatic shale	Napo Formation			Foose, 1993		Insituto Ecuatoriano de Mineria, 1986
436	calcareous sandstone	Napo Formation		Phosphate horizon is 30 cm thick.			Vera, 1980
437							Arab Organisation for Mineral Resources, 1987
438							Arab Organisation for Mineral Resources, 1987
439							Arab Organisation for Mineral Resources, 1987
440							Arab Organisation for Mineral Resources, 1987
441							Arab Organisation for Mineral Resources, 1987
442	no data				U.S. Geological Survey Mineral Resources Data System, 2000		
443					Issawi, 1989		Griffiths, 1995b
444	variegated shales; oyster limestone; shale, marl, chert	Duwi (Phosphate) Formation	collophane, francolite, quartz, clacite, goethite, chlorite, zircon	3 phosphate members with a combined thickness of 8-40 m.	Issawi, 1989; British Sulphur Corporation, 1987		de Kun, 1987; British Sulphur Corporation, 1987; Issawi, 1989

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
445	Egypt			Nile Valley (Idfu-Qena district)	El Rukhamiya	Marine chemical sediment		Late Cretaceous		
446	Egypt			Nile Valley (Idfu-Qena district)	El Mahamid (El Mahamid East, El Mohammed, Sabayia East)	Marine chemical sediment	bedded	Late Cretaceous	Late Campanian-Early Maastrichtian	
447	Egypt			Nile Valley (Idfu-Qena district)	El Sebaiya (West Sebaiya, El Mahamid West, Sibaeya, Sebaya)	Marine chemical sediment	bedded	Late Cretaceous	Late Campanian-Early Maastrichtian	
448	Egypt			Nile Valley (Idfu-Qena district)	Gebel Abu Had	Marine chemical sediment	bedded; clayey phosphorites	Late Cretaceous		
449	Egypt			Nile Valley (Idfu-Qena district)	Gebel El Gir	Marine chemical sediment		Late Cretaceous		
450	Egypt			Nile Valley (Idfu-Qena district)	Gebel El Shaghab	Marine chemical sediment		Late Cretaceous		
451	Egypt			Nile Valley (Idfu-Qena district)	Gebel Nezzi	Marine chemical sediment		Late Cretaceous		
452	Egypt			Nile Valley (Idfu-Qena district)	Gebel Qurn	Marine chemical sediment	bedded	Late Cretaceous		
453	Egypt			Nile Valley (Idfu-Qena district)	Higazi	Marine chemical sediment		Late Cretaceous		
454	Egypt			Nile Valley (Idfu-Qena district)	Kom-Mir	Marine chemical sediment		Late Cretaceous		
455	Egypt			Nile Valley (Idfu-Qena district)	Wadi El Batur	Marine chemical sediment		Late Cretaceous		
456	Egypt			Nile Valley (Idfu-Qena district)	Wadi El Mashash	Marine chemical sediment		Late Cretaceous		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
445	oyster limestone, clay, marl, chert	Duwi (Phosphate) Formation					Issawi, 1989
446	oyster limestone; marl; chert	Duwi (Phosphate) Formation	collophane, francolite	Phosphates occur in 3 main beds; Bed 2 is most important.	Issawi, 1989; British Sulphur Corporation, 1987	Bed No. 2 contains an average 29% P2O5.	Harben and Kuzvart, 1996; de Kun, 1987; British Sulphur Corporation, 1987; Issawi, 1989
447	oyster limestone; marl; chert	Duwi (Phosphate) Formation	collophane, francolite	Phosphates occur in 3 main beds.	Issawi, 1989; British Sulphur Corporation, 1987		Harben and Kuzvart, 1996; de Kun, 1987; Griffiths, 1995b; British Sulphur Corporation, 1987; Issawi, 1989
448	marl; silceous marl; chert nodules; shale	Duwi (Phosphate) Formation	collophane, francolite		Issawi, 1989		Issawi, 1989; Arab Organisation for Mineral Resources, 1987
449	oyster limestone, clay, marl, chert	Duwi (Phosphate) Formation					Issawi, 1989
450	oyster limestone, clay, marl, chert	Duwi (Phosphate) Formation					Issawi, 1989
451	oyster limestone, clay, marl, chert	Duwi (Phosphate) Formation					Issawi, 1989
452	clay; calcareous clay	Duwi (Phosphate) Formation	collophane, francolite		Issawi, 1989		
453	clay; calcareous clay	Duwi (Phosphate) Formation			Issawi, 1989		Issawi, 1989
454	oyster limestone, clay, marl, chert	Duwi (Phosphate) Formation					de Kun, 1987; S. Jasinski, written commun., 2001
455	oyster limestone, clay, marl, chert	Duwi (Phosphate) Formation					Issawi, 1989
456	oyster limestone, clay, marl, chert	Duwi (Phosphate) Formation					Issawi, 1989

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
457	Egypt			Nile Valley (Idfu-Qena district)	Wadi El Serei (El Sarai)	Marine chemical sediment		Late Cretaceous		
458	Egypt			Nile Valley (Idfu-Qena district)	Wadi El Shaghab	Marine chemical sediment		Late Cretaceous		
459	Egypt			Nile Valley (Idfu-Qena district)	Wadi Hamama	Marine chemical sediment		Late Cretaceous		
460	Egypt			Nile Valley (Idfu-Qena district)/	Wadi Qena-Wadi Araba	Marine chemical sediment	bedded; pelletal	Late Cretaceous		
461	Egypt			Red Sea Coastal Region		Marine chemical sediment	lenticular; bedded; pelletal; minor bone fragments and shells in younger beds	Late Cretaceous	Late Campanian-Early Maastrichtian	
462	Egypt			Red Sea Coastal Region/Quseir area	Quseir Qadim (Quseir)	Marine chemical sediment	lenticular; bedded; pelletal; minor bone fragments and shells in younger beds	Late Cretaceous	Late Campanian-Early Maastrichtian	
463	Egypt			Red Sea Coastal Region/Quseir area	Abu Shigeila (Abu Shegeila)	Marine chemical sediment	lenticular; bedded; pelletal; minor bone fragments and shells in younger beds	Late Cretaceous	Late Campanian-Early Maastrichtian	
464	Egypt			Red Sea Coastal Region/Quseir area	Abu Tundub	Marine chemical sediment	lenticular; bedded; pelletal; minor bone fragments and shells in younger beds	Late Cretaceous	Late Campanian-Early Maastrichtian	
465	Egypt			Red Sea Coastal Region/Quseir area	Anz	Marine chemical sediment	lenticular; bedded; pelletal; minor bone fragments and shells in younger beds	Late Cretaceous	Late Campanian-Early Maastrichtian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
457	oyster limestone, clay, marl, chert	Duwi (Phosphate) Formation					Issawi, 1989
458	oyster limestone, clay, marl, chert	Duwi (Phosphate) Formation					Issawi, 1989
459	oyster limestone, clay, marl, chert	Duwi (Phosphate) Formation					Issawi, 1989
460	oyster limestone; shale	Duwi (Phosphate) Formation	collophane, francolite		U.S. Geological Survey Mineral Resources Data System, 2000		British Sulphur Corporation, 1987
461	variegated sandstones; sandy clays; carbonate; shale; marl	Duwi (Phosphate) Formation		Deposits represent deeper depositional environments as go north to Safaga.	Issawi, 1989; British Sulphur Corporation, 1987		Hussein and El Sharkawi, 1990; British Sulphur Corporation, 1987
462	shale, limestone, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter		Issawi, 1989; British Sulphur Corporation, 1987		Issawi, 1989; British Sulphur Corporation, 1987; S. Jasinski, written commun., 2001
463	shale, limestone, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter	Phosphate series up to 15 m thick associated with thick beds of green clay.	Issawi, 1989; British Sulphur Corporation, 1987	Development of additional reserves at this deposit started in 1977 as replacement capacity for mines in the Safaga-Quseir area that are approaching exhaustion.	Issawi, 1989; British Sulphur Corporation, 1987; de Kun, 1987; S. Jasinski, written commun., 2001; Arab Organisation for Mineral Resources, 1987
464	shale, limestone, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter	Phosphate series up to 15 m thick associated with thick beds of green clay.	Issawi, 1989; British Sulphur Corporation, 1987		Hussein and El Sharkawi, 1990
465	shale, limestone, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter	Phosphate series up to 15 m thick associated with thick beds of green clay.	Issawi, 1989; British Sulphur Corporation, 1987		Hussein and El Sharkawi, 1990; Arab Organisation for Mineral Resources, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
466	Egypt			Red Sea Coastal Region/Quseir area	Atshan	Marine chemical sediment	lenticular; bedded; pelletal; minor bone fragments and shells in younger beds	Late Cretaceous	Late Campanian-Early Maastrichtian	
467	Egypt			Red Sea Coastal Region/Quseir area	Duwi (Gebel Duwi)	Marine chemical sediment	lenticular; bedded; pelletal; minor bone fragments and shells in younger beds	Late Cretaceous	Late Campanian-Early Maastrichtian	
468	Egypt			Red Sea Coastal Region/Quseir area	Hamadat	Marine chemical sediment	lenticular; bedded; pelletal; minor bone fragments and shells in younger beds	Late Cretaceous	Late Campanian-Early Maastrichtian	
469	Egypt			Red Sea Coastal Region/Quseir area/Hamrawein (El Hamrawein)	El Hamra, Kueik	Marine chemical sediment	bedded; pelletal; minor bone fragments and shells in younger beds	Late Cretaceous	Late Campanian-Early Maastrichtian	
470	Egypt			Red Sea Coastal Region/Quseir area	Nakheil	Marine chemical sediment	lenticular; bedded; pelletal; minor bone fragments and shells in younger beds	Late Cretaceous	Late Campanian-Early Maastrichtian	
471	Egypt			Red Sea Coastal Region/Quseir area	Zug El Bahar	Marine chemical sediment	lenticular; bedded; pelletal; minor bone fragments and shells in younger beds	Late Cretaceous	Late Campanian-Early Maastrichtian	
472	Egypt			Red Sea Coastal Region/Safaga area	Gasus	Marine chemical sediment	bedded; pelletal; fish bones, coprolites and teeth	Late Cretaceous	Late Campanian-Early Maastrichtian	
473	Egypt			Red Sea Coastal Region/Safaga area	Mohamed Rabah	Marine chemical sediment	bedded; pelletal; fish bones, coprolites and teeth	Late Cretaceous	Late Campanian-Early Maastrichtian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
466	shale, limestone, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter	Phosphate series up to 15 m thick associated with thick beds of green clay.	Issawi, 1989; British Sulphur Corporation, 1987	Reserves nearing exhaustion in 1989.	Issawi, 1989; Hussein and El Sharkawi, 1990; S. Jasinski, written commun., 2001
467	shale, limestone, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter	Phosphate series up to 15 m thick associated with thick beds of green clay.	Issawi, 1989; British Sulphur Corporation, 1987	Reserves nearing exhaustion in 1989.	Issawi, 1989; Hussein and El Sharkawi, 1990; British Sulphur Corporation, 1987
468	shale, limestone, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter	Phosphate series up to 15 m thick associated with thick beds of green clay.	Issawi, 1989; British Sulphur Corporation, 1987		Issawi, 1989; Hussein and El Sharkawi, 1990; British Sulphur Corporation, 1987; S. Jasinski, written commun., 2001
469	carbonate, shale, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter	Phosphate series up to 15 m thick associated with thick beds of green clay.	Issawi, 1989; British Sulphur Corporation, 1987	Ore is mined from 2 sites in the Hamrawein deposit.	Issawi, 1989; Hussein and El Sharkawi, 1990; British Sulphur Corporation, 1987; S. Jasinski, written commun., 2001
470	shale, limestone, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter	Phosphate series up to 15 m thick associated with thick beds of green clay.	Issawi, 1989; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Issawi, 1989; Hussein and El Sharkawi, 1990
471	shale, limestone, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter		Issawi, 1989; British Sulphur Corporation, 1987		Issawi, 1989; British Sulphur Corporation, 1987
472	shale, limestone, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter		Issawi, 1989; British Sulphur Corporation, 1987	May be combined with Um El Howeitat operations, i.e. a single mine.	Harben and Kuzvart, 1996; Hussein and El Sharkawi, 1990; S. Jasinski, written commun., 2001
473	shale, limestone, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter	Phosphate in basin-like hollows.	Issawi, 1989; British Sulphur Corporation, 1987		Issawi, 1989; Hussein and El Sharkawi, 1990

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
474	Egypt			Red Sea Coastal Region/Safaga area	Wassif (Safaga)	Marine chemical sediment	bedded; pelletal; fish bones, coprolites and teeth	Late Cretaceous	Late Campanian-Early Maastrichtian	
475	Egypt			Red Sea Coastal Region/Safaga area	Um El Howeitat (Umel Huetat)	Marine chemical sediment	bedded; pelletal; fish bones, coprolites and teeth	Late Cretaceous	Late Campanian-Early Maastrichtian	
476	Egypt			Western Desert/Abu Tartur plateau	Abu Tartur (Abu Tartour, Maghrabi-Liffiya)	Marine chemical sediment	bedded; granular in upper member; concretionary and pelletal phosphate in lower member; oolites	Late Cretaceous	Late Campanian-Early Maastrichtian	
477	Egypt			Western Desert/Gebel Hafhuf/Bahariya Oasis		Marine chemical sediment	bedded	Late Cretaceous	Campanian-Maastrichtian	
478	Egypt			Western Desert/Gebel Tarawan		Marine chemical sediment		Late Cretaceous		
479	Estonia			Baltic Basin/Kingisepp		Marine chemical sediment		Late Cambrian-Early Ordovician		
480	Estonia			Baltic Basin/Maardu		Marine chemical sediment	bedded; phosphatic sandstone with phosphatized brachiopod fossils	Early Ordovician		
481	Estonia			Baltic Basin/Rakvere		Marine chemical sediment		Early Ordovician		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
474	shale, limestone, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter	Phosphate in basin-like hollows.	Issawi, 1989; British Sulphur Corporation, 1987		Issawi, 1989; Hussein and El Sharkawi, 1990; S. Jasinski, written commun., 2001
475	shale, limestone, marl, chert, sandstone	Duwi (Phosphate) Formation	apatite, pyrite, organic matter	Phosphate in basin-like hollows.	Issawi, 1989; British Sulphur Corporation, 1987	May be combined with Gasus operations, i.e. a single mine.	Hussein and El Sharkawi, 1990; Harben and Kuzvart, 1996; S. Jasinski, written commun., 2001
476	clays and sandy clays; glauconitic sandstones; calcareous mudstones and sandstones; shales; gypsiferous clays	Duwi (Phosphate) Formation	collophane, francolite-dahllite, wavellite, manganapatite, dolomite, montmorillonite, gypsum, glauconite, carbonaceous matter, iron sulfides	Phosphate contains scattered iron sulfide.	Issawi, 1989; British Sulphur Corporation, 1987	Scattered iron sulfides affects workability of these reserves.	Hussein and El Sharkawi, 1990; de Kun, 1987; Industrial Minerals, 1995; British Sulphur Corporation, 1987; Schroter, 1989; S. Jasinski, written commun., 2001
477	clays and sandy clays; glauconitic sandstones				MRDS		
478				Phosphate bed 1.5 m thick.		Deposit worked 1908-1910.	British Sulphur Corporation, 1987
479	quartz sandstone			Phosphate bed is 1.5-3.0 m thick.			Ilyin and Heinsalu, 1990
480	sandstone; conglomerate; limestone; argillite	Obolus Formation		Ore averages 1.1 m thick. Ore is in Obolus conglomerate.	Krasilnikova and Ilyin, 1989b; British Sulphur Corporation, 1987	Closed due to depletion of ore and environmental effects of mining. Obolus and Maardu may be same. Obolus conglomerate is mined at Maardu.	Levine, 1994; British Sulphur Corporation, 1987; Commission for Geological Map of the World, 1972; Ilyin and Heinsalu, 1990
481					Ilyin and Heinsalu, 1990	Mining of this deposit would have a large adverse environmental impact in an area that is relatively prosperous.	Ilyin and Heinsalu, 1990

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
482	Estonia			Baltic Basin/Rakvere	Assamala	Marine chemical sediment		Early Ordovician		
483	Estonia			Baltic Basin/Rakvere	Kabala (Kabala)	Marine chemical sediment		Early Ordovician		
484	Estonia			Baltic Basin/Rakvere	Ryagavere (Ragavere)	Marine chemical sediment		Early Ordovician		
485	Estonia			Obolus		Marine chemical sediment				
486	Estonia			Toolse		Marine chemical sediment				
487	Estonia?			Azeri						
488	Estonia?			Saka-Ontika						
489	Ethiopia			Bale		Magmatic				
490	Ethiopia			Borena		Magmatic				
491	Ethiopia			Ogaden Desert		Marine chemical sediment	bedded	Eocene		
492	Ethiopia	Wellega		Wellega (Bikilal)		Magmatic	disseminated apatite	Precambrian (Proterozoic?)		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
482				Phosphate is 5.0 m thick with 110-195 m of overburden.	Ilyin and Heinsalu, 1990		Ilyin and Heinsalu, 1990
483				Phosphate is 5.2 m thick with 42-107 m of overburden.	Ilyin and Heinsalu, 1990		Levine, 1994; Ilyin and Heinsalu, 1990
484				Phosphate is 5.7 m thick with 50-133 m of overburden.	Ilyin and Heinsalu, 1990		Ilyin and Heinsalu, 1990
485						Obolus and Maardu may be same. Obolus conglomerate is mined at Maardu.	British Sulphur Corporation, 1987; Levine, 1994
486							Levine, 1994; British Sulphur Corporation, 1987
487							Commission for Geological Map of the World, 1972
488							Commission for Geological Map of the World, 1972
489	gabbro-pyroxenite						Abera, 1994
490	alkaline gabbro						Abera, 1994
491	massive limestone; chert; gypsiferous limestone; calcareous shale	Auradu Series			British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
492	gabbro		apatite, magnetite, ilmenite	Apatite and Fe-Ti-oxides disseminated in layered gabbroic plutons. Some oxide mineralization is massive.			Abera, 1994

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
493	Finland	Kuopio		Siilinjarvi		Magmatic carbonatite/alkalic	apatite	Late Archean	2580 (U/Pb)	2580 (U/Pb)
494	Finland	Lappi		Sokli Complex		Magmatic, carbonatite/alkalic; residual enrichment	apatite; apatite-silica residue	Early Devonian-Early Carboniferous; Holocene	334-392 Ma; Holocene	334-392 Ma
495	Finland			Kainuu Area/Paltamo/Nuottijärvi		Marine chemical sediment (metamorphosed)	uraniferous phosphate (metamorphosed)	Early Proterozoic	Early Proterozoic (2100-1900 Ma)	
496	Finland			Peräpohja Area/Mustamaa		Marine volcano-sedimentary	uraniferous phosphate (metamorphosed)	Early Proterozoic	Early Proterozoic (2200-1900 Ma)	
497	Finland			Pohjanmaa Area/Vihanti/Lampinsaari		Marine volcano-sedimentary	uraniferous phosphate (metamorphosed)	Early Proterozoic	Early Proterozoic (2100-1900 Ma)	
498	Finland			Savo Area/Temo		Marine chemical sediment (metamorphosed)	uraniferous phosphate (metamorphosed)	Early Proterozoic	Early Proterozoic (2100-1900 Ma)	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
493	carbonatite; fenite; diabase; dioritic dykes		apatite, phlogopite, calcite, zircon, sulfides, dolomite, iron oxides	Carbonatite is more abundant than alkaline intermediate and ultrabasic rocks in this area.	Puustinen and Kauppinen, 1989; British Sulphur Corporation, 1987		Harben and Kuzvart, 1996; Griffiths, 1995b; Notholt, 1994; Notholt, 1979; British Sulphur Corporation, 1987; Commission for Geological Map of the World, 1972
494	carbonatite; metacarbonatite		magnetite, francolite, apatite, geothite, phlogopite, serpentine, clinohumite, minor zircon, pyrochlore, baddeleyite, rhabdophane	Carbonatite is more abundant than alkaline intermediate and ultrabasic rocks. Most economic mineralization is secondary. Weathered to as much as 60 m depth.	Vartiainen, 1989		Notholt, 1994; Notholt, 1979; Isokangas, 1978; Commission for Geological Map of the World, 1972
495	quartzite; carbonate; tremolite-bearing carbonate			Greenschist to lower amphibolite facies	Äikäs, 1989		
496	quartzites; mafic volcanics; dolomite; black schist; mica schist			Greenschist facies	Äikäs, 1989		
497	apatite-plagioclase rock (metamorphic felsic tuff); phosphatic dolomite; calc-silicate			Amphibolite facies	Äikäs, 1989		
498	quartzite; carbonate; calc-silicate; cherty quartzites, mafic and felsic volcanics; black schists			Amphibolite-upper amphibolite facies	Äikäs, 1989		

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
499	France			Lorraine District/Longwy, L'orne						
500	France			Mondalazac						
501	France			Montebras						
502	France			Pisseloup les Suancourt, Vitrey						
503	France			Verpillere, La						
504	France	Aisne		Paris Basin/Bohain		Marine chemical sediment		Late Cretaceous		
505	France	Aisne		Paris Basin/Harglcourt		Marine chemical sediment		Late Cretaceous		
506	France	Aisne		Paris Basin/Vendhuile		Marine chemical sediment		Late Cretaceous		
507	France	Ardennes		Paris Basin/Apremont		Marine chemical sediment		Late Cretaceous		
508	France	Ardennes		Paris Basin/Saulces-Monclin		Marine chemical sediment		Late Cretaceous		
509	France	Ardennes or Meuse		Dombasle		Marine chemical sediment	nodular	Early Cretaceous		
510	France	Ardennes or Meuse		Grandpre		Marine chemical sediment	nodular	Early Cretaceous		
511	France	Ardennes or Meuse		Monclin		Marine chemical sediment	nodular	Early Cretaceous		
512	France	Ardennes or Meuse		Neuvilly		Marine chemical sediment	nodular	Early Cretaceous		
513	France	Ariege		Castelnau-Durban		Marine chemical sediment	nodular	Devonian		
514	France	Aude		Alet		Marine chemical sediment	nodular	Early Carboniferous		
515	France	Cote D'Or		Arnay Le Duc		Marine chemical sediment				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
499							
500							
501							
502							
503							
504							Mew, 1980
505							Mew, 1980
506							Mew, 1980
507							Mew, 1980
508							Mew, 1980
509				2 layers of phosphatic nodules 10-25 cm thick averaging 25% P2O5 (upper layer) and as little as 4% P2O5 (lower layer)		Mined in 19th century.	Mew, 1980
510				2 layers of phosphatic nodules 10-25 cm thick averaging 25% P2O5 (upper layer) and as little as 4% P2O5 (lower layer)		Mined in 19th century.	Mew, 1980
511				2 layers of phosphatic nodules 10-25 cm thick averaging 25% P2O5 (upper layer) and as little as 4% P2O5 (lower layer)		Mined in 19th century.	Mew, 1980
512				2 layers of phosphatic nodules 10-25 cm thick averaging 25% P2O5 (upper layer) and as little as 4% P2O5 (lower layer)		Mined in 19th century.	Mew, 1980
513	black shale						Mew, 1980
514	limestone; dolomite; chert; shale				Slansky, 1989	Not produced as an economic resource.	
515							

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
516	France	Cote D'Or		Semur en Auxois		Marine chemical sediment				
517	France	Drome		Saint Paul Clansayes		Marine chemical sediment				
518	France	Gard		Saint Maximin		Marine chemical sediment				
519	France	Haut-Garonne		Saint-Beat		Marine chemical sediment	nodular	Devonian		
520	France	Haut Pyrenees?		Cierp		Marine chemical sediment	nodular	Early Carboniferous		
521	France	Haut Pyrenees		Vieille Aure, etc.		Marine chemical sediment				
522	France	Lot		Quercy, Saint Jean de Laur, etc.		Marine chemical sediment				
523	France	Manche		Paris Basin/Brevands		Marine chemical sediment		Late Cretaceous		
524	France	Manche		Paris Basin/Granville		Marine chemical sediment		Late Cretaceous		
525	France	Meurth-et-Moselle		Paris Basin/Homecourt		Marine chemical sediment		Late Cretaceous		
526	France	Meuse		Paris Basin/Lavoy		Marine chemical sediment		Late Cretaceous		
527	France	Nord		Paris Basin/Briastre		Marine chemical sediment		Late Cretaceous		
528	France	Nord		Paris Basin/Forest		Marine chemical sediment		Late Cretaceous		
529	France	Nord		Paris Basin/Montay		Marine chemical sediment		Late Cretaceous		
530	France	Oise		Paris Basin/Bray (Pays de)		Marine chemical sediment	phosphatic chalk; pockets of decalcified phosphate	Late Cretaceous	Santonian-Campanian	
531	France	Oise		Paris Basin/Breteuil		Marine chemical sediment		Late Cretaceous		
532	France	Oise		Paris Basin/Hardivillers		Marine chemical sediment; residual enrichment	phosphatic chalk; pockets of decalcified phosphate	Late Cretaceous	Santonian-Campanian	
533	France	Oise		Paris Basin/Pierrefitte		Marine chemical sediment		Late Cretaceous		
534	France	Pas-de-Calais		Basin/Boulonnais (Pas de Calais)		Marine chemical sediment			Albian	
535	France	Pas-de-Calais		Marquise		Marine chemical sediment	phosphatic chalk; pockets of decalcified phosphate	Late Cretaceous	Santonian-Campanian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
516							
517							
518							
519	black shale						Mew, 1980
520	limestone; dolomite; chert; black shale				Slansky, 1989; British Sulphur Corporation, 1987	Most important of the phosphate areas in the Pyrenees.	British Sulphur Corporation, 1987
521							
522							British Sulphur Corporation, 1987
523							Mew, 1980
524							Mew, 1980
525							Mew, 1980
526							Mew, 1980
527							Mew, 1980
528							Mew, 1980
529							Mew, 1980
530	chalk; local glauconite and flint				Monciardini, 1989		
531							Mew, 1980
532	chalk; local glauconite and flint				Monciardini, 1989	Many small deposits in this region.	Mew, 1980
533							Mew, 1980
534					British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
535	chalk; local glauconite and flint	Paris Basin Chalk?		Inferred to be Paris Basin Chalk from map in Jarvis (1980).	Jarvis, 1980		

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
536	France	Pyrenees Atlantiques		La Bastide de Serou; Castelnau Durban		Marine chemical sediment	nodular	Early Carboniferous		
537	France	Sarthe		Paris Basin/Chateau du Loir		Marine chemical sediment		Late Cretaceous		
538	France	Sarthe		Paris Basin/Indre-et-Loir		Marine chemical sediment		Late Cretaceous		
539	France	Sarthe		Paris Basin/St. Peterne		Marine chemical sediment		Late Cretaceous		
540	France	Seine-et-Marne		Paris Basin/Ferte-sous-Kiyarre		Marine chemical sediment		Late Cretaceous		
541	France	Somme		Paris Basin/Airaines		Marine chemical sediment; residual enrichment				
542	France	Somme		Paris Basin/Beauval; Orville		Marine chemical sediment; residual enrichment	phosphatic chalk; pockets of decalcified phosphate	Late Cretaceous	Santonian-Campanian	
543	France	Somme		Paris Basin/Hallencourt		Marine chemical sediment; residual enrichment	phosphatic chalk; pockets of decalcified phosphate	Late Cretaceous	Santonian-Campanian	
544	France	Somme		Paris Basin/Nurlu (Curlu)		Marine chemical sediment; residual enrichment	phosphatic chalk; pockets of decalcified phosphate	Late Cretaceous	Santonian-Campanian	
545	France	Somme		Paris Basin/Peronne		Marine chemical sediment; residual enrichment		Late Cretaceous		
546	France	Yonne		Paris Basin/Saint Martin Du Tertre (Sens)		Marine chemical sediment	phosphatic chalk; pockets of decalcified phosphate	Late Cretaceous	Santonian-Campanian	
547	Gabon	Ogooue-Ivindo		Mabounie		Magmatic, carbonatitic/alkalic; residual enrichment		Late Proterozoic		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
536	limestone; dolomite; chert; black shale				Slansky, 1989; British Sulphur Corporation, 1987	Not produced as an economic resource.	British Sulphur Corporation, 1987; Commission for Geological Map of the World, 1968a
537							Mew, 1980
538							Mew, 1980
539							Mew, 1980
540							Mew, 1980
541							Mew, 1980
542	phosphatized chalk and sandstone; local glauconite and flint				Monciardini, 1989	Many small deposits in this region. Production ceased in this area in 1963.	British Sulphur Corporation, 1987; Mew, 1980
543	chalk; local glauconite and flint			Lens-shaped bed 7-8 m thick with an average of 10% P2O5.	Monciardini, 1989; British Sulphur Corporation, 1987	Many small deposits in this region. Production believed to have ceased in early 1980's.	British Sulphur Corporation, 1987; Mew, 1980
544	chalk; local glauconite and flint				Monciardini, 1989	Many small deposits in this region. Production believed to have ceased in early 1980's.	Mew, 1980; British Sulfur Corp. , 1987
545							Mew, 1980
546	chalk; local glauconite and flint				Monciardini, 1989	Mined from 1912-1934.	Mew, 1980
547	carbonatite, syenite, fenite		magnetite, apatite, pyrochlore, hematite, cradallite, geothite, quartz, kaolinite, baddeleyite				Notholt, 1994; Woolley, 2001; Industrial Minerals, 1998d

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
548	Gabon	Haut-Ogooue		Moanda		Secondary enrichment	no data	Late Proterozoic	Proterozoic (1740 ±20 Ma)	
549	Germany			Brandenburg		Marine chemical sediment	nodular	Early Oligocene		
550	Germany	Lower Saxony		Broistedt-Lengede area	Includes Broistedt Mine	Sedimentary	nodular	Late Cretaceous	Santonian	
551	Germany			Kaiserstuhl		Magmatic, carbonatitic/alkalic		post-Oligocene		
552	Germany			Laacher See		Magmatic, carbonatitic/alkalic		Würm glacial		
553	Germany			Lahn Valley deposits		residual				
554	Germany			Mecklenburg		Marine chemical sediment	nodular	Mid-Late Cretaceous		
555	Greece			Ioannina						
556	Greece			Ktismata Epire						
557	Greece			Xerovounai Arta						
558	Greece			Zantes						
559	Greece	Epirus (Epiros, Ipiros)		Delvinakion area	Drimos deposit	Marine chemical sediment; local residual enrichment	bedded; laminated; spherulitic	Late Cretaceous	Turonian-Campanian	
560	Greece	Epirus		Ipiros Province/Drymona		Marine chemical sediment; local residual enrichment	bedded; laminated; spherulitic	Late Cretaceous	Turonian-Campanian	
561	Greece	Epirus		Ipiros Province/Kourenta		Marine chemical sediment; local residual enrichment	phosphatic limestone	Late Cretaceous	Turonian-Campanian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
548	black shale (Francevillian series)				DeYoung and others, 1984		
549				Individual beds are too thin or not sufficiently extensive to be of economic interest.			British Sulphur Corporation, 1987
550	basal conglomerate			limonitic iron ore and ferruginous phosphate nodules embedded in a carbonate-clay matrix.		Production ceased in 1977.	British Sulphur Corporation, 1987
551							USGS files
552							USGS files
553	Devonian limestone					Mining ceased in 1945.	British Sulphur Corporation, 1987
554				Individual beds are too thin or not sufficiently extensive to be of economic interest.			British Sulphur Corporation, 1987
555							Commission for Geological Map of the World, 1983
556							
557							Commission for Geological Map of the World, 1983
558							Commission for Geological Map of the World, 1983
559	limestone; glauconitic clay; chert	Vigla Formation		Phosphate beds 2-10 m thick, extending for a distance of 50-60 km.	Papastavrou, 1989		Marinos, 1982; British Sulphur Corporation, 1987; Commission for Geological Map of the World, 1983
560	limestone; glauconitic clay; chert	Vigla Formation			Papastavrou, 1989		
561	limestone; cherty intercalations; dolomite	Vigla Formation			Marinos, 1982		Commission for Geological Map of the World, 1983

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
562	Greece	Epirus		Ipiros Province/Mitsikeli		Marine chemical sediment; local residual enrichment	phosphatic limestone			
563	Greece	Ionian Islands		Cephalinia (Cephalonie)		Marine chemical sediment; local residual enrichment	phosphatic limestone	Miocene		
564	Greece	Ionian Islands		Corfu		Marine chemical sediment; local residual enrichment	phosphatic limestone	Miocene		
565	Greece	Ionian Islands		Zakinthos		Marine chemical sediment; local residual enrichment	phosphatic limestone	Miocene		
566	Greece	Ionian Islands		Epiros		Marine chemical sediment; local residual enrichment	phosphatic limestone	Miocene		
567	Greece	Peloponnese		Mount Parnon		unknown				
568	Greenland			Gardiner Complex		Magmatic, alkalic		Tertiary		
569	Greenland			Gronnededal-Ika		Magmatic, carbonatite/alkalic				
570	Greenland			Qaqarssuk carbonatite cmplx		Magmatic, carbonatite/alkalic	apatite	Middle Jurassic	173 Ma	173 Ma
571	Greenland			Sarfartoq carbonatite complex		Magmatic, carbonatite/alkalic	apatite	Late Proterozoic	600 Ma (K/Ar)	600 Ma (K/Ar)

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
562	limestone; cherty intercalations; dolomite	Vigla Formation			Marinos, 1982		Commission for Geological Map of the World, 1983
563	limestone				Marinos, 1982		Commission for Geological Map of the World, 1983
564	limestone				Marinos, 1982		
565	limestone				Marinos, 1982		
566	limestone				Marinos, 1982		
567					Marinos, 1982		
568	ultramafic alkaline complex		perovskite, loparite, apatite				Notholt and others, 1989a; Campbell and others, 1997
569							USGS files
570	carbonatite (sovite and rauhaugite); ultramafic rocks; fenite		magnetite, apatite, pyrochlore, mica, aegirine, alkali amphibole	Emplaced into Archean basement of granitic to tonalitic gneisses and amphibolites.	Knudsen, 1989		Notholt and others, 1989a; Woolley, 1987
571	carbonatite (rauhaugite and sovite); fenite		magnetite, apatite, pyrochlore	Emplaced into Archean granulite and Proterozoic Nagssugtoquidian mobile belt.	Secher, 1989	Environmental restraints hinder commercial interest.	Notholt and others, 1989a; Moller, 1989

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
572	Guinea Bissau			Farim-Saliquinhe		Marine chemical sediment	decarbonatised phosphate; bedded, granular; pelletal; fossiliferous; phosphatic limestone; locally aluminum phosphate associated with laminated clays; silica-alumininous phosphate pebbles	Late Eocene-Early Oligocene		
573	Hungary			Bakony Mountains		Marine chemical sediment	nodular	Middle Cretaceous		
574	Hungary			Balaton Highlands/Pecs		Marine chemical sediment	bedded; banded phosphate	Middle Triassic		
575	Hungary			Carpathian Basin/ Balaton Highlands/Pécsely		Marine sedimentary	banded	Middle Triassic		
576	India			Offshore		Marine sedimentary	nodules			
577	India	Andhra Pradesh	Kurnool District	Chelima-Pachcherla Area		Marine chemical sediment	stromatolitic phosphorite (silicified); pelletal in quartzites and shales	Late Proterozoic		
578	India	Andhra Pradesh	Vishakhapatman District	Kasitpatnam		Magmatic	apatite-magnetite-vermiculite veins; fracture-filling or joint fillings	Precambrian		
579	India	Chattisgarh	Durg District	Chattisgarh Basin/Lohara Area		Marine chemical sediment	bedded; stromatolitic phosphorite	Late Proterozoic	Late Proterozoic (Middle to Upper Riphean)	
580	India	Gujarat		Amba Dongar		Magmatic, carbonatite				
581	India	Gujarat	Kutch District	Sadanbari-Jhura areas		Sedimentary		Jurassic		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
572	shelly limestone; dolomitic limestone; laminated green clay; sandy-argillaceous sediments				Prian, 1989		Jasinski, 2000; de Kun, 1987; Notholt, 1994
573	glauconitic marl				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
574	limestone; marl; dolomite				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
575	dolomite, limestone		fluorapatite, fluorite, calcite, brushite, limonite, hematite, corundum, zircon, tyuyamunite	Yellow-brown phosphate rock is 0.3-1.2 m thick.	Morvai, 1982	Phosphate rock with 21-28% P2O5.	Morvai, 1982
576				Nodules contain 10% P2O5 and are at a depth of 250-300 m.			British Sulphur Corporation, 1987
577	carbonate (dolomite); quartzite; shale	Cumbum Formation?			Banerjee, 1986		Banerjee, 1986; Sant and Pant, 1980
578	charnockitic gneisses; pyroxene granite; calc-granulites; quartzite; leptinite		apatite, magnetite, vermiculite	Ore-bodies are tabular and lenticular, up to 2.5 m thick, 30-50 m long, and persisting to depths of 25-35 m.	Sant and Pant, 1980; Notholt and others, 1989d		Sant and Pant, 1980; Notholt and others, 1989d; British Sulphur Corporation, 1987; Notholt, 1994
579	limestones; shales			Phosphate mineralization includes pyrite grains and nodules; extensive development of chert and stromatolites	Banerjee, 1986		
580	carbonatite		apatite, fluorite	Minor apatite, up to 9% (3.85% P2O5).			British Sulphur Corporation, 1987; Lee, 1980
581	ferruginous sandstone	Bhuj Formation		Concretionary phosphate horizon	Sant and Pant, 1980		Sant and Pant, 1980

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
582	India	Gujarat	Panchmahal District	Gandhra		Marine chemical sediment	stromatolitic phosphorite; nodular; pelletal; laminated; lenticular	Early-Middle Proterozoic	Early-Middle Proterozoic (2500-900 Ma)	
583	India	Himachal Pradesh	Sirmaur District	Nigalidhar		Marine chemical sediment	phosphatic quartzite	Jurassic		
584	India	Himachal Pradesh	Shimla District	Korgai		Marine chemical sediment	phosphatic quartzite	Jurassic		
585	India	Himachal Pradesh	Solan District	Solan area		Marine chemical sediment	phosphatic quartzite	Jurassic		
586	India	Jharkhand	Palamau District	Bhawnathpur area		Magmatic?				
587	India	Jharkhand	West Singhbum?	Khadandungri		Metasedimentary	strataform; lenticular; nodular	Precambrian		
588	India	Jharkhand	West Singhbum?	Khejurdari		Metasedimentary	strataform; lenticular; nodular	Precambrian		
589	India	Jharkhand	West Singhbum?	Parthargora; Nandup; Sunrgi; Kulamara		Igneous (metamorphosed)	apatite in pockets, lenses, veins	Precambrian	Precambrian (Dharwar)	
590	India	Jharkhand	West Singhbum?	Tamajuri		Metasedimentary	strataform; lenticular; nodular	Precambrian		
591	India	Kashmir	Punch District	Poonch (Punch)		Marine chemical sediment	nodules			
592	India	Kashmir	Riasi District	Riasi		Marine chemical sediment	nodules			

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
582	dolomitic limestone	Champaner Group of Aravalli Supergroup			Dwivedi, 1984		
583	quartzite, chert, shale	Lower Tal Formation			Sant and Pant, 1980		Sant and Pant, 1980
584	quartzite, chert, shale	Lower Tal Formation			Sant and Pant, 1980		Sant and Pant, 1980
585	quartzite, chert, shale	Lower Tal Formation			Sant and Pant, 1980		Sant and Pant, 1980
586				Deposit type is given as sedimentary in Sant and Pant (1980), but given as igneous in British Sulphur Corp. (1987).		Ore is suitable for direct application on acid soils. Ore estimate is very uncertain.	British Sulphur Corporation, 1987; Sant and Pant, 1980
587	slate; schist; minor quartzite bands			Transitional relationship between copper-bearing and phosphate-bearing zones is observed. Harben and Kuzvart classify these deposits as igneous.	Basu, 1984		
588	slate; schist; minor quartzite bands			Transitional relationship between copper-bearing and phosphate-bearing zones is observed. Harben and Kuzvart classify these deposits as igneous.	Basu, 1984		
589	mica schist; chlorite-magnetite schist, granite	Dharwar system	apatite, magnetite, quartz, chlorite	At least 22 small deposits are present in this area. Apatite-magnetite veins in sheared host rocks. Harben and Kuzvart classify these deposits as igneous.	Bhattacharyya and Bhattacharya, 1989; Lee, 1980; Sant and Pant, 1980; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Sant and Pant, 1980; Notholt, 1994
590	slate; schist; minor quartzite bands			Transitional relationship between copper-bearing and phosphate-bearing zones is observed.	Basu, 1984		
591							Lee, 1980
592							Lee, 1980

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
593	India	Kashmir	Udhampur District	Udhampur		Marine chemical sediment	nodules			
594	India	Madhya Pradesh		Barwaha		Sedimentary	phosphatic breccia (ferruginous)	Early Proterozoic	Early Proterozoic (2500-1800 Ma)	
595	India	Madhya Pradesh	Chhatarpur District	Bassia		Sedimentary				
596	India	Madhya Pradesh	Chhatarpur and Sagar Districts	Hirapur Basin/Sagar deposits		Sedimentary	phosphatic breccia; massive bedded; laminated bedded; replacement (vein filling)	Early Proterozoic	Early Proterozoic (2500-1800 Ma)	
597	India	Madhya Pradesh	Chhatarpur District	Kachhar		Sedimentary				
598	India	Madhya Pradesh	Chhatarpur District	Mardeora		Sedimentary	phosphate breccia, massive bedded; laminated; replacement	Early Proterozoic		
599	India	Madhya Pradesh	Jhabua district	Jhabua District deposit(s)		Marine chemical sediment; metasedimentary	stromatolitic phosphorite; bedded; phosphate breccia	Early-Middle Proterozoic	Early-Middle Proterozoic (2500-900 Ma)	
600	India	Madhya Pradesh	Jhabua District	Amalamal		Marine chemical sediment	stromatolitic phosphorite; pelletal	Early-Middle Proterozoic	Early-Middle Proterozoic (2500-900 Ma)	
601	India	Madhya Pradesh	Jhabua District	Kalikhet		Marine chemical sediment	stromatolitic phosphorite	Early-Middle Proterozoic	Early-Middle Proterozoic (2500-900 Ma)	
602	India	Madhya Pradesh	Jhabua District	Kelkua Nala; Kelkua		Marine chemical sediment	stromatolitic phosphorite; phosphate breccias	Early-Middle Proterozoic	Early-Middle Proterozoic (2500-900 Ma)	
603	India	Madhya Pradesh	Jhabua District	Keluka		Marine chemical sediment				
604	India	Madhya Pradesh	Jhabua District	Khatamba North and South		Marine chemical sediment	stromatolitic phosphorite; bedded	Early-Middle Proterozoic	Early-Middle Proterozoic (2500-900 Ma)	
605	India	Madhya Pradesh	Jhabua District	Piploda		Marine chemical sediment	stromatolitic phosphorite	Early-Middle Proterozoic	Early-Middle Proterozoic (2500-900 Ma)	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
593							Lee, 1980
594	dolomite; ferruginous shale	Bijawar Group			Srivastava, 1989		
595							British Sulphur Corporation, 1987
596	brecciated quartzite; ferruginous shale; phyllite	Bijawar Group - Gangau Formation		Phosphorite occurs within zones of high radioactivity. 4 phosphorite horizons.	Srivastava, 1989	Resource estimates from Director of Geology and Mining (1989) for Hirapur Basin.	Pant, 1980; Russell, 1991; Choudhuri, 1990
597							British Sulphur Corporation, 1987
598	brecciated quartzite; ferruginous shale; phyllite	Bijawar Group			Srivastava, 1989		Russell, 1991; Pant, 1980; British Sulphur Corp., 1987
599	dolomitic limestones; chert	Aravalli Group	apatite, francolite, quartz, sericite	Greenschist facies; 2 distinct phosphate horizons are present.	Khan and others, 1989	Resources estimates from Director of Geology and Mining (1989).	Pant, 1980; McClellan and Saavedra, 1986
600	dolomitic limestone; chert (quartzite); phyllite	Aravalli Group		5 phosphate beds.	Khan and others, 1989; Choudhuri, 1990	Resource estimates for combined Kelkua Nala and Amalamal blocks.	Pant, 1980; British Sulphur Corp., 1987; Sant and Pant, 1980
601	dolomitic limestone; chert (quartzite); phyllite	Aravalli Group			Khan and others, 1989; Choudhuri, 1990		
602	dolomitic limestone; chert (quartzite); phyllite	Aravalli Group			Khan and others, 1989; Choudhuri, 1990	Resource estimates for combined Kelkua Nala and Amalamal blocks.	Pant, 1980; Sant and Pant, 1980
603	dolomite, limestone, gray chert			2 phosphate beds.			British Sulphur Corporation, 1987
604	dolomitic limestone; chert (quartzite); phyllite	Aravalli Group			Khan and others, 1989; Choudhuri, 1990		Pant, 1980; Russell, 1991; British Sulphur Corp., 1987; Sant and Pant, 1980
605	dolomitic limestone; chert (quartzite); phyllite	Aravalli Group			Khan and others, 1989; Choudhuri, 1990		Pant, 1980; British Sulphur Corp., 1987; Sant and Pant, 1980

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
606	India	Madhya Pradesh	Jhabua District	Rassori		Marine chemical sediment	stromatolitic phosphorite	Early-Middle Proterozoic	Early-Middle Proterozoic (2500-900 Ma)	
607	India	Meghalaya	East Khasi and Jaintia Hills Districts	East Khasi and Jaintia Hills Districts		Magmatic, carbonatite	nodules	Eocene		
608	India	Mysore		Channapatna-Arsikere-Hole Narsipur		unknown	apatite in pockets			
609	India	Rajasthan	Dungarpur District	Dungarpur		Metamorphic				
610	India	Rajasthan		Kerpura		Magmatic, carbonatite				
611	India	Rajasthan		Mandai		Marine chemical sediment	phosphatic shell fragments in sandstone	Miocene		
612	India	Rajasthan	Chittaurgarh District	Vindhyan/Chittaurgarh		Marine chemical sediment	bedded; thin bands in sandstone and shale	Early Proterozoic	Vindhyan	
613	India	Rajasthan	Alwar District	Advka-Andwara		Marine chemical sediment				
614	India	Rajasthan	Banswara District	Jhermoti (Jher Moti)		Marine chemical sediment (metamorphosed)	stromatolitic phosphorite	Early Proterozoic	Early Proterozoic (2500-2000 Ma)	
615	India	Rajasthan	Banswara District	Ram-ka-Munna		Marine chemical sediment (metamorphosed)	stromatolitic phosphorite	Early Proterozoic	Early Proterozoic (2500-2000 Ma)	
616	India	Rajasthan	Banswara District	Sallopat (Sallapat)		Marine chemical sediment (metamorphosed)	stromatolitic phosphorite	Early Proterozoic	Early Proterozoic (2500-2000 Ma)	
617	India	Rajasthan	Jaipur District	Achraul (Achrol)		Marine chemical sediment (metamorphosed ?); secondary enrichment (?)	bedded; laminated; surface encrustations on brecciated quartzite, chert or carbonate	Early-Middle Proterozoic	Early-Middle Proterozoic (2000-1200 Ma)	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
606	dolomitic limestone; chert (quartzite); phyllite	Aravalli Group			Khan and others, 1989; Choudhuri, 1990		
607	shale	Kopili Formation			Sant and Pant, 1980		British Sulphur Corporation, 1987; Sant and Pant, 1980
608							Lee, 1980
609	schist		apatite				Lee, 1980
610				Deposits are small.			
611	sandstones				Chauhan and Sisodia, 1989		
612	sandstones; shales				Chauhan and Sisodia, 1989		
613		Kushalgarah Formation		Phosphorite zone 1-3 m wide, >900 m long, and containing 10-17% P2O5. Area is largely covered by soil.			British Sulphur Corporation, 1987
614	dolomitic limestones	Aravalli Group		Greenschist facies	Chauhan and Sisodia, 1989; Choudhuri, 1989		Sant and Pant, 1980
615	dolomitic limestones	Aravalli Group		Greenschist facies	Chauhan and Sisodia, 1989; Choudhuri, 1989		Sant and Pant, 1980
616	dolomitic limestones	Aravalli Group		Greenschist facies	Choudhuri, 1989	Reserves are small.	British Sulphur Corporation, 1987; Sant and Pant, 1980; Choudhuri, 1990
617	brecciated quartzite; ferruginous chert; carbonate; locally black, carbonaceous phyllite; stromatolitic structures and oncolites	Siriska Quartzite of Delhi Supergroup		Host rocks contain columnar stromatolites. Phosphorite zone is over 1000 m in length with 3 separate bodies. Grade decreases with depth.	Chauhan and Sisodia, 1989; Dayal and others, 1984		British Sulphur Corporation, 1987; Choudhuri, 1990

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
618	India	Rajasthan	Jaipur District	Baraud		Marine chemical sediment (metamorphosed ?); secondary enrichment (?)	bedded; laminated; surface encrustations on brecciated quartzite, chert or carbonate	Early-Middle Proterozoic	Early-Middle Proterozoic (2000-1200 Ma)	
619	India	Rajasthan	Jaipur District	Siriska		Secondary enrichment (?)	surface encrustations on breccia and quartzite	Early-Middle Proterozoic	Early-Middle Proterozoic (2000-1200 Ma)	
620	India	Rajasthan	Jaisalmer District	Birmania		Marine chemical sediment	pelletal; granular stones; bedded	Cambrian		
621	India	Rajasthan	Jaisalmer and Barmer Districts	Fatehgarh		Marine chemical sediment	pelletal; phosphatic shell fragments	Cretaceous-Eocene		
622	India	Rajasthan	Jhunjhunun District	Chapoli area		Magmatic, metamorphic	apatite stringers and disseminations			
623	India	Rajasthan	Udaipur District	Badgaon		Marine chemical sediment	stromatolitic phosphorite	Early Proterozoic	Early Proterozoic (2500-2000 Ma)	
624	India	Rajasthan	Udaipur District	Bagdara		Marine chemical sediment		Early Proterozoic	Early Proterozoic (2500-2000 Ma)	
625	India	Rajasthan	Udaipur District	Dakan Kotra (Dakankotra)		Marine chemical sediment (metamorphosed)	stromatolitic phosphorite; replacement fillings in fractures	Early Proterozoic	Early Proterozoic (2500-2000 Ma)	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
618	brecciated quartzite; ferruginous chert; carbonate; locally black, carbonaceous phyllite; stromatolitic structures and oncolites	Siriska Quartzite of Delhi Supergroup		Branching stromatolites in quartzite.	Chauhan and Sisodia, 1989; Dayal and others, 1984		
619	breccia; quartzite	Delhi Supergroup			Chauhan and Sisodia, 1989		
620	siliceous limestone; sandstones; shale, chert	Birmania Formation	francolite, calcite, quartz	Transgressive marine rocks. Deposit extends over 4 km with a thickness of 1-3 m.	Chauhan and Sisodia, 1989; Pant, 1979	Lack of water and labor together with other logistical problems and low grade makes development of the deposit unlikely.	Pant, 1980; British Sulphur Corp., 1987; Sant and Pant, 1980
621	sandstones	Fatehgarh Formation?		Beds are 0.6-2.0 m thick.	Chauhan and Sisodia, 1989; Sant and Pant, 1980	Large, low-grade reserves; not likely to be developed.	Chauhan and Sisodia, 1989; British Sulphur Corp., 1987; Sant and Pant, 1980
622	quartz veins, amphibolites, and pegmatites associated with garentiferous biotite schist						Sant and Pant, 1980
623	dolomitic marble, brecciated quartzite	Aravalli Group		Thickness has been reported as 5-20 m.			British Sulphur Corp., 1987; Sant and Pant, 1980
624		Aravalli Group		Deposit is small.			British Sulphur Corp., 1987
625	dolomitic limestones; cherty quartzite	Aravalli Group		Several lenticular bodies near Dakan Kotra. One bed 3 km west of village is 8-10 m thick and has a strike length of 450 m.	Director General Geological Survey of India, 1977; Choudhuri, 1989		Pant, 1980; British Sulphur Corp., 1987; Sant and Pant, 1980

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
626	India	Rajasthan	Udaipur District	Jhamarkotra		Marine chemical sediment (metamorphosed)	nodules, stromatolitic phosphorite; replacement fillings in fractures	Early Proterozoic	Early Proterozoic (2500-2000 Ma)	
627	India	Rajasthan	Udaipur District	Jameshwer		Marine chemical sediment		Early Proterozoic		
628	India	Rajasthan	Udaipur District	Kanpur		Marine chemical sediment (metamorphosed)	nodules, stromatolitic phosphorite; replacement fillings in fractures	Early Proterozoic	Early Proterozoic (2500-2000 Ma)	
629	India	Rajasthan	Udaipur District	Karbaria-ka-Gurha (Ka-Guda)		Marine chemical sediment (metamorphosed)	stromatolitic phosphorite; replacement fillings in fractures	Early Proterozoic	Early Proterozoic (2500-2000 Ma)	
630	India	Rajasthan	Udaipur District	Lakhawas		Marine chemical sediment (metamorphosed)		Early Proterozoic		
631	India	Rajasthan	Udaipur District	Maton		Marine chemical sediment	stromatolitic phosphorite; phosphate breccias	Early Proterozoic	Early Proterozoic (2500-2000 Ma)	
632	India	Rajasthan	Udaipur District	Nimachmata (Neemach Mata)		Marine chemical sediment	stromatolitic phosphorite	Early Proterozoic	Early Proterozoic (2500-2000 Ma)	
633	India	Rajasthan	Udaipur District	Niwania (Newania) Sedimentary Phosphate		Marine chemical sediment		Early Proterozoic	Early Proterozoic (2500-2000 Ma)	
634	India	Rajasthan	Udaipur District	Niwania (Newania)		Magmatic, carbonatite	apatite veins and stringers			
635	India	Rajasthan	Udaipur District	Pichola		Marine chemical sediment		Early Proterozoic		
636	India	Rajasthan	Udaipur District	Sameta		Marine chemical sediment		Early Proterozoic		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
626	dolomitic limestones, marble, quartzite	Aravalli Group-Maton Formation	dolomite, silica	Greenschist facies	Choudhuri, 1989; Banerjee and others, 1980; Chauhan and Sisodia, 1989	Average feed grade is 17% P2O5.	Pant, 1980; Russell, 1991; Choudhuri and Roy, 1986; British Sulphur Corp., 1987; Sant and Pant, 1980; Notholt, 1994
627		Aravalli Group					British Sulphur Corp., 1987
628	dolomitic limestones, cherty quartzite, calcareous sandstone	Aravalli Group		Deposit is 4-6 m thick and bluish-gray in color.	Director General Geological Survey of India, 1977; Choudhuri, 1989; Pant, 1979		Pant, 1980; Russell, 1991; British Sulphur Corp., 1987; Sant and Pant, 1980
629	cherty and calcareous quartzites; sandy phyllite; schist	Aravalli Group		Multiple lenticular bodies of phosphorite 0.5-3.0 m thick over a distance of 1.5 km.	Director General Geological Survey of India, 1977; Choudhuri, 1989; Pant, 1979		Pant, 1980; British Sulphur Corp., 1987; Sant and Pant, 1980
630		Aravalli Group					British Sulphur Corp., 1987
631	brecciated quartzite, quartzite, schist, dolomitic marble	Aravalli Group		Greenschist facies metamorphism present. Single phosphate bed extends a strike length of 3.5 km with thickness ranging from 0.5-20 m.	Banerjee and others, 1980; Choudhuri, 1989; Chauhan and Sisodia, 1989; Pant, 1979		Pant, 1980; Russell, 1991; British Sulphur Corp., 1987; Sant and Pant, 1980; Notholt, 1994
632	dolomite	Aravalli Group		Bed is 2-3 m thick and extends intermittently for 2 km.			Choudhuri and Roy, 1986; British Sulphur Corp., 1987; Sant and Pant, 1980
633		Aravalli Group					British Sulphur Corp., 1987
634	carbonatite	Untala granite		Veins of apatite occur in carbonatite, veins contain up to 30% P2O5.			British Sulphur Corp., 1987; Sant and Pant, 1980
635		Aravalli Group					British Sulphur Corp., 1987
636		Aravalli Group					British Sulphur Corp., 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
637	India	Rajasthan	Udaipur District	Sisarma		Marine chemical sediment	stromatolitic phosphorite	Early Proterozoic	Early Proterozoic (2500-2000 Ma)	
638	India	Rajasthan	Udaipur and Banswara Districts	Tambesra		Marine chemical sediment	stromatolitic phosphorite	Early Proterozoic	Early Proterozoic (2500-2000 Ma)	
639	India	Tamil Nadu		Kottagudie area		Magmatic	apatite in pegmatite			
640	India	Tamil Nadu		Pondicherry						
641	India	Tamil Nadu		S. Arcot						
642	India	Tamil Nadu		Valdavur		Marine chemical sediment	concretions and nodules	Late Cretaceous	Senonian-Maestrichtian	
643	India	Tamil Nadu	Cuddalore District	Cuddalore		Marine chemical sediment	phosphatic nodules			
644	India	Tamil Nadu	Dharmapuri Distict?	Hungenekal area		Magmatic, carbonatic/alkalic	disseminated apatite	Precambrian		
645	India	Tamil Nadu	North Arcot District?	Sevathur Complex		Magmatic, carbonatite/alkalic, residual enrichment		Precambrian		Precambrian
646	India	Tamil Nadu	Tiruchrapelli District	Nambakhurichi-Varagupadi area		Marine chemical sediment	phosphatic nodules	Cretaceous		
647	India	Uttar Pradesh		Jagadhri (Tehri Garhwal)		Marine chemical sediment	nodules	Jurassic		
648	India	Uttar Pradesh		Kumaun Himalaya/Doggada Area		Marine chemical sediment	oolitic	Early Cambrian		
649	India	Uttar Pradesh		Kumaun Himalaya/Pithoragarh District/Dhaigaon		Marine chemical sediment	stromatolitic phosphorite; laminated; pelletal; phosphatic intraclasts	Late Precambrian		
650	India	Uttar Pradesh	Almora District?	Pithorgarh		Marine chemical sediment	stromatolitic phosphorite	Late Precambrian		
651	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Baghi-Mathiangaon		Marine chemical sediment				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
637	dolomite, phyllite, chert	Aravalli Group		Deposit extends for 2 km with thicknesses up to 7-20 m, locally.			Choudhuri and Roy, 1986; British Sulphur Corp., 1987; Sant and Pant, 1980
638	dolomitic limestones	Aravalli Group		Greenschist facies	Choudhuri, 1989; Chauhan and Sisodia, 1989		
639	pegmatite		apatite				Lee, 1980
640							Russell, 1991
641							Russell, 1991
642							Lee, 1980; British Sulphur Corp., 1987
643							Lee, 1980
644	carbonatite, syenite, pyroxenites						Sant and Pant, 1980
645	carbonatite, fenite, nepheline ijolite	Sevathur carbonatite complex	apatite, pyrochlore, uranothorite	Small size of complex suggest that resources are limited.			British Sulphur Corporation, 1987; Sant and Pant, 1980
646	calcareous shale, sandy clay				Sant and Pant, 1980		Russell, 1991; Sant and Pant, 1980
647		Tal Formation			Lee, 1980		Lee, 1980
648	quartzite; shale; limestone	Lower Tal Formation			Mazumdar and Banerjee, 1998		Mazumdar and Banerjee, 1998
649	chert; dolomite	Dhari Member of Gangolihat Formation			Valdiya, 1972		Valdiya, 1972
650	dolomite, chert	Gangolihat Formation					Sant and Pant, 1980
651	chert, shale	Lower Tal Formation				Resources are proven + probable + possible.	British Sulphur Corporation, 1987; Sant and Pant, 1980

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
652	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Bemunda		Marine chemical sediment				
653	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Busti (Bhusti, Bhasti)		Marine chemical sediment	bedded; pelletal; massive beds include platy, lenticular, granular, nodular, and oolitic phosphorite	Early Cambrian		
654	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Chamasari		Marine chemical sediment				
655	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Chavnpa-Kumali		Marine chemical sediment		Early Cambrian		
656	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Chipalda		Marine chemical sediment				
657	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Durmala		Marine chemical sediment	bedded; pelletal; massive beds include platy, lenticular, granular, nodular, and oolitic phosphorite	Early Cambrian		
658	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Jalikhal		Marine chemical sediment	bedded; pelletal; massive beds include platy, lenticular, granular, nodular, and oolitic phosphorite	Early Cambrian		
659	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Kappu Window		Marine chemical sediment				
660	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Kimoi		Marine chemical sediment				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
652						Resources are proven + probable + possible.	British Sulphur Corporation, 1987
653	chert and black chert; shale; siltstone; limestone	Lower Tal Formation	dahllite, collophane, dolomite, calcite, pyrite, quartz, clay	Slansky (1986) gives age as Permian.	Shanker, 1989	Resources are proven + probable + possible.	British Sulphur Corporation, 1987; Pant, 1980; Russell, 1991; Slansky, 1986; Sant and Pant, 1980
654	chert, shale	Lower Tal Formation				Resources are proven + probable + possible.	British Sulphur Corporation, 1987; Sant and Pant, 1980
655						Resources are proven + probable + possible.	British Sulphur Corporation, 1987
656	carbonate			Deposit averages 1.5 m thick and has strike length of 4640 m.			British Sulphur Corporation, 1987
657	chert and black chert; shale; siltstone; limestone	Lower Tal Formation	dahllite, collophane, dolomite, calcite, pyrite, quartz, clay	Slansky (1986) gives age as Permian. Deposit averages 5.0 m thick and has strike length of 1600 m.	Shanker, 1989	Resources are proven + probable + possible.	British Sulphur Corporation, 1987; Pant, 1980; Russell, 1991; Slansky, 1986; Sant and Pant, 1980; Notholt, 1994
658	chert and black chert; shale; siltstone; limestone	Lower Tal Formation	dahllite, collophane, dolomite, calcite, pyrite, quartz, clay	Slansky (1986) gives age as Permian.	Shanker, 1989	Resources are proven + probable + possible.	British Sulphur Corporation, 1987; Pant, 1980; Russell, 1991; Slansky, 1986; Sant and Pant, 1980
659						Resources are proven + probable + possible.	British Sulphur Corporation, 1987
660						Resources are proven + probable + possible.	British Sulphur Corporation, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
661	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Maldeota Block		Marine chemical sediment	bedded; pelletal; massive beds include platy, lenticular, granular, nodular, and oolitic phosphorite	Early Cambrian		
662	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Maldeota East		Marine chemical sediment				
663	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Masrana		Marine chemical sediment				
664	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Mussoorie		Marine chemical sediment	bedded; pelletal; massive beds include platy, lenticular, granular, nodular, and oolitic phosphorite	Early Cambrian		
665	India	Uttar Pradesh/Uttaranchal	Dehradun and Tehri Districts	Mussoorie Syncline/Paritibba		Marine chemical sediment				
666	India	Uttar Pradesh	Lalitpur District	Jalandhar		Sedimentary	phosphorite associated with brecciated massive quartzite	Early Proterozoic	Early Proterozoic (2500-1800 Ma)	
667	India	Uttar Pradesh	Lalitpur District	Pishari-Tari-Barwar		Sedimentary	phosphorite associated with brecciated massive quartzite	Early Proterozoic	Early Proterozoic (2500-1800 Ma)	
668	India	West Bengal	Purulya District	Beldih		Igneous (metamorphosed)	apatite	Precambrian		
669	India	West Bengal	Purulya District	Kutui (Kutni)		Igneous (metamorphosed)	apatite	Precambrian		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
661	chert and black chert; shale; siltstone; limestone	Lower Tal Formation	dahllite, collophane, dolomite, calcite, pyrite, quartz, clay	Slansky (1986) gives age as Permian. Deposit averages 3.5 m thick and has strike length of 1350 m.	Shanker, 1989	Resources are proven + probable + possible.	British Sulphur Corporation, 1987; Pant, 1980; Russell, 1991; Slansky, 1986; Sant and Pant, 1980; Choudhuri, 1990
662						Resources are proven + probable + possible.	British Sulphur Corporation, 1987
663				Deposit averages 1-4 m thick and has strike length of 1500 m.		Resources are proven + probable + possible.	British Sulphur Corporation, 1987
664	chert and black chert; shale; siltstone; limestone	Lower Tal Formation	dahllite, collophane, dolomite, calcite, pyrite, quartz, clay	Slansky (1986) gives age as Permian.	Shanker, 1989		Pant, 1980; Russell, 1991; Slansky, 1986
665	chert, shale	Lower Tal Formation				Resources are proven + probable + possible.	British Sulphur Corporation, 1987; Sant and Pant, 1980
666	brecciated quartzite; shale; conglomerate; dolomitic limestone	Bijawar Group - Sonrai Formation	fluorapatite, quartz	2 zones of phosphate. Phosphorite occurs within zones of high radioactivity.	Sant and Pant, 1980; Pant and others, 1989; Pant, 1979		British Sulphur Corporation, 1987
667	brecciated quartzite; shale; conglomerate; dolomitic limestone	Bijawar Group - Sonrai Formation	fluorapatite, quartz	4 phosphate horizons. Phosphorite occurs within zones of high radioactivity.	Sant and Pant, 1980; Pant and others, 1989; Pant, 1979		British Sulphur Corporation, 1987
668	phyllite; schist; granite		apatite, magnetite, quartz, calcite, U	Mineralization is along a shear zone and includes quartz-apatite veins and apatite-magnetite-quartzite veins.	Sant and Pant, 1980	Ore is suitable only for direct application because of high iron content.	Russell, 1991; Krishnaswamy, 1982; Roy, 1982; Sant and Pant, 1980; Choudhuri, 1990
669	phyllite; schist; granite		apatite, magnetite, quartz, calcite, U	Mineralization is along a shear zone and includes quartz-apatite veins and apatite-magnetite-quartzite veins.	Sant and Pant, 1980	Ore is suitable only for direct application because of high iron content.	Russell, 1991; Krishnaswamy, 1982; Roy, 1982; Sant and Pant, 1980

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
670	India	West Bengal	Purulya District	Mednitarn		Igneous (metamorphosed)	apatite	Precambrian		
671	India	West Bengal	Purulya District	Chirugora		Igneous (metamorphosed)	apatite	Precambrian		
672	India	West Bengal	Purulya District	Panrkidih		Igneous (metamorphosed)	apatite	Precambrian		
673	Indonesia	East Java			Tubon	Marine chemical sediment		Quaternary		
674	Indonesia	West Java	Ciamis	Sidumulin		Marine chemical sediment				
675	Iran			Hassu Kuchak						
676	Iran			Esfordi		Magmatic-Hydrothermal	apatite	Late Precambrian		
677	Iran	Mazandaran		Geirud (Jeirud)		Marine chemical sediment	black pelletal phosphorite; phosphatic sandstone	Late Devonian		
678	Iran	Mazandaran		Shemsek (Shemshak)		Marine chemical sediment	black pelletal phosphorite; phosphatic sandstone	Late Devonian		
679	Iran			Kuh-E-Pabdeh (Pabdeh)		Marine chemical sediment	bedded; pelletal; phosphatic marl	Late Eocene-Early Oligocene		
680	Iran			Dalir Valley/Soltanieh		Marine chemical sediment	bedded; pelletal; ooids; intraclasts	Early Cambrian		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
670	phyllite; schist; granite		apatite, magnetite, quartz, calcite, U	Mineralization is along a shear zone and includes quartz-apatite veins and apatite-magnetite-quartzite veins.	Sant and Pant, 1980	Ore is suitable only for direct application because of high iron content.	Russell, 1991; Krishnaswamy, 1982; Roy, 1982; Sant and Pant, 1980
671	phyllite; schist; granite		apatite, magnetite, quartz, calcite, U	Mineralization is along a shear zone and includes quartz-apatite veins and apatite-magnetite-quartzite veins.	Sant and Pant, 1980	Ore is suitable only for direct application because of high iron content.	Russell, 1991; Krishnaswamy, 1982; Roy, 1982; Sant and Pant, 1980
672	phyllite; schist; granite	quartz-apatite veins; apatite-magnetite-quartzite veins; phyllite; schist; granite	apatite, magnetite, quartz, calcite, U	Mineralization is along a shear zone and includes quartz-apatite veins and apatite-magnetite-quartzite veins.	Sant and Pant, 1980	Ore is suitable only for direct application because of high iron content.	Russell, 1991; Krishnaswamy, 1982; Roy, 1982; Sant and Pant, 1980
673						Area is heavily farmed which may preclude development.	Industrial Minerals, 1997
674						Average grade is reported as 33% P2O5.	Industrial Minerals, 1997; Kuo, 1994
675							Commission for Geological Map of the World, 1982b
676	apatite-amphibolite pyroxenite		apatite, magnetite, hematite, tremolite, quartz, actinolite, calcite	Mineralized zone is up to 8 m thick.	Salehi, 1989a, b		British Sulphur Corp., 1987; Notholt, 1994
677	sandstone; black shale; fossiliferous limestone	Geirud Formation			Salehi, 1989a		Commission for Geological Map of the World, 1982b; Notholt, 1994
678	sandstone; black shale; fossiliferous limestone	Geirud Formation			Salehi, 1989a		Commission for Geological Map of the World, 1982b; Notholt, 1994
679	marl; shale; argillaceous limestone; chert nodules				Salehi, 1989a		Notholt, 1994
680	shale; dolomite; limestone	Soltanieh Formation			Salehi, 1989a	Resources are for Dalir Valley.	Notholt, 1994

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
681	Iran			Zagros Mountains/Behbehan area		Marine chemical sediment	bedded; pelletal phosphatic marl	Middle Eocene-Early Oligocene		
682	Iran			Zagros Mountains/Sheikhabil		Marine chemical sediment	bedded; lenticular; granular; nodular	Late Eocene-Early Oligocene		
683	Iran			Zanjan		Marine chemical sediment	bedded; pelletal; ooids; intraclasts	Early Cambrian		
684	Iraq				Marbat	Marine chemical sediment	pelletal; granular; bone fragments	Late Campanian-Early Eocene		
685	Iraq				Traibeel					
686	Iraq			Western Desert	Akashat	Marine chemical sediment; residual enrichment	bedded; pelletal	Paleocene		
687	Iraq			Western Desert	Ga'ara Area	Marine chemical sediment	pelletal; granular; bone fragments	Late Campanian-Early Eocene		
688	Iraq			Western Desert	Sawab	Marine chemical sediment		Paleocene		
689	Ireland	County Clare		Lisdonvarna		Marine chemical sediment	bedded; nodular; lenticular and discontinuous seams; fossiliferous (fish scales and shark teeth)	Late Carboniferous		
690	Israel			Arava		Marine chemical sediment		Late Cretaceous		
691	Israel			Beersheva (Zohar)		Marine chemical sediment	pelletal; nodular; fossiliferous	Late Cretaceous	Late Campanian	
692	Israel			Ein Jahav (1)						

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
681	shale; limestone; marl				Salehi, 1989a		Notholt, 1994
682	marl; shale; limestone				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
683	shale; dolomite; limestone	Soltanieh Formation			Salehi, 1989a; Notholt, 1994		
684	limestone; chert; sandstone; shale				Al-Bassam and others, 1983; Al-Bassam and Hagopian, 1983		
685							Arab Organisation for Mineral Resources, 1987
686	limestone; shale	Umm er Radhuma Formation		2 adjacent beds-- one 7.5 m thick with 23.5% P2O5 and one 2.5 m thick with 17.5% P2O5. Umm er Radhuma Formation derived from reworking of phosphatic Upper Cretaceous sediments	Al-Bassam, 1989	2 quarries.	Russell, 1987; Commission for Geological Map of the World, 1982b; Notholt, 1994
687	limestone; chert; sandstone; shale			Early Eocene age phosphorite in far western part of area.	Al-Bassam and others, 1983; Al-Bassam and Hagopian, 1983		
688							Notholt, 1994
689	shale; sandstone				British Sulphur Corporation, 1987; Williams and McArdle, 1978	Mines closed since 1947.	British Sulphur Corporation, 1987; Mew, 1980
690							Notholt, 1994
691	Chert; porcelanite; limestone; organic-rich carbonate				Nathan and Shiloni, 1989; Soudry, 1992		MASMILS, 2000; Notholt, 1994
692							Arab Organisation for Mineral Resources, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
693	Israel			Ein Jahav (2)						
694	Israel			Ein Yahav		Marine chemical sediment	pelletal; nodular; fossiliferous	Late Cretaceous	Late Campanian	
695	Israel			Giv'at Mador		Marine chemical sediment	granular, pellets, bone fragments	Late Cretaceous	Late Campanian	
696	Israel			Hameshar						
697	Israel			Har Teref		Marine chemical sediment	granular, pellets, bone fragments	Late Cretaceous	Late Campanian	
698	Israel			Har Zin		Marine chemical sediment	granular, pellets, bone fragments	Late Cretaceous	Late Campanian	
699	Israel			Hiyyon Valley						
700	Israel			Ho Hahar						
701	Israel			Jebel Katan						
702	Israel			Nahal Arod		Marine chemical sediment	granular, pellets, bone fragments	Late Cretaceous	Late Campanian	
703	Israel			Nahal Zinam		Marine chemical sediment	granular, pellets, bone fragments	Late Cretaceous	Late Campanian	
704	Israel			Negev Desert/Nahil Zin area	Makhtesh Mine	Marine chemical sediment	pelletal; nodular; fossiliferous	Late Cretaceous	Late Campanian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
693							Arab Organisation for Mineral Resources, 1987
694	chert; porcelanite; limestone; organic-rich carbonate				Nathan and Shiloni, 1989; Soudry, 1992		
695	Mishash Fmt--carbonate, chert, porcelanite				Lewy, 1990		Lewy, 1990
696							Arab Organisation for Mineral Resources, 1987
697	Mishash Fmt--carbonate, chert, porcelanite				Lewy, 1990		Lewy, 1990
698	Mishash Fmt--carbonate, chert, porcelanite				Lewy, 1990		Lewy, 1990
699							Arab Organisation for Mineral Resources, 1987
700							Arab Organisation for Mineral Resources, 1987
701							Arab Organisation for Mineral Resources, 1987
702	Mishash Fmt--carbonate, chert, porcelanite				Lewy, 1990		Lewy, 1990
703	Mishash Fmt--carbonate, chert, porcelanite				Lewy, 1990		Lewy, 1990
704	Mishash Fmt chert; porcelanite; limestone; organic-rich carbonate		francolite, calcite, gypsum, clay, quartz, iron oxide, halite, dolomite		Nathan and Shiloni, 1989; Soudry, 1992		Harben and Kuzvart, 1996; S. Jasinski, written commun., 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
705	Israel			Negev Desert	Makhtesh Qatan	Marine chemical sediment	pelletal; nodular; fossiliferous	Late Cretaceous	Late Campanian	
706	Israel				Nahal Zin	Marine chemical sediment	pelletal; nodular; fossiliferous	Late Cretaceous	Late Campanian	
707	Israel			Negev Desert	Oron	Marine chemical sediment	pelletal; nodular; fossiliferous	Late Cretaceous	Late Campanian	
708	Israel			Negev Desert/Zefa-Ef'e deposit	Arad Mine	Marine chemical sediment	pelletal; nodular; fossiliferous	Late Cretaceous	Late Campanian	
709	Italy			Capo Santo Maria di Leuca		Marine chemical sediment		Pliocene		
710	Italy	Lecce Province		Salentino Peninsula		Marine chemical sediment		Miocene		
711	Italy	Sicily		Donnafugata (Donnalucata) region		Marine chemical sediment, replacement	Pebbles; phosphatic interclasts in carbonates; nodular	Miocene		
712	Jordan			Al Inab		Marine chemical sediment		Late Cretaceous		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
705	Mishash Fmt chert; porcelanite; limestone; organic-rich carbonate		francolite, calcite, gypsum, clay, quartz, iron oxide, halite, dolomite	Mines phosphate bed once connected to Oron deposit, but now isolated by erosion.	Nathan and Shiloni, 1989; Soudry, 1992		Harben and Kuzvart, 1996; Commission for Geological Map of the World, 1982b; Notholt, 1994
706	Chert; porcelanite; limestone; organic-rich carbonate				Nathan and Shiloni, 1989; Soudry, 1992		Notholt, 1994; Harben and Minster, 1998; MASMILS, 2000
707	chert; porcelanite; limestone; organic-rich carbonate	Mishash Fmt	francolite, calcite, gypsum, clay, quartz, iron oxide, halite, dolomite	3 phosphate beds, each 1-3 m thick.	Nathan and Shiloni, 1989; Soudry, 1992		Harben and Kuzvart, 1996; Slansky, 1986; Commission for Geological Map of the World, 1982b; Notholt, 1994; Harben and Minster, 1998
708	chert; porcelanite; limestone; organic-rich carbonate	Mishash Fmt	francolite, calcite, gypsum, clay, quartz, iron oxide, halite, dolomite		Nathan and Shiloni, 1989; Soudry, 1992		Harben and Kuzvart, 1996; Notholt, 1994; S. Jasinski, written commun., 2001; Harben and Minster, 1998
709		Calcareniti del Salento Fmt		Phosphate found at top of transgressive sequence.			British Sulphur Corp., 1987
710	glauconitic limestone			"piromafo" is 1.2 m thick and contains 8.7% P2O5. Lower grade (3-4% P2O5) "pietra leccese" is up to 30 m thick.			British Sulphur Corp., 1987
711	carbonate	Ragusa Fmt			Carbone and others, 1987		
712							Commission for Geological Map of the World, 1982b; Arab Organisation for Mineral Resources, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
713	Jordan			Batn El Ghol (Batn El Ghul)		Marine chemical sediment		Late Cretaceous	Campanian-Early Maastrichtian	
714	Jordan			Deir Abu Said area		Marine chemical sediment		Late Cretaceous		
715	Jordan			El Abyad (Wadi El Abayad, El Abiad, Al Abayad)	El Abyad	Marine chemical sediment	bedded; marly phosphate	Late Cretaceous	Maastrichtian	
716	Jordan			El Hassa (Zgaimat El Hasah, Al Hasa, Wadi El Hasa)	El Hassa	Marine chemical sediment	bedded; marly phosphate, granular	Late Cretaceous	Maastrichtian	
717	Jordan			Esh Shidiya (Es Shidiya, Esh Shidiya, Al Shidiyah, Shediyah)	Esh Shidiya	Marine chemical sediment; residual enrichment	granular	Late Cretaceous	Maastrichtian	
718	Jordan			Naqb Etaiyg		Marine chemical sediment		Late Cretaceous	Campanian-Early Maastrichtian	
719	Jordan			Ruseifa (Er Ruseifa)	Ruseifa (Rusayfah)	Marine chemical sediment; residual enrichment	granular	Late Cretaceous	Maastrichtian	
720	Jordan			Suweilih		Marine chemical sediment		Late Cretaceous		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
713				Shallow subtidal to intertidal environment	Abed and Amireh, 1999		Commission for Geological Map of the World, 1982b
714					Notholt, 1994		Notholt, 1994
715	oyster coquina; chert; marl; limestone	Belqa Series		There are 2 lenticular phosphate beds, each 1-10 m thick separated by 5-15 m of chalky marl and chert. Phosphorite unit ranges up to 70 m in thickness.	Jallad and others, 1989		Abed and Omari, 1994; Griffiths, 1995b; British Sulphur Corp., 1987; Notholt, 1984; S. Jasinski, written commun., 2001
716	oyster coquina; chert; marl; limestone	Belqa Series		Nearshore marine environment. 2 beds, up to 1 m and 3 m thick that are separated by as much as 12 m of limestone.	Abed and Amireh, 1999; Jallad and others, 1989; Harben and Kuzvart, 1996	3 open-pit mines exploit 2 beds.	Griffiths, 1995b; British Sulphur Corp., 1987; Harben and Kuzvart, 1996; Abed and Omari, 1994; Notholt, 1994; S. Jasinski, written commun., 2001
717	limestone; dolomite; chert; marl; clay	Belqa Series		3 major ore beds interbedded with limestone, chert, marl, clay and silicified phosphate rock.	Abed and Fakhouri, 1990; Jallad and others, 1989	First prod in 1989.	MASMILS; Bartels and Gurr, 1994; Abed and Omari, 1994; British Sulphur Corp., 1987; Notholt, 1994; S. Jasinski, written commun., 2001
718				Shallow subtidal; includes barrier or shoal restricted environment	Abed and Amireh, 1999		
719	limestone; chert; marl	Belqa Series-Upper Phosphate Group		4 ore beds, each 1.5-3 m thick and separated by marl, limestone, and chert.	Jallad and others, 1989	2 underground and 3 open-pit mines were in operation.	Bartels and Gurr, 1994; Abed and Omari, 1994; British Sulphur Corp., 1987; Notholt, 1994
720							Commission for Geological Map of the World, 1982b

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
721	Jordan			Wadi Arfa		Marine chemical sediment		Late Cretaceous	Campanian-Early Maastrichtian	
722	Kazakhstan			Aktyubinsk		Marine chemical sediment	phosphorite pebble bed; nodular	Early Cretaceous; Late Cretaceous	Valanginian; Santonian	
723	Kazakhstan			Aktyubinsk Basin/Bogdanov		Marine chemical sediment	phosphorite pebble bed; nodular	Late Cretaceous	Early Santonian	
724	Kazakhstan			Aktyubinsk/Chilisai		Marine chemical sediment	phosphorite pebble bed; nodular	Early Cretaceous; Late Cretaceous	Valanginian; Santonian	
725	Kazakhstan			Aktyubinsk Basin/Kandagatch		Marine chemical sediment	phosphorite pebble bed; nodular	Late Cretaceous	Early Santonian	
726	Kazakhstan			Aktyubinsk Basin/Karaganda		Marine chemical sediment	phosphorite pebble bed; nodular	Late Cretaceous	Early Santonian	
727	Kazakhstan			Aktyubinsk Basin/Koktiubinsk		Marine chemical sediment	phosphorite pebble bed; nodular	Late Cretaceous	Early Santonian	
728	Kazakhstan			Aktyubinsk Basin/Novo-Ukraina		Marine chemical sediment	phosphorite pebble bed; nodular	Late Cretaceous	Early Santonian	
729	Kazakhstan			Aktyubinsk Basin/Sarblak		Marine chemical sediment	phosphorite pebble bed; nodular	Late Cretaceous	Early Santonian	
730	Kazakhstan			Aktyubinsk Basin/Utebies		Marine chemical sediment	phosphorite pebble bed; nodular	Late Cretaceous	Early Santonian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
721				Restricted nearshore environment	Abed and Amireh, 1999		
722	quartz-glauconite sandstone; claystone				Ilyin and Krasilnikova, 1989b		
723	quartz-glauconite sandstone; claystone				Ilyin and Krasilnikova, 1989b; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
724	quartz-glauconite sandstone; claystone				Ilyin and Krasilnikova, 1989b		
725	quartz-glauconite sandstone; claystone				Ilyin and Krasilnikova, 1989b; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
726	quartz-glauconite sandstone; claystone				Notholt and others, 1989g; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
727	quartz-glauconite sandstone; claystone				Ilyin and Krasilnikova, 1989b; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
728	quartz-glauconite sandstone; claystone				Ilyin and Krasilnikova, 1989b; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
729	quartz-glauconite sandstone; claystone				Ilyin and Krasilnikova, 1989b; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
730	quartz-glauconite sandstone; claystone				Ilyin and Krasilnikova, 1989b; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
731	Kazakhstan			Aktyubinsk Basin/Verkhna-Kara		Marine chemical sediment	phosphorite pebble bed; nodular	Late Cretaceous	Early Santonian	
732	Kazakhstan	Zhambyl Oblast		Karatau District/Aksai (Ak Say) deposit	Aksai (Ak Say) Mine	Marine chemical sediment	granular; pelletal; ooids; phosphatic shale; phosphatic chert; phosphatic conglomerate horizon	Early Cambrian	Tommotian	
733	Kazakhstan	Zhambyl Oblast		Karatau District/Aktugay deposit		Marine chemical sediment	bedded; pelletal	Early Cambrian	Tommotian	
734	Kazakhstan	Zhambyl Oblast		Karatau District/Dzhanatas (Zhanatas) deposit	Dzhanatas Mine	Marine chemical sediment	granular; phosphatic shale; phosphatic chert	Early Cambrian	Tommotian	
735	Kazakhstan	Zhambyl Oblast		Karatau District/Chulak-Tau (Chulak Tau) deposit	Chulak Tau Mine	Marine chemical sediment (metamorphosed)	granular; mudstone phosphate; phosphatic conglomerate horizon	Early Cambrian	Tommotian	
736	Kazakhstan	Zhambyl Oblast		Karatau District/Chulak-Tau (Chulak Tau) deposit	Molodezniy Mine	Marine chemical sediment	granular; pelletal	Early Cambrian	Tommotian	
737	Kazakhstan	Zhambyl Oblast		Karatau District/Karatau		Metasedimentary	bedded; pelletal	Early Cambrian		
738	Kazakhstan	Zhambyl Oblast		Karatau District/Kokdzhon (Kok Dzhon, Kokzhon)	Kokdhzon (Kok Dzhon, Kokzhon) Mine	Marine chemical sediment	granular; pelletal; mudstone phosphorite; phosphatic chert; conglomeritic phosphate interbedded	Early Cambrian	Tommotian	
739	Kazakhstan	Zhambyl Oblast		Karatau District/Kok Su deposit		Marine chemical sediment		Early Cambrian	Tommotian	
740	Kazakhstan	Zhambyl Oblast		Karatau District/Tje Say (Tjesay) deposit	Tje Say (Tjesay) Mine	Marine chemical sediment	bedded; pelletal	Early Cambrian	Tommotian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
731	quartz-glauconite sandstone; claystone				Ilyin and Krasilnikova, 1989b; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
732	dolomite; chert; shale	Chulak Tau Suite			Ilyin and others, 1989a; Eganov and others, 1986		Harben and Kuzvart, 1996; British Sulphur Corporation, 1987
733	dolomite; chert; shale				Bushinskii, 1969; Ilyin and others, 1989a		British Sulphur Corporation, 1987
734	dolomite (stromatolitic); chert; shale; marl; sandstone; siltstone	Chulak Tau Suite			Ilyin and others, 1989a; Eganov and others, 1986		Harben and Kuzvart, 1996; British Sulphur Corporation, 1987; Troitsky and others, 1998
735	dolomite; chert; shale	Chulak Tau Suite	fluorapatite		Ilyin and others, 1989a; Eganov and others, 1986		British Sulphur Corporation, 1987
736	dolomite; chert; shale				Bushinskii, 1969; Ilyin and others, 1989a		British Sulphur Corporation, 1987
737	dolomite; chert; shale				Ilyin and others, 1989a		
738	dolomite; chert; phosphatic shale	Chulak Tau Suite.			Ilyin and others, 1989a; Eganov and others, 1986		Harben and Kuzvart, 1996; British Sulphur Corporation, 1987; Troitsky and others, 1998
739		Chulak Tau Suite		13 km long, 5 productive members 2-22 m thick.	British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
740	dolomite; chert; shale				Bushinskii, 1969; Ilyin and others, 1989a		British Sulphur Corporation, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
741	Kenya			Homa Complex (Ndiru Hill)		Magmatic, carbonatite		Tertiary-Quaternary	1.3-12 Ma (K-Ar)	
742	Kenya			Rangwa Complex (Kisingiri volcano)		Magmatic, carbonatite; residual		Tertiary-Quaternary	Tert (17.5-38 Ma)	
743	Kenya			Ruri Complex		Magmatic, carbonatite		Tertiary-Quaternary	4.1-11 Ma (K-Ar)	
744	Kenya			Tinderet		Magmatic, carbonatite/alkalic		Tertiary	5.5-19.9 Ma (K-Ar)	
745	Korea (North)			Sinpung deposits	South Hamyong	Sedimentary		Precambrian		
746	Korea (North)			Songjin		Sedimentary	apatite	Precambrian		
747	Lebanon				Amioun					
748	Lebanon				Hasbaya			Late Cretaceous		
749	Lebanon				Machnhara					

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
741	carbonatite, phonolite, nephelinite, ijolite		calcite, apatite, nepheline, magnetite, melanite, titanite, pyrochlore, monazite, barite, dahllitewollastonite		Idman and Mulaha, 1991; Woolley, 2001		de Kun, 1987; Idman and Mulaha, 1991; Woolley, 2001
742	carbonatite		calcite, apatite, pyrochlore		Idman and Mulaha, 1991		de Kun, 1987; Idman and Mulaha, 1991; USGS files; Woolley, 2001
743	carbonatite, carbonatite agglomerate, nepheline syenite, phonolite plugs		magnetite, apatite, pyrochlore, fluorite, barite, götzenite; monazite, bastnasite, eudialyte; biotite, aegirine, wollastonite, cancrinite		Idman and Mulaha, 1991		de Kun, 1987; Idman and Mulaha, 1991; Woolley, 2001
744	nephelinite, phonolite, agglomerate						USGS files; Woolley, 2001
745		Mach'onnyong Series	apatite; minor magnetite, pyrrhotite, biotite				Lee, 1980
746	limestone		apatite				Lee, 1980
747							Arab Organisation for Mineral Resources, 1987
748							Commission for Geological Map of the World, 1982b; Arab Organisation for Mineral Resources, 1987
749							Arab Organisation for Mineral Resources, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
750	Lebanon				Nahr Litani (I)					
751	Lebanon				Nahr Litani (II)					
752	Lebanon				Nahr Litani (III)					
753	Lebanon				Saida					
754	Lebanon				Sour					
755	Lebanon				Sour South					
756	Lebanon				Tripoli					
757	Lebanon				Zahle South					
758	Lebanon			Beq'a (Bekaa) Depression	Jebel Bir ed Dahr	Marine chemical sediment		Late Cretaceous		
759	Libya				Gharyan (Jebal Ghariane)	Uncertain--Magmatic, alkalic ??				
760	Luxembourg			Musson, Differdange, Esch		Marine chemical sediment				
761	Malawi			Chilwa Island		Magmatic, carbonatite/alkalic, residual enrichment		Early Cretaceous	126-136 Ma	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
750							Arab Organisation for Mineral Resources, 1987
751							Arab Organisation for Mineral Resources, 1987
752							Arab Organisation for Mineral Resources, 1987
753							Arab Organisation for Mineral Resources, 1987
754							Arab Organisation for Mineral Resources, 1987
755							Arab Organisation for Mineral Resources, 1987
756							Arab Organisation for Mineral Resources, 1987
757							Arab Organisation for Mineral Resources, 1987
758				Beds are of variable thickness up to 3 m thick with 17-31% P2O5 in this area.			Notholt, 1994
759	basalt, phonolite			Area has an extensive alkaline volcanic field.			Commission for Geological Map of the World, 1983; Woolley, 2001; Arab Organisation for Mineral Resources, 1987
760							
761	carbonatite, sovite, breccia		apatite, pyrochlore, rutile, tantalite, microcline, magnetite, florencite, synchysite		Woolley, 2001		USGS files; Woolley, 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
762	Malawi			Kalambo Stream area		Magmatic, carbonatite/alkalic				
763	Malawi			Kangankunde		Magmatic, carbonatite/alkalic, residual enrichment		Late Cretaceous	123.6 +/- 6 Ma	K-Ar on phlogopite
764	Malawi			Kapiri		Magmatic, carbonatite/alkalic, residual enrichment				
765	Malawi			Mtsimukwe		Magmatic, carbonatite/alkalic				
766	Malawi			Nailuwa		Magmatic, carbonatite/alkalic				
767	Malawi			Palula		Magmatic, carbonatite/alkalic				
768	Malawi			Songwe Syenite	includes Ilomba and Ulindi intrusions	Magmatic, carbonatite/alkalic, residual enrichment				
769	Malawi			Tundulu complex		Magmatic, carbonatite/alkalic	apatite	Late Jurassic-Early Cretaceous	133 +/- 7 Ma (K-Ar)	Late Jurassic-Early Cretaceous

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
762							USGS files
763	dolomitic carbonatite, fenite		monazite, apatite, bastnasite, florencite, strontianite, fluorite, barite, sphalerite		Woolley, 2001		Anstett, 1986; Castor, 1994; Notholt, 1990; de Kun, 1987; Neary and Highley, 1984; Mariano, 1989; Pell, 1996; USGS files; Woolley, 2001
764			ankerite, calcite, apatite, barite, monazite (?), synchysite, perovskite	Carbonatite dikes cut Precambrian dolomite			Woolley, 2001
765							USGS files
766		carbonate agglomerate	apatite, quartz, iron oxied, calcite, siderite, goethite				USGS files; Woolley, 2001
767		carbonatite	dolomite, ankerite, fluorite, calcite, quartz, apatite				USGS files; Woolley, 2001
768	syenite		magnetite, ilmenite, pyrochlore, apatite, bastnasite, zircon, garnet, eudialyte				USGS files; Woolley, 2001
769	carbonatite; nepheline syenite, ijolite, agglomerate		apatite, bastnasite, anatase, florencite, strontianite, synchysite; rare monazite	Chilwas Alkaline Province.	U.S. Geological Survey Mineral Resources Data System, 2000		USGS files; Woolley, 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
770	Mali			Adrar Tadhak (Tadhak)		Magmatic, carbonatite/alkalic				
771	Mali			Tilemsi		Marine chemical sediment	limestone; fossiliferous marl; clay	Middle Eocene	Lutetian	
772	Mali			Tilemsi Valley/Ganchirin		Marine chemical sediment	nodules	Middle Eocene	Lutetian	
773	Mali			Tilemsi Valley/Tin Edam		Marine chemical sediment	nodules	Middle Eocene	Lutetian	
774	Mali			Tilemsi Valley/Tamaguil (Tamaguilel, Tamaguelelt)		Marine chemical sediment	coprolites, bone debris	Middle Eocene	Lutetian	
775	Malta			Malta		Marine chemical sediment	nodules	Miocene		
776	Mauritania				Akkadenach	Marine chemical sediment				
777	Mauritania				Aouala	Marine chemical sediment				
778	Mauritania				Batha Ergil	Marine chemical sediment				
779	Mauritania				Bofal	Marine chemical sediment	bedded; siliceous phosphate; bone fragments and fish teeth; coprolites	Middle Eocene		
780	Mauritania				Bogue	Marine chemical sediment				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
770	syenite, carbonatite, melteigite, ijolite		apatite, fluorite, magnetite, titanite, nepheline, aegirine-augite, cancrinite, zircon			Commodities probably not present in economic amounts.	Woolley, 2001
771					Pascal and Traore, 1989	Stripping ratios are relatively high, grades are variable, feral contents are high, and deposits are scattered.	de Kun, 1987; Notholt, 1994
772	limestone; fossiliferous marl; clay			Elevated Mn content due to dendritic growths of manganese oxide within phosphate nodules.	Pascal and Traore, 1989; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
773	limestone; fossiliferous marl; clay			Elevated Mn content due to dendritic growths of manganese oxide within phosphate nodules.	Pascal and Traore, 1989		
774	limestone; fossiliferous marl; clay		collophane, minor apatite, clay, goethite, attapulgite, quartz		Pascal and Traore, 1989		de Kun, 1987
775		Globigerina Limestone		4 distinct nodule beds with an aggregate thickness of over 2 m.			British Sulphur Corporation, 1987
776	argillaceous rocks						Arab Organisation for Mineral Resources, 1987
777							Arab Organisation for Mineral Resources, 1987
778							Arab Organisation for Mineral Resources, 1987
779	limestone; clay; red sandstones			Transgressive sequence. Phosphate is 1.73 m thick.	Boujo and El Houssein Ould Jiddou, 1989		de Kun, 1987; Arab Organisation for Mineral Resources, 1987
780							Arab Organisation for Mineral Resources, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
781	Mauritania				Civé	Marine chemical sediment				
782	Mauritania				Kaedi (Mboto)	Marine chemical sediment				
783	Mauritania				Loubboira (Louberra)	Marine chemical sediment	bedded; siliceous phosphate; bone fragments and fish teeth; coprolites	Middle Eocene		
784	Mauritania				Naniouat Koueriat	Marine chemical sediment				
785	Mauritania				Nouedgui-Bou Naga area	Marine chemical sediment	phosphatic sand			
786	Mauritania				Oued Chig	Marine chemical sediment	phosphatic sand			
787	Mauritania				Tamoust, Beira	Marine chemical sediment				
788	Mexico	Baja California		Continental Shelf		Marine chemical sediment		Holocene	10,000-20,000 yrs	
789	Mexico	Baja California Sur		Bahia Magdalena		Marine chemical sediment				
790	Mexico	Baja California Sur		La Purisima		Marine chemical sediment				
791	Mexico	Baja California Sur		San Hilario Norte		Marine chemical sediment	bedded; pelletal; bone fragments; phosphatized tuffaceous material	Late Oligocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
781							Arab Organisation for Mineral Resources, 1987
782							Arab Organisation for Mineral Resources, 1987
783	limestone; clay; red sandstones			Transgressive sequence. Phosphate is 2.03 m thick.	Boujo and El Houssein Ould Jiddou, 1989		de Kun, 1987; Arab Organisation for Mineral Resources, 1987
784							Arab Organisation for Mineral Resources, 1987
785	sandstone, limestone		apatite, sericite, mica	Deposit has been slightly metamorphosed.			McClellan and Saavedra, 1986
786	sandstone, limestone		apatite, sericite, mica	Deposit has been slightly metamorphosed.			McClellan and Saavedra, 1986
787				1.5 - 2.0 m thick beds 45-50 m deep underlie 60 sq km.			de Kun, 1987
788	sand, silt		carbonate fluorapatite, opaline silica; minor organic matter, calcite, syngenetic sulfides	Shelf are with phosphate covers 13,000 sq km. This site may in part correspond to onshore deposits.	D'Anglejan, 1967		D'Anglejan, 1967; Blatt, 1992
789							Galli-Olivier and others, 1990
790							Galli-Olivier and others, 1990
791	sandstones; detrital limestones; tuffs; siliceous shale	Monterrey Formation	gypsum, diatomite, clay	2 phosphorite seams: a main lower and a secondary upper, as well as numerous lenses of various sizes. Deposited in shallow embayment w/restricted circulation.	Galli-Olivier and others, 1990		Notholt and others, 1989a; Salas, 1991; British Sulphur Corporation, 1987; Ojedo, 1991

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
792	Mexico	Baja California Sur		San Hilario Sur		Marine chemical sediment	bedded; pelletal; bone fragments; phosphatized tuffaceous material	Late Oligocene		
793	Mexico	Baja California Sur		San Jose de Castro		Marine chemical sediment				
794	Mexico	Baja California Sur	La Paz	San Juan de la Costa		Marine chemical sediment	oolitic; bedded to massive; granular; peloids, fossils	Late Oligocene Early-Middle Miocene?		
795	Mexico	Baja California Sur		San Roque		Marine chemical sediment				
796	Mexico	Baja California Sur		Santa Rita		Marine chemical sediment		Pliocene		
797	Mexico	Baja California Sur		Santo Domingo		Placer, marine chemical sediment	phosphatic beach sands	Pleistocene-Recent		
798	Mexico	Baja California Sur		Tembabiche		Marine chemical sediment				
799	Mexico	Coahuila		Astillero		Marine chemical sediment	granular; nodular	Late Jurassic		
800	Mexico	Coahuila		Banuelos (Bunuelos)		Marine chemical sediment	no data	Late Jurassic		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
792	sandstones; detrital limestones; tuffs; siliceous shale	Monterrey Formation	gypsum, diatomite, clay	2 phosphorite seams: a main lower and a secondary upper, as well as numerous lenses of various sizes. Deposited in shallow embayment w/restricted circulation.	Galli-Olivier and others, 1990		Notholt and others, 1989a; Salas, 1991; British Sulphur Corporation, 1987; Ojedo, 1991
793							Galli-Olivier and others, 1990
794	conglomerate; coquinite; mudrock; sandstone, shale	San Gregorio Formation	cryptocrystalline apatite, carbonate, chalcedony, hematite, zeolite	Phosphate beds are up to 5 m thick and at least 8 different beds have been identified. The most important bed, the Humboldt, contains up to 90% phosphatic oolites.	Galli-Olivier and others, 1990		Harben and Kuzvart, 1996; Salas, 1991; Galli-Olivier and others, 1990; British Sulphur Corporation, 1987; S. Jasinski, written commun., 2001
795							Galli-Olivier and others, 1990
796	sandstone	Salada Formation		Poorly stratified, ferruginous phosphatic sandstones in a 15-20 m thick section.			Notholt and others, 1989a; Salas, 1991; British Sulphur Corporation, 1987
797	ferruginous phosphatic sands	Soledad Formation	francolite, quartz, feldspar; minor magnetite, rutile, zircon, sphene	Phosphatic beach deposits (including offshore) cover an area of 1500 sq kms; deposit is up to 40 m thick (ave. 18 m). Two contiguous zones of mineralization-- Elenas and Prados zones.	Notholt and others, 1989a	Efforts to mine deposit were put into abeyance in 1985 after problems developed when hard beds were encountered during dredging.	Harben and Kuzvart, 1996; Notholt and others, 1989a; Salas, 1991; British Sulphur Corporation, 1987
798							Galli-Olivier and others, 1990; Salas, 1991
799	limestone; chert; siltstone				British Sulphur Corporation, 1964	Reserve estimates from World Survey of Phosphate Deposits.	British Sulphur Corporation, 1964
800	no data				Notholt, 1994; Foose, 1993		Consejo de Recursos Minerales, 1993

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
801	Mexico	Coahuila		Garambullo		Marine chemical sediment	granular; nodular	Late Jurassic		
802	Mexico	Coahuila		Mina Honda		Marine chemical sediment	no data	Late Jurassic		
803	Mexico	Coahuila		San Francisco North		Marine chemical sediment	granular; nodular	Late Jurassic		
804	Mexico	Coahuila		San Francisco South		Marine chemical sediment	granular; nodular	Late Jurassic		
805	Mexico	Coahuila		San Juan		Marine chemical sediment	no data	Late Jurassic		
806	Mexico	Coahuila		Sierras Gomez Farias-La Carbonera		Marine chemical sediment	granular; nodular	Late Jurassic		
807	Mexico	Coahuila		Sierras Gomez Farias-La Carbonera/ Canelito		Marine chemical sediment	granular; nodular	Late Jurassic		
808	Mexico	Coahuila		Sierras Gomez Farias-La Carbonera/ Carbonera	Saltillo	Marine chemical sediment	granular; nodular	Late Jurassic		
809	Mexico	Coahuila		Sierras Gomez Farias-La Carbonera/ San Javier		Marine chemical sediment	granular; nodular	Late Jurassic		
810	Mexico	Coahuila		Sierra La Catana		Marine chemical sediment	no data	Late Jurassic		
811	Mexico	Estado de Mexico		Naucalpan de Juárez		Unknown				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
801	limestone; chert; siltstone				British Sulphur Corporation, 1964	Reserve estimates from World Survey of Phosphate Deposits.	British Sulphur Corporation, 1964
802	no data				Foose, 1993		Consejo de Recursos Minerales, 1993
803	limestone; chert; siltstone				British Sulphur Corporation, 1964		British Sulphur Corporation, 1964
804	limestone; chert; siltstone				British Sulphur Corporation, 1964	Reserve estimates from World Survey of Phosphate Deposits.	British Sulphur Corporation, 1964
805	no data				Notholt, 1994; Foose, 1993		Consejo de Recursos Minerales, 1993
806	limestone; chert; siltstone	La Caja Formation	apatite, calcite, fluorspar, gypsum		British Sulphur Corporation, 1964	Reserve estimates from World Survey of Phosphate Deposits.	Consejo de Recursos Minerales, 1993; British Sulphur Corporation, 1964; Salas, 1975
807	limestone; chert; siltstone	La Caja Formation	apatite, calcite, fluorspar, gypsum		British Sulphur Corporation, 1964		Consejo de Recursos Minerales, 1993; British Sulphur Corporation, 1967; Salas, 1975
808	limestone; chert; siltstone	La Caja Formation	apatite, calcite, fluorspar, gypsum		British Sulphur Corporation, 1964	Reserve estimates from World Survey of Phosphate Deposits.	Consejo de Recursos Minerales, 1993; British Sulphur Corporation, 1964; Salas, 1975
809	limestone; chert; siltstone	La Caja Formation	apatite, calcite, fluorspar, gypsum		British Sulphur Corporation, 1964		Consejo de Recursos Minerales, 1993; British Sulphur Corporation, 1964; Salas, 1975
810	no data				Notholt, 1994; Foose, 1993		Salas, 1975
811							Griffiths, 1988; S. Jasinski, written commun., 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
812	Mexico	Guanajuato		Los Pozos District	La Laja, Angelina, El Paseo, La Dura, La Prieta, El Duraznillo	Sedimentary		Jurassic-Cretaceous		
813	Mexico	Hildalgo		San Francisco		Marine chemical sediment	no data	Early-Middle Cretaceous		
814	Mexico	Hildalgo			Mina La Negra	Marine chemical sediment		Jurassic		
815	Mexico	Nuevo Leon		Canon de las Encias		Marine chemical sediment	bedded	Middle Cretaceous		
816	Mexico	Nuevo Leon		Dulces Nombres		Marine chemical sediment; residual enrichment	banded; fracture in-filling			
817	Mexico	Nuevo Leon		Iturbide		Unknown				
818	Mexico	Nuevo Leon		Linares		Unknown				
819	Mexico	Nuevo Leon		Mitra y Arteaga		Marine chemical sediment	no data	Middle Triassic-Jurassic		
820	Mexico	Nuevo Leon		Monterrey		Unknown				
821	Mexico	Nuevo Leon		Rincon de Arizmendi		Marine chemical sediment	concretionary phosphate	Cretaceous		
822	Mexico	Nuevo Leon		Topo Chico		Secondary enrichment	concretionary phosphate			
823	Mexico	Queretaro			Chavarria	Marine chemical sediment, hydrothermal?	fossiliferous	Early-Middle Cretaceous		
824	Mexico	Queretaro			La Ventana	Marine chemical sediment, hydrothermal?	fossiliferous	Early-Middle Cretaceous		
825	Mexico	Queretaro			Tancamá	Marine chemical sediment, hydrothermal?	fossiliferous	Early-Middle Cretaceous		
826	Mexico	Queretaro		Queretaro Municipality P concession		Marine chemical sediment	fossiliferous	Early-Middle Cretaceous		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
812	limestone, shale					Grades are highly variable (2.1-43% P2O5).	Consejo de Recursos Minerales, 1992c
813	no data				Foose, 1993	`	
814							Harben and Kuzvart, 1996; S. Jasinski, written commun., 2001
815	limestone				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
816	limestone			Phosphate in scattered pockets in cavities and fractures in the limestone.	British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
817							Griffiths, 1988; S. Jasinski, written commun., 2001
818							Griffiths, 1988; S. Jasinski, written commun., 2001
819	no data				Foose, 1993		
820							Griffiths, 1988; S. Jasinski, written commun., 2001
821	limestone; clay				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
822	no data				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
823	Caliza El Doctor						Consejo de Recursos Minerales, 1992a
824	Caliza El Doctor						Consejo de Recursos Minerales, 1992a
825	Caliza El Doctor						Consejo de Recursos Minerales, 1992a
826	Caliza El Doctor						Consejo de Recursos Minerales, 1992a

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
827	Mexico	Queretaro		Peña Miller Municipality P concession		Marine chemical sediment	fossiliferous	Early-Middle Cretaceous		
828	Mexico	Queretaro		Landa de Matamoros Municipality P concession		Marine chemical sediment	fossiliferous	Early-Middle Cretaceous		
829	Mexico	Quintana Roo?		Landa de Matamoros		Unknown				
830	Mexico	San Luis Potosi		Ciudad Valles Region		Marine chemical sediment		Cretaceous		
831	Mexico	Zacatecas			El Buen Suceso	Contact metasomatic				
832	Mexico	Zacatecas			El Cerrito	Disseminated				
833	Mexico	Zacatecas			El Papanton	Contact metasomatic				
834	Mexico	Zacatecas			La Campesina	Contact metasomatic				
835	Mexico	Zacatecas			La Continental	Contact metasomatic				
836	Mexico	Zacatecas			La Guadalupe	Contact metasomatic				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
827	Caliza El Doctor						Consejo de Recursos Minerales, 1992a
828	Caliza El Doctor						Consejo de Recursos Minerales, 1992a
829							Griffiths, 1988; S. Jasinski, written commun., 2001
830	La Caja Fmt`						Griffiths, 1988; S. Jasinski, written commun., 2001
831							Consejo de Recursos Minerales, 1992b; S. Jasinski, written commun., 2001
832							Consejo de Recursos Minerales, 1992b; S. Jasinski, written commun., 2001
833							Consejo de Recursos Minerales, 1992b; S. Jasinski, written commun., 2001
834							Consejo de Recursos Minerales, 1992b; S. Jasinski, written commun., 2001
835							Consejo de Recursos Minerales, 1992b; S. Jasinski, written commun., 2001
836							Consejo de Recursos Minerales, 1992b; S. Jasinski, written commun., 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
837	Mexico	Zacatecas			Las Auras	Contact metasomatic				
838	Mexico	Zacatecas			Palmas	Marine chemical sediment?				
839	Mexico	Zacatecas			Palmillas	Contact metasomatic				
840	Mexico	Zacatecas			Palmira	Contact metasomatic				
841	Mexico	Zacatecas			Santo Niño	Marine chemical sediment?				
842	Mexico	Zacatecas			Tetillas	Disseminated, contact metasomatic				
843	Mexico	Zacatecas		Colorada		Marine chemical sediment	granular; nodular	Late Jurassic		
844	Mexico	Zacatecas		Conception del Oro District/Santa Rosa		Marine chemical sediment	bedded; phosphatic limestone	Late Jurassic		
845	Mexico	Zacatecas		Fosforita		Magmatic-related	no data	Oligocene-Pliocene		
846	Mexico	Zacatecas		Lorenzena		Marine chemical sediment	granular; nodular	Late Jurassic		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
837							Consejo de Recursos Minerales, 1992b; S. Jasinski, written commun., 2001
838							Consejo de Recursos Minerales, 1992b; S. Jasinski, written commun., 2001
839							Consejo de Recursos Minerales, 1992b; S. Jasinski, written commun., 2001
840							Consejo de Recursos Minerales, 1992b; S. Jasinski, written commun., 2001
841							Consejo de Recursos Minerales, 1992b; S. Jasinski, written commun., 2001
842							Consejo de Recursos Minerales, 1992b; S. Jasinski, written commun., 2001
843	limestone; chert; siltstone				British Sulphur Corporation, 1964		British Sulphur Corporation, 1964
844	limestone; chert; siltstone	La Caja Formation			British Sulphur Corporation, 1964	Reserve estimates from World Survey of Phosphate Deposits.	British Sulphur Corporation, 1964
845	no data				Foose, 1993		
846	limestone; chert; siltstone				British Sulphur Corporation, 1964	Reserve estimates from World Survey of Phosphate Deposits.	British Sulphur Corporation, 1964

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
847	Mexico	Zacatecas		P.V. 13		Stockworks, Pipes, And Deposits Of Irregular Or Indefinite Shape, Other Than Skarn Or Greisen.		Oligocene-Pliocene		
848	Mexico	Zacatecas		P.V. 26 (2)		More Or Less Strata-Bound, Mainly Disseminated Deposits Other Than Known Placers.		Oligocene-Pliocene		
849	Mexico	Zacatecas		Panfilo Natera Mining District	Cerro El Aguila, Cerro Colorado, El Moro	Contact metasomatic/ hydrothermal		Tertiary?		
850	Mexico	Zacatecas		Panfilo Natera Mining District	La Esperanza	Contact metasomatic/ hydrothermal		Tertiary?		
851	Mexico	Zacatecas		Potrerillos		Marine chemical sediment	granular; nodular	Late Jurassic		
852	Mexico	Zacatecas		Rocamonte (Sierra Rocamontes)		Marine chemical sediment	granular; nodular	Late Jurassic		
853	Mexico	Zacatecas		San Julian		Marine chemical sediment	granular; nodular	Late Jurassic		
854	Mexico	Zacatecas		Sierra El Canutillo		Marine chemical sediment				
855	Mexico	Zacatecas		Sierra El Trébol		Marine chemical sediment				
856	Mexico	Zacatecas		Sierra La Caja		Marine chemical sediment				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
847					Foose, 1993		
848					Foose, 1993		
849	rhyolitic porphyry		variscite	Variscite derived from hydrothermal alteration of the apatite and other minerals in the rhyolite porphyry	Consejo de Recursos Minerales, 1992b		Consejo de Recursos Minerales, 1992b
850	rhyolitic porphyry		variscite	Variscite derived from hydrothermal alteration of the apatite and other minerals in the rhyolite porphyry	Consejo de Recursos Minerales, 1992b		Consejo de Recursos Minerales, 1992b
851	limestone; chert; siltstone				British Sulphur Corporation, 1964	Reserve estimates from World Survey of Phosphate Deposits.	British Sulphur Corporation, 1964
852	La Caja Fmt-limestone; chert; siltstone				British Sulphur Corporation, 1964	Reserve estimates from World Survey of Phosphate Deposits & CRM.	Consejo de Recursos Minerales, 1992b
853	limestone; chert; siltstone				British Sulphur Corporation, 1964	Reserve estimates from World Survey of Phosphate Deposits.	British Sulphur Corporation, 1964
854	La Caja Fmt						Consejo de Recursos Minerales, 1992b
855	La Caja Fmt						Consejo de Recursos Minerales, 1992b
856	La Caja Fmt						Consejo de Recursos Minerales, 1992b

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
857	Mexico	Zacatecas		Sierra Santa Rita		Marine chemical sediment				
858	Mexico	Zacatecas		Sierra Santa Rosa		Marine chemical sediment	cryptocrystalline, granular, nodular	Late Jurassic		
859	Mexico	Zacatecas		Sierra Zuloaga		Marine chemical sediment				
860	Mongolia	Hovsgol		Burenkhan field (Burin-Khan)		Marine chemical sediment	massive			
861	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul, Khubsugul, Hubsugul)		Marine chemical sediment	bedded; pelletal; conglomeritic in places; microphosphorite; dolomite phosphorite composed of phosphate fragments in a dolomite matrix	Early Cambrian	Tommotian	
862	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/ Arasan group (Kharus Gol)		Marine chemical sediment				
863	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/ Baga-Tsagaan Gol		Marine chemical sediment				
864	Mongolia	Hovsgol		(Khubsugul)/Bayan Gol		Marine chemical sediment				
865	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/ Berhimuulin		Marine chemical sediment				
866	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Chzhiglig		Marine chemical sediment				
867	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Darhan group		Marine chemical sediment				
868	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Dertrug		Marine chemical sediment				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
857	La Caja Fmt						Consejo de Recursos Minerales, 1992b
858	phosphorite, phosphatic limestone, siltstone	La Caja Fmt - Unit C	cryptocrystalline apatite, fluorapatite	Phosphorite sequence is about 20 m thick.	British Sulphur Corp., 1987		Consejo de Recursos Minerales, 1992b; British Sulphur Corporation, 1987
859	La Caja Fmt						Consejo de Recursos Minerales, 1992b
860	chert, dolomite, limestone	Khubsugul Group	apatite, quartz; also minor muscovite-sericite, calcite	This deposit may have undergone extensive weathering with carbonate leaching and replacement with silica. 7 phosphate horizons are present.	Ilyin and others, 1989b	Lies outside of Lake Hovsgol drainage basin. Extension of deposit in Russia.	ESCAP, 1999; McClellan and Saavedra, 1986
861	dolomitic phosphate; chert; sandstone; conglomerate	Khubsugul Group		Extension of deposit in Russia.	Ilyin and others, 1989b	In Lake Hovsgol drainage basin.	Ilyin and others, 1986; British Sulphur Corporation, 1987; ESCAP, 19999
862	limestone					In Lake Hovsgol drainage basin.	ESCAP, 1999
863						In Lake Hovsgol drainage basin.	ESCAP, 1999
864						In Lake Hovsgol drainage basin.	ESCAP, 1999
865						In Lake Hovsgol drainage basin.	ESCAP, 1999
866						In Lake Hovsgol drainage basin.	ESCAP, 1999
867						In Lake Hovsgol drainage basin.	ESCAP, 1999
868						In Lake Hovsgol drainage basin.	ESCAP, 1999

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
869	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/East Doodnuur		Marine chemical sediment				
870	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Habhain		Marine chemical sediment				
871	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Harmain		Marine chemical sediment				
872	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/ Hitaingol		Marine chemical sediment				
873	Mongolia	Hovsgol		(Khubsugul)/Hogorgai n		Marine chemical sediment				
874	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/ Holigtsatuin 1		Marine chemical sediment				
875	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/ Holigtsatuin 2		Marine chemical sediment				
876	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/ Hubsgul		Marine chemical sediment				
877	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/ Huren-Nurin		Marine chemical sediment				
878	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/ Kharausugol		Marine chemical sediment				
879	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Khavagol		Marine chemical sediment				
880	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Khuikhen Gol		Marine chemical sediment				
881	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/ Khunkh		Marine chemical sediment				
882	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Mankhan Uul (Manhanulin, Mankhan-ula)		Marine chemical sediment				
883	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/ Maratuinnulin		Marine chemical sediment				
884	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Middle Tengesin		Marine chemical sediment				
885	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Targalulin		Marine chemical sediment				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
869						In Lake Hovsgol drainage basin.	ESCAP, 1999
870						In Lake Hovsgol drainage basin.	ESCAP, 1999
871						In Lake Hovsgol drainage basin.	ESCAP, 1999
872						In Lake Hovsgol drainage basin.	ESCAP, 1999
873						In Lake Hovsgol drainage basin.	ESCAP, 1999
874						In Lake Hovsgol drainage basin.	ESCAP, 1999
875						In Lake Hovsgol drainage basin.	ESCAP, 1999
876	limestone					In Lake Hovsgol drainage basin.	ESCAP, 1999
877						In Lake Hovsgol drainage basin.	ESCAP, 1999
878						In Lake Hovsgol drainage basin.	ESCAP, 1999
879						In Lake Hovsgol drainage basin.	ESCAP, 1999
880						In Lake Hovsgol drainage basin.	ESCAP, 1999
881						In Lake Hovsgol drainage basin.	ESCAP, 1999
882	chert, dolomite, limestone	Khubsugul Group			Ilyin and others, 1989b	In Lake Hovsgol drainage basin.	Ilyin and others, 1986; ESCAP, 1999
883						In Lake Hovsgol drainage basin.	ESCAP, 1999
884						In Lake Hovsgol drainage basin.	ESCAP, 1999
885						In Lake Hovsgol drainage basin.	ESCAP, 1999

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
886	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/ Temensultin		Marine chemical sediment				
887	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Tsagaan Uul		Marine chemical sediment				
888	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Ukhaa Gol		Marine chemical sediment	argillaceous phosphates, granular			
889	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/ Ulaniduruldzhin		Marine chemical sediment				
890	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Uleindaban (Uliin Davaa)		Marine chemical sediment				
891	Mongolia	Hovsgol		Hubsgul Basin (Khubsugul)/Utszegin		Marine chemical sediment				
892	Mongolia			Khubsugul/Tsagan-nur (Tshagan-mur)		Marine chemical sediment				
893	Morocco				Ben Ider					
894	Morocco				Chichaoua					
895	Morocco	Marrakech			Imin Tanoute (Imi-N-Tanoute)	Marine chemical sediment	bedded; phosphatic carbonate	Late Cretaceous-Middle Eocene	Maastrichtian-Lutetian	
896	Morocco				Kasba Tadla					
897	Morocco	Marrakech			Meskala	Marine chemical sediment	bedded; phosphatic carbonate	Late Cretaceous-Middle Eocene	Maastrichtian-Lutetian	
898	Morocco				Nzalet El Hararcha					

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
886						In Lake Hovsgol drainage basin.	ESCAP, 1999
887	limestone					In Lake Hovsgol drainage basin.	ESCAP, 1999
888	chert, dolomite, limestone	Khubsugul Group			Ilyin and others, 1989b	In Lake Hovsgol drainage basin.	Ilyin and others, 1986; ESCAP, 1999
889						In Lake Hovsgol drainage basin.	ESCAP, 1999
890	chert, dolomite, limestone	Khubsugul Group			Ilyin and others, 1989b	In Lake Hovsgol drainage basin.	Ilyin and others, 1986; ESCAP, 1999
891						In Lake Hovsgol drainage basin.	ESCAP, 1999
892	chert, dolomite, limestone	Khubsugul Group		Deposit has 5 phosphate beds.	Ilyin and others, 1989b	Extension of deposit in Russia.	Ilyin and others, 1986; McClellan and Saavedra, 1986; British Sulphur Corporation, 1987
893							Arab Organisation for Mineral Resources, 1987
894							Arab Organisation for Mineral Resources, 1987
895	carbonate; marl; sandstone; chert				Slansky, 1986; Office Cherifien des Phosphates, 1989; Notholt, 1994		Arab Organisation for Mineral Resources, 1987
896							Arab Organisation for Mineral Resources, 1987
897	carbonate; marl; sandstone; chert				Office Cherifien des Phosphates1989; Slansky, 1986	Currently being mined south of Essaouira area.	Bartels and Gurr, 1994; Power, 1986a
898							Arab Organisation for Mineral Resources, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
899	Morocco	Khouribga		Oulad Abdoun Plateau (Khouribga)		Marine chemical sediment; residual enrichment	bedded; granular; shell and vertebrate bone fragments; coprolites; black phosphorite	Late Cretaceous-Middle Eocene	Maastrichtian-Lower Lutetian	
900	Morocco	Khouribga		Oulad Abdoun Plateau	Al Borouj (Al Broujj, El Borouj) area	Marine chemical sediment	bedded; granular; skelletal/fossiliferous	Late Cretaceous-Middle Eocene	Maastrichtian-Lutetian	
901	Morocco	Khouribga		Oulad Abdoun Plateau (Khouribga)	Daoui (Grand Daoui)	Marine chemical sediment				
902	Morocco	Khouribga		Oulad Abdoun Plateau (Khouribga)	Daoui Nord	Marine chemical sediment	bedded; granular; skelletal/fossiliferous	Late Cretaceous-Middle Eocene	Maastrichtian-Lutetian	
903	Morocco	Khouribga		Oulad Abdoun Plateau (Khouribga)	Khouribga Underground	Marine chemical sediment	bedded; granular; skelletal/fossiliferous	Late Cretaceous-Middle Eocene	Maastrichtian-Lutetian	
904	Morocco	Khouribga		Oulad Abdoun Plateau (Khouribga)	Mrzig (Mrizig) area	Marine chemical sediment; residual enrichment	bedded; granular; skelletal/fossiliferous	Late Cretaceous-Middle Eocene	Maastrichtian-Lutetian	
905	Morocco	Khouribga		Oulad Abdoun Plateau (Khouribga)	Meraa-El-Arech (Mera El Arech)	Marine chemical sediment	bedded; granular; shell and vertebrate bone fragments; coprolites	Late Cretaceous-Middle Eocene	Maastrichtian-Lower Lutetian	
906	Morocco	Khouribga		Oulad Abdoun Plateau (Khouribga)	Sidi-Daoui (Sid Daoui)	Marine chemical sediment; residual enrichment	bedded; granular; shell and vertebrate bone fragments; coprolites; decarbonated residual layers	Late Cretaceous-Middle Eocene	Maastrichtian-Lower Lutetian	
907	Morocco	Khouribga		Oulad Abdoun Plateau (Khouribga)	Sidi Hajjaj	Marine chemical sediment; residual enrichment	bedded; granular; skelletal/fossiliferous; decarbonated residual layers	Late Cretaceous-Middle Eocene	Maastrichtian-Lutetian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
899	carbonate; clay; marl; siliclastic rocks				Office Cherifien des Phosphates, 1989; Slansky, 1986		S. Jasinski, written commun., 2001
900	carbonate; marl; siliclastic rocks				Office Cherifien des Phosphates, 1989; Notholt, 1994		de Kun, 1987; Arab Organisation for Mineral Resources, 1987
901						Works bed 2. Ore has high clay content and requires washing.	Power, 1986a; Gharbi, 1998; Industrial Minerals, 1993; S. Jasinski, written commun., 2001
902	carbonate; marl; siliclastic rocks				Office Cherifien des Phosphates, 1989; Notholt, 1994		
903	carbonate; marl; siliclastic rocks				Office Cherifien des Phosphates, 1989; Notholt, 1994		de Kun, 1987
904	carbonate; marl; siliclastic rocks				Office Cherifien des Phosphates, 1989; Notholt, 1994		de Kun, 1987
905	carbonate; clay; marl; siliclastic rocks				Office Cherifien des Phosphates, 1989; Slansky, 1986	Works bed 2.	Harben and Kuzvart, 1996; Power, 1986a; de Kun, 1987
906	carbonate; clay; marl; siliclastic rocks				Office Cherifien des Phosphates, 1989; Slansky, 1986		Harben and Kuzvart, 1996; Power, 1986a; de Kun, 1987; Commission for Geological Map of the World, 1976
907	carbonate; marl; siliclastic rocks			Oulad Abdoun Basin	Office Cherifien des Phosphates, 1989; Notholt, 1994		Power, 1986a; de Kun, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
908	Morocco	Khouribga		Oulad Abdoun Plateau (Khouribga)	Ouled Fares area	Marine chemical sediment	bedded; granular; skelletal/fossiliferous	Late Cretaceous-Middle Eocene	Maastrichtian-Lutetian	
909	Morocco	Khouribga		Oulad Abdoun Plateau (Khouribga)	Oued Zem	Marine chemical sediment; residual enrichment	bedded; granular; fossiliferous (bone and shell fragments; coprolites	Late Cretaceous-Early Eocene	Maastrichtian-Ypresian	
910	Morocco	Khouribga		Oulad-Abdoun Plateau (Khouribga)	Recette 4 (Khouribga Area)	Marine chemical sediment	bedded; granular; skelletal/fossiliferous	Late Cretaceous-Middle Eocene	Maastrichtian-Lutetian	
911	Morocco	Khouribga		Oulad-Abdoun Plateau (Khouribga)	Sidi Chennane	Marine chemical sediment	bedded; granular; skelletal/fossiliferous	Late Cretaceous-Middle Eocene	Maastrichtian-Lutetian	
912	Morocco	Khouribga		Southern Khouribga Region		Marine chemical sediment	bedded; granular; skelletal/fossiliferous	Late Cretaceous-Middle Eocene	Maastrichtian-Lutetian	
913	Morocco	Marrakech		Ganntour	El Outa	Marine chemical sediment	bedded	Late Cretaceous-Early Eocene	Maastrichtian-Ypresian	
914	Morocco	Marrakech		Ganntour	N'zala	Marine chemical sediment	bedded	Late Cretaceous-Early Eocene	Maastrichtian-Ypresian	
915	Morocco	Marrakech		Ganntour	Tessaout	Marine chemical sediment	bedded	Late Cretaceous-Early Eocene	Maastrichtian-Ypresian	
916	Morocco	Safi		Ganntour Plateau		Marine chemical sediment; residual enrichment	bedded; bituminous phosphate bedded	Late Cretaceous-Early Eocene	Maastrichtian-Ypresian	
917	Morocco	Safi		Ganntour	Youssoufia	Marine chemical sediment; residual enrichment	bedded; bituminous phosphate bedded	Late Cretaceous-Early Eocene	Maastrichtian-Ypresian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
908	carbonate; marl; siliclastic rocks				Office Cherifien des Phosphates, 1989; Notholt, 1994		de Kun, 1987
909	carbonate; marl; clay; shale				Office Cherifien des Phosphates, 1989; MRDS	Ore production capacity greater than 3,000,000 t/a. It is possible that there is only a processing plant at this site.	de Kun, 1987; S. Jasinski, written commun., 2001
910	carbonate; marl; siliclastic rocks				Office Cherifien des Phosphates, 1989; Notholt, 1994	This mine may have merged with Daoui.	Gharbi, 1998; de Kun, 1987; S. Jasinski, written commun., 2001
911	carbonate; marl; siliclastic rocks; chert				Office Cherifien des Phosphates, 1989; Notholt, 1994	Grade decreases in lower beds. 6-20 m of overburden is stripped here.	Harben and Kuzvart, 1996; de Kun, 1987; Industrial Minerals, 1993
912	carbonate; marl; siliclastic rocks				Office Cherifien des Phosphates, 1989; Notholt, 1994		
913	carbonate; dolomitic marl; chert; sandstone			In Ganntour Basin.	Office Cherifien des Phosphates, 1989; Notholt, 1994		
914	carbonate; dolomitic marl; chert; sandstone			In Ganntour Basin.	Office Cherifien des Phosphates, 1989; Notholt, 1994		
915	carbonate; dolomitic marl; chert; sandstone		barite	In Ganntour Basin.	Office Cherifien des Phosphates, 1989; Notholt, 1994		MASMILS, 2000; Arab Organisation for Mineral Resources, 1987
916	carbonate; dolomitic marl; chert; sandstone				Office Cherifien des Phosphates, 1989; Slansky, 1986		
917	carbonate; dolomitic marl; chert; sandstone			In Ganntour Basin.	Office Cherifien des Phosphates, 1989; Slansky, 1986		S. Jasinski, written commun., 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
918	Morocco	Safi		Ganntour	Youssoufia Black Rock	Marine chemical sediment; residual enrichment	bedded; bituminous phosphate bedded	Late Cretaceous-Early Eocene	Maastrichtian-Ypresian	
919	Morocco	Safi		Ganntour	Youssoufia Open Cast Mines	Marine chemical sediment, residual enrichment	bedded	Late Cretaceous-Early Eocene	Maastrichtian-Ypresian	
920	Morocco	Marrakech?		Ganntour	Benguérir (Ben-Guerir)	Marine chemical sediment	bedded	Late Cretaceous-Early Eocene	Maastrichtian-Ypresian	
921	Morocco	Safi		Ganntour	Youssoufia White Rock	Marine chemical sediment; residual enrichment	bedded	Late Cretaceous-Early Eocene	Maastrichtian-Ypresian	
922	Morocco	Western Sahara		Aaiun Basin/Oued Eddahab deps/Bou Craa (Bu-Craa, Wadi Bu Craa) Deposit	Bou Craa (Bu-Craa, Wadi Bu Craa)	Marine chemical sediment	bedded; oolites; contains microfossils; nodules	Late Cretaceous-Paleocene	Late Maastrichtian-Paleocene	
923	Mozambique			Cone Negosa (Negoza cone Negose)		Magmatic, carbonatite/alkalic, residual enrichment; metasomatic?				
924	Mozambique	Nampula		Evate		Metasomatic				
925	Mozambique			Luicuisse		Magmatic, carbonatite/alkalic, residual enrichment; metasomatic?				
926	Mozambique	Tete		Monte Muande		Metasomatic				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
918	carbonate; dolomitic marl; chert; sandstone			In Ganntour Basin.	Office Cherifien des Phosphates, 1989; Notholt, 1994		
919	carbonate; dolomitic marl; chert; sandstone			In Ganntour Basin.	Office Cherifien des Phosphates, 1989; Notholt, 1994		Power, 1986a
920	carbonate; dolomitic marl; chert; sandstone			In Ganntour Basin.	Office Cherifien des Phosphates, 1989; Slansky, 1986	First production about 1980. Benguerir works 6 phosphate beds (C1-6).	Harben and Kuzvart, 1996; Power, 1986a; Gharbi, 1998
921	carbonate; dolomitic marl; chert; sandstone			In Ganntour Basin.	Office Cherifien des Phosphates, 1989; Notholt, 1994		
922	black marl; clay; chert, limestone, dolomite		apatite, quartz, calcite, organic matter	Deposit spans a huge area from Edchera to the SE of Laayoune and is composed of 2-6 beds of phosphate. Transgressive marine sequence.	Munoz Cabezon, 1989		Power, 1986a; S. Jasinski, written commun., 2001
923	carbonatite		pyrite, bastnasite, barite, pyrochlore, monazite, brookite, fluorapatite	Premoli classified this deposit as metasomatic.			Premoli, 1994; Woolley, 2001
924	limestone	Nampula Series	apatite, magnetite, forsterite, phlogopite, graphite	The apatite-magnetite deposit intrudes crystalline limestone. Mineralized zones are 5-100 m thick.		Largest P deposit in Mozambique.	Premoli, 1994; Notholt, 1994
925	carbonatite		U, monazite, apatite, pyrochlore, columbite, zircon, magnetite	Premoli classified this deposit as metasomatic.			Premoli, 1994; Woolley, 2001
926	marble		magnetite, apatite	Apatite in crystalline marble.			Premoli, 1994; Notholt, 1994

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
927	Namibia	Namibian continental shelf		Orange River		Marine chemical sediment	pelletal; rocks phosphorite; replacement phosphate (phosphatized porcelanite)	Miocene		
928	Namibia	Namibian continental shelf		Rocky Point		Marine chemical sediment	pelletal; rock phosphorite	Miocene		
929	Namibia	Namibian continental shelf		Walvis Bay; Sylvia Hill		Marine chemical sediment	pelletal; concretionary phosphorite	Miocene		
930	Namibia			Epembe (Otjitanga-Epembe)		Magmatic, carbonatite/alkalic				
931	Namibia			Kalkfeld Complex (Etaneno)		Magmatic, carbonatite/alkalic		Jurassic		
932	Namibia			Otjisazu		Magmatic, carbonatite/alkalic				
933	Namibia			Okorusu		Magmatic, carbonatite/alkalic		Early Cretaceous	126.6 +/- 7.3 Ma (Rb-Sr on separated minerals)	
934	Namibia			Ondurakorume Complex (Kameelberg)		Magmatic, carbonatite/alkalic				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
927	dolomitic porcelanite				Bremner and Rogers, 1990	Resources taken from Bremner and Rogers (1990).	
928	glauconite; limestone				Bremner and Rogers, 1990	Resources taken from Bremner and Rogers (1990).	
929	glauconite				Bremner and Rogers, 1990	Resources taken from Bremner and Rogers (1990).	
930	carbonatite, nepheline syenite, fenite		apatite, titanite, biotite, magnetite				USGS files; Woolley, 2001
931	carbonatite, syenite, foyaite, iron ore		eudialyte, titanite, magnetite, chalcocite, pyrite, barite, monazite, pyrochlore, pyrite, quartz, chlorite		Woolley, 2001		McManus and Schneider, 1994; Woolley, 2001
932	alkali pyroxenites, syenite, sovite		apatite, Cu, titanite, aegirine-augite, garnet	Cu- and P-enriched areas are largely coincident.			Woolley, 2001
933	carbonatite, iron deposits, nephelinite, pyroxenite, syenite, foyaite, aegirine fenite		fluorite, apatite, barite, thorite, titanite, synchisite, monazite, yttrio-fluorite, xenotime		Woolley, 2001		de Kun, 1987; Woolley, 2001
934	beforsite, sovite, breccia, syenite		apatite, pyrochlore, vermiculite, chlorite, biotite, calcite, aegirine, magnetite, zircon, ancylite, monazite, galena, pyrite				McManus and Schneider, 1994; Woolley, 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
935	Namibia			Osongombe Complex		Magmatic, carbonatite/alkalic				
936	Namibia			Swartbooisdrif		Magmatic, carbonatite/alkalic		Late Proterozoic--749 Ma	K-Ar on biotite from pegmatite	
937	Nepal					Marine chemical sediment	detrital phosphorite grains in limestone	Eocene		
938	Nepal			Baitadi area	Dhaubisaune	Marine chemical sediment				
939	Nepal			Baitadi area	Dhik Gad	Marine chemical sediment				
940	Nepal			Baitadi area	Junkuna	Marine chemical sediment				
941	Nepal			Baitadi area	Parchuni	Marine chemical sediment	stromatolitic phosphorite; sandy phosphorite; pelletal	Precambrian-Early Paleozoic		
942	Nepal			Baitadi area	Sanagaon	Marine chemical sediment				
943	Nepal			Baitadi area	Sorar	Marine chemical sediment	stromatolitic phosphorite; sandy phosphorite; pelletal	Precambrian-Early Paleozoic		
944	Nepal			Bajhang area	Goichan-Kandachaur	Marine chemical sediment	stromatolitic phosphorite			
945	Nepal			Bajhang area	Juilgad	Marine chemical sediment	stromatolitic phosphorite			

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
935	beforsite, iron ore, breccia, granite		ankerite, apatite	This is the smallest of the Damaraland carbonatite complexes with an average diameter of 450 m.			McManus and Schneider, 1994; USGS files; Woolley, 2001
936	carbonatite dikes in anorthosite		sodalite, ankerite, cancrinite		Woolley, 2001		USGS files; Woolley, 2001
937	argillaceous limestone				ESCAP, 1993b		ESCAP, 1993b
938	cherty dolomite; black slate	Baitadi Carbonate Formation		1.6-4.7 m thick bed, 8 km long.			ESCAP, 1993b
939	cherty dolomite; black slate	Baitadi Carbonate Formation		0.7-1.3 m thick bed, >200 m long.			ESCAP, 1993b
940	cherty dolomite; black slate	Baitadi Carbonate Formation		1-4.7 m thick bed, 1 km long.			ESCAP, 1993b
941	cherty dolomite; black slate; limestone; gray sandstone	Bajhang Carbonate Formation.		The following resource information from Pradhananga (1986): Dhik Gad 0.7-1.3 m thick and greater than 200 m long; Junkuna, 1-4.7 m thick and 1 km long; Dhaubisaune, 1.6-4.7 m thick and 8 km long; Sanagaon, 1.4-3.4 m thick and 2.4 km long.	Pradhananga, 1986; ESCAP, 1993b		ESCAP, 1993b
942	cherty dolomite; black slate	Baitadi Carbonate Formation		Rich phosphorite has a dense massive structure; 1.4-3.4 m thick bed, 2.4 km long.			ESCAP, 1993b
943	cherty dolomite; black slate; limestone; gray sandstone	Bajhang Carbonate Formation			Pradhananga, 1986; ESCAP, 1993b	Resource estimates from Pradhananga (1986).	ESCAP, 1993b
944		Bajhang Carbonate Formation		2.6-4m thick bed, 2.8 km long.			ESCAP, 1993b
945		Bajhang Carbonate Formation		0.6-3.8 m thick bed.			ESCAP, 1993b

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
946	Nepal			Bajhang zone	Kodachaur	Marine chemical sediment	stromatolitic phosphorite	Precambrian-Early Paleozoic		
947	Nepal			Bajhang area	Tarugad	Marine chemical sediment	stromatolitic phosphorite	Precambrian-Early Paleozoic		
948	Nepal			Bajura		Marine chemical sediment	stromatolitic phosphorite; sandy phosphorite	Precambrian-Early Paleozoic		
949	Nepal			Barahakshetra (Barahkshetra)		Marine chemical sediment	bedded; lenticular; nodular	Permian-Carboniferous		
950	Nepal			Dang Pyuthan		Marine chemical sediment	detrital phosphorite grains in limestone	Eocene		
951	Netherlands			Ootmarsum		Marine chemical sediment				
952	Netherlands			Winterswijk		Marine chemical sediment				
953	New Zealand	Chatham Rise		Chatham Rise Phosphorites		Replacement of marine sediment	nodular	Middle Miocene-Early Pliocene	15-5 Ma	
954	New Zealand			Clarendon		Marine chemical sediment	no data			
955	Niger			Tapoa		Marine chemical sediment; residual enrichment	ooids, aggregates, laminae, peloids, bedded to non-bedded	Late Proterozoic	Vendian	
956	Niger			Tapoa/Park W		Marine chemical sediment		Late Proterozoic		
957	Nigeria			Kaffo Valley						

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
946	cherty dolomite; black slate; limestone; gray sandstone	Bajhang Carbonate Formation		2 beds; one 4 m thick, the other 2.6 m.	Pradhananga, 1986	Resource estimates from Pradhananga (1986).	ESCAP, 1993b
947	cherty dolomite; black slate; limestone; gray sandstone	Bajhang Carbonate Formation		4.4-6.2 m thick bed.	Pradhananga, 1986	Resource estimates from Pradhananga (1986).	ESCAP, 1993b
948	cherty dolomite; black slate; limestone; gray sandstone	Bajhang Carbonate Formation	magnesite	2 m thick bed.	Pradhananga, 1986; ESCAP, 1993b	Resource estimates from Pradhananga (1986).	ESCAP, 1993b
949	sandstone; sandy shale; phyllite; cherty dolomite; bituminous shale; quartzite; marl; black shale (bituminous)	Barahakshetra Formation	siderite	4 thin and erratic beds.	Lee, 1980; British Sulphur Corporation, 1987		ESCAP, 1993b; Tater, 1980; British Sulphur Corporation, 1987
950	argillaceous limestone				ESCAP, 1993b	Sewar Khola section in Dang District; Mari Khola section in Pyuthan district.	ESCAP, 1993b
951							
952							
953	chalk; pelagic ooze			Glauconite-coated phosphate nodules on the sea floor at depths of 300-500 m.	Cullen, 1989		Thompson, 1983
954	sandstone; glauconite	Clarendon Sand					Christie and others, 2000
955	sandstone, shale, mudstone, siltstone	Upper Volta Group	carbonate fluoapatite, quartz, pyrite	35-40 m thick beds. Deposit has been laterized.	Slansky, 1986	Sources differ as to whether part of this deposit occurs in Burkina Faso; Most of dep is in Niger and forms a series of deposits that extends to Mekrou in Benin.	de Kun, 1987; British Sulphur Corporation, 1964; Notholt, 1994; Slansky, 1986; Lucas and others, 1986
956	siltstone			Deposit is 35-40 m thick.			McClellan and Saavedra, 1986
957							USGS files

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
958	Norway			Andorja		Metasedimentary				
959	Norway			Fen Complex		Magmatic, carbonatitic/alkalic			505-565 Ma	
960	Norway			Fen Complex	Sove (Cappelon, Hydro, Tufte)	Magmatic, carbonatitic/alkalic			505-565 Ma	
961	Norway	Vestfold		Kodal		Magmatic, alkaline	apatite	Permian		
962	Norway				Odegarden, others	Magmatic-Hydrothermal; replacement	apatite; in-filling; irregular network of pockets, veins and dykes	Precambrian		
963	Norway			Seiland Complex		Carbonatite complex	apatite			
964	Norway			Sofestad	Sofestad	Magmatic-Hydrothermal; replacement	apatite; in-filling; irregular network of pockets, veins and dykes			
965	Norway			Soroy		Magmatic, carbonatitic/alkalic				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
958							Commission for Geological Map of the World, 1972
959		carbonatite (sovite, rauhaugite, rodberg)	hematite, pyrochlore, apatite, magnetite, pyrite, calcite, tremolite, mica, zoisite, fluorite, topaz, zircon, barite		Bugge, 1978		USGS files, Bugge, 1978
960	sovite		pyrochlore, apatite, columbite, hematite, magnetite, pyrite, calcite, U, tremolite, mica, zoisite, fluorite, topaz, zircon, barite				Commission for Geological Map of the World, 1972; USGS files; Bugge, 1978
961	magnetite-jacupirangite dyke; anorthosite; norite		apatite (fluorapatite), ilmenomagnetite, ilmenite, sphene, pyrite, calcite, talc		Bugge, 1978; British Sulphur Corporation, 1987	Resources estimates are minimums.	Notholt, 1979; British Sulphur Corporation, 1987; Bugge, 1978
962	garnetiferous amphibolite; quartzite; metagabbro		apatite, rutile, monazite, wagnerite, pyrrhotite, pentlandite, chalcopyrite, pyrite, V-bearing phlogopite	Apatite contains a high content of yttrium (3000 ppm) and rare-earth elements.	British Sulphur Corporation, 1987; Bugge, 1978		British Sulphur Corporation, 1987; Bugge, 1978
963			ilmenite, apatite	Carbonatite complex is not well explored.			Karlsen, 1998
964	acid to intermediate metavolcanics; gneiss		magnetite, hematite, fluorapatite	Apatite contains a small percentage of yttrium.	British Sulphur Corporation, 1987; Bugge, 1978		British Sulphur Corporation, 1987; Bugge, 1978
965							USGS files

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
966	Norway			Stjernoy		Magmatic, carbonatitic/alkalic				
967	Oman			Al Hasikiyah						
968	Oman			Al Qibliyah						
969	Pakistan	Baluchistan		Lasbela		Sedimentary	nodular	Paleocene		
970	Pakistan	Baluchistan		Loralai		Sedimentary	nodular	Cretaceous		
971	Pakistan	North West Frontier		Baska						
972	Pakistan	North West Frontier		Domanda Post						
973	Pakistan	North West Frontier		Drazinda						
974	Pakistan	North West Frontier		Hazara	Dalola	Marine chemical sediment	bedded (silty phosphorite)	Early Cambrian		
975	Pakistan	North West Frontier		Hazara/Kakul-Mirpur	Kakul	Marine chemical sediment	lenticular; granular; pelletal; nodular	Early Cambrian		
976	Pakistan	North West Frontier		Hazara/ Kaludi-Banda (Langarban South)		Marine chemical sediment	bedded	Early Cambrian		
977	Pakistan	North West Frontier		Hazara/Langarban	Lagarban	Marine chemical sediment	lenticular; granular; pelletal	Early Cambrian		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
966							USGS files
967							Arab Organisation for Mineral Resources, 1987
968							Arab Organisation for Mineral Resources, 1987
969	shale	Jakkar Group			Asrarullah, 1980		Asrarullah, 1980
970		Moghal Kot Formation			Asrarullah, 1980		Asrarullah, 1980
971							
972							
973							
974	dolomite; chert; quartz sandstone; siltstone	Hazira Formation	collophane, dahlite, minor francolite; organic matter, glauconite, dolomite, iron oxide, pyrite	Phosphorites rich in organic matter.	Hasan, 1989	Reserve estimates from Hasan (1989).	Asrarullah, 1980; Hasan, 1986
975	dolomite; chert; quartz sandstone; siltstone	Abbottabad Formation	collophane, dahlite, minor francolite; glauconite, dolomite, iron oxide, pyrite		Hasan, 1989	Several deposits are found in his area. Reserve estimates from Hasan, 1989.	Asrarullah, 1980
976	dolomite, silty shale, chert	Abbottabad Formation	collophane, dahlite, minor francolite; glauconite, dolomite, iron oxide, pyrite		Asrarullah, 1980	Reserve estimates from Asrarullah, 1980.	Asrarullah, 1980; Hasan, 1986
977	dolomite; chert; quartz sandstone; siltstone	Abbottabad Formation	collophane, dahlite, minor francolite; glauconite, dolomite, iron oxide, pyrite		Hasan, 1989	Reserve estimates from Hasan, 1989.	Asrarullah, 1980; Hasan, 1986

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
978	Pakistan	North West Frontier		Hazara	Sirbun Hill	Marine chemical sediment	bedded and veins (silty phosphorite); bedded (cherty phosphorite)	Early Cambrian		
979	Pakistan	North West Frontier		Loe Shilman		Magmatic, carbonatite	apatite	Oligocene	31 Ma (K/Ar)	31 Ma (K/Ar)
980	Pakistan	North West Frontier		Mushal Khot						
981	Pakistan	North West Frontier		Zam Tower						
982	Pakistan	Punjab		Dera Ghazi Khan		Sedimentary	nodules			
983	Pakistan	Sind		Dadu		Sedimentary	layered	Miocene		
984	Panama			David area		Marine chemical sediment		Pliocene		
985	Peru	Junin		Ichpachi Mine		Marine chemical sediment, diagenetic enrichment	phosphatic arenite; phosphatic siltstone	Early Jurassic		
986	Peru	Junin		Mantaro (La Oroya Phosphorite)		Marine chemical sediment	phosphatic bituminous mudstone; phosphatic limestone; pelletal (scattered as stray clasts); calcareous pelletal mudstone	Early Jurassic (some Cretaceous potential possible)		
987	Peru	Offshore		Peru continental shelf/ ODP site 680		Marine chemical sediment	pelletal; peloids; nodular; fish debris; phosphatic sands	Middle Miocene-Quaternary		
988	Peru	Offshore		Peru continental shelf/ ODP site 684		Marine chemical sediment	pelletal; peloids; nodular; fish debris; phosphatic sands	Middle Miocene-Quaternary		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
978	dolomite; chert; quartz sandstone; siltstone	Abbottabad Formation and Hazia Formation	collophane, dahlite, minor francolite; glauconite, dolomite, iron oxide, pyrite		Hasan, 1989	Reserve estimates from Hasan, 1989.	Asrarullah, 1980
979	carbonatite (sovite, mica carbonatite, amphibole carbonatite, hornblende carbonatite, dolomitic strontium-bearing carbonatite); slate, phyllite, marble				Hasan and Asrarullah, 1989		Asrarullah, 1980; Notholt, 1994
980							
981							
982	shale	Ghazij Shale					Asrarullah, 1980
983		Gaj Formation			Asrarullah, 1980		Asrarullah, 1980
984	shale, diatomaceous rock			Individual beds contain up to 20% P2O5.			Notholt, 1994
985	organic-rich mudstone; chert	Aramachay Formation			Loughman, 1984		
986	bituminous shale; chert; limestone; siltstone; sandstone	Aramachay Formation		Deposit result of marine upwelling processes.	Grose, 1989		
987	laminated muds				Garrison and others, 1990	No economic resource evaluations.	
988	laminated muds				Garrison and others, 1990	No economic resource evaluations.	

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
989	Peru	Offshore		Peru continental shelf/ODP site 686		Marine chemical sediment	pelletal; peloids; nodular; fish debris; phosphatic sands	Middle Miocene-Quaternary		
990	Peru	Piura		Probayovar		Marine chemical sediment	bedded; pelletal; black phosphorite	Middle Miocene		
991	Peru	Piura		Sechura Desert	Bayovar	Marine chemical sediment	pelletal; black phosphorite bedded; minor nodules, oolites, fossil material	Middle Miocene		
992	Peru	Piura		Sechura Desert		Marine chemical sediment	pelletal; black phosphorite bedded; minor nodules, oolites, fossil material	Middle Miocene		
993	Philippines	Cebu	Ronda	Batong-Langub; Talayong		Marine chemical sediment	bedded; pebbly; fossiliferous (shark teeth)			
994	Philippines	Cebu	Alcantara	Kabadiangan; Lagnasan-Iba		Marine chemical sediment	bedded; pebbly; fossiliferous (shark teeth)			
995	Philippines	Cebu	Argao	Mabasa prospect		Marine chemical sediment	bedded; pebbly; fossiliferous (shark teeth)			
996	Philippines	Cebu	Dumanjug	Doldol-Kanhumaud		Marine chemical sediment	bedded; pebbly; somewhat fossiliferous (shark teeth)			
997	Philippines	Cebu	Barili	Supo; Minolos		Marine chemical sediment	bedded; pebbly; somewhat fossiliferous (shark teeth)			
998	Philippines	Leyte		Bantigue		Marine chemical sediment		Late Tertiary		
999	Philippines	Negros Oriental	Guilagen (Guihulngan)	Imelda		Marine chemical sediment; residual enrichment	oolitic	Late Miocene-Pliocene		
1000	Philippines	Siquijor	San Juan	Candura prospect		Marine chemical sediment; alluvial sedimentary	bedded; pebbly; fossiliferous (shark teeth)			
1001	Poland			Annopol		Marine chemical sediment	nodular	Middle-Late Cretaceous		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
989	laminated muds				Garrison and others, 1990	No economic resource evaluations.	
990	diatomite; shale; sandstone; tuff				McClellan, 1989		
991		Zapallal Formation	fluorapatite, diatomite, carbonates, organic matter	Phosphorite is friable; beds are generally massive and well sorted.		Property for sale in 2001.	Harben and Kuzvart, 1996; Cheney and others, 1979; Industrial Minerals, 2001
992	diatomite		apatite, diatomite, organic matter	3 major phosphate zones present	McClellan, 1989		Harben and Kuzvart, 1996; Cheney and others, 1979; S. Jasinski, written commun., 2001
993	calcarenite						Vargas and Escalada, 1986
994	calcarenite						Vargas and Escalada, 1986
995	calcarenite						Vargas and Escalada, 1986
996	calcarenite						Vargas and Escalada, 1986
997	calcarenite						Vargas and Escalada, 1986
998	calcarenite				Notholt, 1994		Notholt, 1994
999	limestone						British Sulphur Corporation, 1987; Vargas and Escalada, 1986
1000	calcarenite						Vargas and Escalada, 1986
1001	glauconitic sandstone			Glauconitic sandstone less than 1 m thick.	British Sulphur Corporation, 1987		British Sulphur Corporation, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1002	Poland			Branica		Marine chemical sediment	no data		Cenomanian-Albian (?)	
1003	Poland			Burzenin		Marine chemical sediment	nodular		Albian	
1004	Poland			Chalupki		Marine chemical sediment	nodular		Cenomanian-Albian	
1005	Poland			Glimny Stok		Marine chemical sediment	no data		Cenomanian-Albian (?)	
1006	Poland			Michow		Marine chemical sediment	no data		Cenomanian-Albian (?)	
1007	Poland			Radom		Marine chemical sediment	nodular	Middle-Late Cretaceous		
1008	Portugal			Carvide		Marine chemical sediment		Jurassic		
1009	Portugal			Monte Real		Marine chemical sediment		Jurassic		
1010	Portugal			Vizon		Marine chemical sediment		Cretaceous		
1011	Portugal	Castelo Branco		Medelim		Veins, Secondary enrichment (?)	apatite-quartz veins	Carboniferous-Permian		
1012	Portugal	Portalegre		Castelo de Vide (Marvao)		Veins, Secondary enrichment (?)	apatite-quartz veins	Carboniferous-Permian		
1013	Portugal	Sagres?		Beleira		Marine chemical sediment		Jurassic		
1014	Puerto Rico	Isla Mona				Sedimentary? Biogenic?				
1015	Puerto Rico	Isla Mona				Sedimentary? Biogenic?				
1016	Puerto Rico	Isla Mona				Sedimentary? Biogenic?				
1017	Puerto Rico	Isla Mona				Sedimentary? Biogenic?				
1018	Romania			Cuza Voda region		Marine chemical sediment	concretions, replacement, fossils	Cretaceous	Early Cenomanian	
1019	Russia?			Aley		Magmatic, carbonatite/alkalic		Mississippian	349 +/- 12 Ma (K-Ar on mica)	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1002	no data				Osika, 1986		Osika, 1986
1003	glauconitic sandstone				Osika, 1986		Osika, 1986
1004	glauconitic sandstone			Glauconitic sandstone less than 1 m thick.	British Sulphur Corporation, 1987		
1005	no data				Osika, 1986		Osika, 1986
1006	no data				Osika, 1986		Osika, 1986
1007	glauconitic sandstone			Glauconitic sandstone less than 1 m thick.	British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1008							Mew, 1980
1009							Mew, 1980
1010							Mew, 1980
1011	granite				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Mew, 1980
1012	granite				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Mew, 1980
1013							Mew, 1980
1014	carbonates						CIMRI, 1992
1015	carbonates						CIMRI, 1992
1016	carbonates						CIMRI, 1992
1017	carbonates						CIMRI, 1992
1018	microconglomerates, sand, clay		dahlite, francolite	P-bearing unit is 0.3-5 m thick, 5 km long, and 1 km wide.	Ianovici and Borcos, 1982		Ianovici and Borcos, 1982
1019	carbonatite	Aley Carbonatite Complex	fermite, pyrochlore, columbite, paatie, rutile, magnetite, zircon		Nokleberg and others, 1997		Nokleberg and others, 1987; Pell, 1996

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1020	Russia			Bol'shoy Dzhebart Deposit						
1021	Russia			Egorievsk deposit	Lopatinsky, Egorievsk mines	Marine chemical sediment				
1022	Russia			Kaivomaki		Magmatic, carbonatite/alkalic	apatite	Precambrian		
1023	Russia			Khalkol		Marine chemical sediment	bedded	Late Cretaceous	Cenomanian	
1024	Russia			Kovdozero		Magmatic, carbonatite/alkalic				
1025	Russia			Kruchininskoe		Magmatic, carbonatite/alkalic	disseminated apatite			
1026	Russia			Kurgusul		Magmatic, carbonatite/alkalic		Proterozoic		
1027	Russia			Lesnaya Varaka		Magmatic, carbonatite/alkalic				
1028	Russia			Maimecha-Kotui	Changit	Magmatic, carbonatite/alkalic				
1029	Russia			Maimecha-Kotui	Gulinski	Magmatic, carbonatite/alkalic			240 Ma	
1030	Russia			Ozernaya Varaka		Magmatic, carbonatite/alkalic			338 Ma	
1031	Russia			Salanlatvinsky (Salanlatva)		Magmatic, carbonatite/alkalic				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1020							
1021	sand, clay, marl			Marine platform deposit composed of subhorizontal phosphorite layers.			Troitsky and others, 1998
1022	ladogalite (ladogite), syenite		apatite, feldspar, sphene, magnetite, pyrite		Shchiptsov, 1993		Shchiptsov, 1993
1023					British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1024	melteigite, ijolite		titanomagnetite				USGS files; Kogarko and others, 1995
1025			apatite, hematite, ilmenite				Troitsky and others, 1998
1026	nepheline syenite, nepheline-gabbro		apatite, Fe-Ti oxides		Kogarko and others, 1995		USGS files; Kogarko and others, 1995
1027	olivinite, pyroxenite, carbonatite		apatite, zircon, pyrochlore, lueshite, titanomagnetite				USGS files; Kogarko and others, 1995
1028	carbonatite, jacupirangite, melteigite		pyroclore, titanomagneite, apatite, phlogopite				USGS files; Kogarko and others, 1995
1029	dolomite carbonatite, calcite carbonatite, jacupirangite, melteitie, phoscorite		apatite, titanomagnetite, phlogopite, pyrochlore		Kogarko and others, 1995		USGS files; Kogarko and others, 1995
1030	ijolite, urtite, carbonatite, melteigite, nepheline pyroxenite		zircon, pyrochlore		Kogarko and others, 1995		USGS files; Kograko and others, 1995
1031	dolomite carbonatite, calcite carbonatite, ijolite, melteigite		apatite, barite, titanomagnetite, pyrochlore, zircon, ancylite, parisite				USGS files; Kogarko and others, 1995

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1032	Russia			Volkovskoe		Magmatic, carbonatite/alkalic				
1033	Russia	Bashkortostan		Abdullino		Marine chemical sediment	bedded	Permian		
1034	Russia	Bashkortostan		Chusovaya (Verkhne-Chusovaya)		Marine chemical sediment	bedded	Permian		
1035	Russia	Bashkortostan		Ishimbaevo		Marine chemical sediment		Permian		
1036	Russia	Bashkortostan		Kush-Tau, Yurak-Tau-Tau		Marine chemical sediment		Permian		
1037	Russia	Bashkortostan		Seleuk		Marine chemical sediment	bedded	Early Permian		
1038	Russia	Bashkortostan		Shak-Tau		Marine chemical sediment		Permian		
1039	Russia	Bashkortostan		Tra-Tau, Shiknanchik, Novii Shikhan		Marine chemical sediment		Permian		
1040	Russia	Bashkortostan		Usolie		Marine chemical sediment		Permian		
1041	Russia	Bashkortostan		Voskresensk		Marine chemical sediment		Permian		
1042	Russia	Bryanskaya Oblast'		Polpinsk (Polpinskaya)		Marine chemical sediment	black phosphate nodules; bedded	Late Cretaceous	Cenomanian	
1043	Russia	Bryanskaya Oblast'			Schchigry	Marine chemical sediment	black phosphate nodules; bedded	Late Cretaceous	Cenomanian	
1044	Russia	Buryatiya		Khubsugul Basin/Eastern Sayan area/Boxon		Marine chemical sediment	phosphatic dolomite	Late Proterozoic-Early Cambrian	Vendian-Early Cambrian	
1045	Russia	Buryatiya		Khubsugul Basin/Eastern Sayan area/Kharanur		Marine chemical sediment	bedded	Late Proterozoic-Early Cambrian	Vendian-Early Cambrian	
1046	Russia	Buryatiya		Khubsugul Basin/Eastern Sayan area/Ukhagol		Marine chemical sediment	bedded; black, siliceous phosphatic shale	Late Proterozoic-Early Cambrian	Vendian-Early Cambrian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1032			apatite, titanomagnetite				Troitsky and others, 1998
1033	dolomitic limestone				Ilyin, 1989b		Ilyin, 1989b
1034	dolomitic limestone				Ilyin, 1989b		Ilyin, 1989b
1035					Ilyin, 1989b		Ilyin, 1989b
1036					Ilyin, 1989b		Ilyin, 1989b
1037	dolomitic limestone; chert			Phosphorite intimately interbedded with carbonate	Ilyin, 1989b		
1038					Ilyin, 1989b		Ilyin, 1989b
1039					Ilyin, 1989b		Ilyin, 1989b
1040					Ilyin, 1989b		Ilyin, 1989b
1041					Ilyin, 1989b		Ilyin, 1989b
1042	sandy, glauconitic chalk				Ilyin and Krasilnikova, 1989b; British Sulphur Corporation, 1987	There are 2 mines.	Kendall and Keegan, 1998; British Sulphur Corporation, 1987; S. Jasinski, written commun., 2001; Troitsky and others, 1998
1043	sandy, glauconitic chalk				Ilyin and Krasilnikova, 1989b; British Sulphur Corporation, 1987		Harben and Kuzvart, 1996; British Sulphur Corporation, 1987; S. Jasinski, written commun., 2001
1044	dolomite; chert nodules; shale				Ilyin and others, 1989b		
1045	dolomite; chert nodules; shale				Ilyin and others, 1989b		
1046	dolomite; chert nodules; shale			Phosphatic shale similar to Karatau Basin, Kazakhstan. Enriched zones average 22% P2O5.	Ilyin and others, 1989b	Deposits extend across border into Mongolia.	

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1047	Russia	Buryatiya		Oshurkov Complex		Magmatic, metasomatic	apatite; disseminations, lenses and veins	Late Proterozoic-Early Paleozoic		
1048	Russia	Buryatiya		Synnyr Complex		Magmatic, carbonatite/alkalic		Devonian		
1049	Russia	Chitinskaya Oblast'		Kruchinskoye		Magmatic	apatite	Precambrian		
1050	Russia	Chuvashiya		Vurnary		Marine chemical sediment	nodular (hard grey phosphatic nodules)	Late Cretaceous		
1051	Russia	Kaluzhskaya Oblast		Volga Basin	Duminichi	Marine chemical sediment	black phosphate nodules; bedded	Late Jurassic-Late Cretaceous	Volga-Valanginian	
1052	Russia	Kareliya		Elisenvaara		Magmatic, alkaline				
1053	Russia	Kareliya		Raivimaki		Magmatic, carbonatite/alkalic	apatite	Precambrian		
1054	Russia	Kareliya		Tikshozero		Magmatic, carbonatite/alkalic	apatite	Precambrian		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1047	diorite; alkaline rocks		apatite, biotite, plagioclase, diopside, hornblende, sphene, Ti-magnetite	Metasomatized diorites form 5-20 m thick phosphate-enriched zones.	British Sulphur Corporation, 1987; Ilyin and Krasilnikova, 1989a; Pell, 1996		Notholt, 1979; British Sulphur Corporation, 1987; Kendall and Keegan, 1998; Troitsky and others, 1998
1048	nepheline syenite		apatite, pyroxene, biotite, nepheline, magnetite, sphene, orthoclase, plagioclase	20 individual apatite-bearing deposits occupy about 5% of the total area of the complex.			Notholt, 1979
1049	anorthosite; gabbro			Dzhugdzhur-Stanovoy terrain.	Gorelov, 1997		
1050	glauconitic, calcareous grit; marl				British Sulphur Corporation, 1987		Harben and Kuzvart, 1996; British Sulphur Corporation, 1987
1051	sandy, glauconitic chalk				British Sulphur Corporation, 1987		Harben and Kuzvart, 1996; British Sulphur Corporation, 1987
1052	alkaline ultrabasic rocks		apatite, Sr and Ba-feldspar, REE-sphene, biotite, phlogopite				Shchiptsov, 1994
1053	ladogalite (ladogite), syenite		apatite, feldspar, sphene, magnetite, pyrite		Shchiptsov, 1993		Shchiptsov, 1993
1054	carbonatite		apatite, calcite, magnetite, mica, titanium-augite			Total apatite and calcite concentrate yield from the carbonatite is no less than 65%.	Shchiptsov, 1993; Shchiptsov, 1994

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1055	Russia	Kemerovskaya Oblast		Gornay Shoriya/Belka		Marine chemical sediment; residual enrichment	breccia of stromatolitic dolomite and limestone in a phosphate-carbonate matrix; individual phosphate fragments are oolitic, stromatolitic, granular and bedded.	Late Proterozoic	Vendian	
1056	Russia	Khabarovskiy Kray		Shantary region/Shantary Islands		Marine chemical sediment	phosphatic breccias and conglomerates	Late Proterozoic-Early Cambrian	Vendian-Early Cambrian	
1057	Russia	Khabarovskiy Kray		Khubsugul Basin/Uda-Shantary region/Shantary Islands	Nelkanskoe	Sedimentary	phosphatic breccia			
1058	Russia	Khabarovskiy Kray		Shantary region/Shantary Islands	North Shantarskoe	Sedimentary	phosphatic breccia			
1059	Russia	Khabarovskiy Kray		Lagapskoe		Sedimentary	phosphorite-bearing breccia	Cambrian		
1060	Russia	Kirovskaya Oblast'		Vyatka-Kama (Verkhnekamsk, Vyatsko-Kamskoe)	Rudnichnyy Mine	Marine chemical sediment	nodular; phosphatized fossil fragments	Early Cretaceous	Middle Valanginian	
1061	Russia	Kransnodarskiy Kray		Eastern Sayan Basin/Telek		Marine chemical sediment; residual enrichment; secondary enrichment	karst phosphorite (secondary phosphate enrichment above phosphatic dolomites)	Paleocene-Eocene		Vendian

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1055	limestone; dolomite; chert; black shale; stromatolite; carbonate conglomerate and breccia				Krasilnikova and Ilyin, 1989a		British Sulphur Corporation, 1987
1056	chert; volcanic rocks			Associated chert and volcanic rocks are Middle Cambrian	Ilyin and others, 1989b		
1057	dolomite, limestone; jasper, volcanics		hydromica	In Galam metallogenic belt. Beds up to 1.8 km long, but some only several tens of meters long; thickness varies from 2-41.4 m.	Nokleberg and others, 1997	Deposit has been drilled to almost 300 m depth. Deposit is reported to be "small".	Nokleberg and others, 1987
1058	carbonate rock, chert, volcanic rocks			In Galam metallogenic belt. Deposit up to 15-16 m thick; but is "small".	Nokleberg and others, 1997		Nokleberg and others, 1987
1059	carbonate' lesser shale, schist, siltstone, basalt			In Galam metallogenic belt. Carbonate is commonly completely altered to quartz. Beds are up to 30 m thick, but more commonly tens of centimeters to 20 m.	Nokleberg and others, 1997	Reported as a "medium" sized deposit.	Nokleberg and others, 1987
1060	glauconitic, argillaceous sandstone; sandy clay			Marine platform deposit composed of subhorizontal phosphorite layers. 0.6-0.8 m thick bed.	Ilyin and Krasilnikova, 1989b	1 mine.	Kendall and Keegan, 1998; Troitsky and others, 1998
1061	phosphatic dolomite			North body 5 km long, 300 m wide, and 24 m thick; south body 3 km long, 200 m wide, 15 m thick	Yanshin, 1986; British Sulphur Corporation, 1987; Krasilnikova and Ilyin, 1989a		British Sulphur Corporation, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1062	Russia	Leningradskaya Oblast'		Kingisepp (Kingisepskoe)		Marine chemical sediment	bedded; phosphatic sandstone with phosphatized brachiopod fossils	Lower Ordovician		
1063	Russia	Moskovskaya Oblast'		Volga Basin	Lepatinsk (Lopatinsk)	Marine chemical sediment	nodular; bedded	Late Jurassic-Early Cretaceous	Volga-Valanginian	
1064	Russia	Moskovskaya Oblast'		Volga Basin	Voskresensk	Marine chemical sediment	nodular; bedded	Early Permian		
1065	Russia	Moskovskaya Oblast'		Volga Basin/Yegor'yevsk deposit (Egorjevsk, Yegorievsk))		Marine chemical sediment	fossiliferous; nodular	Late Jurassic-Early Cretaceous	Volga-Valanginian	
1066	Russia	Murmanskaya Oblast'		Gremyakha-Vyrmes Alkaline Complex		Magmatic	apatite	Early Paleozoic (probably Devonian)		
1067	Russia	Murmanskaya Oblast'/Kola Pennisula		Khibiny		Magmatic, carbonatite/alkalic	apatite	Late Pennsylvanian	290±10 Ma	290±10 Ma

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1062	sandstone; conglomerate; limestone; argillite			Marine platform deposit composed of subhorizontal phosphorite layers.	Krasilnikova and Ilyin, 1989b; British Sulphur Corporation, 1987		Harben and Kuzvart, 1996; Kendall and Keegan, 1998; Commission for Geological Map of the World, 1972; S. Jasinski, written commun., 2001; Troitsky and others, 1998
1063	glauconitic, ferruginous sandstones; glauconitic, ferruginous grits; shales				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1064	glauconitic, ferruginous sandstones; glauconitic, ferruginous grits; shales				Ilyin, 1989b		
1065	quartz-glauconite sandstone; glauconitic, ferruginous grit; shale			Deposit has 2 P horizons: lower bed up to1 ft thick containing 10-13% P2O5 and upper bed about 1 m thick with 7-14% P2O5.	British Sulphur Corporation, 1987; Ilyin and Krasilnikova, 1989b		Harben and Kuzvart, 1996; Kendall and Keegan, 1998; British Sulphur Corporation, 1987
1066	gabbros; gabbro-norites; olivine-gabbro-peridoties; pyroxenties; nepheline-syenites		titanomagnetite, ilmenite, apatite	Titano-magnetite mineralization.	British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Industrial Minerals, 2000
1067	alkalic igneous intrusives including ijolite and nepheline-syenite		apatite		Ilyin, 1989a		Notholt, 1979; British Sulphur Corporation, 1987; Kendall and Keegan, 1998

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1068	Russia	Murmanskaya Oblast'/Kola Pennisula		Khibiny Complex/Apatitovy Tsirk (Apatite Circus) deposit		Magmatic, carbonatite/alkalic	apatite	Late Pennsylvanian	290±10 Ma	290±10 Ma
1069	Russia	Murmanskaya Oblast'/Kola Pennisula		Khibiny Complex/ Kukisvumchorr deposit	Kirov (Kirovsk) Mine Complex			Late Pennsylvanian	290±10 Ma	
1070	Russia	Murmanskaya Oblast'/Kola Pennisula		Khibiny Complex/ Kukisvumchorr deposit	Kukisvumchorr Mine Complex			Late Pennsylvanian	290±10 Ma	
1071	Russia	Murmanskaya Oblast'/Kola Pennisula		Khibiny Complex/Rasvumchorr deposit	Razvumchorr (Rasvumchorr) Mine	Magmatic, carbonatite/alkalic	apatite	Late Pennsylvanian	290±10 Ma	290±10 Ma
1072	Russia	Murmanskaya Oblast'/Kola Pennisula		Khibiny Complex/Tsentralny deposit	Tsentralny (Central) Mine	Magmatic, carbonatite/alkalic	apatite	Late Pennsylvanian	290±10 Ma	290±10 Ma
1073	Russia	Murmanskaya Oblast'/Kola Pennisula		Khibiny Complex/Vostochny (Eastern Mines)	Koashva, Nyorkpakhk (Niorpakh)	Magmatic, carbonatite/alkalic	disseminated apatite	Late Pennsylvanian	290±10 Ma	290±10 Ma

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1068	alkalic igneous intrusives including ijolite and nepheline-syenite		fluorapatite, nepheline, aegirine, sphene, feldspar, titanomagnetite		Ilyin, 1989a	Ore averages 14.3% P2O5. Nepheline extracted to produce alumina.	Harben and Kuzvart, 1996; Notholt, 1979; British Sulphur Corporation, 1987; Kendall and Keegan, 1998
1069			fluorapatite, nepheline, aegirine, sphene, feldspar, titanomagnetite		Ilyin, 1989a	Yukspor and Kukisvumchorr Mines combined to form Kirovsk mine. Nepheline extracted to produce alumina.	Harben and Kuzvart, 1996; British Sulphur Corporation, 1987; Kendall and Keegan, 1998; Troitsky and others, 1998
1070	alkalic igneous intrusives including ijolite and nepheline-syenite		fluorapatite, nepheline, aegirine, sphene, feldspar, titanomagnetite		Ilyin, 1989a	Yukspor and Kukisvumchorr Mines combined to form Kirovsk mine. Nepheline extracted to produce alumina.	Harben and Kuzvart, 1996; Notholt, 1979; Kendall and Keegan, 1998; Troitsky and others, 1998
1071	alkalic igneous intrusives including ijolite and nepheline-syenite		fluorapatite, nepheline, aegirine, sphene, feldspar, titanomagnetite		Ilyin, 1989a	Nepheline extracted to produce alumina.	Harben and Kuzvart, 1996; Notholt, 1979; British Sulphur Corporation, 1987; Kendall and Keegan, 1998; Troitsky and others, 1998
1072	alkalic igneous intrusives including ijolite and nepheline-syenite				Ilyin, 1989a		Ilyin, 1989a;British Sulphur Corporation, 1987; S. Jasinski, written commun., 2001
1073	alkalic igneous intrusives including ijolite and nepheline-syenite				Ilyin, 1989a	2 open-pit mines grading 12.4% P2O5 (Koashva) and 13.6-14.2% P2O5 (Nyorkpakhk). Reserves are limited at Nyorkpakhk.	Harben and Kuzvart, 1996; British Sulphur Corporation, 1987; Kendall and Keegan, 1998; Troitsky and others, 1998

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1074	Russia	Murmanskaya Oblast'/Kola Pennisula		Khibiny Complex/ Yukspor deposit	Yukspor Mine	Magmatic, alkaline	apatite	Late Pennsylvanian	290±10 Ma	290±10 Ma
1075	Russia	Murmanskaya Oblast'/Kola Pennisula		Kovdor Complex (Kovdorskoe)		Magmatic, alkaline	apatite	Middle Devonian		Middle Devonian
1076	Russia	Murmanskaya Oblast'		Sebl'yavr Carbonatite Complex		Magmatic, carbonatite/alkalic; residual enrichment	apatite	Early Paleozoic (probably Devonian)		
1077	Russia	Murmanskaya Oblast'		Vuoriyarvi (Vuori-Yarvi, Vuorijarbi)		Magmatic, carbonatite	apatite			
1078	Russia	Orlovskaya Oblast'		Volga Basin/Dimitrovsk		Marine chemical sediment	bedded; nodular	Late Jurassic-Early Cretaceous	Volga-Valanginian	
1079	Russia	Primorskiy Kray		Koksharovskoe		Magmatic	disseminated		160 Ma (K-Ar)	
1080	Russia	Saratovskaya Oblast'		Saratovskoe		Marine chemical sediment	bedded; nodular	Late Jurassic-Early Cretaceous		
1081	Russia	Siberia?		Bogidenskoe		Magmatic	disseminated to massive to sheeted	Archean	1700 Ma (U-Pb)	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1074	alkalic igneous intrusives including ijolite and nepheline-syenite		fluorapatite, nepheline, aegirine, sphene, feldspar, titanomagnetite		Ilyin, 1989a	Yukspor and Kukisvumchorr Mines combined to form Kirovsk mine. Nepheline extracted to produce alumina.	Harben and Kuzvart, 1996; Notholt, 1979; British Sulphur Corporation, 1987; Troitsky and others, 1998
1075	apatite-forsterite rocks; ultrabasic rocks (pyroxenite, pyroxene-olivine rock, and olivinite); ijolite; melteigite; nepheline-pyroxenite		magnetite, apatite, baddeleyite, forsterite, calcite, phlogopite, francolite		British Sulphur Corporation, 1987	1 mine.	Harben and Kuzvart, 1996; Notholt, 1979; British Sulphur Corporation, 1987; Lyachov, 2000; Troitsky and others, 1998
1076	apatitic carbonatite; apatite-phologopite rocks; apatite-pyroxenites				British Sulphur Corporation, 1987	Reserve estimates from World Survey of Phosphate Deposits (1987).	British Sulphur Corporation, 1987
1077	carbonatite; pyroxenites; ijolite-melteigites		apatite, magnetite, fosterite, baddelyite, pyrochlore				British Sulphur Corporation, 1987; USGS files
1078	glauconitic sandstone; dolomitic limestone; chert				British Sulphur Corporation, 1987; Ilyin and Krasilnikova, 1989b; MRDS		Harben and Kuzvart, 1996; British Sulphur Corporation, 1987
1079		pyroxenite	ilmenite, magnetite, apatite	In Ariadny metallogenic belt.	Nokleberg and others, 1997	Reported as a "large" sized deposit.	Nokleberg and others, 1997
1080	glauconitic, calcareous marl or grit				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1081	gabbro, syenite, anorthosite, norite, pyroxene		apatite, ilmenite, titanium-magnetite	In Dzhugdzhur metallogenic belt.	Nokleberg and others, 1997	Deposit is reported as "large".	Nokleberg and others, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1082	Russia	Siberia?		Dzhaninskoe		Magmatic	disseminated	Archean	1700 Ma (U-Pb)	
1083	Russia	Siberia?		Gayumskoe		Magmatic		Archean	1700 Ma (U-Pb)	
1084	Russia	Siberia?		Ir-Nimiiskoe-2		Sedimentary	breccia	Cambrian		
1085	Russia	Siberia		Kuznetsk Alatau/Talmalyk		Marine chemical sediment	phosphatic limestone and dolomite	Early Cambrian		
1086	Russia	Siberia?		Maimakanskoe		Magmatic	disseminated	Archean	1700 Ma (U-Pb)	
1087	Russia	Siberia		Zaybakal Apatite Complex		Magmatic	apatite; disseminations, lenses and veins	Late Proterozoic-Early Paleozoic		
1088	Russia	Tambovskaya Oblast		Morshansk		Marine chemical sediment	bedded	Late Cretaceous	Cenomanian	
1089	Russia	Tul'skaya Oblast'		Kimovsk (Combine)		Marine chemical sediment	black phosphate nodules; bedded	Late Cretaceous		
1090	Russia	Tul'skaya Oblast'			Kimovsk	Marine chemical sediment	No data	Late Cretaceous	Cenomanian	
1091	Russia	Volgogradskaya Oblast'		Kamyshin Deposit		Marine chemical sediment	bedded	Late Jurassic-Early Cretaceous		
1092	Russia	Volgogradskaya Oblast'		Trioko Deposit		Marine chemical sediment	bedded	Late Jurassic-Early Cretaceous		
1093	Russia	Voronezhskaya Oblast'		Kalatch Station		Marine chemical sediment	bedded	Late Cretaceous	Cenomanian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1082	olivine melanocratic gabbro and pyroxenite stocks in anorthosite		apatite, ilmenite, titanium magnetite	Aldan shied. Dzhugdzhur metallogenic belt.	Nokleberg and others, 1997	Reported as a "large" sized, but low-grade deposit.	Nokleberg and others, 1987
1083	in nelsonites in gabbro, pyroxenite, dunite			In Dzhugdzhur metallogenic belt.	Nokleberg and others, 1987	Deposit is reported as "large".	Nokleberg and others, 1987
1084			quartz, dolomite, carlcite, rare pyrite, chert	In Galam metallogenic belt. Believed to have formed at atoll fans and seamounts. About 30 phosphorite layers; from 0.5 - 24 m thick.		Reported as a "medium" sized deposit.	Nokleberg and others, 1997
1085	siliceous sediments				Yanshin, 1986		
1086	in nelsonite veins in anorthosite		apatite, ilmenite, titanium magnetite	Aldan shied. Dzhugdzhur metallogenic belt. Deposit covers an area of approximately 30 sq km.	Nokleberg and others, 1997	Reported as a "large" sized deposit.	Nokleberg and others, 1987
1087	diorites				British Sulphur Corporation, 1987; Ilyin and Krasilnikova, 1989	Same as Oshurkov.	British Sulphur Corporation, 1987
1088					British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1089	sandy, glauconitic chalk				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1090	No data				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1091	sandstone				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1092	sandstone				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1093					British Sulphur Corporation, 1987		British Sulphur Corporation, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1094	Russia	Sakha (Yakutiya)		Seligdar		Magmatic, carbonatite/alkalic	apatite	Middle Proterozoic		
1095	Russia?			Krasnosel'skoe						
1096	Saudia Arabia			Al Amud		Marine chemical sediment		Paleocene-Oligocene		
1097	Saudia Arabia			Al Jalamid		Marine chemical sediment	bedded; pelletal; shell debris; fish teeth; mud clasts	Early Paleocene		
1098	Saudia Arabia			Al Jawf		Marine chemical sediment	No data	Devonian		
1099	Saudia Arabia			Azlam Trough		Marine chemical sediment				
1100	Saudia Arabia			Jabal Juraymiz		Marine chemical sediment				
1101	Saudia Arabia			Jabal Kharis North		Marine chemical sediment				
1102	Saudia Arabia			Sirhan-Turayf		Marine chemical sediment	bedded; pelletal; phosphatic sandstone; shell and bone fragments; fish teeth	Late Cretaceous-Eocene		
1103	Saudia Arabia			Thaniyat		Marine chemical sediment		Late Cretaceous		
1104	Saudia Arabia			Umm Wu'al Area (Um Wa'ul)		Marine chemical sediment	bedded; pelletal; bivalve debris	Middle Eocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1094	alkaline igneous intrusives; apatite-hematite dolomite; apatite-hematite calcite; apatite-quartz dolomite			Emplaced into Archean schists and gneisses.	Ilyin and Krasilnikova, 1989a	Resource estimates from World Survey of Phosphate Deposits (1987).	
1095							Commission for Geological Map of the World, 1972
1096					Notholt, 1994		Notholt, 1994
1097	carbonate; sandstone; biomicrite	Thaniyat Phosphorite Member			Riddler and others, 1989		Industrial Minerals, 1996: Bartels and Gurr, 1994; Riddler and others, 1989; Notholt, 1994; S. Jasinski, written commun., 2001
1098	carbonate; sandstone				Riddler and others, 1989; British Sulphur Corporation, 1987		Commission for Geological Map of the World, 1982b
1099							Arab Organisation for Mineral Resources, 1987
1100							Arab Organisation for Mineral Resources, 1987
1101							Arab Organisation for Mineral Resources, 1987
1102	carbonate; sandstone; biomicrite; claystone				Riddler and others, 1989		Commission for Geological Map of the World, 1982b
1103					Notholt, 1994		Notholt, 1994
1104	carbonate; argillaceous limestone; claystone; coquina beds	Arqah Phosphorite Member			Riddler and others, 1989		Notholt, 1994; Riddler and others, 1989

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1105	Saudia Arabia			Umm Wu'al North		Marine chemical sediment	bedded; pelletal; bivalve debris	Paleocene-Oligocene		
1106	Saudia Arabia			Wadi Al Ghinah		Marine chemical sediment				
1107	Saudia Arabia			West Thaniyat		Marine chemical sediment	bedded; pelletal; shell debris; fish teeth; mud clasts	Early Paleocene		
1108	Senegal			Casamance/Kolda area		Marine chemical sediment	bedded; granular; pelletal; fossilferous (includes skeletal fragments and coprolites); reworked aggregate grains with phosphate particles in an argillaceous-calcareous cement	Early-Middle Eocene		
1109	Senegal			Casamance/Ziguinchor		Marine chemical sediment	bedded; granular; fossiliferous (bone and teeth fragments); coprolites	Middle Miocene		
1110	Senegal			Kedogou/Namel		Marine chemical sediment (metamorphosed?); residual enrichment	bedded; granular; cryptocrystalline; stromatolites	Cambrian		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1105	carbonate; argillaceous limestone; claystone; coquina beds	Arqah Phosphorite Member			Notholt, 1994		Notholt, 1994; Riddler and others, 1989
1106							Arab Organisation for Mineral Resources, 1987
1107	carbonate; sandstone; biomicrite				Berge and Jack, 1989		Riddler and others, 1989
1108	dolomitic marl; argillaceous limestone; sandstone; clays			Drill hole CP1 south of Kolda shows 1 m thick bed with 28% P2O5, 10 m thick bed with 15.7% P2O5. 10 m of overburden.	Pascal and others, 1989		de Kun, 1987
1109	clayey sandstone; clays; marl; limestone				Sustrac and others, 1990	Deposit discovered by drillhole.	
1110	quartizite; chert; calcareous dolomite; yellow pelite; tillite (containing fragments of quartz, granite, greenstone, quartzite, and limestone)		fluorapatite, francolite, quartz, calcite, talc, minor goethite			Two other prospects in this region are Gambia and Sanigourou; base of the Faleme series of lower Paleozoic age.	Slansky, 1986; McClellan and Saavedra, 1986

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1111	Senegal			Matam (N'Diendouri and Ouali Diala)		Marine chemical sediment; residual enrichment	phosphatic limestone; phosphatic alluvium derived from underlying clay and limestone formations	Middle Eocene	Lutetian	
1112	Senegal	Thies?		Taiba Plateau		Marine chemical sediment; residual enrichment	bedded aluminum phosphate; coprolitic phosphate; calcium phosphate beds with or without flint; phosphate gravel	Middle Eocene-Oligocene		
1113	Senegal	Thies?		Taiba Plateau	Keur Mor Fall Mine (Keur Morfal)	Marine chemical sediment; residual enrichment				
1114	Senegal	Thies?		Taiba Plateau	Ndomor Diop					
1115	Senegal	Thies?		Taiba Plateau	Tobene	Marine chemical sediment; residual enrichment				
1116	Senegal	Thies		Thies Plateau		Marine chemical sediment; residual enrichment	aluminum phosphate beds; calcium phosphate beds; coprolitic phosphate; phosphatic lateroids; phosphatic gravels	Middle Eocene-Oligocene		
1117	Senegal			Thies Plateau	Lam Lam	Marine chemical sediment; residual enrichment	bedded aluminous phosphate; calcium phosphate including granular beds; shelly limestone with calcium phosphate beds	Middle Eocene-Oligocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1111	limestone and dolomite containing bone fragments, fish teeth and coprolites; laminated clay; argillaceous sandstone with chert; ferruginous gravels and sandstones; aeolian sands and reworked aeolian sands				Pascal and others, 1989; Pascal and Faye, 1989		
1112	variegated clays; laminated clays; flint; phosphatic sandstone		vivianite, millisite, crandallite, augelite, wavellite, turquoise	Phosphate bed 5-12 m thick (ave. 7 m) under 25 m of overburden.	Sustrac and others, 1990; Flicoteaux and Hameh, 1989	Keur Mor Fall Mine is open pit extension of the Taiba deposit; also N'Domor Diop and Tobene deposits in this area.	de Kun, 1987; Slansky, 1986; Sustrac and others, 1990
1113						Mine will be depleted by 2003. Ore runs 35-37% P2O5.	de Kun, 1987; Jasinski, 1999
1114							Pascal and others, 1989
1115						Ore runs 35-37% P2O5.	de Kun, 1987
1116	limestone; marl; flint; variegated clays; laminated clays; phosphatic sandstone		wavellite	Deposit has been laterized.	Sustrac and others, 1990; Flicoteaux and Hameh, 1989	This is one of rare mines that exploits aluminum phosphates (wavellite).	Harben and Kuzvart, 1996; de Kun, 1987
1117	limestone; marl; flint; variegated clays; phosphatic sandstone				Flicoteaux and Hameh, 1989; Pascal and others, 1989		de Kun, 1987; Sustrac and others, 1990; Flicoteaux and Hameh (1989)

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1118	Senegal			Thies Plateau	Pallo	Marine chemical sediment; residual enrichment	bedded aluminum phosphate; phosphate lateroids (aluminum phosphate and iron phosphate alteration); phosphatic sandstone	Middle Eocene-Oligocene		
1119	Senegal			Thies Plateau	Pire Goureye	Marine chemical sediment; residual enrichment	calcium phosphate bed (leached from underlying carbonate facies); small beds with nodules, coprolites and ooliths; lenses of oolitic phosphorite	Middle Eocene-Oligocene	Lutetian	
1120	Senegal			Pout region						
1121	Senegal			Yen						
1122	Somalia			Modu Mode		Magmatic-Hydrothermal (?)	bedded	Precambrian		
1123	South Africa			Bulhoekkop		Magmatic, carbonatite/alkalic				
1124	South Africa			Derdepoort		Magmatic, carbonatite/alkalic		Precambrian	post-Waterberg and pre-Karoo	
1125	South Africa			Kruidfontein		Magmatic, carbonatite/alkalic				
1126	South Africa			Nooitgedacht (Gelukshoek, Nooitgedagt)		Magmatic, carbonatite/alkalic				
1127	South Africa			Pretoria Sault Pan (Soutpan, Zoutpan)		Magmatic, carbonatite/alkalic		Proterozoic		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1118	variegated marl; flint; phosphatic sandstone; shelly limestone (locally karstified)				Flicoteaux and Hameh, 1989	Resource information from Flicoteaux and Hameh (1989).	de Kun, 1987; Sustrac and others, 1990
1119	limestone; clayey sandstone; marl				Pascal and others, 1989		Sustrac and others, 1990; Pascal and others, 1989
1120							de Kun, 1987
1121							de Kun, 1987
1122	silicified marbles; granite; quartzite				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1123	beforsite, fenite, gabbroic vent breccia		apatite, calcite, biotite				Woolley, 2001
1124	carbonatite, breccia		apatite, magnetiteankerite, biotite, amphibole, pyroxene, quartz	Outcrop is restricted to approximately 1 sq km. May be an irregularly shaped pipe.	Woolley, 2001		USGS files; Woolley, 2001
1125	tuff, breccia, carbonatite, phonolite		fluorite, apatite, barite, quartz, carbonate, anatase, Au, Mn				USGS files; Woolley, 2001
1126	sovite, beforsite, pyroxene fenite, syenite, tinguaite		pyrochlore, apatite, pyrite, fluorite, titanite, monazite, ankerite, dolomite, quartz, phlogopite, chondrodite				USGS files; Woolley, 2001
1127	carbonatite, syenite, nepheline syenite, porphyry		calcite, dolomite, ankerite, magnetite, pyrite, apatite, quartz	This circular feature is about 1.1 km in diameter with a central basin which contains salt deposits that have long been worked. The feature is a meteor impact crater.	Woolley, 2001		USGS files; Woolley, 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1128	South Africa			Roodeplaat		Magmatic, carbonatite/alkalic		Proterozoic		
1129	South Africa			Schiel		Magmatic, carbonatite/alkalic				
1130	South Africa			Spitskop		Magmatic, carbonatite/alkalic		Proterozoic		
1131	South Africa			Tweerivier		Magmatic, carbonatite/alkalic				
1132	South Africa	Cape Province		Langebaan		Sedimentary, placer	phosphatic conglomerate (gravel member); pelletal; replacement (phosphatized limestone and horizons within Pelletal Phosphorite Member)	Early Pliocene		
1133	South Africa	Cape Province		Saldanha Embayment/Constable Hill		Marine chemical sediment	phosphatic conglomerate (gravel member); pelletal; phosphatized porphyry; aluminum phosphorite	Miocene-Pliocene		
1134	South Africa	Cape Province		Saldanha Embayment/Duyker Eiland		Marine chemical sediment	phosphatic conglomerate (gravel member); phosphatic sand; pelletal	Miocene-Pliocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1128	tuff, foyaite, dolerite, trachyte, volcanic breccia		nepheline, sodalite, zeolite, aegirine, titanite, apatite	3 small carbonatite dikes occur along the southern margin of the volcanic complex. A fluorite-apatite rock occurs at Walmannsthal.	Woolley, 2001		USGS files; Woolley, 2001
1129	syenite, carbonatite, foskorite, pyroxenite		calcite, apatite, phlogopite magnetite, rutile, Cu				Woolley, 2001
1130	ijolite, carbonatite, foyaite, urtite, pyroxenite, jacupirangite		aegirine, cancrinite, zeolite, calcite, titanite, apatite, melanite, pectolite, monazite, phlogopite, magnetite		Woolley, 2001		Woolley, 2001
1131	sovite, dolomite, breccia, fenite, beforsite dikes		apatite, magnetite, ankerite, aegirine, arfvedsonite	Apatite in beforsite dikes is abundant, but probably not economic.			USGS files; Woolley, 2001
1132	phosphatic quartz sandstone; siltstone; sandstone; calcareous sand				Hendey and Dingle, 1989		Hendey and Dingle, 1989
1133	phosphatic quartz sandstone; siltstone; sandstone; calcareous sand	Varswater Formation of Sandveld Group	wavellite or variscite; an unidentified aluminum phosphate;	An "aluminum phosphate" orebody.	Birch, 1990; Hendey and Dingle, 1989	Resource estimates from Hendey and Dingle (1989).	Hendey and Dingle, 1989
1134	phosphatic quartz sandstone; siltstone; sandstone; calcareous sand	Varswater Formation of Sandveld Group			Birch, 1990; Hendey and Dingle, 1989	Resource estimates from Hendey and Dingle (1989).	Hendey and Dingle, 1989

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1135	South Africa	Cape Province		Saldanha Embayment/Elandsfontyn		Marine chemical sediment	phosphatic conglomerate (gravel member); pelletal	Miocene-Pliocene		
1136	South Africa	Cape Province		Saldanha Embayment/ Hoedjiespunt		Marine chemical sediment	phosphatic conglomerate (gravel member); pelletal	Miocene-Pliocene		
1137	South Africa	Cape Province		Saldanha Embayment/Langebaan (Varswater)	Old Varswater Quarry	Marine chemical sediment	phosphatic conglomerate (gravel member); pelletal; replacement (phosphatized limestone and horizons within Pelletal Phosphorite Member)	Miocene-Pliocene		
1138	South Africa	Cape Province		Saldanha Embayment/Langebaan (Varswater)	New Varswater Quarry	Marine chemical sediment	pelletal; phosphatic conglomerate (gravel member); replacement (phosphatized limestone and horizons within Pelletal Phosphorite Member)	Miocene-Pliocene		
1139	South Africa	Cape Province		Saldanha Embayment/Langebaan (Varswater)	Baad's Quarry	Marine chemical sediment	phosphatic conglomerate (gravel member); pelletal; replacement (phosphatized limestone and horizons within Pelletal Phosphorite Member)	Miocene-Pliocene		
1140	South Africa	Cape Province		Saldanha Embayment/Paternoster	Includes Pelgrimsrust and Noodhulp properties	Marine chemical sediment	phosphatic sand, nodules, phosphatic conglomerate (gravel member); pelletal	Miocene-Pliocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1135	phosphatic quartz sandstone; siltstone; sandstone; calcareous sand	Varswater Formation of Sandveld Group			Birch, 1990; Hendey and Dingle, 1989		Hendey and Dingle, 1989
1136	phosphatic quartz sandstone; siltstone; sandstone; calcareous sand	Varswater Formation of Sandveld Group	dahllite		Birch, 1990; Hendey and Dingle, 1989	Probably not economic.	Hendey and Dingle, 1989
1137	phosphatic quartz sandstone; siltstone; sandstone; calcareous sand	Varswater Formation of Sandveld Group	francolite, collophane		Watkins and others, 1996; Birch, 1990; Hendley and Dingle, 1989	Quarry mined the Gravel Member of the Varswater formation and operated from 1948-1965. Hendley and Dingle (1989) report both that the quarry is mined out and that there are reserves in the vicinity of the old quarry.	Hendey and Dingle, 1989
1138	phosphatic quartz sandstone; siltstone; sandstone; calcareous sand	Varswater Formation of Sandveld Group	francolite, collophane	The mineable zone has an average thickness of 10 m with a grade of 10% P2O5.	Watkins and others, 1996; Birch, 1990; Hendley and Dingle, 1989	Resource estimates from Hendey and Dingle (1989).	Hendey and Dingle, 1989
1139	phosphatic quartz sandstone; siltstone; sandstone; calcareous sand	Varswater Formation of Sandveld Group	francolite, collophane	Phosphate-rich duracrust.	Watkins and others, 1996; Birch, 1990; Hendley and Dingle, 1989	Quarry mined phosphate-rich duracrust from 1943-1963. Hendley and Dingle (1989) report both that the quarry is mined out and that there are reserves just to the north of the old quarry.	Hendey and Dingle, 1989
1140	phosphatic quartz sandstone; siltstone; sandstone; calcareous sand	Varswater Formation of Sandveld Group			Birch, 1990; Hendey and Dingle, 1989	Resource estimates from Hendey and Dingle (1989).	

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1141	South Africa	Cape Province		Saldanha Embayment/Sandheuwel	Includes Sandheuwel, Langlaagte, Witteklip properties	Marine chemical sediment	phosphatic conglomerate (gravel member); pelletal	Miocene-Pliocene		
1142	South Africa	South African continental shelf		Agulhas Bank		Marine chemical sediment	phosphatic conglomerate (gravel member); pelletal; replacement (phosphatized limestone)	Miocene-Pliocene		
1143	South Africa	Transvaal		Glenover		Magmatic, carbonatite/alkalic	apatite	Proterozoic		
1144	South Africa	Transvaal		Phalaborwa		Magmatic, carbonatite/alkalic		Early Proterozoic	2060 Ma (Pb/Pb)	2060 Ma (Pb/Pb)
1145	South Africa	Transvaal		Foskor Mine (Phalabora)		Magmatic, carbonatite/alkalic		Early Proterozoic		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1141	phosphatic quartz sandstone; siltstone; sandstone; calcareous sand	Varswater Formation of Sandveld Group			Birch, 1990; Hendey and Dingle, 1989	Resource estimates from Hendey and Dingle (1989).	Hendey and Dingle, 1989
1142	carbonate; glauconite			13570 M sq. meters, 0.5 m thick.	Watkins and others, 1996; Birch, 1990	Resource estimates from Birch (1990).	
1143	carbonatite, pyroxenite, breccia		apatite, pyrochlore, columbite, barite, celestite, galena, perovskite, rutile, magnetite, anatase, pyrite, chalcopyrite, zircon, Ta, REE, fluorite	Part of Transvaal province of carbonatites; Glenover Carbonatite Complex	Woolley, 2001		Woolley, 2001
1144	pyroxenite; carbonatite; granite-gneissic host rocks	Phalaborwa Carbonatite	apatite; chalcopyrite, bornite, chalcocite, valerite, cubanite, magnetite, baddeleyite, uranothorianite and vermiculite		de Jager, 1989		Woolley, 2001
1145	pyroxenite; foskorite; syenite; carbonatite; granite-gneissic host rocks	Phalaborwa igneous complex	apatite; phoscorite (copper, iron, and phosphate-bearing), vermiculite, serpentine, carbonatite minerals enriched in copper and iron		U.S. Geological Survey Mineral Resources Data System, 2000		Sims, 1999

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1146	Spain	Almeria		Sierra Alhamilla		Marine chemical sediment		Cretaceous		
1147	Spain	Caceres		Aldea Moret		Veins, secondary enrichment (?)	apatite-quartz veins	Carboniferous-Permian		
1148	Spain	Caceres		Caleruela		Secondary enrichment (?)	apatite-quartz veins	Carboniferous-Permian		
1149	Spain	Caceres		Costanza vein		Veins, secondary enrichment (?)	apatite-quartz veins	Carboniferous-Permian		
1150	Spain	Caceres		Logrosan vein		Veins, secondary enrichment (?)	apatite-quartz veins	Carboniferous-Permian		
1151	Spain	Caceres		Malpartida de Caceras		Secondary enrichment (?)	apatite-quartz veins	Carboniferous-Permian		
1152	Spain	Caceres		Montanchez		Veins, secondary enrichment (?)	apatite-quartz veins	Carboniferous-Permian		
1153	Spain	Caceres		Trujillo		Veins, secondary enrichment (?)	apatite-quartz veins	Carboniferous-Permian		
1154	Spain	Caceres		Valencia de Alcantara		Veins, secondary enrichment (?)	apatite-quartz veins	Carboniferous-Permian		
1155	Spain	Caceres		Zarza la Major, Ceclavin		Veins, secondary enrichment (?)	apatite-quartz veins	Carboniferous-Permian		
1156	Spain	Cordoba		Belmez		Veins, secondary enrichment (?)	apatite-quartz veins			
1157	Spain	Cordoba		Espiel		Veins, secondary enrichment (?)	apatite-quartz veins			
1158	Spain	Cordoba		Santa Eufemia		Veins, secondary enrichment (?)	apatite-quartz veins			
1159	Spain	Cuidad Real		Fontanarejo/Horcajo de los Montes		Sedimentary	phospharenite or phospharenorudite; granular (sandy layers and debris flows); bedded	Proterozoic-Cambrian		
1160	Spain	Murcia		Jumilla		Marine chemical sediment		Cretaceous		
1161	Spain	Murcia		Sierra Espuna		Marine chemical sediment	glauconitic phosphatic marl or limestone	Cretaceous	Albian	
1162	Spain	Toledo		Val de Verdeja		Veins, secondary enrichment (?)	apatite-quartz veins			

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1146							Mew, 1980
1147	schist; limestone; granite				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Mew, 1980
1148	schist; limestone; granite				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1149	schist; limestone; granite				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1150	schist; limestone; granite				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Mew, 1980
1151	schist; limestone; granite				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1152	schist; limestone; granite				British Sulphur Corporation, 1987		Mew, 1980
1153	schist; limestone; granite				British Sulphur Corporation, 1987		Commission for Geological Map of the World, 1976, Mew, 1980
1154	schist; limestone; granite				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Mew, 1980
1155	schist; limestone; granite				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Mew, 1980
1156	granite						Mew, 1980
1157	granite						Mew, 1980
1158	granite						Mew, 1980
1159	siltstone; sandstone		fluorapatite	Phosphatic intervals are 10-60 m thick over a strike length of about 1.5 km.	Gabaldon and others, 1989; Notholt and others, 1989f		Perconig and others, 1986
1160							Mew, 1980
1161	marl; limestone; chert beds			Thickness up to 20 m.	British Sulphur Corporation, 1987	Thickness up to 20 m; 8-14% P2O5.	British Sulphur Corporation, 1987; Mew, 1980
1162	granite						Mew, 1980

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1163	Sri Lanka	Anuradhapura		Eppawella	Eppawella	Magmatic, carbonatite/alkalic; residual enrichment	apatite	Late Proterozoic; Recent	720 Ma; Modern residual enrichment	720 Ma
1164	Sri Lanka			Seruwila				Precambrian		
1165	Surinam			Bakhuis Mountains - K/3 Deposit		Magmatic; residual enrichment	apatite; wavellite	Late Archean-Early Proterozoic	2000-2600 Ma	
1166	Sweden			Nakerivaara						
1167	Sweden			Påläng		Marine chemical sediment (metamorphosed)	Uraniferous phosphate (metamorphosed)	Early Proterozoic	2200-1900 Ma	
1168	Sweden			Skellefte District/Boliden		VMS-shallow marine (metamorphosed)	apatite associated with massive sulfide ores	Early Proterozoic		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1163	leached and fresh carbonatite; Precambrian gneisses, charnockites and quartzites		Chlorine-rich fluorapatite, martite, goethite, francolite, magnetite		Jayawardena, 1989; British Sulphur Corporation, 1987	Chloride content (>1%) and high Fe2O3 + Al2O3 (ave. 10%) is a problem for potential fertilizer production.	Jayawardena, 1989; Jaywardena, 1986a, b; ESCAP, 1989; Jayawardena, 1998
1164			chalcopyrite, pyrite, magnetite, fluorapatite, scapolite	Apatite forms about 25% of the non-magnetic fraction of the deposit.	Lee, 1980		Jayawardena, 1980; Lee, 1980
1165	plagioclase-apatite-clinopyroxene rock; clinopyroxene-bearing syenite; monzonite; mangerite; pelitic, quartzitic and calcsilicate gneiss and granulite; mafic to ultramafic igneous rocks		apatite, wavellite	2-3 m thick phosphatic horizon	Dahlberg, 1989		
1166							Commission for Geological Map of the World, 1972
1167	Mica schists; quartzites; dolomitic limestone; stromatolites			Deposit affected by low grade metamorphism.	Äikäs, 1989		
1168	Volcanics; apatite-banded arsenopyrite and pyrite-apatite ores			Deposit affected by at least two phases of metamorphism.	Äikäs, 1989; Rickard, 1986		

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1169	Sweden	Kopparberg		Grängesberg District	Includes Export field, Strandberg field, Timmer miner, Risberg field, Ormberg field, Lomberg field	Hydrothermal-Magmatic iron deposit (metamorphosed)	apatite-bearing iron ore	Early Proterozoic		
1170	Sweden	Norrbotten		Ekströmsberg		Hydrothermal-Magmatic iron deposit	apatite-bearing iron ore	Early Proterozoic		
1171	Sweden	Norrbotten		Kirunavaara	Kiruna	Hydrothermal-Magmatic iron deposit	apatite-bearing iron ore	Early Proterozoic	1635-1605 Ma	
1172	Sweden	Norrbotten		Malmberget/Gallivare		Hydrothermal-Magmatic iron deposit	apatite bands	Middle Proterozoic	1600-1570 Ma	
1173	Sweden	Norrbotten		Pattok		Hydrothermal-Magmatic iron deposit	apatite-bearing iron ore	Early Proterozoic		
1174	Sweden	Norrbotten		Svappavaara Area		Hydrothermal-Magmatic iron deposit	apatite-bearing iron ore	Middle Proterozoic	1600-1570 Ma	
1175	Sweden	Norrbotten		Tuolluvaara		Hydrothermal-Magmatic iron deposit	apatite-bearing iron ore	Early Proterozoic	1635-1605 Ma	
1176	Sweden	Väsernorrland		Alnö (Alno Island)		Magmatic, carbonatite/alkalic	apatite in carbonatite	Late Proterozoic-Early Cambrian	600-540 Ma	600-540 Ma
1177	Switzerland			Corandoni Mountain		Metamorphic	apatite in schist			
1178	Syria			Ain Layloun		Marine chemical sediment		Cretaceous		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1169	Iron ore; skarn		magnetite, hematite, apatite		Äikäs, 1989; Grip, 1989	P production is as byproduct of Fe production.	Russell, 1987; Commission for Geological Map of the World, 1972; Grip, 1978
1170	Acid volcanics (less altered than Kiruna ores)			Magnetite-hematite ores	Äikäs, 1989; Grip, 1989		
1171	Intermediate to felsic volcanics (metamorphosed to keratophyre); sediments interlayered with volcanics				Äikäs, 1989	P production is as byproduct of Fe production.	Russell, 1987; Commission for Geological Map of the World, 1972
1172	Volcanics				Grip, 1989		Commission for Geological Map of the World, 1972
1173	Acid volcanics (less altered than Kiruna ores)				Äikäs, 1989; Grip, 1989		
1174	Intermediate to felsic volcanics; sediments interlayered with volcanics				Grip, 1989		Commission for Geological Map of the World, 1972
1175	Intermediate to felsic volcanics (metamorphosed to keratophyre); sediments interlayered with volcanics						
1176	Sövites; carbonatite				Grip, 1989	Attempts to exploit in the 1940's failed due to high production costs.	Grip, 1978
1177	biotite schist		apatite				British Sulphur Corporation, 1987
1178	glauconitic phosphatic limestone						Notholt, 1994

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1179	Syria			Bardeh						
1180	Syria			Bir Sejeri						
1181	Syria			Bir Setri						
1182	Syria			Charkiet						
1183	Syria			Dumeir						
1184	Syria			Eastern A and B (Sawwaneh)		Marine chemical sediment; residual enrichment	bedded; both hard and soft phosphorite	Late Cretaceous	Upper Campanian-Lower Maastrichtian	
1185	Syria			Gadir Al Hamal						
1186	Syria			Hibari						
1187	Syria			Hiffe						
1188	Syria			Khneifiss area		Marine chemical sediment	bedded; granular; fossiliferous (fish bones and teeth); both hard and soft phosphorite	Late Cretaceous	Upper Campanian	
1189	Syria			Tarag El Hbari (El Hagbari)		Marine chemical sediment	bedded; siliceous phosphorite	Early Eocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1179							Commission for Geological Map of the World, 1982b
1180							Arab Organisation for Mineral Resources, 1987
1181							Commission for Geological Map of the World, 1982b
1182							Commission for Geological Map of the World, 1982b
1183							Commission for Geological Map of the World, 1982b
1184	fossiliferous limestone; clayey limestone; phosphatic limestone and dolomite; clay; dolomite			The 2 phosphate beds found at Khneifiss, usually combine to form one bed nearly 20 m thick in these deposits.	Atfeh, 1989		Harben and Kuzvart, 1996; Notholt, 1994; Arab Organisation for Mineral Resources, 1987
1185							Arab Organisation for Mineral Resources, 1987
1186							Arab Organisation for Mineral Resources, 1987
1187							Commission for Geological Map of the World, 1982b
1188	clayey limestone; chert lenses; brecciated cherts			Mainly calcareous phosphorites with abundant organic fragments; overlain by two thin Maastrichtian phosphate beds-- one siliceous phosphate, one calcareous phosphate, each about 4 m thick.	Atfeh, 1989		MASMILS, 2000; Harben and Kuzvart, 1996; Commission for Geological Map of the World, 1982b; Notholt, 1994
1189	limestone; chert			The quality of the beds in generally poor and the phosphate beds less than 1 m thick.	Atfeh, 1989		Commission for Geological Map of the World, 1982b; Notholt, 1994

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1190	Syria			Wadi El Rachim (Wadi Erkheime; Er Rakheime)		Marine chemical sediment		Cretaceous		
1191	Tadzikistan			Khodzha Achkan (Khodzhaachkan)		Magmatic, carbonatite/alkalic				
1192	Tanzania	Arusha		Minjingu		Sedimentary, lacustrine	collophane mud (phosphate leached from bird guano); massive phosphorite; bedded phosphorite interbedded with clays	Neogene-Quaternary		
1193	Tanzania			Chali		Marine chemical sediment?				
1194	Tanzania			Chamoto		Marine chemical sediment?				
1195	Tanzania			Kerimasi (Kerimasio)		Magmatic, carbonatite/alkalic		Quaternary		
1196	Tanzania			Kwahera (Ufiome, Kawaraa, Kwaramu, Kwaraha, Galappo)		Magmatic, carbonatite/alkalic		Pleistocene		
1197	Tanzania			Luhombero - Pangani Gorge		Magmatic, carbonatite/alkalic				
1198	Tanzania			Makonde		Magmatic, carbonatite/alkalic				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1190				3 main phosphate beds.			Commission for Geological Map of the World, 1982b; Notholt, 1994
1191	syenite gneiss, shonkinite, nepheline syenite, granodiorite, granite						USGS files; Kogarko and others, 1995
1192	clays			Individual beds range from 1-3 m in thickness.	British Sulphur Corporation, 1964, 1987; Notholt and others, 1989c	There is an overburden ratio of 1:6 at this site. Resource information from World Survey of Phosphate Deposits (1987).	British Sulphur Corporation, 1964, 1987; Notholt, 1990; de Kun, 1987; Notholt and others, 1989c; S. Jasinski, written commun., 2001
1193							de Kun, 1987
1194							de Kun, 1987
1195	nephelinitic agglomerates, tuff, flows, carbonatite			Composite volcano straddling the fault scarp of the Gregory Rift valley.	Woolley, 2001		USGS files; Woolley, 2001
1196	nephelenitic tuff, agglomerate, sovite, basalt		calcite, magnetite, pyrochlore, vermiculite, apatite, sodic amphibole		Woolley, 2001		USGS files; Woolley, 2001
1197	phonolite, carbonatite dikes		pyrochlore, calcite, magnetite, vermiculite, biotite		Woolley, 2001		USGS files; Woolley, 2001
1198	carbonatite		apatite, calcite, magnetite, Ba, Sr				Woolley, 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1199	Tanzania			Mbalizi		Magmatic, carbonatite/alkalic		Cretaceous		
1200	Tanzania			Mbeya (Panda Hills)		Magmatic, carbonatite/alkalic, residual enrichment		Probably Cretaceous		
1201	Tanzania			Minjingu		Marine chemical sediment?				
1202	Tanzania			Nachendazawaya		Magmatic, carbonatite/alkalic		Proterozoic		
1203	Tanzania			Ngualla		Magmatic, carbonatite/alkalic		Proterozoic		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1199	carbonatite, breccia		apatite, phlogopite, magnetite, dolomite, pyrochlore, pyrrhotite, pyrite, chalcopyrite, fluorite		Woolley, 2001		Woolley, 2001
1200	beforsite, sovite, agglomerate, tuff, fenite		apatite, pyrochlore, pyrite, magnetite, fluorite, celestite, barite, ilmenite, rutile, titanite, bastnasite, monazite, REE carbonates, calcite, quartz		Woolley, 2001	Nb reserve.	de Kun, 1987; Bartels & Gurr, 1994; Woolley, 2001
1201						Overburden ratio 1:6.	de Kun, 1987
1202	carbonatite, foyaite, ijolite		calcite, dolomite, ankerite, biotite, arfvedsonite, apatite, titanomagnetite, pyrite, pyrochlore,, titanite, zircon		Woolley, 2001		USGS files; Woolley, 2001
1203	carbonatite, breccia		apatite, magnetite, dolomite, biotite, muscovite, quartz, barite, fluorite, parisite, pyrochlore, sulfides, monazite, diamonds	Magnetite-apatite veins up to 20 m wide and several hundred meters long contain 12-35% P2O5.	Woolley, 2001		Woolley, 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1204	Tanzania			Oldoinyo Dili		Magmatic, carbonatite/alkalic		pre-Neogene		
1205	Tanzania			Sangu Carbonatite Group, Karema Depression (includes Ikola, Ikambwa, Middle carbonatites)		Magmatic, carbonatite/alkalic				
1206	Tanzania			**Zizi**						
1207	Thailand			Fang-Chiang Dao		Marine chemical sediment	bedded; laminated; nodular	Devonian		
1208	Thailand	Ratchaburi		Khao Phak Mah		Marine chemical sediment, residual weathering	nodular			
1209	Thailand	Roi Et		Ban Lao Kham		Sedimentary	phosphatic cement; boulders of aluminum phosphate			
1210	Togo			Dagbati		Marine chemical sediment	bedded; biophosarenite; fossiliferous	Middle Eocene		
1211	Togo	Region Maritime		Hahotoe-Kpogame		Marine chemical sediment; residual enrichment	bedded; biophosarenite; fossiliferous	Middle Eocene		
1212	Togo			Adete (Avete?)		Marine chemical sediment				
1213	Togo			Hahotoe-Akoumape Deposit		Marine chemical sediment		Early-Middle Eocene	Late Ypresian - Early Lutetian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1204	sovite, fenite		calcite, biotite, magnesioarfvedsonite, pyrochlore, apatite, magnetite, fluorite	Volcano is deeply weathered.	Woolley, 2001		USGS files; Woolley, 2001
1205	carbonatite, fenite		apatite, magnetite, baddeleyite, pyrochlore, Ti, Sr, aegirine, dolomite, quartz, phlogopite		Woolley, 2001		USGS files; Woolley, 2001
1206			apatite				de Kun, 1987
1207	chert, black shale, sandstone; quartzitic tuff		fluorapatite		Notholt and others, 1989d; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Bunopas and others, 1986; Notholt, 1994
1208	limestone						Thailand Department of Mineral Resources, 1997
1209	phosphatic sandstone, limestone			1 m thick sandstone bed. Sandstone is overlain by limestone that shows replacement by phosphate.	British Sulphur Corporation, 1987; Japakasetr, 1980		British Sulphur Corporation, 1987; Thailand Department of Mineral Resources, 1997
1210	phosphatic limestone; marl			Phosphorites up to 4.5 m thick.	Slansky, 1989		de Kun, 1987
1211	phosphatic limestone; marl				Slansky, 1989		
1212				Phosphorite up to 10 m thick.			de Kun, 1987
1213	clay, limestone, marl, shale	Serie de la Lama	francolite, quartz, kaolinite, smectite	Phosphate beds are 2-6 m thick.	Van Kauwenbergh and McClellan, 1990		Harben and Kuzvart, 1996; de Kun, 1987; Notholt, 1994; Van Kauwenbergh and McClellan, 1990

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1214	Togo			Kpomé (Kpogame?)		Marine chemical sediment		Early-Middle Eocene	Late Ypresian - Early Lutetian	
1215	Togo			Momé		Marine chemical sediment				
1216	Tunisia				Chaketma	Marine chemical sediment	bedded; pelletal; bioclasts	Early Eocene		
1217	Tunisia				Kalaa Djerda					
1218	Tunisia				Kalaet Es Senam					
1219	Tunisia	El Kef		Djebel Gouraya		Marine chemical sediment	bedded; pelletal; bioclasts	Paleocene-Early Eocene		
1220	Tunisia	El Kef		El Kef Basin/Tebessa-Thala mining area/Kalaâ- Khasba Deposit	Kalaâ- Khasba Mine	Marine chemical sediment	bedded; pelletal; bioclasts	Paleocene-Early Eocene	Thanetian	
1221	Tunisia	El Kef		Sra Ouertane (Stra Ouertane)	Sra Ouertane	Marine chemical sediment	bedded; pelletal; bioclasts	Paleocene-Early Eocene		
1222	Tunisia	Gafsa		Gafsa Basin	Kef Eddour (Kef ed Dour)	Marine chemical sediment	bedded	Paleocene-Early Eocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1214	clay, limestone, marl, shale		francolite, quartz, kaolinite, smectite	Phosphorite up to 10 m thick.	Van Kauwenbergh and McClellan, 1990		de Kun, 1987; Van Kauwenbergh and McClellan, 1990
1215							de Kun, 1987
1216	phosphatic limestone; argillaceous limestone; glauconite			2-40 m thick bed.	Svoboda, 1989		de Kun, 1987; Commission for Geological Map of the World, 19
1217							Commission for Geological Map of the World, 1983; Commission for Geological Map of the World, 1976
1218							Arab Organisation for Mineral Resources, 1987
1219	limestone; clay; marl				Svoboda, 1989; British Sulphur Corporation, 1964, 1987	Resource estimates from World Survey of Phosphate Deposits (1987).	British Sulphur Corporation, 1964, 1987
1220	limestone; clay; marl				Svoboda, 1989	Ore grades run 25-29% P2O5. This mine works an extension of an Algerian deposit. Average grade is 18% P2O5 (1986).	Harben and Kuzvart, 1996; Power, 1986b; S. Jasinski, written commun., 2001
1221	limestone; clay; marl			13-65 m thickness, with 11 m of argillaceous phosphorite rich in glauconite.	Svoboda, 1989	Although development was started with a planned mine opening in 1987, the mine never opened.	Power, 1986b; de Kun, 1987; S. Jasinski, written commun., 2001; MASMILS, 2000
1222	carbonate; clay; marl; chert				Svoboda, 1989; British Sulphur Corporation, 1964, 1987	Resource estimates from World Survey of Phosphate Deposits (1987).	Power, 1986b; de Kun, 1987; British Sulphur Corporation, 1964, 1987; S. Jasinski, written commun., 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1223	Tunisia	Gafsa		Gafsa Basin	Djellabia (Jellabia)	Marine chemical sediment	bedded	Paleocene-Early Eocene		
1224	Tunisia	Gafsa		Gafsa Basin	Kef es Schfair (Kef Eschaier) Mine	Marine chemical sediment	bedded	Paleocene-Early Eocene	Thanetian	
1225	Tunisia	Gafsa		Gafsa Basin	Mdilla (M'dilla) Mine	Marine chemical sediment	bedded	Paleocene-Early Eocene	Thanetian	
1226	Tunisia	Gafsa		Gafsa Basin	Metlauoi Mine	Marine chemical sediment	bedded	Paleocene-Early Eocene	Thanetian	
1227	Tunisia	Gafsa		Gafsa Basin	Moularès Mine	Marine chemical sediment	bedded	Paleocene-Early Eocene	Thanetian	
1228	Tunisia	Gafsa		Gafsa Basin	Mrata (M'rata, Sehib M'Rata) Mine	Marine chemical sediment	bedded	Paleocene-Early Eocene	Thanetian	
1229	Tunisia	Gafsa		Gafsa Basin	Oum el-Kecheb (Oum El Kecheb)	Marine chemical sediment	bedded	Paleocene-Early Eocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1223	carbonate; clay; marl; chert				Svoboda, 1989; British Sulphur Corporation, 1964, 1987	Resource estimates from World Survey of Phosphate Deposits (1987)	Power, 1986b; British Sulphur Corporation, 1964, 1987; S. Jasinski, written commun., 2001
1224	Metlaoui Fmt carbonate; clay; marl; chert	Metlaoui Formation		9 P-rich beds in Metlaoui Formation.	Svoboda, 1989	Production from 8 of the 9 phosphate beds of the Metlaoui Formation.	Harben and Kuzvart, 1996; Power, 1986b; de Kun, 1987; MASMILS, 2000
1225	Metlaoui Fmt carbonate; clay; marl; chert	Metlaoui Formation			Svoboda, 1989	Production from Beds V and VI of the Metlaoui Fmt.	Harben and Kuzvart, 1996; Power, 1986b; de Kun, 1987; S. Jasinski, written commun., 2001; MASMILS, 2000
1226	Metlaoui Fmt marl, flint, carbonate; clay; chert	Metlaoui Formation			Svoboda, 1989	Production from 3 m thick Bed II.	Harben and Kuzvart, 1996; Power, 1986b; Commission for Geological Map of the World, 1976; S. Jasinski, written commun., 2001
1227	Metlaoui Fmt carbonate; clay; marl; chert	Metlaoui Formation		Production from Beds I and II which are separated by less than 30 cm of shelly limestone.	Svoboda, 1989	Production from Beds I and II which are mined as a unit.	Harben and Kuzvart, 1996; Power, 1986b; de Kun, 1987
1228	Metlaoui Fmt carbonate; clay; marl; chert	Metlaoui Formation			Svoboda, 1989	Production from Bed I of the Metlaoui Fmt only.	Harben and Kuzvart, 1996; Power, 1986b; de Kun, 1987; S. Jasinski, written commun., 2001
1229	carbonate; clay; marl; chert				Svoboda, 1989; British Sulphur Corporation, 1964, 1987		Power, 1986b; de Kun, 1987; British Sulphur Corporation, 1964, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1230	Tunisia	Gafsa		Gafsa Basin	Redeyef Mine	Marine chemical sediment	bedded	Paleocene-Early Eocene	Thanetian	
1231	Tunisia	Gafsa		Gafsa Basin	Sehib Sud	Marine chemical sediment				
1232	Tunisia	Gafsa		Sehib		Marine chemical sediment	bedded	Paleocene-Early Eocene		
1233	Tunisia			Djebel Mechaib	Djebel Mechaib, Mezzoura, Maknassy, Meheri Zebbeus					
1234	Tunisia				Djebel Mechaib					
1235	Tunisia				Maknassy					
1236	Turkey			Bingöl Area/Miskel; Gonac; Haylandere; Kavakli; Murderesi; Arduvan; Hamek; Avnik; Kavakli		Hydrothermal-Magmatic or Marine volcano-sedimentary (metamorphosed)	magnetite-apatite mineralization	Late Ordovician		
1237	Turkey			Derik						
1238	Turkey			Kilis						
1239	Turkey	Anatolia?		Bitlis Area/Sürüm; Mese; Sirti; Yaku (Unaldi); Simek; Setek; Mesclik		Hydrothermal-Magmatic or Marine volcano-sedimentary (metamorphosed)	magnetite-apatite mineralization	Late Ordovician		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1230	Metlaoui Fmt carbonate; clay; marl; chert	Metlaoui Formation		Production from Beds I and II which are separated by less than 30 cm of shelly limestone.	Svoboda, 1989	Production from Beds I and II which are mined as a unit. Underground mining ended in 2000.	Harben and Kuzvart, 1996; de Kun, 1987; Notholt, 1994; Van Kauwenbergh and McClellan, 1990; S. Jasinski, written commun., 2001; MASMILS, 2000
1231							Power, 1986b
1232	carbonate; clay; marl; chert				Svoboda, 1989		de Kun, 1987; MASMILS, 2000
1233							Commission for Geological Map of the World, 1983
1234							Arab Organisation for Mineral Resources, 1987
1235							Arab Organisation for Mineral Resources, 1987
1236	quartz amphibolite; albite amphibolite; albite gneiss; metavolcanics; schist; marble			Hamek deposit is 50 m thick; Avnik deposit is 20 m thick.	Seyhan, 1989		
1237							Commission for Geological Map of the World, 1982b
1238							Commission for Geological Map of the World, 1982b
1239	quartz amphibolite; albite amphibolite; albite gneiss; metavolcanics; schist; marble				Seyhan, 1989		

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1240	Turkey	Mardin		Mazidagi		Marine chemical sediment; residual enrichment	bedded; pelletal; nodular; oolitic; fossiliferous (fish remains and bones); limonitic and glauconitic phosphatic limestone	Late Cretaceous	Turonian-Santonian	
1241	Uganda			Budeda		Magmatic, carbonatite/alkalic				
1242	Uganda			Bukusu Complex/Busumbu (Busuku)		Magmatic, carbonatite/alkalic; residual enrichment		Tertiary		
1243	Uganda			Sekululu (Butiriku)		Magmatic, carbonatite/alkalic				
1244	Uganda	Bukedi		Sukulu Complex		Magmatic, carbonatite/alkalic; residual enrichment	apatite; apatite residual soils	Cretaceous-Early Miocene?		Cretaceous-Lower Miocene?
1245	Uganda			Tororo (Tororo Hill)		Magmatic, carbonatite/alkalic	apatite	Cretaceous-Early Miocene?		
1246	Ukraine			Stremygoroske			apatite			

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1240	limestone; dolomite; chert lenses; marl chalk			Phosphate from three distinct horizons: Tasit Phosphorite (pelletal, nodular and fossiliferous), Kasrik Phosphorite (pelletal and oolitic, associated with a red clayey or cherty rock), and Akras Phosphorite (limonitic and glauconitic phosphatic limestone)	Berker, 1989		Russell, 1987; Commission for Geological Map of the World, 1982b
1241	ijolite, melteigite, carbonatite, syenite						USGS files; Woolley, 2001
1242	carbonatite, agglomerate, ijolite, melteigite, nepheline syenite		apatite, francolite, magnetite, vermiculite, zircon, barite, pyrochlore, baddeleyite, Cu minerals	Residual soils up to 60 m thick. Francolite occurs in a secondary phoscrete (concretionary hard pan).		Secondary phoscrete averages 30% P2O5.	Mathers, 1994; de Kun, 1987; Mew, 1980; Notholt, 1994; Woolley, 2001
1243	carbonatite, ferruginous phosphatic rock		pyrite, pyrochlore, magnetite, apatite, secondary phosphates	Phosphates are largely secondary and found in ferruginous phosphatic rock and soils and not in carbonatite.			Woolley, 2001
1244	carbonatite (sovite, dolomitic carbonatite, ankeritic carbonatite); tinguaitie dykes; fenite-breccia		apatite, magnetite, hematite, iron oxides and clays, quartz; minor ilmenite, zircon, mica, pyrochlore, and baddeleyite	Residual deposits 15-67 m in thickness.	Kabagambe-Kaliisa, 1989		Mathers, 1994; de Kun, 1987; Mew, 1980; Notholt, 1994; Woolley, 2001
1245	apatite pyroxenite, carbonatite						Mew, 1980
1246			apatite			Deposit has been earmarked for development.	O'Driscoll, 1998

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1247	Ukraine			Fedorivske			apatite			
1248	Ukraine			Vydyborzke			apatite			
1249	Ukraine	Chernigov		Krolevets		Marine chemical sediment				
1250	Ukraine	Kharkov		Sinichemo-Yeremov		Marine chemical sediment				
1251	Ukraine	Kharkov		Kremenesk (Izyum)		Marine chemical sediment				
1252	Ukraine	Ivano-Frankov		Nezvis		Marine chemical sediment				
1253	Ukraine	Vinnitsa		Shvan		Marine chemical sediment				
1254	United Arab Emirates			Arsana						
1255	United Arab Emirates			Qarnain						
1256	United Kingdom	England		Cambridge Greensand		Marine chemical sediment	bedded; nodular	Late Cretaceous	Cenomanian	
1257	United Kingdom	England		Potton						
1258	United Kingdom	England		Red Crag Deposits/Ipswich		Marine chemical sediment	nodular; conglomeritic bed	Pliocene		
1259	United Kingdom	England		Spilsby						
1260	United Kingdom	England		Taplow		Marine chemical sediment	bedded; pelletal	Late Cretaceous	Campanian	
1261	United Kingdom	England		Woburn-Ampthill		Marine chemical sediment	bedded; nodular	Early Cretaceous	Aptian	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1247			apatite			Deposit has been earmarked for development.	O'Driscoll, 1998
1248			apatite			Deposit has been earmarked for development.	O'Driscoll, 1998
1249						Small scale production 1929-1932.	British Sulphur Corporation, 1987
1250							British Sulphur Corporation, 1987
1251						Small scale production WWII.	British Sulphur Corporation, 1987
1252						At times, worked by hand.	British Sulphur Corporation, 1987
1253							British Sulphur Corporation, 1987
1254							Arab Organisation for Mineral Resources, 1987
1255							Arab Organisation for Mineral Resources, 1987
1256	glauconitic marl; chalk			Glauconitic Marl.	British Sulphur Corporation, 1987; Dunham and others, 1978	Productive bed less than 0.3 m thick with nodules containing 25-27% P_2O_5.	British Sulphur Corporation, 1987
1257							
1258					British Sulphur Corporation, 1987; Dunham and others, 1978	Nodules contain on average 24% P_2O_5.	British Sulphur Corporation, 1987
1259							
1260	phosphatic chalk			Two phosphate beds: 2.6 m thick with 7-13% P_2O_5 and 1.2 m thick with 11.5-14.8% P_2O_5; phosphatic chalk runs 1.83-6.18% P_2O_5.	British Sulphur Corporation, 1987		
1261	glauconitic marl; clay				British Sulphur Corporation, 1987; Dunham and others, 1978		British Sulphur Corporation, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1262	United Kingdom	Scotland		Loch Borralan		Magmatic, alkaline	apatite	Silurian (?)		Silurian (430 Ma)
1263	United Kingdom	Wales		Nod Glas Formation/ Llangynog		Marine chemical sediment	bedded; nodular	Late Ordovician	Caradocian	
1264	United States			Bearpaw Mountains		Magmatic, carbonatite/alkalic		Middle Eocene		
1265	United States			Deep Creek		Magmatic, carbonatite/alkalic				
1266	United States			Monte Largo area		Magmatic, carbonatite/alkalic				
1267	United States			Westcriffe		Magmatic, carbonatite/alkalic		Late Precambrian		
1268	United States	Alabama		Gilbert Quarries		Marine sedimentary?		Ordovician		
1269	United States	Alaska		Salmon Bay		Magmatic, carbonatite/alkalic				
1270	United States	Alaska		Shublik Formation/Sadlerochit River deposit		Marine chemical sediment	pelletal; nodular; fish remains	Middle-Late Triassic		
1271	United States	Arkansas		Magnet Cove		Magmatic, carbonatite/alkalic, residual weathering		Middle Cretaceous		
1272	United States	California		Coast Range Phosphate Area		Marine chemical sediment	nodular; pelletal	Oligocene-Pliocene		
1273	United States	California		Salinas Basin/Carmel Valley area		Marine chemical sediment	bedded; pelletal	Middle-Late Miocene	11-13 Ma	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1262	ultramafic rocks (pyroxenites); nepheline-syenite; felspathic syenites; quartz-syenite		titaniferous magnetite, apatite	Absolute age of apatite-magnetite ultramafic rocks unknown.	Notholt, 1979		Notholt, 1979
1263	black phosphatic mudstone			Bed thickness 0.1-0.4 m, average 21% P2O5	British Sulphur Corporation, 1987; Dunham and others, 1978		British Sulphur Corporation, 1987
1264							USGS files
1265							USGS files
1266							USGS files
1267							USGS files
1268	limestone						MRDS, 2000
1269			parisite, bastnasite, monazite, thorite, P, F, Zr, ankerite-dolomite	Veins			
1270	black siltstone; limestone; dolomite; shale	Shublik Formation			Detterman, 1989		
1271							USGS files
1272	marine sediments				Foose, 1993; British Sulphur Corporation, 1964		British Sulphur Corporation, 1964
1273	shale; siltstone; basinal turbidite facies; phosphatic sandstone	Monterey Formation - Hames Member		Basinal turbidite.	Roberts, 1989; Kastner and others, 1990		Kastner and others, 1990

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1274	United States	California		Continental Borderland/outer continental shelf deposits		Marine chemical sediment; secondary enrichment	bedded; nodular; pelletal; some beds result of erosional reworking of Miocene deposits; phosphatic sandstone and mudstone	Miocene		
1275	United States	California	Kern	Chico Martinez		Marine chemical sediment	pelletal; irregularly thick beds	Late Oligocene - Early Miocene		
1276	United States	California	San Luis Obispo	Wilson Corner (Indian Creek)		Marine chemical sediment	bedded; pelletal	Middle-Late Miocene		
1277	United States	California	Santa Barbara	Cuyama Basin/Cuyama		Marine chemical sediment	bedded; pelletal; nodular; phosphatic mudstone	Middle-Late Miocene	10-13 Ma	
1278	United States	California		Cuyama Basin/Indian Creek		Marine chemical sediment	bedded; pelletal	Middle-Late Miocene	13 Ma	
1279	United States	California	Ventura	Pine Mountain (Sespe Creek)		Marine chemical sediment	bedded; pelletal; nodular; includes graded beds of phosphatic pebbles; phosphatic mudstone with interbedded terrigenous clastic and volcanic debris	Late Miocene		
1280	United States	Colorado		Gem Park		Magmatic, carbonatite/alkalic			551 Ma (K-Ar on riebeckite)	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1274						Pellets are 1.04-9.68% P2O5.	
1275	sandstone; shale	Santos shale member of Temblor Formation			Roberts, 1989		Roberts, 1989
1276	calcareous shales; siliceous shales; bentonite laminae	Hames Member of Monterey Formation		Base of the Hames Member.	Roberts, 1989		Roberts, 1989
1277	phosphatic mudstone; mudstone; sandstone; siltstone	Santa Margarita Formation	fluorapatite	Phosphate zone up to 30 m thick. Winnowed shelf.	Roberts, 1989; British Sulphur Corporation, 1987; Kastner and others, 1990		Roberts, 1989; British Sulphur Corporation, 1987; Kastner and others, 1990
1278	phosphatic shale	Santa Margarita Formation - Whiterock Bluff Shale Member		Basinal turbidite.	Kastner and others, 1990		Kastner and others, 1990
1279	phosphatic mudstone; mudstone; sandstone; siltstone; volcanic ash, bentonite	Santa Margarita Formation		Regressive sequence.	Roberts, 1989	Resource estimates from Roberts (1989).	Lowe, 1972; Roberts, 1989
1280			strontianite, vermiculite, dolomite, calcite, barite, apatite, magnetite, lueshite, natroniobite, thorianite, fersmite, ancylite, aegirine, phlogopite			Past producer of vermiculite.	USGS files; Woolley, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1281	United States	Colorado		Iron Hill (Powderhorn, Cebolla Creek)		Magmatic, carbonatite/alkalic			570 Ma	
1282	United States	Florida		Bronson (East Ocala Hard Rock) District		Marine chemical sediment; residual enrichment	pelletal; pebbles; clasts of phosphatized carbonate with fossils	Miocene-Pleistocene		
1283	United States	Florida		East Florida phosphate district		Marine chemical sediment				
1284	United States	Florida		Land Pebble phosphate district	Hopewell	Marine chemical sediment		Early-Middle Miocene		
1285	United States	Florida	DeSoto, Manatee	Land Pebble phosphate district	Pine Level	Marine chemical sediment		Miocene-Pliocene		
1286	United States	Florida	Hardee	Land Pebble phosphate district	Ona	Marine chemical sediment		Miocene-Pliocene		
1287	United States	Florida	Hardee	Land Pebble phosphate district	Stuart Tract	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Early-Middle Miocene		
1288	United States	Florida	Hillsborough	Land Pebble phosphate district	Big Four Mine	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Early-Middle Miocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1281	ultramafics, carbonatite dikes and pegmatites; fenite, ijolite, nepheline syenite		perovskite, ilmenite, rutile, zircon, pyrochlore, P, Ba, V, U, magnetite, fluorapatite, fluorite, thorite, vermiculite, bastnasite, synchysite, parisite, apatite, pyrochlore			Has been Ti prospect.	USGS files; Anstett, 1986; Castor, 1984; Woolley, 1987; Pell, 1996; Moller, 1989; Thompson, 1990
1282	limestone; chert; sandstone				Cathcart, 1989a; British Sulphur Corporation, 1964		British Sulphur Corporation, 1964
1283							
1284							IMC-Agrico Website, 2000; S. Jasinski, written commun., 2001
1285						In permitting stage.	Jasinski, 2000; S. Jasinski, written commun., 2001
1286						In permitting stage.	Jasinski, 2000; S. Jasinski, written commun., 2001
1287	carbonate; sandstone; clay				Cathcart, 1989a; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1288	carbonate; sandstone; clay				Cathcart, 1989a; British Sulphur Corporation, 1987	Reserves exhausted.	Griffiths, 1995b; S. Jasinski, written commun., 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1289	United States	Florida	Hillsborough	Land Pebble phosphate district/Central Florida district	Lonesome Mine	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1290	United States	Florida	Hillsborough	Land Pebble phosphate district/Central Florida district	Noranda	Marine chemical sediment		Miocene-Pliocene		
1291	United States	Florida	Manatee	Land Pebble phosphate district/Central Florida district	Beker (Wingate Creek)	Marine chemical sediment		Miocene-Pliocene		
1292	United States	Florida	Manatee	Land Pebble phosphate district	Duette	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Early-Middle Miocene		
1293	United States	Florida	Manatee, Hillsborough	Land Pebble phosphate district/Central Florida district	Four Corners Mine	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1294	United States	Florida	Polk	Land Pebble phosphate district	Bonny Lake	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Early-Middle Miocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1289	sandstone; clay	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, quartz, smectite, wavellite; minor geothite, K feldspar, crandallite		Cathcart, 1989a; British Sulphur Corporation, 1987	Temporarily shutdown in 2001.	British Sulphur Corporation, 1987; Van Kauwenbergh and others, 1990; Van Kauwenbergh and McClellan, 1990; S. Jasinski, written commun., 2001
1290		Hawthorne Group - Peace River Formation - Bone Valley Member			Van Kauwenbergh and McClellan, 1990		Van Kauwenbergh and McClellan, 1990
1291		Hawthorne Group - Peace River Formation - Bone Valley Member			Van Kauwenbergh and McClellan, 1990	Mining is under water. Mined by dredge.	Van Kauwenbergh and others, 1990; Van Kauwenbergh and McClellan, 1990; Jasinski, 2000; S. Jasinski, written commun., 2001
1292	carbonate; sandstone; clay				Cathcart, 1989a; British Sulphur Corporation, 1987	Reserves exhausted.	British Sulphur Corporation, 1987
1293	sandstone, dolomite, clay	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, quartz, smectite, kaolinite, K feldspar, dolomite; minor palygorskite, illite		Cathcart, 1989a; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; IMC-Agrico Website, 2000; Van Kauwenbergh and others, 1990; Industrial Minerals, 1998a; S. Jasinski, written commun., 2001
1294	carbonate; sandstone; clay				Cathcart, 1989a; British Sulphur Corporation, 1987	Reserves exhausted.	British Sulphur Corporation, 1987; S. Jasinski, written commun., 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1295	United States	Florida	Polk	Land Pebble phosphate district/Central Florida district	Clear Springs Mine	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1296	United States	Florida	Polk	Land Pebble phosphate district/Central Florida district	Fort Green	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1297	United States	Florida	Polk	Land Pebble phosphate district/Central Florida district	Fort Meade Mine (Mobil)	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1298	United States	Florida	Polk	Land Pebble phosphate district/Central Florida district/ Ft. Meade	Gardinier Mine (Cargill Mine)	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1299	United States	Florida	Polk	Land Pebble phosphate district/Central Florida district	Haynsworth Mine	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1300	United States	Florida	Polk	Land Pebble phosphate district/Central Florida district	Hookers Prairie	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1295	carbonate; sandstone; dolomite	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, quartz, smectite; minor kaolinite, wavellite, illite, crandallite		Cathcart, 1989a; British Sulphur Corporation, 1987	Reserves exhausted. Land sold for development.	British Sulphur Corporation, 1987; Van Kauwenbergh and others, 1990; Industrial Minerals, 1998a
1296	carbonate; sandstone; dolomite	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, quartz, kaolinite, smectite; minor wavellite, crandallite, illite, K feldspar, albite		Cathcart, 1989a; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; IMC-Agrico Website, 2000; Van Kauwenbergh and others, 1990; S. Jasinski, written commun., 2001
1297	carbonate; sandstone; dolomite	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, albite, quartz, smectite, palygorskite ; minor wavellite, K feldspar, kaolinite, illite		Cathcart, 1989a; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Van Kauwenbergh and others, 1990; S. Jasinski, written commun., 2001
1298	carbonate; sandstone; dolomite	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, quartz, smectite; minor wavellite, crandallite, kaolinite		Cathcart, 1989a; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Van Kauwenbergh and others, 1990
1299	sandstone	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, quartz, smectite; minor wavellite, crandallite, smectite, K feldspar, kaolinite, illite		Cathcart, 1989a; British Sulphur Corporation, 1987	Reserves exhausted.	British Sulphur Corporation, 1987; Van Kauwenbergh and others, 1990
1300	sandstone; clay, dolomite	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, qartz, smectite, kaolinite, illite, K feldspar, dolomite, crandallite		Cathcart, 1989a; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Van Kauwenbergh and others, 1990; S. Jasinski, written commun., 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1301	United States	Florida	Polk	Land Pebble phosphate district/Central Florida district	Kingsford Mine	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1302	United States	Florida	Polk	Land Pebble phosphate district/Fort Meade (Mobil)	South Fort Meade	Marine chemical sediment				
1303	United States	Florida	Polk	Land Pebble phosphate district/Central Florida district	Nichols Mine	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1304	United States	Florida	Polk	Land Pebble phosphate district/Central Florida district	Noralyn Mine	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1305	United States	Florida	Polk	Land Pebble phosphate district	Payne Creek	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Early-Middle Miocene		
1306	United States	Florida	Polk	Land Pebble phosphate district/Central Florida district	Phosphoria	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1307	United States	Florida	Polk	Land Pebble phosphate district	Polk County mine	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Early-Middle Miocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1301	sandstone; clay, dolomite	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, quartz, dolomite, smectite; minor K feldspar, albite, crandallite		Cathcart, 1989a; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; IMC-Agrico Website, 2000; Van Kauwenbergh and others, 1990; S. Jasinski, written commun., 2001
1302					Cathcart, 1989a; British Sulphur Corporation, 1987		Griffiths, 1995b; S. Jasinski, written commun., 2001
1303	sandstone; clay; dolomite	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, quartz, smectite, crandallite, kaolinite, K feldspar, illite, albite; minor dolomite		Cathcart, 1989a; British Sulphur Corporation, 1987		Griffiths, 1995b; Jasinski, 1999; British Sulphur Corporation, 1987; Van Kauwenbergh and others, 1990; S. Jasinski, written commun., 2001
1304	sandstone; clay	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, quartz; minor crandallite, wavellite, K feldspar		Cathcart, 1989a; British Sulphur Corporation, 1987	Reserves exhausted.	British Sulphur Corporation, 1987; IMC-Agrico Website, 2000; Van Kauwenbergh and others, 1990; Industrial Minerals, 1998a
1305	carbonate; sandstone; clay				Cathcart, 1989a; British Sulphur Corporation, 1987	Closed due to market conditions; will not reopen.	Jasinski, 1998; IMC-Agrico Website, 2000; S. Jasinski, written commun., 2001
1306	sandstone; clay	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, quartz, sectite; minor K feldspar, crandallite, albite, wavellite		Cathcart, 1989a; British Sulphur Corporation, 1987	Reserves exhausted.	Jasinski, 1998; Van Kauwenbergh and others, 1990
1307	carbonate; sandstone; clay				Cathcart, 1989a; British Sulphur Corporation, 1987	Reserves exhausted.	British Sulphur Corporation, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1308	United States	Florida	Polk	Land Pebble phosphate district	Rockland	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1309	United States	Florida	Polk	Land Pebble phosphate district/Central Florida district	Saddle Creek	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1310	United States	Florida	Polk	Land Pebble phosphate district	Silver City	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Early-Middle Miocene		
1311	United States	Florida	Polk	Land Pebble phosphate district/Central Florida district	Watson	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene		
1312	United States	Florida	Polk, Hardee	Land Pebble phosphate district/Central Florida district	C.F. - Hardee complex	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Miocene-Pliocene		
1313	United States	Florida	Polk, Hillsboro, Manatee	Land Pebble phosphate district		Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Early-Middle Miocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1308	sandstone; clay, dolomite	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, quartz, palygorskite, sepiolite; minor wavellite, K feldspar, smectite, goethite, crandallite		Cathcart, 1989a; British Sulphur Corporation, 1987	Reserves exhausted.	British Sulphur Corporation, 1987; Van Kauwenbergh and others, 1990
1309	sandstone; clay	Hawthorne Group - Peace River Formation - Bone Valley Member	francolite, quartz, smectite, crandallite, palygorskite, K feldspar; minor albite, kaolinite, wavellite, dolomite		Cathcart, 1989a; British Sulphur Corporation, 1987	Reserves exhausted.	British Sulphur Corporation, 1987; Van Kauwenbergh and others, 1990
1310	carbonate; sandstone; clay				Cathcart, 1989a; British Sulphur Corporation, 1987	Reserves exhausted.	British Sulphur Corporation, 1987
1311	sandstone; clay; dolomite	Hawthorne Group - Peace River Formation	francolite, quartz, sepiolite, smectite, palygorskite; minor ksolinite, K feldspar, goethite, crandallite		Cathcart, 1989a; British Sulphur Corporation, 1987	Reserves exhausted.	British Sulphur Corporation, 1987; Van Kauwenbergh and others, 1990
1312	carbonate; sandstone; dolomite	Hawthorne Group - Peace River Formation - Bone Valley Member	francoliute, quartz, smectite, wavellite; minor kaolinite, illite, K feldspar, crandallite		Van Kauwenbergh and McClellan, 1990		Van Kauwenbergh and others, 1990; Van Kauwenbergh and McClellan, 1990; S. Jasinski, written commun., 2001
1313	carbonate; sandstone; clay				Cathcart, 1989a; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1314	United States	Florida	Desoto,	South Florida phosphate district		Marine chemical sediment	both river pebble and land pebble deposits; pebbles; granular phosphatic matrix	Early Miocene-Early Pliocene		
1315	United States	Florida		Steinhatchee (N. Ocala Hard Rock) District		Marine chemical sediment, residual enrichment	pelletal; pebbles; clasts of phosphatized carbonate with fossils	Miocene-Pleistocene		
1316	United States	Florida; Georgia		North Florida-South Georgia district		Marine chemical sediment; reworked, concentrated	pebbles; granular phosphatic matrix; reworked pebble deposits	Late Miocene		
1317	United States	Florida; Georgia	Hamilton	North Florida-South Georgia district	Suwanee River Mine	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Late Miocene - Pliocene		
1318	United States	Florida; Georgia	Hamilton	North Florida-South Georgia district	Swift Creek Mine	Marine chemical sediment	pebbles; granular phosphatic matrix; reworked pebble deposits	Late Miocene - Pliocene		
1319	United States	Georgia		Savannah District		Marine chemical sediment	pelletal; pebbles	Miocene		
1320	United States	Idaho		Deseret Basin/Bear River		Marine chemical sediment	peloidal; oolitic; bedded	Early Mississippian	Early Osagean-Early Meramecian	
1321	United States	Idaho		Deseret Basin/North Georgetown Canyon		Marine chemical sediment	peloidal; oolitic; bedded	Early Mississippian	Early Osagean-Early Meramecian	
1322	United States	Idaho		SE Idaho phosphate district		Marine chemical sediment; residual enrichment	laminated; pelletal; oolitic; fish remains and fossiliferous	Middle-Late Permian		
1323	United States	Idaho	Caribou	SE Idaho phosphate district/Conda	Conda	Marine chemical sediment; residual enrichment	laminated; pelletal; oolitic; fish remains and fossiliferous	Middle-Late Permian		
1324	United States	Idaho	Caribou	SE Idaho phosphate district	Dry Valley			Middle-Late Permian		
1325	United States	Idaho		SE Idaho phosphate district	Enoch Valley			Middle-Late Permian		
1326	United States	Idaho	Bingham	SE Idaho phosphate district/Gay	Gay	Marine chemical sediment; residual enrichment	laminated; pelletal; oolitic; fish remains and fossiliferous	Middle-Late Permian		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1314				River pebble deposits.	Scott, 1990		
1315	limestone; chert; sandstone				Cathcart, 1989a; British Sulphur Corporation, 1964	Land used for other purposes.	British Sulphur Corporation, 1964
1316	carbonate; sandstone; clay				Cathcart, 1989a; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1317	sandstone; clay	Hawthorne Group	francolite, quartz, dolomite, smectite, kaolinite		Cathcart, 1989a; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Van Kauwenbergh and others, 1990
1318	sandstone; clay; dolomite	Hawthorne Group	francolite, quartz, dolomite, palygorskite, kaolinite, wavellite, crandallite		Cathcart, 1989a; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; IMC-Agrico Website, 2000; Van Kauwenbergh and others, 1990
1319	limestone; diatomaceous clays; coarse clastics				Cathcart, 1989a; British Sulphur Corporation, 1964		British Sulphur Corporation, 1964
1320	phosphatic shale; chert; micrite	Delle Phosphatic Member			Sandberg and Gutschick, 1989		
1321	phosphatic shale; chert; micrite	Delle Phosphatic Member			Sandberg and Gutschick, 1989		
1322	black shale; carbonate; chert	Phosphoria Formation			Sheldon, 1989		
1323	black shale; carbonate; chert	Phosphoria Formation			Sheldon, 1989	Reserves exhausted.	
1324							Jasinski, 1998, 2000
1325							Jasinski, 1998, 2000
1326	black shale; carbonate; chert	Phosphoria Formation			Sheldon, 1989	Reserves exhausted.	

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1327	United States	Idaho	Caribou	SE Idaho phosphate district/Henry	Henry	Marine chemical sediment; residual enrichment	laminated; pelletal; oolitic; fish remains and fossiliferous	Middle-Late Permian		
1328	United States	Idaho	Caribou	SE Idaho phosphate district/Maybie Canyon	Maybie Canyon	Marine chemical sediment; residual enrichment	laminated; pelletal; oolitic; fish remains and fossiliferous	Middle-Late Permian		
1329	United States	Idaho	Caribou	SE Idaho phosphate district	Rasmussen Ridge					
1330	United States	Idaho		SE Idaho phosphate district	Smoky Canyon					
1331	United States	Idaho	Caribou	SE Idaho phosphate district	Wooley Valley	Marine chemical sediment; residual enrichment	laminated; pelletal; oolitic; fish remains and fossiliferous	Middle-Late Permian		
1332	United States	Kentucky		Central Kentucky Brown Rock District		Residual enrichment; laterite	layer (plates separated by phosphatic clays)	Post-Tertiary		Ordovician
1333	United States	Michigan		Dead River Basin		Metasedimentary	phosphatic pebbles, phosphate sand	Early Proterozoic		
1334	United States	Michigan		Huron River Basin		Metasedimentary	phosphatic pebbles	Early Proterozoic		
1335	United States	Michigan		Section 15		Metasedimentary	phosphatic pebbles	Early Proterozoic		
1336	United States	Michigan		Slate River		Metasedimentary	phosphatic pebbles	Early Proterozoic		
1337	United States	Minnesota		Carleton County		Metasedimentary		Early Proterozoic		
1338	United States	Montana		Montana phosphate district (2)		Marine chemical sediment	laminated; pelletal; oolitic; fish remains and fossiliferous	Middle-Late Permian		
1339	United States	Montana		Montana phosphate district	Warm Springs Creek (2)	Marine chemical sediment	laminated; pelletal; oolitic; fish remains and fossiliferous	Middle-Late Permian		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1327	black shale; carbonate; chert	Phosphoria Formation			Sheldon, 1989	Reserves exhausted.	S. Jasinski, written commun., 2001
1328	black shale; carbonate; chert	Phosphoria Formation			Sheldon, 1989	Reserves exhausted.	
1329							Jasinski, 1998
1330							Jasinski, 1998
1331	black shale; carbonate; chert	Phosphoria Formation			Sheldon, 1989		
1332	phosphatic limestone			Phosphate occurs in 1-2 cm thick layers with 33% P2O5.	British Sulphur Corporation, 1964, 1987		British Sulphur Corporation, 1964, 1987
1333	metaconglomerate	Marquette Range Supergroup.	apatite, quartz, chert, sericite	Near base of Marquette Range Supergroup.	McClellan and Saavedra, 1986		McClellan and Saavedra, 1986
1334	metaconglomerate	Baraga Group sediments- cherty carbonate-iron formation	apatite, goethite, quartz, sericite; also minor barite, calcite	Near base of Marquette Range Supergroup.	McClellan and Saavedra, 1986		McClellan and Saavedra, 1986; British Sulphur Corporation, 1987
1335	metaconglomerate	chert, argillite, quartzite	apatite, quartz sand	Near base of Marquette Range Supergroup. Bed is 15 m thick and averages 15% P2O5			British Sulphur Corporation, 1987
1336	metaconglomerate	Baraga Group sediments- cherty carbonate-iron formation		Near base of Marquette Range Supergroup.			British Sulphur Corporation, 1987
1337	quartzite, phyllite, iron formation	Thomson Formation	francolite, quartz, goethite, sericite	Phosphate units pinch and swell and are 2-4 m thick in places with up to 50% francolite.	McClellan and Saavedra, 1986		McClellan and Saavedra, 1986
1338	black shale; carbonate; chert	Phosphoria Formation			Sheldon, 1989		
1339	black shale; carbonate; chert	Phosphoria Formation			Sheldon, 1989		Canadian Mines Handbook 1989-90

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1340	United States	North Carolina		Onslow Embayment/Frying Pan Phosphate District		Marine chemical sediment	bedded; granular; irregularly shaped intraclasts; shell	Early-Middle Miocene; Holocene		
1341	United States	North Carolina		Onslow Embayment/Northeast Onslow Bay District		Marine chemical sediment	bedded; granular; irregularly shaped intraclasts	Early-Middle Miocene		
1342	United States	North Carolina		Aurora Embayment/Aurora District		Marine chemical sediment	bedded; granular; irregularly shaped intraclasts	Early-Middle Miocene; Pliocene		
1343	United States	North Carolina	Beaufort	Aurora Embayment/Aurora District	Aurora	Marine chemical sediment		Early-Middle Miocene		
1344	United States	North Carolina		North Carolina phosphate district/Aurora area	Lee Creek Mine	Marine chemical sediment	bedded; granular; irregularly shaped intraclasts	Middle Miocene; Pliocene		
1345	United States	North Carolina		North Carolina phosphate district/North Carolina Phosphate Corp.		Marine chemical sediment	bedded; granular; irregularly shaped intraclasts	Middle Miocene; Pliocene		
1346	United States	Pennsylvnia	Juanita	Oriskany Fm-Ridgeley Sandstone	Newman Mine	Marine chemical sediment; residual weathering	oolites, nodules	Early Devonian		
1347	United States	South Carolina		Blake Plateau/Charleston Bump		Marine chemical sediment	lag deposits; phosphorite pavements; pebbles; pelletal; nodular	post-Miocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1340	clayey phosphorite quartz sandstone; carbonate; thin, irregularly distributed Holocene surface sediments	Pungo River Formation and Holocene Frying Pan Formation			Riggs, 1989	Resource information from Riggs (1989).	Riggs, 1989
1341	clayey phosphorite quartz sandstone; carbonate	Pungo River Formation			Riggs, 1989	Resource information from Riggs (1989).	Riggs, 1989
1342	clayey phosphorite quartz sandstone; carbonate	Pungo River (Miocene) and Yorktown Formations (Pliocene)			Riggs, 1989		Riggs, 1989
1343		Pungo River Formation			Riggs, 1989		Griffiths, 1995b; Riggs, 1989; Jasinski, 2000
1344	clayey phosphorite quartz sandstone; carbonate	Pungo River Formation			Riggs, 1989		Van Kauwenbergh and McClellan, 1990
1345	clayey phosphorite quartz sandstone; carbonate				Riggs, 1989		
1346	sandstone, chert	Oriskany Group-Shriver chert and Ridgeley Sandstone	carbonate fluorapatite, wavellite, crandallite		USGS and USBM, 1968	Probably not economic.	USGS and USBM, 1968
1347	quartzose sandstone and silty sandstone; limestone			Lag deposits in a 22000 sq km area resulting from reworking of Miocene phosphorites on continental margin.	Popenoe, 1990; Riggs, 1989		Riggs, 1989

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1348	United States	South Carolina		Charleston-Beaufort District		Marine chemical sediment	bedded (land rock deposits); nodular (river rock deposits)	Miocene and younger		
1349	United States	South Carolina		Ridgeland Basin-Beaufort District		Marine chemical sediment; residual enrichment	bedded (land rock deposits); nodular (river rock deposits)	Miocene and younger		
1350	United States	Tennessee		Blue-rock phosphate district		Marine sedimentary, reworking and secondary enrichment in marine environment	bedded; granular; pelletal; fossiliferous (phosphatized fossil fragments); secondary phosphate cement	Devonian		Devonian
1351	United States	Tennessee	Maury, Williamson, Hickman	Brown-rock phosphate district		Marine chemical sediment; residual enrichment	phosphate-cemented, phosphate-quartz sand resulting from residual enrichment	Holocene-Pleistocene		Ordovician
1352	United States	Tennessee		Brown-rock phosphate district/Hooker Chemical		Marine chemical sediment; residual enrichment	phosphate-cemented, phosphate-quartz sand resulting from residual enrichment	Holocene-Pleistocene		Ordovician
1353	United States	Tennessee	Giles, Hickman	Brown-rock phosphate district/Monsanto		Marine chemical sediment; residual enrichment	phosphate-cemented, phosphate-quartz sand resulting from residual enrichment	Holocene-Pleistocene		Ordovician
1354	United States	Tennessee	Giles, Maury	Brown-rock phosphate district/ Mount Pleasant		Marine chemical sediment; residual enrichment	phosphate-cemented, phosphate-quartz sand resulting from residual enrichment	Holocene-Pleistocene		Ordovician
1355	United States	Tennessee	Johnson	Mountain City-Roan Creek Valley-Doe Creek Valley		Marine chemical sediment; residual enrichment	pockets, irregular bodies, black, oolitic	Lower Cambrian		
1356	United States	Tennessee		Eastern pelletal phosphorite		Marine chemical sediment (?)	pelletal	Late Precambrian		
1357	United States	Tennessee	Sevier	East Fork District		Marine chemical sediment (?)	pelletal	Late Proterozoic		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1348	marl; limestone	Hawthorn Formation		River rock nodules result of residual enrichment of Eocene Cooper marl redeposited as the Hawthorn Formation in Miocene times.	Riggs, 1989; British Sulphur Corporation, 1964		British Sulphur Corporation, 1964
1349	marl; limestone	Hawthorn Formation		River rock nodules result of residual enrichment of Eocene Cooper marl redeposited as the Hawthorn Formation in Miocene times.	Riggs, 1989; British Sulphur Corporation, 1964		British Sulphur Corporation, 1964
1350	sandy phosphorite; sandstone; shale; limestone	Basal Hardin Sandstone Member of the Chattanooga Shale		Phosphate beds are generally less than1 m thick.	Cathcart, 1989b	Resource estimates from Notholt and others, 1989a.	Notholt and others, 1989a
1351	phosphatic limestone	Bigby-Cannon Limestone			Cathcart, 1989b		
1352	phosphatic limestone	Bigby-Cannon Limestone			Cathcart, 1989b		
1353	phosphatic limestone	Bigby-Cannon Limestone			Cathcart, 1989b		
1354	phosphatic limestone	Bigby-Cannon Limestone			Cathcart, 1989b		
1355	dolomite, dolomitic limestone, dolomitic shale	Shady and Rome Formations	carbonate fluorapatite		USGS and USBM, 1968	For direct fertilizer use.	USGS and USBM, 1968
1356	sediments	Ocoee Supergroup			Cathcart, 1989b		
1357	carbonaceous, shale, limestone, dolomite	Ocoee Series - Wilhite Formation	fluorapatite, francolite	Wilhite Formation contains phosphorite up to 1.5 m thick.	Cathcart, 1989b; McClellan and Saavedra, 1986		McClellan and Saavedra, 1986

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1358	United States	Tennessee	Smith	Mine Lick Creek		Marine chemical sediment	nodules	Mississippian		
1359	United States	Tennessee		Eastern white-rock phosphate district		Secondary replacement; residual enrichment	in-filling; fracture fillings; phosphatized dolomite; breccia cement	Holocene		Cambrian
1360	United States	Tennessee		White-rock phosphate district		Secondary replacement; residual enrichment	in-filling; fracture fillings; phosphatized limestone	Holocene		Devonian
1361	United States	Utah	Rich	Deseret Basin/Laketown		Marine chemical sediment	peloidal; oolitic; bedded	Early Mississippian	Early Osagean-Early Meramecian	
1362	United States	Utah		Uinta Mountains; Crawford Mountains; Wasatch Range		Marine chemical sediment	laminated; pelletal; oolitic; fish remains and fossiliferous	Middle-Late Permian		
1363	United States	Utah	Uinta	Crawford Mountains; Wasatch Range/Vernal	Vernal	Marine chemical sediment	laminated; pelletal; oolitic; fish remains and fossiliferous	Middle-Late Permian		
1364	United States	Virginia		Piney River		Magmatic, carbonatite/alkalic				
1365	United States	Wyoming		Beckwith Hills	Leefe Mine	Marine chemical sediment	bedded; black pelletal phosphorite and mudstone; bioclastic sandy phosphorite	Middle-Late Permian		
1366	United States	Wyoming		Salt River Range (combined)		Marine chemical sediment	black pelletal phosphorite and mudstone	Middle-Late Permian		
1367	United States	Wyoming		SE Wind River Range (combined)		Marine chemical sediment	black pelletal phosphorite and mudstone	Middle-Late Permian		
1368	United States	Wyoming		Snake River Range (combined)		Marine chemical sediment	black pelletal phosphorite and mudstone	Middle-Late Permian		
1369	United States	Wyoming		Sublette Range (combined)		Marine chemical sediment	black pelletal phosphorite and mudstone	Middle-Late Permian		
1370	Venezuela			El Pilar		Marine chemical sediment (?)	No data	Neogene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1358	shale	Maury Fm		P nodules make up to 50% of 3 ft shale bed.	USGS and USBM, 1968		USGS and USBM, 1968
1359	dolomite	Knox Dolomite			Cathcart, 1989b		
1360	chert; shale; limestone	Harriman Formation, Birdsong Shale Member of Ross Formation; Decatur Limestone			Cathcart, 1989b	Resource estimates from Cathcart (1989).	
1361	phosphatic shale; chert; micrite	Delle Phosphatic Member			Sandberg and Gutschick, 1989		
1362	black shale; carbonate; chert	Phosphoria Formation			Sheldon, 1989		
1363	black shale; carbonate; chert	Phosphoria Formation			Sheldon, 1989		Jasinski, 2000
1364							USGS files
1365	phosphatic shale				Sheldon, 1989; British Sulphur Corporation, 1964		British Sulphur Corporation, 1964
1366	black shale; mudstone; chert; carbonate	Phosphoria Formation			Sheldon, 1989; British Sulphur Corporation, 1987	Resources estimates from World Survey of Phosphate Resources (1964).	British Sulphur Corporation, 1987
1367	black shale; mudstone; chert; carbonate	Phosphoria Formation			Sheldon, 1989; British Sulphur Corporation, 1987	Phosphoria Formation.	British Sulphur Corporation, 1987
1368	black shale; mudstone; chert; carbonate	Phosphoria Formation			Sheldon, 1989; British Sulphur Corporation, 1987	Resources estimates from World Survey of Phosphate Resources (1964).	British Sulphur Corporation, 1987
1369	black shale; mudstone; chert; carbonate	Phosphoria Formation			Sheldon, 1989; British Sulphur Corporation, 1987	Resources estimates from World Survey of Phosphate Resources (1964).	British Sulphur Corporation, 1987
1370	No data				Foose, 1993		

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1371	Venezuela	Falcon		Lizardo		Marine chemical sediment	lenticular masses in dolomite and limestone	Middle-Late Miocene		
1372	Venezuela	Falcon		Reicito		Marine chemical sediment	lenticular masses in dolomite and limestone	Middle-Late Miocene		
1373	Venezuela	Falcon		Sanare		Marine chemical sediment		Middle-Late Miocene		
1374	Venezuela	Falcon		Yaracuybare		Marine chemical sediment		Middle-Late Miocene		
1375	Venezuela	Merida		Chigura area		Marine chemical sediment	bedded, pelletal			
1376	Venezuela	Merida		Jaji area		Marine chemical sediment	bedded, pelletal			
1377	Venezuela	Tachira		Berlin- El Pueblecite area		Marine chemical sediment	bedded, pelletal	Late Cretaceous		
1378	Venezuela	Tachira		El Corozo		Marine chemical sediment	bedded; oolitic phosphorites	Late Cretaceous	Santonian	
1379	Venezuela	Tachira		La Blanca - Palo Grande areas		Marine chemical sediment	bedded, pelletal	Late Cretaceous		
1380	Venezuela	Tachira		La Molina		Marine chemical sediment	bedded; oolitic phosphorites	Late Cretaceous	Santonian	
1381	Venezuela	Tachira		Las Adjuntas - San Jacinto		Marine chemical sediment	bedded, pelletal	Late Cretaceous		
1382	Venezuela	Tachira		Las Hernandez		Marine chemical sediment	bedded, pelletal	Late Cretaceous		
1383	Venezuela	Tachira		Lobatera	Lobatera Mine	Marine chemical sediment	bedded, pelletal	Late Cretaceous		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1371	clay; dolomite; limestone	Capadare Formation			Rodriguez, 1989		
1372	clay; dolomite; limestone	Capadare Formation		Deposit affected by secondary solution.	Rodriguez, 1989		Russell, 1987; Slansky, 1986
1373		Capadare Formation			Rodriguez, 1989		Rodriguez, 1989
1374		Capadare Formation			Rodriguez, 1989		Rodriguez, 1989
1375	phosphatic-glauconitic rocks	La Luna Formation			Rodriguez, 1989		Rodriguez, 1989
1376	phosphatic-glauconitic rocks	La Luna Formation			Rodriguez, 1989		Rodriguez, 1989
1377	black phosphorite, chert, limestone, shale	La Luna Formation		At least 15 beds of phosphorite are present.	Rodriguez, 1989		Rodriguez, 1989
1378	black chert; chert; black limestone; black shale; local glauconite	La Luna Formation			Rodriguez, 1989		
1379	black phosphorite, chert, limestone, shale	La Luna Formation		11 horizons of commercial phosphorite are present.	Rodriguez, 1989		Rodriguez, 1989
1380	black chert; chert; black limestone; black shale; local glauconite	La Luna Formation		Phosphorite is 1.0-2.2 m thick.	Foose, 1993		
1381	black phosphorite, chert, limestone, shale	La Luna Formation		18 beds of phosphorite have been identified.	Rodriguez, 1989		Rodriguez, 1989
1382	black phosphorite, chert, limestone, shale	La Luna Formation			Rodriguez, 1989		Rodriguez, 1989
1383	black phosphorite, chert, limestone, shale	La Luna Formation			Rodriguez, 1989	For direct application fertilizer.	Notholt and others, 1989b; Rodriguez, 1989; Notholt, 1994

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1384	Venezuela	Tachira		Los Cedros		Marine chemical sediment	bedded, pelletal	Late Cretaceous		
1385	Venezuela	Tachira		Los Monos		Marine chemical sediment	bedded (white arenaceous phosphate); oolitic to granular	Late Cretaceous	Coniacian-Maastrichtian	
1386	Venezuela	Zulia		La Villa del Rosaria area		Marine chemical sediment	thin bedded, micritic	Late Cretaceous		
1387	Vietnam			Lao Cai Basin	Mau Kok (Mo Coc)	Marine chemical sediment, slightly metamorphosed?, weathered				
1388	Vietnam			Lao Cai Basin		Marine chemical sediment, weathered, metasedimentary	granular, disseminated apatite	Late Proterozoic-Early Cambrian	Vendian-Early Cambrian	
1389	Vietnam	Northern Provinces		Thanh Hoa and other provinces (Lang Son, Nghe Tinh, Bac Thai & others)		Residual enrichment	concretionary; phosphatic pisolites	Carboniferous (?)		Carboniferous
1390	Yugoslavia			Bosiljgrad		Sedimentary (metamorphosed)	metamorphosed phosphatic sandstone	Early Ordovician		
1391	Yugoslavia			Strana		Residual		Late Cretaceous, Quaternary		
1392	Yugoslavia			Zezelj		Residual		Late Cretaceous, Quaternary		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1384	black phosphorite, chert, limestone, shale	La Luna Formation		3 beds of commercial phosphorite.	Rodriguez, 1989		Rodriguez, 1989
1385	limestone; shale; chert	Navay Formation	fluorapatite	Navay Formation is arenaceous equivalent to La Luna Formation; two members are La Morita and Quevada. Phosphorite is 3-12 m thick.	Rodriguez, 1989; British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Rodriguez, 1989
1386	black phosphorite, chert, limestone, shale	La Luna Formation		Phosphate is 0.6 -1.0 m thick.			Rodriguez, 1989
1387							Harben and Kuzvart, 1996; ESCAP, 1990
1388	apatite-quartz-feldspar-calcareous schist; quartzite; shale; dolomite	Cam Duong Formation	apatite		Notholt and others, 1989d; British Sulphur Corporation, 1987	Resources in region may be as much as 1400 Mt.	ESCAP, 1990; Lee, 1980; Tran Quoc An and Nguyen Dang Khoa, 1986; O'Driscoll, 1996; Mining Journal, 1990
1389	limestone			Associated with limestone caves.	ESCAP, 1990; Lee, 1980; O'Driscoll, 1996	Reserves from several mines; Lang Son, Nghe Tinh, Thanh Hoa, Bac Thai and other provinces.	ESCAP, 1990
1390	sericitic-chloritic schist			Two phosphatic beds each 7 m thick	British Sulphur Corporation, 1987; Jankovic, 1982		British Sulphur Corporation, 1987
1391					Jankovic, 1982	Deposits worked from 1932-1941.	Jankovic, 1982
1392					Jankovic, 1982	Deposits worked from 1932-1941.	Jankovic, 1982

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1393	Zambia			Keshya		Magmatic, carbonatite/alkalic				
1394	Zambia			Mkwisi		Magmatic, carbonatite/alkalic				
1395	Zambia	Central		Mumbwa North (Sugar Loaf, NW Mumbwa)		Magmatic, alkalic	hydroxylapatite (pegmatites)			
1396	Zambia	Eastern		Chilembwe (Petauke)		Magmatic, alkalic	hydroxylapatite, chloro-fluorapatite	Late Cambrian		
1397	Zambia	Lusaka		Kaluwe		Magmatic, carbonatite/alkalic, residual enrichment	fluorapatite, hydroxyl apatite	Cretaceous		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1393	carbonatite (limestone)		magnetite, pyrite, apatite, monazite, xenotime, rutile, Th, Mn, Pb	This unit has been mapped as a limestone, but chemistry is consistent with late-stage carbonatite.			USGS files; Woolley, 2001
1394	carbonatite (limestone)		apatite, monazite, rutile	This unit has been mapped as a limestone, but some features are characteristic of carbonatite.			Woolley, 2001
1395	syenite, brecciated syenite		apatite, hematite, magnetite, pyrite, chalcopyrite, Cu phosphates, quartz, hornblende, biotite	Phosphate mineralization in 3 forms: apatite with Cu-Fe mineralization; apatite pegmatites; supergene Cu phosphates.		Too small and comparatively low grade for development.	Simukanga and others, 1994; Turner and others, 1989
1396	syenite	Mayira Hills syenite	apatite (hydroxylapatite, chloro-fluorapatite), quartz, hornblende, biotite	Approx. 5 small orebodies are intruded into syenite; 2 largest bodies are No. 2 and No. 4.		Occurrence; too small and comparatively low grade for development.	de Kun, 1987; Simukanga and others, 1994; Turner and others, 1989
1397	carbonatite		magnetite, apatite, pyrochlore, iron oxide	Large sheet-like body.	Woolley, 2001	Occurrence; grade is too low for development.	de Kun, 1987; Simukanga and others, 1994; Turner and others, 1989; Woolley, 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1398	Zambia	Northern		Nkombwa Hill (Nkumbwa, Nkumba)		Carbonatite	apatite, Sr-apatite, isokite	Late Proterozoic	679 +/- 25 Ma	K-Ar on phlogopite from carbonatite
1399	Zimbabwe			Chishanya (Cheshanya, Cheshanyi)		Magmatic, carbonatite/alkalic	apatite	Cretaceous		
1400	Zimbabwe			Kapfrugwa (Gungwa)		Magmatic, carbonatite/alkalic; metamorphosed				
1401	Zimbabwe			Shawa		Magmatic, carbonatite/alkalic	apatite	Early Mesozoic, probably Triassic- - 209 Ma +/- 16 Ma (Rb-Sr on biotite from ijolite)	Late Karoo to Early post-Karoo	209 Ma +/- 16 Ma

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1398	magnesian carbonatite, rauhaugite		apatite, isokite, pyrochlore, sellaite, monazite, bastnasite, dolomite, ankerite, siderite, magnesite, strontianite, isokite, daqingshanite, pyrite, iron oxide, quartz, phlogopite, barite, ilmenite	Inselberg formed of carbonatite. Highest concentrations of P minerals and monazite are in the pegmatite. Age by K-Ar on phlogopite. Most of the phosphate is contained in isokite.	Turner and others, 1989	Complex composition (isokite) poses technical problems for development.	Neary and Highley, 1984; Overstreet, 1967; de Kun, 1987; Simukanga and others, 1994; Notholt, 1994; Turner and others, 1989
1399	carbonatite, melteigite, ijolite, syenite		apatite, magnetite, pyrite, phlogopite, aegirine, vermiculite, monazite, baddeleyite	Significant phosphate resources, including Baradanga Hill where 10 beforsite dikes average P2O5 contents of up to 15%.	Woolley, 2001		Mew, 1980; de Kun, 1987; Woolley, 2001
1400	magnetite-carbonate rock, apatite-magnetite rock		apatite, magnetite, pyrochlore, dolomite	Probably metamorphosed carbonatite.			Woolley, 2001
1401	carbonatite dikes , ijolite, serpentine, dunite, syenitic fenite		vermiculite, apatite, magnetite, barite, magnesite, quartz, dolomite, cancrinite, titanite		Fernandes, 1989	Past production of vermiculite from Shawa Mine.	Fernandes, 1989; Mew, 1980; de Kun, 1987; Pell, 1996; USGS files; Woolley, 2001

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1402	Zimbabwe	Midlands		Dorowa		Magmatic, carbonatite/alkalic, residual enrichment	apatite	Jurassic		
1403	ex-USSR			Toisuk - Bol'shaya Zhidaya		Magmatic, carbonatite/alkalic				
Guano/Guano-Related										
1404	Afghanistan			Gerishk		Guano	cave guano			
1405	Argentina			Tova Island		Guano		Recent		
1406	Argentina	Chubut		Leones Island		Guano		Recent		
1407	Argentina	Santa Cruz		Penguin Island		Guano		Recent		
1408	Australia			Barrow Island		Guano		Recent		
1409	Australia			Brothers Islands		Guano		Recent		
1410	Australia	New South Wales		Ashford Caves		Guano and replacement by guano-derived phosphate	cave guano; bone breccia; cave earth	Holocene		
1411	Australia	New South Wales		Canowindra		Guano and replacement by guano-derived phosphate	in-filling; pockets and irregular patches	Holocene		
1412	Australia	New South Wales		Molong District	Gamboola, Nandillyan, Larras Lee, Vale Head, Borenore	Guano and replacement by guano-derived phosphate	in-filling; pockets and irregular patches	Holocene		Silurian
1413	Australia	New South Wales		Wellington Caves		Guano and replacement by guano-derived phosphate	cave guano; bone breccia; cave earth	Holocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1402	ijolite, foyaite, carbonatite, fenite		apatite (fluorapatite, hudroxyapatite), carbonate-apatite), magnetite, vermiculite, serpentine, calcite, zeolite, phlogopite	Ijolitic pipelike bodies have been weathered or decalcified to form an apatite-rich zone.	Notholt, 1994	Production is from weathered ore only.	Harben and Kuzvart, 1996; Fernandes, 1989; Mew, 1980; de Kun, 1987; Notholt, 1994; Woolley, 2001
1403							USGS files
Guano/Gu							
1404							Lee, 1980
1405					Leanza and others, 1989		Leanza and others, 1989
1406				Island is largely of volcanic origin.	Leanza and others, 1989		Leanza and others, 1989
1407				Island is largely of volcanic origin.	Leanza and others, 1989		Leanza and others, 1989
1408							Lee, 1980
1409							Lee, 1980
1410	limestone				Cook, 1980; British Sulphur Corporation, 1987		Mew, 1980; British Sulphur Corporation, 1987; Lee, 1980
1411	limestone				Cook, 1980; British Sulphur Corporation, 1987		Mew, 1980; British Sulphur Corporation, 1987
1412	limestone				Cook, 1980; British Sulphur Corporation, 1987		Mew, 1980; British Sulphur Corporation, 1987
1413	limestone				Cook, 1980; British Sulphur Corporation, 1987		Mew, 1980; Lee, 1980

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1414	Australia	New South Wales		Willi Willi Caves		Guano and replacement by guano-derived phosphate	cave guano; bone breccia; cave earth	Holocene		
1415	Australia	Queensland		Bramble Cay		Guano and replacement by guano-derived phosphate	insular phosphate	Neogene		
1416	Australia	Queensland		Holbourne Island		Guano and replacement by guano-derived phosphate	insular phosphate	Neogene		
1417	Australia	Queensland		Lady Elliot Island		Guano and replacement by guano-derived phosphate	insular phosphate	Neogene		
1418	Australia	Queensland		Raine Island		Guano and replacement by guano-derived phosphate	insular phosphate	Neogene		
1419	Australia	South Australia		Bickers Islets		Guano and replacement by guano-derived phosphate	insular phosphate	Holocene		
1420	Australia	South Australia		Clinton		Guano and replacement by guano-derived phosphate	in-filling; fracture and pocket in-filling	Holocene		
1421	Australia	South Australia		Lower Hermitage		Guano and replacement by guano-derived phosphate	guano	Holocene		
1422	Australia	South Australia		Marum Island		Guano and replacement by guano-derived phosphate	insular phosphate	Neogene		
1423	Australia	South Australia		Oroparinna		Guano and replacement by guano-derived phosphate	guano	Holocene		
1424	Australia	South Australia		Wooltana Caves		Guano and replacement by guano-derived phosphate	cave guano	Holocene		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1414	limestone				Cook, 1980; British Sulphur Corporation, 1987		Mew, 1980; British Sulphur Corporation, 1987; Lee, 1980
1415	coralline limestone				Cook and O'Brien, 1990		Lee, 1980
1416	coralline limestone				Cook and O'Brien, 1990		Lee, 1980
1417	coralline limestone				Cook and O'Brien, 1990		Lee, 1980
1418	coralline limestone				Cook and O'Brien, 1990		Lee, 1980
1419	coralline limestone				Cook, 1980; Cook and O'Brien, 1990		
1420	limestone				Cook, 1980; Lee, 1980		
1421	limestone (?)				Cook, 1980; Lee, 1980		
1422	coralline limestone				Cook and O'Brien, 1990		Lee, 1980
1423	limestone				Cook, 1980; Lee, 1980		Lee, 1980
1424	limestone				Cook, 1980; British Sulphur Corporation, 1987		Lee, 1980

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1425	Australia	Tasmania		Slopen Island		Guano and replacement by guano-derived phosphate	insular phosphate	Neogene		
1426	Australia	Victoria		Bellarine Peninsula		Guano and replacement by guano-derived phosphate	cave guano	Holocene		
1427	Australia	Victoria		Sea Elephant Island		Guano and replacement by guano-derived phosphate	insular phosphate	Neogene		
1428	Australia	Western Australia		Adele Island		Guano and replacement by guano-derived phosphate	insular phosphate	Neogene		
1429	Australia	Western Australia		Ashmore Reef		Guano and replacement by guano-derived phosphate	guano; insular phosphate	Holocene		
1430	Australia	Western Australia		Browse Island		Guano and replacement by guano-derived phosphate	insular phosphate	Neogene		
1431	Australia	Western Australia		Houtman Abrolhos		Guano and replacement by guano-derived phosphate	insular phosphate	Neogene		
1432	Australia	Western Australia		Lacepede Island		Guano and replacement by guano-derived phosphate	insular phosphate	Neogene		
1433	Australia	Western Australia		Perth Area		Guano and replacement by guano-derived phosphate	cave guano	Holocene		
1434	Australia	Western Australia		Recherche Archipelago		Guano and replacement by guano-derived phosphate	insular phosphate	Neogene		
1435	Baker Island			Baker Island		Guano				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1425	coralline limestone (?)				Cook and O'Brien, 1990		Lee, 1980
1426	limestone						Lee, 1980
1427	coralline limestone (?)				Cook and O'Brien, 1990		Cook and O'Brien, 1990; Lee, 1980
1428	coralline limestone (?)				Cook and O'Brien, 1990		Cook and O'Brien, 1990; Lee, 1980
1429	coralline limestone (?)				Cook, 1980; Lee, 1980		Cook and O'Brien, 1990; Lee, 1980
1430	coralline limestone (?)				Cook and O'Brien, 1990		Cook and O'Brien, 1990; Lee, 1980
1431	coralline limestone (?)				Cook and O'Brien, 1990		Cook and O'Brien, 1990; Lee, 1980
1432	coralline limestone (?)				Cook and O'Brien, 1990		Cook and O'Brien, 1990; Lee, 1980
1433	limestone				Cook, 1980; Lee, 1980		
1434	coralline limestone (?)				Cook and O'Brien, 1990		Cook and O'Brien, 1990; Lee, 1980
1435							Piper and others, 1990; Rossfelder, 1990

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1436	Brazil			Itacupin, Ilha		Guano and replacement by guano-derived phosphate; residual enrichment				
1437	Brazil	Bahia		Arq. Abrolhos		Guano and replacement by guano-derived phosphate				
1438	Brazil	Maranhão	Godofredo Viana	Piracahua, Ilha (Pirocaua)		Guano and replacement by guano-derived phosphate; residual enrichment	phosphatic bauxite	Proterozoic-Paleozoic, Quaternary		Precambrian
1439	Brazil	Maranhão	Candido Mendes	Trauira, Ilha		Guano and replacement by guano-derived phosphate; residual enrichment	guano; aluminum phosphate and phosphatic bauxite	Cretaceous; Quaternary		
1440	Brazil	Mato Grosso	Corumbá	Mandioré		Guano and replacement by guano-derived phosphate				
1441	Brazil	Pernambuco		Ilha Rata		Guano and replacement by guano-derived phosphate				
1442	Brazil	Rio de Janeiro		Ilha Ancoras		Guano and replacement by guano-derived phosphate				
1443	Brazil	Rio de Janeiro		Ilha Cagarras		Guano and replacement by guano-derived phosphate				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1436							Cathcart, 1980
1437							Lima, 1976
1438	phyllite, other metasediments	Piria Formation	apatite, bauxite	Phosphatic bauxite.	British Sulphur Corporation, 1964	Reserve estimates from World Survey of Phosphate Deposits.	Lima, 1976; Azevedo Branco, 1984; MASMILS; British Sulphur Corporation, 1964
1439				Phosphatic bauxite.	Notholt, 1994		Lima, 1976; Azevedo Branco, 1984; British Sulphur Corporation, 1987; U.S. Geological Survey Mineral Resources Data System, 2000
1440							Lima, 1976
1441							Mew, 1980; Lima, 1976
1442							Lima, 1976
1443							Lima, 1976

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1444	Brazil	Sao Paolo		Ilho do Castillo (Ilha de Castilhos)		Guano and replacement by guano-derived phosphate		46-54		
1445	Brazil	Sao Paolo		Islas dos Alcatrazes (Ilha de Alcatraz)		Guano and replacement by guano-derived phosphate				
1446	Chile	Antofagasto		Islote Algodones		Guano and replacement by guano-derived phosphate				
1447	Chile	Antofagasto		Punta Ala		Guano and replacement by guano-derived phosphate				
1448	Chile	Antofagasto		Islote Guanillo de Batuco		Guano and replacement by guano-derived phosphate				
1449	Chile	Antofagasto		Islote Cobija		Guano and replacement by guano-derived phosphate				
1450	Chile	Antofagasto		Islote Huesilla		Guano and replacement by guano-derived phosphate				
1451	Chile	Antofagasto		Guanillito Boliviano		Guano and replacement by guano-derived phosphate				
1452	Chile	Antofagasto		Punta Tames		Guano and replacement by guano-derived phosphate				
1453	Chile	Antofagasto		Islote Huaqui		Guano and replacement by guano-derived phosphate				
1454	Chile	Antofagasto		Islote itata		Guano and replacement by guano-derived phosphate				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1444							Mew, 1980; Lima, 1976
1445							Mew, 1980; Lima, 1976
1446							
1447							
1448							
1449							
1450							
1451							
1452							
1453							
1454							

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1455	Chile	Atacama or Antofagasto		Quebrada San Ramon		Guano and replacement by guano-derived phosphate				
1456	China	Guangdong	Wengyuan			Guano	cave guano			
1457	China	Guangxi	Zhuang			Guano, weathering-related	karst and in-filling; bands and laminae; cave guano			
1458	China	Hainan	Xisha Islands	Xisha Islands		Guano	guano phosphate; phosphatic cemented coral sand; earthy	Holocene		
1459	Christmas Island			Christmas Island		Sedimentary, island phosphate	guano; phosphatic laterite	Upper Miocene	200,000 y	
1460	Colombia	Valle	Buenaventura	Malpelo Island		Guano and replacement by guano-derived phosphate	guano, phosphatized basalt			
1461	Colombia	Cundinamarca	Gachala	Puente Murca		Guano				
1462	Ecuador			El Pelado Island		Guano and replacement by guano-derived phosphate				
1463	Ecuador			La Pata Island		Guano and replacement by guano-derived phosphate				
1464	Ecuador			Los Fallarones Islands		Guano and replacement by guano-derived phosphate				
1465	Ecuador			Santa Clara Island		Guano and replacement by guano-derived phosphate				
1466	Fiji			Lau Island/Tuvutha		Secondary replacement	phosphatic clay; loams, nodules and oolites filling cavities	Miocene (?)		Miocene

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1455					Naranjo and Puig, 1984		Naranjo and Puig, 1984
1456				Cave guano.			Li and others, 1996
1457	dolomite; siliceous rock			Cave guano.		There is also another deposit located in Yilong, Baise District with unknown latitude-long location.	Li and others, 1996
1458	coralline limestone				Li and others, 1996	Largest deposit on Yongxing Island.	Li and others, 1996
1459	limestone; andesite; basalt			Replacement/soil formation	Barrett, 1989		Russell, 1987; Slansky, 1986; Bingham, 1990
1460	guano, phosphatized basalt			Phosphatizaton of vesicular basalts below guano has resulted in formation of iron phosphate up to 0.9 m thick.			Mew, 1980; British Sulphur Corporation, 1987; Mutis Jurado, 1982
1461							Mutis Jurado, 1982
1462						Typically 20% P2O5.	Mew, 1980
1463							Mew, 1980
1464						Typically 17% P2O5.	Mew, 1980
1465						Typically 14% P2O5.	Mew, 1980
1466	dolomitic limestone			Phosphate in karst limestone.	Plummer, 1980; Notholt and others, 1989e		Notholt, 1994

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1467	French Polynesia			Makatea		Guano and replacement by guano-derived phosphate;	sand, pebbles			
1468	French Polynesia	Clipperton Islands		Mataiva Atoll		Guano, Sedimentary, replacement	insular phosphate	Middle-Late Miocene-Pleistocene		
1469	Guinea			Corail Island		Guano and replacement by guano-derived phosphate;				
1470	India			Laccadive Islands		Guano and replacement by guano-derived phosphate;				
1471	Indonesia	Central Java	Grobogan	Karangrayung		Guano and replacement by guano-derived phosphate	phosphatized limestone	Quaternary		Tertiary
1472	Indonesia	Central Java	Pati	Sukolilo; Brati		Guano and replacement by guano-derived phosphate	phosphatized limestone	Quaternary		Tertiary
1473	Indonesia	East Java		Tuban		Guano and replacement by guano-derived phosphate	cave guano	Quaternary		Tertiary
1474	Indonesia	East Java		Lamongan		Guano and replacement by guano-derived phosphate	cave guano	Quaternary		Tertiary
1475	Indonesia	East Java		Gresik		Guano and replacement by guano-derived phosphate	cave guano	Quaternary		Tertiary
1476	Indonesia	East Java		Madura Island		Guano and replacement by guano-derived phosphate	phosphatized limestone	Quaternary		Tertiary

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1467		coral limestone					Piper and others, 1990; Notholt, 1994
1468	coral limestone			Similar to Nauru, but higher calcite content. Guano is currently being accumulated.	Rossfelder, 1990		Industrial Minerals, 1989; Industrial Minerals, 1987c; Piper and others, 1990
1469						Ore grades 33% P2O5.	de Kun, 1987
1470				Low-grade deposits occur as thin mantle of dark gray soil, 0.25-1.0 m thick, on nine of the islands.			British Sulphur Corporation, 1987; Sant and Pant, 1980
1471	limestone				Harjanto, 1986		Harjanto, 1986
1472	limestone				Harjanto, 1986		Harjanto, 1986
1473	limestone				Harjanto, 1986		Harjanto, 1986
1474	limestone				Harjanto, 1986		Harjanto, 1986
1475	limestone				Harjanto, 1986		Harjanto, 1986
1476	limestone				Harjanto, 1986		Harjanto, 1986

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1477	Indonesia	East Java		Kangean Island		Guano and replacement by guano-derived phosphate	phosphatized limestone	Quaternary		Tertiary
1478	Indonesia	East Timor		Quelicai		Guano and replacement by guano-derived phosphate	phosphatized limestone	Quaternary		Tertiary
1479	Indonesia	Irian Jaya		Misool Island		Guano and replacement by guano-derived phosphate	phosphatized limestone; nodules	Quaternary		pre-Tertiary
1480	Indonesia	Irian Jaya		Anjawi Island		Guano and replacement by guano-derived phosphate	phosphatized limestone	Quaternary		Tertiary
1481	Indonesia	Irian Jaya		Ayamaru		Guano and replacement by guano-derived phosphate	cave guano	Quaternary		Tertiary
1482	Indonesia	South Kalimantan		Kandangan		Guano and replacement by guano-derived phosphate	cave guano	Quaternary		Tertiary
1483	Indonesia	Southeast Sulawesi		Kakabiya Island		Guano and replacement by guano-derived phosphate	phosphatized limestone	Quaternary		Tertiary
1484	Indonesia	West Java	Ciamis	Cigur; Cijulang; Parigi; Pangandaran; Kalipucang; Padherang		Guano and replacement by guano-derived phosphate	cave guano	Quaternary		Tertiary
1485	Indonesia	West Java		Lebak; Rankasbitung		Guano and replacement by guano-derived phosphate	cave guano	Quaternary		Tertiary
1486	Indonesia	West Java		Cibinong; Leuwiliang		Guano and replacement by guano-derived phosphate	cave guano	Quaternary		Tertiary
1487	Jamaica			Cousin's Cave		Guano				
1488	Jamaica			Mosely Hall Cave		Guano				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1477	limestone				Harjanto, 1986		Harjanto, 1986
1478	limestone				Harjanto, 1986		Harjanto, 1986
1479	limestone				Harjanto, 1986		Harjanto, 1986
1480	limestone				Harjanto, 1986		Harjanto, 1986
1481	limestone				Harjanto, 1986		Harjanto, 1986
1482	limestone				Harjanto, 1986		Harjanto, 1986
1483	limestone				Harjanto, 1986		Harjanto, 1986
1484	limestone				Harjanto, 1986		Harjanto, 1986
1485	limestone				Harjanto, 1986		Harjanto, 1986
1486	limestone				Harjanto, 1986		Harjanto, 1986
1487							Briish Sulphur Corporation, 1987
1488							Briish Sulphur Corporation, 1987

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1489	Jamaica			Windsor Cave		Guano				
1490	Japan			Kita Daito Jima		Guano				
1491	Jarvis Island			Jarvis Island		Guano				
1492	Kiribati	Gilbert Islands		Ocean Island (Banaba)		Guano, Sedimentary, island phosphate; secondary enrichment	insular phosphate; guano; fracture in-filling between pinnacles; phosphatized limestone fragments and phosphate dust in an incoherent deposit; pelletal	Cenozoic		
1493	Kiribati	Line Islands		Malden Island		Guano and replacement by guano-derived phosphate	insular phosphate; in-filling pockets and cavities	Quaternary		
1494	Kiribati	Line Islands		Starbuck Island		Guano				
1495	Kiribati	Phoenix Islands		Enderbury Island		Guano and replacement by guano-derived phosphate	insular phosphate	Quaternary		
1496	Korea (South)			Nan-do Island		Guano				
1497	Malaysia			Bt. Baling		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1498	Malaysia			Chuping		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1499	Malaysia			Dalam Wang		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1500	Malaysia			Gua Musang		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1489							Briish Sulphur Corporation, 1987
1490							Piper and others, 1990
1491							Piper and others, 1990; Rossfelder, 1990
1492	coral limestone			Limestone bedrock has been eroded and in-filled with phosphate	Notholt and others, 1989e		Piper and others, 1990
1493	coralline limestone			Relatively small deposit.	Tracey, 1979		Piper and others, 1990; Rossfelder, 1990
1494							Rossfelder, 1990
1495	coralline limestone				Tracey, 1979		Piper and others, 1990
1496							Yoo, 1986
1497	limestone				Peck Chin Aw, 1980		
1498	limestone				Peck Chin Aw, 1980	Guano collected from cave floors by hand.	
1499	limestone				Peck Chin Aw, 1980		
1500	limestone				Peck Chin Aw, 1980		

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1501	Malaysia			Gua Setir		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1502	Malaysia			Gunong Keriang		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1503	Malaysia			Kota Jin		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1504	Malaysia	Sabah		Batu Sapad		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1505	Malaysia	Sabah		Baturong		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1506	Malaysia	Sabah		Gomantong		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1507	Malaysia	Sabah		Lian		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1508	Malaysia	Sabah		Madai		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1509	Malaysia	Sabah		Punan Batu		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1510	Malaysia	Sabah		Siput		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1511	Malaysia	Sabah		Tempadong		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1501	limestone				Peck Chin Aw, 1980		
1502	limestone				Peck Chin Aw, 1980		
1503	limestone				Peck Chin Aw, 1980		
1504	limestone				Peck Chin Aw, 1980		
1505	limestone				Peck Chin Aw, 1980		
1506	limestone				Peck Chin Aw, 1980	Resource information from Peck Chin (1980).	
1507	limestone				Peck Chin Aw, 1980		
1508	limestone				Peck Chin Aw, 1980	Resource information from Peck Chin (1980).	
1509	limestone				Peck Chin Aw, 1980		
1510	limestone				Peck Chin Aw, 1980		
1511	limestone				Peck Chin Aw, 1980		

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1512	Malaysia	Sarawak		Bidi		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1513	Malaysia	Sarawak		Melinau		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1514	Malaysia	Sarawak		Niah		Guano and replacement by guano-derived phosphate	cave guano; fossil guano, rock phosphate overlying limestone but beneath a surface of soft cave guano	Recent (?)		
1515	Malaysia	Sarawak		Selabor		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1516	Malaysia	Sarawak		Sta'at		Guano and replacement by guano-derived phosphate	cave guano	Recent (?)		
1517	Marshall Islands			Ebon Island		Guano and replacement by guano-derived phosphate	insular phosphate	Quaternary (?)		
1518	Mexico	Nuevo Leon		El Chapote - La Casualidad (Chapopote 1 y 2)		Guano and replacement by guano-derived phosphate	phosphatic limestone (limonite-bearing0	Middle Cretaceous		
1519	Mexico	Nuevo Leon		Mercedes y Herminia (Sabinas Hgo.)		Guano and replacement by guano-derived phosphate	guano; fracture in-filling	Oligocene-Pliocene		
1520	Mexico	Queretaro			La Ventana	Guano				
1521	Micronesia, Federated States of	Caroline Islands		Fais Island		Sedimentary, island phosphate; secondary enrichment, guano	insular phosphate; in-filling crevices and encrusting limestone pinnacles	Quaternary (?)		
1522	Namibia			Albatros Island		Guano				
1523	Namibia			Cape Cross		Guano				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1512	limestone				Peck Chin Aw, 1980		
1513	limestone				Peck Chin Aw, 1980		
1514	limestone			Bat and swift droppings.	Peck Chin Aw, 1980	Resource information from Peck Chin (1980).	
1515	limestone				Peck Chin Aw, 1980	Resource information from World Survey of Phosphate Deposits (1987).	
1516	limestone				Peck Chin Aw, 1980		
1517	coralline limestone				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987
1518	limestone			Phosphatic limestone is limonite-bearing.	British Sulphur Corporation, 1964	Reserve estimates from World Survey of Phosphate Deposits.	British Sulphur Corporation, 1964
1519	limestone (clayey)			Deposit type not clearly defined	Foose, 1993		British Sulphur Corporation, 1987
1520				Cave guano.			British Sulphur Corporation, 1987
1521	coralline limestone; clay				British Sulphur Corporation, 1987		British Sulphur Corporation, 1987; Rossfelder, 1990
1522							McManus and Schneider, 1994
1523						Mined before WWI and 1939-1943.	McManus and Schneider, 1994

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1524	Namibia			Halifax Island		Guano				
1525	Namibia			Hollandsbird Island		Guano				
1526	Namibia			Ichaboe Island and others		Guano				
1527	Namibia			Kalk Mountains		Guano				
1528	Namibia			Mercury Island		Guano				
1529	Namibia			North Long Island		Guano				
1530	Namibia			Panther Beacon Salt Pan		Guano				
1531	Namibia			Penguin Island		Guano				
1532	Namibia			Plumpudding Island		Guano				
1533	Namibia			Pomona Island		Guano				
1534	Namibia			Possession Island		Guano				
1535	Namibia			Seal Island		Guano				
1536	Namibia			Sinclair's Island		Guano				
1537	Namibia			South Long Island		Guano				
1538	Namibia			Walvis Bay Harbour		Guano				
1539	Nauru			Nauru Island		Sedimentary, island phosphate	guano; fracture in-filling; pelletal	Late Miocene-Pleistocene	11-0.3 Ma	

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1524							McManus and Schneider, 1994
1525							McManus and Schneider, 1994
1526						Ichaboe Island deposit contained 250,000 t guano.	McManus and Schneider, 1994
1527						Bat guano in caves has been expoited on a small scale in the past.	McManus and Schneider, 1994
1528							McManus and Schneider, 1994
1529							McManus and Schneider, 1994
1530						Artificial platforms for the roosting and breeding of sea birds have been built here. Guano is recovered annually.	McManus and Schneider, 1994
1531							McManus and Schneider, 1994
1532							McManus and Schneider, 1994
1533							McManus and Schneider, 1994
1534							McManus and Schneider, 1994
1535							McManus and Schneider, 1994
1536							McManus and Schneider, 1994
1537							McManus and Schneider, 1994
1538						Artificial platforms for the roosting and breeding of sea birds have been built here. Guano is recovered annually.	McManus and Schneider, 1994
1539	coral limestone		apatite	Phosphate may be due to bird guano	Piper and others, 1990		Slansky, 1986; Piper and others, 1990; Bingham, 1990

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1540	Navassa Island			Navassa Island		Guano and replacement by guano-derived phosphate; residual enrichment				
1541	Netherlands Antilles			Curacao Island	Curacao phosphate Mine	Guano and replacement by guano-derived phosphate; residual enrichment	guano; karst phosphorite (secondary phosphate enrichment above phosphatic limestone)	Early Pleistocene		
1542	Pacific Islands Trust Territory	Mariana Islands		Rota		Guano and replacement by guano-derived phosphate	insular phosphate	Pliocene-Quaternary		
1543	Pacific Islands Trust Territory	Mariana Islands		Saipan		Guano and replacement by guano-derived phosphate	insular phosphate	Pliocene-Quaternary		
1544	Peru			Chincha Islands		Guano				
1545	Philippines	Bohol		Cave 7		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1546	Philippines	Bohol		Cuimba cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1547	Philippines	Bohol		Huyophuyop cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1548	Philippines	Camerines Sur		Abayala cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1549	Philippines	Camerines Sur		Colapnitan I		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1540							Gugliotta, 1996
1541	limestone				Stienstra, 1983		Slansky, 1986
1542	coralline limestone; clay				British Sulphur Corporation, 1987; Tracey, 1979		British Sulphur Corporation, 1987
1543	coralline limestone; clay				British Sulphur Corporation, 1987; Tracey, 1979		British Sulphur Corporation, 1987
1544				Bird guano was more than 45 m thick when deposit first mined. Guano is still accumulating.			Piper and others, 1990; Cathcart, 1980
1545	limestone				Jagolino,1976	0.27 m thick, 720 sq m.	
1546	limestone				Jagolino,1976	0.36 m thick, 880 sq m.	
1547	limestone				Jagolino,1976		
1548	limestone				Jagolino,1976	0.30 m thick with area of 1,333 sq m.	
1549	limestone				Jagolino,1976	0.50 m thick with area of 625 sq m.	

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1550	Philippines	Camerines Sur		Copapnitan cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1551	Philippines	Camerines Sur		Dragon cave II		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1552	Philippines	Camerines Sur		Haga cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1553	Philippines	Camerines Sur		Malangog cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1554	Philippines	Catanduanes		Lictin cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1555	Philippines	Catanduanes		Marapad cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1556	Philippines	Catanduanes		Marilima cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1557	Philippines	Catanduanes		Talisoy cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1558	Philippines	Cebu		Cave No. 2		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1559	Philippines	Cebu		Cave No. 3		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1560	Philippines	Cebu		Collapsed cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1550	limestone				Jagolino,1976	0.45 m thick with area of 197 sq m.	
1551	limestone				Jagolino,1976	0.30 m thick with area of 4,844 sq m.	
1552	limestone				Jagolino,1976	3.20 m thick with area of 10,203 sq m.	
1553	limestone				Jagolino,1976	0.23 m thick with area of 700 sq m.	
1554	limestone				Jagolino,1976	0.78 m thick with area of 937 sq m.	
1555	limestone				Jagolino,1976	0.37 m thick, 2012 sq m.	
1556	limestone				Jagolino,1976	0.64 m thick, 370 sq m.	Lee, 1980
1557	limestone				Jagolino,1976	0.26 m thick, 714 sq m.	
1558	limestone				Jagolino,1976	0.65 m thick, 807 sq m.	
1559	limestone				Jagolino,1976	5 m thick, 5026 sq m.	
1560	limestone				Jagolino,1976	1.79 m thick, 1825 sq m.	

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1561	Philippines	Cebu		Lanigpa cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1562	Philippines	Cebu		Libo Hills cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1563	Philippines	Ilocos Norte		Baconay cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1564	Philippines	Ilocos Norte		Beth cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1565	Philippines	Ilocos Norte		Lapa-Lapa cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1566	Philippines	Ilocos Norte		McLintok cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1567	Philippines	Ilocos Norte		Ruby cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1568	Philippines	Iloilo		Gegante cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1569	Philippines	Iloilo		Kapitungan cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1570	Philippines	Iloilo		Liti-Liti cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1561	limestone				Jagolino,1976	5.50 m thick, 1608 sq m.	
1562	limestone				Jagolino,1976	1.05 m thick, 100 sq m.	
1563	limestone			Phosphate rock are found in collapsed caves and in layers in fragment limestone and as fracture filling, and less replacing limestone	Jagolino,1976	0.14 m thick, 462 sq m.	
1564	limestone				Jagolino,1976	0.33 m thick, 1767 sq m.	
1565	limestone				Jagolino,1976	0.17 m thick, 346 sq m.	
1566	limestone				Jagolino,1976	0.37 m thick, 321 sq m.	
1567	limestone				Jagolino,1976	0.60 m thick, 23 sq m.	
1568	limestone				Jagolino,1976	0.24 m thick, 886 sq m.	
1569	limestone				Jagolino,1976		
1570	limestone				Jagolino,1976	2.50 m thick, 4000 sq m.	

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1571	Philippines	Leyete		Batingue deposit		Guano and replacement by guano-derived phosphate	fracture filling; pebbly phosphorite rock mixed with soil; slightly phosphatic limestone	Quaternary		
1572	Philippines	Nebros Occidental		Fourteen cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1573	Philippines	Negros Occidental		Bano cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1574	Philippines	Negros Occidental		GE-3 cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1575	Philippines	Negros Occidental		No. two cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1576	Philippines	Negros Ocidental		G-19 cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1577	Philippines	Negros Oriental		Baliw cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1578	Philippines	Negros Oriental		Baliw cave II		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1579	Philippines	Negros Oriental		Botokon cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1580	Philippines	Zambales		Bayabas cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1581	Philippines	Zambales		Kawyan cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1571	limestone						British Sulphur Corporation, 1987
1572	limestone			Are mostly in collapsed cave as fracture filling and replacing limestone	Jagolino,1976	1.68 m thick, 300 sq m.	
1573	limestone			Are mostly in collapsed cave as fracture filling and replacing limestone	Jagolino,1976	1 m thick, 421 sq m.	
1574	limestone			Are mostly in collapsed cave as fracture filling and replacing limestone	Jagolino,1976	4.21 m thick, 250 sq m.	
1575	limestone			Are mostly in collapsed cave as fracture filling and replacing limestone	Jagolino,1976	5.90 m thick, 3600 sq m.	
1576	limestone			Are mostly in collapsed cave as fracture filling and replacing limestone	Jagolino,1976	0.42 m thick, 400 sq m.	
1577	limestone				Jagolino,1976	0.75 m thick, 125 sq m.	
1578	limestone				Jagolino,1976	0.60 m thick, 350 sq m.	
1579	limestone				Jagolino,1976	0.72 m thick, 723 sq m.	
1580	limestone				Jagolino,1976	0.25 m thick, 43 sq m.	
1581	limestone				Jagolino,1976	0.42 m thick, 150 sq m.	

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1582	Philippines	Zambales		Luhok cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1583	Philippines	Zambales		Sinimbahan cave		Guano and replacement by guano-derived phosphate	cave guano; in-filling; fracture filling	Quaternary		
1584	Puerto Rico				Cerro de las Cuevas	Guano	cave guano;	Quaternary		
1585	Puerto Rico	Isla Mona			Cueva al Lado del Faro	Guano	cave guano;	Quaternary		
1586	Puerto Rico	Isla Mona			Cueva Caigo O No Caigo	Guano	cave guano;	Quaternary		
1587	Puerto Rico	Isla Mona			Cueva de Dona Gena Arriba	Guano	cave guano;	Quaternary		
1588	Puerto Rico	Isla Mona			Cueva de Espinal	Guano	cave guano;	Quaternary		
1589	Puerto Rico	Isla Mona			Cueva de La Casa de Erickson	Guano	cave guano;	Quaternary		
1590	Puerto Rico	Isla Mona			Cueva de La Cucaracha	Guano	cave guano;	Quaternary		
1591	Puerto Rico	Isla Mona			Cueva de La Esperanza	Guano	cave guano;	Quaternary		
1592	Puerto Rico	Isla Mona			Cueva de La Playa Brava	Guano	cave guano;	Quaternary		
1593	Puerto Rico	Isla Mona			Cueva de Las Losetas	Guano	cave guano;	Quaternary		
1594	Puerto Rico	Isla Mona			Cueva de Los Pajaros	Guano	cave guano;	Quaternary		
1595	Puerto Rico	Isla Mona			Cueva de Pajaros	Guano	cave guano;	Quaternary		
1596	Puerto Rico	Isla Mona			Cueva del Basurero	Guano	cave guano;	Quaternary		
1597	Puerto Rico	Isla Mona			Cueva del Capitan	Guano	cave guano;	Quaternary		
1598	Puerto Rico	Isla Mona			Cueva del Diamante	Guano	cave guano;	Quaternary		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1582	limestone				Jagolino,1976	0.13 m thick, 92 sq m.	
1583	limestone				Jagolino,1976	0.15 m thick with area of 695 sq m.	
1584	limestone	Cuevas Limestone (Eocene)			CIMRI, 1992		CIMRI, 1992
1585	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1586	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1587	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1588	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1589	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1590	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1591	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1592	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1593	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1594	limestone	Lirio Limestone (Miocene)	hydroxlapatite, crandallite, montmorillonite, brushite, calcite, gypsum		CIMRI, 1992		CIMRI, 1992; Kaye, 1959
1595	limestone						CIMRI, 1992
1596	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1597	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1598	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1599	Puerto Rico	Isla Mona			Cueva del Esquelito	Guano	cave guano;	Quaternary		
1600	Puerto Rico	Isla Mona			Cueva del Gato	Guano	cave guano;	Quaternary		
1601	Puerto Rico	Isla Mona			Cueva del Limon	Guano	cave guano;	Quaternary		
1602	Puerto Rico	Isla Mona			Cueva del Lirio	Guano	cave guano;	Quaternary		
1603	Puerto Rico	Isla Mona			Cueva del Mangle	Guano	cave guano	Quaternary		
1604	Puerto Rico	Isla Mona			Cueva del Norte	Guano	cave guano	Quaternary		
1605	Puerto Rico	Isla Mona			Cueva del Rifle	Guano	cave guano	Quaternary		
1606	Puerto Rico	Isla Mona			Cueva del Toro	Guano	cave guano;	Quaternary		
1607	Puerto Rico	Isla Mona			Cueva Negra	Guano	cave guano; white to brown, earthy	Quaternary		
1608	Puerto Rico	Isla Mona			Cueva de Frio	Guano	cave guano	Quaternary		
1609	Romania				Cioclovina	Guano	cave guano			
1610	Romania				Ampoita	Guano	cave guano			
1611	Romania				Cheia-Hateg	Guano	cave guano			
1612	Romania				Meristi-Harghita	Guano	cave guano			
1613	Romania				Huda lui Papara-Cluj	Guano	cave guano			
1614	Romania				Baia de fier-Oltenia	Guano	cave guano			
1615	Romania				Ivrinezu-Dobrogea	Guano	cave guano			
1616	Seychelles			Aldabra Island		Guano				
1617	Solomon Islands			Bellona Island		Sedimentary, island phosphate; secondary enrichment	insular phosphate; fracture in-filling	Cenozoic		
1618	Solomon Islands			Rennell Island		Sedimentary, island phosphate; secondary enrichment	insular phosphate; fracture in-filling	Cenozoic		

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1599	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1600	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992; Kaye, 1959
1601	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1602	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992; Kaye, 1959
1603	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1604	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1605	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1606	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1607	limestone	Lirio Limestone (Miocene)	hydroxlapatite, martinite, calcite		CIMRI, 1992		CIMRI, 1992; Kaye, 1959
1608	limestone	Lirio Limestone (Miocene)			CIMRI, 1992		CIMRI, 1992
1609							Ianovici and Borcos, 1982
1610							Ianovici and Borcos, 1982
1611							Ianovici and Borcos, 1982
1612							Ianovici and Borcos, 1982
1613							Ianovici and Borcos, 1982
1614							Ianovici and Borcos, 1982
1615							Ianovici and Borcos, 1982
1616							Piper and others, 1990
1617	coral limestone			7 main deposits in karst limestone.			Rossfelder, 1990; Notholt, 1994
1618	coral limestone			Limestone bedrock has been eroded and in-filled with phosphate	Notholt and others, 1989e		

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1619	Somalia			Mait Island		Guano and replacement by guano-derived phosphate	bird guano	Holocene		
1620	Thailand	Kanchanaburi		Ban Na Kan		Guano and replacement by guano-derived phosphate	in-filling; pocket filling	Pleistocene		
1621	Thailand	Lamphun		Mae Tha (Mae Ta, Maeta)		Guano and replacement by guano-derived phosphate	in-filling; pocket filling	Pleistocene (Permian-Slansky)		
1622	Thailand	Phattalung		Khao Phanom Wang		Guano and replacement by guano-derived phosphate	in-filling; pocket filling	Pleistocene		
1623	Thailand	Phetchabun		Chon Daen		Guano and replacement by guano-derived phosphate	in-filling; pocket filling	Pleistocene		
1624	Thailand	Phetchabun		Wichianburi		Guano and replacement by guano-derived phosphate	in-filling; pocket filling	Pleistocene		
1625	United States	Texas	Edwards	Devil's Sinkhole		Guano				
1626	United States	Texas	Kinney	Webb Cave		Guano				
1627	United States	Texas	Real	Celestite Cave		Guano				
1628	United States	Texas	Uvalde	Frio Cave		Guano				
1629	United States	Texas	Uvalde	Parker Cave		Guano				
1630	United States	Texas	Val Verde	Murrah Cave		Guano				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1619	no data				British Sulphur Corporation, 1987		de Kun, 1987; British Sulphur Corporation, 1987
1620	limestone				British Sulphur Corporation, 1987	Resource estimates from World Survey of Phosphate Deposits (1987).	British Sulphur Corporation, 1987
1621	limestone			Deposit affected by secondary solution.	British Sulphur Corporation, 1987	Resource estimates from World Survey of Phosphate Deposits (1987); Rat Buri limestone.	Slansky, 1986; Japakasetr, 1980
1622	limestone				British Sulphur Corporation, 1987	Resource estimates from World Survey of Phosphate Deposits (1987).	British Sulphur Corporation, 1987
1623	limestone				British Sulphur Corporation, 1987	Resource estimates from World Survey of Phosphate Deposits (1987).	Japakasetr, 1980
1624	limestone				British Sulphur Corporation, 1987	Resource estimates from World Survey of Phosphate Deposits (1987).	British Sulphur Corporation, 1987
1625				Bat guano several feet thick.		Cave has not been thoroughly explored.	Maxwell, 1962
1626				Bat guano.		Only small quantities of guano are still present in the cave.	Maxwell, 1962
1627				Bat guano, locally 3-4 feet deep. However cave is only about 25 feet by 14 ft, so the deposit is small.			Maxwell, 1962
1628				Bat guano as much as 32 feet deep. High grade phosphate occurs beneath the guano blanket. There are 2 large rooms in the cave-- one 600 x 1000 ft and another 300 x 500 feet.		The guano was mined during the 1920's. It is also reported that it was mined for nitrate (for gun powder) by the Confederate Army in the 1860's.	Maxwell, 1962
1629				Bat guano.			Maxwell, 1962
1630				The rear parts of the cave are covered by bat guano.			Maxwell, 1962

Deposit No.	Country/ Ocean	State/ Principal Administrative Area	3rd order political	Basin/Fmt/Region (area)/Deposit	Deposit or Site_Name	Deposit type	Type of Phosphorite	General Age Mineralization	Specific Age Mineralization	Magmatic/host rock age
1631	Vietnam			Hoang Sa Island		Guano				
1632	Vietnam			Lam Tuyen Island		Guano				
1633	Vietnam			Truong Sa Island		Guano				
1634	Vietnam			Vinh Lac Island		Guano				

Deposit No.	Host/Associated Lithology	Host Formation or Complex	Minerals	Geologic Comments or Deposit Description	Age references	General Comments	General References
1631						Coral isle. Small production 1957-1961.	ESCAP, 1990; O'Driscoll, 1996
1632						Small production 1957-1961.	ESCAP, 1990
1633						Coral isle.	ESCAP, 1990; O'Driscoll, 1996
1634						Small production 1957-1961.	ESCAP, 1990