

## Classification on the Genesis of Iron Resources in Hokkaido

Type of ore deposits		Kind of ores	Explanatory notes	Main mines (producing districts)	
Sedimentary deposits	(Weathering) Residual deposits	Siderite	Serpentine	Wassamu, Numaushi	
		Limonite	Replaced from magnetite, pyrites	Katsuraoka, Abuta	
	Deposits formed by rain water -underground water	Limonite	Replaced from pyrites	Abuta	
		Hematite	Replaced from pyrites	Kamaya	
	Chemical precipitation deposits	Siderite	Tertiary	Yūbari, Numata, Yoshioka, Kushiro	
		Limonite (Pyrite)	Quaternary volcanic zone	Tokushumbetsu,* Abuta,* Shōjingawa, Karurusu, Kutchan,* Nakadōya*	
		Limonite (Powder hematite)	Quaternary volcanic zone	Akanuma, Konai,* Akagawa	
		Limonite (Jarosite)	Quaternary volcanic zone	Shiretoko peninsula, Tokachidake	
		Limonite (Sulphur)	Quaternary volcanic zone	Akan, Daisetsu, Iwao	
	Mechanical sedimentary deposits	Limonite	Quaternary	Shari, Memambetsu, Tokachishimizu, Bannaguro, Oyafure, Biei	
		Titaniferous magnetite placer	Tertiary, Cretaceous	Shibun, Hobetsu, Ashibetsu	
		Titaniferous magnetite placer	Diluvium	Muroran,* Shikabe, Toyotsu,* Kushiro	
Plutonic deposits	Orthomagmatic deposits	Titaniferous magnetite placer	Alluvium	Volcano bay,* Shirikishinai,*Hakodate, Washibetsu,* Okhotsk sea, Tarukishi	
		Magnetite	Serpentine	Nukabiragawa, Chisaka	
		Magnetite	Gabbro	Oshimaōsawa	
	Pyrometasomatic -hydrothermal deposits	Pyrrhotite	Gabbro	Oshirabetsu, Horoman, Okushibetsu	
		Magnetite, Hematite, Pyrrhotite	Pre-Cretaceous altered rocks, Diorite	Katsuraoka*	
Magnetite, Pyrrhotite	Pre-Tertiary hornfels	Furano, Shikaribetsu			
Pyrrhotite	Pre-Tertiary hornfels	Tokushibetsu, Meppu			
Mineral deposits of magmatic origin	Hydrothermal deposits	Hematite, Pyrite	Neogene Tertiary	Kamaya*	
		Magnetite	Diorite, Neogene Tertiary	Osappe, Kutō, Menagawa	
	Sub-volcanic deposits	Mesothermal -epithermal deposits	Hematite	Pre-Tertiary, Rhyolite	Kamiikutawara
			Pyrrhotite, Pyrite	Slate, Neogene Tertiary	Toyoha, Takinoue, Okusetose, Otoshi- be, Oshamambe, Suttu, Kitami, Yoichi, Oe
		Hematite, (Limonite)	Neogene Tertiary, Quaternary volcanic rocks	Asari, Shokambetsu, Mitsumori, Naganori	
		Hematite	Diorite, Propylite	Sannai	
	Exhalation deposits	Marine exhalation deposits	Hematite	Pre-Tertiary, Diabasic rocks	Shukushubetsu, Mitsuishigawa
			Manganiferous hematite	Pre-Tertiary, Diabase, chert	Kokuriki,* Nikura, Fukuyama
			Hematite, Limonite	Neogene Tertiary	Yunotai
		Land exhalation -hot spring's deposits	Pyrite	Tertiary-Quaternary volcanic rocks	Horobetsu,* Shimeigawa,* Abuta,* Shōjingawa
Hematite	New type's volcanic rocks		Ayumikotan, Esan		
Metamorphic deposits	Wide areal metamorphic deposits	Magnetite	Pre-Tertiary, Hornblende schist	Mitsuishi	
		Magnetite, Pyrrhotite	Pre-Tertiary, Hornblendite	Kōryū	
		Pyrrhotite, Pyrite	Diabase, Slate	Shimokawa,* Tomuraushi, Shintoku, Kuroda, Bushi	

\* Working mine