5-4-3 Mineralization and Alteration

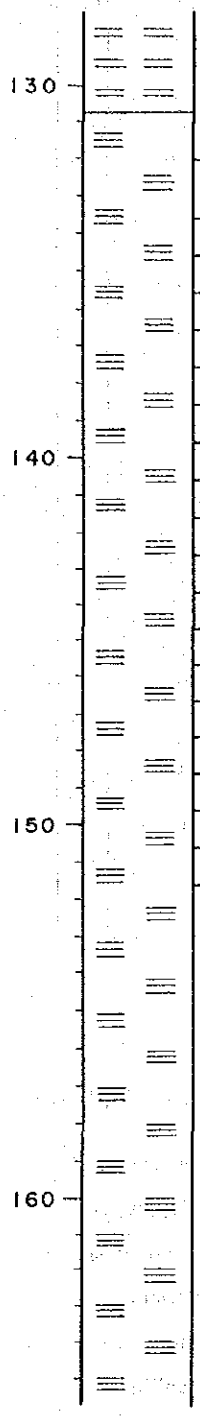
(1) MJM-6

As the main mineralization of this hole, disseminated fine pyrite is produced in fine tuff and pumice tuff within the depth between 107.30 m and 283.20 m. Some of what is seemed to be dissemination is found to be veinlet by microscopic observation. The constituent sulfide minerals are pyrite and sphalerite. Both minerals are produced generally but are small in quantity microscopically. However, sphalerite is too fine to identify macroscopically. Most pyrite produced in this hole is enhedral, while sphalerite is anhedral.

The results of analyses are as follows:

Depth(m)	Analytical Results					Remarks
	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
106.60-107.60	0.20	0.70	0.01	0.01	0.01	Py imp in do & p.t.
-108.60	Tr	0.60	0.01	0.00	0.01	Py imp in p.t.
-109.60	0.10	0.40	0.01	0.00	0.02	Py imp in p.t.& f.t.
-110.60	0.20	2.10	0.01	0.00	0.01	Py imp in f.t.
-117.60	Tr	0.60	0.01	0.00	0.01	〃
-112.60	Tr	0.50	0.01	0.00	0.02	〃
-113.60	0.0	Tr	0.00	0.00	0.01	〃
-114.60	0.0	Tr	0.00	0.00	0.01	〃
-115.60	0.0	Tr	0.00	0.00	0.02	〃
-116.60	Tr	0.80	0.01	0.00	0.01	〃
-117.60	Tr	0.40	0.00	0.00	0.01	〃
-118.60	0.0	Tr	0.00	0.00	0.01	〃
-119.60	0.0	Tr	0.00	0.00	0.01	〃
-120.60	Tr	0.70	0.00	0.00	0.01	〃
-121.60	Tr	1.10	0.00	0.00	0.01	〃
-122.60	Tr	0.80	0.00	0.00	0.01	〃
-123.60	Tr	0.50	0.00	0.00	0.01	〃
-124.60	0.0	Tr	0.00	0.00	0.01	〃
-125.60	0.0	Tr	0.00	0.01	0.01	〃
-126.60	Tr	0.80	0.01	0.01	0.01	〃
-127.60	Tr	0.60	0.00	0.01	0.01	〃
-128.60	0.0	Tr	0.00	0.00	0.01	〃
-129.60	0.0	Tr	0.00	0.00	0.01	〃
-130.60	Tr	0.40	0.00	0.00	0.01	〃
-131.60	0.0	Tr	0.00	0.00	0.01	Py imp in p.t.

Depth(m)	Analytical Results					Remarks
	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
131.60-132.60	0.0	Tr	0.00	0.00	0.02	Py imp in p.t.
-133.60	0.0	Tr	0.00	0.00	0.26	〃
-134.60	0.10	38.00	0.12	0.10	0.26	〃
-135.60	Tr	46.80	0.27	0.03	0.36	〃
-136.60	0.20	75.00	0.26	0.20	0.35	〃
-137.60	Tr	8.60	0.02	0.02	0.09	〃
-138.60	1.60	367.40	0.69	0.35	0.38	〃
-139.60	0.10	71.30	0.23	0.20	0.39	〃
-140.60	0.20	107.60	0.37	0.38	0.39	〃
-141.60	0.10	162.50	0.65	0.34	0.38	〃
-142.60	Tr	150.80	0.56	0.57	0.35	〃
-143.60	Tr	33.60	0.10	0.17	0.39	〃
-144.60	Tr	46.80	0.20	0.35	0.26	〃
-145.60	Tr	221.80	0.69	0.37	0.10	〃
-146.60	Tr	36.50	0.11	0.19	0.38	〃
-147.60	Tr	10.00	0.02	0.05	0.39	〃
-148.60	0.10	93.30	0.25	0.38	0.37	〃
-149.60	Tr	43.90	0.17	0.15	0.38	〃
-150.60	0.10	100.20	0.34	0.05	0.12	〃
-151.60	Tr	8.70	0.02	0.06	0.32	〃
-152.60	Tr	0.80	0.01	0.01	0.01	〃
-153.60	0.20	1.30	0.01	0.01	0.01	〃
-154.00	Tr	1.20	0.00	0.01	0.01	〃
-155.00	Tr	1.60	0.05	0.01	0.01	〃
-156.00	0.10	0.70	0.01	0.01	0.01	〃
-157.00	0.60	0.70	0.01	0.02	0.01	〃
-158.00	Tr	0.60	0.01	0.02	0.01	〃
-159.00	0.20	5.30	0.01	0.02	0.01	〃
-160.00	Tr	0.90	0.01	0.02	0.01	〃
-161.00	Tr	0.80	0.01	0.01	0.01	〃
-162.00	0.10	1.00	0.01	0.01	0.01	〃
-163.00	Tr	0.70	0.01	0.01	0.01	〃

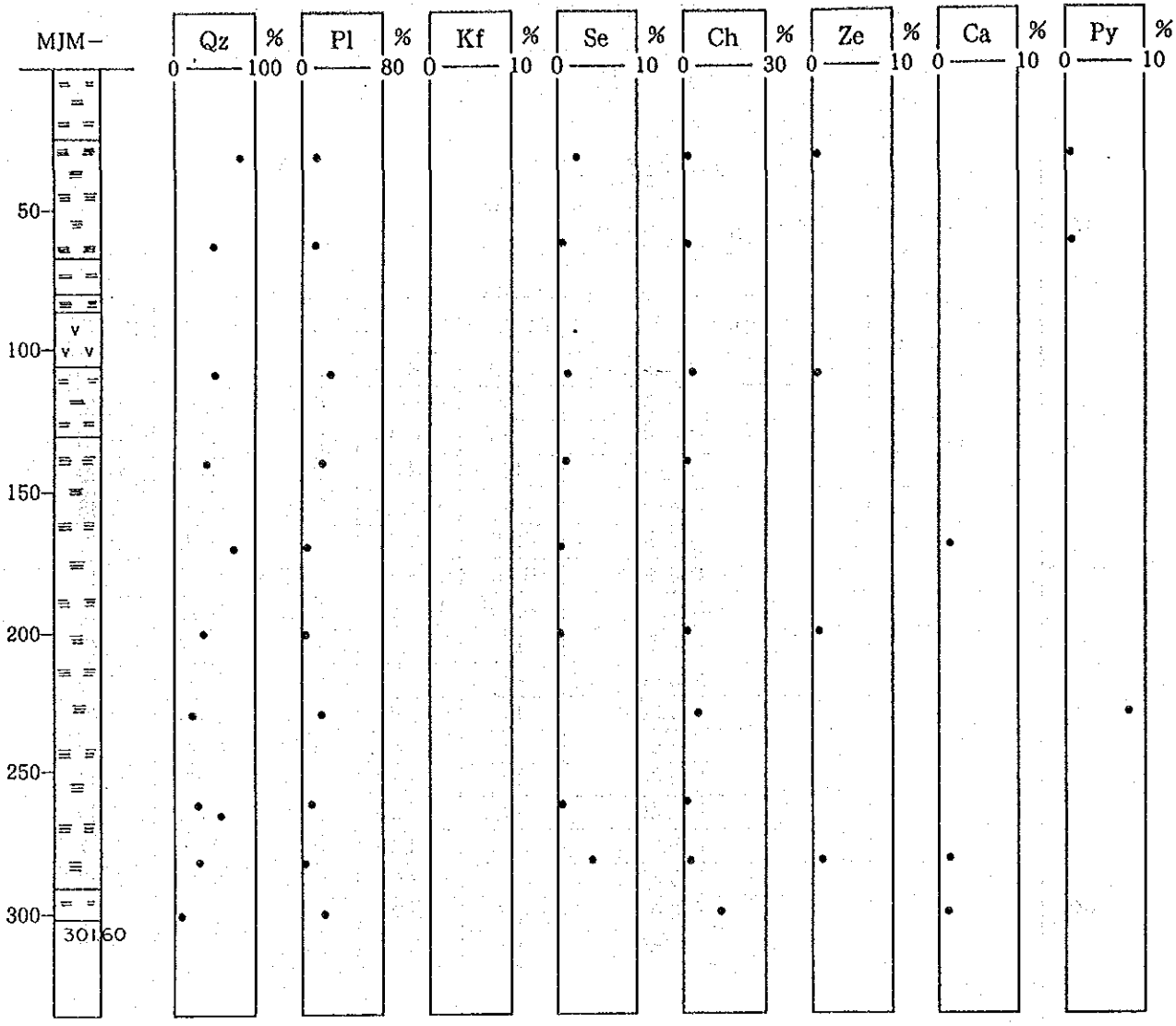


Fine Tuff

Pumice Tuff

Depth (m)	Au g/t	Ag g/t	Cu %	Pb %	Zn %
133.60M－134.60 M	0.10	38.00	0.12	0.10	0.26
－135.60	Tr	46.80	0.27	0.03	0.36
－136.60	0.20	75.00	0.26	0.20	0.35
－137.60	Tr	8.60	0.20	0.02	0.09
－138.60	1.60	367.40	0.69	0.35	0.38
－139.60	0.10	71.30	0.23	0.20	0.39
－140.60	0.20	107.60	0.37	0.38	0.39
－141.60	0.10	162.50	0.65	0.34	0.38
－142.60	Tr	150.80	0.56	0.57	0.35
－143.60	Tr	33.60	0.10	0.17	0.39
－144.60	Tr	221.80	0.20	0.35	0.26
－145.60	Tr	46.80	0.69	0.37	0.10
－146.60	Tr	36.50	0.11	0.19	0.38
－147.60	Tr	10.00	0.02	0.05	0.39
－148.60	0.10	93.30	0.25	0.38	0.37
－149.60	Tr	43.90	0.17	0.15	0.38
－150.60	0.10	100.20	0.34	0.05	0.12
－151.60	Tr	8.70	0.02	0.06	0.32

Fig. 5-20 Geology and Assay Results of MJM-6



Legend

- Soil
- Gravel
- Shale
- Sandstone
- Fine tuff
- Pumice tuff
- Lapilli tuff
- Basaltic tuff
- Andesite lava
- Dolerite
- Dacite
- Porphyrite
- 18% : Quartz index

Abbreviation

- Qz : Quartz
- Pl : Plagioclase
- Kf : K−feldspar
- Se : Sericite
- Ch : Chlroite
- Ze : Zeolite
- Ca : Calcite
- Py : Pyrite

Fig. 5-21 Alteration of Drilling Core (MJM-6).

The mineralization of this hole is particularly dominant in the depth between 133.60 m and 150.60 m, below which less mineralization occurs. In particular, a silver concentrated zone is found in the depth between 137.60 m and 145.60 m (8 m thick), and the average silver grade is as high as 145 g/t with a maximum of 367.40 g/6 (Fig. 5-20). In microscopic observation, however, since nothing was found which can be identified as silver minerals, most silver contained is seemed to be the solid solution in pyrite or sphalerite.

This hole has been subjected to hydrothermal alteration throughout the hole even slightly (Fig. 5-21). Especially, sericite and chlorite are found from upper to lower portions. However, the production of the clay minerals is small and the relative ratio using the quartz index is 10% or below. Although this hole has been subjected to Kuroko type mineralization, zeolite remains partially indicating heterogeneous alteration. Microscopic observation shows that plagioclase remains although it is being replaced by sericite indicating that hydrothermal alteration was not so strong.

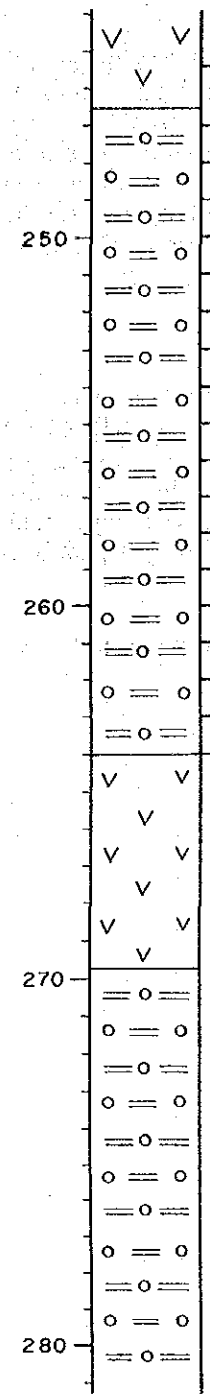
(2) MJM-7

Mineralization found in this hole is characterized by the dissemination and veinlet in fine pyrite in lapilli tuff in the ore horizon (depth: 236.50 m ~ 316.40 m). Mineralization is visually found by the concentration of fine pyrite along the boundary of pumice filled or stretched between lapilli in pyroclastics. Euhedral pyrite and anhedral sphalerite were microscopically observed. Although some pyrite has grown to 0.1 mm in diameter, most pyrite is as fine as 0.01 mm or below and disseminated like dust in pyroclastics.

Constituent sulphide minerals found in this hole are only pyrite and sphalerite, and main gangue minerals are quartz and calcite.

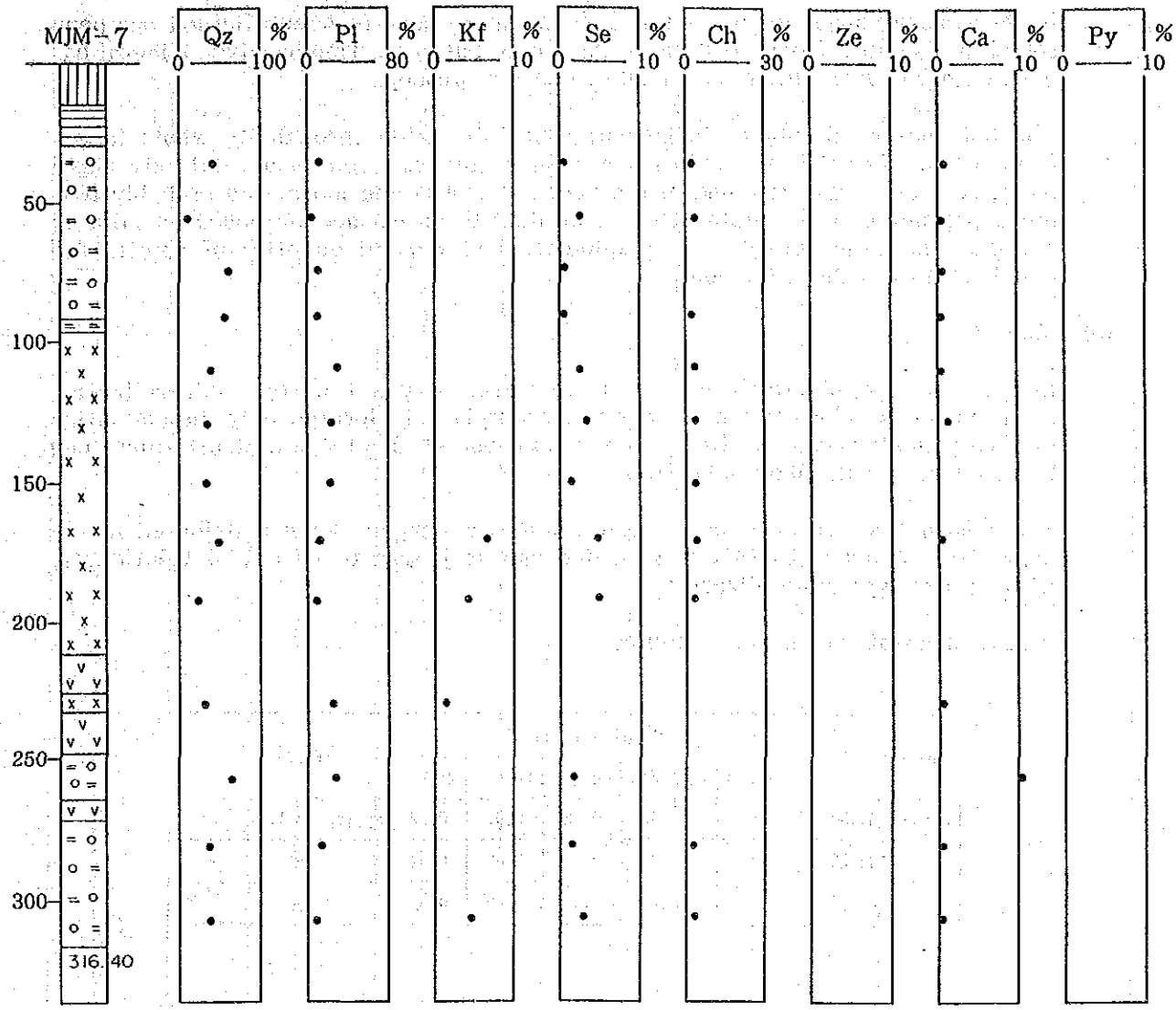
The results of analyses are as follows:

Depth(m)	Analytical Results					Remarks
	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
247.00-248.00	0.10	31.50	0.14	0.19	0.36	Py imp in l.t.
-279.00	0.70	46.60	0.20	0.32	0.24	〃
-250.00	0.10	52.50	0.18	0.28	0.36	〃
-251.00	0.10	60.40	0.21	0.33	0.32	〃
-252.00	Tr	50.70	0.19	0.31	0.37	〃
-253.00	1.10	44.20	0.15	0.25	0.34	〃
-254.00	0.10	63.70	0.28	0.38	0.08	〃
-255.00	Tr	46.60	0.17	0.29	0.38	〃
-256.00	Tr	7.10	0.01	0.06	0.37	〃
-257.00	Tr	102.90	0.32	0.41	0.38	〃
-258.00	Tr	108.90	0.38	0.25	0.37	〃
-259.00	Tr	83.90	0.30	0.39	0.37	〃
-260.00	0.10	63.20	0.20	0.34	0.35	〃
-261.00	0.10	143.70	0.62	0.39	0.39	〃
-262.00	Tr	17.60	0.01	0.02	0.11	〃
-263.00	Tr	93.50	0.04	0.09	0.13	〃
-264.00	Tr	6.40	0.32	0.23	0.37	〃



	Depth (m)	Au g/t	Ag g/t	Cu %	Pb %	Zn %
	247.00M−248.00M	0.10	31.50	0.14	0.19	0.36
	−249.00	0.70	46.60	0.20	0.32	0.24
	−250.00	0.10	52.50	0.18	0.28	0.36
	−251.00	0.10	60.40	0.21	0.33	0.32
	−252.00	Tr	50.70	0.19	0.31	0.37
	−253.00	1.10	44.20	0.15	0.25	0.34
	−254.00	0.10	63.70	0.28	0.38	0.08
	−255.00	Tr	46.60	0.17	0.29	0.38
	−256.00	Tr	7.10	0.01	0.06	0.37
	−257.00	Tr	102.90	0.32	0.41	0.38
	−258.00	Tr	108.90	0.38	0.25	0.37
	−259.00	Tr	83.90	0.30	0.39	0.37
	−260.00	0.10	63.20	0.20	0.34	0.35
	−261.00	0.10	143.70	0.62	0.39	0.39
	−262.00	Tr	17.60	0.01	0.02	0.11
	−263.00	Tr	93.50	0.04	0.09	0.13
	−264.00	Tr	6.40	0.32	0.23	0.37

Fig. 5-22 Geology and Assay Results of MJM-7



Legend

- Soil
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- Shale
- Sandstone
- Fine tuff
- Pumice tuff
- Lapilli tuff
- Basaltic tuff
- Andesite lava
- Dolerite
- Dacite
- Porphyrite
- 18% : Quartz index

Abbreviation

- Qz : Quartz
- Pl : Plagioclase
- Kf : K-feldspar
- Se : Sericite
- Ch : Chlroite
- Ze : Zeolite
- Ca : Calcite
- Py : Pyrite

Fig. 5-23 Alteration of Drilling Core (MJM-7)

In the mineralization zone, a silver concentrated zone of about 100 g/t has been found in the depth from 256.00 m to 261.00 m, but no particular silver mineral has been observed with either the naked eye or a microscope.

The hole has been subject to hydrothermal alteration through its whole length (Fig. 5-21). Sericite and chlorite are generally observed in a relatively small quantity. K-feldspar is found in the depth of 170 m and more, and probably it is not a product of strong alteration, according to an estimation based on mineral paragenesis. Some quantity of plagioclase and a small quantity of calcite are distributed throughout the hole.

(3) MJM-8

In this hole, the mineralization presumably caused by Kuroko type mineralization found in the previous two holes has been sharply deteriorated only dissemination of a very small amount of fine pyrite is observed at about 240 m depth where can be assumed as a Kuroko ore horizon.

There is dissemination of pyrite and pyrrhotite lying in shale distributed in the depth from 31.50 m to 145.00 m, which can be judged to be out of relationship with Kuroko type mineralization.

Analyzed results are shown as follows:

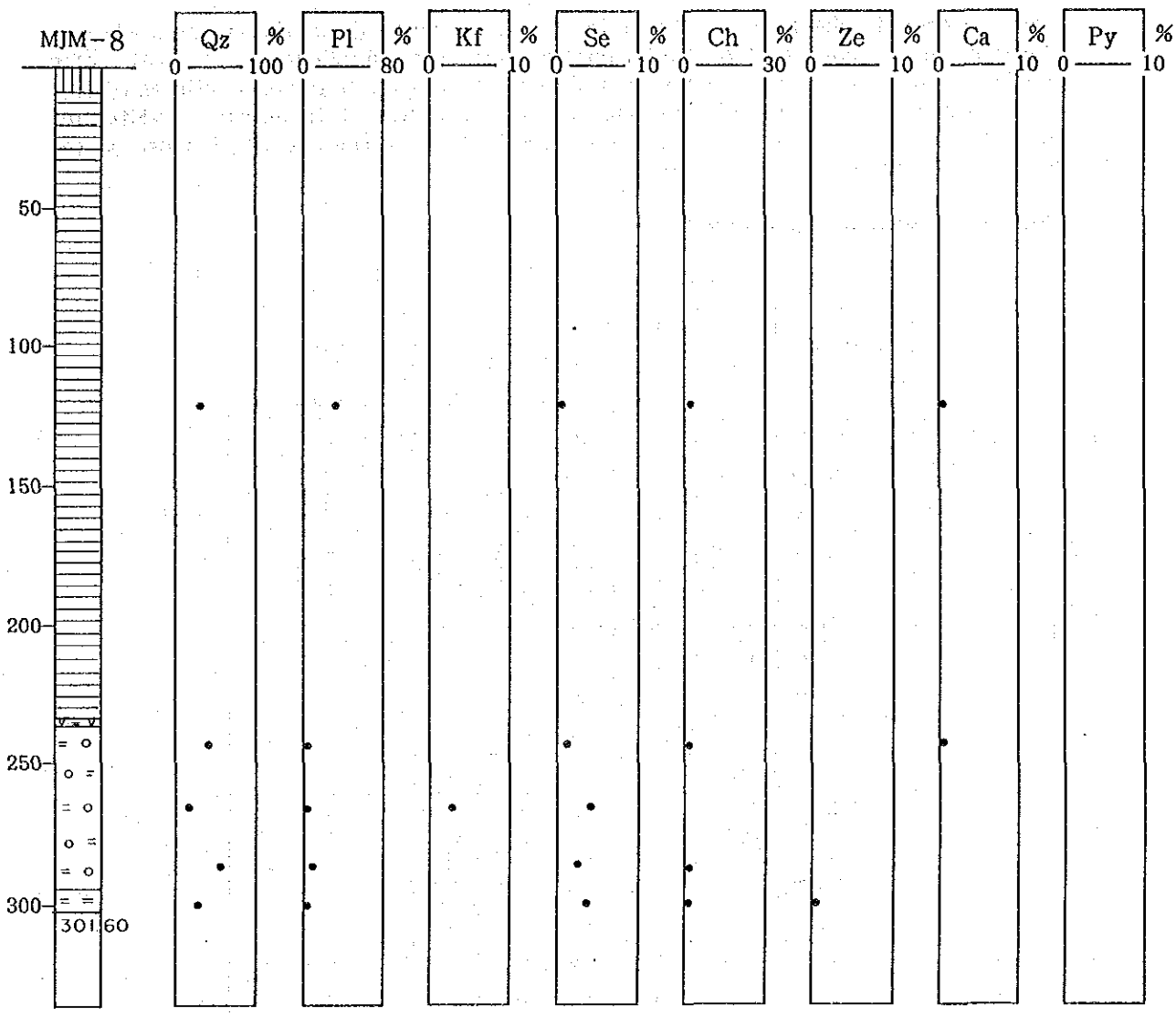
Depth(m)	Analytical Results					Remarks
	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
240.50-241.50	Tr	0.60	0.06	0.02	0.02	Py imp in l.t.
-242.50	Tr	0.40	0.03	0.02	0.02	〃
-243.50	Tr	0.40	0.03	0.02	0.03	〃

where no remarkable grade can be found.

The alteration of this hole, when compared with those of the previous two holes, features an increased quantity of sericite but a reduced amount of plagioclase. It can be estimated that the hole has been subjected to not only hydrothermal alteration but also thermal metamorphism from granodiorite that has been distributed in the vicinity of the hole, though in a small amount (Fig. 5-24). Chlorite is also frequently found in a small quantity.

(4) MJM-9

Mineralization found in this hole is characterized by the dissemination of pyrite in fine tuff in the Kuroko ore horizon beginning at a depth of 281.77 m. Dense, massive Kuroko ore (massive sulphide ore) of a thickness of 15 cm was found at a depth of 293.45 m. The degree of dissemination is even and strong down to a depth of 297 m, below which it tends to decrease.



Legend

- Soil
- Gravel
- Shale
- Sandstone
- Fine tuff
- Pumice tuff
- Lapilli tuff
- Basaltic tuff
- Andesite lava
- Dolerite
- Dacite
- Porphyrite
- 18% : Quartz index

Abbreviation

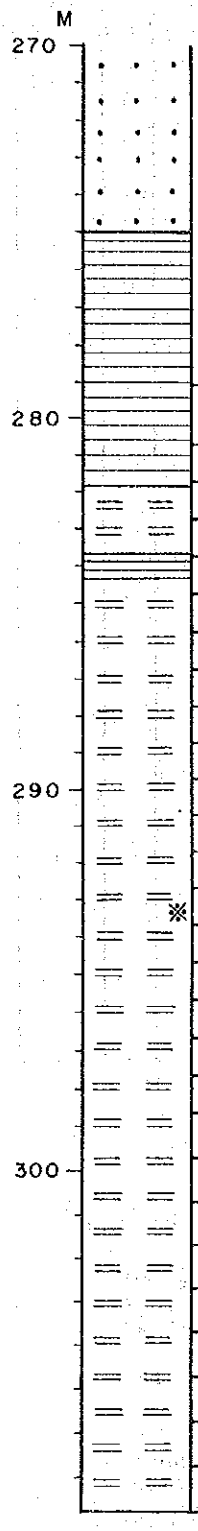
Qz : Quartz
Pl : Plagioclase
Kf : K-feldspar
Se : Sericite
Ch : Chlroite
Ze : Zeolite
Ca : Calcite
Py : Pyrite

Fig. 5-24 Alteration of Drilling Core (MJM-8)

The microscopic observation of samples from a strongly disseminated zone showed the general presence of framboidal pyrite (diameter: 0.025 mm or below). Fine pyrite approx. 0.01 mm in diameter is distributed in gaps between particles of fine tuff. Kuroko ore is mainly constituted of sphalerite, tetrahedrite, pyrite and galena. Argentite and electrum were also found. A feature of this ore is the absence of chalcopyrite.

The results of analyses are as follows:

Depth(m)	Analytical Results					Remarks
	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
274.70-275.70	Tr	1.90	0.02	0.04	0.35	Py imp in s.s.& sh.
-276.70	0.0	Tr	0.01	0.02	0.34	Py imp in sh.
-277.70	0.0	Tr	0.01	0.02	0.37	〃
-278.70	Tr	0.90	0.01	0.02	0.38	〃
-279.70	0.10	5.50	0.01	0.04	0.40	〃
-280.70	0.20	20.20	0.02	0.06	0.40	〃
-281.70	2.50	18.80	0.01	0.06	0.26	〃
-282.70	14.30	44.90	0.02	0.72	0.40	Py imp in f.t.
-283.70	2.80	40.40	0.01	0.06	0.32	〃
-284.70	5.60	244.70	0.02	0.17	0.38	〃
-285.70	1.20	23.60	0.03	0.08	0.39	〃
-286.70	2.80	23.10	0.00	0.05	0.19	〃
-287.70	2.00	9.70	0.00	0.03	0.12	〃
-288.70	2.10	10.80	0.01	0.02	0.09	〃
-289.70	1.20	9.20	0.01	0.02	0.07	〃
-290.70	1.40	10.20	0.01	0.02	0.08	〃
-291.70	0.80	6.30	0.01	0.02	0.08	〃
-292.70	0.90	16.10	0.01	0.02	0.11	〃
-293.70	2.50	41.70	0.07	0.03	0.16	〃
-294.70	1.10	5.10	0.01	0.02	0.13	〃
-295.70	1.20	3.80	0.01	0.02	0.10	〃
-296.70	1.00	3.40	0.01	0.01	0.08	〃
-297.70	0.20	2.20	0.01	0.01	0.06	〃
-298.70	Tr	2.20	0.01	0.01	0.07	〃
-299.70	0.10	0.50	0.01	0.02	0.13	〃
-300.70	0.10	1.40	0.01	0.02	0.20	〃
-301.70	Tr	0.80	0.01	0.02	0.13	〃
-302.70	Tr	0.90	0.01	0.16	0.08	〃
-303.70	Tr	0.70	0.01	0.02	0.07	〃
-304.70	Tr	0.50	0.01	0.01	0.06	〃
-305.70	0.10	1.20	0.01	0.01	0.05	〃
-306.70	Tr	1.70	0.01	0.01	0.08	〃
-307.60	0.10	1.50	0.01	0.01	0.25	〃
293.46-293.60	7.80	1.108	1.15	16.2	32.2	Massive sulphide ore



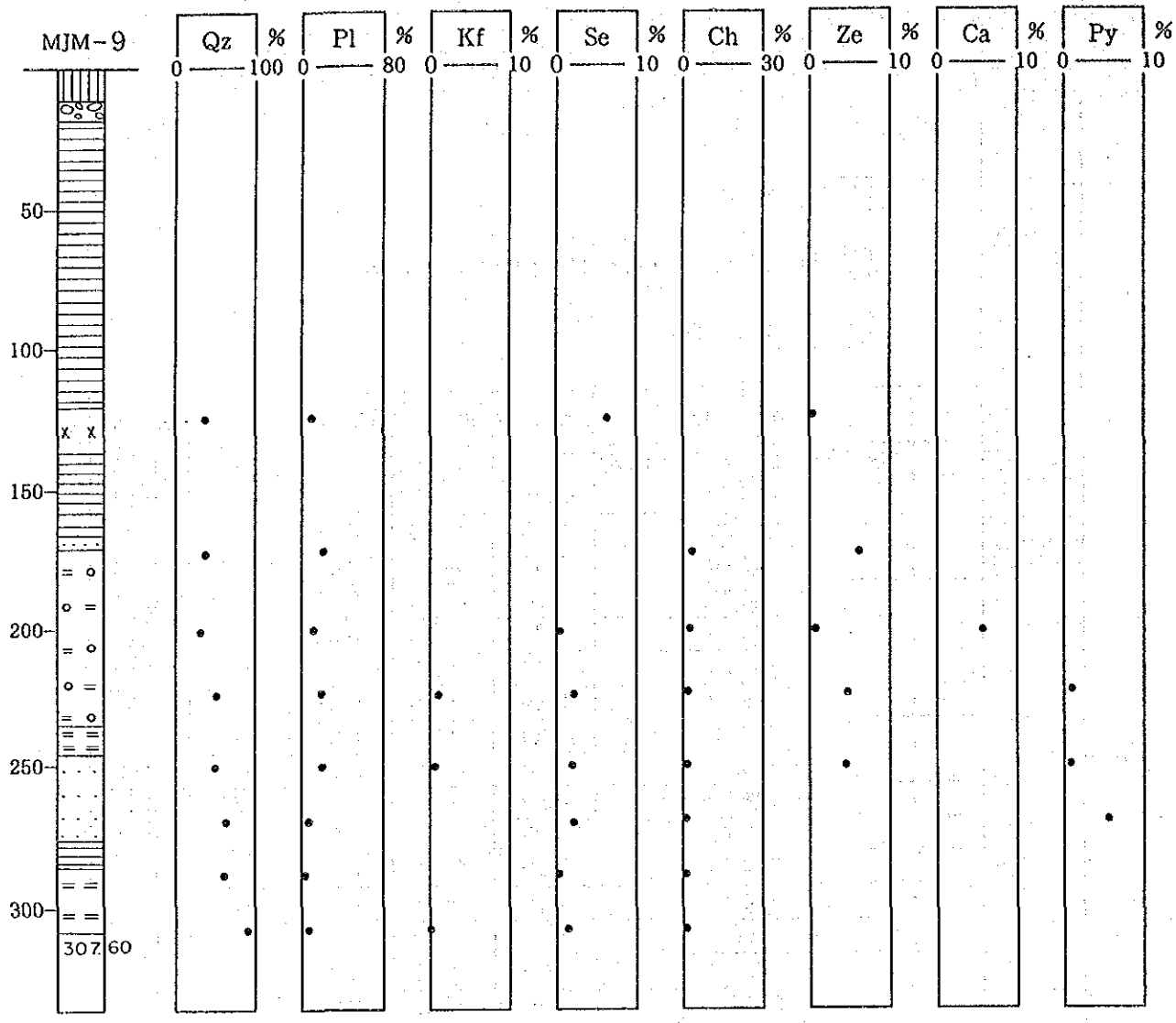
Sandstone

Shale (intercalated sandstone layers)

Fine Tuff

	Depth (m)	Au g/t	Ag g/t	Cu %	Pb %	Zn %
	280.70M－281.70 M (1.00)	2.50	18.80	0.01	0.06	0.26
	－282.70	14.30	44.90	0.02	0.72	0.40
	－283.70	2.80	40.40	0.01	0.06	0.32
	－284.70	5.60	244.70	0.02	0.17	0.38
	－285.70	1.20	23.60	0.03	0.08	0.39
	－286.70	2.80	23.10	0.00	0.05	0.19
	－287.70	2.00	9.70	0.00	0.03	0.12
	－288.70	2.10	10.80	0.01	0.02	0.09
	－289.70	1.20	9.20	0.01	0.02	0.07
	－290.70	1.40	10.20	0.01	0.02	0.08
	－291.70	0.80	6.30	0.01	0.02	0.08
	－292.70	0.90	16.10	0.01	0.02	0.11
	－293.70	2.50	41.70	0.01	0.03	0.16
	－294.70	1.10	5.10	0.01	0.02	0.13
	－295.70	1.20	3.80	0.01	0.02	0.01
	－296.70	1.00	3.40	0.01	0.01	0.08
	－297.70	0.20	2.20	0.01	0.01	0.06
	－298.70	Tr	2.20	0.01	0.01	0.07
	－299.70	0.10	0.50	0.01	0.02	0.13
	－300.70	0.10	1.40	0.01	0.02	0.20
	－301.70	Tr	0.80	0.01	0.02	0.13
	－302.70	Tr	0.90	0.01	0.16	0.08
	－303.70	Tr	0.70	0.01	0.02	0.07
	－304.70	Tr	0.50	0.01	0.01	0.06
	－305.70	0.10	1.20	0.01	0.01	0.05
	－306.70	Tr	1.70	0.01	0.01	0.08
	－306.60 (0.90)	0.10	1.50	0.01	0.01	0.25
※	293.45－293.60 (Massive sulphide ore)	7.8	1.108	1.15	16.2	32.3

Fig. 5-25 Geology and Assay Results of MJM-9



Legend

- Soil
- Gravel
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- 18% : Quartz index

Abbreviation

- Qz : Quartz
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- Se : Sericite
- Ch : Chlroite
- Ze : Zeolite
- Ca : Calcite
- Py : Pyrite

Fig. 5-26 Alteration of Drilling Core (MJM-9)

An mineralized zone of gold and silver is found in the depth from 280.70 m to 288.70 m (thickness: 8 m) with an average grade of 4.2 g/t for gold and 52 g/t for silver (Fig. 5-25). The gold mineralization likely go more deeply (down to 296.70 m), though gradually lowering in grade. The Kuroko lying in the depth between 294.45 m and 294.60 m has a very high grade shown in the above table, giving an expectation that the ore deposit may spread horizontally.

As to the alteration in the hole, the strong mineralization is not reflected in formation of altered products sericite and chlorite are generally formed but their quantities are greater enough than those found in other holes. Quartz, on the other hand, tends to increase in quantity under the Kuroko ore horizon (Fig. 5-26). Zeolite is generally found above the Kuroko ore horizon, though the quantity varies from spot to spot.

(5) MJM-10

No significant mineralization was found in this hole. Only weak dissemination of pyrite was found in fine tuff in depth between 32.40 m and 37.30 m, and shale and andesite in depth between 314.20 m and 358.60 m. The former dissemination was not caused by Kuroko type mineralization because it was found above the Kuroko ore horizon. The pyrite dissemination in shale is extremely weak, and the paragenesis of pyrrhotite and ilmenite is also locally observed.

The results of analyses are as follows:

Depth(m)	Analytical Results					Remarks
	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
314.20-315.20	0.10	1.10	0.04	0.02	0.07	Py imp in sh.
-316.20	Tr	0.50	0.03	0.02	0.03	〃
-317.20	Tr	1.90	0.03	0.02	0.03	〃

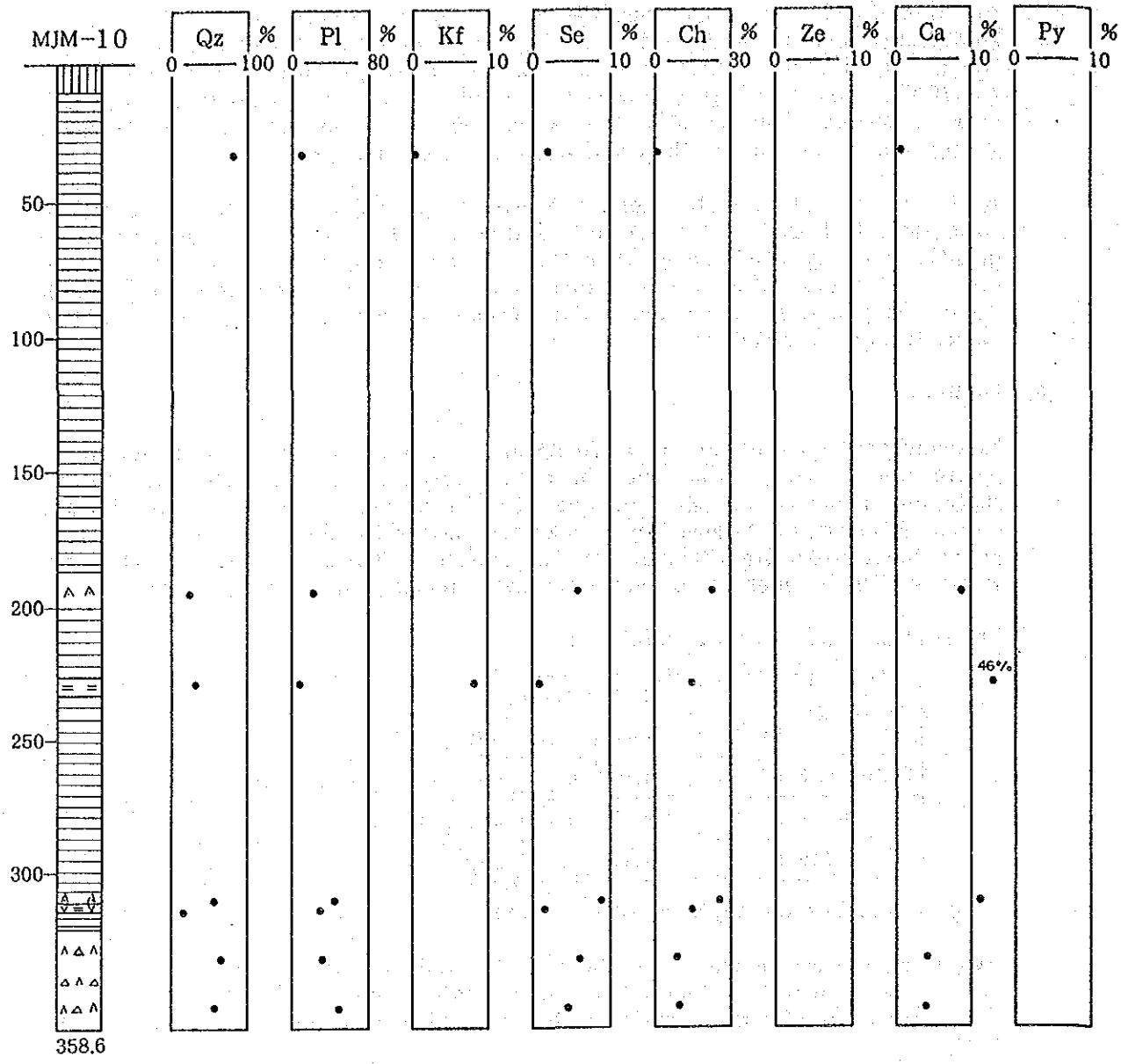
No promising results in grades were obtained.

Regarding the alteration of this hole, andesite in the lowermost portion of the hole are seemed to be subjected to propylitization and silicification judging from the paragenesis of quartz, sericite chlorite and calcite and their amounts (Fig. 5-27).

(6) MJM-11

In this hole, a fine pyrite dissemination zone considered to be caused by Kuroko type mineralization was found in depth between 129.60 m and 161.20 m. Dissemination tends to concentrate in the gaps among the particles in fine tuff, lapilli tuff and pumice tuff which are country rocks, and in pumice.

Microscopically, the zone is composed of pyrite of which particle diameters are roughly divided into 0.03 mm and 0.01 mm. Both particles are distributed in the country rock, pyroclastic rocks, occasionally accompanied by fine sphalerite (approx. 0.002 mm in diameter).



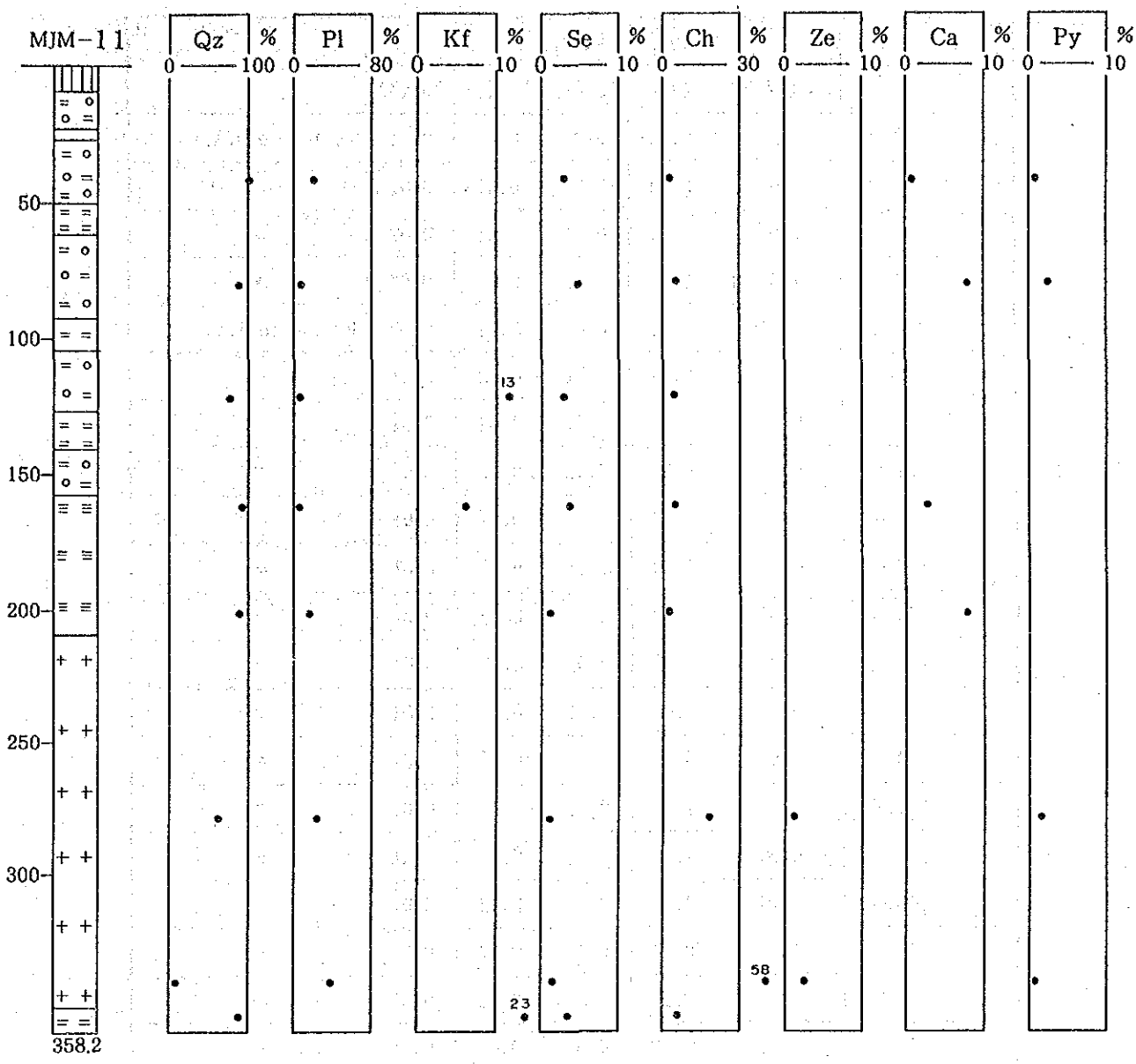
Legend

- Soil
- Gravel
- Shale
- Sandstone
- Fine tuff
- Pumice tuff
- Lapilli tuff
- Basaltic tuff
- Andesite lava
- Dolerite
- Dacite
- Porphyrite
- Granodiorite
- 18% : Quartz index

Abbreviation

Qz : Quartz
Pl : Plagioclase
Kf : K-feldspar
Se : Sericite
Ch : Chlroite
Ze : Zeolite
Ca : Calcite
Py : Pyrite

Fig. 5-27 Alteration of Drilling Core (MJM-10)



Legend

- Soil
- Gravel
- Shale
- Sandstone
- Fine tuff
- Pumice tuff
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- Basaltic tuff
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- Dolerite
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- 18% : Quartz index

Abbreviation

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Kf : K-feldspar
Se : Sericite
Ch : Chlroite
Ze : Zeolite
Ca : Calcite
Py : Pyrite

Fig. 5-28 Alteration of Drilling Core (MJM-11)

Depth(m)	Analytical Results					Remarks
	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
129.60-130.60	Tr	0.80	0.01	0.01	0.01	Py imp in f.t.
-131.60	Tr	0.50	0.01	0.01	0.01	〃
-132.60	Tr	1.00	0.01	0.01	0.02	〃
-133.60	0.20	7.40	0.05	0.01	0.02	〃
-134.60	0.10	1.30	0.02	0.02	0.02	Py imp in l.t.
-135.60	Tr	0.50	0.02	0.02	0.01	〃
-136.60	Tr	0.30	0.02	0.02	0.02	〃
-137.60	Tr	0.50	0.02	0.02	0.02	〃
-138.60	Tr	1.10	0.01	0.01	0.01	〃
-139.60	Tr	1.80	0.01	0.02	0.01	〃
-140.60	0.10	0.80	0.01	0.02	0.01	〃
-141.60	0.20	0.60	0.01	0.02	0.01	〃
-142.60	0.10	1.00	0.01	0.01	0.01	〃
-143.60	Tr	0.90	0.01	0.01	0.01	〃
-144.60	Tr	1.00	0.01	0.02	0.01	〃
-145.60	0.20	1.30	0.01	0.02	0.01	〃
-146.60	0.10	0.60	0.01	0.02	0.01	〃
-147.60	Tr	0.40	0.01	0.02	0.01	〃
-148.60	Tr	0.50	0.01	0.01	0.01	〃
-149.60	0.00	Tr	0.01	0.02	0.01	〃
-150.60	Tr	0.60	0.01	0.01	0.01	〃
-151.60	Tr	0.30	0.01	0.02	0.01	〃
-152.60	0.20	2.30	0.01	0.03	0.01	〃
-153.60	Tr	1.00	0.01	0.03	0.01	〃
-154.60	0.10	1.40	0.01	0.03	0.01	〃
-155.60	Tr	0.50	0.01	0.02	0.01	〃
-156.60	Tr	0.40	0.01	0.02	0.01	〃
-157.60	0.00	Tr	0.01	0.02	0.03	Py imp in p.t.
157.60-158.60	0.00	Tr	0.02	0.02	0.03	Py imp in p.t.
-159.60	Tr	0.90	0.01	0.01	0.01	〃
-160.60	0.00	Tr	0.01	0.01	0.01	Py imp in p.t.

Some dissemination zone of pyrite, which can be regarded as a feature of Kuroko type mineralization, have been catched up, but they are not promising in grade.

The hole has been affected by hydrothermal alteration throughout its length, generally including sericite and chlorite in small quantities, mostly less than 10% in relative quantity rate (Fig. 5-28). On the other hand, the rate for quartz is higher than those in other holes. Samples (pumice tuff) taken at 185 m depth generally include K-feldspar, indicating that the rock is rather rhyolite than dacite.

(7) MJM-12

Mineralization was found in the following three sites. In depth between 49.40 m and 61.10 m, almost uniform dissemination of fine pyrite is found in pumice tuff, and veinlet can be found locally. Mineralization in depth between 220 m and 254.10 m is similar to the above. On the other hand, mineralization in depth between 323.20 m and 352.20 m is similar to that of MJM-9 where gold mineralization and Kuroko ore are found. However, it differs from that of MJM-9 (depth: 281.77 m or more) in that the quantity of pyrite disseminated in fine tuff is small, and in particle size.

Microscopically, euhedral pyrite (approx. 0.1 mm in diameter) and dust-like pyrite fill gaps between particles in fine tuff.

Sphalerite is also accompanied by dust-like pyrite,although its quantity is small, and is always anhedral.

The results of analyses are as follows:

Depth(m)	Analytical Results					Remarks
	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
49.40- 50.40	0.00	Tr	0.01	0.01	0.01	Py imp in p.t.
- 51.40	Tr	0.80	0.01	0.01	0.02	〃
- 52.40	Tr	1.00	0.01	0.01	0.01	〃
- 53.40	0.10	0.50	0.01	0.01	0.01	〃
- 54.40	0.20	0.80	0.01	0.01	0.01	〃
- 55.40	Tr	0.40	0.01	0.01	0.01	〃
- 56.40	Tr	1.10	0.01	0.01	0.01	〃
- 57.40	Tr	0.80	0.01	0.01	0.01	〃
- 58.40	0.40	0.90	0.01	0.01	0.01	〃
- 59.40	Tr	0.70	0.02	0.02	0.12	〃
- 60.40	0.00	Tr	0.01	0.01	0.01	〃
220.00-221.00	Tr	0.60	0.01	0.00	0.01	〃
-222.00	0.10	0.30	0.01	0.01	0.01	〃
-223.00	0.10	0.40	0.01	0.01	0.01	〃
-224.00	Tr	0.50	0.01	0.00	0.01	〃
-225.00	0.20	0.80	0.01	0.00	0.01	〃

Depth(m)	Analytical Results					Remarks
	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
225.00-226.00	Tr	0.40	0.01	0.00	0.01	Py imp in p.t.
-227.00	Tr	0.50	0.01	0.01	0.01	〃
-228.00	Tr	0.40	0.01	0.00	0.01	〃
-229.00	0.00	Tr	0.01	0.01	0.01	〃
-230.00	0.00	Tr	0.01	0.00	0.01	〃
-231.00	0.50	2.40	0.01	0.00	0.01	〃
-232.00	Tr	0.40	0.01	0.01	0.01	〃
-233.00	Tr	0.50	0.01	0.01	0.01	〃
-234.00	0.00	Tr	0.01	0.01	0.01	〃
-235.00	0.00	Tr	0.01	0.00	0.01	〃
-236.00	0.00	Tr	0.01	0.01	0.00	〃
-237.00	Tr	1.30	0.01	0.01	0.01	〃
-238.00	Tr	0.50	0.01	0.01	0.01	〃
-239.00	0.00	Tr	0.01	0.01	0.01	〃
-240.00	Tr	0.70	0.01	0.01	0.01	〃
-241.00	0.00	Tr	0.01	0.01	0.01	〃
-242.60	Tr	0.40	0.01	0.01	0.01	〃
-243.00	0.00	Tr	0.01	0.00	0.01	〃
-244.00	0.00	Tr	0.01	0.01	0.01	〃
-245.00	0.10	0.70	0.01	0.00	0.01	〃
-246.00	0.10	2.60	0.01	0.01	0.01	〃
-247.00	Tr	0.40	0.01	0.01	0.01	〃
-248.00	Tr	1.00	0.02	0.01	0.01	〃
250.00-251.00	Tr	0.50	0.02	0.01	0.01	〃
-252.00	Tr	0.40	0.02	0.01	0.01	〃
-253.00	Tr	0.30	0.01	0.01	0.01	〃
323.20-324.20	Tr	0.80	0.01	0.01	0.00	Py imp in f.t.
-325.20	0.10	0.60	0.01	0.01	0.01	〃
-326.20	0.10	0.90	0.01	0.01	0.01	〃
-327.20	Tr	0.40	0.01	0.01	0.01	〃
-328.20	Tr	0.60	0.01	0.01	0.01	〃
-329.20	0.00	Tr	0.01	0.01	0.00	〃
-330.20	0.00	Tr	0.02	0.01	0.01	〃
-331.20	Tr	0.50	0.01	0.01	0.00	〃
-332.20	Tr	0.70	0.01	0.03	0.01	〃
-333.20	Tr	0.90	0.01	0.01	0.01	〃

Depth(m)	Analytical Results					Remarks
	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
333.20-334.20	0.00	T r	0.01	0.01	0.01	Py imp in f.t.
-335.20	0.00	T r	0.01	0.01	0.01	〃
-336.20	T r	1.10	0.00	0.01	0.01	〃
-337.20	T r	0.60	0.00	0.01	0.01	〃
-338.20	0.10	3.50	0.00	0.01	0.01	〃
-339.20	T r	0.70	0.00	0.01	0.01	Py imp in p.t.
-340.20	T r	0.50	0.00	0.01	0.01	〃
-341.20	T r	0.40	0.00	0.01	0.01	〃
-342.20	0.00	T r	0.00	0.01	0.01	〃
-343.20	T r	0.50	0.00	0.01	0.01	〃
-344.20	0.10	0.80	0.00	0.02	0.02	〃
-345.20	T r	0.60	0.01	0.02	0.01	〃
-346.20	T r	0.80	0.01	0.02	0.02	〃
-347.20	0.00	T r	0.01	0.02	0.01	〃
-348.20	T r	0.80	0.01	0.02	0.01	〃
-349.20	T r	0.30	0.01	0.02	0.01	〃
-350.20	T r	0.70	0.01	0.02	0.02	〃
-351.20	T r	0.80	0.01	0.02	0.01	〃
-352.20	T r	0.90	0.01	0.02	0.01	〃

Geological features of mineralized zone between 323.20 m and 352.20 m resemble those of the ore intersection in MJM-9, suggesting a promising grade, but no favorable data are found in the analyzed results.

The hole is so judged that it has been subjected to hydrothermal alteration throughout its length. Advent frequency and quantity of sericite and chlorite are similar to those found other holes in the neighborhood, and this suggests that hydrothermal alteration is "pervasive" type one, but the relative quantity rate of quartz is higher than those of such holes. Granodiorite intruding the middle of the hole has been attacked by an intense chloritization.

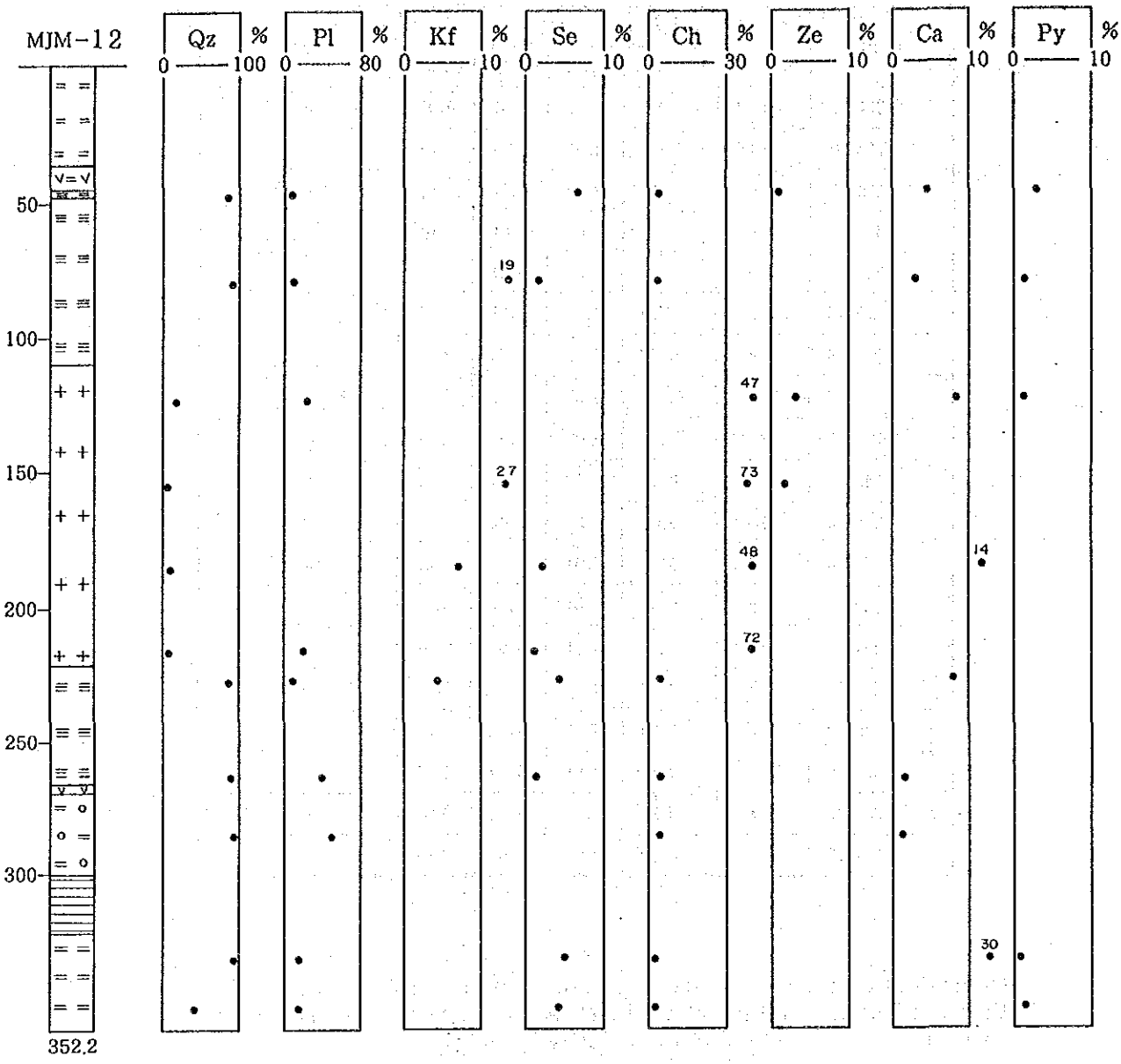

Fig. 5-29 Alteration of Drilling Core (MJM-12)

5-4-4 Correlation between the Results of Drilling and Geophysical Surveys

Of the seven drill holes in this year, the sites of four holes (MJM-6, MJM-7, MJM-8 and MJM-9) were determined taking into account the results of geophysical survey (CSAMT method) in addition to the other survey results.

The correlation between geology and resistivity distribution is reviewed as follows:

(1) MJM-6

This hole is located in the south of the La Concha low resistivity zone. Although the drilling site is about 150 m away from the nearest geophysical survey station, geophysical survey results are considered to be virtually reflective of the geology of this hole. As shown in Fig. 5-30, the resistivity distribution measured at this survey station represents 140 Ω·m to the depth of 60 m below the surface, 250 Ω·m the depth of 380 m, 100 Ω·m upto 550 m and 1,600 Ω·m thereunder, with the resistivity increasing in the deeper portion. These figures of resistivity were obtained by estimating optimum resistivity distribution by means of simulation so that they may correspond with the figures measured at the surrounding survey stations.

In the correlation with geology taking into consideration the altitude differentials between the respective survey sites, the low resistivity surface portion (140 Ω·m) correlates with the distribution zone of fine tuff, pumice tuff and dolerite. These rocks are relatively dense, except for those of the surface portion (0 m to about 20 m), and fractured portions are noticed only locally. It is, therefore, difficult to estimate based on the apparent properties of these rocks the resistivity figure of 140 Ω·m shown in the results of geophysical survey.

The lower portion indicating the resistivity of 250 Ω·m corresponds with the distribution zone of pumice tuff associated with the dissemination of fine pyrite. The resistivity measured on the pyrites-disseminated hand specimen showed a figure of about 300 Ω·m that is higher than the resistivity measured for this part. In this part, the fractures promoting water circulation are poorly developed and also argillization is not observable. Furthermore, the degree of dissemination of sulphide minerals, a factor to reduce resistivity, is weaker than that noticed on the hand specimen used for resistivity measurement.

Consequently, as far as the geological conditions of this hole are concerned, any factor explaining such resistivity distribution cannot be found out. It is presumed that such resistivity distribution is probably reflective of the neighboring geological conditions more strongly than those of this hole itself. Fig. 5-30 shows the correlation between each hole's geology and resistivity distribution.

(2) MJM-7

This hole is located at the southweatern end of the low resistivity zone southeast of La Concha. The drilling site is about 100 m away from the geophysical survey station (No. 5). Therefore, they do not always correspond strictly with each other. As shown in Fig. 5-30, the resistivity distribution measured at this survey station represents the resistivity of 300 Ω·m upto 100 m below the surface but the resistivity decreases to 150 Ω·m in the lower portion. Such resistivity distribution correlates with soil, shale and lapilli tuff in the upper portion and dacite

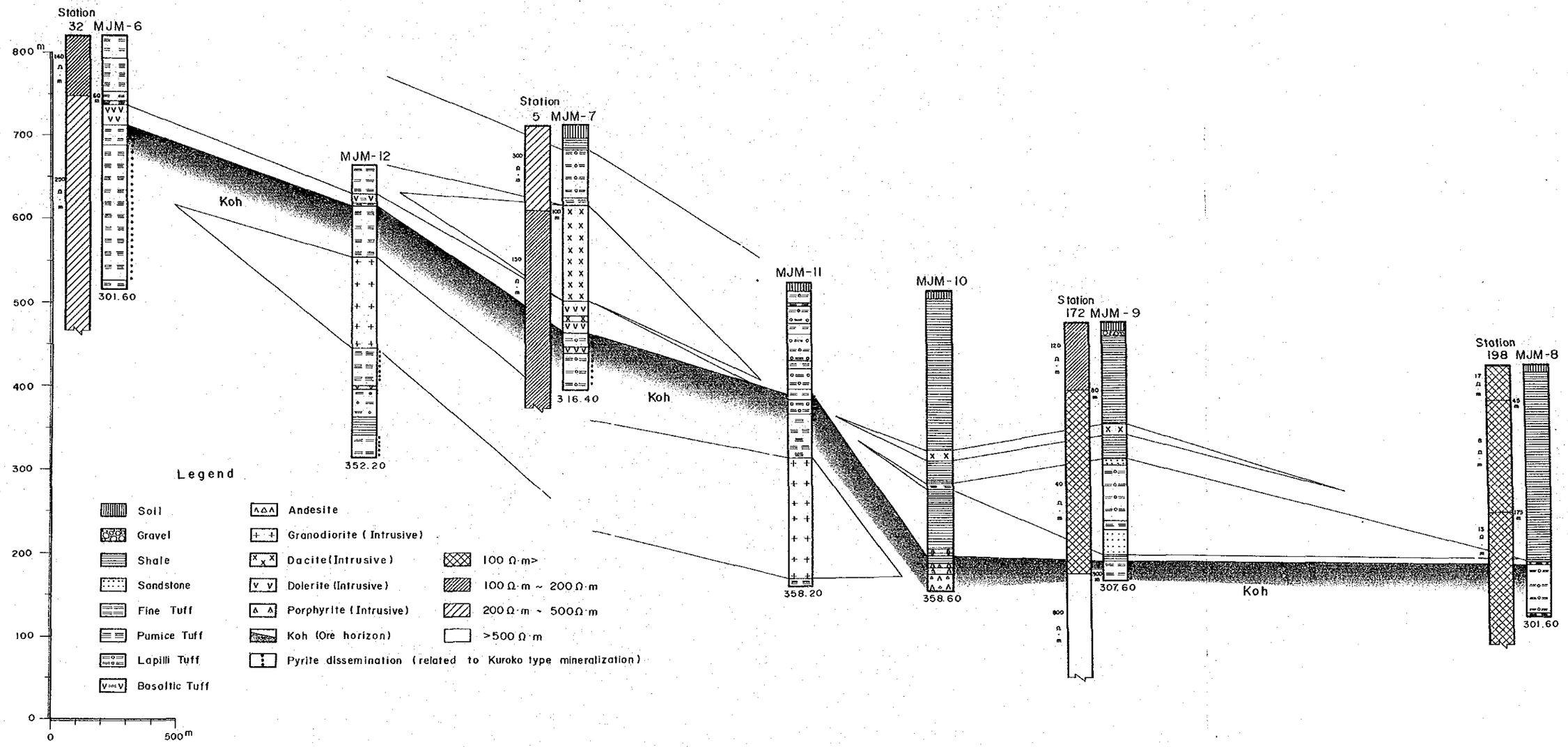

Fig. 5-30 Comparison between Geology and Resistivity Distribution of Each Hole

(intrusive), lapilli tuff associated with fine pyrite dissemination in the lower portion. With reference to the low resistivity zone (150 Ω·m) in the lower portion, the influences of water circulation through the fractures in dacite and dissemination developed in the lower lapilli tuff are not ignorable as its causes.

Meanwhile, as regards the medium resistivity zone (300 Ω·m) in the upper portion, although higher resistivity than in the lower portion can be expected also from geological point of view, the figure of resistivity itself appears to the biased on the side of low resistivity rather than one the apparent rock properties shown by the drill cores.

(3) MJM-8

This hole is located almost at the center of the low resistivity zone east-northeast of El Bramador. The geology of this hole can be classified into two; that is, the portion from the surface to the depth of 237.80 m where sedimentary rocks prevail and the deeper portion where pyroclastic rocks are dominant. Since the drilling site coincides with the position of the geophysical survey station (No. 198), the results of geophysical survey are considered to be reflective of the geology of this hole.

As indicated in Fig. 5-30, the resistivity at this station was measured at 17 Ω·m from the surface to the depth of 45 m, 8 Ω·m upto the depth of 175 m and 13 Ω·m for the deeper portion, showing very low figures in resistivity. These low resistivity figures being equivalent to those of massive sulphide minerals, such low resistivity cannot be explained by the properties of rocks composing this hole and farther study will be required in this respect.

In this hole, both alteration (argillization) and brecciation are noticed only locally and any special factor causing such remarkably low resistivity cannot be found.

(4) MJM-9

This hole is located almost at the center of the Santa Edwiges low resistivity zone. Since the drilling site coincides with the position of geophysical survey station (No. 172), the results of geophysical survey at the station are considered reflective of the geology of this hole. As shown in Fig. 5-30, the resistivity measured at this station stands at 120 Ω·m from the surface to the depth of 80 m and 40 Ω·m in the deeper portion upto 300 m.

The low resistivity zone (120 Ω·m) in the upper portion upto the depth of 80 m correlates geologically with the zone of dense black shale. Although the black shale is associated with a fractured zone, this is not considered to be of such scale as holding down the overall resistivity greatly.

Meanwhile, the low resistivity zone (40 Ω·m) in the deeper portion below the depth of 80 m correlates with the zone of dense and hard black shale and pyroclastic rocks. In this portion a fine pyrite disseminated zone (281.77 m ~ 307.60 m below the surface) exists within the zone of pyroclastic rocks, but this cannot be considered to be of such scale as may cause such a low resistivity measured at this survey station.

In the correlation between the geology of this hole and the resistivity distribution measured at the station No. 172, it is evident that the resistivity tends to be biased on the low side.

The relationship between the geology of drill holes and resistivity distribution is summarized as follows:

Upon reviewing the actual measurement results by referring to the resistivity test results on hand specimens of rocks, it is evident that the resistivity actually measured in the field survey tends to be biased on the lower side regardless of whether the rocks are sedimentary (shale and sandstone) or pyroclastic rocks.

The relationship between resistivity and geology of MJM-8 in particular remains to be studied further.

CHAPTER 6 CONCLUSION AND RECOMMENDATION

CHAPTER 6 CONCLUSION AND RECOMMENDATION

6-1 Conclusion

As this year's survey (Phase 3) in Jalisco State of the United Mexican States, drilling surveys, aiming to extract hopeful sites for existence of Kuroko type ore deposits, were practiced at seven sites picked out from the last year's survey (Phase 2) results. Conclusions obtained from this survey are summarized as follows:

Drilling Survey

As a result from the survey (at seven holes with a total drilling length of 2,296.20 m) Kuroko type mineralization has been catched up in MJM-6, MJM-7 and MJM-9. Especially, the Kuroko ore horizon of MJM-9 has included a high grade Kuroko ore (15 cm thick: Au: 7.8 g/t, Ag: 1,108 g/t, Cu: 1.15%, Pb: 16.2% and Zn; 32.2%) and a gold mineralized zone (8 m thick; averaged Au grade: 4.2 g/t).

On the other hand, disseminated zone of fine pyrite, which are one of characteristics of Kuroko type mineralization, have been observed in acidic pyroclastics of Kuroko ore horizon in MJM-6 and MJM-7. These disseminated zone partly include silver mineralized zones (MJM-6, 8 m thick; average Ag grade: 145 g/t, MJM-7, 5 m thick; averaged Ag grade: 100 g/t). These facts implicate that the Kuroko type mineralization in this area may also be accompanied by mineralization of precious metals.

In La Concha - El Bramador area, there is a remarkable difference of geological environment between the northwest part (MJM-6, MJM-7, MJM-11 and MJM-12) and the southeast past (MJM-8, MJM-9 and MJM-10). The former four holes have been mainly constituted with similar acidic and basic volcanic rocks, suggesting that they may have been formed by the same volcanic activities. However, the fact that there are no lens-shaped sedimentary rock observed, which is usually found at the center of a sedimentary basin, implicates that these drilling sites are located in the periphery of the basin.

One of big reasons why, despite of observation of predominant Kuroko type mineralization (disseminated zones), no massive sulphide Kuroko type deposits have been encountered is that locations and scales of sedimentary basins necessary for formation of Kuroko type deposits have not been sufficiently followed.

On the other hand, the southeast part is characterized by a small percentage of volcanics in the rock constitution, greatly differing in geological features from the northwest part.
In MJM-9, however, a black shale, which suggests the existence of a sedimentary basin, has been found just above the Kuroko ore horizon, and this meets one of requirements for the existence of Kuroko type deposits. Geological mode of occurrence (including degree and alteration of mineralization in the Kuroko type ore horizon) indicates that this drilling site may not be away from the mineralized center of the Kuroko type deposit.

From the exploration point of view, the probability of existence of Kuroko type deposits may be small in the southeast part.

6-2 Recommendation

Based on survey results and conclusions resulted from discussions of the Phase 3 survey, recommendation for the future can be summarized as follows:

Desirable is detailed exploration by drilling to identify the scale and the grade of the black ore and the gold mineralized zone catched up in MJM-9. This detailed exploration will make the whole image of the expected Kuroko type deposit clear and understanding on the relationship between the Kuroko type mineralization and the gold mineralization deeper.

Additional drilling surveys should be also carried out on silver mineralized zones found in MJM-6 and MJM-7, which may pave a way to catch up Kuroko type deposits, the existence of which in this vicinity is promisingly expected.

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APPENDIX

APX. 1 Drill Logs

Legend


Soil


Gravel


Shale


Sandstone


Fine tuff


Pumice tuff


Lapilli tuff


Basaltic tuff


Andesite lava


Dolerite


Dacite


Porphyrite


Granodiorite

Py : Pyrite

Po : Pyrrhotite

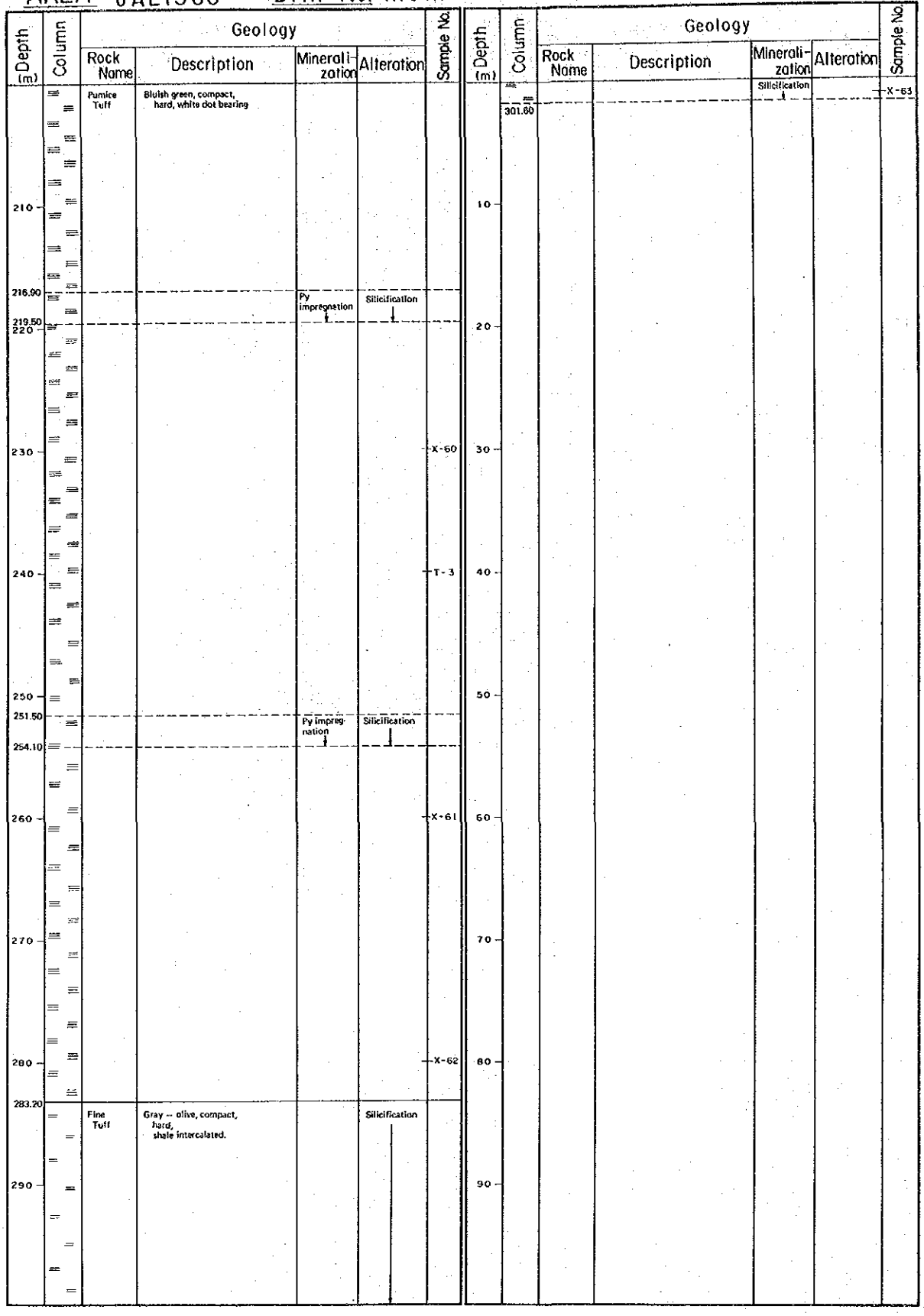
X-1 : Sample Numbers of X-ray Powder Diffraction
P-1 : Sample Numbers of Polished Section
T-1 : Sample Numbers of Thin Section

AREA JALISCO Drill No. MJM - 6 (1) 0 m ~ 200 m

Depth (m)	Rock Name	Description	Mineralization	Alteration	Sample No.
0	Fine Tuff	Pale brown – brown, rather compact, partly fractured.			
10					
20		← Black mud-ball bearing			
28.10	Pumice Tuff	Bluish green – Olive, rather massive, gentle dipping (L10°±).			
30					X-54
40		ore fragment ore fragment			
50					
60					T-1 X-55
70	Fine Tuff	Bluish green, compact, hard, massive, partly black mud-ball bearing.			
78.10	Shale	Black, fractured.			
80					
80.20	Fine Tuff	Dark gray, compact, stratified.			
81.60	Dolerite	Dark green – olive, massive, partly fractured.			
90		Mineral grain size gradually increase.			

Depth (m)	Rock Name	Description	Mineralization	Alteration	Sample No.
107.30	Pumice Tuff	Gray – bluish green, compact hard.	Py impregnation	Silicification	
109.10					
110	Fine Tuff	Bluish green, compact, hard, rather massive.			X-56
120					P-15
130					
130.70	Pumice Tuff	Olive, compact, hard, homogenous pumice structure: clear			
140					P-16 X-57 P-17
150					
160					
170					X-58
180					
190					T-2
197.60					X-59

AREA MEXICO JALISCO Drill No. MJM - 6 (2) 200m ~ 301.60m



AREA JALISCO Drill No. MJM - 7 (1) 0 m ~ 200 m

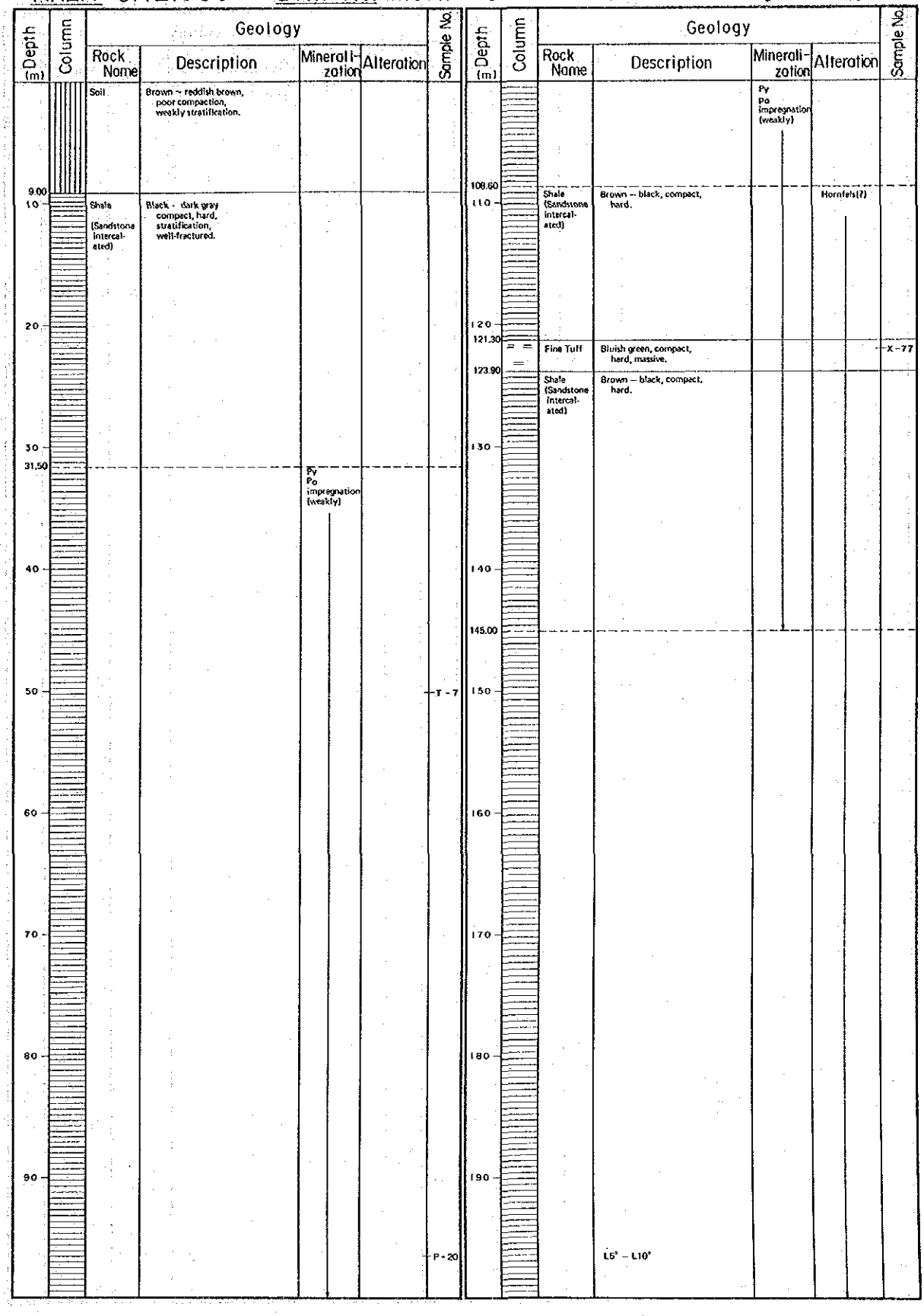
Depth (m)	Column	Geology: Rock Name	Description	Mineralization	Alteration	Sample No.
0		Soil	Brown – pale brown, rather homogeneous C-horizon.			
15.00		Shale	Black, compact, hard, fractured, mineralized fine tuff thin layer intercalated.	Py impregnation		
27.00		Lapilli Tuff	Olive – green, compact, hard, attenuated pumice, almost flat. Lapilli: dacite (?)			X-64, X-65, T-4, X-66
85.00		Fine Tuff	Olive, rather loose, lamination, black shale intercalated.			X-67
94.00		Dacite (intrusive)	Pale green, compact, hard, massive.			
200		Dacite	Pale green, compact, hard, massive.			X-68, X-69, T-5, X-70, X-71, X-82

AREA JALISCO Drill No. MJM - 7 (2) 200 m ~ 316.40m

Depth (m)	Column	Geology: Rock Name	Description	Mineralization	Alteration	Sample No.
		Dacite (intrusive)	Bluish green, compact hard, massive, rather fine.			
208.20						
210		Dolerite (intrusive)	Dark green, compact, hard, massive.			
220						
226.90		Dacite (intrusive)	Dark gray, compact, massive, fine.			X-73
230						
233.40		Dolerite	Dark green, compact, hard, massive.			
240						
246.50		Lapilli Tuff	Pale green, compact, hard. Lapilli: dacite(?) Au(g/t) Ag(g/t) Cu(%) Pb(%) Zn(%) 247.0 – 248.0m 248.0 – 249.0 249.0 – 250.0	Py impregnation	Silicification Sericite (Chlorite)	P-18
250						X-74
260						T-6
263.90		Dolerite	Dark green, compact, massive, weakly chloritization.			
269.70		Lapilli Tuff	Dark green – olive pumice structure: obscure. well-fractured.	Py impregnation	Silicification Sericite (Chlorite)	
270						
280						X-75
289.80						
290						
292.40		Dolerite (intrusive) / Lapilli Tuff	Pale green – green compact, pumice structure: clear.	Py impregnation	Sericite (Chlorite)	P-19

Depth (m)	Column	Geology: Rock Name	Description	Mineralization	Alteration	Sample No.
		Lapilli Tuff	Pale green – green, compact	Py impregnation	Sericite (Chlorite)	
10						X-76
		316.40				
20						
30						
40						
50						
60						
70						
80						
90						

AREA JALISCO Drill No. MJM－ 8 (I) 0 m ～ 200 m

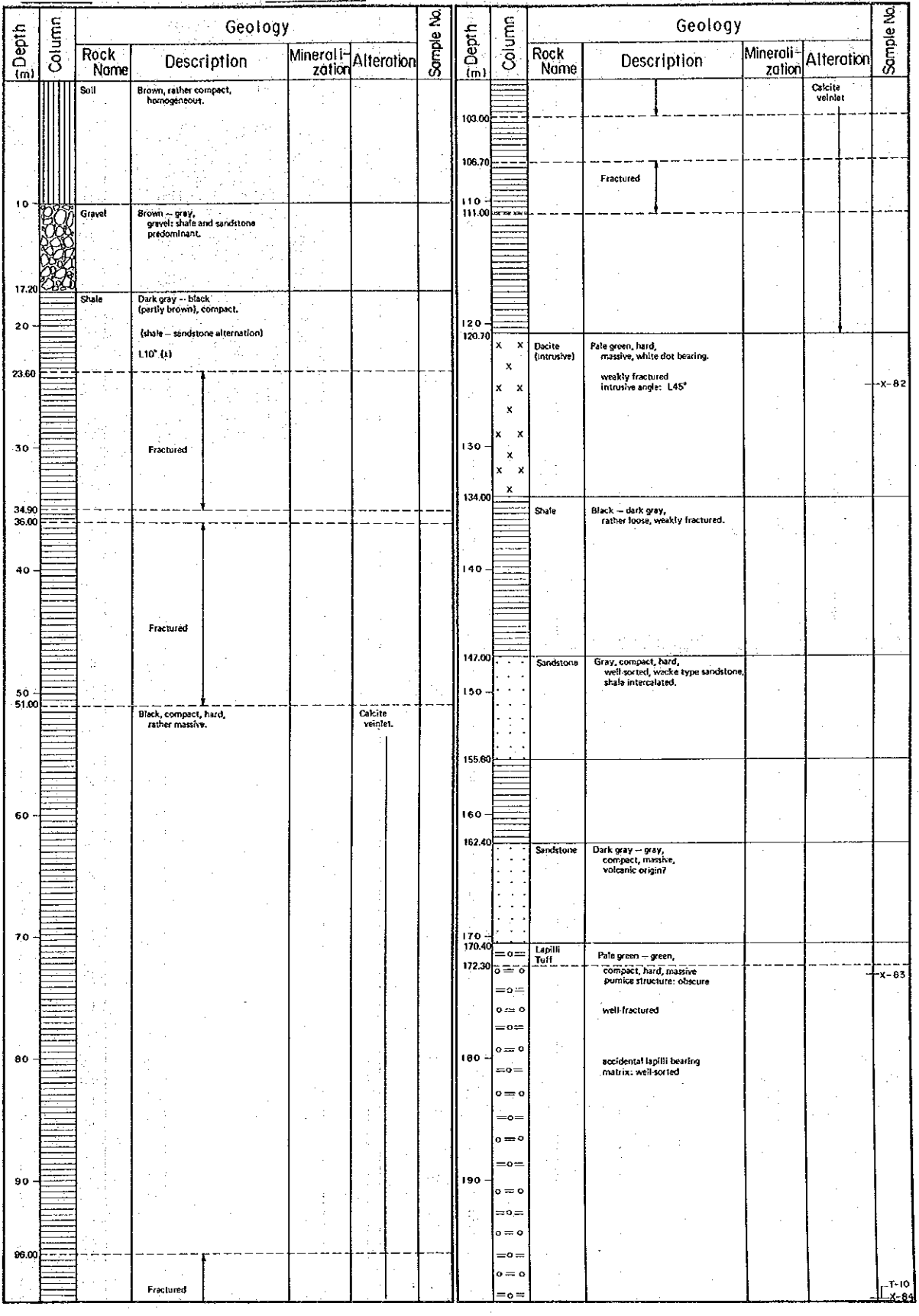


AREA JALISCO Drill No. MJM - 8 (2) 200 m ~ 301.60m

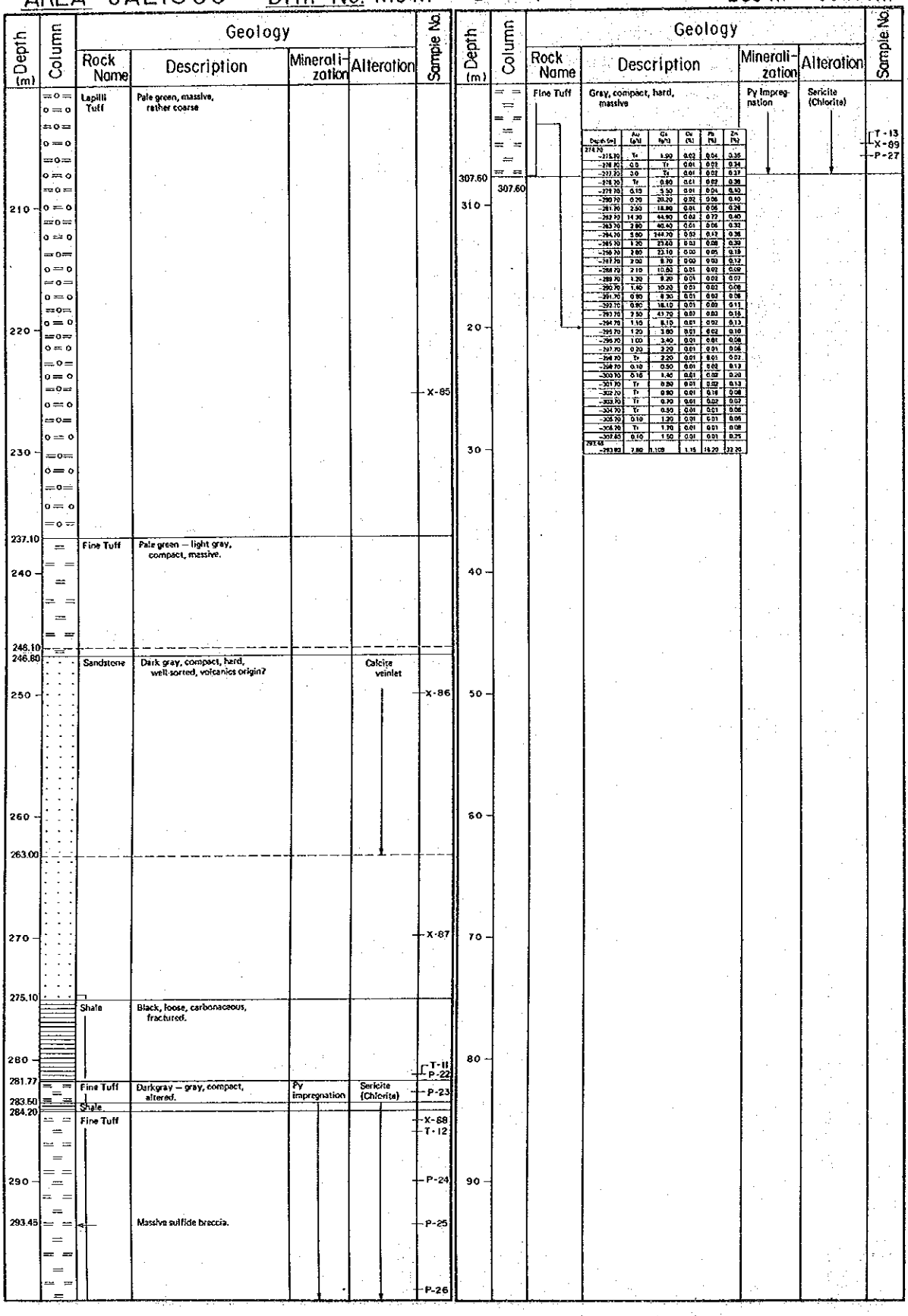
Depth (m)	Rock Name	Description	Mineralization	Alteration	Sample No.
210	Shale (Sandstone intercalated)	Brown – dark gray, compact, hard, gentle dipping (15° – 10°).		hornfels (?)	
220					
230					
235.00					T-8
237.80	Sandstone	Gray, compact, hard massive.			
240	Basaltic Tuff	Dark green, compact, massive.			
240.50	Lapilli Tuff	Grayish white, compact, hard. pumice: attenuated Lapilli : dacite (?)	Py impregnation		P-21
					X-78
250					
260					X-79
270		Olive – grayish green compact, hard, pumice: common.			T-9
280					
280.60	Shale	Black, compact, hard.			
281.30	Lapilli Tuff	Grayish white-pale green compact, hard. pumice: well-attenuated. well-mixtured pumice and lapilli.			X-80
290					
297.30					
299.60	Shale	Black, compact, hard (silicified).		silicification	X-81

Depth (m)	Rock Name	Description	Mineralization	Alteration	Sample No.
301.60	Fine Tuff	Pale green, loose, fractured.			
10					
20					
30					
40					
50					
60					
70					
80					
90					

AREA JALISCO Drill No. MJM − 9 (I) 0 m ～ 200 m



AREA JALISCO Drill No. MJM - 9 (2) 200 m ~ 307.60m



AREA JALISCO Drill No. MJM - 10 (1) 0 m ~ 200 m

Depth (m)	Column	Geology: Rock Name	Description	Mineralization	Alteration	Sample No.
0		Soil	Brown, loose, C horizon light brown bed rock bearing			
9.00						
10		Shale	Yellowish brown, loose, fractured, weathered part.			
18.80		Shale	Black – dark gray, compact, hard, sandstone intercalated. L15°			
20						
30						
32.30		Fine Tuff	Pale green hard, fractured.	Py impregnation		x-90
37.30						
40						
44.00			well-fractured			
50						
56.60						
60			Pale gray, compact, hard. wacke type sandstone intercalated. L20° – 30°			
70						
80						
90						
110						
113.60			Fractured		Calcite veinlets	
120						
123.20						
130						
140						
150			Black – dark gray compact, hard, thin sandstone layer frequently intercalated.			
160						
170						
180						
184.20			Black, compact, rather coarse, carbon matter bearing (?)			
188.60						
190		Porphyrite	Dark gray, compact, hard, rather homogenous, weakly fractured.			x-91

AREA JALISCO Drill No. MJM - 10 (2) 200 m ~ 358.60m

Depth (m)	Column	Geology: Rock Name	Description	Mineralization	Alteration	Sample No.
201.00		Shale	Black - dark gray, compact, hard, intercalation of sandstone layer. L15°			
210						
220						
228.70		Fine Tuff	Pale gray, compact, hard, well-sorted.			X-92
230						
235.30			Dark gray, compact, hard, gray sandstone intercated.			
240						
250			L6° – 10°			
260						
270						
280						
290						

Depth (m)	Column	Geology: Rock Name	Description	Mineralization	Alteration	Sample No.
306.60		Porphyrite	Pale green, compact, hard, intermediate grain feldspar, hornblend			X-93, T-14
310						
312.00		Basaltic Tuff	Dark olive, fine, compact well-sorted.		Chloritization	X-94
314.20		Shale	Black – dark gray, compact, hard, white silicified sandstone layer frequently intercalated.	Py impregnation		P-28
320						
324.80		Andesite	Olive – bluish green, fine, compact, fractured.		Prophylitization	
330		Porphyrite	Olive – dark green, compact massive, rather coarse			T-15, X-95
337.40		Andesite	Olive – bluish green, compact, weakly brecciated			
340						
350						X-96
358.60						
360						
70						
80						
90						

Depth (m)	Au (g/t)	Cu (%)	Pb (%)	Zn (%)
313.20				
~313.30	0.10	1.10	0.04	0.01
~316.30	Tr	0.30	0.01	0.01
~317.30	Tr	1.90	0.01	0.01

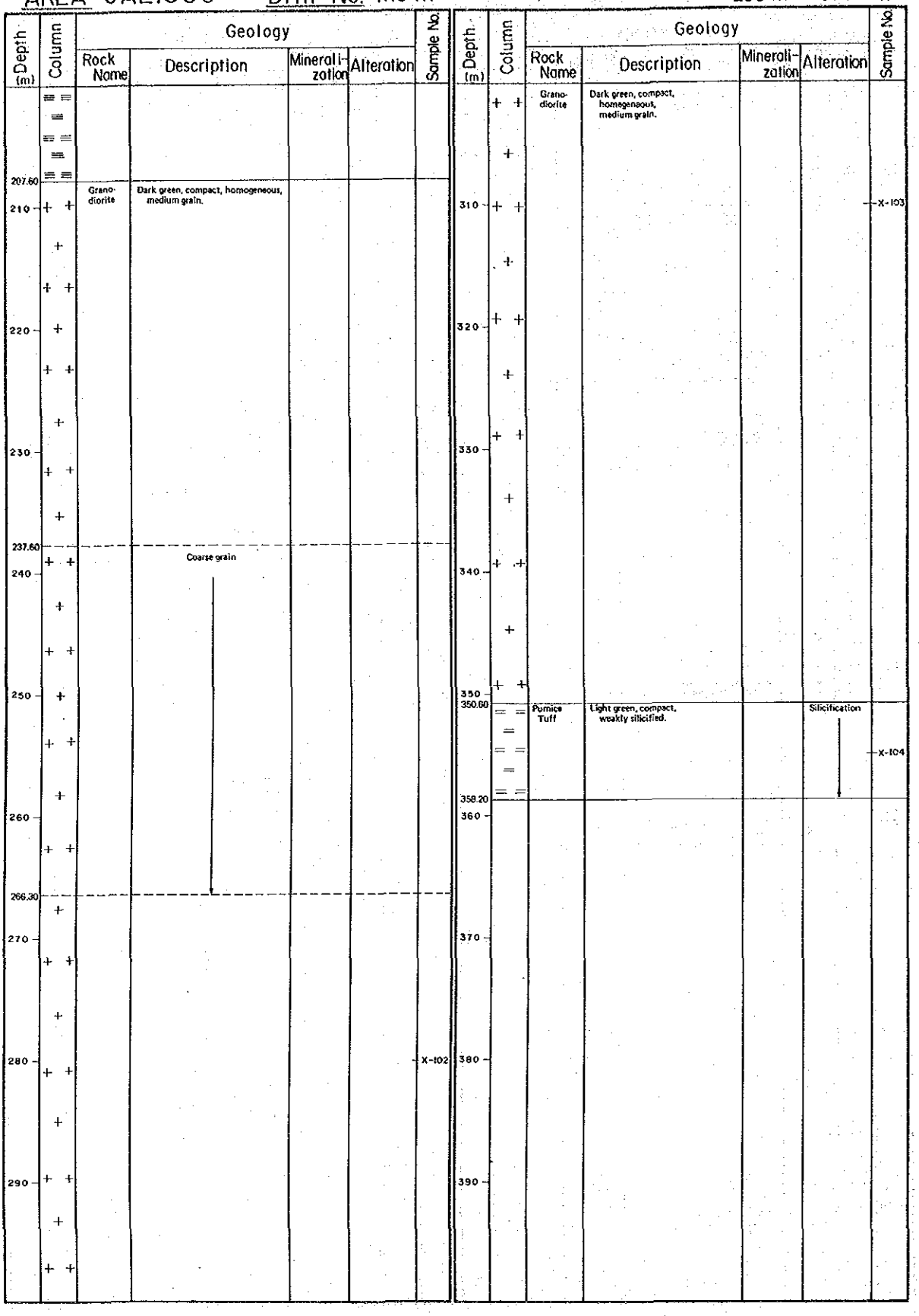
AREA JALISCO　Drill No. MJM − 11 (1)　0 m ～ 200m

Depth (m)	Rock Name	Description	Mineralization	Alteration	Sample No.
	Soil (C-horizon)	Brown-light brown, loose, rather compact.			
8.80					
10	Lapilli Tuff	Light brown, weathered. lapilli: essential and accidental (shale?)			
20					X-99
20.20	Fine Tuff	Light brown, compact, rather coarse. partly green compact part			
26.50	Lapilli Tuff	Pale green, very compact, homegenous lapilli: essential and accidental (shale?)			
30					
40					X-97
47.70	Fine Tuff	Pale green, very compact massive, homogenous.			
50					
60					
60.10	Lapilli Tuff	Bluish green, very compact, rather fine. accidental lapilli (shale?) common.			
70					T-16
77.30			Py impregnation (weakly)		
80					X-98
					P-32
90					
90.30					
92.00	Fine Tuff	Bluish green, compact, well-laminated. L10°			

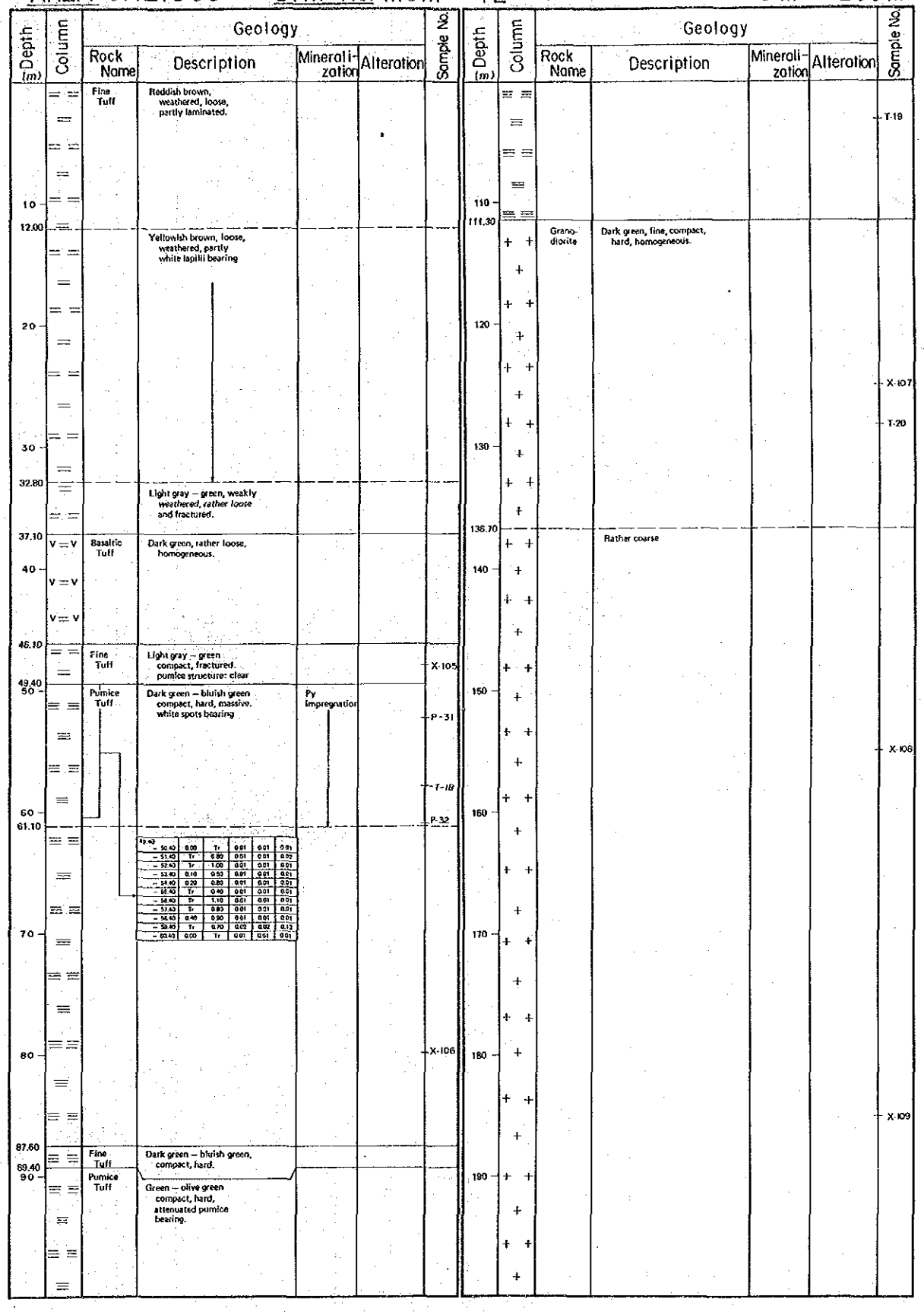
Depth (m)	Rock Name	Description	Mineralization	Alteration	Sample No.
101.00	Lapilli Tuff	Bluish gray, compact, hard, rather massive.			
110					
120					X-99
126.10	Fine Tuff	Light gray – gray, compact, homegenous, rather massive.			
129.60					
130			Py impregnation		
138.50					
140	Lapilli Tuff	Gray – bluish gray, compact, hard, lapilli: accidental lapilli (basic?) bearing.			
					P-29
150					
					P-30
156.20	Pumice Tuff	Gray, compact, hard, massive, white spots common. pumice structure clear			
160					X-100
161.20					
170					
180					T-17
190					
					X-101

Depth (m)	Au (g/t)	Ox (g/t)	Cu (%)	Pb (%)	Zn (%)
129.80					
−130.80	Tr	0.80	0.01	0.01	0.01
−131.60	Tr	0.50	0.01	0.01	0.01
−132.60	Tr	1.00	0.01	0.01	0.02
−133.50	0.20	2.40	0.08	0.01	0.03
−134.50	0.10	1.30	0.02	0.02	0.02
−135.50	Tr	0.50	0.02	0.02	0.01
−136.50	Tr	0.30	0.01	0.02	0.02
−137.60	Tr	0.50	0.02	0.02	0.02
−138.80	Tr	1.10	0.01	0.01	0.01
−139.50	ND	1.80	0.01	0.02	0.01
−140.80	0.10	0.90	0.01	0.02	0.01
−141.60	0.20	0.60	0.01	0.02	0.01
−142.80	0.10	1.00	0.01	0.01	0.01
−143.80	Tr	0.30	0.01	0.01	0.01
−144.50	Tr	1.00	0.01	0.02	0.01
−145.80	0.10	1.30	0.01	0.02	0.01
−146.80	0.10	0.80	0.01	0.02	0.01
−147.60	Tr	0.40	0.01	0.02	0.01
−148.80	Tr	0.50	0.01	0.01	0.01
−149.80	0.00	Tr	0.01	0.02	0.01
−150.80	Tr	0.60	0.01	0.01	0.01
−151.80	Tr	0.30	0.01	0.02	0.01
−152.80	0.20	2.20	0.01	0.03	0.01
−153.80	Tr	1.00	0.01	0.02	0.01
−154.60	0.10	1.40	0.01	0.03	0.01
−155.60	Tr	0.50	0.01	0.02	0.01
−156.60	Tr	0.40	0.01	0.02	0.01
−157.80	0.00	Tr	0.01	0.02	0.02
−158.80	0.00	Tr	0.02	0.02	0.03
−159.80	Tr	0.30	0.01	0.01	0.01
−160.60	0.00	Tr	0.01	0.01	0.01

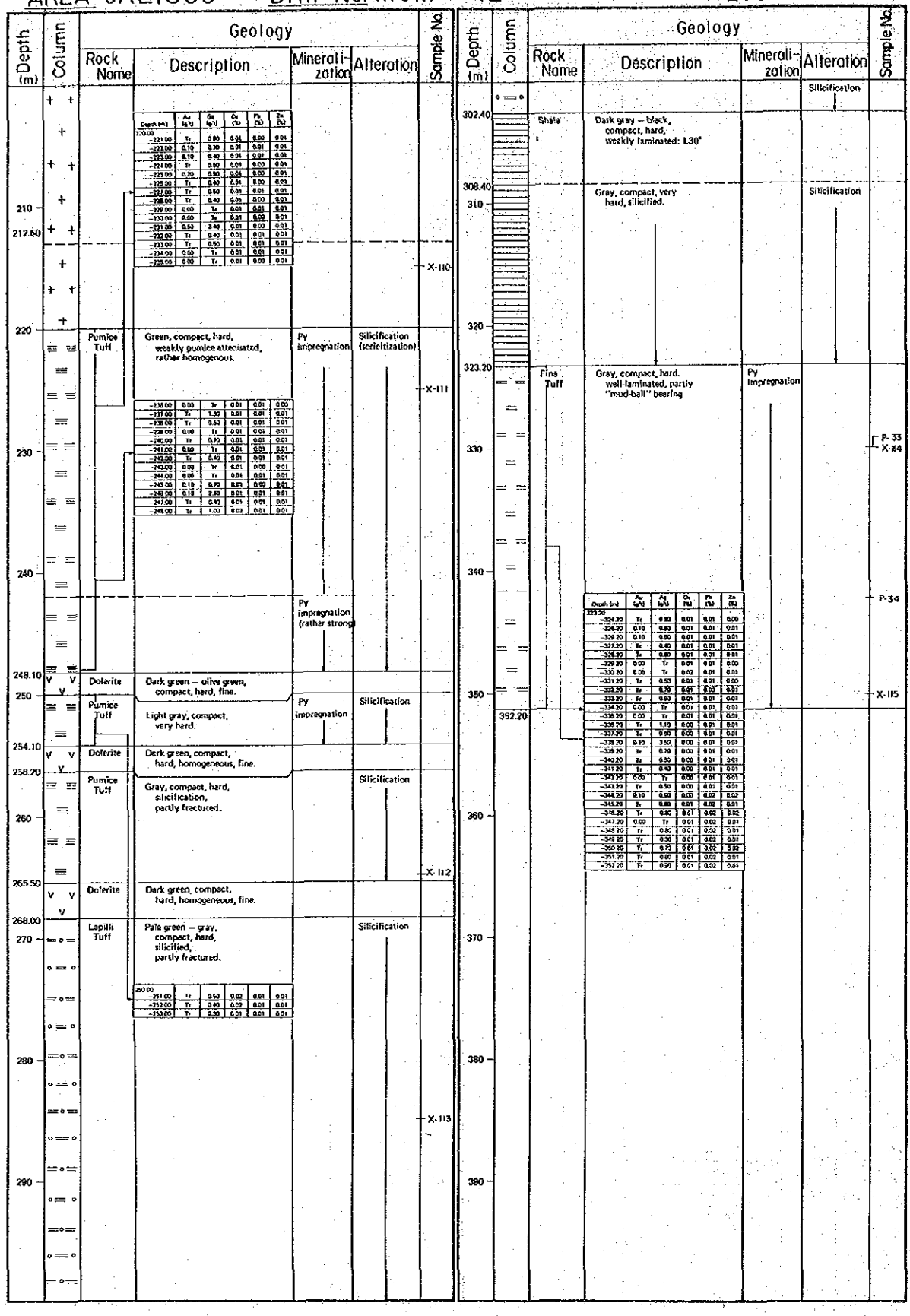
AREA JALISCO Drill No. MJM - 11 (2) 200 m ~ 358.20m



AREA JALISCO Drill No. MJM－12 (1) 0m～200m



AREA JALISCO　Drill No. MJM－12（2）　200m～352.20m



APX. 2 Microscopic Observation of Rock Thin Sections

APX.2 Microscopic Observation of Rock Thin Sections

No.	Sample No.	Drill No.	Depth (m)	Rock Name	Texture	Phenocrysts or Fragments															Grandmass or Matrix											Alteration Minerals						Remarks
						Qz	Pl	Kf	Bi	Hb	Sp	Ap	C	Lc	Fe	Ru	Ad	Dc	Rh	Se	Tf	Qz	Pl	Kf	Bi	Hb	Ox	Cx	Fe	Gl	Pu	Md	Qz	Ca	Ch	Ep	Se	Py	
1	T-1	MJM-6	60	PUMICE TUFF		◉	◉					●		●								○									◎	○	○	●	○		◎	●	
2	T-2	〃	190	PUMICE TUFF		◎	◎							●								○									◉	○	◎		○		◎		
3	T-3	〃	240	PUMICE TUFF		◉	◉				●	●										○	○								◉	○	◉		○		◎	●	
4	T-4	MJM-7	70	LAPILLI TUFF		○	◎					●										○	○								◎	○	◉	●	○		◎	●	
5	T-5	〃	140	DACITE	VARIOLITIC		◉					●										◉	◉			○								○		●	●		
6	T-6	〃	260	LAPILLI TUFF		◉	◉					●										○	○								○		◎	○	●		◎	●	
7	T-7	MJM-8	50	SHALE									○				●					◎	◎												●		●	○	MICROFOSSIL BEARING
8	T-8	〃	235	SANDSTONE									◎									○	○														●		〃
9	T-9	〃	270	LAPILLI TUFF		◎	◉				●							○													◉		◎	○	○	●	◉	●	
10	T-10	MJM-9	200	LAPILLI TUFF		◉	◉	○				●																			○			○	○		○		
11	T-11	〃	281	SHALE									◉									◎	●											◎				○		
12	T-12	〃	286	FINE TUFF		◉					●							●													◎						◉	●	
13	T-13	〃	305	FINE TUFF		◉	◎	○														◎	○								◎			○	●		◎	●	
14	T-14	MJM-10	310	PORPHYRITE	PORHYRITIC		◉			◎	○	●		●								○	◉			◎			●					●	◎		◎		
15	T-15	〃	330	PORPHYRITE	PORHYRITIC		○			●	●	●		●								○	◉			○			●					○	○				
16	T-16	MJM-11	70	LAPILLI TUFF		◉	◉	○				●						○				◎	◎								◎			○	●		◎	●	
17	T-17	〃	185	PUMICE TUFF		◉	○	◉				●				●						○	○	○							◉	○	◎		●		◎		RHYOLITIC (?)
18	T-18	MJM-12	58	PUMICE TUFF		◉	◉				●	●						○				○	○								◎				●		◎		
19	T-19	〃	103	PUMICE TUFF		◉	○	◎			●											○	○	○							◎			◎	●	●	◎		RHYOLITIC (?)
20	T-20	〃	128	GRANODIORITE	EQUIGRANULAR	◎	◉	◎			●	●		○							◎													●	◉	○				

◉:Abundant ◎:Common ○:Minor ●:Rare

Abbreviation

Qz: Quartz
Pl: Plagioclase
Kf: K-feldspar
Bi: Biotite
Hb: Hornblend
Sp: Shene
Ap: Apatite
Zr: Zircon
Lc: Leucoxene
Ru: Rutil
Ca: Calcite
Py: Pyrite
Cx: Clinopyroxene
Ox: Orthopyroxene
Ch: Chlorite
Ep: Epidote
Se: Sericite
Fe: Iron minerals
Gl: Glass
Pu: Pumice
Cl: Clay
C : Carbon matter
Md: Mud
Ad: Andesite
Dc: Dacite
Rh: Rhyolite
Tf: Tuff

APX. 3 Photomicrographs of Rock Thin Sections of Drill Cores

Abbreviation

Qz : Quartz

Pl : Plagioclase

Se : Sericite

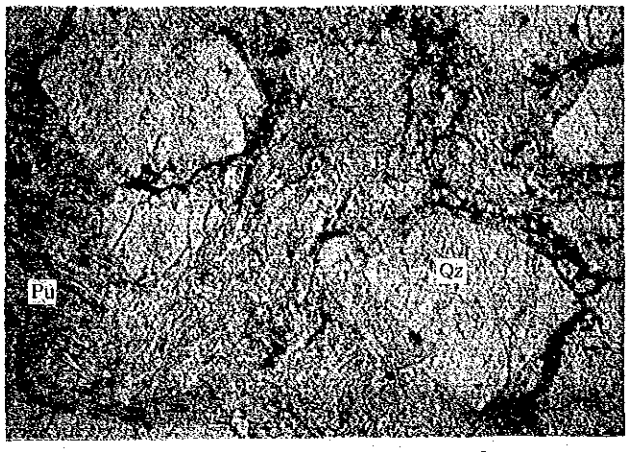
Fe : Iron mineral

Ca : Calcite

Pu : Pumice

Ep : Epidote

C : Carbon matter

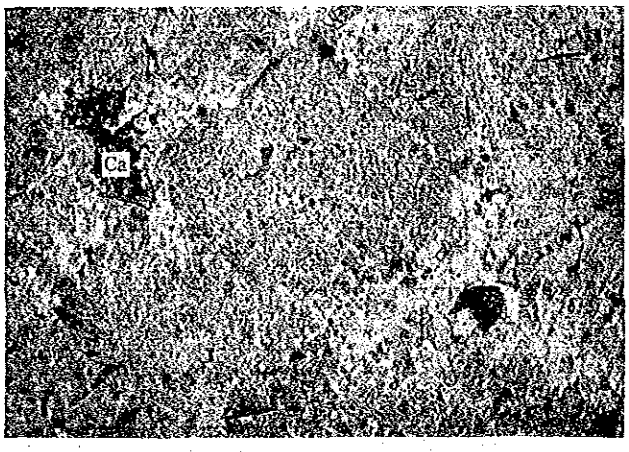


Open nicol

Crossed nicol

0.5mm

Sample No. : T-3
Location : MJM-6, 240m
Rock Name : Dacitic pumice tuff



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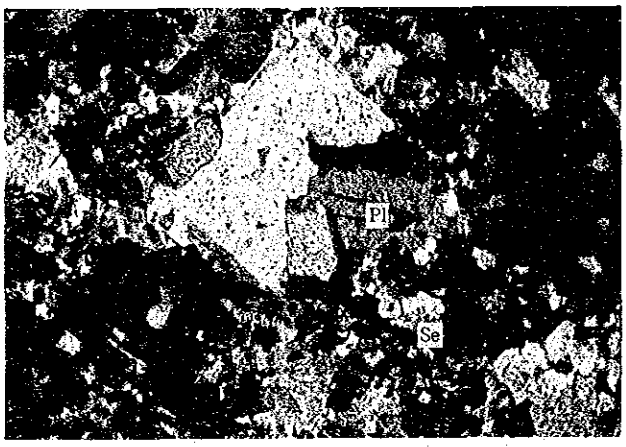
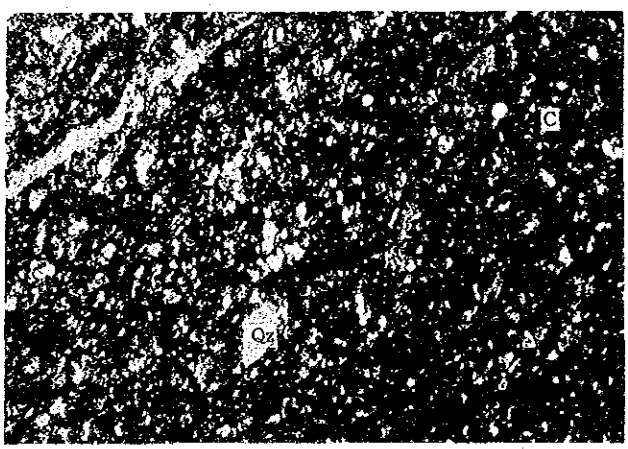


Crossed nicol

0.5mm

Sample No. : T-5
Location : MJM-7, 140m
Rock Name : Dacite



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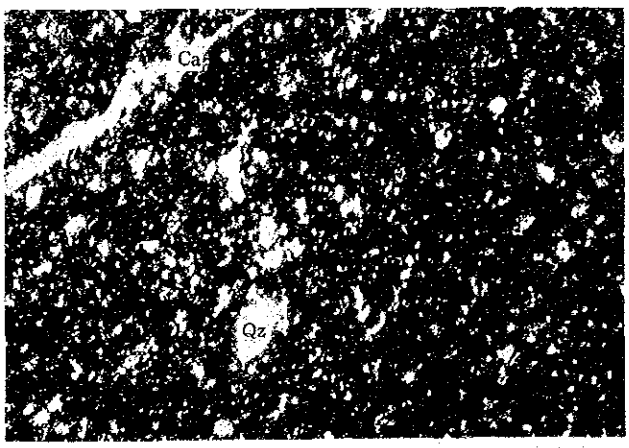
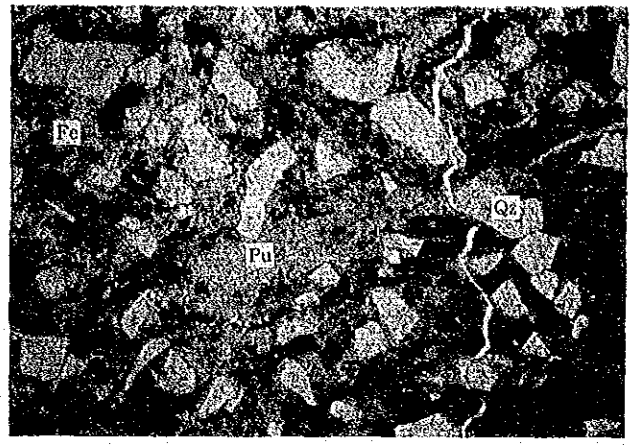


Crossed nicol

0.5mm

Sample No. : T-11
Location : MJM-9, 281m
Rock Name : Shale



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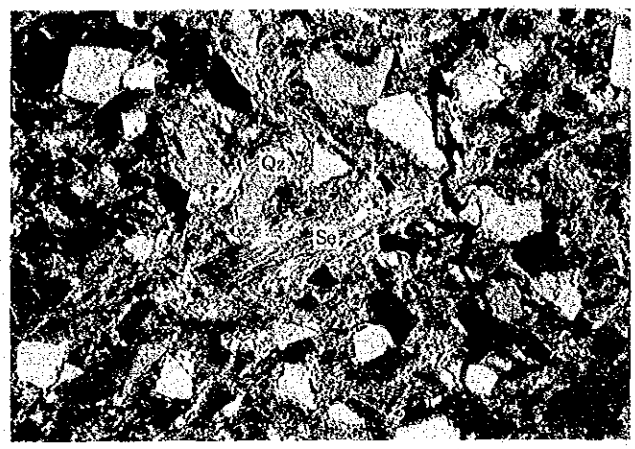
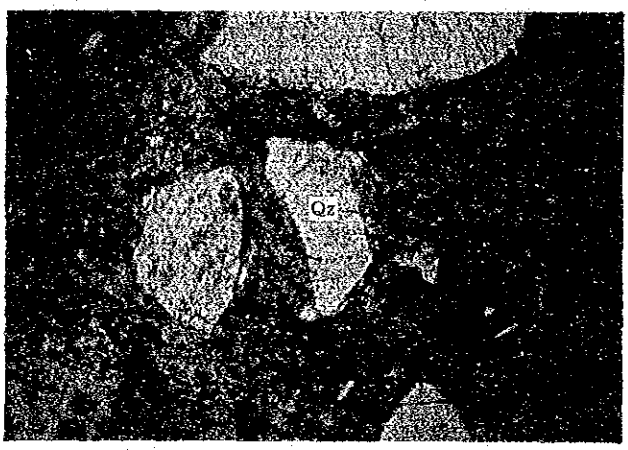


Crossed nicol

0.5mm

Sample No. : T－12
Location : MJM－9, 286m
Rock Name : Dacitic fine tuff

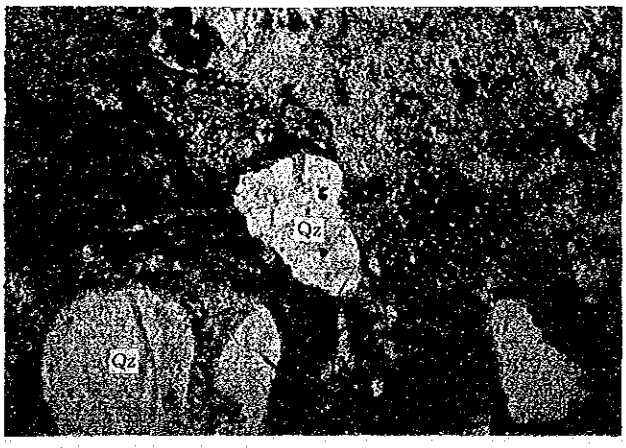


Open nicol

Crossed nicol

0.5mm

Sample No. : T－17
Location : MJM－11, 70m
Rock Name : Dacitic pumice tuff



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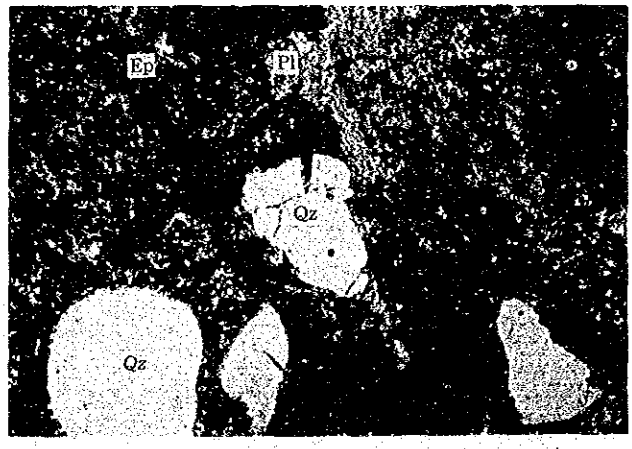


Crossed nicol

0.5mm

Sample No. : T－19
Location : MJM－12, 103m
Rock Name : Dacitic pumice tuff

APX. 4 Microscopic Observation of Polished Sections of Drill Cores

APX. 4 Microscopic Observation of Ore Polished Sections of Drill Cores

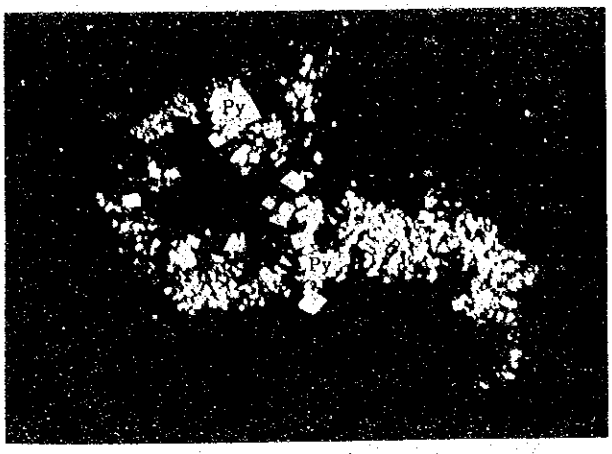
No	Sample No.	Drill No.	Depth (m)	Ore minerals							Gangue minerals					Remarks
				Sp	Cp	Py	Te	Po	Ag	Gn	Qz	Ca	Se			
1	P-15	MJM- 6	115.60	●		○					◎					Py-Sp impregnation in fine tuff
2	P-16	MJM- 6	136.50	○		○					◎					Py-Sp impregnation in Pumice tuff
3	P-17	MJM- 6	147.40	●		○					○					〃
4	P-18	MJM- 7	250.00	○		○					○					Py-Sp impregnation in lapilli tuff
5	P-19	MJM- 7	300.00	○		○					○	○				〃
6	P-20	MJM- 8	96.60	●	●			○								Po-Sp-Cp impregnation in shale
7	P-21	MJM- 8	241.00	●		●										Py-Sp impregnation in shale
8	P-22	MJM- 9	281.50	○		○										〃
9	P-23	MJM- 9	282.80	○		○										Py-Sp impregnation in fine tuff
10	P-24	MJM- 9	290.00	○		○										〃
11	P-25	MJM- 9	293.45	◉		◎	◎	● El	●	○	◎	◎	○			Massive sulphide ore
12	P-26	MJM- 9	299.00	○		○					○	○				Py-Sp impregnation in fine tuff
13	P-27	MJM- 9	306.20	●		○					○					〃
14	P-28	MJM-10	314.30	●				○								Po-Sp impregnation in shale
15	P-29	MJM-11	143.00	●		○										Py-Sp impregnation in lapilli tuff
16	P-30	MJM-11	155.00	●		○										〃
17	P-31	MJM-12	52.40	●		●										Py-Sp impregnation in pumice tuff
18	P-32	MJM-12	61.00	●		●										〃
19	P-33	MJM-12	330.00	●		○					○	○				Py-Sp impregnation in fine tuff
20	P-34	MJM-12	342.00	○		○					○	○				〃

Abbreviation
Sp: Sphalerite Cp: Chalcopyrite Py: Pyrite Te: Tetrahedrite Po: Pyrrhotite Ag: Argentite
Gn: Galena El: Electrun Qa: Quartz Ca: Calcite Se: Sericite
◉: Abundant ◎: Common ○: Minor ●: Rare

APX. 5 Photomicrographs of Ore polished Sections of Drill Cores

Abbreviation

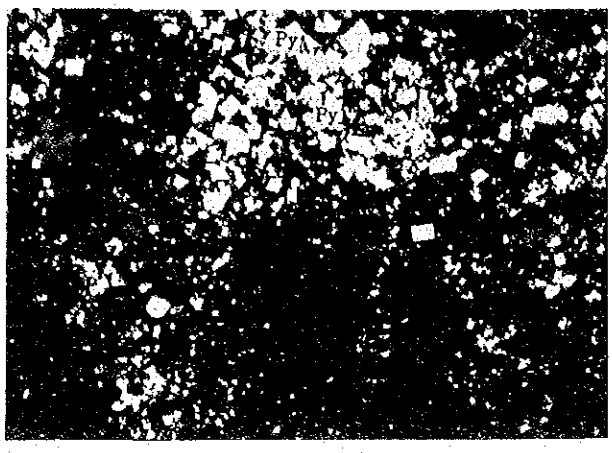
Sp	:	Sphalerite
Py	:	Pyrite
Gn	:	Galena
Po	:	Pyrrhotite
Te	:	Tetrahedrite
El	:	Electrum
Im	:	Ilmenite



Sample No. : P−15
Drill No. : MJM−6
Depth : 115.60m
Remarks : Pyrite impregnation in fine tuff

Open nicol

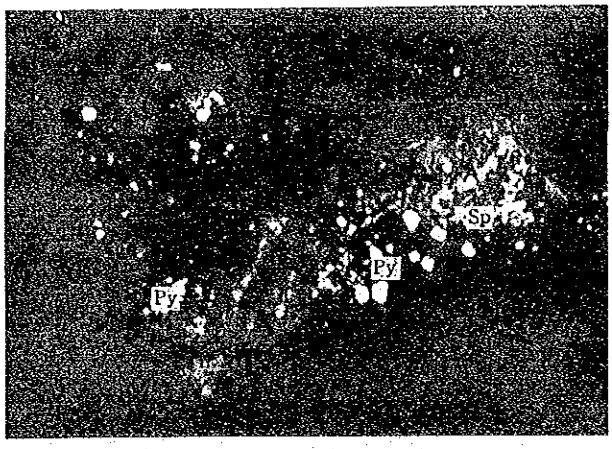
0.2mm



Sample No. : P−17
Drill No. : MJM−6
Depth : 147.40m
Remarks : Pyrite concentration in pumice tuff

Crossed nicols

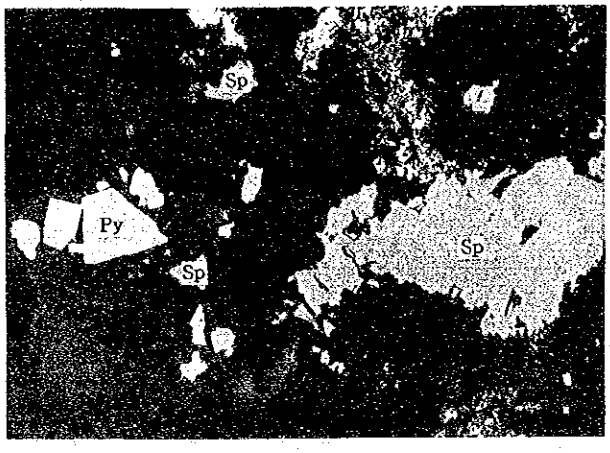
0.2mm



Sample No. : P−18
Drill No. : MJM−7
Depth : 250.00m
Remarks : Pyrite and sphalerite impregnation in lapilli tuff

Open nicol

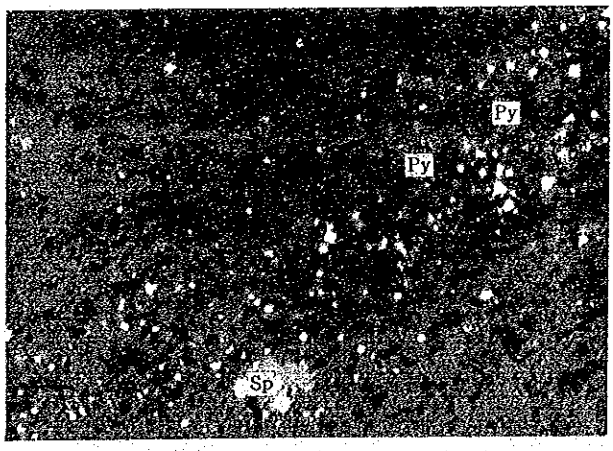
0.2mm



Sample No. : P−19
Drill No. : MJM−7
Depth : 300.00m
Remarks : Pyrite and sphalerite impregnation in lapilli tuff

Open nicol

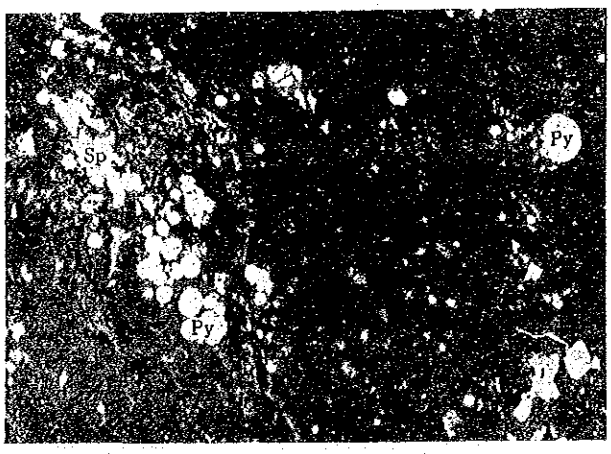
0.1mm



Sample No. : P−21
Drill No. : MJM−8
Depth : 241.00m
Remarks : Pyrite and sphalerite impregnation in shale

Open nicol

0.1mm

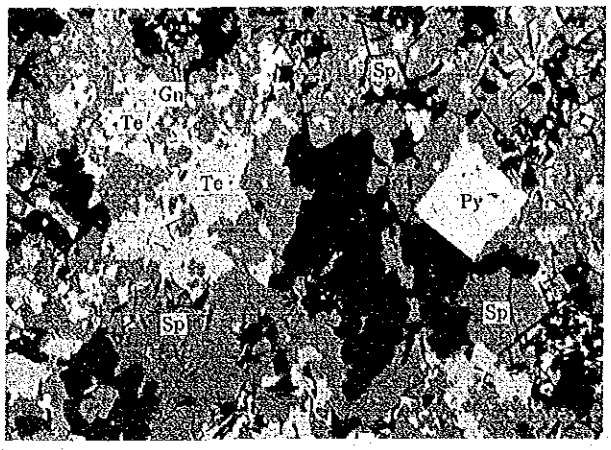


Sample No. : P−22
Drill No. : MJM−9
Depth : 281.50m
Remarks : Framboidal pyrite bearing shale

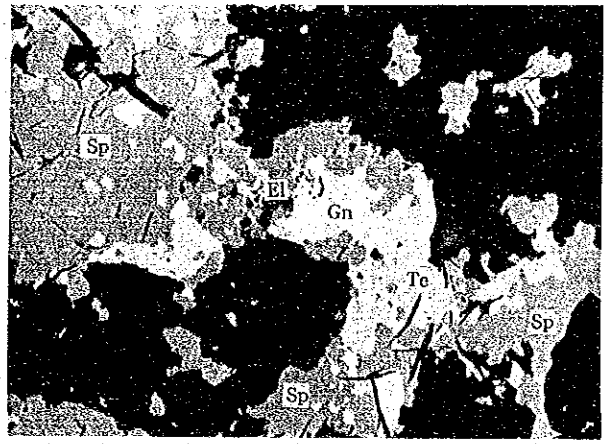
Open nicols

0.05mm

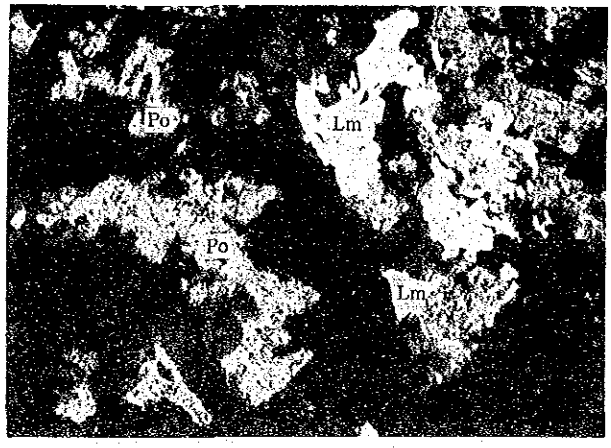
Sample No. : P-23 Open nicol
Drill No. : MJM-9
Depth : 282.80m
Remarks : Sphalerite and pyrite in fine tuff
0.05mm



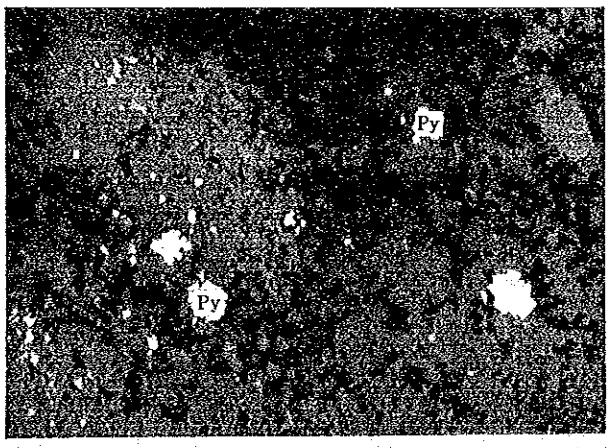
Sample No. : P-25 Open nicol
Drill No. : MJM-9
Depth : 293.45m
Remarks : Massive sulphide ore
0.1mm



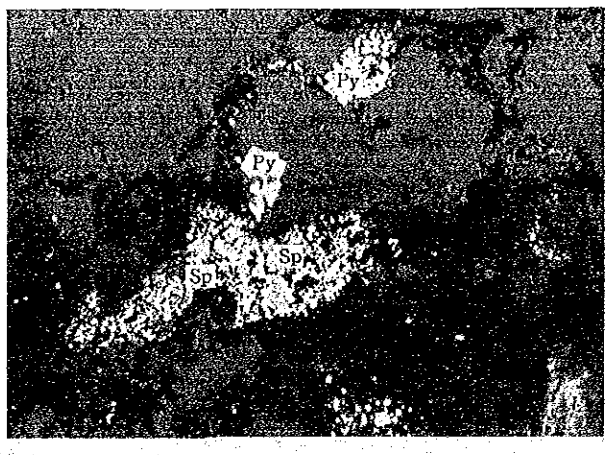
Sample No. : P-25 Open nicol
Drill No. : MJM-9
Depth : 293.45m
Remarks : Massive sulphide ore
0.05mm



Sample No. : P-28 Open nicols
Drill No. : MJM-10
Depth : 314.30m
Remarks : Pyrrhotite and ilmenite in shale
0.1mm



Sample No. : P-29 Open nicol
Drill No. : MJM-11
Depth : 143.00m
Remarks : Pyrite impregnation in lapilli tuff
0.1mm



Sample No. : P-34 Crossed nicol
Drill No. : MJM-12
Depth : 342.00m
Remarks : Pyrite and sphaterite impregnation in fine tuff
0.2mm

APX. 6 Results of Chemical Analysis of Ore Samples from Drill Cores

APX. 6 Results of Chemical Analysis of Ore Samples from Drill Cores (1)

No.	Drill No.	Depth(m)	Sample No.	Coordinates		Analytical Results					Remarks
				−X	Y	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
1	MJM- 6	106.60-107.60	MJM- 6- 1	13,430	11,860	0.20	0.70	0.01	0.01	0.01	Py imp in do & p.t.
2		-108.60	MJM- 6- 2			Tr	0.60	0.01	0.00	0.01	Py imp in p.t.
3		-109.60	MJM- 6- 3			0.10	0.40	0.01	0.00	0.02	Py imp in p.t.& f.t.
4		-110.60	MJM -6- 4			0.20	2.10	0.01	0.00	0.01	Py imp in f.t.
5		-117.60	MJM- 6- 5			Tr	0.60	0.01	0.00	0.01	〃
6		-112.60	MJM- 6- 6			Tr	0.50	0.01	0.00	0.02	〃
7		-113.60	MJM- 6- 7			0.0	Tr	0.00	0.00	0.01	〃
8		-114.60	MJM- 6- 8			0.0	Tr	0.00	0.00	0.01	〃
9		-115.60	MJM- 6- 9			0.0	Tr	0.00	0.00	0.02	〃
10		-116.60	MJM- 6-10			Tr	0.80	0.01	0.00	0.01	〃
11		-117.60	MJM- 6-11			Tr	0.40	0.00	0.00	0.01	〃
12		-118.60	MJM- 6-12			0.0	Tr	0.00	0.00	0.01	〃
13		-119.60	MJM- 6-13			0.0	Tr	0.00	0.00	0.01	〃
14		-120.60	MJM- 6-14			Tr	0.70	0.00	0.00	0.01	〃
15		-121.60	MJM- 6-15			Tr	1.10	0.00	0.00	0.01	〃
16		-122.60	MJM- 6-16			Tr	0.80	0.00	0.00	0.01	〃
17		-123.60	MJM- 6-17			Tr	0.50	0.00	0.00	0.01	〃
18		-124.60	MJM- 6-18			0.0	Tr	0.00	0.00	0.01	〃
19		-125.60	MJM- 6-19			0.0	Tr	0.00	0.01	0.01	〃
20		-126.60	MJM- 6-20			Tr	0.80	0.01	0.01	0.01	〃
21		-127.60	MJM- 6-21			Tr	0.60	0.00	0.01	0.01	〃
22		-128.60	MJM- 6-22			0.0	Tr	0.00	0.00	0.01	〃
23		-129.60	MJM- 6-23			0.0	Tr	0.00	0.00	0.01	〃
24		-130.60	MJM- 6-24			Tr	0.40	0.00	0.00	0.01	〃
25		-131.60	MJM- 6-25			0.0	Tr	0.00	0.00	0.01	Py imp in p.t.
26		-132.60	MJM- 6-26			0.0	Tr	0.00	0.00	0.02	〃
27		-133.60	MJM- 6-27			0.0	Tr	0.00	0.00	0.26	〃
28		-134.60	MJM- 6-28			0.10	38.00	0.12	0.10	0.26	〃
29		-135.60	MJM- 6-29			Tr	46.80	0.27	0.03	0.36	〃
30		-136.60	MJM- 6-30			0.20	75.00	0.26	0.20	0.35	〃
31		-137.60	MJM- 6-31			Tr	8.60	0.02	0.02	0.09	〃
32		-138.60	MJM- 6-32			1.60	367.40	0.69	0.35	0.38	〃
33		-139.60	MJM- 6-33			0.10	71.30	0.23	0.20	0.39	〃
34		-140.60	MJM- 6-34			0.20	107.60	0.37	0.38	0.39	〃
35		-141.60	MJM- 6-35			0.10	162.50	0.65	0.34	0.38	〃
36		-142.60	MJM- 6-36			Tr	150.80	0.56	0.57	0.35	〃

No.	Drill No.	Depth(m)	Sample No.	Coordinates		Analytical Results					Remarks
				-X	Y	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
37	MJM- 6	142.60-143.60	MJM- 6-37	13,430	11,860	Tr	33.60	0.10	0.17	0.39	Py imp in p.t.
38		-144.60	MJM- 6-38			Tr	46.80	0.20	0.35	0.26	〃
39		-145.60	MJM- 6-39			Tr	221.80	0.69	0.37	0.10	〃
40		-146.60	MJM- 6-40			Tr	36.50	0.11	0.19	0.38	〃
41		-147.60	MJM- 6-41			Tr	10.00	0.02	0.05	0.39	〃
42		-148.60	MJM- 6-42			0.10	93.30	0.25	0.38	0.37	〃
43		-149.60	MJM- 6-43			Tr	43.90	0.17	0.15	0.38	〃
44		-150.60	MJM- 6-44			0.10	100.20	0.34	0.05	0.12	〃
45		-151.60	MJM- 6-45			Tr	8.70	0.02	0.06	0.32	〃
45		-152.60	MJM- 6-46			Tr	0.80	0.01	0.01	0.01	〃
47		-153.60	MJM- 6-47			0.20	1.30	0.01	0.01	0.01	〃
48		-154.00	MJM- 6-48			Tr	1.20	0.00	0.01	0.01	〃
49		-155.00	MJM- 6-49			Tr	1.60	0.05	0.01	0.01	〃
50		-156.00	MJM- 6-50			0.10	0.70	0.01	0.01	0.01	〃
51		-157.00	MJM- 6-51			0.60	0.70	0.01	0.02	0.01	〃
52		-158.00	MJM- 6-52			Tr	0.60	0.01	0.02	0.01	〃
53		-159.00	MJM- 6-53			0.20	5.30	0.01	0.02	0.01	〃
54		-160.00	MJM- 6-54			Tr	0.90	0.01	0.02	0.01	〃
55		-161.00	MJM- 6-55			Tr	0.80	0.01	0.01	0.01	〃
56		-162.00	MJM- 6-56			0.10	1.00	0.01	0.01	0.01	〃
57		-163.00	MJM- 6-57			Tr	0.70	0.01	0.01	0.01	〃
58	MJM- 7	247.00-248.00	MJM- 7- 1	11,780	11,260	0.10	31.50	0.14	0.19	0.36	Py imp in l.t.
59		-279.00	MJM- 7- 2			0.70	46.60	0.20	0.32	0.24	〃
60		-250.00	MJM- 7- 3			0.10	52.50	0.18	0.28	0.36	〃
61		-251.00	MJM- 7- 4			0.10	60.40	0.21	0.33	0.32	〃
62		-252.00	MJM- 7- 5			Tr	50.70	0.19	0.31	0.37	〃
63		-253.00	MJM- 7- 6			1.10	44.20	0.15	0.25	0.34	〃
64		-254.00	MJM- 7- 7			0.10	63.70	0.28	0.38	0.08	〃
65		-255.00	MJM- 7- 8			Tr	46.60	0.17	0.29	0.38	〃
66		-256.00	MJM- 7- 9			Tr	7.10	0.01	0.06	0.37	〃
67		-257.00	MJM- 7-10			Tr	102.90	0.32	0.41	0.38	〃
68		-258.00	MJM- 7-11			Tr	108.90	0.38	0.25	0.37	〃
69		-259.00	MJM- 7-12			Tr	83.90	0.30	0.39	0.37	〃
70		-260.00	MJM- 7-13			0.10	63.20	0.20	0.34	0.35	〃
71		-261.00	MJM- 7-14			0.10	143.70	0.62	0.39	0.39	〃
72		-262.00	MJM- 7-15			Tr	17.60	0.01	0.02	0.11	〃

No.	Drill No.	Depth(m)	Sample No.	Coordinates		Analytical Results					Remarks
				-X	Y	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
73		262.00-263.00	MJM- 7-16	11,780	11,260	Tr	93.50	0.04	0.09	0.13	Py imp in l.t.
74		-264.00	MJM- 7-17			Tr	6.40	0.32	0.23	0.37	〃
75	MJM- 8	240.50-241.50	MJM- 8- 1	9,690	9,410	Tr	0.60	0.06	0.02	0.02	〃
76		-242.50	MJM- 8- 2			Tr	0.40	0.03	0.02	0.02	〃
77		-243.50	MJM- 8- 3			Tr	0.40	0.03	0.02	0.03	〃
78	MJM- 9	274.70-275.70	MJM- 9- 1	11,180	9,780	Tr	1.90	0.02	0.04	0.35	Py imp in s.s.& sh.
79		-276.70	MJM- 9- 2			0.0	Tr	0.01	0.02	0.34	Py imp in sh.
80		-277.70	MJM- 9- 3			0.0	Tr	0.01	0.02	0.37	〃
81		-278.70	MJM- 9- 4			Tr	0.90	0.01	0.02	0.38	〃
82		-279.70	MJM- 9- 5			0.10	5.50	0.01	0.04	0.40	〃
83		-280.70	MJM- 9- 6			0.20	20.20	0.02	0.06	0.40	〃
84		-281.70	MJM- 9- 7			2.50	18.80	0.01	0.06	0.26	Py imp in f.t.
85		-282.70	MJM- 9- 8			14.30	44.90	0.02	0.72	0.40	〃
86		-283.70	MJM- 9- 9			2.80	40.40	0.01	0.06	0.32	〃
87		-284.70	MJM- 9 10			5.60	244.70	0.02	0.17	0.38	〃
88		-285.70	MJM- 9-11			1.20	23.60	0.03	0.08	0.39	〃
89		-286.70	MJM- 9-12			2.80	23.10	0.00	0.05	0.19	〃
90		-287.70	MJM- 9-13			2.00	9.70	0.00	0.03	0.12	〃
91		-288.70	MJM- 9-14			2.10	10.80	0.01	0.02	0.09	〃
92		-289.70	MJM- 9-15			1.20	9.20	0.01	0.02	0.07	〃
93		-290.70	MJM- 9-16			1.40	10.20	0.01	0.02	0.08	〃
94		-291.70	MJM- 9-17			0.80	6.30	0.01	0.02	0.08	〃
95		-292.70	MJM- 9-18			0.90	16.10	0.01	0.02	0.11	〃
96		-293.70	MJM- 9-19			2.50	41.70	0.07	0.03	0.16	〃
97		-294.70	MJM- 9-20			1.10	5.10	0.01	0.02	0.13	〃
98		-295.70	MJM- 9-21			1.20	3.80	0.01	0.02	0.10	〃
99		-296.70	MJM- 9-22			1.00	3.40	0.01	0.01	0.08	〃
100		-297.70	MJM- 9-23			0.20	2.20	0.01	0.01	0.06	〃
101		-298.70	MJM- 9-24			Tr	2.20	0.01	0.01	0.07	〃
102		-299.70	MJM- 9-25			0.10	0.50	0.01	0.02	0.13	〃
103		-300.70	MJM- 9-26			0.10	1.40	0.01	0.02	0.20	〃
104		-301.70	MJM- 9-27			Tr	0.80	0.01	0.02	0.13	〃
105		-302.70	MJM- 9-28			Tr	0.90	0.01	0.16	0.08	〃
106		-303.70	MJM- 9-29			Tr	0.70	0.01	0.02	0.07	〃
107		-304.70	MJM- 9-30			Tr	0.50	0.01	0.01	0.06	〃
108		-305.70	MJM- 9-31			0.10	1.20	0.01	0.01	0.05	〃

No.	Drill No.	Depth(m)	Sample No.	Coordinates		Analytical Results					Remarks
				−X	Y	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
109	MJM- 9	305.70-306.70	MJM- 9-32	11,180	9,780	Tr	1.70	0.01	0.01	0.08	Py imp in f.t.
110		-307.60	MJM- 9-33			0.10	1.50	0.01	0.01	0.25	〃
111		293.45-293.60	MJM- 9-34			7.80	1.108	1.15	16.2	32.2	Massive sulphide ore
112	MJM-10	314.20-315.20	MJM-10- 1	11,850	9,960	0.10	1.10	0.04	0.02	0.07	Py imp in sh.
113		-316.20	MJM-10- 2			Tr	0.50	0.03	0.02	0.03	〃
114		-317.20	MJM-10- 3			Tr	1.90	0.03	0.02	0.03	〃
115	MJM-11	129.60-130.60	MJM-11- 1	11,550	10,420	Tr	0.80	0.01	0.01	0.01	Py imp in f.t.
116		-131.60	MJM-11- 2			Tr	0.50	0.01	0.01	0.01	〃
117		-132.60	MJM-11- 3			Tr	1.00	0.01	0.01	0.02	〃
118		-133.60	MJM-11- 4			0.20	7.40	0.05	0.01	0.02	〃
119		-134.60	MJM-11- 5			0.10	1.30	0.02	0.02	0.02	Py imp in l.t.
120		-135.60	MJM-11- 6			Tr	0.50	0.02	0.02	0.01	〃
121		-136.60	MJM-11- 7			Tr	0.30	0.02	0.02	0.02	〃
122		-137.60	MJM-11- 8			Tr	0.50	0.02	0.02	0.02	〃
123		-138.60	MJM-11- 9			Tr	1.10	0.01	0.01	0.01	〃
124		-139.60	MJM-11-10			Tr	1.80	0.01	0.02	0.01	〃
125		-140.60	MJM-11-11			0.10	0.80	0.01	0.02	0.01	〃
126		-141.60	MJM-11-12			0.20	0.60	0.01	0.02	0.01	〃
127		-142.60	MJM-11-13			0.10	1.00	0.01	0.01	0.01	〃
128		-143.60	MJM-11-14			Tr	0.90	0.01	0.01	0.01	〃
129		-144.60	MJM-11-15			Tr	1.00	0.01	0.02	0.01	〃
130		-145.60	MJM-11-16			0.20	1.30	0.01	0.02	0.01	〃
131		-146.60	MJM-11-17			0.10	0.60	0.01	0.02	0.01	〃
132		-147.60	MJM-11-18			Tr	0.40	0.01	0.02	0.01	〃
133		-148.60	MJM-11-19			Tr	0.50	0.01	0.01	0.01	〃
134		-149.60	MJM-11-20			0.00	Tr	0.01	0.02	0.01	〃
135		-150.60	MJM-11-21			Tr	0.60	0.01	0.01	0.01	〃
136		-151.60	MJM-11-22			Tr	0.30	0.01	0.02	0.01	〃
137		-152.60	MJM-11-23			0.20	2.30	0.01	0.03	0.01	〃
138		-153.60	MJM-11-24			Tr	1.00	0.01	0.03	0.01	〃
139		-154.60	MJM-11-25			0.10	1.40	0.01	0.03	0.01	〃
140		-155.60	MJM-11-26			Tr	0.50	0.01	0.02	0.01	〃
141		-156.60	MJM-11-27			Tr	0.40	0.01	0.02	0.01	〃
142		-157.60	MJM-11-28			0.00	Tr	0.01	0.02	0.03	Py imp in p.t.
143		-158.60	MJM-11-29			0.00	Tr	0.02	0.02	0.03	〃
144		-159.60	MJM-11-30			Tr	0.90	0.01	0.01	0.01	〃

No.	Drill No.	Depth(m)	Sample No.	Coordinates		Analytical Results					Remarks
				−X	Y	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
145	MJM-11	159.60-160.60	MJM-11-31	11,550	10,420	0.00	Tr	0.01	0.01	0.01	Py imp in p.t.
146	MJM-12	49.40- 50.40	MJM-12- 1	12,600	11,400	0.00	Tr	0.01	0.01	0.01	〃
147		- 51.40	MJM-12- 2			Tr	0.80	0.01	0.01	0.02	〃
148		- 52.40	MJM 12- 3			Tr	1.00	0.01	0.01	0.01	〃
149		- 53.40	MJM-12- 4			0.10	0.50	0.01	0.01	0.01	〃
150		- 54.40	MJM-12- 5			0.20	0.80	0.01	0.01	0.01	〃
151		- 55.40	MJM-12- 6			Tr	0.40	0.01	0.01	0.01	〃
152		- 56.40	MJM-12- 7			Tr	1.10	0.01	0.01	0.01	〃
153		- 57.40	MJM-12- 8			Tr	0.80	0.01	0.01	0.01	〃
154		- 58.40	MJM-12- 9			0.40	0.90	0.01	0.01	0.01	〃
155		- 59.40	MJM-12-10			Tr	0.70	0.02	0.02	0.12	〃
156		- 60.40	MJM-12-11			0.00	Tr	0.01	0.01	0.01	〃
157		220.00-221.00	MJM-12-12			Tr	0.60	0.01	0.00	0.01	〃
158		-222.00	MJM-12-13			0.10	0.30	0.01	0.01	0.01	〃
159		-223.00	MJM-12-14			0.10	0.40	0.01	0.01	0.01	〃
160		-224.00	MJM-12-15			Tr	0.50	0.01	0.00	0.01	〃
161		-225.00	MJM-12-16			0.20	0.80	0.01	0.00	0.01	〃
162		-226.00	MJM-12-17			Tr	0.40	0.01	0.00	0.01	〃
163		-227.00	MJM-12-18			Tr	0.50	0.01	0.01	0.01	〃
164		-228.00	MJM-12-19			Tr	0.40	0.01	0.00	0.01	〃
165		-229.00	MJM-12-20			0.00	Tr	0.01	0.01	0.01	〃
166		-230.00	MJM-12-21			0.00	Tr	0.01	0.00	0.01	〃
167		-231.00	MJM-12-22			0.50	2.40	0.01	0.00	0.01	〃
168		-232.00	MJM-12-23			Tr	0.40	0.01	0.01	0.01	〃
169		-233.00	MJM-12-24			Tr	0.50	0.01	0.01	0.01	〃
170		-234.00	MJM-12-25			0.00	Tr	0.01	0.01	0.01	〃
171		-235.00	MJM-12-26			0.00	Tr	0.01	0.00	0.01	〃
172		-236.00	MJM-12-27			0.00	Tr	0.01	0.01	0.00	〃
173		-237.00	MJM-12-28			Tr	1,30	0.01	0.01	0.01	〃
174		-238.00	MJM-12-29			Tr	0.50	0.01	0.01	0.01	〃
175		-239.00	MJM-12-30			0.00	Tr	0.01	0.01	0.01	〃
176		-240.00	MJM-12-31			Tr	0.70	0.01	0.01	0.01	〃
177		-241.00	MJM-12-32			0.00	Tr	0.01	0.01	0.01	〃
178		-242.60	MJM-12-33			Tr	0.40	0.01	0.01	0.01	〃
179		-243.00	MJM-12-34			0.00	Tr	0.01	0.00	0.01	〃
180		-244.00	MJM-12-35			0.00	Tr	0.01	0.01	0.01	〃

No.	Drill No.	Depth(m)	Sample No.	Coordinates		Analytical Results					Remarks
				−X	Y	Au (g/t)	Ag (g/t)	Cu (%)	Pb (%)	Zn (%)	
181	MJM-12	244.00-245.00	MJM-12-36	12,630	11,400	0.10	0.70	0.01	0.00	0.01	Py imp in p.t.
182		-246.00	MJM-12-37			0.10	2.60	0.01	0.01	0.01	〃
183		-247.00	MJM-12-38			Tr	0.40	0.01	0.01	0.01	〃
184		-248.00	MJM-12-39			Tr	1.00	0.02	0.01	0.01	〃
185		250.00-251.00	MJM-12-40			Tr	0.50	0.02	0.01	0.01	〃
186		-252.00	MJM-12-41			Tr	0.40	0.02	0.01	0.01	〃
187		-253.00	MJM-12-42			Tr	0.30	0.01	0.01	0.01	〃
188		323.20-324.20	MJM-12-43			Tr	0.80	0.01	0.01	0.00	Py imp in f.t.
189		-325.20	MJM-12-44			0.10	0.60	0.01	0.01	0.01	〃
190		-326.20	MJM-12-45			0.10	0.90	0.01	0.01	0.01	〃
191		-327.20	MJM-12-46			Tr	0.40	0.01	0.01	0.01	〃
192		-328.20	MJM-12-47			Tr	0.60	0.01	0.01	0.01	〃
193		-329.20	MJM-12-48			0.00	Tr	0.01	0.01	0.00	〃
194		-330.20	MJM-12-49			0.00	Tr	0.02	0.01	0.01	〃
195		-331.20	MJM-12-50			Tr	0.50	0.01	0.01	0.00	〃
196		-332.20	MJM-12-51			Tr	0.70	0.01	0.03	0.01	〃
197		-333.20	MJM-12-52			Tr	0.90	0.01	0.01	0.01	〃
198		-334.20	MJM-12-53			0.00	Tr	0.01	0.01	0.01	〃
199		-335.20	MJM-12-54			0.00	Tr	0.01	0.01	0.01	〃
200		-336.20	MJM-12-55			Tr	1.10	0.00	0.01	0.01	〃
201		-337.20	MJM-12-56			Tr	0.60	0.00	0.01	0.01	〃
202		-338.20	MJM-12-57			0.10	3.50	0.00	0.01	0.01	〃
203		-339.20	MJM-12-58			Tr	0.70	0.00	0.01	0.01	〃
204		-340.20	MJM-12-59			Tr	0.50	0.00	0.01	0.01	〃
205		-341.20	MJM-12-60			Tr	0.40	0.00	0.01	0.01	〃
206		-342.20	MJM-12-61			0.00	Tr	0.00	0.01	0.01	〃
207		-343.20	MJM-12-62			Tr	0.50	0.00	0.01	0.01	〃
208		-344.20	MJM-12-63			0.10	0.80	0.00	0.02	0.02	〃
209		-345.20	MJM-12-64			Tr	0.60	0.01	0.02	0.01	〃
210		-346.20	MJM-12-65			Tr	0.80	0.01	0.02	0.02	〃
211		-347.20	MJM-12-66			0.00	Tr	0.01	0.02	0.01	〃
212		-348.20	MJM-12-67			Tr	0.80	0.01	0.02	0.01	〃
213		-349.20	MJM-12-68			Tr	0.30	0.01	0.02	0.01	〃
214		-350.20	MJM-12-69			Tr	0.70	0.01	0.02	0.02	〃
215		-351.20	MJM-12-70			Tr	0.80	0.01	0.02	0.01	〃
216		-352.20	MJM-12-71			Tr	0.90	0.01	0.02	0.01	〃

Py : pyrite p.t. : pumice tuff f.t. : fine tuff l.t. : lapilli tuff do. : dolerite sh. : shale

APX. 7 Analytical Results of X-ray Powder Diffractometry of Drill Cores

Abbreviation

Qz: Quartz, Pl: Plagioclase, Kf: K-feldspar, Se: Sericite, Ch: Chlorite, Ca: Calcite, Py: Pyrite
Mo: Montmorillonite, Lmt: Laumontite, Mrd: Mordenite, Ka: Kaolinite

*2: Quartz Index (QI)

$$QI = \frac{Im}{Iq} \times 100,$$

Im: the strongest X-ray intensity of a mineral.
Iq: the strongest X-ray intensity of pure quartz.

APX. 7 Analytical Results of X-ray Powder Diffractometry of Drill Cores (1)

No	Sample No.	Drill No.	Depth (m)	Rock name	Silica mineral	Silicate minerals							Zeolites		Carbonate mineral		Metal mineral	
						Feldspars			Clay minerals									
					Qz	Pl	Kf		Se	Ch	Ka	Mo	Lmt	Mrd	Ca		Py	
1	X- 54	MJM- 6	30	Pumice tuff	80	15			3	2			1				1	
2	X- 55	MJM- 6	60	〃	58	13			1	2							1	
3	X- 56	MJM- 6	110	Fine tuff	59	30			2	4			1					
4	X- 57	MJM- 6	140	Pumice tuff	45	23			2	2								
5	X- 58	MJM- 6	170	〃	76	9			1						2			
6	X- 59	MJM- 6	200	〃	42	5			1	2			1					
7	X- 60	MJM- 6	230	〃	26	20				7							7	
8	X- 61	MJM- 6	260	〃	40	14			1	2								
9	X- 62	MJM- 6	280	〃	38	6			4	3			2		2			
10	X- 63	MJM- 6	301	Fine tuff	10	27				13		2			2			
11	X- 64	MJM- 7	35	Lapilli tuff	40	15			1	2					1			
12	X- 65	MJM- 7	55	〃	17	4			3	5					0.5			
13	X- 66	MJM- 7	75	〃	62	15			1		1				1			
14	X- 67	MJM- 7	90	Fine tuff	53	16			1	4					1			
15	X- 68	MJM- 7	110	Dacite	38	30			3	5					1			
16	X- 69	MJM- 7	130	〃	35	28			4	5					2			
17	X- 70	MJM- 7	150	〃	36	23			2	5								
18	X- 71	MJM- 7	170	〃	50	19	7		5	5					1			
19	X- 72	MJM- 7	190	〃	33	14	4		5	4								
20	X- 73	MJM- 7	230	〃	35	26	2				2				1			
21	X- 74	MJM- 7	255	Lapilli tuff	70	29			2		1				11			

No	Sample No.	Drill No.	Depth (m)	Rock name	Silica mineral	Silicate minerals							Zeolites		Carbonate mineral		Metal mineral	
						Feldspars			Clay minerals									
					Qz	Pl	Kf		Se	Ch	Ka	Mo	Lmt	Mrd	Ca		Py	
22	X- 75	MJM- 7	280	Lapilli tuff	37	13			2	3					1			
23	X- 76	MJM- 7	305	〃	41	7	5		3	4					1			
24	X- 77	MJM- 8	122	Fine tuff	34	39			0.5	3					0.5			
25	X- 78	MJM- 8	245	Lapilli tuff	49	4			2	3					0.5			
26	X- 79	MJM- 8	265	〃	24	6	3		4		1							
27	X- 80	MJM- 8	285	〃	61	9			3	3								
28	X- 81	MJM- 8	300	Fine tuff	27	2			4	3			1					
29	X- 82	MJM- 9	125	Dacite	46	17			7		1		1					
30	X- 83	MJM- 9	173	Lapilli tuff	41	25				4			6					
31	X- 84	MJM- 9	200	〃	47	18			1	4			1		6			
32	X- 85	MJM- 9	225	〃	51	21	1		3	3			5				1	
33	X- 86	MJM- 9	250	Sandstone	51	21	1		3	3			5				1	
34	X- 87	MJM- 9	270	〃	66	4			3	1	1						6	
35	X- 88	MJM- 9	285	Fine tuff	67	6			1	2								
36	X- 89	MJM- 9	305	〃	93	9	0.5		2	1					1			
37	X- 90	MJM-10	34	〃	79	70			1	4								
38	X- 91	MJM-10	195	Porphyrite	31	30			6	24					9			
39	X- 92	MJM-10	232	Fine tuff	37	9	8		1	16					46			
40	X- 93	MJM-10	309	Porphyrity	63	46			9	26					13			
41	X- 94	MJM-10	313	Basaltic tuff	23	32		2	2	16								
42	X- 95	MJM-10	330	Andesite	74	34			6	10					4			

No	Sample No.	Drill No.	Depth (m)	Rock name	Silica mineral	Silicate minerals							Zeolites		Carbonate mineral		Metal mineral	
						Feldspars			Clay minerals									
					Qz	Pl	Kf		Se	Ch	Ka	Mo	Lmt	Mrd	Ca		Py	
43	X- 96	MJM-10	350	Andesite	58	42			4	10					4			
44	X- 97	MJM-11	40	Lapilli tuff	99	21			3	2					1		1	
45	X- 98	MJM-11	80	〃	87	9			3	5					8		3	
46	X- 99	MJM-11	120	〃	74	3	13		3	4								
47	X-100	MJM-11	160	Pumics tuff	98	5	6		4	7					3			
48	X-101	MJM-11	200	〃	88	20			1	2					7			
49	X-102	MJM-11	280	Dolerite	66	26			1	19			1				2	
50	X-103	MJM-11	310	〃	8	40			1	58			1	3 ※	1		1	
51	X-104	MJM-11	355	Lapilli tuff	91		23		3	5								
52	X-105	MJM-12	48	Fine tuff	97	7			6	4			1		5		3	
53	X-106	MJM-12	80	Pumics tuff	98	14	19		2	3					3		1	
54	X-107	MJM-12	125	Granodiorite	18	25				47				3 ※	8		2	
55	X-108	MJM-12	155	〃	2		27			73				2 ※				
56	X-109	MJM-12	185	〃	9		7		2	48					14			
57	X-110	MJM-12	215	〃	8	23			1	72								
58	X-111	MJM-12	225	Pumics tuff	89	11	5		4	6					7			
59	X-112	MJM-12	265	〃	86	40			1	4					2			
60	X-113	MJM-12	285	Lapilli tuff	97	68				5					1			
61	X-114	MJM-12	330	Fine tuff	99	17			5	1					30		1	
62	X-115	MJM-12	350	〃	47	13			4	1							2	

※ : Clinoptilolite