References

Reference

Campa, M. F (1978): La evolución tectónica de Tierra Caliente, Gro.: Bol. Soc. Geol. Mex., Ⅳ Convención Geológica, Tomo XXXⅣ,No 2.

Campa, M. F., Campos, M., Flores, R. y Oviedo, R. (1974): La secuencia mesozoica volcano-sedimentaria metamorfizada de Ixtapan de la Sal, México-Teloloapan, Guerrero. : Bolétin de la Sociedad Geológica. Mexicana: v.35, p.7-28.

Campa, M. F. y Ramirez., J. (1979): La evolución geológica y la metalogénesis del noroccidente de Guerrero: Univesidad. Autónoma de Guerrero, Serie Técnico-Científica: núm.1, p.1-84.

Coney, P.J. y Campa, M. F. (1987): Lithotectonic terrane map of Mexico(west of the 91st. meridian): US Geological Survey, Miscellaneous Field Studies Map MF-1874-D.

De Cserna, Z. (1965): Reconocimiento geológico de la Sierra Madre del Sur de México entre Chilpancingo y Acapulco, Estado de Guerrero: Universidad Nacional Autónoma de México. Inst. Geol., Boletín: v.62, 76p.

De Cserna, Z. (1978): Notas sobre la geología de la región comprendida entre Iguala, Ciudad Altamirano y Temascaltepec, Estado de Guerrero y México, D.F.: Sociedad Geológica Mexicana, Libro guía de la excursión geológica a Tierra Caliente: p.1-25.

De Cserna, Z. (1983): Hoja Tejupilco 14Q-g(9), con Resumen de la geología de la Hoja Tejupilco, estados de Guerrero, México y Michoacán: Universidad Nacional Autónoma de México, Instituto de Geología, Carta Geologíca de Mexico, Serie de 1:100,000, mapa con texto explicativo: 28p.

De Cserna, Z., Palacions, N. y Pantoja, A. (1978): Relaciones de facies de las rocas cretácicas en el noroeste de Guerrero y en áreas colindantes de México y Michoacán: Universidad Nacional Autónoma de México. Inst. Geol., Revista: v.2, p.8-18.

Elías-Herrera, Mariano y Sánchez-Zavala, J.L. (1992): Relaciones tectonoestrati－gráficas del terreno Guerrero en la porcíon suroccidental del estado de México

y su interpretaíon geodinámica: Sociedad Geológica Méxicana, XI Convencíon Geológica Nacional, Veracruz, Ver., Resúmenes(abstract).

Fries, C. (1960): Geología del estado de Morelos y de partes adyacentes de México y Guerrero, regíon central meridional de México: Univ. Nacional Autónoma de México, Inst. Geol., Bolétin: v.60, 236p.

Guerrero, M., Ramirez, J. y Talavera., O. (1990): Estudio estratigrafico del arco volcanico cretácico inferior de Teloloapan. Guerrero: Abstracts, X Convencion Sociedad Geológica Mexicana: p.67.

Guerrero, M., Ramirez, J., Talavera., O. y Campa, M.F. (1991): El desarrollo carbonatado del cretácico inferior asociad al arco de Teloloapan, Norocidente del Estado Guerrero: Abstracts, Convencion Sobre la Evolucion Sociedad Mexicana de Mineralogia and Instituto de Geología, Universidad Nacional Autónoma de México:p.67.

Ishikawa, Y., Sawaguti, T., Iwaya, S., Horiuti, M.(1976):Aproch to exprolation indicator using footwall dacite lava of Kuroko deposit, trace for alteration haro around Fukazawa main and volcanic activity, Mining Geology(in japanese).26(2)

JICA・ MMAJ(1994): Reporte sobre la geologia y depositos minerales en la region de Tejupilco, Estados Unidos Mexicanos. p44

Ochoa Camarillo, H., Gomez-Moreno, V. y Leon Matz, A. (1985): Geología, geoquimica de mercurio y magnetometria terrestre del area Azulaquez, Gro.: Informe de Avance, GFE, CRM, Inedito.

Raiz, Erwin(1959): Landforms of Mexico, Cambridge,Mass

Reyes J.S.(1990): Prospeccion geologico-minera del area la Trinidad, Mpio, de Zacualpan, Mex. CRM.

Sakai, H., Hisamatu, Y. (1996): Stable isotope geochemistry, University of Tokyo Press

Sedlock, R.L., Ortega, G.F., and Speed, R.C. (1993): Tectonostartigraphic terranes and tectonic evolution of Mexico: Geological Society of America Bulletin: v.100, p.274-281.

Serratos,R.V., Diaz, A. S,. and Martinez, M. A. (1999): Carta Geológico-Minera, Teloloapan E14-A77.

Serratos,R.V., Diaz, A. S,. Trjillo, D. A,. and Martinez, M. A. (1999): Carta Geológico-Minera, Pilcaya E14-A67.

Serratos,R.V.,et al(2000): Carta Geológico-Minera, Amatepec E14-A66.

Yamamoto, S and Nedachi, M (1998): Geochemistry on the Tizapa volcanogenic massive sulfide deposits, Mexico. The society of resource geology annual meeting.

Watanabe, S (2003): The distribution of precious and base metals, Tizapa deposit, Mexico state, Mexico. Resource geology. vol 53, no1.

Appendix

Table 2-2-4 Result of Chemical Analysis(1)

No.	SAMPLE No	Coordinates UTM-E	Coordinates UTM-N	Au ppm	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sr ppm	Ti %	V ppm	W ppm	Zn ppm	Remarks
1	FC-1	411,125	2,054,640	0.003	<0.5	7.71	26	2140	0.8	<2	0.56	3.3	13	53	4	4.44	1.96	4.64	2410	<1	0.04	11	430	10	0.11	<5	24	0.4	141	<10	914	
2	FC-2	411,451	2,054,735	0.001	<0.5	6.39	7	590	1.2	<2	0.2	<0.5	<1	44	6	1.38	1.57	0.73	136	1	1.87	2	60	6	0.03	<5	77	0.07	2	<10	64	
3	FC-3	411,465	2,054,842	0.005	<0.5	6.07	24	180	0.7	<2	0.11	<0.5	9	60	5	4.07	2.11	3.35	790	<1	0.11	5	370	10	1.48	<5	13	0.24	117	10	101	
4	FC-4	410,700	2,055,272	0.001	<0.5	5.87	<5	490	0.7	<2	0.05	<0.5	1	78	2	2.16	1.49	1.26	257	<1	1.24	3	80	5	0.47	<5	26	0.07	5	<10	60	
5	FC-5	409,716	2,054,668	0.001	<0.5	9.02	7	360	0.7	<2	3.57	<0.5	19	96	24	5.6	1.33	2.75	719	1	2.22	26	440	6	0.02	<5	338	0.49	201	<10	97	
6	FC-6	410,012	2,054,753	<0.001	<0.5	9.32	16	270	0.9	<2	4.55	<0.5	20	59	20	5.11	0.82	2.52	256	<1	1.91	8	410	10	0.01	<5	348	0.41	160	<10	88	
7	FC-7	410,385	2,054,883	0.002	<0.5	4.87	12	330	0.7	2	14.6	<0.5	9	41	42	3.07	1.16	1.55	401	5	0.43	40	410	7	1.3	<5	492	0.22	110	<10	73	
8	FC-8	409,576	2,055,884	0.001	<0.5	10.1	13	340	1.1	<2	4.86	<0.5	17	58	25	5.36	1.09	2.48	554	<1	2.32	12	410	11	0.15	<5	316	0.44	211	10	128	
9	FC-9	409,810	2,055,893	0.001	<0.5	10.8	6	220	1.1	<2	4.89	<0.5	18	35	27	5.3	0.55	2.71	314	<1	2.44	4	440	10	0.8	<5	233	0.47	196	<10	82	
10	FC-10	410,033	2,055,883	0.001	<0.5	10.8	9	160	0.8	<2	3.43	<0.5	20	26	14	5.93	0.47	2.02	169	5	3.59	12	460	10	1.04	<5	238	0.53	216	<10	49	
11	FC-11	410,430	2,055,800	0.002	<0.5	3.17	12	180	0.6	2	20.8	1.9	2	29	23	1	0.82	0.72	156	39	0.51	84	690	2	0.79	<5	350	0.14	380	<10	109	
12	FC-12	410,690	2,055,775	<0.001	<0.5	8.35	<5	420	1.3	<2	0.72	<0.5	18	61	88	4.8	1.44	2.11	1070	2	1.92	12	400	9	0.46	<5	90	0.34	134	10	137	
13	FC-13	410,060	2,054,759	0.002	<0.5	4.6	19	280	0.8	<2	3.61	0.7	12	66	25	2.41	0.67	0.69	392	3	1.48	30	830	10	1.39	<5	110	0.24	261	10	67	
14	FC-14	410,263	2,056,195	0.001	<0.5	5.5	16	950	1.3	<2	1.51	<0.5	3	35	3	3.35	1.59	1.51	148	4	0.06	1	90	6	0.67	<5	93	0.08	15	10	83	
15	FC-15	410,585	2,055,990	0.003	1.4	4.97	37	430	1.1	<2	10.3	14.8	3	52	44	2.03	1.5	0.94	529	26	0.62	82	1020	22	0.03	13	170	0.24	790	<10	333	
16	FC-16	410,759	2,056,003	0.001	<0.5	8.37	13	900	1	<2	0.58	2.2	15	55	102	5.65	2.3	1.9	716	2	0.27	12	520	14	0.06	<5	32	0.43	202	<10	379	
17	FC-17	410,900	1,056,010	0.001	<0.5	8.47	10	360	1	<2	1.98	<0.5	13	25	21	4.42	1.74	1.64	465	1	2.32	4	600	10	0.28	<5	184	0.41	136	<10	158	
18	FC-18	410,900	2,056,311	0.004	0.5	0.71	10	100	<0.5	6	>25.0	2.4	<1	8	28	0.76	0.18	0.47	230	5	0.12	6	230	77	0.7	<5	836	0.02	25	<10	332	
19	FC-19	410,610	2,056,237	0.003	1.7	4.52	22	640	0.9	<2	14.5	13.3	2	74	63	1.54	1.41	0.69	147	16	0.43	61	2050	8	0.01	5	283	0.22	858	<10	405	
20	FC-20	409,725	2,056,088	0.001	<0.5	9.96	<5	180	0.9	<2	3.63	0.8	19	41	23	3.24	0.91	0.51	236	1	3.88	8	620	15	2.31	<5	308	0.47	202	10	203	
21	FC-21	409,790	2,056,265	0.001	<0.5	10.7	24	290	1	<2	4.46	<0.5	41	20	28	5.21	0.46	2.36	287	<1	3.09	17	410	15	0.83	<5	218	0.49	204	10	105	
22	FC-22	409,980	2,056,550	0.006	0.6	1.02	30	100	<0.5	6	>25.0	3.6	1	12	54	0.92	0.33	0.36	421	5	0.13	8	230	96	0.64	7	486	0.03	23	<10	493	
23	FC-23/jg-3			<0.001	<0.5	8.52	<5	460	1.4	<2	2.66	<0.5	11	10	7	2.56	2.17	1.07	533	<1	2.97	15	540	15	<0.01	<5	366	0.29	65	20	43	Standard
24	FC-24	406,975	2,058,770	0.001	<0.5	7.25	13	200	0.6	<2	3.31	<0.5	9	53	24	4.79	0.58	2.36	1020	2	2.49	11	400	9	0.14	<5	76	0.33	121	<10	130	
25	FC-25	407,208	2,058,675	0.001	<0.5	8.99	24	300	0.7	<2	1.96	<0.5	17	180	27	5.68	1.05	2.73	880	<1	1.89	48	450	9	0.01	<5	137	0.48	190	<10	170	
26	FC-26	407,500	2,058,500	<0.001	<0.5	8.18	13	1000	0.8	<2	3.01	<0.5	19	94	6	5.12	1.2	2.51	703	<1	2.43	19	450	10	0.02	<5	188	0.38	241	<10	137	
27	FC-27	407,723	2,058,360	0.032	1.6	8.33	47	1820	1.3	<2	0.08	<0.5	1	46	14	3.52	3.46	2.97	376	5	0.04	4	530	55	0.06	20	11	0.37	190	10	160	
28	FC-28	407,794	2,058,333	0.001	1.1	8.28	68	1420	0.6	<2	0.04	0.7	2	48	6	2.18	4.09	0.59	153	<1	0.33	7	50	17	0.81	21	26	0.35	108	<10	117	
29	FC-29	406,786	2,056,813	0.001	<0.5	7.44	11	360	0.8	<2	3.57	<0.5	16	148	2	4.54	1.52	2.3	860	<1	2.24	49	350	9	0.01	<5	103	0.29	93	10	153	
30	FC-30	406,850	2,057,015	0.001	<0.5	8.53	10	220	0.8	<2	3.51	<0.5	13	43	24	4.61	1.32	0.44	707	<1	2.34	9	410	16	1.69	7	378	0.4	152	<10	62	
31	FC-31	407,000	2,057,313	0.029	2.2	6.76	31	680	1.2	<2	0.23	1.5	4	34	22	3.19	0.58	2.39	676	2	1.04	16	570	34	0.01	6	141	0.21	97	<10	245	
32	FC-32	407,084	2,057,515	0.002	<0.5	7.32	23	670	1.2	<2	1.39	0.5	6	36	9	2.76	1.41	1.15	264	<1	1.66	8	240	14	0.1	<5	184	0.22	61	10	210	
33	FC-33	407,326	2,057,689	<0.001	<0.5	6.03	15	500	1.2	<2	0.14	<0.5	2	37	3	1.48	1.18	1.22	176	<1	1.76	2	80	13	0.01	<5	84	0.07	5	<10	77	
34	FC-34	407,386	2,057,795	0.001	<0.5	8.89	13	340	0.9	<2	3.24	<0.5	15	148	94	8.24	0.97	1.7	1230	<1	1.96	44	580	10	<0.01	<5	83	0.56	227	<10	145	
35	FC-35	408,013	2,057,963	<0.001	<0.5	10.3	8	310	1	<2	1.61	<0.5	14	67	25	5.12	2.05	1.58	671	<1	3.3	13	560	6	0.02	<5	157	0.52	196	<10	152	
36	FC-36	408,035	2,057,755	0.001	<0.5	9.72	6	490	1.3	<2	3.06	<0.5	17	136	54	4.63	1.5	3.41	702	<1	2.48	43	450	3	0.01	<5	138	0.44	195	<10	139	
37	FC-37	408,041	2,057,482	<0.001	<0.5	9.13	5	180	0.7	<2	6.02	<0.5	16	128	40	4.94	1.08	1.57	1000	<1	2.73	23	510	9	<0.01	<5	96	0.42	133	<10	121	
38	FC-38	408,087	2,057,148	0.001	<0.5	8.07	23	820	1.7	<2	0.36	<0.5	1	32	4	1.66	0.95	1.55	86	1	1.78	3	150	18	<0.01	<5	132	0.12	11	10	97	
39	FC-39	408,227	2,057,110	0.012	<0.5	9.17	79	960	1.1	<2	0.22	0.5	2	47	9	1.79	1.26	0.16	9	1	4.12	5	180	14	0.02	12	176	0.46	174	10	40	
40	FC-40	408,326	2,057,016	<0.001	<0.5	9.96	17	1000	1.2	<2	2.61	<0.5	10	53	20	5.6	2.71	1.43	367	<1	2	14	320	12	0.06	6	177	0.53	180	<10	104	
41	FC-41	408,438	2,057,323	0.005	<0.5	10.1	25	1400	0.9	<2	4.85	<0.5	25	78	29	3.37	1.16	1.54	1080	<1	3.75	21	440	14	0.65	<5	172	0.49	218	10	72	
42	FC-42	408,397	2,057,487	0.001	<0.5	4.45	16	380	0.5	<2	0.07	<0.5	2	47	6	0.96	0.7	0.8	56	1	1.66	4	80	15	0.41	15	67	0.07	12	<10	71	
43	FC-43	408,412	2,057,745	<0.001	<0.5	8.06	16	410	0.8	<2	4.08	<0.5	18	65	2	5.03	2.41	1.37	1110	<1	1.33	20	340	5	<0.01	<5	217	0.27	111	<10	79	
44	FC-44	408,268	2,057,950	<0.001	<0.5	7.95	39	580	1.3	<2	3.69	<0.5	10	34	19	3.94	3.3	1.27	589	<1	0.68	10	350	12	0.01	<5	114	0.35	112	<10	100	
45	FC-45/jr-3			<0.001	<0.5	6.57	6	60	7.4	<2	0.07	<0.5	1	7	6	3.36	3.51	0.03	651	<1	3.3	4	50	41	<0.01	<5	2	0.14	1	10	216	Standard

AI:Aiteration Index

Table 2-2-4 Result of Chemical Analysis(2)

No.	SAMPLE No	Coordinates UTM-E	Coordinates UTM-N	Au ppm	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sr ppm	Ti %	V ppm	W ppm	Zn ppm	Remarks
46	JC-01	411,060	2,054,855	0.001	<0.5	7.95	12	350	0.9	<2	0.39	<0.5	15	61	2	3.99	1.75	4.21	1145	<1	0.68	14	350	12	0.76	<5	20	0.27	125	10	110	
47	JC-02	410,972	2,055,076	0.001	<0.5	4.58	7	230	0.6	<2	0.09	<0.5	3	75	2	2.49	0.7	1.98	391	<1	0.86	4	60	8	0.38	<5	17	0.05	3	<10	88	
48	JC-03	410,992	2,055,300	<0.001	<0.5	6.16	7	400	0.9	<2	0.08	<0.5	1	63	2	1.51	1.55	2.05	296	1	0.92	6	70	5	0.33	<5	23	0.07	6	<10	53	
49	JC-04	411,277	2,055,588	0.001	<0.5	9.68	16	410	0.8	<2	2.71	0.6	15	38	26	4.09	0.95	2.02	507	<1	3.2	9	680	18	0.08	<5	243	0.56	130	<10	138	
50	JC-05	410,080	2,054,945	0.001	<0.5	7.58	12	440	1.6	<2	1.52	<0.5	1	18	3	2.43	1.31	0.83	149	<1	2.03	5	90	15	0.1	<5	239	0.09	4	<10	67	
51	JC-06	410,195	2,055,195	<0.001	<0.5	9.01	47	610	1	<2	1.03	<0.5	16	37	16	4.84	1.51	2.97	880	<1	2.28	9	520	18	0.15	<5	98	0.38	170	10	151	
52	JC-07	410,304	2,055,393	0.001	<0.5	8.9	15	420	0.9	<2	2.29	<0.5	12	45	3	4.64	1.18	1.97	683	<1	2.47	9	480	14	0.01	<5	237	0.45	158	10	86	
53	JC-08	409,537	2,055,062	0.001	<0.5	9.2	9	210	1	<2	3.57	<0.5	10	36	19	4.1	0.71	2.08	203	<1	2.7	11	380	6	0.01	<5	160	0.4	160	<10	111	
54	JC-09	409,720	2,055,056	0.001	<0.5	8.05	29	430	0.9	<2	2.86	<0.5	19	74	21	3.42	1.23	1.86	211	<1	2.16	20	590	16	0.9	<5	360	0.45	163	10	253	
55	JC-10	409,945	2,055,117	0.002	<0.5	2.24	9	230	0.5	<2	24.5	9.8	2	47	27	0.71	0.74	0.4	145	9	0.12	45	640	9	0.03	<5	401	0.11	563	<10	170	
56	JC-11	410,262	2,056,328	<0.001	<0.5	9.47	10	160	1.1	<2	4.98	<0.5	15	77	31	4.31	0.56	2.16	526	<1	2.33	26	360	3	0.03	<5	192	0.38	168	<10	96	
57	JC-12	410,442	2,056,408	0.001	<0.5	2.9	13	390	0.5	<2	18.1	2	3	69	13	1.71	0.6	2.09	1750	2	0.03	31	4500	5	0.76	<5	240	0.15	144	<10	159	
58	JC-13	410,650	2,056,490	<0.001	<0.5	0.24	<5	20	<0.5	<2	>25.0	<0.5	<1	9	2	0.17	0.1	0.47	184	<1	0.01	4	220	<2	<0.5	<5	375	0.01	8	<10	16	
59	JC-14	410,795	2,056,513	<0.001	<0.5	9.31	15	360	1.2	<2	1.82	1.4	15	33	54	3.65	3.29	1.29	595	3	1.61	22	430	15	0.07	<5	67	0.38	134	<10	585	
60	JC-15	409,944	2,056,057	0.001	<0.5	10.9	10	110	0.8	<2	4.8	<0.5	29	32	23	4.98	0.31	2.04	269	<1	3.31	20	440	23	0.77	<5	221	0.5	198	<10	70	
61	JC-16	409,632	2,055,653	0.001	<0.5	9.75	18	190	0.9	<2	4.01	<0.5	23	45	32	5.54	0.59	2.82	345	<1	2.58	15	440	14	0.29	<5	340	0.44	200	10	94	
62	JC-17	409,758	2,055,584	<0.001	<0.5	8.51	21	600	1.5	<2	0.44	<0.5	3	22	5	3.82	2.22	2.47	97	<1	1	6	140	16	0.35	<5	87	0.13	20	10	102	
63	JC-18	409,808	2,055,480	0.004	1.8	3.52	39	910	0.7	<2	0.04	<0.5	2	54	4	0.96	1.45	0.23	15	3	0.07	6	70	7	0.81	14	21	0.15	256	<10	9	
64	JC-19	409,867	2,055,394	0.003	<0.5	4.18	16	510	0.7	<2	17	<0.5	5	35	26	2.49	1.25	0.8	768	<1	0.23	22	1280	17	1.93	7	262	0.21	67	<10	84	
65	JC-20	407,277	2,058,778	<0.001	<0.5	6.84	18	60	0.5	<2	5.18	<0.5	35	303	53	5.05	0.07	4.16	1010	<1	2.3	107	480	10	0.22	<5	287	0.37	170	<10	92	
66	JC-20-B/jr-1			<0.001	<0.5	6.82	20	50	3	<2	0.49	<0.5	1	3	2	0.62	3.51	0.08	752	2	2.81	1	70	25	<0.01	<5	25	0.07	6	10	28	Standard
67	JC-21	407,568	2,058,754	0.001	<0.5	9.94	9	340	0.7	<2	2.89	<0.5	14	21	2	4.96	1.02	1.96	740	<1	3.72	6	530	11	<0.01	<5	156	0.34	150	<10	102	
68	JC-22	407,780	2,058,673	0.001	<0.5	6.99	13	130	0.5	<2	3.47	<0.5	27	235	47	6.07	0.33	4.82	1190	<1	1.65	106	350	10	0.25	<5	110	0.29	172	<10	102	
69	JC-23	408,044	2,058,656	0.001	<0.5	8.76	10	570	1	<2	3.06	<0.5	11	28	15	2.99	1.99	1.01	747	<1	2.19	12	390	12	0.43	<5	152	0.32	128	<10	66	
70	JC-24	408,345	2,058,565	<0.001	<0.5	8.05	11	540	0.7	<2	3.03	0.5	15	45	9	4.64	2.63	1.62	2200	<1	0.69	24	370	11	<0.01	<5	61	0.16	138	10	78	
71	JC-25	406,945	2,056,907	<0.001	<0.5	12.2	18	830	1	<2	5.55	<0.5	15	22	3	5.75	0.9	1.96	1190	4	3.37	13	450	14	<0.01	<5	593	0.55	219	<10	167	
72	JC-26	407,180	2,056,992	0.001	<0.5	6.63	26	140	0.5	<2	9.94	<0.5	13	36	21	3.91	2.2	0.31	1525	2	2.12	13	430	17	4.24	14	229	0.37	126	<10	23	
73	JC-27	407,290	2,057,069	0.109	3.6	3.23	26	400	0.5	<2	0.43	1.4	2	82	52	1.53	0.39	0.59	112	5	1.25	34	1760	27	0.72	13	45	0.16	184	10	161	
74	JC-28	407,435	2,057,207	0.001	<0.5	9.05	18	1020	1.8	<2	0.23	<0.5	2	17	5	2.99	1.78	2.31	204	<1	2.06	5	120	23	<0.01	<5	84	0.1	6	<10	82	
75	JC-29	407,577	2,057,360	0.001	<0.5	6.67	12	560	1.3	<2	0.11	<0.5	2	31	3	1.45	0.86	1.49	88	<1	1.72	4	70	16	0.02	<5	124	0.07	3	<10	65	
76	JC-30	407,610	2,057,535	0.001	<0.5	7.52	12	160	0.7	<2	0.75	<0.5	8	27	9	5.07	1.06	1.84	440	<1	0.91	14	480	10	0.03	<5	53	0.33	132	<10	99	
77	JC-31	407,407	2,058,286	0.001	<0.5	7.05	26	760	1.3	<2	0.06	<0.5	1	35	3	1.07	1.86	0.37	91	<1	2.86	3	100	24	0.03	<5	122	0.08	7	<10	37	
78	JC-32	407,072	2,058,201	0.001	<0.5	7.99	10	720	1.7	<2	0.13	<0.5	4	9	3	1.45	0.99	1.15	111	<1	1.98	4	80	25	<0.01	<5	127	0.1	9	<10	158	
79	JC-33	407,083	2,058,406	0.001	<0.5	3.66	38	380	1	<2	0.05	<0.5	1	45	5	0.85	1.73	0.26	38	5	0.14	5	140	18	0.71	22	35	0.15	248	<10	26	
80	JC-34	406,665	2,058,483	0.008	1.2	8.24	26	1910	1.2	<2	0.02	<0.5	5	19	96	4.66	2.26	0.64	277	2	0.1	17	200	79	<0.01	<5	26	0.2	79	<10	674	
81	JC-35	406,677	2,058,130	0.002	0.6	4.87	27	200	0.6	<2	5.09	2.4	9	77	35	2.94	2.23	1.43	681	7	0.02	37	630	16	1.81	10	135	0.24	258	<10	128	
82	JC-36	406,643	2,057,886	<0.001	<0.5	9.23	18	160	0.9	<2	1.72	<0.5	16	32	18	3.28	3.1	0.97	198	<1	2.66	11	460	11	2.11	<5	147	0.46	135	<10	32	
83	JC-37	406,732	2,057,527	<0.001	<0.5	9.48	27	510	1.3	<2	1.78	<0.5	10	25	9	2.98	1.73	1.35	521	<1	3.2	12	400	12	0.07	<5	255	0.37	134	<10	118	
84	JC-38	406,985	2,058,060	<0.001	<0.5	0.35	19	20	<0.5	<2	>25.0	<0.5	<1	5	3	0.16	0.11	0.42	595	<1	0.02	7	1400	<2	<0.5	<5	309	0.01	15	<10	15	
85	JC-39/jb-3			<0.001	<0.5	10.4	13	240	0.6	<2	6.63	<0.5	36	41	225	8.11	0.68	3.13	1360	<1	2.21	45	1300	7	<0.01	<5	441	0.89	381	<10	101	Standard

Al:Aiteration Index

Table 2-2-5 List of Statistic Data for Chemical Analysis

Element		Au	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sr	Ti	V	W	Zn	A.l.
Unit		ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%
2003	Min	0.0005	0.25	0.24	2.5	20	0.25	1	0.02	0.25	0.5	5	2	0.16	0.07	0.16	9	0.5	0.01	1	50	1	0.005	2.5	11	0.01	2	5	9	2.313293
	Max	0.109	3.6	12.15	79	2140	1.8	6	24.5	14.8	41	303	102	8.24	4.09	4.82	2410	39	4.12	107	4500	96	4.24	22	836	0.56	858	10	914	98.2087
	Ave	0.0036	0.4173	7.3207	18.444	498.02	0.9123	1.1481	3.6303	0.9821	10.556	56.123	22.37	3.4883	1.3533	1.6833	551.05	2.4136	1.6612	19	484.81	15.333	0.4515	4.3765	182.41	0.2917	153.16	6.2963	144.54	44.6088
	Ave(log)	0.0012	0.3115	6.3771	14.812	365.31	0.8448	1.0633	1.5231	0.4056	6.3007	43.738	12.925	2.8767	1.0768	1.3414	365.98	1.0258	0.9314	11.869	337.34	11.458	0.1063	3.3376	128.12	0.2232	85.692	5.9843	105.67	35.09436
	Median	0.001	0.25	8.05	15	390	0.9	1	2.71	0.25	10	45	19	3.65	1.23	1.57	421	0.5	1.87	12	410	12	0.14	2.5	152	0.33	138	5	102	41.43395
	SD	2.7514	1.818	1.9925	1.9909	2.3531	1.5226	1.3464	6.2526	2.7003	3.3036	2.0387	3.135	2.1025	2.1739	2.1053	2.8227	2.9358	4.3735	2.6273	2.3726	2.1349	7.6295	1.8632	2.5715	2.4506	4.0378	1.3575	2.1972	2.327286
	Limit	21	70	0	4	0	4	77	0	61	4	0	0	0	0	0	0	49	0	0	0	2	12	65	0	0	0	60	0	0
Total(2002+2003)	Min	0.0005	0.1	0.01	1	5	0.25	1	0.005	0.25	0.5	1	0.5	0.04	0.005	0.005	2.5	0.5	0.005	0.5	5	1	0.005	1	2	0.005	0.5	5	1	0.451113
	Max	0.109	20	12.15	200	2140	1.8	8	24.5	56	41	303	1135	8.24	4.09	7.8	2920	121	4.12	150	9790	1260	6.08	22	836	0.56	858	10	1040	98.96789
	Ave	0.0018	0.2985	2.7456	8.1072	130.27	0.4243	1.2363	2.3846	0.6735	9.035	45.781	21.403	2.7629	0.3128	1.3802	470.84	1.8359	0.3111	11.996	471.01	12.239	0.2952	2.0142	99.462	0.1036	64.594	5.2298	89.024	39.29196
	Ave(log)	0.0007	0.1557	1.5225	3.4936	45.241	0.3568	1.1095	1.3858	0.3423	4.4839	32.732	9.5399	2.0088	0.0932	0.9415	303.56	0.8133	0.0314	5.0089	278.92	5.0313	0.0607	1.4279	43.281	0.0316	22.047	5.1618	59.155	28.17761
	Median	0.0005	0.1	1.99	2	40	0.25	1	1.52	0.25	9	37	12	2.88	0.09	1.22	367	0.5	0.02	6	360	6	0.06	1	37	0.04	45	5	68	35.58559
	SD	2.2932	2.0615	3.9157	3.4874	4.05	1.7105	1.4329	5.4377	2.0757	4.1455	2.475	3.7849	2.7556	4.6867	2.9494	2.8969	2.4227	6.2639	4.01	2.8149	2.9901	6.6726	1.9335	3.7441	5.7034	6.5051	1.1564	2.8555	2.97066
	Limit	326	348	0	179	37	298	413	1	350	92	0	18	0	32	1	1	304	78	62	1	70	95	389	0	191	25	436	5	0

Table 2-2-6 Result of Principal Component Analysis (Load Value)

Element	Component	Component	Component	Component	Component
	1	2	3	4	5
AU	0.761382156	0.258030834	0.080718372	-0.0630566	-0.01295573
AG	0.780703133	0.239176954	0.10634366	-0.12943381	0.208080173
AS	0.518063556	0.220803794	0.394196173	-0.21970268	-0.15684791
BA	0.217725799	0.19058211	0.830659929	0.143971947	0.061484384
BE	-0.17402822	0.072155842	0.831982134	0.154732848	0.036098052
BI	0.373675016	0.16900002	-0.57778281	0.443196395	-0.29840933
CD	0.724449379	-0.07870495	-0.24570986	0.245473434	0.347384987
CO	-0.15162676	-0.83509481	0.269602548	-0.06128903	-0.31832999
CR	0.062498325	-0.58905474	0.265932288	-0.38269716	0.138563097
CU	0.524520505	-0.58637231	-0.06823714	0.06135555	-0.1658926
MN	-0.09995808	-0.7207438	-0.04819269	0.241712427	-0.0689546
MO	0.719743941	0.091994239	-0.28647675	-0.01412616	0.255155975
NI	0.377709367	-0.77694073	-0.12499148	-0.13748331	0.203871286
PB	0.544718382	0.209883515	0.341929076	0.339919784	-0.52057401
S	0.228426559	-0.00589541	-0.27838928	-0.34304125	-0.64786705
SB	0.599577728	0.362409779	0.080525118	-0.53590151	-0.07322973
V	0.463730247	-0.67985578	0.093111606	-0.2850978	-0.00494746
ZN	0.487035494	-0.35868747	0.212819903	0.678468888	0.044583683
Eigenvalue	4.333085658	3.534883373	2.452550168	1.663866982	1.240455009
contribution	0.240726981	0.19638241	0.136252787	0.092437055	0.068914167

Table 2-2-6 Result of Principal Component Analysis (Factor)

Sample No	Component 1	Component 2	Component 3	Component 4	Component 5		Component No	Component 1	Component 2	Component 3	Component 4	Component 5
1	0.58949	-0.65199	1.01156	1.62125	0.49302		40	0.24697	-0.78613	0.95488	-0.49424	-1.15664
2	-1.04972	1.63457	0.04632	0.53785	1.09001		41	-0.03665	1.47103	-0.34283	-1.21204	-0.60309
3	-0.17506	-0.00963	-0.16511	-0.53134	-1.13177		42	-0.90592	-0.5699	0.2719	-0.1464	1.01185
4	-1.29697	1.02334	-0.64871	-0.05203	0.60814		43	-0.3861	-0.18409	0.99929	0.38402	-0.06851
5	-0.37404	-1.12498	-0.13798	-0.24734	0.65776		44	-0.55621	-0.41883	0.17825	-0.1509	-0.70653
6	-0.57701	-0.43681	0.32806	-0.05816	0.05764		45	-1.07618	0.76367	-0.63383	0.06167	-0.03881
7	0.4442	-0.47061	-1.21819	-0.02521	-0.78421		46	-1.12516	0.93855	-0.44485	-0.21608	0.72366
8	-0.29179	-0.70273	0.41501	0.03217	-0.56614		47	-0.05239	-0.41023	0.25227	0.51806	-0.56688
9	-0.58452	-0.28431	-0.10243	-0.09833	-1.09367		48	-0.89686	1.57782	0.38452	0.71945	-0.00424
10	-0.17246	-0.15883	-0.77473	-0.71067	-0.63069		49	-0.14775	-0.40044	0.89304	0.3165	-1.11104
11	1.07472	-0.34983	-2.33271	-0.12513	1.483		50	-0.5931	-0.11365	0.50256	0.22251	0.15746
12	-0.40008	-1.14528	-0.0573	0.46228	-0.32025		51	-0.59415	-0.28648	-0.01659	0.12631	0.58612
13	0.43074	-0.6828	-0.36448	-0.7832	-0.31019		52	0.11621	-0.6295	0.6155	-0.10073	-1.16534
14	-0.59675	1.40435	0.43799	0.08143	0.00109		53	1.13772	-0.52391	-1.28891	0.35235	2.24253
15	2.8713	-0.43461	0.22564	-0.07297	2.15501		54	-0.71349	-1.09447	-0.16955	-0.43355	0.73619
16	0.66859	-0.99294	0.50777	1.24723	0.34786		55	0.31256	-0.82855	-0.93588	0.01185	0.85462
17	-0.34449	-0.12578	0.09677	0.48108	-0.71332		56	-2.03131	1.34752	-3.35044	-0.656	2.20434
18	1.80349	1.39258	-3.38245	3.22681	-1.93406		57	0.51529	-0.94273	0.25489	1.46832	0.28982
19	2.47434	-0.46174	0.07218	0.16354	3.24459		58	-0.27492	-0.59872	-0.42431	-0.34214	-1.52379
20	-0.14712	-0.61158	-0.62132	0.48504	-0.78198		59	-0.19899	-0.64803	0.05199	-0.29193	-1.05651
21	-0.111	-0.50011	0.26947	-0.10842	-1.57903		60	-0.61782	1.02766	0.71464	0.41078	-0.63194
22	2.57114	1.16905	-2.91657	2.7168	-2.29901		61	0.98336	1.93911	0.26063	-3.4973	0.41989
23	-0.13562	-0.62051	-0.55917	0.00288	-0.16369		62	0.29685	-0.03471	-0.01615	-0.65777	-1.3541
24	-0.07296	-1.39511	0.37169	-0.24107	0.46603		63	-0.17596	-2.06066	-0.76196	-1.19717	-0.47523
25	-0.47377	-0.81228	0.75568	0.07813	0.32665		64	-0.80861	0.06454	0.03569	0.61611	0.35843
26	2.18636	1.52303	1.77218	-0.63756	-0.14218		65	-0.06263	-1.90838	-0.56688	-0.93323	-0.38568
27	1.16872	1.18985	0.81569	-1.48313	-0.41691		66	-0.45248	-0.26652	0.20921	0.02497	-0.81272
28	-0.55584	-0.90043	0.3658	-0.03428	0.918		67	-0.52134	-0.84737	0.13331	0.45884	0.64511
29	-0.14268	-0.28724	-0.23181	-0.87669	-1.55645		68	-0.22906	-0.24825	0.65316	0.93209	0.65097
30	2.0328	0.4895	1.12005	0.56784	0.94982		69	0.28523	-0.12024	-0.89185	-2.01545	-1.89147
31	-0.02647	0.26051	0.81865	0.68556	-0.20377		70	3.03113	0.63225	-0.07105	-1.51002	0.54209
32	-1.08061	1.35429	0.57182	0.73369	0.41125		71	-0.70773	1.36769	1.21884	1.27699	0.26674
33	-0.08867	-1.5824	0.45192	0.09915	0.52849		72	-0.93702	1.52286	0.56914	0.64274	0.28945
34	-0.61378	-0.91627	0.17729	0.2345	0.43478		73	-0.51858	-0.20145	-0.40218	0.12124	0.01979
35	-0.48999	-1.48914	0.46886	-0.10147	1.25879		74	-0.72681	1.76704	0.8531	0.21	-0.07191
36	-0.62182	-1.34907	-0.25921	0.17578	0.67252		75	-0.78011	1.41204	0.99901	1.75567	0.13903
37	-0.55321	1.57318	1.13959	0.86908	0.71262		76	0.54248	1.61022	0.16883	-2.37681	-0.51393
38	0.85709	1.79151	1.20643	-1.7317	0.25332		77	1.57439	0.27708	1.74494	1.96377	-0.03631
39	-0.15332	-0.25153	0.97977	-0.32457	-0.2759		78	1.63966	-0.59528	-0.61693	-1.13684	-0.0348
							79	-0.57602	-0.12155	-0.36496	-1.00327	-1.40298
							80	-0.43705	-0.11013	0.74368	0.35496	-0.41269
							81	-1.58473	1.17391	-3.01816	-0.83619	1.71989

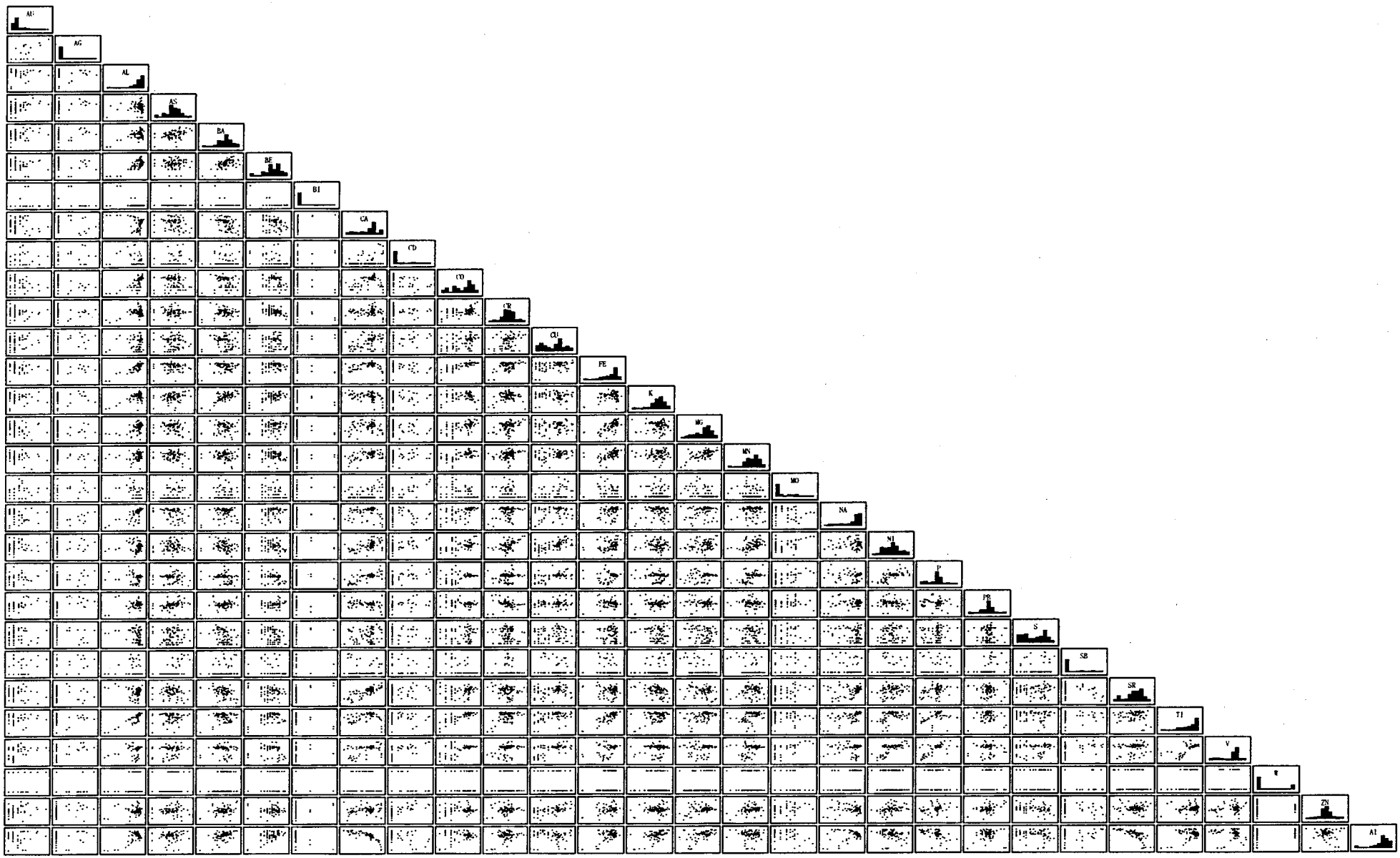


Fig. 2-2-15 Scatter Diagram

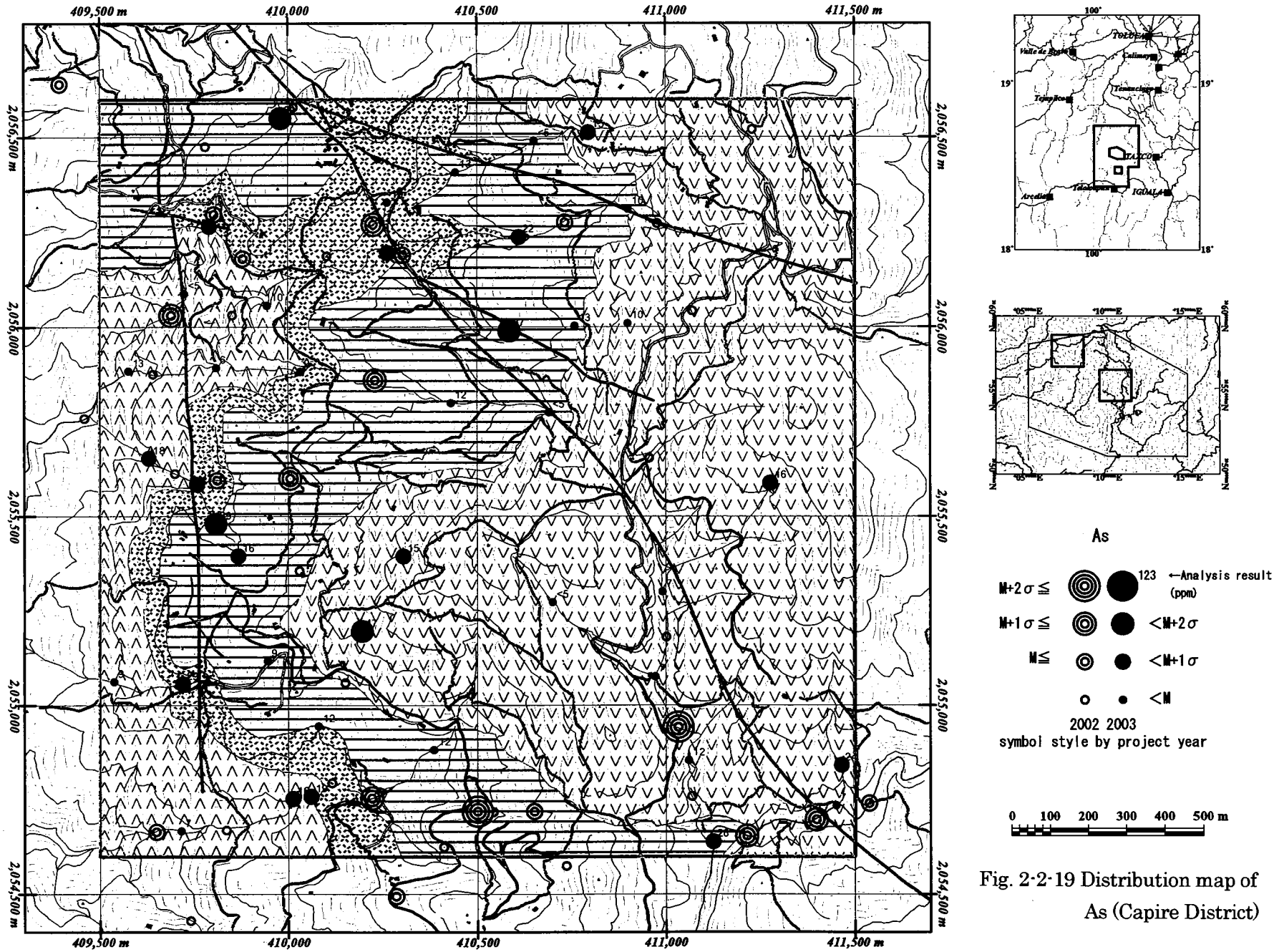
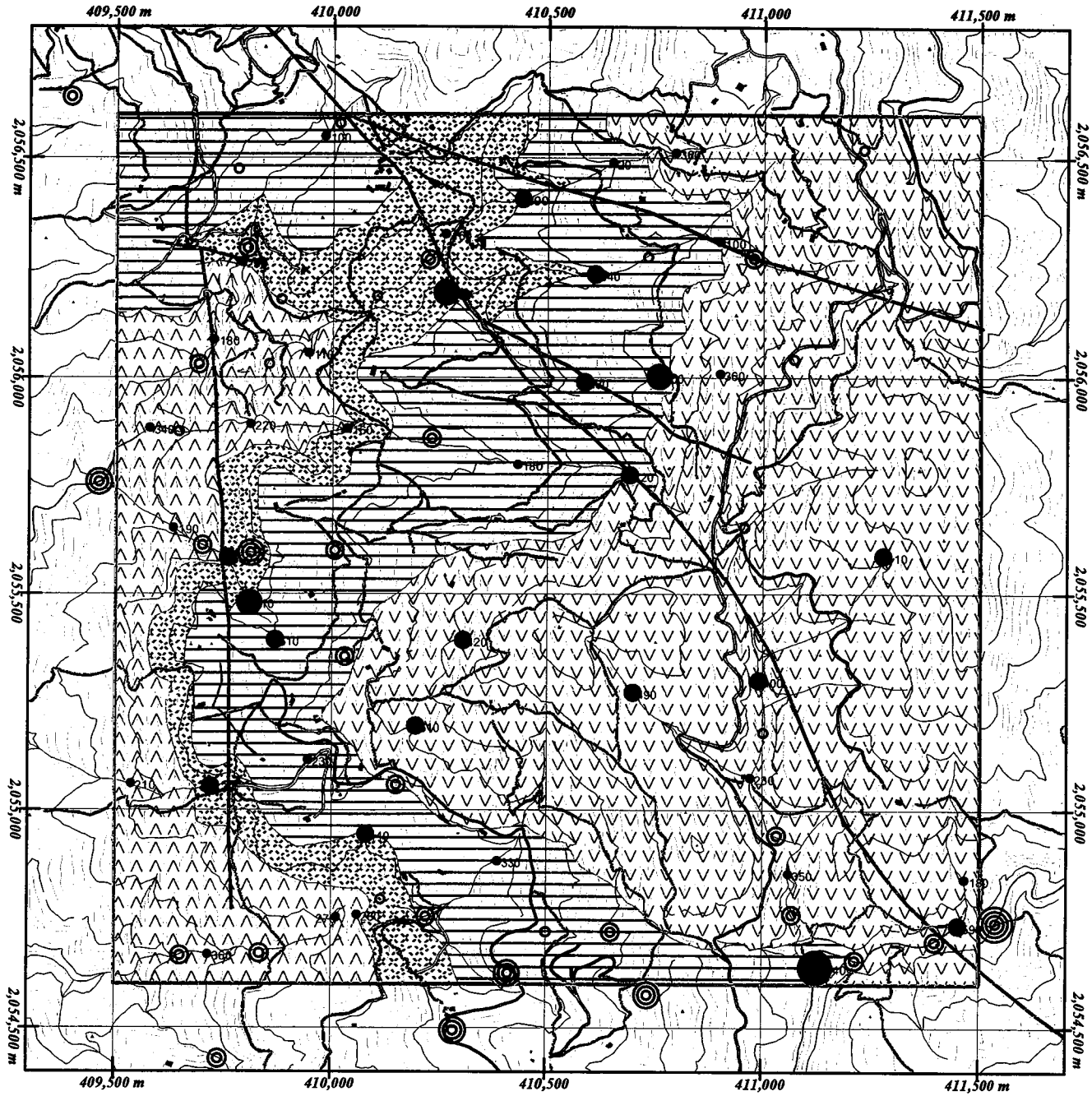
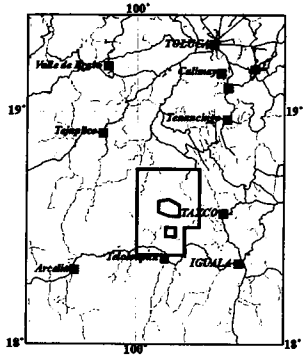
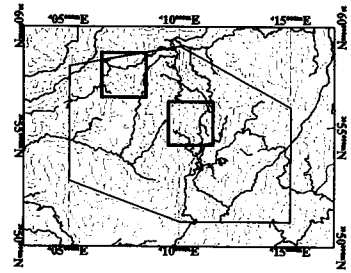


Fig. 2-2-19 Distribution map of As (Capire District)







Ba

M+2σ≦ 123 ←Analysis result (ppm)

M+1σ≦ <M+2σ

M≦ <M+1σ

<M

2002 2003
symbol style by project year

0 100 200 300 400 500 m

Fig. 2-2-20 Distribution map of Ba (Capire District)

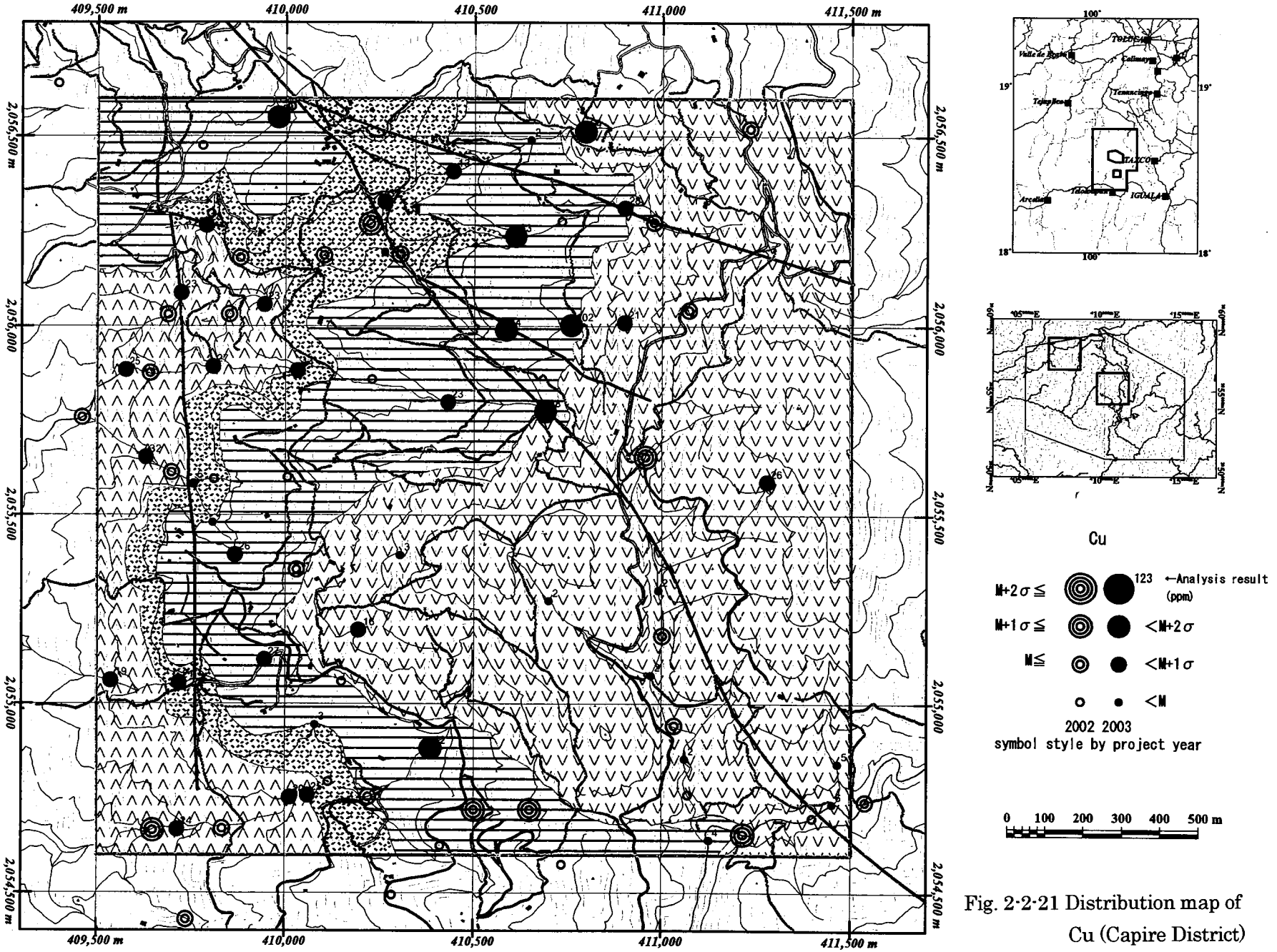


Fig. 2-2-21 Distribution map of Cu (Capire District)

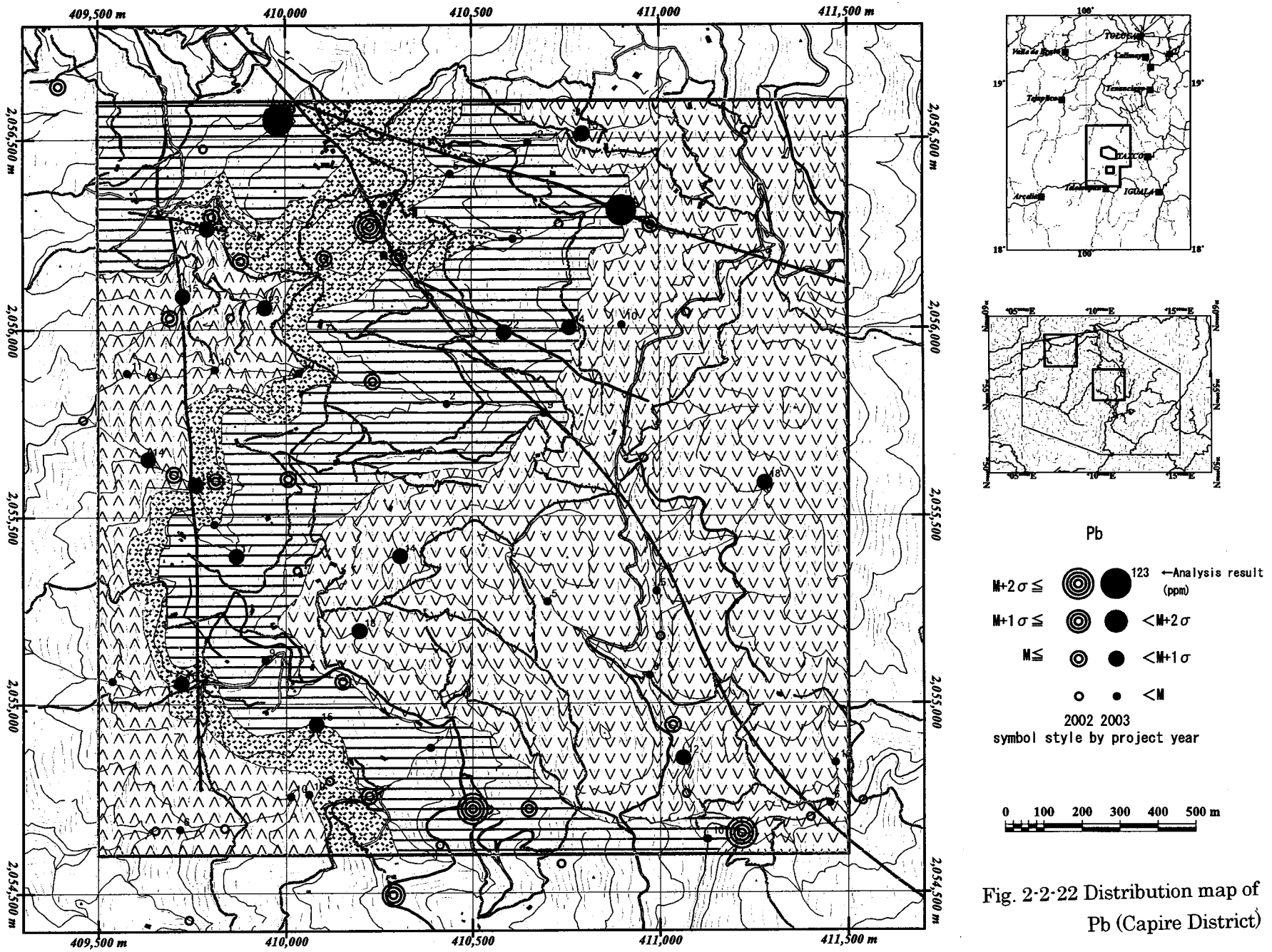


Fig. 2-2-22 Distribution map of Pb (Capire District)

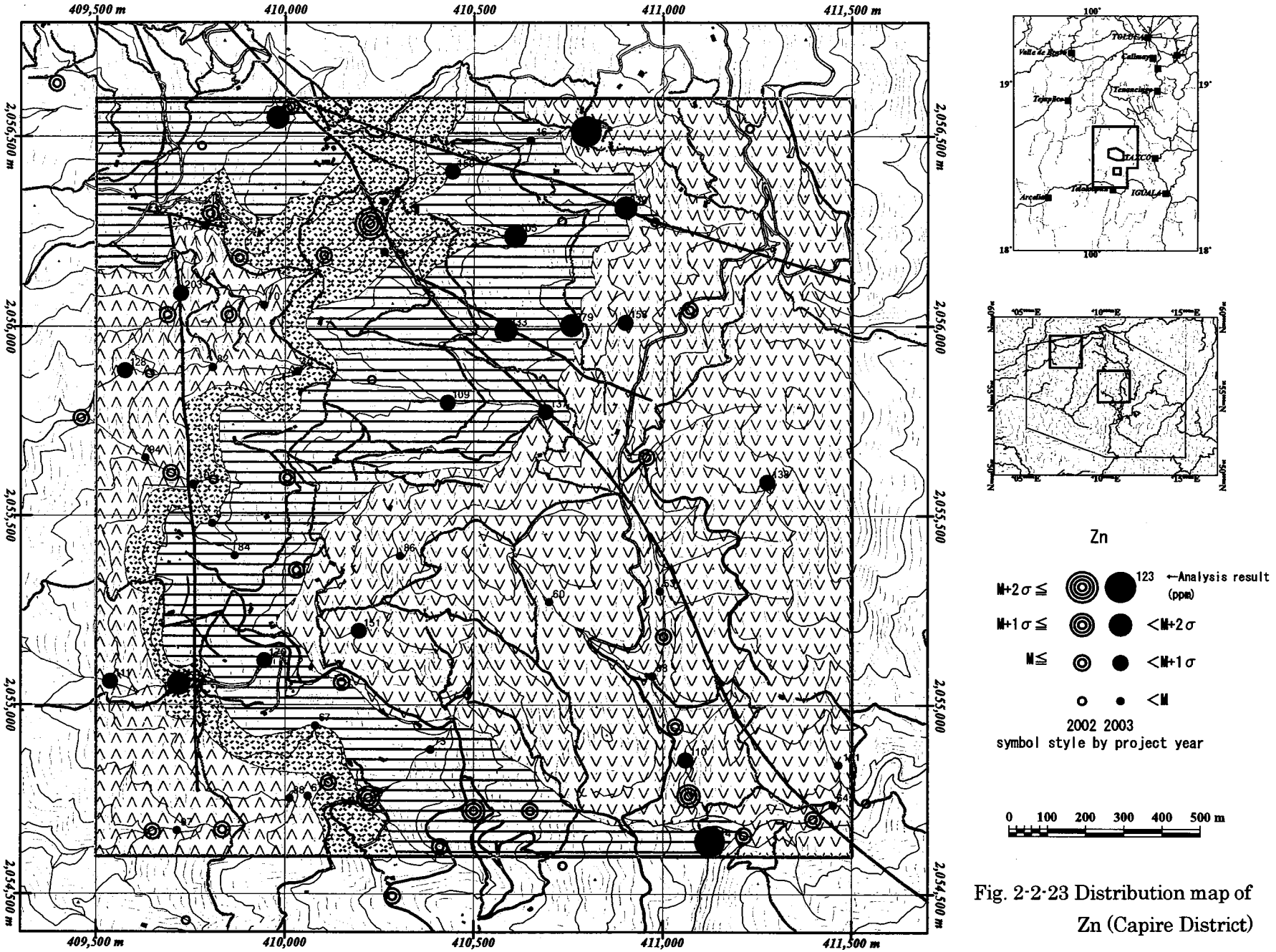


Fig. 2-2-23 Distribution map of Zn (Capire District)

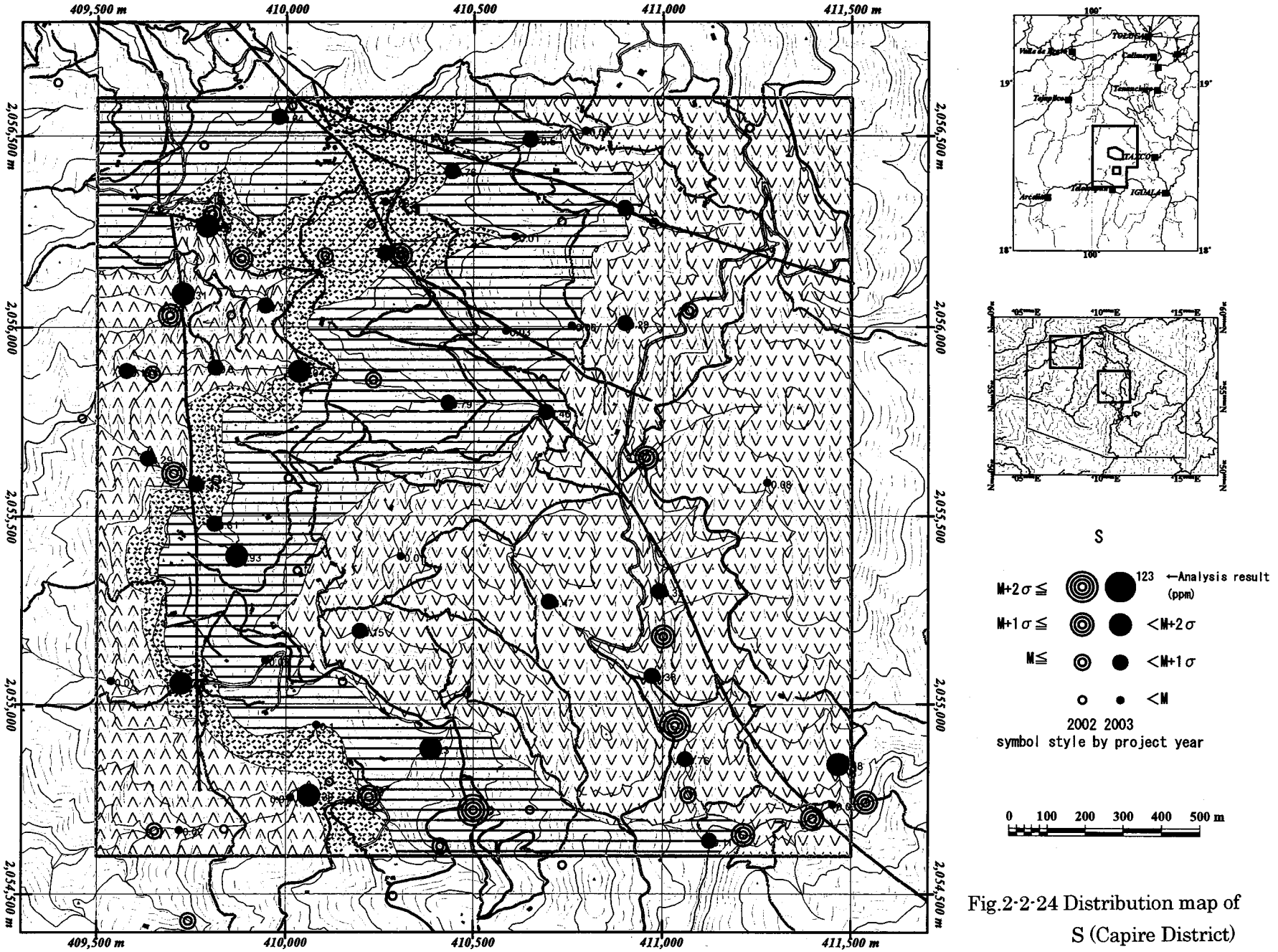


Fig.2-2-24 Distribution map of S (Capire District)

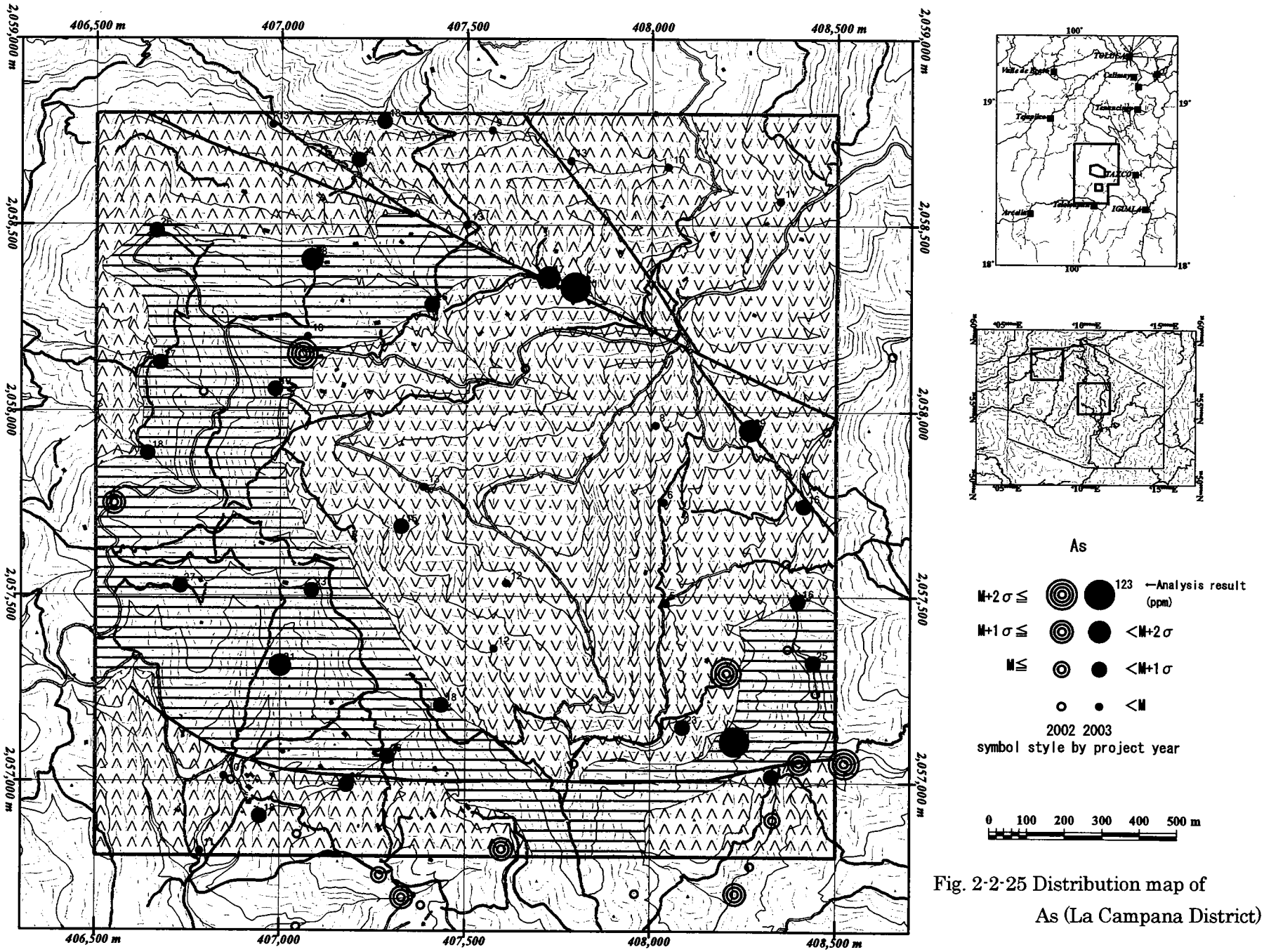


Fig. 2-2-25 Distribution map of As (La Campana District)

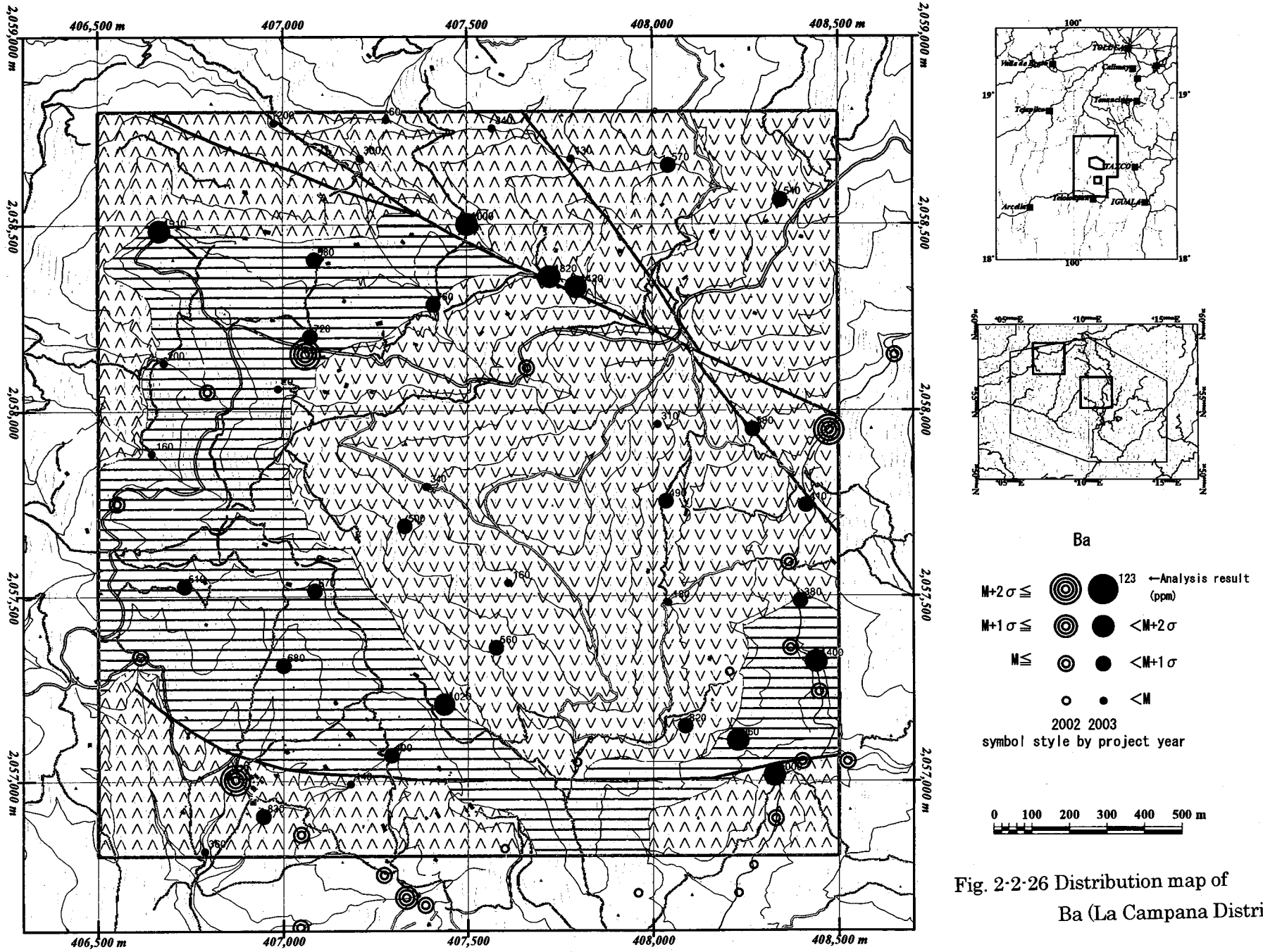


Fig. 2-2-26 Distribution map of Ba (La Campana District)

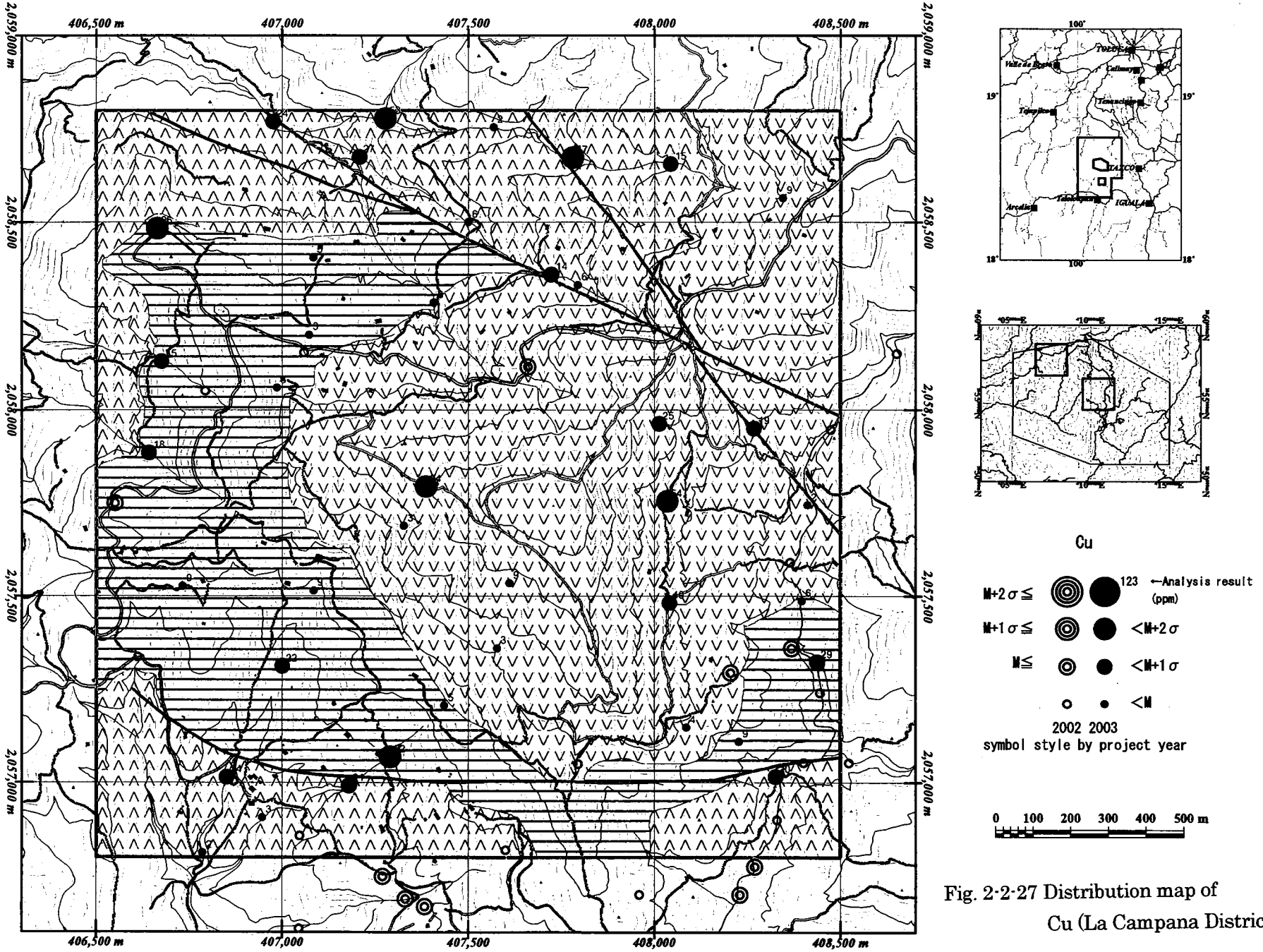
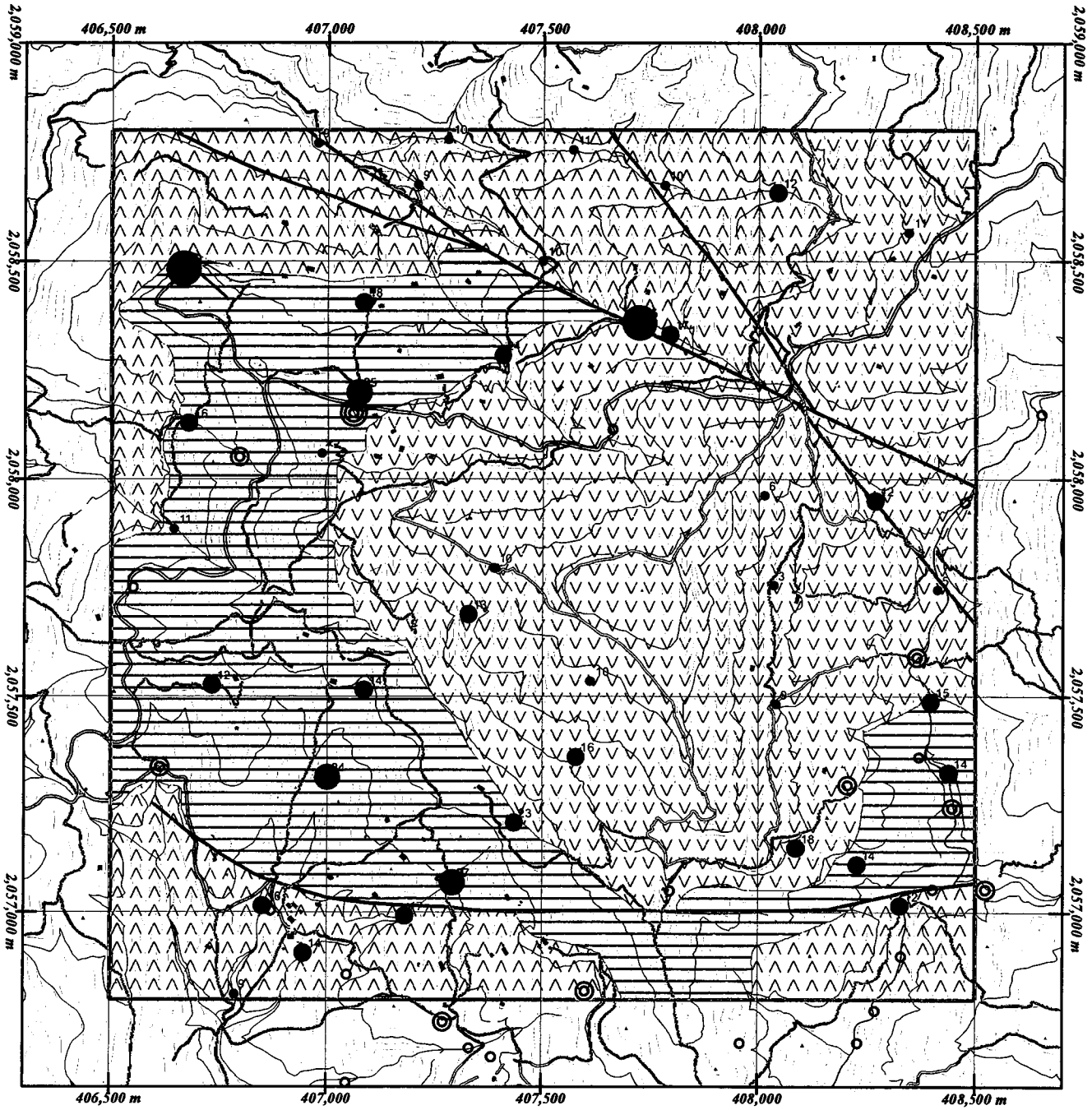
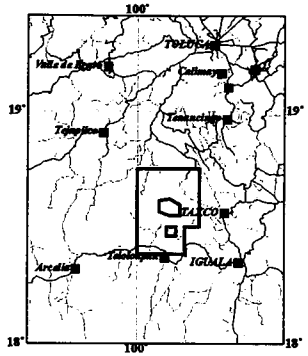
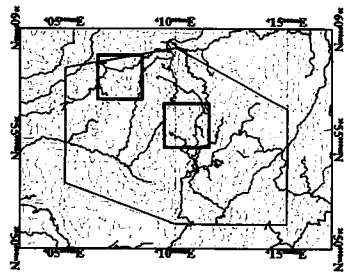


Fig. 2-2-27 Distribution map of
Cu (La Campana District)







Pb

M+2σ≦ 123 ←Analysis result (ppm)

M+1σ≦ <M+2σ

M≦ <M+1σ

<M

2002 2003
symbol style by project year

0 100 200 300 400 500 m

Fig. 2-2-28 Distribution map of Pb (La Campana District)

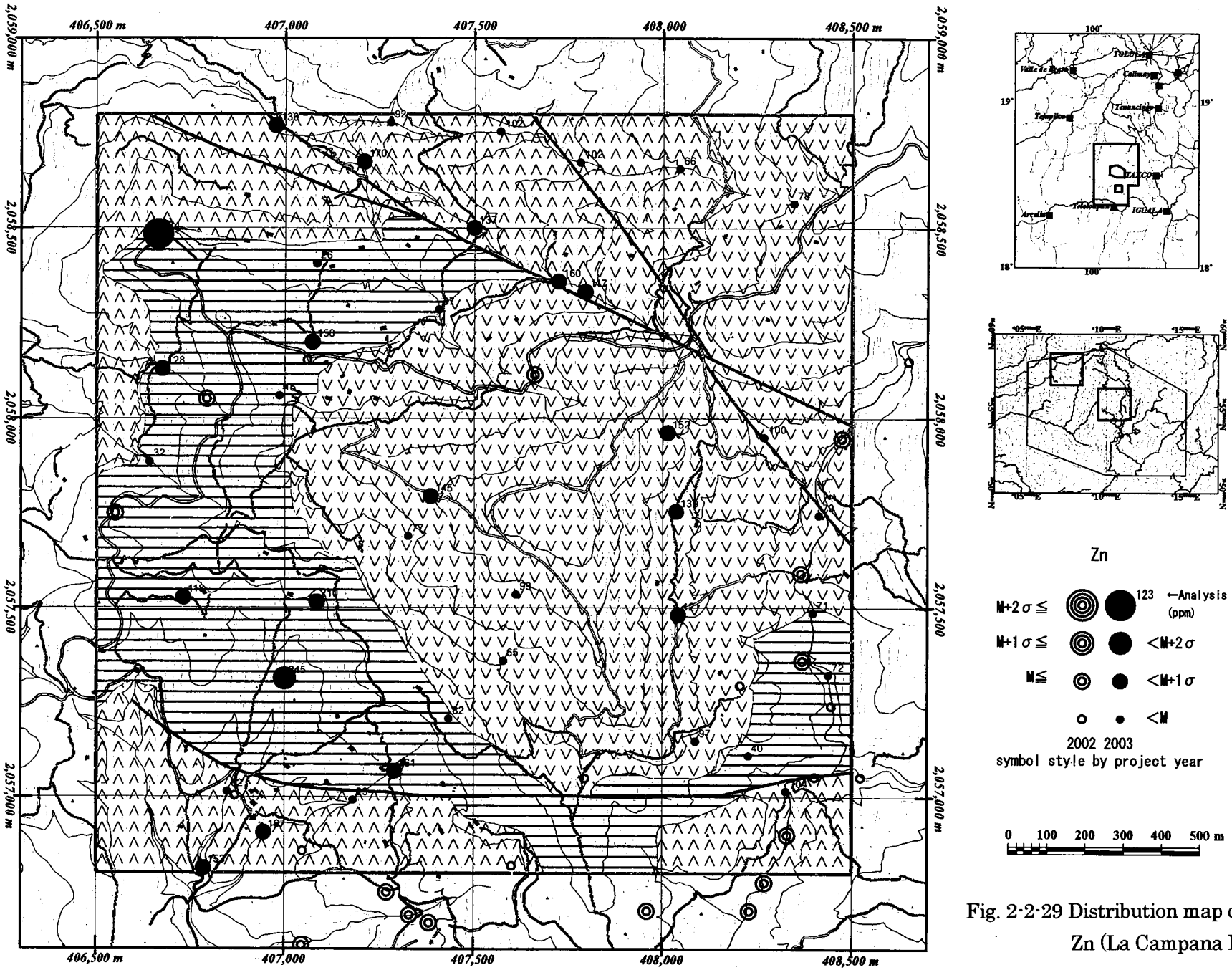


Fig. 2-2-29 Distribution map of Zn (La Campana District)

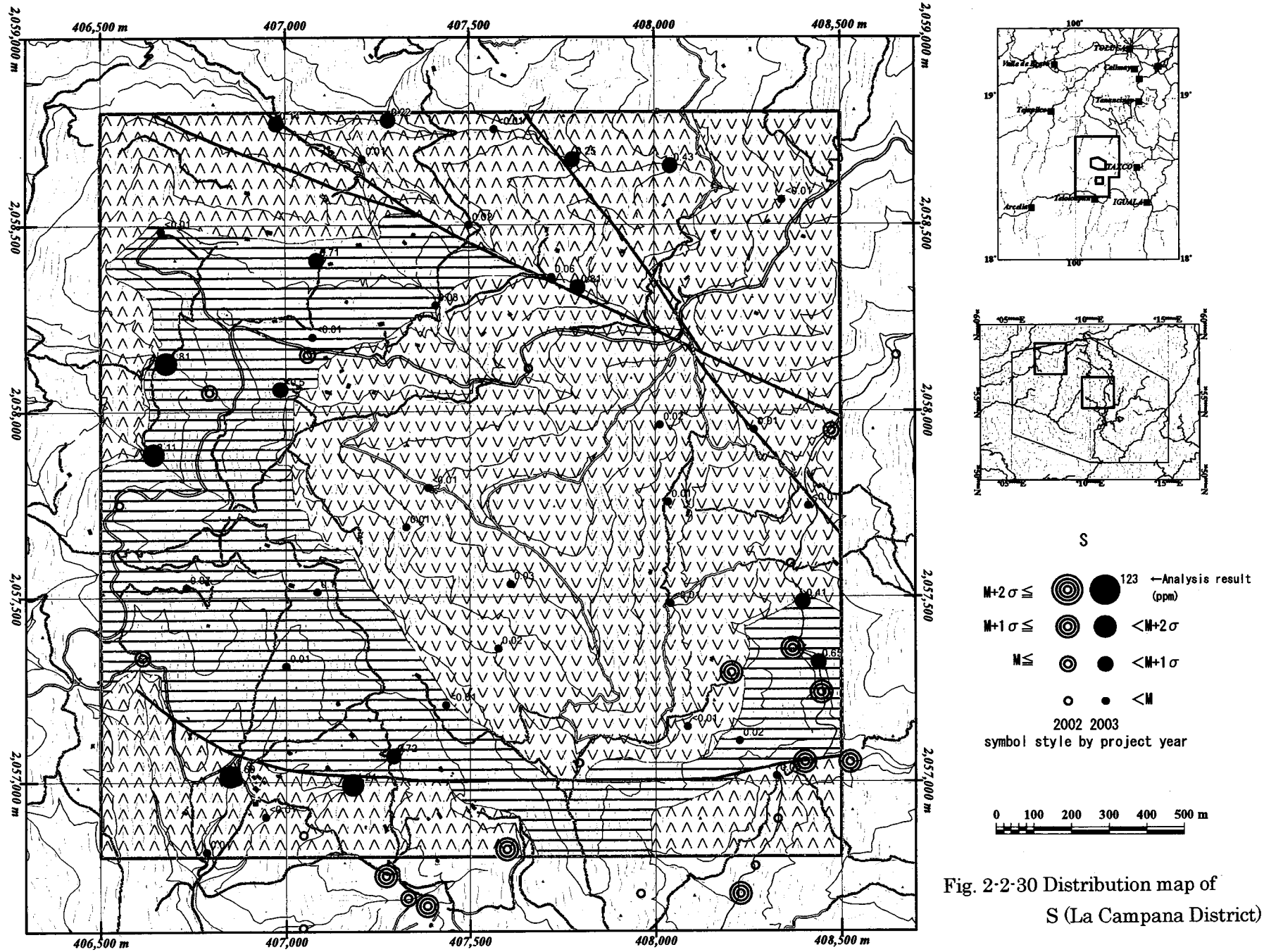


Fig. 2-2-30 Distribution map of S (La Campana District)

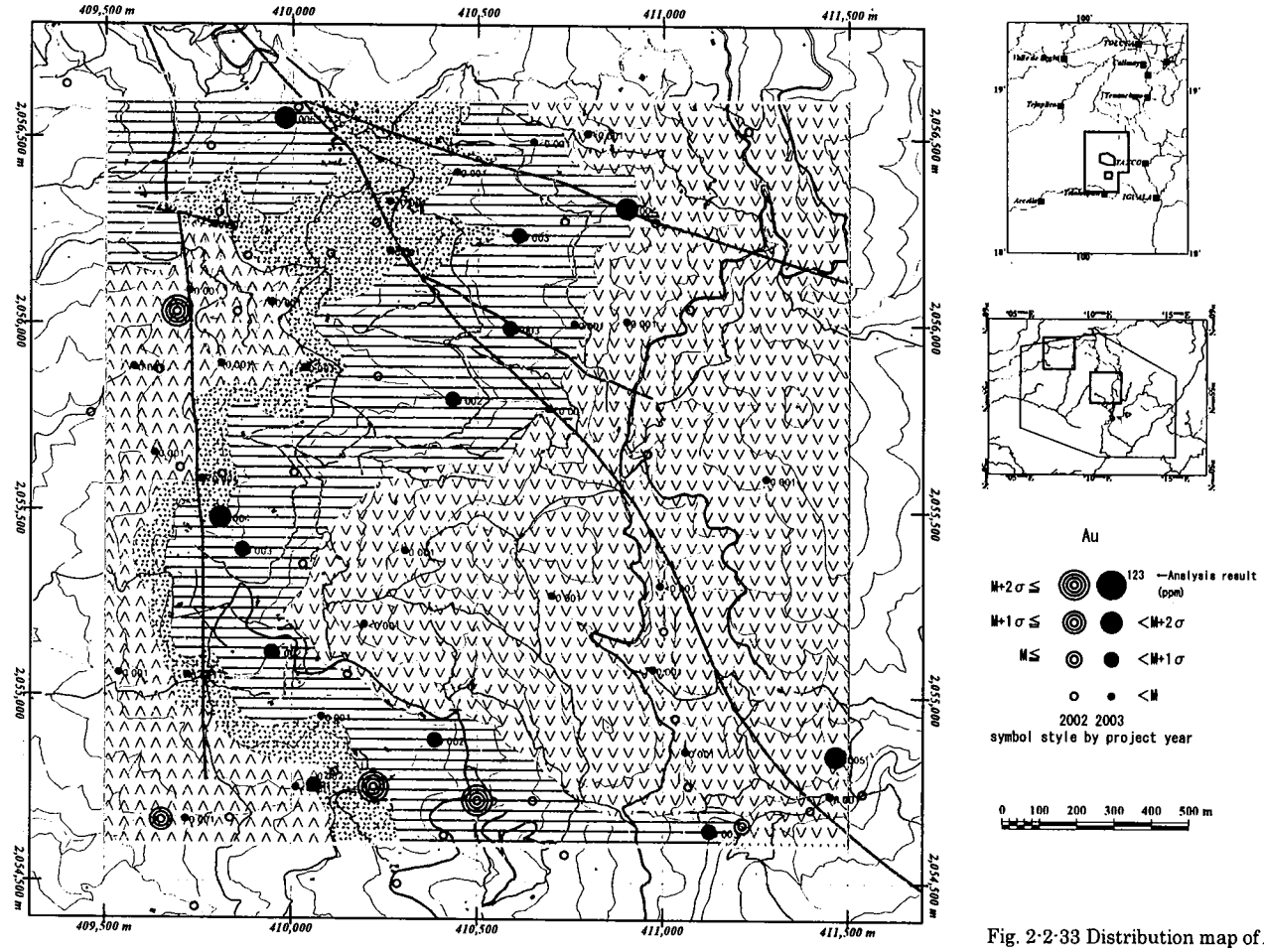


Fig. 2-2-33 Distribution map of Au (Capire District)

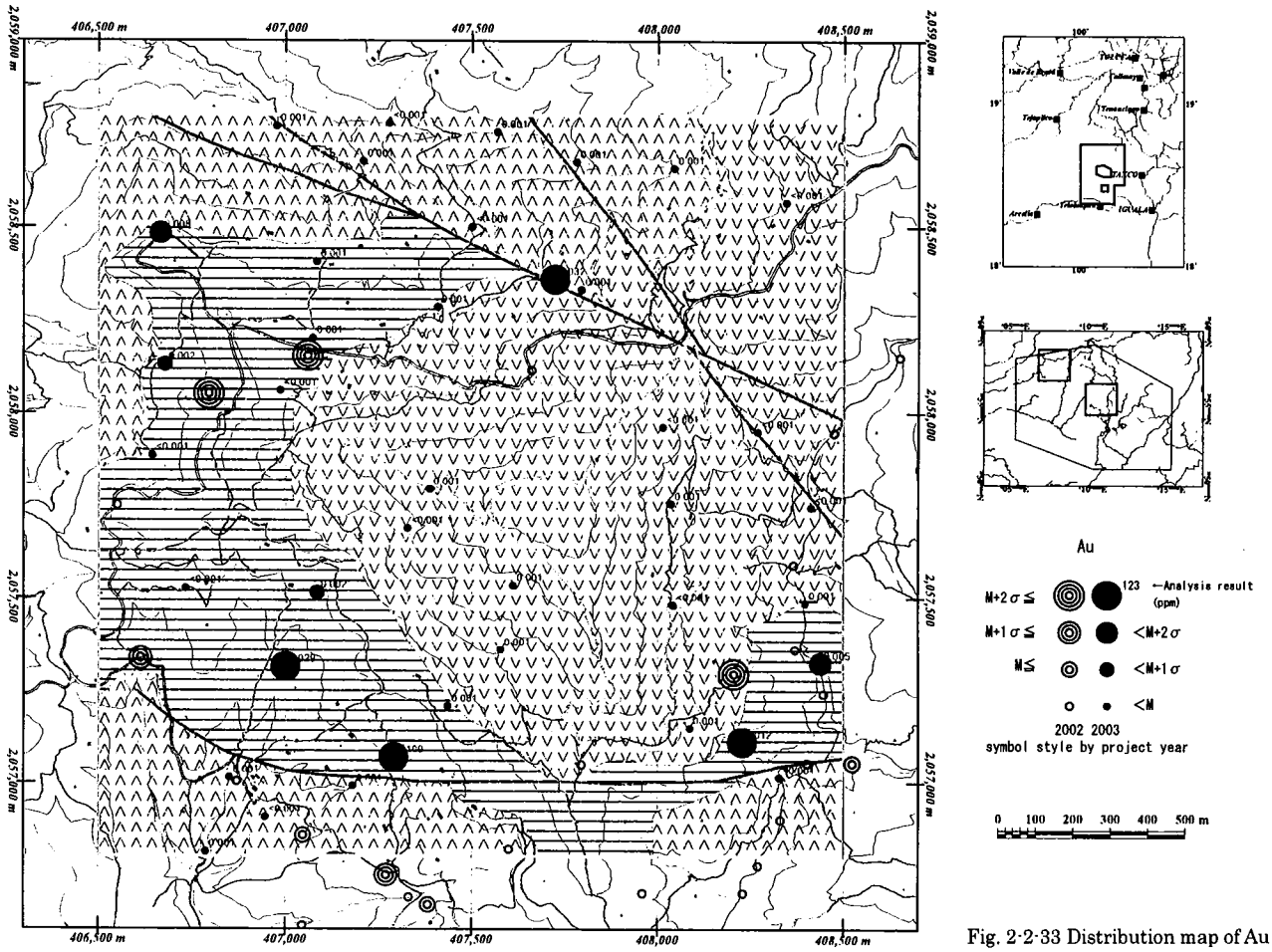


Fig. 2-2-33 Distribution map of Au (La Campana District)

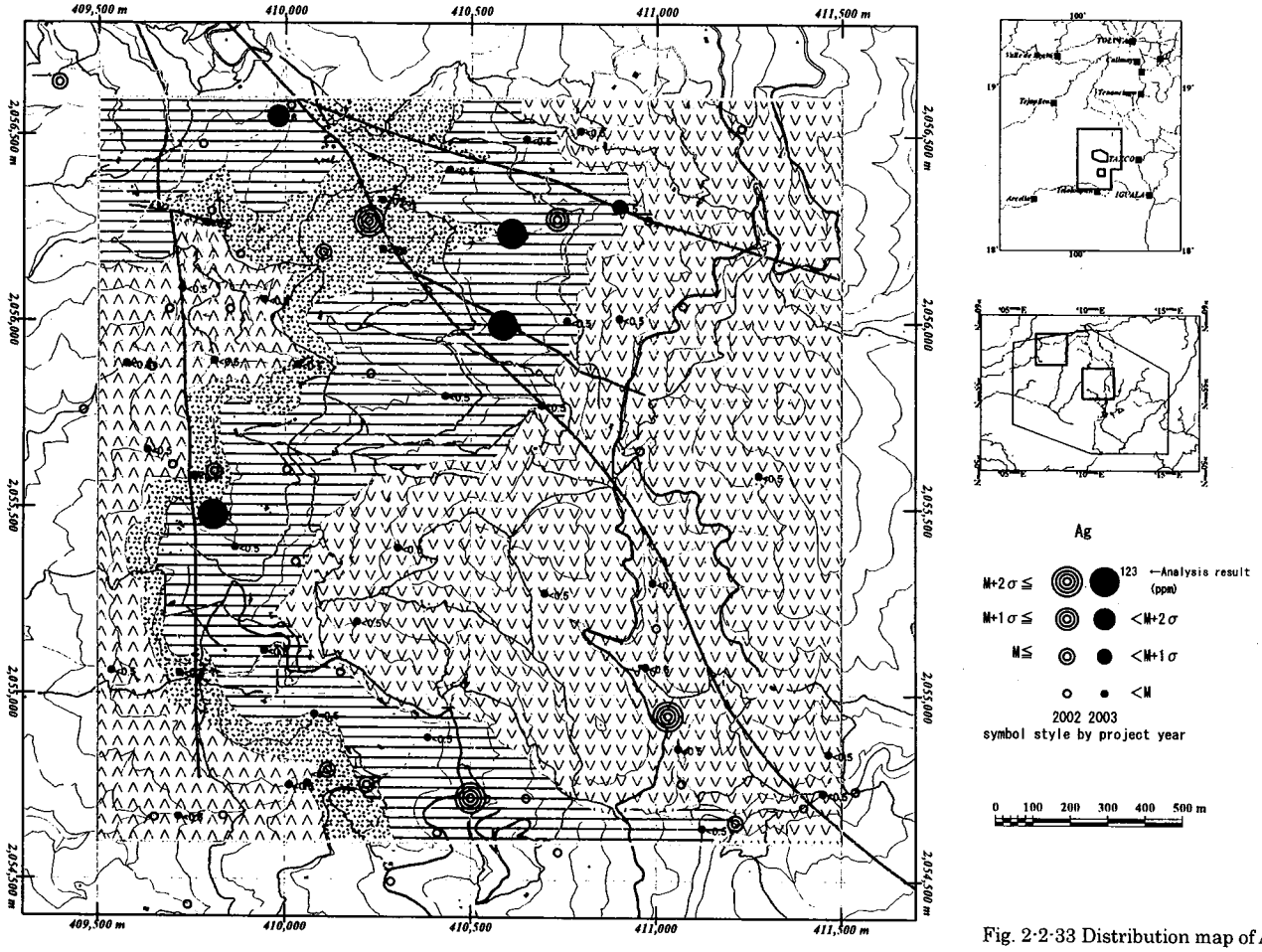


Fig. 2-2-33 Distribution map of Ag (Capire District)

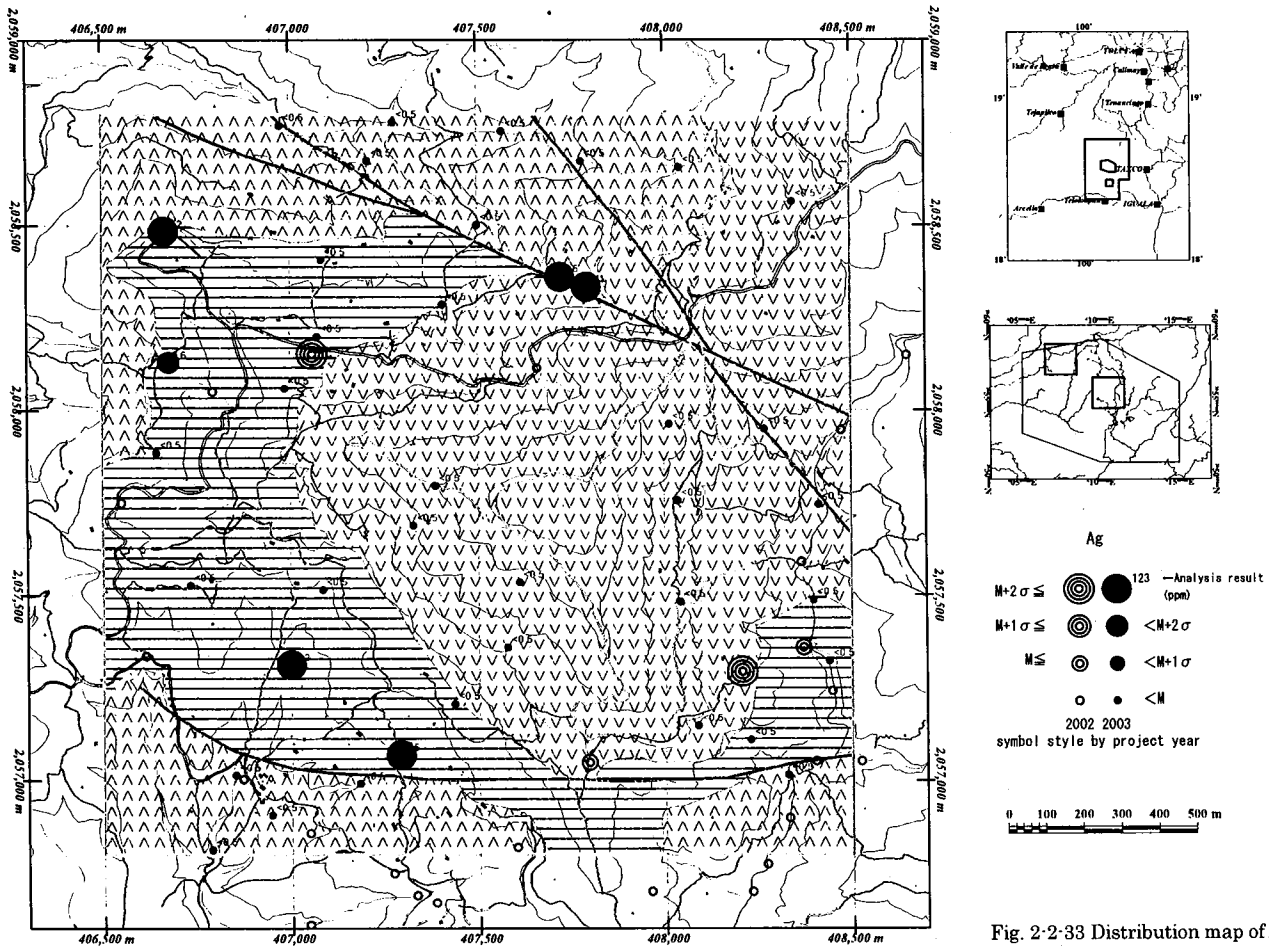


Fig. 2-2-33 Distribution map of Ag (La Campana District)

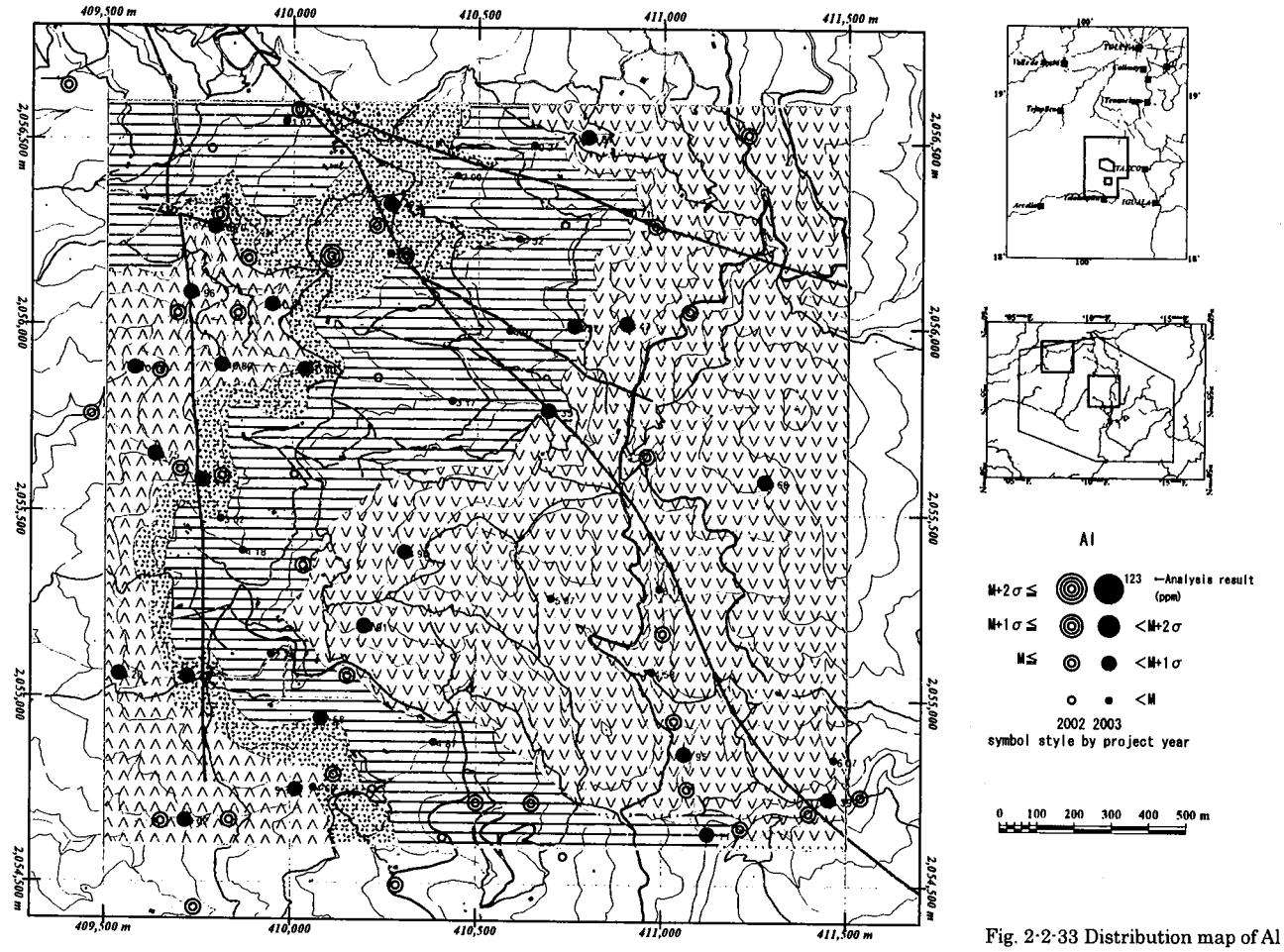


Fig. 2-2-33 Distribution map of Al
(Capire District)

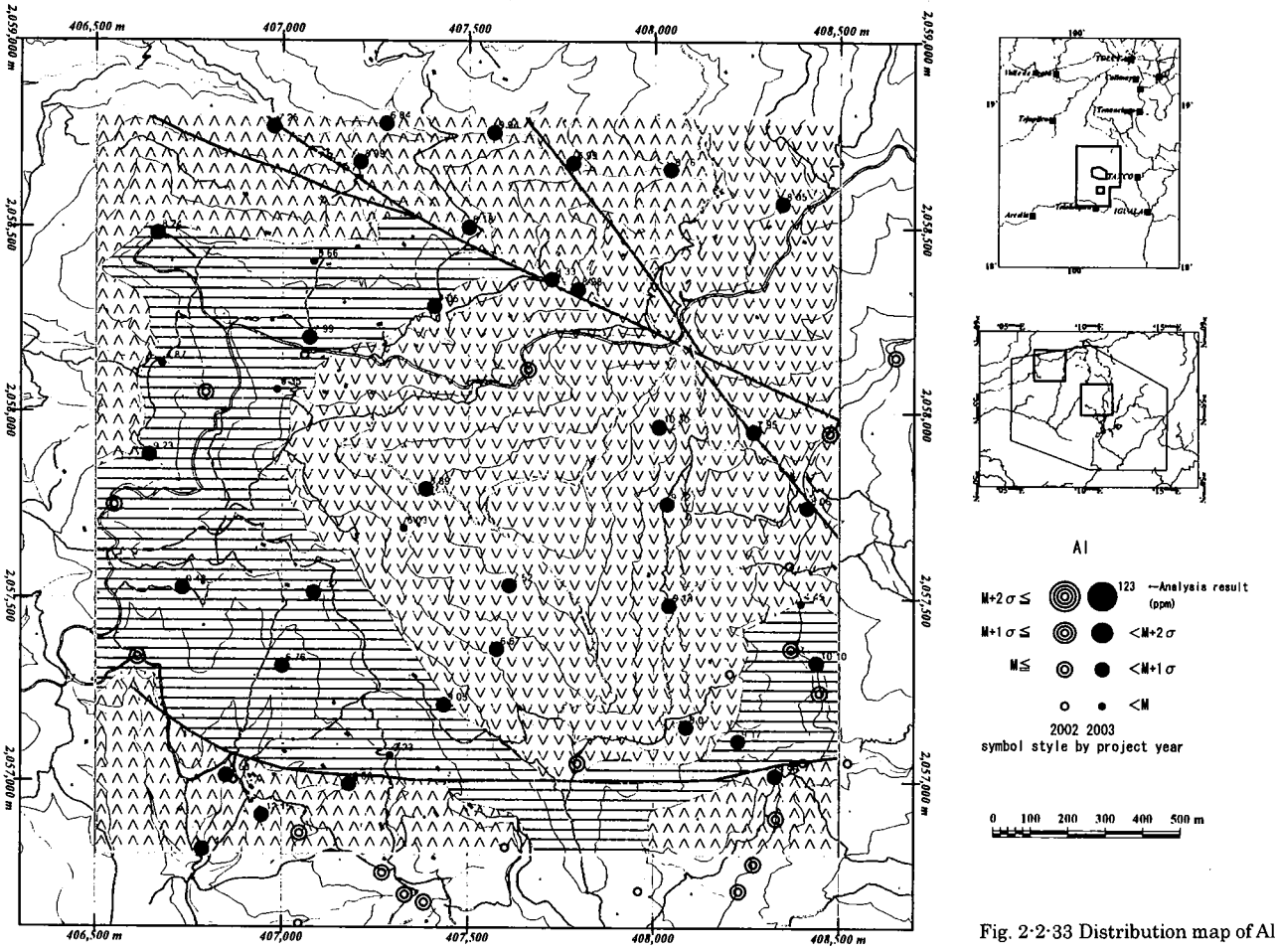


Fig. 2-2-33 Distribution map of Al
(La Campana District)

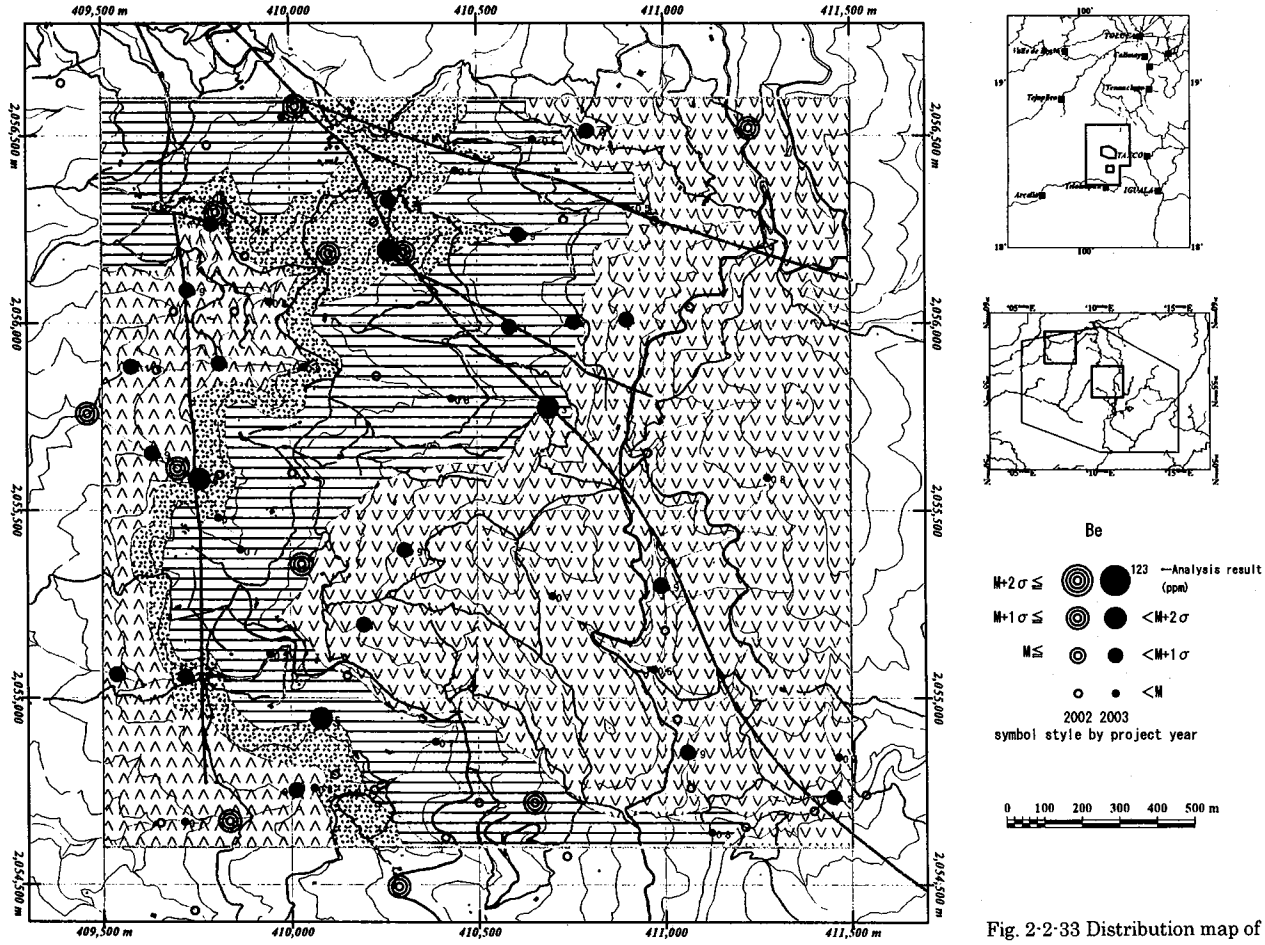


Fig. 2-2-33 Distribution map of Be (Capire District)

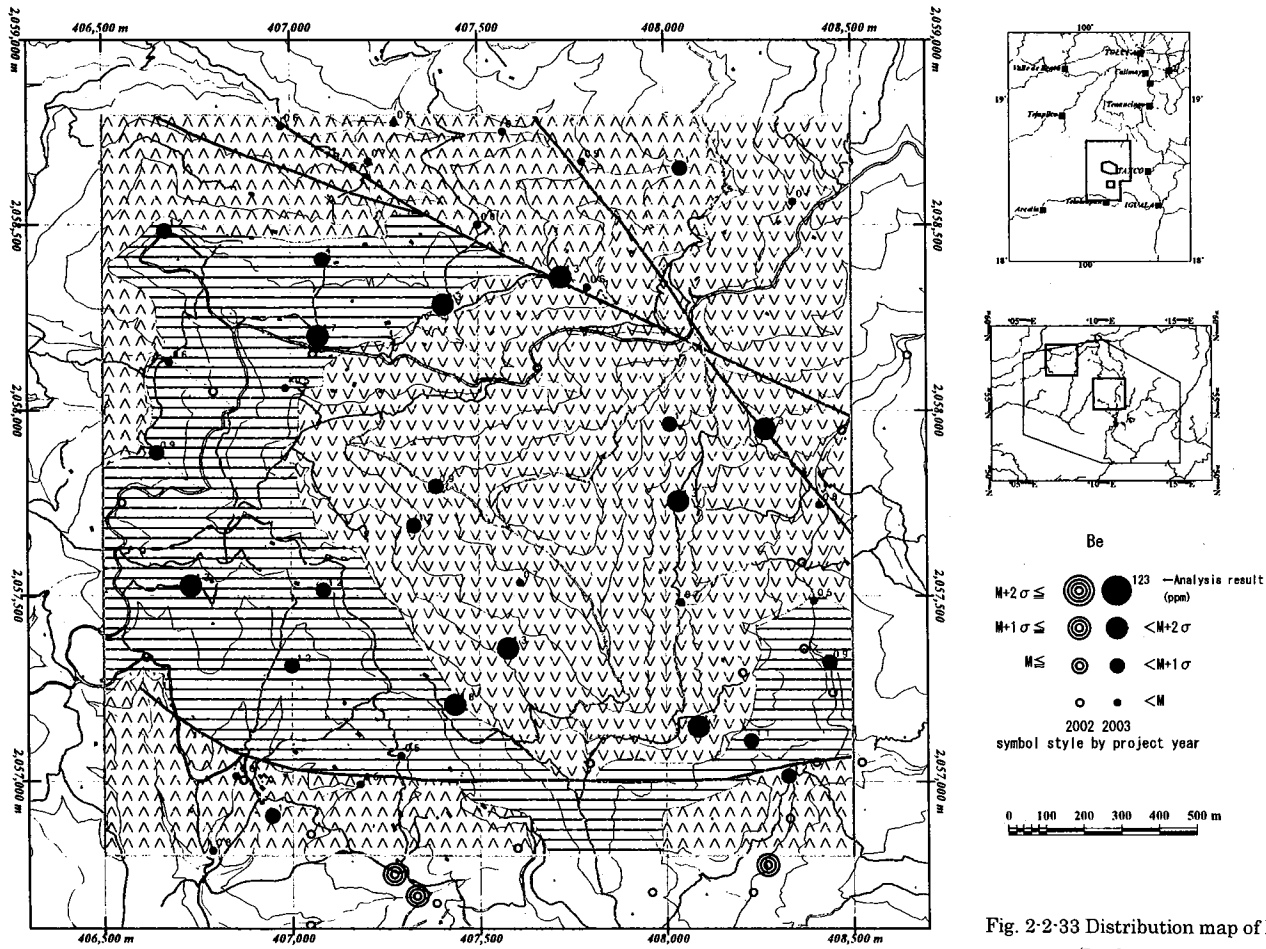
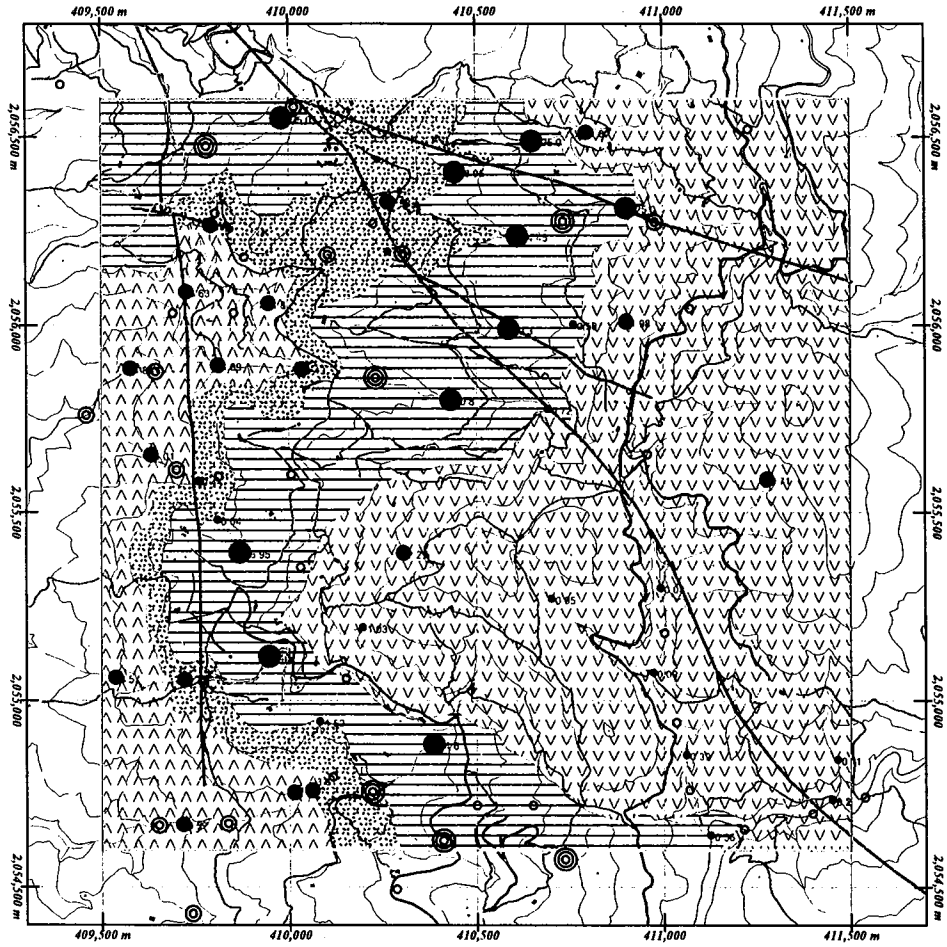


Fig. 2-2-33 Distribution map of Be (La Campana District)



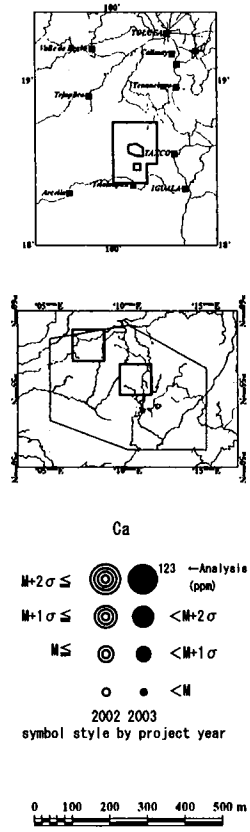
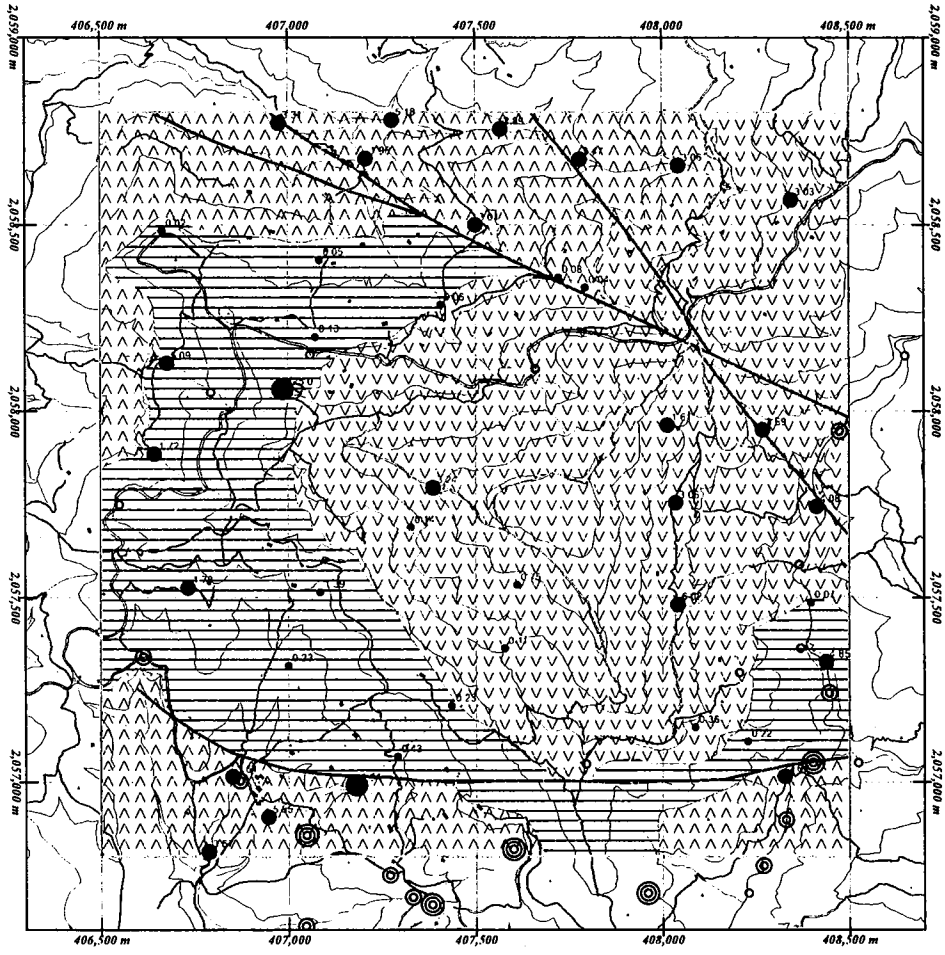


Fig. 2-2-33 Distribution map of Ca (Capire District)



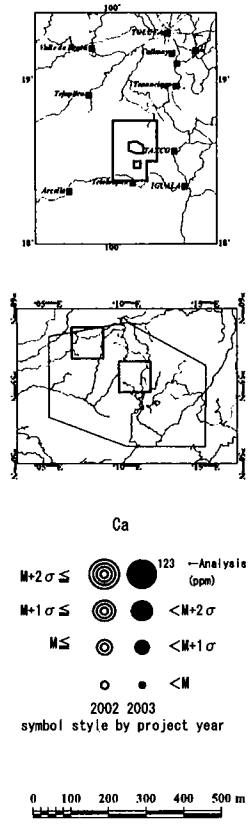
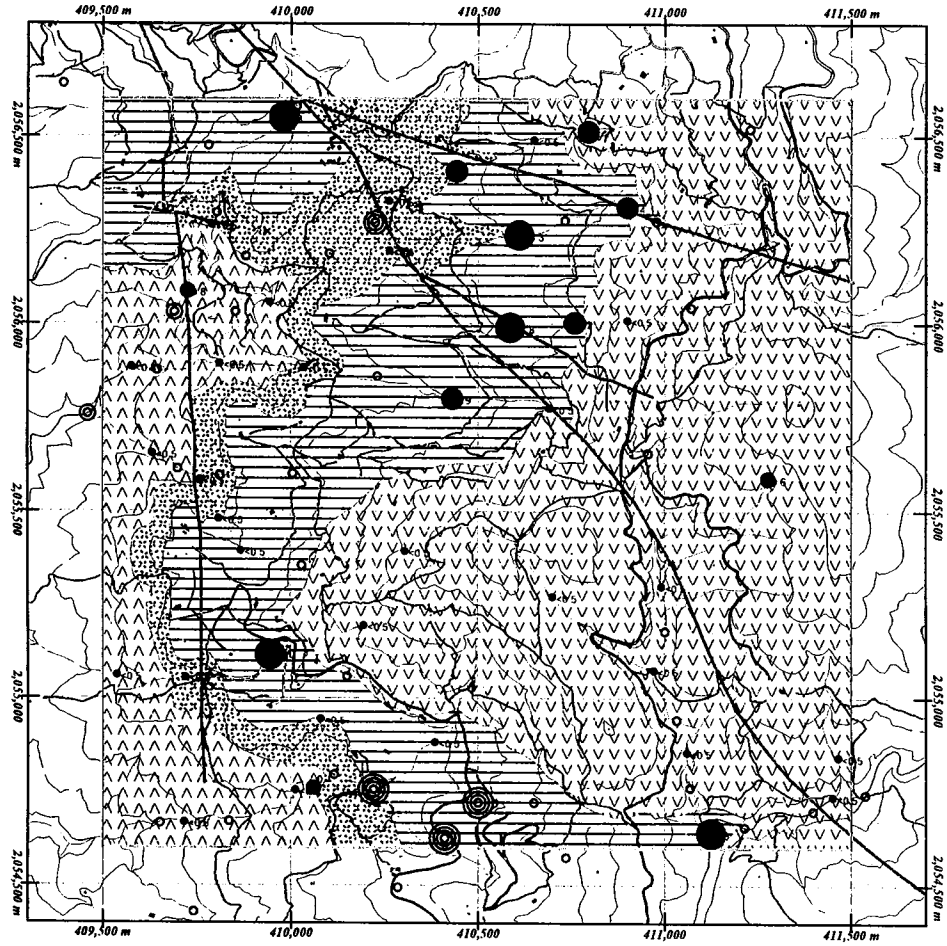


Fig. 2-2-33 Distribution map of Ca (La Campana District)



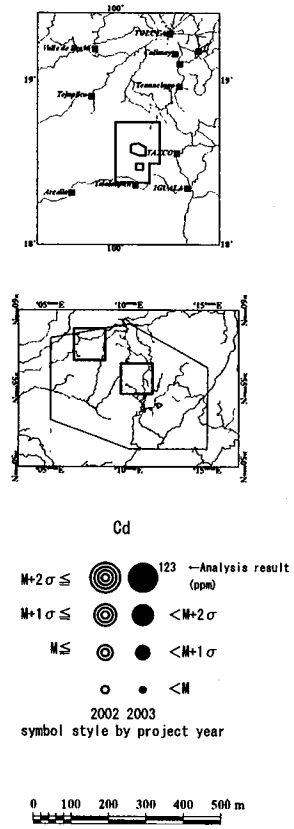
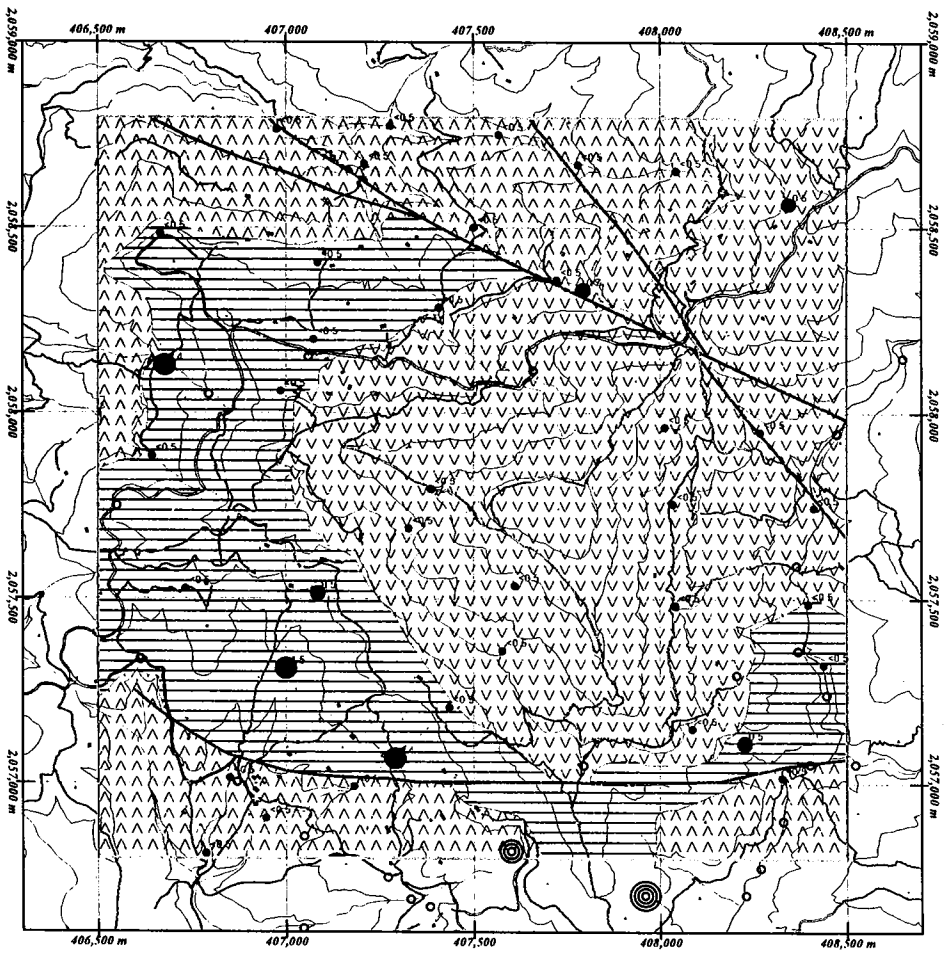


Fig. 2-2-33 Distribution map of Cd
(Capire District)



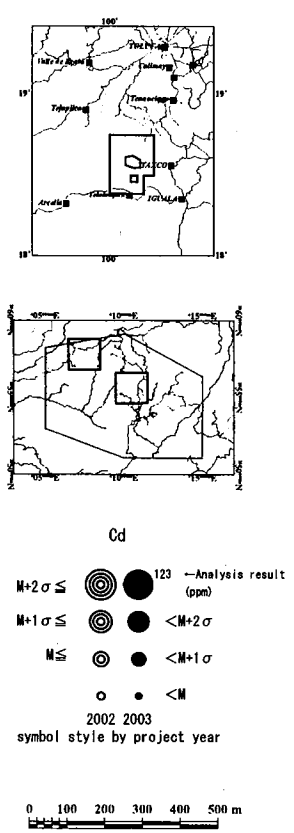


Fig. 2-2-33 Distribution map of Cd
(La Campana District)

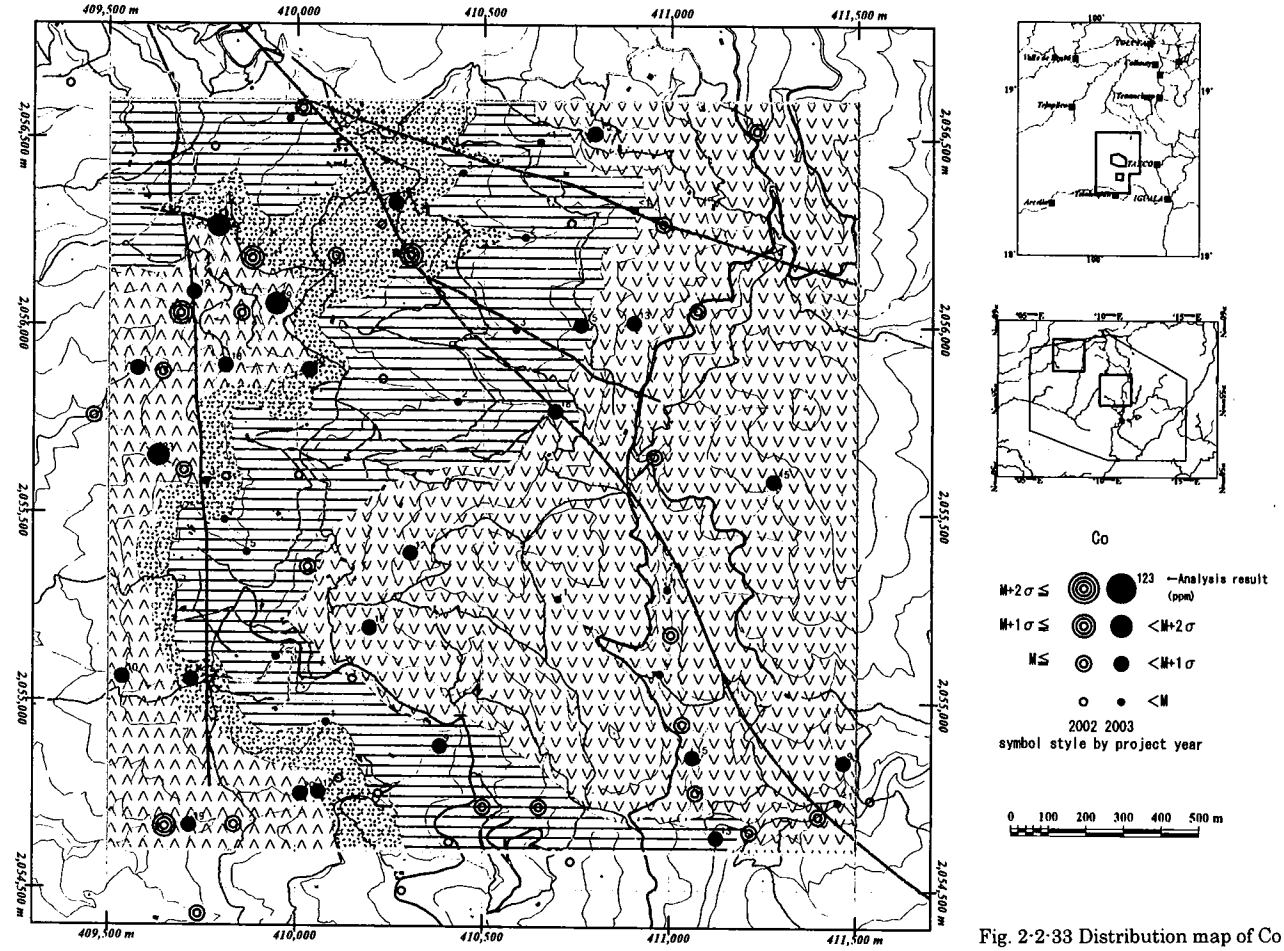


Fig. 2-2-33 Distribution map of Co
(Capire District)

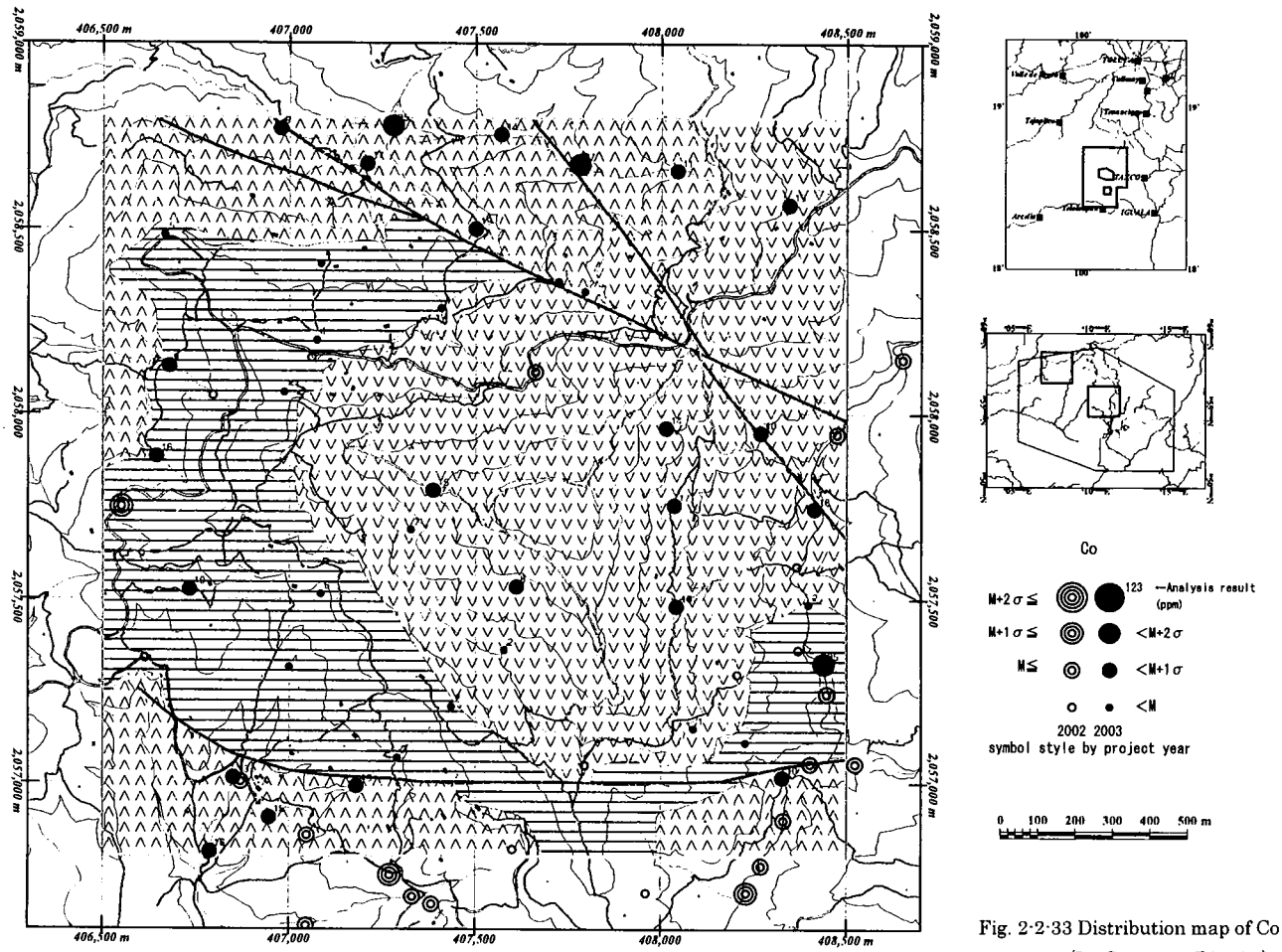


Fig. 2-2-33 Distribution map of Co
(La Campana District)

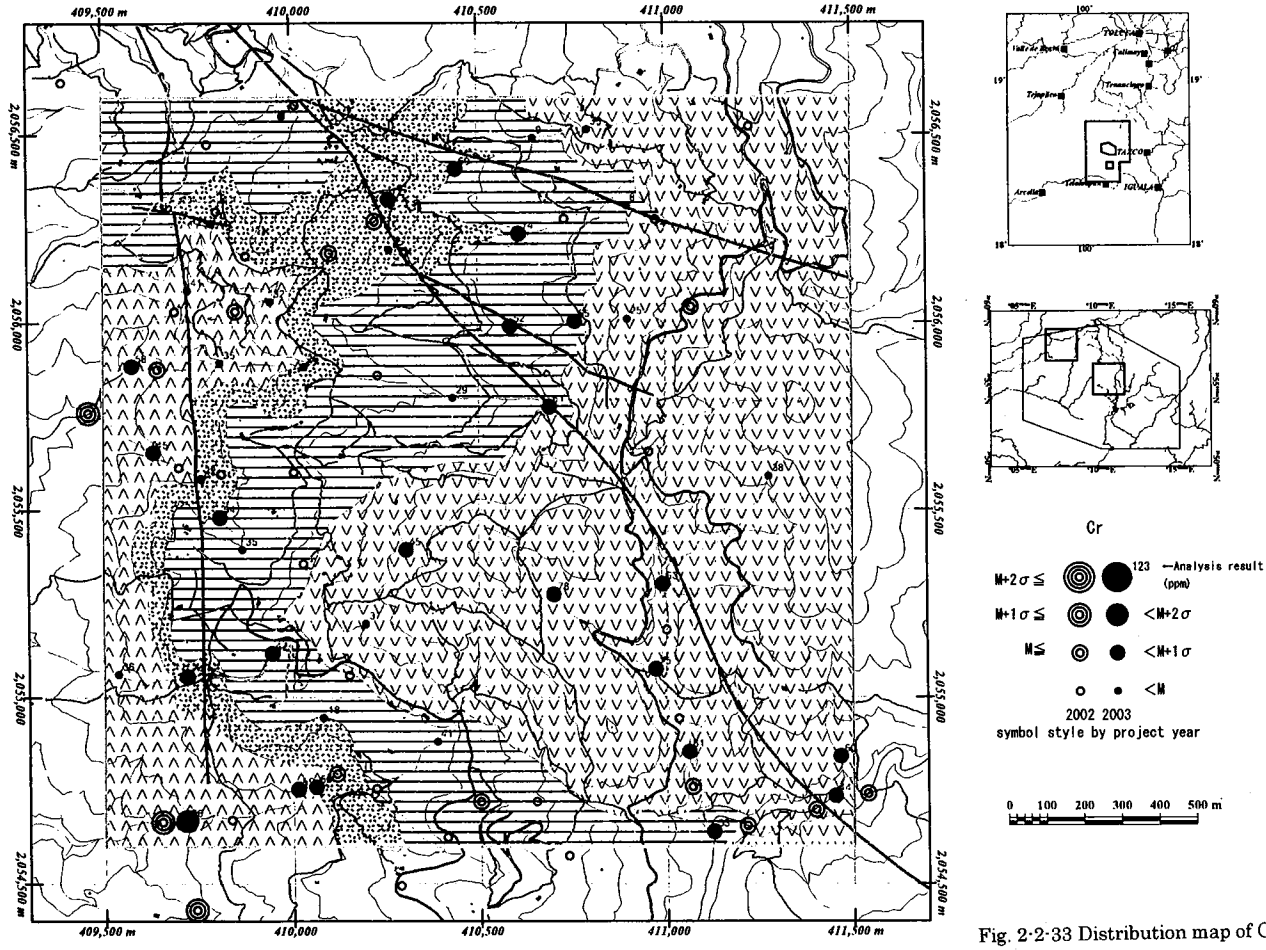


Fig. 2-2-33 Distribution map of Cr
(Capire District)

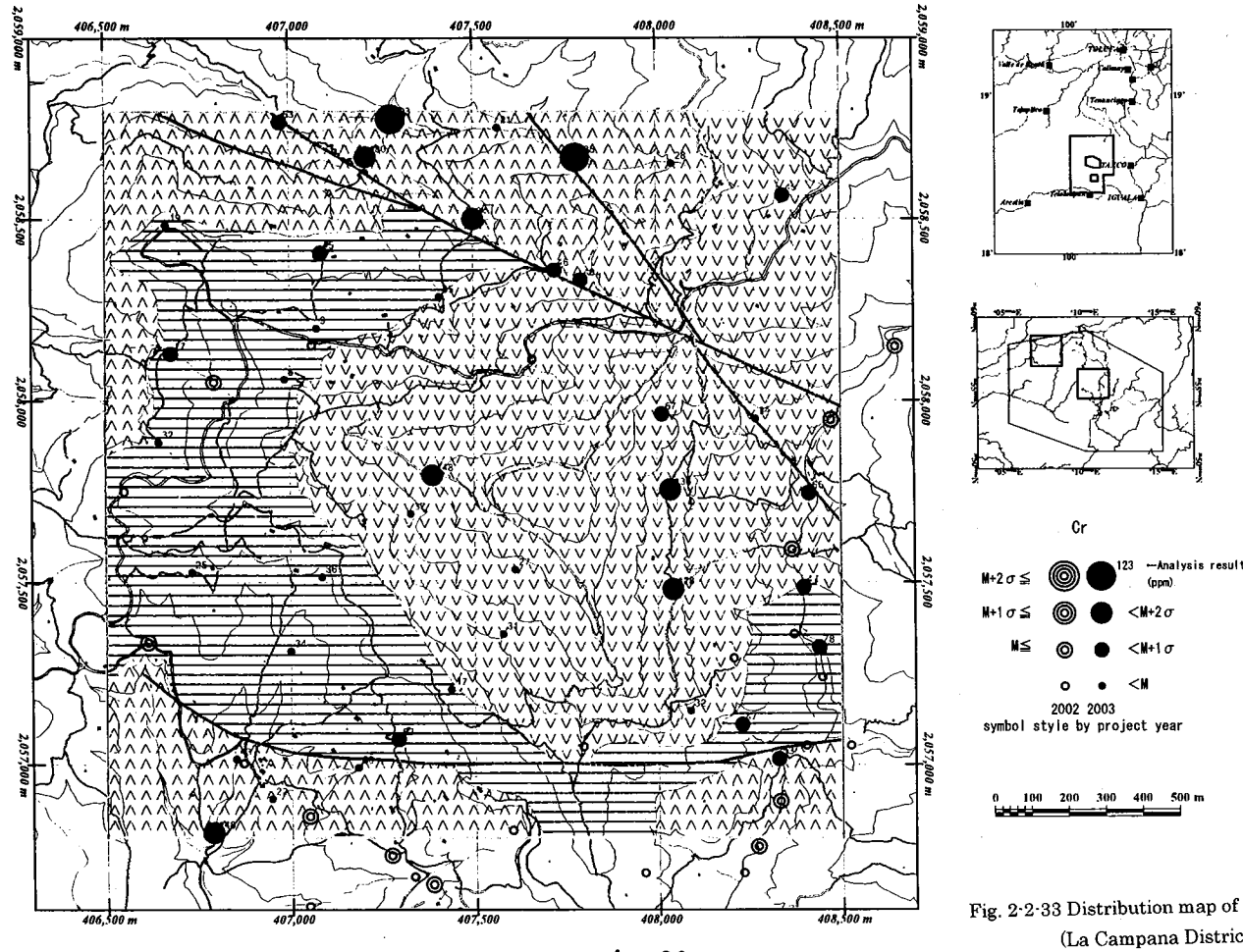


Fig. 2-2-33 Distribution map of Cr
(La Campana District)

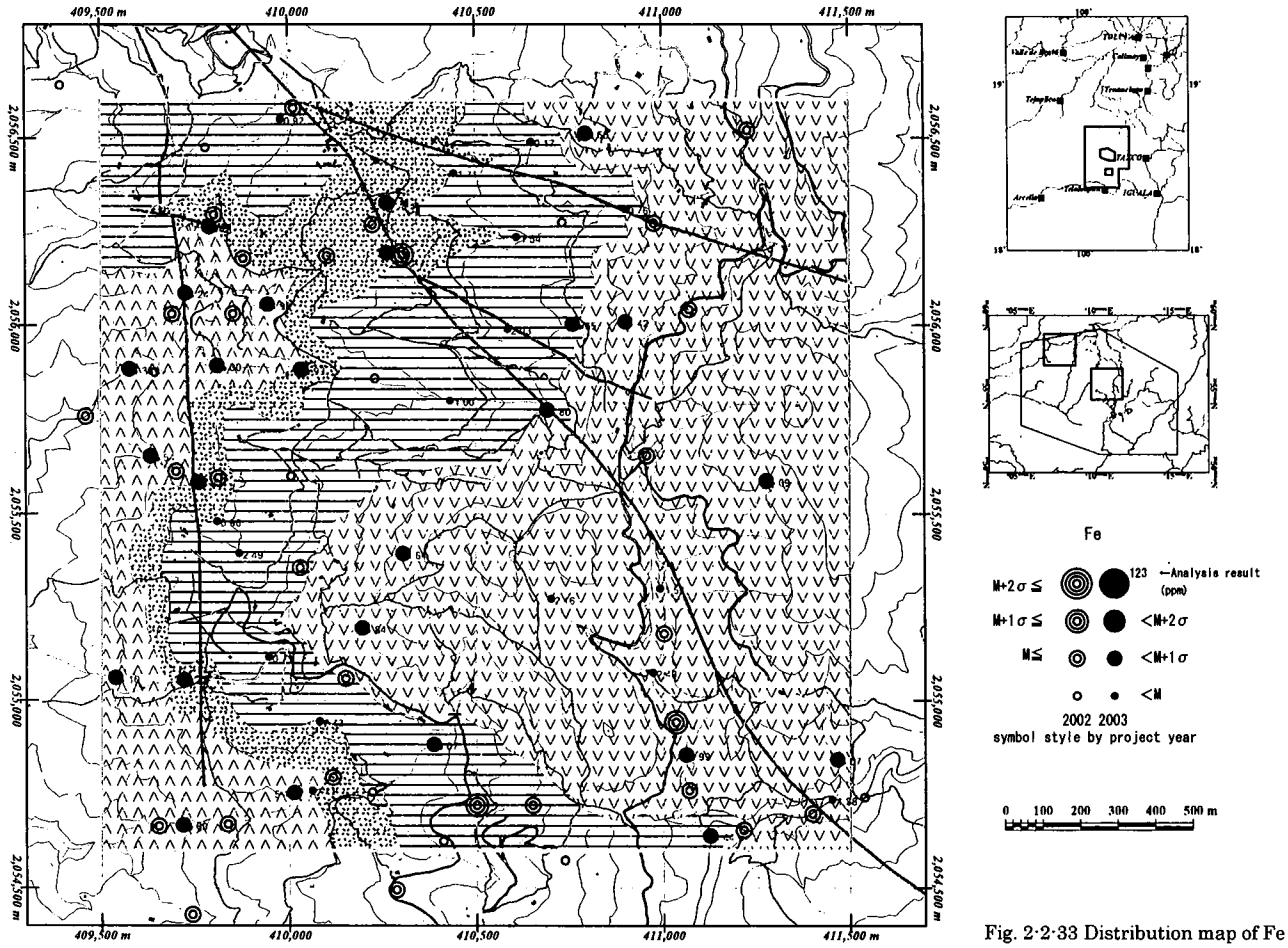


Fig. 2-2-33 Distribution map of Fe (Capire District)

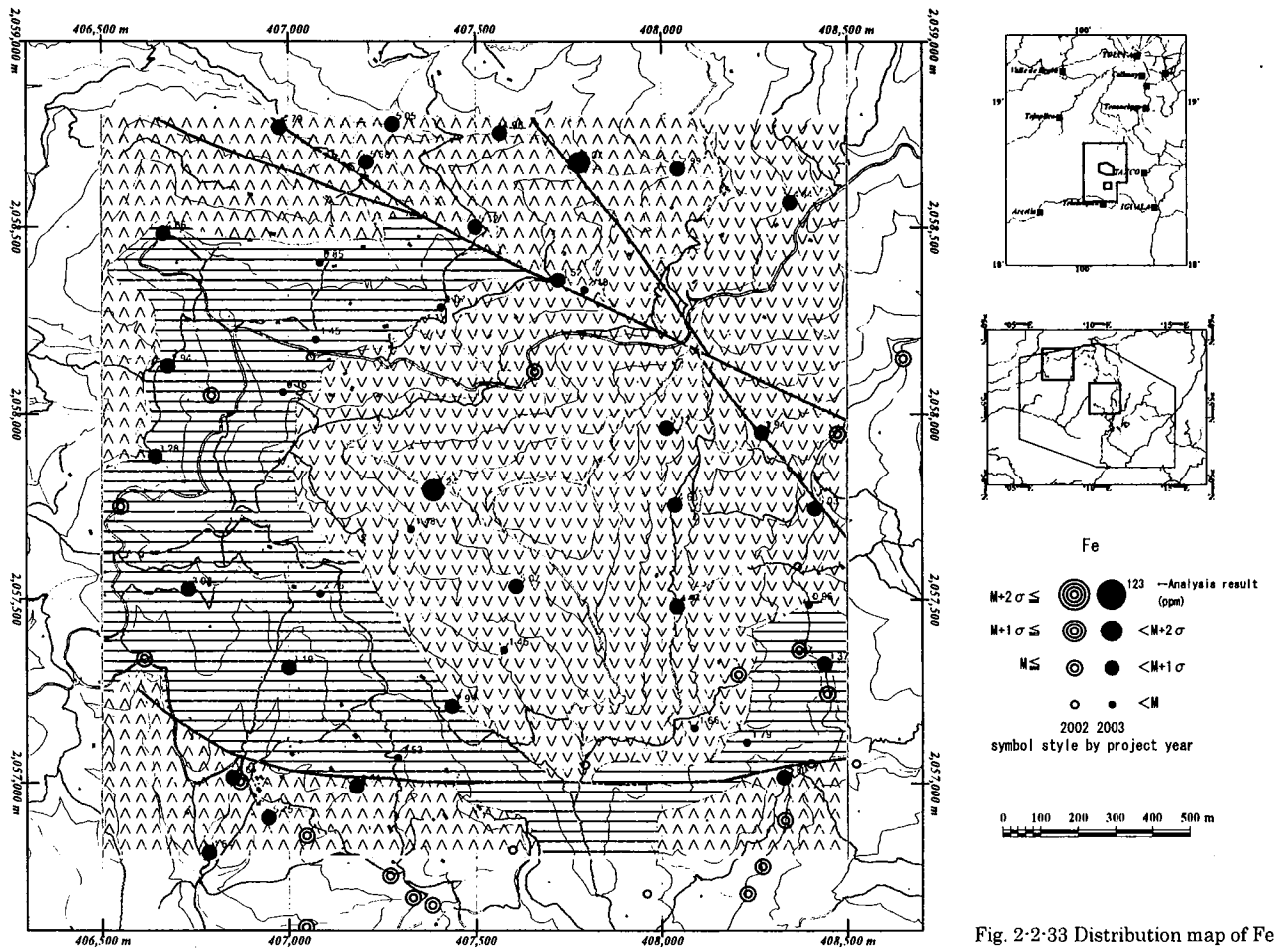


Fig. 2-2-33 Distribution map of Fe (La Campana District)

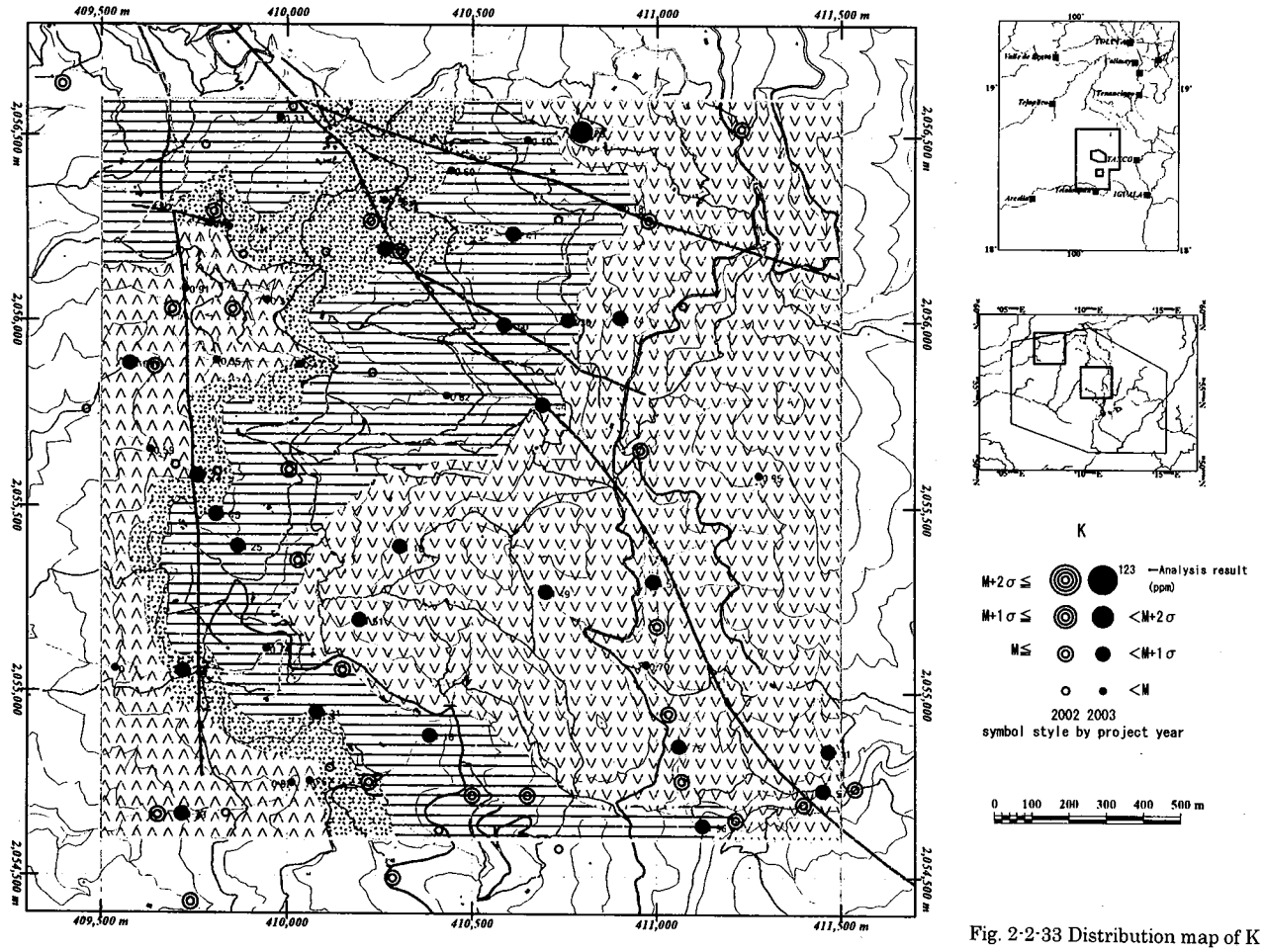


Fig. 2-2-33 Distribution map of K
(Capire District)

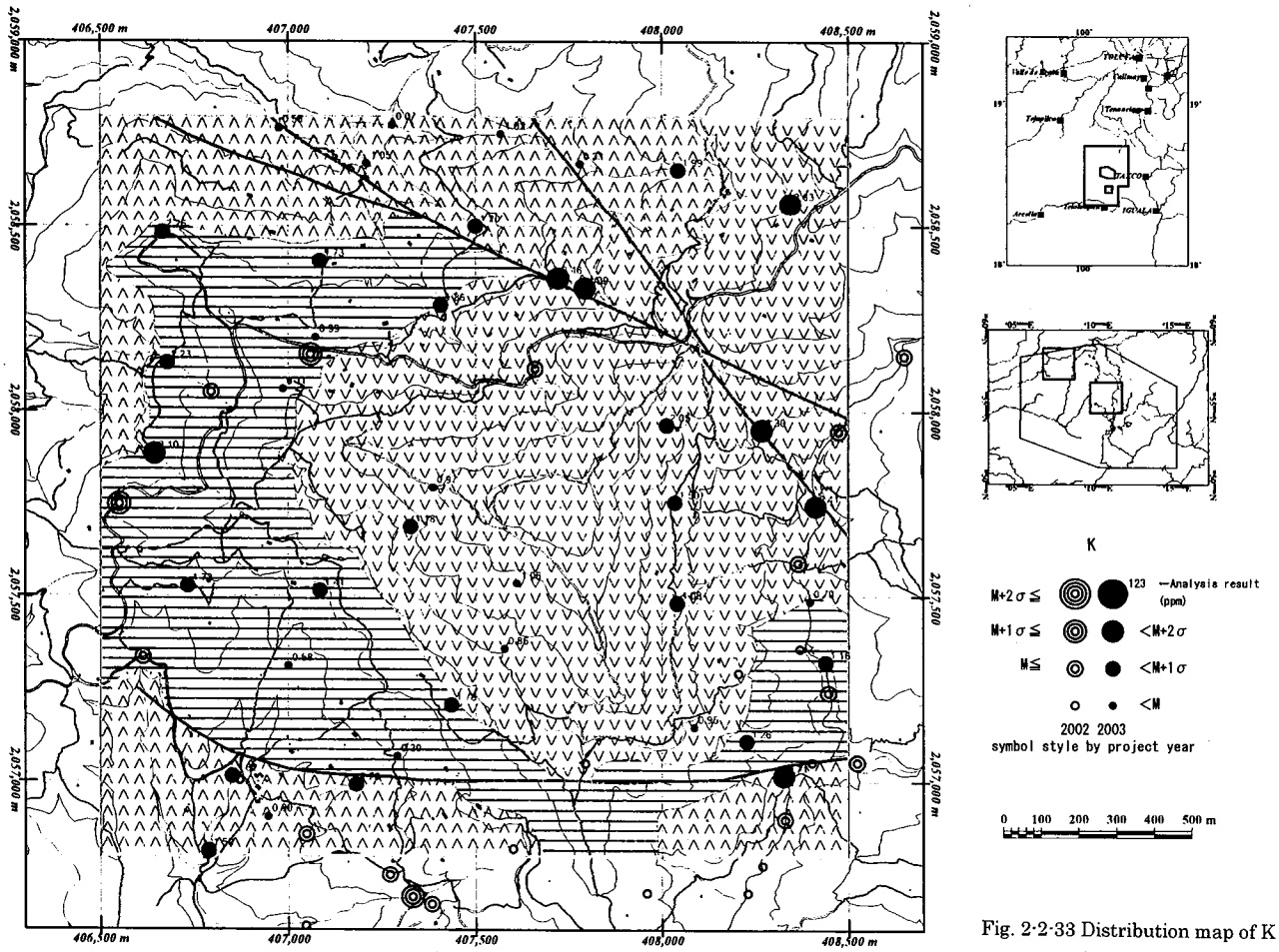


Fig. 2-2-33 Distribution map of K
(La Campana District)

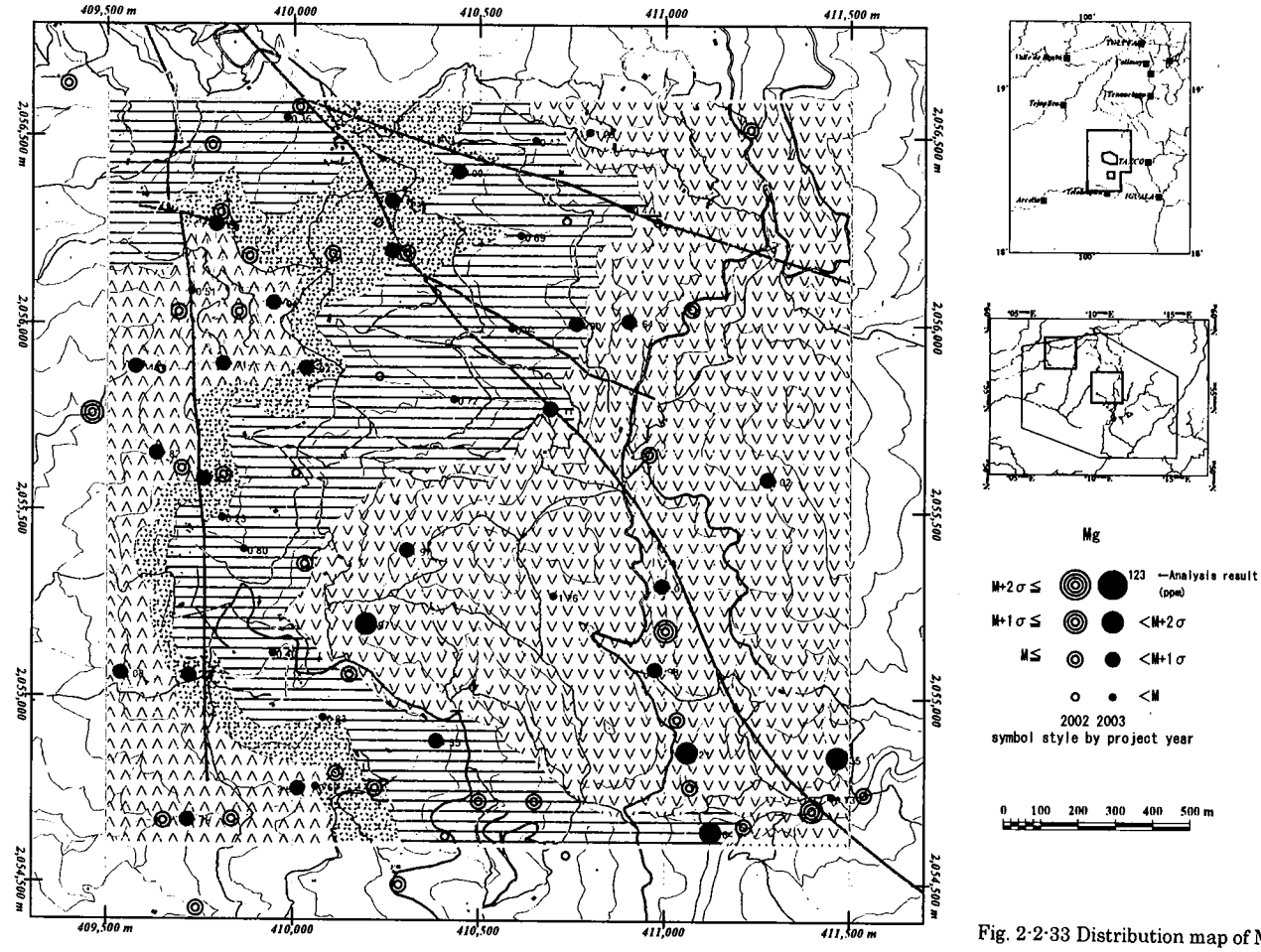


Fig. 2-2-33 Distribution map of Mg (Capire District)

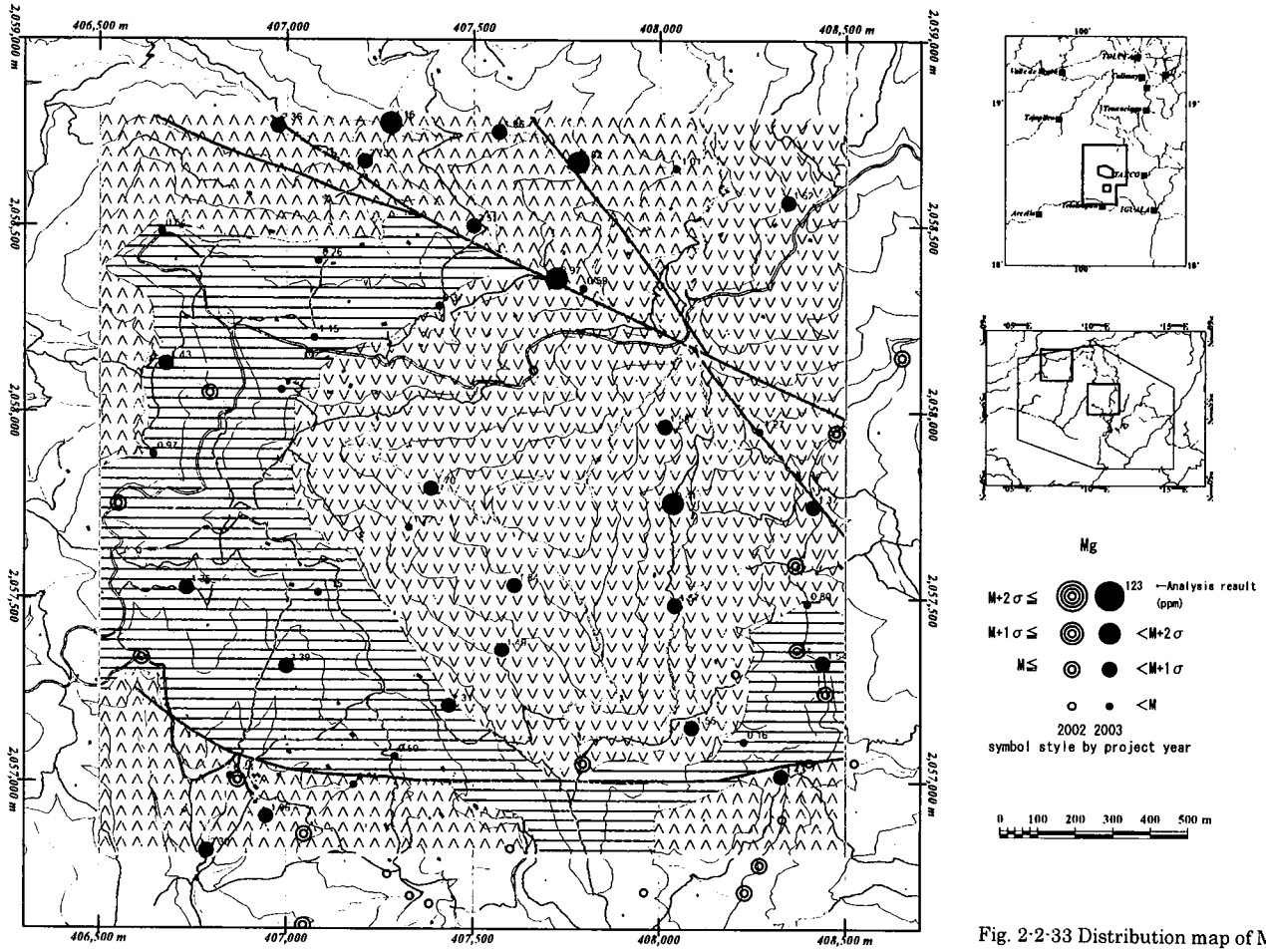
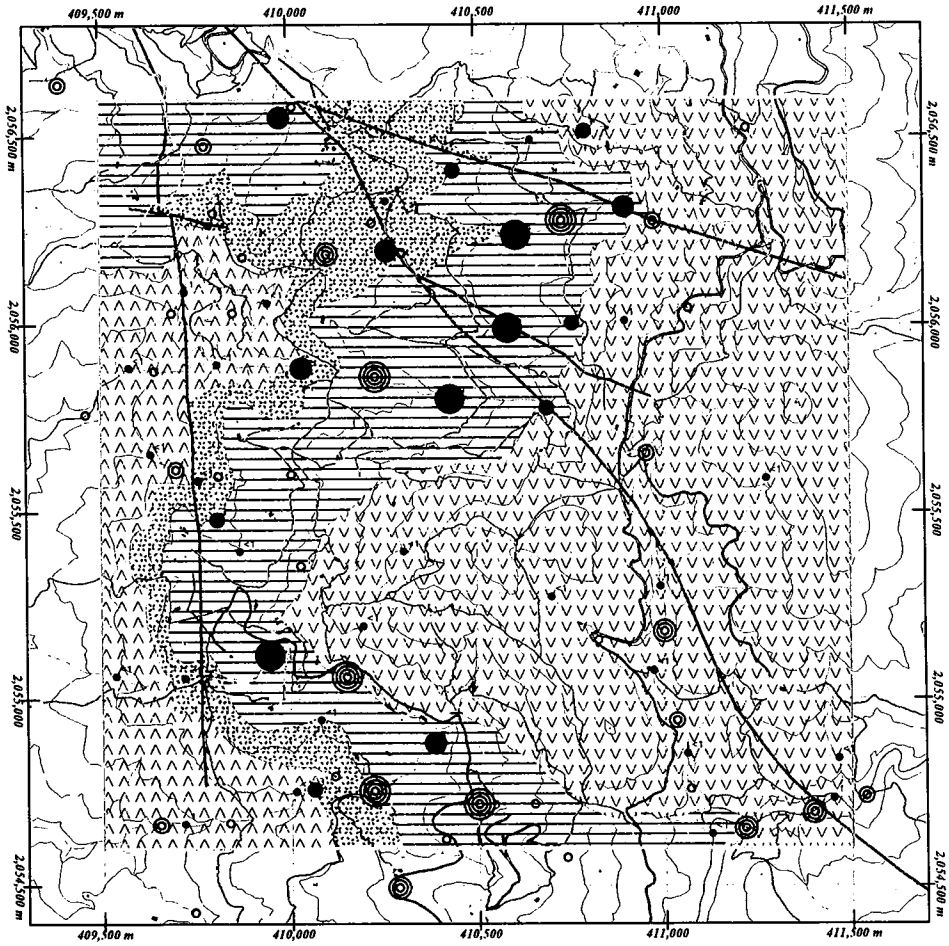


Fig. 2-2-33 Distribution map of Mg (La Campana District)



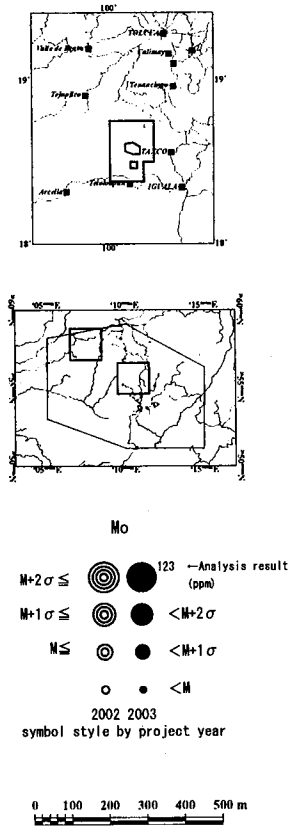
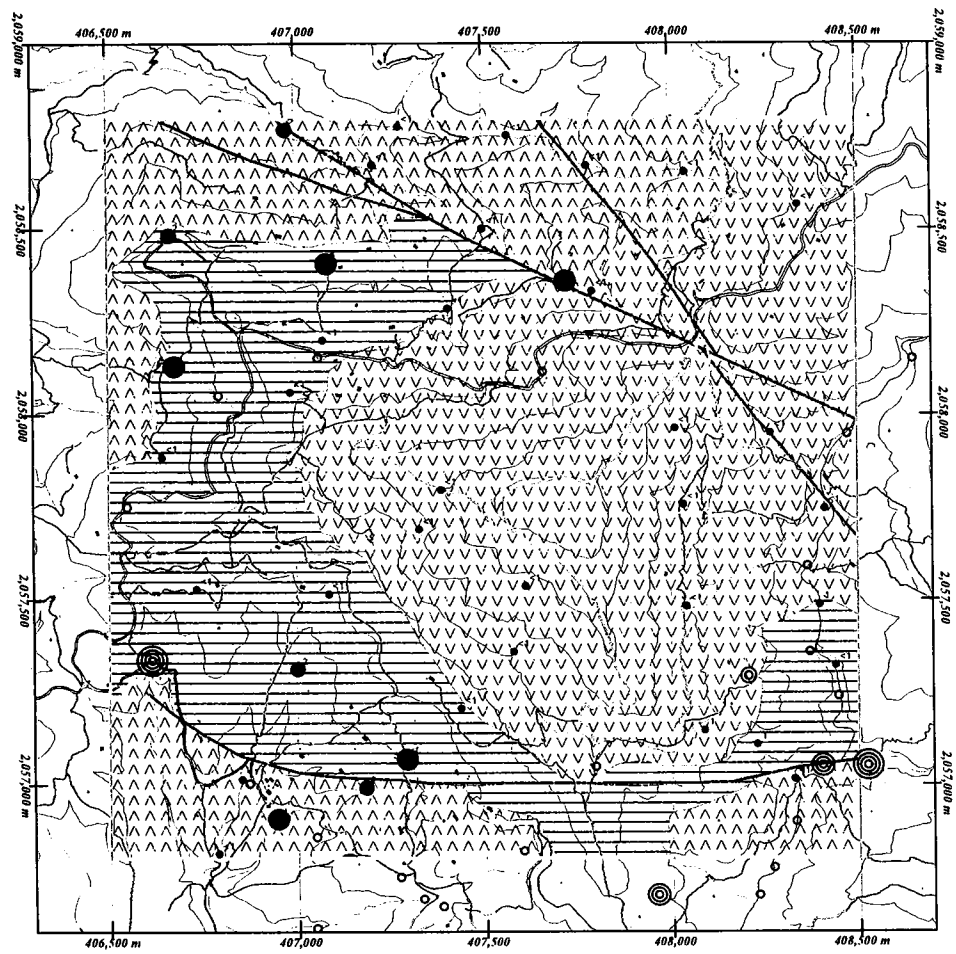


Fig. 2-2-33 Distribution map of Mo
(Capire District)



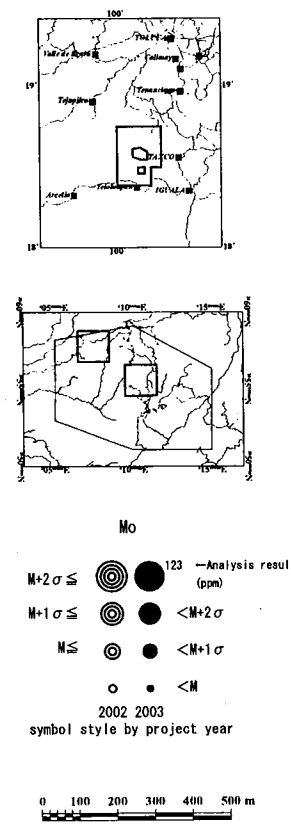
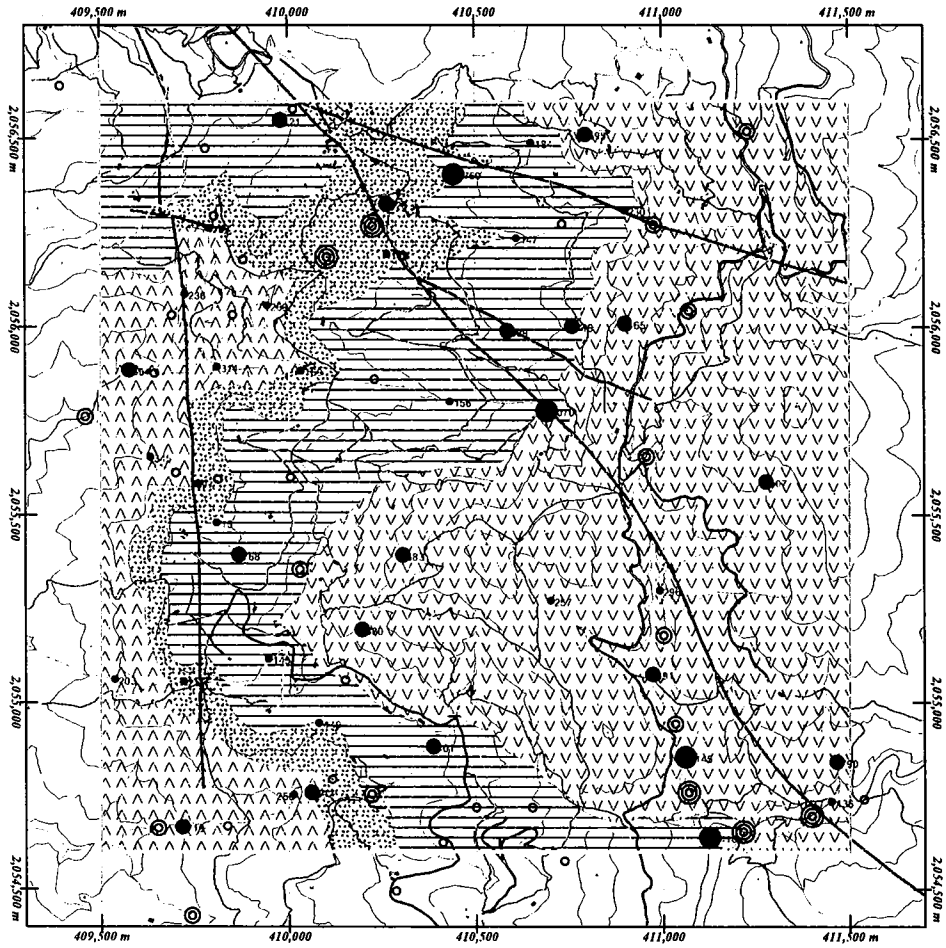


Fig. 2-2-33 Distribution map of Mo
(La Campana District)



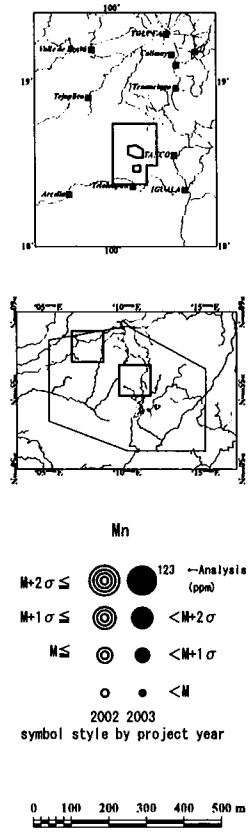
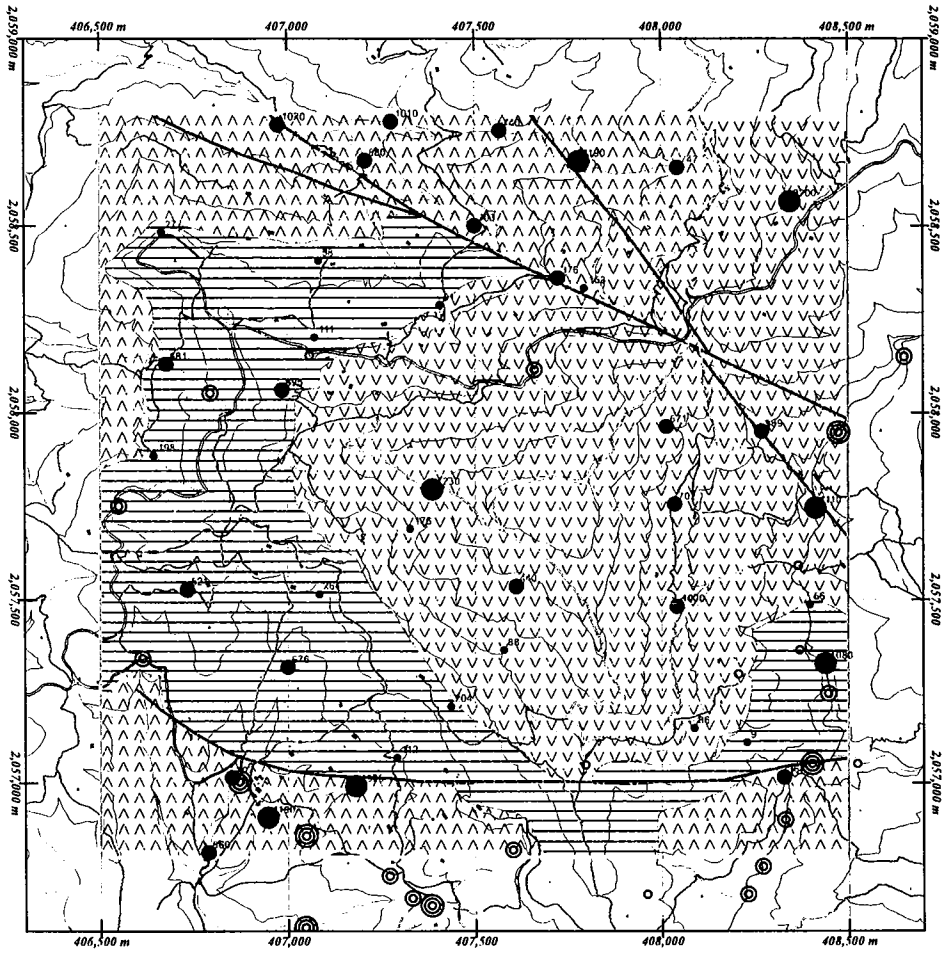


Fig. 2-2-33 Distribution map of Mn (Capire District)



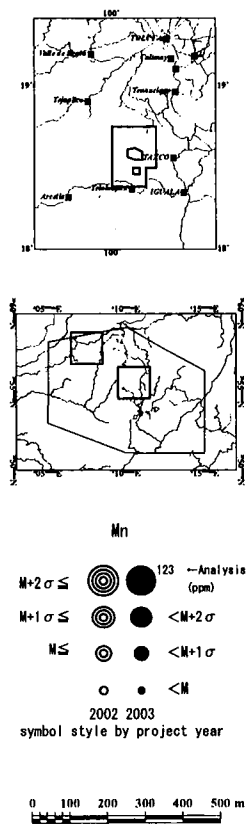
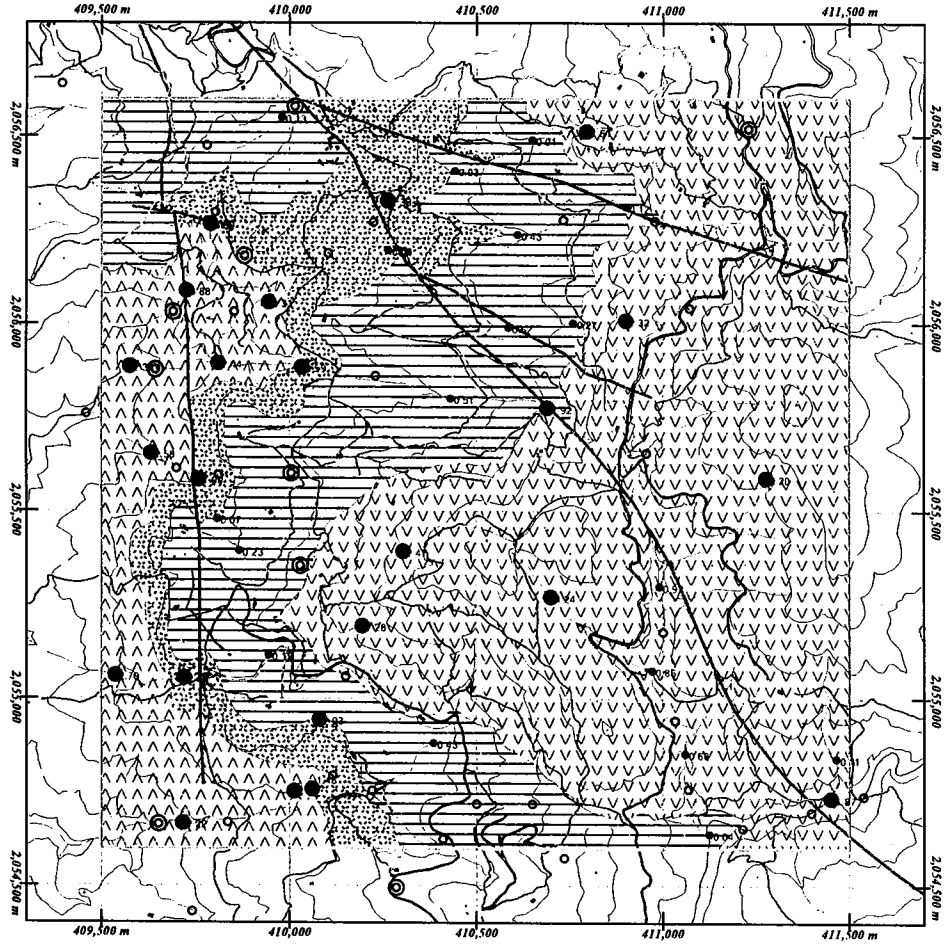


Fig. 2-2-33 Distribution map of Mn (La Campana District)



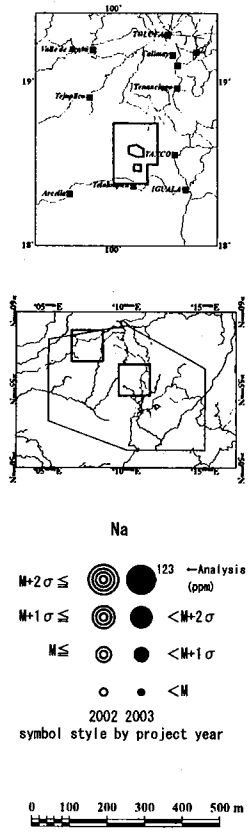
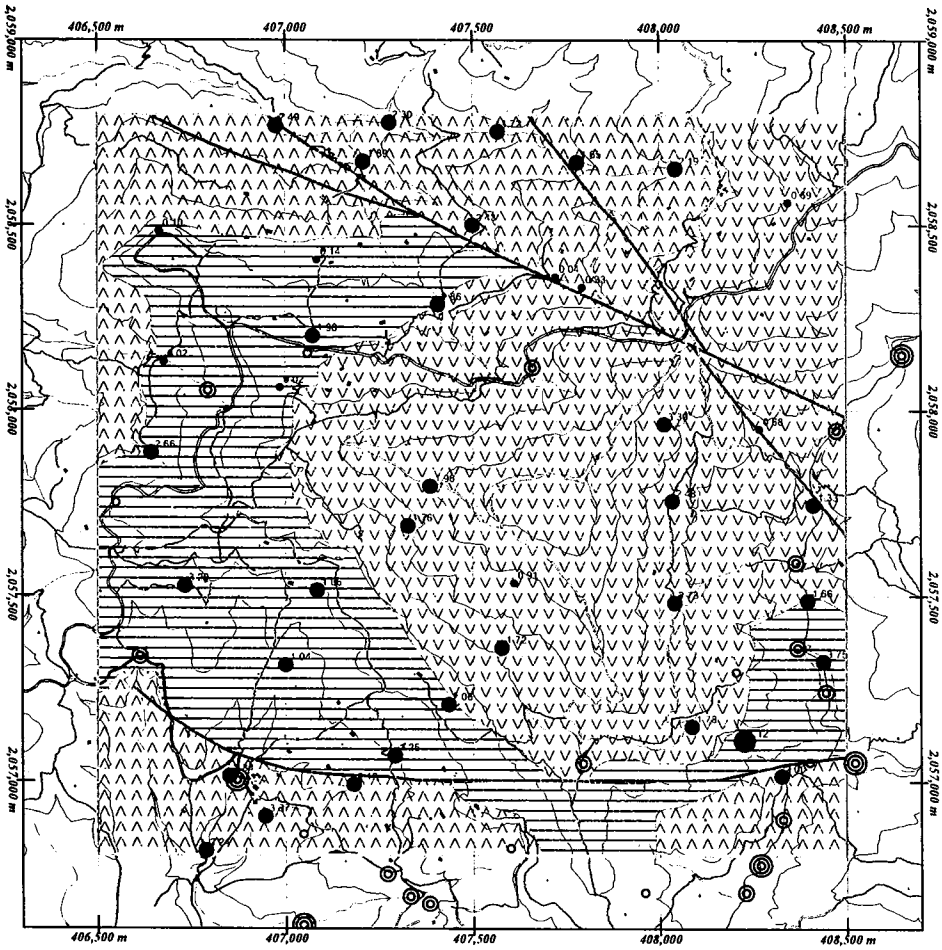


Fig. 2-2-33 Distribution map of Na
(Capire District)



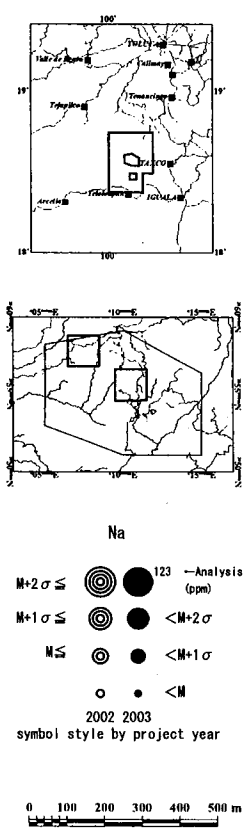


Fig. 2-2-33 Distribution map of Na
(La Campana District)

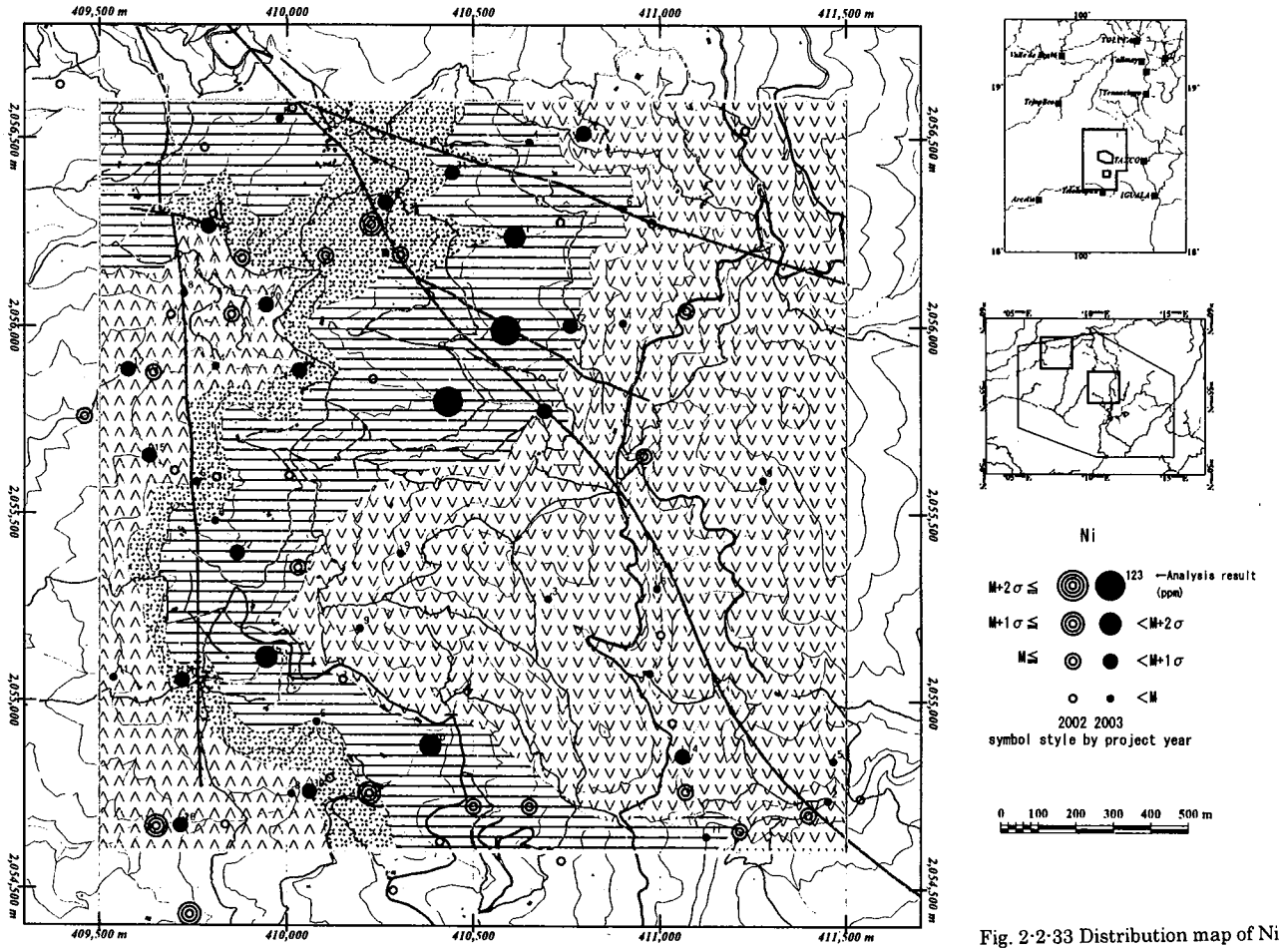


Fig. 2-2-33 Distribution map of Ni (Capire District)

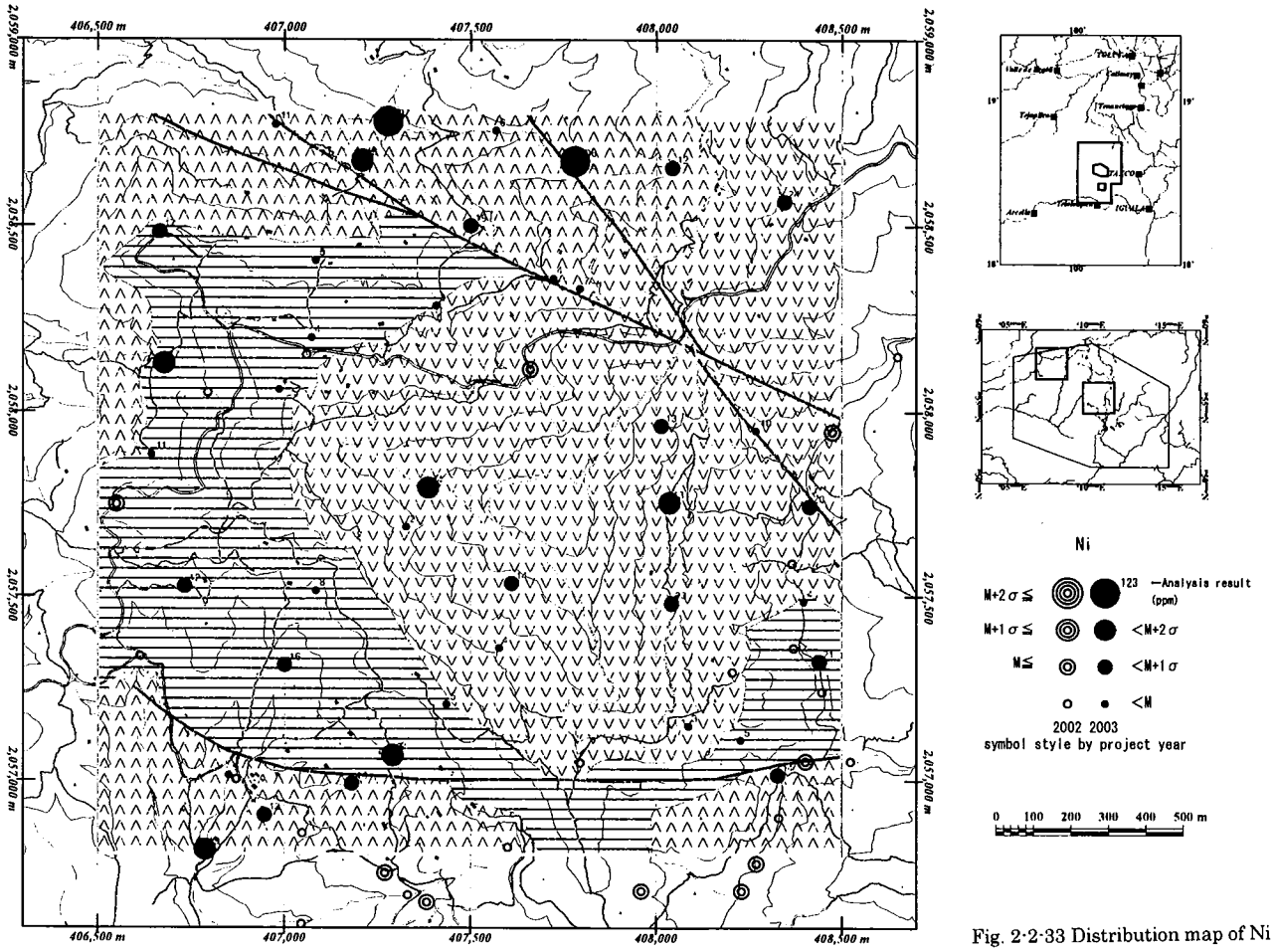
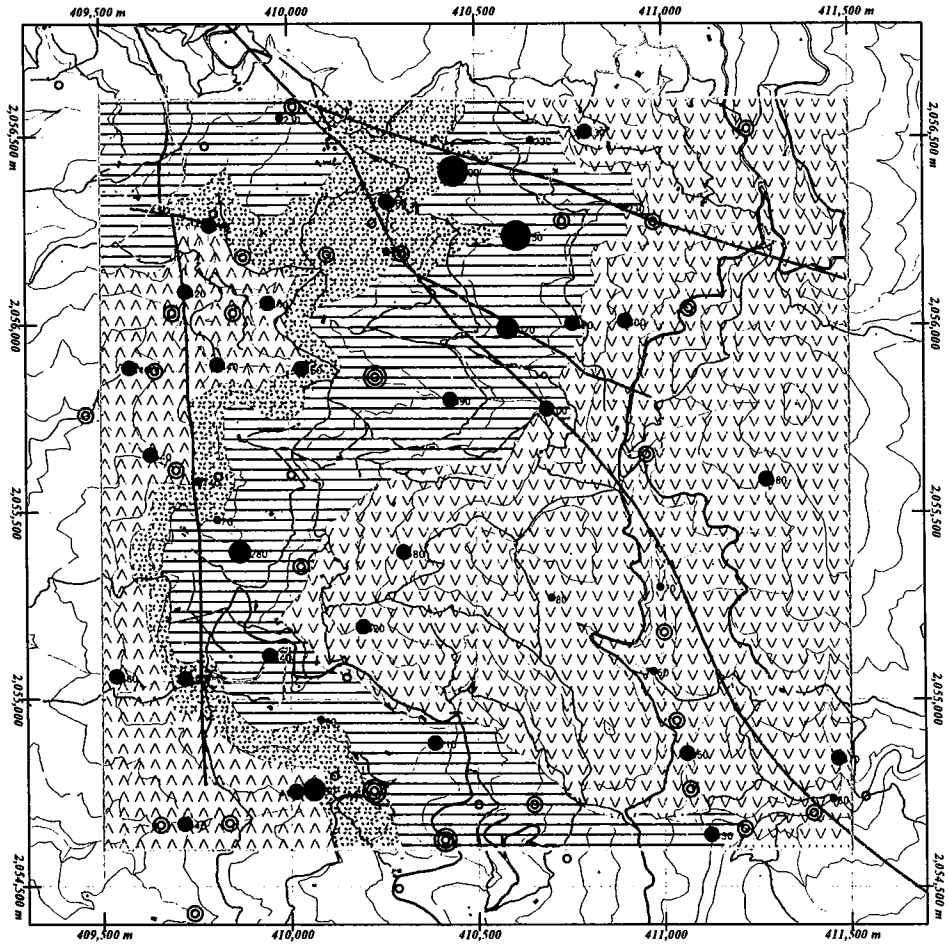
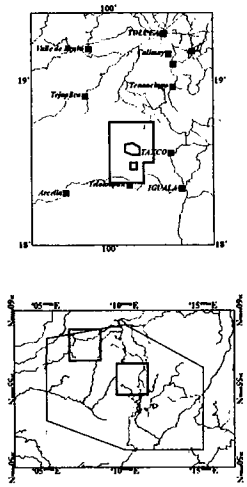


Fig. 2-2-33 Distribution map of Ni (La Campana District)





P

M+2σ≦ 123 ←Analysis result (ppm)

M+1σ≦ <M+2σ

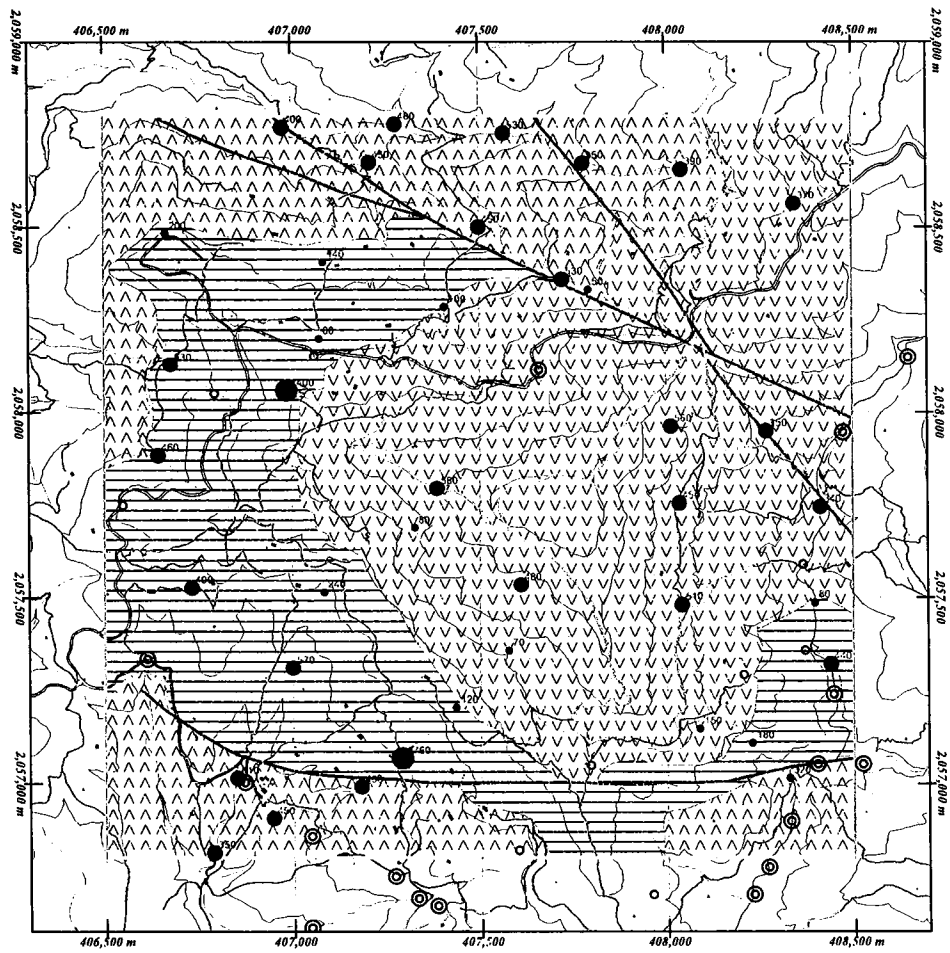
M≦ <M+1σ

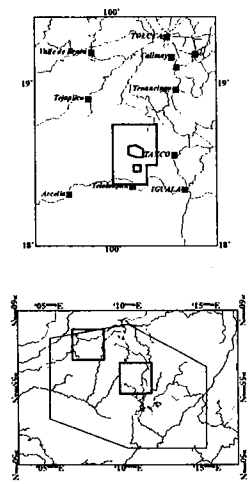
<M

2002 2003
symbol style by project year

0 100 200 300 400 500 m

Fig. 2-2-33 Distribution map of P
(Capire District)





P

M+2σ≦ 123 ←Analysis result (ppm)

M+1σ≦ <M+2σ

M≦ <M+1σ

<M

2002 2003
symbol style by project year

0 100 200 300 400 500 m

Fig. 2-2-33 Distribution map of P
(La Campana District)

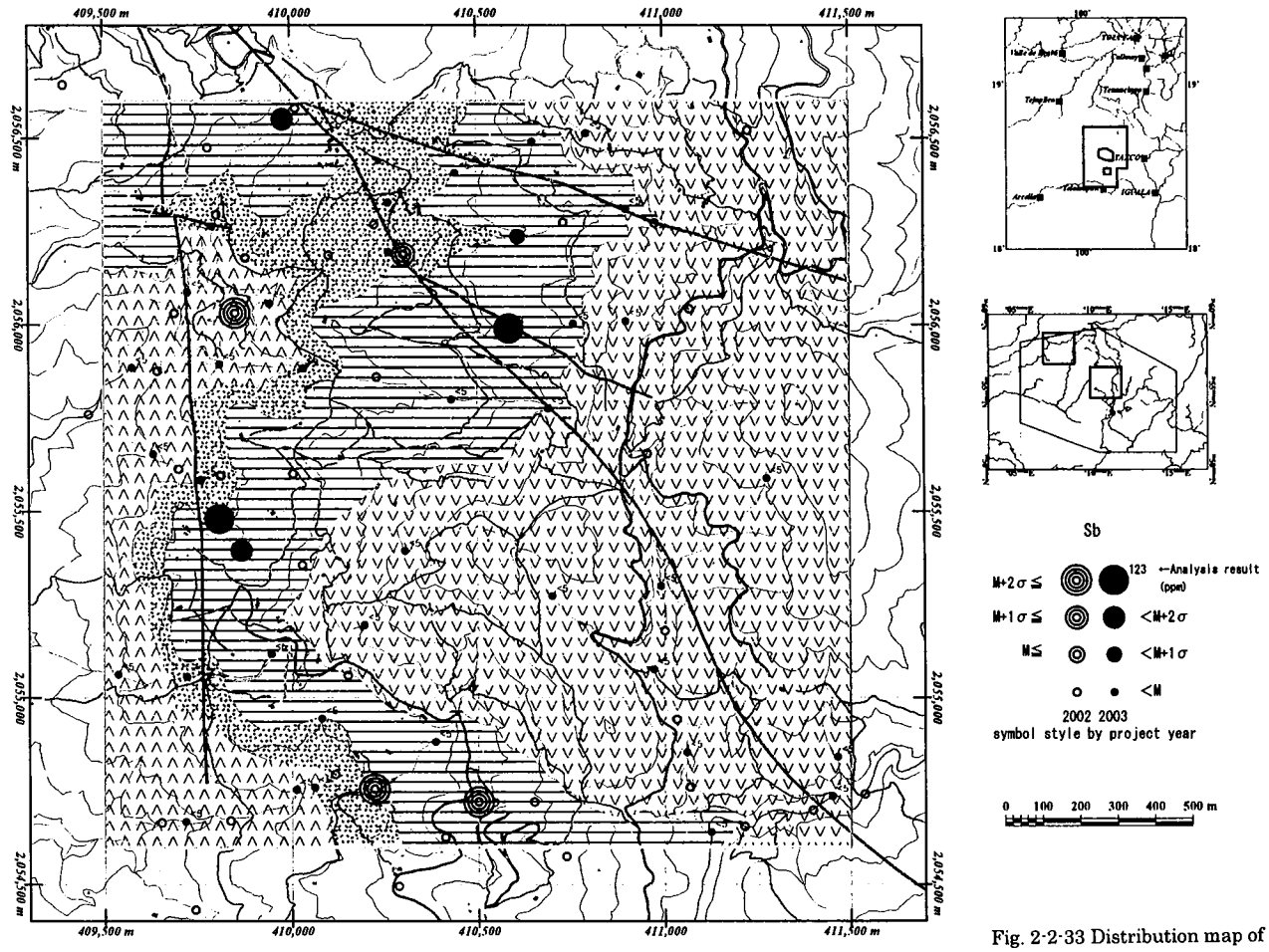


Fig. 2-2-33 Distribution map of Sb
(Capire District)

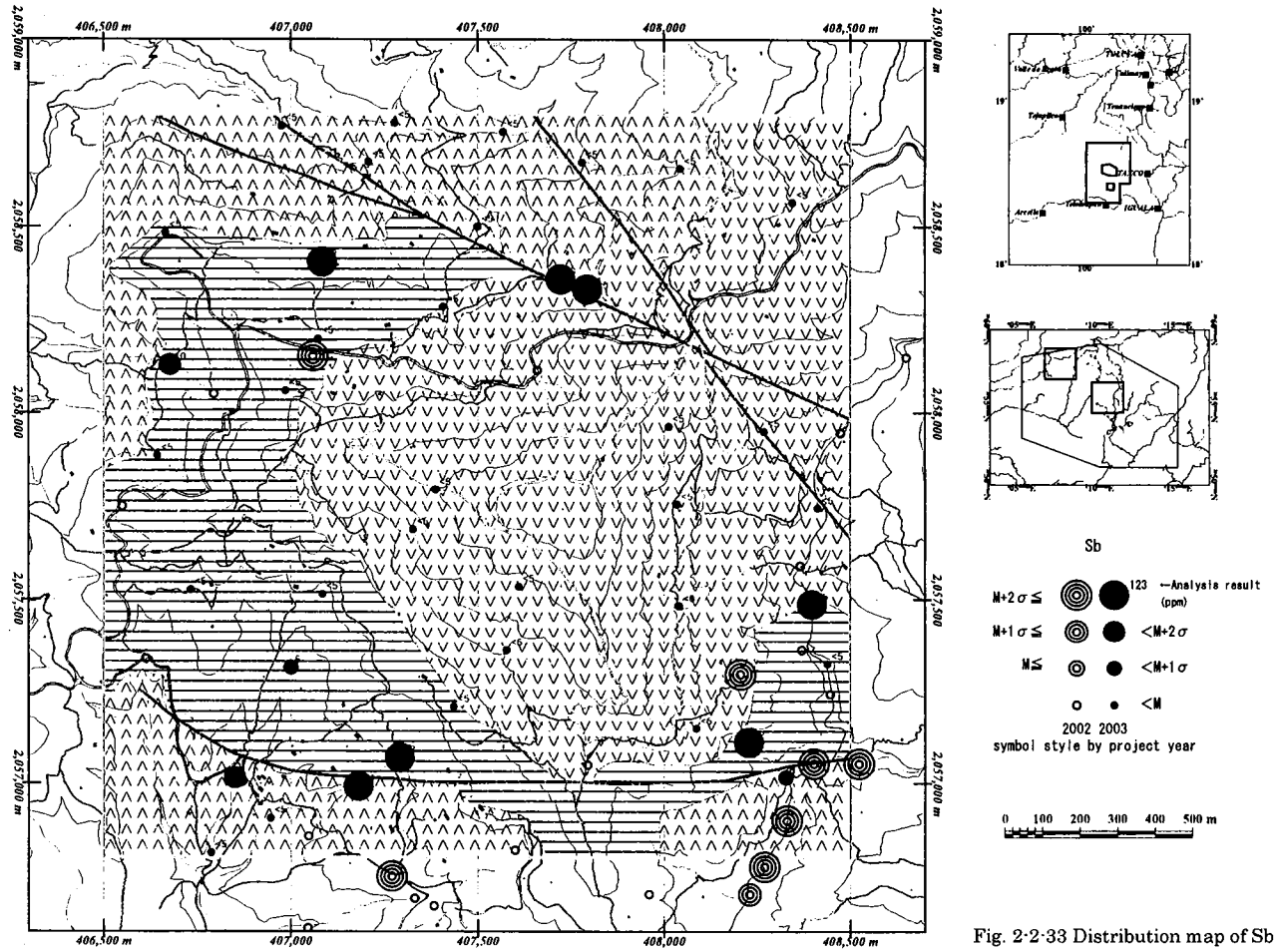


Fig. 2-2-33 Distribution map of Sb
(La Campana District)

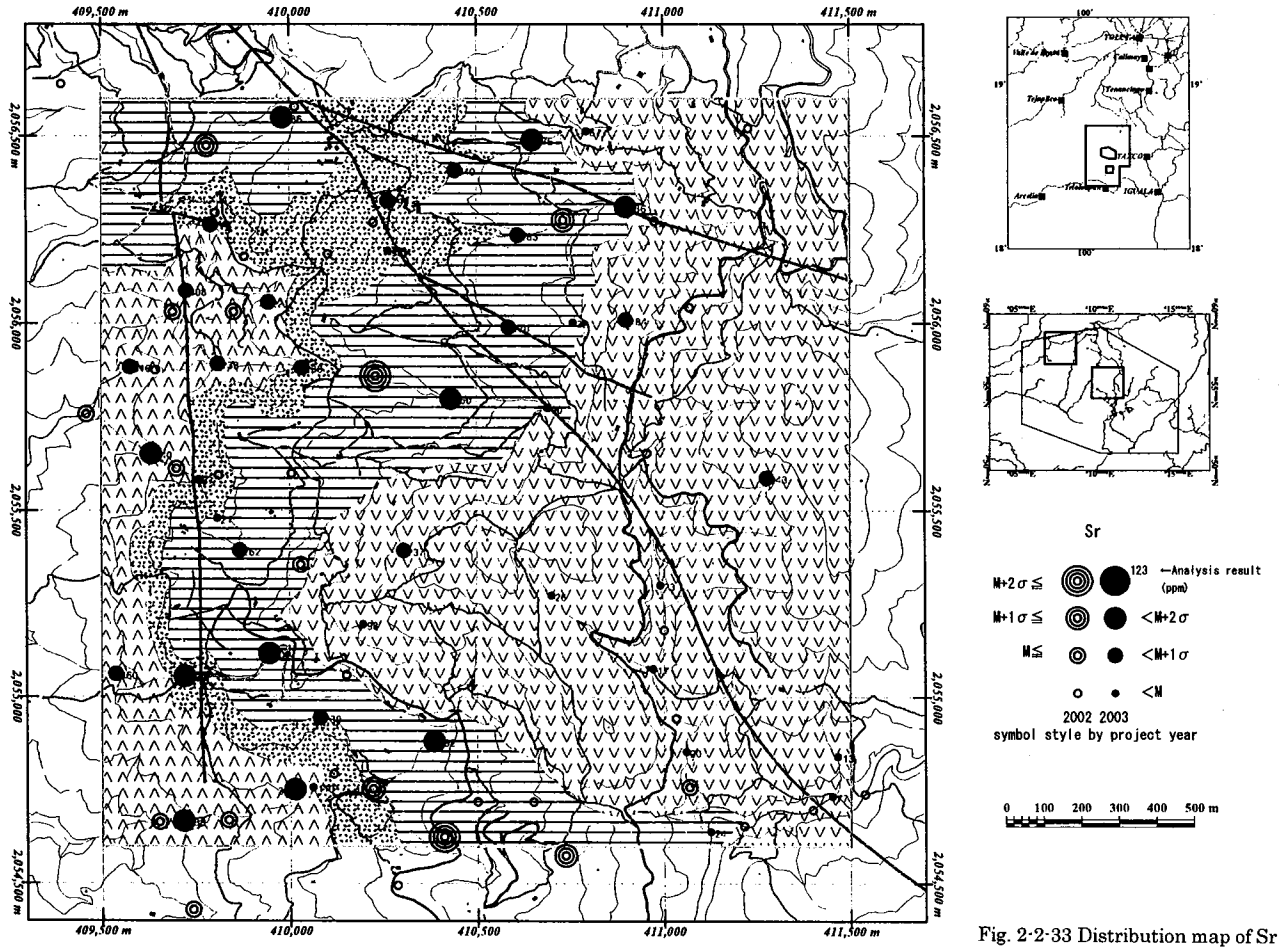


Fig. 2-2-33 Distribution map of Sr
(Capire District)

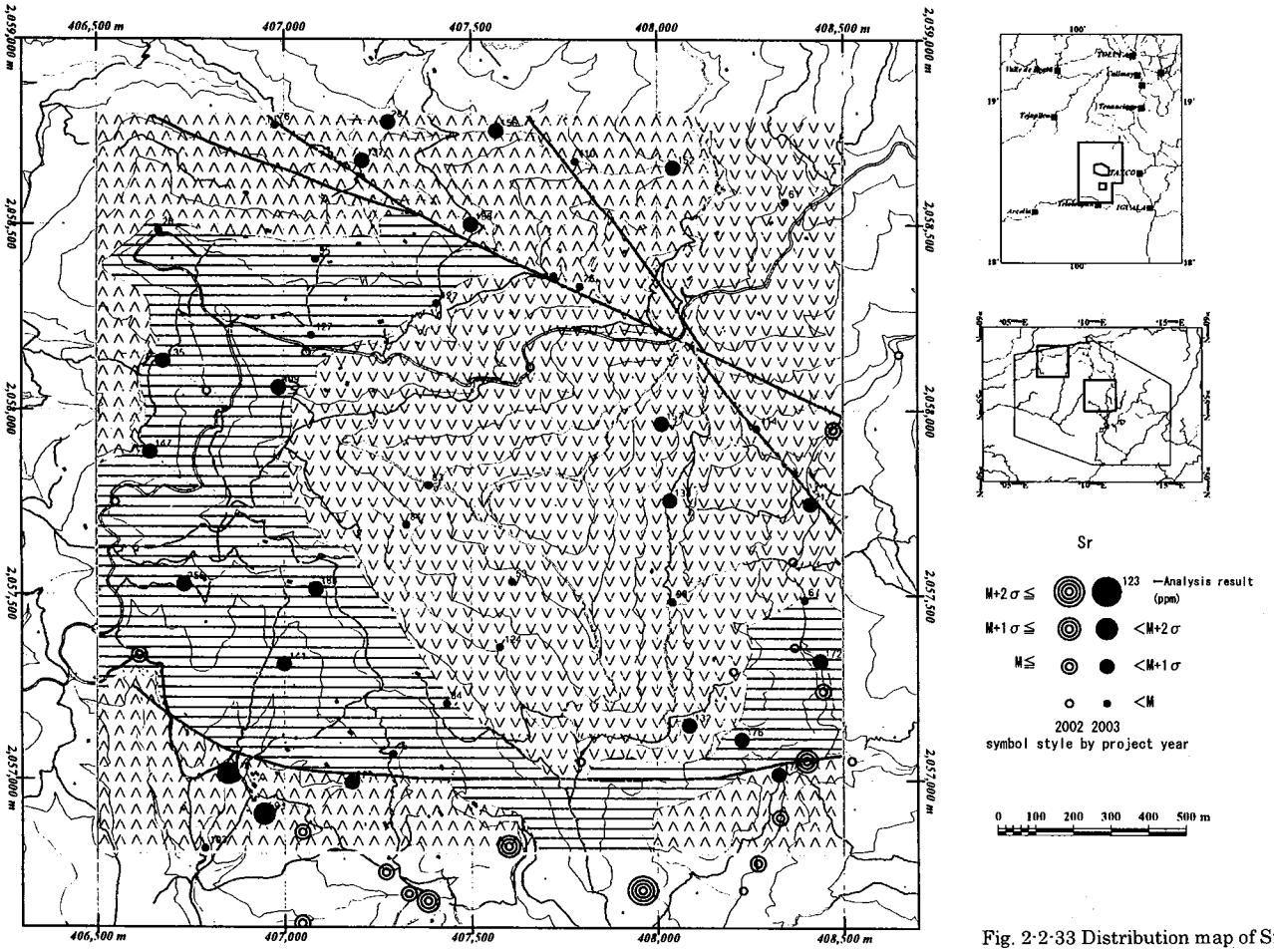


Fig. 2-2-33 Distribution map of Sr
(La Campana District)

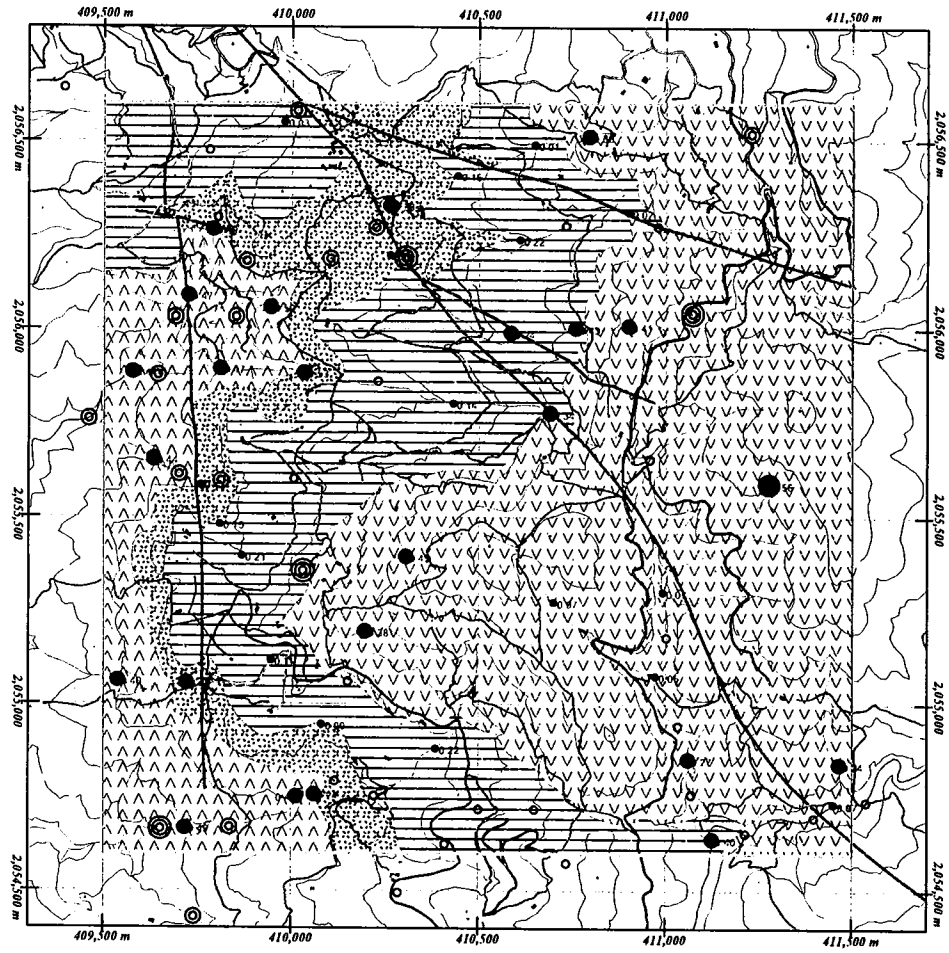


Fig. 2-2-33 Distribution map of Ti
(Capire District)

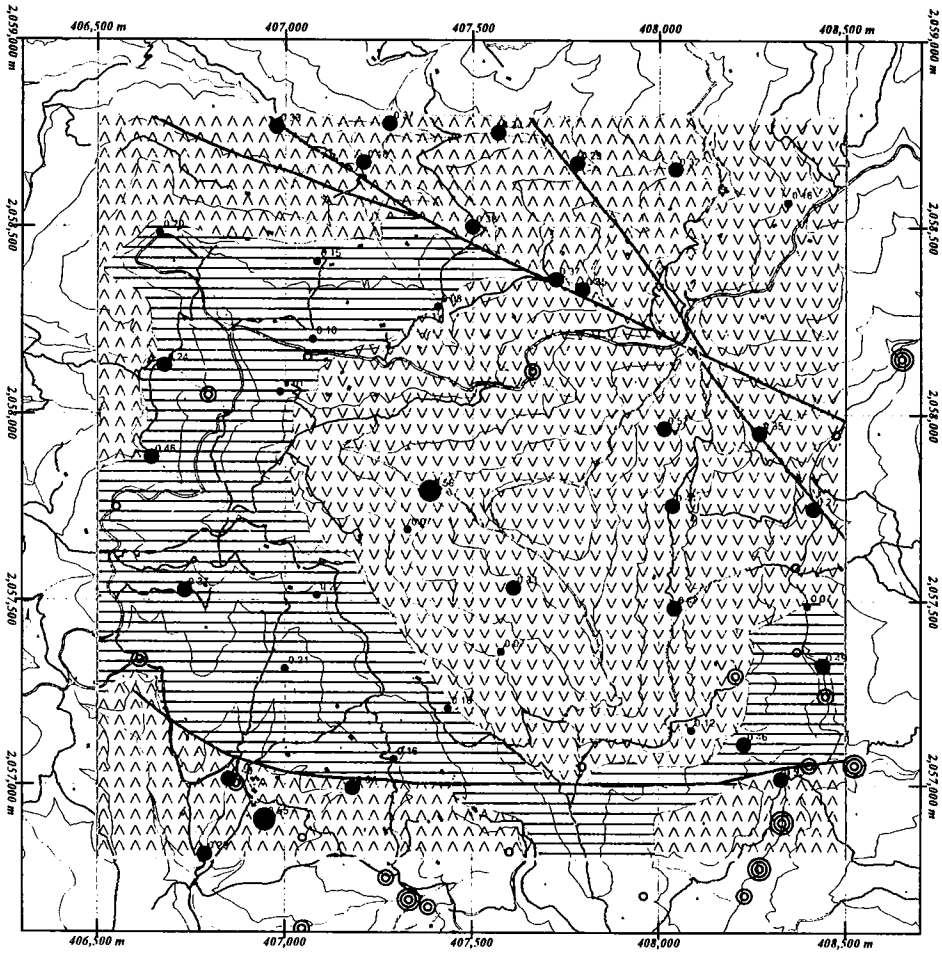
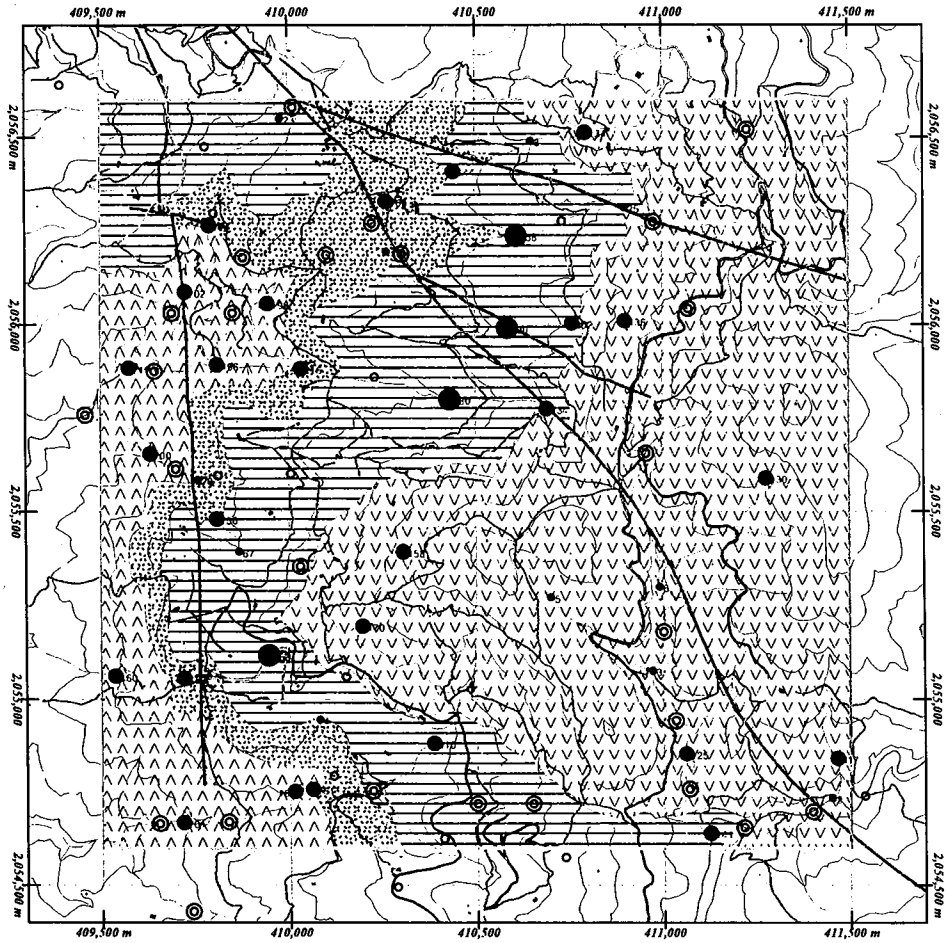
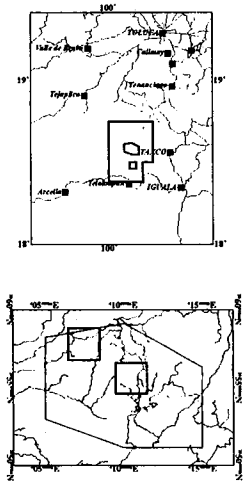


Fig. 2-2-33 Distribution map of Ti
(La Campana District)





V

M+2σ≦ 123 ←Analysis result (ppm)

M+1σ≦ <M+2σ

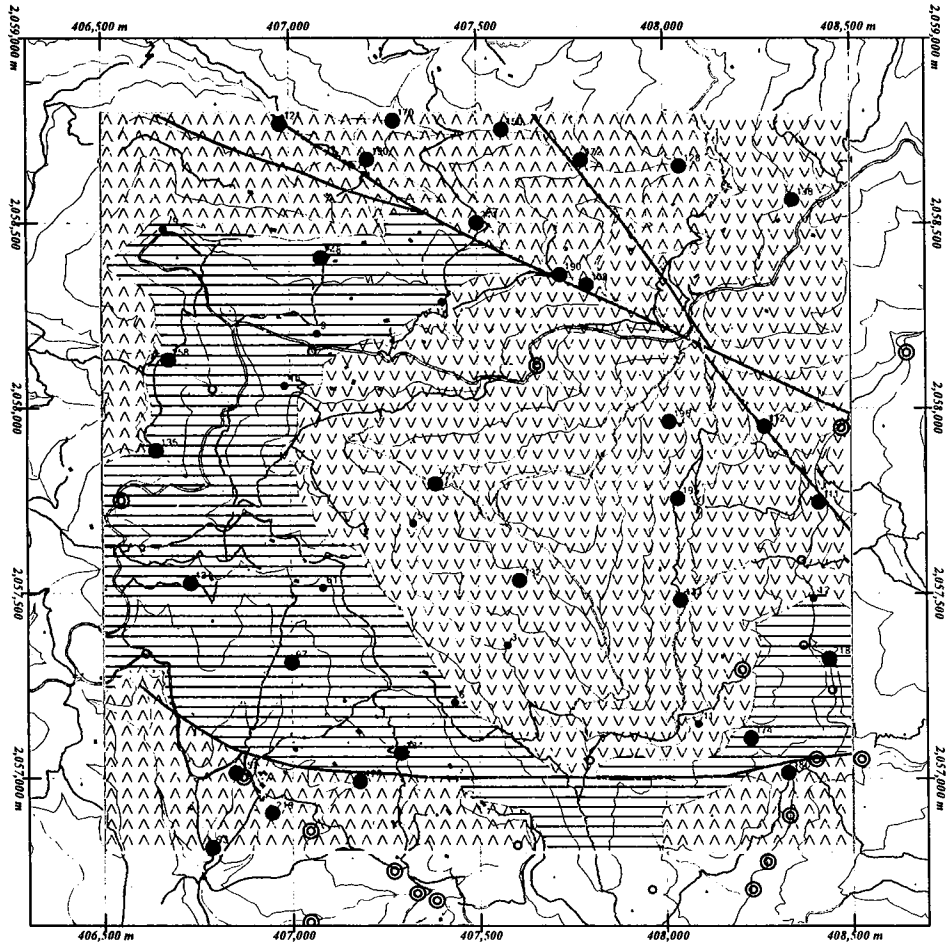
M≦ <M+1σ

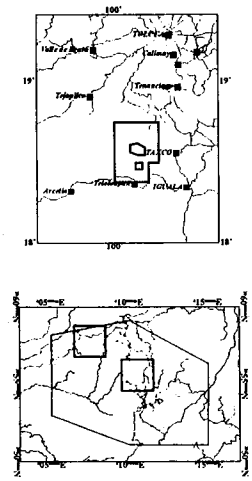
2002 2003

symbol style by project year

0 100 200 300 400 500 m

Fig. 2-2-33 Distribution map of V (Capire District)





V

M+2σ≦ 123 ←Analysis result (ppm)

M+1σ≦ <M+2σ

M≦ <M+1σ

2002 2003

symbol style by project year

0 100 200 300 400 500 m

Fig. 2-2-33 Distribution map of V (La Campana District)

Table Ⅱ－3－1 List of Drilling Equipment

Name	Type	Specification	No.
Drilling Machine	L-38, L-44 (LONG YEAR)	Max Depth : NQ 450m Engine type "DETROIT" 50H.P、1500RPM	3
Drilling Pump	420RT (BEAN ROYAL)	Volume : 20GPM Max Pressure : 400psi Motor : 17.5H.P 1800RPM	6
Rod, Outer tube, etc	Outer tube(NQ)	3.05m	8
	Inner tube(NQ)	3.05m	10
	Casing pipe	NW 3.05m	65
	Rod(NQ-WL)	NQ 3.05m	390
Transportation	Truk	1t	1
	Truk	3.5t	1
	Truk	20t	1

Table Ⅱ－3－2 List of Used Diamond Bits and Consumption Goods

Description	Specification	Unit	Quantity						Total
			MJZC-4	MJZC-5	MJZC-6	MJZC-7	MJZC-8	MJZC-9	
Drilling rod NQ	CN×3.05m	pc	69	91	98	101	66	66	491
Casing pipe(NW)	76.2mm×3.05m	pc	5	10	3	12	3	2	35
Outer tube(NQ)	12-400-05	pc	0	2	3	4	2	2	13
Inner tube(NQ)	12-400-03	pc	0	2	3	4	2	2	13
Inner tube head(NQ)	12-400-00	pc	0	2	3	3	1	2	11
Overshot	13-400-00	pc	0	1	1	1	1	1	5
Wireline rope	5mm×600m	m	215	60	450	450	300	450	1,925
Casing shoe bit	76.1mm×91.8mm	pc	1	1	1	2	1	1	7
Diamond bit	NQ	pc	2	2	5	2	1	3	15
Diamond reamer	NQ	pc	1	0	2	3	1	1	8
Stabilizer	NQ	pc	2	2	5	7	1	2	19
Core lifter	NQ	pc	5	8	15	23	7	10	68
Core lifter case	NQ	pc	3	6	5	5	2	3	24
Pipe for water		m	250	400	350	500	0	700	2,200
Cement		kg	0	0	5	5	6	0	16
Polymer		kg	42	20	2	4	2	3	73
Diesel		l	2900	1,400	1,200	3,000	600	1,000	10,100
Gear oil		l	0	19	19	19	0	12	69
Hydraulic oil		l	38	0	57	38	19	19	171
Engine oil		l	32	30	76	60	30	19	247
Glees		kg	48	16	3	5	5	3	80

Table 2-3-3 Drilling Summary (MJZC-4)

CLASS	WORKING PERIOD			TOTAL DAYS	ACTUAL WORKING	DAY OFF	WORKERS
RIG UP	2003. 9.14	～	2003.9. 18	5	5	0	105
DRILLING	2003.9. 19	～	2003.9.29	11	11	0	231
TEAR DOWN	2003.9.30	～	2003.10.4	5	5	0	105
TOTAL	2003. 9.14	～	2003.10.4	21	21	0	441

DRILLING DEPTH etc.			
PROPOSED DEPTH	200.00	OVERBURDEN(m)	-
ADDITIONAL DEPTH	-	CORE LENGTH(m)	190.40
INSPECTED DEPTH	201.50	RECOVERY(%)	94.49

TIME ANALYSIS			
COTEGORY	(h)	(%)	(%)
DRILLING	64	42.11	25.91
TRIP,CORE RECOVER,CASING,etc	36	23.68	14.57
REPAIR,FISHING	28	18.42	11.34
OTHER	24	15.79	9.72
(SUB-TOTAL)	152	100.00	61.54
RIG UP	48		19.43
TEAR DOWN	47		19.03
TOTAL	247		100.00

SIZE (mm)		B/A×100 (%)		RECOVERY (%)
SIZE	SET DEPTH			
NW (76.2)	24.00	11.91		100.00

CORE RECOVERY PER EACH 100m			
TOTAL DAYS	ACTUAL WORKING	DAY OFF	WORKERS
0.00～98.60	87.50	88.74	88.74
98.60～201.50	102.90	100.00	94.49

PENETRATION RATE		
TOTAL DEPTH(m)	/TOTAL WORKING DAYS	9.60 /DAY
TOTAL DEPTH(m)	/ACTUAL WORKING DAYS	9.60 /DAY
TOTAL DEPTH(m)	/TOTAL DRILLING DAYS	18.32 /DAY
TOTAL DEPTH(m)	/ACTUL DRILLING DAYS	18.32 /DAY
TOTAL DEPTH(m)	/TOTAL WORKERS	0.46 /WORKERS
ACTUAL DRILLING	/TOTAL DEPTH(m)	1.15 /m

Note

Table 2-3-3 Drilling Summary (MJZC-5)

CLASS	WORKING PERIOD			TOTAL DAYS	ACTUAL WORKING	DAY OFF	WORKERS
RIG UP	2003.8.25	～	2032.8.27	3	3	0	18
DRILLING	2003.8.28	～	2032.9.11	15	15	0	90
TEAR DOWN	2003.9.12	～	2032.9.13	1	1	0	6
TOTAL	2003.8.25	～	2032.9.13	19	19	0	114

DRILLING DEPTH etc.			
PROPOSED DEPTH	264.00	OVERBURDEN(m)	8.00
ADDITIONAL DEPTH	-	CORE LENGTH(m)	217.00
INSPECTED DEPTH	264.00	RECOVERY(%)	82.20

TIME ANALYSIS			
COTEGORY	(h)	(%)	(%)
DRILLING	119	29.82	27.74
TRIP,CORE RECOVER,CASING,etc	44	11.03	10.26
REPAIR,FISHING	24	6.02	5.59
OTHER	212	53.13	49.42
(SUB-TOTAL)	399	100.00	93.01
RIG UP	18		4.20
TEAR DOWN	12		2.80
TOTAL	429		100.00

SIZE (mm)	B/A×100 (%)		RECOVERY (%)
SIZE	SET DEPTH		
NW (76.2)	30.30	11.48	100.00

CORE RECOVERY PER EACH 100m			
TOTAL DAYS	ACTUAL WORKING	DAY OFF	WORKERS
0.00～97.4	72.80	73.87	73.87
97.4～192.85	73.30	76.79	75.76
192.785～264.00	70.90	99.65	82.20

PENETRATION RATE		
TOTAL DEPTH(m)	/TOTAL WORKING DAYS	13.89 /DAY
TOTAL DEPTH(m)	/ACTUAL WORKING DAYS	13.89 /DAY
TOTAL DEPTH(m)	/TOTAL DRILLING DAYS	17.60 /DAY
TOTAL DEPTH(m)	/ACTUL DRILLING DAYS	17.60 /DAY
TOTAL DEPTH(m)	/TOTAL WORKERS	2.32 /WORKERS
ACTUAL DRILLING	/TOTAL DEPTH(m)	0.34 /m

Note

Table 2-3-3 Drilling Summary (MJZC-6)

CLASS	WORKING PERIOD			TOTAL DAYS	ACTUAL WORKING	DAY OFF	WORKERS
RIG UP	2003. 10.13	～	2003.10. 16	4	4	0	24
DRILLING	2003.10. 17	～	2003.11.3	18	18	0	108
TEAR DOWN	2003.11.4	～	2003.11.7	4	4	0	24
TOTAL	2003. 10.13	～	2003.11.7	26	26	0	156

DRILLING DEPTH etc.			
PROPOSED DEPTH	300.00	OVERBURDEN(m)	-
ADDITIONAL DEPTH	-	CORE LENGTH(m)	295.60
INSPECTED DEPTH	300.00	RECOVERY(%)	98.53

TIME ANALYSIS			
COTEGORY	(h)	(%)	(%)
DRILLING	218	67.91	60.39
TRIP,CORE RECOVER,CASING,etc	61	19.00	16.90
REPAIR,FISHING	18	5.61	4.99
OTHER	24	7.48	
(SUB-TOTAL)	321	100.00	88.92
RIG UP	8		2.22
TEAR DOWN	32		8.86
TOTAL	361		100.00

SIZE (mm)	B/A×100 (%)		RECOVERY (%)
SIZE	SET DEPTH		
NW (76.2) 12.00	4.00		100.00

CORE RECOVERY PER EACH 100m			
TOTAL DAYS	ACTUAL WORKING	DAY OFF	WORKERS
0.00～84.75	82.35	97.17	97.17
84.75～202.10	117.35	100.00	98.81
202.10～300.00	95.90	97.96	98.53

PENETRATION RATE		
TOTAL DEPTH(m)	/TOTAL WORKING DAYS	11.54 /DAY
TOTAL DEPTH(m)	/ACTUAL WORKING DAYS	11.54 /DAY
TOTAL DEPTH(m)	/TOTAL DRILLING DAYS	16.67 /DAY
TOTAL DEPTH(m)	/ACTUL DRILLING DAYS	16.67 /DAY
TOTAL DEPTH(m)	/TOTAL WORKERS	1.92 /WORKERS
ACTUAL DRILLING	/TOTAL DEPTH(m)	0.36 /m

Note

Table 2-3-3 Drilling Summary (MJZC-7)

CLASS	WORKING PERIOD			TOTAL DAYS	ACTUAL WORKING	DAY OFF	WORKERS
RIG UP	2003. 10.5	~	2003.10. 8	4	4	0	20
DRILLING	2003.10. 9	~	2003.11.2	25	25	0	125
TEAR DOWN	2003.11.3	~	2003.11.3	1	1	0	5
TOTAL	2003. 10.5	~	2003.11.3	30	30	0	150

DRILLING DEPTH etc.			
PROPOSED DEPTH	300.00	OVERBURDEN(m)	-
ADDITIONAL DEPTH	-	CORE LENGTH(m)	274.90
INSPECTED DEPTH	300.00	RECOVERY(%)	91.63

TIME ANALYSIS			
COTEGORY	(h)	(%)	(%)
DRILLING	214	50.23	45.73
TRIP,CORE RECOVER,CASING,etc	140	32.86	29.91
REPAIR,FISHING	28	6.57	5.98
OTHER	44	10.33	9.40
(SUB-TOTAL)	426	100.00	91.03
RIG UP	30		6.41
TEAR DOWN	12		2.56
TOTAL	468		100.00

SIZE (mm)		B/A×100 (%)	RECOVERY (%)
SIZE	SET DEPTH		
NW (76.2)	24.00	8.00	100.00

CORE RECOVERY PER EACH 100m			
TOTAL DAYS	ACTUAL WORKING	DAY OFF	WORKERS
0.00~102.65	78.95	76.91	76.91
102.65~213.25	109.20	98.78	88.23
213.25~300.00	86.75	100.00	91.63

PENETRATION RATE			
TOTAL DEPTH(m)	/TOTAL WORKING DAYS	10.00	/DAY
TOTAL DEPTH(m)	/ACTUAL WORKING DAYS	10.00	/DAY
TOTAL DEPTH(m)	/TOTAL DRILLING DAYS	12.00	/DAY
TOTAL DEPTH(m)	/ACTUL DRILLING DAYS	12.00	/DAY
TOTAL DEPTH(m)	/TOTAL WORKERS	2.00	/WORKERS
ACTUAL DRILLING	/TOTAL DEPTH(m)	0.42	/m

Note

A : TOTAL DEPTH
B : SET DEPTH

Table 2-3-3 Drilling Summary (MJZC-8)

CLASS	WORKING PERIOD			TOTAL DAYS	ACTUAL WORKING	DAY OFF	WORKERS
RIG UP	2003. 10.26	～	2003.10. 29	4	4	0	16
DRILLING	2003.10. 30	～	2003.11.11	13	13	0	52
TEAR DOWN	2003.11.12	～	2003.11.13	2	2	0	8
TOTAL	2003. 10.26	～	2003.11.13	19	19	0	76

DRILLING DEPTH etc.			
PROPOSED DEPTH	200.00	OVERBURDEN(m)	-
ADDITIONAL DEPTH	-	CORE LENGTH(m)	182.55
INSPECTED DEPTH	200.00	RECOVERY(%)	91.28

TIME ANALYSIS			
COTEGORY	(h)	(%)	(%)
DRILLING	77	29.06	26.64
TRIP,CORE RECOVER,CASING,etc	56	21.13	19.38
REPAIR,FISHING	78	29.43	26.99
OTHER	54	20.38	18.69
(SUB-TOTAL)	265	100.00	91.70
RIG UP	8		2.77
TEAR DOWN	16		5.54
TOTAL	289		100.00

SIZE (mm)	B/A×100 (%)		RECOVERY (%)
SIZE	SET DEPTH		
NW (76.2) 9.00	4.50		100.00

CORE RECOVERY PER EACH 100m			
TOTAL DAYS	ACTUAL WORKING	DAY OFF	WORKERS
0.00～121.00	104.10	86.03	86.03
121.0～200.0	78.45	99.30	91.28

PENETRATION RATE		
TOTAL DEPTH(m)	/TOTAL WORKING DAYS	10.53 /DAY
TOTAL DEPTH(m)	/ACTUAL WORKING DAYS	10.53 /DAY
TOTAL DEPTH(m)	/TOTAL DRILLING DAYS	15.38 /DAY
TOTAL DEPTH(m)	/ACTUL DRILLING DAYS	15.38 /DAY
TOTAL DEPTH(m)	/TOTAL WORKERS	2.63 /WORKERS
ACTUAL DRILLING	/TOTAL DEPTH(m)	0.26 /m

Note

Table 2-3-3 Drilling Summary (MJZC-9)

CLASS	WORKING PERIOD			TOTAL DAYS	ACTUAL WORKING	DAY OFF	WORKERS
RIG UP	2003. 11.3	～	2003.11. 3	1	1	0	4
DRILLING	2003.11. 4	～	2003.11.9	6	6	0	24
TEAR DOWN	2003.11.10	～	2003.11.12	3	3	0	12
TOTAL	2003. 11.3	～	2002.11.12	10	10	0	40

DRILLING DEPTH etc.			
PROPOSED DEPTH	200.00	OVERBURDEN(m)	-
ADDITIONAL DEPTH	-	CORE LENGTH(m)	173.80
INSPECTED DEPTH	200.00	RECOVERY(%)	86.90

TIME ANALYSIS			
COTEGORY	(h)	(%)	(%)
DRILLING	67	52.34	38.51
TRIP,CORE RECOVER,CASING,etc	50	39.06	28.74
REPAIR,FISHING	3	2.34	1.72
OTHER	8	6.25	4.60
(SUB-TOTAL)	128	100.00	73.56
RIG UP	16		9.20
TEAR DOWN	30		17.24
TOTAL	174		100.00

SIZE (mm)	B/A×100 (%)		RECOVERY (%)
SIZE	SET DEPTH		
NW (76.2) 9.00	4.50		100.00

CORE RECOVERY PER EACH 100m			
TOTAL DAYS	ACTUAL WORKING	DAY OFF	WORKERS
0.00～76.35	55.48	72.67	72.67
76.35～200.0	118.32	95.69	86.90

PENETRATION RATE		
TOTAL DEPTH(m)	/TOTAL WORKING DAYS	20.00 /DAY
TOTAL DEPTH(m)	/ACTUAL WORKING DAYS	20.00 /DAY
TOTAL DEPTH(m)	/TOTAL DRILLING DAYS	33.33 /DAY
TOTAL DEPTH(m)	/ACTUL DRILLING DAYS	33.33 /DAY
TOTAL DEPTH(m)	/TOTAL WORKERS	5.00 /WORKERS
ACTUAL DRILLING	/TOTAL DEPTH(m)	0.12 /m

Note

Table 2-3-4 Drilling Schedule

Hole No	Item	July	August	September	Octorber	November
Road construction		29			12	
Transportation			18 21			
MJZC-4	Rig up			17 18		
	Drilling			19 29		
	Tear down			30	12	
MJZC-5	Rig up		21 27			
	Drilling		28	11		
	Tear down			12 16		
MJZC-6	Rig up				13 16	
	Drilling				17	3
	Tear down					4 7
MJZC-7	Rig up				5 8	
	Drilling				9	2
	Tear down					3
MJZC-8	Rig up				26 29	
	Drilling				30	11
	Tear down					12 13
MJZC-9	Rig up					3
	Drilling				4	9
	Tear down					10 12

Table 2—3—5 Result of Microscopic Observation for Thin Section(core)

No.	Drilling No	Depth(m)	Rock type	Minerals																										texture
				Phenocryst							Grandmass/matrix/fragment														Alteration minerals						
				Qz	Pl	Ho	Hy	Au	Ap	Fe	Si	Qz	Pl	K-f	Bio	Hy	Au	Fe	Gl	C	Mud	Dc	And	Pum	Q/Si	se	chl	ca	ep		op	
1	MJZC-4	36.0	dacitic tuff										○						◎			○				◎	・	・	・		・	
2	MJZC-4	71.7	caicareous slate									△								○						△		◎			△	
3	MJZC-4	108.0	slate								◎		・							◎					△	△	△	・			△	
4	MJZC-4	114.6	lapilli tuff									△	○						◎			○	○			○	○	△			△	
5	MJZC-4	156.4	glassy rhyolite										△						◎						◎		△	・			・	glassy fluidai
6	MJZC-4	199.7	tuff and slate										△						○	○			△			△	○	△			△	
7	MJZC-5	49.2	dacitic coarse tuff										○						◎			◎			◎	◎						gypsam?
8	MJZC-5	76.0	porphyritic rhyolite										○												◎	◎	△	△			・	weak vitroclastic
9	MJZC-5	95.0	slate								◎									◎						△	△	○			△	
10	MJZC-5	118.4	limestone																	△					△			◎			△	
11	MJZC-5	141.3	dacite	○	◎														◎							◎	△	△	・		△	porhyritic
12	MJZC-5	166.2	lapill tuff										△						◎			◎			◎	◎	△	・			・	
13	MJZC-5	186.75	glassy tuff										・						◎						◎	◎	○	△				
14	MJZC-5	196.0	glassy fine tuff																◎						◎	◎	○				△	
15	MJZC-5	230.0	augite andesite		○	・		○		△			△	△				△	○						△	△	◎	△	△		・	hyalopilitic
16	MJZC-6	32.6	andesitic coarse tufff									・	◎						◎							△	△	△	△		△	
17	MJZC-6	95.5	tuff									・	○						◎						△	◎	△				○	
18	MJZC-6	117.5	limestone																	△						△	○	◎			○	
19	MJZC-6	153.2	limestone																						○			◎			○	
20	MJZC-6	235.7	dacitic lapilli tuff										◎						◎				○	?	○	◎	○				△	
21	MJZC-7	50.7	andesitic lapilli tuff										◎						◎		・		◎			◎	○	△			△	
22	MJZC-7	95.0	slaty tuff										・						◎						△	◎	△	○			△	
23	MJZC-7	106.0	dcitic tuff										◎						◎				△			◎	○	○			△	
24	MJZC-7	110.7	porphyritic andesite		◎		?						◎					△	◎						△	◎	◎	△			△	hyalopilitic
25	MJZC-7	198.5	fine tuff and slate										△						◎						△	◎	△	○			○	
26	MJZC-7	232.3	lapilli tuff																◎				○		○	○	○				・	altered rock fragment
27	MJZC-7	247.2	pyroxene andesite		◎		△?			△	△		◎			△?		○	◎							△	△	△			△	hyalopilitic
28	MJZC-7	299.0	pyroxene andesite		◎		○?			△	○		◎			○?		○	◎						△	△	△	△			△	hyalopilitic, glomeroporphyritic
29	MJZC-8	28.2	dacitic coarse tuff										○					△	◎			○			△	△	△	△			△	
30	MJZC-8	79.4	slate																	◎					△	△	△	△			△	
31	MJZC-8	136.5	coarse tuff									△	△						◎						△	◎	△	△			△	
32	MJZC-8	159.4	altered rhyolitic tuff										△						◎			○			△	△	△	△			△	
33	MJZC-8	168.2	slate,tuff																						◎	◎	△	◎			○	
34	MJZC-9	19.0	dacitic coarse tuff										◎					△	◎			△	○		△	△	△	△			△	
35	MJZC-9	194.1	aphyric foliated tuff										○						◎						・	◎	○	△			△	

Legend: ◎, abundant; ○, common; △, minor; ・,rare
Qz:Quartz, Pl:Plagioclase, Ho:Hornblende, Opx:Orthopyroxene, Cpx:Clinopyroxene, Ap:Apatite, Fe:Fe minerals,
Si:Silica minerals, K-f:K-feldspar, Bio:Biotite, Gl:Glass, Coa:Coal, Se:Sericite, Chl:Chlorite, Ca:Calcite, Py:Pyrite,
And:Andesite, Mud:Mudstone,Mud, Pum:Pumice

Table2—3—6 Result of Microscopic Observation Polished Section(core)

No.	Drilling No.	Depth(m)	Sample Type	Ore Minerals												Note (texture,others)
				Py	As	Mc	Sph	Gn	Cp	Th	Bo	Ilm	Ba	Cv	Rt	
1	MJZC-4	105.5	calcite and pyrite film, dissemination	○												clot
2	MJZC-4	106.3	dissemination pyrite	○												colloform pyrite bearing
3	MJZC-4	107.75	banded pyrite ore	◎												clot
4	MJZC-4	108.2	Massive pyrite ore	◎												colloform pyrite bearing
5	MJZC-4	108.4-108.75	pyrite dissemination ore	○												
6	MJZC-4	199.9	pyrite bearing tuff/slate	△												framboidal very fine
7	MJZC-5	46.9m	pyrite net fragment	◎												
8	MJZC-5	59.5m	pyrite dissemination in dacite	△												
9	MJZC-5	129.5-129.7m	pyrite band in slate	◎												
10	MJZC-5	133.1m	pyritic tuff, band	○												colloform pyrite bearing
11	MJZC-5	133.6-133.8m	massive pyrite ore	◎												colloform pyrite bearing
12	MJZC-5	133.8-134.2	massive to disseminated pyrite ore	◎												colloform pyrite bearing
13	MJZC-5	147.9m	pyrite band	◎												colloform pyrite bearing
14	MJZC-5	148.15-3m	pyrite film-band	○												
15	MJZC-5	175.5m	pyrite network	○												
16	MJZC-6	67m	pyrite film	◎											・	
17	MJZC-6	194.6m	very fine pyrite band	◎			△									
18	MJZC-6	196.4,196.5m	pyrite network	◎												
19	MJZC-6	199.8m	pyrite dissemination	◎												
20	MJZC-6	292.8m	calcite-quartz-pyrite vein	○												colloform
21	MJZC-7	148.55m	pyrite bed	◎												colloform
22	MJZC-7	195.1m	slate and pyritic tuff	◎											△	
23	MJZC-7	198.3m	pyritic tuff	◎											△	
24	MJZC-7	205.8m	pyrite bed in slate	○					・						△	colloform (py)、crack filling cp
25	MJZC-7	207.9m	pyrite dissemonation in dacite	△												
26	MJZC-7	228.0m	pyrite film	○												
27	MJZC-7	250.5m	very fine pyrite dissemination	△					・							
28	MJZC-7	203.0m	pyrite bed in slate	◎					・							
29	MJZC-8	86.0m	py-sph-gn-cp band	○			○	△	△							
30	MJZC-8	87.3m	py-sph-gn-cp band	○			○	△	△							
31	MJZC-8	115.7-116.1m	py-sph-gn-cp band	◎			△	△	△							chalcopyrite diseas
32	MJZC-8	141-146m	pyrite band	◎												colloform, framboidal,
33	MJZC-8	168.6m	pyrite film, network	○			△									
34	MJZC-9	91.2m	pyrite dissemination, film	○			△									
35	MJZC-9	186.4m	quartz-calcite-pyrite vein	○			・		・						・	

Legend: ◎, abundant; ○, common; △, minor; ・,rare
Py:Pyrite, As:Arsenopyrite, Mc:Marcasite, Sph:Sphalerite, Gn,Galena, Cp:Chalcopyrite, Th:Tetrahedrite,
Bo:Bornite, Ilm:Ilmenite, Ba:Barite, Cv:Covellline, Rt:Rutile

Table2-3-7 Result of X-Ray Diffraction of Drilling Survey

No.	Sample No.		Rock name type	Detected Minerals																											Re
				Silica M	Feldspar M			Clay Minerals								Sulphate M				Other Minerals											
				Qz	Ab	Kf		Sm	Ha	K	Ch	S	S3	Pg	S/Sm	Gp	Ba	Ja		Ca	Do	Mg	Go	Py	Gn	Sph	Ep	Hb			
1	MJZC-4	36.00 m	dacitic tuff	○	○						△	△		△																
2	MJZC-4	114.60 m	dacitic tuff,sandy	○	○						△	・		・						・				△							
3	MJZC-4	115.20 m	slate,siliceous	○	○						△	・								・				・							
4	MJZC-4	125.80 m	dacitic tuff	○	○						△	・		・										・							
5	MJZC-4	156.50 m	glassy tuff	◎	◎						・	・																			
6	MJZC-4	197.25 m	andesitic hyaloclastite	○	○						△	・								△				・			・				
7	MJZC-5	49.20 m	dacitic tuff	○	○						・	・		・						・				・			・				
8	MJZC-5	76.00 m	dacitic tuff	○	◎						・	△																			
9	MJZC-5	95.00 m	slate	○	・	・					○		△			・				◎				・							
10	MJZC-5	118.40 m	limestone breccia	・																◎				・							apatit
11	MJZC-5	141.30 m	dacitic tuff	○	△						△	・		・										・							
12	MJZC-5	166.20 m	lapilli tuff	○	◎						△	△								・				・							
13	MJZC-5	186.75 m	glass patch tuff	○	◎						△	・								・				・							
14	MJZC-5	196.00 m	glass tuff	◎	△						△	△		・																	
15	MJZC-5	230.00 m	andsite	△	△						△	・															・	・			
16	MJZC-6	32.60 m	andesite	○	○						△	・								・							・				
17	MJZC-6	56.80 m	andesitic tuff	△	△	・					△	・								・				・			・				
18	MJZC-6	67.00 m	pyrite film,andesite	△	△	・					△	△								・				・			・				
19	MJZC-6	75.80 m	andesitic tuff	○	○	・					○	・								・				・			・				
20	MJZC-6	199.80 m	dacitic tuff,pyrite	○	○						△	△								・				△							
21	MJZC-6	298.90 m	andesite, pyrite	○	○						・	・								・				△			・				
22	MJZC-7	50.70 m	andesite tuff	△	○	△					○	△								○				・			・				
23	MJZC-7	71.70 m	andesite	○	△						△	・								・							△				
24	MJZC-7	116.70 m	tuff glassy	△	△						○		△							◎				・							
25	MJZC-7	201.50 m	slate, tuff	△	△						・		○							△				△							
26	MJZC-7	220.50 m	lapilli tuff	△	○						○				・					△				・							
27	MJZC-7	241.20 m	black breccia	○	◎						・	・			・					○				・							
28	MJZC-7	250.50 m	andesite,pyrite	△	○						△	・								○				・							
29	MJZC-8	28.10 m	dacitic tuff	◎	○						○	△		△						・				・							
30	MJZC-8	94.30 m	very fine tuff, pyrite	○	○						○		△							△				△							
31	MJZC-8	137.00 m	tuff, calcite	△	△						△		△							◎				・							
32	MJZC-8	168.60 m	black glassy tuff,slate	△	・	△							△							△				△							
33	MJZC-9	19.00 m	sandy tuff	○	○						◎	・								・				・							
34	MJZC-9	91.20 m	altered tuff	○	△	△							○											・							
35	MJZC-9	134.30 m	altered tuff	○	・	△					・	△								△				○							
36	MJZC-9	198.65 m	andesite	△	○						△	△								○				△							

Legend ; ◎, abundant ; ○, common ; △, minor ; ・, rare

Qz:quartz, Ab:albite, Kf:K-feldspar, Sm:smectite, Ha:halloysite, K:kaolinite, Ch:chlorite, S:sericite, S3:sericite(3T), Pg:palagonite, S/Sm:sericite/smectite mix
Gp:gypsum, Ja:jarosite, Ca:calcite, Do:dolomite, Mg:magnesite, Ba:barite, Go:goethite, Py:pyrite, Gn:galena, Sph:sphalerite, Px:pyroxene, Hb:hornblende, Ep

Table 2-3-8 Result of Ore Grade Assay of Drilling Survey

No.	Drilling No,	Depth(m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (ppm)	S (ppm)	Remarks
1	MJZC-4	105.5 m	2	0.80	11	5	53	218	15200	15100	cal, py film
2	MJZC-4	106.45 ~ 106.60 m	2	0.10	19	2	112	599	27200	11900	sl/vftuff,pydiss
3	MJZC-4	107.8 m	31	1.30	28	9	17	13	204000	234000	pyband ore
4	MJZC-4	108.2 ~ 108.4 m	30	0.65	13	92	38	23	296000	340800	vmspy
5	MJZC-4	108.4 m	9	0.35	10	7	330	1590	52000	45400	pydissore
6	MJZC-4	199.9 m	2	0.35	16	4	73	277	27600	8620	adtuff//sl
7	MJZC-5	46.9 m	6	1.90	17	88	164	551	73600	86800	py ore frag
8	MJZC-5	59.5 m	6	0.25	4	12	35	45	16100	14800	pl diss py sil
9	MJZC-5	129.5 m	3	0.60	30	6	95	905	30800	32300	vf py band in sl
10	MJZC-5	133.1 m	5	0.70	20	16	51	2470	52500	57400	py band in slate,tf
11	MJZC-5	133.6 m	8	0.10	7	9	15	1040	182000	205300	py-ore diss
12	MJZC-5	133.8 m	4	0.35	9	16	21	971	117000	124000	py-ore diss
13	MJZC-5	147.9 m	6	0.60	6	15	32	271	101000	108400	py band in
14	MJZC-5	148.3 m	4	0.35	4	16	25	1242	75500	72200	py bad-film
15	MJZC-5	173.7 ~ 173.8 m	5	0.35	3	22	23	1070	40900	31000	py net breccia
16	MJZC-6	67.0	35	0.75	34	33	55	163	63400	49800	py filmi in ad
17	MJZC-6	195.3 m	7	0.60	16	25	28	864	106000	122000	py vf band in sl/dc
18	MJZC-6	196.4 m	7	0.55	7	17	68	103	57800	48600	py vf net in dc
19	MJZC-6	202.2 m	4	0.35	3	5	82	368	19300	6800	vf py in dc
20	MJZC-6	298.9 m	18	0.80	100	14	63	240	106000	117000	vf py net
21	MJZC-7	195.1 m	3	0.35	15	7	87	897	42400	28300	sl tuff py diss
22	MJZC-7	198.5 m	3	0.10	21	13	84	1300	42500	48700	tuff py diss
23	MJZC-7	203.0 m	4	0.70	18	13	98	1480	45100	48500	sl tuff py dissband
24	MJZC-7	204.1 m	2	0.35	15	12	55	1880	47000	48300	pl tuff, py
25	MJZC-7	205.8 m	3	0.90	24	8	46	2000	38000	38800	sl py bed
26	MJZC-7	207.9 m	2	0.35	4	6	59	967	33800	18600	py net, pl dc
27	MJZC-7	228.0 m	3	0.60	367	12	143	484	56500	28900	py film dc
28	MJZC-7	250.5 m	3	0.35	13	5	75	464	48400	13200	gray sil ser py
29	MJZC-8	83.7 m	26	11.7	2680	16900	39400	1920	36500	62800	py.sph,gn band
30	MJZC-8	86.0 m	9	1.15	70	728	16	660	30800	17100	py.sph,gn band
31	MJZC-8	115.7 ~ 116.1 m	176	47.5	2310	12800	13300	44	82000	102600	py.sph,gn band
32	MJZC-8	141.0 ~ 146.0 m	22	9.85	18	37	461	2270	111000	128000	colo,py bad
33	MJZC-8	168.6 m	15	7.65	20	17	455	4460	42600	46400	black glassy tuff
34	MJZC-9	91.2 m	21	1.30	9	6	48	579	45100	43700	tuff py
35	MJZC-9	186.4 m	18	1.90	40	12	56	156	45100	33300	q-cal py v

Table 2-3-9 Result of Chemical Analysis of Drilling Survey

Drilling No	Depth (m)	Au ppm	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sr ppm	Ti %	V ppm	W ppm	Zn ppm	Base ppm	Al Al	Sample type
NJZC-4	35.9	0.001	<0.5	7.39	8	720	1.6	<2	0.68	<0.5	2	29	4	1.32	0.7	1.38	43	<1	2.05	3	100	8	0.02	<5	194	0.09	8	<10	81	93	46	dacite tuff
NJZC-4	71.7	0.002	<0.5	6.01	14	200	1	<2	10.3	<0.5	9	46	33	3.26	1.24	2.06	366	2	1.22	23	530	6	1.24	5	425	0.28	91	<10	108	147	23	calcareous slate
NJZC-4	114.6	0.001	<0.5	10	20	170	2.2	<2	1.19	<0.5	11	41	9	2.84	1.22	1.57	110	1	2.63	9	350	9	0.99	9	341	0.24	46	<10	176	194	44	sandy tuff
NJZC-4	156.5	<0.001	<0.5	7.09	<5	360	1.4	<2	0.16	<0.5	2	32	3	1.11	0.52	0.29	156	<1	4.38	2	50	4	0.04	<5	102	0.05	3	<10	62	69	15	glassy tuff
NJZC-4	197.3	<0.001	<0.5	9.2	19	120	1.1	<2	3.04	<0.5	27	74	22	4.87	0.53	2.54	210	2	3.33	19	460	7	0.83	8	230	0.48	176	<10	104	133	36	hyaloclastic andesite
NJZC-4	125.8	<0.001	<0.5	8.24	8	530	1.7	<2	1.18	<0.5	2	29	4	2.11	0.64	1.49	43	<1	2.18	5	130	9	0.46	5	295	0.1	9	<10	46	59	41	plagio dacite tuff
MJZC-5	49.3	<0.001	<0.5	6.84	10	210	1.2	<2	1.17	<0.5	2	54	4	1.76	0.66	1.72	78	<1	1.5	3	100	1	0.63	5	188	0.1	14	<10	99	104	50	dacite tuff
MJZC-5	77.3	<0.001	<0.5	6.48	<5	280	1.2	<2	0.95	<0.5	1	38	3	1.38	1.34	0.35	179	2	2.97	2	90	10	0.15	5	122	0.09	10	<10	104	117	29	dacite tuff
MJZC-5	96	0.001	<0.5	7.35	19	270	1	<2	7.08	<0.5	14	55	53	4	1.94	2.27	255	1	0.92	43	640	7	1.46	<5	287	0.31	144	<10	126	186	35	slate,siliceous band
MJZC-5	118.4	0.002	<0.5	0.22	8	20	<0.5	<2	>25.0	<0.5	1	8	2	0.12	0.06	0.42	225	3	0.03	5	3500	3	<0.5	<5	369	0.01	21	<10	58	63	2	limestone breccia
MJZC-5	140.3	<0.001	<0.5	7.55	12	120	1.1	<2	1.74	<0.5	4	61	10	3.42	0.69	1.5	76	7	1.8	9	270	7	1.8	7	274	0.19	35	<10	88	105	41	dacite plagio rich
MJZC-5	165.2	<0.001	<0.5	7.01	6	200	1.4	<2	1.12	<0.5	4	46	5	2.56	0.99	1.56	139	<1	2.13	6	180	13	0.93	6	162	0.14	36	<10	54	72	46	dacite lapilli tuff
MJZC-5	185	<0.001	<0.5	7.15	<5	610	1.5	<2	0.26	<0.5	1	21	2	2.25	1.04	1.97	63	3	2.32	1	50	14	0.07	5	180	0.04	1	<10	53	69	56	glass patch tuff
MJZC-5	193.1	0.003	<0.5	6.44	<5	920	1.8	<2	0.33	0.5	1	19	2	1.94	1.08	2.2	259	1	0.82	1	30	26	0.14	<5	266	0.04	3	<10	51	79	76	glass tuff
MJZC-5	229	<0.001	<0.5	8	6	600	1	<2	3.19	<0.5	15	67	20	3.47	1.29	2.16	203	<1	2.55	14	390	5	0.37	5	317	0.35	138	<10	92	117	39	autobrecciated andesite
Standard	JSL-1	0.001	<0.5	9.5	18	300	2	<2	1.08	<0.5	16	33	44	4.69	2.35	1.4	442	<1	1.58	37	860	17	0.17	5	208	0.41	132	<10	110	171	59	slate
MJZC-6	32.4	<0.001	<0.5	9.17	6	330	1	<2	4.01	<0.5	14	33	20	4.37	0.41	1.8	924	4	2.74	5	620	1	0.16	6	437	0.41	138	<10	111	132	27	plagio crystal tuff andesitic
MJZC-6	95.5	<0.001	<0.5	7.71	<5	390	1.1	<2	2.2	<0.5	7	24	12	2.27	2.33	1.04	343	<1	1.74	3	300	8	0.71	6	166	0.21	57	<10	80	100	46	glassy tuff
MJZC-6	113.5	0.001	<0.5	4.24	9	240	0.8	<2	17.6	<0.5	3	23	15	2.02	1.34	0.64	435	<1	0.7	13	530	5	0.98	6	426	0.14	64	<10	127	147	9	sl/tuff altarnation
MJZC-6	153.2	<0.001	<0.5	0.12	7	20	<0.5	<2	>25.0	<0.5	2	5	1	0.08	0.03	0.46	80	1	0.01	5	1260	2	0.1	<5	623	<0.01	15	<10	33	36	2	calcareous slate
MJZC-6	235.8	<0.001	<0.5	7.84	13	720	1.6	<2	1.6	<0.5	1	27	4	2.59	1.41	2.05	50	<1	1.5	2	150	16	0.23	6	256	0.11	12	<10	145	165	54	glss patch dacite tuff
MJZC-6	285.2	<0.001	<0.5	6.45	11	340	0.8	<2	4.01	<0.5	19	120	29	2.24	1.59	0.8	716	<1	2.28	44	600	7	1.64	6	238	0.29	121	<10	68	104	27	green andesite
MJZC-7	49.5	<0.001	<0.5	8.04	8	300	0.8	<2	2.74	<0.5	14	27	19	4.61	2.41	2.54	404	<1	1.95	7	440	3	0.14	5	258	0.34	146	<10	95	117	52	glass patch tuff
MJZC-7	116.7	0.003	<0.5	8.08	12	580	0.8	<2	7.52	<0.5	13	24	21	3.66	1.72	1.16	850	<1	1.88	3	460	6	0.61	5	198	0.39	156	<10	104	131	23	glassy foliated tuff
MJZC-7	127.2	<0.001	<0.5	7.83	<5	830	1.6	<2	0.42	<0.5	1	23	5	2.09	1.48	1.66	210	<1	1.79	<1	90	3	0.13	<5	142	0.09	7	<10	82	90	60	plagio dacitic tuff
MJZC-7	161.8	<0.001	<0.5	0.08	<5	10	<0.5	<2	>25.0	<0.5	1	<1	1	0.06	0.01	0.25	92	<1	0.01	<1	140	1	0.05	<5	359	<0.01	4	<10	9	11	1	limestone, Mn band?
MJZC-7	201.5	<0.001	<0.5	9.13	5	80	1.1	<2	1.94	<0.5	8	56	14	2.54	2.47	0.28	87	4	2.81	4	450	3	2.64	8	178	0.4	160	<10	75	92	35	slate, tuffaceous
MJZC-7	241.2	<0.001	<0.5	8.92	21	360	0.7	<2	2.55	0.9	13	102	31	1.72	1.2	0.74	318	<1	3.23	22	610	2	0.57	6	282	0.41	185	<10	149	182	25	black glassy breccia
MJZC-8	28	<0.001	<0.5	7.05	<5	680	1.5	<2	0.99	<0.5	1	16	3	1.71	0.81	1.18	172	3	1.65	2	100	7	0.05	5	228	0.09	9	<10	57	67	45	dacitic tuff
MJZC-8	80.9	0.003	<0.5	3.09	19	330	<0.5	<2	>25.0	<0.5	3	15	22	3.01	1.5	0.89	308	2	0.11	5	>1000	3	3.71	14	825	0.09	62	<10	72	97	9	slate with py band
MJZC-8	130.3	0.028	2.5	6.91	98	190	0.8	<2	7.58	1.9	10	95	41	4.24	3.12	1.08	766	15	0.05	51	2130	144	3.5	35	149	0.32	284	<10	261	446	34	slate with py band
MJZC-8	168.2	0.01	4.2	7.43	33	120	0.7	<2	11.2	<0.5	18	31	22	4.02	4.59	0.69	2050	1	0.82	7	450	13	4.78	22	439	0.33	124	<10	179	214	29	black glass tuff py
Standard	JC-1b	<0.001	<0.5	7.91	<5	480	3.1	<2	1.66	<0.5	6	8	1	1.46	3.43	0.42	451	<1	2.51	6	380	26	0.01	7	204	0.15	20	10	39		46	gabbro
MJZC-9	19	<0.001	<0.5	9.14	10	210	0.9	<2	2.64	<0.5	17	32	13	5.37	0.54	2.59	235	<1	2.68	5	410	4	0.21	9	385	0.47	186	<10	124	141	40	sandy tuff
MJZC-9	57.3	0.001	<0.5	5.81	9	320	1.1	<2	4.48	0.7	3	20	13	1.35	2.71	0.71	489	2	0.05	7	410	6	0.4	5	129	0.12	59	<10	144	163	41	slate py bnd
MJZC-9	134.3	0.001	1	7.68	19	90	0.6	<2	2.43	<0.5	15	47	13	4.31	5.88	1.61	875	<1	0.67	7	310	7	4.59	9	128	0.29	134	<10	80	100	69	tuff foliated,py
MJZC-9	198.7	0.001	<0.5	6.68	18	110	0.6	<2	9.86	<0.5	17	32	21	4.24	1.96	0.86	1415	1	1.77	5	330	3	2.61	9	146	0.31	140	<10	66	90	19	foliated andesite

Note:Base=Cu+Pb+Zn, Al=Alteration Index

Table 2—3—10 Result of S Isotope Analysis

No	Sample Name	Locality	Sample type	$\delta^{34}S$(‰)
1	AUR-1	Aurora	Black ore(Sph+Gn)	2.2
2	CP-1	Capire	Very fineBlack ore(Sph+Gn)	6.2
3	RDP-A	Rey de Plata	Semi-Black ore(Py-Sph+Gn)	-0.8
4	RDP-B	Rey de Plata	Black ore(Sph+Gn)	-0.5
5	132.5m	MJZC-5	Py dissemination ore	0.9
6	195.1m	MJZC-7	Py band in slate	-44.7
7	204.1m	MJZC-7	Py film, in slate	-3.8
8	112.1m	MJZC-8	Py band in slate	-6.1
9	172.0m	MJZC-8	Py film black galssy tuff/slate	-12.8
10	139.5m	MJZC-9	Py dissemination tuff	-34.8

Br-HNO3 digestion. Total sulfides in whole rock
All results reported in the usual permil notation relative to the international CDT std
Precision and accuracy on (n=10) lab stds equals plus minus 0.5 permil

by University of Calgary

Table 2-3-11Result of Pb Isotope Analysis

No.	Sample No	Sample Type	Location	$^{206}Pb/^{204}Pb$	Pb64	$^{207}Pb/^{204}Pb$	Pb74	$^{208}Pb/^{204}Pb$	Pb84	$^{207}Pb/^{206}Pb$	Pb76	$^{208}Pb/^{206}Pb$	Pb86
				Unity	% error	Unity	% error	Unity	% error	Unity	% error	Unity	% error
1	AUR-2	Pb-Zn ore	Aurora 1	18.612	0.05	15.646	0.07	38.526	0.09	0.841	0.023	2.07	0.044
2	CP-2	Pb-Zn ore	Capire	18.587	0.05	15.672	0.07	38.647	0.09	0.843	0.022	2.079	0.044
3	RDP-B	Pyrite-Pb-Zn ore	Rey de Plata	18.603	0.13	15.605	0.16	38.439	0.21	0.839	0.067	2.066	0.101
4	RDP-D	Massive Zn-Pb ore	Rey de Plata	18.601	0.05	15.651	0.07	38.517	0.09	0.841	0.025	2.071	0.045
5	CAP-3	Siliceous Ore	Capire	18.604	0.05	15.643	0.07	38.514	0.09	0.841	0.023	2.07	0.044
6	CAP-4	Pb-Zn ore	Capire	18.6305	0.01	15.6831	0.01	38.6494	0.03	0.8412	0.000	2.0745	0.001

409,400 m 409,600 409,800 410,000 410,200 410,400 410,600 410,800 411,000 411,200 411,400 411,600 m

2,056,800 m 2,056,600 2,056,400 2,056,200 2,056,000 2,055,800 2,055,600 2,055,400 2,055,200 2,055,000 2,054,800 2,054,600 2,054,400 m

A A' B B' C C' D D'

Ms Mts Mt Dc-1 Vab Vah Vaa Vam Va-2 Vat Vdt Ml Dio

TL-1 TL-5 TL-14 TL-15 TL-16 C-150 MJZC-7 MJZC-6 Aul-13 Capire Aurora-I

0 50 100 150 200 250 300 m

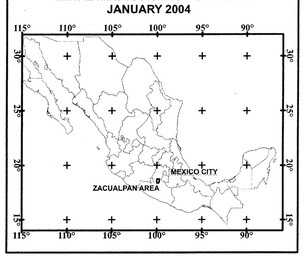
REPORT ON THE MINERAL EXPLORATION IN THE ZACUALPAN AREA UNITED MEXICAN STATES

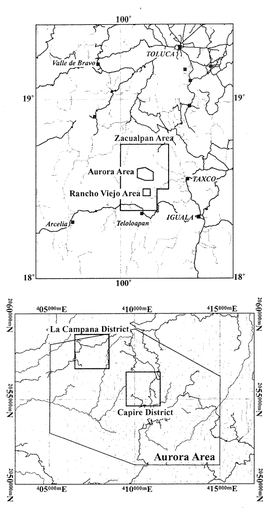
PHASE III

Geological Map of Capire District

(SCALE 1:2,500)

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
JANUARY 2004





LEGEND

Villa Ayala Formation

Upper Volcanic Unit

- Va-2 Andesitic tuff, lava
- Vdt Dacitic tuff
- Vat Glassy tuff

Middle Sedimentary Unit

- Ml Limestone foliated
- Ms Calcareous slate, slate
- Mt Dacitic tuff
- Mts Sandy tuff and slate

Lower Volcanic Unit

- Dc-1 Dacitic tuff
- Vam Slate and tuff
- Vab Andesitic tuff, autobrecciated lava
- Vah Andesitic hyaloclastite, tuff breccia
- Vaa Andesite lava

Intrusive Rock

- Dio Andesite

Ore Showings

- Capire
- Aurora- I

Symbol

- Bedding plane
- Cleavage plane
- Fault(minor)
- Fault(major)
- Section line
- Drilling location(previous project)
- Drilling location(this project)

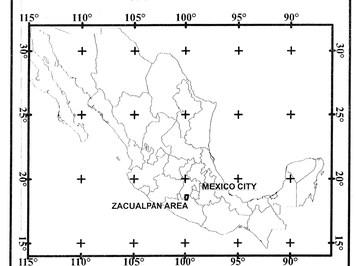
REPORT ON THE MINERAL EXPLORATION IN THE ZACUALPAN AREA UNITED MEXICAN STATES

PHASE III

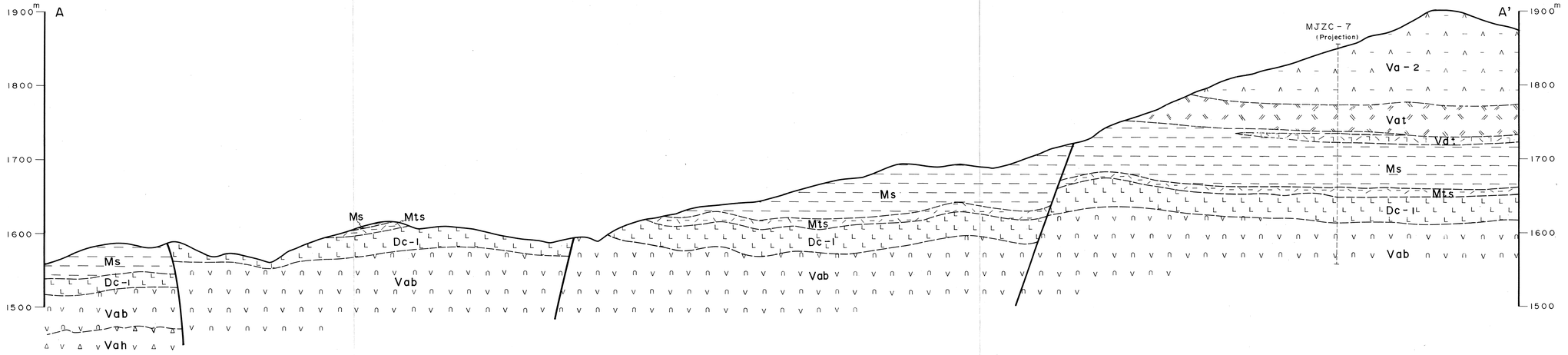
Geological Section of Capire District

(SCALE 1:2,500)

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
JANUARY 2004

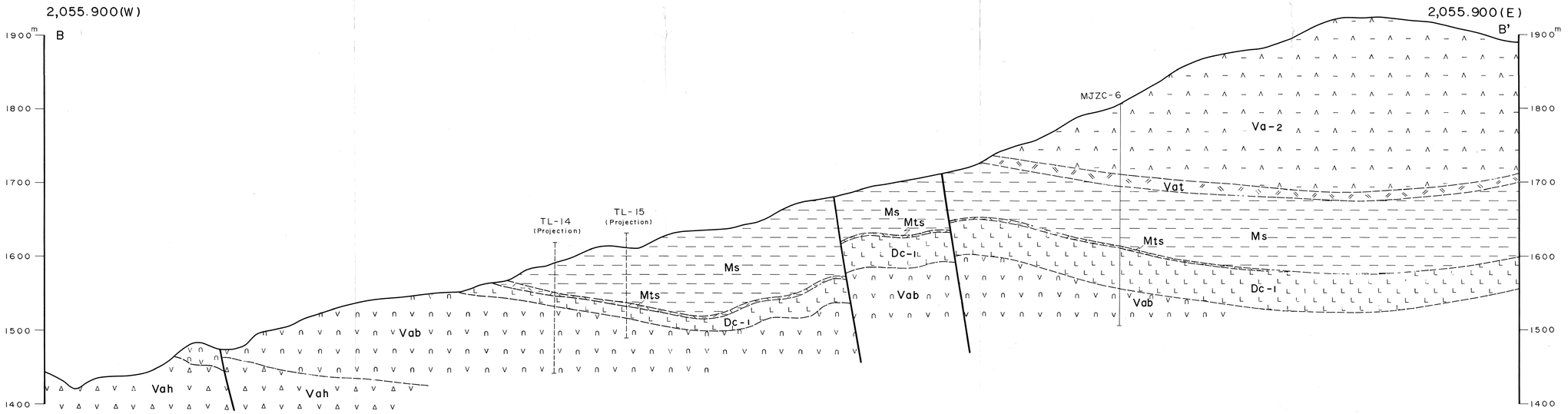


2,056.300(W)

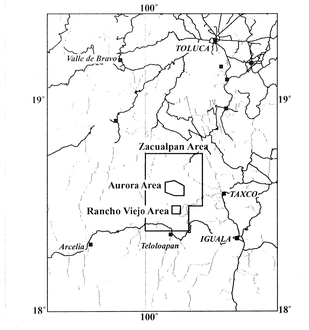


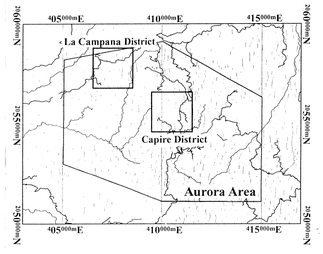
2,056.300(S)

2,055.900(W)

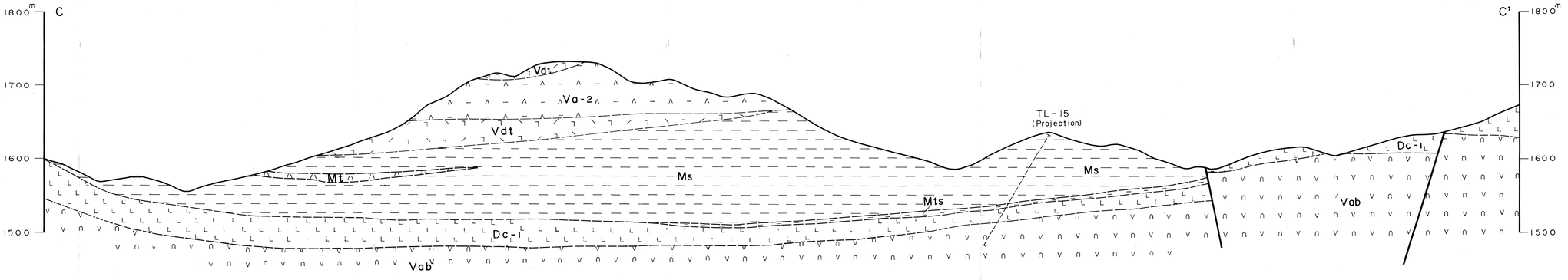


2,055.900(E)



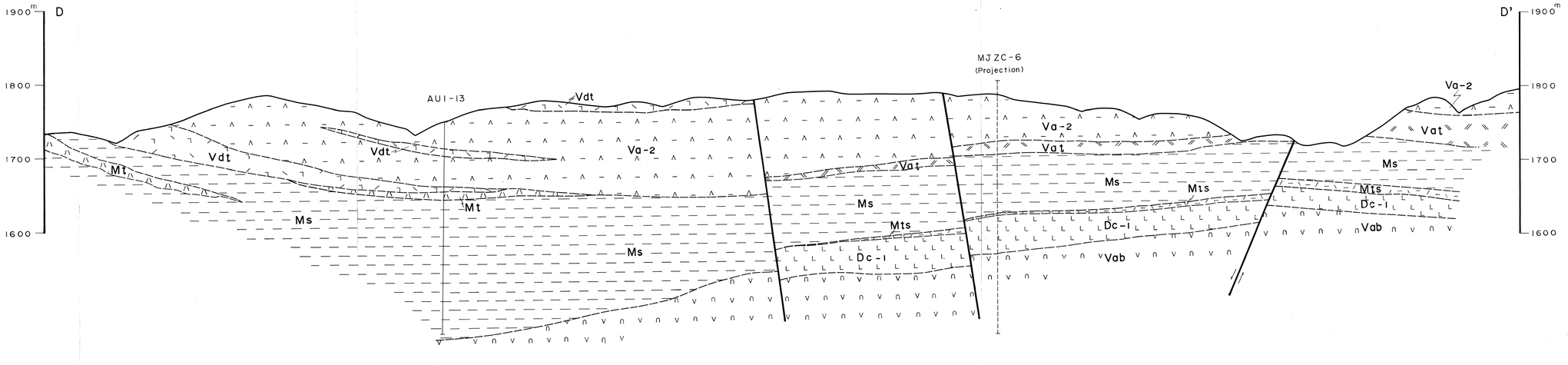


410.300(S)



410.300(N)

410.900(S)



410.900(N)

LEGEND

Villa Ayala Formation

Upper Volcanic Unit

- Va-2 Andesitic tuff, lava
- Vdt Dacitic tuff
- Vat Glassy tuff

Middle Sedimentary Unit

- Ms Calcareous slate, slate
- Mt Dacitic tuff
- Mts Sandy tuff and slate

Lower Volcanic Unit

- Dc-1 Dacitic tuff
- Vab Andesitic tuff, autobrecciated lava
- Vah Andesitic hyaloclastite, tuff breccia

Fault(major)

MJZC-6 Drilling location

TL-15 Drilling location(projection)

409,400 m | 409,600 | 409,800 | 410,000 | 410,200 | 410,400 | 410,600 | 410,800 | 411,000 | 411,200 | 411,400 | 411,600 m

2,056,800 m | 2,056,600 | 2,056,400 | 2,056,200 | 2,056,000 | 2,055,800 | 2,055,600 | 2,055,400 | 2,055,200 | 2,055,000 | 2,054,800 | 2,054,600 | 2,054,400 m

2,056,500 | 2,056,000 | 2,055,500 | 2,055,000

(1)

(2)

JS-07
(15, 3.50, 31, 37, 22, 17, 28.9, 30.9)

MJZC-7

(3)

FA-05
(4, 1.10, 38, 40, 58, 24, 9.21, 9.24)

(4) TLanilpa

(5)

MJZC-6

FA-03
(3, 0.33, 16, 15, 14, 283, 2.09, 1.80)

(6)

FA-04
(6, 0.40, 13, 11, 20, 417, 1.75, 1.45)

(12, 1.35, 7, 22, 176, 81, 1.46, 10.1)
FA-02

(W)

Aurorc-I' North

(E)

FA-01(73, 95.0, 6.82, 6.96, 750, 155, 2.83, 7.53)

Capire

Aurora-I

0 50 100 150 200 250 300 m

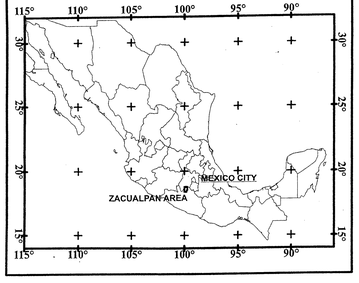
REPORT ON THE MINERAL EXPLORATION IN THE ZACUALPAN AREA UNITED MEXICAN STATES

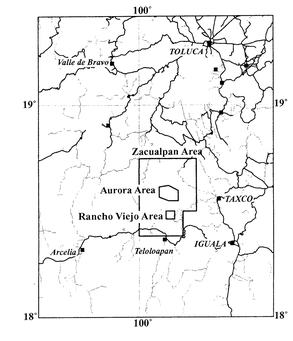
PHASE III

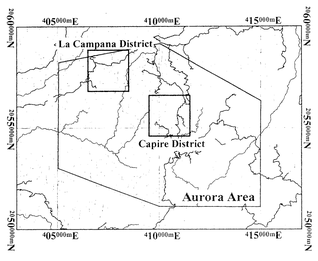
Location Map of Ore Showings Capire District

(SCALE 1:2,500)

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
JANUARY 2004







LEGEND

- Outcrop of mineralization
- FA-08 Sample No and assay result
  Au(ppb), Ag(ppm), Cu(ppm), Pb(ppm), Zn(ppm), Ba(ppm), Fe(%), S(%)
- Drilling location
- Adit

409,500 m | 410,000 | 410,500 | 411,000 | 411,500 m

2,056,500 m | 2,056,000 | 2,055,500 | 2,055,000 | 2,054,500 m

REPORT ON THE MINERAL EXPLORATION IN THE ZACUALPAN AREA UNITED MEXICAN STATES

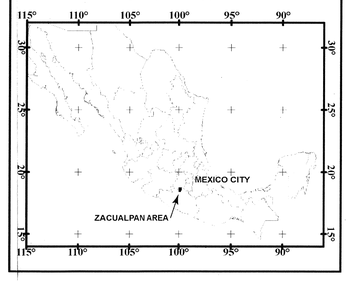
PHASE III

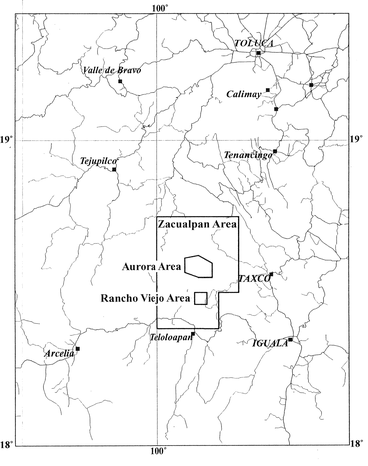
Sample Location Map

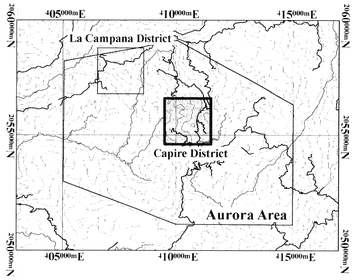
Capire District

(SCALE 1:2,500)

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
JANUARY 2004







Analysis Type

- ○ Chemical
- □ Ore assay
- ■ Polish
- △ Thin section
- × X-ray

0 100 200 300 m

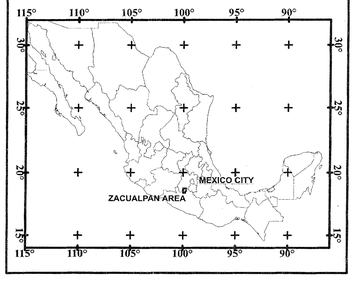
REPORT ON THE MINERAL EXPLORATION IN THE ZACUALPAN AREA UNITED MEXICAN STATES

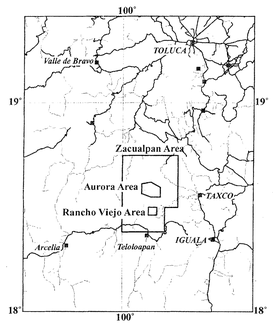
PHASE III

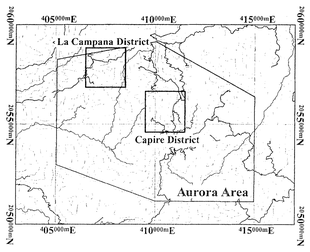
Geochemical Anomaly Map of Capire District

(SCALE 1:2,500)

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
JANUARY 2004







Geochemical anomaly

Geochemical anomaly zone of principal component analysis

Geochemical anomaly zone of alteration index

406,400 m 406,600 406,800 407,000 407,200 407,400 407,600 407,800 408,000 408,200 408,400 408,600 m

2,059,000 m 2,058,800 2,058,600 2,058,400 2,058,200 2,058,000 2,057,800 2,057,600 2,057,400 2,057,200 2,057,000 2,056,800 2,056,600 m

Gsh Qsh Mst Vat Vtm Vdt Vab Ms Mt Ml Dc-1

MJZC-9 MJZC-8 MJZC-2

La Campana C. La Campana Mant. Rico

A A' B B'

0 50 100 150 200 250 300 m

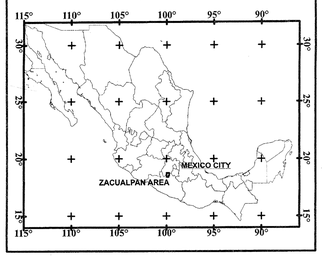
REPORT ON THE MINERAL EXPLORATION IN THE ZACUALPAN AREA UNITED MEXICAN STATES

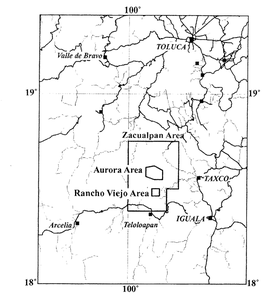
PHASE III

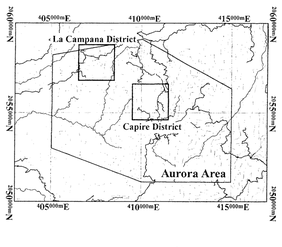
Geological Map of La Campana District

(SCALE 1:2,500)

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
JANUARY 2004







LEGEND

Villa Ayala Formation

Upper Volcanic Unit

- Vtm Slate, tuffaceous slate
- Vdt Dacitic tuff
- Vat Glassy tuff

Middle Sedimentary Unit

- Ml Limestone foliated
- Ms Calcareous slate, slate
- Mt Dacitic tuff
- Mst Alternation of sandy tuff and tuffaceous slate

Lower Volcanic Unit

- Dc-1 Dacitic tuff
- Vab Andesitic tuff, hyaloclastite,
- Qsh Foliated tuff, altered
- Gsh Foliated andesite,tuff

Ore Showings

- Mnato Rico
- La Campana

Symbol

- Bedding plane
- Cleavage plane
- Fault(minor)
- Fault(major)
- Section line
- MJZC-2 Drilling location(phase II project)
- MJZC-8 Drilling location(this project)

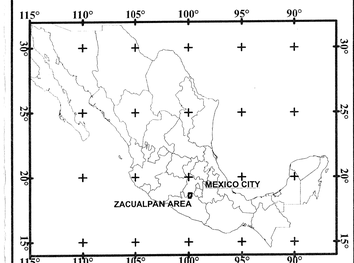
REPORT ON THE MINERAL EXPLORATION IN THE ZACUALPAN AREA UNITED MEXICAN STATES

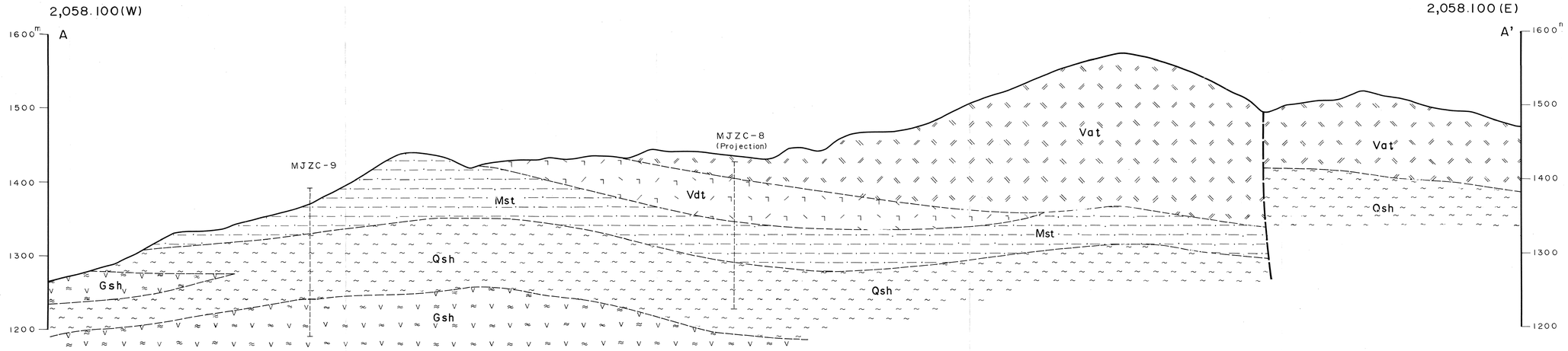
PHASE III

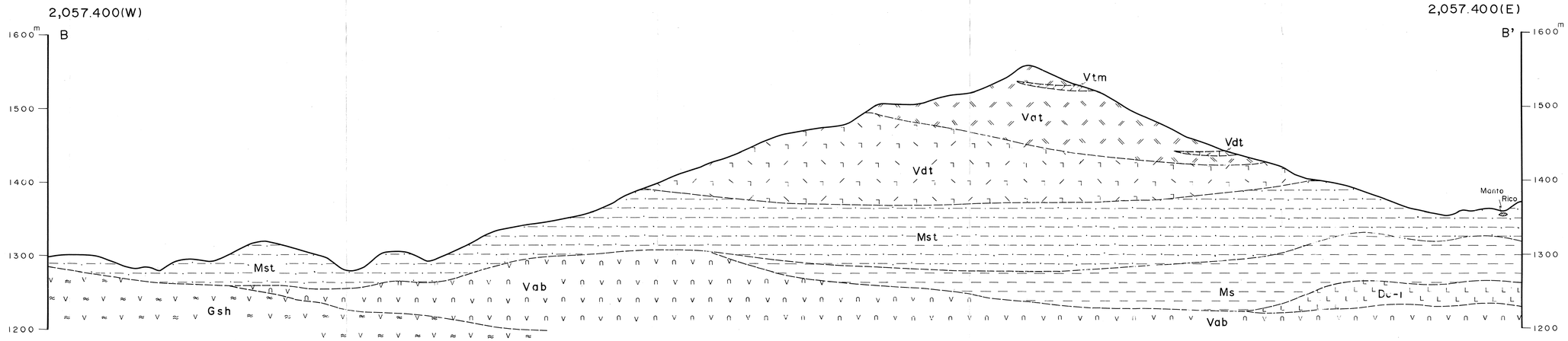
Geological Section of La Campana District

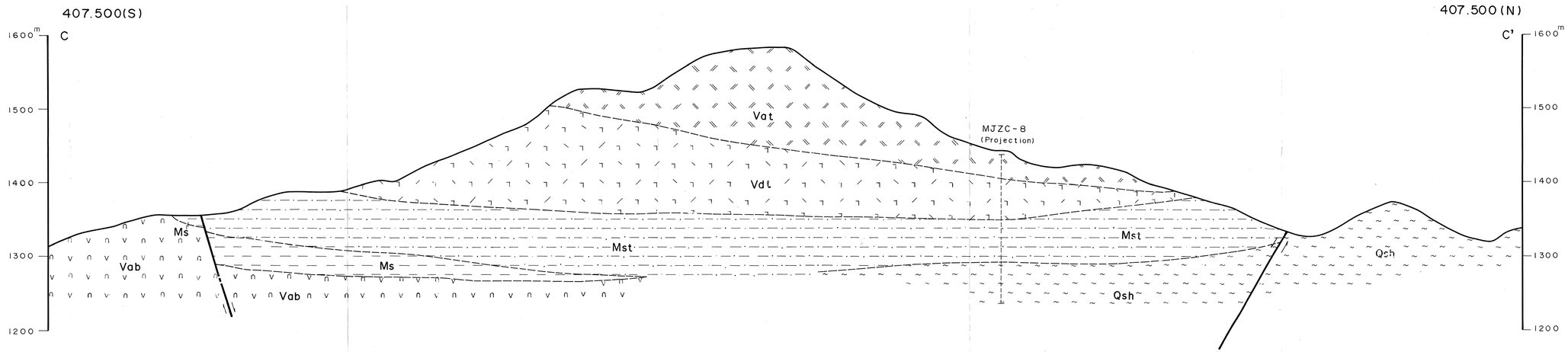
(SCALE 1:2,500)

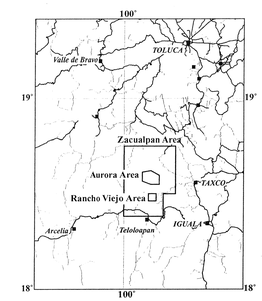
JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
JANUARY 2004

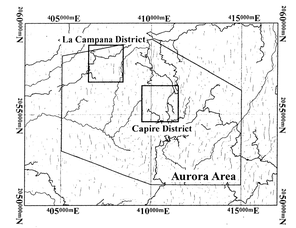












LEGEND

Villa Ayala Formation

Upper Volcanic Unit

- Vtm Slate, tuffaceous slate
- Vdt Dacitic tuff
- Vat Glassy tuff

Middle Sedimentary Unit

- Mst Alternation of sandy tuff and tuffaceous slate
- Ms Calcareous slate, slate

Lower Volcanic Unit

- Dc-1 Dacitic tuff
- Vab Andesitic tuff, autobrecciated lava
- Qsh Foliated tuff
- Gsh Foliated andesite, tuff

Fault(major)

MJZC-8 Drilling location(projection)

406,400 m 406,600 406,800 407,000 407,200 407,400 407,600 407,800 408,000 408,200 408,400 408,600 m

2,059,000 m 2,058,800 2,058,600 2,058,400 2,058,200 2,058,000 2,057,800 2,057,600 2,057,400 2,057,200 2,057,000 2,056,800 2,056,600 m

FA-06
(7, 0.4, 35, 36, 35, 221, 4.85, 3.73)

FA-07
(60, 10.8, 25, 19, 46, 85, 11.5, 12.6)

La Campana North

FA-08
(7, 0.70, 19, 5, 3, 89, 13.30, 15.08)

2,058,500

MJZC-9

La Campana

JC-35
(1, 0.90, 39, 10, 103, 257, 4.32, 2.76)

MJZC-8

La Campana West

2,058,000

Manto Rico North

Sph+Gn+pyl+Cal vein

2,057,500

Manto Rico

Otates SE

2,057,000

0 50 100 150 200 250 300 m

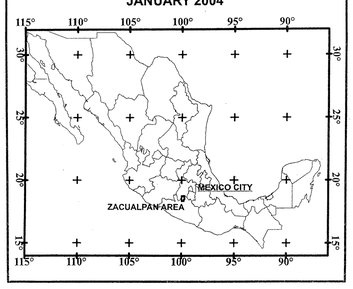
REPORT ON THE MINERAL EXPLORATION IN THE ZACUALPAN AREA UNITED MEXICAN STATES

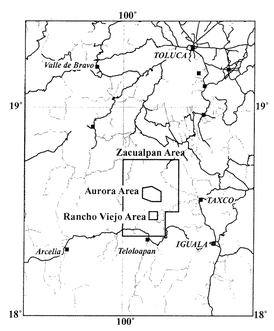
PHASE III

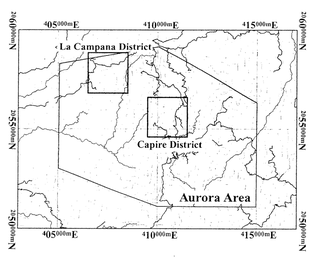
Location Map of Ore Showings La Campana District

(SCALE 1:2,500)

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
JANUARY 2004







LEGEND

- Outcrop of mineralization
- FA-08 Sample No and assay result
  Au(ppb), Ag(ppm), Cu(ppm), Pb(ppm), Zn(ppm), Ba(ppm), Fe(%), S(%)
- Drilling location
- Adit

406,500 m 407,000 407,500 408,000 408,500 m

2,058,500 m

2,058,000

2,057,500

2,057,000 m

REPORT ON THE MINERAL EXPLORATION IN THE ZACUALPAN AREA UNITED MEXICAN STATES

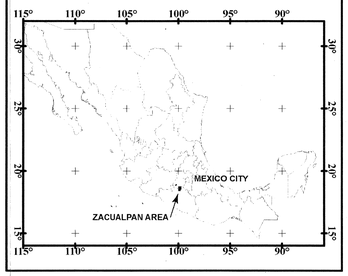
PHASE III

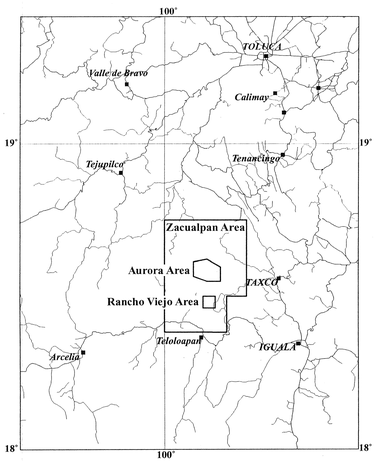
Sample Location Map

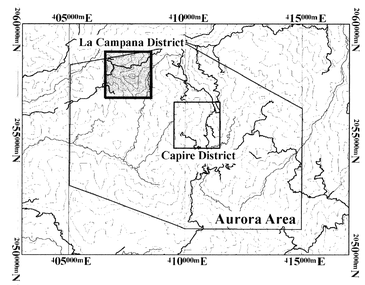
La Campana District

(SCALE 1:2,500)

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
JANUARY 2004







Analysis Type

- ○ Chemical
- □ Ore assay
- ▪ Polish
- △ Thin section
- × X-ray

0 100 200 300 m

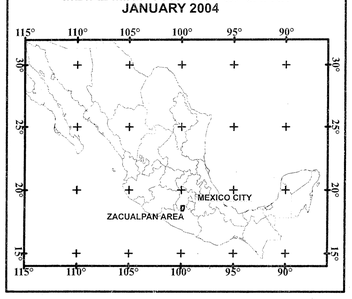
REPORT ON THE MINERAL EXPLORATION IN THE ZACUALPAN AREA UNITED MEXICAN STATES

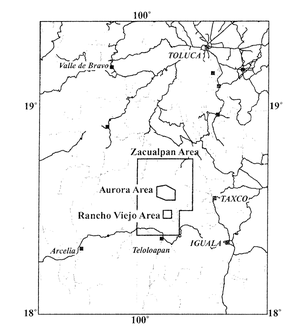
PHASE III

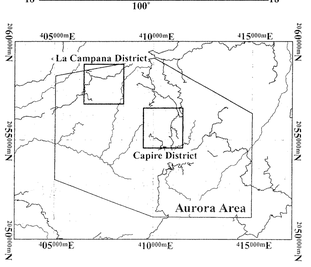
Geochemical Anomaly Map of La Campana District

(SCALE 1:2,500)

JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
JANUARY 2004







Geochemical anomaly

Geochemical anomaly zone of principal component analysis

Geochemical anomaly zone of alteration index

MJZC-4(1)

0m－100m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
5		Dacite tuff	weathered dacite fragments low coar recovery	8,7m py-net3cm											
			oxide brown plagio-dacite tuff												
10			8-14m;gray to brown mix color dacite lapilli bearing tuff												
			11.5-12m;fractured coar,with 70 dip frac, quartz vein												
15			fragment:black glassy altered rock, pl-dot dacite, py-ore	14.1m py ore chip 1x3cm											
			14m-;gray silisified?dacite tuff, lapilli bearing												
20			foliation pane=10												
			gray aphyiric dc lens, cm cont												
25			gradual change to greenish color												
			30.6m;black slate chip	matrix;py poor											
30			32.9m;quartz vein,5cm,with black breccia												
			33.5-35.0m:gray sandy tuff, pl-poor	chlorite, silicification?											
35			grayish pale green dacitic lapilli bearing tuff, plagio:5-7%, siliceous aphyric dc or tuff lens cont												
40			40.3-40.5m:fine to coarse tuff												
			accidental fragment slitly increas black slate chip, siliceous rock, black glassy rock, cm	45.5m vf-py ore chip 3x5cm											
45															
		49.2	gradual chang dip 10												
50		Slate	49.2-50.6m;black slate, mm siliceus band	mm py band chip cont.											
		calcareous slate	50.6-51.7m;black calcareous mud 51.7-55.6m;gray to dark gray sandy calcaeous slate, bed:dip 20-30												
55		55.6													
			black slate>>gray fine calcareous part	very fine py diss, sil+py band(mm)											
60			60.4-60.7m:siliceous mm band, dip:40-70												
			61m:pyrite band (mm) rich zone, dip 10												
65			64.5-66m;minor folding,fold axis=S2 cleavage plane(10-20), bed=40-50												
		slate													
			black to dark gray slate with calcareous fine band	pyrite diss:2-3 %											
70															
			78.3m;3cm calcite vein, dip10												
75			drag fold, foliation plane:dip 30°												
80															
			85-85.15m:shear zone?												
85															
			86.5-87.2m:calcareous band rich zone cleavage:dip10° , bed:dip10-30°												
90			90.4-90.8m;folding, bed:dip 30-80°	calcite vein rich zone											
95		95.5	95.5-97.8m;black slate,with siliceous, calc, mm band,bed:30-40												
		97.8		99.4m, pyrite mm band rich											
100		99.5	97.8-99.5m:very fine calc. mud												

MJZC-4(1) Geological Columnar Section of Drilling (1:200)

MJZC-4 (2)

100m－200m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DETH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
105	⊥ ⊥ ⊥ ⊥	Limestone	gray sandy foliated linestone, calc. slate		1	105.5	10	2	0.80	11	5	53	218	1.52	1.51
	⊥ ⊥ ⊥ ⊥			107.65-107.75 py beded ore	2	106.45	15	2	0.10	19	2	112	599	2.72	1.19
	⊥ ⊥ ⊥ ⊥		104.6-107.3m:olive yellow gray vary fine tuff, cm bed-lens cont, with py dissemination.		3	107.75	10	31	1.30	28	9	17	13	20.40	23.40
	⊥ ⊥ ⊥ ⊥				4	108.2	20	30	0.65	13	92	38	23	29.6	30.08
	⊥ ⊥ ⊥ ⊥				5	108.4	10	9	0.35	10	7	330	1590	5.20	4.54
			107.3-108.2m:black slate, with py band contact:20° dip												
110	L L L L	Dacite	gray plagio rich dacitic tuff, matrix glassy	108.2-108.4m massive py ore											
	L L L L														
	L L L L	113.8													
115	— — —	Tuff/slate	gray sandy tuff, siliceous fine breccia, siliceous mud alternaion(very fine pyrite) bed=10-20° dip	intens diss of pyrite10-15%											
	／＼／＼														
	— — —	116.75													
120	L L L L		dark gray to pale greenish gray glassy dacitic tuff, plagioclase 1-2mm, 10% essential aphyric-small plagio porphyritic lens-band, 2-10cm cont.	pyrite 2-3% decreas to down											
	L L L L														
	L L L L														
125	L L L L														
	L L L L														
	L L L L	Dacitic tuff		py less than 1%											
130	L L L L		greenish gray glassy plagio rich tuff, foliation=20° accidental siliceous ,porphyritic rock fragment bearing(dia:5-15mm)												
	L L L L														
	L L L L														
135	L L L L														
	L L L L														
	L L L L														
140	L L L L		green fine glass chip rich												
	L L L L														
	L L L L		essentail? green aphyric glass fragment 10cm cont												
145	L L L L														
	L L L L	147.3	accidental lapilli and green glass chip increas, plagio decreas, gradually chang to greenish gray glassy crystal poor tuff												
	／＼／＼														
	= = = =	148.2													
150	= = = =		151.3m:quartz vein, 3cm with, 40 ° dip												
	= = = =														
	= = = =		grassy to silicified tuff, dacite-ryhiolittic? very fine plagioclase bearing sheard or fractured(hyaloclastic?) accidental altered(py+sil)fragment cont. foliation=30°												
155	= = = =	Glassy tuff													
	= = = =														
	= = = =														
160	= = = =		160-161.2m:yellow aphyric fragment-lens rich zone,foliation=40°												
	= = = =														
	= = = =														
165	= = = =														
	= = = =		167.7m, 168.9m:shear zone,clay												
	= = = =	169.3													
170	＝／＝＼＝	Dacitic tuff/ breccia?	glassy tuff and plagioclase crystal rich tuff mix zone												
	＼＝／＝／														
	＝＼＝／＝	173.9													
175	／＼／＼	Dacitic tuff	graysh green plagio crysytal rich tuff contact:30° dip												
	△ L △ L	175.4	lithic lapill tuff ,plagio rich in matrix accidental fragment:sil+py ore,sil-dcaite gray porphyry, glass chip,5-20mm												
	L △ L △	Lapilli tuff													
	△ L △ L														
180	△ L △ L	180.75	gradual change,contact quartz band zne												
	= = = =														
	= = = =		deep green glassy tuff(andesitic-dacitic) small plagio crystal bearing												
	= = = =														
185	= = = =	Tuff													
	= = = =		187.1m:solid shesr fault zone 20cm pale green and deep green glassy band												
	= = = =														
	= = = =														
190	= = = =	191.0													
	V ∩ V ∩		grayish green lpillitic hyaloclastite, partly slate bed or fragnent cont.	very fine pyrite in slate bed											
	∩ V ∩ V														
	V ∩ V ∩	Andesitic hyaloclastite													
195	∩ V ∩ V		199.2-199.9m:darkgray siliceous mud-slate breccia intercaration, dip30°												
	V ∩ V ∩														
	∩ V ∩ V														
200	V ∩ V ∩		201.5m:End of hole		6	199.9	10	2	0.35	16	4	73	277	2.76	0.862

MJZC-4(2) Geological Columnar Section of Drilling (1:200)

MJZC-5 (1)

0m－100m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
5		overbarden weathered dacite, 8.0	yellow brown soil and weathered dacite fragments												
10		Dacite tuff	olive yellow brown to graysh breown weathered dacite tuff lapilli bearing plagio max 2mm, 5-10%, essential glass film, and sil+py ore fragments(15.1m, m, etc) mm-cm in size fractured(disking)												
15															
20															
25			gradual chang in color	overall:very fine py diss emination 0.5-1%?											
30			deep - dark gray lapilli bearing dacite tuff, plagio max:2mm, 5-10% lappili:light gray siliceous rock, sil+ py ore , and mm size black slate chip, foliation pl=10°												
35															
40		Dacite tuff	36.2-43.65m:fractured core ore fragments, chuip:34.15m, 35m 47.1m, 50m, 52.4m, 52.6m etc												
45					7	46.9	5	6	1.90	17	88	164	551	7.36	8.68
50			52.8-54.0m:fracture zone 55-57m:milky quartz veinlets 1/10cm. 3-10mm width												
55															
		58.8													
60		59.8	dark gray hard fine siliceous breccia bed or fragment?	very fine py 10-15% diss-film	8	59.5	10 6	0.25	0.25	4	12	35	45	1.61	1.48
65		dacite tuff	61-63m:fractured core 65m-:olive graysh green plagio rich lapilli bearing dacite tuff	bluish green chloritic alt											
70			plagio dot essential glass lens,												
75			pyrite ore - film:2-3cm(67.9m) 69.6m:very fine py ore fragment (2-4cm)												
80			77.6m:black slate fragment with py dissemination												
85			dark gray -black color												
90															
		93.2	bedding:5-10°												
95		95.5	gray calcareous slate>>black slate black slate//calcareous slate mm altarnation	pyrite film mm											
		97.75													
100		Calcareous slate													

MJZC-5(1) Geological Columnar Section of Drilling (1:200)

MJZC-5 (2)

100m－200m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
105		calcareous slate	dark gray to black calcareous mud ～slate weak startification with very fine pyrite bed, dissemination												
			gradual change dip 10°												
110		110.1	110.1-111.6m:gray folded limestone												
			111.6-112.1m:black muddy part												
		113.6	112.1-113.6m: gray sheard limestone foliated, dip=20°												
115		114.5	113.6-114.5m:sandy gray limestone												
		limestone	114.5-122.0m:fine fragmented to sheard calcareous slate ～limestone												
120		122.0	116.7-117.4m, 119.5-119.6m:fine slate, sandy calcareous slate												
125		calcareous slate	dark gray calcareouse slate dominant, minor black graphytic slate	129.4-129.7m very fine py sulfide diss-emination bed	9	129.5	10	3	0.60	30	6	95	905	3.08	3.23
			partly well folded, foliation pl:10-20°												
130			124.5-124.9m:alternation of black slate calcareouse slate		10	133.1	10	5	0.70	20	16	51	2470	5.25	5.74
		133.6		133.6-134.2m massive py + siliceous ore	11	133.6	10	8	0.10	7	9	15	1040	18.20	20.53
135			dark gray plagio crystal rich(10-20%) dacitic tuff, lapilli bearing		12	133.8	20	4	0.35	9	16	21	971	11.70	12.40
			matrix:glassy, pale olive gray glass film-patch(flat),												
140			lapilli:porphyritic dc-ad, siliceous rock with py diss., rare,black slate, mostly mm to 4cm in size, subrounded	overall pyrite content=5-10 %											
		Dacite tuff		138.5m:very fine py film zone											
145			144m:10cm siliceous fine dacite fragment												
			145.9-151.1m:silicified porphyritic dacite or tuff,	147.8-148.8m: partly dens py diss-film zone	13	147.9	10	6	0.60	6	15	32	271	10.1	10.84
150			155.2-155.6m:quartz-calcite veinlets 1-5mm, dip:20-50		14	148.3	10	4	0.35	4	16	25	1242	7.55	7.22
				151.75m: pyrite net											
155			156m:greenish essential lens-patch rich												
			158.5-158.8m:fine part?												
160			gradual change												
		164.1													
165		Lapilli tuff	garyish green lithic lappli tuff or lapilli stone matrix poor, fragment:siliceous pyrite ore, aphyric dacite green glass, rare black slate, mm-cm in size, subanguler-rounded												
170			gradual change												
		173.5	grayish green, fine aphyric, dacitic hyaloclastic breccia, 1-5cm in size intens pyrite network	pyrite network silicification	15	173.7	10	5	0.35	3	22	23	1070	4.09	3.10
175		Dacite breccia	gradual change												
		178.8	gree essential glass patch lapilli bearing dacitic tuff, crystal poor lapilli: gray siliceous dacite? glass patch:dip 40°												
180															
185		Dacitic tuff	186.9m:very fine siliceous pyritized fragments rich zone												
190			gradual change												
195		195.7	greenish gray foliated fine glassy dacite tuff pale green glass weak band siliceouse fragment bearing	very fine py diss weak											
200		Dacite tuff													

MJZC-5(2) Geological Columnar Section of Drilling (1:200)

MJZC-5 (3)

200m－300m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
205	= = = =	204.0	fractured coare 204.0-207.5m black glassy matrix, plagio porphyritic rock(Ad-Dc) 207.5-264.0m:grayish green gradually decreas glassy net (py, sil alteration)	silicification, py											
210			essential breccia part: pl 1-2mm, glass chip(green bluish green) pyx?(chloritized), plago porphyry 1-10cm	chlorite, minor pyrite											
215		Andesite (hyaloclastic)	accdental fragment: gray siliseous altered rock, sandstone black glassy rock, mm-cm	220.3m, 220.8m py-net											
220			223m:fine lapillitic hyaloclastite												
225			coarese plagioclase dominat ,2-3mm												
230			dark gray porphyritic fragment increas max;15cm												
235			, partly auto brecciated												
240			243.7m:2cm quartz vein dip:75												
245			246.8m;2-3cm calcite vein dip 80												
250			246.5-247.5m:lithic laplli - hyaloclastite buish green glass film, chip cont. weak foliated												
255				chlorite, minor py net											
260			10cm breccia: plagio porpyritic auto breccia lava pl:1-2mm with siliceous black fragment mm-cm												
265		264.0m	End of hole												
270															
275															
280															
285															
290															
295															
300															

MJZC-5(3) Geological Columnar Section of Drilling (1:200)

MJZC-6(1)

0m－100m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppb)	Pb (ppb)	Zn (ppb)	Ba (ppb)	Fe (%)	S (%)
	□ ∴ □ ∴		0-1.5m:soil and rock fragmnet												
5	∧－∧－∧		1,5-15.5m:fractured core, brown oxide fracture surface	pyrite net weak											
10			grayish green compact andesite lava, partly autobrecciated, plagio porphyritic(max 3mm), minor minor pyroxene phenocryst cont.												
15			grayish green compact, coarse plagio-crystal rich andesite												
20				20-24m:qz+ca vein rich											
25		Andesite	25-26m:fine part with pyrite net												
			27-28m:fractured core												
30			fine greenish lens or fragment(cm order) cont. up to 42.1m	ca+qz vein rich zone dip50-70,											
35			33.3-33.8m:fracture zone, core lost												
40		41.2													
	‖ ‖ ‖ ‖		gradual change to fine olive green to gray green andesitic tuff? with plagio dot lens	43-45m:ca vein rich pyrite+sil net fine											
45		Andesitic tuff													
50			fine olive greenish gray matrix>plagio dot andesitic fragment,	48.3-48.5m: dark gray net with pyrite											
		55.2													
55															
60			gray to grayish green fine mafic tuff with plagio dot andesitic(essential) fragment small glass chip cont												
		Andesitic tuff?		66.4-65m,py film rich											
65			63.8m:lapillitic essential lens(plagio dot) and accidental black pyritized slate bearing	65.4-65.7m, py net-film rich zone	16	67	5	35	0.75	34	33	55	163	6.34	4.98
			67.1m:py very fine band,1cm, 20 dip accompanied 10cm py net												
70															
			71-74m:grayish green mafic fine tuff	py film-net rich											
75															
			pale olive yellow green massive tuff with glass chip and porphyritic altered rock fragment												
80			81.3m:70° fault clay												
		82.0	gradual change												
85			coarse plagio rich, weak brecciated andesite lava	87.4m, 87.7m py net rich											
		Andesite													
90			gradually change to deep green fine mafic tuff?												
		94.8	pale grayish green lapilli bearing tuff white fine rock fragment(pumic?) cm plagio dot fragment	pyrite film											
95		Dactic tuff	99.65-100.05m:dark gray slaty tuff,bed =10dip	pyrite dot band											
100															

MJZC-6(1) Geological Columnar Section of Drilling (1:200)

MJZC-6 (2)

100m－200m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
105			pale green dacitic lapilli bearing tuff essential plagio-dot fragment, green glass chip, and accidenal black slate(rare) increas reddish rock, aphyric rock,sil-altered rock etc. foliation=30-40												
		106.0													
		Andesitic tuff	103.4m:shear zone, core lost												
110		109.9	106.0-109.9m:fractured, olive green fine to coarse andesitic glass tuff	very fine py diss-band 2-3%											
		Calcareous slate/tuff/slate	109.2-109.6m:fault shear zone with clay												
115		115.4	109.9-115.4m:calcareous slate>slate, tuff intercalation,bed=10, cleavage=30												
		Sandy limestone	gray well foliated sandy, conglotic breccia partly rich in black slate chip foliation or bedding=30-40(Max80)												
120		121.6													
125		Calcareous slate	dark gray calcareous slate, minor black slate, sandy limestone bed, partly py+silica band (mm) bearing foliation =10-30	py+silica mm band											
130			130.5-133m:kink folded sandy limestone well foliated												
135		136.4													
		Limestone conglo,ss	gray to light gray conglomeratic limestone sandstone, well foliated matrix:black calcareous slate fragment, light gray limestone, elongated mostly pebble size foliation =30												
140															
145		145.4													
150		Muddy limestone	dark gray calcareous mud dominant, well foliated, partly intercalated blak slate, sandy limestone foliation=20-30, partly folded and neary vertical												
155															
160			160.4-160.85m:black slate rich												
165															
170		170.9	168.9-169.2m:altarnation of black slate/ calcareous slate	170.9m: pyrite band zone											
		Slate	foliated black slate>siliceous mm band foliation=60-90 shear contact												
175		175.2													
180		Calcareous slate	dark gray fine muddy, well foliated												
185			182.5m:folded fold axis=foliation plane (30-40), bed=50												
		189.2													
190		Slate and Calcareous slate	folded and foliated black slate, calc. slate, with siliceous band foliation =10-20												
		194.9	194.9-195.9m:black slate and plagio dot glassy tuff, mix zone with very fine py bed	pyrite bed	17	195.3	10	7	0.60	16	25	28	864	10.6	12.2
195					18	196.4	10	7	0.55	7	17	68	103	5.78	4.86
		195.9 Dacite	plagio crystal rich, essential lens tuff upper part is fine	intens py-dissemination											
200															

MJZC-6(2) Geological Columnar Section of Drilling (1:200)

MJZC-6 (3)

200m－300m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
205	L L L L L	Dacite	grayish brawn to greenish gray, plagio-crystal rich lapilli bearing tuff,	pyrite film,diss 2-3%	19	202.2	10	4	0.35	3	5	82	368	1.93	0.68
210			accidental siliceous alterd rock, light gray aphyric rock, black siliceous rock matrix:glassy, green chip,plagio=0.5-2mm 7-10% vol,												
215			glass patches show foliation=20												
220			222.9-223.1m:pagio poor, fine part												
225			224.2-224.7m:plagio poor and glass chp cont.												
230			glass chip, patch gradually increase												
235	L L L L L	235.7		pyrite<0.5%											
240	△ L △ L		green ahyric-fine porphyritic lens, gray fine rock lapilli tuff												
245			deep green glass patch rich, foliation 20												
250	V ∩ V ∩	248.8	olive grayish green, lithic lapilli-tuff breccia or hyaloclastite												
255		Andesitic breccia													
260			matrix:green glass chip, plagio, sil-ser alt ball-chip fragment:gray porphyritic rock. altered rock,												
265			264.5-lapilli and autobreccia lens alternation												
270															
275		276.8													
280	V V V V		coarse plagio, green glass dot massive to autobreccia?	pyrite film dot, vein											
285		Andesite													
290			gark gray fine sel+sil alterd tuff? pyrite film-net , vein cont												
295				chlorite											
300			green fine-porphyritic rock	fine pyrite net	20	298.9	10	18	0.80	100	14	63	240	10.6	11.7

MJZC-6(3) Geological Columnar Section of Drilling (1:200)

MJZC-7(1)

0m－100m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
0			low core recovery, intens fracturing												
5			weatherd graysh brown fine andesitic or dacitic tuff?												
10			low core recovery, intens fracturing brown oxide fracture surface up to 28m												
15															
20			graysh green to weatheard brownish gray fine fractured (with high angle fracture) fine to coarse plagio-dot andesitic tuff? calcite and quartz vein fracture filling?												
25															
30		Andesitic hayaloclastic tuff-lapilli tuff	28-30m:grayish green andestic lapilli-or hyaloclastic tuff, glassy, pale yllow gray fragment(glass), pyritized chip cont												
35			31-34m:grayish green glassy matrix, andesitic lapilli tuff-hyaloclastite with black slate(max2X4cm), siliceous slate? and essential fragment, breccia, green glass chip(mm) foliation plane:dip10-15	35.3m:py-net											
40			35-:pale yellow gray fragment bearing andesitic glassy lapilli - hyaloclastite matrix:plagioclase(2mm), pyroxne(1mm) glass chip	blue-green chlorite											
45			37.8-46.5m:fractured core, high angle sharp joint												
50			49.5-52.1m:deep green glass film-chip (plagio bearing), lapilli tuff andesitic? foliation plane: dip 10												
		53.3													
55			autobreccia lava, hyaloclastic tuff												
60			greenish glass chip andesitic rock(tuff) partly porphyritic, coarse plagio rich, deep gray - black silicelos, glassy lamina or film bearing												
65		Andesite													
70															
75															
80		81.15													
85		Tuff//Slate	olive gray fine glassy tuff>black slate(cm) intercalation bedding plane10-20° 87.4m:fault,60 dip, solid clay	very fine py 1-2% diss											
		87.8													
90		Tuff	gradual contact, 50-55 dip, folding												
95			olive gray fine tuff, glass rich, partly black slate film cont.and pale pumiceous patch band, dip 20° well foliated essental glass patch increas												
100		100.0	contact:30°												

MJZC-7(1) Geological Columnar Section of Drilling (1:200)

MJZC-7 (2)

100m－200m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
105		Dacitc tuff	100.0-102.2m:graysh green partly reddish pl dot, glassy fine tuff, green glass chip cont 102.2-107.3m:lapilli bearing pagido dot glassy tuff, foliation=5-20												
		107.3m	fault contact with clay?												
	// // // //	Tuff	107.3-109.15m:olive green fine foliated tuff												
110		109.15 Andesite	graysh green massive porhyritic andesite upper part is brecciated												
115		115.1 Tuff 118.2	siliceous gray to grayish green foliated andesitic tuff, glassy, foliation=10-30												
120		Slate	black slate>siliceous band well foliated,lower contact dip=20												
		120.4													
125		Dacitic tuff	olive-pale grayish green glassy lapilli bearing tuff, fragment:siliceous py ore, aphyric gray rock, black slate, mm-cm in size, foliation=40-50 essential plagio rich elongated fragment												
130		132.9	132.5-132.9m:marginal black grass part calcite vein filled with contact												
135		Calcareous slate 137.6	gray to dark gray calcareous slate>black slate, with pyrite fine band, kink folding foliation plane=10-40												
140	⊥ ⊥ ⊥ ⊥	Sandy limestone	gray foliated, black thin slate intercalated												
		140.5	fine framboidal pyrite+silica band mm (140.5m, 171.7m, 141.8m etc)	pyrite band mm											
145			dark gray fine cacareous slate>black slate well foliated, foliation plane=10-30 145.8-147.5m:black slate dominant	pyrite diss. 1-2% in slate											
150		Calcareous slate													
155															
160		160.4													
	⊥ ⊥ ⊥ ⊥	Limestone	black mm Mn band? gray fine muddy-sandy partly brecciated calcite veinlets rich												
165		167.1	bed or foliation=20-30 fault contact, 2cm clay												
170			dark gray muddy to sandy calcareous slate>black slate, well foliated and laminated 171-173m:folding, foliation or bed=50-55												
175		Calcareous slate													
			178.6-179.2m:shear and boudinage												
180															
			181.6m:folding,overturned												
185															
190			siliceous mm band increas foliation or bed =30-70		21	195.1	10	3	0.35	15	7	87	897	4.24	2.83
		195.1	zigzag boundary dip=15												
195		slate//sandy tuff	intercalation of pyritic sandy tuff and slate with pyrite bed	pyrite bed	22	198.5	10	3	0.10	21	13	84	1300	4.25	4.87
200															

MJZC-7(2) Geological Columnar Section of Drilling (1:200)

MJZC-7 (3)

200m－300m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
205		Tuff//slate	pyritic tuff, calcareous slate, intercalation bed=10-30 dip	pyrite band diss	23	203.0	10	4	0.7	18	13	98	1480	4.51	4.85
					24	204.1	10	2	0.35	15	12	55	1880	4.7	4.83
			205.2m, black slate, calcareous slate mix		25	205.8	10	3	0.90	24	8	46	2000	3.8	3.88
			207.2-207.5m:shear fault contact												
210		207.5 Dacite(tuff)	gray pyrite+clay altered plagio rich dacitic tuff ,glassy matrix	pyrite, caicite, clay mineral(ser)	26	207.9	10	2	0.35	4	6	59	967	3.38	1.86
			green glass chip cont.												
215		214.8	gradual change												
		Dacitic lapilli tuff	pale grayish green lapilli tuff, matrix=green glass chip(5-20mm) cont.												
220			fragment=gray aphyric to fine rock,py diss siliceous rock, foliation 10-20												
225			fragment increas(lapilli stone?)												
		228.1	pyrite band zone	227.85-228.0 py band zone	27	228.0	10	3	0.60	367	12	143	484	5.65	2.89
230		Dacite	fault shear boundary:dip 40												
		233.2	deep green glassy plagio dacite,lapilli bearing												
235		Dacite Braccia	black glassy brecciated rock or hyalo-clastite? with white to pale gray aphyric fragment	very fine py diss											
240		243.4	gradual change to aphyric grayish andesite												
245		Andesite	fine aphyric andesite, gray to pale green altered	silicification py diss(max 5%)											
250		250.5	silicified boundary with pyrite		28	250.5	10	3	0.35	13	5	75	464	4.84	1.32
255		Andesitic tuff	greenish coarse andesite, matrix contain coarse plagioclase(cal or epidote altered), siliceous fragment ball? minor pyroxene(chl)	chlorite,epidote											
260			262.3m:60 dip shear fault												
265			pale brown fine to very fine sil-ser alterd fragment(very fine pyrite cont) in matrix green glass chip, coarse plagio dot.												
270															
275				silicification pyrite, chl-ep?											
280			278.5-282m:green fine part, tuff or aphyric lava fragment												
285															
290			289-295m:autobreccia, pyroxene porhyritic or fine aphyric breccia in glassy grandmass												
295															
300															

MJZC-7(3) Geological Columnar Section of Drilling (1:200)

MJZC-8(1)

0m－100m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
5			0-6m:no core												
10	〃 〃 〃 〃 〃	Tuff	weathered oxide and fractured core,fine green tuff with slate												
15	〃 〃 〃 〃 〃	16.2													
20	△ △ △ △	Breccia	dark gray glassy tuffaceous breccia? altered(py disseminate) frgament bearing matrix=black glassy, light gray aphyric fragment dominat												
25	△ △ △ △	24.5	weak foliation=20°												
			gradual change												
30			plae green plagio dot, glassy tuff dacitic to rhyolitic with altered rock, essential and accidental fragment bearing												
35		Dacitic tuff	foliation=20-30°												
40															
45			46.4-47.5m:reddish brown hematite band and plagio crystal increas foliation plane=30°												
50															
55			flat essential lass or lens(neary aphyric), partly black accidental fragment(1-3cm) bearing												
60		60.2													
65		Tuff	olive green laminated, foliated glass tuff pyritic ore fragment bearing foliation=5-30°												
		66.7	66.7-67.3m:contact,segrigation quartz zone												
70		Dacitic tuff	grayish green glassy tuff, foliated and partly small kink folded plagioclase 0.5-2mm(5-10%), accidental gray, black fragment bearing												
75		77.5	gradual change												
		Tuff	gray to olive gray foliatete pyritic tuf (py=max10%)												
80		79.0	gray calcareous slate>black slate(79-79.4m, 80.5-80.9m, with py band)												
		83.6		83.7-84m: py+sph+gn+cp sil band mm	29	83.7	10	26	11.7	0.268 (%)	1.69 (%)	3.94 (%)	1920	3.65	6.28
85	… … … …		dark gray fine, tuffaceous partly sandy, and well foliated, pyrtic tuff bed cont	84.6m:py diss 5-10%(10cm)	30	86.0	10	9	1.15	70	728	16	660	3.08	1.71
90	… … … …	Tuffaceous slate	foliation(cleavage)plae=5-30°	85.8-86m: py+sph+gn+cp sil band mm											
			90.1-92.2m:plagio rich sandy tuff with fine pyrite dissemination												
95	… … … …	96.1													
		98.0 Sandy tuff	gradual change grayish green coarse to lapili bearing sandy tuff, essential lens, plagio rich												
100		Dacitic tuff	gradual change												

MJZC-8(1) Geological Columnar Section of Drilling (1:200)

MJZC-8 (2)

100m－200m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
		Dacitic tuff	plagio dot glassy, foliation=20-30°												
		104.4	contact 15° sharp												
105			black slate>pyritic olive tuff, well foliated and folded												
			msall kink fold(111.8m 113.7m etc)	108.8, 109.0m 2-3cm py+sph band											
110			very fine gray tuffaceous lamina												
			coare separated or fracured along cleavage plane	110.2m(10cm) py band											
115				110.6m(5cm) py band+sph	31	115.7	30	176	47.5	0.23 (%)	1.28 (%)	1.33 (%)	44	8.2	10.26
		Slate	sandy tuff part(23.5-124.4m, 126.1-126.m) bed//foliation=10°												
120				116-116.2m py band with sph, gn,											
125															
			black slate dominant partly sandy bed or fragment, py bed(130.3m)												
130															
		132.0	boundary is fractured with calcite vein												
		Sandy tuff	coarse plagio cont, sandy tuff intercalated black glassy tuff, slate bed												
135		137.0	sharp cntact 5-10°												
140			olive gray fine pyritic foliated tuff, black glassy part intercalated		32	141	50	22	9.85	18	37	461	2270	11.1	12.8
145			140.5-155.5m:black glassy slaty?part dominant, accompanied with py bed (colloform texture) and flat light gray glass essential fragment	pyrite diss-emination 5-10%											
150		Tuff	foliation=5-20°												
155															
			below 162m:black glassy part increas												
160															
		164.5													
165		Black glassy tuff	olive gray tuff fragment bearing fine dissemination py net-film rich	py:5-15%	33	168.6	10	15	7.65	20	17	455	4460	4.26	4.64
		172.8	gradual change												
170				dissemination pyrite 5-10% (framboidal py cont.)											
			well foliated gray to yellow tuff?sandy olive glass fragment, chip , shear lens foliation=20°												
175		Altered tuff													
		178.8	gradual chang												
180		Sandy tuff	gray plagio crystal rich sandy tuff, less foliated with quartz vein												
		183.8													
185			olive gray to gray sandy, glassy foliated tuff												
190		Altered tuff													
195			195.7m(20cm):fine to lapillitic(sheared) tuff, normal grading?												
			well shear flat banded												
200			end of hole(200.1m)												

MJZC-8(2) Geological Columnar Section of Drilling (1:200)

MJZC-9(1)

0m－100m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
5		overbarden	reddish brawn soil and weatherd fuff fragment												
10		10.2													
15			gray to greenish gray coarse-lapilli bearing plagioclase, glass chip and accidental altered rock, slate ,pyrite dissemination fragment												
20		Sandy tuff													
25			27-28m:grading, sandy to glassy tuff												
		28.9													
30		Slaty tuff	28.9-31.4m:black fine slate-tuff lamination												
		31.4		py-diss, 1-2%											
35		Sandy tuff	plagioclas and glass dominant, coarse to lapilli(siliceous aphyric) bearing tuff												
		36.8													
40		Slate	black slate, partly sandy fractured coare, low core recovery												
		40.3													
45		Sandy tuff	coarse-lapilli bearing,py ore, slate chip, well foliated(foliation=10)												
		46.1													
50		Tuff/slate	dark gray tuffaceus, well foliated	py dot, band											
		52.2													
55		Slate	below 52.2:black slate ,sandy tuff altarnation, bedding plane=5-10°												
60		61.1													
			sheared contact												
65			olive gray fine glassy, foliated dacitic? ser+qz+py altered												
			quartz vein rich zone	py diss 5-10%											
70			70.0-30cm:green glass mm chip bearing tuff zone												
75			75-78m:shear or fragmented tuff, well foliated and altered												
		Altered tuff	foliation=10-40°												
80			82-83.1m:quartz vein rich												
85			86-90m:white altered glass patch(pumice?) well banded,and foliated												
90															
			94.5-95.3m:fine green tuff, weak pyritization		34	91.2	10	21	1.30	9	6	48	579	4.51	4.37
95															
100			99.5-100m:grayish green fine tuff												

MJZC-9(1) Geological Columnar Section of Drilling (1:200)

MJZC-9 (2)

100m－200m

DEPTH (m)	GEOLOGICAL COLUM	ROCK NAME	DESCRIPTION	ALTERATION and MINERALIZATION	SAMPLE No.	SAMPLE DEPTH (m)	SAMPLE WIDTH (cm)	CHEMICAL ANALYSIS Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ba (ppm)	Fe (%)	S (%)
105		Tuff	gray siliceous, sericite, pyrite altered partly brecciated, and accidental rock fragment bearing 100-105m:lapillitic breciated(gray essential breccia)												
115			weak to moderate bracciated foliated tuffaceous rock foliation plane=0-40°	pyrite,silicification											
125			125.5-126.5m:greenish chloritic fine andesitic tuff, sharp lower contact indicate fragment?												
130		130.8													
		Andesitic tuff	deep green andesitic glassy, py - diss week												
135		133.8													
140		Tuff	gray tuff and green chloritic tuff mix, olive glass cont. well foliated(0-20°) partly lapillitic brecciated												
145		144.9													
150			deep greenish, fie glassy andesitic? partly brecciated, chl+py>ser altered	146.3-146.6m pyrite quartz vein - net											
155			151.7-153.6m:gray aphyric fragmented breccia zone	py band											
160		Andesitic tuff	well foliated green tuff and gray altered part mix, foliation=10-20°												
165		165.6													
170		Andesitic breccia	well foliared, banded, gray aphyric breccia, fragment and fine matrix	168.6m, pyrite band 5mm											
		174.2	calcite and quartz segrigation filled with contact zone												
180		Andesite	greebish fine-porphyritic, chl-altered lava, qz+ca+py veinlet cut foliation plane and high angle												
185					35	186.4	10	18	1.90	40	12	56	156	4.51	3.33
190															
195															
200															

MJZC-9(2) Geological Columnar Section of Drilling (1:200)