

**REPORT ON THE MINERAL EXPLORATION
IN
THE ZACUALPAN AREA,
THE UNITED MEXICAN STATES
PHASE III**

MARCH 2004

**JAPAN INTERNATIONAL COOPERATION AGENCY
JAPAN OIL, GAS AND METALS NATIONAL CORPORATION**

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Preface

The Japanese Government decided to conduct a mineral exploration program consisting of geological, geochemical and geophysical surveys in the Zacualpan area, in response to the request from the Government of the United Mexican States. The purpose of the program is to estimate its potential for mineral deposits. The Japanese Government entrusted the implementation of this plan to the Japan International Cooperation Agency (JICA) and JICA entrusted the enforcement of the program to the Metal Mining Agency of Japan (recently, Japan Oil, Gas and Metals National Corporation) due to the specialty of the program. MMAJ started the survey program in the fiscal year of 2001 and dispatched a two members survey team to Mexico from July 21 to November 14, 2003.

The field survey program in the area has completed as scheduled in cooperation with the Consejo de Recursos Minerales and the concerned Governmental organizations of Mexico.

Finally, We wish to express a deep appreciation for the cooperation of the concerned Governmental organizations of Mexico and Japan.

March, 2004

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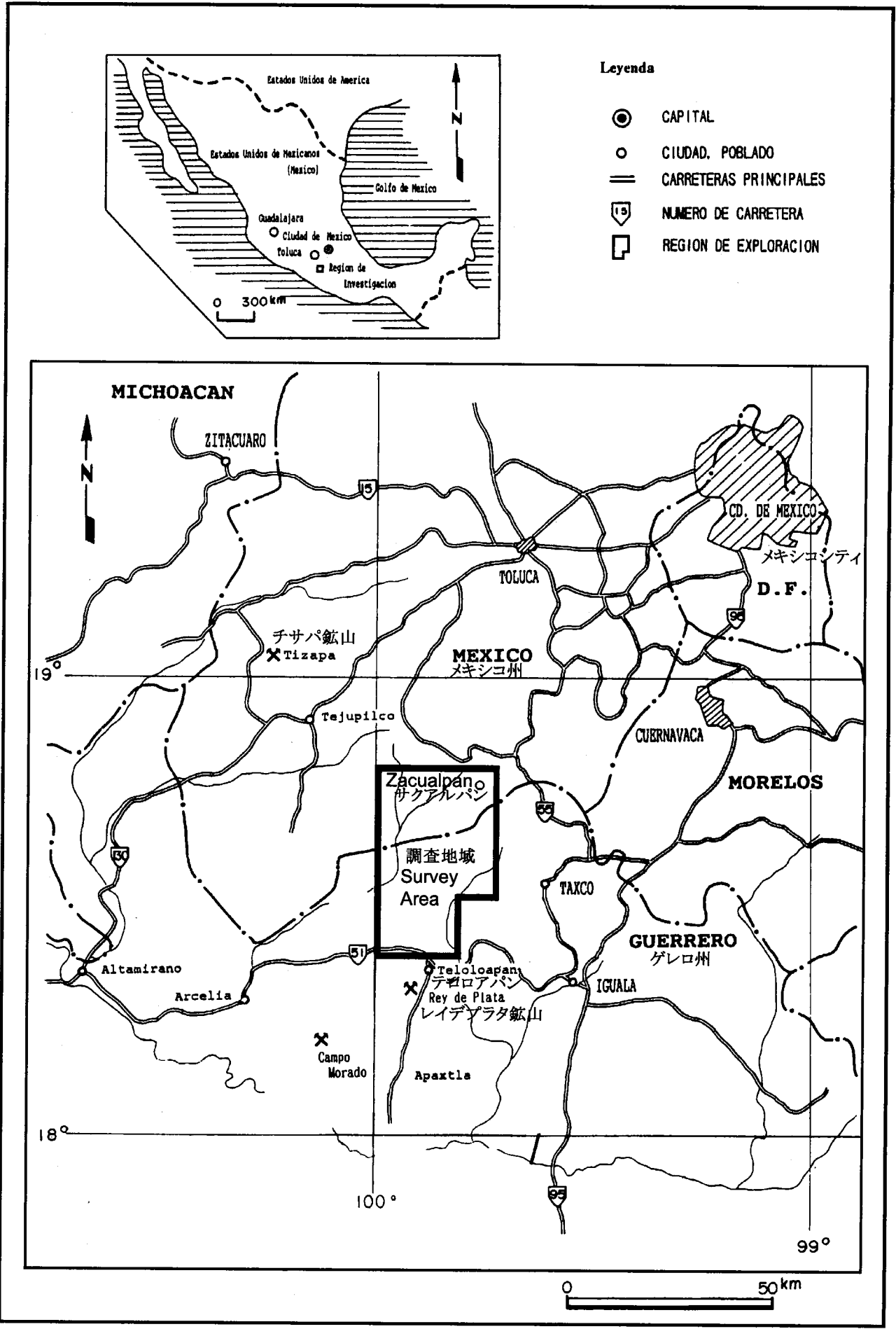


Fig.1 Location Map of Zacualpan Area

Summary

The present survey was conducted, with the aim of discovering volcanic massive sulfide deposits of economic value and technical exchange with counterpart agencies, through the investigation and evaluation of geology and mineralization in the Zacualpan area of the United Mexican States.

A survey of two boreholes in the Santiago Salinas district, a detailed geological survey and a survey of two boreholes in the Capire district, a detailed geological survey and a survey of two boreholes in the La Campana district were conducted and existing data was collected and analyzed. All of these districts are situated in the Aurora area selected on the basis of the results of the second phase survey.

According to the survey, the geology of the Aurora area consists of lower volcanic rocks, sedimentary rocks, upper volcanic rocks, andesitic intrusive rocks, of the Villa Ayala Formation and the Pachivia Formation. The lower volcanic rocks of the Villa Ayala Formation consist of lower andesitic volcanic rocks and upper dacitic tuff. Sedimentary rocks are mainly composed of calcareous slate and accompanied by limestone and tuff. The survey also revealed that the upper volcanic rocks consist of andesitic volcanic rocks and dacitic tuff.

The drilling survey in the Santiago Salinas district discovered a massive or disseminated pyritic layer, which may be an extension of mineralization zones observed on the outcrops, but did not show the mineralization of Pb or Zn.

In the Capire district, the Capire deposit and Aurora 1 deposit occur in the sedimentary rocks, and a pyritic dissemination zone and thin layer were recognized at the boundary between the lower volcanic rocks and the sedimentary rocks near the Tlanilpa mineral showing. Geochemical anomalies were extracted near the Aurora 1 deposit, in the western part to the northwestern part of the Capire deposit, and in the east of the Tlanilpa mineral showing. On the basis of the results obtained, boring surveys (MJZC-6 and MJZC-7) were conducted in the east of the Tlanilpa mineral showing. In MJZC-7, interbeds of pyritic layer, tuff, and slate corresponding to an extension of the Tlanilpa mineral showing were intersected over about 10 m, but an ore body of economic value was not discovered.

In the La Campana district, the Manto Rico deposit and the La Campana mineral showing occur in sedimentary rocks, and an alteration zone accompanied by a remarkable pyritic dissemination was recognized in foliated tuff (lower volcanic rocks) in the western part to the northern part of the district. The geochemical survey extracted geochemical anomalies in the southern part of the Manto Rico deposit, in the eastern part of the Otates village, in the western part to the eastern part of the La Campana mineral showing. On the basis of this result, drilling surveys (MJZC-8 and MJZC-9) were carried out in the eastern and western parts of the La Campana mineral showing. At MJZC-8, a mineralization zone of a several-centimeter thin layer mainly composed of Pb-Zn was captured in some places to the depth of 80 to 120 m. The analysis showed 0.268%/Cu, 1.69%/Pb, 3.94%/Zn, and 1,920 ppm/Ba at the depth of 83.7 m and 176 ppb/Au, 47.5 ppm/Ag, 0.231%/Cu, 1.28%/Pb, and 1.33%/Zn at the depth of 115.7m to 116.0 m.

The collection and analysis of existing data showed that there is a 1.2 million tons of ore body having an average grade of Ag: 73 g/t and Zn: 1.13% in an underground shallow place between the Aurora 1 deposit and the Capire deposit. It was also clarified that a small-scale mineralization zone mainly composed of Pb-Zn was captured in the sedimentary rocks of the Villa Ayala Formation of each district.

From the above results, large ore bodies were unlikely to have been formed because small-scale mineralization zones are widely distributed and development of hydrothermal systems are spread out in this area. It was concluded that there is little possibility of the formation of massive sulfide ore bodies of a high economic value.

CONTENTS

Preface

Location Map of Zacualpan Area

Summary

Part I The General

Chapter 1 Introduction	1
1-1 The Background and Objective of the Survey	1
1-2 Conclusions and Recommendation of the Second Year	1
1-3 Outline of Phase III.....	5
Chapter 2 Geography of Survey Area	8
2-1 Location and Access	8
2-2 Topography, Climate and Vegetation	8
2-3 Infrastructures	9
Chapter 3 General Geology and Mining.....	10
3-1 Outline of Geology	10
3-2 History of Mining in the Area	12
Chapter 4 Integrated Discussion of Survey Result	13
4-1 Characteristics of Mineralization in Teloloapan Subterrane	13
4-2 Characteristics of Mineralization and Geological Structure in Survey Area	13
4-3 Mineralization Model	17
4-4 Potential for Ore Deposit	18
Chapter 5 Conclusion and Recommendation	21
5-1 Conclusion	21
5-2 Recommendation	24
Part II Details of the Survey	
Chapter 1 Collection and Analysis of Previous Data	25
1-1 Survey Method	25
1-2 Survey Result.....	25
1-3 Summary	27
Chapter 2 Geological Survey	33

2-1 Survey Method	33
2-2 Survey Result	33
1 Capire District	33
2 La Campana District	40
3 Rock Geochemical Survey	79
Chapter 3 Drilling Survey	93
3-1 Survey Method	93
3-2 Survey Result	98
1. Santiago Salinas District	98
2 Capire District	106
3 La Campana District	116
4 Result of Isotope Analysis	124
Part III Conclusion and Recommendation	
Chapter 1 Conclusion	161
Chapter 2 Recommendation	164
References	165
Appendixes	

List of Figures

Fig. 1 Location Map of Zacualpan Area	
Fig. 1-3-1 Tectonostratigraphic Terranes of Mexico	11
Fig. 1-4-1 Integrated Interpretation Map	19
Fig. 2-1-1 Location Map of Previous Exploration	28
Fig. 2-1-2 Capire-Aurora 1 Cross Section	29
Fig. 2-1-3 IP Anomaly Map of Capire-Aurora 2	31
Fig. 2-2-1 Geological Map of Capire District	47
Fig. 2-2-2 Geological Section of Capire District	49
Fig. 2-2-3 Schematic Stratigraphic Column of Capire District	51
Fig. 2-2-4 Location Map of Ore Showings (Capire District)	53
Fig. 2-2-5 Sample Location Map (Capire District)	55
Fig. 2-2-6 Stereographic Projection (Capire District)	56
Fig. 2-2-7 Distribution Map of Alteration Minerals (Capire District)	59
Fig. 2-2-8 Geological Map of La Campana District	61
Fig. 2-2-9 Geological section of La Campana District	63
Fig. 2-2-10 Schematic Stratigraphic Column of La Campana District	65
Fig. 2-2-11 Location Map of Ore Showings (La Campana District)	67
Fig. 2-2-12 Sample Location Map (La Campana District)	69
Fig. 2-2-13 Stereographic Projection (La Campana District)	70
Fig. 2-2-14 Distribution Map of Alteration Minerals (Capire District)	73
Fig. 2-2-15 Scatter Diagram	A-6
Fig. 2-2-16 Histogram of Alteration Index	84
Fig. 2-2-17 Distribution Map of Alteration Index (Capire District)	85
Fig. 2-2-18 Distribution Map of Alteration Index (La Campana District)	86
Fig. 2-2-19 Distribution map of As (Capire District)	A-7
Fig. 2-2-20 Distribution map of Ba (Capire District)	A-8
Fig. 2-2-21 Distribution map of Cu (Capire District)	A-9
Fig. 2-2-22 Distribution map of Pb (Capire District)	A-10
Fig. 2-2-23 Distribution map of Zn (Capire District)	A-11

Fig.2-2-24 Distribution map of S (Capire District).....	A-12
Fig. 2-2-25 Distribution map of As (La Campana District).....	A-13
Fig. 2-2-26 Distribution map of Ba (La Campana District)	A-14
Fig. 2-2-27 Distribution map of Cu (La Campana District)	A-15
Fig. 2-2-28 Distribution map of Pb (La Campana District).....	A-16
Fig. 2-2-29 Distribution map of Zn (La Campana District).....	A-17
Fig. 2-2-30 Distribution map of S (La Campana District)	A-18
Fig. 2-2-31 Result of Principal Component Analysis (Capire District).....	87
Fig. 2-2-32 Result of Principal Component Analysis (La Campana District).....	88
Fig. 2-2-33 Distribution map of each element	A-19
Fig. 2-2-34 Geochemical Anomaly Map (Capire District).....	89
Fig. 2-2-35 Geochemical Anomaly Map (La Campana District)	91
Fig. 2-3-1 Drilling Survey Location Map	126
Fig. 2-3-2 Drilling Site Location of MJZC-4, MJZC-5	127
Fig. 2-3-3 Geological Columnar Section (MJZC-4).....	129
Fig. 2-3-4 Geological Columnar Section (MJZC-5).....	131
Fig. 2-3-5 Geological Section of Drilling Survey (Santiago Salinas District).....	135
Fig. 2-3-6 Drilling Site Location of MJZC-6, MJZC-7	137
Fig. 2-3-7 Geological Columnar Section (MJZC-6).....	138
Fig. 2-3-8 Geological Columnar Section (MJZC-7).....	141
Fig. 2-3-9 Geological Section of Drilling Survey (Capire District).....	145
Fig. 2-3-10 Drilling Site Location of MJZC-8, MJZC-9	147
Fig. 2-3-11 Geological Columnar Section (MJZC-8).....	148
Fig. 2-3-12 Geological Columnar Section (MJZC-9)	150
Fig. 2-3-13 Geological Section of Drilling Survey (La Campana District)	153
Fig. 2-3-14 Result of Geochemical Analysis of MJZC-4, MJZC-5.....	155
Fig. 2-3-15 Result of Geochemical Analysis of MJZC-6, MJZC-7.....	156
Fig.2-3-16 Result of Geochemical Analysis of MJZC-8, MJZC-9.....	157
Fig.2-3-17 Result of S Isotope Analysis.....	158
Fig.2-3-18 Result of Pb Isotope Analysis	159

List of Tables

Table 2-2-1 Result of Microscopic Observation	74
Table 2-2-2 Result of Ore Grade Assay	76
Table 2-2-3 Result of X-Ray Diffraction	77
Table 2-2-4 Result of Chemical Analysis	A-1
Table 2-2-5 List of Statistic Data for Chemical Analysis	A-3
Table 2-2-6 Result of Principal Component Analysis	A-4
Table 2-3-1 List of Drilling Equipment	A-39
Table 2-3-2 List of Used Diamond Bits and Consumption Goods	A-39
Table 2-3-3 Drilling Summary	A-40
Table 2-3-4 Drilling Schedule.....	A-46
Table 2-3-5 Result of Microscopic Observation of Thin Section (core)	A-47
Table 2-3-6 Result of Microscopic Observation of Polished Section (core)	A-48
Table 2-3-7 Result of X-Ray Diffraction of Drilling Survey.....	A-49
Table 2-3-8 Result of Ore Grade Assay of Drilling Survey.....	A-50
Table 2-3-9 Result of Chemical Analysis of Drilling Survey.....	A-51
Table 2-3-10 Table Result of S Isotope Analysis	A-52
Table 2-3-11 Table Result of Pb Isotope Analysis.....	A-53

List of Plate

1. Geological Map of Capire District (1:2,500)
2. Geological Section of Capire District (1:2,500)
3. Location Map of Ore Showings (Capire District 1:25,000)
4. Sample Location Map of Capire District (1:2,500)
5. Geochemical Anomaly Map of Capire District (1:2,500)
6. Geological Map of La Campana District (1:2,500)
7. Geological Section of La Campana District (1:2,500)
8. Location Map of Ore Showings (La Campana District 1:25,000)
9. Sample Location Map of La Campana District (1:2,500)
10. Geochemical Anomaly Map of La Campana District (1:2,500)
11. Geological Columnar Section of Drilling (1:200)