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**GEOLOGY AND MINERALOGY OF THE MAE THAN BALL CLAY DEPOSIT,
AMPHOE MAE THA, CHANGWAT LAMPANG**

Mr. Suthisak Thowanich

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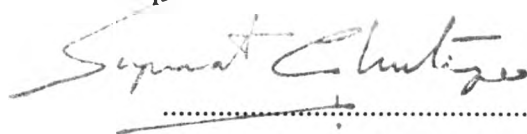
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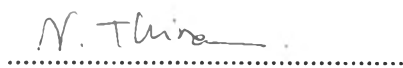
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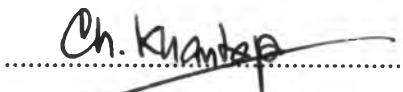
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พิมพ์ขึ้นจากบทคัดย่อวิทยานิพนธ์ที่ตีพิมพ์ในกรอบสี่เหลี่ยมที่พิมพ์อยู่บนเดียว

สุทธิศักดิ์ โทวนิช : ธรณีวิทยาและแร่วิทยาของแหล่งแร่ดินบอลล์เคลย์แม่ทาน อำเภอแม่ทะ จังหวัดลำปาง (GEOLOGY AND MINERALOGY OF THE MAE THAN BALL CLAY DEPOSIT, AMPHOE MAE THA, CHANGWAT LAMPANG) อ.ที่ปรึกษา รศ.ดร.วิสุทธิพิสฺสธอานนท์ รศ.ดร.ชัยยุทธ ชันทรพร 114 หน้า ISBN 974-633-290-2

พื้นที่ที่ทำการศึกษารอบคลุมพื้นที่ประมาณ 50 ตารางกิโลเมตร บริเวณอำเภอแม่ทะ จังหวัดลำปาง ทางภาคเหนือของประเทศไทย การศึกษาในครั้งนี้เป็นการศึกษาลักษณะทางด้านธรณีวิทยาของบริเวณแม่ทาน ซึ่งรวมถึงลักษณะเฉพาะ การกระจายตัว และการกำเนิดของดินบอลล์เคลย์แม่ทาน แอ่งแม่ทาน เป็นแอ่งสะสมตะกอนระหว่างหุบ เขาในช่วงมหายุคซีโนโซอิก ซึ่งมีการสะสมตัวของตะกอนขนาดกลางถึงละเอียดร่วมกับการเกิดถ่านหิน การกระจายตัวของหินที่มีอายุแก่กว่ามหายุคซีโนโซอิกรอบบริเวณแอ่งแม่ทานประกอบไปด้วยหินภูเขาไฟยุคเพอร์โม-โทรแอสซิกทางด้านตะวันตกของแอ่งแม่ทาน ในขณะที่หินตะกอนชุดลำปาง ที่มีอายุอยู่ในยุคโทรแอสซิก ครอบคลุมพื้นที่ทางด้านตะวันออกของแอ่งแม่ทาน ลักษณะเฉพาะตัวและการกระจายตัวของดินบอลล์เคลย์แม่ทานมีความเกี่ยวข้องกับองค์ประกอบทางด้านแร่คือ ส่วนใหญ่ประกอบไปด้วยแร่เคโอลิไนต์ ส่วนน้อยประกอบไปด้วยแร่อีลไลต์ ควอร์ตซ์ และการสลับชั้นของแร่อีลไลต์-สเมกไทต์ อินทรีย์สารในรูปของผลรวมของสารประกอบคาร์บอนมีค่าเฉลี่ยประมาณ 0.26 เปอร์เซ็นต์ ส่วนองค์ประกอบทางเคมีที่สำคัญของดินบอลล์เคลย์ได้แก่ ซิลิกามีค่าประมาณ 74 เปอร์เซ็นต์ อลูมินามีค่าประมาณ 20.3 เปอร์เซ็นต์ และเฟอร์ริกออกไซด์มีค่าประมาณ 1.29 เปอร์เซ็นต์ ดินบอลล์เคลย์ในแอ่งแม่ทานส่วนมากจะพบทางด้านตะวันตกเฉียงใต้ของแอ่งมีลักษณะ เป็นชั้นและมีความหนาอยู่ในช่วง 5 ถึง 20 เมตร และอยู่ลึกจากผิวดินโดยเฉลี่ย 0 ถึง 100 เมตร ชั้นดินบอลล์เคลย์นี้มีการพบอยู่ร่วมกับชั้นถ่านหินและชั้นของตะกอนที่มีขนาดของตะกอนตั้งแต่เม็ดขนาดกลางจนกระทั่งถึงขนาดเล็ก การสะสมตัวของตะกอนในแอ่งแม่ทานนี้เป็นการสะสมตัวภายใต้สภาวะแวดล้อมแบบ fluvio-lacustrine ดินที่มีความ เป็นไปได้ในการที่จะ เป็นหินต้นกำเนิดของดินบอลล์เคลย์ได้แก่หินภูเขาไฟยุคเพอร์โม-โทรแอสซิกซึ่งพบทางขอบด้านตะวันตกของแอ่งแม่ทานและมีความ เป็นไปได้ที่จะมีการวางตัวอยู่ใต้ชั้นตะกอนของมหายุคซีโนโซอิกทางด้านตะวันตกเฉียงใต้ของแอ่งแม่ทาน

ภาควิชา ธรณีวิทยา
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ลายมือชื่อนิสิต
ลายมือชื่ออาจารย์ที่ปรึกษา
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SUTHISAK THOWANICH : GEOLOGY AND MINERALOGY OF THE MAE THAN BALL CLAY DEPOSIT, AMPHOE MAE THA, CHANGWAT LAMPANG. THESIS ADVISOR : ASSOC.PROF.VISUT PISUTHA-ARNOND, Ph.D. AND ASSOC.PROF.CHAIYUDH KHANTAPRAB, Ph.D. 114 pp. ISBN 974-633-290-2

The study area is covered an area approximately 50 square kilometres in Amphoe Mae Tha, Changwat Lampang in the northern part of Thailand. This study is focusing upon the appraisal of the geological aspects of the Mae Than area, including the characteristics, distribution, and possible genesis of the Mae Than ball clay. The Mae Than basin is the Cenozoic intermontane basin infilled with medium- to fine-grained clastic associations and carbonaceous sediments. Considering the distribution of pre-Cenozoic rocks surrounding the Mae Than basin, the Permo-Triassic volcanic associations are exposed in the western part of the basin whereas the clastic sediments of Lampang Group cover the eastern part of the basin. Characteristics and distribution of the Mae Than ball clay have revealed that the mineralogical composition are mainly disordered kaolinite with minor amount of illite, quartz and traces of interstratified illite-smectite. The organic matters content in terms of total carbon is averaged about 0.26 per cent. The important chemical composition of the ball clay is approximately 74 per cent SiO₂, 20.3 per cent Al₂O₃, and 1.29 per cent Fe₂O₃. The ball clay in the Mae Than basin is mainly discovered in the SW part of the basin as layers with the thickness ranging from 5-20 metres within the average depth range of 0-100 metres below the ground surface. The ball clay layers are associated with coal seams and other medium- to fine-grained clastic sequences. They are believed to be deposited under the fluvio-lacustrine environment. The potential source rocks of the ball clay are identified to be the Permo-Triassic volcanic association exposed at the western margin of the basin and probably underlying the Cenozoic sequence in the SW part of the basin.

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