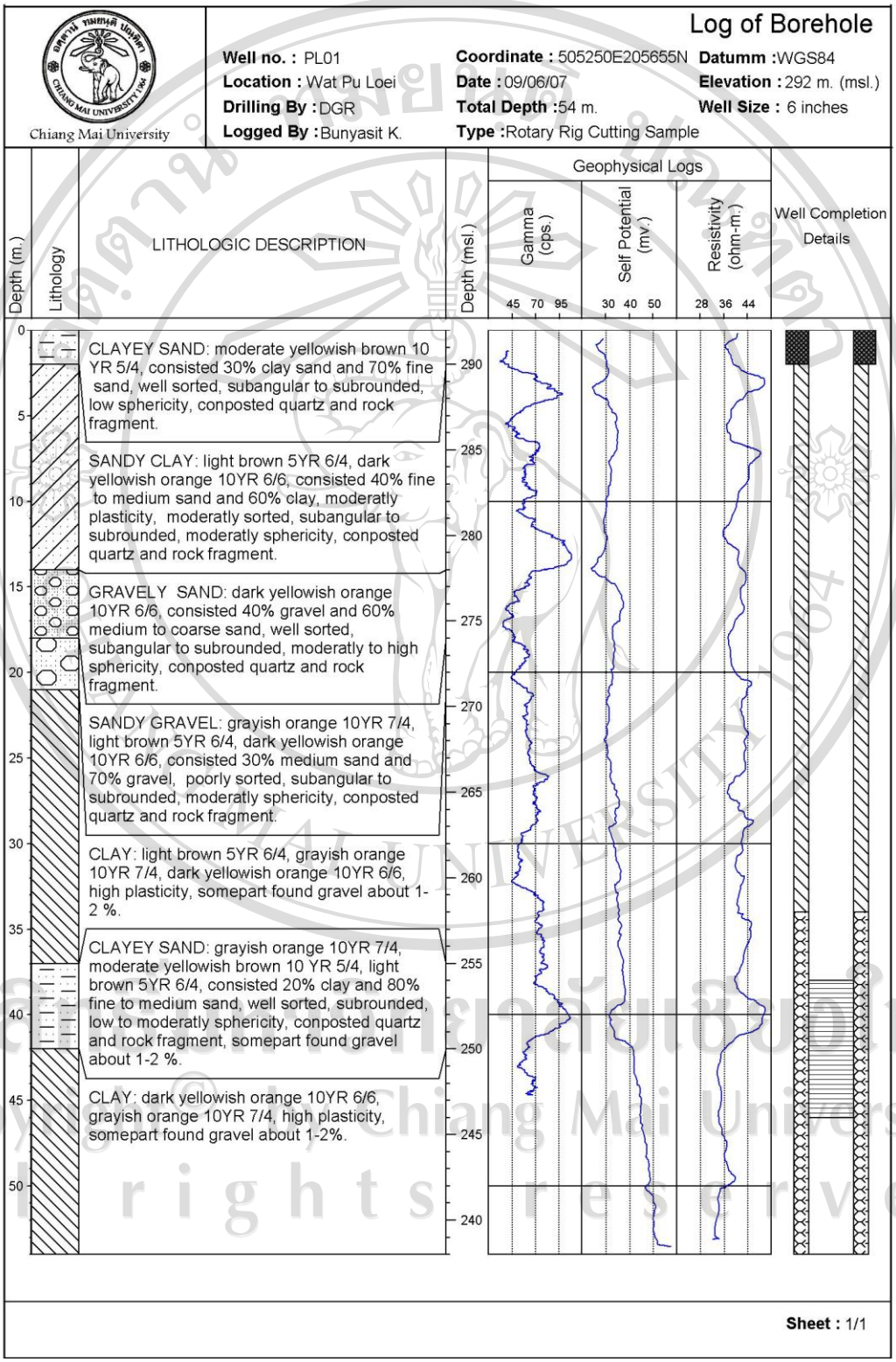
APPENDICES

APPENDIX A
LITHOLOGIC LOG DATA

APPENDIX A1

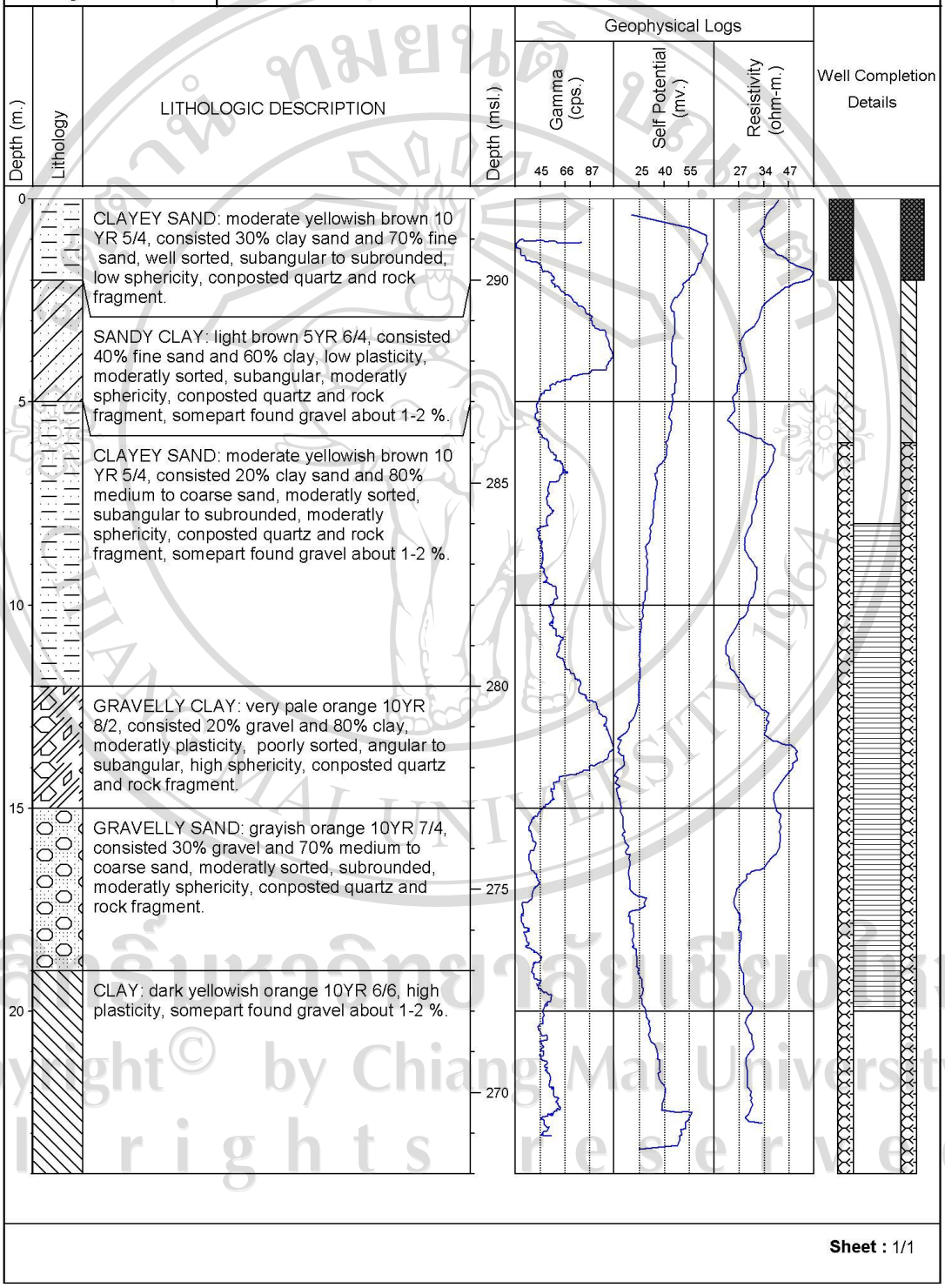
Lithology Logs of Chiang Mai University Record



Chiang Mai University

Log of Borehole

Well no. : PL02 **Coordinate :** 505250E205655N **Datumm :**WGS84
Location : Wat Pu Loei **Date :** 10/06/07 **Elevation :** 292 m. (msl.)
Drilling By : DGR **Total Depth :**24 m. **Well Size :** 6 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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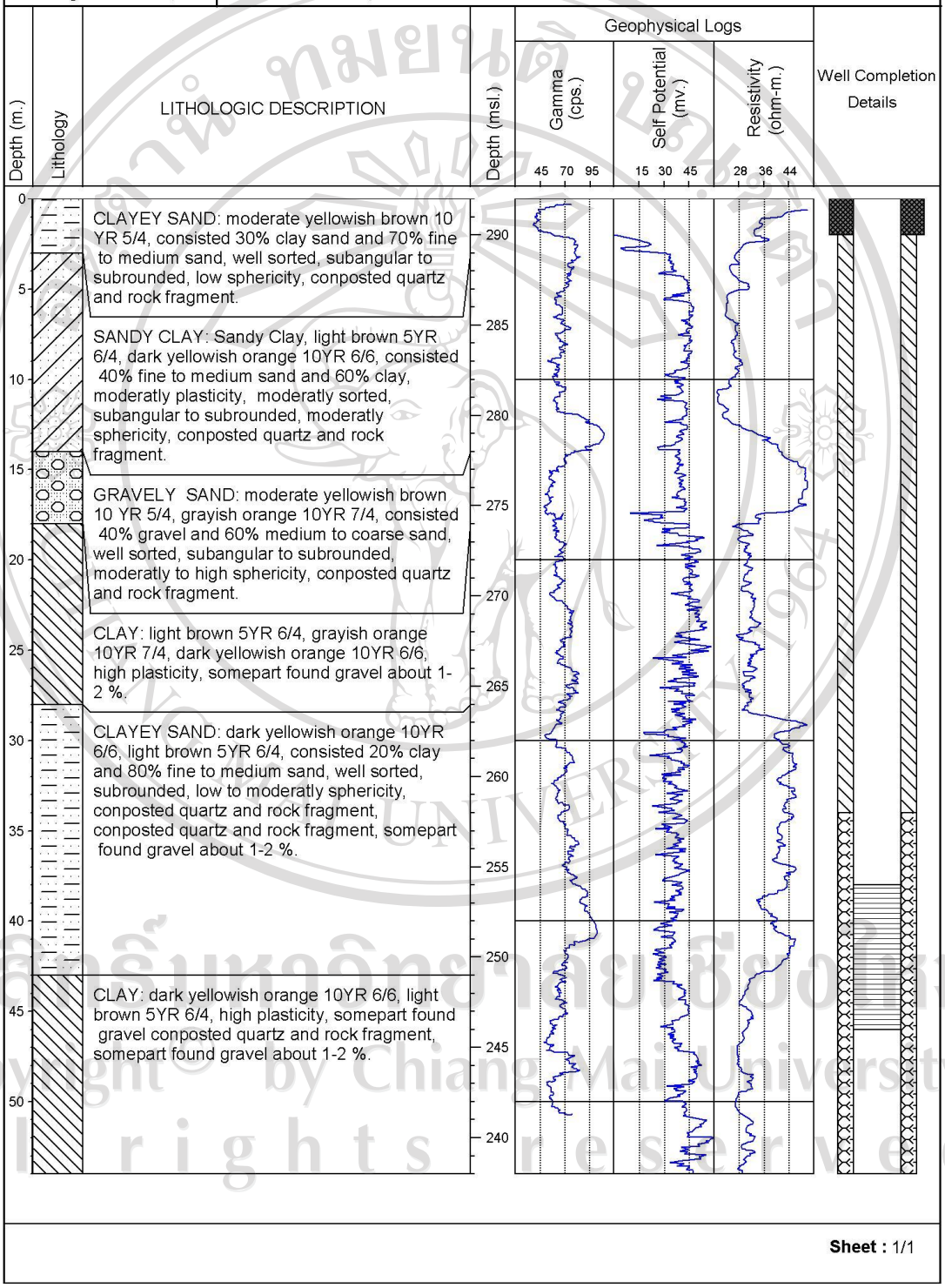
Chiang Mai University

Log of Borehole

Well no. : PL03 **Coordinate :** 505250E205655N **Datumm :**WGS84
Location : Wat Pu Loei **Date :** 12/06/07 **Elevation :** 292 m. (msl.)
Drilling By : DGR **Total Depth :**54 m. **Well Size :** 4 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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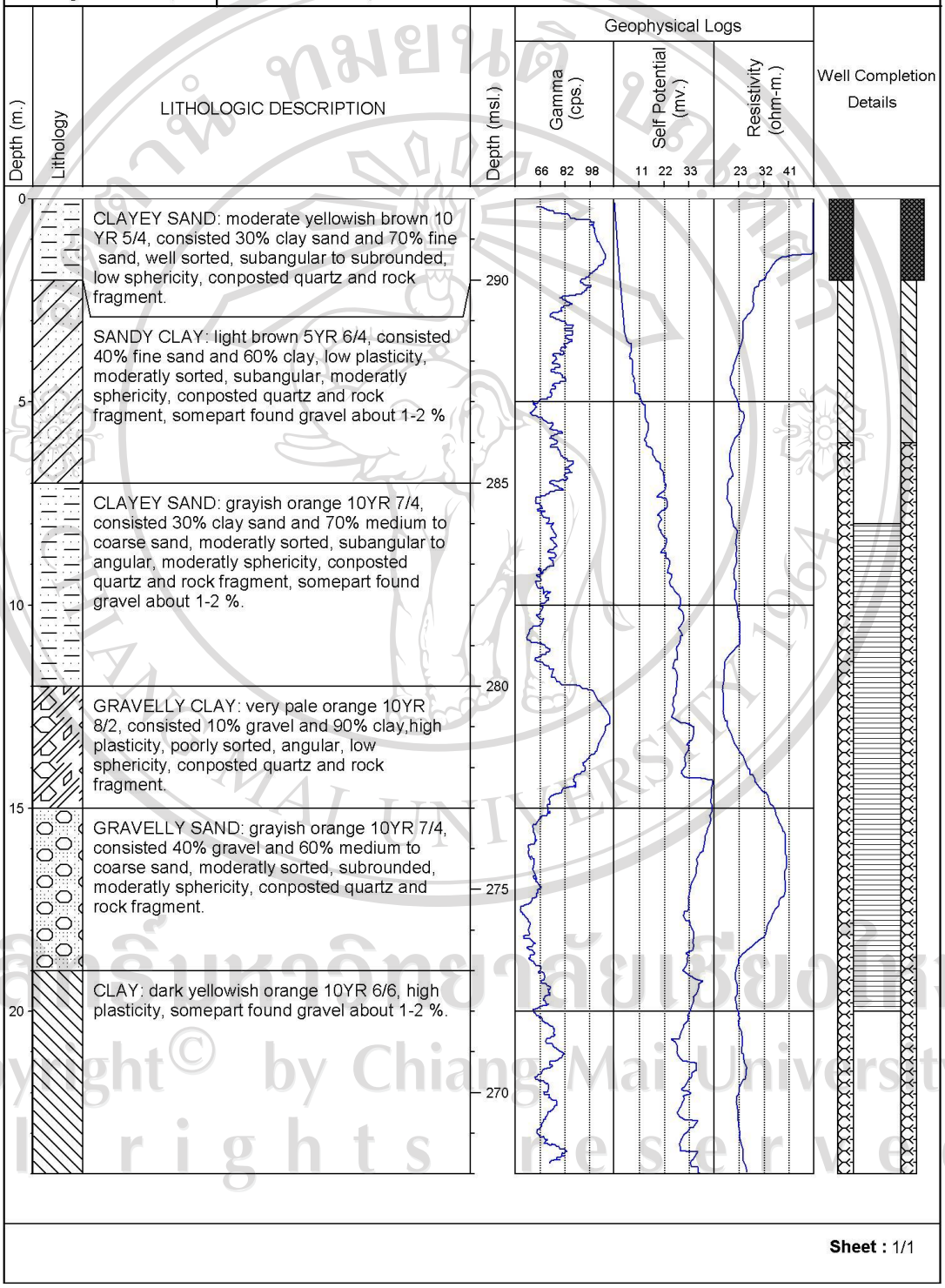
Chiang Mai University

Log of Borehole

Well no. : PL04 **Coordinate :** 505250E205655N **Datumm :**WGS84
Location : Wat Pu Loei **Date :** 14/06/07 **Elevation :** 292 m. (msl.)
Drilling By : DGR **Total Depth :**24 m. **Well Size :** 4 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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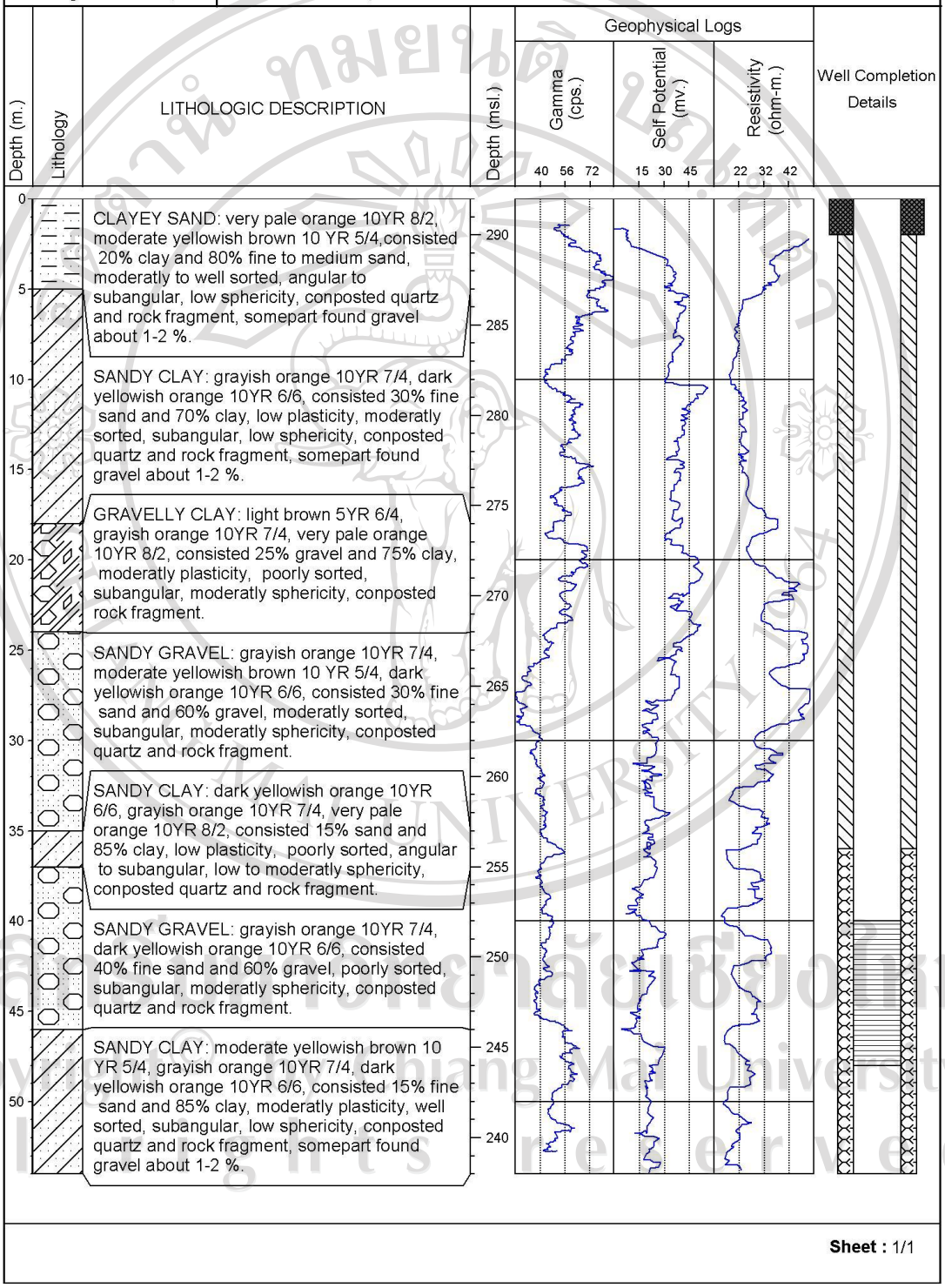
Chiang Mai University

Log of Borehole

Well no. : SK01 **Coordinate :** 505058E2054310N **Datumm :**WGS84
Location : Ban Sing Kheong **Date :** 01/07/07 **Elevation :** 292 m. (msl.)
Drilling By : DGR **Total Depth :**54 m. **Well Size :** 6 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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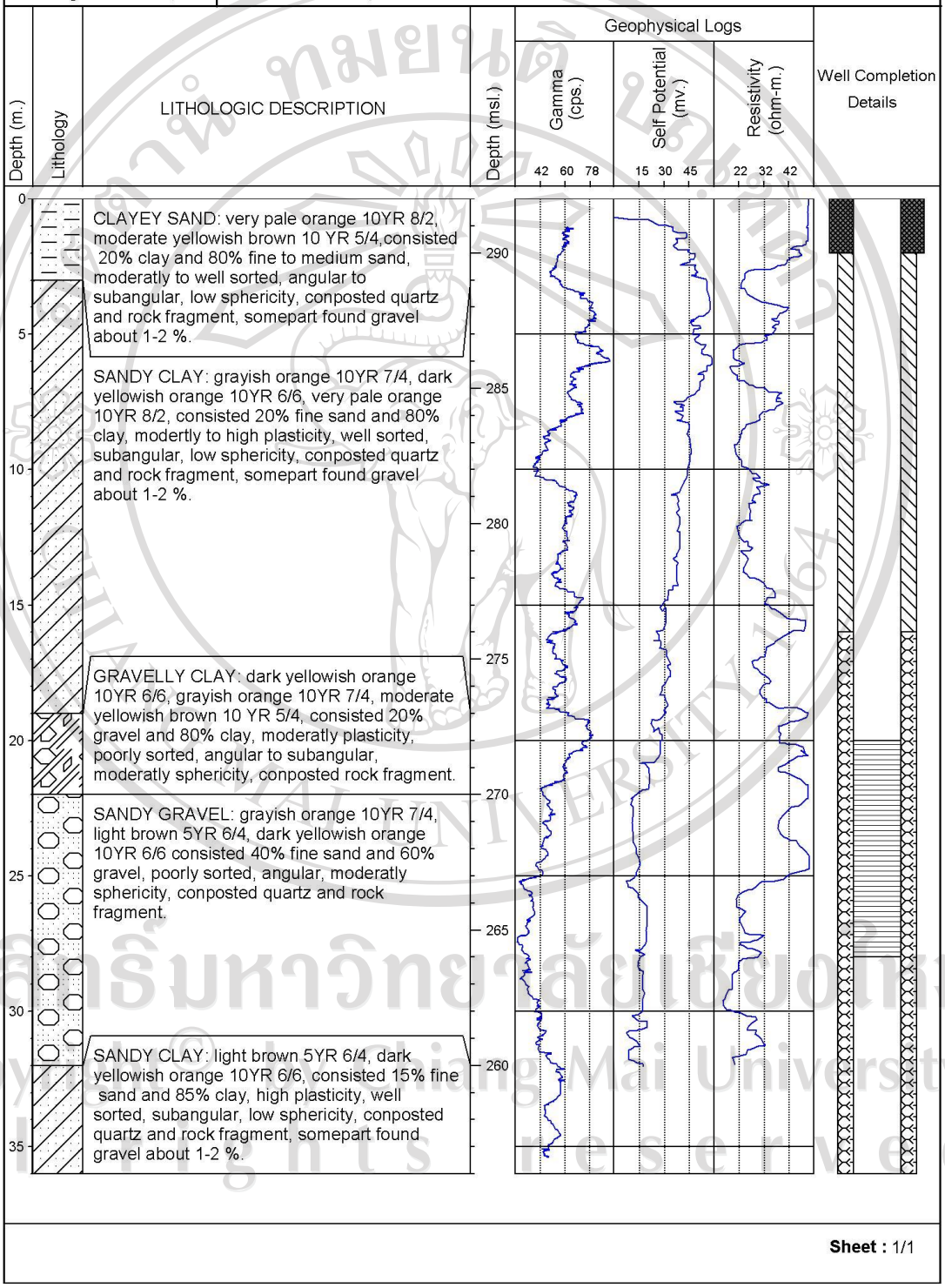
Chiang Mai University

Log of Borehole

Well no. : SK02 **Coordinate :** 505058E2054310N **Datumm :** WGS84
Location : Ban Sing Kheong **Date :** 02/07/07 **Elevation :** 292 m. (msl.)
Drilling By : DGR **Total Depth :** 36 m. **Well Size :** 6 inches
Logged By : Bunyasit K. **Type :** Rotary Rig Cutting Sample



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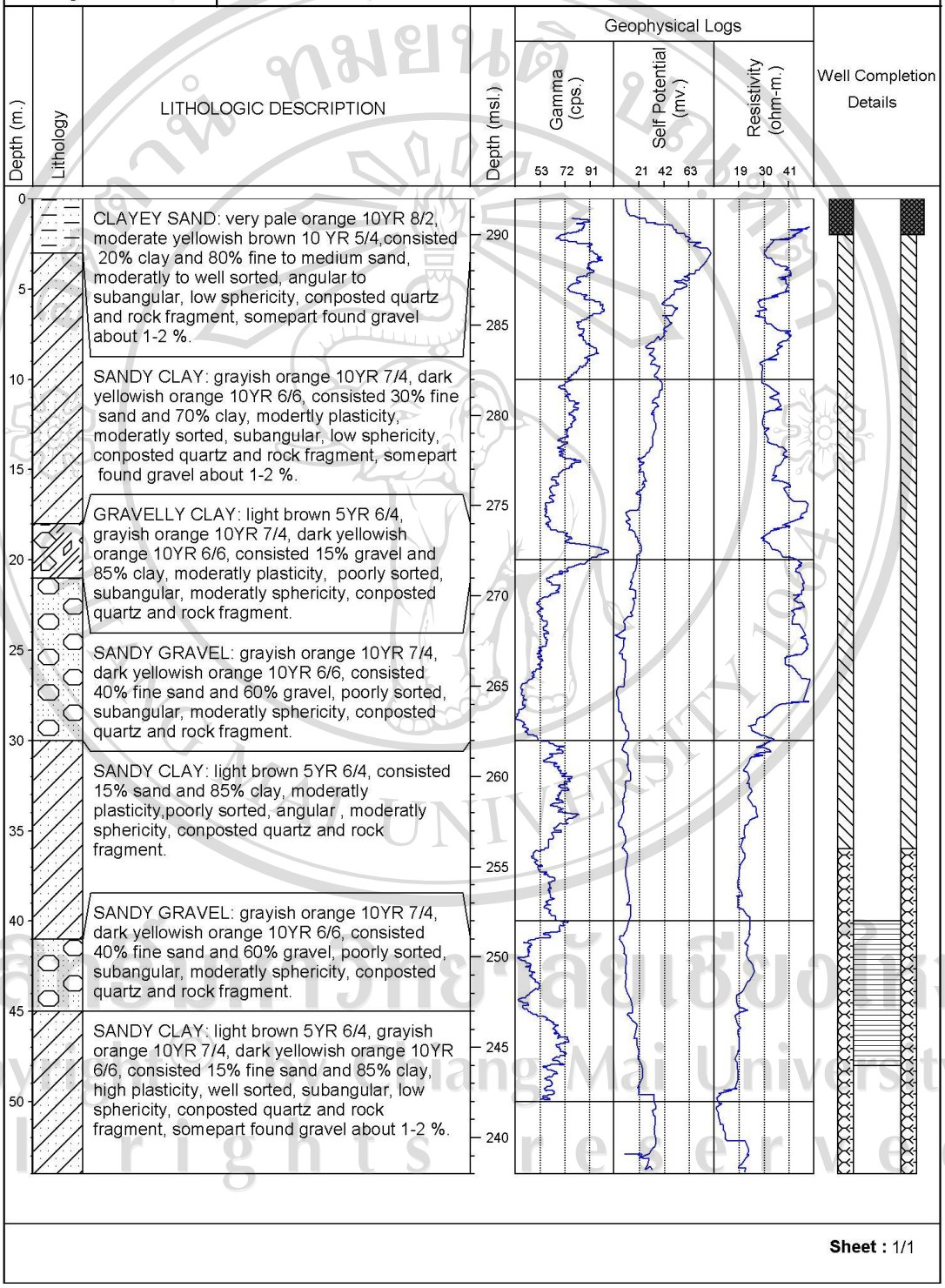
Chiang Mai University

Log of Borehole

Well no. : SK03 **Coordinate :** 505058E2054310N **Datumm :** WGS84
Location : Ban Sing Kheong **Date :** 04/07/07 **Elevation :** 292 m. (msl.)
Drilling By : DGR **Total Depth :** 54 m. **Well Size :** 4 inches
Logged By : Bunyasit K. **Type :** Rotary Rig Cutting Sample



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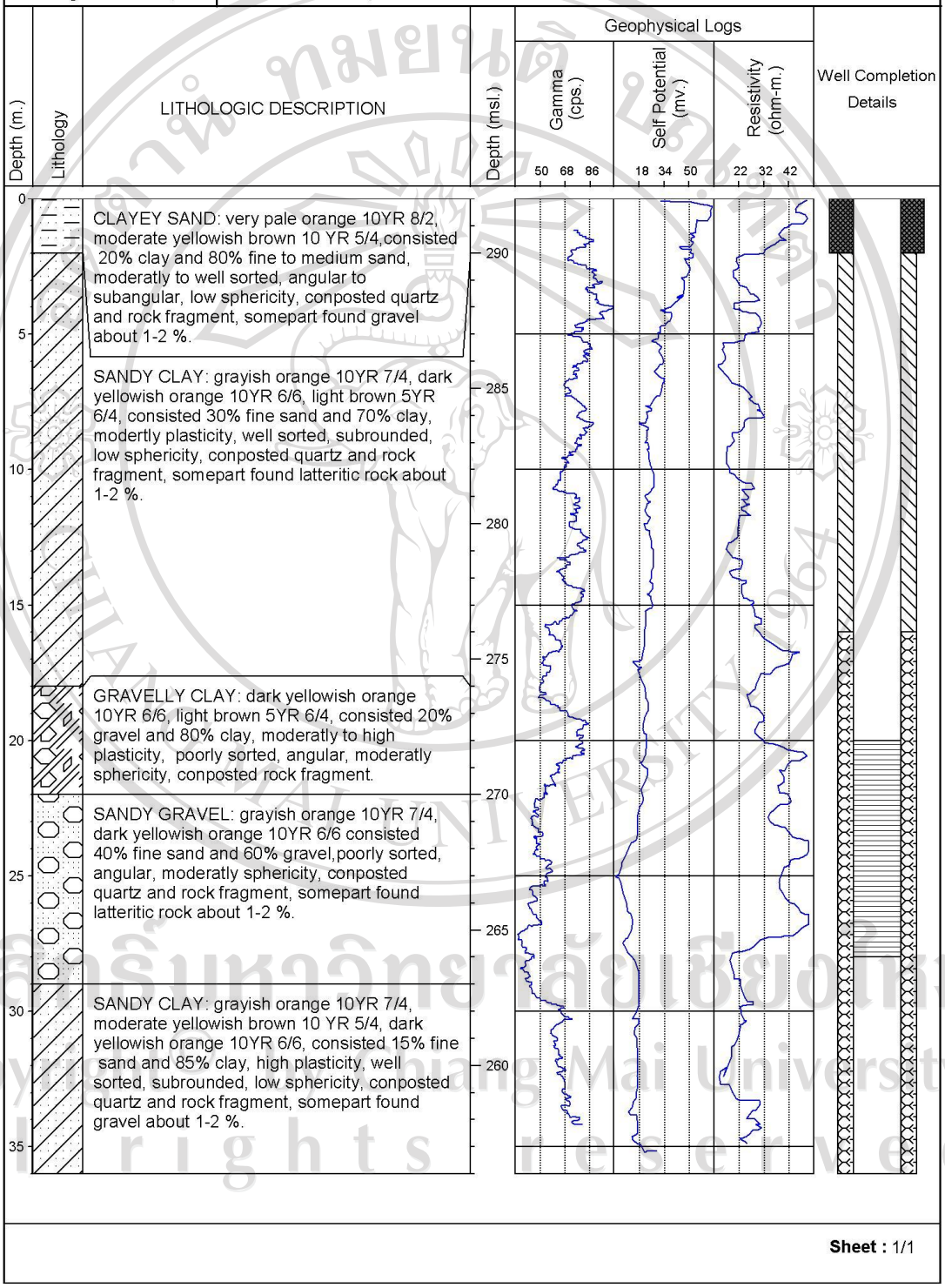
Chiang Mai University

Log of Borehole

Well no. : SK04 **Coordinate :** 505058E2054310N **Datumm :**WGS84
Location : Ban Sing Kheong **Date :** 05/07/07 **Elevation :** 292 m. (msl.)
Drilling By : DGR **Total Depth :**36 m. **Well Size :** 4 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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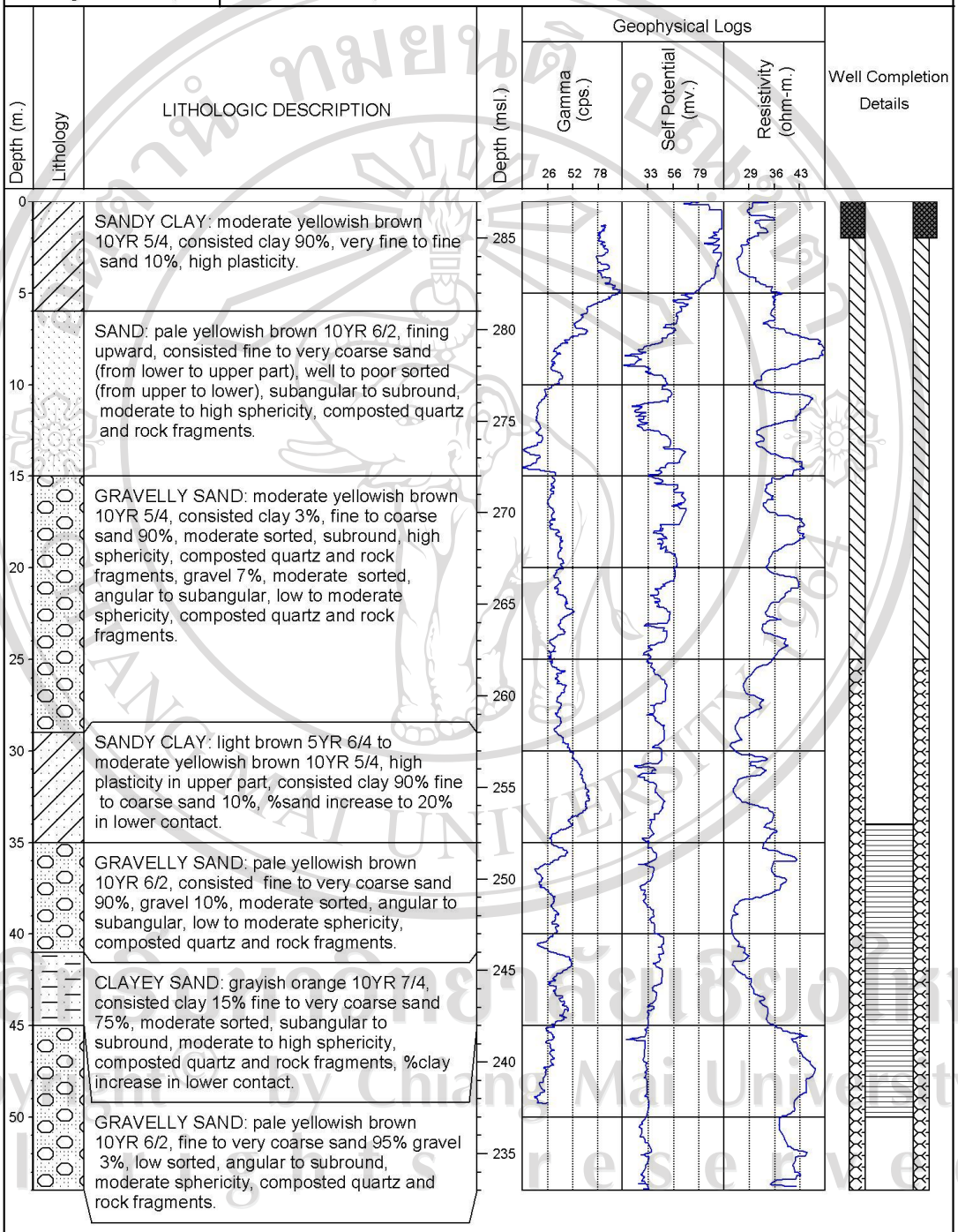
Chiang Mai University

Log of Borehole

Well no. : SMY01 **Coordinate :** 500599E2052548N **Datumm :** WGS84
Location : Sri Mueang Yu **Date :** 14/07/07 **Elevation :** 287 m. (msl.)
Drilling By : DGR **Total Depth :** 54 m. **Well Size :** 6 inches
Logged By : Bunyasit K. **Type :** Rotary Rig Cutting Sample



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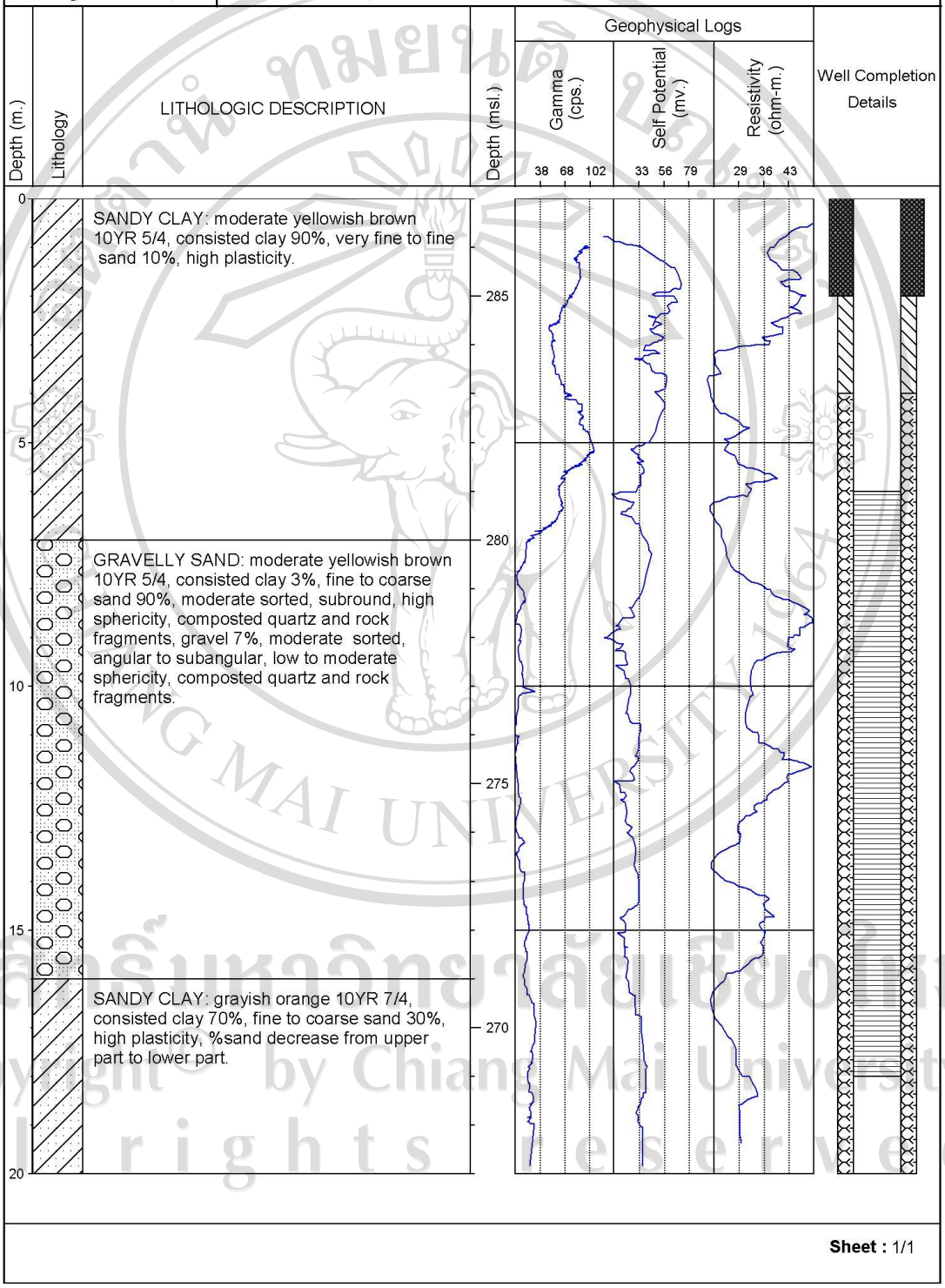
Chiang Mai University

Log of Borehole

Well no. : SMY02 **Coordinate :** 500599E2052548N **Datumm :** WGS84
Location : Sri Mueang Yu **Date :** 17/07/07 **Elevation :** 287 m. (msl.)
Drilling By : DGR **Total Depth :** 20 m. **Well Size :** 6 inches
Logged By : Bunyasit K. **Type :** Rotary Rig Cutting Sample



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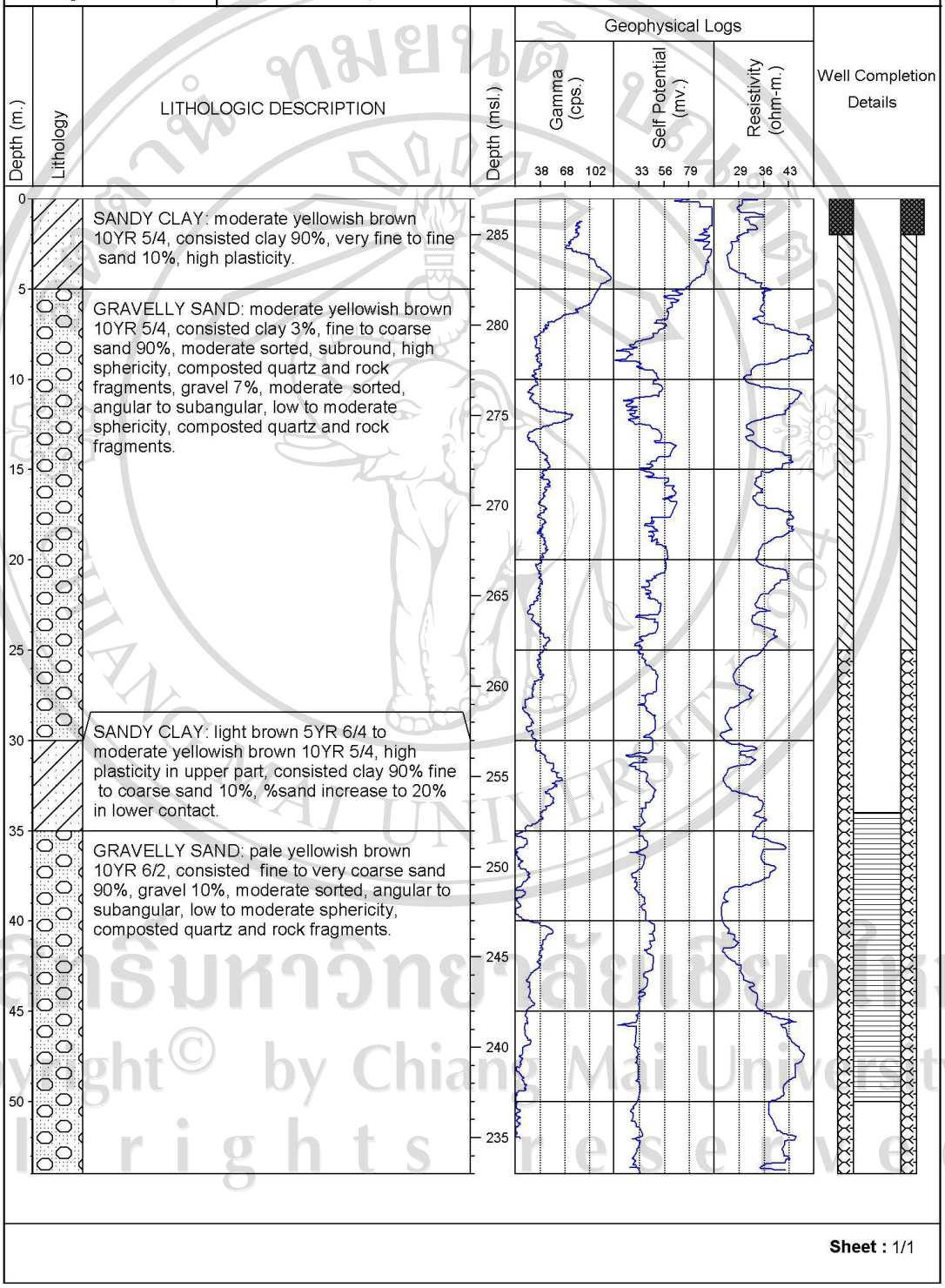
Chiang Mai University

Log of Borehole

Well no. : SMY03 **Coordinate :** 500599E2052548N **Datumm :**WGS84
Location : Sri Mueang Yu **Date :** 15/07/07 **Elevation :** 287 m. (msl.)
Drilling By : DGR **Total Depth :**54 m. **Well Size :** 4 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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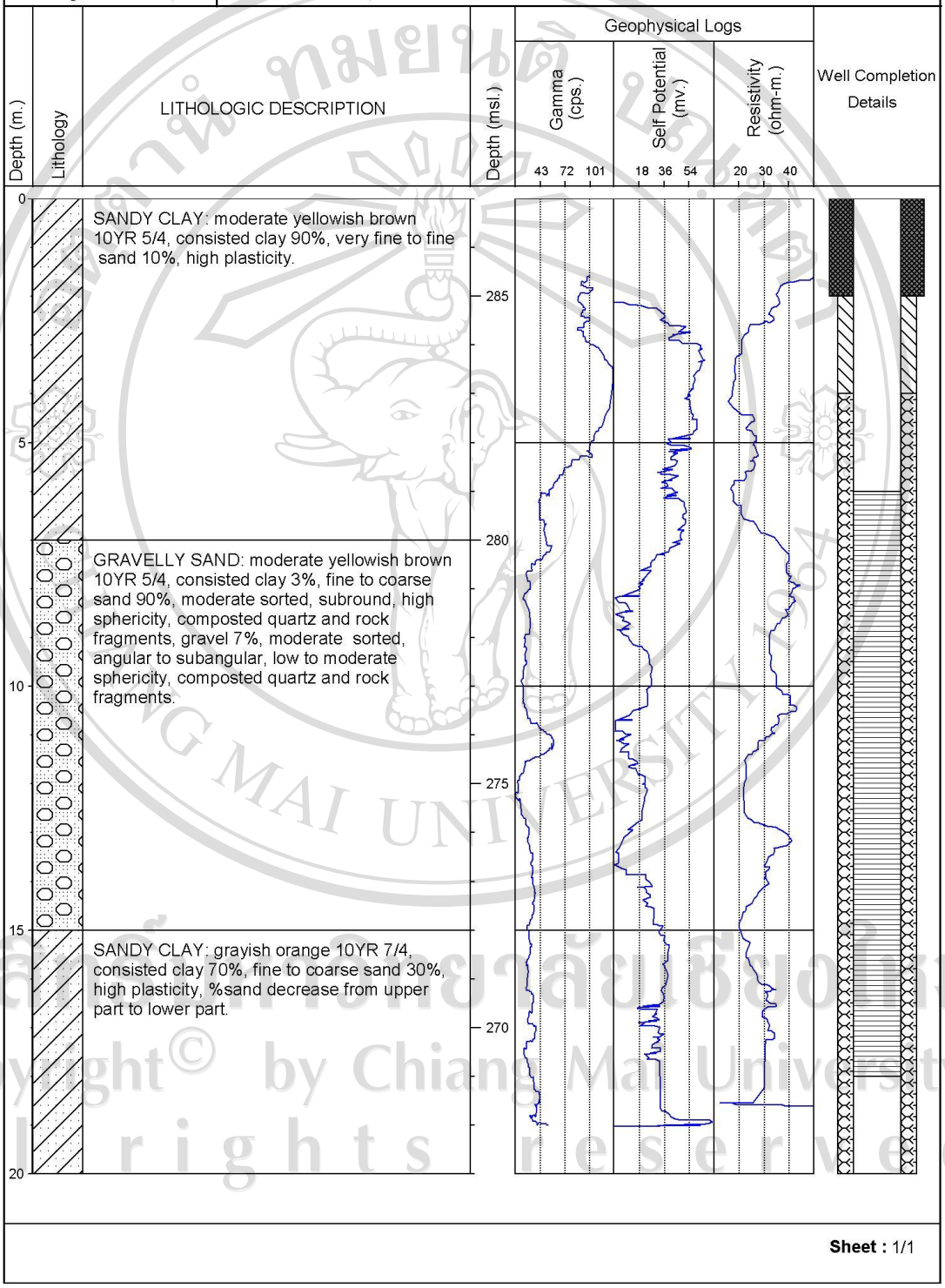
Chiang Mai University

Log of Borehole

Well no. : SMY04 **Coordinate :** 500599E2052548N **Datumm :** WGS84
Location : Sri Mueang Yu **Date :** 19/07/07 **Elevation :** 287 m. (msl.)
Drilling By : DGR **Total Depth :** 20 m. **Well Size :** 4 inches
Logged By : Bunyasit K. **Type :** Rotary Rig Cutting Sample



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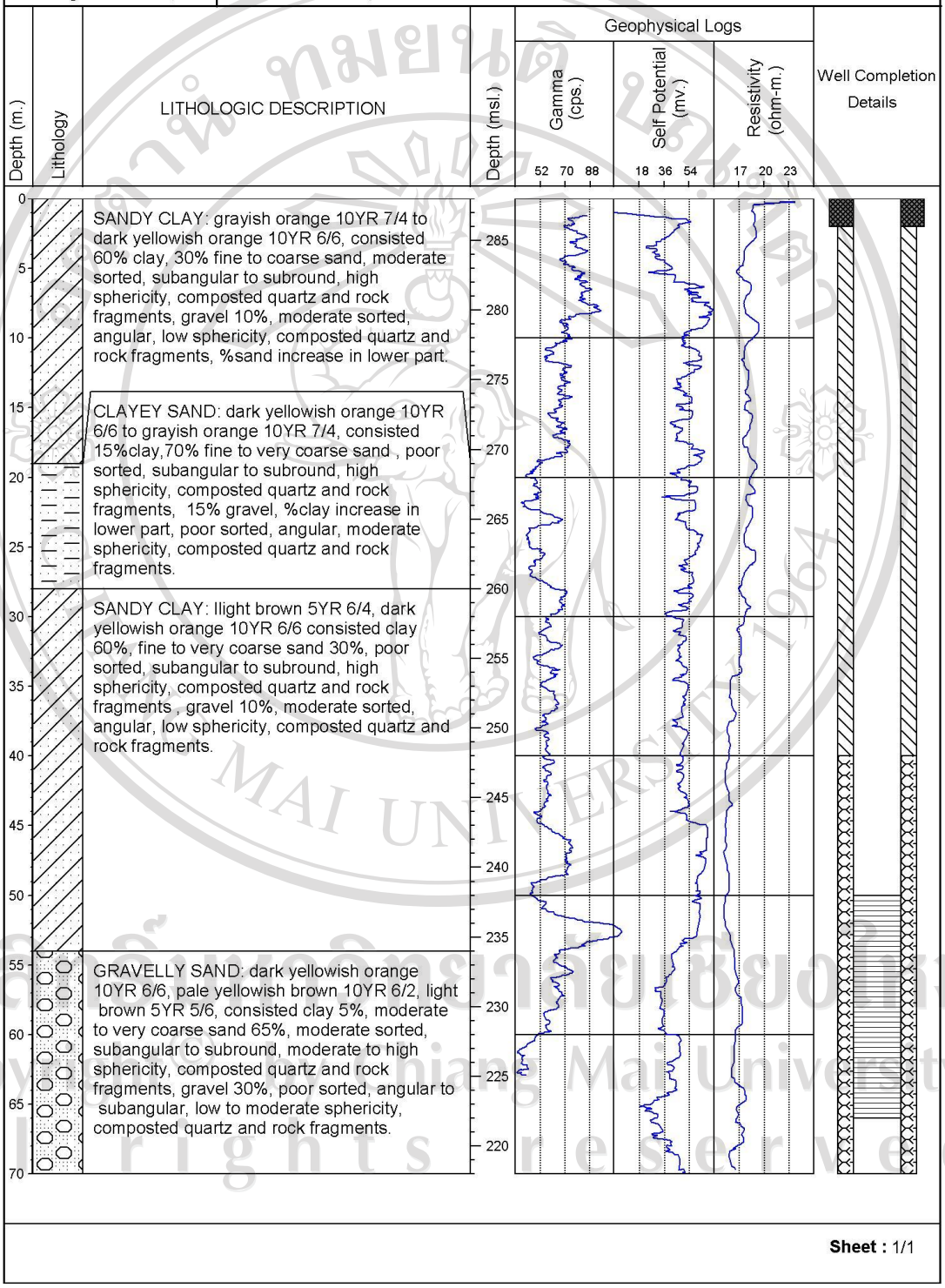
Chiang Mai University

Log of Borehole

Well no. : PD01 **Coordinate :** 502827E2052983N **Datumm :**WGS84
Location : Mae San Pa Daet **Date :** 08/08/07 **Elevation :** 288 m. (msl.)
Drilling By : DGR **Total Depth :**70 m. **Well Size :** 6 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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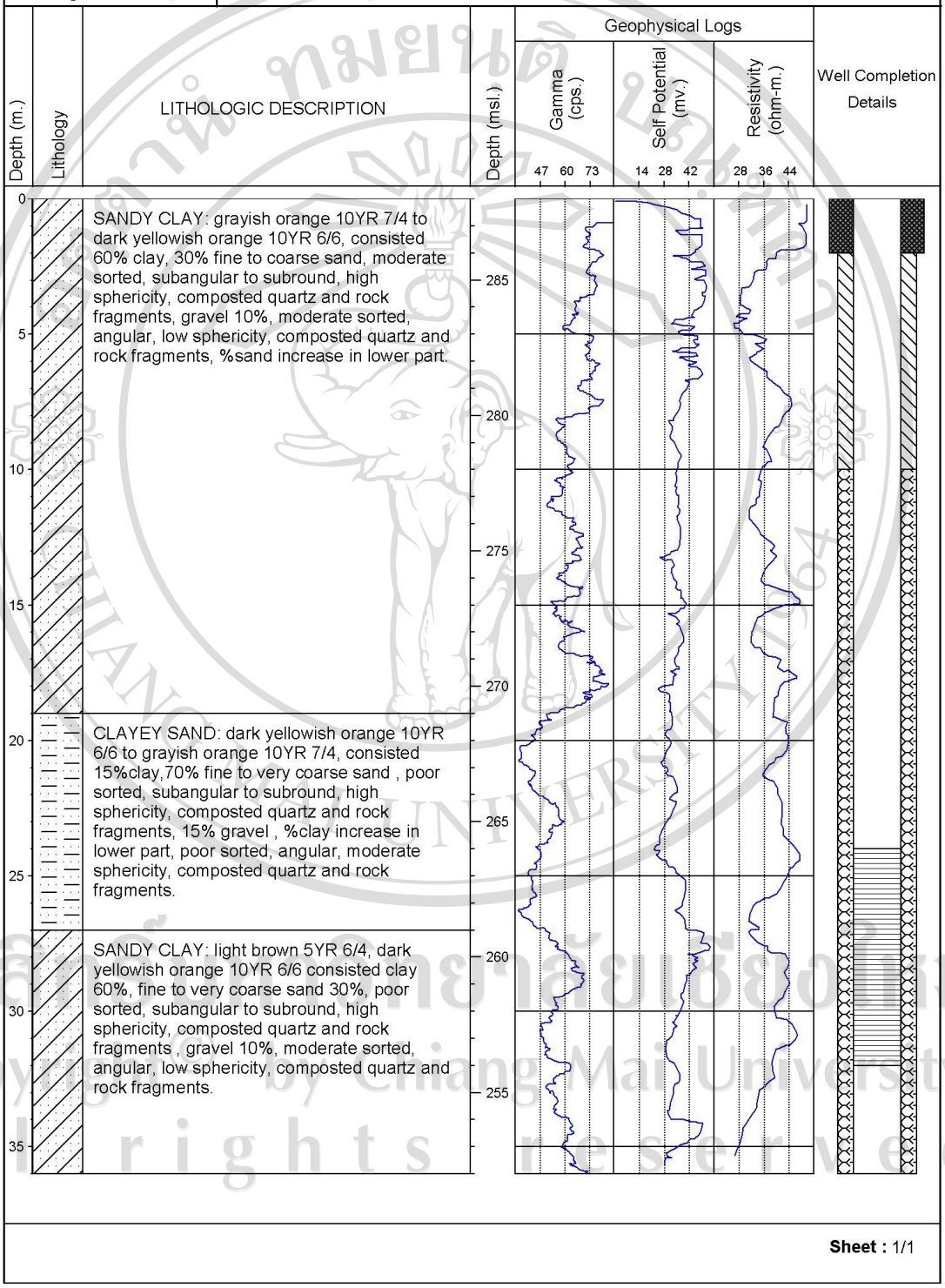
Chiang Mai University

Log of Borehole

Well no. : PD02 **Coordinate :** 502827E2052983N **Datumm :**WGS84
Location : Mae San Pa Daet **Date :** 09/08/07 **Elevation :** 288 m. (msl.)
Drilling By : DGR **Total Depth :**36 m. **Well Size :** 6 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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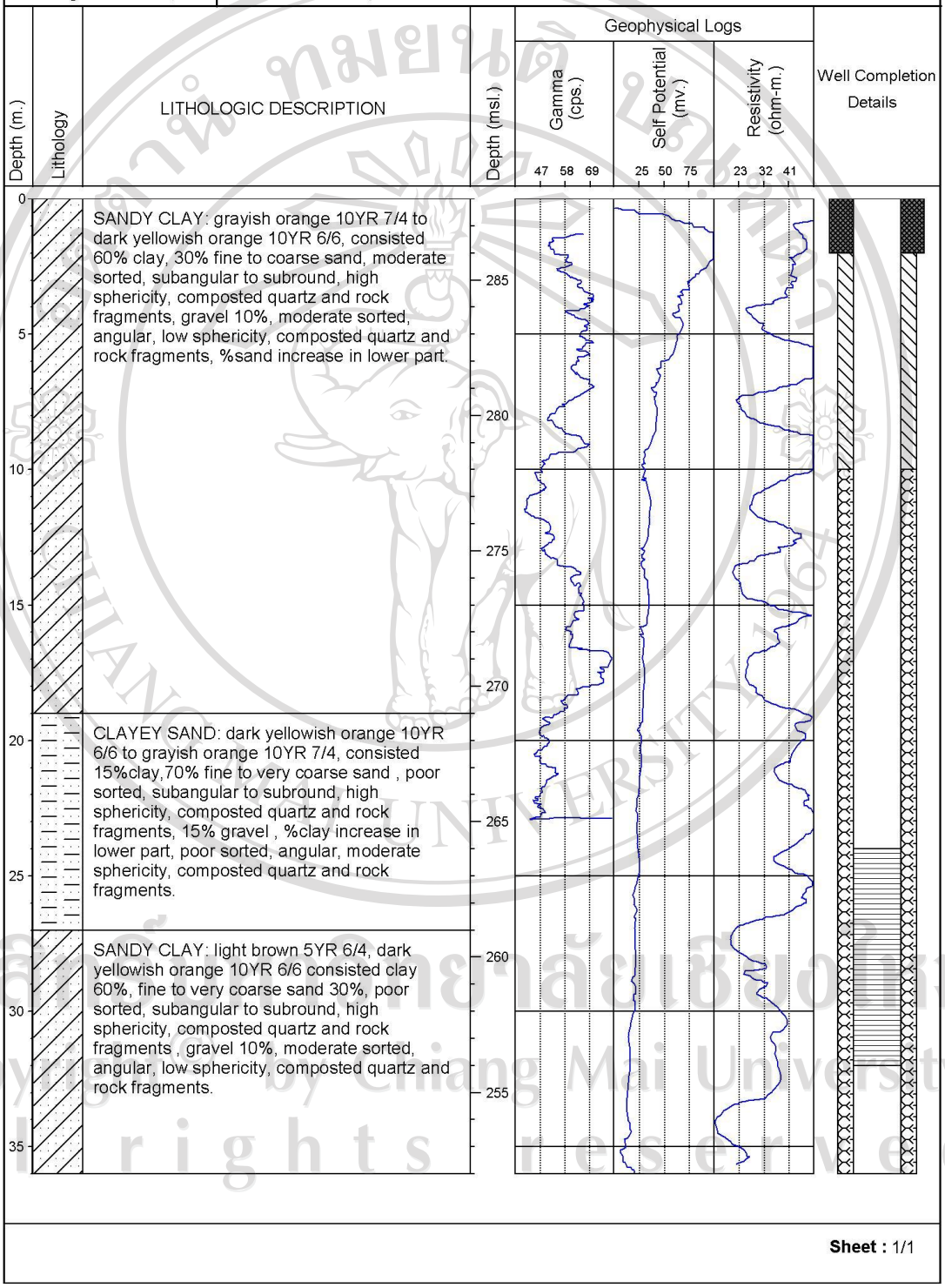
Chiang Mai University

Log of Borehole

Well no. : PD03 **Coordinate :** 502827E2052983N **Datumm :**WGS84
Location : Mae San Pa Daet **Date :** 11/08/07 **Elevation :** 288 m. (msl.)
Drilling By : DGR **Total Depth :**36 m. **Well Size :** 4 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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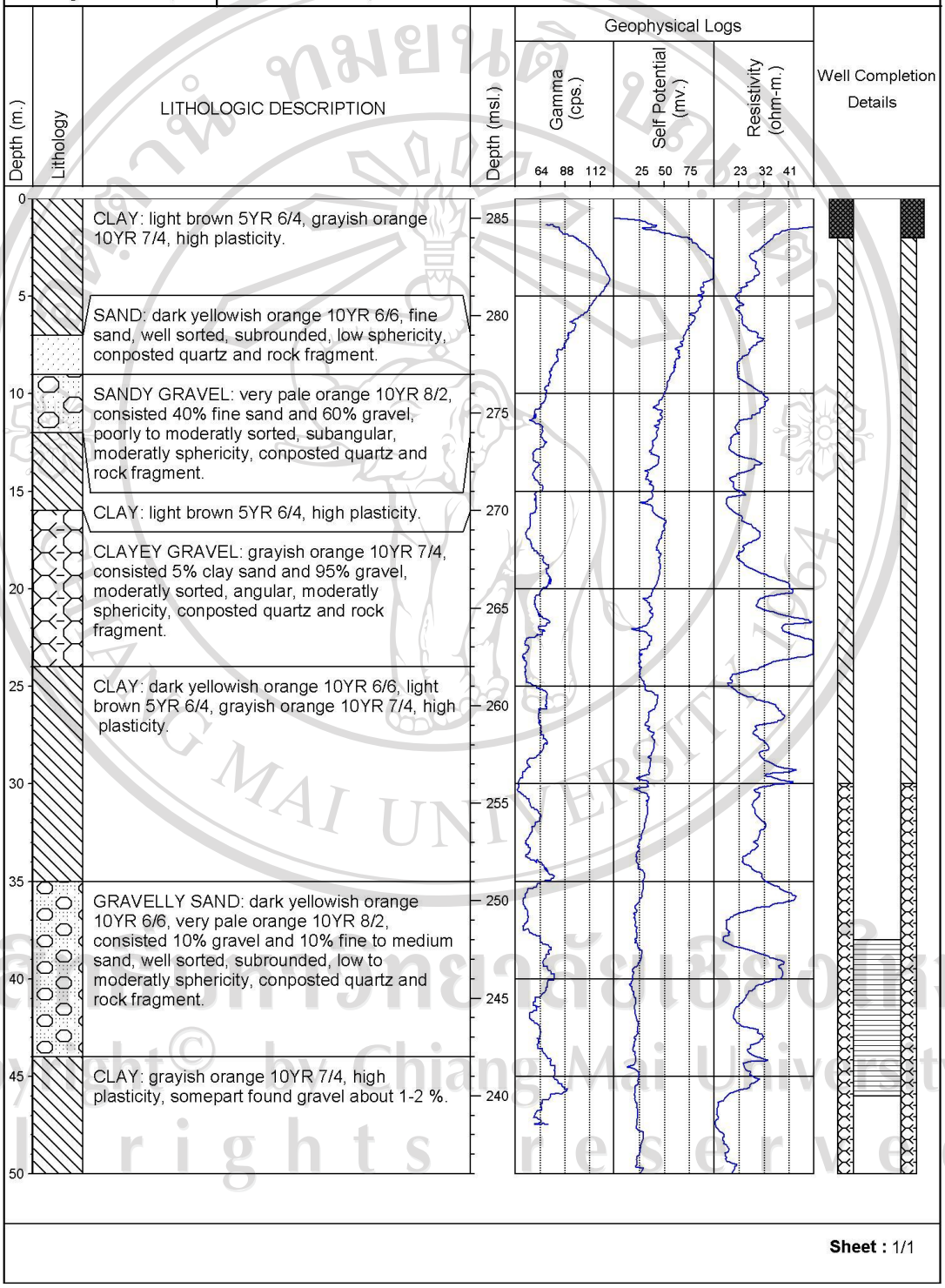
Chiang Mai University

Log of Borehole

Well no. : PY01 **Coordinate :** 502094E2053810N **Datumm :** WGS84
Location : Wat Phra Yuen **Date :** 20/07/07 **Elevation :** 286 m. (msl.)
Drilling By : DGR **Total Depth :** 50 m. **Well Size :** 6 inches
Logged By : Bunyasit K. **Type :** Rotary Rig Cutting Sample



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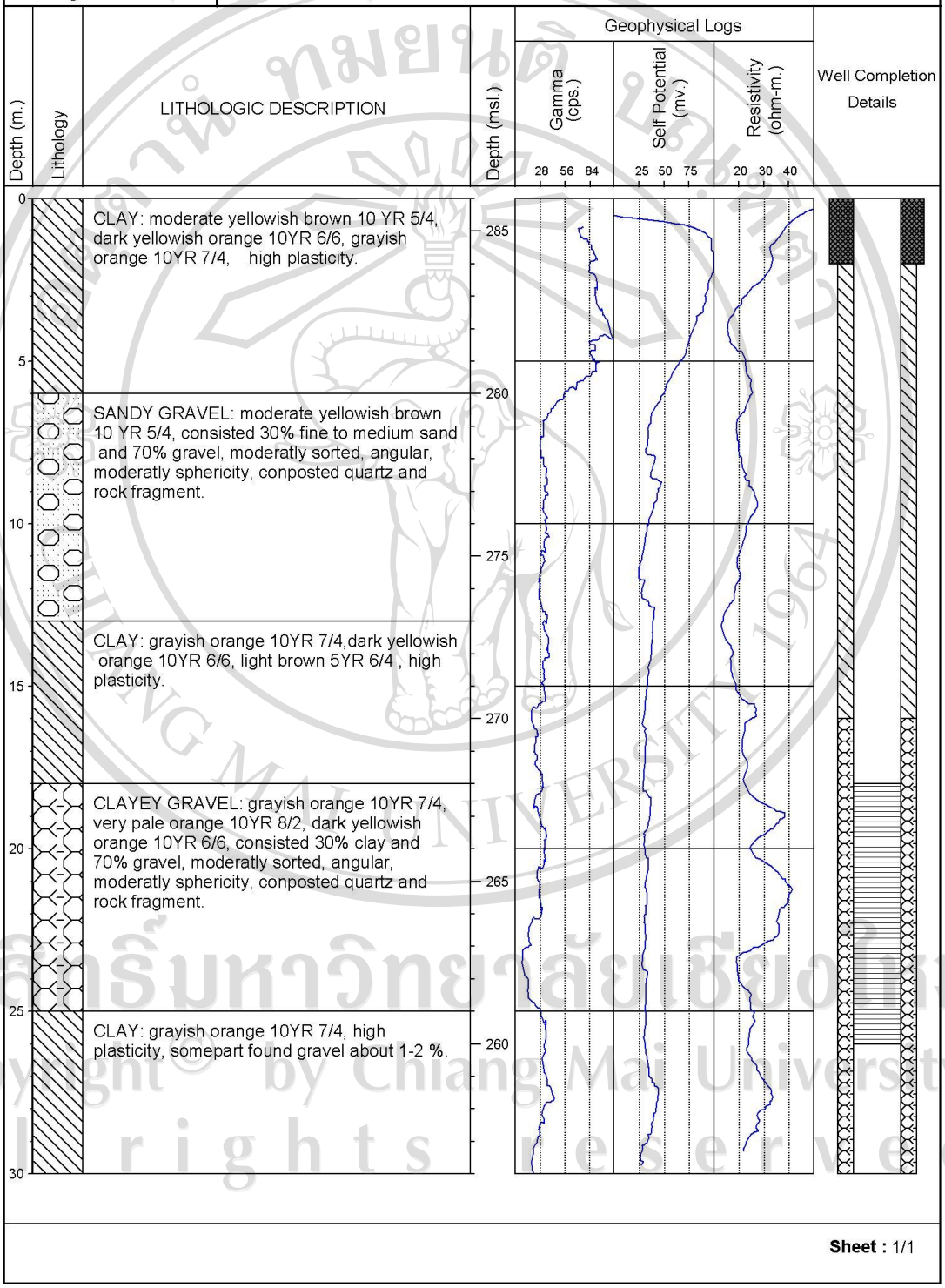
Chiang Mai University

Log of Borehole

Well no. : PY02 **Coordinate :** 502094E2053810N **Datumm :**WGS84
Location : Wat Phra Yuen **Date :** 22/07/07 **Elevation :** 286 m. (msl.)
Drilling By : DGR **Total Depth :**30 m. **Well Size :** 6 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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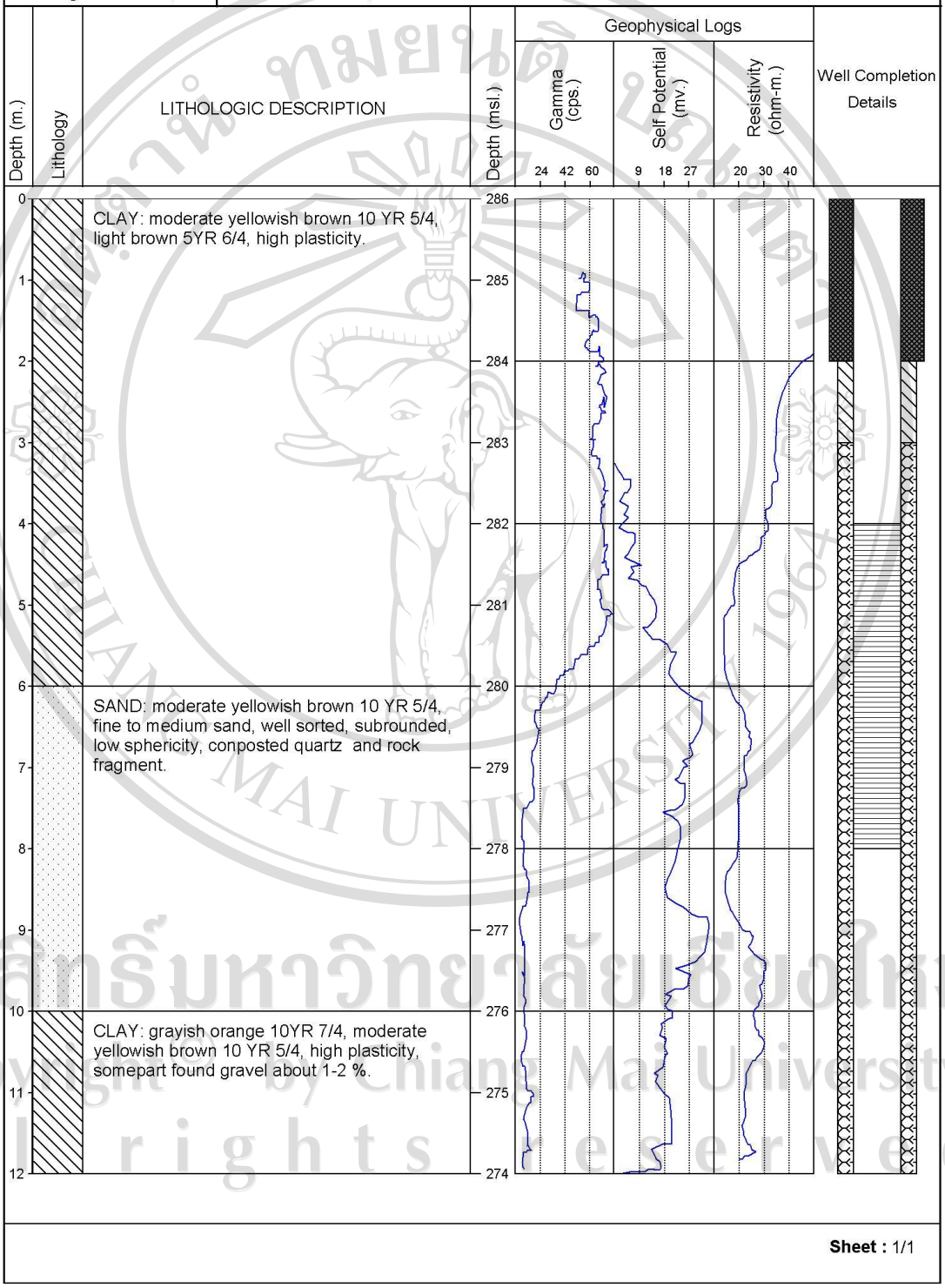
Chiang Mai University

Log of Borehole

Well no. : PY03 **Coordinate :** 502094E2053810N **Datumm :**WGS84
Location : Wat Phra Yuen **Date :** 23/07/07 **Elevation :** 286 m. (msl.)
Drilling By : DGR **Total Depth :**12 m. **Well Size :** 6 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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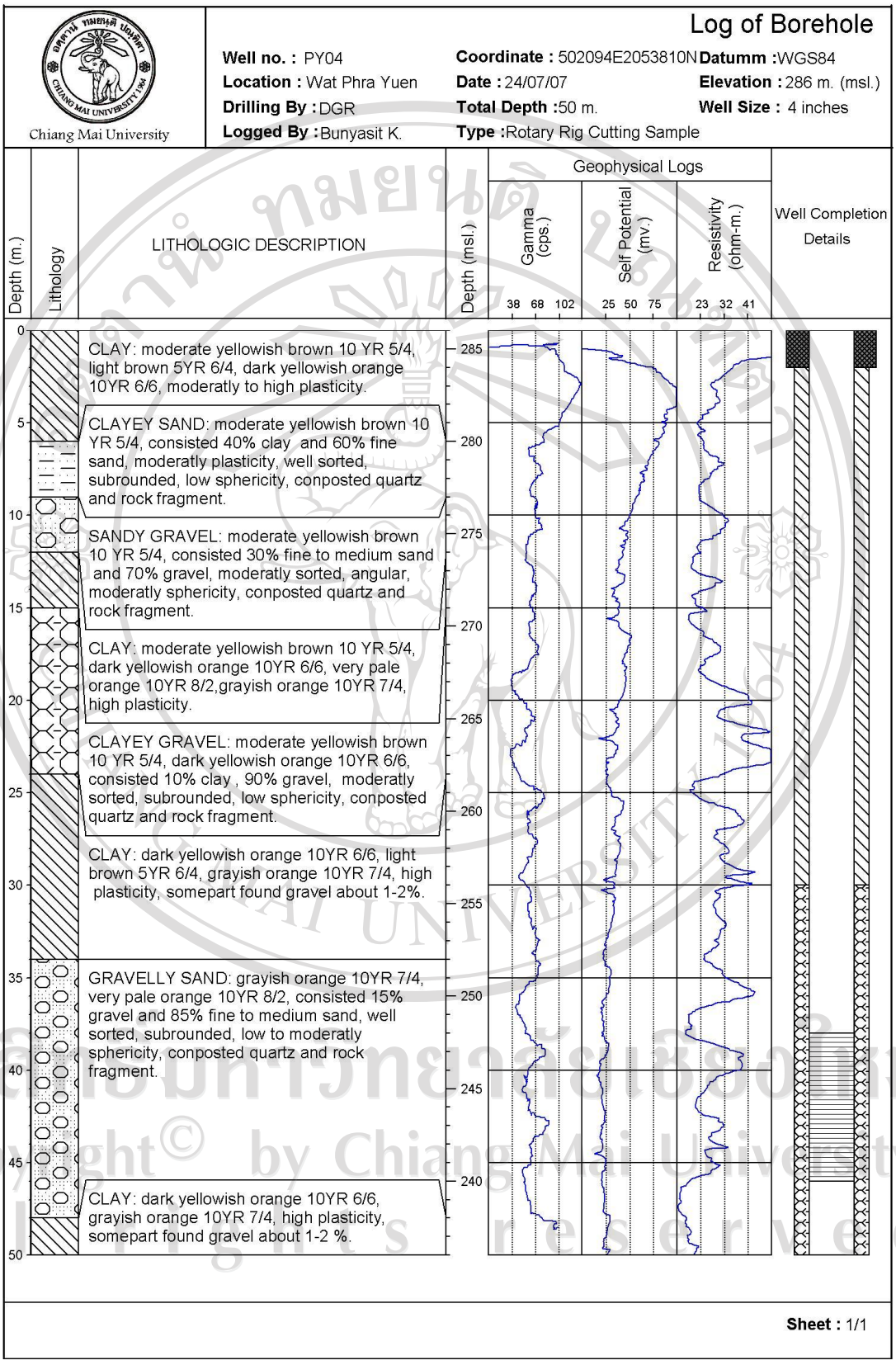
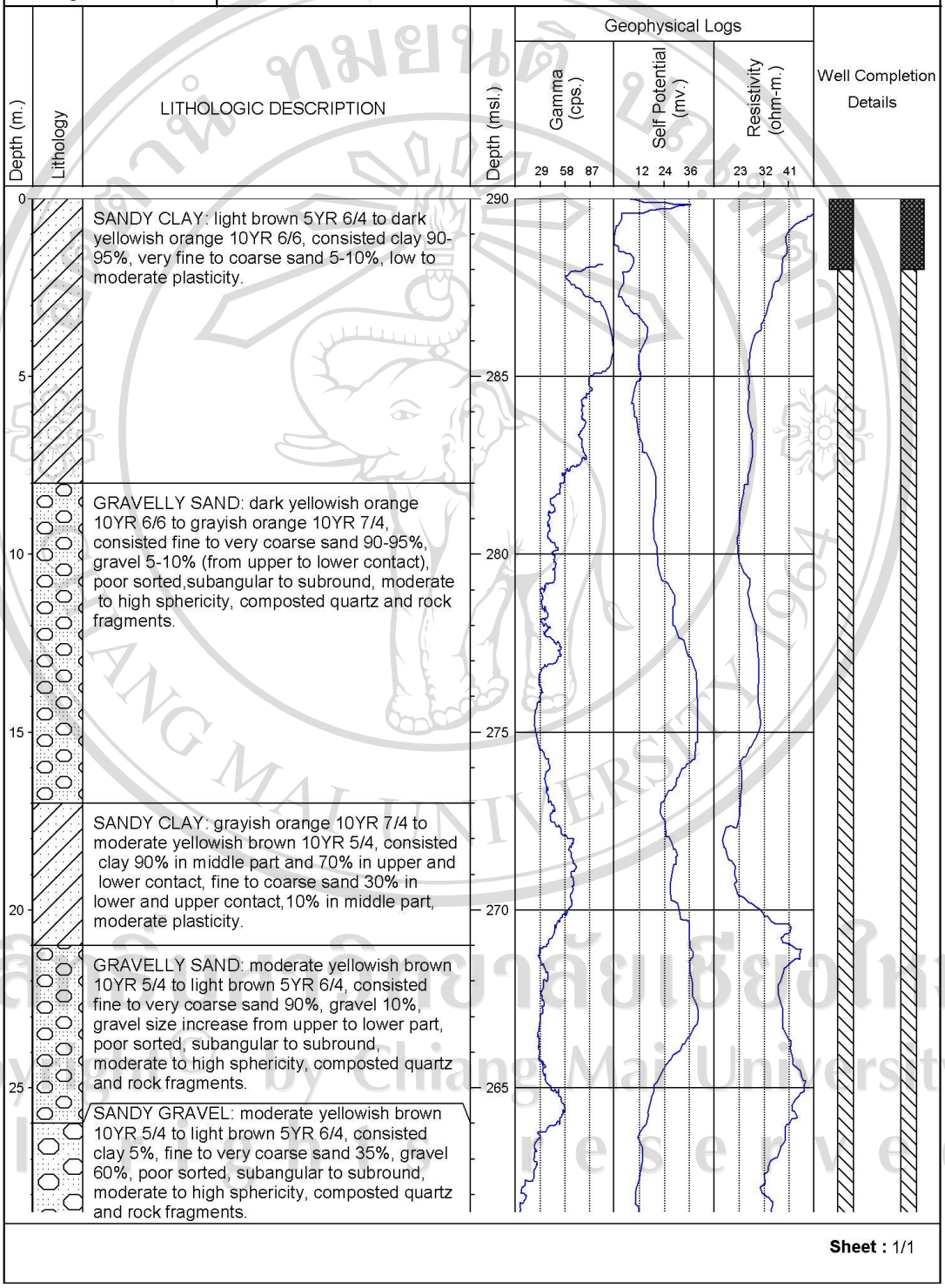


Chiang Mai University

Log of Borehole

Well no. : NS01 **Coordinate :** 501718E2055921N **Datumm :**WGS84
Location : Wat Nong Seng **Date :** 19/06/07 **Elevation :** 290 m. (msl.)
Drilling By : DGR **Total Depth :**54 m. **Well Size :** 6 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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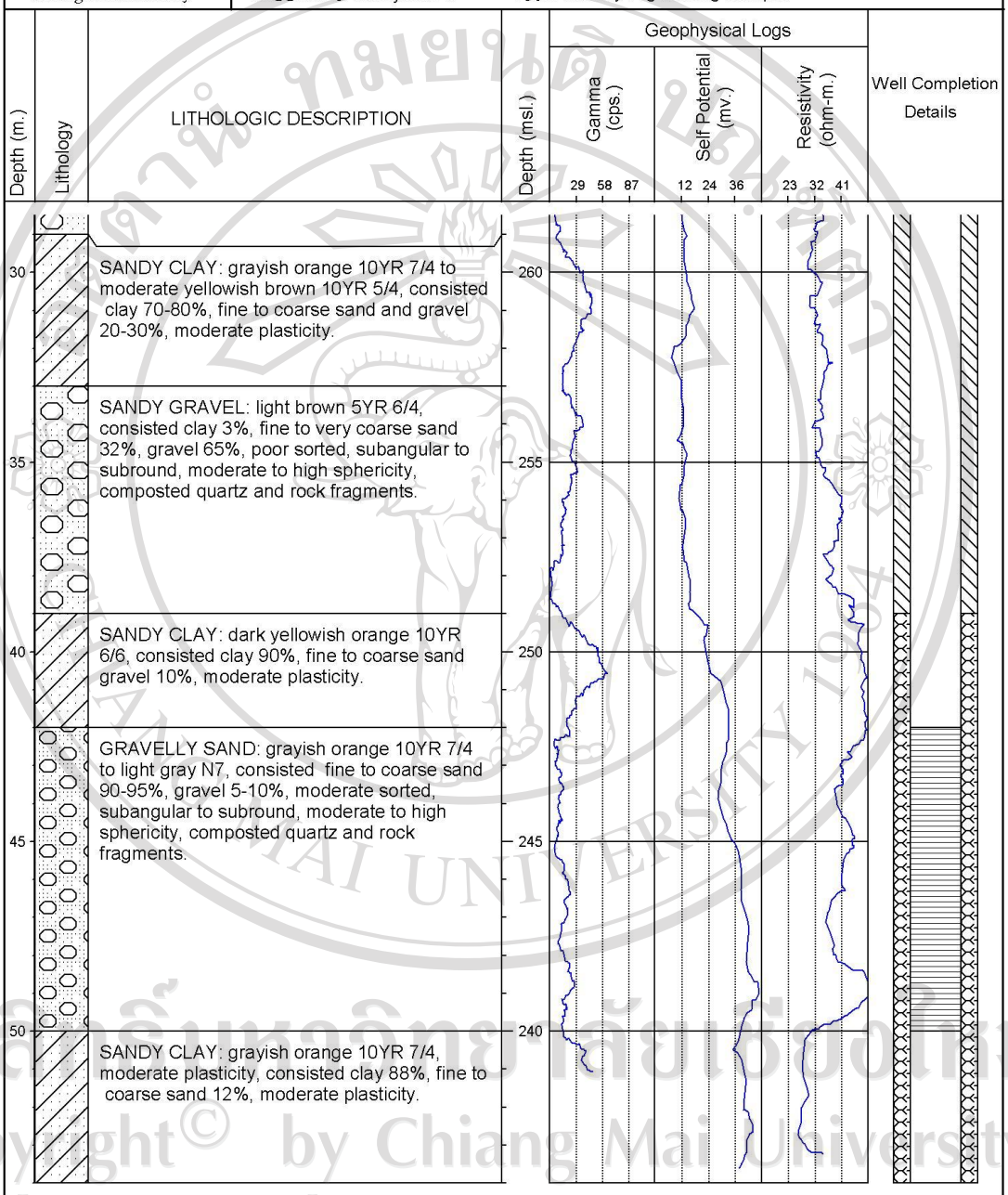
Chiang Mai University

Log of Borehole

Well no. : NS01 **Coordinate :** 501718E2055921N **Datumm :**WGS84
Location : Wat Nong Seng **Date :** 19/06/07 **Elevation :** 290 m. (msl.)
Drilling By : DGR **Total Depth :**54 m. **Well Size :** 6 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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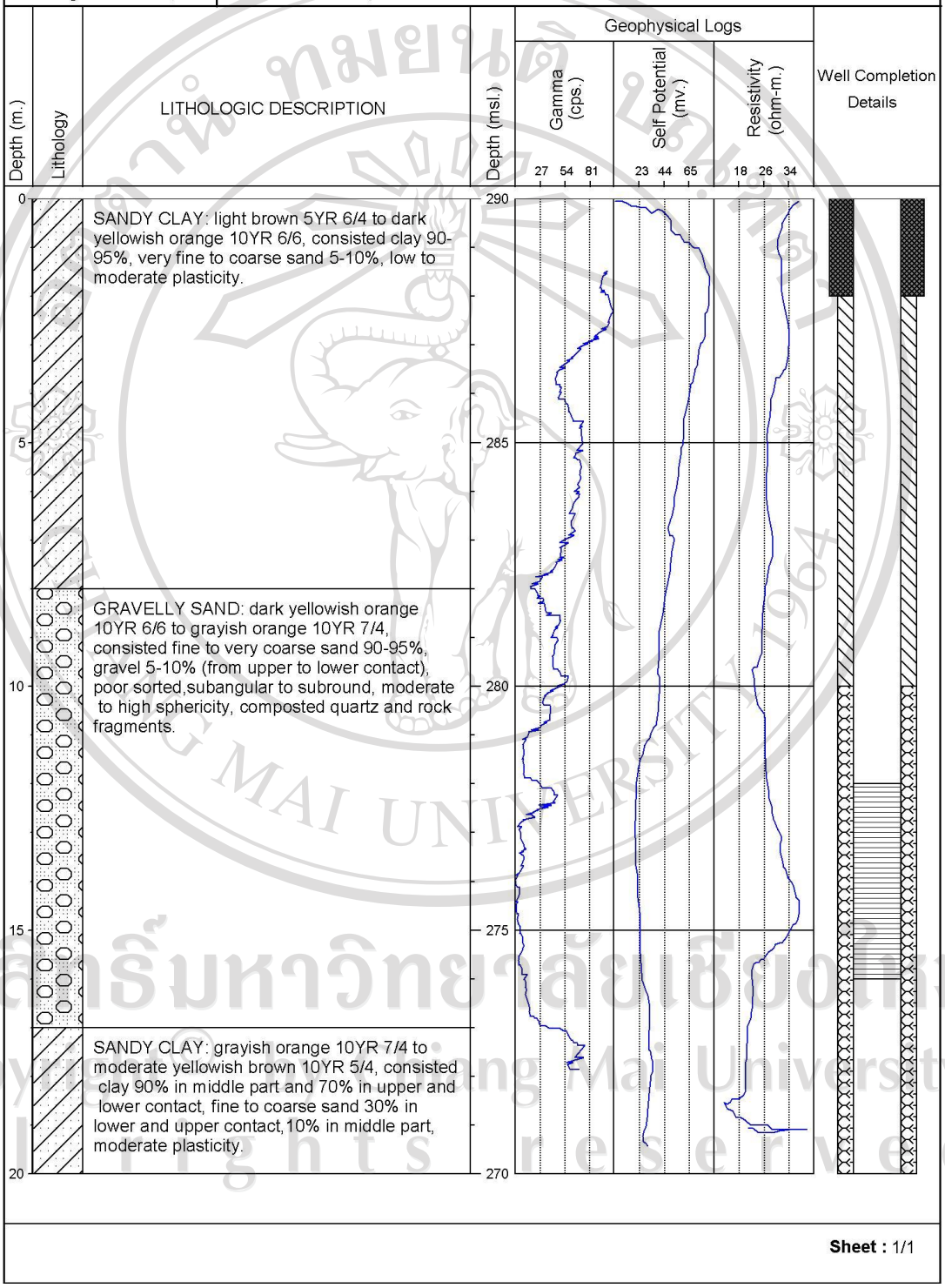
Chiang Mai University

Log of Borehole

Well no. : NS02
Location : Wat Nong Seng
Drilling By : DGR
Logged By : Bunyasit K.

Coordinate : 501718E2055921N **Datumm :** WGS84
Date : 20/06/07 **Elevation :** 290 m. (msl.)
Total Depth : 54 m. **Well Size :** 6 inches
Type : Rotary Rig Cutting Sample



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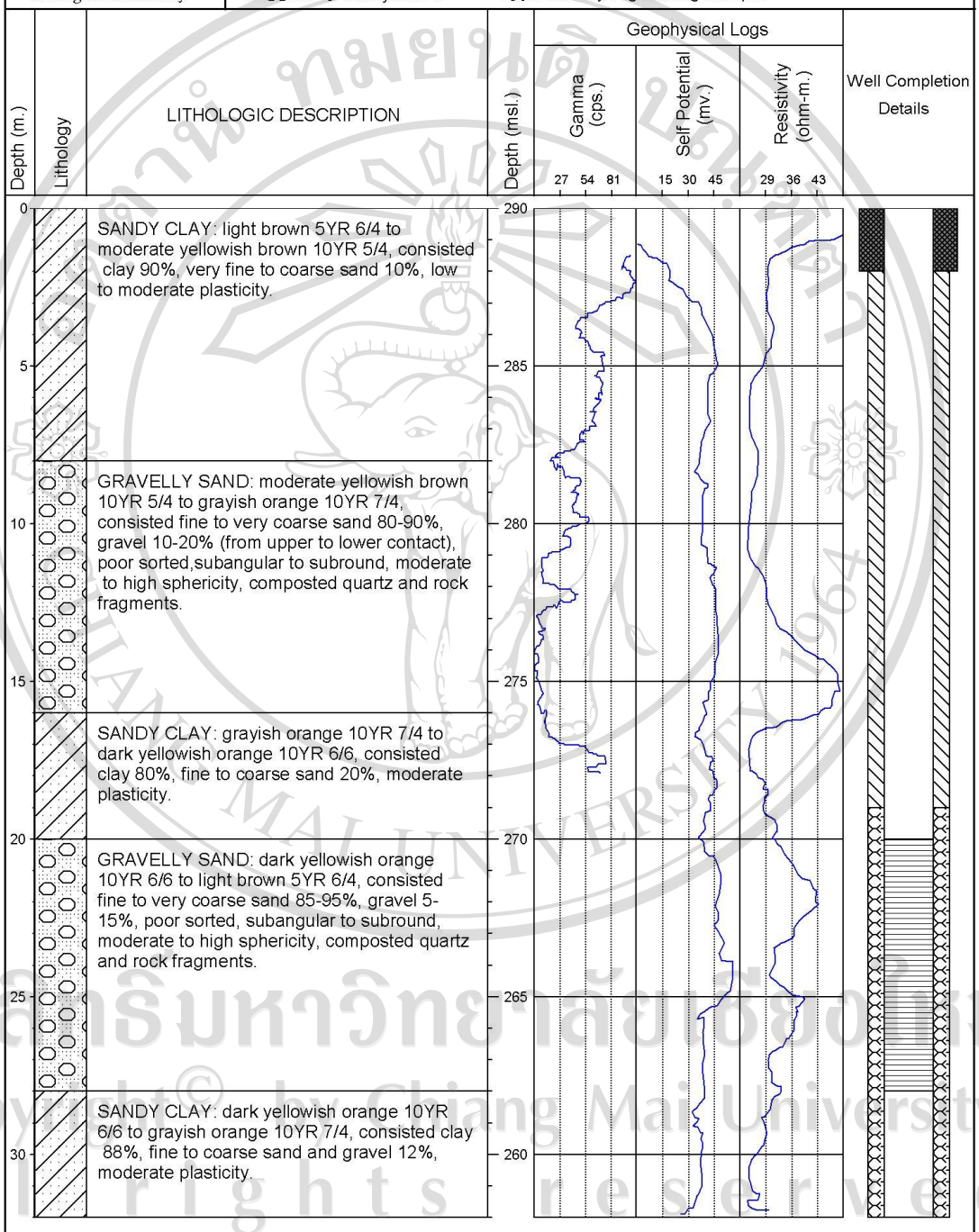
Chiang Mai University

Log of Borehole

Well no. : NS03
Location : Wat Nong Seng
Drilling By : DGR
Logged By : Bunyasit K.

Coordinate : 501718E2055921N **Datumm :** WGS84
Date : 22/06/07 **Elevation :** 290 m. (msl.)
Total Depth : 32 m. **Well Size :** 6 inches
Type : Rotary Rig Cutting Sample

Depth (m.)	Lithology	LITHOLOGIC DESCRIPTION
0 – 5		SANDY CLAY: light brown 5YR 6/4 to moderate yellowish brown 10YR 5/4, consisted clay 90%, very fine to coarse sand 10%, low to moderate plasticity.
5 – 15		GRAVELLY SAND: moderate yellowish brown 10YR 5/4 to grayish orange 10YR 7/4, consisted fine to very coarse sand 80-90%, gravel 10-20% (from upper to lower contact), poor sorted,subangular to subround, moderate to high sphericity, composted quartz and rock fragments.
15 – 20		SANDY CLAY: grayish orange 10YR 7/4 to dark yellowish orange 10YR 6/6, consisted clay 80%, fine to coarse sand 20%, moderate plasticity.
20 – 25		GRAVELLY SAND: dark yellowish orange 10YR 6/6 to light brown 5YR 6/4, consisted fine to very coarse sand 85-95%, gravel 5-15%, poor sorted, subangular to subround, moderate to high sphericity, composted quartz and rock fragments.
25 – 30		SANDY CLAY: dark yellowish orange 10YR 6/6 to grayish orange 10YR 7/4, consisted clay 88%, fine to coarse sand and gravel 12%, moderate plasticity.



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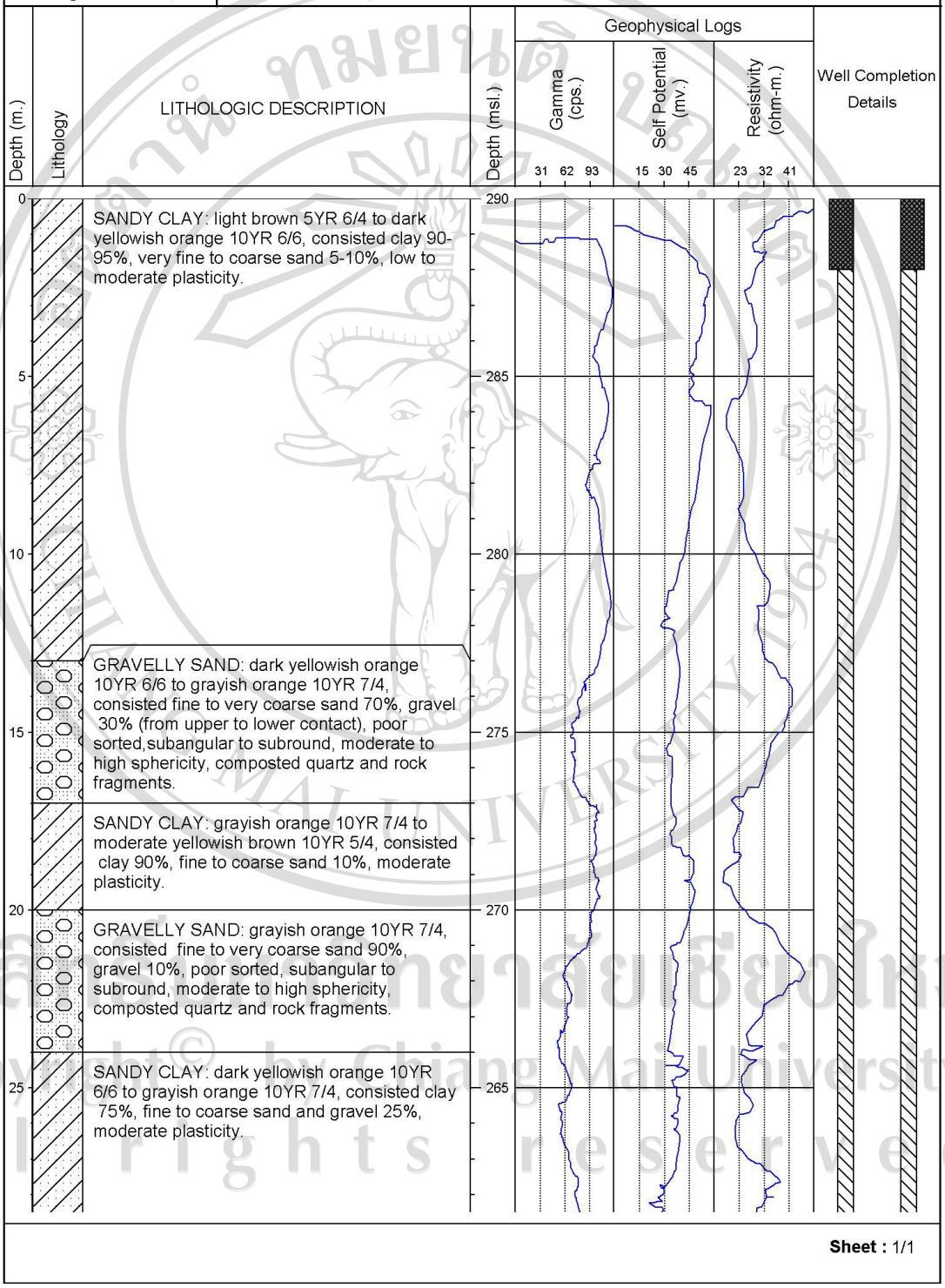
Chiang Mai University

Log of Borehole

Well no. : NS04 **Coordinate :** 501718E2055921N **Datumm :**WGS84
Location : Wat Nong Seng **Date :** 25/06/07 **Elevation :** 290 m. (msl.)
Drilling By : DGR **Total Depth :**54 m. **Well Size :** 4 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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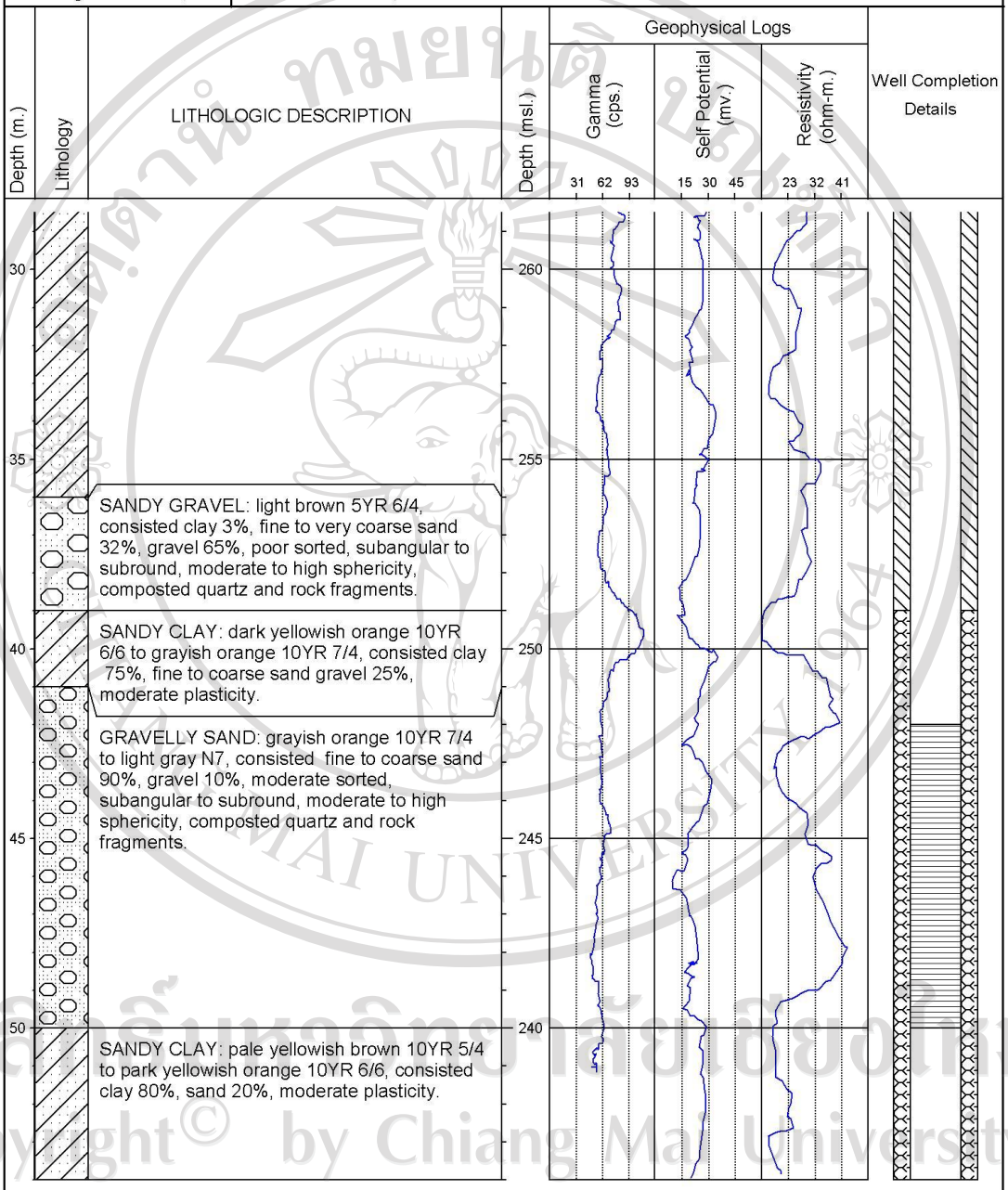
Chiang Mai University

Log of Borehole

Well no. : NS04 **Coordinate :** 501718E2055921N **Datumm :**WGS84
Location : Wat Nong Seng **Date :** 25/06/07 **Elevation :** 290 m. (msl.)
Drilling By : DGR **Total Depth :**54 m. **Well Size :** 4 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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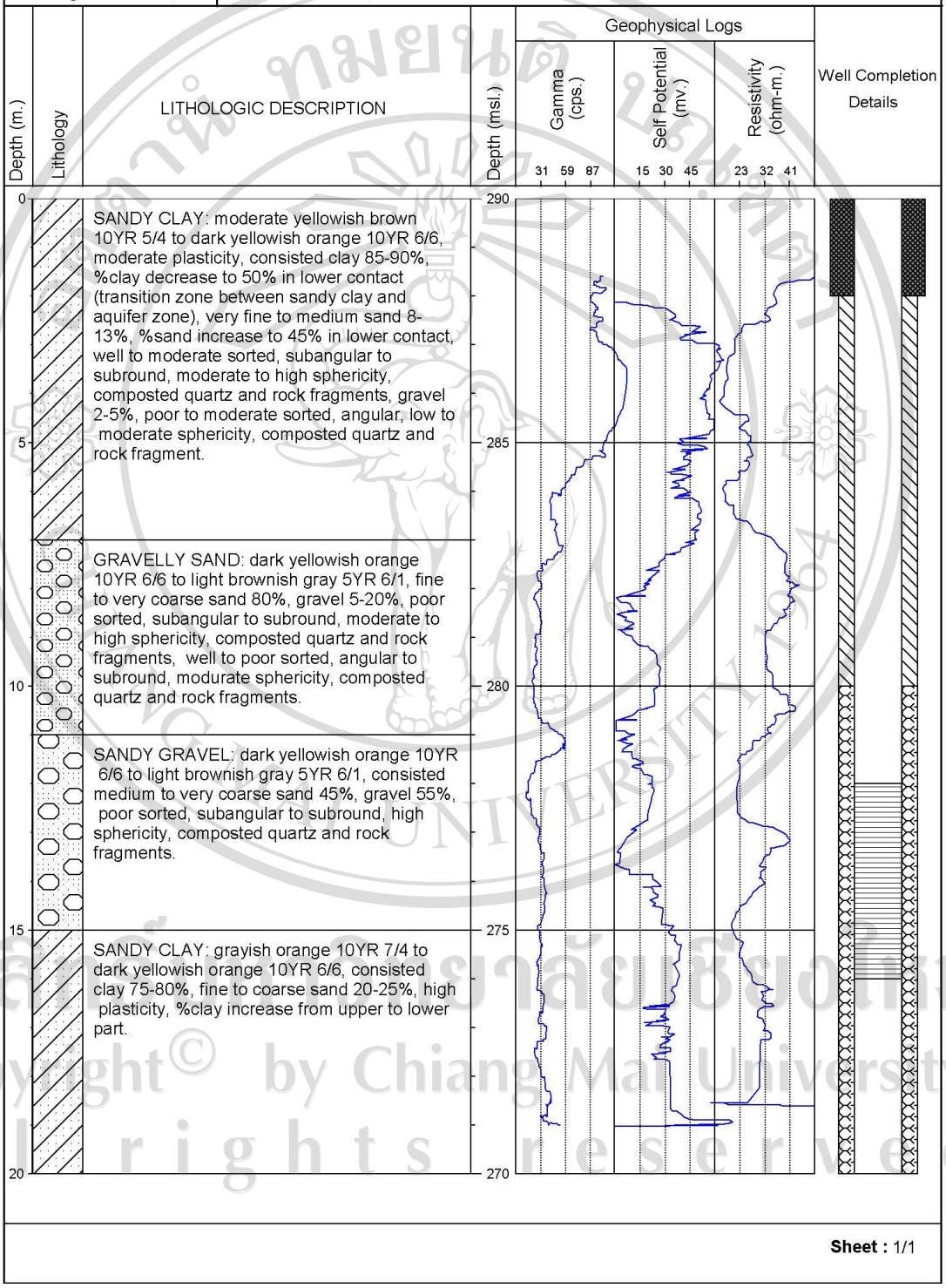
Chiang Mai University

Log of Borehole

Well no. : NS05
Location : Wat Nong Seng
Drilling By : DGR
Logged By : Bunyasit K.

Coordinate : 501718E2055921N **Datumm :** WGS84
Date : 27/06/07 **Elevation :** 290 m. (msl.)
Total Depth : 20 m. **Well Size :** 4 inches
Type : Rotary Rig Cutting Sample



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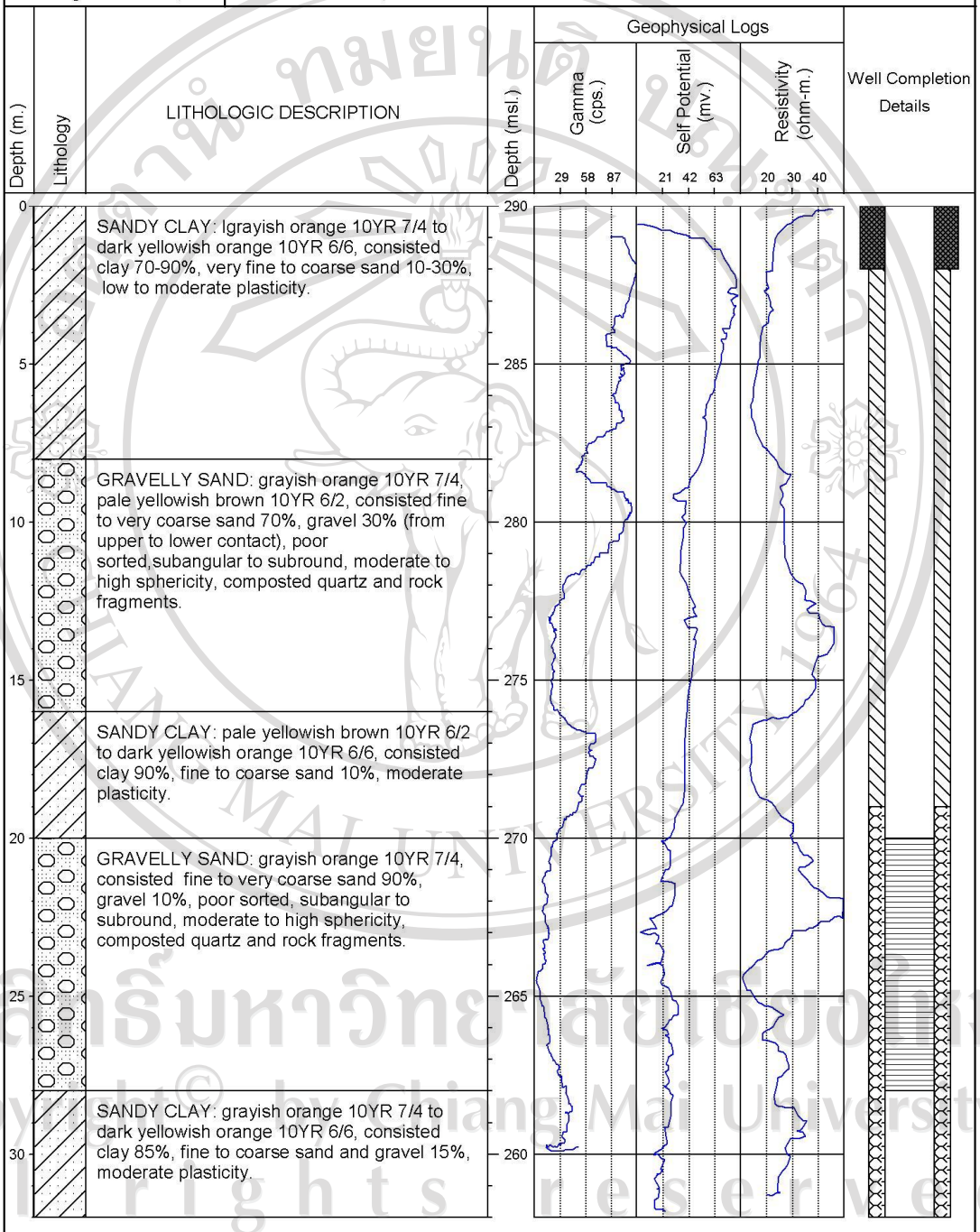
Chiang Mai University

Log of Borehole

Well no. : NS06 **Coordinate :** 501718E2055921N **Datumm :**WGS84
Location : Wat Nong Seng **Date :** 29/06/07 **Elevation :** 290 m. (msl.)
Drilling By : DGR **Total Depth :**32 m. **Well Size :** 4 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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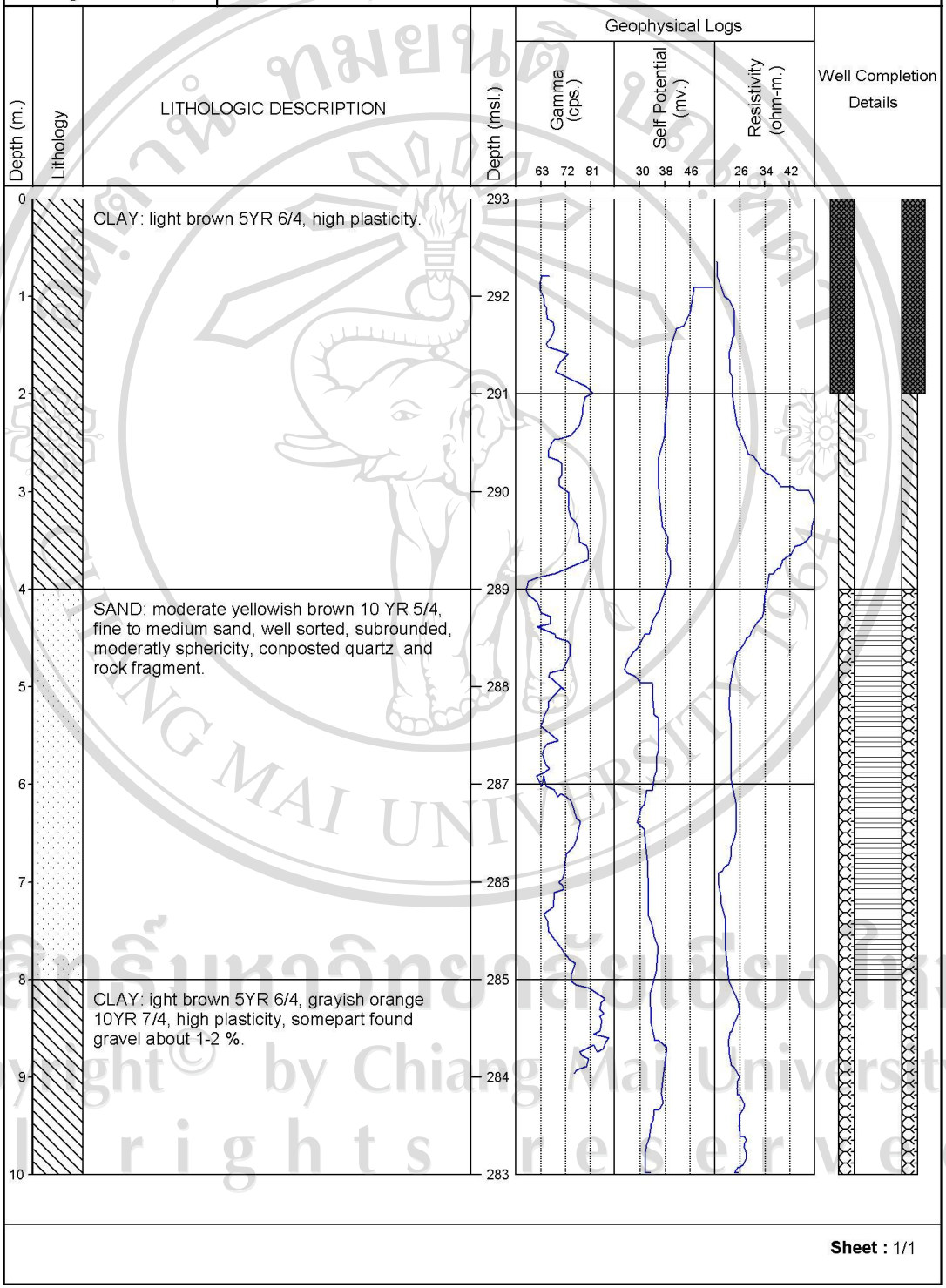
Chiang Mai University

Log of Borehole

Well no. : MY01 **Coordinate :** 505670E2054540N **Datumm :** WGS84
Location : Ban Mae Yak **Date :** 27/07/07 **Elevation :** 293 m. (msl.)
Drilling By : DGR **Total Depth :** 10 m. **Well Size :** 4 inches
Logged By : Bunyasit K. **Type :** Rotary Rig Cutting Sample



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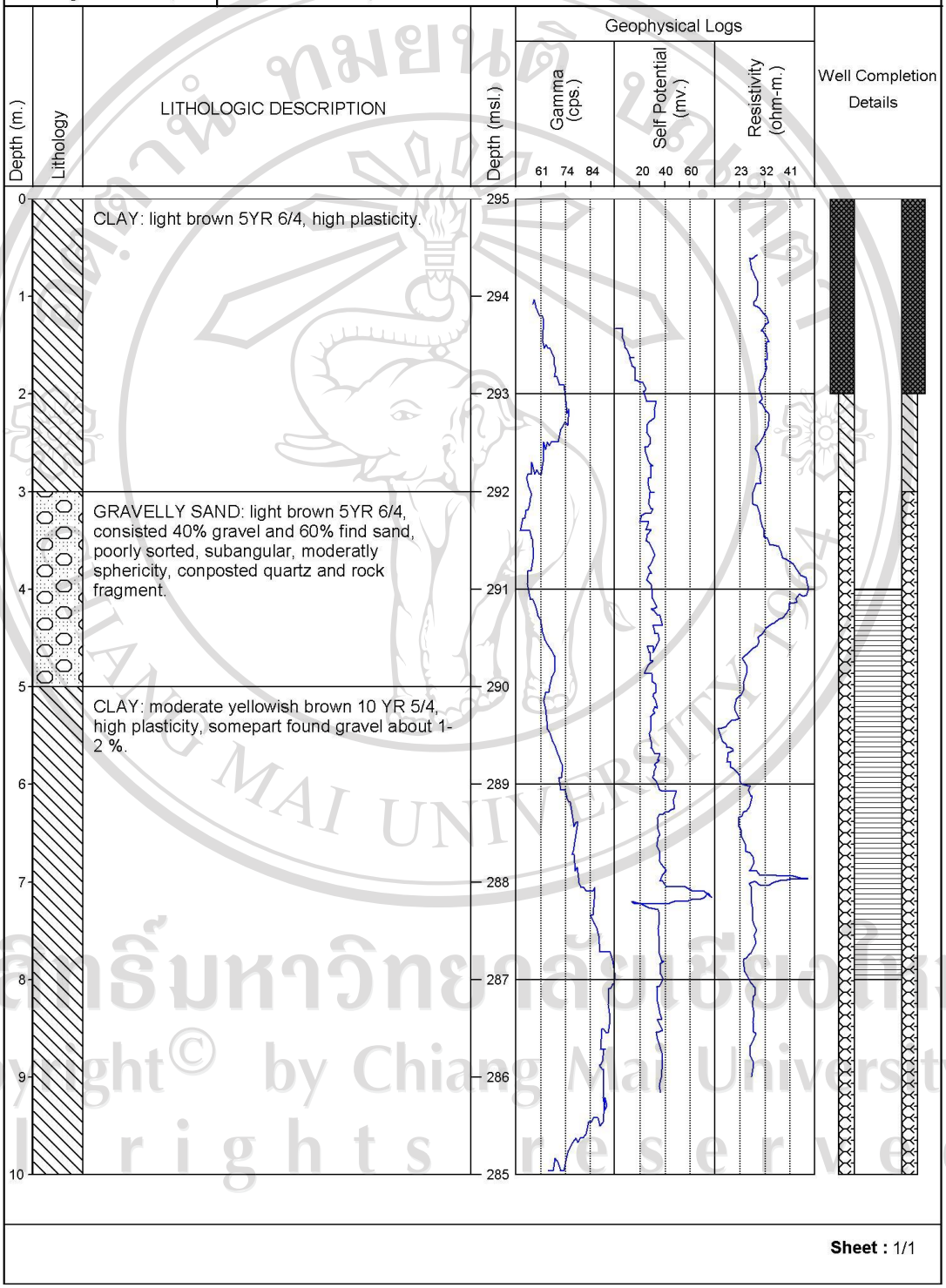
Chiang Mai University

Log of Borehole

Well no. : PK01 **Coordinate :** 504615E2053312N **Datumm :**WGS84
Location : Ban Pratu Khong **Date :** 28/07/07 **Elevation :** 295 m. (msl.)
Drilling By : DGR **Total Depth :**10 m. **Well Size :** 4 inches
Logged By : Bunyasit K. **Type :**Rotary Rig Cutting Sample



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Chiang Mai University

Log of Borehole

Well no. : PK02 **Coordinate :** 504615E2053312N **Datumm :** WGS84
Location : Ban Pratu Khong **Date :** 28/07/07 **Elevation :** 295 m. (msl.)
Drilling By : DGR **Total Depth :** 10 m. **Well Size :** 4 inches
Logged By : Bunyasit K. **Type :** Rotary Rig Cutting Sample

Depth (m.)	Lithology	LITHOLOGIC DESCRIPTION	Depth (msl.)	Geophysical Logs: Gamma (cps.) 59 70 81	Geophysical Logs: Self Potential (mv.) 27 32 37	Geophysical Logs: Resistivity (ohm-m.) 25 30 35	Well Completion Details
0–1		CLAY: light brown 5YR 6/4, high plasticity.	295–294				
1–4			294–291				
4–6		GRAVELLY SAND: light brown 5YR 6/4, consisted 40% gravel and 60% find sand, poorly sorted, subangular, moderatly sphericity, conposted quartz and rock fragment.	291–289				
6–10		CLAY: moderate yellowish brown 10 YR 5/4, high plasticity, somepart found gravel about 1-2 %.	289–285				

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APPENDIX A2

Lithology Logs of DGR Record

Well Number	G0228
Grid	502116E 2054005N
Description	(Depth, meter)
15.2-36.6	clay brown remark: sample lost; the above descriptions were obtained from driller's daily drilling report
36.6-54.9	clay / gravel yellow remark: sample lost; the above descriptions were obtained from driller's daily drilling report
54.9-76.2	gravel brownish gray remark: sample lost; the above descriptions were obtained from driller's daily drilling report

Well Number	G0229
Grid	506616E 2053955N
Description	(Depth, meter)
0-19.8	clay yellowish brown to pinkish brown, silty, slightly plastic, fairly compacted, partially limonitic and lateritic, with few quartz sand and pebble
19.8-41.2	gravel brownish gray, clayey, size ranged from 1-15 mm, angular to subrounded, poorly sorted; composed mostly of quartz, quartzite, feldspars, dark minerals, and other rock fragments
41.2-112.8	clay same as depth 0-19.8 m
112.8-167.7	gravel brown, clayey, size ranged from 1-8 mm, angular to subrounded, poorly sorted; composed mostly of quartz, quartzite, feldspars, dark minerals, and other rock fragments
167.7-175.3	clay same as depth 0-19.8 m
175.3-182.9	gravel same as depth 19.8-41.2 m
182.9-266.8	shale same as depth 112.8-167.7 m
266.8-294.2	slate light to dark gray, siliceous, partially calcareous, well cemented, hard, laminated, fissility

Well Number	G0286
Grid	501716E 2053155N
Description	(Depth, meter)
0-3.0	gravel brown, sandy, 2-4 mm, subrounded, poorly sorted; composed of quartz, laterite, felspars
3.0-13.7	gravel / clay yellowish brown, composited of 45-70% clay, 30-35& gravel; composed of quartz, laterites
13.7-38.1	clay reddish brown, lateritic, highly plastic, compact
38.1-44.2	gravel same as 0-3 m, sizes increased up to 8 mm
44.2-51.8	gravel / clay same as 3.0-13.7 m
51.8-67.0	gravel various colors, sandy, 4-10 mm, subangular to subrounded, moderately to fairly well sorted; composed of quartz, slate, feldspars

Well Number	G0302
Grid	507966E 2054555N
Description	(Depth, meter)
0-19.8	clay yellowish brown, silty, lateritic, gravel presented, plastic, compact
19.8-22.9	gravel yellowish brown, silty, sizes ranged from 2-6 mm, subangular to subrounded, poorly sorted; composed of quartz, feldspars, sandstone
22.9-42.7	clay same as 0-19.8 m, gravelly
42.7-62.5	gravel / clay same as 19.8-22.9 m, clay increased and gravel sizes also increased

Well Number	G0330
Grid	506466E 2054955N
Description	(Depth, meter)
0-7.6	clay brown
7.6-19.8	gravel / clay brown
19.8-25.9	clay red
25.9-44.2	clay / gravel brown

remark: sample lost; the above descriptions were obtained from driller's daily drilling report

Well Number	G0338
Grid	505066E 2054105N
Description	(Depth, meter)
0-6.0	clay brown, sandy, silty, pisolitic, low plastic, loosely compacted, lateritic
6.0-28.9	gravel brown, sizes ranged from 1-2 mm, angular to subrounded, fairly well sorted; composed of quartz, feldspars, sandstone
28.9-36.5	gravel same as 6.0-28.9 m, but bigger sizes to 4 mm
36.5-45.7	gravel same as 6.0-28.9 m

Well Number	G0346
Grid	506466E 2050205N
Description	(Depth, meter)
0-3.0	sand reddish brown, medium to very coarse sand, angular to subrounded, well sorted, loosely compacted, composed of quartz, feldspars, pisolitic laterite, and dark mineral, iron solution coated
3.0-7.6	gravel reddish brown, 2 mm-1.2 cm sandy, angular to subrouded, poorly sorted, loose, quartz and feldspars are the main compositions with some dark rock fragments, highly oxidized, medium sand to gravel of yellowish brown color interbedded at 5.0-6.7 m
7.6-10.7	clay orangish brown, gravelly, sandy limonitic, lateritic, moderately plastic when wet, compacted, limonitic
10.7-21.3	sand brown, clayey, fine to very coarse, angular to subangular, poorly sorted, loosely compacted; composed of feldspars, quartz and chert debris, with some light brown shale, laterite and gravel presented at 11.7-23.3 m
21.3-25.9	shale black, hard, dense, brittle, fissility, with some laterites and quartz, carbonaceous
25.9-38.1	sand dirty brown, medium to coarse sand, subangular to subrounded, very, well sorted, loosely compacted; composed of quartz, feldspars, laterites, carbonaceous shale and chert fragment

Well Number	LN18
Grid	503488E 2052032N
Description	(Depth, meter)
0-3.0	silt brown, silt size, well sorted, well round, composed of quartz and fragment
3.0-9.0	clay yellowish brown, consisted of 80% clay and 20% fine sand, high sphericity, subangular to subrounded, composed of quartz and rock fragment
9.0-12.0	sand reddish brown, consisted of 90% fine sand and 10% clay, well sorted, low to high sphericity, angular to subrounded, composed of quartz and rock fragment
12.0-18.0	gravel reddish brown to brown, consisted 85% very fine pebble to very coarse pebble and 15% of very fine to fine sand, poor sorted, low to high sphericity, angular to subrounded, composed of quartz and rock fragment
18.0-21.0	clay yellowish brown, consisted of 80% clay and 20% fine sand, high sphericity, subangular to subrounded, composed of quartz and rock fragment
22.5-27.0	gravel reddish brown to brown, consisted 80% very fine pebble to very coarse pebble and 20% of very fine to fine sand, poor sorted, low to high sphericity, angular to subrounded, composed of quartz and rock fragment
27.0-58.5	sand reddish brown, consisted 90% fine sand and 10% clay, well sorted, low to high sphericity, angular to subrounded, composed of quartz and rock fragment
58.5-63.5	gravel reddish brown, consisted 70% very fine to fine pebble, 30% fine to medium sand, poorly sorted, low to high sphericity, subangular to subrounded, composed of quartz and rock fragment
63.5-75.0	gravel red, consisted 50% very fine to fine pebble, 30% very fine to fine sand, 20% clay, poorly sorted, low to high sphericity, subangular to subrounded, composed of quartz and rock fragment
75.0-87.0	gravel reddish yellow, consisted 70% very fine pebble to fine 30% very fine to fine sand, poorly sorted, low to high sphericity, subangular to subrounded, composed quartz and rock fragment
87.0-100.5	clay yellowish brown, consisted of 60% clay and 40% medium to fine sand, poorly sorted, low to high sphericity

100.5-103.5	sand yellowish gray, consisted coarse sand to fine sand, poorly sorted angular to subrounded, composed of quartz, feldspar, and rock fragment
103.0-108.0	sand yellowish brown, consisted 60% medium sand to fine sand, 40% clay, low to high sphericity, angular to subrounded, composed of quartz and rock fragment
108.0-112.5	sand yellowish gray, consisted coarse sand to fine sand, poorly sorted angular to subrounded, composed of quartz, feldspar, and rock fragment
112.5-120.0	sand yellowish brown, consisted 80% medium sand, 20% clay, low to high sphericity, angular to subrounded, composed of quartz and rock fragment
120.0-124.5	sand yellowish gray, consisted coarse sand to fine sand, poorly sorted angular to subrounded, composed of quartz, feldspar, and rock fragment
124.5-126.0	sand brown, consisted 80% very fine to fine sand, 20% clay, poorly sorted, low to high sphericity, round to subrounded, composed quartz and rock fragment
126.0-130.5	sand yellowish gray, consisted coarse sand to fine sand, poorly sorted angular to subrounded, composed of quartz, feldspar, and rock fragment
130.5-135.0	sand yellowish brown, consisted 80% medium sand, 20% clay, low to high sphericity, angular to subrounded, composed of quartz and rock fragment
135.0-136.5	sand yellowish gray, consisted coarse sand to fine sand, poorly sorted angular to subrounded, composed of quartz, feldspar, and rock fragment
136.5-138.0	clay yellowish brown
138.0-156.0	sand reddish brown, consisted 80% very fine to fine sand, 20% clay, poorly sorted, low to high sphericity, round to subrounded, composed of quartz and rock fragment
156.0-160.0	sand yellowish gray, consisted coarse sand to fine sand, poorly sorted angular to subrounded, composed of quartz, feldspar, and rock fragment

Well Number	MW0177
Grid	503316E 2053005N
Description	(Depth, meter)
0-1.5	sand brown, fine-grained, angular, fairly well sorted, composed mostly of quartz
1.5-4.5	clay brown, sandy, plastic, compacted
4.5-10.6	sand brown, gravelly, fine to very coarse-grained, angular, poorly sorted, composed mostly of quartz
10.6-45.7	clay brown, plastic, compacted
45.7-68.5	sand same as 4.5-10.6 m
68.5-71.6	clay brown, clay, plastic, compacted, pebble; 4-6 mm, subrounded, moderately sorted, consisted of 60-70% clay, 30-40% gravel, composed mostly of quartz
71.6-79.2	clay brown, silty, sandy, non-plastic, partially compacted
79.2-80.7	sand brown, very fine to medium-grained, angular, fairly well sorted, composed mostly of quartz
80.7-89.9	sand same as 4.5-10.6 m
89.9-97.5	clay same as 71.6-79.2 m
97.5-106.7	sand brown, gravelly, pebbly, fine to very coarse-grained, angular, very poor sorted
106.7-114.3	sand brown, fine to coarse-grained, angular, poorly sorted, composed mostly of quartz
114.3-118.9	sand same as 106.7-114.3

Well Number	MW0195
Grid	506663E 2054832N
Description	(Depth, meter)
0-3.0	clay / sand yellow remark: sample lost, the above descriptions were obtained from driller's daily drilling reports
3.0-18.2	clay yellow

	remark: sample lost, the above descriptions were obtained from driller's daily drilling reports
18.2-38.1	sand fine remark: sample lost, the above descriptions were obtained from driller's daily drilling reports
38.1-45.7	sand / clay fine, yellow remark: sample lost, the above descriptions were obtained from driller's daily drilling reports
45.7-48.7	clay yellow remark: sample lost, the above descriptions were obtained from driller's daily drilling reports
48.7-59.4	clay / sand red remark: sample lost, the above descriptions were obtained from driller's daily drilling reports
59.4-73.1	sand remark: sample lost, the above descriptions were obtained from driller's daily drilling reports
73.1-76.2	clay / sand yellow remark: sample lost, the above descriptions were obtained from driller's daily drilling reports

Well Number	MW0221
Grid	498956E 2052445N
Description	(Depth, meter)
0-1.5	clay black remark: sample lost, the above descriptions were obtained from driller's daily drilling reports
1.5-4.6	clay brown remark: sample lost, the above descriptions were obtained from driller's daily drilling reports
4.6-7.6	sand fine remark: sample lost, the above descriptions were obtained from driller's daily drilling reports

Well Number	MW0223
Grid	507866E 2056555N
Description	(Depth, meter)
0-1.5	top soil
1.5-21.3	clay light yellowish brown to brown, sandy, very silty, partially limonitic, non-plastic, compacted
21.3-27.4	sand whitish brown, gravelly, fine to very coarse grained, angular, poorly sorted, composed mostly of quartz
27.4-38.1	clay moderate brown, very silty, sandy, plastic, compacted
38.1-91.5	sand brown, gravelly, fine to very coarse grained, angular, poorly sorted, composed mostly of quartz

Well Number	MW0348
Grid	506716E 2055905N
Description	(Depth, meter)
0-3.0	clay yellowish gray, limonitic, plastic
3.0-6.1	gravel yellow and various colors, very fine gravel to fine gravel, angular, moderately sorted, composed of quartz, chert
6.1-9.2	clay yellow, limonitic, plastic
9.2-27.4	gravel light yellow and various colors, clayey, very fine gravel to fine gravel, subangular, moderately sorted, composed of quartz, chert

Well Number	MW0392
Grid	505366E 2051355N
Description	(Depth, meter)
0-10.6	clay yellowish brown and brown, sandy, plastic
10.6-12.1	sand brown, medium sand, subrounded, very well sorted, composed of quartz, feldspars
12.1-15.2	sand brown, coarse sand, subrounded, very well sorted, composed of quartz, feldspars
15.2-22.8	gravel whitish gray, very fine gravel to medium gravel, subrounded, moderately sorted, composed of quartz, feldspars

22.8-24.3	sand brown, very coarse sand, subrounded, very well sorted, composed of quartz, feldspars
24.3-38.1	gravel whitish gray, very fine gravel to medium gravel, subrounded, moderately sorted, composed of quartz, feldspars
38.1-39.6	gravel whitish gray, very fine gravel to fine gravel, subrounded, moderately sorted to well sorted, composed of quartz

Well Number	MW0516
Grid	508036E 2054255N
Description	(Depth, meter)
0-17.7	clay light brownish gray and dark brownish orange, slightly plastic to plastic
17.7-29.0	gravel light yellowish orange, clayey, very fine gravel, subangular to subrounded, well sorted, composed of quartz, chert, feldspars, rock fragments
29.0-35.1	clay yellowish brown, sandy, slightly plastic
35.1-38.1	gravel light yellowish orange, sandy, very fine gravel, subangular to subrounded, well sorted, composed of quartz, chert, feldspars, rock fragments
38.1-44.2	gravel / clay yellowish brown, very fine gravel, subangular to subrounded, well sorted, consists of 50% gravel, 50% clay, composed of quartz, feldspars, rock fragment
44.2-73.2	clay yellowish brown, plastic
73.2-83.8	gravel / clay light brownish gray, very fine gravel, subangular to subrounded, well sorted, consists of 70% gravel, 30% clay, composed of quartz, feldspars, chert, rock fragments
83.8-89.9	clay yellowish brown, sandy, slightly plastic
89.9-102.1	gravel / clay yellowish brown, very fine gravel, subangular to subrounded, well sorted, consists of 70% gravel, 30% clay, composed of quartz veinlets, feldspars, rock fragments
102.1-120.4	sand various colors, gravelly, very coarse sand, subangular to subrounded, well sorted, composed of quartz, feldspars, chert

Well Number	MW0536
Grid	501386E 2053935N
Description	(Depth, meter)
0-7.6	clay dark brown and light yellowish brown, plastic
7.6-10.6	clay light yellowish brown, sandy, gravelly, slightly plastic
10.6-13.7	clay dark gray, sandy, plastic
13.7-16.7	gravel brownish gray, clayey, very fine gravel to medium gravel, subrounded to rounded, moderately sorted, composed of quartz, chert
16.7-36.5	clay yellowish brown and light yellowish brown, sandy, gravelly, plastic
36.5-41.1	sand / gravel light brownish gray, gravelly, medium sand to very coarse sand, subangular to subrounded, moderately sorted, composed of quartz, chert
41.1-42.6	sand various colors, gravelly, coarse sand to very coarse sand, subangular to subrounded, well sorted, composed of quartz, chert
42.6-47.2	sand / gravel various colors, clayey, gravelly, medium sand to very coarse sand, subangular to subrounded, moderately sorted, composed of quartz, chert
47.2-51.8	clay yellowish brown, sandy, plastic
51.8-62.5	gravel various colors, sandy, very fine gravel to fine gravel, subrounded to rounded, well sorted, composed of quartz, chert, sandstone fragments
62.5-65.5	clay yellowish brown, sandy, plastic.

Well Number	MW0541
Grid	502816E 2056160N
Description	(Depth, meter)
0-6.0	sand light yellowish brown, silty, plastic
6.0-10.6	clay yellowish brown, sandy, plastic
10.6-15.2	sand white and grayish white, gravelly, coarse sand to very coarse sand, subrounded, moderately sorted to well sorted, composed of quartz, chert, feldspars

15.2-16.7	gravel grayish white, sandy, very fine gravel, subrounded to rounded, well sorted, composed of quartz, chert
16.7-45.7	clay grayish white, sandy, plastic
45.7-50.3	sand / gravel grayish white, medium sand to very fine gravel, subrounded, moderately sorted, consists of 60% sand, 40% gravel, composed of quartz, chert
50.3-56.4	clay yellowish brown, sandy, plastic
56.4-64.0	gravel light gray, sandy, very fine gravel to fine gravel, subrounded to rounded, moderately sorted, composed of quartz, chert, sandstone fragmens
64.0-77.7	clay yellowish brown, sandy, plastic

Well Number	MW0542
Grid	502466E 2053845N
Description	(Depth, meter)
0-3.0	sand light yellowish brown, clayey, very fine sand to medium sand, subrounded, composed of quartz
3.0-10.6	clay yellowish brown, sandy, plastic
10.6-12.1	sand yellowish brown, clayey, gravelly, very fine sand to medium sand, subangular to subrounded, composed of quartz
12.1-18.2	clay / gravel light yellowish brown, very fine gravel to fine gravel, subrounded, consists of 60% clay, 40% gravel, composed of quartz
18.2-41.1	clay yellowish brown, sandy, plastic
41.1-44.2	sand light brownish gray, medium sand to very coarse sand, subangular to subrounded, moderately sorted to well sorted, composed of quartz, chert
44.2-50.3	clay yellowish brown, high plastic
50.3-51.8	sand light brownish gray, coarse sand to very coarse sand, subangular to subrounded, well sorted, composed of quartz, chert
51.8-54.8	clay yellowish brown, high plastic

54.8-64.0	sand grayish white, gravelly, medium sand to very coarse sand, subangular to subrounded, moderately sorted to well sorted, composed of quartz, chert
64.0-65.5	clay yellowish brown, sandy, plastic
65.5-70.1	sand / gravel grayish white, coarse sand to very fine gravel, subrounded, moderately sorted to well sorted, consists of 65% sand, 35% gravel, composed of quartz, chert
70.1-77.7	clay yellowish brown, sandy, plastic

Well Number	MW0544
Grid	499466E 2054755N
Description	(Depth, meter)
22.9-25.9	sand light brownish orange, clayey, very fine sand to medium sand, subrounded, moderately sorted, composed of quartz
25.9-36.6	clay light yellowish brown, sandy, slightly plastic
36.6-47.3	sand light yellowish brown, gravelly, clayey, fine sand to very coarse sand, subangular to subrounded, poorly sorted, composed of quartz, chert
47.3-68.6	gravel various colors, sandy, clayey, very fine gravel to fine gravel, subangular to subrounded, poorly sorted, composed of quartz, chert, sandstone fragments
68.6-99.1	sand light brownish orange, gravelly, clayey, very fine sand to coarse sand, subrounded, moderately sorted to poorly sorted, composed of quartz
99.1-111.3	clay yellowish orange, sandy, slightly plastic to plastic
111.3-112.8	sand light yellowish orange, gravelly, medium sand to very coarse sand, subrounded, moderately sorted, composed of quartz, chert
112.8-115.8	clay light yellowish orange, sandy, gravelly, slightly plastic
115.8-126.5	gravel / sand various colors, clayey, very fine gravel, subangular to subrounded, moderately sorted, consists of 60% gravel, 40% sand, composed of quartz, coral, quartzite fragments

Well Number	MW0604
Grid	506546E 2052645N
Description	(Depth, meter)
0-4.6	clay
	yellowish brown
4.6-6.1	sand
	yellowish brown, clayey, medium sand to coarse sand, subangular, well sorted, composed of quartz
6.1-12.2	sand
	yellowish brown, clayey, gravelly, medium sand to very fine gravel, subangular, poorly sorted, composed of quartz
12.2-61.0	sand / clay
	yellowish brown, gravelly, fine sand to very fine gravel, subangular, poorly sorted, composed of quartz
61.0-65.6	clay
	light grayish brown, slightly plastic

Well Number	MW0646
Grid	507666E 2051605N
Description	(Depth, meter)
0-30.5	clay
30.5-33.5	sand
33.5-65.6	clay
65.6-82.3	sand
	yellow, clayey slightly, medium sand, composed of quartz
82.3-91.5	clay
	yellow, sandy slightly, slightly plastic
91.5-99.1	sand
	black, medium sand, composed of dark minerals, quartz, feldspars

APPENDIX A3

Lithology Logs of DEQP Record

Well Number	KL_P
Grid	506491E 2054725N
Description	(Depth, meter)
0-6.0	clay dark gray, sandy loam
6.0-15.0	clay light brown, sandy, compacted
15.0-21.0	sand light brown, clayey, subangular, medium sand, moderately sorted, composed of quartz
21.0-26.0	clay light brown, sandy, gravelly, loose
26.0-32.0	sand yellowish brown, clayey, subrounded to subangular, medium to coarse sand, well sorted, composed of quartz
32.0-35.0	clay light brown, compacted
35.0-39.0	gravel yellowish brown, clayey, subrounded to subangular, size 2-8 mm, poorly sorted, composed of quartz, feldspar
39.0-50.0	clay yellowish brown, gravelly (2-8 mm), compacted
50.0-72.0	gravel various colors, sandy, clayey, subangular, size 2-8 mm, poorly sorted, composed of quartz, feldspar, rock fragment

Well Number	MSBT_P
Grid	502026E 2053272N
Description	(Depth, meter)
0-6.0	clay light brown, sandy loam, compacted, low plastic
6.0-12.0	clay light brown, organic matter, sandy compacted, low plastic
12.0-36.0	clay light brown, gravelly (2-10 mm), mottled, compacted, low plastic
36.0-54.0	clay yellowish light brown, gravelly (2-10 mm), sandy, mottled, compacted
54.0-72.0	gravel yellowish light brown, size 2-15 mm, subrounded to subangular, poorly sorted, composed of quartz, feldspar,chert
72.0-78.0	gravel yellowish light brown, clayey, sandy, size 2-12 mm subangular, very poorly sorted, composed of quartz, feldspar

Well Number	SPF_P
Grid	504843E 2055157N
Description	(Depth, meter)
0-9.0	clay reddish brown, mottled, compacted
9.0-15.0	clay yellowish brown, mottled, compacted
15.0-20.0	gravel yellowish brown, clayey, sandy, subangular, size 2-6 mm, poorly sorted, composed of quartz, feldspar
20.0-36.0	clay yellowish brown, sandy, gravelly (2-8 mm)
36.0-49.0	sand yellowish brown, clayey, gravelly (2-6 mm), subangular, medium to very coarse sand, moderately sorted, composed of quartz, feldspar
49.0-54.0	sand / clay
54.0-62.0	sand
62.0-69.0	clay yellowish brown, gravelly (2-10 mm), sandy, composed of quartz, feldspar

Well Number	TOT_P
Grid	504407E 2055346N
Description	(Depth, meter)
0-6.0	clay light brown, mottled, compacted, high plastic
6.0-18.0	clay light brown, sandy loam, compacted
18.0-24.0	sand light brown, clayey, gravelly (2-4 mm), very coarse sand, subangular, moderately sorted, composed of quartz
24.0-27.0	clay light brown, sandy, compacted
27.0-39.0	sand light brown, clayey, subangular, medium sand, moderately sorted, composed of quartz
39.0-42.0	clay light brown, gravelly (2-6 mm), compacted
42.0-48.0	gravel light brown, clayey, subangular, size 2-8 mm, poorly sorted
48.0-64.0	clay yellowish brown, gravelly, sandy

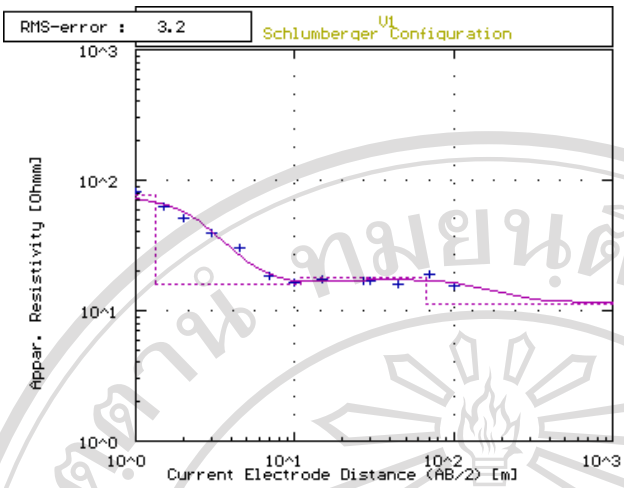
64.0-67.0	sand white, black, yellowish brown, gravelly (2-5 mm), coarse to very coarse sand, subangular to angular, well sorted, composed of quartz, feldspar
67.0-72.0	gravel white, black, various color, very fine to gravel, size 2-5 mm, subangular, very well sorted, composed of quartz, feldspar, chert
72.0-78.0	clay brown, compacted, plastic

Well Number	PTK_P
Grid	504549E 2053348N
Description	(Depth, meter)
0-7.0	clay dark gray, compacted, plastic
7.0-9.0	clay yellowish brown, compacted, sandy
9.0-12.0	gravel various color, size 2-4 mm, subangular to angular, well sorted, composed of quartz, feldspar, rock fragment
12.0-16.0	clay light brown, compacted
16.0-21.0	gravel various color, size 2-10 mm, subangular to angular, well sorted, composed of quartz, feldspar, rock fragment
21.0-27.0	gravel various color, size 4-15 mm, subangular to angular, well sorted, composed of quartz, feldspar, rock fragment
27.0-33.0	gravel various color, size 2-5 mm, subangular to angular, well sorted, composed of quartz, feldspar, rock fragment
33.0-37.0	clay light brown, compacted
37.0-39.0	gravel light brown, size 2-5 mm, subangular to angular, well sorted, composed of quartz, feldspar, rock fragment
39.0-52.0	clay light brown, sandy, gravelly, compacted
52.0-56.0	gravel light brown, size 2-15 mm, subangular to angular, well sorted, composed of quartz, feldspar, rock fragments
56.0-62.0	clay light brown, gravelly, compacted
62.0-70.0	gravel yellowish brown, clayey, sandy, very coarse sand to fine sand, moderately sorted, composed of quartz, feldspar

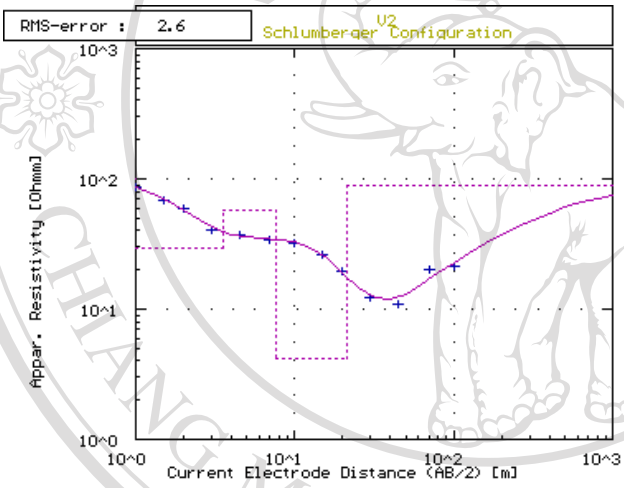
APPENDIX B
RESISTIVITY SURVAY DATA

	UTM_E	UTM_N	AB/2

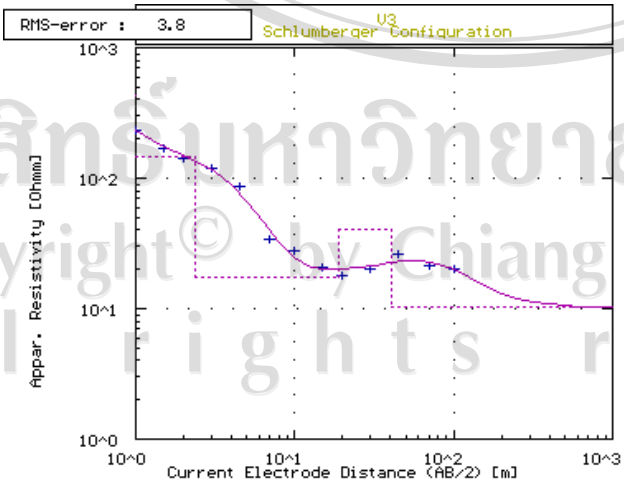
			1	1.5	2	3	4.5	7	10	15	20	30	45	70	100
V1	503501	2053709	82.315	62.060	51.189	39.268	30.002	18.452	16.294	17.400	17.101	16.749	16.089	19.189	15.430
V2	503063	2053736	85.804	68.802	59.509	41.069	36.972	34.332	31.841	26.522	19.624	12.409	11.041	20.105	21.173
V3	503353	2054111	235.750	171.000	141.820	118.280	86.165	33.568	27.709	20.952	17.983	19.846	26.248	21.380	19.990
V4	503520	2054364	251.520	196.200	145.660	116.500	85.124	43.689	29.121	23.073	22.876	20.755	22.327	25.891	31.730
V5	503961	2054421	237.520	135.560	94.886	57.532	38.348	46.935	42.260	32.072	30.225	30.281	34.133	61.588	-
V6	504231	2054740	673.510	566.650	357.395	13.958	-	-	13.958	21.028	15.827	13.003	12.423	22.253	18.809
V7	502490	2054643	0.134	0.063	0.624	0.289	0.269	0.072	1.897	1.271	0.793	9.699	17.546	26.097	25.847
V8	502856	2054256	1.715	2.094	1.981	2.055	1.301	1.468	2.130	3.456	4.836	8.358	15.303	87.095	372.120
V9	503193	2054341	2.258	1.013	12.222	20.359	10.686	116.010	385.810	154.880	102.290	990.950	2425.400	2864.300	15137.0
V10	503185	2054681	20.186	6.429	97.836	27.722	21.224	307.460	503.270	4530.700	3507.600	5663.000	3095.200	205.430	14495.0
V11	501732	2055837	8.624	12.271	10.743	16.753	18.878	23.565	17.649	26.689	30.271	34.974	39.806	34.552	36.626
V12	503873	2056298	65.099	75.606	69.807	78.870	143.000	106.030	98.774	85.999	55.849	38.640	43.519	42.119	38.147
V13	503765	2056805	63.923	57.536	39.372	27.430	13.336	12.198	15.039	19.204	21.427	24.429	26.499	29.964	28.735
V14	504208	2057178	725.870	680.250	405.720	319.560	68.160	21.435	15.950	17.904	19.135	25.015	30.223	27.156	21.048
V15	501561	2052306	72.601	84.877	56.664	36.746	25.601	31.108	37.082	47.408	45.405	42.313	30.249	28.480	20.482
V16	502370	2052277	30.342	36.040	45.368	53.674	48.358	58.965	63.312	45.168	32.331	27.703	26.460	26.447	19.220
V17	502763	2052021	93.358	37.117	19.884	14.493	11.605	11.678	10.558	13.132	14.974	20.452	25.480	22.261	17.891
V18	503135	2051445	70.219	89.908	84.524	74.802	47.454	23.837	18.600	17.202	16.343	18.658	24.049	21.032	19.996
V19	500599	2051982	63.033	61.396	68.282	58.047	46.266	43.701	37.977	35.819	35.428	33.894	29.565	23.704	25.743
V20	502154	2051288	130.900	143.510	134.370	135.360	129.250	93.971	73.396	43.133	24.749	16.341	12.621	14.696	14.958
V21	504526	2050847	2011.200	1319.000	878.880	315.995	193.490	167.950	141.095	109.010	81.978	47.216	33.379	24.733	24.311
V22	506145	2051987	284.080	175.720	105.660	70.799	31.061	18.478	14.449	15.440	15.636	19.934	33.704	31.212	8.144
V23	505301	2051710	175.140	98.012	84.568	72.856	41.507	22.737	16.212	11.931	12.500	14.450	19.939	20.360	11.682
V24	506625	2051010	181.56	112.21	59.117	31.923	17.091	13.89	14.789	14.49	19.521	25.417	28.749	34.201	38.202
V25	507060	2052116	64.931	42.533	35.617	37.545	38.998	33.071	26.290	18.746	17.415	17.006	19.200	22.864	23.067
V26	505593	2052603	69.947	28.028	27.313	25.616	21.085	19.521	19.695	20.194	18.347	21.360	20.342	14.505	11.000
V27	504267	2053149	34.254	53.959	57.281	121.263	226.500	178.080	127.945	65.555	67.271	35.301	27.403	20.473	19.422
V28	505105	2056448	38.925	37.073	38.080	35.856	30.723	25.227	19.725	17.026	18.018	21.022	21.864	21.948	19.005
V29	505723	2056853	115.230	168.470	187.760	201.220	153.440	72.077	48.846	60.825	70.234	47.366	41.593	37.756	28.113
V30	506862	2056620	200.010	146.560	114.610	101.315	83.137	52.436	39.867	26.375	18.620	22.594	32.380	30.765	24.918
V31	507592	2055875	150.630	158.570	161.740	134.840	88.646	34.040	10.557	13.238	13.780	14.240	16.839	14.687	8.465
V32	508110	2055576	45.654	42.336	42.540	38.088	30.942	24.021	21.123	21.020	20.866	22.402	25.115	26.986	30.090
V33	507408	2055090	57.664	40.496	33.834	25.283	15.231	9.789	8.307	8.688	10.017	12.501	14.874	16.337	16.926
V34	507947	2053425	14.413	11.611	10.627	10.542	11.052	11.758	11.808	12.648	13.734	13.995	14.264	11.909	11.573
V35	507560	2052715	239.860	234.050	219.920	188.475	162.220	111.360	55.422	19.325	14.396	10.959	11.582	13.786	14.191
V36	505959	2054525	71.351	63.760	60.950	51.196	40.797	31.349	25.575	26.372	23.422	16.737	14.398	13.092	13.816
V37	506281	2053202	372.500	376.680	294.020	258.000	172.950	89.108	60.361	31.041	27.393	17.591	18.207	16.222	23.618
V38	505303	2054078	88.401	53.935	40.835	35.946	23.785	17.740	17.113	16.195	15.832	20.922	21.737	21.681	18.697
V39	504198	2056099	62.639	43.698	38.990	34.154	25.781	15.102	13.469	14.644	16.495	20.517	25.483	27.535	26.642
V40	505028	2057410	73.512	55.005	42.561	24.488	16.702	14.718	14.134	15.970	18.570	21.631	26.963	31.681	29.165



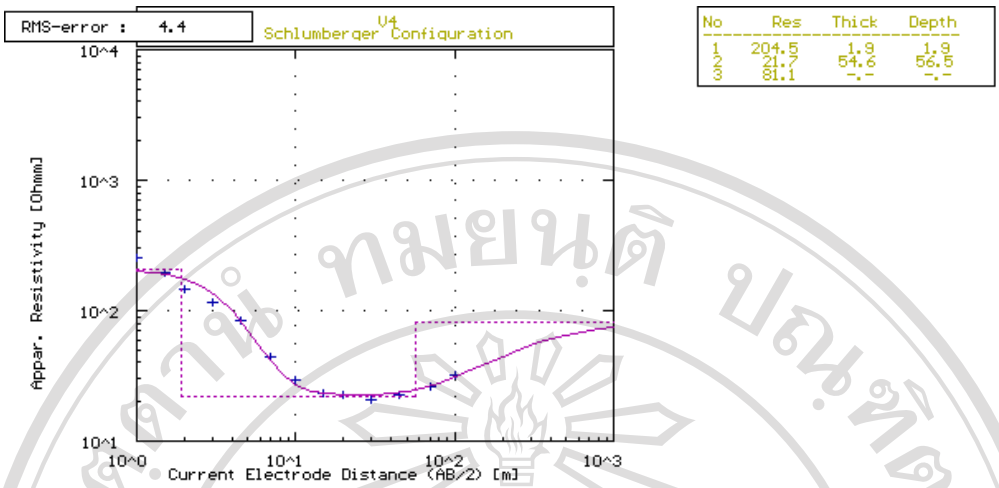
No	Res	Thick	Depth
1	76.3	1.3	1.3
2	16.0	9.6	10.9
3	18.0	56.4	67.3
4	11.3	-.-	-.-



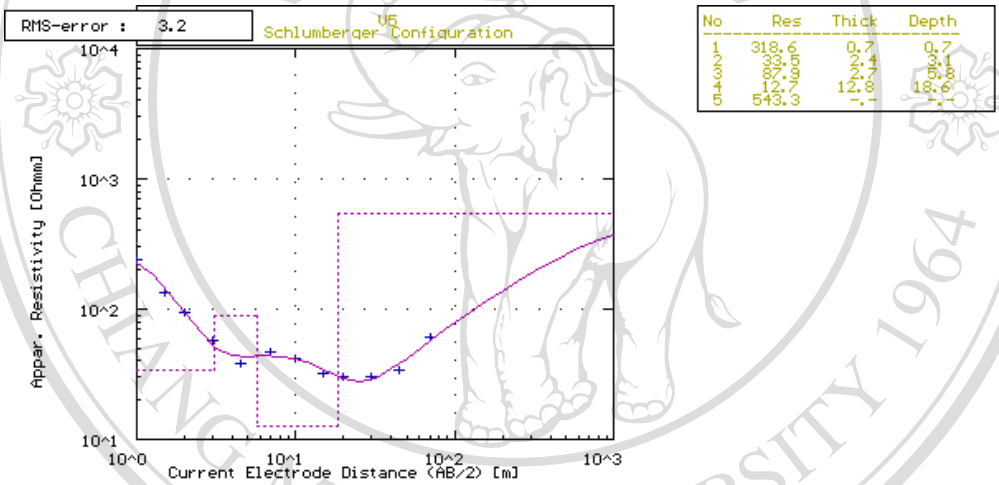
No	Res	Thick	Depth
1	98.7	0.8	0.8
2	29.3	2.7	3.5
3	57.8	4.0	7.5
4	4.2	13.5	21.1
5	88.6	-.-	-.-



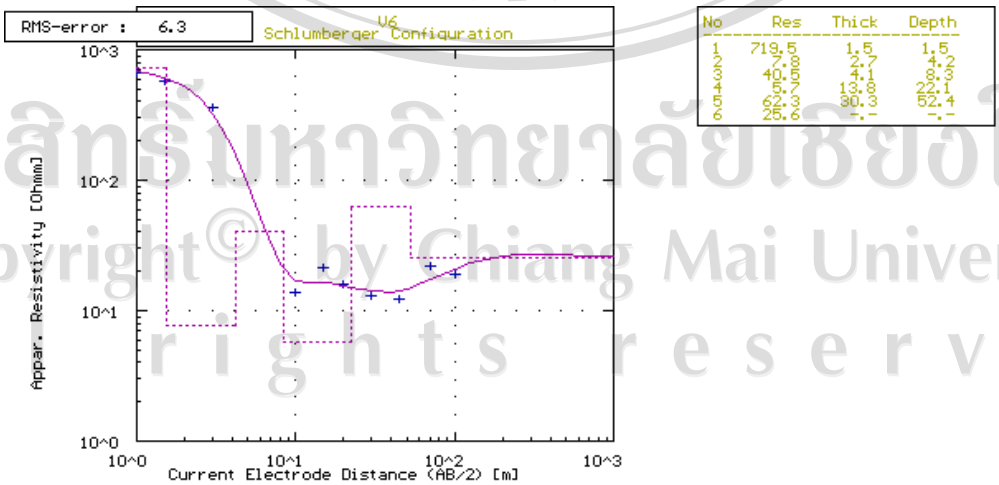
No	Res	Thick	Depth
1	425.4	0.4	0.4
2	146.1	2.0	2.4
3	17.6	16.4	18.8
4	40.9	22.1	40.9
5	10.2	-.-	-.-



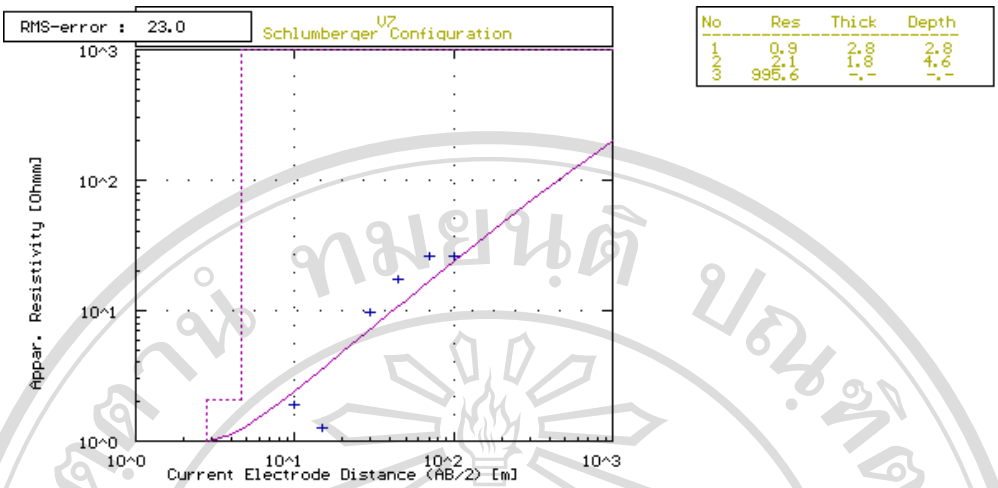
No	Res	Thick	Depth
1	204.5	1.9	1.9
2	21.7	54.6	56.5
3	81.1	-.-	-.-



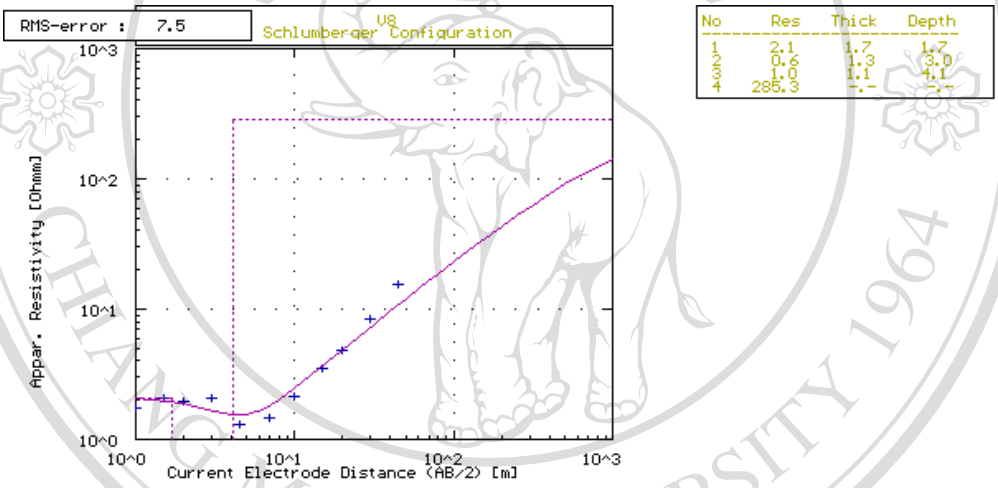
No	Res	Thick	Depth
1	318.6	0.7	0.7
2	33.5	2.4	3.1
3	87.9	2.7	5.8
4	12.7	12.8	18.6
5	543.3	-.-	-.-



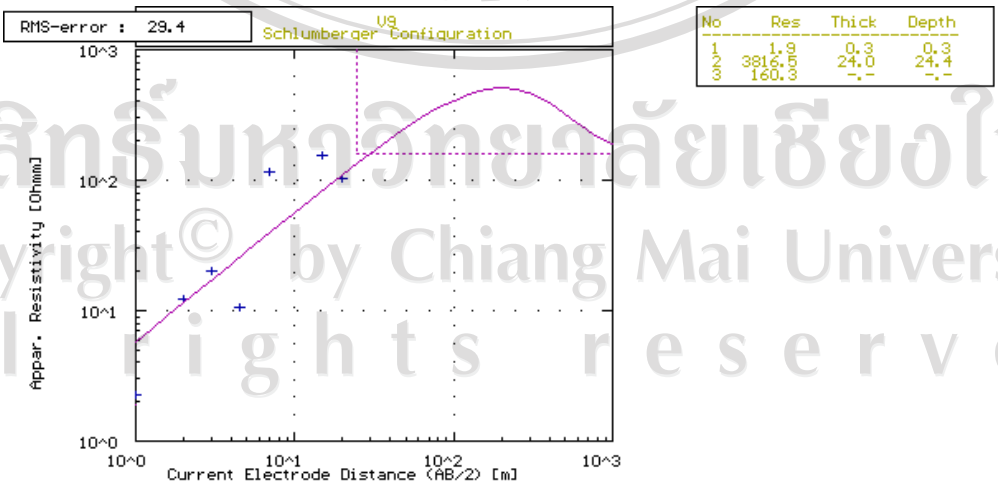
No	Res	Thick	Depth
1	719.5	1.5	1.5
2	7.8	2.7	4.2
3	40.8	4.1	8.3
4	5.7	13.8	22.1
5	62.3	30.3	52.4
6	25.6	-.-	-.-



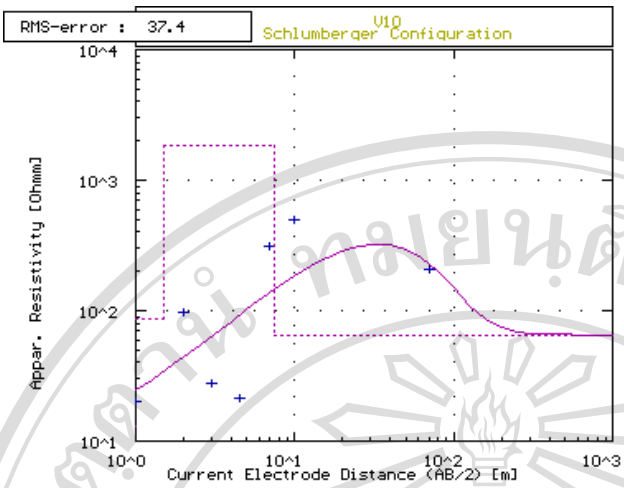
No	Res	Thick	Depth
1	0.9	2.8	2.8
2	2.1	1.8	4.6
3	995.6	-.-	-.-



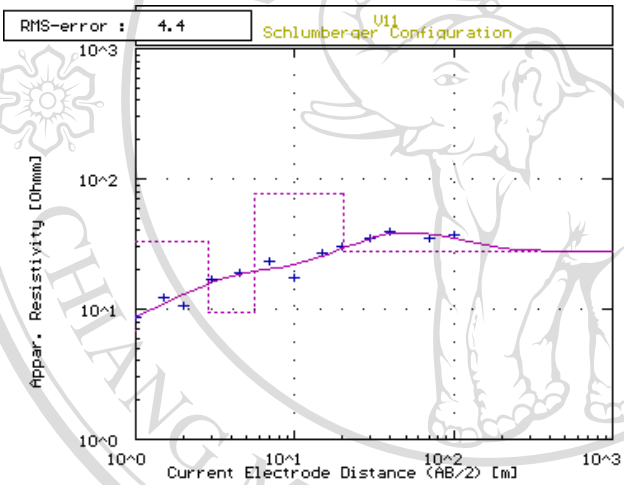
No	Res	Thick	Depth
1	2.1	1.7	1.7
2	0.6	1.3	3.0
3	1.0	1.1	4.1
4	285.3	-.-	-.-



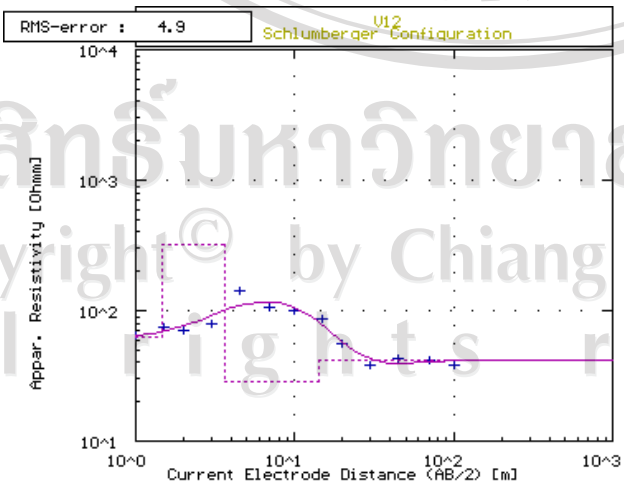
No	Res	Thick	Depth
1	1.9	0.3	0.3
2	3816.5	24.0	24.4
3	160.3	-.-	-.-



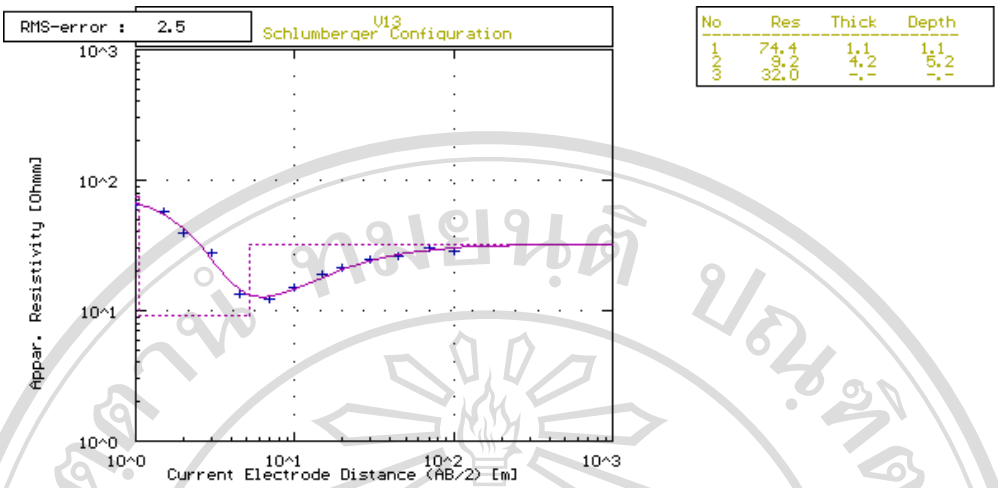
No	Res	Thick	Depth
1	13.0	0.4	0.4
2	98.6	0.5	1.0
3	86.8	0.5	1.5
4	1836.5	5.9	7.4
5	65.0	-.-	-.-

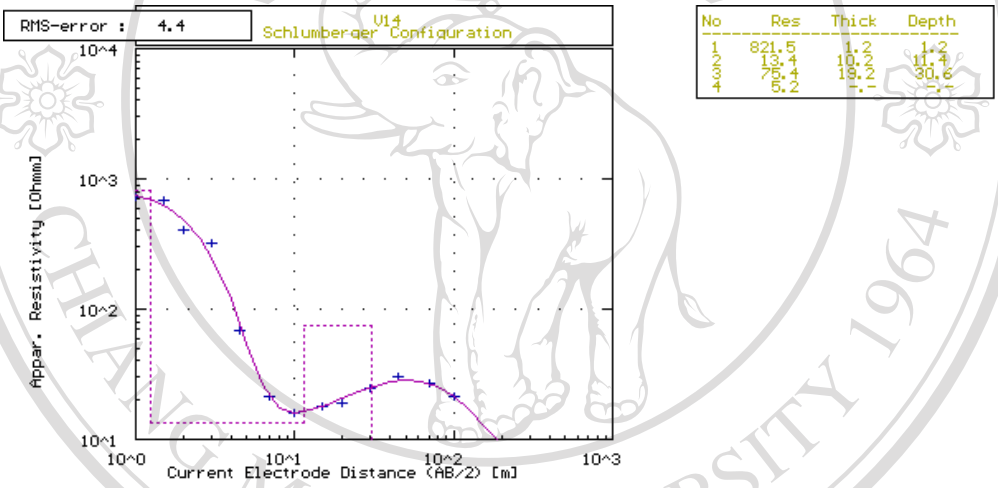


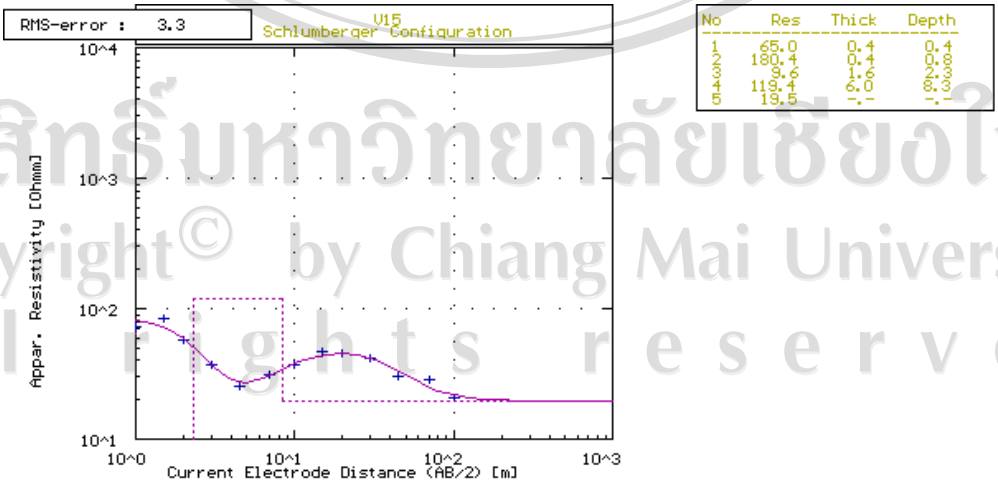
No	Res	Thick	Depth
1	6.8	0.7	0.7
2	32.6	2.2	2.9
3	9.5	2.7	5.6
4	76.7	14.5	20.1
5	27.4	-.-	-.-

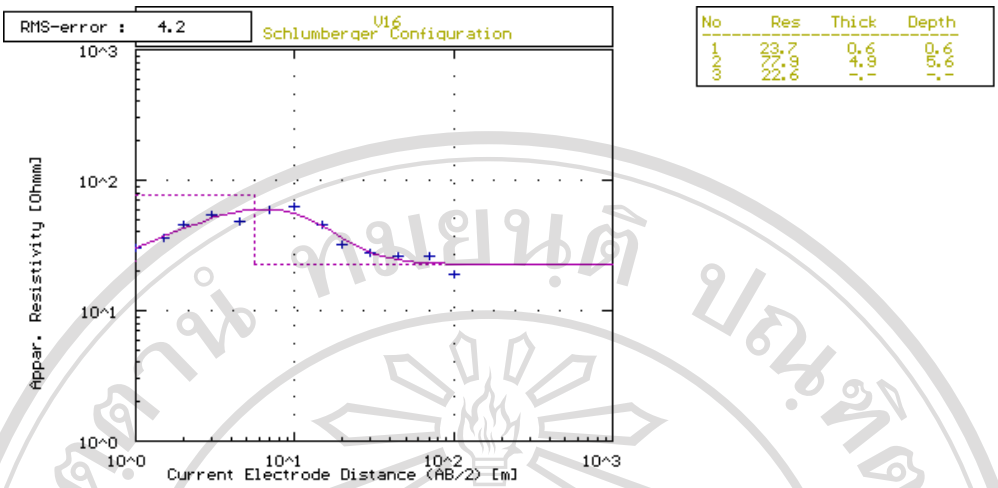


No	Res	Thick	Depth
1	61.8	1.5	1.5
2	321.9	2.1	3.6
3	28.5	10.5	14.1
4	42.3	-.-	-.-

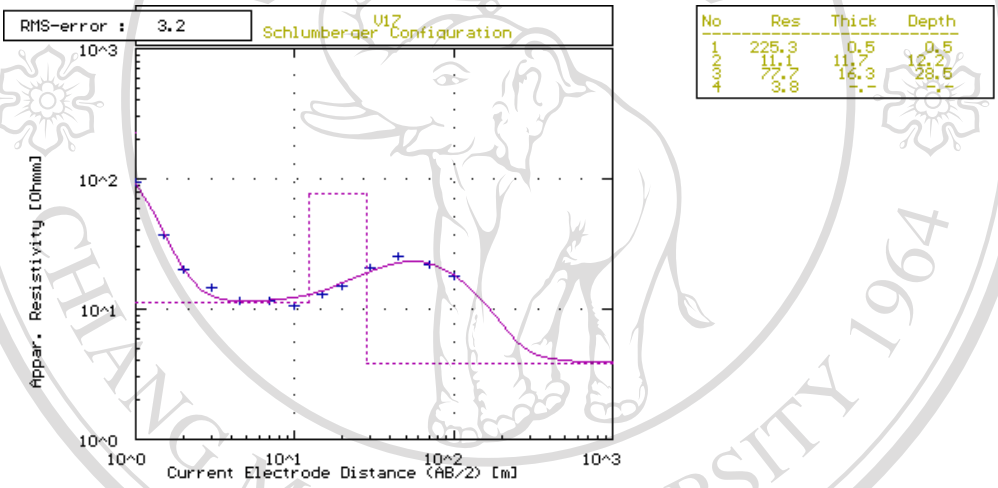




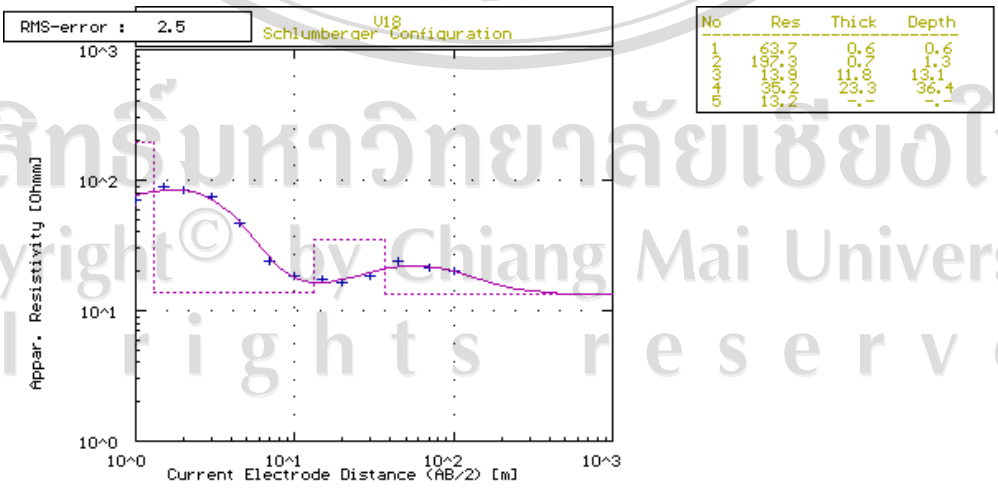




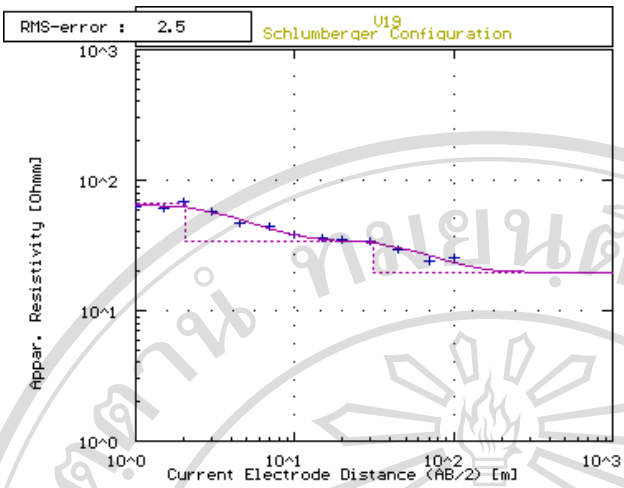
No	Res	Thick	Depth
1	23.7	0.6	0.6
2	77.9	4.9	5.6
3	22.6	-.-	-.-



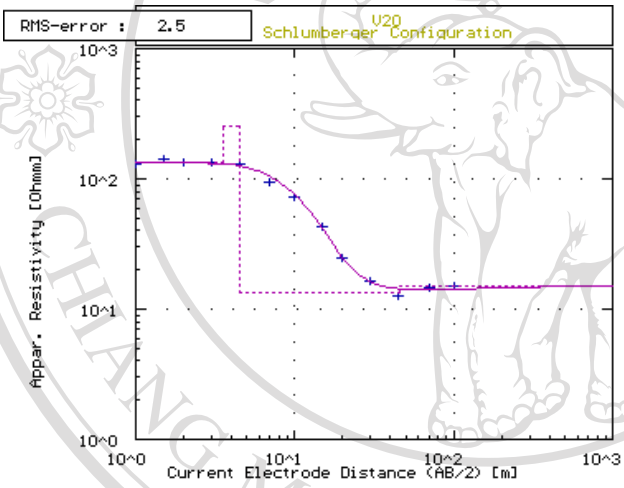
No	Res	Thick	Depth
1	225.3	0.5	0.5
2	11.1	11.7	12.2
3	77.7	16.3	28.5
4	3.8	-.-	-.-



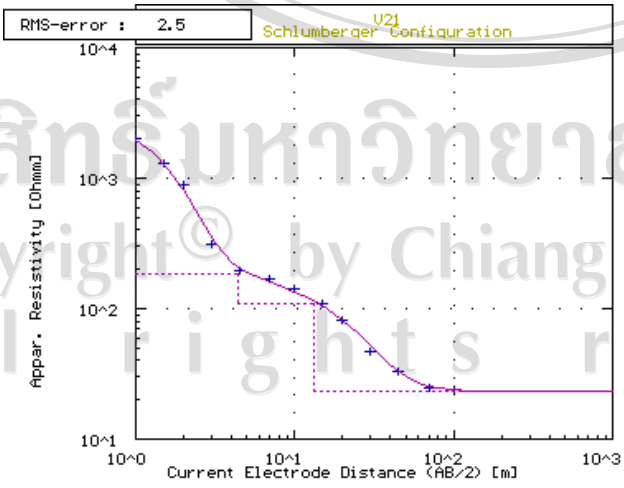
No	Res	Thick	Depth
1	63.7	0.6	0.6
2	197.3	0.7	1.3
3	13.9	11.8	13.1
4	35.2	23.3	36.4
5	13.2	-.-	-.-



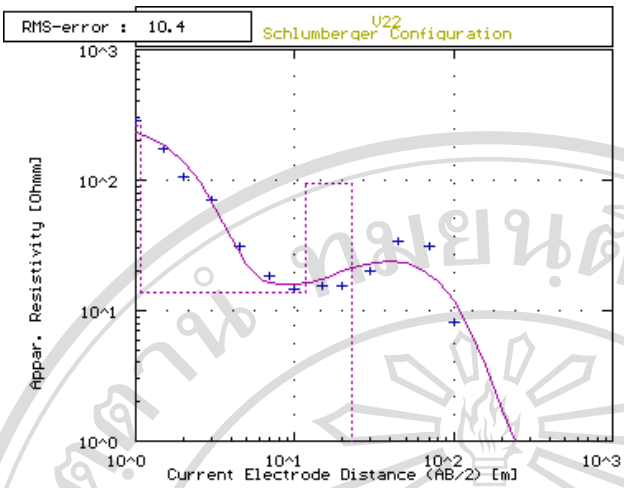
No	Res	Thick	Depth
1	65.2	1.0	1.0
2	65.8	1.0	2.0
3	34.2	29.0	31.0
4	19.4	-.-	-.-



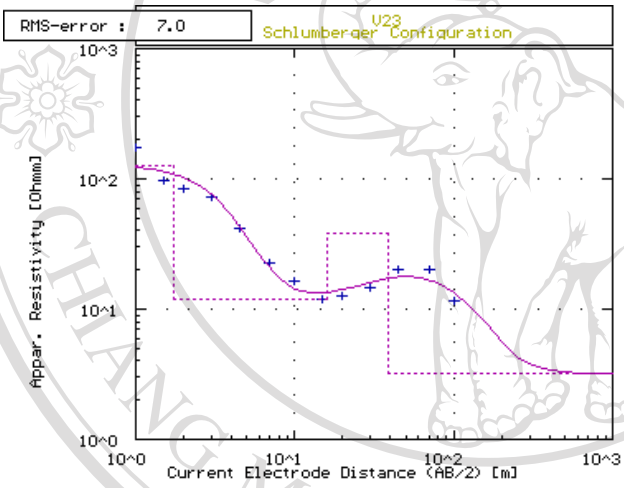
No	Res	Thick	Depth
1	135.4	3.6	3.6
2	250.6	0.9	4.5
3	13.5	41.4	45.9
4	15.0	-.-	-.-



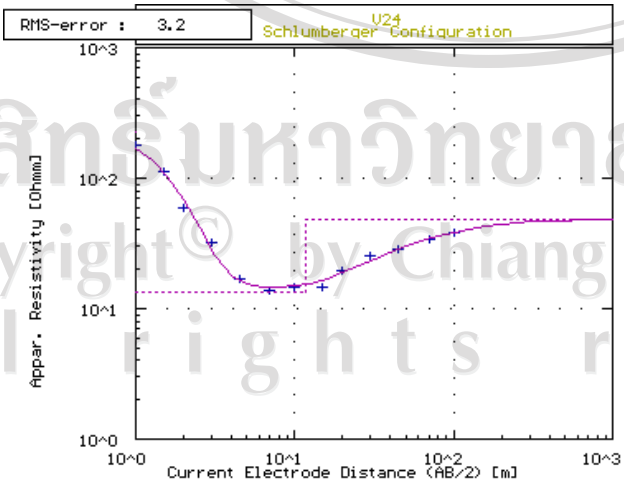
No	Res	Thick	Depth
1	2629.1	0.7	0.7
2	186.5	3.6	4.4
3	109.2	8.8	13.2
4	23.0	-.-	-.-



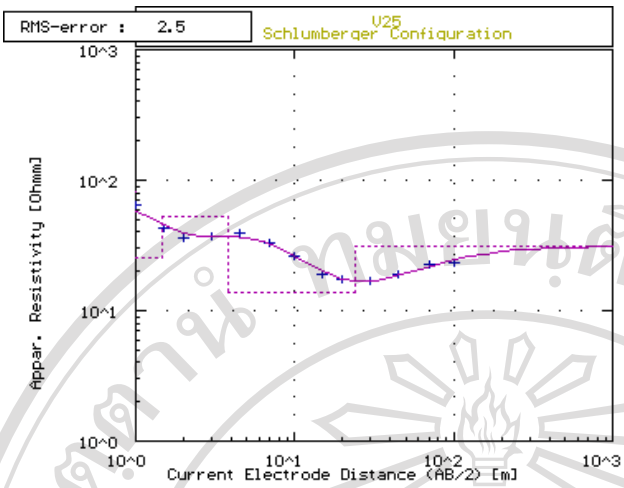
No	Res	Thick	Depth
1	260.7	1.1	1.1
2	13.8	10.6	11.7
3	93.0	11.2	23.0
4	0.6	-.-	-.-



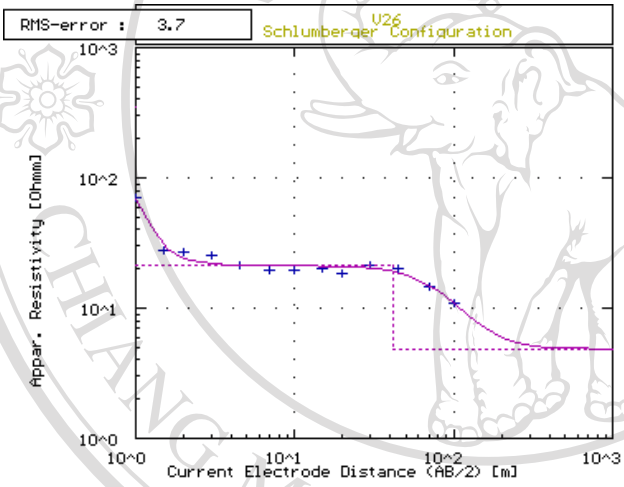
No	Res	Thick	Depth
1	125.5	1.7	1.7
2	11.8	14.4	16.2
3	38.2	22.6	38.8
4	3.2	-.-	-.-



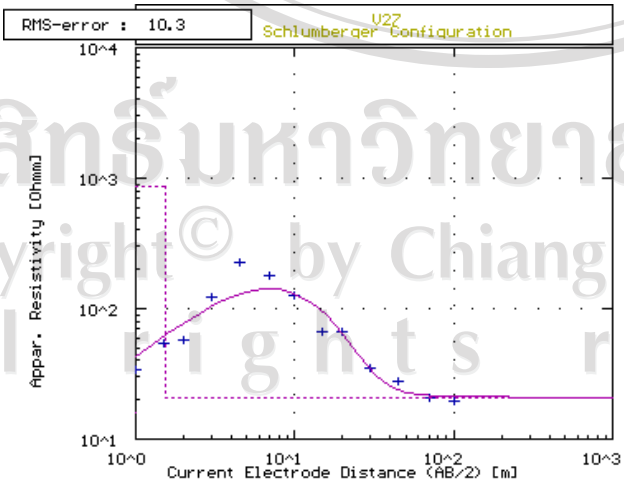
No	Res	Thick	Depth
1	227.3	0.8	0.8
2	13.5	11.1	11.8
3	48.1	-.-	-.-



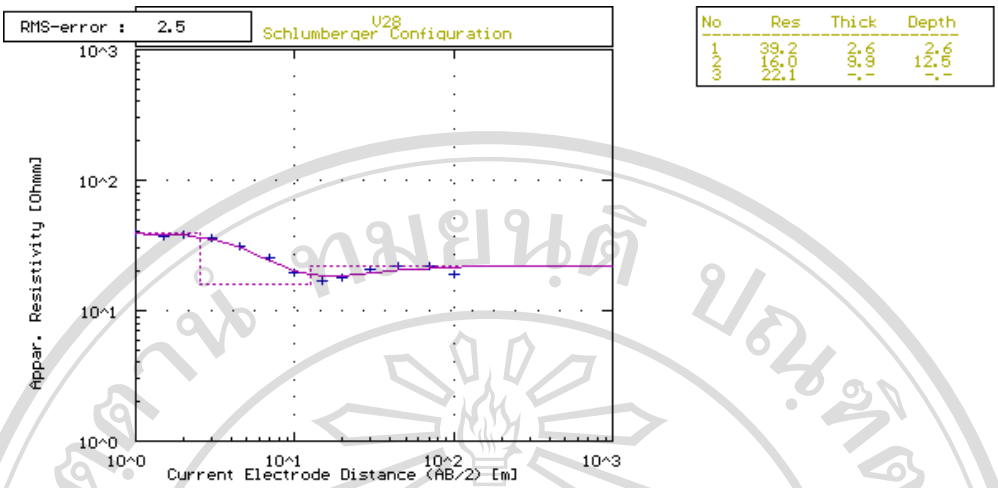
No	Res	Thick	Depth
1	81.3	0.5	0.5
2	25.7	0.9	1.5
3	52.6	2.4	3.8
4	13.9	20.3	24.1
5	31.1	-.-	-.-



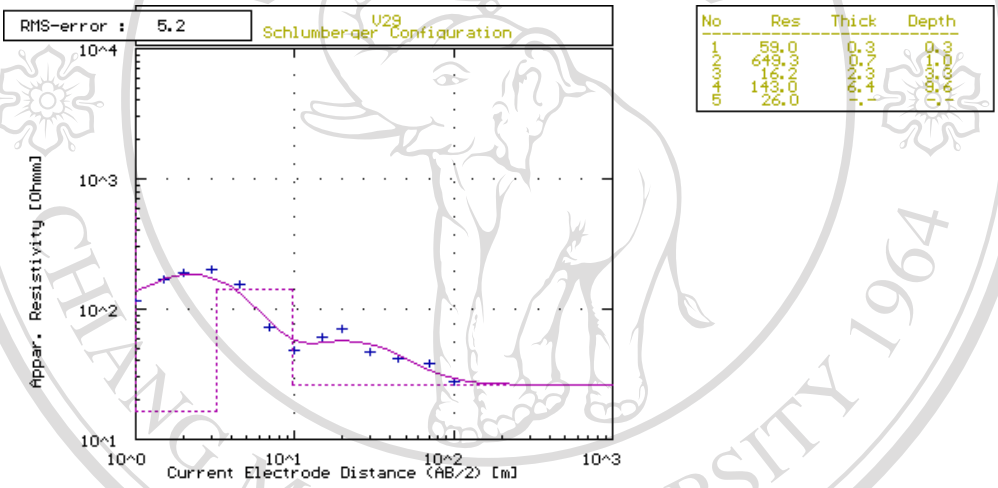
No	Res	Thick	Depth
1	352.6	0.3	0.3
2	21.1	9.9	10.2
3	21.4	31.6	41.7
4	4.8	-.-	-.-



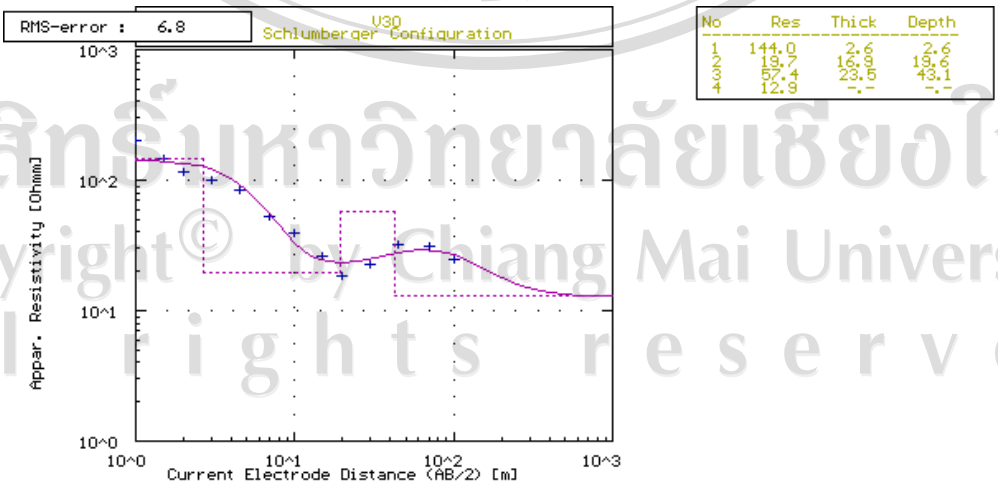
No	Res	Thick	Depth
1	15.7	0.3	0.3
2	827.0	1.2	1.6
3	21.0	-.-	-.-



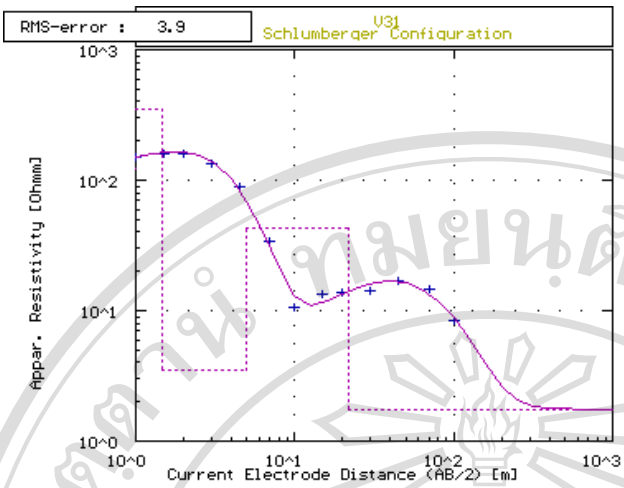
No	Res	Thick	Depth
1	39.2	2.6	2.6
2	16.0	9.9	12.5
3	22.1	-.-	-.-



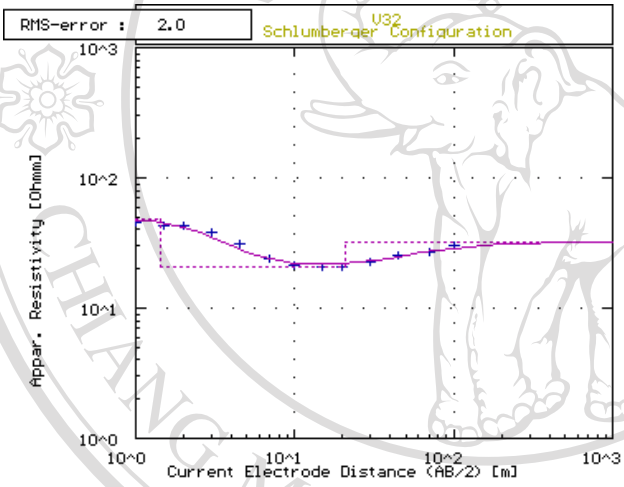
No	Res	Thick	Depth
1	59.0	0.3	0.3
2	649.3	0.7	1.0
3	16.2	2.3	3.3
4	143.0	6.4	9.6
5	26.0	-.-	-.-



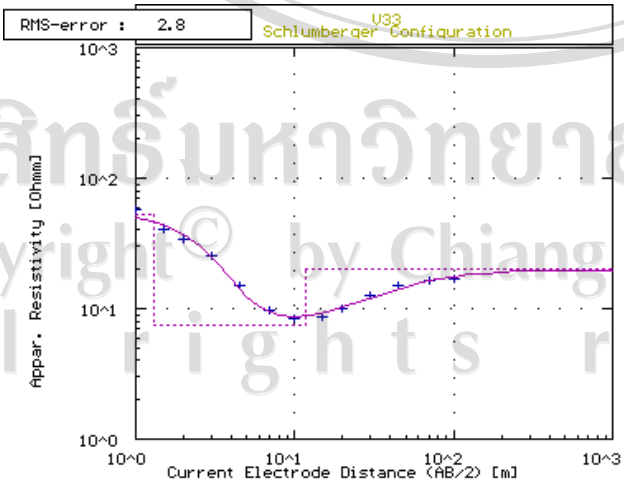
No	Res	Thick	Depth
1	144.0	2.6	2.6
2	19.7	16.9	19.6
3	57.4	23.5	43.1
4	12.9	-.-	-.-



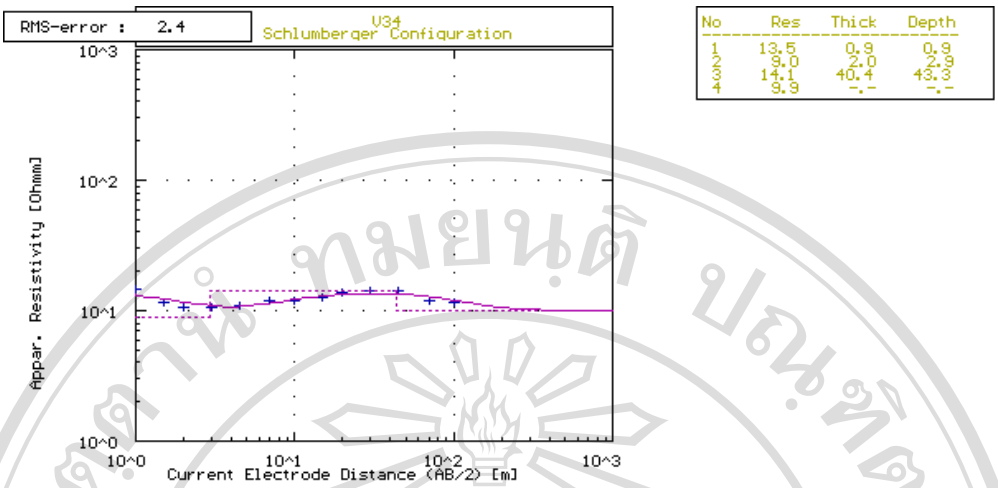
No	Res	Thick	Depth
1	122.7	0.6	0.6
2	351.1	0.9	1.5
3	3.5	3.5	4.9
4	43.1	17.0	21.9
5	1.7	-.-	-.-



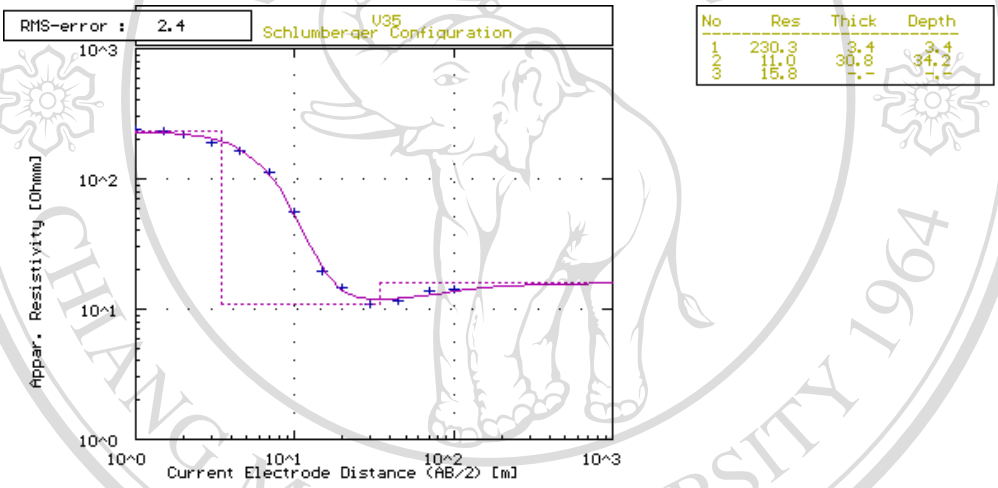
No	Res	Thick	Depth
1	48.8	1.4	1.4
2	20.8	19.4	20.8
3	32.0	-.-	-.-



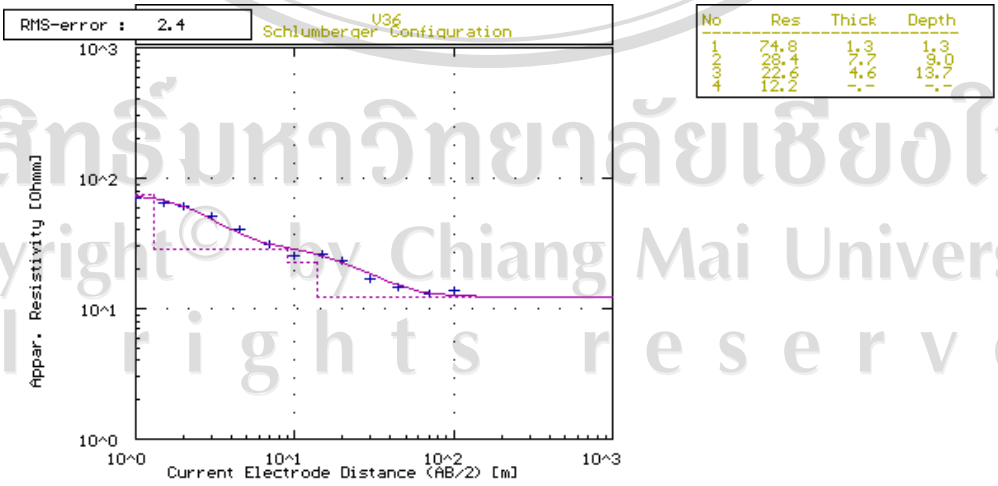
No	Res	Thick	Depth
1	52.9	1.3	1.3
2	7.6	10.3	11.6
3	19.9	-.-	-.-



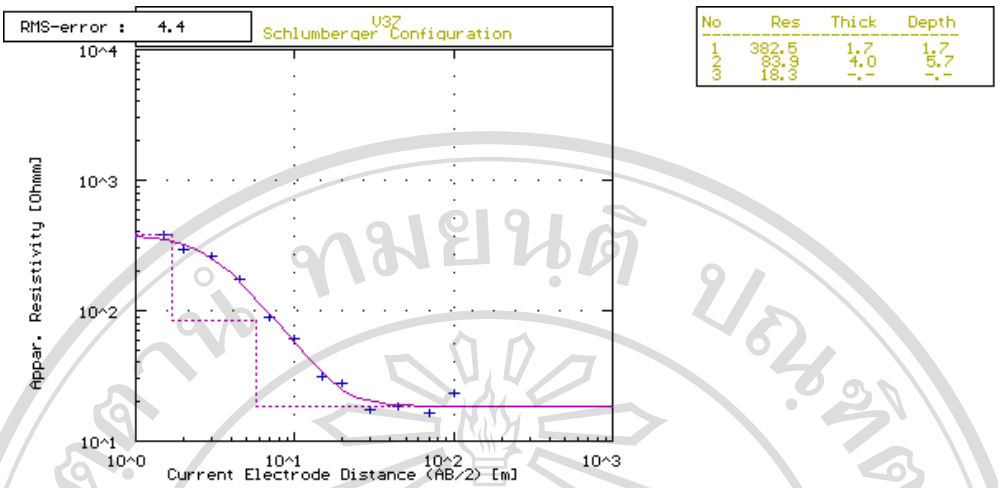
No	Res	Thick	Depth
1	13.5	0.9	0.9
2	9.0	2.0	2.9
3	14.1	40.4	43.3
4	9.9	-.-	-.-

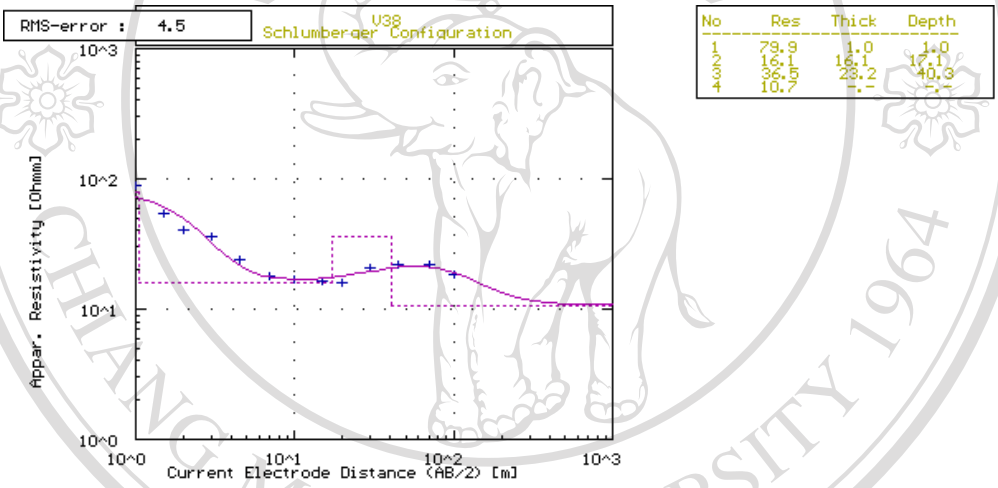


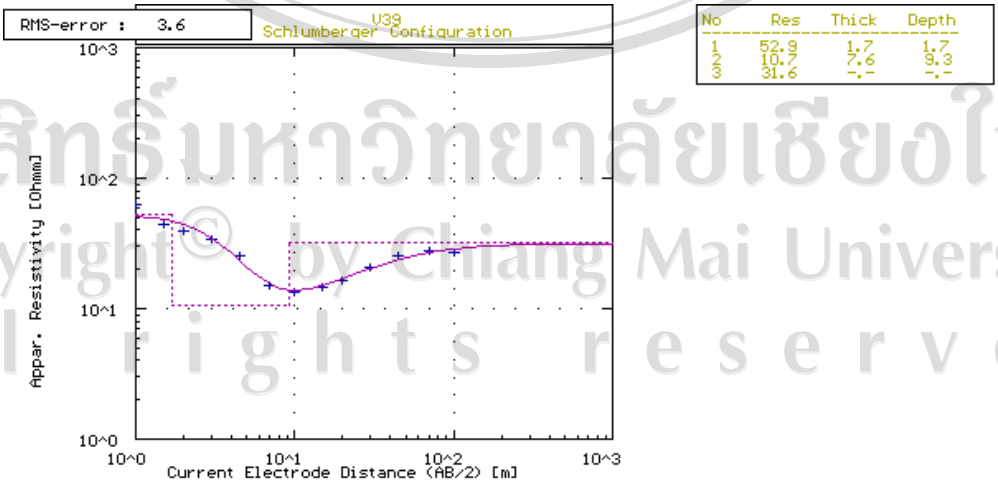
No	Res	Thick	Depth
1	230.3	3.4	3.4
2	11.0	30.8	34.2
3	15.8	-.-	-.-

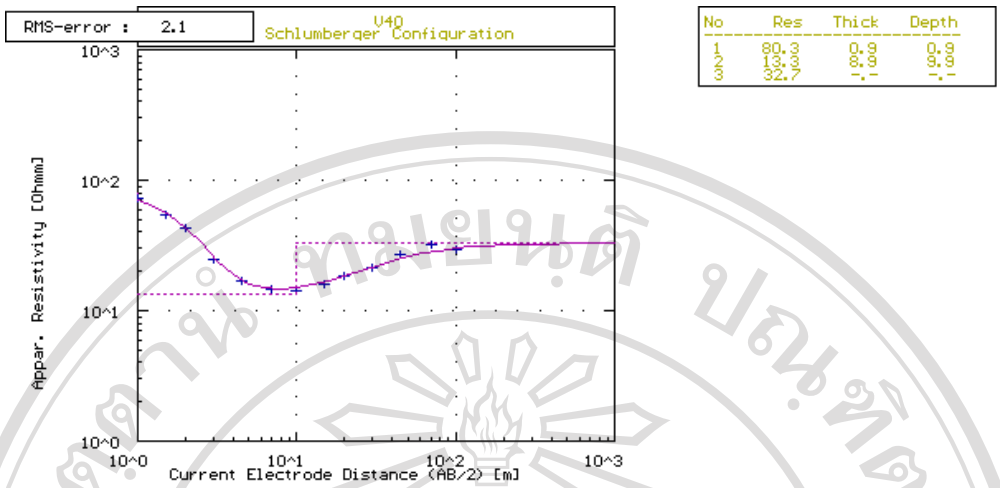


No	Res	Thick	Depth
1	74.8	1.3	1.3
2	28.4	7.7	9.0
3	22.6	4.6	13.7
4	12.2	-.-	-.-









APPENDIX C

GROUNDWATER LEVEL DATA

The water level of dug wells.

Well No.	Location (WGS84)		Depth of Well	Elevation	Groundwater Level (msl.)					
	East	North	(m.)	(msl.)	24/1/2010	18/2/2010	11/3/2010	12/5/2010	25/6/2010	24/7/2010
LP01	505200	2056554	6.95	291.21	289.49	288.57	287.82	286.28	285.51	285.71
LP02	506053	2057298	9.50	291.89	289.9	289.7	289.71	283.98	285.18	285.83
LP03	507466	2056746	12.70	297.45	296.43	296.39	296.26	296.23	296.46	#VALUE!
LP04	508413	2056083	7.30	301.61	299.72	299.55	299.34	299.2	299.5	299.55
LP05	508494	2055313	4.30	300.96	298.43	298.13	297.99	297.84	297.99	297.97
LP06	507939	2054344	8.80	300.05	298.42	298.12	298.08	298.75	298.76	298.83
LP07	506520	2054704	10.10	297	288.73	288.54	288.5	288.6	289	288
LP08	505703	2054443	6.80	295.99	293.59	293.62	293.25	292.83	292.84	292.87
LP09	506221	2052939	4.30	299.42	296.5	297.41	296.28	296.12	296.37	296.59
LP10	505035	2054035	14.30	294.72	285.56	285.48	285.16	284.91	285.9	286.72
LP11	504659	2054214	4.60	293.93	292.13	292.01	291.75	292.03	292.33	#VALUE!
LP12	507709	2051339	6.70	305.46	304.8	304.61	304.45	305.11	305.28	305.27
LP13	505436	2050836	3.00	304.98	302.44	-	-	-	-	-
LP14	503426	2052102	8.00	292.15	290.37	290.27	290.2	290.05	290.08	290.36
LP15	504570	2053309	9.65	295.5	289.91	289.36	289.18	287.1	287.66	288.82
LP16	503568	2055819	8.35	290.26	288.53	288.19	288.07	288.15	288.85	289.04
LP17	506732	2058292	4.20	294.25	292.99	292.84	292.71	292.43	292.52	292.56
LP18	509172	2058330	6.60	304.23	299.67	301.32	300.25	301.07	301.5	301.63
LP19	509428	2054188	7.90	308.31	307	306.99	306.63	306.9	307.12	307.27
LP20	509164	2053116	5.70	307.13	304.47	304.28	304.11	304.22	304.64	304.39

Well No.	Location (WGS84)		Depth of Well	Elevation	Groundwater Level (msl.)					
	East	North	(m.)	(msl.)	24/1/2010	18/2/2010	11/3/2010	12/5/2010	25/6/2010	24/7/2010
N1	506906	2058514	4.00	293.71	292.23	292.17	292.04	293.4	292.37	291.86
N2	507668	2058868	3.70	295.16	293.6	293.5	293.55	293.28	293.46	293.48
N3	509156	2058225	8.20	303.12	301.47	301.18	301.16	300.46	301.26	301.16
N4	509376	2057663	5.85	303.84	300.29	299.86	299.64	299.67	304.05	-
N5	506702	2055865	9.30	296	294.23	294.07	293.93	293.71	293.78	293.89
N6	506655	2055966	12.30	297.23	294.24	293.99	293.87	293.97	294.17	294.04
N7	507778	2056005	5.30	298.42	293.35	293.3	293.2	-	-	-
N8	509057	2055781	8.04	304.65	302.43	299.89	298.87	302.49	301.07	298.17
N9	508556	2054281	5.90	305.72	303.62	303.41	303.21	303.19	303.3	303.37
N10	507445	2053985	5.53	299.4	-	-	-	-	-	-
N11	506645	2053622	7.70	297.26	292.1	292.79	292.86	292.7	292.45	293.21
N12	506557	2053919	4.45	294.12	292.01	291.82	291.82	291.56	291.86	291.95
N13	504851	2055090	4.83	292.43	290.85	290.75	290.74	290.84	290.9	290.97
N14	503132	2056540	8.20	289.73	289.06	288.92	288.89	288.95	289.05	289.23
N15	502158	2056760	5.76	290.63	288.52	288.47	288.36	288.26	288.52	288.67
N16	501647	2055962	5.80	290.84	289.49	289.36	289.19	289.04	288.87	288.94
N17	501250	2054937	5.00	288.87	286.31	286.28	286.16	286.02	286.1	286.3
N18	500938	2054319	8.70	290.92	286.78	286.56	287.37	286.19	286.19	286.36
N19	502195	2053833	4.20	288.74	286.2	285.99	285.88	285.61	285.42	285.54
N20	502838	2053064	8.50	288.95	288	286.02	288.13	287.81	288.13	288.27

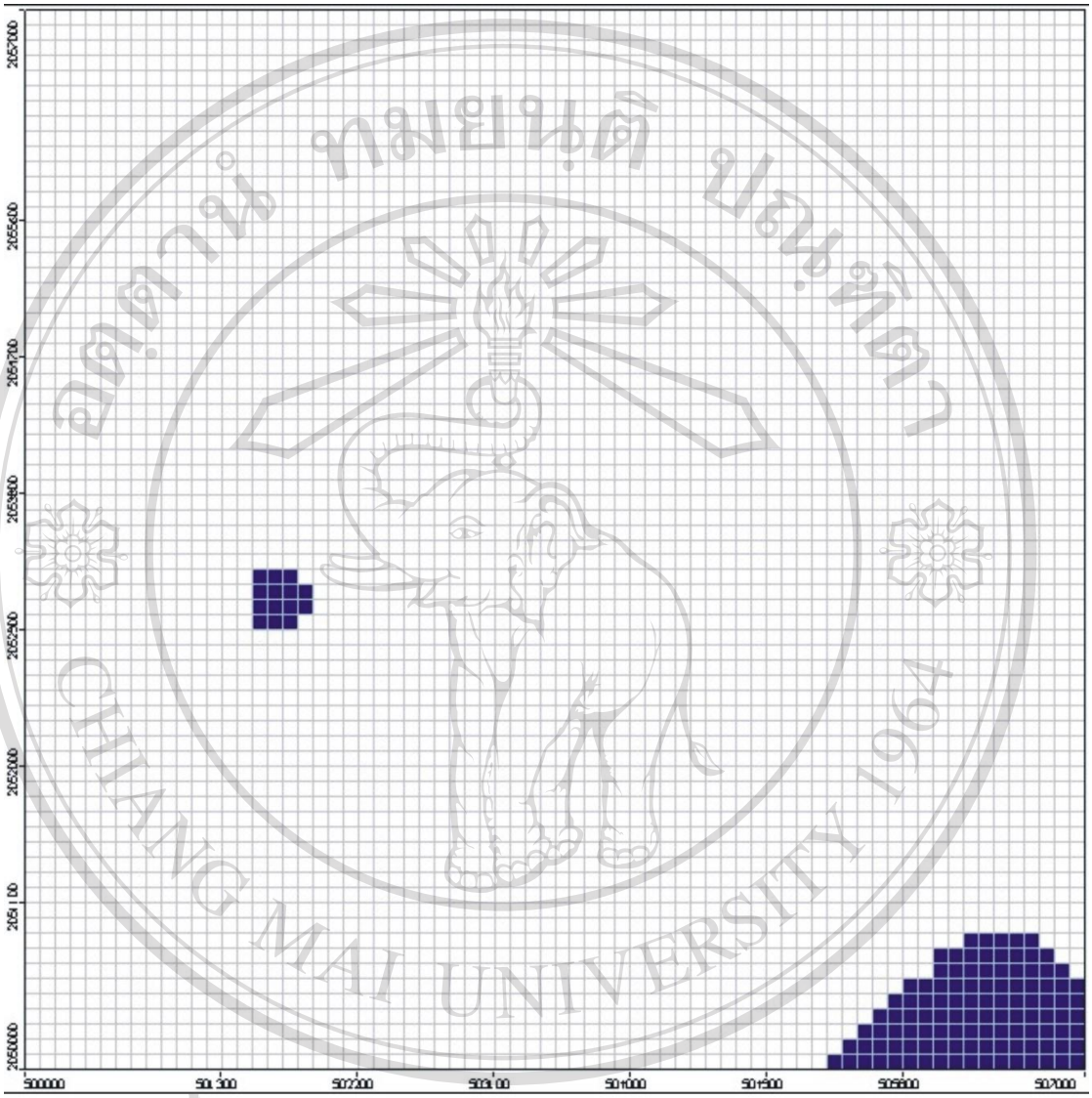
The water level of drilled wells.

Well No.	Location (WGS84) East	Location (WGS84) North	Elevation (msl.)	Screen Interval (m.)	Depth of Well (m.)	Groundwater Level (msl.) 24/1/2010	18/2/2010	11/3/2010	12/5/2010	25/6/2010	24/7/2010
PL01	505177	2056607	292.0	36-44	54	281.55	281.26	280.83	279.86	279.98	280.28
PL02	505175	2056608	292.0	8-20	24	284.96	285.06	284.78	284.43	284.67	284.86
PL03	505184	2056610	292.0	32-40	54	279.14	278.69	278.34	277.1	277.1	277.45
PL04	505183	2056611	292.0	8-20	24	284.37	283.93	284.63	284.32	284.52	284.7
SK01	505063	2054307	292.0	40-48	54	264.86	264.74	264.56	263.77	264.31	264.36
SK02	505062	2054306	292.0	24-32	36	265.58	265.42	265.35	265.3	265.31	265.3
SK03	505106	2054280	292.5	40-48	54	264.3	263.76	263.14	262.84	262.72	262.8
SK04	505105	2054279	292.5	24-32	36	265.28	265.04	264.98	264.92	264.87	264.91
SMY01	500595	2052552	288.0	34-50	54	285.16	284.73	284.26	283.68	284.18	284.6
SMY02	500596	2052551	288.0	6-18	20	286.65	286.36	286.05	285.62	285.88	286.35
SMY03	500608	2052539	288.0	34-50	54	287.12	288.55	-	-	-	-
SMY04	500609	2052538	288.0	6-18	20	288.76	-	288.23	-	-	-
PD01	502828	2052993	290.0	50-66	70	283.46	283.28	282.43	281.36	282.24	282.26
PD02	502829	2052992	290.0	22-30	36	284.93	284.7	284.48	283.83	283.9	284.1
PD03	502835	2052984	290.0	22-30	36	282.42	282.2	281.89	281.35	281.4	281.6
PY01	502085	2053798	288.0	38-46	50	286.02	285.67	285.29	284.77	284.89	285.17
PY02	502085	2053799	288.0	18-26	30	286.11	285.79	285.39	284.89	284.97	285.25
PY03	502086	2053800	288.0	4-8	10	285.53	285.31	285.11	284.75	284.74	285
PY04	502096	2053817	288.0	38-46	50	283.39	283.09	282.66	282.15	282.19	282.59
PY05	502097	2053818	288.0	18-26	30	284.49	284.07	283.83	283.36	283.33	283.51
PY06	502097	2053819	288.0	4-8	10	285.99	285.64	285.49	285.1	285.07	285.24
NS01	501706	2055923	290.0	42-50	54	282.76	282.42	281.89	281.49	281.86	282.27
NS02	501706	2055922	290.0	12-16	20	283.77	283.77	282.97	282.87	283.65	284.04
NS03	501706	2055921	290.0	21-28	30	283.79	283.72	282.97	282.85	283.63	284.01
NS04	501684	2055912	290.0	42-50	54	282.64	282.29	281.81	281.37	281.74	282.11
NS05	501685	2055912	290.0	12-16	20	283.6	283.61	282.8	282.71	283.48	283.87
NS06	501686	2055912	290.0	21-28	30	283.55	283.51	282.75	282.71	283.41	283.8

APPENDIX D

DISTRIBUTION OF HYDRAULIC CONDUCTIVITY OF MODEL LAYER

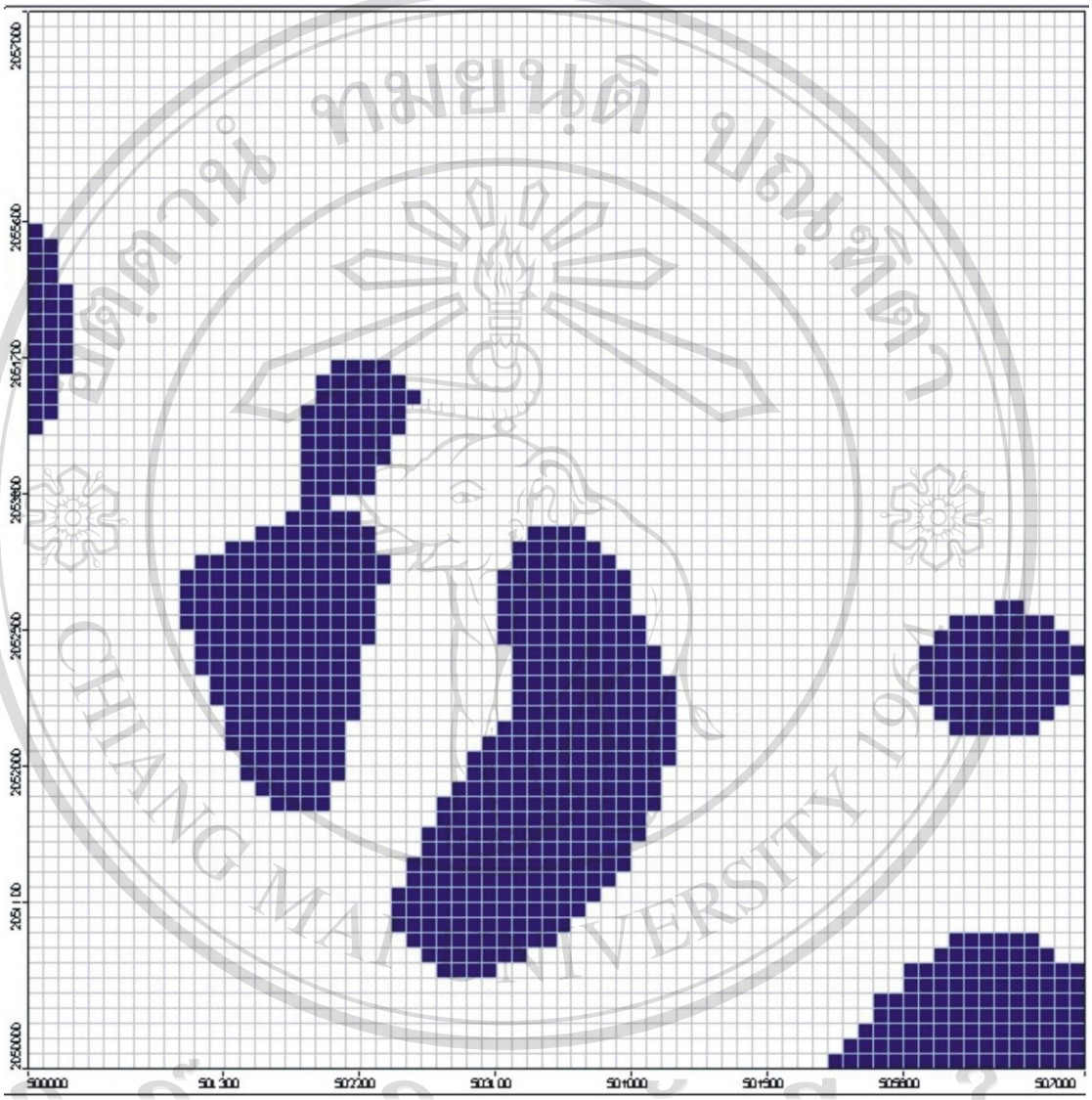
Distribution of hydraulic conductivity of layer 1



Conductivity

Zone		Kx [m/d]	Ky [m/d]	Kz [m/d]
1		0.1	0.1	0.01
2		2.6	2.6	0.26
3		0.1	0.1	0.01
4		3	3	0.3
5		0.1	0.1	0.1
6		4	4	0.04
7		1.16E-6	1.16E-6	1.16E-7

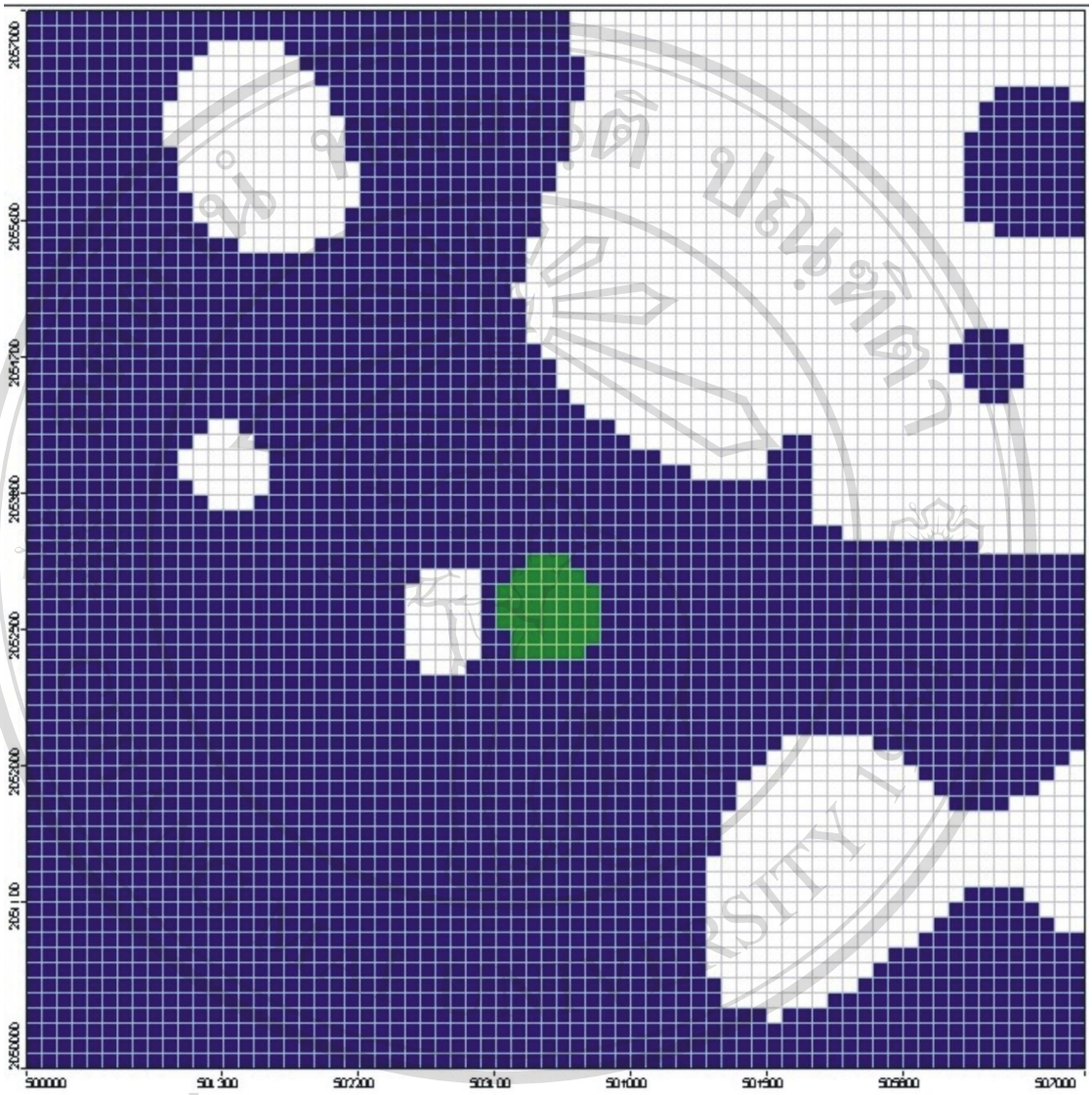
Distribution of hydraulic conductivity of layer 2



Conductivity

	Zone	Kx [m/d]	Ky [m/d]	Kz [m/d]
	1	0.1	0.1	0.01
	2	2.6	2.6	0.26
	3	0.1	0.1	0.01
	4	3	3	0.3
	5	0.1	0.1	0.1
	6	4	4	0.04
	7	1.16E-6	1.16E-6	1.16E-7

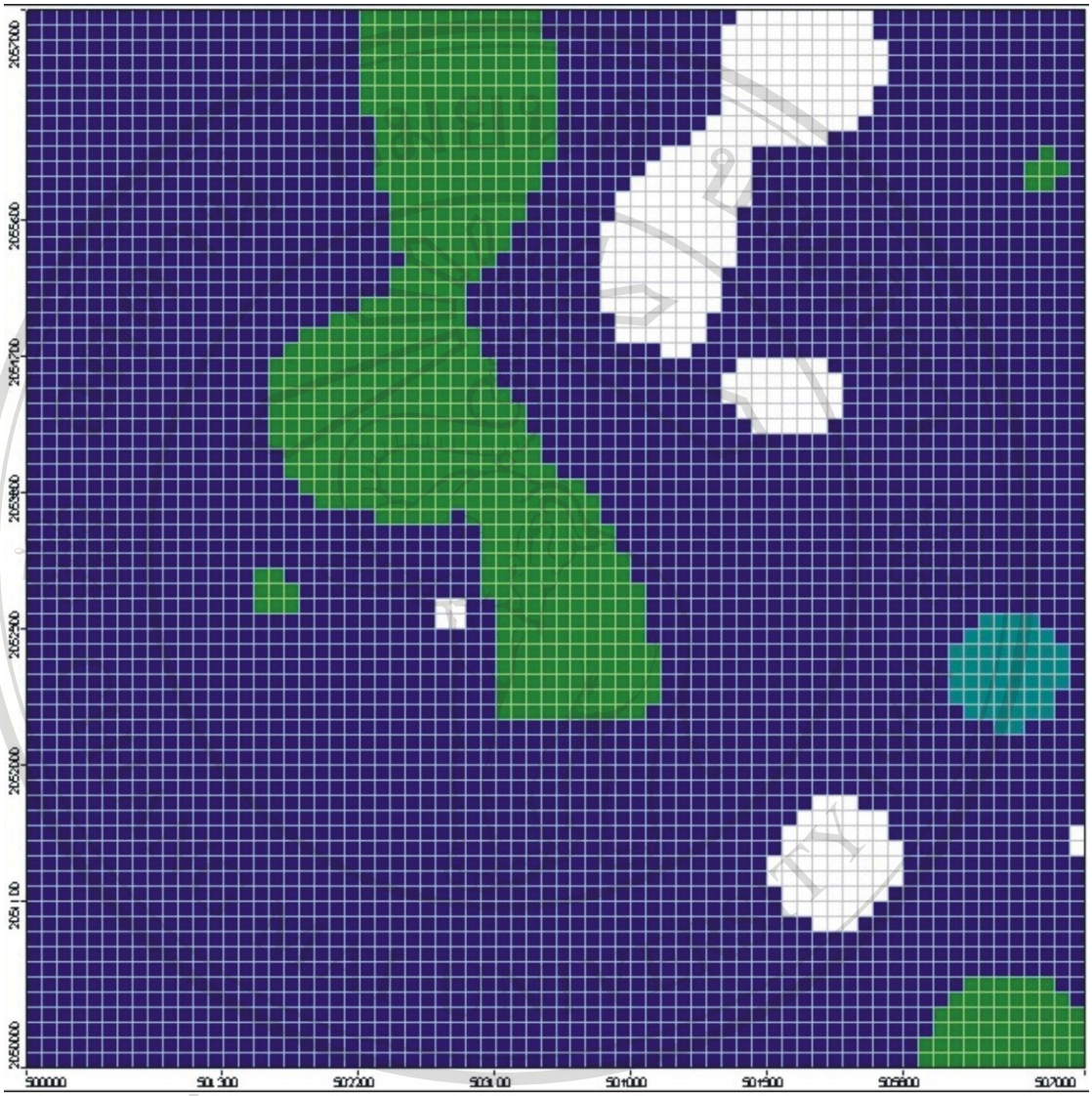
Distribution of hydraulic conductivity of layer 3



Conductivity

Zone	Kx [m/d]	Ky [m/d]	Kz [m/d]
1	0.1	0.1	0.01
2	2.6	2.6	0.26
3	0.1	0.1	0.01
4	3	3	0.3
5	0.1	0.1	0.1
6	4	4	0.04
7	1.16E-6	1.16E-6	1.16E-7

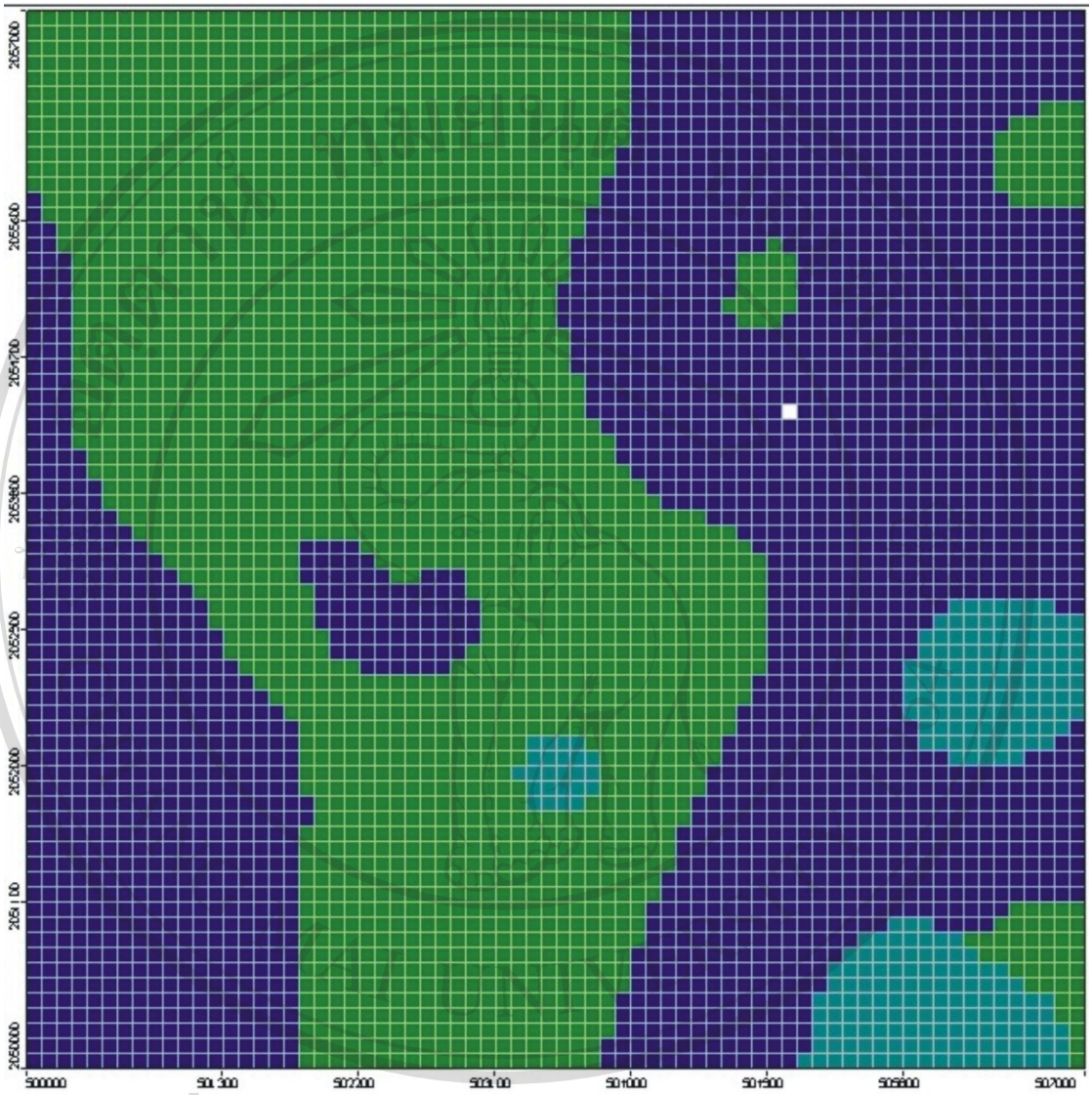
Distribution of hydraulic conductivity of layer 4



Conductivity

Zone	Kx [m/d]	Ky [m/d]	Kz [m/d]
1	0.1	0.1	0.01
2	2.6	2.6	0.26
3	0.1	0.1	0.01
4	3	3	0.3
5	0.1	0.1	0.1
6	4	4	0.04
7	1.16E-6	1.16E-6	1.16E-7

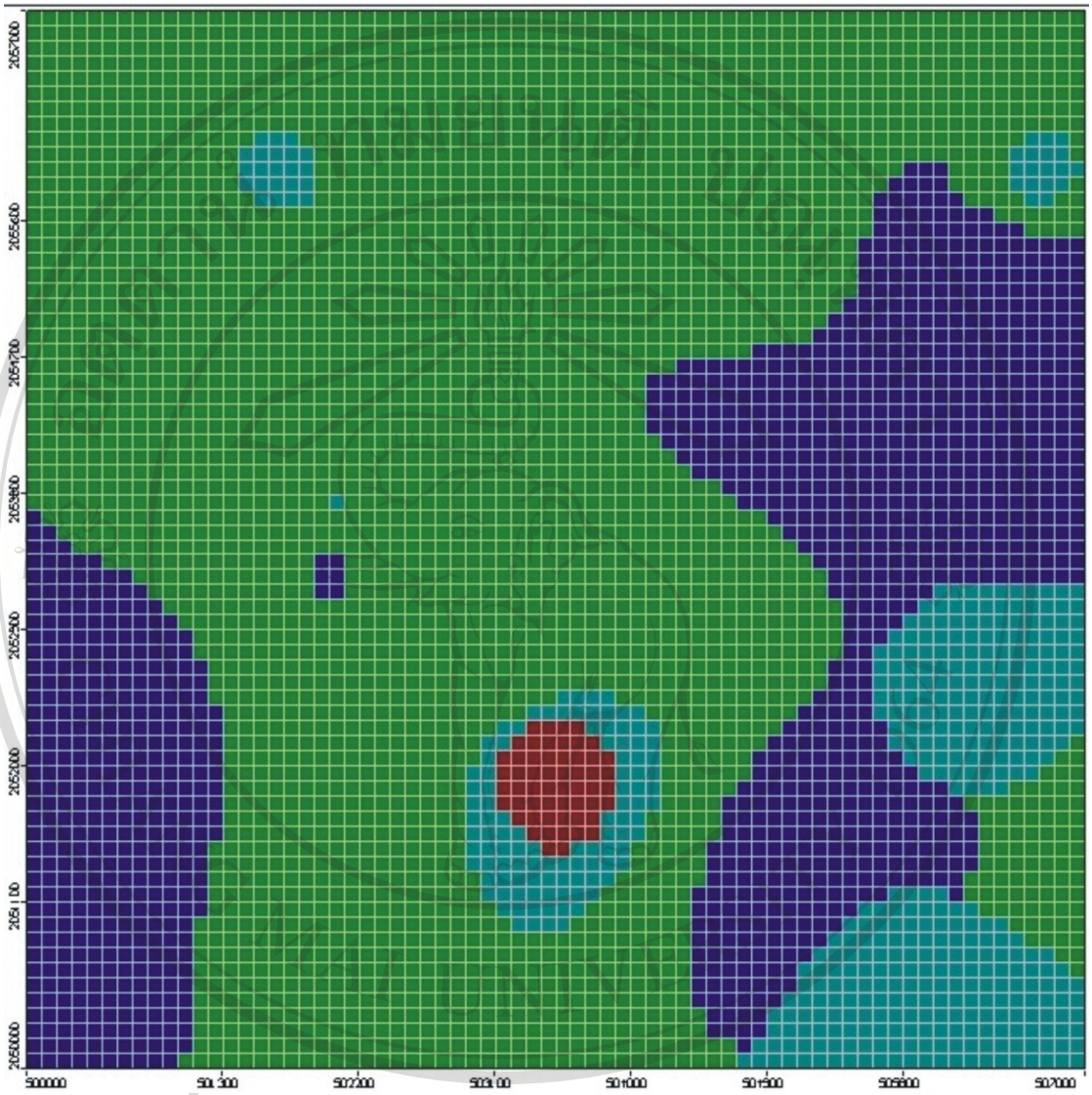
Distribution of hydraulic conductivity of layer 5



Conductivity

Zone	Kx [m/d]	Ky [m/d]	Kz [m/d]
1	0.1	0.1	0.01
2	2.6	2.6	0.26
3	0.1	0.1	0.01
4	3	3	0.3
5	0.1	0.1	0.1
6	4	4	0.04
7	1.16E-6	1.16E-6	1.16E-7

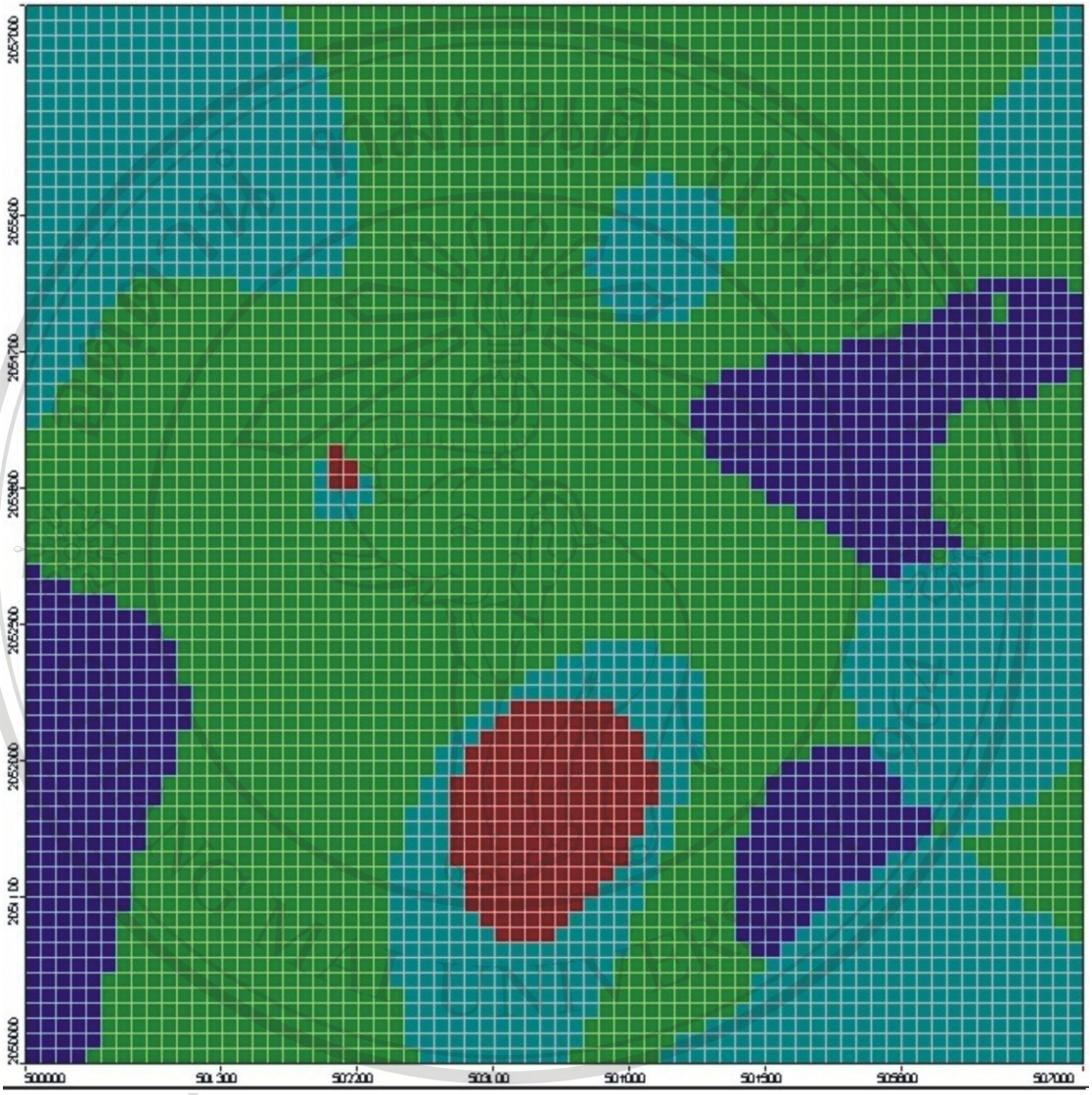
Distribution of hydraulic conductivity of layer 6



Conductivity

Zone	Kx [m/d]	Ky [m/d]	Kz [m/d]
1	0.1	0.1	0.01
2	2.6	2.6	0.26
3	0.1	0.1	0.01
4	3	3	0.3
5	0.1	0.1	0.1
6	4	4	0.04
7	1.16E-6	1.16E-6	1.16E-7

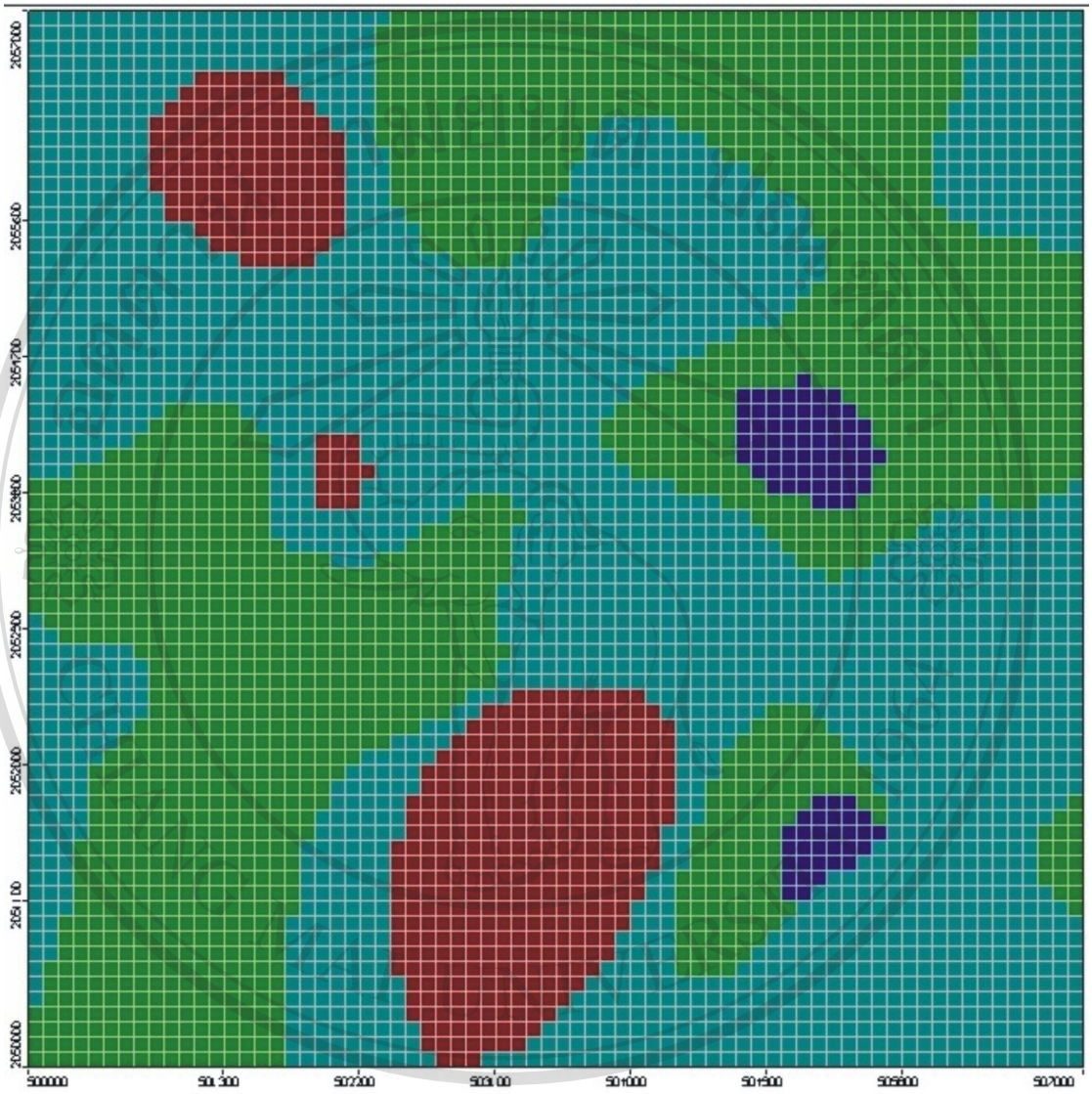
Distribution of hydraulic conductivity of layer 7



Conductivity

Zone	Kx [m/d]	Ky [m/d]	Kz [m/d]
1	0.1	0.1	0.01
2	2.6	2.6	0.26
3	0.1	0.1	0.01
4	3	3	0.3
5	0.1	0.1	0.1
6	4	4	0.04
7	1.16E-6	1.16E-6	1.16E-7

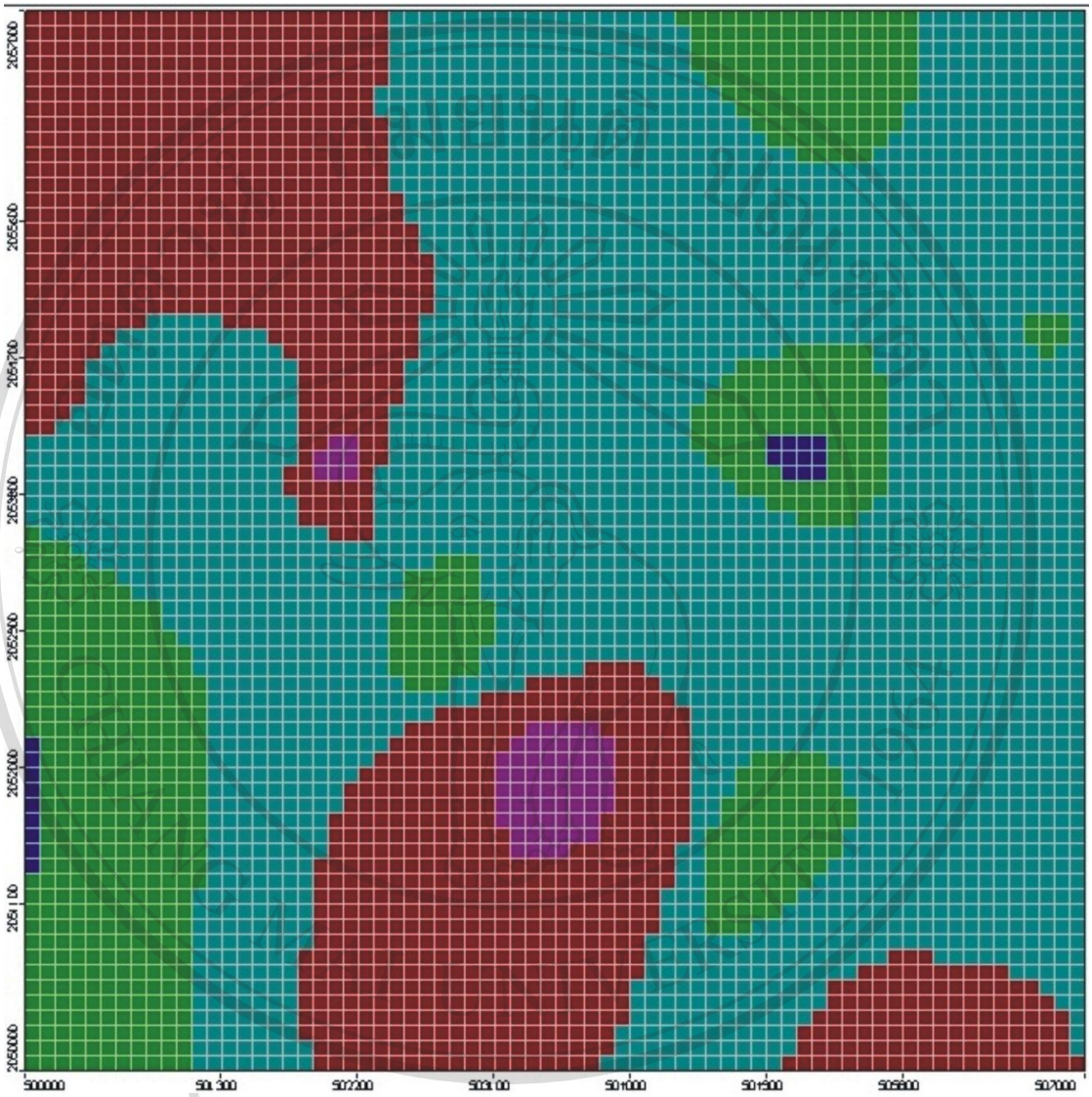
Distribution of hydraulic conductivity of layer 8



Conductivity

Zone	Kx [m/d]	Ky [m/d]	Kz [m/d]
1	0.1	0.1	0.01
2	2.6	2.6	0.26
3	0.1	0.1	0.01
4	3	3	0.3
5	0.1	0.1	0.1
6	4	4	0.04
7	1.16E-6	1.16E-6	1.16E-7

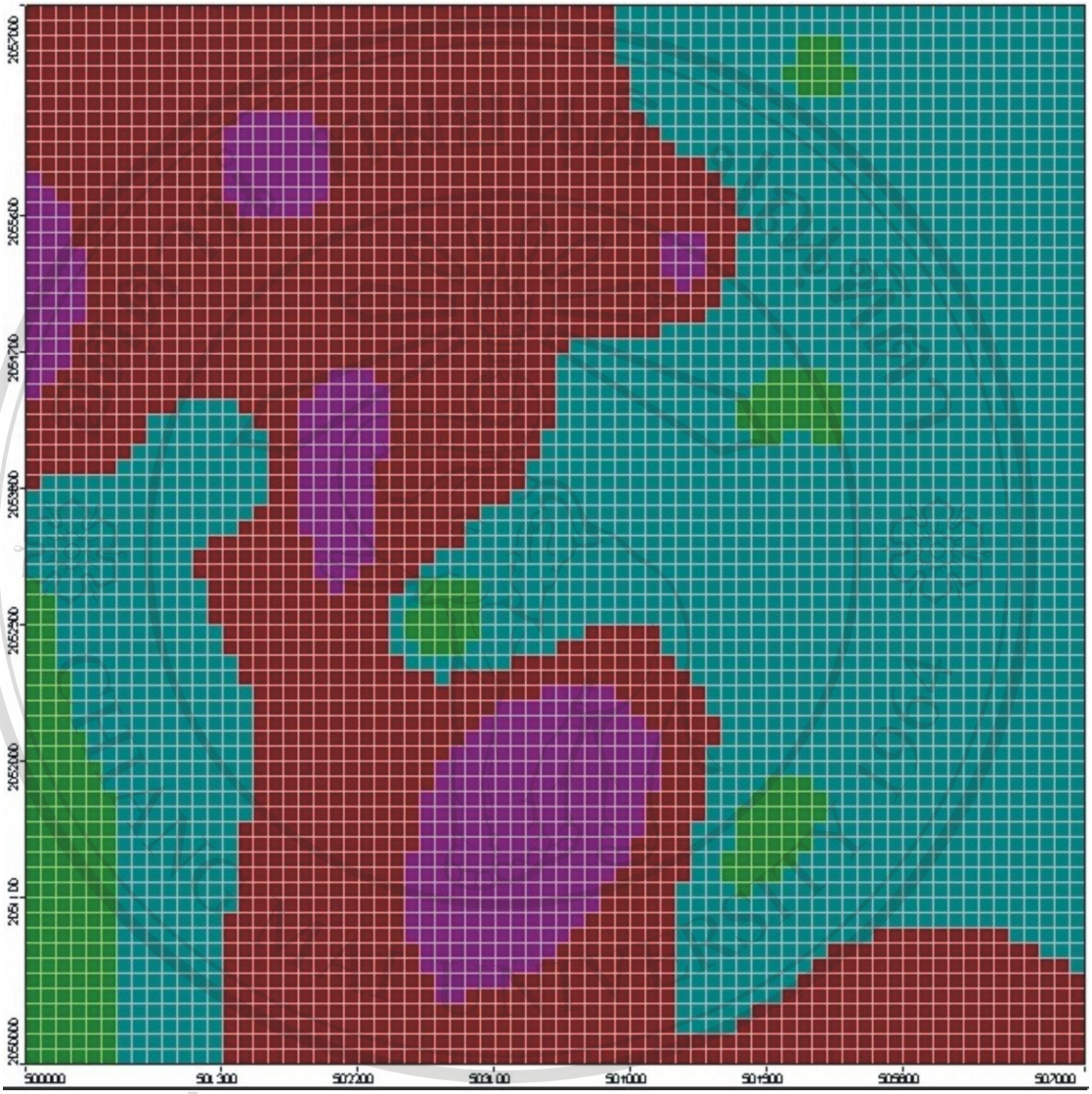
Distribution of hydraulic conductivity of layer 9



Conductivity

Zone	Kx [m/d]	Ky [m/d]	Kz [m/d]
1	0.1	0.1	0.01
2	2.6	2.6	0.26
3	0.1	0.1	0.01
4	3	3	0.3
5	0.1	0.1	0.1
6	4	4	0.04
7	1.16E-6	1.16E-6	1.16E-7

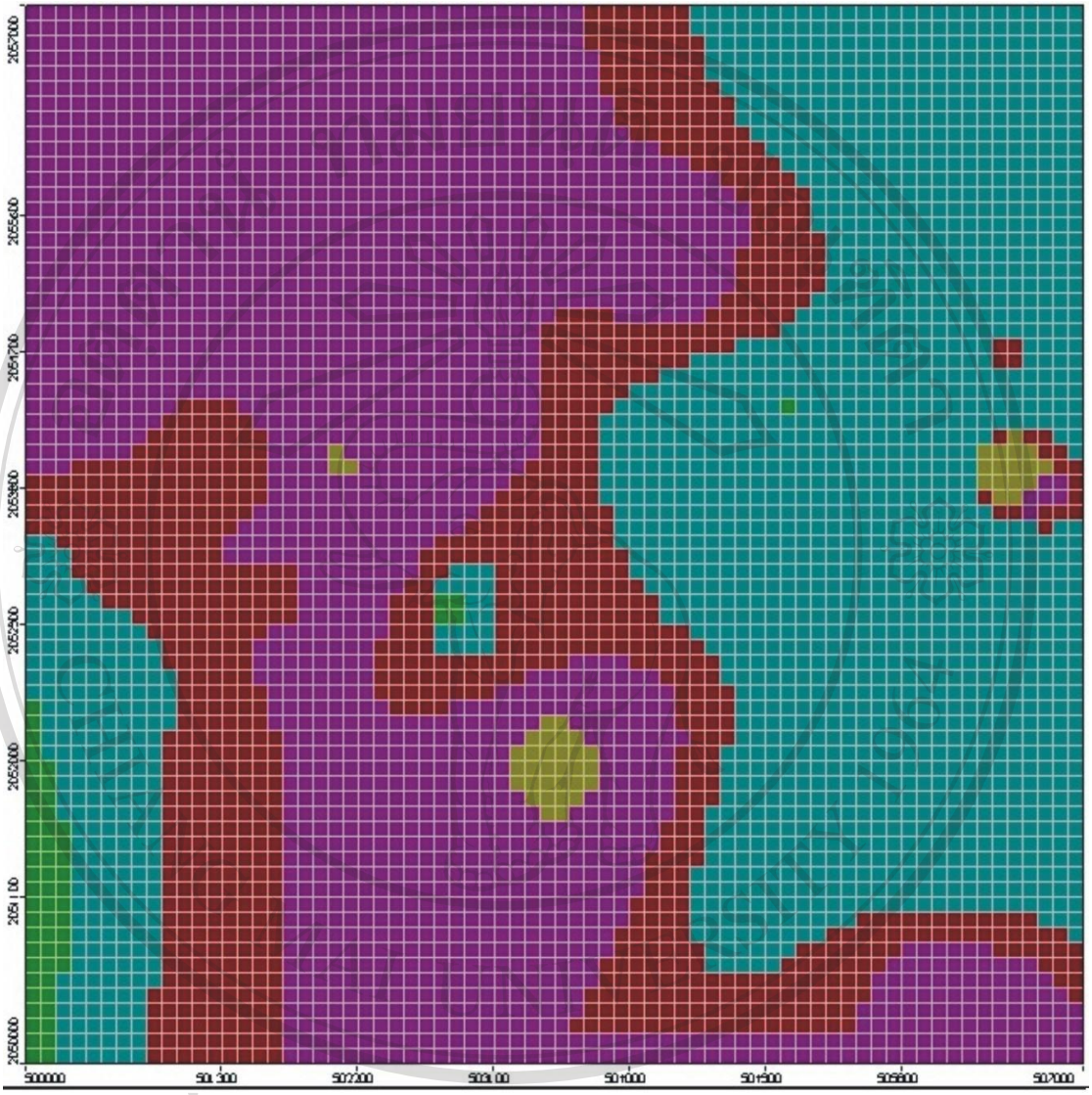
Distribution of hydraulic conductivity of layer 10



Conductivity

Zone	Kx [m/d]	Ky [m/d]	Kz [m/d]
1	0.1	0.1	0.01
2	2.6	2.6	0.26
3	0.1	0.1	0.01
4	3	3	0.3
5	0.1	0.1	0.1
6	4	4	0.04
7	1.16E-6	1.16E-6	1.16E-7

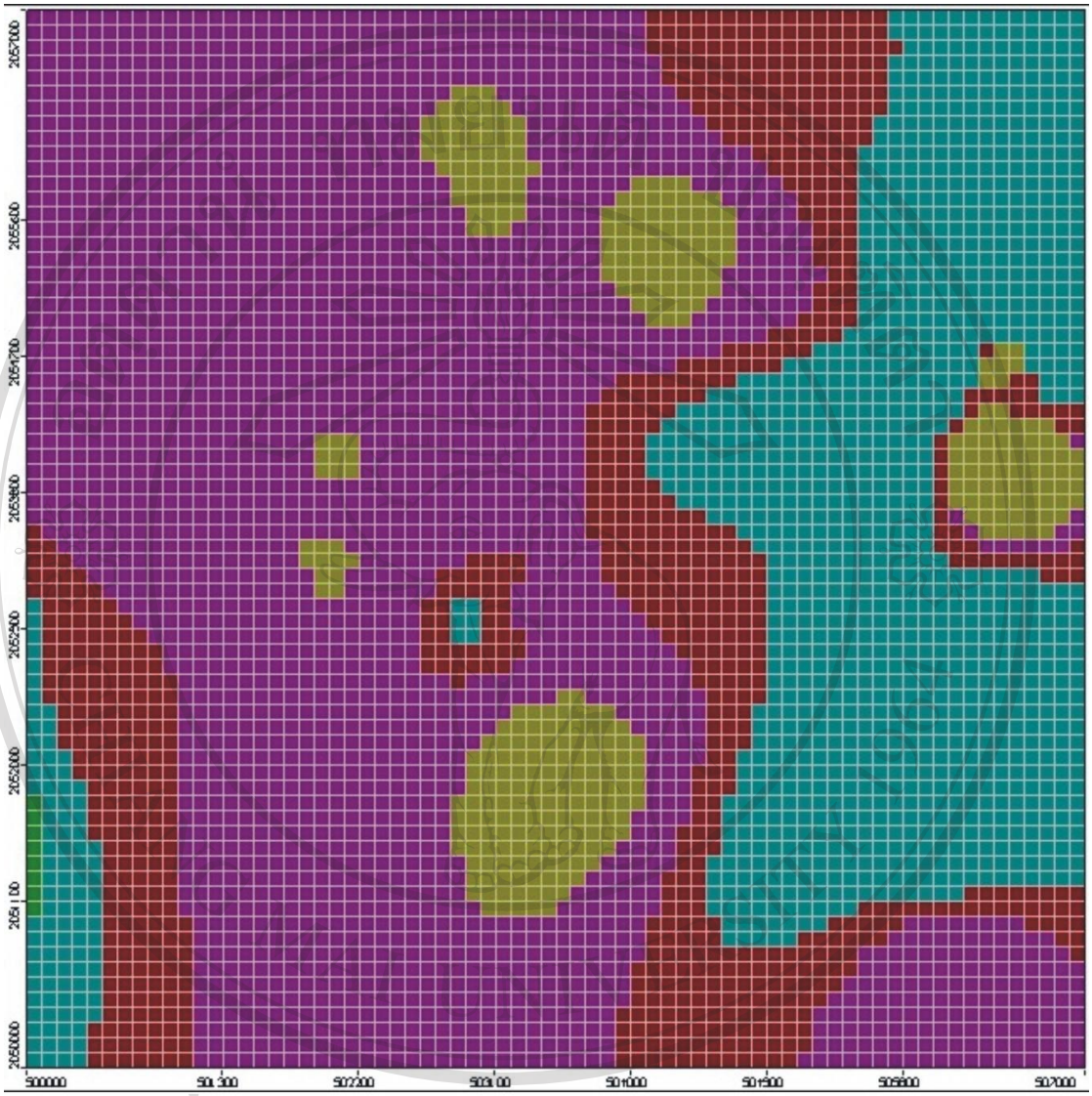
Distribution of hydraulic conductivity of layer 11



Conductivity

Zone	Kx [m/d]	Ky [m/d]	Kz [m/d]
1	0.1	0.1	0.01
2	2.6	2.6	0.26
3	0.1	0.1	0.01
4	3	3	0.3
5	0.1	0.1	0.1
6	4	4	0.04
7	1.16E-6	1.16E-6	1.16E-7

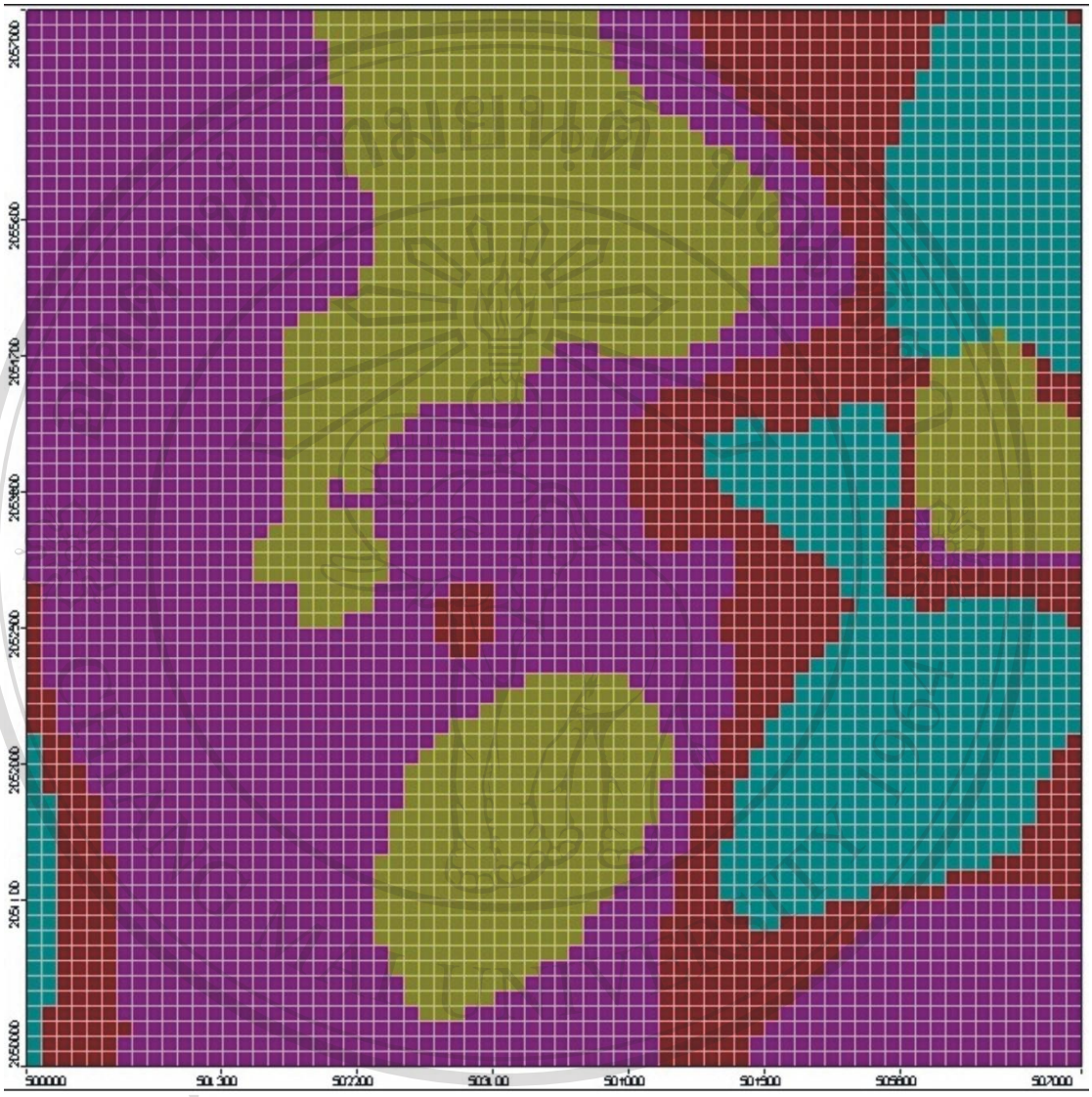
Distribution of hydraulic conductivity of layer 12



Conductivity

Zone	Kx [m/d]	Ky [m/d]	Kz [m/d]
1	0.1	0.1	0.01
2	2.6	2.6	0.26
3	0.1	0.1	0.01
4	3	3	0.3
5	0.1	0.1	0.1
6	4	4	0.04
7	1.16E-6	1.16E-6	1.16E-7

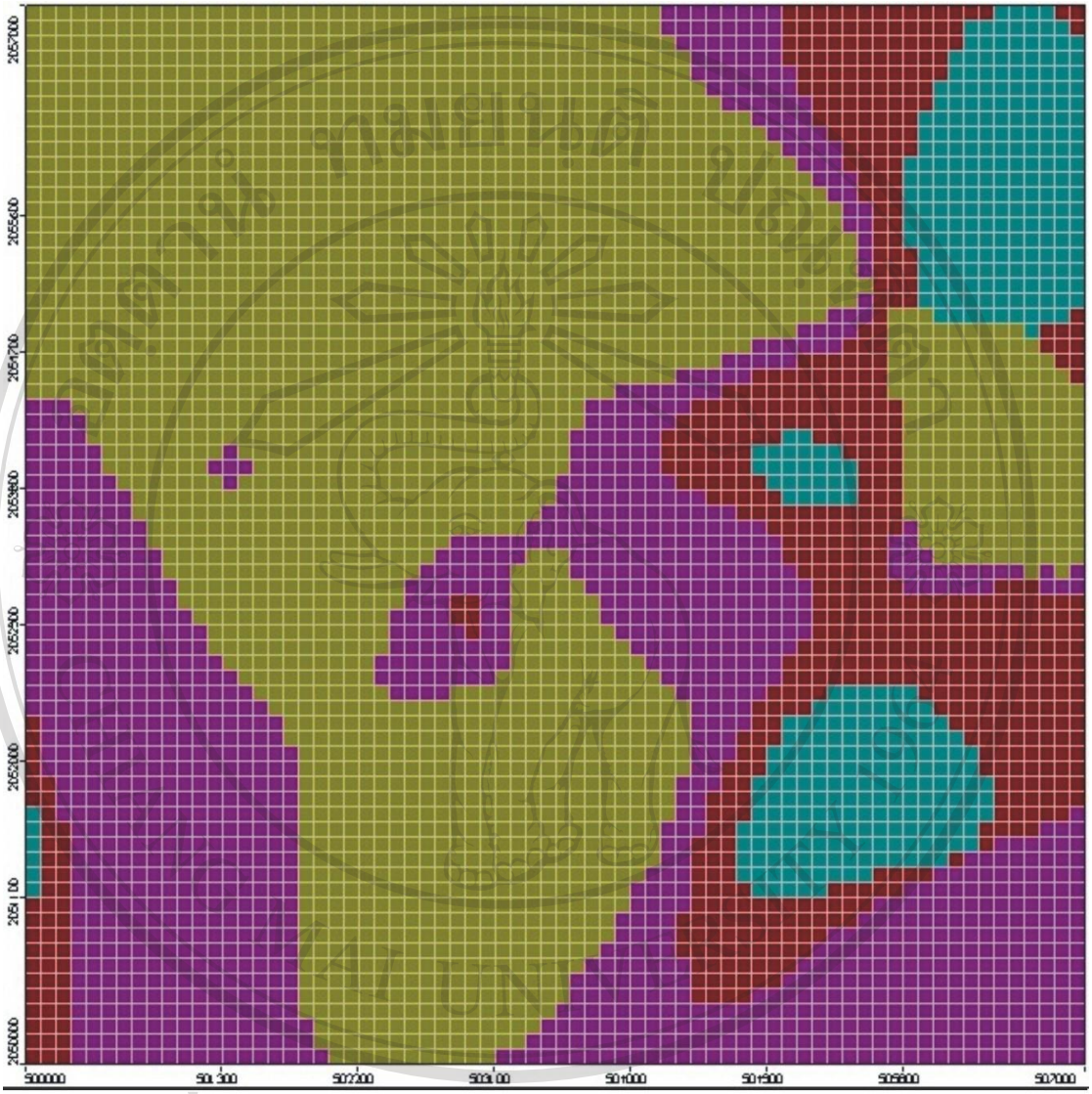
Distribution of hydraulic conductivity of layer 13



Conductivity

Zone	Kx [m/d]	Ky [m/d]	Kz [m/d]
1	0.1	0.1	0.01
2	2.6	2.6	0.26
3	0.1	0.1	0.01
4	3	3	0.3
5	0.1	0.1	0.1
6	4	4	0.04
7	1.16E-6	1.16E-6	1.16E-7

Distribution of hydraulic conductivity of layer 14



Conductivity

Zone	Kx [m/d]	Ky [m/d]	Kz [m/d]
1	0.1	0.1	0.01
2	2.6	2.6	0.26
3	0.1	0.1	0.01
4	3	3	0.3
5	0.1	0.1	0.1
6	4	4	0.04
7	1.16E-6	1.16E-6	1.16E-7

VITAE

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