
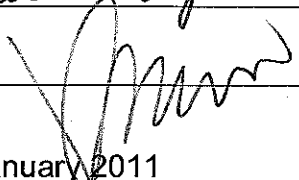


MTR Corporation Limited

Express Rail Link (XRL)
Consultancy Agreement No.: C8016

Environmental Term Consultancy for XRL**Tai Kong Po Emergency Assess Point –
Further Archaeological Investigation
Report**

January 2011

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Version: -

Date: 19 January 2011

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1 INTRODUCTION

1.1 Background

- 1.1.1 The “Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link” Project (hereinafter known as “the Project”) covers a 26km long underground rail line on a dedicated track that runs from the terminus in West Kowloon to the boundary at Huanggang, where it connect with the Mainland section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL). The Project also comprises ventilation buildings, emergency access points, stabling sidings and maintenance facilities and an emergency rescue sidings.
- 1.1.2 An Environmental Impact Assessment (EIA) study for the Project was conducted in accordance with the EIA Study Brief No. ESB-197/2008 (ESB). The EIA study concluded that the Project would be environmentally acceptable with the implementation of mitigation measures.
- 1.1.3 The EIA Report (Register No.: AEIA-143/2009) was approved on 28 September 2009 by the Director of Environmental Protection (DEP) under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Report, an environmental permit (EP) was granted on 16 October 2009 (EP No: EP-349/2009) for the construction and operation of the Project. A variation of environmental permit was approved with an Environmental Permit (EP No: EP-349/2009/A) issued by Director of Environmental Protection (DEP) on 27 September 2010.
- 1.1.4 Pursuant to EP Condition 2.37, an Archaeological Action Plan (AAP) was prepared following the AMO’s *Guidelines for Cultural Heritage Impact Assessment* and the recommendations specified in the EIA Report. The AAP includes the details of the archaeological actions required to mitigate potential impact on archaeological deposits in the works area of Shek Kong Stabling Sidings (SSS), Tai Kong Po Emergency Access Point (TPP) or Tse Uk Tsuen (TUW). The AAP includes the following items:
- a detailed plan for further archaeological investigation at inaccessible areas at SSS and TPP;
 - a detailed plan for rescue excavation at the southern portion of SSS; and
 - a contingency plan to address possible arrangement when significant archaeological findings are unearthed during the further archaeological investigation and rescue excavation; and
 - a detailed plan for Archaeological Watching Brief for the identification of any historical finds during the construction works at TUW.
- 1.1.5 This AAP was submitted to Antiquities and Monuments Office (AMO) together with the application of a Licence to excavate and search for antiquities under *Antiquities and Monuments Ordinance* (Cap 53). A License (No. 306) was granted by Antiquities Authority on 1 September 2010.
- 1.1.6 AECOM Asia Co. Ltd has been commissioned by the MTR to conduct further archaeological investigation at TPP. AECOM in-house archaeological team led by licensed archaeologist Steven Ng conducted the fieldworks and prepared further archaeological investigation report at the respective area for approval of AMO, following the detailed plan presented in the approved AAP.
- ### **1.2 Purpose of This Report**
- 1.2.1 This Archaeological Investigation Report (AIR) is prepared following the AMO’s *Guidelines for Archaeological Report* and the recommendations specified in the AAP. This report includes the details of the archaeological findings acquired from desktop research and fieldwork conducted between 2 November and 12 November 2010 at the proposed TPP. The AIR includes the following items:

- Descriptions of the results of the desktop research, field walking, auger testing and test pitting;
- Description of any significant archaeological finds during the course of the fieldwork;
- All the necessary photos, maps, drawings, survey information recorded during the fieldwork;
- Discussion of the archaeological findings; and
- Conclusion.

1.3 Report Structure

1.3.1 This AIR comprises the following sections:

- Section 1 presents the background information and purpose of AIR;
- Section 2 describes the objectives and scope of the archaeological investigation;
- Section 3 presents the methodology of the archaeological investigation;
- Section 4 presents the background of the archaeological investigation area;
- Section 5 describes the details of field findings; and
- Section 6 concludes the findings of archaeological investigation.

2 OBJECTIVE AND SCOPE OF ARCHAEOLOGICAL INVESTIGATION

2.1 Objective

- 2.1.1 The objective of the further archaeological investigation is to examine and rescue the archaeological resource as necessary within the TPP area through a programme of controlled, intrusive fieldwork with relevant research studies which examines, records and interprets archaeological deposits, features and structures and, as appropriate, retrieves artefacts, ecofacts and other remains, and to seek a better understanding of, to compile a lasting record of that resource, to analyse and interpret, and to disseminate the results.

2.2 Areas of Further Archaeological Investigation

- 2.2.1 During the course of EIA, there were many inaccessible areas within the TPP area which were still occupied by, such as pig and chicken farms, open storage yards, garages and village houses, and archaeological investigation could not be taken place. As such, the archaeological investigation of the EIA study was limited by the accessibility of the above-ground works areas and the archaeological potential within these inaccessible areas is uncertain. In order to confirm whether any archaeological remains exist in these inaccessible areas, a further archaeological investigation is therefore recommended.
- 2.2.2 Locations of further archaeological investigation are shown in **Figures B1 to B3 of Appendix B and Figure No. C8016/C/XRL/ENS/M55/005**. In order to demarcate the boundary of archaeological deposit and search of archaeological potential, field walking, four test pits and six auger holes are carried out in these areas.

3 METHODOLOGY

- 3.1.1 The methodology discussed in the following sections was implemented according to the requirements of the Antiquities and Monuments Office (AMO) *Guidelines for Archaeological Impact Assessment* and the Section 3 (Methodology) of AAP.

Field Walking

- 3.1.2 Fieldwalking was undertaken for surface collection in a systematic manner and covers the undisturbed and original landscape areas in TPP. Particular attention was given to exposed areas such as face cutting of slope.

Auger Holes

- 3.1.3 Hand auger was employed to drill soil and investigate existence of archaeology beneath the ground. A hand auger consists of a hollow auger head with shape blades on one end, a pole and a handle. The tool was used to vertically drill into the ground and extract a column of soil for examination. To identify and record strata, soil colour, composition and compaction (3C) were measured and stratum depth jotted each time the 3C changed. The depth of any material found was also measured. Augering only stopped when regolith, water table, or rocks is encountered, or the auger head failed to hold the soil due to its low degree in plasticity.

- 3.1.4 The location of each drilled auger hole is marked on a 1:1000 scale map as presented in **Figure No. C8016/C/XRL/ENS/M55/005**.

Test Pit Excavation

- 3.1.5 Test Pit excavations were conducted to verify the archaeological potential within the proposed development areas and to establish the horizontal spread of cultural material deposits and vertical sequence of cultural materials. Test pit location was set out at the designated locations based on the AAP.
- 3.1.6 The locations of each test pit were surveyed by a qualified land surveyor according to the Hong Kong metric grid system. The site benchmark was tied to Hong Kong Principal Datum, i.e. mPD.

4 BACKGROUND OF THE AREA

4.1 Geographic and Geological Background

- 4.1.1 The area of Tai Kong Po is a river valley terrain, and the further investigation area lies around a dry stream valley and gentle slope. The area lies to the south of the hill range of Kai Kung Leng (鷄公嶺). A tributary of Kam Tin River runs southwest and south to the area; Kam Tin River runs to the south of Tai Kong Po.
- 4.1.2 The geology of this area contained three main superficial deposits of Chek Lap Kok Formation, i.e. Alluvium (Qa on 1:20,000 geology maps), Terraced Alluvium (Qpa), and Colluvium / Debris Flow Deposits (Qpd)¹. They respectively occupied the low-to-high altitude which usually forms along both sides of a nearby river course, and in this area, the Kam Tin River. These superficial deposits formed a terraced landscape and gentle slope observed in this area. The distribution of superficial deposits in TPP area indicated a possible dry stream channel valley has ran through this area.
- 4.1.3 The bedrock in this area is a coarse grained volcanic tuff (JTM on geology maps). This is a common bedrock type in north New Territories. They are usually exposed on top of small hills and hill ranges. Kai Kung Leng hill range is formed by this type of bedrocks (See also **Figure B3** in **Appendix B**).

4.2 Historical Background

- 4.2.1 A review of historic information indicated that inhabitants have settled in Kam Tin since the Tang dynasty (618-907AD). As early as the 24th year of Kaiyuan reign (開元二十四年) (736AD) during the Tang dynasty, a navy base, which was named as Tunmen Zhen (屯門鎮), was set up as a military division of Guangzhou. It is believed that the soldiers and their supporters were settled in the valley of Yuen Long, Kam Tin, San Tin and Shekou in Shenzhen. Two cremation burial urns of Tang dynasty were found in Shek Kong in 1960.
- 4.2.2 Some villages within and near to the works area were established between Song and Qing dynasties. During the early Qing dynasties (late 17th century), the Qing court encouraged the Hakka people to migrate from eastern Guangdong to Hong Kong where belonged to Xinan County. These people established their villages at the western end of Kam Tin valley, such as Wang Toi Shan and Sheung Tsuen.
- 4.2.3 A detailed land survey was conducted in both 1864 and 1899 in New Territories. Seven villages in Kam Tin were indicated in 1868 *Map of the Sun-On District*. 32 years later, eight villages in Kam Tin along the XRL alignment were shown in the 1899 map in the scale of 1:31,600. The villages within the alignment area marked on the *Map of the Sun-On District* of 1868² are Kam Tin Hu, Shek Tau Wai and Sheung Tsuen. The villages within the XRL alignment area marked on the New Territories map of 1899 to 1904 are Mai Po, Wai Tsai, Shui Tau, Kam Tin, Shek Kong and Sheung Tsuen, but in the 1915 map of New Territories, no settlement are marked at the area of Tai Kong Po³.
- 4.2.4 Cheung Kong Tsuen, located at the southeast 400m from TPP, was established at early 20th century, and the villagers migrated from Lam Tsuen Valley. Tse Shing Ko Tsuen in the west, which is about 300m from the TPP, was established in the 1930s, and villagers were migrated and settled there from working areas of Shing Mun Reservoir.

¹ Fyfe, J.A. and others 2000 *The Quaternary Geology of Hong Kong*, Hong Kong, CEDD.

² Empson, Hal 1992 *Mapping Hong Kong: A Historical Atlas*, Hong Kong: The Government Printer.

³ Empson, Hal 1992 *Mapping Hong Kong: A Historical Atlas*, Hong Kong: The Government Printer.

4.3 Archaeological Background

- 4.3.1 Archaeological findings indicated that human was settled in Kam Tin valley since the Bronze Age, which is about 3,500 years ago. The archaeological investigations were carried out for the channelization works of Kam Tin River in the late 1990s and the early 2000s, Tsat Sing Kong and Tai Kong Po Archaeological Sites⁴ were then discovered.
- 4.3.2 Tsat Sing Kong Archaeological Site is situated about 300m south to the further investigation area in TPP. Double F pottery sherds, green glazed stand cup, post holes and a stone adze and a few celadon shreds dated to Bronze Age and Song dynasty were recorded in the recent archaeological survey in 2009 by the Hong Kong Archaeological Society⁵. An archaeological investigation was carried out for the widening of Tai Kong Po Road in 2004, where a Ming dynasty grave, a layer of roof tiles and a few celadon fragments were found at Cheung Kong Tsuen. Both archaeological findings in Tsat Sing Kong and Tai Kong Po Road are located on river terrace, as indicated by terraced alluvium deposits (Qpa) according to geology map⁶.
- 4.3.3 During the course of XRL EIA in 2009, archaeological investigation was conducted at the accessible lands within the TPP area. No artefacts and cultural layers were identified during field scan, auger test or test pit excavation. The locations of auger test and test pit excavation at the TPP area conducted in 2009 are also presented in Figure No. C8016/C/XRL/ENS/M55/005.

⁴ Antiquities and Monuments Office. *Lists of Sites of Archaeological Interest in Hong Kong (as at Nov 2010)*.

⁵ 香港考古學會 2009 《錦田七星崗考古調查報告》，香港，香港考古學會。(unpublished)

⁶ ERM HK Ltd 2004 *The Archaeological Investigation for the Proposed Widening Works at Tai Ko Po Road*, Hong Kong, ERM HK Ltd. (unpublished)

5 ARCHAEOLOGICAL INVESTIGATION FINDINGS

5.1 Result of Field Walking

- 5.1.1 A field walking was conducted at undisturbed and original landscape areas within the TPP, where no archaeological deposit and remain were identified. The original landscape of TPP were cultivation fields before the 1970s, however such fields were levelled, cut and filled during site formation for pig, chicken farms.

5.2 Result of Supplementary Auger Tests

- 5.2.1 In general, no feature of archaeological significance was observed in the additional six auger tests conducted in the area. A full record of the excavation is presented in **Appendix A**, while a summary of auger tests results is presented in **Table 5.1**. The locations of auger holes are shown in **Figure B3** of **Appendix B** and **Figure No. C8016/C/XRL/ENS/M55/005**. The following sections describe the augering condition of each auger hole.

Supplementary Auger Hole SH1

- 5.2.2 SH1 is situated on a slope just below the original fish pond to the immediate north and is backed by Kai Kung Leng to the north. An auger hole of diameter 10cm was drilled upto a depth of 140cm from the ground surface, when underground water is encountered.
- 5.2.3 Four strata were defined in SH1, none of which contained archaeological finds. Details on the stratigraphy are presented in **Table 5.1** and **Appendix A**.

Supplementary Auger Hole SH2

- 5.2.4 SH2 is situated on a slope just below the original fish pond to the immediate north and is backed by Kai Kung Leng to the north. An auger hole of diameter 10cm was drilled upto a depth of 270cm from the ground surface, when the soil is too muddy to be extracted by hand augering. Underground water emerged at a depth of 200cm from the ground surface.
- 5.2.5 Seven strata were defined in SH2, none of which contained archaeological finds. Details on the stratigraphy are presented in **Table 5.1** and **Appendix A**.

Supplementary Auger Hole SH3

- 5.2.6 SH3 is situated in between two abandoned chicken sheds and next to an abandoned septic tank on a slope. It is on a gentle slope backed by Kai Kung Leng to the northeast. An auger hole of diameter 10cm was drilled upto a depth of 230cm from the ground surface, when the soil is too muddy to be extracted by hand augering. Underground water emerged at a depth of 200cm from the ground surface.
- 5.2.7 Five strata have been defined in SH3, none of which contained archaeological finds. Details on the stratigraphy are presented in **Table 5.1** and **Appendix A**.

Supplementary Auger Hole SH4

- 5.2.8 SH4 is situated on a slope beside an abandoned septic tank and is backed by Kai Kung Leng to the north. An auger hole of diameter 10cm was drilled upto a depth of 210cm from the ground surface when rock is hit.
- 5.2.9 Five strata were defined in SH4, none of which contained archaeological finds. Details on the stratigraphy are presented in **Table 5.1** and **Appendix A**.

Supplementary Auger Hole SH5

- 5.2.10 SH5 is situated on a slope beside an abandoned septic tank and is backed by Kai Kung Leng to the north. An auger hole of diameter 10cm was drilled upto a depth of 55cm from the ground surface when rock is hit. This auger hole is placed near to SH4, but at a ground level of approximately 150cm lower than SH4.
- 5.2.11 Four strata were defined in SH5, none of which contained archaeological finds. Details on the stratigraphy are presented in **Table 5.1** and **Appendix A**.

Supplementary Auger Hole SH6

- 5.2.12 SH6 is situated on a vacant land to the south of the abandoned pig/chicken farm and is backed by Kai Kung Leng to the north. An auger hole of diameter 10cm was drilled upto a depth of 20cm from the ground surface when rock is hit. This auger hole is placed near to SP4, but at a ground level of approximately 40cm higher than SP4.
- 5.2.13 Only one stratum was defined in SH6, which contained no archaeological finds. Details on the stratigraphy are presented in **Table 5.1** and **Appendix A**.

5.3 Results of Supplementary Test Pit Excavations

- 5.3.1 In general, no feature of archaeological significance was observed in the four test pit excavations conducted in the area. A dark brown glazed pottery sherd was recovered from SP2, but cannot be diagnosed archaeologically. A full record of the excavation is presented in **Appendix A**, while a summary of test pit excavation results is presented in **Table 5.1**. The locations of the Supplementary Test Pits are shown in **Figure B3** of **Appendix B** and **Figure No. C8016/C/XRL/ENS/M55/005**. The following sections describe the excavation condition of each test pit.

Supplementary Test Pit SP1

- 5.3.2 SP1 is situated on concreted paved ground between two abandoned chicken sheds and is on a gentle slope backed by Kai Kung Leng to the northeast. A test pit of 2m x 1.2m was excavated up to a depth of 150cm from the ground surface by hand, and then an auger hole was drilled to extend the depth to 280cm from the ground surface, when underground water emerged which prevent soils extraction by hand augering.
- 5.3.3 Six strata were defined in SP1, none of which contained archaeological finds. Details on the stratigraphy are presented in **Table 5.1** and **Appendix A**.

Supplementary Test Pit SP2

- 5.3.4 SP2 is situated on concrete paved ground beside an abandoned and levelled pig shed. It is on a river terrace and is backed by Kai Kung Leng to the north. A test pit of 2.3m x 1.45m was excavated up to a depth of 112cm from the ground surface by hand, and then an auger hole was drilled to extend the depth to 210cm from the ground surface, when the soil is too muddy to be extracted by hand augering. Underground water emerged at a depth of 100cm from the ground surface.
- 5.3.5 Seven strata were defined in SP2. A sherd of dark brown glazed pottery was found in stratum L4, which is an orange firm sandy loam. The sherd was found in isolation from any archaeological materials, as well as the lack of distinctive diagnostic features on the sherd, the glazing resembled those pots seen from the 19th century to Modern Age. Details on the stratigraphy are presented in **Table 5.1** and **Appendix A**.

Supplementary Test Pit SP3

- 5.3.6 SP3 is situated on concrete paved ground beside an abandoned and levelled pig shed and an abandoned iron tower for feed storage. It is on a flat river terrace and is backed by Kai Kung Leng to the north. A test pit of 2.3m × 1.2m was excavated up to a depth of 140cm from the ground surface by hand, and then an auger hole was drilled to extend the depth to 230cm from the ground surface, when the soil is too muddy to be extracted by hand augering. Underground water emerged at a depth of 145cm from the ground surface.
- 5.3.7 Six strata were defined in SP3, none of which contained archaeological finds. Details on the stratigraphy are presented in **Table 5.1** and **Appendix A**.

Supplementary Test Pit SP4

- 5.3.8 SP4 is situated on a vacant land with olive brown sand as topsoil. There are concrete rubbles discarded on this small vacant lot, which might have caused recent disturbance to the soil near to the surface. It is on a flat river terrace and is backed by Kai Kung Leng to the north. A test pit of 1.8m × 1.0m was excavated up to a depth of 120cm from the ground surface by hand, and then an auger hole was drilled to extend the depth to 130cm from the ground surface, when underground water emerged at 95cm which prevent soils extraction by hand augering.
- 5.3.9 Five strata were defined in SP4, none of which contained archaeological finds. Details on the stratigraphy are presented in **Table 5.1** and **Appendix A**.

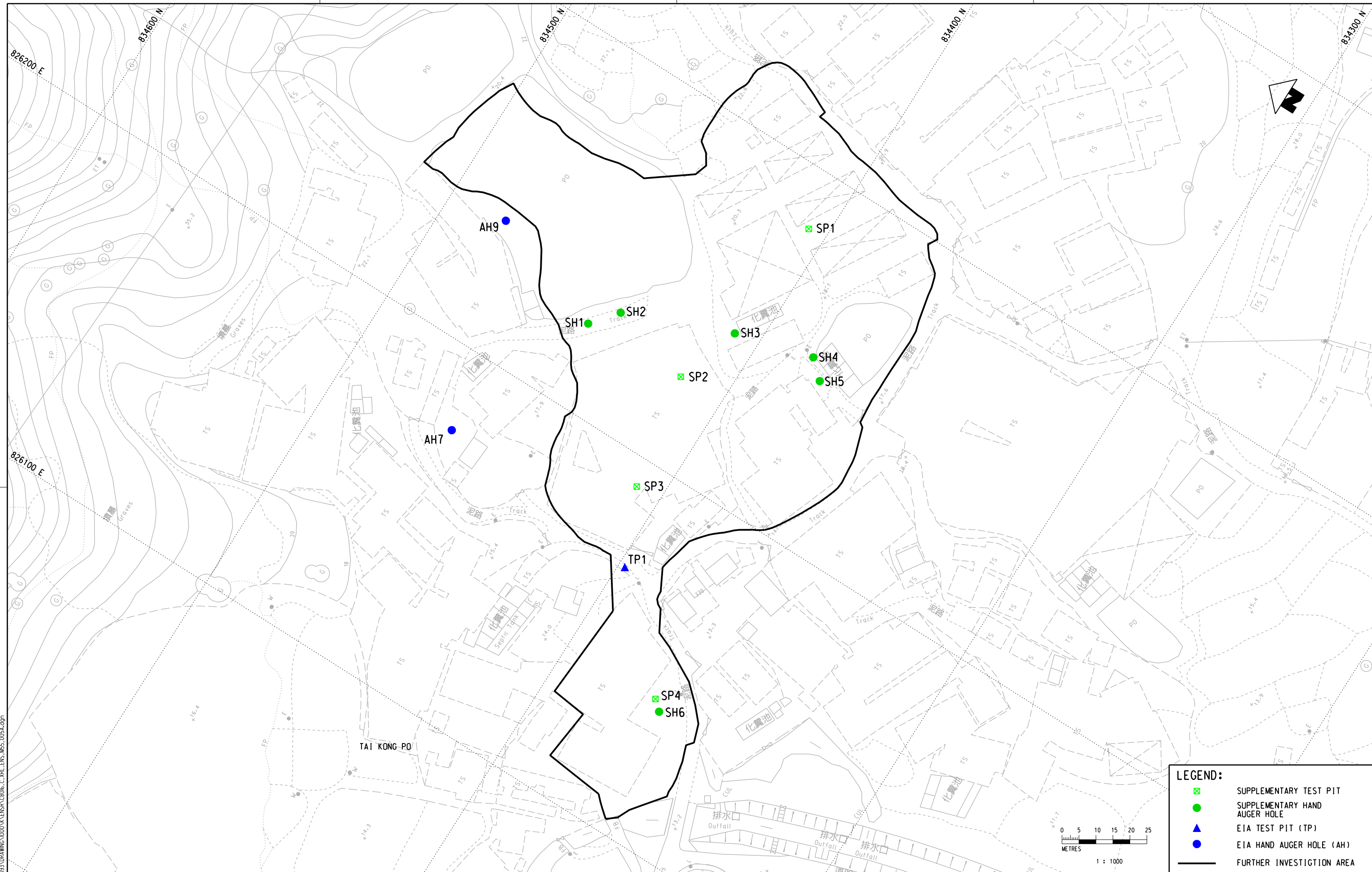
Table 5.1 Summary of Test Pit Excavation and Auger Test Results in Tai Kong Po



Test Pit / Auger Hole	Surface Altitude	Maximum Depth Excavated / Drilled	Landscape	Current Land Use	Strata					Artefacts / Remarks
					Top Soil	Sub soil		Regolith	Bedrock	
						With Archaeology	Without Archaeology			
SP1	c.a. +20mPD	Digging: 150cm Drilling: 280cm	Slope	Abandoned Pig/Chicken farm	L1	Nil	L2, L3, L4	L6	-----	Underground water reached at 270cm
SP2	c.a. +17.9mPD	Digging: 112cm Drilling: 210cm	River terrace	Abandoned Pig/Chicken farm	L1	Nil	L2, L3, L4, L5, L6	L7	-----	Underground water reached at 100cm
SP3	c.a. +15.5mPD	Digging: 140cm Drilling: 230cm	River terrace	Abandoned Pig/Chicken farm	L1	Nil	L2, L3, L4, L5	L6	-----	Underground water reached at 145cm
SP4	c.a. +12mPD	Digging: 120cm Drilling: 130cm	River terrace	Vacant	L1	Nil	L2, L3, L4, L5		-----	Underground water reached at 95cm
SH1	c.a.+17mPD	140cm	Slope	Abandoned Pig/Chicken farm	L1	Nil	L2, L3	L4	-----	Underground water reached at 140cm
SH2	c.a. +16.5mPD	270cm	Slope	Abandoned Pig/Chicken farm	L1	Nil	L2, L3, L4, L5, L6	L7	-----	Underground water reached at 200cm
SH3	c.a. +16.5mPD	230cm	Slope	Abandoned Pig/Chicken farm	L1	Nil	L2, L3, L4	L5	-----	Underground water reached at 200cm
SH4	c.a. +17mPD	210cm	River terrace	Abandoned Pig/Chicken farm	L1	Nil	L2, L3, L4	L5	-----	Rock hit at 210cm
SH5	c.a. +15.5mPD	55cm	River terrace	Abandoned Pig/Chicken farm	L1	Nil	L2, L3	L4	-----	Rock hit at 55cm
SH6	c.a. +12mPD	20cm	River terrace	Vacant	L1	Nil	----	-----	-----	Rubbles hit at 20cm

6 CONCLUSION

- 6.1.1 Field investigation at Tai Kong Po Works Area (TPP) was conducted according to the objectives and scope of archaeological actions set in AAP. This archaeological field investigation at Tai Kong Po revealed that no archaeology is observed in this area. Only a pottery sherd with dark brown glaze was found in L4 of SP2 but it is dated to 19th century to Modern Age, indicating no relevant information regarding past human activities in this area.
- 6.1.2 The investigation area is located in a dry stream valley and a gentle slope. From geological and topographic information, in addition to the stratigraphy of test pitting and augering, most TPP area was ran through by a stream, at least in a seasonal manner (See **Figure B3** of **Appendix B** and **Figure No. C8016/C/XRL/ENS/M55/005**). Due to the wet conditions and effect of erosion by water actions near to the stream, it is interpreted that the area of TPP was not suitable for human settlement, pushing people away from this area.
- 6.1.3 On the other hand, the nearby Tsat Sing Kong and Tai Kong Po Archaeological Sites located at river terraces contained Bronze Age and Song dynasty materials, which implied that it was a suitable place for human settlement. The established settlement at Tsat Sing Kong Tai Kong Po at river terraces would have pulled in local population.
- 6.1.4 In the light of all evidences, retrieved from this archaeological field investigation, it is concluded that the archaeological potential on the TPP area is negligence. No further action or mitigation measure is therefore required.

FIGURE



REV		DESCRIPTION		BY	DATE	APPROVED	REV	DESCRIPTION		BY	DATE	APPROVED	DRAWN ZRH DESIGNED -- CHECKED -- APPROVED -- DATE 29/DEC/2010 DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED ON SITE. © MTR CORPORATION LIMITED 2008 COPYRIGHT IN RESPECT OF THIS DRAWING / DOCUMENT IS OWNED BY THE MTR CORPORATION LIMITED OF HONG KONG. NO REPRODUCTION OF THE DRAWING / DOCUMENT OR ANY PART BY WHATEVER MEANS IS PERMITTED WITHOUT THE PRIOR WRITTEN CONSENT OF THE MTR CORPORATION LIMITED.		 MTR EXPRESS RAIL LINK ORIGINATOR  AECOM CADD REF. C8016_C_XRL_ENS_M55_005A.dgn		TITLE C8016 ENVIRONMENTAL TERM CONSULTANCY FOR XRL LOCATION OF TEST PITS AND AUGER HOLES IN TAI KONG PD EMERGENCY ACCESS POINT		SCALE 1 : 1000 (A3)	FIGURE NO. C8016/C/XRL/ENS/M55/005	REV. A
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APPENDIX A

Archaeological Investigation Records

Location	Tai Kong Po	Area Code	TKP	Test Pit No.	SP1
Test Pit Coordinate	826282.094E	834405.966N	Test Pit Measurement	2m x 1.2m	
Digging Method	Hand Digging		Ground Level	c.a. +20.0mPD	

Stratigraphy and Finds

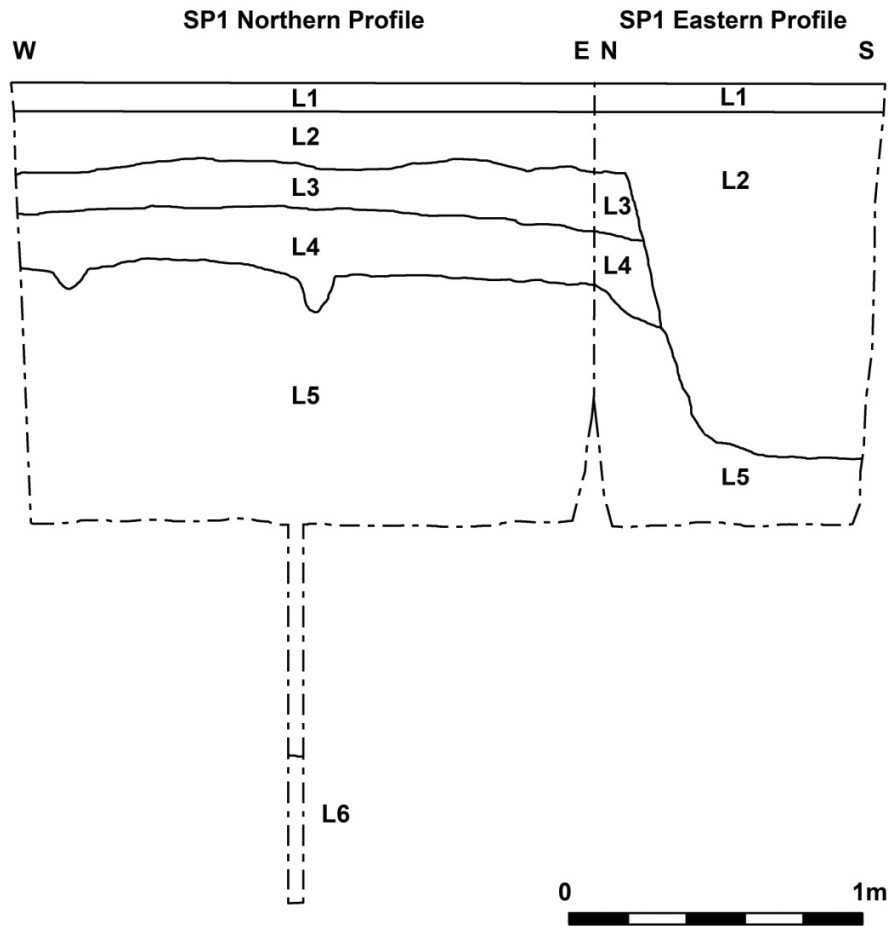
Layer	Soil Texture	Soil Colour	Finds	Chronology / Remarks
L1	Concrete Paving		Nil	Modern
L2	Sand	Grayish Red	Nil	Modern Fill Soil
L3	Sand	Gray	Nil	
L4	Sandy Loam	Bright Reddish Brown	Nil	
L5	Clay	Bright Yellowish Brown	Nil	
L6	Sandy Clay	Bright Yellowish Brown	Nil	Sterile Regolith, underground water at 270cm deep

Test Pit Wall Photography



SP1 Northern Profile

Test Pit Wall Drawing



Date

6-Nov-2010

Log by

Steven Ng

Location	Tai Kong Po	Area Code	TKP	Test Pit No.	SP2
Test Pit Coordinate	826225.537E	834415.317N	Test Pit Measurement	2.3m × 1.45m	
Digging Method	Hand Digging		Ground Level	c.a. +17.9mPD	

Stratigraphy and Finds

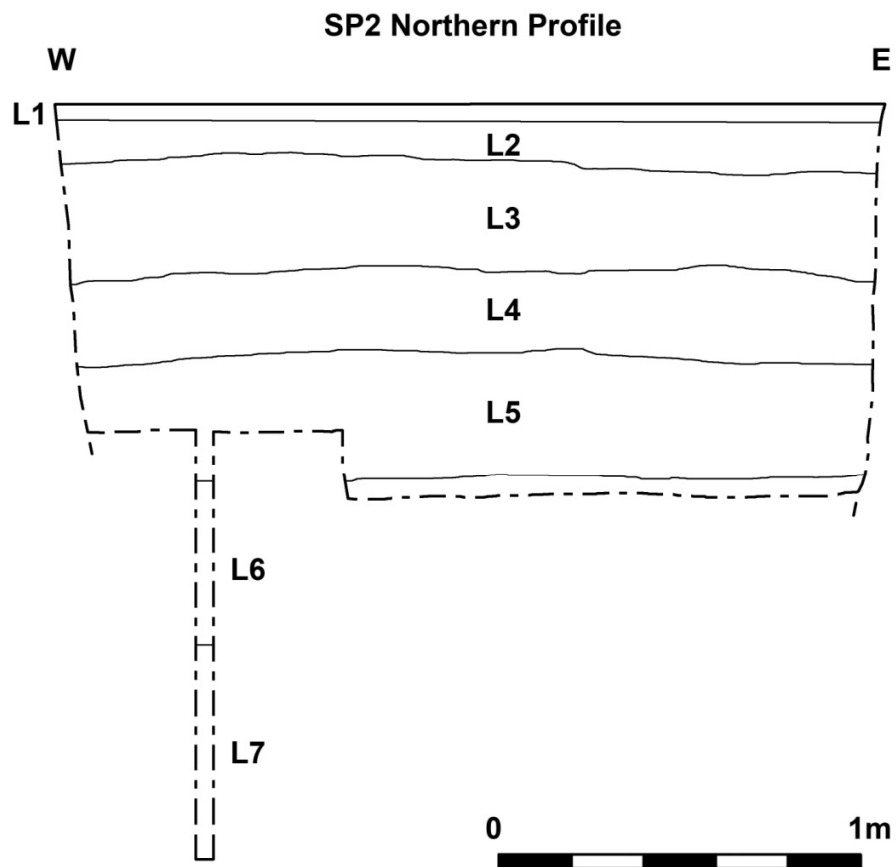
Layer	Soil Texture	Soil Colour	Finds	Chronology / Remarks
L1	Concrete Paving		Nil	Modern
L2	Sandy Soil	Dull Yellowish Brown	Nil	
L3	Coarse Sand	Grayish Red	Nil	
L4	Sandy Loam	Orange	a Modern brown glazed pottery sherd	19 th century to Modern
L5	Sand	Dull Orange	Nil	Underground water reached at 100cm
L6	Sand	Bright Yellowish Brown	Nil	Alluvium
L7	Clay	Light Yellow	Nil	Sterile Regolith

Test Pit Wall Photography



SP2 Northern Profile

Test Pit Wall Drawing



Date

4-Nov-2010

Log by

Steven Ng

Location	Tai Kong Po	Area Code	TKP	Test Pit No.	SP3
Test Pit Coordinate	826191.677E	834409.110N	Test Pit Measurement	2.3m x 1.2m	
Digging Method	Hand Digging		Ground Level	c.a. +15.5mPD	

Stratigraphy and Finds

Layer	Soil Texture	Soil Colour	Finds	Chronology / Remarks
L1	Concrete Paving		Nil	Modern
L2	Clayey Silt	Dull Yellow Orange	Nil	Modern Fill Soil
L3	Clay	Brownish Gray	Nil	Modern with Concrete Slab and Plastic Tubes
L4	Sandy Clay	Gray	Nil	Modern, with Plastic Tubes
L5	Clayey Sand	Bright Yellowish Brown	Nil	Alluvial, Underground water reached at 145cm
L6	Clay	Olive Black	Nil	Sterile Regolith

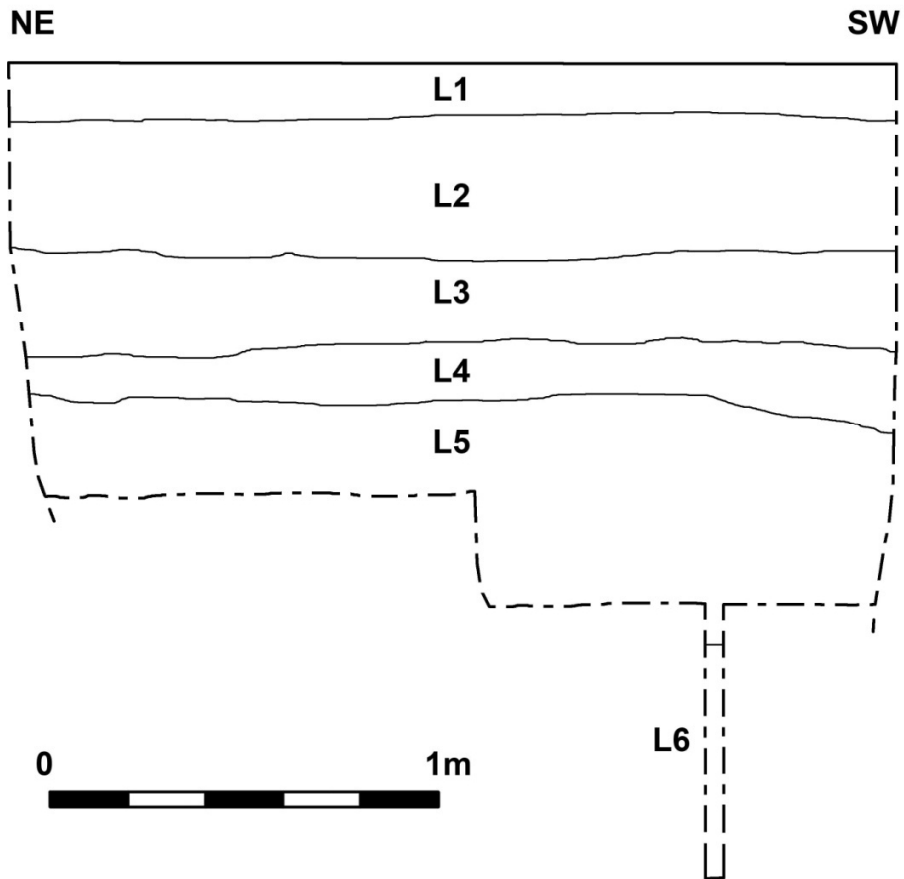
Test Pit Wall Photography



SP3 Southeastern Profile

Test Pit Wall Drawing

SP3 Southeastern Profile



Date

6-Nov-2010

Log by

Patrick Lai

Location	Tai Kong Po	Area Code	TKP	Test Pit No.	SP4
Test Pit Coordinate	826140.949E	834370.549N	Test Pit Measurement	1.8m x 1m	
Digging Method	Hand Digging		Ground Level	c.a. +12mPD	

Stratigraphy and Finds

Layer	Soil Texture	Soil Colour	Finds	Chronology / Remarks
L1	Sand with Pebbles	Olive Brown	Nil	Modern
L2	Silty Sand	Dull Yellowish Brown	Nil	
L3	Sand with Pebbles	Bright Brown	Nil	
L4	Sand	Dull Yellow Orange	Nil	Alluvium, Underground water reached at 95cm
L5	Sand	Brown	Nil	

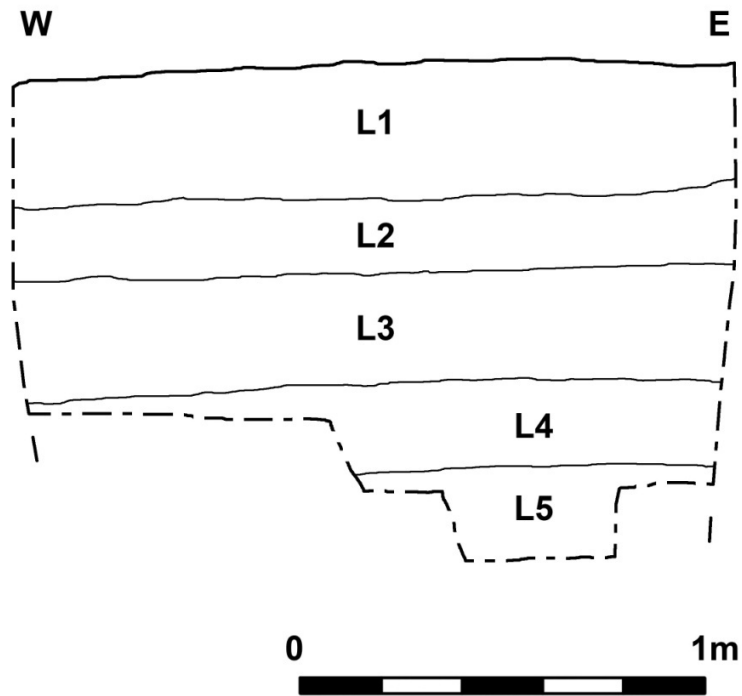
Test Pit Wall Photography



SP4 Northern Profile

Test Pit Wall Drawing

SP4 Northern Profile


















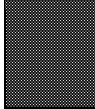













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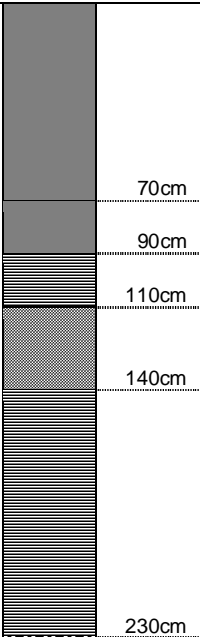









4-Nov-2010

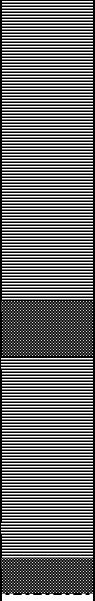
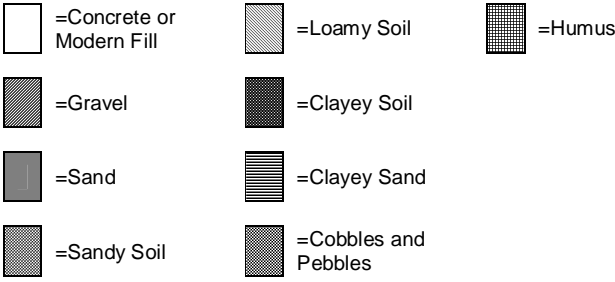
Log by

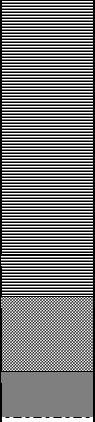









Patrick Lai

Location	Tai Kong Po	Area Code	TKP	Auger Hole No.	SH1	
Auger Hole Coordinate	826224E	834447N	Auger Hole Drill Size	10cm diameter		
Augering Method	Hand Augering		Ground Level	c.a. +17mPD		
SOIL PROFILE	DEPTH (CM)	STRATUM	SOIL COLOUR	SOIL TEXTURE	FINDS	REMARKS
Ground Surface						
	0 20 40	L1	Brownish Black	Silty Sand	Nil	
	40 60 80	L2	Brownish Gray	Sand	Nil	
	80 100 120	L3	Gray	Silty Sand	Nil	
	120 140	L4	Grayish Olive	Sand	Nil	Sterile Regolith , underground water reached at 140cm
	140 160 180 200 220 240 260 280 300 320 340 360 380 400					
Legend				Interpretation		
 =Concrete or Modern Fill  =Loamy Soil  =Humus  =Gravel  =Clayey Soil  =Sand  =Clayey Sand  =Sandy Soil  =Cobbles and Pebbles						
Date		9-Nov-2010		Log by	Patrick Lai	

Location	Tai Kong Po	Area Code	TKP	Auger Hole No.	SH2		
Auger Hole Coordinate	826240E	834439N	Auger Hole Drill Size	10cm diameter			
Augering Method	Hand Augering		Ground Level	c.a. +16.5mPD			
SOIL PROFILE		DEPTH (CM)	STRATUM	SOIL COLOUR	SOIL TEXTURE	FINDS	REMARKS
Ground Surface							
	40cm	0 2 0	L1	Brownish Black	Silty Sand	Nil	
	60cm	4 0 0	L2	Bright Yellowish Brown	Sand	Nil	
	100cm	6 0 0	L3	Dull Yellow	Clayey Silt	Nil	
	140cm	8 0 0	L4	Bright Yellowish Brown	Silty Sand	Nil	
	160cm	1 4 0	L5	Yellowish Brown	Clayey Sand	Nil	
	250cm	1 6 0	L6	Gray	Clayey Sand	Nil	Underground water reached at 200cm
	270cm	2 0 0	L7	Black	Clay	Nil	Sterile Regolith
		2 4 0					
		2 6 0					
		2 8 0					
		3 0 0					
		3 2 0					
Legend				Interpretation			
<div><div> =Concrete or Modern Fill</div><div> =Gravel</div><div> =Sand</div><div> =Sandy Soil</div></div> <div><div> =Loamy Soil</div><div> =Clayey Soil</div><div> =Clayey Sand</div><div> =Cobbles and Pebbles</div></div> <div><div> =Humus</div></div>							
Date		9-Nov-2010		Log by		Patrick Lai	

Location	Tai Kong Po	Area Code	TKP	Auger Hole No.	SH3		
Auger Hole Coordinate	826244E	834406N	Auger Hole Drill Size	10cm diameter			
Augering Method	Hand Augering		Ground Level	c.a. +16.5mPD			
SOIL PROFILE		DEPTH (CM)	STRATUM	SOIL COLOUR	SOIL TEXTURE	FINDS	REMARKS
Ground Surface							
		0					
		2	L1	Bright Yellowish Brown	Sand	Nil	
		4					
		6					
		8	L2	Dull Yellow	Silty Sand	Nil	
		10	L3	Yellowish Brown	Clayey Sand	Nil	
		12	L4	Bright Yellowish Brown	Sandy Clay	Nil	
		14					
		16					
		18	L5	Light Gray	Clayey Sand	Nil	Sterile Regolith, underground water reached at 200cm
	20						
	22						
	24						
	26						
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	34						
	36						
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	40						
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Legend				Interpretation			
<div><div> =Concrete or Modern Fill</div><div> =Gravel</div><div> =Sand</div><div> =Sandy Soil</div><div> =Loamy Soil</div><div> =Clayey Soil</div><div> =Clayey Sand</div><div> =Cobbles and Pebbles</div><div> =Humus</div></div>							
Date		9-Nov-2010		Log by		Patrick Lai	

Location	Tai Kong Po	Area Code	TKP	Auger Hole No.	SH4	
Auger Hole Coordinate	826247E	834380N	Auger Hole Drill Size	10cm diameter		
Augering Method	Hand Augering		Ground Level	c.a. +17mPD		
SOIL PROFILE	DEPTH (CM)	STRATUM	SOIL COLOUR	SOIL TEXTURE	FINDS	REMARKS
Ground Surface						
	0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144 146 148 150 152 154 156 158 160 162 164 166 168 170 172 174 176 178 180 182 184 186 188 190 192 194 196 198 200 202 204 206 208 210	L1	Brown	Clayey Sand	Nil	
		L2	Grayish Brown	Clay	Nil	
		L3	Yellowish Brown	Clayey Sand	Nil	
		L4	Grayish Brown	Clayey Sand	Nil	
		L5	Reddish Brown	Clay	Nil	Sterile Regolith
Legend			Interpretation			
						
Date		12-Nov-2010	Log by		Patrick Lai	

Location	Tai Kong Po	Area Code	TKP	Auger Hole No.	SH5	
Auger Hole Coordinate	826240E	834378N	Auger Hole Drill Size	10cm diameter		
Augering Method	Hand Augering		Ground Level	c.a. +15.5mPD		
SOIL PROFILE	DEPTH (CM)	STRATUM	SOIL COLOUR	SOIL TEXTURE	FINDS	REMARKS
Ground Surface						
	0 2 0 4 0 6 0 8 0 1 0 0	L1	Dark Brown	Clayey Sand	Nil	
		L2	Brown	Clayey Sand	Nil	
		L3	Grayish Yellow	Sandy Clay	Nil	
		L4	Reddish Brown	Sand	Nil	Sterile Regolith
Legend				Interpretation		
<div> <div> =Concrete or Modern Fill</div> <div> =Loamy Soil</div> <div> =Humus</div> <div> =Gravel</div> <div> =Clayey Soil</div> <div> =Sand</div> <div> =Clayey Sand</div> <div> =Sandy Soil</div> <div> =Cobbles and Pebbles</div> </div>						
Date	12-Nov-2010		Log by	Patrick Lai		

Location	Tai Kong Po	Area Code	TKP	Auger Hole No.	SH6	
Auger Hole Coordinate	826138E	834362N	Auger Hole Drill Size	10cm diameter		
Augering Method	Hand Augering		Ground Level	c.a. +12mPD		
SOIL PROFILE		DEPTH (CM)	STRATUM	SOIL COLOUR	SOIL TEXTURE	FINDS
Ground Surface						
		0 2 0 4 0 6 0 8 0 1 0 0	L1	Dark Brown	Sand	Nil
Legend				Interpretation		
<div> <div></div> =Concrete or Modern Fill <div></div> =Loamy Soil <div></div> =Humus </div> <div> <div></div> =Gravel <div></div> =Clayey Soil <div></div> =Sand <div></div> =Sandy Soil </div> <div> <div></div> =Clayey Sand <div></div> =Cobbles and Pebbles </div>						
Date		12-Nov-2010		Log by		Patrick Lai

APPENDIX B

Maps and Photos

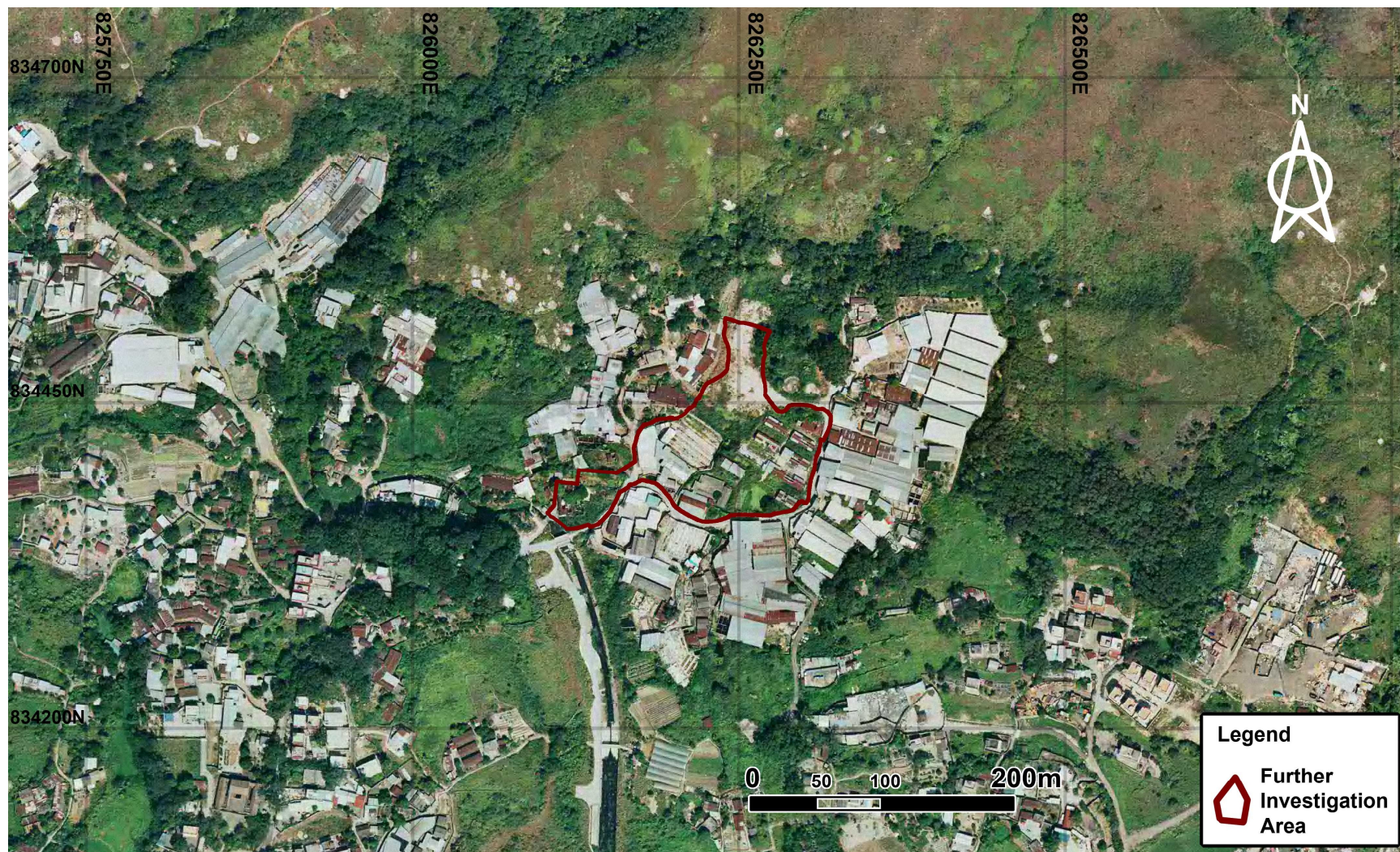


Figure B1 Further Investigation Area of TPP marked on an 2009 Aerial Photograph
(Source: Survey and Mapping Office of Lands Department 2009 Aerial Photo)



Figure B2 Further Investigation Area of TPP on an 1963 Aerial Photograph
(Source: Survey and Mapping Office of Lands Department 1963 Aerial Photo)

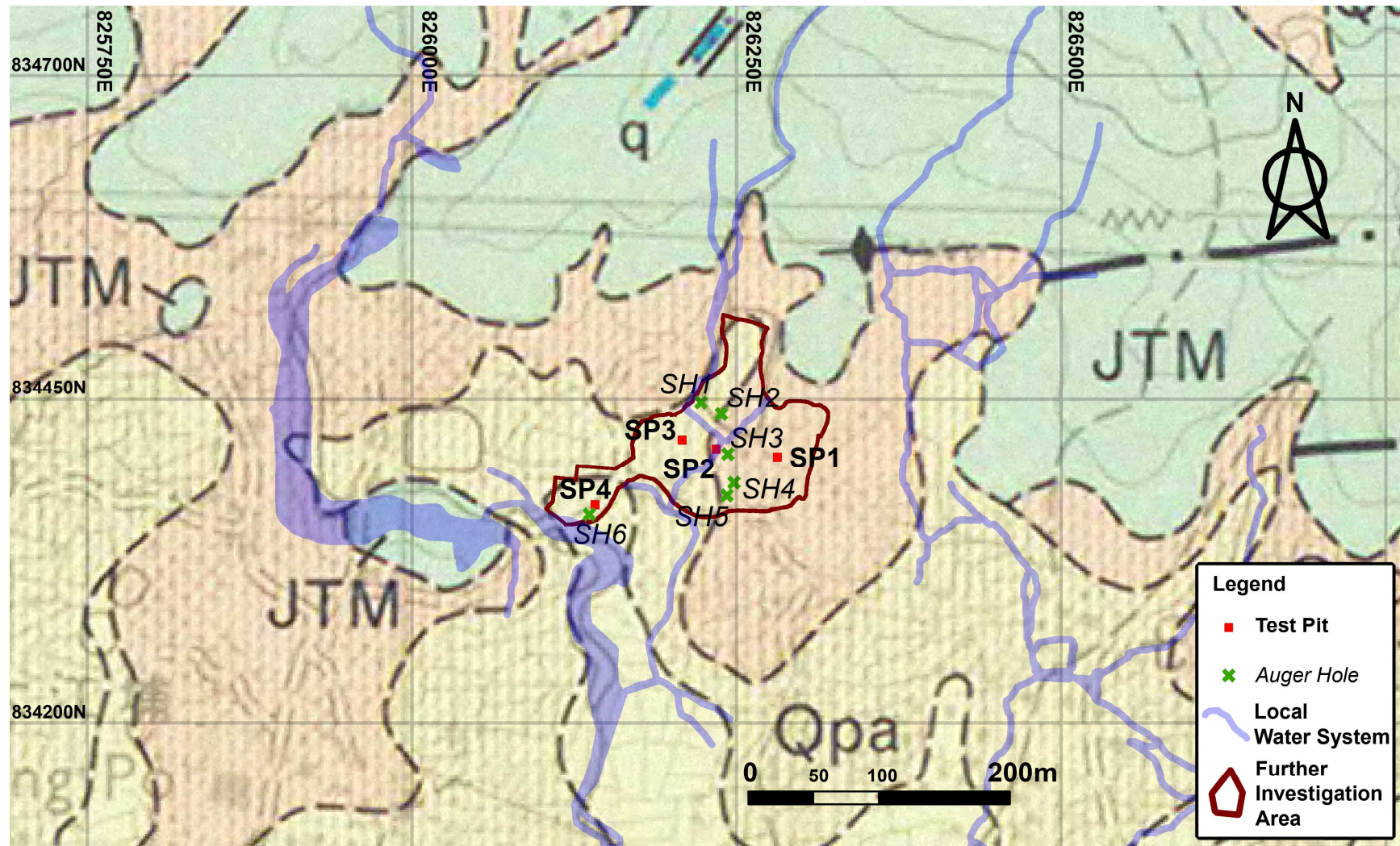


Figure B3 Local Geology and the Water System around the Further Investigation Area of TPP
(Source: Geotechnical Control Office 1989)



Figure B4 Dark Brown Glazed Pottery in L4 of SP2
(Source: AECOM Asia Co. Ltd. 2010)