KUMPULAN PENGURUSAN KAYU KAYAN TERENGGANU SDN BHD
(KPKKT)

PUBLIC SUMMARY
MANAGEMENT PLAN FOR HCVFs WITHIN DUNGUN TIMBER COMPLEX (DTC) MALAYSIA FOR THE PERIOD 2013 – 2017

BY

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1.0 Introduction

The concept of High Conservation Value Forest (HCVF) which constitutes Principle 9 of the Forest Stewardship Council (FSC)'s certification protocol, focuses on the environmental, social and/or cultural values that make a particular forest area of outstanding significance. The intent of this Principle is to manage and conserve those forests in such sound manner as to enable the maintenance or enhancement of the identified High Conservation Values (HCVs) in perpetuity. At KPKKT, much of the efforts in the areas of Biodiversity and HCVF Management within DTC thus far have been conducted in win-win, close collaboration with WWF-Malaysia and the Forest Research Institute of Malaysia (FRIM), as well as UPM and UKM.

2.0 HCVs and HCVF Sites for DTC

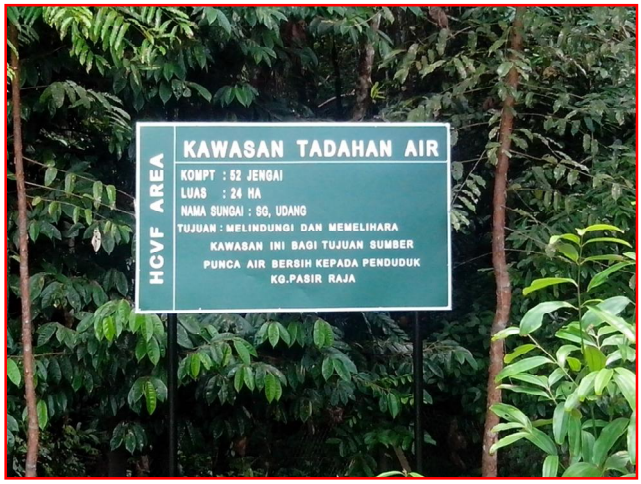
For the case of DTC, and for reasons of practicality, resource availability and managerial expediency, the following two areas have been preliminarily recommended to be set aside as new HCVF areas:

1) The unique Keruing sarawak (*Dipterocarpus sarawakensis*) stands in Jerangau PRF on 61ha (Figs. 1a & 1b) ;
2) The Community Water Catchment Forest of Compartment No. 52 of Jengai PRF, covering a total area of 24ha (Figs. 2a & 2b).

Figures 1 (a & b): Keruing Sarawak (*Dipterocarpus sarawakensis*) at Comp. 31 Jerangau .Source: FRIM

1a.

1b.



(2a) **(2b)**

Figure 2 (a & b): Community Water Catchment Forest at Compartment 52, Jengai PRF

2.1 Biodiversity in Jerangau PRF

Research show that there are at least 666 taxa of vascular plants from 123 families and 331 genera in Jerangau PRF. Among them, 568 were Dicots, 58 Monocots, 37 Ferns and Lycophytes, and three Gymnosperms. The highest number of species came from the family Euphorbiaceae with 50 species from 24 genera, followed by Dipterocarpaceae (46 taxa), Rubiaceae (37 taxa), Annonaceae (27 taxa) and Palmae (24 taxa). The flora inventory found 59 species that are either endemic to Terengganu or Peninsular Malaysia. Three endemic species *Scaphochlamys breviscapa (Zingiberaceae), Licuala fractilexa* (Palmae) and Licuala bayana (Palmae) are only confined to Terengganu with L. bayana being only known from its type locality, Jerangau PRF.

The KPKKT – WWF Malaysia survey of 2009/ 2010 detected the presence of fauna species which are either on the IUCN Red List, CITES or the Wildlife Protection Act 2010 as threatened and endangered. Out of these, 8 are listed by the Red List as Vulnerable (VU), 5 as Endangered (EN) and one as Critically Endangered (CR). Nine species are listed in Appendix I and II of CITES while 28 are listed either in Schedule 1 or Schedule 2 of the Malaysian Wildlife Protection Act 2010. As for the fish fauna among the common species caught and identified included the *Kelah, Sebarau, Baung, Lampam and Kelisa putih*. The Wildlife Plan for Peninsular Malaysia (DWNP, 1992) lists the Asian Elephant, Malayan Tiger, Sumatran Rhino, Malayan tapir and the Gaur (Seladang) as endangered in Malaysia. DTC contains all five species in its forests.

2.2 Community Water Catchment Area in Compt 52, Jengai PRF

Part of compartment 52 of Jengai PRF which forms the watershed of Sungai Udang was chosen, in consultation with the villagers of Kampung Pasir Raja as a source of their clean and freshwater supply. **Table 1** summarises the findings on characteristics of the site and the water supply project which was initiated by KPKKT as part of its CSR (Corporate Social Responsibility) (see also Annex 1).

Table 1: Description of the Water Supply Project for Kampung Pasir Raja Residents.

No	Activity/ Parameter	Description/ Value
1	Date the Site was chosen & Project started	25 June 2010
2	Name of river	Sungai Udang
3	Objective of Project	1. To protect and conserve the area as a source of clean water for the residents of Kampung pasir Raja. 2. Project as part of KPKKT's CSR 3. To enlist the support of local residents in sustainable forest management effort by KPKKT. 4. To fulfil certification requirements under FSC.
4	Location	Compartment no. 52, Jengai PRF, coordinates: RV 554343; WMR 505528.
5	Area	24 ha
6	Length of 3" polyurethane pipe used to deliver water	3,000 feet (or approx. 1,000 meters (contributed by KPKKT)
7	Total Cost of pipe	Appro RM10,000.00
8	Total number of beneficiaries of project	540 houses.
9	Date of project completion	25 November 2014 – Launched by the State Chief Minister, Dato Seri Hj Ahmad Mohd Said.

3.0 HCVF Management Plan

3.1 Management Objectives and Strategies

(1) To establish a network of HCVFs in identified spots/areas within DTC and to manage and protect such HCVs/ HCVFs within the framework of sustainable forest management (SFM) of DTC as a whole, and in the wider contexts of HCVF management in Terengganu and Malaysia.

(2) To make sure that the management of KPKKT adheres to FSC's protocols on the identification, maintenance and long–term management, monitoring and protection of such HCVFs within DTC.

(2) To develop and refine in-house expertise within KPKKT/ GPB in the area of HCVF management through continuous training and skill upgrading of the relevant staff.

(3) To extend the concept and practice of HCVF management to as wide an audience as possible.

(4) Over the long term, to continue to keep the existing HCVFs and to expand it so as to achieve and fulfil FSC specification that at least 10 percent of the whole DTC be declared and set aside as HCVF/ conservation areas.

(5) To collaborate with relevant agencies, NGOs and other stakeholders on the management and research on HCVFs.

(6) To identify areas of research and management which have the potential to contribute to add value to the existing HCVF initiative.

The general plan of action for the various HCVs within DTC is outlined in **Table 2**.

Table 2. Dungun Timber Complex (DTC) HCVF Management Plan Action Plan 2014 – 2015

(Based on brainstorimings held with WWF-Malaysia)
Venue: WWF-Malaysia Office, Petaling Jaya. Dates: 18 & 24 September 2014

HCVs	Main Findings	WWF-Malaysia's Recommendations	KPKKT's Response and Actions
HCV 1.1 – Hutan Perlindungan (*Protection Forests*)	DTC shares boundaries with the national park (Taman Negara) to the west (i.e. with Pasir Raja Barat PRF & Pasir Raja Selatan PRF)	1. Identify and clearly mark the boundaries on map and on the ground. 2. Provide buffer zones/ strips along the boundaries between KPKKT and Taman Negara in which logging activities are totally prohibited (recommended width of buffer zone/ strip is 500m) 3. Intensify monitoring activities and law enforcement along the boundaries.	1. Appropriate boundaries had been identified and marked on map and delineated on the ground; buffer zones have been set aside and fully complied with by KPKKT. 2. Although WWF-Malaysia has recommended a buffer width of 500m, the State Forestry Department (SFD) has decided that the buffer width along the boundaries between DTC and Taman Negara should be only 20m. 3. Monitoring and law enforcement are carried out on routine basis in collaboration with the SFD and Perhilitan.
HCV 1.2 – Spesies Terancam (*Threatened Species*)	1. Flora (IUCN): • *Hopea pubescens* (VU) • *Shorea palembanica* (VU) • *Vatica scortechinii* (EN) • *Vatica stapfiana* (VU) Notes: • Possibly three new discoveries. • 35 new records for Terengganu state – 11 of them were found to be endemic to Peninsular Malaysia. 2. Fauna (Birds): • 166 specis – Totally Protected (TP); 10 specis – Protected (P) (DWNP) • 3 specis – Threatened (VU); 39 species Near-threatened (NT) (IUCN) • 3 Species – Appendix 1 (CITES) Critical Specie: • Malaysian Peacock Pheasant (VU) • Short-toed Coucal (VU) • Great Slaty Woodpecker (VU)	1. Representative populations of *Vatica scortechinii* (EN) should be marked on the ground and made into a High Conservation Value Forest (HCVF). 2. Experts from FRIM have recommended that further assessments be made on other parts of Jengai PRF (?) in order to have a complete picture of HCV inside it. 3. Identify, mark on the ground and maintain adequate riparian buffers for avifauna (Minimum 50 m in width). Prohibit any logging within such buffer zones.. 4. Identify, mark and maintain all mature trees which are important as nesting and roosting trees for birdlife. 5. Identify and maintain tall trees of DBH 45-50cm and above with natural holes (at the height of 8-9 m from the ground) for certain birds to nest in. Examples of such trees incl. those from families	1. The species *Vatica scortechinii* had been detected in Compt. 31 Jerangau PRF. But since it is also present in other parts of DTC, its delineation as a HCVF can not be fully justified and not an urgent proposition as yet. Under the circumstance, the Terengganu SFD is of the opinion that an HCVF of this species is not yet necessary, at least in the near future. 2. Concomittantly, KPKKT takes note of FRIM's concern on this, and KPKKT will take appropriate actions, among others, to identify the parameters that should be taken into account during the assessment process; including further collaboration with FRIM. . 3 – 8. All of the recommended actions have been part and parcel of KPKKT's operations all along and routinely implemented in compliance with the specifications and guidelines laid down by the Terengganu Satte Forestry Department (TSFD) and in accordance with KPKKT's own management standard since 3 decades ago. Monitoring of activities which are deemed detrimental to wildlife and HCVs are routinely carried out in collaboration with TSFD.

	• Great Hornbill (Appendix 1) • Helmeted Hornbill (Appendix 1) • White-bellied Woodpecker (Appendix 1) 3. Fauna (Big Mammals): • Malayan tiger (EN, TP, I) • Malayan tapir (EN, TP, I) • Asiatic wild dog (EN, TP, I) • White handed gibbon (EN, TP) • Asian elephant (EN, P, I) • Malayan sun bear (VU, P, I) • Smooth otter (VU, TP) • Leopard (TP, I) • Leopard cat (TP, I) • Asiatic Golden cat (TP) • Malay civet (TP) • Large Indian civet (TP) 4. Incidence of forest encroachment and poaching/ illegal hunting for wildlife within DTC	Dipterocarpaceae; *Hopea*, *Shorea* and *Neobalanocarpus* spp. 6. Maintain identified fruit trees which are useful for birds. Examples incl. Ficus (Moraceae), Lauraceae, Annonaceae and Meliaceae 7. Every compartments being logged should preserve a patch of *mature forest* as refugia for wildlife. 8. Stop and monitor all snaring, trapping and poaching of birds within all of KPKKT areas. 9. Adhere strictly with RIL guidelines particularly on hilly areas and hill ridges. 10. Conduct a compartment-level evaluation of HCV before a compartment is opened for logging. Identify and mark on the map and on the gound riparian buffers, salt licks, wallowing grounds, fruit trees for wildlife as well as other HCV areas. 11. Appoint a conservation or environmental officer to lead in the management and monitoring of biodiversity within DTC. 12. Establish a patrol unit to monitor Poaching of wildlife and stem illegal hunting and forest ecnroachment into DTC (anti-poaching patrol unit). This could be done through: (i) Coordinated anti-poaching patrol with PERHILITAN. (ii) Cooperate with TSFD on forest law enforcement particularly at checkpoints and along main access road. (iii) All primary roads into the PRFs should have checkpoints equipped with b*oom gate* and guardpost. (iv) All inactive forest roads should be closed.. (v) Strictly enforce the requirement for SFD-issued permit to enter DTC forests. (vi) Appropriate SOP should be formulated to regulate and control poaching of wildlife, forest encroachment as well as other	9. Establihsed guidelines and specifications on RIL are being routinely followed in earnest by KPKKT and its contractors at all phases of forest planning and management. 10. Compartment-level assessment of HCVs is done during Pre-felling and Tree-marking exercises before selective logging commences. A total of 32 species of fruit trees are routinely identified and set aside to be exempted from logging. 11. Programmes & activities related to forest conservation and environmental management are also tasked on the Management Representative (MR) himself. The latter is assisted in the field by Forest Supervisors (FSs) who are responsble for the forest compartments under their charge. FSs also conduct routine patrols on the forest areas concerned while at the same time enforcing relevant SOPs. . 12. KPKKT to strengthen directive on the movement of staff involved in monitoring activities in the field. (i) Relevant staff to regularly maintain proper and accurate records of travels using KPKKT's vehicles; re. their movement for the purpose of field montoring and patrols. Appropriate entries on their activities, observations and findings should also be made in specially designated books kept at base camps during every visit.

		illegal activities. (vii) All logging camps should be monitored. (viii) Install appropriate and clear signboard '*Dilarang memburu*' (No hunting) at strategic places.	
HCV 1.3 – Endemism (*Endemisme*)	1. Flora • 36 sp endemic to Peninsular Malaysia • 3 sp endemic to Terengganu • 11 sp new discoveries for Terengganu 2. Fauna (Birds) • Malaysian Peacock Pheasant (VU) – endemic to Peninsular Malaysia	Notes: FRIM had not recommended any specific management measures to deal with endemic species since those species were found to have restricted distribution but not rare. Nevertheless, FRIM experts did recommend that: : 1. Healthy riparian buffers be kept along rivers and streams 2. The above management measures for avifauna be implemented.	*Noted*. All observations by FRIM were noted and relevant recommendations were acted upon as much as possible.
HCV 1.4: Kawasan Genting Bermusim (Seasonally vulnerable habitats)	1. Fauna (Bird) • Lowland Forests – very vital for low-canopy forests or birds which dwell on forest floor • Fig (Ficus) Trees – Fruitng Ficus spp is important to fruit-eating fauna life (*frugivore*) including Hornbills and small Mammals.	1. Preserve regenerating forest blocks as representative samples. These Blocks should contain samples of mature, tall trees on an area of about 2 ha within every compartment, they can take the form of mosaic of forest patches of 0.5ha each. This is critical in order to ensure DTC continues to function as "kawasan genting bermusim" for birds. 2. Identify and mark on the ground mature Fig trees within DTC.	1. This recommendation is not relevant and redundant. Under the current practice of SMS, Mother Trees (MT) are marked and protected during selective logging. Totalling at least 4 nos. per ha, MTs serve to ensure forest ecosystem continuity and resource sustainability by acting as seed trees under the Shelterwood concept. 2. There is no need to mark Fig trees since this species is already protected from logging.
HCV 2: Hutan Bertahap Landskap (*Landscape-level Forests*)	1. Taman Negara- Timur Range forests complex (NPP) 2. "*Greater Taman Negara*" Landscape (Tiger Action Plan) 3. Bordering Gunung Aais PRF	1. It is pertinent to maintain the connection and continuity between DTC areas with adjacent forests. 2. Forest management activities should be conducted in such a way as not to impact negatively on Fungi life, and that the role of DTC as a HCV2 forest would not lessen in any way through, the application on RIL, SFM, etc. 3. KPKKT management should identify areas deemed critical for wildlife such as wildlife corridors and that these areas should be sufficiently covered with good forest vegetation.	1. The connectivity and continuity of DTC with adjacent forest areas are maintained whereby they were never separated by any physical barriers, such as a fence. *2*. KPKKT never engages in activities that are detrimental to Fungi life, such as application of fire or use of poisons. 3. Noted. Wildlife corridors have been taken care of through the (i) establishment of riparian buffer zones, (ii) selective logging. (iii) directional felling, (iv) mosaic logging pattern.
HCV 3: Ekosistem terancam dan/atau	1. WWF-Malaysia assessment (only Jengai PRF) • Pandanus swamps in Compt. 6, Jengai PRF. 2. Potential HCV 3 Areas in	1. KPKKT needs to carry out a concession-wide assessment in order to determine the presence of HCV3 (threatened and/rare ecosystems) 2. Formulate appropriate SOP that	1 - 3. Noted and will be considered by KPKKT for further action, *e.g*. in collaboration with relevant parties/ agencies. Relevant SOP and identification

langka (*Threatened/ Rare Ecosystems*)	DTC: • Peat Swamp Forest • Kerangas (Heath) Forest • Lowland Forest /extreme • Freahwater Swamp Forest • Rare forest types (e.g.: representative samples of forest types, *e.g*. Kapur Forest or Meranti-Keruing Forest.	would compell the identification of HCV3 at compartment level before logging activities commence. 3. Identify and mark both on the ground and on map, all HCV 3 areas and establish appropriate buffer zones for all identified HCV3.	requirements are addressed in related documents: (i) Forest Management Plan for DTC (2008 – 2037), (ii) HCVF Management Plan for DTC 2012 – 2017, (iii) Harvesting Plans.
HCV 4.1 - Perlindungan Legeh (*Watershed Protection*)	1. Gazetted Water Catchment Forests 2. All permanent water ways (rivers and streams)	1. Map all water catchment areas within DTC. Establish buffer zones for all identified water catchment areas, with a minimum width of 50 m. Mark the buffer zones clearly on the ground. 2. Map all permanent rivers and streams. Prepare buffer strips along all rivers/ streams following DID guidelines, and mark the buffer strips clearly on the ground. 3. Monitor quality of water on a frequency to be determined by KPKKT, following FSC's certification standards.	1. Watershed areas are not included in the Production Forest category and hence not subject to logging. 2. Delineation and marking of buffer zones within Production Forests under management in DTC is routinely done at KPKKT. 3. Monitoring of water quality is conducted regularly and periodically with the help of appointed environmental consultants.
HCV 4.2: Kawalan Hakisan (*Erosion Control*)	Probably not found	Note: KPKKT management needs to verify that HCV4.2 does not exist in other DTC areas that are yet to be assessed.	This matter will be referred to Terengganu SFD for guidance and further actions.
HCV 4.3: Hutan Perintang-Api (*Fire-resistance Forests*)	Probably not found	Note: KPKKT management needs to verify that HCV4.3 does not exist in other areas of DTC that are yet to be assessed.	This matter will be referred to Terengganu SFD for guidance and further actions.
HCV 5: Keperluan Asas Komuniti Tempatan (*Forests for Communities' Usufrage*)	1. There are a total of at least 7 villages located in close vicinity of DTC forests. They are: • Kg Minda • Kg Talong • Kg Jongok Batu • Kg Pasir Raja • Kg Shukur • Kg Kuala Jengai • Kg Besul 2. SIA studies showed that about 80% of the village population did not depend on DTC forests for their daily needs, incl. traditional herbs and medicines. 3. Major forest produce	1. Conservation of freshwater fishes • Prohibit logging in soil protection area, riparian reserves, buffer zones as well as swampy land. • All logging operations must adhere to RIL guidelines. • Road construction activities in the forest should entail the lowest impacts so as to avoid soil erosion. 2. Conservation of Non-Timber Forest Produce (NTFP) • There is a need for a sustainable management system for NTFP with special focus on Rattans & Bamboo 3. Conservation of medicinal plants • Identify the extent of use of medicinal plants and where	1. All specifications aimed at protecting and conserving riparian ecosystem and aquatic life (incl. freshwater fishes) are adhered to as parts of RIL. 2. Not relevant.

	supplied by DTC forests include: • Wood – for construction • NTFP – Bamboo, Gaharu, Rattan, Petai • Medicinal: – Tongkat Ali & Kacip Fatimah • Protein (wildlife meat) – Deer & Mousedeer being most common • Protein (fishes) – highest contribution • Income – average of 30% contribution	they could be found within DTC. Particularly Tongkat Ali and Kacip Fatimah. • Ensure that medicinal plants are not negatively impacted by logging activities. • Encourage local communities to plant selected medicinal plant species in their villages. 4. Catching of fish, hunting and unsustainable logging • Ensure that KPKKT has a proper management plan for sustainable catching of fishes and hunting within DTC forests. • Monitor and stop illegal hunting in accordance with the requirements of HCV 1.2 • Ensure that KPKKT has a management plan to regulate illegal cutting and removal of timbers by local communities from DTC areas.	3. Not relevant. 4. This issue is outside the scope of KPKKT's management and business operations.
HCV 6: Identiti Kebudayaan Komuniti Tempatan (*Forests for Local Communities' Cultural Identify*).	Not found	Note: The settlements in the vicinity of DTC consist of Malay villages. And, being Muslims, the local residents do not need to turn to the forests for their spiritual or religious needs.	Not relevant.

3.2 Plan Implementation

Based on the foregoing, the implementation of this HCVF Management Plan for DTC over the period 2013 – 2017 is anticipated to take place along the following time line (**Table 3**):

(1) Demarcation and maintenance of the boundary of the area
(2) Conduct Multi-Resource Inventory on the HCVF
(3) Maintenance of database and documentation and marking on the ground of relevant features and resources
(4) Regular Monitoring of flowering and fruiting and collection of seeds.
(5) Tracking and collection of wildings.
(6) Establishment of nursery for planting stock propagation and improvement.
(7) Re-census of trees and other resources to monitor growth rates, health condition and phenological behaviour.
(8) Collaborative Research and Development (R & D) on population biology, reproductive system, breeding programme with relevant institutions and NGOs.

Table 3: Summary of Plan of Actions for Implementing HCVF Management Plan in DTC the Period During 2013 – 2017.

No	ACTIVITY	YEAR				
		2013	2014	2015	2016	2017
1	Start of HCVF Management Plan					
2	***Documentation***					
2a	HCVF Management Plan prepared and approved					
2b	HCVF Management Plan updating					
2c	HCVF Management Plan review					
3	***HCV/ HCVF Establishment and Maintenance***					
3a	Keruing Sarawak (H1)					
3b	Community Water Catchment Forest in C52 Jengai (H2)					
4	Stakeholder Consultation					
5	Training, Capacity Building & FSC Mentoring					
6	Multi-resource Inventory					
7	Patrolling (Incl. monitoring of impacts of management activities)					
8	Evaluation of impacts of management activities on HCVF					
9	Adaptation to management activities					
10	R & D (incollaboration with relevant R & D institutions and NGOs					
11	HCVF Committee Meeting & presentation of findings					
12	***FSC Auditing***					
12a	Certification Audit					
12b	Surveillance Audit					

4.0 Summary And Recommendations

The identification and management of HCVFs at the Forest Management Unit (FMU) level requires the following steps (WWF-Malaysia, 2009):

(1) Interpret the global definition
(2) Identify potential HCVF
(3) Identify specific HCVF components in the field and through consultation
(4) Zone HCVF areas, buffer zones and note compartments
(5) Identify Limits of Acceptable Change (LAC) for maintaining HCVF
(6) Plan precautionary management prescriptions for HCVF compartments
(7) Implement management activities
(8) Monitor impacts of management activities
(9) Evaluate impacts of management activities
(10) Adapt management where appropriate.

It is recommended for KPKKT to adopt the guidelines as propounded in this HCVF Management Plan document while at the same time remaining adaptive with the latest thinking and approach in this field. The HCVF Management Plan covers a five year period of 2013 – 2017, following the general principles and guidelines as laid out by the Forestry Department of Peninsular Malaysia (FDPM) as well as those of the WWF-Malaysia "National Toolkit" for HCVF, *i.e*. within the bounds of KPKKT's existing available resources, capacity and capability.

Needless to say, the various HCVs within DTC that had been identified through KPKKT's close collaboration with WWF-Malaysia, are to be managed in tandem with other production (includimg

timber) functions of DTC, as laid out, *albeit* in generic terms, in DTC's 30-year Forest Management Plan and this HCVF Management Plan documents. Other HCVF areas will be accordingly added to the existing list over time, as and when appropriate, so that the list could be expanded to cover as much as possible of the six categories of HCVFs, and to eventually fulfil FSC's requirement that at least 10% of the total area of DTC should be set aside and declared as HCVF.

Concomittantly the HCVF Management Plan will also be revised periodically from time to time on regular basis, of which the present exercise forms the first.

Annex 1:

Community Water Catchment Area of Compartment 52, Jengai PRF

Kawasan Cadangan Sebagai New HCVF Area DTC :

Tarikh Kenal Pasti Lokasi : 25 Jun 2010
Nama Sungai : Sungai Udang
Tujuan : Melindungi dan Memelihara kawasan ini sebagai punca air bersih kepada Penduduk Kampung Pasir Raja

Lokasi Kpt : Kpt 52 Jengai (Koordinat GPS RV554343 ; WMR 505528)
Anggaran luas : 24 ha
Panjang Paip Poly 3" : 3000 kaki (Sumbangan KPKKT)
Jumlah Harga : RM10,050.00
Jumlah Penggunaan(isi rumah) : 540 Buah Rumah
Perasmian : Oleh Y.A.B Menteri Besar Terengganu pada 25 November 2010