Monitoring of Chinese White Dolphins in Southwest Lantau Waters

15th Monthly Progress Report (May 2016)
submitted to Environmental Project Office for the HZMB HKLR, HZMB HKBCF and TM-CLKL – Investigation

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3 June 2016

1. Introduction

1.1. In March 2015, Hong Kong Cetacean Research Project (HKCRP) was appointed by the Environmental Project Office for the HZMB Hong Kong Projects to undertake a monitoring study of Chinese White Dolphins in Southwest Lantau (SWL) waters.

1.2. The objectives of the monitoring study are to quantify the abundance and density of Chinese White Dolphins in SWL waters, to identify individuals during the monitoring surveys, and to analyze their range use and movement patterns in Hong Kong and the wider Pearl River Estuary waters.

1.3. The monitoring study will supplement the on-going EM&A monitoring results of the HZMB Hong Kong Projects in North and West Lantau waters, and provide a more complete picture of dolphin usage and movements between different survey areas in western Hong Kong waters.

1.4. The present report is the 15th monthly progress report under this dolphin monitoring study submitted to the Environmental Project Office, summarizing the survey findings during the month of May 2016.

2. Monitoring Methodology

2.1. Vessel-based Line-transect Survey

2.1.1. According to the requirement of the technical proposal submitted to the Environmental

Project Office, dolphin monitoring programme should cover all transect lines in SWL survey area (see Figure 1) once per month upon instruction. The co-ordinates of all transect lines conducted during the dolphin monitoring survey are shown in Table 1.

Table 1. Co-ordinates of transect lines in SWL survey area (corresponding to transect line layout as shown in Figure 1)

Line #		Northing	Easting		Line #		Northing	Easting
SWL001	1	806180	802510		SWL007	13	807380	808520
	2	804250	802510			14	805600	808520
SWL002	3	806710	803480			15	804400	808520
	4	803450	803480			16	803000	808520
SWL003	5	807270	804500			17	802100	808520
	6	802690	804500			18	800470	808520
SWL004	7	807590	805450		SWL008	19	807380	809550
	8	802295	805450			20	805050	809550
SWL005	9	808490	806500			21	804400	809550
	10	801410	806500			22	800470	809550
SWL006	11	808500	807430		SWL009	23	807380	810550
	12	801250	807430			24	800470	810550
					SWL010	25	809410	811510
						26	801470	811510

2.1.2. The HKCRP survey team used standard line-transect methods (Buckland et al. 2001) to conduct the systematic vessel surveys, and followed the same technique of data collection that has been adopted over the last 17 years of marine mammal monitoring surveys in Hong Kong developed by HKCRP (see Hung 2014). For each monitoring vessel survey, a 15-m inboard vessel with an open upper deck (about 4.5 m above water surface) was used to make observations from the flying bridge area.

2.1.3. Two experienced observers from HKCRP (a data recorder and a primary observer) made up the on-effort survey team, and the survey vessel transited different transect lines at a

constant speed of 13-15 km per hour. The data recorder searched with unaided eyes and filled out the datasheets, while the primary observer searched for dolphins and porpoises continuously through 7 x 50 *Fujinon* marine binoculars. Both observers searched the sea ahead of the vessel, between 270° and 90° (in relation to the bow, which is defined as 0°). One to two additional experienced observer was available on the boat to work in shift (i.e. rotate every 30 minutes) in order to minimize fatigue of the survey team members. All observers were experienced in small cetacean survey techniques and identifying local cetacean species.

2.1.4. During on-effort survey periods, the survey team recorded effort data including time, position (latitude and longitude), weather conditions (Beaufort sea state and visibility), and distance traveled in each series (a continuous period of search effort) with the assistance of a handheld GPS (*Garmin eTrex Legend*).

2.1.5. Data including time, position and vessel speed were also automatically and continuously logged by handheld GPS throughout the entire survey for subsequent review.

2.1.6. When dolphins were sighted, the survey team would end the survey effort, and immediately record the initial sighting distance and angle of the dolphin group from the survey vessel, as well as the sighting time and position. Then the research vessel was diverted from its course to approach the animals for species identification, group size estimation, assessment of group composition, and behavioural observations. The perpendicular distance (PSD) of the dolphin group to the transect line was later calculated from the initial sighting distance and angle.

2.1.7. Survey effort being conducted along the parallel transect lines that were perpendicular to the coastlines (as indicated in Figure 1) was labeled as “primary” survey effort, while the survey effort conducted along the connecting lines between parallel lines as well as the section around the Soko Islands was labeled as “secondary” survey effort. Both primary and secondary survey effort were presented as on-effort survey effort in this report.

2.1.8. Encounter rates of Chinese White Dolphins (number of on-effort sightings per 100 km of survey effort and number of dolphins from all on-effort sightings per 100 km of survey effort) were calculated in SWL survey area in relation to the amount of survey effort conducted during each month of monitoring survey. Only data collected under Beaufort 3 or below condition would be used for encounter rate analysis. Dolphin encounter rates were calculated using the combined survey effort from both primary and secondary lines for comparison to the historical data collected by HKCRP in this survey area. For the historical data, the encounter rates were calculated by pooling all relevant survey effort

and dolphin sightings to calculate a single index.

2.2. Photo-identification Work

2.2.1. When a group of Chinese White Dolphins were sighted during the line-transect survey, the survey team would end effort and approach the group slowly from the side and behind to take photographs of them. Every attempt was made to photograph every dolphin in the group, and even photograph both sides of the dolphins, since the colouration and markings on both sides may not be symmetrical.

2.2.2. A professional digital camera (*Canon* EOS 7D model), equipped with long telephoto lenses (100-400 mm zoom), were available on board for researchers to take sharp, close-up photographs of dolphins as they surfaced. The images were shot at the highest available resolution and stored on Compact Flash memory cards for downloading onto a computer.

2.2.3. All digital images taken in the field were first examined, and those containing potentially identifiable individuals were sorted out. These photographs would then be examined in greater detail, and were carefully compared to the existing Chinese White Dolphin photo-identification catalogue maintained by HKCRP since 1995. For individual dolphins that are not readily identifiable from the catalogue but have distinct features on their bodies, they will be placed in a pool of "potential new individuals", with decision being made at the end of each year on whether any of them should be incorporated into the photo-ID catalogue.

2.2.4. Chinese White Dolphins can be identified by their natural markings, such as nicks, cuts, scars and deformities on their dorsal fin and body, and their unique spotting patterns were also used as secondary identifying features (Jefferson 2000).

2.2.5. All photographs of each individual were then compiled and arranged in chronological order, with data including the date and location first identified (initial sighting), re-sightings, associated dolphins, distinctive features, and age classes entered into a computer database.

3. Monitoring Results

3.1. Vessel-based Line-transect Survey

3.1.1. One set of systematic line-transect vessel survey was conducted under the present

monitoring study on May 6th to cover all transect lines in SWL survey area once. The route and track log of this survey are presented in Figure 2 and Appendix I respectively.

3.1.2. In addition, three line-transect surveys were also conducted under the AFCD long-term marine mammal monitoring programme in SWL survey area on May 4th (with lines no. SWL002, SWL003, SWL004 and SWL006 covered), May 11th (with lines no. SWL006, SWL008, SWL009 and SWL010 covered) and May 30th (with lines no. SWL006, SWL008 and SWL010 covered). Such monitoring data were also incorporated into the present study for various analyses.

3.1.3. For the present study alone, a total of 71.49 km of survey effort was collected from 10:51 to 16:27 (i.e. 5 hours and 36 minutes of survey time) on May 6th, with 98.2% of the total survey effort being conducted under favourable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility) (Appendix II). The total survey effort conducted on primary and secondary lines were 54.11 km and 17.38 km respectively.

3.1.4. For the combined monitoring dataset from both the present study and AFCD monitoring study, a total of 154.15 km of survey effort was collected in SWL waters in May 2016.

3.1.5. During this month, five groups of eight Chinese White Dolphins were sighted from the present study's survey and another AFCD monitoring survey conducted May 4th (Appendix III). Four of the five dolphin groups were sighted during on-effort search, and none of them was associated with any operating fishing vessel.

3.1.6. Notably, three groups of eight finless porpoises were also sighted in SWL survey area during this monitoring month.

3.1.7. Distribution of the five dolphin sightings made in May 2016 is shown in Figure 3. Two groups were sighted near Fan Lau, and another two groups (both with single animals) were sighted to the south of Shui Hau Peninsula (Figure 3). One lone dolphin was also sighted to the east of Soko Islands (Figure 3).

3.1.8. Encounter rates of Chinese White Dolphins deduced from the survey effort and on-effort sighting data made under favourable conditions (Beaufort 3 or below) in May 2016 are shown in Table 2. Comparison of encounter rates was also made to the one deduced in spring months (March-May) in the past decade (2005-14), as well as in May 2015 under the present study (Table 2).

Table 2. Overall dolphin encounter rates (sightings per 100 km of survey effort) from the present monitoring survey and combined database with AFCD monitoring survey conducted in May 2016 (primary lines only, as well as both primary lines and secondary lines were used) in SWL survey area in comparison to the ones deduced during spring months (March-May 2005-14) in the past decade

	Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)		**Encounter rate (ANI)** (no. of dolphins from all on-effort sightings per 100 km of survey effort)	
	Primary Lines Only	Both Primary and Secondary Lines	Primary Lines Only	Both Primary and Secondary Lines
HYD-HZMB data (May 2016)	3.70	4.27	3.70	4.27
Combined data (May 2016)	2.89	2.72	2.89	2.72
Combined data (May 2015)	2.62	2.06	7.87	6.17
Historical Data (Spring 2005-14)		1.54		4.14

3.1.9. From the combined data of HYD-HZMB and AFCD monitoring surveys, the overall encounter rates based on the number of dolphin sightings (ER(STG)) and the total number of dolphins (ER(ANI)) deduced in May 2016 in SWL waters were slightly higher than the ones deduced from the historical data during the spring months of 2005-14, but were lower than the one in May 2015 (Table 2).

3.1.10. The average group size of Chinese White Dolphin sighted during SWL monitoring surveys in May 2016 was only 1.6 animals per group, which was lower than the average group size in spring months of 2005-14 (2.7). Four of the five groups were composed of lone animal, while the other group was medium in size with four animals.

3.2. Photo-identification Work

3.2.1. Attempts were made to photograph the dolphins sighted during all SWL surveys conducted in May 2016.

3.2.2. Among the eight dolphins sighted during this month's surveys, three individual dolphins were identified and re-sighted four times in total (Appendices IV and V). None of these individuals was accompanied by a young calf.

3.2.3. The locations where all three individuals being re-sighted were well within their past home ranges in SWL waters

4. References

Buckland, S. T., Anderson, D. R., Burnham, K. P., Laake, J. L., Borchers, D. L., and Thomas, L. 2001. Introduction to distance sampling: estimating abundance of biological populations. Oxford University Press, London.

Hung, S. K. 2014. Monitoring of Marine Mammals in Hong Kong waters: final report (2013-14). An unpublished report submitted to the Agriculture, Fisheries and Conservation Department, 231 pp.

Jefferson, T. A. 2000. Population biology of the Indo-Pacific hump-backed dolphin in Hong Kong waters. Wildlife Monographs 144:1-65.

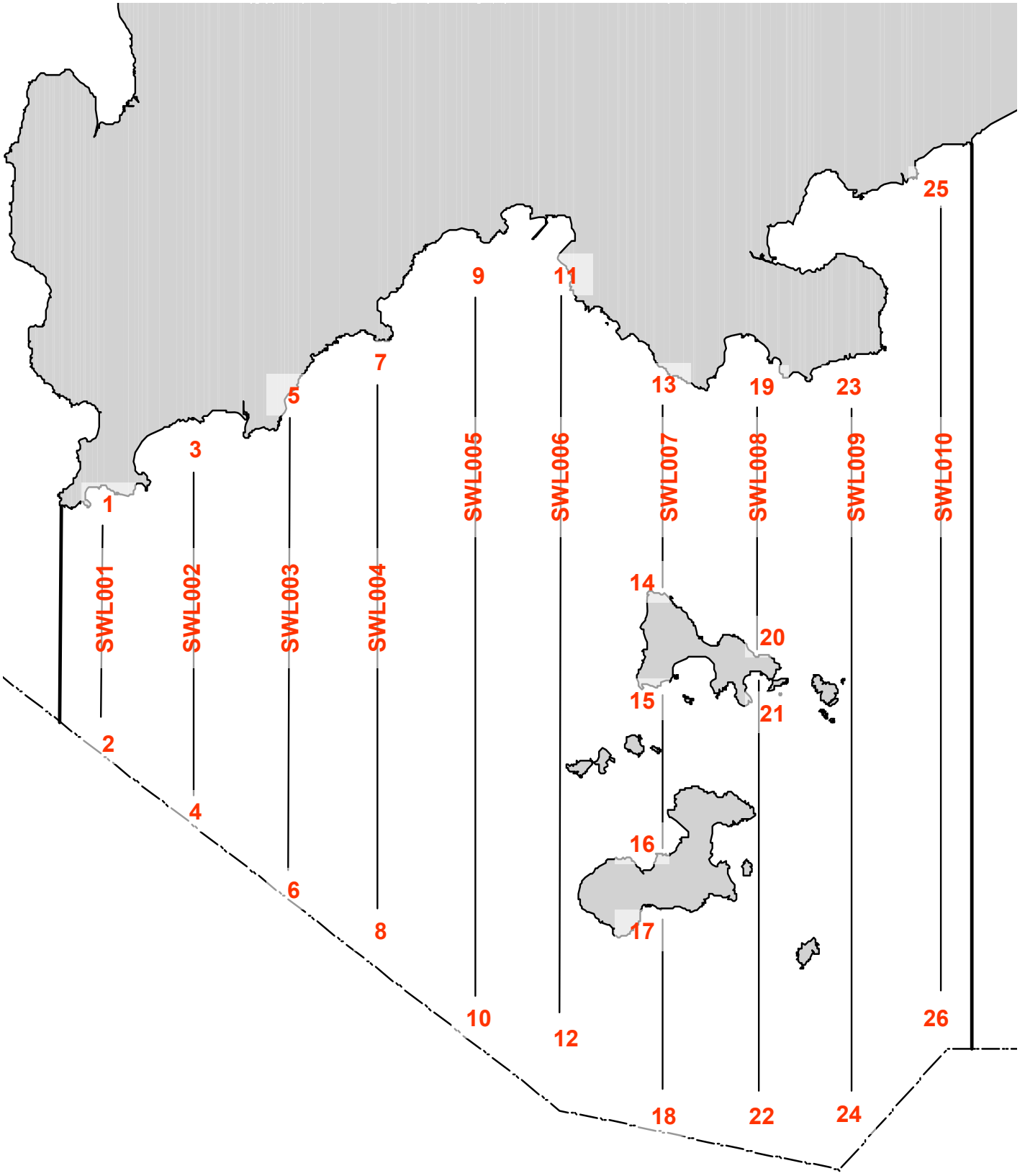

Figure 1. Survey Lines and associated coordinates in Southwest Lantau survey area

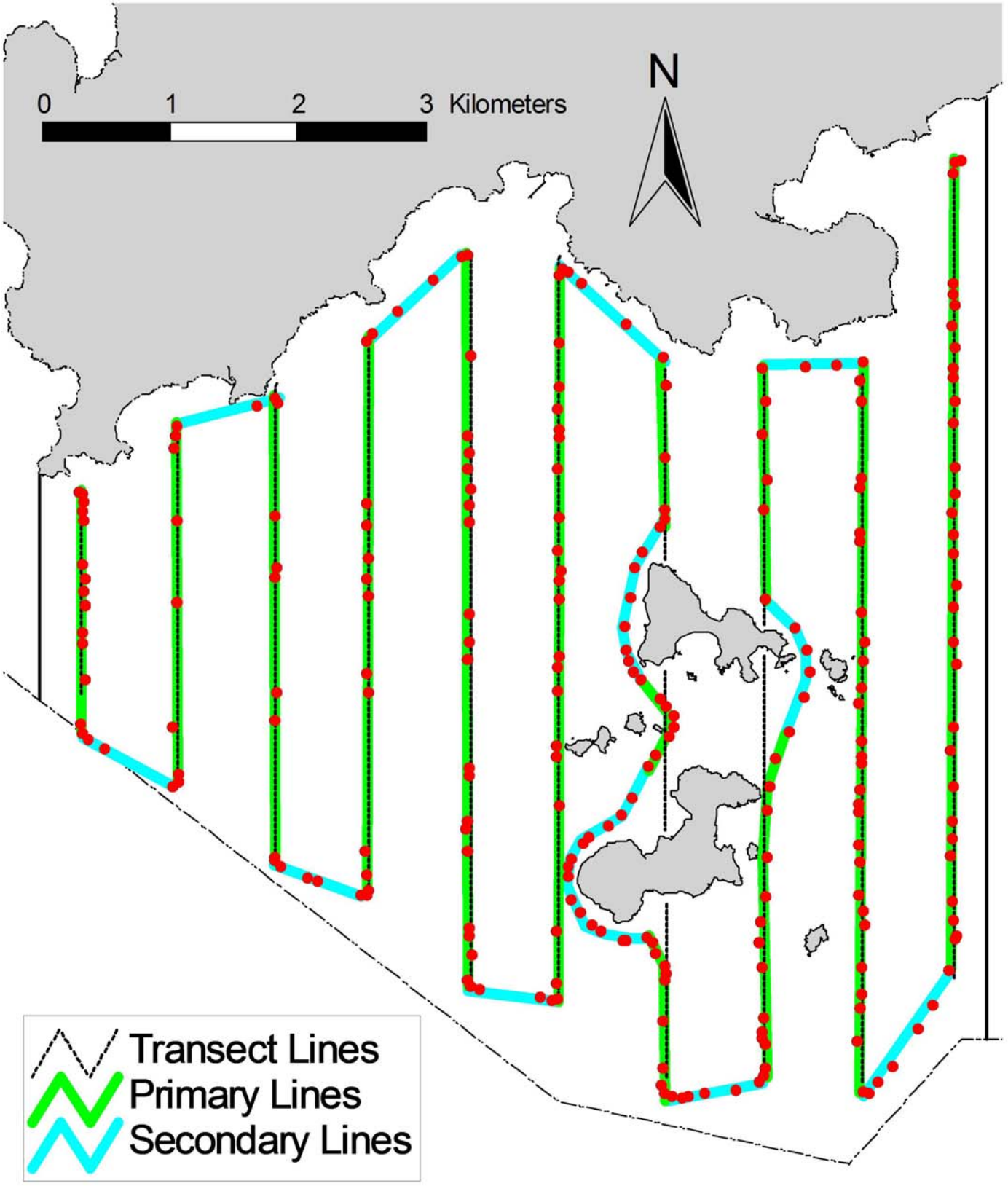

Figure 2. Survey Route on May 6th, 2016 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

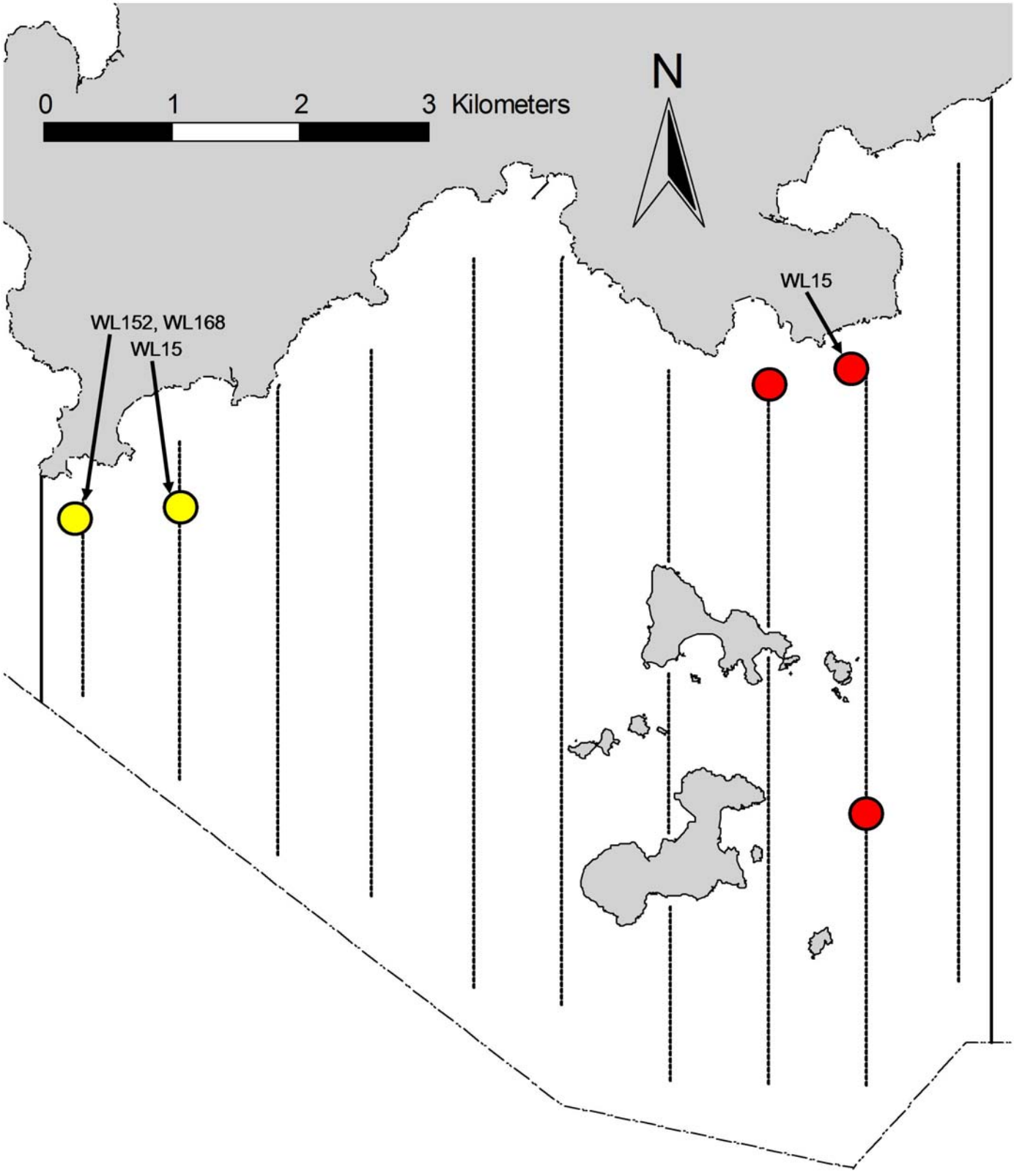

Figure 3. Distribution of Chinese White Dolphin sightings during May 2016 monitoring surveys in Southwest Lantau survey area, with identified individuals indicated for their corresponding sightings (red dot: HYD-HZMB sighting; yellow dot: AFCD sighting)

Appendix I. Track Log of Southwest Lantau Survey on May 6th, 2016

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 10:51	ON	N22.19403 E113.84917			
6/5/2016 10:51	ON	N22.19392 E113.84948	35 m	0:00:09	14 kph
6/5/2016 10:51	ON	N22.19321 E113.84962	80 m	0:00:22	13 kph
6/5/2016 10:52	ON	N22.19235 E113.84953	96 m	0:00:25	14 kph
6/5/2016 10:52	ON	N22.19145 E113.84955	101 m	0:00:25	14 kph
6/5/2016 10:53	ON	N22.19053 E113.84955	102 m	0:00:25	15 kph
6/5/2016 10:53	ON	N22.18947 E113.84952	119 m	0:00:29	15 kph
6/5/2016 10:54	ON	N22.18871 E113.84953	84 m	0:00:20	15 kph
6/5/2016 10:54	ON	N22.18762 E113.84946	122 m	0:00:29	15 kph
6/5/2016 10:55	ON	N22.18639 E113.84967	138 m	0:00:32	16 kph
6/5/2016 10:55	ON	N22.18525 E113.84961	127 m	0:00:30	15 kph
6/5/2016 10:56	ON	N22.18409 E113.84969	130 m	0:00:30	16 kph
6/5/2016 10:56	ON	N22.18305 E113.84957	116 m	0:00:28	15 kph
6/5/2016 10:57	ON	N22.18170 E113.84946	151 m	0:00:35	16 kph
6/5/2016 10:57	ON	N22.18065 E113.84937	117 m	0:00:27	16 kph
6/5/2016 10:58	ON	N22.17955 E113.84946	123 m	0:00:28	16 kph
6/5/2016 10:58	ON	N22.17848 E113.84962	120 m	0:00:28	15 kph
6/5/2016 10:58	ON	N22.17758 E113.84966	100 m	0:00:23	16 kph
6/5/2016 10:59	ON	N22.17666 E113.84958	103 m	0:00:24	16 kph
6/5/2016 10:59	ON	N22.17570 E113.84948	107 m	0:00:25	15 kph
6/5/2016 11:00	ON	N22.17460 E113.84949	122 m	0:00:28	16 kph
6/5/2016 11:00	ON	N22.17371 E113.84942	100 m	0:00:23	16 kph
6/5/2016 11:00	ON	N22.17282 E113.84954	100 m	0:00:23	16 kph
6/5/2016 11:01	ON	N22.17227 E113.85010	84 m	0:00:21	14 kph
6/5/2016 11:01	ON	N22.17182 E113.85086	93 m	0:00:21	16 kph
6/5/2016 11:01	ON	N22.17173 E113.85105	22 m	0:00:05	16 kph
6/5/2016 11:02	ON	N22.17139 E113.85170	77 m	0:00:17	16 kph
6/5/2016 11:02	ON	N22.17095 E113.85278	122 m	0:00:27	16 kph
6/5/2016 11:02	ON	N22.17059 E113.85355	89 m	0:00:20	16 kph
6/5/2016 11:03	ON	N22.17006 E113.85461	125 m	0:00:28	16 kph
6/5/2016 11:03	ON	N22.16956 E113.85555	111 m	0:00:25	16 kph
6/5/2016 11:03	ON	N22.16942 E113.85585	35 m	0:00:08	16 kph
6/5/2016 11:04	ON	N22.16905 E113.85667	94 m	0:00:21	16 kph
6/5/2016 11:04	ON	N22.16859 E113.85768	116 m	0:00:26	16 kph
6/5/2016 11:04	ON	N22.16823 E113.85863	106 m	0:00:24	16 kph
6/5/2016 11:05	ON	N22.16849 E113.85905	52 m	0:00:18	10 kph
6/5/2016 11:05	ON	N22.16918 E113.85906	77 m	0:00:23	12 kph
6/5/2016 11:06	ON	N22.17003 E113.85896	95 m	0:00:27	13 kph
6/5/2016 11:06	ON	N22.17085 E113.85888	92 m	0:00:26	13 kph
6/5/2016 11:06	ON	N22.17162 E113.85887	86 m	0:00:24	13 kph
6/5/2016 11:07	ON	N22.17254 E113.85878	102 m	0:00:29	13 kph
6/5/2016 11:07	ON	N22.17340 E113.85864	97 m	0:00:28	12 kph
6/5/2016 11:08	ON	N22.17429 E113.85859	99 m	0:00:28	13 kph
6/5/2016 11:08	ON	N22.17523 E113.85866	105 m	0:00:29	13 kph
6/5/2016 11:09	ON	N22.17606 E113.85871	92 m	0:00:26	13 kph
6/5/2016 11:09	ON	N22.17701 E113.85873	106 m	0:00:30	13 kph
6/5/2016 11:10	ON	N22.17795 E113.85876	104 m	0:00:29	13 kph
6/5/2016 11:10	ON	N22.17880 E113.85879	95 m	0:00:26	13 kph
6/5/2016 11:11	ON	N22.17963 E113.85880	93 m	0:00:26	13 kph
6/5/2016 11:11	ON	N22.18069 E113.85882	117 m	0:00:32	13 kph
6/5/2016 11:12	ON	N22.18175 E113.85883	118 m	0:00:32	13 kph
6/5/2016 11:12	ON	N22.18262 E113.85882	97 m	0:00:26	13 kph
6/5/2016 11:13	ON	N22.18360 E113.85893	109 m	0:00:28	14 kph
6/5/2016 11:13	ON	N22.18444 E113.85897	94 m	0:00:25	14 kph
6/5/2016 11:14	ON	N22.18550 E113.85896	118 m	0:00:31	14 kph
6/5/2016 11:14	ON	N22.18642 E113.85893	102 m	0:00:27	14 kph
6/5/2016 11:14	ON	N22.18738 E113.85885	107 m	0:00:28	14 kph
6/5/2016 11:15	ON	N22.18821 E113.85883	92 m	0:00:24	14 kph
6/5/2016 11:15	ON	N22.18934 E113.85892	126 m	0:00:32	14 kph
6/5/2016 11:16	ON	N22.19048 E113.85894	127 m	0:00:32	14 kph
6/5/2016 11:16	ON	N22.19148 E113.85886	112 m	0:00:29	14 kph
6/5/2016 11:17	ON	N22.19255 E113.85886	118 m	0:00:30	14 kph
6/5/2016 11:17	ON	N22.19349 E113.85882	105 m	0:00:27	14 kph
6/5/2016 11:18	ON	N22.19456 E113.85873	119 m	0:00:31	14 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 11:18	ON	N22.19565 E113.85884	122 m	0:00:30	15 kph
6/5/2016 11:19	ON	N22.19678 E113.85881	126 m	0:00:31	15 kph
6/5/2016 11:19	ON	N22.19788 E113.85873	123 m	0:00:31	14 kph
6/5/2016 11:20	ON	N22.19902 E113.85875	127 m	0:00:33	14 kph
6/5/2016 11:20	ON	N22.19985 E113.85900	95 m	0:00:28	12 kph
6/5/2016 11:21	ON	N22.20004 E113.85990	96 m	0:00:26	13 kph
6/5/2016 11:21	ON	N22.20019 E113.86092	106 m	0:00:28	14 kph
6/5/2016 11:22	ON	N22.20041 E113.86182	96 m	0:00:25	14 kph
6/5/2016 11:22	ON	N22.20071 E113.86281	107 m	0:00:27	14 kph
6/5/2016 11:23	ON	N22.20096 E113.86372	98 m	0:00:24	15 kph
6/5/2016 11:23	ON	N22.20122 E113.86494	129 m	0:00:31	15 kph
6/5/2016 11:24	ON	N22.20137 E113.86590	100 m	0:00:24	15 kph
6/5/2016 11:24	ON	N22.20156 E113.86687	103 m	0:00:24	15 kph
6/5/2016 11:24	ON	N22.20189 E113.86794	116 m	0:00:27	16 kph
6/5/2016 11:25	ON	N22.20227 E113.86869	88 m	0:00:21	15 kph
6/5/2016 11:25	ON	N22.20197 E113.86896	44 m	0:00:17	9 kph
6/5/2016 11:25	ON	N22.20124 E113.86895	81 m	0:00:23	13 kph
6/5/2016 11:26	ON	N22.20044 E113.86896	89 m	0:00:24	13 kph
6/5/2016 11:26	ON	N22.19955 E113.86886	100 m	0:00:27	13 kph
6/5/2016 11:27	ON	N22.19873 E113.86882	91 m	0:00:25	13 kph
6/5/2016 11:27	ON	N22.19768 E113.86897	117 m	0:00:32	13 kph
6/5/2016 11:28	ON	N22.19680 E113.86894	98 m	0:00:27	13 kph
6/5/2016 11:28	ON	N22.19574 E113.86890	118 m	0:00:32	13 kph
6/5/2016 11:29	ON	N22.19489 E113.86883	94 m	0:00:26	13 kph
6/5/2016 11:29	ON	N22.19406 E113.86886	92 m	0:00:25	13 kph
6/5/2016 11:29	ON	N22.19320 E113.86882	96 m	0:00:26	13 kph
6/5/2016 11:30	ON	N22.19254 E113.86882	74 m	0:00:20	13 kph
6/5/2016 11:30	ON	N22.19192 E113.86876	69 m	0:00:19	13 kph
6/5/2016 11:31	ON	N22.19100 E113.86879	103 m	0:00:27	14 kph
6/5/2016 11:31	ON	N22.19011 E113.86880	99 m	0:00:26	14 kph
6/5/2016 11:31	ON	N22.18915 E113.86885	107 m	0:00:28	14 kph
6/5/2016 11:32	ON	N22.18822 E113.86889	104 m	0:00:27	14 kph
6/5/2016 11:32	ON	N22.18743 E113.86887	87 m	0:00:23	14 kph
6/5/2016 11:33	ON	N22.18662 E113.86874	91 m	0:00:25	13 kph
6/5/2016 11:33	ON	N22.18588 E113.86878	82 m	0:00:22	13 kph
6/5/2016 11:33	ON	N22.18503 E113.86878	94 m	0:00:25	14 kph
6/5/2016 11:34	ON	N22.18403 E113.86885	112 m	0:00:29	14 kph
6/5/2016 11:34	ON	N22.18304 E113.86883	111 m	0:00:29	14 kph
6/5/2016 11:35	ON	N22.18204 E113.86882	111 m	0:00:29	14 kph
6/5/2016 11:35	ON	N22.18096 E113.86884	120 m	0:00:31	14 kph
6/5/2016 11:36	ON	N22.17994 E113.86884	114 m	0:00:29	14 kph
6/5/2016 11:36	ON	N22.17894 E113.86886	111 m	0:00:28	14 kph
6/5/2016 11:37	ON	N22.17798 E113.86888	107 m	0:00:27	14 kph
6/5/2016 11:37	ON	N22.17721 E113.86892	85 m	0:00:21	15 kph
6/5/2016 11:38	ON	N22.17645 E113.86896	85 m	0:00:21	15 kph
6/5/2016 11:38	ON	N22.17563 E113.86887	92 m	0:00:23	14 kph
6/5/2016 11:38	ON	N22.17485 E113.86877	87 m	0:00:22	14 kph
6/5/2016 11:39	ON	N22.17396 E113.86879	99 m	0:00:24	15 kph
6/5/2016 11:39	ON	N22.17313 E113.86885	92 m	0:00:22	15 kph
6/5/2016 11:39	ON	N22.17228 E113.86882	95 m	0:00:23	15 kph
6/5/2016 11:40	ON	N22.17139 E113.86878	99 m	0:00:24	15 kph
6/5/2016 11:40	ON	N22.17044 E113.86883	105 m	0:00:25	15 kph
6/5/2016 11:41	ON	N22.16957 E113.86883	97 m	0:00:23	15 kph
6/5/2016 11:41	ON	N22.16848 E113.86882	121 m	0:00:29	15 kph
6/5/2016 11:42	ON	N22.16761 E113.86888	98 m	0:00:23	15 kph
6/5/2016 11:42	ON	N22.16665 E113.86891	107 m	0:00:25	15 kph
6/5/2016 11:42	ON	N22.16570 E113.86885	106 m	0:00:25	15 kph
6/5/2016 11:43	ON	N22.16498 E113.86881	80 m	0:00:19	15 kph
6/5/2016 11:43	ON	N22.16409 E113.86888	99 m	0:00:23	16 kph
6/5/2016 11:43	ON	N22.16315 E113.86890	104 m	0:00:24	16 kph
6/5/2016 11:44	ON	N22.16234 E113.86888	90 m	0:00:21	15 kph
6/5/2016 11:44	ON	N22.16219 E113.86886	17 m	0:00:04	15 kph
6/5/2016 11:44	ON	N22.16190 E113.86884	32 m	0:00:10	12 kph
6/5/2016 11:44	ON	N22.16159 E113.86882	35 m	0:00:12	11 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 11:44	ON	N22.16156 E113.86883	4 m	0:00:01	13 kph
6/5/2016 11:45	ON	N22.16109 E113.86944	82 m	0:00:20	15 kph
6/5/2016 11:45	ON	N22.16088 E113.87003	65 m	0:00:14	17 kph
6/5/2016 11:45	ON	N22.16057 E113.87107	113 m	0:00:24	17 kph
6/5/2016 11:46	ON	N22.16019 E113.87213	117 m	0:00:25	17 kph
6/5/2016 11:46	ON	N22.15990 E113.87305	100 m	0:00:22	16 kph
6/5/2016 11:46	ON	N22.15962 E113.87403	106 m	0:00:23	17 kph
6/5/2016 11:47	ON	N22.15934 E113.87506	111 m	0:00:24	17 kph
6/5/2016 11:47	ON	N22.15931 E113.87519	14 m	0:00:03	17 kph
6/5/2016 11:47	ON	N22.15905 E113.87626	114 m	0:00:25	16 kph
6/5/2016 11:48	ON	N22.15871 E113.87732	115 m	0:00:25	17 kph
6/5/2016 11:48	ON	N22.15865 E113.87744	14 m	0:00:03	16 kph
6/5/2016 11:48	ON	N22.15858 E113.87807	66 m	0:00:18	13 kph
6/5/2016 11:48	ON	N22.15908 E113.87821	57 m	0:00:18	11 kph
6/5/2016 11:49	ON	N22.15983 E113.87814	83 m	0:00:24	13 kph
6/5/2016 11:49	ON	N22.16041 E113.87798	67 m	0:00:20	12 kph
6/5/2016 11:49	ON	N22.16101 E113.87799	67 m	0:00:19	13 kph
6/5/2016 11:50	ON	N22.16178 E113.87793	86 m	0:00:25	12 kph
6/5/2016 11:50	ON	N22.16251 E113.87791	80 m	0:00:23	13 kph
6/5/2016 11:51	ON	N22.16337 E113.87801	97 m	0:00:27	13 kph
6/5/2016 11:51	ON	N22.16422 E113.87801	94 m	0:00:27	13 kph
6/5/2016 11:51	ON	N22.16497 E113.87794	83 m	0:00:24	13 kph
6/5/2016 11:52	ON	N22.16577 E113.87805	90 m	0:00:25	13 kph
6/5/2016 11:52	ON	N22.16636 E113.87799	66 m	0:00:19	13 kph
6/5/2016 11:52	ON	N22.16693 E113.87795	63 m	0:00:18	13 kph
6/5/2016 11:53	ON	N22.16770 E113.87798	86 m	0:00:24	13 kph
6/5/2016 11:53	ON	N22.16851 E113.87802	90 m	0:00:25	13 kph
6/5/2016 11:54	ON	N22.16941 E113.87798	101 m	0:00:28	13 kph
6/5/2016 11:54	ON	N22.17027 E113.87808	96 m	0:00:26	13 kph
6/5/2016 11:55	ON	N22.17106 E113.87811	88 m	0:00:25	13 kph
6/5/2016 11:55	ON	N22.17171 E113.87804	72 m	0:00:21	12 kph
6/5/2016 11:55	ON	N22.17242 E113.87803	79 m	0:00:22	13 kph
6/5/2016 11:56	ON	N22.17318 E113.87802	86 m	0:00:24	13 kph
6/5/2016 11:56	ON	N22.17401 E113.87799	92 m	0:00:26	13 kph
6/5/2016 11:57	ON	N22.17473 E113.87799	80 m	0:00:22	13 kph
6/5/2016 11:57	ON	N22.17570 E113.87808	108 m	0:00:29	13 kph
6/5/2016 11:57	ON	N22.17653 E113.87809	92 m	0:00:25	13 kph
6/5/2016 11:58	ON	N22.17731 E113.87800	87 m	0:00:24	13 kph
6/5/2016 11:58	ON	N22.17821 E113.87796	101 m	0:00:27	13 kph
6/5/2016 11:59	ON	N22.17908 E113.87799	96 m	0:00:25	14 kph
6/5/2016 11:59	ON	N22.17979 E113.87799	79 m	0:00:21	14 kph
6/5/2016 11:59	ON	N22.18048 E113.87803	77 m	0:00:20	14 kph
6/5/2016 12:00	ON	N22.18132 E113.87801	94 m	0:00:25	14 kph
6/5/2016 12:00	ON	N22.18222 E113.87802	101 m	0:00:26	14 kph
6/5/2016 12:01	ON	N22.18323 E113.87805	113 m	0:00:29	14 kph
6/5/2016 12:01	ON	N22.18392 E113.87805	76 m	0:00:20	14 kph
6/5/2016 12:02	ON	N22.18485 E113.87809	104 m	0:00:27	14 kph
6/5/2016 12:02	ON	N22.18565 E113.87809	88 m	0:00:23	14 kph
6/5/2016 12:02	ON	N22.18641 E113.87800	85 m	0:00:23	13 kph
6/5/2016 12:03	ON	N22.18730 E113.87810	100 m	0:00:25	14 kph
6/5/2016 12:03	ON	N22.18831 E113.87815	113 m	0:00:29	14 kph
6/5/2016 12:04	ON	N22.18929 E113.87800	109 m	0:00:29	14 kph
6/5/2016 12:04	ON	N22.19026 E113.87798	108 m	0:00:28	14 kph
6/5/2016 12:05	ON	N22.19115 E113.87800	99 m	0:00:25	14 kph
6/5/2016 12:05	ON	N22.19210 E113.87802	106 m	0:00:27	14 kph
6/5/2016 12:05	ON	N22.19311 E113.87801	113 m	0:00:29	14 kph
6/5/2016 12:06	ON	N22.19414 E113.87802	115 m	0:00:29	14 kph
6/5/2016 12:06	ON	N22.19489 E113.87799	83 m	0:00:21	14 kph
6/5/2016 12:07	ON	N22.19598 E113.87801	121 m	0:00:31	14 kph
6/5/2016 12:07	ON	N22.19705 E113.87809	120 m	0:00:30	14 kph
6/5/2016 12:08	ON	N22.19796 E113.87794	102 m	0:00:27	14 kph
6/5/2016 12:08	ON	N22.19896 E113.87805	112 m	0:00:27	15 kph
6/5/2016 12:09	ON	N22.19999 E113.87811	115 m	0:00:28	15 kph
6/5/2016 12:09	ON	N22.20117 E113.87794	133 m	0:00:33	14 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 12:10	ON	N22.20224 E113.87801	119 m	0:00:28	15 kph
6/5/2016 12:10	ON	N22.20322 E113.87803	109 m	0:00:26	15 kph
6/5/2016 12:11	ON	N22.20432 E113.87803	123 m	0:00:29	15 kph
6/5/2016 12:11	ON	N22.20534 E113.87802	113 m	0:00:27	15 kph
6/5/2016 12:12	ON	N22.20635 E113.87794	113 m	0:00:28	15 kph
6/5/2016 12:12	ON	N22.20741 E113.87803	118 m	0:00:29	15 kph
6/5/2016 12:12	ON	N22.20813 E113.87847	92 m	0:00:24	14 kph
6/5/2016 12:13	ON	N22.20876 E113.87942	120 m	0:00:30	14 kph
6/5/2016 12:13	ON	N22.20939 E113.88028	113 m	0:00:28	15 kph
6/5/2016 12:14	ON	N22.21002 E113.88110	110 m	0:00:27	15 kph
6/5/2016 12:14	ON	N22.21060 E113.88186	102 m	0:00:25	15 kph
6/5/2016 12:15	ON	N22.21125 E113.88275	117 m	0:00:28	15 kph
6/5/2016 12:15	ON	N22.21212 E113.88385	149 m	0:00:35	15 kph
6/5/2016 12:16	ON	N22.21280 E113.88464	111 m	0:00:26	15 kph
6/5/2016 12:16	ON	N22.21343 E113.88555	117 m	0:00:27	16 kph
6/5/2016 12:17	ON	N22.21409 E113.88654	126 m	0:00:29	16 kph
6/5/2016 12:17	ON	N22.21482 E113.88746	125 m	0:00:29	16 kph
6/5/2016 12:17	ON	N22.21499 E113.88801	60 m	0:00:19	11 kph
6/5/2016 12:18	ON	N22.21450 E113.88806	54 m	0:00:19	10 kph
6/5/2016 12:18	ON	N22.21390 E113.88806	67 m	0:00:19	13 kph
6/5/2016 12:18	ON	N22.21317 E113.88808	81 m	0:00:23	13 kph
6/5/2016 12:19	ON	N22.21244 E113.88816	82 m	0:00:23	13 kph
6/5/2016 12:19	ON	N22.21173 E113.88816	79 m	0:00:22	13 kph
6/5/2016 12:20	ON	N22.21112 E113.88818	67 m	0:00:19	13 kph
6/5/2016 12:20	ON	N22.21019 E113.88819	104 m	0:00:29	13 kph
6/5/2016 12:20	ON	N22.20936 E113.88820	93 m	0:00:26	13 kph
6/5/2016 12:21	ON	N22.20865 E113.88824	79 m	0:00:22	13 kph
6/5/2016 12:21	ON	N22.20782 E113.88822	92 m	0:00:26	13 kph
6/5/2016 12:22	ON	N22.20703 E113.88823	88 m	0:00:25	13 kph
6/5/2016 12:22	ON	N22.20613 E113.88829	100 m	0:00:28	13 kph
6/5/2016 12:23	ON	N22.20529 E113.88828	94 m	0:00:27	13 kph
6/5/2016 12:23	ON	N22.20449 E113.88820	89 m	0:00:26	12 kph
6/5/2016 12:23	ON	N22.20381 E113.88823	76 m	0:00:22	12 kph
6/5/2016 12:24	ON	N22.20297 E113.88822	93 m	0:00:27	12 kph
6/5/2016 12:24	ON	N22.20215 E113.88820	91 m	0:00:26	13 kph
6/5/2016 12:25	ON	N22.20128 E113.88826	97 m	0:00:27	13 kph
6/5/2016 12:25	ON	N22.20049 E113.88826	88 m	0:00:25	13 kph
6/5/2016 12:26	ON	N22.19980 E113.88821	76 m	0:00:22	13 kph
6/5/2016 12:26	ON	N22.19903 E113.88813	86 m	0:00:25	12 kph
6/5/2016 12:26	ON	N22.19839 E113.88818	72 m	0:00:20	13 kph
6/5/2016 12:27	ON	N22.19764 E113.88823	84 m	0:00:24	13 kph
6/5/2016 12:27	ON	N22.19685 E113.88814	88 m	0:00:26	12 kph
6/5/2016 12:28	ON	N22.19608 E113.88813	86 m	0:00:24	13 kph
6/5/2016 12:28	ON	N22.19530 E113.88826	88 m	0:00:24	13 kph
6/5/2016 12:28	ON	N22.19444 E113.88833	95 m	0:00:26	13 kph
6/5/2016 12:29	ON	N22.19373 E113.88824	80 m	0:00:23	13 kph
6/5/2016 12:29	ON	N22.19304 E113.88817	77 m	0:00:22	13 kph
6/5/2016 12:30	ON	N22.19222 E113.88823	91 m	0:00:25	13 kph
6/5/2016 12:30	ON	N22.19135 E113.88825	97 m	0:00:26	13 kph
6/5/2016 12:30	ON	N22.19073 E113.88825	69 m	0:00:19	13 kph
6/5/2016 12:31	ON	N22.18993 E113.88819	89 m	0:00:25	13 kph
6/5/2016 12:31	ON	N22.18916 E113.88817	86 m	0:00:24	13 kph
6/5/2016 12:31	ON	N22.18835 E113.88815	90 m	0:00:25	13 kph
6/5/2016 12:32	ON	N22.18757 E113.88817	87 m	0:00:24	13 kph
6/5/2016 12:32	ON	N22.18664 E113.88815	104 m	0:00:29	13 kph
6/5/2016 12:33	ON	N22.18582 E113.88824	92 m	0:00:25	13 kph
6/5/2016 12:33	ON	N22.18507 E113.88822	83 m	0:00:23	13 kph
6/5/2016 12:34	ON	N22.18422 E113.88822	94 m	0:00:26	13 kph
6/5/2016 12:34	ON	N22.18341 E113.88823	90 m	0:00:25	13 kph
6/5/2016 12:34	ON	N22.18253 E113.88822	98 m	0:00:27	13 kph
6/5/2016 12:35	ON	N22.18170 E113.88824	92 m	0:00:25	13 kph
6/5/2016 12:35	ON	N22.18092 E113.88831	88 m	0:00:23	14 kph
6/5/2016 12:36	ON	N22.18015 E113.88818	86 m	0:00:24	13 kph
6/5/2016 12:36	ON	N22.17937 E113.88813	88 m	0:00:24	13 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 12:36	ON	N22.17856 E113.88820	90 m	0:00:24	13 kph
6/5/2016 12:37	ON	N22.17780 E113.88822	84 m	0:00:22	14 kph
6/5/2016 12:37	ON	N22.17705 E113.88818	84 m	0:00:22	14 kph
6/5/2016 12:38	ON	N22.17623 E113.88820	91 m	0:00:24	14 kph
6/5/2016 12:38	ON	N22.17521 E113.88829	115 m	0:00:29	14 kph
6/5/2016 12:39	ON	N22.17431 E113.88823	100 m	0:00:26	14 kph
6/5/2016 12:39	ON	N22.17351 E113.88819	89 m	0:00:23	14 kph
6/5/2016 12:39	ON	N22.17263 E113.88821	98 m	0:00:25	14 kph
6/5/2016 12:40	ON	N22.17167 E113.88819	107 m	0:00:27	14 kph
6/5/2016 12:40	ON	N22.17088 E113.88823	88 m	0:00:22	14 kph
6/5/2016 12:41	ON	N22.16993 E113.88831	106 m	0:00:26	15 kph
6/5/2016 12:41	ON	N22.16914 E113.88833	89 m	0:00:22	14 kph
6/5/2016 12:41	ON	N22.16834 E113.88819	89 m	0:00:23	14 kph
6/5/2016 12:42	ON	N22.16762 E113.88826	81 m	0:00:20	15 kph
6/5/2016 12:42	ON	N22.16677 E113.88828	95 m	0:00:23	15 kph
6/5/2016 12:42	ON	N22.16602 E113.88815	84 m	0:00:21	14 kph
6/5/2016 12:43	ON	N22.16518 E113.88809	94 m	0:00:23	15 kph
6/5/2016 12:43	ON	N22.16437 E113.88800	90 m	0:00:22	15 kph
6/5/2016 12:44	ON	N22.16356 E113.88806	90 m	0:00:22	15 kph
6/5/2016 12:44	ON	N22.16253 E113.88817	115 m	0:00:27	15 kph
6/5/2016 12:44	ON	N22.16166 E113.88816	97 m	0:00:23	15 kph
6/5/2016 12:45	ON	N22.16091 E113.88815	84 m	0:00:20	15 kph
6/5/2016 12:45	ON	N22.16018 E113.88818	81 m	0:00:19	15 kph
6/5/2016 12:45	ON	N22.15938 E113.88821	90 m	0:00:21	15 kph
6/5/2016 12:46	ON	N22.15830 E113.88821	119 m	0:00:28	15 kph
6/5/2016 12:46	ON	N22.15743 E113.88819	97 m	0:00:23	15 kph
6/5/2016 12:47	ON	N22.15663 E113.88822	90 m	0:00:21	15 kph
6/5/2016 12:47	ON	N22.15582 E113.88828	91 m	0:00:21	16 kph
6/5/2016 12:47	ON	N22.15509 E113.88825	81 m	0:00:19	15 kph
6/5/2016 12:48	ON	N22.15420 E113.88839	100 m	0:00:23	16 kph
6/5/2016 12:48	ON	N22.15344 E113.88862	88 m	0:00:20	16 kph
6/5/2016 12:48	ON	N22.15279 E113.88851	74 m	0:00:18	15 kph
6/5/2016 12:49	ON	N22.15204 E113.88833	85 m	0:00:21	15 kph
6/5/2016 12:49	ON	N22.15123 E113.88820	91 m	0:00:22	15 kph
6/5/2016 12:49	ON	N22.15064 E113.88841	69 m	0:00:19	13 kph
6/5/2016 12:50	ON	N22.15039 E113.88935	101 m	0:00:23	16 kph
6/5/2016 12:50	ON	N22.15036 E113.88962	28 m	0:00:06	17 kph
6/5/2016 12:50	ON	N22.15026 E113.89050	91 m	0:00:20	16 kph
6/5/2016 12:50	ON	N22.15020 E113.89119	72 m	0:00:16	16 kph
6/5/2016 12:51	ON	N22.15006 E113.89215	100 m	0:00:22	16 kph
6/5/2016 12:51	ON	N22.14985 E113.89339	130 m	0:00:28	17 kph
6/5/2016 12:52	ON	N22.14978 E113.89450	115 m	0:00:25	17 kph
6/5/2016 12:52	ON	N22.14967 E113.89544	98 m	0:00:21	17 kph
6/5/2016 12:52	ON	N22.14941 E113.89659	122 m	0:00:26	17 kph
6/5/2016 12:53	ON	N22.14953 E113.89726	70 m	0:00:20	13 kph
6/5/2016 12:53	ON	N22.15018 E113.89726	72 m	0:00:23	11 kph
6/5/2016 12:53	ON	N22.15085 E113.89710	76 m	0:00:23	12 kph
6/5/2016 12:54	ON	N22.15160 E113.89714	84 m	0:00:24	13 kph
6/5/2016 12:54	ON	N22.15231 E113.89711	79 m	0:00:23	12 kph
6/5/2016 12:55	ON	N22.15301 E113.89712	78 m	0:00:23	12 kph
6/5/2016 12:55	ON	N22.15363 E113.89712	69 m	0:00:20	12 kph
6/5/2016 12:55	ON	N22.15433 E113.89711	78 m	0:00:23	12 kph
6/5/2016 12:56	ON	N22.15498 E113.89715	72 m	0:00:21	12 kph
6/5/2016 12:56	ON	N22.15553 E113.89714	61 m	0:00:18	12 kph
6/5/2016 12:56	ON	N22.15625 E113.89714	80 m	0:00:23	13 kph
6/5/2016 12:57	ON	N22.15674 E113.89718	55 m	0:00:16	12 kph
6/5/2016 12:57	ON	N22.15734 E113.89715	67 m	0:00:20	12 kph
6/5/2016 12:57	ON	N22.15804 E113.89716	78 m	0:00:23	12 kph
6/5/2016 12:58	ON	N22.15876 E113.89718	80 m	0:00:24	12 kph
6/5/2016 12:58	ON	N22.15955 E113.89721	88 m	0:00:27	12 kph
6/5/2016 12:59	ON	N22.16032 E113.89718	86 m	0:00:26	12 kph
6/5/2016 12:59	ON	N22.16116 E113.89721	93 m	0:00:28	12 kph
6/5/2016 13:00	ON	N22.16207 E113.89723	101 m	0:00:30	12 kph
6/5/2016 13:00	ON	N22.16286 E113.89719	88 m	0:00:26	12 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 13:00	ON	N22.16360 E113.89718	83 m	0:00:24	12 kph
6/5/2016 13:01	ON	N22.16455 E113.89724	106 m	0:00:30	13 kph
6/5/2016 13:02	ON	N22.16565 E113.89721	122 m	0:00:34	13 kph
6/5/2016 13:02	ON	N22.16656 E113.89731	102 m	0:00:27	14 kph
6/5/2016 13:02	ON	N22.16756 E113.89721	112 m	0:00:30	13 kph
6/5/2016 13:03	ON	N22.16855 E113.89714	110 m	0:00:29	14 kph
6/5/2016 13:04	ON	N22.16971 E113.89711	129 m	0:00:34	14 kph
6/5/2016 13:04	ON	N22.17089 E113.89708	131 m	0:00:35	13 kph
6/5/2016 13:05	ON	N22.17184 E113.89707	106 m	0:00:29	13 kph
6/5/2016 13:05	ON	N22.17280 E113.89708	107 m	0:00:29	13 kph
6/5/2016 13:06	ON	N22.17397 E113.89709	131 m	0:00:34	14 kph
6/5/2016 13:06	ON	N22.17484 E113.89712	97 m	0:00:25	14 kph
6/5/2016 13:06	ON	N22.17558 E113.89716	83 m	0:00:21	14 kph
6/5/2016 13:07	ON	N22.17672 E113.89724	126 m	0:00:32	14 kph
6/5/2016 13:07	ON	N22.17770 E113.89724	109 m	0:00:28	14 kph
6/5/2016 13:08	ON	N22.17868 E113.89723	110 m	0:00:28	14 kph
6/5/2016 13:08	ON	N22.17968 E113.89730	112 m	0:00:28	14 kph
6/5/2016 13:09	ON	N22.18037 E113.89729	77 m	0:00:20	14 kph
6/5/2016 13:09	ON	N22.18131 E113.89727	104 m	0:00:27	14 kph
6/5/2016 13:10	ON	N22.18214 E113.89722	92 m	0:00:24	14 kph
6/5/2016 13:10	ON	N22.18302 E113.89721	98 m	0:00:25	14 kph
6/5/2016 13:10	ON	N22.18388 E113.89722	96 m	0:00:24	14 kph
6/5/2016 13:11	ON	N22.18465 E113.89725	86 m	0:00:21	15 kph
6/5/2016 13:11	ON	N22.18549 E113.89725	94 m	0:00:23	15 kph
6/5/2016 13:11	ON	N22.18631 E113.89725	91 m	0:00:22	15 kph
6/5/2016 13:12	ON	N22.18718 E113.89743	99 m	0:00:23	16 kph
6/5/2016 13:12	ON	N22.18813 E113.89729	106 m	0:00:27	14 kph
6/5/2016 13:13	ON	N22.18904 E113.89718	102 m	0:00:26	14 kph
6/5/2016 13:13	ON	N22.19008 E113.89723	116 m	0:00:28	15 kph
6/5/2016 13:14	ON	N22.19092 E113.89726	94 m	0:00:23	15 kph
6/5/2016 13:14	ON	N22.19187 E113.89733	106 m	0:00:26	15 kph
6/5/2016 13:14	ON	N22.19278 E113.89725	101 m	0:00:26	14 kph
6/5/2016 13:15	ON	N22.19344 E113.89725	74 m	0:00:19	14 kph
6/5/2016 13:15	ON	N22.19419 E113.89725	83 m	0:00:21	14 kph
6/5/2016 13:15	ON	N22.19502 E113.89720	93 m	0:00:24	14 kph
6/5/2016 13:16	ON	N22.19621 E113.89720	132 m	0:00:33	14 kph
6/5/2016 13:16	ON	N22.19718 E113.89719	107 m	0:00:27	14 kph
6/5/2016 13:17	ON	N22.19802 E113.89716	94 m	0:00:24	14 kph
6/5/2016 13:17	ON	N22.19886 E113.89725	93 m	0:00:23	15 kph
6/5/2016 13:18	ON	N22.19967 E113.89734	91 m	0:00:22	15 kph
6/5/2016 13:18	ON	N22.20053 E113.89720	97 m	0:00:25	14 kph
6/5/2016 13:19	ON	N22.20152 E113.89720	110 m	0:00:28	14 kph
6/5/2016 13:19	ON	N22.20251 E113.89720	110 m	0:00:28	14 kph
6/5/2016 13:19	ON	N22.20343 E113.89722	103 m	0:00:26	14 kph
6/5/2016 13:20	ON	N22.20441 E113.89724	109 m	0:00:27	14 kph
6/5/2016 13:20	ON	N22.20535 E113.89728	105 m	0:00:26	15 kph
6/5/2016 13:21	ON	N22.20633 E113.89722	109 m	0:00:27	15 kph
6/5/2016 13:21	ON	N22.20728 E113.89716	105 m	0:00:26	15 kph
6/5/2016 13:22	ON	N22.20843 E113.89719	129 m	0:00:32	14 kph
6/5/2016 13:22	ON	N22.20956 E113.89716	125 m	0:00:32	14 kph
6/5/2016 13:23	ON	N22.21071 E113.89715	128 m	0:00:33	14 kph
6/5/2016 13:23	ON	N22.21188 E113.89723	131 m	0:00:34	14 kph
6/5/2016 13:24	ON	N22.21316 E113.89727	143 m	0:00:37	14 kph
6/5/2016 13:24	ON	N22.21384 E113.89753	81 m	0:00:25	12 kph
6/5/2016 13:25	ON	N22.21352 E113.89813	71 m	0:00:21	12 kph
6/5/2016 13:25	ON	N22.21306 E113.89865	75 m	0:00:19	14 kph
6/5/2016 13:26	ON	N22.21246 E113.89948	108 m	0:00:27	14 kph
6/5/2016 13:26	ON	N22.21181 E113.90030	111 m	0:00:28	14 kph
6/5/2016 13:26	ON	N22.21124 E113.90110	103 m	0:00:26	14 kph
6/5/2016 13:27	ON	N22.21054 E113.90189	113 m	0:00:28	15 kph
6/5/2016 13:27	ON	N22.20998 E113.90255	93 m	0:00:23	15 kph
6/5/2016 13:28	ON	N22.20929 E113.90337	114 m	0:00:28	15 kph
6/5/2016 13:28	ON	N22.20887 E113.90397	78 m	0:00:19	15 kph
6/5/2016 13:28	ON	N22.20836 E113.90471	95 m	0:00:23	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 13:29	ON	N22.20778 E113.90550	104 m	0:00:25	15 kph
6/5/2016 13:29	ON	N22.20717 E113.90628	105 m	0:00:25	15 kph
6/5/2016 13:30	ON	N22.20665 E113.90694	89 m	0:00:21	15 kph
6/5/2016 13:30	ON	N22.20602 E113.90772	106 m	0:00:25	15 kph
6/5/2016 13:30	ON	N22.20525 E113.90789	88 m	0:00:22	14 kph
6/5/2016 13:31	ON	N22.20432 E113.90788	103 m	0:00:25	15 kph
6/5/2016 13:31	ON	N22.20352 E113.90798	90 m	0:00:23	14 kph
6/5/2016 13:32	ON	N22.20275 E113.90796	85 m	0:00:23	13 kph
6/5/2016 13:32	ON	N22.20189 E113.90795	96 m	0:00:26	13 kph
6/5/2016 13:32	ON	N22.20117 E113.90786	81 m	0:00:25	12 kph
6/5/2016 13:33	ON	N22.20046 E113.90788	78 m	0:00:21	13 kph
6/5/2016 13:33	ON	N22.19959 E113.90787	97 m	0:00:27	13 kph
6/5/2016 13:34	ON	N22.19884 E113.90783	83 m	0:00:23	13 kph
6/5/2016 13:34	ON	N22.19800 E113.90779	94 m	0:00:26	13 kph
6/5/2016 13:35	ON	N22.19710 E113.90776	100 m	0:00:27	13 kph
6/5/2016 13:35	ON	N22.19633 E113.90779	85 m	0:00:23	13 kph
6/5/2016 13:35	ON	N22.19551 E113.90782	92 m	0:00:25	13 kph
6/5/2016 13:36	ON	N22.19485 E113.90783	73 m	0:00:21	13 kph
6/5/2016 13:36	ON	N22.19398 E113.90788	97 m	0:00:27	13 kph
6/5/2016 13:36	ON	N22.19334 E113.90786	72 m	0:00:21	12 kph
6/5/2016 13:37	ON	N22.19257 E113.90787	86 m	0:00:25	12 kph
6/5/2016 13:37	ON	N22.19168 E113.90778	99 m	0:00:30	12 kph
6/5/2016 13:38	ON	N22.19107 E113.90744	77 m	0:00:26	11 kph
6/5/2016 13:38	ON	N22.19041 E113.90692	90 m	0:00:31	11 kph
6/5/2016 13:39	ON	N22.18989 E113.90646	76 m	0:00:26	10 kph
6/5/2016 13:39	ON	N22.18938 E113.90610	67 m	0:00:23	10 kph
6/5/2016 13:40	ON	N22.18886 E113.90567	74 m	0:00:25	11 kph
6/5/2016 13:40	ON	N22.18813 E113.90534	87 m	0:00:28	11 kph
6/5/2016 13:41	ON	N22.18739 E113.90493	93 m	0:00:31	11 kph
6/5/2016 13:41	ON	N22.18660 E113.90470	91 m	0:00:31	11 kph
6/5/2016 13:42	ON	N22.18569 E113.90451	103 m	0:00:35	11 kph
6/5/2016 13:42	ON	N22.18487 E113.90435	93 m	0:00:31	11 kph
6/5/2016 13:43	ON	N22.18407 E113.90418	91 m	0:00:29	11 kph
6/5/2016 13:43	ON	N22.18324 E113.90405	93 m	0:00:29	12 kph
6/5/2016 13:44	ON	N22.18244 E113.90391	91 m	0:00:28	12 kph
6/5/2016 13:44	ON	N22.18156 E113.90394	98 m	0:00:28	13 kph
6/5/2016 13:44	ON	N22.18088 E113.90402	76 m	0:00:21	13 kph
6/5/2016 13:45	ON	N22.18016 E113.90403	80 m	0:00:22	13 kph
6/5/2016 13:45	ON	N22.17929 E113.90432	102 m	0:00:26	14 kph
6/5/2016 13:46	ON	N22.17844 E113.90484	108 m	0:00:26	15 kph
6/5/2016 13:46	ON	N22.17769 E113.90553	109 m	0:00:25	16 kph
6/5/2016 13:46	ON	N22.17696 E113.90628	113 m	0:00:25	16 kph
6/5/2016 13:47	ON	N22.17637 E113.90698	98 m	0:00:22	16 kph
6/5/2016 13:47	ON	N22.17604 E113.90736	54 m	0:00:12	16 kph
6/5/2016 13:47	ON	N22.17532 E113.90812	111 m	0:00:25	16 kph
6/5/2016 13:48	ON	N22.17446 E113.90865	111 m	0:00:26	15 kph
6/5/2016 13:48	ON	N22.17351 E113.90874	105 m	0:00:28	14 kph
6/5/2016 13:49	ON	N22.17260 E113.90844	107 m	0:00:32	12 kph
6/5/2016 13:50	ON	N22.17172 E113.90766	127 m	0:00:39	12 kph
6/5/2016 13:50	ON	N22.17097 E113.90698	108 m	0:00:31	13 kph
6/5/2016 13:51	ON	N22.17000 E113.90630	129 m	0:00:34	14 kph
6/5/2016 13:51	ON	N22.16913 E113.90569	116 m	0:00:31	13 kph
6/5/2016 13:52	ON	N22.16809 E113.90511	130 m	0:00:37	13 kph
6/5/2016 13:52	ON	N22.16720 E113.90459	113 m	0:00:33	12 kph
6/5/2016 13:53	ON	N22.16653 E113.90412	89 m	0:00:27	12 kph
6/5/2016 13:53	ON	N22.16584 E113.90360	94 m	0:00:29	12 kph
6/5/2016 13:54	ON	N22.16526 E113.90295	93 m	0:00:29	12 kph
6/5/2016 13:54	ON	N22.16475 E113.90215	100 m	0:00:31	12 kph
6/5/2016 13:55	ON	N22.16422 E113.90115	119 m	0:00:35	12 kph
6/5/2016 13:55	ON	N22.16378 E113.90029	101 m	0:00:29	12 kph
6/5/2016 13:56	ON	N22.16326 E113.89970	84 m	0:00:24	13 kph
6/5/2016 13:56	ON	N22.16246 E113.89908	110 m	0:00:30	13 kph
6/5/2016 13:57	ON	N22.16186 E113.89863	81 m	0:00:22	13 kph
6/5/2016 13:57	ON	N22.16118 E113.89832	82 m	0:00:21	14 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 13:57	ON	N22.16030 E113.89824	98 m	0:00:23	15 kph
6/5/2016 13:58	ON	N22.15932 E113.89836	110 m	0:00:24	16 kph
6/5/2016 13:58	ON	N22.15924 E113.89837	9 m	0:00:02	16 kph
6/5/2016 13:58	ON	N22.15832 E113.89855	105 m	0:00:24	16 kph
6/5/2016 13:58	ON	N22.15802 E113.89872	37 m	0:00:08	17 kph
6/5/2016 13:59	ON	N22.15718 E113.89946	120 m	0:00:25	17 kph
6/5/2016 13:59	ON	N22.15710 E113.89957	14 m	0:00:03	17 kph
6/5/2016 13:59	ON	N22.15673 E113.89991	54 m	0:00:11	18 kph
6/5/2016 13:59	ON	N22.15601 E113.90058	106 m	0:00:22	17 kph
6/5/2016 14:00	ON	N22.15546 E113.90151	114 m	0:00:23	18 kph
6/5/2016 14:00	ON	N22.15504 E113.90255	117 m	0:00:23	18 kph
6/5/2016 14:00	ON	N22.15499 E113.90269	16 m	0:00:03	19 kph
6/5/2016 14:00	ON	N22.15469 E113.90371	110 m	0:00:21	19 kph
6/5/2016 14:01	ON	N22.15465 E113.90410	40 m	0:00:08	18 kph
6/5/2016 14:01	ON	N22.15477 E113.90485	78 m	0:00:16	18 kph
6/5/2016 14:01	ON	N22.15496 E113.90590	110 m	0:00:22	18 kph
6/5/2016 14:01	ON	N22.15500 E113.90622	34 m	0:00:07	18 kph
6/5/2016 14:02	ON	N22.15454 E113.90672	72 m	0:00:19	14 kph
6/5/2016 14:02	ON	N22.15388 E113.90694	77 m	0:00:19	15 kph
6/5/2016 14:02	ON	N22.15384 E113.90696	5 m	0:00:01	16 kph
6/5/2016 14:02	ON	N22.15363 E113.90709	28 m	0:00:06	17 kph
6/5/2016 14:02	ON	N22.15341 E113.90723	28 m	0:00:06	17 kph
6/5/2016 14:02	ON	N22.15334 E113.90727	9 m	0:00:02	17 kph
6/5/2016 14:03	ON	N22.15259 E113.90781	100 m	0:00:21	17 kph
6/5/2016 14:03	ON	N22.15251 E113.90786	10 m	0:00:02	17 kph
6/5/2016 14:03	ON	N22.15175 E113.90800	87 m	0:00:21	15 kph
6/5/2016 14:03	ON	N22.15115 E113.90787	68 m	0:00:18	14 kph
6/5/2016 14:04	ON	N22.15052 E113.90787	70 m	0:00:17	15 kph
6/5/2016 14:04	ON	N22.14988 E113.90785	71 m	0:00:17	15 kph
6/5/2016 14:04	ON	N22.14917 E113.90781	79 m	0:00:19	15 kph
6/5/2016 14:04	ON	N22.14838 E113.90778	88 m	0:00:21	15 kph
6/5/2016 14:05	ON	N22.14763 E113.90781	84 m	0:00:20	15 kph
6/5/2016 14:05	ON	N22.14687 E113.90787	84 m	0:00:20	15 kph
6/5/2016 14:05	ON	N22.14622 E113.90784	73 m	0:00:18	15 kph
6/5/2016 14:06	ON	N22.14559 E113.90774	70 m	0:00:18	14 kph
6/5/2016 14:06	ON	N22.14483 E113.90772	85 m	0:00:21	15 kph
6/5/2016 14:06	ON	N22.14408 E113.90779	84 m	0:00:20	15 kph
6/5/2016 14:07	ON	N22.14344 E113.90780	71 m	0:00:18	14 kph
6/5/2016 14:07	ON	N22.14258 E113.90771	96 m	0:00:26	13 kph
6/5/2016 14:08	ON	N22.14185 E113.90774	81 m	0:00:22	13 kph
6/5/2016 14:08	ON	N22.14121 E113.90795	75 m	0:00:20	13 kph
6/5/2016 14:08	ON	N22.14093 E113.90870	82 m	0:00:19	16 kph
6/5/2016 14:09	ON	N22.14081 E113.90966	101 m	0:00:22	16 kph
6/5/2016 14:09	ON	N22.14083 E113.91007	42 m	0:00:09	17 kph
6/5/2016 14:09	ON	N22.14086 E113.91025	19 m	0:00:04	17 kph
6/5/2016 14:09	ON	N22.14090 E113.91047	23 m	0:00:05	17 kph
6/5/2016 14:09	ON	N22.14104 E113.91104	60 m	0:00:13	17 kph
6/5/2016 14:09	ON	N22.14130 E113.91201	104 m	0:00:22	17 kph
6/5/2016 14:10	ON	N22.14141 E113.91296	99 m	0:00:21	17 kph
6/5/2016 14:10	ON	N22.14146 E113.91397	104 m	0:00:22	17 kph
6/5/2016 14:10	ON	N22.14146 E113.91402	5 m	0:00:01	17 kph
6/5/2016 14:11	ON	N22.14158 E113.91508	110 m	0:00:23	17 kph
6/5/2016 14:11	ON	N22.14164 E113.91530	24 m	0:00:05	17 kph
6/5/2016 14:11	ON	N22.14180 E113.91591	66 m	0:00:14	17 kph
6/5/2016 14:11	ON	N22.14189 E113.91626	37 m	0:00:08	17 kph
6/5/2016 14:11	ON	N22.14208 E113.91697	76 m	0:00:16	17 kph
6/5/2016 14:11	ON	N22.14211 E113.91705	9 m	0:00:02	17 kph
6/5/2016 14:11	ON	N22.14215 E113.91718	14 m	0:00:03	17 kph
6/5/2016 14:11	ON	N22.14223 E113.91744	28 m	0:00:06	17 kph
6/5/2016 14:12	ON	N22.14281 E113.91793	83 m	0:00:20	15 kph
6/5/2016 14:12	ON	N22.14353 E113.91814	82 m	0:00:20	15 kph
6/5/2016 14:12	ON	N22.14408 E113.91810	61 m	0:00:17	13 kph
6/5/2016 14:13	ON	N22.14487 E113.91811	88 m	0:00:24	13 kph
6/5/2016 14:13	ON	N22.14558 E113.91805	80 m	0:00:24	12 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 14:14	ON	N22.14608 E113.91776	63 m	0:00:23	10 kph
6/5/2016 14:14	ON	N22.14662 E113.91769	60 m	0:00:20	11 kph
6/5/2016 14:14	ON	N22.14720 E113.91786	68 m	0:00:19	13 kph
6/5/2016 14:15	ON	N22.14786 E113.91793	73 m	0:00:22	12 kph
6/5/2016 14:15	ON	N22.14852 E113.91787	74 m	0:00:23	12 kph
6/5/2016 14:15	ON	N22.14922 E113.91789	78 m	0:00:23	12 kph
6/5/2016 14:16	ON	N22.14986 E113.91794	72 m	0:00:21	12 kph
6/5/2016 14:16	ON	N22.15049 E113.91790	69 m	0:00:21	12 kph
6/5/2016 14:16	ON	N22.15106 E113.91785	64 m	0:00:19	12 kph
6/5/2016 14:17	ON	N22.15169 E113.91780	70 m	0:00:21	12 kph
6/5/2016 14:17	ON	N22.15227 E113.91784	64 m	0:00:18	13 kph
6/5/2016 14:17	ON	N22.15295 E113.91778	76 m	0:00:22	12 kph
6/5/2016 14:18	ON	N22.15360 E113.91769	73 m	0:00:21	13 kph
6/5/2016 14:18	ON	N22.15449 E113.91750	101 m	0:00:27	13 kph
6/5/2016 14:19	ON	N22.15533 E113.91753	93 m	0:00:24	14 kph
6/5/2016 14:19	ON	N22.15628 E113.91759	106 m	0:00:27	14 kph
6/5/2016 14:20	ON	N22.15732 E113.91776	118 m	0:00:30	14 kph
6/5/2016 14:20	ON	N22.15845 E113.91796	127 m	0:00:32	14 kph
6/5/2016 14:21	ON	N22.15941 E113.91798	107 m	0:00:27	14 kph
6/5/2016 14:21	ON	N22.16026 E113.91795	94 m	0:00:24	14 kph
6/5/2016 14:21	ON	N22.16109 E113.91802	94 m	0:00:24	14 kph
6/5/2016 14:22	ON	N22.16196 E113.91812	96 m	0:00:24	14 kph
6/5/2016 14:22	ON	N22.16293 E113.91819	109 m	0:00:27	15 kph
6/5/2016 14:23	ON	N22.16413 E113.91820	133 m	0:00:32	15 kph
6/5/2016 14:23	ON	N22.16522 E113.91819	121 m	0:00:30	15 kph
6/5/2016 14:24	ON	N22.16623 E113.91822	112 m	0:00:28	14 kph
6/5/2016 14:24	ON	N22.16702 E113.91835	89 m	0:00:22	15 kph
6/5/2016 14:25	ON	N22.16823 E113.91851	136 m	0:00:33	15 kph
6/5/2016 14:25	ON	N22.16909 E113.91872	98 m	0:00:25	14 kph
6/5/2016 14:25	ON	N22.16989 E113.91897	92 m	0:00:24	14 kph
6/5/2016 14:26	ON	N22.17069 E113.91913	90 m	0:00:24	14 kph
6/5/2016 14:26	ON	N22.17140 E113.91951	88 m	0:00:22	14 kph
6/5/2016 14:27	ON	N22.17228 E113.91993	107 m	0:00:26	15 kph
6/5/2016 14:27	ON	N22.17307 E113.92039	100 m	0:00:24	15 kph
6/5/2016 14:27	ON	N22.17385 E113.92084	99 m	0:00:23	15 kph
6/5/2016 14:28	ON	N22.17459 E113.92118	89 m	0:00:21	15 kph
6/5/2016 14:28	ON	N22.17541 E113.92151	97 m	0:00:23	15 kph
6/5/2016 14:29	ON	N22.17623 E113.92185	99 m	0:00:23	15 kph
6/5/2016 14:29	ON	N22.17705 E113.92214	96 m	0:00:22	16 kph
6/5/2016 14:29	ON	N22.17831 E113.92239	143 m	0:00:33	16 kph
6/5/2016 14:30	ON	N22.17922 E113.92233	101 m	0:00:23	16 kph
6/5/2016 14:30	ON	N22.18027 E113.92212	119 m	0:00:26	16 kph
6/5/2016 14:31	ON	N22.18094 E113.92179	82 m	0:00:19	16 kph
6/5/2016 14:31	ON	N22.18168 E113.92140	92 m	0:00:21	16 kph
6/5/2016 14:31	ON	N22.18230 E113.92098	81 m	0:00:19	15 kph
6/5/2016 14:32	ON	N22.18284 E113.92030	92 m	0:00:22	15 kph
6/5/2016 14:32	ON	N22.18343 E113.91958	99 m	0:00:23	15 kph
6/5/2016 14:32	ON	N22.18404 E113.91874	110 m	0:00:25	16 kph
6/5/2016 14:33	ON	N22.18465 E113.91797	104 m	0:00:24	16 kph
6/5/2016 14:33	ON	N22.18531 E113.91791	74 m	0:00:19	14 kph
6/5/2016 14:33	ON	N22.18612 E113.91793	91 m	0:00:22	15 kph
6/5/2016 14:34	ON	N22.18702 E113.91784	100 m	0:00:24	15 kph
6/5/2016 14:34	ON	N22.18779 E113.91784	86 m	0:00:21	15 kph
6/5/2016 14:35	ON	N22.18874 E113.91785	105 m	0:00:26	15 kph
6/5/2016 14:35	ON	N22.18973 E113.91782	110 m	0:00:27	15 kph
6/5/2016 14:36	ON	N22.19062 E113.91781	99 m	0:00:24	15 kph
6/5/2016 14:36	ON	N22.19158 E113.91783	107 m	0:00:26	15 kph
6/5/2016 14:36	ON	N22.19256 E113.91780	109 m	0:00:26	15 kph
6/5/2016 14:37	ON	N22.19343 E113.91783	96 m	0:00:23	15 kph
6/5/2016 14:37	ON	N22.19424 E113.91801	93 m	0:00:22	15 kph
6/5/2016 14:38	ON	N22.19525 E113.91806	112 m	0:00:27	15 kph
6/5/2016 14:38	ON	N22.19601 E113.91792	86 m	0:00:22	14 kph
6/5/2016 14:38	ON	N22.19676 E113.91790	84 m	0:00:21	14 kph
6/5/2016 14:39	ON	N22.19755 E113.91783	89 m	0:00:22	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 14:39	ON	N22.19832 E113.91761	88 m	0:00:23	14 kph
6/5/2016 14:39	ON	N22.19922 E113.91758	101 m	0:00:25	14 kph
6/5/2016 14:40	ON	N22.20006 E113.91764	93 m	0:00:23	15 kph
6/5/2016 14:40	ON	N22.20070 E113.91771	72 m	0:00:18	14 kph
6/5/2016 14:41	ON	N22.20154 E113.91781	94 m	0:00:24	14 kph
6/5/2016 14:41	ON	N22.20222 E113.91788	76 m	0:00:20	14 kph
6/5/2016 14:41	ON	N22.20321 E113.91783	110 m	0:00:29	14 kph
6/5/2016 14:42	ON	N22.20375 E113.91776	61 m	0:00:17	13 kph
6/5/2016 14:42	OFF	N22.20406 E113.91771	34 m	0:00:16	8 kph
6/5/2016 14:42	OFF	N22.20426 E113.91765	24 m	0:00:16	5 kph
6/5/2016 14:42	OFF	N22.20444 E113.91760	21 m	0:00:18	4 kph
6/5/2016 14:43	OFF	N22.20452 E113.91756	9 m	0:00:07	5 kph
6/5/2016 14:43	OFF	N22.20464 E113.91702	58 m	0:00:24	9 kph
6/5/2016 14:44	OFF	N22.20462 E113.91627	77 m	0:00:30	9 kph
6/5/2016 14:44	OFF	N22.20461 E113.91589	40 m	0:00:19	7 kph
6/5/2016 14:44	OFF	N22.20461 E113.91582	7 m	0:00:04	6 kph
6/5/2016 14:44	OFF	N22.20460 E113.91562	21 m	0:00:15	5 kph
6/5/2016 14:44	OFF	N22.20460 E113.91557	5 m	0:00:04	4 kph
6/5/2016 14:45	OFF	N22.20457 E113.91534	24 m	0:00:25	3 kph
6/5/2016 14:45	OFF	N22.20454 E113.91519	16 m	0:00:24	2 kph
6/5/2016 14:45	OFF	N22.20451 E113.91511	9 m	0:00:20	2 kph
6/5/2016 14:46	OFF	N22.20450 E113.91502	9 m	0:00:19	2 kph
6/5/2016 14:46	OFF	N22.20448 E113.91493	10 m	0:00:17	2 kph
6/5/2016 14:46	OFF	N22.20448 E113.91491	2 m	0:00:02	3 kph
6/5/2016 14:46	OFF	N22.20448 E113.91489	2 m	0:00:02	4 kph
6/5/2016 14:46	OFF	N22.20449 E113.91484	5 m	0:00:05	4 kph
6/5/2016 14:46	OFF	N22.20459 E113.91475	14 m	0:00:19	3 kph
6/5/2016 14:47	OFF	N22.20463 E113.91473	6 m	0:00:08	3 kph
6/5/2016 14:47	OFF	N22.20475 E113.91477	13 m	0:00:10	5 kph
6/5/2016 14:47	OFF	N22.20481 E113.91521	46 m	0:00:17	10 kph
6/5/2016 14:47	OFF	N22.20481 E113.91587	68 m	0:00:18	14 kph
6/5/2016 14:48	OFF	N22.20501 E113.91683	101 m	0:00:26	14 kph
6/5/2016 14:48	ON	N22.20511 E113.91765	85 m	0:00:22	14 kph
6/5/2016 14:49	ON	N22.20516 E113.91863	101 m	0:00:26	14 kph
6/5/2016 14:49	ON	N22.20520 E113.91943	82 m	0:00:21	14 kph
6/5/2016 14:49	ON	N22.20522 E113.92027	87 m	0:00:22	14 kph
6/5/2016 14:50	ON	N22.20522 E113.92118	94 m	0:00:24	14 kph
6/5/2016 14:50	ON	N22.20518 E113.92194	78 m	0:00:20	14 kph
6/5/2016 14:50	ON	N22.20519 E113.92304	113 m	0:00:28	15 kph
6/5/2016 14:51	ON	N22.20523 E113.92414	114 m	0:00:28	15 kph
6/5/2016 14:51	ON	N22.20527 E113.92501	90 m	0:00:22	15 kph
6/5/2016 14:52	ON	N22.20529 E113.92573	75 m	0:00:21	13 kph
6/5/2016 14:52	ON	N22.20532 E113.92610	38 m	0:00:19	7 kph
6/5/2016 14:52	OFF	N22.20533 E113.92615	4 m	0:00:03	5 kph
6/5/2016 14:52	OFF	N22.20533 E113.92617	3 m	0:00:02	5 kph
6/5/2016 14:52	OFF	N22.20535 E113.92630	14 m	0:00:10	5 kph
6/5/2016 14:53	OFF	N22.20548 E113.92685	59 m	0:00:19	11 kph
6/5/2016 14:53	OFF	N22.20558 E113.92775	93 m	0:00:23	15 kph
6/5/2016 14:53	OFF	N22.20565 E113.92847	75 m	0:00:22	12 kph
6/5/2016 14:54	OFF	N22.20567 E113.92902	56 m	0:00:20	10 kph
6/5/2016 14:54	OFF	N22.20567 E113.92942	41 m	0:00:21	7 kph
6/5/2016 14:54	OFF	N22.20568 E113.92946	5 m	0:00:03	5 kph
6/5/2016 14:54	OFF	N22.20569 E113.92951	6 m	0:00:04	5 kph
6/5/2016 14:54	OFF	N22.20570 E113.92963	12 m	0:00:09	5 kph
6/5/2016 14:54	OFF	N22.20571 E113.92970	8 m	0:00:07	4 kph
6/5/2016 14:55	OFF	N22.20574 E113.92992	23 m	0:00:24	3 kph
6/5/2016 14:55	OFF	N22.20576 E113.93006	14 m	0:00:18	3 kph
6/5/2016 14:55	OFF	N22.20577 E113.93021	15 m	0:00:24	2 kph
6/5/2016 14:56	OFF	N22.20562 E113.93048	33 m	0:00:22	5 kph
6/5/2016 14:56	OFF	N22.20522 E113.93048	45 m	0:00:20	8 kph
6/5/2016 14:57	OFF	N22.20501 E113.93030	29 m	0:00:25	4 kph
6/5/2016 14:57	OFF	N22.20495 E113.93021	11 m	0:00:18	2 kph
6/5/2016 14:57	OFF	N22.20491 E113.93012	11 m	0:00:19	2 kph
6/5/2016 14:57	OFF	N22.20490 E113.93007	5 m	0:00:05	3 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 14:57	OFF	N22.20489 E113.93004	3 m	0:00:03	4 kph
6/5/2016 14:57	OFF	N22.20488 E113.92999	6 m	0:00:05	4 kph
6/5/2016 14:58	OFF	N22.20522 E113.92959	56 m	0:00:24	8 kph
6/5/2016 14:58	OFF	N22.20563 E113.92865	106 m	0:00:31	12 kph
6/5/2016 14:59	OFF	N22.20562 E113.92783	85 m	0:00:24	13 kph
6/5/2016 14:59	ON	N22.20513 E113.92767	57 m	0:00:17	12 kph
6/5/2016 14:59	ON	N22.20459 E113.92758	61 m	0:00:16	14 kph
6/5/2016 15:00	ON	N22.20404 E113.92746	63 m	0:00:16	14 kph
6/5/2016 15:00	ON	N22.20317 E113.92746	97 m	0:00:25	14 kph
6/5/2016 15:00	ON	N22.20219 E113.92759	110 m	0:00:28	14 kph
6/5/2016 15:01	ON	N22.20143 E113.92767	85 m	0:00:23	13 kph
6/5/2016 15:01	ON	N22.20068 E113.92763	83 m	0:00:23	13 kph
6/5/2016 15:02	ON	N22.19996 E113.92760	81 m	0:00:22	13 kph
6/5/2016 15:02	ON	N22.19913 E113.92757	92 m	0:00:25	13 kph
6/5/2016 15:02	ON	N22.19823 E113.92757	100 m	0:00:27	13 kph
6/5/2016 15:03	ON	N22.19735 E113.92763	98 m	0:00:26	14 kph
6/5/2016 15:03	ON	N22.19676 E113.92763	66 m	0:00:18	13 kph
6/5/2016 15:04	ON	N22.19604 E113.92760	80 m	0:00:22	13 kph
6/5/2016 15:04	ON	N22.19536 E113.92755	76 m	0:00:21	13 kph
6/5/2016 15:04	ON	N22.19453 E113.92744	93 m	0:00:25	13 kph
6/5/2016 15:05	ON	N22.19380 E113.92747	81 m	0:00:21	14 kph
6/5/2016 15:05	ON	N22.19302 E113.92747	87 m	0:00:23	14 kph
6/5/2016 15:05	ON	N22.19224 E113.92753	87 m	0:00:24	13 kph
6/5/2016 15:06	ON	N22.19152 E113.92758	80 m	0:00:22	13 kph
6/5/2016 15:06	ON	N22.19063 E113.92751	100 m	0:00:28	13 kph
6/5/2016 15:07	ON	N22.18983 E113.92751	88 m	0:00:25	13 kph
6/5/2016 15:07	ON	N22.18920 E113.92755	71 m	0:00:20	13 kph
6/5/2016 15:07	ON	N22.18843 E113.92758	85 m	0:00:24	13 kph
6/5/2016 15:08	ON	N22.18770 E113.92761	82 m	0:00:23	13 kph
6/5/2016 15:08	ON	N22.18696 E113.92762	82 m	0:00:23	13 kph
6/5/2016 15:09	ON	N22.18614 E113.92760	91 m	0:00:25	13 kph
6/5/2016 15:09	ON	N22.18526 E113.92761	98 m	0:00:27	13 kph
6/5/2016 15:09	ON	N22.18447 E113.92760	87 m	0:00:24	13 kph
6/5/2016 15:10	ON	N22.18365 E113.92761	91 m	0:00:25	13 kph
6/5/2016 15:10	ON	N22.18303 E113.92765	69 m	0:00:19	13 kph
6/5/2016 15:10	ON	N22.18238 E113.92775	74 m	0:00:20	13 kph
6/5/2016 15:11	ON	N22.18185 E113.92782	59 m	0:00:16	13 kph
6/5/2016 15:11	ON	N22.18099 E113.92791	97 m	0:00:26	13 kph
6/5/2016 15:12	ON	N22.18021 E113.92784	87 m	0:00:23	14 kph
6/5/2016 15:12	ON	N22.17933 E113.92780	98 m	0:00:26	14 kph
6/5/2016 15:12	ON	N22.17858 E113.92773	84 m	0:00:22	14 kph
6/5/2016 15:13	ON	N22.17778 E113.92759	91 m	0:00:24	14 kph
6/5/2016 15:13	ON	N22.17696 E113.92761	91 m	0:00:24	14 kph
6/5/2016 15:14	ON	N22.17628 E113.92741	78 m	0:00:21	13 kph
6/5/2016 15:14	ON	N22.17559 E113.92731	78 m	0:00:21	13 kph
6/5/2016 15:14	ON	N22.17494 E113.92734	72 m	0:00:19	14 kph
6/5/2016 15:15	ON	N22.17427 E113.92738	74 m	0:00:19	14 kph
6/5/2016 15:15	ON	N22.17368 E113.92738	66 m	0:00:17	14 kph
6/5/2016 15:15	ON	N22.17297 E113.92746	80 m	0:00:20	14 kph
6/5/2016 15:15	ON	N22.17231 E113.92757	73 m	0:00:18	15 kph
6/5/2016 15:16	ON	N22.17165 E113.92755	74 m	0:00:19	14 kph
6/5/2016 15:16	ON	N22.17092 E113.92758	81 m	0:00:20	15 kph
6/5/2016 15:16	ON	N22.17027 E113.92759	72 m	0:00:18	14 kph
6/5/2016 15:17	ON	N22.16957 E113.92752	79 m	0:00:20	14 kph
6/5/2016 15:17	ON	N22.16885 E113.92751	80 m	0:00:20	14 kph
6/5/2016 15:17	ON	N22.16801 E113.92751	93 m	0:00:23	15 kph
6/5/2016 15:18	ON	N22.16734 E113.92746	76 m	0:00:19	14 kph
6/5/2016 15:18	ON	N22.16674 E113.92741	67 m	0:00:17	14 kph
6/5/2016 15:18	OFF	N22.16632 E113.92742	46 m	0:00:17	10 kph
6/5/2016 15:18	OFF	N22.16615 E113.92744	19 m	0:00:11	6 kph
6/5/2016 15:19	OFF	N22.16609 E113.92746	6 m	0:00:04	6 kph
6/5/2016 15:19	OFF	N22.16601 E113.92748	9 m	0:00:07	5 kph
6/5/2016 15:19	OFF	N22.16585 E113.92735	23 m	0:00:17	5 kph
6/5/2016 15:19	OFF	N22.16617 E113.92702	49 m	0:00:21	8 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 15:20	OFF	N22.16669 E113.92671	66 m	0:00:23	10 kph
6/5/2016 15:20	OFF	N22.16733 E113.92630	83 m	0:00:25	12 kph
6/5/2016 15:20	OFF	N22.16767 E113.92609	44 m	0:00:23	7 kph
6/5/2016 15:21	OFF	N22.16779 E113.92601	16 m	0:00:20	3 kph
6/5/2016 15:21	OFF	N22.16785 E113.92597	7 m	0:00:20	1.3 kph
6/5/2016 15:21	OFF	N22.16794 E113.92587	14 m	0:00:18	3 kph
6/5/2016 15:22	OFF	N22.16830 E113.92558	51 m	0:00:20	9 kph
6/5/2016 15:22	OFF	N22.16894 E113.92527	78 m	0:00:26	11 kph
6/5/2016 15:23	OFF	N22.16960 E113.92507	77 m	0:00:25	11 kph
6/5/2016 15:23	OFF	N22.17001 E113.92498	46 m	0:00:22	8 kph
6/5/2016 15:23	OFF	N22.17012 E113.92496	12 m	0:00:09	5 kph
6/5/2016 15:23	OFF	N22.17015 E113.92496	3 m	0:00:03	4 kph
6/5/2016 15:24	OFF	N22.17035 E113.92495	23 m	0:00:26	3 kph
6/5/2016 15:24	OFF	N22.17045 E113.92495	11 m	0:00:20	2 kph
6/5/2016 15:24	OFF	N22.17053 E113.92498	8 m	0:00:23	1.3 kph
6/5/2016 15:25	OFF	N22.17058 E113.92500	6 m	0:00:21	1.0 kph
6/5/2016 15:25	OFF	N22.17062 E113.92502	5 m	0:00:20	0.9 kph
6/5/2016 15:25	OFF	N22.17067 E113.92503	5 m	0:00:10	2 kph
6/5/2016 15:25	OFF	N22.17073 E113.92502	8 m	0:00:05	5 kph
6/5/2016 15:25	OFF	N22.17088 E113.92510	19 m	0:00:08	8 kph
6/5/2016 15:26	OFF	N22.17142 E113.92591	103 m	0:00:27	14 kph
6/5/2016 15:26	OFF	N22.17189 E113.92647	78 m	0:00:22	13 kph
6/5/2016 15:27	OFF	N22.17217 E113.92678	45 m	0:00:22	7 kph
6/5/2016 15:27	OFF	N22.17234 E113.92701	30 m	0:00:22	5 kph
6/5/2016 15:27	OFF	N22.17243 E113.92722	23 m	0:00:21	4 kph
6/5/2016 15:28	OFF	N22.17247 E113.92735	14 m	0:00:15	3 kph
6/5/2016 15:28	OFF	N22.17248 E113.92750	16 m	0:00:18	3 kph
6/5/2016 15:28	OFF	N22.17249 E113.92756	6 m	0:00:07	3 kph
6/5/2016 15:28	OFF	N22.17249 E113.92770	14 m	0:00:16	3 kph
6/5/2016 15:28	OFF	N22.17250 E113.92774	4 m	0:00:04	4 kph
6/5/2016 15:28	OFF	N22.17250 E113.92778	5 m	0:00:04	4 kph
6/5/2016 15:29	OFF	N22.17250 E113.92793	15 m	0:00:08	7 kph
6/5/2016 15:29	OFF	N22.17243 E113.92806	15 m	0:00:06	9 kph
6/5/2016 15:29	OFF	N22.17205 E113.92811	43 m	0:00:16	10 kph
6/5/2016 15:29	ON	N22.17145 E113.92791	69 m	0:00:19	13 kph
6/5/2016 15:29	ON	N22.17094 E113.92774	60 m	0:00:16	14 kph
6/5/2016 15:30	ON	N22.17036 E113.92758	67 m	0:00:18	13 kph
6/5/2016 15:30	ON	N22.16972 E113.92754	70 m	0:00:18	14 kph
6/5/2016 15:30	ON	N22.16897 E113.92759	84 m	0:00:21	14 kph
6/5/2016 15:31	ON	N22.16816 E113.92754	90 m	0:00:23	14 kph
6/5/2016 15:31	ON	N22.16749 E113.92749	75 m	0:00:19	14 kph
6/5/2016 15:31	ON	N22.16680 E113.92743	76 m	0:00:19	14 kph
6/5/2016 15:32	ON	N22.16608 E113.92740	80 m	0:00:20	14 kph
6/5/2016 15:32	ON	N22.16536 E113.92744	81 m	0:00:20	15 kph
6/5/2016 15:32	ON	N22.16456 E113.92743	89 m	0:00:22	15 kph
6/5/2016 15:33	ON	N22.16388 E113.92741	76 m	0:00:19	14 kph
6/5/2016 15:33	ON	N22.16320 E113.92742	76 m	0:00:19	14 kph
6/5/2016 15:33	ON	N22.16245 E113.92746	84 m	0:00:21	14 kph
6/5/2016 15:34	ON	N22.16156 E113.92753	99 m	0:00:25	14 kph
6/5/2016 15:34	ON	N22.16079 E113.92751	86 m	0:00:22	14 kph
6/5/2016 15:35	ON	N22.16013 E113.92747	73 m	0:00:19	14 kph
6/5/2016 15:35	ON	N22.15941 E113.92745	80 m	0:00:21	14 kph
6/5/2016 15:35	ON	N22.15868 E113.92737	82 m	0:00:22	13 kph
6/5/2016 15:36	ON	N22.15805 E113.92751	71 m	0:00:20	13 kph
6/5/2016 15:36	ON	N22.15734 E113.92780	85 m	0:00:25	12 kph
6/5/2016 15:36	ON	N22.15667 E113.92796	77 m	0:00:22	13 kph
6/5/2016 15:37	ON	N22.15606 E113.92801	68 m	0:00:19	13 kph
6/5/2016 15:37	ON	N22.15524 E113.92797	91 m	0:00:25	13 kph
6/5/2016 15:38	ON	N22.15445 E113.92780	90 m	0:00:25	13 kph
6/5/2016 15:38	ON	N22.15370 E113.92771	84 m	0:00:23	13 kph
6/5/2016 15:38	ON	N22.15301 E113.92763	77 m	0:00:21	13 kph
6/5/2016 15:39	ON	N22.15239 E113.92765	70 m	0:00:19	13 kph
6/5/2016 15:39	ON	N22.15185 E113.92772	61 m	0:00:17	13 kph
6/5/2016 15:39	ON	N22.15128 E113.92768	63 m	0:00:19	12 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 15:40	ON	N22.15060 E113.92774	77 m	0:00:22	13 kph
6/5/2016 15:40	ON	N22.15004 E113.92770	62 m	0:00:19	12 kph
6/5/2016 15:40	ON	N22.14947 E113.92754	66 m	0:00:21	11 kph
6/5/2016 15:41	ON	N22.14881 E113.92747	73 m	0:00:22	12 kph
6/5/2016 15:41	ON	N22.14816 E113.92743	73 m	0:00:22	12 kph
6/5/2016 15:41	ON	N22.14750 E113.92734	75 m	0:00:23	12 kph
6/5/2016 15:42	ON	N22.14690 E113.92731	67 m	0:00:20	12 kph
6/5/2016 15:42	ON	N22.14632 E113.92728	64 m	0:00:19	12 kph
6/5/2016 15:42	ON	N22.14583 E113.92728	55 m	0:00:16	12 kph
6/5/2016 15:43	ON	N22.14523 E113.92734	67 m	0:00:19	13 kph
6/5/2016 15:43	ON	N22.14461 E113.92740	69 m	0:00:19	13 kph
6/5/2016 15:43	ON	N22.14404 E113.92754	65 m	0:00:17	14 kph
6/5/2016 15:44	ON	N22.14330 E113.92766	83 m	0:00:22	14 kph
6/5/2016 15:44	ON	N22.14273 E113.92777	65 m	0:00:17	14 kph
6/5/2016 15:44	ON	N22.14205 E113.92786	76 m	0:00:20	14 kph
6/5/2016 15:45	ON	N22.14139 E113.92791	74 m	0:00:21	13 kph
6/5/2016 15:45	ON	N22.14128 E113.92849	61 m	0:00:17	13 kph
6/5/2016 15:45	ON	N22.14174 E113.92894	69 m	0:00:18	14 kph
6/5/2016 15:45	ON	N22.14230 E113.92939	76 m	0:00:18	15 kph
6/5/2016 15:46	ON	N22.14281 E113.92997	83 m	0:00:19	16 kph
6/5/2016 15:46	ON	N22.14302 E113.93023	36 m	0:00:08	16 kph
6/5/2016 15:46	ON	N22.14361 E113.93080	88 m	0:00:20	16 kph
6/5/2016 15:47	ON	N22.14426 E113.93128	88 m	0:00:20	16 kph
6/5/2016 15:47	ON	N22.14489 E113.93171	83 m	0:00:19	16 kph
6/5/2016 15:47	ON	N22.14525 E113.93198	48 m	0:00:11	16 kph
6/5/2016 15:47	ON	N22.14538 E113.93208	18 m	0:00:04	16 kph
6/5/2016 15:47	ON	N22.14560 E113.93225	31 m	0:00:07	16 kph
6/5/2016 15:47	ON	N22.14611 E113.93268	72 m	0:00:16	16 kph
6/5/2016 15:48	ON	N22.14627 E113.93281	22 m	0:00:05	16 kph
6/5/2016 15:48	ON	N22.14637 E113.93289	13 m	0:00:03	16 kph
6/5/2016 15:48	ON	N22.14647 E113.93296	13 m	0:00:03	16 kph
6/5/2016 15:48	ON	N22.14683 E113.93323	49 m	0:00:11	16 kph
6/5/2016 15:48	ON	N22.14693 E113.93331	14 m	0:00:03	17 kph
6/5/2016 15:48	ON	N22.14734 E113.93360	54 m	0:00:12	16 kph
6/5/2016 15:48	ON	N22.14767 E113.93384	45 m	0:00:10	16 kph
6/5/2016 15:49	ON	N22.14840 E113.93432	95 m	0:00:21	16 kph
6/5/2016 15:49	ON	N22.14910 E113.93475	90 m	0:00:20	16 kph
6/5/2016 15:49	ON	N22.14938 E113.93492	36 m	0:00:08	16 kph
6/5/2016 15:49	ON	N22.14966 E113.93508	36 m	0:00:08	16 kph
6/5/2016 15:49	ON	N22.14981 E113.93517	18 m	0:00:04	16 kph
6/5/2016 15:49	ON	N22.15002 E113.93529	27 m	0:00:06	16 kph
6/5/2016 15:50	ON	N22.15079 E113.93572	97 m	0:00:22	16 kph
6/5/2016 15:50	ON	N22.15146 E113.93604	82 m	0:00:19	16 kph
6/5/2016 15:50	ON	N22.15214 E113.93641	85 m	0:00:20	15 kph
6/5/2016 15:51	ON	N22.15292 E113.93668	91 m	0:00:22	15 kph
6/5/2016 15:51	OFF	N22.15343 E113.93676	57 m	0:00:20	10 kph
6/5/2016 15:51	OFF	N22.15353 E113.93677	11 m	0:00:05	8 kph
6/5/2016 15:51	OFF	N22.15369 E113.93679	18 m	0:00:10	7 kph
6/5/2016 15:51	OFF	N22.15378 E113.93681	10 m	0:00:06	6 kph
6/5/2016 15:52	OFF	N22.15401 E113.93687	27 m	0:00:20	5 kph
6/5/2016 15:52	OFF	N22.15404 E113.93688	3 m	0:00:02	5 kph
6/5/2016 15:52	OFF	N22.15407 E113.93688	4 m	0:00:03	4 kph
6/5/2016 15:52	OFF	N22.15420 E113.93692	15 m	0:00:13	4 kph
6/5/2016 15:52	OFF	N22.15439 E113.93698	22 m	0:00:21	4 kph
6/5/2016 15:53	OFF	N22.15456 E113.93704	20 m	0:00:21	3 kph
6/5/2016 15:53	OFF	N22.15470 E113.93708	16 m	0:00:19	3 kph
6/5/2016 15:53	OFF	N22.15481 E113.93710	13 m	0:00:16	3 kph
6/5/2016 15:54	OFF	N22.15495 E113.93714	16 m	0:00:22	3 kph
6/5/2016 15:54	OFF	N22.15502 E113.93716	8 m	0:00:11	3 kph
6/5/2016 15:54	OFF	N22.15511 E113.93720	11 m	0:00:07	6 kph
6/5/2016 15:54	OFF	N22.15575 E113.93709	73 m	0:00:22	12 kph
6/5/2016 15:55	ON	N22.15651 E113.93688	86 m	0:00:21	15 kph
6/5/2016 15:55	ON	N22.15739 E113.93688	98 m	0:00:24	15 kph
6/5/2016 15:56	ON	N22.15824 E113.93677	96 m	0:00:23	15 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 15:56	ON	N22.15913 E113.93680	99 m	0:00:25	14 kph
6/5/2016 15:56	ON	N22.15998 E113.93673	95 m	0:00:26	13 kph
6/5/2016 15:57	ON	N22.16073 E113.93677	83 m	0:00:23	13 kph
6/5/2016 15:57	ON	N22.16152 E113.93673	87 m	0:00:24	13 kph
6/5/2016 15:57	ON	N22.16220 E113.93664	76 m	0:00:21	13 kph
6/5/2016 15:58	ON	N22.16292 E113.93671	81 m	0:00:22	13 kph
6/5/2016 15:58	ON	N22.16372 E113.93677	89 m	0:00:24	13 kph
6/5/2016 15:59	ON	N22.16452 E113.93670	89 m	0:00:24	13 kph
6/5/2016 15:59	ON	N22.16533 E113.93668	91 m	0:00:25	13 kph
6/5/2016 15:59	ON	N22.16616 E113.93671	92 m	0:00:25	13 kph
6/5/2016 16:00	ON	N22.16678 E113.93671	69 m	0:00:19	13 kph
6/5/2016 16:00	ON	N22.16759 E113.93682	92 m	0:00:25	13 kph
6/5/2016 16:01	ON	N22.16828 E113.93682	76 m	0:00:21	13 kph
6/5/2016 16:01	ON	N22.16888 E113.93675	68 m	0:00:19	13 kph
6/5/2016 16:01	ON	N22.16943 E113.93675	61 m	0:00:17	13 kph
6/5/2016 16:02	ON	N22.17009 E113.93677	74 m	0:00:20	13 kph
6/5/2016 16:02	ON	N22.17076 E113.93665	75 m	0:00:21	13 kph
6/5/2016 16:02	ON	N22.17152 E113.93658	85 m	0:00:23	13 kph
6/5/2016 16:03	ON	N22.17219 E113.93669	76 m	0:00:20	14 kph
6/5/2016 16:03	ON	N22.17291 E113.93674	80 m	0:00:21	14 kph
6/5/2016 16:03	ON	N22.17360 E113.93686	78 m	0:00:20	14 kph
6/5/2016 16:04	ON	N22.17435 E113.93686	84 m	0:00:22	14 kph
6/5/2016 16:04	ON	N22.17501 E113.93690	74 m	0:00:19	14 kph
6/5/2016 16:04	ON	N22.17586 E113.93697	94 m	0:00:24	14 kph
6/5/2016 16:05	ON	N22.17660 E113.93688	82 m	0:00:21	14 kph
6/5/2016 16:05	ON	N22.17743 E113.93703	94 m	0:00:24	14 kph
6/5/2016 16:05	ON	N22.17829 E113.93710	96 m	0:00:24	14 kph
6/5/2016 16:06	ON	N22.17912 E113.93707	93 m	0:00:23	14 kph
6/5/2016 16:06	ON	N22.18008 E113.93702	107 m	0:00:27	14 kph
6/5/2016 16:07	ON	N22.18096 E113.93679	101 m	0:00:25	15 kph
6/5/2016 16:07	ON	N22.18182 E113.93680	95 m	0:00:24	14 kph
6/5/2016 16:07	ON	N22.18246 E113.93687	72 m	0:00:18	14 kph
6/5/2016 16:08	ON	N22.18333 E113.93689	97 m	0:00:24	15 kph
6/5/2016 16:08	ON	N22.18413 E113.93688	89 m	0:00:22	15 kph
6/5/2016 16:09	ON	N22.18505 E113.93700	103 m	0:00:26	14 kph
6/5/2016 16:09	ON	N22.18595 E113.93708	100 m	0:00:25	14 kph
6/5/2016 16:09	ON	N22.18689 E113.93699	106 m	0:00:26	15 kph
6/5/2016 16:10	ON	N22.18772 E113.93697	92 m	0:00:23	14 kph
6/5/2016 16:10	ON	N22.18873 E113.93683	113 m	0:00:29	14 kph
6/5/2016 16:11	ON	N22.18953 E113.93687	89 m	0:00:23	14 kph
6/5/2016 16:11	ON	N22.19038 E113.93690	94 m	0:00:25	14 kph
6/5/2016 16:12	ON	N22.19137 E113.93683	111 m	0:00:29	14 kph
6/5/2016 16:12	ON	N22.19234 E113.93674	108 m	0:00:28	14 kph
6/5/2016 16:13	ON	N22.19332 E113.93681	109 m	0:00:28	14 kph
6/5/2016 16:13	ON	N22.19401 E113.93692	77 m	0:00:20	14 kph
6/5/2016 16:13	ON	N22.19481 E113.93693	89 m	0:00:23	14 kph
6/5/2016 16:14	ON	N22.19562 E113.93688	90 m	0:00:23	14 kph
6/5/2016 16:14	ON	N22.19639 E113.93687	86 m	0:00:22	14 kph
6/5/2016 16:14	ON	N22.19721 E113.93687	91 m	0:00:23	14 kph
6/5/2016 16:15	ON	N22.19805 E113.93686	93 m	0:00:24	14 kph
6/5/2016 16:15	ON	N22.19868 E113.93681	71 m	0:00:18	14 kph
6/5/2016 16:15	ON	N22.19946 E113.93679	87 m	0:00:22	14 kph
6/5/2016 16:16	ON	N22.20022 E113.93676	85 m	0:00:22	14 kph
6/5/2016 16:16	ON	N22.20128 E113.93691	118 m	0:00:30	14 kph
6/5/2016 16:17	ON	N22.20221 E113.93695	104 m	0:00:27	14 kph
6/5/2016 16:17	ON	N22.20328 E113.93693	120 m	0:00:31	14 kph
6/5/2016 16:18	ON	N22.20429 E113.93683	113 m	0:00:29	14 kph
6/5/2016 16:18	ON	N22.20511 E113.93675	92 m	0:00:24	14 kph
6/5/2016 16:19	ON	N22.20607 E113.93681	107 m	0:00:28	14 kph
6/5/2016 16:19	ON	N22.20693 E113.93692	96 m	0:00:26	13 kph
6/5/2016 16:20	ON	N22.20786 E113.93680	104 m	0:00:28	13 kph
6/5/2016 16:20	ON	N22.20883 E113.93666	109 m	0:00:29	14 kph
6/5/2016 16:20	ON	N22.20962 E113.93681	90 m	0:00:24	14 kph
6/5/2016 16:21	ON	N22.21059 E113.93690	109 m	0:00:29	13 kph

Appendix I. (cont'd)

Date & Time	EFFORT	Position	Leg Length	Leg Time	Leg Speed
6/5/2016 16:21	ON	N22.21157 E113.93684	109 m	0:00:29	14 kph
6/5/2016 16:22	ON	N22.21261 E113.93675	116 m	0:00:31	13 kph
6/5/2016 16:22	ON	N22.21337 E113.93678	85 m	0:00:23	13 kph
6/5/2016 16:23	ON	N22.21447 E113.93683	122 m	0:00:33	13 kph
6/5/2016 16:23	ON	N22.21545 E113.93674	109 m	0:00:29	14 kph
6/5/2016 16:24	ON	N22.21662 E113.93680	131 m	0:00:35	13 kph
6/5/2016 16:24	ON	N22.21774 E113.93682	124 m	0:00:33	14 kph
6/5/2016 16:25	ON	N22.21880 E113.93682	118 m	0:00:31	14 kph
6/5/2016 16:26	ON	N22.21987 E113.93687	119 m	0:00:31	14 kph
6/5/2016 16:26	ON	N22.22094 E113.93689	119 m	0:00:31	14 kph
6/5/2016 16:27	ON	N22.22220 E113.93680	141 m	0:00:37	14 kph
6/5/2016 16:27	ON	N22.22320 E113.93693	111 m	0:00:30	13 kph

Appendix II. Survey Effort Database in SWL (May 2016)

(Abbreviations: BEAU = Beaufort Sea State; P = Primary Line Effort; S = Secondary Line Effort)

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
4-May-16	SW LANTAU	1	1.17	SPRING	STANDARD31516	HKCRP	P
4-May-16	SW LANTAU	2	13.15	SPRING	STANDARD31516	HKCRP	P
4-May-16	SW LANTAU	3	4.71	SPRING	STANDARD31516	HKCRP	P
4-May-16	SW LANTAU	0	0.90	SPRING	STANDARD31516	HKCRP	S
4-May-16	SW LANTAU	2	5.61	SPRING	STANDARD31516	HKCRP	S
4-May-16	SW LANTAU	3	3.20	SPRING	STANDARD31516	HKCRP	S
6-May-16	SW LANTAU	1	2.98	SPRING	STANDARD31516	HYD-HZMB	P
6-May-16	SW LANTAU	2	35.51	SPRING	STANDARD31516	HYD-HZMB	P
6-May-16	SW LANTAU	3	15.62	SPRING	STANDARD31516	HYD-HZMB	P
6-May-16	SW LANTAU	1	0.70	SPRING	STANDARD31516	HYD-HZMB	S
6-May-16	SW LANTAU	2	8.58	SPRING	STANDARD31516	HYD-HZMB	S
6-May-16	SW LANTAU	3	6.80	SPRING	STANDARD31516	HYD-HZMB	S
6-May-16	SW LANTAU	4	1.30	SPRING	STANDARD31516	HYD-HZMB	S
11-May-16	SW LANTAU	2	15.29	SPRING	STANDARD31516	HKCRP	P
11-May-16	SW LANTAU	2	11.43	SPRING	STANDARD31516	HKCRP	S
30-May-16	SW LANTAU	2	5.46	SPRING	STANDARD31516	HKCRP	P
30-May-16	SW LANTAU	3	9.84	SPRING	STANDARD31516	HKCRP	P
30-May-16	SW LANTAU	4	5.54	SPRING	STANDARD31516	HKCRP	P
30-May-16	SW LANTAU	3	6.36	SPRING	STANDARD31516	HKCRP	S

Appendix III. Chinese White Dolphin Sighting Database in SWL (May 2016)

(Abberviations: STG# = Sighting Number; HRD SZ = Dolphin Herd Size; BEAU = Beaufort Sea State; PSD = Perpendicular Distance; ND = Not Determined; BOAT ASSOC. = Fishing Boat Association; P/S: Sighting Made on Primary/Secondary Lines)

DATE	STG #	TIME	HRD SZ	AREA	BEAU	PSD	EFFORT	TYPE	NORTHING	EASTING	SEASON	BOAT ASSOC.	P/S
04-May-16	4	1239	4	SW LANTAU	2	ND	OFF	HKCRP	805962	802394	SPRING	NONE	
04-May-16	5	1255	1	SW LANTAU	2	171	ON	HKCRP	806081	803477	SPRING	NONE	P
06-May-16	1	1442	1	SW LANTAU	2	338	ON	HYD-HZMB	807266	809543	SPRING	NONE	P
06-May-16	2	1452	1	SW LANTAU	2	10	ON	HYD-HZMB	807430	810388	SPRING	NONE	S
06-May-16	3	1518	1	SW LANTAU	2	412	ON	HYD-HZMB	803100	810536	SPRING	NONE	P

Appendix IV. Individual dolphins identified during HYD-HZMB and AFCD monitoring surveys in SWL waters in May 2016

ID#	DATE	STG#	TYPE	AREA
WL15	04/05/16	5	HKCRP	SW LANTAU
	06/05/16	2	HYD-HZMB	SW LANTAU
WL152	04/05/16	4	HKCRP	SW LANTAU
WL168	04/05/16	4	HKCRP	SW LANTAU

Appendix V. Photographs of Identified Individual Dolphins in May 2016 in SWL waters