

## Monitoring of Chinese White Dolphins in Southwest Lantau Waters

21<sup>st</sup> Monthly Progress Report (December 2016)

submitted to Environmental Project Office for the HZMB HKLR, HZMB HKBCF and TM-CLKL – Investigation

Submitted by

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### 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 21<sup>st</sup> monthly progress report under this dolphin monitoring study submitted to the Environmental Project Office, summarizing the survey findings during the month of December 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 18 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 December 9<sup>th</sup> 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 December 2<sup>nd</sup> (with lines no. SWL001, SWL003, SWL005 and SWL007 covered), December 7<sup>th</sup> (with lines no. SWL002, SWL004, SWL006, SWL008 and SWL010 covered) and December 13<sup>th</sup> (with lines no. SWL001, SWL003, SWL005, SWL007 and SWL009 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 68.17 km of survey effort was collected from 10:06 to 15:04 (i.e. 4 hours and 58 minutes of survey time) on December 9<sup>th</sup>, with 100% 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 51.83 km and 16.34 km respectively.
- 3.1.4. For the combined monitoring dataset from both the present study and AFCD monitoring study, a total of 166.02 km of survey effort was collected in SWL waters in December 2016.
- 3.1.5. During this monitoring month, 11 groups of 25 Chinese White Dolphins were sighted from the present study's survey and all three AFCD monitoring surveys (Appendix III). All eleven dolphin groups were sighted during on-effort search, and one of them was associated with an operating pair-trawler.
- 3.1.6. No finless porpoise was sighted at all in SWL survey area during this monitoring month during the surveys from both the present study and AFCD monitoring study.
- 3.1.7. Distribution of the 11 dolphin sightings made in December 2016 is shown in Figure 3. They were sighted mostly at the western end of the survey area as well as around the Soko Islands with no particular concentration (Figure 3). On the contrary, they were mostly absent from the eastern portion of the survey area during this monitoring month (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 December 2016 are shown in Table 2. Comparison of encounter rates was also made to the one deduced in winter months (December-February) in the past decade (2005-14), as well as in

December 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 December 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 winter months (December-February 2005-14) in the past decade

|   | Encounter rate (STG)<br>(no. of on-effort dolphin sightings per<br>100 km of survey effort) |                                     | Encounter rate (ANI)<br>(no. of dolphins from all on-effort<br>sightings per 100 km of survey effort) |                                     |
|---|---|-------------------------------------|---|-------------------------------------|
|   | Primary Lines<br>Only   | Both Primary and<br>Secondary Lines | Primary Lines<br>Only   | Both Primary and<br>Secondary Lines |
| <b>HYD-HZMB data (December 2016)</b>    | 3.86  | 4.40                                | 13.51   | 11.74                               |
| <b>Combined data (December 2016)</b>    | 5.82  | 6.63                                | 14.13   | 15.06                               |
| <b>Combined data (December 2015)</b>    | 5.29  | 4.40                                | 20.28   | 15.08                               |
| <b>Historical Data (Winter 2005-14)</b> |   | 3.32                                |   | 10.88                               |

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)) deduced in December 2016 in SWL waters was higher than the one deduced in December 2015 as well as the one during the winter months of 2005-14. On the other hand, the total number of dolphins (ER(ANI)) deduced in December 2016 in SWL waters was similar to the one in December 2015 (Table 2).

3.1.10. The average group size of Chinese White Dolphins sighted during SWL monitoring surveys in December 2016 was 2.3 animal per group. This was lower than the average group size in winter months of 2005-14 (3.3). In fact, all except one group were small in size, while the other group was moderate in size with six animals (see Appendix III).

### 3.2. Photo-identification Work

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

3.2.2. Among the 25 dolphins sighted during this month's surveys, 12 individual dolphins were identified and re-sighted 16 times in total (Appendices IV and V). Two of them (NL33 and WL94) were accompanied by their older calves (NL322 and WL260 respectively).

3.2.3. The locations where most of these individuals were re-sighted were well within their past home ranges in Southwest Lantau waters. However, NL33 and NL322 (a mother-calf pair) used to range primarily in North Lantau waters, but have increased their usage in West and Southwest Lantau waters in recent years.

#### 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.

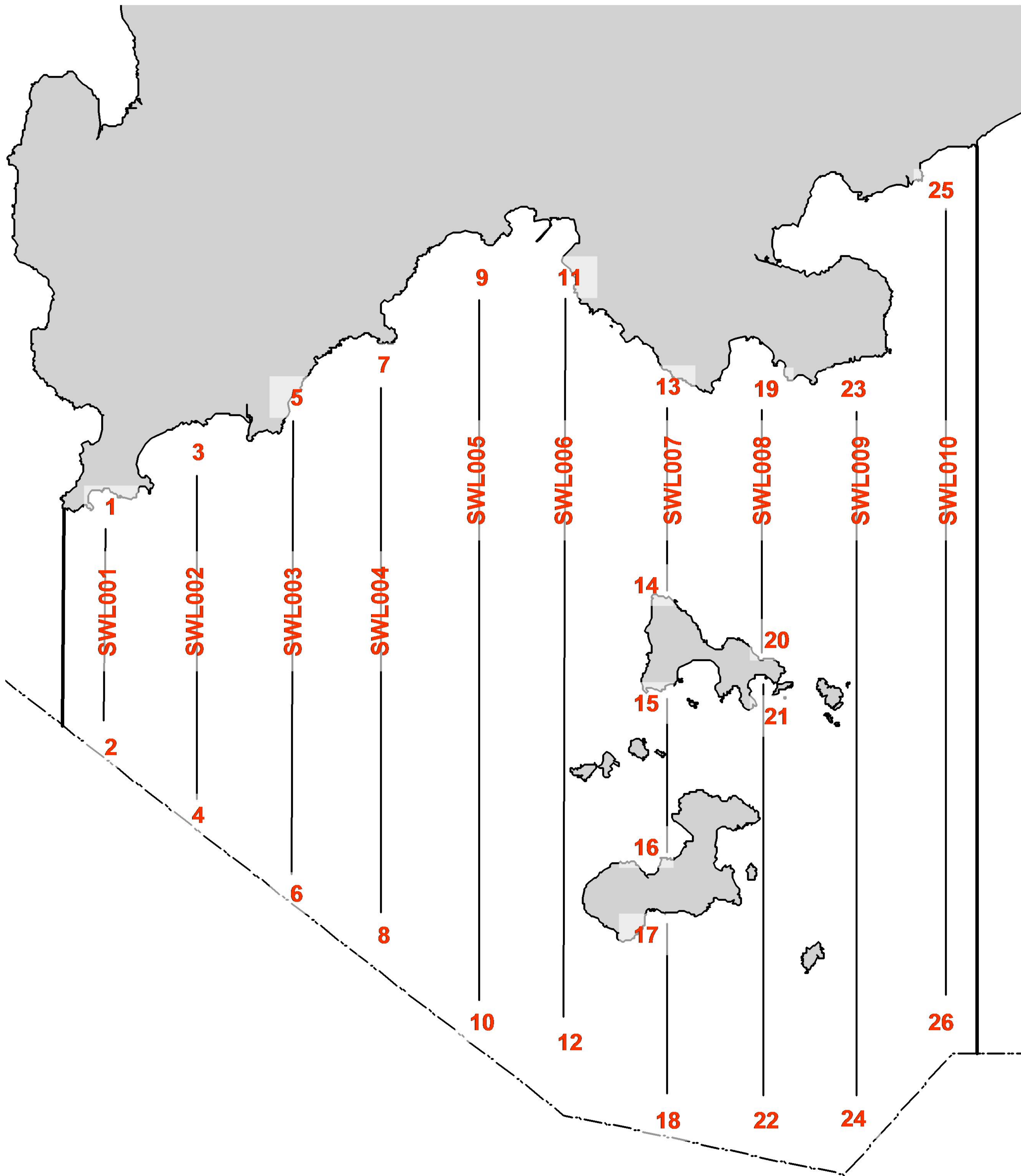


Figure 1. Survey Lines and associated coordinates in Southwest Lantau survey area



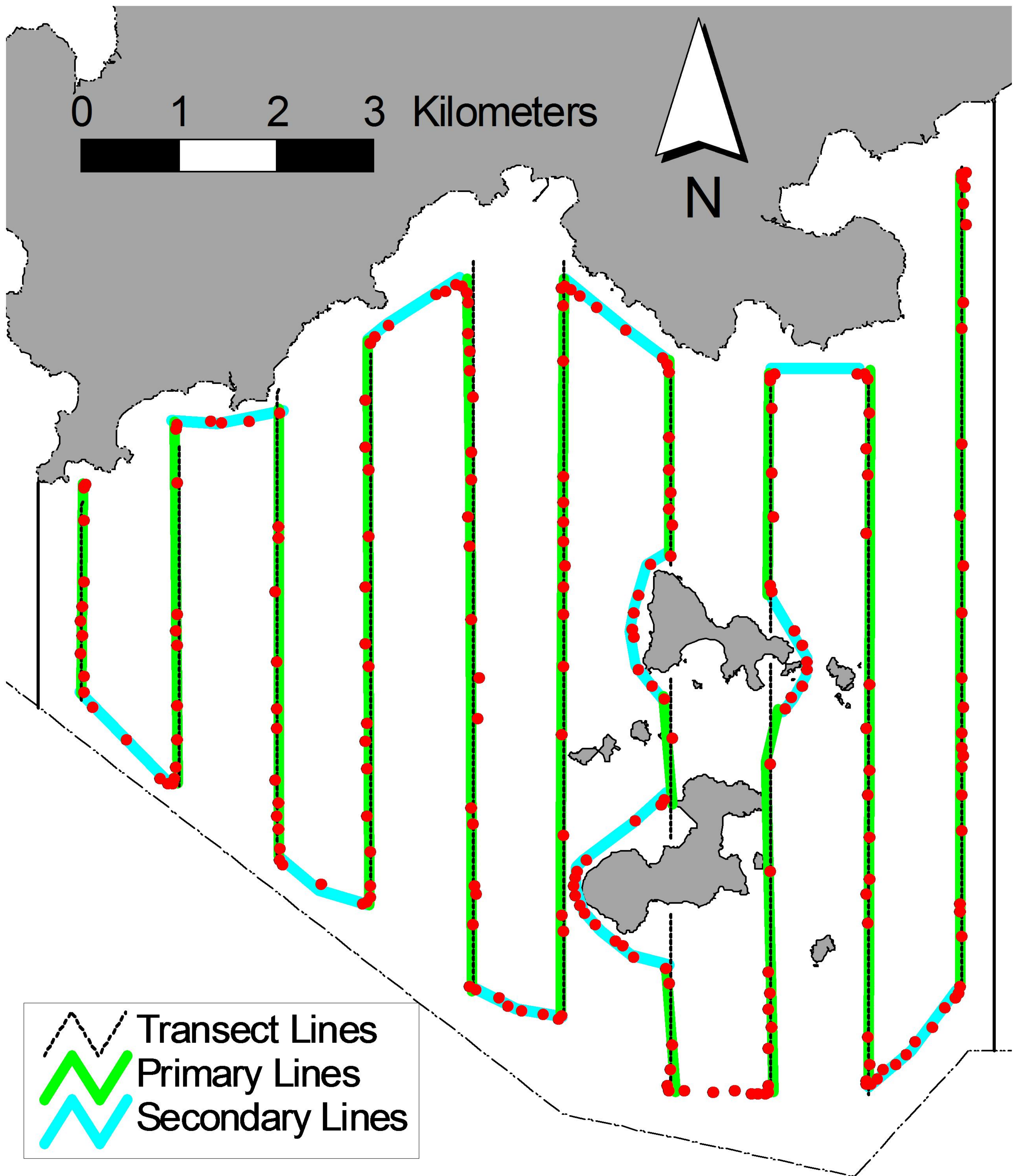


Figure 2. Survey Route on December 9<sup>th</sup>, 2016 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

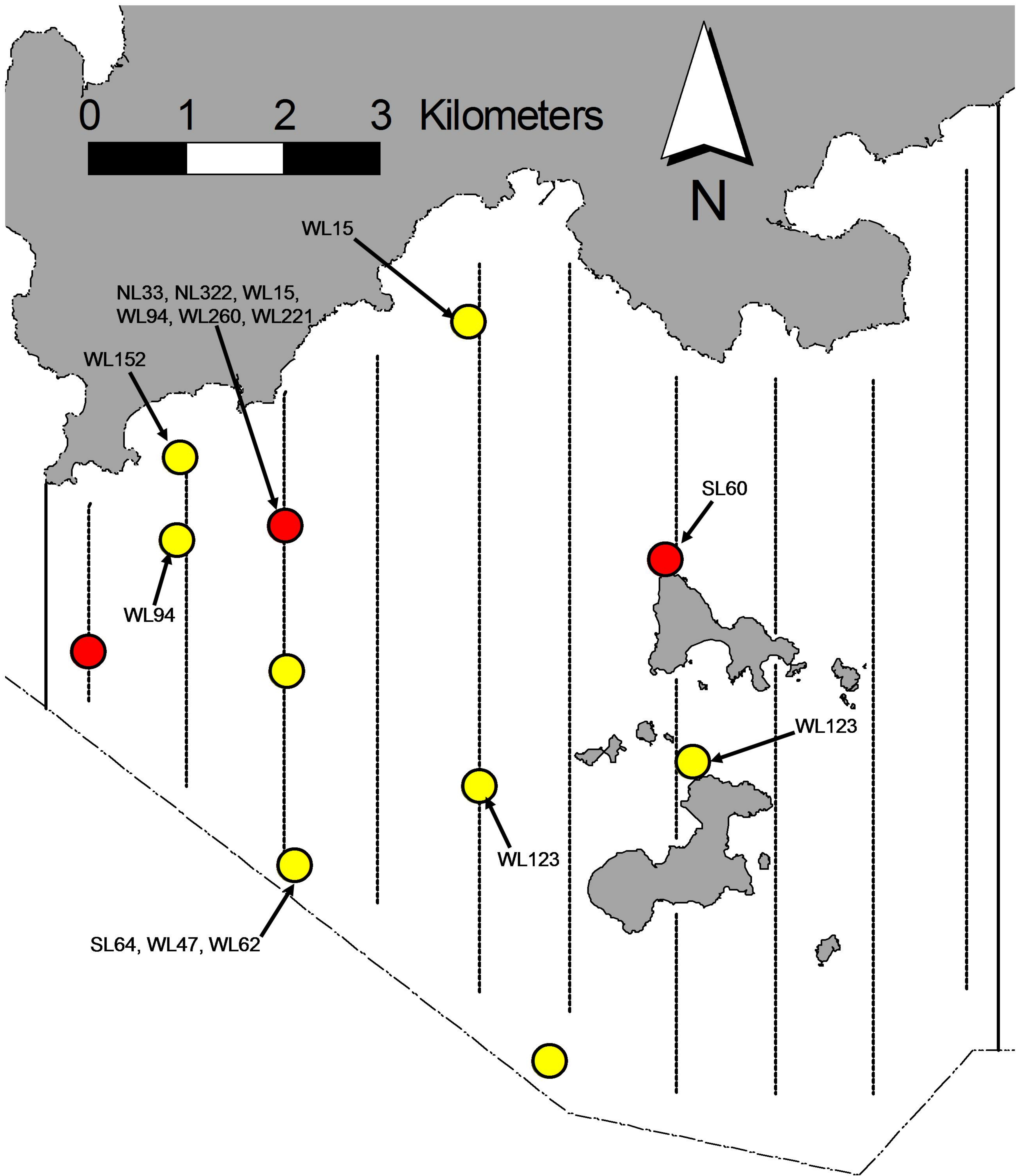


Figure 3. Distribution of Chinese White Dolphin sightings during December 2016 monitoring surveys in Southwest Lantau survey area, with identified individuals indicated for their corresponding sightings (red dot: HYD-HZMB sighting; yellow dot: AFCD sighting)

## Appendix I. Track Log of SW Lantau Survey on December 9th, 2016

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 10:06 | ON     | N22.22265 E113.93715 |            |          |           |
| 9/12/2016 10:06 | ON     | N22.22251 E113.93681 | 39 m       | 0:00:11  | 13 kph    |
| 9/12/2016 10:06 | ON     | N22.22206 E113.93682 | 51 m       | 0:00:14  | 13 kph    |
| 9/12/2016 10:07 | ON     | N22.22130 E113.93696 | 85 m       | 0:00:20  | 15 kph    |
| 9/12/2016 10:07 | ON     | N22.22073 E113.93694 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 10:07 | ON     | N22.21985 E113.93692 | 98 m       | 0:00:23  | 15 kph    |
| 9/12/2016 10:08 | ON     | N22.21897 E113.93704 | 99 m       | 0:00:24  | 15 kph    |
| 9/12/2016 10:08 | ON     | N22.21810 E113.93721 | 98 m       | 0:00:24  | 15 kph    |
| 9/12/2016 10:09 | ON     | N22.21718 E113.93719 | 103 m      | 0:00:25  | 15 kph    |
| 9/12/2016 10:09 | ON     | N22.21640 E113.93715 | 87 m       | 0:00:21  | 15 kph    |
| 9/12/2016 10:09 | ON     | N22.21574 E113.93716 | 74 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:10 | ON     | N22.21504 E113.93717 | 77 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:10 | ON     | N22.21441 E113.93710 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:10 | ON     | N22.21364 E113.93705 | 86 m       | 0:00:21  | 15 kph    |
| 9/12/2016 10:10 | ON     | N22.21313 E113.93704 | 57 m       | 0:00:14  | 15 kph    |
| 9/12/2016 10:11 | ON     | N22.21251 E113.93704 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:11 | ON     | N22.21196 E113.93705 | 61 m       | 0:00:15  | 15 kph    |
| 9/12/2016 10:11 | ON     | N22.21129 E113.93703 | 74 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:12 | ON     | N22.21060 E113.93696 | 77 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:12 | ON     | N22.20979 E113.93688 | 90 m       | 0:00:22  | 15 kph    |
| 9/12/2016 10:12 | ON     | N22.20909 E113.93683 | 78 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:13 | ON     | N22.20843 E113.93686 | 74 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:13 | ON     | N22.20783 E113.93687 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:13 | ON     | N22.20721 E113.93685 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:13 | ON     | N22.20665 E113.93683 | 62 m       | 0:00:15  | 15 kph    |
| 9/12/2016 10:14 | ON     | N22.20605 E113.93682 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:14 | ON     | N22.20538 E113.93683 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:14 | ON     | N22.20464 E113.93688 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 10:14 | ON     | N22.20400 E113.93687 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:15 | ON     | N22.20333 E113.93685 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:15 | ON     | N22.20269 E113.93688 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:15 | ON     | N22.20205 E113.93692 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:16 | ON     | N22.20129 E113.93691 | 84 m       | 0:00:20  | 15 kph    |
| 9/12/2016 10:16 | ON     | N22.20051 E113.93687 | 88 m       | 0:00:21  | 15 kph    |
| 9/12/2016 10:16 | ON     | N22.19986 E113.93685 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:17 | ON     | N22.19903 E113.93684 | 92 m       | 0:00:22  | 15 kph    |
| 9/12/2016 10:17 | ON     | N22.19843 E113.93682 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:17 | ON     | N22.19782 E113.93682 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:18 | ON     | N22.19714 E113.93684 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:18 | ON     | N22.19637 E113.93684 | 85 m       | 0:00:20  | 15 kph    |
| 9/12/2016 10:18 | ON     | N22.19569 E113.93682 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:19 | ON     | N22.19489 E113.93677 | 89 m       | 0:00:21  | 15 kph    |
| 9/12/2016 10:19 | ON     | N22.19417 E113.93674 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:19 | ON     | N22.19344 E113.93669 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:19 | ON     | N22.19283 E113.93668 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:20 | ON     | N22.19237 E113.93669 | 51 m       | 0:00:12  | 15 kph    |
| 9/12/2016 10:20 | ON     | N22.19169 E113.93675 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:20 | ON     | N22.19108 E113.93683 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:20 | ON     | N22.19051 E113.93690 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 10:21 | ON     | N22.18981 E113.93689 | 78 m       | 0:00:18  | 16 kph    |
| 9/12/2016 10:21 | ON     | N22.18916 E113.93692 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:21 | ON     | N22.18829 E113.93701 | 98 m       | 0:00:23  | 15 kph    |
| 9/12/2016 10:22 | ON     | N22.18748 E113.93697 | 90 m       | 0:00:21  | 15 kph    |
| 9/12/2016 10:22 | ON     | N22.18683 E113.93689 | 73 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:22 | ON     | N22.18611 E113.93689 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:23 | ON     | N22.18545 E113.93691 | 73 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:23 | ON     | N22.18484 E113.93688 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:23 | ON     | N22.18420 E113.93682 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:23 | ON     | N22.18359 E113.93682 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:24 | ON     | N22.18282 E113.93686 | 86 m       | 0:00:20  | 15 kph    |
| 9/12/2016 10:24 | ON     | N22.18209 E113.93691 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:24 | ON     | N22.18139 E113.93688 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:25 | ON     | N22.18066 E113.93688 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:25 | ON     | N22.17989 E113.93692 | 86 m       | 0:00:20  | 15 kph    |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 10:25 | ON     | N22.17919 E113.93692 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:26 | ON     | N22.17853 E113.93692 | 74 m       | 0:00:17  | 16 kph    |
| 9/12/2016 10:26 | ON     | N22.17803 E113.93694 | 56 m       | 0:00:13  | 16 kph    |
| 9/12/2016 10:26 | ON     | N22.17748 E113.93696 | 61 m       | 0:00:14  | 16 kph    |
| 9/12/2016 10:26 | ON     | N22.17675 E113.93701 | 82 m       | 0:00:19  | 16 kph    |
| 9/12/2016 10:27 | ON     | N22.17604 E113.93704 | 79 m       | 0:00:18  | 16 kph    |
| 9/12/2016 10:27 | ON     | N22.17549 E113.93697 | 61 m       | 0:00:14  | 16 kph    |
| 9/12/2016 10:27 | ON     | N22.17491 E113.93689 | 65 m       | 0:00:15  | 16 kph    |
| 9/12/2016 10:27 | ON     | N22.17440 E113.93683 | 57 m       | 0:00:13  | 16 kph    |
| 9/12/2016 10:28 | ON     | N22.17378 E113.93679 | 70 m       | 0:00:16  | 16 kph    |
| 9/12/2016 10:28 | ON     | N22.17319 E113.93682 | 66 m       | 0:00:15  | 16 kph    |
| 9/12/2016 10:28 | ON     | N22.17252 E113.93690 | 74 m       | 0:00:17  | 16 kph    |
| 9/12/2016 10:28 | ON     | N22.17183 E113.93701 | 78 m       | 0:00:18  | 16 kph    |
| 9/12/2016 10:29 | ON     | N22.17129 E113.93698 | 60 m       | 0:00:14  | 15 kph    |
| 9/12/2016 10:29 | ON     | N22.17072 E113.93684 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 10:29 | ON     | N22.17011 E113.93688 | 69 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:29 | ON     | N22.16952 E113.93696 | 65 m       | 0:00:15  | 16 kph    |
| 9/12/2016 10:30 | ON     | N22.16902 E113.93695 | 56 m       | 0:00:13  | 16 kph    |
| 9/12/2016 10:30 | ON     | N22.16831 E113.93692 | 79 m       | 0:00:18  | 16 kph    |
| 9/12/2016 10:30 | ON     | N22.16757 E113.93684 | 83 m       | 0:00:19  | 16 kph    |
| 9/12/2016 10:31 | ON     | N22.16702 E113.93680 | 61 m       | 0:00:14  | 16 kph    |
| 9/12/2016 10:31 | ON     | N22.16648 E113.93678 | 61 m       | 0:00:14  | 16 kph    |
| 9/12/2016 10:31 | ON     | N22.16601 E113.93677 | 52 m       | 0:00:12  | 16 kph    |
| 9/12/2016 10:31 | ON     | N22.16597 E113.93677 | 4 m        | 0:00:01  | 16 kph    |
| 9/12/2016 10:31 | ON     | N22.16519 E113.93675 | 87 m       | 0:00:20  | 16 kph    |
| 9/12/2016 10:32 | ON     | N22.16440 E113.93675 | 87 m       | 0:00:20  | 16 kph    |
| 9/12/2016 10:32 | ON     | N22.16370 E113.93678 | 79 m       | 0:00:18  | 16 kph    |
| 9/12/2016 10:32 | ON     | N22.16307 E113.93681 | 69 m       | 0:00:16  | 16 kph    |
| 9/12/2016 10:32 | ON     | N22.16253 E113.93681 | 61 m       | 0:00:14  | 16 kph    |
| 9/12/2016 10:33 | ON     | N22.16194 E113.93678 | 66 m       | 0:00:15  | 16 kph    |
| 9/12/2016 10:33 | ON     | N22.16135 E113.93676 | 65 m       | 0:00:15  | 16 kph    |
| 9/12/2016 10:33 | ON     | N22.16073 E113.93677 | 69 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:34 | ON     | N22.16007 E113.93679 | 74 m       | 0:00:17  | 16 kph    |
| 9/12/2016 10:34 | ON     | N22.15944 E113.93678 | 70 m       | 0:00:16  | 16 kph    |
| 9/12/2016 10:34 | ON     | N22.15886 E113.93674 | 66 m       | 0:00:15  | 16 kph    |
| 9/12/2016 10:34 | ON     | N22.15819 E113.93671 | 74 m       | 0:00:17  | 16 kph    |
| 9/12/2016 10:35 | ON     | N22.15766 E113.93675 | 60 m       | 0:00:14  | 15 kph    |
| 9/12/2016 10:35 | ON     | N22.15720 E113.93680 | 51 m       | 0:00:12  | 15 kph    |
| 9/12/2016 10:35 | ON     | N22.15670 E113.93687 | 56 m       | 0:00:13  | 15 kph    |
| 9/12/2016 10:35 | ON     | N22.15601 E113.93689 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:36 | ON     | N22.15528 E113.93682 | 82 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:36 | ON     | N22.15469 E113.93680 | 65 m       | 0:00:15  | 16 kph    |
| 9/12/2016 10:36 | ON     | N22.15399 E113.93679 | 78 m       | 0:00:18  | 16 kph    |
| 9/12/2016 10:36 | ON     | N22.15337 E113.93674 | 69 m       | 0:00:16  | 16 kph    |
| 9/12/2016 10:37 | ON     | N22.15278 E113.93671 | 65 m       | 0:00:15  | 16 kph    |
| 9/12/2016 10:37 | ON     | N22.15220 E113.93672 | 65 m       | 0:00:15  | 16 kph    |
| 9/12/2016 10:37 | ON     | N22.15166 E113.93671 | 60 m       | 0:00:14  | 16 kph    |
| 9/12/2016 10:37 | ON     | N22.15113 E113.93664 | 60 m       | 0:00:14  | 15 kph    |
| 9/12/2016 10:38 | ON     | N22.15071 E113.93628 | 59 m       | 0:00:15  | 14 kph    |
| 9/12/2016 10:38 | ON     | N22.15036 E113.93581 | 62 m       | 0:00:15  | 15 kph    |
| 9/12/2016 10:38 | ON     | N22.14975 E113.93524 | 90 m       | 0:00:21  | 15 kph    |
| 9/12/2016 10:39 | ON     | N22.14915 E113.93478 | 82 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:39 | ON     | N22.14861 E113.93439 | 73 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:39 | ON     | N22.14813 E113.93397 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:39 | ON     | N22.14767 E113.93343 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:40 | ON     | N22.14723 E113.93286 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:40 | ON     | N22.14677 E113.93237 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:40 | ON     | N22.14626 E113.93189 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:41 | ON     | N22.14572 E113.93137 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:41 | ON     | N22.14531 E113.93089 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:41 | ON     | N22.14493 E113.93033 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:41 | ON     | N22.14468 E113.92984 | 58 m       | 0:00:14  | 15 kph    |
| 9/12/2016 10:42 | ON     | N22.14438 E113.92923 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:42 | ON     | N22.14398 E113.92881 | 62 m       | 0:00:15  | 15 kph    |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 10:42 | ON     | N22.14348 E113.92846 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:42 | ON     | N22.14307 E113.92794 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:43 | ON     | N22.14306 E113.92753 | 42 m       | 0:00:13  | 12 kph    |
| 9/12/2016 10:43 | ON     | N22.14343 E113.92744 | 42 m       | 0:00:13  | 12 kph    |
| 9/12/2016 10:43 | ON     | N22.14415 E113.92758 | 82 m       | 0:00:20  | 15 kph    |
| 9/12/2016 10:44 | ON     | N22.14478 E113.92767 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:44 | ON     | N22.14527 E113.92763 | 54 m       | 0:00:13  | 15 kph    |
| 9/12/2016 10:44 | ON     | N22.14600 E113.92753 | 82 m       | 0:00:20  | 15 kph    |
| 9/12/2016 10:44 | ON     | N22.14667 E113.92752 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:45 | ON     | N22.14732 E113.92758 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:45 | ON     | N22.14792 E113.92764 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:45 | ON     | N22.14856 E113.92767 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:45 | ON     | N22.14917 E113.92768 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:46 | ON     | N22.14984 E113.92764 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:46 | ON     | N22.15045 E113.92762 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:46 | ON     | N22.15110 E113.92764 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:47 | ON     | N22.15170 E113.92766 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:47 | ON     | N22.15235 E113.92765 | 73 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:47 | ON     | N22.15304 E113.92760 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:47 | ON     | N22.15373 E113.92755 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:48 | ON     | N22.15434 E113.92755 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:48 | ON     | N22.15501 E113.92755 | 74 m       | 0:00:17  | 16 kph    |
| 9/12/2016 10:48 | ON     | N22.15569 E113.92753 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:49 | ON     | N22.15637 E113.92755 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:49 | ON     | N22.15705 E113.92760 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 10:49 | ON     | N22.15765 E113.92762 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:49 | ON     | N22.15836 E113.92759 | 79 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:50 | ON     | N22.15900 E113.92754 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:50 | ON     | N22.15972 E113.92751 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:50 | ON     | N22.16035 E113.92756 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:51 | ON     | N22.16098 E113.92766 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:51 | ON     | N22.16168 E113.92765 | 79 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:51 | ON     | N22.16243 E113.92760 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 10:52 | ON     | N22.16326 E113.92764 | 93 m       | 0:00:22  | 15 kph    |
| 9/12/2016 10:52 | ON     | N22.16400 E113.92768 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 10:52 | ON     | N22.16463 E113.92769 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:53 | ON     | N22.16522 E113.92770 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:53 | ON     | N22.16596 E113.92771 | 82 m       | 0:00:20  | 15 kph    |
| 9/12/2016 10:53 | ON     | N22.16684 E113.92769 | 98 m       | 0:00:24  | 15 kph    |
| 9/12/2016 10:54 | ON     | N22.16754 E113.92765 | 78 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:54 | ON     | N22.16832 E113.92763 | 87 m       | 0:00:21  | 15 kph    |
| 9/12/2016 10:54 | ON     | N22.16905 E113.92768 | 82 m       | 0:00:20  | 15 kph    |
| 9/12/2016 10:55 | ON     | N22.16979 E113.92775 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 10:55 | ON     | N22.17054 E113.92775 | 84 m       | 0:00:20  | 15 kph    |
| 9/12/2016 10:55 | ON     | N22.17133 E113.92768 | 88 m       | 0:00:21  | 15 kph    |
| 9/12/2016 10:56 | ON     | N22.17197 E113.92762 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:56 | ON     | N22.17269 E113.92757 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:56 | ON     | N22.17340 E113.92750 | 79 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:57 | ON     | N22.17421 E113.92742 | 91 m       | 0:00:22  | 15 kph    |
| 9/12/2016 10:57 | ON     | N22.17479 E113.92750 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:57 | ON     | N22.17535 E113.92755 | 62 m       | 0:00:15  | 15 kph    |
| 9/12/2016 10:57 | ON     | N22.17607 E113.92757 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:58 | ON     | N22.17667 E113.92758 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 10:58 | ON     | N22.17738 E113.92768 | 79 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:58 | ON     | N22.17803 E113.92773 | 73 m       | 0:00:17  | 15 kph    |
| 9/12/2016 10:59 | ON     | N22.17856 E113.92772 | 59 m       | 0:00:14  | 15 kph    |
| 9/12/2016 10:59 | ON     | N22.17929 E113.92771 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 10:59 | ON     | N22.17986 E113.92768 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 10:59 | ON     | N22.18058 E113.92763 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:00 | ON     | N22.18126 E113.92767 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:00 | ON     | N22.18182 E113.92769 | 61 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:00 | ON     | N22.18247 E113.92758 | 74 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:01 | ON     | N22.18312 E113.92752 | 72 m       | 0:00:18  | 14 kph    |
| 9/12/2016 11:01 | ON     | N22.18371 E113.92751 | 66 m       | 0:00:16  | 15 kph    |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 11:01 | ON     | N22.18441 E113.92747 | 79 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:01 | ON     | N22.18520 E113.92746 | 87 m       | 0:00:21  | 15 kph    |
| 9/12/2016 11:02 | ON     | N22.18576 E113.92751 | 63 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:02 | ON     | N22.18628 E113.92753 | 58 m       | 0:00:14  | 15 kph    |
| 9/12/2016 11:02 | ON     | N22.18692 E113.92750 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:03 | ON     | N22.18767 E113.92747 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:03 | ON     | N22.18842 E113.92747 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:03 | ON     | N22.18903 E113.92745 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:03 | ON     | N22.18971 E113.92744 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:04 | ON     | N22.19034 E113.92742 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:04 | ON     | N22.19110 E113.92737 | 84 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:04 | ON     | N22.19192 E113.92739 | 91 m       | 0:00:22  | 15 kph    |
| 9/12/2016 11:05 | ON     | N22.19259 E113.92749 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:05 | ON     | N22.19320 E113.92753 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:05 | ON     | N22.19383 E113.92744 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:06 | ON     | N22.19438 E113.92744 | 61 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:06 | ON     | N22.19486 E113.92750 | 54 m       | 0:00:13  | 15 kph    |
| 9/12/2016 11:06 | ON     | N22.19558 E113.92755 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:06 | ON     | N22.19623 E113.92754 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:07 | ON     | N22.19691 E113.92750 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:07 | ON     | N22.19775 E113.92744 | 93 m       | 0:00:22  | 15 kph    |
| 9/12/2016 11:07 | ON     | N22.19862 E113.92740 | 97 m       | 0:00:23  | 15 kph    |
| 9/12/2016 11:08 | ON     | N22.19934 E113.92744 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:08 | ON     | N22.20003 E113.92749 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:08 | ON     | N22.20083 E113.92757 | 90 m       | 0:00:21  | 15 kph    |
| 9/12/2016 11:09 | ON     | N22.20159 E113.92763 | 84 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:09 | ON     | N22.20241 E113.92755 | 92 m       | 0:00:22  | 15 kph    |
| 9/12/2016 11:09 | ON     | N22.20317 E113.92750 | 85 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:10 | ON     | N22.20394 E113.92752 | 86 m       | 0:00:20  | 16 kph    |
| 9/12/2016 11:10 | ON     | N22.20464 E113.92749 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:10 | ON     | N22.20499 E113.92719 | 50 m       | 0:00:14  | 13 kph    |
| 9/12/2016 11:11 | ON     | N22.20503 E113.92651 | 70 m       | 0:00:18  | 14 kph    |
| 9/12/2016 11:11 | ON     | N22.20500 E113.92575 | 78 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:11 | ON     | N22.20500 E113.92495 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:12 | ON     | N22.20501 E113.92425 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:12 | ON     | N22.20504 E113.92340 | 88 m       | 0:00:21  | 15 kph    |
| 9/12/2016 11:12 | ON     | N22.20505 E113.92295 | 46 m       | 0:00:11  | 15 kph    |
| 9/12/2016 11:12 | ON     | N22.20504 E113.92259 | 37 m       | 0:00:09  | 15 kph    |
| 9/12/2016 11:12 | ON     | N22.20500 E113.92211 | 50 m       | 0:00:12  | 15 kph    |
| 9/12/2016 11:13 | ON     | N22.20500 E113.92158 | 54 m       | 0:00:13  | 15 kph    |
| 9/12/2016 11:13 | ON     | N22.20503 E113.92093 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:13 | ON     | N22.20501 E113.92012 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:14 | ON     | N22.20499 E113.91927 | 88 m       | 0:00:21  | 15 kph    |
| 9/12/2016 11:14 | ON     | N22.20504 E113.91833 | 97 m       | 0:00:23  | 15 kph    |
| 9/12/2016 11:14 | ON     | N22.20493 E113.91773 | 63 m       | 0:00:17  | 13 kph    |
| 9/12/2016 11:14 | ON     | N22.20453 E113.91771 | 45 m       | 0:00:13  | 12 kph    |
| 9/12/2016 11:15 | ON     | N22.20387 E113.91784 | 74 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:15 | ON     | N22.20328 E113.91788 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:15 | ON     | N22.20265 E113.91793 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:16 | ON     | N22.20197 E113.91797 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:16 | ON     | N22.20148 E113.91797 | 55 m       | 0:00:13  | 15 kph    |
| 9/12/2016 11:16 | ON     | N22.20076 E113.91800 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:16 | ON     | N22.20012 E113.91799 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:17 | ON     | N22.19948 E113.91795 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:17 | ON     | N22.19887 E113.91794 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:17 | ON     | N22.19815 E113.91792 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:18 | ON     | N22.19750 E113.91788 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:18 | ON     | N22.19693 E113.91789 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:18 | ON     | N22.19637 E113.91793 | 63 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:18 | ON     | N22.19576 E113.91796 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:19 | ON     | N22.19516 E113.91797 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:19 | ON     | N22.19466 E113.91796 | 55 m       | 0:00:13  | 15 kph    |
| 9/12/2016 11:19 | ON     | N22.19397 E113.91799 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:19 | ON     | N22.19332 E113.91803 | 73 m       | 0:00:17  | 15 kph    |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 11:20 | ON     | N22.19260 E113.91806 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:20 | ON     | N22.19187 E113.91802 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:20 | ON     | N22.19118 E113.91797 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:21 | ON     | N22.19050 E113.91795 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:21 | ON     | N22.18970 E113.91797 | 89 m       | 0:00:21  | 15 kph    |
| 9/12/2016 11:21 | ON     | N22.18912 E113.91792 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:22 | ON     | N22.18849 E113.91781 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:22 | ON     | N22.18784 E113.91782 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:22 | ON     | N22.18725 E113.91784 | 65 m       | 0:00:15  | 16 kph    |
| 9/12/2016 11:22 | ON     | N22.18664 E113.91777 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:23 | ON     | N22.18602 E113.91787 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:23 | ON     | N22.18557 E113.91815 | 58 m       | 0:00:14  | 15 kph    |
| 9/12/2016 11:23 | ON     | N22.18506 E113.91856 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:23 | ON     | N22.18442 E113.91900 | 85 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:24 | ON     | N22.18383 E113.91938 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:24 | ON     | N22.18315 E113.91981 | 87 m       | 0:00:21  | 15 kph    |
| 9/12/2016 11:24 | ON     | N22.18260 E113.92015 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:25 | ON     | N22.18201 E113.92056 | 78 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:25 | ON     | N22.18137 E113.92097 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:25 | ON     | N22.18083 E113.92122 | 65 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:26 | ON     | N22.18001 E113.92145 | 95 m       | 0:00:23  | 15 kph    |
| 9/12/2016 11:26 | ON     | N22.17925 E113.92148 | 84 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:26 | ON     | N22.17852 E113.92130 | 84 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:27 | ON     | N22.17791 E113.92100 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:27 | ON     | N22.17744 E113.92060 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:27 | ON     | N22.17691 E113.92003 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:28 | ON     | N22.17634 E113.91959 | 78 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:28 | ON     | N22.17586 E113.91937 | 59 m       | 0:00:14  | 15 kph    |
| 9/12/2016 11:28 | ON     | N22.17539 E113.91922 | 54 m       | 0:00:13  | 15 kph    |
| 9/12/2016 11:28 | ON     | N22.17485 E113.91905 | 63 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:29 | ON     | N22.17439 E113.91888 | 54 m       | 0:00:13  | 15 kph    |
| 9/12/2016 11:29 | ON     | N22.17381 E113.91870 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:29 | ON     | N22.17319 E113.91851 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:29 | ON     | N22.17276 E113.91836 | 51 m       | 0:00:12  | 15 kph    |
| 9/12/2016 11:30 | ON     | N22.17219 E113.91818 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:30 | ON     | N22.17163 E113.91801 | 65 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:30 | ON     | N22.17102 E113.91787 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:30 | ON     | N22.17047 E113.91790 | 61 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:31 | ON     | N22.16995 E113.91793 | 58 m       | 0:00:14  | 15 kph    |
| 9/12/2016 11:31 | ON     | N22.16956 E113.91791 | 44 m       | 0:00:11  | 14 kph    |
| 9/12/2016 11:31 | ON     | N22.16891 E113.91789 | 72 m       | 0:00:18  | 14 kph    |
| 9/12/2016 11:31 | ON     | N22.16832 E113.91792 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:32 | ON     | N22.16767 E113.91795 | 72 m       | 0:00:18  | 14 kph    |
| 9/12/2016 11:32 | ON     | N22.16713 E113.91792 | 60 m       | 0:00:15  | 14 kph    |
| 9/12/2016 11:32 | ON     | N22.16636 E113.91784 | 86 m       | 0:00:21  | 15 kph    |
| 9/12/2016 11:32 | ON     | N22.16573 E113.91783 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:33 | ON     | N22.16498 E113.91785 | 84 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:33 | ON     | N22.16450 E113.91788 | 54 m       | 0:00:13  | 15 kph    |
| 9/12/2016 11:33 | ON     | N22.16387 E113.91787 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:34 | ON     | N22.16331 E113.91787 | 62 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:34 | ON     | N22.16272 E113.91788 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:34 | ON     | N22.16213 E113.91786 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:34 | ON     | N22.16157 E113.91783 | 62 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:35 | ON     | N22.16097 E113.91779 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:35 | ON     | N22.16029 E113.91776 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:35 | ON     | N22.15969 E113.91771 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:35 | ON     | N22.15923 E113.91770 | 50 m       | 0:00:12  | 15 kph    |
| 9/12/2016 11:36 | ON     | N22.15879 E113.91773 | 50 m       | 0:00:12  | 15 kph    |
| 9/12/2016 11:36 | ON     | N22.15816 E113.91779 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:36 | ON     | N22.15748 E113.91779 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:37 | ON     | N22.15662 E113.91771 | 96 m       | 0:00:23  | 15 kph    |
| 9/12/2016 11:37 | ON     | N22.15595 E113.91767 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:37 | ON     | N22.15532 E113.91769 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:37 | ON     | N22.15469 E113.91773 | 71 m       | 0:00:17  | 15 kph    |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 11:38 | ON     | N22.15402 E113.91773 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:38 | ON     | N22.15353 E113.91768 | 54 m       | 0:00:13  | 15 kph    |
| 9/12/2016 11:38 | ON     | N22.15293 E113.91766 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:38 | ON     | N22.15238 E113.91769 | 62 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:39 | ON     | N22.15175 E113.91775 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:39 | ON     | N22.15111 E113.91778 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:39 | ON     | N22.15066 E113.91774 | 50 m       | 0:00:12  | 15 kph    |
| 9/12/2016 11:39 | ON     | N22.15013 E113.91767 | 59 m       | 0:00:14  | 15 kph    |
| 9/12/2016 11:40 | ON     | N22.14960 E113.91767 | 59 m       | 0:00:14  | 15 kph    |
| 9/12/2016 11:40 | ON     | N22.14909 E113.91777 | 58 m       | 0:00:14  | 15 kph    |
| 9/12/2016 11:40 | ON     | N22.14861 E113.91789 | 55 m       | 0:00:13  | 15 kph    |
| 9/12/2016 11:40 | ON     | N22.14812 E113.91795 | 55 m       | 0:00:13  | 15 kph    |
| 9/12/2016 11:41 | ON     | N22.14755 E113.91790 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:41 | ON     | N22.14694 E113.91781 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:41 | ON     | N22.14618 E113.91776 | 85 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:41 | ON     | N22.14559 E113.91783 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:42 | ON     | N22.14490 E113.91784 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:42 | ON     | N22.14417 E113.91777 | 82 m       | 0:00:19  | 16 kph    |
| 9/12/2016 11:42 | ON     | N22.14352 E113.91775 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:43 | ON     | N22.14295 E113.91776 | 63 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:43 | ON     | N22.14240 E113.91771 | 62 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:43 | ON     | N22.14219 E113.91735 | 43 m       | 0:00:13  | 12 kph    |
| 9/12/2016 11:43 | ON     | N22.14233 E113.91671 | 68 m       | 0:00:17  | 14 kph    |
| 9/12/2016 11:44 | ON     | N22.14234 E113.91598 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:44 | ON     | N22.14239 E113.91521 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:44 | ON     | N22.14250 E113.91440 | 85 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:45 | ON     | N22.14251 E113.91362 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:45 | ON     | N22.14242 E113.91300 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:45 | ON     | N22.14236 E113.91222 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:46 | ON     | N22.14241 E113.91145 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:46 | ON     | N22.14253 E113.91084 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:46 | ON     | N22.14257 E113.91007 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:46 | ON     | N22.14253 E113.90938 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:47 | ON     | N22.14256 E113.90865 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:47 | ON     | N22.14264 E113.90789 | 79 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:47 | ON     | N22.14291 E113.90766 | 38 m       | 0:00:12  | 11 kph    |
| 9/12/2016 11:47 | ON     | N22.14334 E113.90779 | 50 m       | 0:00:13  | 14 kph    |
| 9/12/2016 11:48 | ON     | N22.14385 E113.90788 | 58 m       | 0:00:14  | 15 kph    |
| 9/12/2016 11:48 | ON     | N22.14438 E113.90796 | 59 m       | 0:00:14  | 15 kph    |
| 9/12/2016 11:48 | ON     | N22.14494 E113.90799 | 63 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:48 | ON     | N22.14554 E113.90801 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:49 | ON     | N22.14603 E113.90810 | 55 m       | 0:00:13  | 15 kph    |
| 9/12/2016 11:49 | ON     | N22.14652 E113.90815 | 55 m       | 0:00:13  | 15 kph    |
| 9/12/2016 11:49 | ON     | N22.14716 E113.90810 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:49 | ON     | N22.14780 E113.90807 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:50 | ON     | N22.14838 E113.90807 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 11:50 | ON     | N22.14902 E113.90802 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:50 | ON     | N22.14948 E113.90801 | 51 m       | 0:00:12  | 15 kph    |
| 9/12/2016 11:50 | ON     | N22.14990 E113.90801 | 47 m       | 0:00:11  | 15 kph    |
| 9/12/2016 11:51 | ON     | N22.15050 E113.90796 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:51 | ON     | N22.15115 E113.90789 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:51 | ON     | N22.15188 E113.90782 | 82 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:51 | ON     | N22.15256 E113.90769 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:52 | ON     | N22.15310 E113.90746 | 65 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:52 | ON     | N22.15338 E113.90690 | 65 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:52 | ON     | N22.15361 E113.90616 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:53 | ON     | N22.15388 E113.90530 | 94 m       | 0:00:22  | 15 kph    |
| 9/12/2016 11:53 | ON     | N22.15423 E113.90443 | 98 m       | 0:00:23  | 15 kph    |
| 9/12/2016 11:53 | ON     | N22.15459 E113.90379 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 11:54 | ON     | N22.15508 E113.90318 | 84 m       | 0:00:19  | 16 kph    |
| 9/12/2016 11:54 | ON     | N22.15548 E113.90253 | 79 m       | 0:00:18  | 16 kph    |
| 9/12/2016 11:54 | ON     | N22.15595 E113.90185 | 88 m       | 0:00:20  | 16 kph    |
| 9/12/2016 11:55 | ON     | N22.15645 E113.90113 | 93 m       | 0:00:21  | 16 kph    |
| 9/12/2016 11:55 | ON     | N22.15695 E113.90046 | 88 m       | 0:00:20  | 16 kph    |



## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 11:55 | ON     | N22.15736 E113.90000 | 66 m       | 0:00:15  | 16 kph    |
| 9/12/2016 11:56 | ON     | N22.15798 E113.89946 | 88 m       | 0:00:20  | 16 kph    |
| 9/12/2016 11:56 | ON     | N22.15870 E113.89898 | 95 m       | 0:00:21  | 16 kph    |
| 9/12/2016 11:56 | ON     | N22.15951 E113.89858 | 99 m       | 0:00:22  | 16 kph    |
| 9/12/2016 11:57 | ON     | N22.16036 E113.89843 | 96 m       | 0:00:22  | 16 kph    |
| 9/12/2016 11:57 | ON     | N22.16109 E113.89847 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:57 | ON     | N22.16166 E113.89869 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:58 | ON     | N22.16217 E113.89906 | 69 m       | 0:00:17  | 15 kph    |
| 9/12/2016 11:58 | ON     | N22.16267 E113.89958 | 77 m       | 0:00:19  | 15 kph    |
| 9/12/2016 11:58 | ON     | N22.16315 E113.90018 | 81 m       | 0:00:20  | 15 kph    |
| 9/12/2016 11:58 | ON     | N22.16349 E113.90068 | 65 m       | 0:00:16  | 15 kph    |
| 9/12/2016 11:59 | ON     | N22.16376 E113.90110 | 52 m       | 0:00:13  | 15 kph    |
| 9/12/2016 11:59 | ON     | N22.16417 E113.90173 | 80 m       | 0:00:20  | 14 kph    |
| 9/12/2016 11:59 | ON     | N22.16461 E113.90244 | 88 m       | 0:00:22  | 14 kph    |
| 9/12/2016 12:00 | ON     | N22.16500 E113.90300 | 72 m       | 0:00:18  | 14 kph    |
| 9/12/2016 12:00 | ON     | N22.16549 E113.90371 | 92 m       | 0:00:23  | 14 kph    |
| 9/12/2016 12:00 | ON     | N22.16603 E113.90454 | 105 m      | 0:00:26  | 14 kph    |
| 9/12/2016 12:01 | ON     | N22.16651 E113.90542 | 105 m      | 0:00:26  | 15 kph    |
| 9/12/2016 12:01 | ON     | N22.16691 E113.90622 | 93 m       | 0:00:23  | 15 kph    |
| 9/12/2016 12:02 | ON     | N22.16736 E113.90699 | 94 m       | 0:00:23  | 15 kph    |
| 9/12/2016 12:02 | ON     | N22.16787 E113.90740 | 71 m       | 0:00:18  | 14 kph    |
| 9/12/2016 12:02 | ON     | N22.16867 E113.90756 | 90 m       | 0:00:22  | 15 kph    |
| 9/12/2016 12:03 | ON     | N22.16949 E113.90767 | 92 m       | 0:00:22  | 15 kph    |
| 9/12/2016 12:03 | ON     | N22.17043 E113.90781 | 106 m      | 0:00:25  | 15 kph    |
| 9/12/2016 12:03 | ON     | N22.17108 E113.90786 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 12:04 | ON     | N22.17179 E113.90793 | 79 m       | 0:00:19  | 15 kph    |
| 9/12/2016 12:04 | ON     | N22.17246 E113.90802 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 12:04 | ON     | N22.17325 E113.90807 | 89 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:05 | ON     | N22.17394 E113.90794 | 78 m       | 0:00:18  | 16 kph    |
| 9/12/2016 12:05 | ON     | N22.17475 E113.90774 | 92 m       | 0:00:21  | 16 kph    |
| 9/12/2016 12:05 | ON     | N22.17540 E113.90759 | 75 m       | 0:00:17  | 16 kph    |
| 9/12/2016 12:06 | ON     | N22.17602 E113.90752 | 70 m       | 0:00:16  | 16 kph    |
| 9/12/2016 12:06 | ON     | N22.17671 E113.90737 | 78 m       | 0:00:18  | 16 kph    |
| 9/12/2016 12:06 | ON     | N22.17721 E113.90686 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 12:07 | ON     | N22.17784 E113.90608 | 107 m      | 0:00:24  | 16 kph    |
| 9/12/2016 12:07 | ON     | N22.17858 E113.90531 | 114 m      | 0:00:26  | 16 kph    |
| 9/12/2016 12:07 | ON     | N22.17921 E113.90476 | 90 m       | 0:00:20  | 16 kph    |
| 9/12/2016 12:08 | ON     | N22.18001 E113.90453 | 92 m       | 0:00:21  | 16 kph    |
| 9/12/2016 12:08 | ON     | N22.18088 E113.90445 | 98 m       | 0:00:22  | 16 kph    |
| 9/12/2016 12:09 | ON     | N22.18202 E113.90426 | 128 m      | 0:00:29  | 16 kph    |
| 9/12/2016 12:09 | ON     | N22.18283 E113.90419 | 91 m       | 0:00:21  | 16 kph    |
| 9/12/2016 12:09 | ON     | N22.18356 E113.90423 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 12:09 | ON     | N22.18417 E113.90432 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 12:10 | ON     | N22.18477 E113.90443 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 12:10 | ON     | N22.18533 E113.90455 | 63 m       | 0:00:15  | 15 kph    |
| 9/12/2016 12:10 | ON     | N22.18584 E113.90470 | 59 m       | 0:00:14  | 15 kph    |
| 9/12/2016 12:11 | ON     | N22.18653 E113.90498 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 12:11 | ON     | N22.18715 E113.90527 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 12:11 | ON     | N22.18772 E113.90556 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 12:11 | ON     | N22.18838 E113.90590 | 82 m       | 0:00:20  | 15 kph    |
| 9/12/2016 12:12 | ON     | N22.18879 E113.90630 | 62 m       | 0:00:17  | 13 kph    |
| 9/12/2016 12:12 | OFF    | N22.18902 E113.90653 | 35 m       | 0:00:17  | 8 kph     |
| 9/12/2016 12:12 | OFF    | N22.18916 E113.90666 | 20 m       | 0:00:15  | 5 kph     |
| 9/12/2016 12:13 | OFF    | N22.18928 E113.90674 | 16 m       | 0:00:18  | 3 kph     |
| 9/12/2016 12:13 | OFF    | N22.18937 E113.90693 | 22 m       | 0:00:19  | 4 kph     |
| 9/12/2016 12:13 | OFF    | N22.18930 E113.90728 | 37 m       | 0:00:23  | 6 kph     |
| 9/12/2016 12:14 | OFF    | N22.18922 E113.90749 | 24 m       | 0:00:22  | 4 kph     |
| 9/12/2016 12:14 | OFF    | N22.18915 E113.90756 | 10 m       | 0:00:20  | 2 kph     |
| 9/12/2016 12:14 | OFF    | N22.18913 E113.90758 | 3 m        | 0:00:19  | 0.6 kph   |
| 9/12/2016 12:15 | OFF    | N22.18905 E113.90766 | 12 m       | 0:00:16  | 3 kph     |
| 9/12/2016 12:15 | OFF    | N22.18910 E113.90790 | 25 m       | 0:00:16  | 6 kph     |
| 9/12/2016 12:15 | OFF    | N22.18956 E113.90797 | 52 m       | 0:00:16  | 12 kph    |
| 9/12/2016 12:16 | ON     | N22.19043 E113.90797 | 97 m       | 0:00:23  | 15 kph    |
| 9/12/2016 12:16 | ON     | N22.19107 E113.90799 | 71 m       | 0:00:17  | 15 kph    |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 12:16 | ON     | N22.19182 E113.90804 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 12:16 | ON     | N22.19249 E113.90797 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 12:17 | ON     | N22.19331 E113.90783 | 92 m       | 0:00:22  | 15 kph    |
| 9/12/2016 12:17 | ON     | N22.19401 E113.90787 | 78 m       | 0:00:22  | 13 kph    |
| 9/12/2016 12:17 | ON     | N22.19460 E113.90789 | 66 m       | 0:00:17  | 14 kph    |
| 9/12/2016 12:18 | ON     | N22.19536 E113.90785 | 85 m       | 0:00:20  | 15 kph    |
| 9/12/2016 12:18 | ON     | N22.19593 E113.90777 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 12:18 | ON     | N22.19662 E113.90773 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 12:19 | ON     | N22.19731 E113.90777 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 12:19 | ON     | N22.19805 E113.90781 | 82 m       | 0:00:19  | 16 kph    |
| 9/12/2016 12:19 | ON     | N22.19876 E113.90781 | 79 m       | 0:00:18  | 16 kph    |
| 9/12/2016 12:20 | ON     | N22.19953 E113.90784 | 86 m       | 0:00:20  | 15 kph    |
| 9/12/2016 12:20 | ON     | N22.20034 E113.90785 | 91 m       | 0:00:21  | 16 kph    |
| 9/12/2016 12:20 | ON     | N22.20104 E113.90786 | 78 m       | 0:00:18  | 16 kph    |
| 9/12/2016 12:21 | ON     | N22.20185 E113.90791 | 90 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:21 | ON     | N22.20274 E113.90788 | 100 m      | 0:00:23  | 16 kph    |
| 9/12/2016 12:21 | ON     | N22.20363 E113.90773 | 100 m      | 0:00:23  | 16 kph    |
| 9/12/2016 12:22 | ON     | N22.20429 E113.90777 | 73 m       | 0:00:17  | 15 kph    |
| 9/12/2016 12:22 | ON     | N22.20513 E113.90780 | 94 m       | 0:00:22  | 15 kph    |
| 9/12/2016 12:22 | ON     | N22.20586 E113.90763 | 84 m       | 0:00:19  | 16 kph    |
| 9/12/2016 12:23 | ON     | N22.20635 E113.90720 | 70 m       | 0:00:16  | 16 kph    |
| 9/12/2016 12:23 | ON     | N22.20684 E113.90652 | 89 m       | 0:00:20  | 16 kph    |
| 9/12/2016 12:23 | ON     | N22.20729 E113.90579 | 90 m       | 0:00:20  | 16 kph    |
| 9/12/2016 12:24 | ON     | N22.20773 E113.90508 | 88 m       | 0:00:20  | 16 kph    |
| 9/12/2016 12:24 | ON     | N22.20833 E113.90427 | 107 m      | 0:00:24  | 16 kph    |
| 9/12/2016 12:24 | ON     | N22.20893 E113.90347 | 106 m      | 0:00:24  | 16 kph    |
| 9/12/2016 12:25 | ON     | N22.20942 E113.90274 | 93 m       | 0:00:21  | 16 kph    |
| 9/12/2016 12:25 | ON     | N22.20982 E113.90205 | 83 m       | 0:00:19  | 16 kph    |
| 9/12/2016 12:25 | ON     | N22.21027 E113.90135 | 88 m       | 0:00:20  | 16 kph    |
| 9/12/2016 12:26 | ON     | N22.21082 E113.90061 | 98 m       | 0:00:22  | 16 kph    |
| 9/12/2016 12:26 | ON     | N22.21132 E113.89977 | 103 m      | 0:00:24  | 15 kph    |
| 9/12/2016 12:27 | ON     | N22.21181 E113.89889 | 106 m      | 0:00:24  | 16 kph    |
| 9/12/2016 12:27 | ON     | N22.21241 E113.89793 | 120 m      | 0:00:27  | 16 kph    |
| 9/12/2016 12:27 | ON     | N22.21271 E113.89725 | 78 m       | 0:00:19  | 15 kph    |
| 9/12/2016 12:28 | ON     | N22.21248 E113.89697 | 39 m       | 0:00:12  | 12 kph    |
| 9/12/2016 12:28 | ON     | N22.21203 E113.89702 | 50 m       | 0:00:14  | 13 kph    |
| 9/12/2016 12:28 | ON     | N22.21153 E113.89712 | 56 m       | 0:00:14  | 14 kph    |
| 9/12/2016 12:28 | ON     | N22.21095 E113.89720 | 65 m       | 0:00:16  | 15 kph    |
| 9/12/2016 12:28 | ON     | N22.21048 E113.89726 | 53 m       | 0:00:13  | 15 kph    |
| 9/12/2016 12:29 | ON     | N22.21005 E113.89730 | 49 m       | 0:00:12  | 15 kph    |
| 9/12/2016 12:29 | ON     | N22.20932 E113.89727 | 81 m       | 0:00:20  | 15 kph    |
| 9/12/2016 12:29 | ON     | N22.20861 E113.89726 | 78 m       | 0:00:19  | 15 kph    |
| 9/12/2016 12:30 | ON     | N22.20810 E113.89728 | 57 m       | 0:00:14  | 15 kph    |
| 9/12/2016 12:30 | ON     | N22.20758 E113.89729 | 58 m       | 0:00:14  | 15 kph    |
| 9/12/2016 12:30 | ON     | N22.20695 E113.89729 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 12:30 | ON     | N22.20618 E113.89732 | 86 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:31 | ON     | N22.20558 E113.89731 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 12:31 | ON     | N22.20507 E113.89729 | 57 m       | 0:00:14  | 15 kph    |
| 9/12/2016 12:31 | ON     | N22.20441 E113.89729 | 73 m       | 0:00:18  | 15 kph    |
| 9/12/2016 12:31 | ON     | N22.20386 E113.89729 | 61 m       | 0:00:15  | 15 kph    |
| 9/12/2016 12:32 | ON     | N22.20331 E113.89730 | 61 m       | 0:00:15  | 15 kph    |
| 9/12/2016 12:32 | ON     | N22.20271 E113.89729 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 12:32 | ON     | N22.20219 E113.89728 | 58 m       | 0:00:14  | 15 kph    |
| 9/12/2016 12:32 | ON     | N22.20163 E113.89726 | 62 m       | 0:00:15  | 15 kph    |
| 9/12/2016 12:33 | ON     | N22.20116 E113.89726 | 53 m       | 0:00:13  | 15 kph    |
| 9/12/2016 12:33 | ON     | N22.20053 E113.89725 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 12:33 | ON     | N22.19998 E113.89725 | 62 m       | 0:00:15  | 15 kph    |
| 9/12/2016 12:33 | ON     | N22.19938 E113.89727 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 12:34 | ON     | N22.19878 E113.89731 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 12:34 | ON     | N22.19808 E113.89734 | 78 m       | 0:00:19  | 15 kph    |
| 9/12/2016 12:34 | ON     | N22.19752 E113.89734 | 62 m       | 0:00:15  | 15 kph    |
| 9/12/2016 12:35 | ON     | N22.19685 E113.89729 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 12:35 | ON     | N22.19614 E113.89726 | 79 m       | 0:00:19  | 15 kph    |
| 9/12/2016 12:35 | ON     | N22.19561 E113.89724 | 58 m       | 0:00:14  | 15 kph    |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 12:35 | ON     | N22.19510 E113.89721 | 58 m       | 0:00:14  | 15 kph    |
| 9/12/2016 12:36 | ON     | N22.19450 E113.89720 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 12:36 | ON     | N22.19382 E113.89719 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 12:36 | ON     | N22.19326 E113.89722 | 62 m       | 0:00:15  | 15 kph    |
| 9/12/2016 12:36 | ON     | N22.19262 E113.89730 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 12:37 | ON     | N22.19206 E113.89733 | 62 m       | 0:00:15  | 15 kph    |
| 9/12/2016 12:37 | ON     | N22.19135 E113.89731 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 12:37 | ON     | N22.19044 E113.89726 | 101 m      | 0:00:24  | 15 kph    |
| 9/12/2016 12:38 | ON     | N22.18984 E113.89729 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 12:38 | ON     | N22.18901 E113.89735 | 92 m       | 0:00:22  | 15 kph    |
| 9/12/2016 12:38 | ON     | N22.18827 E113.89739 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 12:39 | ON     | N22.18725 E113.89734 | 114 m      | 0:00:27  | 15 kph    |
| 9/12/2016 12:39 | ON     | N22.18651 E113.89723 | 83 m       | 0:00:20  | 15 kph    |
| 9/12/2016 12:40 | ON     | N22.18563 E113.89721 | 98 m       | 0:00:23  | 15 kph    |
| 9/12/2016 12:40 | ON     | N22.18481 E113.89721 | 91 m       | 0:00:22  | 15 kph    |
| 9/12/2016 12:40 | ON     | N22.18400 E113.89717 | 90 m       | 0:00:22  | 15 kph    |
| 9/12/2016 12:41 | ON     | N22.18312 E113.89717 | 98 m       | 0:00:24  | 15 kph    |
| 9/12/2016 12:41 | ON     | N22.18246 E113.89721 | 73 m       | 0:00:18  | 15 kph    |
| 9/12/2016 12:41 | ON     | N22.18170 E113.89720 | 85 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:42 | ON     | N22.18095 E113.89720 | 84 m       | 0:00:21  | 14 kph    |
| 9/12/2016 12:42 | ON     | N22.18028 E113.89725 | 74 m       | 0:00:18  | 15 kph    |
| 9/12/2016 12:42 | ON     | N22.17952 E113.89729 | 85 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:43 | ON     | N22.17874 E113.89725 | 87 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:43 | ON     | N22.17807 E113.89722 | 74 m       | 0:00:18  | 15 kph    |
| 9/12/2016 12:43 | ON     | N22.17734 E113.89723 | 82 m       | 0:00:20  | 15 kph    |
| 9/12/2016 12:44 | ON     | N22.17655 E113.89724 | 87 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:44 | ON     | N22.17572 E113.89722 | 93 m       | 0:00:22  | 15 kph    |
| 9/12/2016 12:44 | ON     | N22.17493 E113.89720 | 88 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:45 | ON     | N22.17428 E113.89715 | 73 m       | 0:00:17  | 15 kph    |
| 9/12/2016 12:45 | ON     | N22.17349 E113.89709 | 88 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:45 | ON     | N22.17286 E113.89717 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 12:46 | ON     | N22.17213 E113.89720 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 12:46 | ON     | N22.17117 E113.89715 | 107 m      | 0:00:26  | 15 kph    |
| 9/12/2016 12:46 | ON     | N22.17036 E113.89718 | 90 m       | 0:00:22  | 15 kph    |
| 9/12/2016 12:47 | ON     | N22.16959 E113.89723 | 87 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:47 | ON     | N22.16872 E113.89724 | 97 m       | 0:00:23  | 15 kph    |
| 9/12/2016 12:48 | ON     | N22.16796 E113.89725 | 84 m       | 0:00:20  | 15 kph    |
| 9/12/2016 12:48 | ON     | N22.16722 E113.89724 | 82 m       | 0:00:19  | 16 kph    |
| 9/12/2016 12:48 | ON     | N22.16639 E113.89723 | 93 m       | 0:00:22  | 15 kph    |
| 9/12/2016 12:49 | ON     | N22.16552 E113.89728 | 97 m       | 0:00:23  | 15 kph    |
| 9/12/2016 12:49 | ON     | N22.16474 E113.89733 | 87 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:49 | ON     | N22.16398 E113.89729 | 85 m       | 0:00:20  | 15 kph    |
| 9/12/2016 12:50 | ON     | N22.16319 E113.89726 | 88 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:50 | ON     | N22.16237 E113.89728 | 91 m       | 0:00:22  | 15 kph    |
| 9/12/2016 12:50 | ON     | N22.16156 E113.89726 | 90 m       | 0:00:22  | 15 kph    |
| 9/12/2016 12:51 | ON     | N22.16079 E113.89721 | 86 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:51 | ON     | N22.16006 E113.89721 | 81 m       | 0:00:20  | 15 kph    |
| 9/12/2016 12:51 | ON     | N22.15926 E113.89723 | 90 m       | 0:00:22  | 15 kph    |
| 9/12/2016 12:52 | ON     | N22.15849 E113.89716 | 86 m       | 0:00:21  | 15 kph    |
| 9/12/2016 12:52 | ON     | N22.15784 E113.89713 | 72 m       | 0:00:18  | 14 kph    |
| 9/12/2016 12:52 | ON     | N22.15705 E113.89722 | 88 m       | 0:00:23  | 14 kph    |
| 9/12/2016 12:53 | ON     | N22.15642 E113.89729 | 70 m       | 0:00:18  | 14 kph    |
| 9/12/2016 12:53 | ON     | N22.15590 E113.89727 | 59 m       | 0:00:15  | 14 kph    |
| 9/12/2016 12:53 | ON     | N22.15533 E113.89727 | 63 m       | 0:00:16  | 14 kph    |
| 9/12/2016 12:54 | ON     | N22.15470 E113.89733 | 70 m       | 0:00:18  | 14 kph    |
| 9/12/2016 12:54 | ON     | N22.15406 E113.89735 | 72 m       | 0:00:18  | 14 kph    |
| 9/12/2016 12:54 | ON     | N22.15359 E113.89732 | 52 m       | 0:00:13  | 14 kph    |
| 9/12/2016 12:54 | ON     | N22.15304 E113.89729 | 61 m       | 0:00:15  | 15 kph    |
| 9/12/2016 12:55 | ON     | N22.15246 E113.89729 | 65 m       | 0:00:16  | 15 kph    |
| 9/12/2016 12:55 | ON     | N22.15188 E113.89728 | 64 m       | 0:00:16  | 14 kph    |
| 9/12/2016 12:55 | ON     | N22.15137 E113.89723 | 58 m       | 0:00:14  | 15 kph    |
| 9/12/2016 12:55 | ON     | N22.15090 E113.89719 | 52 m       | 0:00:13  | 15 kph    |
| 9/12/2016 12:56 | ON     | N22.15021 E113.89721 | 77 m       | 0:00:19  | 15 kph    |
| 9/12/2016 12:56 | ON     | N22.14958 E113.89723 | 69 m       | 0:00:17  | 15 kph    |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 12:56 | ON     | N22.14897 E113.89718 | 68 m       | 0:00:17  | 15 kph    |
| 9/12/2016 12:56 | ON     | N22.14876 E113.89690 | 37 m       | 0:00:11  | 12 kph    |
| 9/12/2016 12:57 | ON     | N22.14886 E113.89646 | 47 m       | 0:00:12  | 14 kph    |
| 9/12/2016 12:57 | ON     | N22.14910 E113.89576 | 77 m       | 0:00:17  | 16 kph    |
| 9/12/2016 12:57 | ON     | N22.14921 E113.89530 | 49 m       | 0:00:11  | 16 kph    |
| 9/12/2016 12:57 | ON     | N22.14926 E113.89463 | 69 m       | 0:00:15  | 16 kph    |
| 9/12/2016 12:58 | ON     | N22.14928 E113.89406 | 59 m       | 0:00:13  | 16 kph    |
| 9/12/2016 12:58 | ON     | N22.14940 E113.89329 | 81 m       | 0:00:18  | 16 kph    |
| 9/12/2016 12:58 | ON     | N22.14961 E113.89261 | 74 m       | 0:00:16  | 17 kph    |
| 9/12/2016 12:58 | ON     | N22.14991 E113.89193 | 77 m       | 0:00:17  | 16 kph    |
| 9/12/2016 12:59 | ON     | N22.15026 E113.89134 | 73 m       | 0:00:16  | 16 kph    |
| 9/12/2016 12:59 | ON     | N22.15044 E113.89104 | 37 m       | 0:00:08  | 17 kph    |
| 9/12/2016 12:59 | ON     | N22.15053 E113.89089 | 18 m       | 0:00:04  | 16 kph    |
| 9/12/2016 12:59 | ON     | N22.15074 E113.89014 | 81 m       | 0:00:18  | 16 kph    |
| 9/12/2016 12:59 | ON     | N22.15096 E113.88934 | 86 m       | 0:00:19  | 16 kph    |
| 9/12/2016 13:00 | ON     | N22.15129 E113.88857 | 87 m       | 0:00:19  | 17 kph    |
| 9/12/2016 13:00 | ON     | N22.15162 E113.88809 | 62 m       | 0:00:15  | 15 kph    |
| 9/12/2016 13:00 | ON     | N22.15212 E113.88806 | 56 m       | 0:00:14  | 14 kph    |
| 9/12/2016 13:01 | ON     | N22.15281 E113.88811 | 78 m       | 0:00:18  | 16 kph    |
| 9/12/2016 13:01 | ON     | N22.15304 E113.88812 | 26 m       | 0:00:06  | 15 kph    |
| 9/12/2016 13:01 | ON     | N22.15367 E113.88810 | 70 m       | 0:00:16  | 16 kph    |
| 9/12/2016 13:01 | ON     | N22.15421 E113.88810 | 61 m       | 0:00:14  | 16 kph    |
| 9/12/2016 13:01 | ON     | N22.15468 E113.88814 | 52 m       | 0:00:12  | 16 kph    |
| 9/12/2016 13:02 | ON     | N22.15518 E113.88821 | 57 m       | 0:00:13  | 16 kph    |
| 9/12/2016 13:02 | ON     | N22.15577 E113.88827 | 66 m       | 0:00:15  | 16 kph    |
| 9/12/2016 13:02 | ON     | N22.15628 E113.88828 | 56 m       | 0:00:13  | 16 kph    |
| 9/12/2016 13:02 | ON     | N22.15686 E113.88826 | 65 m       | 0:00:15  | 16 kph    |
| 9/12/2016 13:03 | ON     | N22.15741 E113.88826 | 61 m       | 0:00:14  | 16 kph    |
| 9/12/2016 13:03 | ON     | N22.15804 E113.88832 | 70 m       | 0:00:16  | 16 kph    |
| 9/12/2016 13:03 | ON     | N22.15866 E113.88842 | 70 m       | 0:00:16  | 16 kph    |
| 9/12/2016 13:03 | ON     | N22.15928 E113.88852 | 70 m       | 0:00:16  | 16 kph    |
| 9/12/2016 13:03 | ON     | N22.15971 E113.88855 | 48 m       | 0:00:11  | 16 kph    |
| 9/12/2016 13:04 | ON     | N22.16029 E113.88846 | 66 m       | 0:00:15  | 16 kph    |
| 9/12/2016 13:04 | ON     | N22.16101 E113.88836 | 80 m       | 0:00:18  | 16 kph    |
| 9/12/2016 13:04 | ON     | N22.16164 E113.88838 | 71 m       | 0:00:16  | 16 kph    |
| 9/12/2016 13:05 | ON     | N22.16235 E113.88838 | 79 m       | 0:00:18  | 16 kph    |
| 9/12/2016 13:05 | ON     | N22.16307 E113.88830 | 81 m       | 0:00:18  | 16 kph    |
| 9/12/2016 13:05 | ON     | N22.16371 E113.88825 | 71 m       | 0:00:16  | 16 kph    |
| 9/12/2016 13:05 | ON     | N22.16442 E113.88829 | 79 m       | 0:00:18  | 16 kph    |
| 9/12/2016 13:06 | ON     | N22.16477 E113.88830 | 39 m       | 0:00:09  | 16 kph    |
| 9/12/2016 13:06 | ON     | N22.16508 E113.88830 | 35 m       | 0:00:08  | 16 kph    |
| 9/12/2016 13:06 | ON     | N22.16568 E113.88828 | 66 m       | 0:00:15  | 16 kph    |
| 9/12/2016 13:06 | ON     | N22.16635 E113.88823 | 75 m       | 0:00:17  | 16 kph    |
| 9/12/2016 13:07 | ON     | N22.16722 E113.88824 | 97 m       | 0:00:22  | 16 kph    |
| 9/12/2016 13:07 | ON     | N22.16800 E113.88830 | 87 m       | 0:00:20  | 16 kph    |
| 9/12/2016 13:07 | ON     | N22.16874 E113.88837 | 82 m       | 0:00:19  | 16 kph    |
| 9/12/2016 13:08 | ON     | N22.16945 E113.88840 | 79 m       | 0:00:18  | 16 kph    |
| 9/12/2016 13:08 | ON     | N22.17035 E113.88842 | 100 m      | 0:00:23  | 16 kph    |
| 9/12/2016 13:08 | ON     | N22.17105 E113.88849 | 78 m       | 0:00:18  | 16 kph    |
| 9/12/2016 13:09 | ON     | N22.17190 E113.88855 | 95 m       | 0:00:22  | 16 kph    |
| 9/12/2016 13:09 | ON     | N22.17265 E113.88854 | 83 m       | 0:00:19  | 16 kph    |
| 9/12/2016 13:09 | ON     | N22.17347 E113.88855 | 92 m       | 0:00:21  | 16 kph    |
| 9/12/2016 13:10 | ON     | N22.17421 E113.88860 | 82 m       | 0:00:19  | 16 kph    |
| 9/12/2016 13:10 | ON     | N22.17486 E113.88866 | 73 m       | 0:00:17  | 16 kph    |
| 9/12/2016 13:10 | ON     | N22.17556 E113.88869 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 13:10 | ON     | N22.17618 E113.88869 | 69 m       | 0:00:16  | 16 kph    |
| 9/12/2016 13:11 | ON     | N22.17706 E113.88872 | 99 m       | 0:00:23  | 15 kph    |
| 9/12/2016 13:11 | ON     | N22.17778 E113.88882 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 13:12 | ON     | N22.17852 E113.88888 | 82 m       | 0:00:19  | 16 kph    |
| 9/12/2016 13:12 | ON     | N22.17930 E113.88879 | 88 m       | 0:00:20  | 16 kph    |
| 9/12/2016 13:12 | ON     | N22.17996 E113.88863 | 76 m       | 0:00:17  | 16 kph    |
| 9/12/2016 13:12 | ON     | N22.18075 E113.88848 | 88 m       | 0:00:20  | 16 kph    |
| 9/12/2016 13:13 | ON     | N22.18141 E113.88839 | 75 m       | 0:00:17  | 16 kph    |
| 9/12/2016 13:13 | ON     | N22.18215 E113.88831 | 82 m       | 0:00:19  | 16 kph    |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 13:13 | ON     | N22.18277 E113.88826 | 70 m       | 0:00:16  | 16 kph    |
| 9/12/2016 13:14 | ON     | N22.18355 E113.88820 | 87 m       | 0:00:20  | 16 kph    |
| 9/12/2016 13:14 | ON     | N22.18429 E113.88816 | 83 m       | 0:00:19  | 16 kph    |
| 9/12/2016 13:14 | ON     | N22.18499 E113.88813 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 13:15 | ON     | N22.18584 E113.88810 | 95 m       | 0:00:22  | 16 kph    |
| 9/12/2016 13:15 | ON     | N22.18676 E113.88803 | 103 m      | 0:00:24  | 16 kph    |
| 9/12/2016 13:15 | ON     | N22.18753 E113.88801 | 85 m       | 0:00:20  | 15 kph    |
| 9/12/2016 13:16 | ON     | N22.18833 E113.88801 | 89 m       | 0:00:21  | 15 kph    |
| 9/12/2016 13:16 | ON     | N22.18913 E113.88803 | 89 m       | 0:00:21  | 15 kph    |
| 9/12/2016 13:16 | ON     | N22.18994 E113.88801 | 90 m       | 0:00:21  | 15 kph    |
| 9/12/2016 13:17 | ON     | N22.19082 E113.88794 | 98 m       | 0:00:23  | 15 kph    |
| 9/12/2016 13:17 | ON     | N22.19159 E113.88784 | 87 m       | 0:00:20  | 16 kph    |
| 9/12/2016 13:18 | ON     | N22.19248 E113.88775 | 99 m       | 0:00:23  | 15 kph    |
| 9/12/2016 13:18 | ON     | N22.19331 E113.88774 | 93 m       | 0:00:22  | 15 kph    |
| 9/12/2016 13:18 | ON     | N22.19418 E113.88787 | 98 m       | 0:00:23  | 15 kph    |
| 9/12/2016 13:19 | ON     | N22.19489 E113.88798 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 13:19 | ON     | N22.19576 E113.88808 | 97 m       | 0:00:23  | 15 kph    |
| 9/12/2016 13:19 | ON     | N22.19648 E113.88810 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 13:20 | ON     | N22.19717 E113.88810 | 77 m       | 0:00:18  | 15 kph    |
| 9/12/2016 13:20 | ON     | N22.19817 E113.88806 | 112 m      | 0:00:26  | 15 kph    |
| 9/12/2016 13:20 | ON     | N22.19890 E113.88810 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 13:21 | ON     | N22.19966 E113.88812 | 85 m       | 0:00:20  | 15 kph    |
| 9/12/2016 13:21 | ON     | N22.20047 E113.88813 | 90 m       | 0:00:21  | 15 kph    |
| 9/12/2016 13:21 | ON     | N22.20121 E113.88814 | 82 m       | 0:00:19  | 15 kph    |
| 9/12/2016 13:22 | ON     | N22.20210 E113.88813 | 100 m      | 0:00:23  | 16 kph    |
| 9/12/2016 13:22 | ON     | N22.20295 E113.88815 | 94 m       | 0:00:22  | 15 kph    |
| 9/12/2016 13:22 | ON     | N22.20376 E113.88807 | 91 m       | 0:00:21  | 16 kph    |
| 9/12/2016 13:23 | ON     | N22.20454 E113.88795 | 87 m       | 0:00:20  | 16 kph    |
| 9/12/2016 13:23 | ON     | N22.20531 E113.88789 | 87 m       | 0:00:20  | 16 kph    |
| 9/12/2016 13:23 | ON     | N22.20612 E113.88794 | 90 m       | 0:00:21  | 15 kph    |
| 9/12/2016 13:24 | ON     | N22.20693 E113.88799 | 90 m       | 0:00:21  | 15 kph    |
| 9/12/2016 13:24 | ON     | N22.20771 E113.88793 | 87 m       | 0:00:20  | 16 kph    |
| 9/12/2016 13:24 | ON     | N22.20852 E113.88781 | 91 m       | 0:00:21  | 16 kph    |
| 9/12/2016 13:25 | ON     | N22.20942 E113.88774 | 101 m      | 0:00:23  | 16 kph    |
| 9/12/2016 13:25 | ON     | N22.21027 E113.88780 | 95 m       | 0:00:22  | 16 kph    |
| 9/12/2016 13:26 | ON     | N22.21124 E113.88778 | 108 m      | 0:00:25  | 16 kph    |
| 9/12/2016 13:26 | ON     | N22.21209 E113.88761 | 96 m       | 0:00:22  | 16 kph    |
| 9/12/2016 13:26 | ON     | N22.21261 E113.88720 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 13:27 | ON     | N22.21276 E113.88659 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 13:27 | ON     | N22.21249 E113.88604 | 64 m       | 0:00:16  | 14 kph    |
| 9/12/2016 13:27 | ON     | N22.21215 E113.88545 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 13:27 | ON     | N22.21186 E113.88461 | 92 m       | 0:00:21  | 16 kph    |
| 9/12/2016 13:28 | ON     | N22.21144 E113.88379 | 96 m       | 0:00:22  | 16 kph    |
| 9/12/2016 13:28 | ON     | N22.21098 E113.88304 | 93 m       | 0:00:21  | 16 kph    |
| 9/12/2016 13:29 | ON     | N22.21053 E113.88218 | 102 m      | 0:00:23  | 16 kph    |
| 9/12/2016 13:29 | ON     | N22.21013 E113.88133 | 98 m       | 0:00:22  | 16 kph    |
| 9/12/2016 13:29 | ON     | N22.20974 E113.88058 | 89 m       | 0:00:20  | 16 kph    |
| 9/12/2016 13:30 | ON     | N22.20924 E113.87978 | 100 m      | 0:00:22  | 16 kph    |
| 9/12/2016 13:30 | ON     | N22.20875 E113.87911 | 87 m       | 0:00:19  | 16 kph    |
| 9/12/2016 13:30 | ON     | N22.20821 E113.87846 | 91 m       | 0:00:20  | 16 kph    |
| 9/12/2016 13:31 | ON     | N22.20759 E113.87810 | 78 m       | 0:00:18  | 16 kph    |
| 9/12/2016 13:31 | ON     | N22.20687 E113.87802 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 13:31 | ON     | N22.20614 E113.87790 | 82 m       | 0:00:19  | 15 kph    |
| 9/12/2016 13:32 | ON     | N22.20545 E113.87777 | 78 m       | 0:00:18  | 16 kph    |
| 9/12/2016 13:32 | ON     | N22.20484 E113.87774 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 13:32 | ON     | N22.20400 E113.87770 | 94 m       | 0:00:22  | 15 kph    |
| 9/12/2016 13:32 | ON     | N22.20342 E113.87762 | 65 m       | 0:00:15  | 16 kph    |
| 9/12/2016 13:33 | ON     | N22.20269 E113.87755 | 82 m       | 0:00:19  | 16 kph    |
| 9/12/2016 13:33 | ON     | N22.20220 E113.87757 | 55 m       | 0:00:13  | 15 kph    |
| 9/12/2016 13:33 | ON     | N22.20167 E113.87761 | 59 m       | 0:00:14  | 15 kph    |
| 9/12/2016 13:33 | ON     | N22.20118 E113.87763 | 55 m       | 0:00:13  | 15 kph    |
| 9/12/2016 13:34 | ON     | N22.20045 E113.87760 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 13:34 | ON     | N22.19988 E113.87756 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 13:34 | ON     | N22.19927 E113.87754 | 68 m       | 0:00:16  | 15 kph    |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 13:35 | ON     | N22.19863 E113.87759 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 13:35 | ON     | N22.19805 E113.87770 | 66 m       | 0:00:16  | 15 kph    |
| 9/12/2016 13:35 | ON     | N22.19733 E113.87787 | 82 m       | 0:00:20  | 15 kph    |
| 9/12/2016 13:35 | ON     | N22.19661 E113.87794 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 13:36 | ON     | N22.19596 E113.87790 | 73 m       | 0:00:17  | 15 kph    |
| 9/12/2016 13:36 | ON     | N22.19524 E113.87792 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 13:36 | ON     | N22.19457 E113.87799 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 13:37 | ON     | N22.19400 E113.87798 | 63 m       | 0:00:15  | 15 kph    |
| 9/12/2016 13:37 | ON     | N22.19343 E113.87794 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 13:37 | ON     | N22.19283 E113.87797 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 13:37 | ON     | N22.19220 E113.87800 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 13:38 | ON     | N22.19140 E113.87798 | 89 m       | 0:00:21  | 15 kph    |
| 9/12/2016 13:38 | ON     | N22.19075 E113.87794 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 13:38 | ON     | N22.18990 E113.87785 | 96 m       | 0:00:22  | 16 kph    |
| 9/12/2016 13:39 | ON     | N22.18905 E113.87775 | 95 m       | 0:00:22  | 15 kph    |
| 9/12/2016 13:39 | ON     | N22.18845 E113.87773 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 13:39 | ON     | N22.18758 E113.87773 | 97 m       | 0:00:23  | 15 kph    |
| 9/12/2016 13:40 | ON     | N22.18694 E113.87770 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 13:40 | ON     | N22.18637 E113.87765 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 13:40 | ON     | N22.18574 E113.87764 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 13:40 | ON     | N22.18520 E113.87769 | 60 m       | 0:00:15  | 14 kph    |
| 9/12/2016 13:41 | ON     | N22.18449 E113.87767 | 79 m       | 0:00:19  | 15 kph    |
| 9/12/2016 13:41 | ON     | N22.18383 E113.87764 | 74 m       | 0:00:18  | 15 kph    |
| 9/12/2016 13:41 | ON     | N22.18305 E113.87770 | 87 m       | 0:00:21  | 15 kph    |
| 9/12/2016 13:42 | ON     | N22.18242 E113.87765 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 13:42 | ON     | N22.18147 E113.87758 | 107 m      | 0:00:26  | 15 kph    |
| 9/12/2016 13:42 | ON     | N22.18084 E113.87768 | 71 m       | 0:00:18  | 14 kph    |
| 9/12/2016 13:43 | ON     | N22.18003 E113.87784 | 92 m       | 0:00:23  | 14 kph    |
| 9/12/2016 13:43 | ON     | N22.17945 E113.87785 | 65 m       | 0:00:16  | 15 kph    |
| 9/12/2016 13:43 | ON     | N22.17872 E113.87781 | 82 m       | 0:00:20  | 15 kph    |
| 9/12/2016 13:44 | ON     | N22.17794 E113.87781 | 86 m       | 0:00:21  | 15 kph    |
| 9/12/2016 13:44 | ON     | N22.17728 E113.87777 | 74 m       | 0:00:18  | 15 kph    |
| 9/12/2016 13:44 | ON     | N22.17652 E113.87779 | 84 m       | 0:00:21  | 14 kph    |
| 9/12/2016 13:45 | ON     | N22.17587 E113.87777 | 73 m       | 0:00:18  | 15 kph    |
| 9/12/2016 13:45 | ON     | N22.17519 E113.87772 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 13:45 | ON     | N22.17447 E113.87776 | 81 m       | 0:00:20  | 14 kph    |
| 9/12/2016 13:46 | ON     | N22.17377 E113.87769 | 78 m       | 0:00:19  | 15 kph    |
| 9/12/2016 13:46 | ON     | N22.17304 E113.87756 | 82 m       | 0:00:20  | 15 kph    |
| 9/12/2016 13:46 | ON     | N22.17252 E113.87762 | 59 m       | 0:00:15  | 14 kph    |
| 9/12/2016 13:47 | ON     | N22.17185 E113.87765 | 74 m       | 0:00:19  | 14 kph    |
| 9/12/2016 13:47 | ON     | N22.17118 E113.87771 | 75 m       | 0:00:19  | 14 kph    |
| 9/12/2016 13:47 | ON     | N22.17045 E113.87776 | 81 m       | 0:00:21  | 14 kph    |
| 9/12/2016 13:48 | ON     | N22.16963 E113.87777 | 91 m       | 0:00:23  | 14 kph    |
| 9/12/2016 13:48 | ON     | N22.16896 E113.87778 | 75 m       | 0:00:19  | 14 kph    |
| 9/12/2016 13:48 | ON     | N22.16838 E113.87780 | 64 m       | 0:00:16  | 14 kph    |
| 9/12/2016 13:49 | ON     | N22.16771 E113.87778 | 75 m       | 0:00:19  | 14 kph    |
| 9/12/2016 13:49 | ON     | N22.16702 E113.87775 | 77 m       | 0:00:19  | 15 kph    |
| 9/12/2016 13:49 | ON     | N22.16639 E113.87775 | 70 m       | 0:00:18  | 14 kph    |
| 9/12/2016 13:49 | ON     | N22.16579 E113.87782 | 67 m       | 0:00:17  | 14 kph    |
| 9/12/2016 13:50 | ON     | N22.16517 E113.87795 | 70 m       | 0:00:18  | 14 kph    |
| 9/12/2016 13:50 | ON     | N22.16453 E113.87797 | 71 m       | 0:00:18  | 14 kph    |
| 9/12/2016 13:50 | ON     | N22.16397 E113.87802 | 62 m       | 0:00:16  | 14 kph    |
| 9/12/2016 13:51 | ON     | N22.16326 E113.87818 | 81 m       | 0:00:21  | 14 kph    |
| 9/12/2016 13:51 | ON     | N22.16275 E113.87813 | 57 m       | 0:00:14  | 15 kph    |
| 9/12/2016 13:51 | ON     | N22.16234 E113.87814 | 46 m       | 0:00:12  | 14 kph    |
| 9/12/2016 13:51 | ON     | N22.16167 E113.87816 | 75 m       | 0:00:19  | 14 kph    |
| 9/12/2016 13:52 | ON     | N22.16099 E113.87818 | 75 m       | 0:00:19  | 14 kph    |
| 9/12/2016 13:52 | ON     | N22.16043 E113.87819 | 63 m       | 0:00:16  | 14 kph    |
| 9/12/2016 13:52 | ON     | N22.15986 E113.87817 | 63 m       | 0:00:16  | 14 kph    |
| 9/12/2016 13:52 | ON     | N22.15944 E113.87812 | 48 m       | 0:00:12  | 14 kph    |
| 9/12/2016 13:53 | ON     | N22.15892 E113.87793 | 60 m       | 0:00:16  | 14 kph    |
| 9/12/2016 13:53 | ON     | N22.15884 E113.87744 | 51 m       | 0:00:13  | 14 kph    |
| 9/12/2016 13:53 | ON     | N22.15911 E113.87675 | 78 m       | 0:00:17  | 17 kph    |
| 9/12/2016 13:53 | ON     | N22.15932 E113.87623 | 58 m       | 0:00:12  | 17 kph    |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 13:54 | ON     | N22.15956 E113.87553 | 77 m       | 0:00:16  | 17 kph    |
| 9/12/2016 13:54 | ON     | N22.15977 E113.87497 | 63 m       | 0:00:13  | 17 kph    |
| 9/12/2016 13:54 | ON     | N22.16002 E113.87432 | 72 m       | 0:00:15  | 17 kph    |
| 9/12/2016 13:54 | ON     | N22.16028 E113.87362 | 77 m       | 0:00:16  | 17 kph    |
| 9/12/2016 13:54 | ON     | N22.16035 E113.87344 | 20 m       | 0:00:04  | 18 kph    |
| 9/12/2016 13:55 | ON     | N22.16042 E113.87327 | 19 m       | 0:00:04  | 17 kph    |
| 9/12/2016 13:55 | ON     | N22.16078 E113.87247 | 92 m       | 0:00:19  | 17 kph    |
| 9/12/2016 13:55 | ON     | N22.16113 E113.87175 | 84 m       | 0:00:17  | 18 kph    |
| 9/12/2016 13:55 | ON     | N22.16150 E113.87099 | 88 m       | 0:00:18  | 18 kph    |
| 9/12/2016 13:56 | ON     | N22.16186 E113.87023 | 88 m       | 0:00:18  | 18 kph    |
| 9/12/2016 13:56 | ON     | N22.16221 E113.86948 | 87 m       | 0:00:18  | 17 kph    |
| 9/12/2016 13:56 | ON     | N22.16256 E113.86918 | 49 m       | 0:00:12  | 15 kph    |
| 9/12/2016 13:56 | ON     | N22.16288 E113.86919 | 36 m       | 0:00:09  | 14 kph    |
| 9/12/2016 13:57 | ON     | N22.16356 E113.86908 | 77 m       | 0:00:17  | 16 kph    |
| 9/12/2016 13:57 | ON     | N22.16368 E113.86905 | 14 m       | 0:00:03  | 16 kph    |
| 9/12/2016 13:57 | ON     | N22.16384 E113.86902 | 18 m       | 0:00:04  | 16 kph    |
| 9/12/2016 13:57 | ON     | N22.16423 E113.86900 | 44 m       | 0:00:10  | 16 kph    |
| 9/12/2016 13:57 | ON     | N22.16439 E113.86901 | 18 m       | 0:00:04  | 16 kph    |
| 9/12/2016 13:57 | ON     | N22.16495 E113.86905 | 62 m       | 0:00:14  | 16 kph    |
| 9/12/2016 13:57 | ON     | N22.16515 E113.86904 | 22 m       | 0:00:05  | 16 kph    |
| 9/12/2016 13:58 | ON     | N22.16575 E113.86893 | 68 m       | 0:00:15  | 16 kph    |
| 9/12/2016 13:58 | ON     | N22.16635 E113.86888 | 67 m       | 0:00:15  | 16 kph    |
| 9/12/2016 13:58 | ON     | N22.16678 E113.86895 | 49 m       | 0:00:11  | 16 kph    |
| 9/12/2016 13:58 | ON     | N22.16740 E113.86898 | 69 m       | 0:00:16  | 16 kph    |
| 9/12/2016 13:58 | ON     | N22.16761 E113.86897 | 23 m       | 0:00:05  | 16 kph    |
| 9/12/2016 13:59 | ON     | N22.16825 E113.86885 | 73 m       | 0:00:16  | 16 kph    |
| 9/12/2016 13:59 | ON     | N22.16894 E113.86872 | 78 m       | 0:00:17  | 17 kph    |
| 9/12/2016 13:59 | ON     | N22.16954 E113.86871 | 67 m       | 0:00:15  | 16 kph    |
| 9/12/2016 13:59 | ON     | N22.17027 E113.86873 | 80 m       | 0:00:18  | 16 kph    |
| 9/12/2016 14:00 | ON     | N22.17086 E113.86875 | 66 m       | 0:00:15  | 16 kph    |
| 9/12/2016 14:00 | ON     | N22.17118 E113.86876 | 35 m       | 0:00:08  | 16 kph    |
| 9/12/2016 14:00 | ON     | N22.17213 E113.86876 | 106 m      | 0:00:24  | 16 kph    |
| 9/12/2016 14:01 | ON     | N22.17287 E113.86882 | 83 m       | 0:00:19  | 16 kph    |
| 9/12/2016 14:01 | ON     | N22.17369 E113.86890 | 91 m       | 0:00:21  | 16 kph    |
| 9/12/2016 14:01 | ON     | N22.17395 E113.86892 | 30 m       | 0:00:07  | 15 kph    |
| 9/12/2016 14:01 | ON     | N22.17450 E113.86890 | 61 m       | 0:00:14  | 16 kph    |
| 9/12/2016 14:02 | ON     | N22.17509 E113.86882 | 66 m       | 0:00:15  | 16 kph    |
| 9/12/2016 14:02 | ON     | N22.17568 E113.86879 | 65 m       | 0:00:15  | 16 kph    |
| 9/12/2016 14:02 | ON     | N22.17630 E113.86882 | 70 m       | 0:00:16  | 16 kph    |
| 9/12/2016 14:02 | ON     | N22.17712 E113.86886 | 91 m       | 0:00:21  | 16 kph    |
| 9/12/2016 14:03 | ON     | N22.17778 E113.86885 | 74 m       | 0:00:17  | 16 kph    |
| 9/12/2016 14:03 | ON     | N22.17846 E113.86881 | 75 m       | 0:00:17  | 16 kph    |
| 9/12/2016 14:03 | ON     | N22.17920 E113.86884 | 83 m       | 0:00:19  | 16 kph    |
| 9/12/2016 14:04 | ON     | N22.17986 E113.86887 | 73 m       | 0:00:17  | 15 kph    |
| 9/12/2016 14:04 | ON     | N22.17989 E113.86888 | 4 m        | 0:00:01  | 16 kph    |
| 9/12/2016 14:04 | ON     | N22.18048 E113.86885 | 65 m       | 0:00:15  | 16 kph    |
| 9/12/2016 14:04 | ON     | N22.18133 E113.86877 | 95 m       | 0:00:22  | 16 kph    |
| 9/12/2016 14:05 | ON     | N22.18207 E113.86874 | 82 m       | 0:00:19  | 16 kph    |
| 9/12/2016 14:05 | ON     | N22.18276 E113.86877 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 14:05 | ON     | N22.18352 E113.86881 | 85 m       | 0:00:20  | 15 kph    |
| 9/12/2016 14:05 | ON     | N22.18414 E113.86884 | 69 m       | 0:00:16  | 15 kph    |
| 9/12/2016 14:06 | ON     | N22.18479 E113.86877 | 73 m       | 0:00:17  | 16 kph    |
| 9/12/2016 14:06 | ON     | N22.18533 E113.86873 | 61 m       | 0:00:14  | 16 kph    |
| 9/12/2016 14:06 | ON     | N22.18598 E113.86871 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 14:07 | ON     | N22.18665 E113.86878 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 14:07 | ON     | N22.18736 E113.86886 | 80 m       | 0:00:19  | 15 kph    |
| 9/12/2016 14:07 | ON     | N22.18797 E113.86890 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 14:07 | ON     | N22.18861 E113.86891 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 14:08 | ON     | N22.18928 E113.86892 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 14:08 | ON     | N22.18998 E113.86896 | 78 m       | 0:00:19  | 15 kph    |
| 9/12/2016 14:08 | ON     | N22.19064 E113.86901 | 73 m       | 0:00:18  | 15 kph    |
| 9/12/2016 14:09 | ON     | N22.19121 E113.86898 | 63 m       | 0:00:15  | 15 kph    |
| 9/12/2016 14:09 | ON     | N22.19174 E113.86891 | 59 m       | 0:00:16  | 13 kph    |
| 9/12/2016 14:09 | OFF    | N22.19201 E113.86884 | 31 m       | 0:00:14  | 8 kph     |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 14:09 | OFF    | N22.19223 E113.86876 | 26 m       | 0:00:16  | 6 kph     |
| 9/12/2016 14:10 | OFF    | N22.19244 E113.86866 | 25 m       | 0:00:18  | 5 kph     |
| 9/12/2016 14:10 | OFF    | N22.19271 E113.86859 | 31 m       | 0:00:16  | 7 kph     |
| 9/12/2016 14:10 | OFF    | N22.19307 E113.86852 | 40 m       | 0:00:21  | 7 kph     |
| 9/12/2016 14:11 | OFF    | N22.19326 E113.86847 | 22 m       | 0:00:17  | 5 kph     |
| 9/12/2016 14:11 | OFF    | N22.19357 E113.86846 | 35 m       | 0:00:17  | 7 kph     |
| 9/12/2016 14:11 | OFF    | N22.19402 E113.86824 | 55 m       | 0:00:16  | 12 kph    |
| 9/12/2016 14:11 | OFF    | N22.19450 E113.86780 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 14:12 | OFF    | N22.19512 E113.86724 | 89 m       | 0:00:21  | 15 kph    |
| 9/12/2016 14:12 | OFF    | N22.19575 E113.86676 | 86 m       | 0:00:22  | 14 kph    |
| 9/12/2016 14:12 | OFF    | N22.19619 E113.86651 | 55 m       | 0:00:15  | 13 kph    |
| 9/12/2016 14:13 | OFF    | N22.19675 E113.86638 | 64 m       | 0:00:18  | 13 kph    |
| 9/12/2016 14:13 | OFF    | N22.19736 E113.86635 | 68 m       | 0:00:18  | 14 kph    |
| 9/12/2016 14:13 | OFF    | N22.19799 E113.86632 | 71 m       | 0:00:20  | 13 kph    |
| 9/12/2016 14:14 | OFF    | N22.19846 E113.86631 | 52 m       | 0:00:17  | 11 kph    |
| 9/12/2016 14:14 | OFF    | N22.19889 E113.86626 | 48 m       | 0:00:19  | 9 kph     |
| 9/12/2016 14:14 | OFF    | N22.19925 E113.86620 | 40 m       | 0:00:17  | 8 kph     |
| 9/12/2016 14:14 | OFF    | N22.19953 E113.86617 | 32 m       | 0:00:14  | 8 kph     |
| 9/12/2016 14:15 | OFF    | N22.19980 E113.86617 | 30 m       | 0:00:15  | 7 kph     |
| 9/12/2016 14:15 | OFF    | N22.20003 E113.86619 | 25 m       | 0:00:17  | 5 kph     |
| 9/12/2016 14:15 | OFF    | N22.20022 E113.86628 | 23 m       | 0:00:17  | 5 kph     |
| 9/12/2016 14:15 | OFF    | N22.20032 E113.86632 | 12 m       | 0:00:14  | 3 kph     |
| 9/12/2016 14:16 | OFF    | N22.20042 E113.86636 | 12 m       | 0:00:18  | 2 kph     |
| 9/12/2016 14:16 | OFF    | N22.20054 E113.86648 | 18 m       | 0:00:17  | 4 kph     |
| 9/12/2016 14:16 | OFF    | N22.20057 E113.86653 | 6 m        | 0:00:05  | 5 kph     |
| 9/12/2016 14:16 | OFF    | N22.20064 E113.86665 | 14 m       | 0:00:17  | 3 kph     |
| 9/12/2016 14:17 | OFF    | N22.20068 E113.86672 | 8 m        | 0:00:14  | 2 kph     |
| 9/12/2016 14:17 | OFF    | N22.20068 E113.86674 | 2 m        | 0:00:12  | 0.7 kph   |
| 9/12/2016 14:17 | OFF    | N22.20069 E113.86676 | 2 m        | 0:00:15  | 0.6 kph   |
| 9/12/2016 14:17 | OFF    | N22.20069 E113.86677 | 1 m        | 0:00:01  | 4 kph     |
| 9/12/2016 14:17 | OFF    | N22.20070 E113.86679 | 3 m        | 0:00:02  | 5 kph     |
| 9/12/2016 14:17 | OFF    | N22.20072 E113.86694 | 16 m       | 0:00:16  | 4 kph     |
| 9/12/2016 14:18 | OFF    | N22.20073 E113.86700 | 5 m        | 0:00:19  | 1.0 kph   |
| 9/12/2016 14:18 | OFF    | N22.20074 E113.86701 | 2 m        | 0:00:16  | 0.4 kph   |
| 9/12/2016 14:18 | OFF    | N22.20074 E113.86712 | 12 m       | 0:00:18  | 2 kph     |
| 9/12/2016 14:19 | OFF    | N22.20077 E113.86738 | 26 m       | 0:00:17  | 6 kph     |
| 9/12/2016 14:19 | OFF    | N22.20081 E113.86751 | 14 m       | 0:00:17  | 3 kph     |
| 9/12/2016 14:19 | OFF    | N22.20082 E113.86755 | 5 m        | 0:00:17  | 1.1 kph   |
| 9/12/2016 14:19 | OFF    | N22.20084 E113.86763 | 8 m        | 0:00:13  | 2 kph     |
| 9/12/2016 14:20 | OFF    | N22.20085 E113.86772 | 9 m        | 0:00:15  | 2 kph     |
| 9/12/2016 14:20 | OFF    | N22.20086 E113.86774 | 2 m        | 0:00:16  | 0.5 kph   |
| 9/12/2016 14:20 | OFF    | N22.20085 E113.86776 | 2 m        | 0:00:12  | 0.5 kph   |
| 9/12/2016 14:20 | OFF    | N22.20086 E113.86777 | 2 m        | 0:00:15  | 0.4 kph   |
| 9/12/2016 14:21 | OFF    | N22.20086 E113.86778 | 1 m        | 0:00:20  | 0.2 kph   |
| 9/12/2016 14:21 | OFF    | N22.20086 E113.86784 | 6 m        | 0:00:14  | 2 kph     |
| 9/12/2016 14:21 | OFF    | N22.20087 E113.86795 | 12 m       | 0:00:18  | 2 kph     |
| 9/12/2016 14:21 | OFF    | N22.20087 E113.86801 | 6 m        | 0:00:18  | 1.2 kph   |
| 9/12/2016 14:22 | OFF    | N22.20097 E113.86832 | 34 m       | 0:00:15  | 8 kph     |
| 9/12/2016 14:22 | OFF    | N22.20126 E113.86876 | 56 m       | 0:00:18  | 11 kph    |
| 9/12/2016 14:22 | OFF    | N22.20156 E113.86924 | 59 m       | 0:00:17  | 13 kph    |
| 9/12/2016 14:23 | OFF    | N22.20190 E113.86978 | 67 m       | 0:00:19  | 13 kph    |
| 9/12/2016 14:23 | OFF    | N22.20211 E113.87011 | 42 m       | 0:00:15  | 10 kph    |
| 9/12/2016 14:23 | OFF    | N22.20231 E113.87043 | 40 m       | 0:00:19  | 8 kph     |
| 9/12/2016 14:23 | OFF    | N22.20244 E113.87063 | 25 m       | 0:00:13  | 7 kph     |
| 9/12/2016 14:24 | OFF    | N22.20258 E113.87082 | 25 m       | 0:00:18  | 5 kph     |
| 9/12/2016 14:24 | OFF    | N22.20266 E113.87098 | 19 m       | 0:00:18  | 4 kph     |
| 9/12/2016 14:24 | OFF    | N22.20268 E113.87112 | 14 m       | 0:00:14  | 4 kph     |
| 9/12/2016 14:24 | OFF    | N22.20267 E113.87123 | 11 m       | 0:00:15  | 3 kph     |
| 9/12/2016 14:25 | OFF    | N22.20265 E113.87127 | 5 m        | 0:00:04  | 5 kph     |
| 9/12/2016 14:25 | OFF    | N22.20256 E113.87144 | 20 m       | 0:00:18  | 4 kph     |
| 9/12/2016 14:25 | OFF    | N22.20254 E113.87148 | 5 m        | 0:00:04  | 5 kph     |
| 9/12/2016 14:25 | OFF    | N22.20229 E113.87153 | 29 m       | 0:00:15  | 7 kph     |
| 9/12/2016 14:25 | OFF    | N22.20204 E113.87119 | 44 m       | 0:00:12  | 13 kph    |
| 9/12/2016 14:26 | OFF    | N22.20187 E113.87070 | 54 m       | 0:00:12  | 16 kph    |



## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 14:26 | OFF    | N22.20185 E113.87061 | 9 m        | 0:00:02  | 17 kph    |
| 9/12/2016 14:26 | OFF    | N22.20181 E113.87048 | 14 m       | 0:00:03  | 17 kph    |
| 9/12/2016 14:26 | OFF    | N22.20177 E113.87035 | 14 m       | 0:00:03  | 17 kph    |
| 9/12/2016 14:26 | OFF    | N22.20160 E113.86949 | 91 m       | 0:00:19  | 17 kph    |
| 9/12/2016 14:26 | OFF    | N22.20151 E113.86913 | 38 m       | 0:00:08  | 17 kph    |
| 9/12/2016 14:26 | OFF    | N22.20128 E113.86833 | 86 m       | 0:00:18  | 17 kph    |
| 9/12/2016 14:27 | OFF    | N22.20108 E113.86756 | 83 m       | 0:00:17  | 18 kph    |
| 9/12/2016 14:27 | OFF    | N22.20092 E113.86682 | 78 m       | 0:00:16  | 18 kph    |
| 9/12/2016 14:27 | ON     | N22.20078 E113.86603 | 83 m       | 0:00:17  | 18 kph    |
| 9/12/2016 14:28 | ON     | N22.20073 E113.86513 | 93 m       | 0:00:19  | 18 kph    |
| 9/12/2016 14:28 | ON     | N22.20075 E113.86418 | 98 m       | 0:00:20  | 18 kph    |
| 9/12/2016 14:28 | ON     | N22.20069 E113.86326 | 95 m       | 0:00:21  | 16 kph    |
| 9/12/2016 14:29 | ON     | N22.20078 E113.86228 | 101 m      | 0:00:22  | 17 kph    |
| 9/12/2016 14:29 | ON     | N22.20076 E113.86150 | 81 m       | 0:00:18  | 16 kph    |
| 9/12/2016 14:29 | ON     | N22.20065 E113.86063 | 91 m       | 0:00:20  | 16 kph    |
| 9/12/2016 14:30 | ON     | N22.20057 E113.85968 | 98 m       | 0:00:22  | 16 kph    |
| 9/12/2016 14:30 | ON     | N22.20047 E113.85890 | 81 m       | 0:00:19  | 15 kph    |
| 9/12/2016 14:30 | ON     | N22.20011 E113.85872 | 44 m       | 0:00:12  | 13 kph    |
| 9/12/2016 14:30 | ON     | N22.19944 E113.85875 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 14:31 | ON     | N22.19879 E113.85878 | 73 m       | 0:00:17  | 15 kph    |
| 9/12/2016 14:31 | ON     | N22.19800 E113.85877 | 88 m       | 0:00:20  | 16 kph    |
| 9/12/2016 14:31 | ON     | N22.19726 E113.85883 | 82 m       | 0:00:19  | 16 kph    |
| 9/12/2016 14:32 | ON     | N22.19665 E113.85887 | 69 m       | 0:00:16  | 16 kph    |
| 9/12/2016 14:32 | ON     | N22.19605 E113.85889 | 66 m       | 0:00:15  | 16 kph    |
| 9/12/2016 14:32 | ON     | N22.19550 E113.85891 | 61 m       | 0:00:14  | 16 kph    |
| 9/12/2016 14:32 | ON     | N22.19487 E113.85887 | 70 m       | 0:00:16  | 16 kph    |
| 9/12/2016 14:33 | ON     | N22.19452 E113.85885 | 40 m       | 0:00:09  | 16 kph    |
| 9/12/2016 14:33 | ON     | N22.19389 E113.85885 | 69 m       | 0:00:16  | 16 kph    |
| 9/12/2016 14:33 | ON     | N22.19321 E113.85889 | 76 m       | 0:00:18  | 15 kph    |
| 9/12/2016 14:33 | ON     | N22.19250 E113.85891 | 79 m       | 0:00:18  | 16 kph    |
| 9/12/2016 14:34 | ON     | N22.19184 E113.85888 | 74 m       | 0:00:17  | 16 kph    |
| 9/12/2016 14:34 | ON     | N22.19119 E113.85890 | 72 m       | 0:00:17  | 15 kph    |
| 9/12/2016 14:34 | ON     | N22.19043 E113.85892 | 85 m       | 0:00:20  | 15 kph    |
| 9/12/2016 14:35 | ON     | N22.18982 E113.85893 | 68 m       | 0:00:16  | 15 kph    |
| 9/12/2016 14:35 | ON     | N22.18925 E113.85891 | 64 m       | 0:00:15  | 15 kph    |
| 9/12/2016 14:35 | ON     | N22.18876 E113.85888 | 54 m       | 0:00:13  | 15 kph    |
| 9/12/2016 14:35 | ON     | N22.18816 E113.85884 | 67 m       | 0:00:16  | 15 kph    |
| 9/12/2016 14:36 | ON     | N22.18758 E113.85885 | 65 m       | 0:00:16  | 15 kph    |
| 9/12/2016 14:36 | ON     | N22.18699 E113.85888 | 65 m       | 0:00:16  | 15 kph    |
| 9/12/2016 14:36 | ON     | N22.18622 E113.85887 | 86 m       | 0:00:21  | 15 kph    |
| 9/12/2016 14:36 | ON     | N22.18555 E113.85884 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 14:37 | ON     | N22.18503 E113.85882 | 58 m       | 0:00:14  | 15 kph    |
| 9/12/2016 14:37 | ON     | N22.18440 E113.85883 | 69 m       | 0:00:17  | 15 kph    |
| 9/12/2016 14:37 | ON     | N22.18389 E113.85885 | 58 m       | 0:00:14  | 15 kph    |
| 9/12/2016 14:38 | ON     | N22.18315 E113.85883 | 82 m       | 0:00:20  | 15 kph    |
| 9/12/2016 14:38 | ON     | N22.18248 E113.85882 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 14:38 | ON     | N22.18184 E113.85889 | 72 m       | 0:00:18  | 14 kph    |
| 9/12/2016 14:38 | ON     | N22.18117 E113.85902 | 75 m       | 0:00:19  | 14 kph    |
| 9/12/2016 14:39 | ON     | N22.18053 E113.85899 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 14:39 | ON     | N22.17991 E113.85899 | 69 m       | 0:00:17  | 15 kph    |
| 9/12/2016 14:39 | ON     | N22.17928 E113.85902 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 14:40 | ON     | N22.17866 E113.85901 | 69 m       | 0:00:17  | 15 kph    |
| 9/12/2016 14:40 | ON     | N22.17815 E113.85897 | 57 m       | 0:00:14  | 15 kph    |
| 9/12/2016 14:40 | ON     | N22.17756 E113.85895 | 65 m       | 0:00:16  | 15 kph    |
| 9/12/2016 14:40 | ON     | N22.17702 E113.85893 | 60 m       | 0:00:15  | 14 kph    |
| 9/12/2016 14:41 | ON     | N22.17651 E113.85891 | 58 m       | 0:00:14  | 15 kph    |
| 9/12/2016 14:41 | ON     | N22.17596 E113.85890 | 60 m       | 0:00:15  | 14 kph    |
| 9/12/2016 14:41 | ON     | N22.17533 E113.85894 | 71 m       | 0:00:18  | 14 kph    |
| 9/12/2016 14:42 | ON     | N22.17459 E113.85903 | 83 m       | 0:00:21  | 14 kph    |
| 9/12/2016 14:42 | ON     | N22.17404 E113.85897 | 61 m       | 0:00:15  | 15 kph    |
| 9/12/2016 14:42 | ON     | N22.17354 E113.85891 | 56 m       | 0:00:14  | 14 kph    |
| 9/12/2016 14:42 | ON     | N22.17296 E113.85900 | 66 m       | 0:00:17  | 14 kph    |
| 9/12/2016 14:43 | ON     | N22.17236 E113.85897 | 67 m       | 0:00:17  | 14 kph    |
| 9/12/2016 14:43 | ON     | N22.17185 E113.85888 | 57 m       | 0:00:14  | 15 kph    |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 14:43 | ON     | N22.17117 E113.85886 | 75 m       | 0:00:19  | 14 kph    |
| 9/12/2016 14:43 | ON     | N22.17070 E113.85883 | 53 m       | 0:00:13  | 15 kph    |
| 9/12/2016 14:44 | ON     | N22.17007 E113.85872 | 71 m       | 0:00:17  | 15 kph    |
| 9/12/2016 14:44 | ON     | N22.16955 E113.85866 | 59 m       | 0:00:15  | 14 kph    |
| 9/12/2016 14:44 | ON     | N22.16921 E113.85846 | 43 m       | 0:00:12  | 13 kph    |
| 9/12/2016 14:44 | ON     | N22.16922 E113.85800 | 47 m       | 0:00:12  | 14 kph    |
| 9/12/2016 14:44 | ON     | N22.16923 E113.85796 | 4 m        | 0:00:01  | 16 kph    |
| 9/12/2016 14:45 | ON     | N22.16965 E113.85729 | 84 m       | 0:00:17  | 18 kph    |
| 9/12/2016 14:45 | ON     | N22.17022 E113.85668 | 88 m       | 0:00:18  | 18 kph    |
| 9/12/2016 14:45 | ON     | N22.17084 E113.85613 | 90 m       | 0:00:18  | 18 kph    |
| 9/12/2016 14:45 | ON     | N22.17150 E113.85556 | 94 m       | 0:00:19  | 18 kph    |
| 9/12/2016 14:46 | ON     | N22.17166 E113.85540 | 24 m       | 0:00:05  | 18 kph    |
| 9/12/2016 14:46 | ON     | N22.17215 E113.85490 | 74 m       | 0:00:15  | 18 kph    |
| 9/12/2016 14:46 | ON     | N22.17218 E113.85487 | 5 m        | 0:00:01  | 18 kph    |
| 9/12/2016 14:46 | ON     | N22.17261 E113.85439 | 69 m       | 0:00:14  | 18 kph    |
| 9/12/2016 14:46 | ON     | N22.17308 E113.85390 | 73 m       | 0:00:15  | 17 kph    |
| 9/12/2016 14:47 | ON     | N22.17349 E113.85340 | 69 m       | 0:00:14  | 18 kph    |
| 9/12/2016 14:47 | ON     | N22.17390 E113.85284 | 73 m       | 0:00:15  | 18 kph    |
| 9/12/2016 14:47 | ON     | N22.17401 E113.85269 | 20 m       | 0:00:04  | 18 kph    |
| 9/12/2016 14:47 | ON     | N22.17447 E113.85209 | 80 m       | 0:00:16  | 18 kph    |
| 9/12/2016 14:47 | ON     | N22.17485 E113.85164 | 63 m       | 0:00:13  | 17 kph    |
| 9/12/2016 14:48 | ON     | N22.17515 E113.85129 | 49 m       | 0:00:10  | 18 kph    |
| 9/12/2016 14:48 | ON     | N22.17576 E113.85061 | 98 m       | 0:00:20  | 18 kph    |
| 9/12/2016 14:48 | ON     | N22.17634 E113.85008 | 84 m       | 0:00:17  | 18 kph    |
| 9/12/2016 14:48 | ON     | N22.17648 E113.84996 | 19 m       | 0:00:04  | 17 kph    |
| 9/12/2016 14:48 | ON     | N22.17707 E113.84959 | 77 m       | 0:00:16  | 17 kph    |
| 9/12/2016 14:49 | ON     | N22.17751 E113.84954 | 50 m       | 0:00:11  | 16 kph    |
| 9/12/2016 14:49 | ON     | N22.17796 E113.84960 | 50 m       | 0:00:11  | 16 kph    |
| 9/12/2016 14:49 | ON     | N22.17857 E113.84970 | 68 m       | 0:00:15  | 16 kph    |
| 9/12/2016 14:49 | ON     | N22.17927 E113.84962 | 79 m       | 0:00:17  | 17 kph    |
| 9/12/2016 14:50 | ON     | N22.18000 E113.84945 | 84 m       | 0:00:18  | 17 kph    |
| 9/12/2016 14:50 | ON     | N22.18046 E113.84936 | 52 m       | 0:00:15  | 12 kph    |
| 9/12/2016 14:50 | OFF    | N22.18084 E113.84930 | 42 m       | 0:00:16  | 10 kph    |
| 9/12/2016 14:50 | OFF    | N22.18101 E113.84929 | 19 m       | 0:00:10  | 7 kph     |
| 9/12/2016 14:50 | OFF    | N22.18104 E113.84928 | 3 m        | 0:00:02  | 6 kph     |
| 9/12/2016 14:50 | OFF    | N22.18113 E113.84927 | 10 m       | 0:00:07  | 5 kph     |
| 9/12/2016 14:51 | OFF    | N22.18130 E113.84924 | 20 m       | 0:00:16  | 4 kph     |
| 9/12/2016 14:51 | OFF    | N22.18143 E113.84919 | 15 m       | 0:00:15  | 3 kph     |
| 9/12/2016 14:51 | OFF    | N22.18151 E113.84915 | 10 m       | 0:00:12  | 3 kph     |
| 9/12/2016 14:51 | OFF    | N22.18162 E113.84914 | 12 m       | 0:00:11  | 4 kph     |
| 9/12/2016 14:52 | OFF    | N22.18174 E113.84935 | 25 m       | 0:00:15  | 6 kph     |
| 9/12/2016 14:52 | OFF    | N22.18161 E113.84979 | 48 m       | 0:00:15  | 12 kph    |
| 9/12/2016 14:52 | OFF    | N22.18146 E113.85024 | 48 m       | 0:00:17  | 10 kph    |
| 9/12/2016 14:52 | OFF    | N22.18143 E113.85033 | 10 m       | 0:00:06  | 6 kph     |
| 9/12/2016 14:53 | OFF    | N22.18140 E113.85048 | 15 m       | 0:00:15  | 4 kph     |
| 9/12/2016 14:53 | OFF    | N22.18132 E113.85061 | 16 m       | 0:00:16  | 4 kph     |
| 9/12/2016 14:53 | OFF    | N22.18102 E113.85057 | 33 m       | 0:00:14  | 9 kph     |
| 9/12/2016 14:53 | OFF    | N22.18074 E113.85046 | 33 m       | 0:00:16  | 7 kph     |
| 9/12/2016 14:54 | OFF    | N22.18058 E113.85036 | 21 m       | 0:00:16  | 5 kph     |
| 9/12/2016 14:54 | OFF    | N22.18052 E113.85032 | 8 m        | 0:00:07  | 4 kph     |
| 9/12/2016 14:54 | OFF    | N22.18044 E113.85026 | 11 m       | 0:00:07  | 6 kph     |
| 9/12/2016 14:54 | OFF    | N22.18036 E113.84986 | 42 m       | 0:00:15  | 10 kph    |
| 9/12/2016 14:54 | OFF    | N22.18045 E113.84932 | 56 m       | 0:00:18  | 11 kph    |
| 9/12/2016 14:55 | OFF    | N22.18055 E113.84885 | 51 m       | 0:00:17  | 11 kph    |
| 9/12/2016 14:55 | OFF    | N22.18062 E113.84850 | 37 m       | 0:00:15  | 9 kph     |
| 9/12/2016 14:55 | OFF    | N22.18070 E113.84822 | 29 m       | 0:00:16  | 7 kph     |
| 9/12/2016 14:55 | OFF    | N22.18074 E113.84801 | 22 m       | 0:00:16  | 5 kph     |
| 9/12/2016 14:55 | OFF    | N22.18075 E113.84800 | 1 m        | 0:00:01  | 5 kph     |
| 9/12/2016 14:56 | OFF    | N22.18078 E113.84784 | 17 m       | 0:00:16  | 4 kph     |
| 9/12/2016 14:56 | OFF    | N22.18080 E113.84773 | 11 m       | 0:00:12  | 3 kph     |
| 9/12/2016 14:56 | OFF    | N22.18083 E113.84760 | 14 m       | 0:00:16  | 3 kph     |
| 9/12/2016 14:56 | OFF    | N22.18085 E113.84749 | 12 m       | 0:00:15  | 3 kph     |
| 9/12/2016 14:57 | OFF    | N22.18087 E113.84739 | 10 m       | 0:00:13  | 3 kph     |
| 9/12/2016 14:57 | OFF    | N22.18086 E113.84734 | 5 m        | 0:00:04  | 5 kph     |

## Appendix I. (cont'd)

| Date & Time     | EFFORT | Position             | Leg Length | Leg Time | Leg Speed |
|-----------------|--------|----------------------|------------|----------|-----------|
| 9/12/2016 14:57 | OFF    | N22.18085 E113.84731 | 4 m        | 0:00:02  | 7 kph     |
| 9/12/2016 14:57 | OFF    | N22.18059 E113.84719 | 32 m       | 0:00:14  | 8 kph     |
| 9/12/2016 14:57 | OFF    | N22.18052 E113.84737 | 20 m       | 0:00:08  | 9 kph     |
| 9/12/2016 14:57 | OFF    | N22.18071 E113.84786 | 55 m       | 0:00:15  | 13 kph    |
| 9/12/2016 14:58 | OFF    | N22.18111 E113.84842 | 73 m       | 0:00:18  | 15 kph    |
| 9/12/2016 14:58 | OFF    | N22.18154 E113.84903 | 79 m       | 0:00:19  | 15 kph    |
| 9/12/2016 14:58 | OFF    | N22.18175 E113.84931 | 37 m       | 0:00:09  | 15 kph    |
| 9/12/2016 14:58 | ON     | N22.18210 E113.84954 | 47 m       | 0:00:12  | 14 kph    |
| 9/12/2016 14:59 | ON     | N22.18269 E113.84950 | 66 m       | 0:00:15  | 16 kph    |
| 9/12/2016 14:59 | ON     | N22.18338 E113.84938 | 77 m       | 0:00:17  | 16 kph    |
| 9/12/2016 14:59 | ON     | N22.18399 E113.84942 | 67 m       | 0:00:15  | 16 kph    |
| 9/12/2016 14:59 | ON     | N22.18466 E113.84949 | 76 m       | 0:00:17  | 16 kph    |
| 9/12/2016 15:00 | ON     | N22.18540 E113.84951 | 82 m       | 0:00:18  | 16 kph    |
| 9/12/2016 15:00 | ON     | N22.18605 E113.84952 | 72 m       | 0:00:16  | 16 kph    |
| 9/12/2016 15:00 | ON     | N22.18673 E113.84955 | 76 m       | 0:00:17  | 16 kph    |
| 9/12/2016 15:00 | ON     | N22.18705 E113.84955 | 36 m       | 0:00:08  | 16 kph    |
| 9/12/2016 15:00 | ON     | N22.18737 E113.84954 | 36 m       | 0:00:08  | 16 kph    |
| 9/12/2016 15:01 | ON     | N22.18813 E113.84953 | 85 m       | 0:00:19  | 16 kph    |
| 9/12/2016 15:01 | ON     | N22.18873 E113.84955 | 66 m       | 0:00:15  | 16 kph    |
| 9/12/2016 15:01 | ON     | N22.18904 E113.84957 | 35 m       | 0:00:08  | 16 kph    |
| 9/12/2016 15:01 | ON     | N22.18963 E113.84962 | 65 m       | 0:00:15  | 16 kph    |
| 9/12/2016 15:02 | ON     | N22.19027 E113.84968 | 72 m       | 0:00:16  | 16 kph    |
| 9/12/2016 15:02 | ON     | N22.19067 E113.84965 | 44 m       | 0:00:10  | 16 kph    |
| 9/12/2016 15:02 | ON     | N22.19136 E113.84965 | 77 m       | 0:00:17  | 16 kph    |
| 9/12/2016 15:02 | ON     | N22.19156 E113.84965 | 22 m       | 0:00:05  | 16 kph    |
| 9/12/2016 15:02 | ON     | N22.19168 E113.84966 | 13 m       | 0:00:03  | 16 kph    |
| 9/12/2016 15:03 | ON     | N22.19223 E113.84969 | 61 m       | 0:00:14  | 16 kph    |
| 9/12/2016 15:03 | ON     | N22.19300 E113.84969 | 86 m       | 0:00:20  | 16 kph    |
| 9/12/2016 15:03 | ON     | N22.19371 E113.84968 | 79 m       | 0:00:19  | 15 kph    |
| 9/12/2016 15:03 | ON     | N22.19439 E113.84962 | 75 m       | 0:00:18  | 15 kph    |
| 9/12/2016 15:04 | ON     | N22.19501 E113.84956 | 70 m       | 0:00:17  | 15 kph    |
| 9/12/2016 15:04 | ON     | N22.19515 E113.84958 | 15 m       | 0:00:04  | 14 kph    |
| 9/12/2016 15:04 | ON     | N22.19531 E113.84983 | 32 m       | 0:00:12  | 10 kph    |
| 9/12/2016 15:04 | ON     | N22.19520 E113.85039 | 59 m       | 0:00:17  | 12 kph    |

## Appendix II. Survey Effort Database in SWL (December 2016)

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

| DATE      | AREA      | BEAU | EFFORT | SEASON | VESSEL        | TYPE     | P/S |
|-----------|-----------|------|--------|--------|---------------|----------|-----|
| 2-Dec-16  | SW LANTAU | 2    | 11.38  | WINTER | STANDARD36826 | HKCRP    | P   |
| 2-Dec-16  | SW LANTAU | 3    | 3.48   | WINTER | STANDARD36826 | HKCRP    | P   |
| 2-Dec-16  | SW LANTAU | 2    | 4.61   | WINTER | STANDARD36826 | HKCRP    | S   |
| 2-Dec-16  | SW LANTAU | 3    | 2.20   | WINTER | STANDARD36826 | HKCRP    | S   |
| 7-Dec-16  | SW LANTAU | 2    | 24.77  | WINTER | STANDARD36826 | HKCRP    | P   |
| 7-Dec-16  | SW LANTAU | 3    | 2.54   | WINTER | STANDARD36826 | HKCRP    | P   |
| 7-Dec-16  | SW LANTAU | 2    | 8.03   | WINTER | STANDARD36826 | HKCRP    | S   |
| 9-Dec-16  | SW LANTAU | 2    | 48.65  | WINTER | STANDARD36826 | HYD-HZMB | P   |
| 9-Dec-16  | SW LANTAU | 3    | 3.18   | WINTER | STANDARD36826 | HYD-HZMB | P   |
| 9-Dec-16  | SW LANTAU | 2    | 14.00  | WINTER | STANDARD36826 | HYD-HZMB | S   |
| 9-Dec-16  | SW LANTAU | 3    | 2.34   | WINTER | STANDARD36826 | HYD-HZMB | S   |
| 13-Dec-16 | SW LANTAU | 2    | 24.94  | WINTER | STANDARD36826 | HKCRP    | P   |
| 13-Dec-16 | SW LANTAU | 3    | 1.35   | WINTER | STANDARD36826 | HKCRP    | P   |
| 13-Dec-16 | SW LANTAU | 2    | 11.01  | WINTER | STANDARD36826 | HKCRP    | S   |
| 13-Dec-16 | SW LANTAU | 3    | 3.54   | WINTER | STANDARD36826 | HKCRP    | S   |

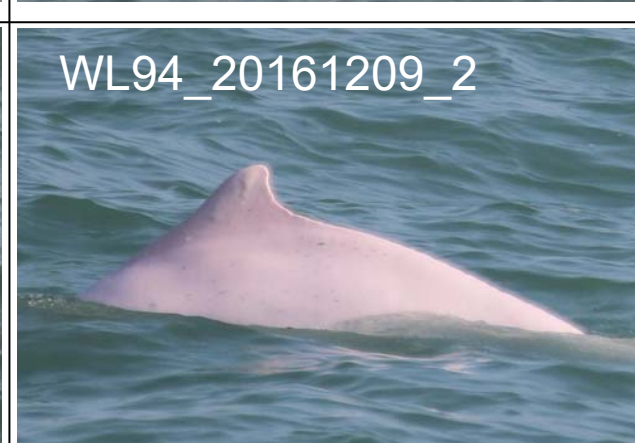
### Appendix III. Chinese White Dolphin Sighting Database in SWL (December 2016)

(Abbreviations: 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 Line)

| DATE      | STG # | TIME | HRD SZ | AREA      | BEAU | PSD | EFFORT | TYPE     | NORTHING | EASTING | SEASON | BOAT ASSOC. | P/S |
|-----------|-------|------|--------|-----------|------|-----|--------|----------|----------|---------|--------|-------------|-----|
| 2-Dec-16  | 1     | 1400 | 2      | SW LANTAU | 2    | 437 | ON     | HKCRP    | 804551   | 804515  | WINTER | NONE        | P   |
| 7-Dec-16  | 6     | 1230 | 2      | SW LANTAU | 2    | 614 | ON     | HKCRP    | 806613   | 803416  | WINTER | NONE        | P   |
| 07-Dec-16 | 7     | 1243 | 1      | SW LANTAU | 2    | 140 | ON     | HKCRP    | 805816   | 803383  | WINTER | NONE        | P   |
| 07-Dec-16 | 8     | 1344 | 3      | SW LANTAU | 2    | 33  | ON     | HKCRP    | 807936   | 806378  | WINTER | NONE        | S   |
| 09-Dec-16 | 1     | 1212 | 1      | SW LANTAU | 2    | 65  | ON     | HYD-HZMB | 805629   | 808395  | WINTER | NONE        | S   |
| 09-Dec-16 | 2     | 1409 | 6      | SW LANTAU | 2    | 384 | ON     | HYD-HZMB | 805958   | 804497  | WINTER | NONE        | P   |
| 09-Dec-16 | 3     | 1450 | 1      | SW LANTAU | 3    | 298 | ON     | HYD-HZMB | 804733   | 802473  | WINTER | NONE        | P   |
| 13-Dec-16 | 1     | 1126 | 3      | SW LANTAU | 2    | 146 | ON     | HKCRP    | 802657   | 804583  | WINTER | NONE        | P   |
| 13-Dec-16 | 2     | 1230 | 2      | SW LANTAU | 2    | 219 | ON     | HKCRP    | 803429   | 806493  | WINTER | NONE        | P   |
| 13-Dec-16 | 3     | 1308 | 2      | SW LANTAU | 3    | 90  | ON     | HKCRP    | 800770   | 807210  | WINTER | PAIR        | S   |
| 13-Dec-16 | 4     | 1336 | 2      | SW LANTAU | 3    | 87  | ON     | HKCRP    | 803668   | 808680  | WINTER | NONE        | S   |

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

| <b>ID#</b> | <b>DATE</b> | <b>STG#</b> | <b>TYPE</b> | <b>AREA</b> |
|------------|-------------|-------------|-------------|-------------|
| NL33       | 09/12/16    | 2           | HYD-HZMB    | SW LANTAU   |
| NL322      | 09/12/16    | 2           | HYD-HZMB    | SW LANTAU   |
| SL60       | 09/12/16    | 1           | HYD-HZMB    | SW LANTAU   |
|            | 13/12/16    | 4           | HKCRP       | SW LANTAU   |
| SL64       | 13/12/16    | 1           | HKCRP       | SW LANTAU   |
| WL15       | 07/12/16    | 8           | HKCRP       | SW LANTAU   |
|            | 09/12/16    | 2           | HYD-HZMB    | SW LANTAU   |
| WL47       | 13/12/16    | 1           | HKCRP       | SW LANTAU   |
| WL62       | 13/12/16    | 1           | HKCRP       | SW LANTAU   |
| WL94       | 07/12/16    | 7           | HKCRP       | SW LANTAU   |
|            | 09/12/16    | 2           | HYD-HZMB    | SW LANTAU   |
| WL123      | 13/12/16    | 2           | HKCRP       | SW LANTAU   |
|            | 13/12/16    | 4           | HKCRP       | SW LANTAU   |
| WL152      | 07/12/16    | 6           | HKCRP       | SW LANTAU   |
| WL221      | 09/12/16    | 2           | HYD-HZMB    | SW LANTAU   |
| WL260      | 09/12/16    | 2           | HYD-HZMB    | SW LANTAU   |



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



WL260\_20161209\_2



SL64\_20161213\_1



WL47\_20161213\_1



WL62\_20161213\_1



WL123\_20161213\_2



SL60\_20161213\_4



WL123\_20161213\_4