

**Russian Federal Research Institute of Fisheries and Oceanography
(VNIRO)**

**APPROVED
Director of VNIRO**

_____ **B. N. Kotenev**
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**DISTRIBUTION AND ABUNDANCE OF GRAY WHALES
OF THE OKHOTSK-KOREAN POPULATION
IN THE WATERS OF NORTHEASTERN SAKHALIN
IN JUNE – OCTOBER 2006
(based on data from onshore and vessel-based surveys)**

**REPORT ON STUDIES CONDUCTED
AS PART OF THE “PROGRAM FOR STUDY AND MONITORING OF GRAY
WHALES OFF THE NORTHEAST COAST OF SAKHALIN ISLAND IN 2006”**

V. A. Vladimirov (VNIRO), S. P. Starodymov (VNIRO),
A. T. Ashchepkov (MBI FERAS) A. G. Afanasyev-Grigoryev (MBI FERAS),
J.E. Muir (LGL Limited) and A. V. Vladimirov (VNIRO)

Prepared for

Exxon Neftegas Limited
and
Sakhalin Energy Investment Company Limited

Moscow
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SUMMARY

This report presents the results of vessel-based and onshore surveys of the gray whales of the Okhotsk-Korean (western) population performed in the summer and fall of 2006 under the auspices of the “Program for Study and Monitoring of Gray Whales off the Northeast Coast of Sakhalin Island”. The studies showed that the vast majority of the whales observed off northeast Sakhalin as in 2004-2005, were concentrated in the near-shore Piltun feeding area. In the Offshore feeding area, the maximum number of animals (44 observed in September 2006) was higher than that in 2005 (approximately 25 individuals) and similar to 2002-2003 when up to 50 sightings were made on a given survey. Marine Mammal Observers (MMOs) indicated, however, that 27 of the 44 whales were likely resighted during the survey. When the resights are considered, the maximum number of gray whales in the offshore area was 26 individuals that were observed in October 2006, which is similar to 2005 (approximately 25 individuals) and lower than 2002-2003 when up to 50 sightings were made on a given survey. It is hypothesized that the apparent shift in distribution from the Offshore to the Piltun area in 2004-2006 was due to concentrations of sand lance (*Ammodytes hexapterus*) in the latter area, which are an easily-accessible and high-calorie food of gray whales (Fadeev 2005, 2006, 2007).

Within the Piltun Area in 2006, the majority of gray whales (97.9%), stayed within a 5-km zone of coastal shallows with depths of up to 20 m during the feeding season. The seasonal distribution of gray whales in the Piltun feeding area in the summer-fall period of 2006 displayed similarities to 2004-2005, however there was a marked difference in the amount of whales observed in the southern part of the survey area compared with previous years. Large aggregations of gray whales were observed in the south of the mouth of Piltun Bay, where more than 30% of the whales were concentrated by September. No similar congregation of whales had been observed there in previous years. Fewer whales were observed during the main feeding period in the northern part of the Piltun Area (from 65-75% of animals in 2004-2005 to 30-35% in 2006). This redistribution may have resulted from a change in the hydrology of the coastal waters of northeastern Sakhalin and the corresponding shifts in the distribution and biomass of the main gray whale food sources. Fadeev (2007) reports a reduction in frequency of occurrence of sand lance in the northern part of the Piltun Area in 2006 compared with 2004-2005.

Five calves were tentatively sighted in the Piltun Area from shore based observations in 2006. This suggests a relatively stable level of reproduction in the Okhotsk-Korean gray whale population in recent years (in 2004, six of such pairs were sighted, and in 2003 and 2005 – five each). It should be noted however that the identification of calves from shore is difficult.

In summary, the results of the distribution surveys performed in 2006 indicate that the abundance of western gray whales observed in the summer and fall in the coastal waters of northeastern Sakhalin appears stable. The abundance and distribution of gray whales in 2006 did not indicate obvious direct or indirect negative impacts from the Sakhalin-1 and Sakhalin II operations, including the 2006 construction of the subsea pipeline from the coast of the island to the PA-A (Molikpaq) and PA-B platforms.

Keywords: gray whale, Sakhalin, Piltun, survey, distribution, feeding, population trends, anthropogenic impacts.

Tables - 11, Figures - 20, Appendices - 3, Bibl. – 57, Pages - 145

**PROGRAM FOR STUDY AND MONITORING OF THE OKHOTSK-KOREAN
GRAY WHALE POPULATION OFF THE NORTHEAST COAST OF
SAKHALIN ISLAND IN 2006**

STUDY GROUP MEMBERS

1. Onshore automobile-based surveys:

A. V. Vladimirov, S. P. Starodymov (both - VNIRO), I. P. Marchenko (Far East State University), D. S. Samarin (Far East State Technical Fisheries University, student intern), R. E. Sidorenko (Far East State University, student intern) and S. A. Tyurin (MBI FERAS).

The coordinator for the studies is the Russian Federal Research Institute of Fisheries and Oceanography (VNIRO).

The study supervisor is Candidate of Biological Sciences V. A. Vladimirov (VNIRO).

2. Vessel-based surveys:

A. T. Ashchepkov, A. G. Afanasyev-Grigoryev, M. S. Korniyenko, N. V. Chursinova (all MBI FERAS).

The coordinator for the studies is the Marine Biology Institute (MBI) of the Far East Branch of the Russian Academy of Sciences (FERAS).

The study supervisor is A. T. Ashchepkov.

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1. INTRODUCTION

The operations to survey the gray whales in the offshore waters of Sakhalin Island, the results of which are presented in this report, were performed during the summer-fall period of 2006 in accordance with the "Program for Study and Monitoring of Gray Whales off the Northeast Coast of Sakhalin Island", which was duly endorsed by the appropriate Russian organizations and agencies – with the Russian Federation Ministry of Natural Resources (MNR), the Federal Oversight Service for Natural Resource Use (ROSPRIRODNADZOR), the Federal Veterinary and Phytosanitary Oversight Service (ROSSELKHOZNADZOR), the Russian Federal Fishery Agency, and the local Sakhalin departments of ROSPRIRODNADZOR and ROSSELKHOZNADZOR. The program, which complies with the basic principles of the Russian-American "Joint Declaration on Ensuring Biodiversity Conservation in the Sakhalin Island Area" (1997), is aimed at studying regional populations of marine mammals and obtaining the biological data needed to develop conservation measures to be implemented during active development of oil and gas fields on the northeastern shelf of the island. This is especially important for the extremely small and endangered Okhotsk-Korean (western) gray whale (*Eschrichtius robustus*) population that resides in the area during the summer-fall season. The population is estimated to number only around 120 according to the latest data (Vladimirov et al. 2005, 2006; Yakovlev and Tyurneva 2006, 2007; Cooke et al. 2006; Weller et al. 2006) and for that reason is listed in the "Red Data Book" of the Russian Federation and listed as critically endangered by the International Union for the Conservation of Nature (IUCN). The important feeding areas of this population are in direct proximity to several offshore petroleum license areas, in two of which (Piltun-Astokhskoye and Chayvo) active operations have already begun within the framework of the Sakhalin-1 and Sakhalin II projects (Figure 1). As a result of this proximity, detailed annual studies of gray whale distribution patterns in Sakhalin waters have been conducted, the results of which are presented in this report.

The surveys performed in 2006 included regular vessel-based and onshore surveys in key feeding habitats of the target population in order to continue monitoring whale distribution and abundance in the waters off northeastern Sakhalin. These operations continued and expanded upon the program of surveys performed under the similar Russian "Programs for Study and Monitoring of the Okhotsk-Korean Gray Whale Population off the Northeast Coast of Sakhalin Island" in 2002-2005. This work is part of ongoing research funded by the Sakhalin-1 (operator - Exxon Neftegas Limited (ENL)) and Sakhalin II (Sakhalin Energy Investment Company, Limited (SEIC)) projects.

In 2006, the survey operations were performed by specialists from the Russian Federal Research Institute of Fisheries and Oceanography (VNIRO) and the Institute of Marine Biology (IBM) of the Far East Branch of the Russian Academy of Sciences. Students

from the Far East State University (FESU) and Far East State Technical Fisheries University (FESTFU) participated in the collection of field data, in addition to other appropriately qualified contracted specialists.

This summary report on gray whale distribution studies performed in 2006 was prepared by V. A. Vladimirov (VNIRO) based on the processing of onshore survey data (S. P. Starodymov) and data from vessel-based surveys (A. T. Ashchepkov and A. G. Afanasyev-Grigoryev). Maps of gray whale population density in the feeding areas were prepared by J.E. Muir (LGL Limited).

1.1. NEED FOR MONITORING

The Okhotsk-Korean or western gray whale population is one of the smallest of all the world's populations of large whales. Currently, its population is estimated to total around 120 individuals (Cooke et al. 2006). However, the results of studies of recent years performed by Russian scientists indicates this number may under-estimate the overall abundance of the entire Okhotsk-Korean population, as 126 individuals were photographed in the area in 2006 (Yakovlev and Tyurneva 2007).

Based on currently-available data, during the summer and fall months, i.e., during the feeding season, gray whales of the Okhotsk-Korean population are concentrated in the Sea of Okhotsk off the northeastern coast of Sakhalin Island (Blokhin 1996; Sobolevsky 2000, 2001; Blokhin et al. 1985; Wursig et al. 1999, 2000; Weller et al. 2000, 2001, 2002), although feeding gray whales have also been found more or less regularly in other coastal areas of the Sea of Okhotsk, as well as in the waters of eastern Kamchatka (Vertyanin et al., 2004; Maminov and Blokhin, 2004; Weller et al., 2002, 2003; A. V. Andreyev [Institute of Biological Problems of the North of FERAS, Magadan], S. I. Korniyev [KamchatNIRO, Petropavlovsk-Kamchatsky] and V. N. Malakhov [Rosselkhoznadzor, Magadan] – *pers. comm.*). The shallow bays on the southern coast of the Korean Peninsula were long thought to be the wintering grounds for whales of the Okhotsk-Korean population (hence its name). In recent years, however, it has been established that gray whales are sighted off the Korean coast only during migrations, and the whales more likely winter and breed somewhere in the South China Sea, most probably off the coast of Guangdong Province and in the waters around Hainan Island (Rice 1998). These wintering grounds and seasonal migration routes have yet to be identified.

The coastal waters of northeastern Sakhalin near Piltun, Chayvo and Nyyskiy bays are currently the only known feeding areas of the Okhotsk-Korean gray whale population. Gray whales are benthophages and in contrast to all other cetaceans, feed primarily on benthic (bottom) and epibenthic (near-bottom) invertebrates. The exceptionally high biomass of preferred prey in the area (Koblikov, 1986; Fadeev, 2003, 2004, 2005) is apparently the reason for the formation of gray whale feeding aggregations in specific areas near the shores of northeastern Sakhalin. In recent years, whales have been

observed feeding in two limited offshore areas located in close proximity to each other – the Piltun and Offshore areas (Figure 1).

Gray whales appear off the northeast coast of Sakhalin in late May – early June, when the water area is free of ice, and remain there for the most part until October. They will then begin their fall migration to their wintering grounds in the south. The gray whales exit Sakhalin waters entirely by late November or early December, when the sea starts to freeze again.

The annual feeding routine has evolved in such a way that the gray whales actively feed only during the summer-fall season when they arrive offshore Sakhalin. During the rest of the year, including the breeding season, they survive almost entirely on accumulated energy reserves stored in a layer of subcutaneous blubber. As a result, it is very important that normal feeding conditions be maintained in order to preserve the Okhotsk-Korean gray whale population. Recent survey data on Okhotsk-Korean gray whales (Weller et al. 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006; Wursig et al. 1999, 2000) indicate that the current reproductive potential of the population is extremely low. Only 23 productive cows were reliably identified in 2005, and the total number of calves observed in 1997-2005, when regular, active observations were established, was only 53 (Weller et al. 2006), i.e., an average of 5.9 calves per year.

The average annual gray whale calf mortality rate (in a range of approximately 6 months to 1.5 years) is currently estimated to be 28% for the Okhotsk-Korean gray whale population, and 1.3% for adults (Cooke et al. 2006). It is possible, however, that some yearlings or calves spend the entire year in regions elsewhere and thus the mortality estimate may be somewhat overstated. However, vulnerability and pressure from anthropogenic activities on this population are clear, as indicated recently by reports of four deaths of female western gray whales in Japanese fishing nets over the last two years. Research and monitoring programs such as the whale distribution and abundance work presented in this report therefore play an important role in understanding how to minimize potential impacts from oil and gas operations.

1.2. SURVEY GOALS AND OBJECTIVES

The main objectives of the 2006 survey suite were to study and monitor spatial and seasonal patterns in the distribution of gray whales in the coastal waters of northeastern Sakhalin, which in addition to serving as practical indicators of the status of the Okhotsk-Korean population, presumably also reflect the condition of its summer-fall feeding habitats.

The area covered by the 2006 surveys included the coastal area of the island's northeast shelf and the part of the offshore license areas for the Sakhalin-1 (Odoptu, Chayvo and Arkutun-Dagi fields) and Sakhalin II projects (Piltun-Astokhskoye field).

As part of the 2006 program, transect vessel-based surveys were conducted from the "*Professor Bogorov*" research vessel, and then from the "*Akademik Oparin*", in the Piltun and Offshore feeding areas and adjacent Arkutun-Dagi licence area from the last four days in June through the first week of October. Onshore vehicle-based scan surveys were performed in the Piltun Area from the last five days of June through the second week of October (no aerial surveys were performed in 2006).

The most important task of the vessel-based surveys was to assess the abundance and distribution of gray whales in the feeding areas in the waters of northeastern Sakhalin, as well to survey the adjacent areas in order to identify the presence of whales within the Arkutun-Dagi license area (Sakhalin-1 project).

The purpose of onshore vehicle-based surveys was to study patterns and seasonal variations in gray whale distribution in the near-shore Piltun feeding area. The specific goals of these surveys, as during the previous year, were as follows:

- gathering detailed data on the distribution of gray whales in the near-shore waters from Odoptu Bay in the north to Chayvo Bay in the south;
- identifying the spatial and temporal distribution of gray whales in this area during the feeding season and the nature of their local movements within the area. This includes any potential effect on gray whale distribution from the subsea pipeline installation in the summer of 2006 from shore to the PA-A (Molikpaq) and PA-B platforms, as well as the assembly operations performed on the latter;
- estimating the number of cows with current-year calves arriving at the Piltun feeding area during the summer, and determining the dates on which the "mother-calf" pairs split and current-year's calves make the transition to independent feeding; and
- assessing the total number of whales in the Piltun area, based as much as possible on the data collected.

Data were also collected during surveys on the distribution and abundance of other marine mammal species observed in the area.

Onshore and vessel surveys were designed to cause minimal disturbance of the whales. In 2006 a series of in situ calibration experiments were also performed to improve the analysis of the data received, and to understand how many whales are missed during the surveys

2. METHODS AND MATERIALS

2.1. STUDY AREA AND SURVEY DESIGN

In recent years, gray whales of the Okhotsk-Korean population have concentrated during the feeding season in the shelf waters off northeastern Sakhalin near Piltun, Chayvo and Nyyskiy bays (between 52°20' and 53°30' north latitude) in two feeding areas located in close proximity to each other (Fig. 1). The first of these areas, the traditional area (usually referred to as the "Piltun" or "near-shore" area), is about 120 km long and is located opposite Piltun Bay, where the whales normally remain in shallows with depths up to 20-25 m, primarily within 4-5 km from shore. The second feeding area, which was discovered in 2001 and is called the "Offshore" feeding area (Blokhin et al. 2002; Maminov and Yakovlev 2002; Meier et al. 2002), is located 40-50 km south-southeast of the Piltun area opposite Chayvo and Nyyskiy bays, 25-40 km offshore in waters 35-45 m deep.

The coastal waters opposite Piltun Bay have special importance for the feeding of the gray whales of the Okhotsk-Korean population, since this is the only known location where cows-calf pairs are observed and where calves learn foraging skills before the transition to independent life. This area is located near existing and planned onshore and offshore facilities of the Sakhalin-1, Sakhalin II, Sakhalin-3, and Sakhalin-5 oil production complexes (Figure 1). Whales remain close to the shore, making it possible in good weather to count virtually all whales in the Piltun feeding waters from coastal hills, to perform repeat surveys, and thereby to obtain detailed information on gray whale distribution patterns for subsequent statistical analysis.

As already mentioned, a significant concentration of gray whales in the Offshore area was observed for the first time in 2001. The animals feed there at substantially greater depths than in the near-shore area, and no cow-calf pairs have ever been observed in this area. This may be due to the greater depths or to the fact that young gray whales may have greater protection from killer whale attacks in the shallower Piltun area. Benthos studies performed as part of the research program in 2002-2005 (Fadeev 2003, 2004, 2005, 2006) showed that density of preferred prey items accessible to whales in the Offshore area are sufficient to feed a large number of animals. The number of adult gray whales feeding there in 2003-2004 was similar to the number in coastal waters (Blokhin et al. 2004). However, the distance of the Offshore area from shore makes it impossible to perform surveys from shore; consequently ships or aircraft (airplanes or helicopters) must be used for this purpose.

The vessel-based surveys were conducted off the northeastern coast of Sakhalin Island from the "*Professor Bogorov*" (16 June – 28 September) and "*Akademik Oparin*" (15 August – 14 October) research vessels. The primary objective was to collect data on the overall abundance and distribution of gray whales in their entire feeding area in the waters of

northeastern Sakhalin. The onshore surveys were conducted on a regular basis from late June through the middle of October in order to obtain data on whale distribution in the Piltun area during the entire summer-fall season. This approach yielded comprehensive and reliable information on the nature and features of the distribution of the gray whales in their main feeding areas. Issues concerning the methods and organization of the surveys will be covered in greater detail in the following sections.

2.1.1. VESSEL-BASED SURVEYS

2.1.1.1. Area of Operations

A shipboard survey of gray whales in the Piltun feeding area was conducted in 2006 on transects along the Sakhalin shoreline at a distance of 2.5 and 6.5 km from shore. The surveyed area in the near-shore zone was between 52°37' N to the south and 53°30' N to the north. Therefore, the length of each survey transect was approximately 100 km (Figure 2).

The vessel-based survey in the Offshore area was performed over eight transects at intervals of 6.5 km oriented from east to west in a water area bounded by latitudes 51°50' - 52°14' N on the north and south and longitudes of 143°30' and 143°50' E on the east and west, respectively (Figure 2).

A vessel-based survey was also performed this year in the Arkutun-Dagi area along seven transects oriented from east to west in a water area bounded by latitudes 52°18' – 52°39' N on the north and south and longitudes of 143°30' and 143°55' E on the east and west (Figure 2).

2.1.1.2. Survey Organization and Protocols

During the entire survey period, appropriately qualified marine mammal observers (A. T. Ashchepkov, N. V. Chursinova, A. G. Afanasyev-Grigoryev, M. S. Korniyenko) surveyed marine mammals daily from the pilot house (weather permitting). The observations were usually performed by one observer, but where possible, two specialists participated during the entire daylight period. The elevation of the observation point was 10 m above sea level. For remote observation of marine mammals, determining their species, evaluating their behavior, and estimating their individual sizes, the survey observers used Fujinon 7x50 FMTRC-SX 7°30' reticule binoculars.

Surveys in the Piltun feeding area were performed at a vessel speed of 10 knots. Surveys in the Offshore and Arkutun-Dagi areas were both performed at a vessel speed of 11 knots. The ship's GPS system and the Furuno marine radar system were used to determine the exact position and heading of the vessel during the surveys. The ship's gyrocompass was used to determine the azimuth to a marine mammal sighting. The distance to the sighting was

determined using the reticle scale on the Fujinon 7x50 reticle binoculars, as a rule, at the moment they were abreast of the vessel. The distance to the individual closest to the vessel was recorded when a group of marine mammals was sighted. Whale surveys were conducted only in conditions of good visibility (at least 6-8 km) and smooth seas (waves rated at no more than 3 on the Beaufort scale).

In order to obtain the most representative data on gray whale distribution and abundance in the waters of northeastern Sakhalin, the procedures for the vessel-based surveys called for them to be performed in the Piltun and Offshore feeding areas, as well as in the Arkutun-Dagi license area, within the smallest time interval possible— over three consecutive days, weather permitting. This makes it possible to minimize the probability of duplicate counting or undercounting of whales as they move from one area to another during the pause and, therefore, substantially improves the reliability of the survey results.

Since the vessel-based program includes the photo-ID program, still and video photography of gray whales are taken for photo identification purposes. Hydrobiological, oceanographic and acoustic studies are also part of the vessel-based program. During the activities of these other groups, the marine mammal observers recorded opportunistic sightings in addition to the dedicated surveys. Due to some inevitable deviations from standard survey protocols for the opportunistic sighting data, these data were considered only as an additional source of information on the gray whales but were not used in analysis of their distribution or abundance.

Information on the date and time of sightings of animals, their species, the numbers of animals in groups, the distance from the vessel, the position and heading of the vessel, and the weather and visibility was recorded immediately on a special data form and was entered into a computer database at the end of each working day.

2.1.1.3. Calculating Whale Coordinates

The coordinates of whales sighted during vessel-based surveys were calculated using an analytical reckoning formula (Yermolayev and Zoteyev 1988). Minor adjustments were made to the formula, after which it assumed the following form:

$$\begin{aligned}\varphi_2 &= \varphi_1 + \cos K \times S / (1853 \times 60) \\ \lambda_2 &= \lambda_1 + \sin K \times \sec \varphi_{cp} \times S / (1853 \times 60)\end{aligned}$$

where,

φ_2 and λ_2 – latitude and longitude coordinates of the animal's location, respectively (in decimal degrees);

φ_1 and λ_1 - latitude and longitude coordinates, respectively, of the ship (in decimal degrees);

K - bearing to the animal (in degrees);

S - distance to the animals (in meters);

φ_{cp} - average latitude, computed by the formula:

$$\varphi_{cp} = \frac{\varphi_1 + \varphi_2}{2}$$

2.1.1.4. Data Analysis and Mapping

Statistical analysis of the data acquired in the course of the vessel-based survey program was performed with MS Excel 2002, and gray whale distribution charts were plotted with ArcView 3.2 and Surfer 8.0.

2.1.1.5. Minimizing the Impact of Vessel-Based Surveys on Whales

Since of the dedicated vessel-based surveys tracks can result in some vessel encroachment into gray whale feeding areas, detailed special instructions governing survey procedures have been developed based on the appropriate international rules. These survey protocols are reviewed with the teams at the beginning of each field season. Compliance with the instructions by the vessel captains and the members of the scientific teams therefore reduced the level of any disturbance to the gray whale population during survey operations and other studies.

2.1.2. SHORE-BASED SURVEYS

2.1.2.1. Coastal Features and Locations of Survey Stations

The coast of the near-shore gray whale feeding area, which stretches approximately from the mouth of Ekhaba Bay in the north to the waters opposite the northern part of Chayvo Bay in the south (i.e., approximately 120 km along the Sakhalin coast), is divided into two parts by a channel connecting Piltun Bay to the sea; which is a water obstacle impassable by automobiles. The survey area was therefore divided into two sections – the Odoptu-Piltun (north) section, covering the waters north of the mouth of Piltun Bay, and the Astokh-Chayvo (south) section, occupying the near-shore waters south of the mouth of Piltun Bay (Figure 3). Onshore route surveys were carried out by two survey teams, one of which (the north team) performed surveys in the Odoptu-Piltun section, while the other (the south team) was responsible for the Astokh-Chayvo section.

The surveys were performed from the same 13 permanent survey stations that had been selected and spatially fixed in the two sections during 2003-2004. They were situated in elevated areas of the coast, approximately 8-10 km from one another (Table 1, Figure 3), in order to minimize overlap of survey areas and thus recounts of the same whales in adjacent sectors of neighboring survey zones. The distances between adjacent survey stations was not exactly the same, since their locations were selected according to

the terrain (naturally, the highest points onshore with the best view of the offshore waters were chosen). The same table provides geographic coordinates and other characteristics for all the survey stations. Unfortunately, stations 8, 9, 10, and 13 that were used in 2005 were destroyed before the end of the season due to shore erosion from powerful late-autumn storms, and in 2006 new stations meeting all requirements were selected in place of these stations in their immediate vicinity. An additional two survey stations (14 and 15) were considered at the south edge of the area since 2004, although no observations were performed from these stations in 2006, just as in the previous years. No observations were performed from these stations because the road conditions south of station 13 were too hazardous.

2.1.2.2. Survey Organization and Protocols

Onshore automobile-based surveys of gray whales (and other marine mammals) were performed by two survey teams – north and south – on coordinated routes run concurrently. The north survey team included S.P. Starodymov, S.A. Tyurin, and I.P. Marchenko, and the south team included A.V. Vladimirov (who also supervised the field studies by both teams within the scope of the onshore survey program), D.S. Samarin, and R.E. Sidorenko. V.A. Vladimirov also participated in the onshore surveys in the Odoptu-Piltun section during the period from 28 September to 14 October.

Using vehicles allowed the groups to move along the shoreline from one survey section to another, significantly reducing the time interval between surveys from adjacent stations and thereby minimizing survey errors related to whale movements along the coast. Owing to the poor condition of the roads in the study area (and sometimes the actual lack of such roads), all-terrain vehicles were used to perform the route surveys: a Ural truck in the Odoptu-Piltun section, and a 4WD Toyota HiLux Surf in the Astokh-Chayvo section.

The whale surveys were organized as follows.

The two teams made a phone contact in the morning and began the survey if the weather was good. The north group, based in a Okhaneftgaz housing unit between Odoptu and Piltun bays, started the survey from the northernmost survey station (station No. 1) and moved south. The survey route in the north section was about 70 km long, and covering all eight survey stations took about seven hours. The team spent the night in a temporary portacabin near the mouth of Piltun Bay (survey station No. 8) and repeated the survey from south to north, from survey station No. 8 to station No. 1, the next day.

Until the end of August, the south group was based at a portacabin located between stations No. 10 and No. 11, by the base of the Astokh spit, and then later at ENL's Chayvo camp. It took the team about five hours to perform a complete survey on the route from survey station No. 9 to station No. 13. However, performing the entire survey in the Astokh-Chayvo section took at least seven hours, since the south group still

needed time to get from the base station to the initial point on the route or to return from the end station. Hence the actual length of the route for the south team (for a complete survey) was about 90 km in a day. The survey direction for this team was coordinated with the activities of the north team as described below.

The work of the two teams was structured to synchronize the survey time so that the surveys at the neighboring end survey stations near the mouth of Piltun Bay (stations 8 and 9) were collected at the same time. This provides a basis to compare survey data at nearly the same position at the same time and a basis to evaluate the results of the two teams for the same area. Therefore, if the north team conducted a survey from station 1 to station 8, the south team conducted a survey moving in the opposite direction, from station 13 to station 9, and the teams finished the surveys in precise synchronization by matching the exact time of the start of counting at station 8 and station 9 by satellite telephone. In similar fashion, if the north team started a survey from station 8 in the morning, the south team started its survey from station 9, and the exact time for the start of the surveys by the two teams was matched by telephone.

The whale surveys were conducted using the same protocol used by the behavior team. The protocol calls for regular, continuous scan surveys of near-shore waters. The resulting data are subsequently used to calculate the density distribution of whales and conduct statistical analysis of the data to analyze trends. The surveys were performed during daylight hours under good visibility conditions. Fujinon 7x50 binoculars provided by LGL Limited with a 7°30' field of view, a built-in compass and a range finder reticule, were used for the surveys, along with the similar Steiner Commander V binoculars. All study participants were trained to properly use the binoculars and to process the raw data.

All the surveys were performed according to a consistent protocol:

- observations were conducted from fixed survey stations located along the route, the exact elevations and coordinates of which were known;
- the direction for viewing the water area (scanning) matched the direction of movement along the route, thereby minimizing the time interval between scans of overlapping sectors of the survey zones;
- all team members participated in the surveys – two continuously scanned the water area through binoculars, while the third recorded whale sightings;
- scanning was performed from a standing position, using a rest for the binoculars, at a constant rate of 10° per minute;
- all cetaceans and vessels sighted were recorded;
- the reticule readings, bearings to the whales and vessels sighted were recorded;
- when whales were sighted, the precise time of the sighting, the species, the number of animals in the pod, the heading, the distance, the direction of

movement of the animals, behaviors, cow-calf pairs, and the observer's initials were recorded on a special form;

- hydrometeorological conditions and the starting and ending times of the scanning were also entered in the record; and
- details not included in the record columns were entered as notes.

Surveys were not performed or were terminated under the following conditions:

- wave conditions rated 4 or higher on the Beaufort scale;
- wind speed of 10 m/sec or higher;
- heavy precipitation (rain, hail, snow);
- fog; and
- other hydrometeorological conditions or combinations of conditions that interfered with visibility and prevented observation of whales more than 2 km from the survey station.

The team also had to note such features of the near-shore area as lower water depths southward from the mouth of Piltun Bay, which frequently caused higher seas in the south than in the north when the wind speeds were the same. Therefore, the south team often had to stop working due to weather conditions, while the north team continued its normal survey work.

Mother-calf pairs of gray whales were identified during shore-based surveys based on the following criteria: 1) a pair of whales stay constantly in very close contact and their surfacing and blows are practically simultaneous; 2) blows of one of the whales are much smaller and lower than ones of the second animal in the pair; and 3) body size of one of the whales is much smaller than one of the second animal (if the distance allows to assess their comparative body sizes).

Upon completion of each survey, all data recorded on the record forms regarding the number of whales sighted, reticule readings and compass bearings, hydrometeorological conditions and other details were transferred to computer (in MS Excel electronic worksheets) on the evening of that same day. The survey data were sent to the companies on a daily basis to keep them apprised of the distribution of gray whales in the Piltun area.

Methods and organization of the onshore automobile-based gray whale surveys are described in greater detail in the report on gray whale distribution in Sakhalin waters for 2004 (Vladimirov et al. 2005).

2.1.2.3. Calculating Whale Coordinates and Distances from Shore

During the surveys, the distance to the whales was determined from the range finder scale of the binoculars, and the bearing was selected from the built-in compass. When a

whale or spout was sighted with the binoculars, divisions on the reticle scale were counted from the horizon to the whale or the base of the spout. The data were entered into the computer, where the number of divisions was converted to distance. In 2006, as in 2004 and 2005, the distance was determined by the following formula (Lerzack and Hobbs 1998):

$$\begin{aligned}\alpha &= \arctan\left(\sqrt{2hR_E + h^2}/R_E\right) \cong \sqrt{2hR_E + h^2}/R_E \\ \beta &= \frac{\pi}{2} - \alpha - \theta \\ H &= \alpha R_E \cong \sqrt{2hR_E} \\ D_0 &= (R_E + h)\cos(\beta) - \sqrt{(R_E + h)^2\cos^2(\beta) - (2hR_E + h^2)} \\ \delta &= \arcsin\left(\sin(\beta)\frac{D_0}{R_E}\right) \cong \sin(\beta)\frac{D_0}{R_E} \\ D &= \delta R_E \cong \sqrt{D_0^2 - h^2}.\end{aligned}$$

where, α - the angle between a horizontal line (90°) and the horizon;
 β - the angle between the survey station and the target;
 δ - the arc between the survey station and the target;
 θ - the angle between the horizon and the target object;
 h - the elevation of the survey station;
 R_E - = radius of the Earth (6.371×10^6 m)
 D_0 - straight-line distance to the object;
 D - the distance between the survey station and the target on the Earth's surface.

In addition, a correction for sea level depending on the high or low tidal phase was included in the calculations. Then, given the distance to the whales or pods and the bearing to the animals from a survey station with known coordinates and elevation, the exact coordinates of the animals were calculated using the appropriate formulas (this stage of the calculations was discussed in greater detail in the report for 2004 – Vladimirov et al. 2005).

2.1.2.4. Data Analysis and Mapping

Statistical analysis of data obtained in 2006 during onshore vehicle-based surveys in northeastern Sakhalin was conducted to compare with distributions from previous years. Density analysis was used to prepare information to map whale distribution and conduct additional statistical analyses.

For the density analysis, the study area was divided into a grid of 1.0 x 1.0 km cells, with average western gray whale (WGW) densities (WGW/km²) estimated for each cell that

was sampled during the 2006 survey season. Average density estimates correct for the possible double counting of WGWs from different vessel transects or shore stations by accounting for survey effort (area of the grid cell that was surveyed) in the calculation of the average WGW density estimate for that grid cell.

Gray whale sightings from vessel-based and shore-based surveys were first calibrated, or brought to a common standard by correcting for two types of visibility bias that typically result in an underestimation of animal abundance (Marsh and Sinclair 1989):

- i) Availability bias: This is the probability that WGWs were available to be seen on the surface of the water during a particular survey based on the amount of time an area of water is observed during a survey (dependent on the size of the area in view, and vessel survey speed or binocular scanning rate at shore-based stations), and 2006 WGW surface-respiration-dive cycle behavior (Gailey et al. 2007).
- ii) Perception bias: This is the probability that an observer perceives an available gray whale. Distance Sampling methodology (Buckland et al. 2001, 2004) was used to analyze the effects of distance and other factors (e.g. sea state and WGW group size) on the probability of detecting an available gray whale. Distance 5.0 (Thomas et al. 2006) was used to model a detection function for the vessel-based surveys. The shore-based detection function was determined to be flat (i.e. the detection probability does not decrease with increasing distance from the observation station) for up to 0.1 reticle radial distance (range 4.5 to 10.8 km) from each shore station, to a maximum of 8 km distance. This detection function is based on an analysis of the calibration data conducted by the University of St. Andrews (Rexstad and Borchers 2006). The model they fitted included both shore-based and ship-based sightings in an analysis to estimate parameters of a shore-based detection function. This indicated that whale detectability did not diminish to the offshore limit of ship-based surveys (8 km). An important assumption of the analysis is that the detectability of whales from the ship does not depend on distance from shore. In addition, the effects on the shore-based detection function of variables other than distance were not considered. Western gray whale sightings beyond the maximum distance assumed for a flat detection function at a shore-based observation station were excluded from the density analysis.

A WGW density was estimated for each grid cell that was sampled during a particular survey of a vessel transect or shore station by summing that survey's corrected WGW sightings in the grid cell, and then dividing by the area that was surveyed in the grid cell. The estimated densities from each survey are maintained in a database that allows WGW density estimates to be extracted for selected combinations of survey type and time period. These

estimates were used to create WGW density maps at several temporal scales (e.g., monthly, yearly) that depict the WGW spatial distribution and abundance at a resolution of 1.0 km² for most of the northeast Sakhalin Island coastline. The estimated average density in each 1.0 km² grid cell was calculated by taking the arithmetic average of the WGW density estimated by each survey that sampled that grid cell.

Then whale distribution maps were plotted with the ArcView GIS program based on the data obtained.

2.1.2.5. Minimizing the Impact of Onshore Surveys on Whales

Since there was no likely direct or indirect impact on gray whales of the Okhotsk-Korean population during the process of visual surveys from shore, no measures were taken to regulate the survey work to minimize the effect of the surveys on the animals.

2.2. RESEARCH EFFORTS AND COLLECTED DATA

2.2.1. VESSEL-BASED SURVEYS

A total of 14 full-scale vessel-based gray whale surveys were performed in the Piltun and Offshore areas, as well as in the Arkutun-Dagi license area of the Sakhalin-1 project, off the northeastern Sakhalin coast during the operations period (from 22 June through 10 October 2006). A total of 324 individual gray whales¹ were recorded during the dedicated vessel-based surveys (Table 2).

More detailed information on gray whales and other marine mammals recorded in 2006 during the vessel-based surveys in the waters of Sakhalin Island is presented below in the corresponding sections of this report, in Table 3, and in Appendix 1.

2.2.2. SHORE-BASED SURVEYS

Due to unfavorable weather conditions in the summer and first half of fall of 2006, only 15 complete synchronized surveys (surveys by northern and southern teams on the same day) could be performed in the Piltun area. During a synchronized survey, observations were made at all survey stations, and they were commenced or completed at the same time at neighboring end survey stations 8 and 9 near the mouth of Piltun Bay. In addition, 12 complete surveys were also performed in one of the sections (three in the Odoptu-Piltun and nine in the Astokh-Chayvo areas), when for various reasons (usually weather-related), it was impossible to perform complete surveys. And in 19 cases, initiated surveys had to be suspended at one stage or another due to worsening weather. The total time spent directly on the surveys in 2006 was 96 hours 31 minutes (Table 4). For the sake of comparison, we should note that 35 complete synchronized

¹ MMOs indicated 27 gray whales were likely resighted during the Offshore survey on 15 September 2006.

surveys were performed during practically the same gray whale distribution monitoring period in Piltun area in 2004, and 40 were performed in 2005, and the total time of direct survey operations in these years was 230 hours 40 minutes and 201 hours 29 minutes, respectively.

A total of 1590 sightings were made in 2006 from the shore-based surveys in the Piltun area, and the total number of whales observed was 1973 (Table 4, Appendix 2). This is much lower than in the preceding two years, when the weather conditions were much better (for comparison, in 2004 the numbers were 3518 and 4414, and in 2005 they were 3892 and 4527, respectively).

In addition to the gray whales, other cetacean and pinniped species were observed during the surveys in the coastal waters off Sakhalin; information on these species is presented in the applicable section of this report and in Appendix 2.

Data on weather conditions in the 2006 onshore survey area are given in Appendix 3.

3. STUDY RESULTS

3.1. DISTRIBUTION AND ABUNDANCE OF GRAY WHALES

3.1.1. PILTUN AREA

3.1.1.1. Vessel-based Surveys

Gray whale abundance in the Piltun coastal area during transect vessel-based surveys in 2006 totaled 25 and 33 individuals (in June and July, respectively) and 41-76 (in August and September). The lower gray whale numbers in June and July were apparently related to their having not completely migrated from the wintering grounds, and in September – from partial redistribution among the feeding sites.

The relatively stable number of gray whales observed in the Piltun area in August – September (Table 2) makes it possible to assume that the whales' migration from the wintering grounds has mostly been completed by late August. Overall, the peak number of gray whales observed for a single survey in the Piltun area in 2006 (76 on 23 August) was 10% higher than the highest number observed in 2005 (69 on 19 September). The average number of sightings per survey decreased in 2006 compared to 2005 but this can partly be explained by the earlier initiation of surveys in June 2006 when fewer whales were in the area.

The monthly vessel-based surveys in the Piltun area in 2006 made it possible to identify certain seasonal variations in whale distribution and abundance (Table 2). In June, the highest whale densities were found near the mouth of Piltun Bay and the southern end of the Astokhskaya spit, but individual whales were found all the way up to the northern part of Piltun Bay (Figure 4-a).)

In July, higher densities of gray whales were observed near the mouth of Piltun Bay and somewhat north of it, as well as opposite of the northern part of the bay (Figure 4-b).

In August, the gray whales were distributed more regularly, forming groups near the mouth of Piltun Bay and just north and south of this area. Figure 4-c also illustrates that whales were observed as far south as the top of the spit adjacent to Chayvo Bay, and opposite of the northern part of Piltun Bay. Individual whales were also observed at the latitude of Urkt and Odoptu Bays (Figure 4-c). The gridded area in Figure 4-c illustrates the survey area of the vessel.

In September, as in August, gray whales were distributed regularly throughout the coastal area opposite Piltun Bay, but were not observed as far north (Figure 4-d).

In October, in incidental sightings, two large groups of gray whales were observed near the mouth of Piltun Bay; somewhat to the north and south of it, and opposite of the northern part of the bay. There was also a small group at the latitude of the middle part of the bay.

Over the course of the 2006 observation period, gray whales were sighted everywhere in the near-shore shallows from 52°28' to 53°33' north latitude, although their distribution there was uneven. Their numbers were especially low in the middle and most northern part of the area. From month to month and from survey to survey, the number of animals sighted in various parts of the area varied significantly.

The majority of gray whales remained in the shallows there within the 20-m isobath. However, individual whales were recorded in the zone with deeper water, sometimes as much as 7-8 km from shore, where they also fed actively. Whales were sighted most often outside the 20-m isobath in the northern part of the Piltun area. The areas of most frequent sightings from all vessel survey data (Figure 4-f) were near the mouth of Piltun Bay and opposite of onshore survey station No. 3.

3.1.1.2. Onshore Surveys

Detailed information on the gray whale distribution within the Piltun feeding area and the seasonal dynamics during the period from the late June to mid-October 2006 was acquired in the course of onshore automobile-based surveys. However, due to extremely poor weather in the summer-fall season in 2006, the number of complete synchronized surveys, which give a more precise picture of the overall whale distribution within the area on a given day, was significantly lower than previous years (15 surveys) and the breaks between surveys were quite long – from 1 July to 15 July (15 days), from 25 July to 19 August (26 days), from 24 August to 12 September (20 days), and from 17 to 28 September (12 days). These data gaps significantly reduce the power of the analysis of seasonal distribution variations. Nevertheless, the data obtained still made it possible to identify some seasonal trends in gray whale population and distribution in the Piltun Bay during the 2006 feeding period.

Seasonal variations in whale spatial distribution

The results of onshore surveys performed in 2006 in the Piltun area are summarized in Table 5. For analysis of the overall density of gray whales, the survey area was broken down into 1 x 1 km squares, and the whale population density was calculated for each square (the analysis and mapping method is described above in more detail in the corresponding section). The resultant gray whale population density maps illustrate gray whale distribution within the feeding area while incorporating survey effort, therefore removing potential bias associated with double counting.

The overall distribution of gray whales in the Piltun area in June – October 2006, which was determined based on onshore survey data, is presented in Figure 5. This summary map, which was plotted based on data regarding all gray whale sightings during the entire observation period, illustrates the boundaries of the summer-fall feeding area as viewed from shore of the Okhotsk-Korean gray whale population in the Piltun area and

the density of whale distribution within the area for the entire season. As in 2004-2005, whales were observed in the northern part of the area in relatively high densities, in the area offshore from survey stations 2-5. However, in contrast to 2004-2005, the population density was lower in the northern part of the survey area than opposite the mouth of Piltun Bay. The average density in the area was 0.25 – 0.5 whales per square km, and only reached 0.5 – 1 whale per square km in the 2-km near-shore zone in the sector of survey station 3. As in all preceding years, whales were observed near the mouth of Piltun Bay, where population density was somewhat higher. The highest value (up to two whales/km²) was observed in the 2-km zone of coastal shallows near survey station 9. Another high density area (with a density of up to one-two whales/km² in the 2-km near-shore zone) was observed in 2006 in the southern periphery of the feeding area opposite the northern part of Chayvo Bay (between survey stations 11 and 13), where overall densities were much lower in 2004 and 2005 (Figure 1). The higher density of whales offshore stations 11-13 was the greatest difference in overall gray whale distribution in the waters of northeastern Sakhalin in comparison with the previous years.

Comparison of density distributions averaged over shorter time periods provides insight into the temporal use of the habitat timing of increased numbers on the Piltun feeding ground and departure of whales out of the area.

In late June, when the onshore surveys began, the whales were already present in the Piltun area, but their numbers were comparatively small (a complete survey on 30 June observed 40 sightings; Table 5), as the whales' active spring-summer migration from the wintering grounds to the feeding habitats was still underway. Due to poor weather, complete surveys could be only be resumed in the second half of July, when already approximately 60 whales were present in Piltun Bay, and their numbers continued to increase, reaching around 80 individuals by 20 July (Table 5). A new, prolonged period of poor weather beginning on 25 July caused a lengthy suspension of complete synchronized surveys, but the whales' arrival into the area continued as on 26 July, a survey observed a large group of whales in the southern periphery of the feeding area (in the area of stations 11-12) (Table 5). However, the lack of complete surveys makes it impossible to know if these whales had only recently arrived. In 2004-2005 the higher frequency of surveys made it possible to evaluate when the majority of the population had completed their spring-summer migration, however, for 2006 this remains undetermined.

Whale distribution in the Piltun area in late June – July 2006 was similar to the previous two years. Whales were sighted at this time at locations dispersed throughout the near-shore zone of the Piltun area, usually forming only one more or less pronounced localized congregation – near the mouth of Piltun Bay (in the area of survey stations 8-9). Data from complete synchronized surveys conducted on 6/30 and 7/16 and 7/24 showed approximately 30% of all whales recorded within the Piltun area were located (Table 5, Figure 6-a) in this area with population density reaching two or more individuals per square km

(maximum – 2.95). A somewhat elevated concentration of whales was also observed in the northern part of the area (around stations 2-3), where approximately 20% of the whales were present, but their population density was lower, not exceeding one whale per km². As observed in 2004-2005, there was also an increased concentration of gray whales in the Astokh-Chayvo section, which the whales pass through during their northern migration. Approximately 17% of whales were observed in the area of stations 11-13 in late June – July, which is markedly higher than in the preceding two years (in 2004, 5% of whales were encountered there; and in 2005, 10%). The population density in these waters in 2006 reached one-two whales/km². Quite a number of whales (more than 15%), as in previous years, remained scattered outside of the 20-m isobath in the northern part of the Piltun feeding area (in the area of stations 1-4).

In 2004-2005, starting in late July gray whales that were distributed throughout the Piltun area had formed a fairly stable spatial structure and had transitioned to the intensive feeding stage. However, in 2006, due to the previously mentioned lengthy interval between complete surveys due to bad weather, it was impossible to determine this moment as when the surveys were resumed (at the beginning of the last 10 days of August). Whale abundance and distribution were already in line with characteristics that are typical for the feeding period, based on observations from previous years. Judging by the results of a series of two complete surveys conducted on 20 and 23 August, and of one partially completed survey (19 August)², the total number of whales sighted in the Piltun area reached at least 90-100; however, there were certain variations in their distribution in comparison with June-July (Figure 6-b). As before, the whales were found throughout the entire Piltun area, but the congregation by the entrance to Piltun Bay was somewhat larger (up to 35% of whales) and more extensive, occupying the area adjacent to stations 7-10. This contrasts 2005, in which this aggregation was sharply reduced in August. The greatest population density here was within the 2-3 km near-shore zone by station 9 – with observed densities exceeding two whales/km² in multiple 1 km grid cells, reaching a maximum of 3.89 whales/km². In the northern part of the area (between stations 2 and 6), in August of both 2004-2005, around 65-75% of all whales that were present in the feeding area were observed. In 2006, their relative abundance in 2006 was only 35% of whales, and they did not form an especially densely concentrated congregation (in a majority of cases the population density here did not exceed one whale/km², and only in a few places, mainly in the sector of station 3, did it vary from one to two whales km²). The number of whales feeding here in waters deeper than 20 m was also much lower than in preceding years (in 2004 it was approximately 15% of the whales present in the area; in

² - In the survey conducted on 19 August, it was impossible to perform observations at station 13, but keeping in mind that during the surveys on the subsequent days (20, 23, and 24 August), no whales were sighted in this area, it was deemed acceptable to consider it a complete survey.

2005 – up to 10%; and in 2006 – only about 5%). In the southern part of the area (in the area of stations 11-13), the population of gray whales during August 2006 surveys dropped in comparison with the previous month, but it remained at quite a high level (10% of whales). This differs sharply from 2004-2005, when the whale population in August dropped much greater in comparison with July to less than 1% in 2004 and 3% in 2005. Data from the surveys conducted only in the southern part of the area also confirm the practically continuous presence here in August of a certain number of whales (Table 5), the density of which reached one to two whales per km².

In September 2006 (per data from complete surveys conducted on 9/13, 9/15, 9/16, 9/29, and 9/30), the gray whale population in the Piltun area continued to remain at a high level (on the order of 85-95 sightings), but their distribution varied markedly throughout the area. In the northern part of the area, the number of whales declined and an increased concentration was observed only in the area of survey stations 3-5, with around 33% of whales in the Piltun area located in this area at distances of primarily 1.5-2 km from shore. Their density generally did not exceed one whale/km², while it was even lower in the rest of the area in the north (Figure 6-c). As in 2004-2005, the grouping by the mouth of Piltun Bay (located in August in the area of stations 8-10), was practically dissipated in September with only 16% of whales recorded there during this month in 2006. The density also dropped sharply in the near-mouth area, to less than one whale/km² during September, while in the segment between survey stations 8 and 10 the whales completely left the area within 1 km from shore (Figure 6-c). During this time there was a corresponding increase in gray whale sightings in the southern part of the area in the 2-3-km near-shore zone between stations 11 and 13. Approximately 30% of all whales observed in the Piltun area (with the majority concentrated in the area of stations 12 and 13) were observed in this location south of the mouth of Piltun Bay with a density of up to 2.78 whales/km². Such a high abundance of gray whales in this area in September was observed for the first time during three years of systematic onshore surveys in the southern part of the Piltun feeding area (in September of 2004 and 2005, as in August, only 1% and 3% of whales were located here, respectively).

In the first half of October gray whales were sighted throughout the Piltun feeding area and their distribution was observed to begin to shift more toward the southern boundary (Figure 6-d), presumably initiating their fall migration to the wintering grounds. As data from three complete surveys (10/1, 10/6, and 10/14) demonstrate (Figure 6-d), a somewhat elevated concentration of gray whales with a density of up to two whales/km² was observed in October in the most northern part of the area adjacent to station 3. Near the mouth of Piltun Bay (in the areas of stations 8-9) approximately 10% of whales remained in October while the highest fraction (32%) of all sightings in the Piltun area was recorded at the southern periphery of the feeding

area (in the area of stations 11-13). Similarly to September, this significantly exceeded the sightings in this area in 2004-2005 (15% and 12%, respectively). The highest density in this southern congregation was observed in the 2-km near-shore zone in the area of survey station 12. Within a 6 km² area near station 12 the density exceeded two whales/km² and reached 4.89 whales/km², which is the highest average monthly density of any area observed from shore during the 2006 survey period.

The seasonal changes in the distribution of gray whales in the Piltun feeding area in the summer-fall period of 2006 displayed similarities to 2004-2005. However, noticeable differences in the location of whales in 2006 compared with previous years were also observed. In the northern part of the Piltun area in August-September there were lower densities of gray whales with a corresponding unusually high concentration of gray whales during this time and for most of the season in the southern part of the feeding area. This redistribution may have resulted from a change in the hydrology of the coastal waters of northeastern Sakhalin and the corresponding shifts in the distribution and biomass of the main gray whale food sources. This hypothesis is consistent with Fadeev (2007) who reported a reduction in sand lance biomass in the northern part of the Piltun Area in 2006.

Seasonal-Spatial Changes in Whale Abundance

The seasonal dynamic of gray whale abundance in the Piltun area in 2006 from the limited number of complete surveys, was similar to that of the previous two years (Figure 7). As whales arrived from their wintering grounds, their number in the feeding area increased steadily, with 40 sightings at the beginning of this phase (6/30) and an average of 70 sightings (during surveys conducted on 07/16, 07/18 and 07/24). During the main feeding period, whale abundance was higher in the second half of August averaging 108 sightings during surveys conducted on 08/19, 08/20, and 08/23, dropping in the middle of September to an average of 76 sightings (during surveys conducted on 09/13, 09/15 and 09/16). At the end of the feeding period an increase in sightings was observed with an average 92 sightings (during surveys conducted on 9/29, 9/30 and 10/6). With the beginning of the fall return to the wintering grounds, the number of sightings immediately dropped significantly with the complete survey of 10/14 observing only 54 whales.

As with the analysis of the 2005 materials, comparison of the number of whales counted on a given date in areas between adjacent survey stations (1-13), as well as in sections north of station 1 and south of section 13, was used as the basis for assessing spatial-temporal variation of gray whale distribution in the Piltun area (Tables 6 and 7). The average numbers of gray whales in these sections for the season as a whole are shown in Figure 8, which is based on data only from complete surveys of the entire area. The figure shows the whale concentration in the northern part of the Piltun area in the area from station 2 to station 4, a second congregation with fewer whales but occupying a larger area between stations 7-

10 (by the mouth of Piltun Bay), and finally, an especially large aggregation of whales at the southern periphery of the area, between stations 11-13.

The monthly gray whale distribution in sections of the survey area is given in Figure 9. This plot shows the average numbers of whales in sections of the near-shore area based on data from complete surveys. Analysis of these figures made it possible to refine the boundaries of the main congregations of whales on a monthly basis and to discover patterns in their seasonal and spatial distribution throughout the Piltun area in 2006.

The location of whales in late June – July was characterized in the area by two clearly expressed congregations (Figure 9). The larger of the two was located by the mouth of Piltun Bay, in the area between survey stations 7 and 10 (with the highest concentration between stations 8 and 9), while the second was located in the north – between survey stations 1 and 4, with the center between stations 2-3. An elevated concentration of whales was also observed in the southern part of the area, in the section between stations 11 and 12.

In August the majority of gray whales present in the area continued to concentrate by the mouth of Piltun Bay, in the section between survey stations 7 and 10, with the highest abundance between stations 9-10 (Figure 9). The northern congregation was localized in an area from stations 1 to 6, but the main whale congregation was observed there in the section between stations 2 and 3.

In September 2006, the grouping that had previously been located by the mouth of Piltun Bay dispersed, leaving two whale congregations within the near-shore feeding area – one in the north between stations 2 and 5, the other in the south between stations 12 and 13. In October the picture of gray whale distribution in the Piltun area remained essentially the same as in September – although very few whales were sighted in the northern periphery of the survey area between stations 1-2 (Figure 9).

A more detailed analysis of whale abundance variations in all of the identified sections throughout the entire season is presented in Figure 10. For the analysis, we took only those days when the surveys were completely conducted in the entire area or in any of the following sections: in Odoptu-Piltun – for the sections north of station 8; in Astokh-Chayvo – for the sections south of station 9.

Gray whales were sighted north of station 1 only during their arrival from the wintering grounds and in the first half of the main feeding period (in July-August), but their numbers were low (no more than four individuals per survey) (Figure 10-a).

More whales were sighted in the section between stations 1 and 2 than north of station 1 (up to 12 whales per survey), and they were present there for most of the survey period (Figure 10-b). The abundance dynamic was mainly characterized by a steady increase in the number of whales as they arrive from the wintering grounds in July and by the same steady decrease at the end of the feeding season (in the second half of September – beginning of October).

The section between stations 2 and 3 was characterized by the highest average concentration of whales in the Piltun area over the survey period. The highest number of sightings (up to 24 individuals per survey) was in the second half of July and then remained at a high (averaging 10 individuals) but variable level until the beginning of October (Figure 10-c).

The section between stations 3 and 4 exhibited the same features as the previous section (Figure 10-d), but the greatest abundance of whales occurred (approximately 20 whales per survey) occurred at the end of the feeding season, although there was significant variability in sightings from the 3rd 10 days of August through the 3rd 10 days of September).

The dynamic of whale abundance in the sections between survey stations 4-5, 5-6, and 6-7 differed significantly from that of the previous sections, but it was quite similar among the sections. The number of whales here was comparatively low (in general, no more than 10 whales per survey) and was distinguished by its moderate stability throughout the entire season (Figures 10-e-g).

In the area between stations 7-8, 8-9, and 9-10, which is the location of a grouping of whales that appears every year at the mouth of Piltun Bay, the maximum abundance is observed in the period from the 2nd 10 days of July through the 3rd 10 days of August, when on some days their numbers in the sections between stations 8-9 and 9-10 reached 18-20 individuals. The abundance was observed to display significant variability from survey to survey (Figures 10-h-j). The number of whales then started to drop and by mid-September the grouping of whales by the mouth of Piltun Bay had dispersed. Towards the end of the feeding season the number of whales in this area was generally low, although on some days more sightings were observed, likely related to whales passing through the area toward the southern part of the feeding area.

In the section between stations 10 and 11, whales were sighted throughout the summer-fall season, but abundance was low (no more than eight whales per survey) and there was no clearly expressed seasonal dynamic (Figure 10-k).

Gray whales were also encountered continuously between stations 11 and 12 throughout the summer-fall season, with consistently higher numbers of observations from mid September to mid October (Figure 10-l).

In the section between stations 12 and 13, low numbers of individuals were located here almost continuously in July-August. Beginning at the end of September sightings increased sharply to 25-30 individuals. The high density of gray whales in the area remained at this level until the beginning of October, after which it began to drop due to the fall whale migration from the feeding area to the wintering grounds (Figure 10-m).

South of station 13, sightings of gray whales during the summer season were relatively infrequent, with sightings only increasing (up to 5-10 whales) in October when the whales began to migrate south (Figure 10-n). This result indicates that the gray whales do not

use these waters during the summer-fall feeding season and are observed there only during migration periods.

It should be noted that the quite limited complete survey data available limits the conclusions that can be made regarding the dynamics of the gray whale distribution in various sections.

Naturally, during the season there were also almost continuous movements of gray whales in the Piltun area, which is illustrated by examining whale abundance at each location as a function of time (Figures 11 and 12).

In summary, due to the limited number of onshore vehicle-based surveys conducted in June-October 2006, it is impossible to give even a rough estimate of the total population of the feeding grouping that was present in the summer-fall months in the coastal waters of the Piltun area (according to 2004-2005 survey data, the population was estimated to be approximately 120 individuals). The maximum number of sightings recorded in the waters of the Piltun area in 2006 was 131 (Table 5) and was close to the maximum number of sightings during the preceding year (138). This would suggest the population of the Piltun feeding area grouping of gray whales remains at a reasonably stable level.

Whale distribution away from the shore and in deep water

A characteristic feature of gray whale distribution in the Piltun area over all the survey years has been the concentration of an overwhelming majority of them in the waters within the 4-5 km near-shore zone. In 2006, 98% of whales were recorded in this zone, with around half (49%) within 1-2 km from the shore (Table 8, Figure 13). In the Odoptu-Piltun area, the number of whales sighted in the direct vicinity of the shore (at a distance of up to 1 km) was two times higher (34%) than in the Astokh-Chayvo area (17%). No clearly evident seasonal dynamic of whale distance from the shore was noted in 2006.

Gray whale distribution throughout the depths of the Piltun area in 2006 also matched the general pattern established for this area in previous years, namely, that the majority of whales (96%) were located throughout the entire season in waters with depths of no more than 20 m (Table 9, Figure 14). Most of the gray whales were found at depths from 6 to 10 m (48%) and 11 to 15 m (32%). In the closer near-shore zone, at depths of up to 10 m, there were a higher percentage of whales in the Astokh-Chayvo area (63%) than in the Odoptu-Piltun area (49%). Beyond the 20-m isobath there were significantly fewer whales (1%) in the southern part of the area in comparison with the northern part (8%).

In 2006, a gradual shifting of whales in the Odoptu-Piltun area to shallower depths from summer to fall was observed. Approximately a third of the gray whales observed in this area (32%) were sighted at depths of up to 10 m in July followed by 62% in September; the percentage of whales was reduced at depths of more than 20 m (from 10.7% in July to 5.4%

in September) (Table 9). At the northern periphery of the area, elevated numbers of gray whales were initially observed to feed in deeper waters. However, their concentration beyond the 20-m isobath was shown to steadily drop from 15.1% in June-July to 11.8% in August, 6.5% in September, and 3.3% in October. No obvious seasonal dynamic of gray whale depth distribution was observed in the Astokh-Chayvo area, although an analysis of any seasonal characteristics of whale distribution in 2006 was made much more difficult due to the previously noted insufficiency of survey data as a result of the poor weather conditions.

3.1.2. OFFSHORE AREA

The offshore area was surveyed numerous times from a vessel throughout June-October 2006 in the course of survey, photo-ID, acoustic, and hydrological operations. In June and July, no gray whales were observed in this area, either during dedicated or "opportunistic" surveys (no dedicated survey was conducted in July due to poor weather conditions). However, in August-October, whales began to be regularly sighted in the Offshore area, with numbers observed each time increasing from 10 whales on 25 August to 44 whales on 15 September³, and then declining to 26 whales on the last dedicated survey on 7 October (Table 2, Figures 4-c-e).

Certain variations in gray whale distribution were noted during the season in the Offshore area. Initially sightings in August were in the southwestern part (Figure 4-c), then in September this shifted to the central and northeastern parts (Figures 4-d-e).

Individual encounters with gray whales were only noted in the Arkutun-Dagi license area on 11 August and 4 October during dedicated surveys and the whales were only observed on the western boundary of this area (Figures 4-c and 4-e).

3.2. SIZE OF WHALE GROUPS

3.2.1. PILTUN AREA

3.2.1.1. Vessel-based Surveys

During the period of vessel-based surveys in the Piltun area in 2006, 154 gray whale sightings were recorded. The animals were solitary or in groups of two to five (Table 10). The average number of whales per group during the period from June through October was 1.6.

Lone whales were observed most frequently in near-shore waters – in 61% of sightings. Groups of two whales were sighted in 23% of cases, groups of three – 15% of cases, and groups of four and five whales – 0.6% each (Table 10). The proportion of lone whales varied slightly in June-August - from 63.5% to 68.2%, but it dropped to around 56% in September.

³ MMOs indicated that 27 of these gray whales were likely resighted from earlier observations during the survey.

The percentage of groups of two to four whales varied to a large degree during the survey period. No distinct pattern was observed in the seasonal variation of the frequency of gray whale sightings of particular numbers.

3.2.1.2. Onshore Surveys

Primarily solitary gray whales were observed in the Piltun area (80% of the sightings), making up 64% of the animals recorded (Table 11), during the onshore survey period. The frequency of groups of two whales was 17%, and this made up 27% of all whales. Groups of three whales were observed with considerably less frequency (2% of the sightings, accounting for 6% of the animals), groups of four whales made up 1% of the sightings (2% of the animals), and the number of sightings of groups of five or six whales was negligible (<0.5% of the sightings, and 0.5% of the animals, and <0.1% of the sightings and 0.3% of the animals, respectively). There was no apparent seasonal dynamic of the sighting frequency of groups of various sizes. Overall, the proportion of lone whales and groups of a given number in 2006 was very similar to that of 2005.

3.2.2 OFFSHORE AREA

In the course of the 2006 vessel-based surveys in the Offshore area, 37 gray whale sightings were recorded⁴. The largest groups had six whales, but lone whales, as usual, were prevalent and were recorded in 41% of the sightings (Table 10). The average size of the groups during the survey period was 2.2 whales (i.e., the size of the groups here was somewhat larger than in the Piltun area).

Two gray whale sightings (in August and October) were recorded during special vessel-based surveys in the Arkutun-Dagi license area in 2006. In both cases they were solitary whales (Table 10).

3.3. DISTRIBUTION OF COWS WITH CALVES

It is difficult to identify calves with certainty from shore. However, tentative identification was made based on size of blow and proximity to an adult whale. Typically, gray whale cows with calves arriving to the shores of northeastern Sakhalin Island to feed remained exclusively in the shallow waters of the Piltun area in summer and the beginning of fall (up to the time the calves were weaned).

In 2006, the first cow/calf pair was observed in the coastal Piltun area by the onshore team on 30 June (near survey station 9). The last cow-calf pair was sighted on 23 September. The highest number of cow-calf pairs (five pairs) was recorded during onshore surveys on 24 June and 19 August.

⁴ MMOs indicated that seven of these sightings were likely resights of gray whales observed earlier in a survey.

On 16 July a lone young whale, probably a yearling, was sighted in the northern part of the Piltun area.

Thus, according to the ohshore estimates, the number of calves in the Piltun gray whale feeding grouping remained at the level of the preceding year.

The distribution of cows with calves throughout the coastal area was irregular in 2006 with most sightings near the mouth of Piltun Bay and in the waters of the Astokh-Chayvo area (Figure 15).

An analysis of data on depths in the areas where cows with calves were sighted (Figure 16) showed that in 2006 they were located, as in the previous year, in the immediate vicinity of the shore in a depth range of 4 to 15 m; while the majority of pairs (83%) were observed within 10-m depths, most frequently in the 9-10-m isobaths (40.0%). No cow-calf pairs or individual calves were sighted in vessel-based surveys in 2006.

3.4. IMPACT OF ANTHROPOGENIC ACTIVITY ON GRAY WHALES

Active production operations primarily related to laying a subsea pipeline from the island to the PA-A drilling platform (Molikpaq) and then to the PA-B platform as well as the assembly operations on the surface section of the latter, were performed during the summer-fall of 2006 in the Piltun-Astokh license area of the Sakhalin II project. The results of all onshore surveys conducted in 2006 were analyzed to elucidate any impact of these operations on gray whale distribution.

In connection with pipeline construction, there were a significant number of vessels involved in construction operations on the pipeline route in the coastal waters of Sakhalin Island, reaching as many as 10-12 vessels (Figure 17). Despite this fact, a clear increase in gray whale concentration in comparison with previous years was observed in 2006 at the southern periphery of the Piltun area; with the largest concentration between survey stations 11 and 13, close to the offshore pipeline construction operations. In July-August the whales were mainly located north of the pipeline route (between survey stations 11 and 12), while in September-October they moved southward and concentrated in the area of the pipeline route and adjacent areas, between stations 12 and 13 (Table 7, Figures 9 and 17).

The gray whales that were almost continuously present near the construction operations did not show any obvious signs of stress or discomfort. The whales located within 5 km of the vessels continued to actively feed, and did not leave the area. Moreover, there were numerous cases (for example, on 2, 16, 24, and 26 July) when gray whales near station 12 that were located near several working vessels moved further south, even closer to the pipeline construction route. In August-September, when the active phase of offshore pipeline construction operations had ended and the number of ships in the southern part of the area

had been reduced, the number of whales there nevertheless remained much higher than in previous years, especially in September-October.

The maps in Figure 17 clearly show that there was no relationship between the number of whales in the construction area and the number of vessels. This was also confirmed by a standard correlation coefficient analysis of these parameters, which showed no correlation between their variations, either during the entire season or in individual time frames. The correlation coefficient between them during the entire observation period from late June to mid-October was -0.13, and by months it was as follows: June-July – 0.45; August – 0.60; September – -0.23, October – 0.23 (i.e., it even showed a trend toward a positive correlation during the main pipeline construction operations and immediately upon their completion).

It is interesting to note that there appears to be a slight positive correlation between pipeline construction and whale sightings in the southern part of the Piltun area. For example, in 2004, when no offshore construction operations were being carried out in the southern part of the Piltun area, whales were sighted in the waters of stations 11-13 only in June-July and at the very end of September and October during the migration period. During the main feeding period (in August and most of September), whales were rarely sighted in the south. In 2005 when ENL was installing the Orlan platform and the associated subsea pipeline to it from the shore (July-September) (Figure 1), a number of feeding gray whales were observed almost continuously in the immediate vicinity of the operations area (between stations 12 and 13) in August-September. In August there was an average of >2.8 whales per survey and in September >1.6 whales (Vladimirov et al. 2006). In 2006, gray whales were sighted in the immediate vicinity of the construction operations area in very large numbers (8.7 and 26.2 whales per survey, respectively).

These data demonstrate that the offshore pipeline construction operations did not cause any “avoidance reaction” signs in the whales or cause them to leave the construction area. Noise from the ships performing dredging and pipeline installation operations did not appear to disturb the gray whales, perhaps suggesting that they were habituated to the presence of ships in this area. An important factor contributing to the appearance of a large congregation of whales in the southern part of the feeding area in late September-October was likely the appearance of significant concentrations of benthic organisms during these months, which was identified in the course of benthos studies (Fadeev 2006), as well as the overall gradual shift of the whales southward due to the beginning of the fall migration. These questions clearly require further detailed analysis; however, it appears that the operations performed in 2006 to lay the subsea pipeline to the PA-A (Molikpaq) and PA-B platforms had no negative impact on gray whale distribution in the Piltun feeding area. It is also unlikely that the construction activity could have negatively impacted the condition of their benthic food base in the coastal waters, since the pipeline route passed far to the south of those areas where the

main congregations of feeding whales were observed in previous years and benthos studies revealed suitable food resources in the area (Fadeev 2007).

During the summer-fall season of 2006, installation operations were also performed on the reinforced concrete base of the PA-B platform, which caused a certain number of working vessels to be located near there continuously. However, all of these operations were carried out at a distance of more than 10 km from the shore, which is also only as close as the vessels approached. Gray whales in this area are usually found no more than 5-6 km from the shore, and in July-October 2006 no impacts on their distribution were seen from the installation operations at the PA-B platform. This is confirmed by the increased concentration of whales near the mouth of Piltun Bay in the first half of summer, which has been observed every year over the entire course of onshore survey operations carried out since 2003.

3.5. SIGHTINGS OF OTHER MARINE MAMMAL SPECIES

During the vessel-based surveys in 2006, a number of other cetaceans were sighted quite regularly: northern minke whales *Balaenoptera acutorostrata* (135 whales), harbor porpoises *Phocoena phocoena* (197 animals) and Dall's porpoises *Phocoenoides dallii* (114 animals). Relatively few killer whales (*Orcinus orca*) were sighted (63 individuals). One Baird's beaked whale *Berardius bairdi* and one whale of unknown species were also encountered (Table 3, Appendix 1).

The following pinnipeds were sighted during vessel-based surveys in 2006: the ringed seal (*Pusa hispida*) - 93 animals, largha seal (*Phoca largha*) - 167 animals, bearded seal (*Erignathus barbatus*) - 9 animals, and Steller's sea lion (*Eumetopias jubatus*) - 23 animals. Many northern fur seals (*Calorhinus ursinus*) were also observed - 330 animals, although the vast majority were sighted near Cape Terpeniya, outside of the main operations area, and when the research vessel *Akademik Oparin* passed through the Laperuz Strait, 5 Pacific white-sided dolphins were also sighted (Table 3).

Based on shore-based survey data, the following cetacean species in addition to gray whales were sighted in the Piltun area in 2006: northern minke whale (16 groups, 16 animals); harbor porpoise (16 groups, 29 animals); and killer whale (3 groups, 4 animals). They were scattered throughout the area, and no congregations were formed (Figure 18, Appendix 2).

Two dead Baird's beaked whales were also found beached on the shore in the beginning of summer 2006 in the southern part of the area (between stations 10 and 11) – one in June and one in July. Previously, no cetaceans of this species were found either alive or dead during onshore surveys in the operations area, since they are inhabitants of deep-water areas.

Pinnipeds in the Piltun area were mainly represented by the ringed seal and bearded seal, which were the most numerous species. No special survey of the pinnipeds was

performed due to specific features of the onshore automobile-based surveys, but they were sighted constantly in small numbers along the route. There is a permanent mixed seal rookery near the mouth of Piltun bay, numbering approximately 800-1000 animals.

4. DISCUSSION OF RESULTS

The 2006 distribution surveys of gray whales of the Okhotsk-Korean population in the waters of northeastern Sakhalin, despite poor weather conditions, collected new data on whale distribution and abundance in the main summer-fall feeding areas.

Vessel-based surveys showed a smaller number of gray whales in the Offshore feeding area than in 2001-2003. At that time, gray whales used the Offshore area more intensively for feeding, with approximately 48-50 whales being observed there during one vessel survey (Maminov 2004). However, in 2004 the whales moved to the Piltun area*, and since that time their number in the Offshore area has remained low. In 2004 a maximum of only nine whales were counted; in 2005 – 25 (Vladimirov et al. 2005, 2006), in 2006 – 44 (i.e., there was an increase between 2005 and 2006 in the maximum number of observed gray whales). Marine Mammal Observers (MMOs) indicated, however, that 27 of the 44 whales were likely resighted during the survey. When the resights are considered, the maximum number of gray whales in the offshore area was 26 individuals that were observed in October 2006, which is similar to 2005.

In the last three years, most gray whales observed off the Sakhalin coast were concentrated in waters of the Piltun area throughout most of the main feeding period (August – first half of September) while fewer whales were sighted at this time in the Offshore area. Gray whales are more frequently observed in the Offshore area only in the second half of September, reaching a maximum of approximately 25 whales in 2005 and 44 whales⁵ in 2006 (Vladimirov et al. 2005, 2006). This suggests that during the past three years the Offshore area has become a type of alternate (backup) gray whale feeding area, which they begin to use more intensively at the end of the feeding season, most likely due to a certain reduction of the food resources by this time in the coastal waters of the Piltun area.

However, under certain conditions (for example, if the food conditions in the near-shore zone by Piltun Bay are unfavorable in a given year) whales may travel there to feed in the summer, which apparently took place in greater numbers in 2001-2003. However, the question regarding the nature of the whales' trophic usage of the Offshore area, and its corresponding role in the formation of a common food base for gray whales in the offshore waters of northeastern Sakhalin, is not yet clear and requires additional study.

* - The gray whale migration from the Offshore area to the Piltun area was reliably confirmed by photo-ID data – (Yakovlev and Tyurneva, 2005, 2006, 2007).

⁵ MMOs indicated that 27 gray whales were likely resighted during the survey.

The gray whales that arrive off Sakhalin Island each summer to feed choose this location due to the high abundance of their preferred benthic and epibenthic prey in the area. The most likely reason for the migration of a majority of gray whales from the Offshore area to the Piltun area in 2004 was, as the results of benthos studies demonstrate (Fadeev 2004, 2005, 2006, 2007), not the deterioration of the feeding conditions or food base in the Offshore area (which have remained basically unchanged since 2002-2003), but rather the appearance in the Piltun area in 2004 of major spawning concentrations of conglomerations young fish of the bottom-dwelling sand lance *Ammodytes hexapterus*, which is an easily-accessible and high-calorie food of gray whales.

The coastal Piltun area is clearly of major importance for the gray whales that feeds in the northeastern Sakhalin waters in comparison with the Offshore area as has been reported earlier (Perlov and Maminov 2002). In addition, all of the arriving cow-calf pairs and young leaving their mothers and transitioning to independent feeding stay in this area, which additionally underlines the special value of this habitat for the population. Neither cow-calf pairs nor young whales have ever been sighted in the deeper Offshore area. This may be attributable to the fact that the calves are not yet able to dive to such depths and are unable to forage there. In addition, young gray whales are unprotected in the Offshore area against their main predators – killer whales, whereas their chances of avoiding their attacks is higher in the shallow waters of the Piltun area.

An analysis of the available multiyear data on gray whale distribution in the Piltun feeding area demonstrates that, along with obvious general patterns, there is also major variation from year to year. For example, judging by observations from the late 90's and early this decade, the majority of the gray whales coming to the waters of the Piltun area were almost exclusively concentrated within the 4-5-km zone of coastal shallows at depths up to 15 m during the feeding period (Blokhin et al. 2002a-b, 2004). However, in 2004-2005, approximately 15% of gray whales appeared and remained in the northern part of the area during for much of the feeding season at a distance of 6-8 km from the shore, in deeper waters (to 20-30 m). However, in 2006 the congregation of whales at depths of 20-30 m in the northern part of the Piltun area was reduced to approximately 5% of the whales, which coincides with the significant decrease in their food resources there in 2006 (Fadeev 2007).

Clear patterns in gray whale distribution along the coast of the island have emerged in 2004-2006 within the Piltun area. For example, two clearly localized whale congregations formed in the coastal waters during the main feeding period in each of the last three years. The most populous and extensive congregation was observed in the northern part of the area, while the second somewhat smaller congregation – in the waters adjacent to the mouth of Piltun Bay. In 2004-2005, up to 70-75% of whales were located in the northern grouping during the main feeding period (in August-September); however, in 2006 their concentration there dropped and did not exceed 35-40% during these

months. It should be noted that before 2004 the congregation of gray whales in the northern part of the Piltun were observed to form later – in September-October (Blokhin et al. 2004; Melnikov and Starodymov 2004), suggesting some other benthic food resource was available there in the fall months.

The second of the constant congregations formed during the feeding period, which has been forming for many years near the mouth of Piltun Bay (Blokhin et al. 2004), is usually most populous in July-August. In 2004-2005 it included 15-20% of the whales present at that time in the coastal area, but in 2006 the percentage of whales in this congregation increased during these months to 25-35%. This was likely related to the regrouping of the animals, their partial migration from the northern congregation, and possibly less preferable feeding conditions in the northern part of the feeding area. In September, the large group of whales observed near the mouth of Piltun Bay dispersed, but an elevated abundance here is nevertheless maintained. In October, with the start of the fall migration of gray whales to the wintering grounds, both of these congregations disperse further and begin to gradually move toward the southern boundary.

The formation of these two congregations has been recorded for at least the past quarter century during regular aerial surveys of the coastal area of northeastern Sakhalin by TINRO specialists in 1984-1991 in order to monitor a grouping of gray whales that they sighted previously in that area. These data were used to plot a generalized map of all whale sightings during these years (Figure 19). Comparing the whales' current distribution in this area with the 1984-1991 sightings illustrates the consistency of the preference for these two feeding locations.

Estimating density per square kilometer for each survey method and accounting for survey effort and method bias for each survey type makes it possible to combine the data of onshore and vessel-based surveys. This then allows for whale distribution as a function of density for the entire area of their summer-fall feeding in the waters of northeastern Sakhalin in June-October 2006 to be illustrated (Figure 20). This approach allows both qualitative and quantitative comparison of whale distribution between various areas within a season and also between different years. For the Offshore area, density maps are based only on data from vessel-based surveys (Figure 4), and show that in 2006 the whale feeding area shifted markedly to the south-southwest in comparison with 2005 (Figure 1), in addition to whales being observed more in groups. In 2005, the density of whales were mostly (97%) < 1 whale/km² and only in one instance (3%) exceeded this level. In 2006 (Figure 20-e), an average seasonal density of one to two whales/km² was recorded in 28% of grid cells where whales had been observed, while in 7% of cases the density exceed two whales/km². Observations there may be an artifact related to the lower number of surveys of the Offshore area in 2006.

The density maps based on combined onshore and vessel surveys for the Piltun area are similar to the maps plotted based on data from the onshore surveys (Figure 5-b)

and they give a somewhat more detailed description of whale population density further from shore. A comparison of the summary gray whale distribution map in the Piltun feeding area in June-October 2006 (Figure 20-e) with the analogous map from 2005 (Figure 1), illustrates, first of all, a significant reduction of the northern congregation in 2006 that decreased both in its area and in the density of the whales. In 2005 there was more than 20 km² area with an average seasonal density of 0.5 to one whale /km² in the northern section, with a 3 km² area ranging from one to two whales/km². In 2006, there was only a 3 km² with a density of 0.5-1 whales/km². Although the timing of surveys between years was somewhat different due to poor weather in 2006, these plots indicate that in 2006 the gray whales' usage of the northern part of the Piltun area dropped significantly in comparison with 2005. Conversely in 2005, the average seasonal gray whale density southward from station 11 only exceeded 0.25 whales/km² occasionally, while in 2006 the density of gray whales reached one to two whales/km² over a 20 km² (Figures 1 and 20-e). This indicates that in 2006 the gray whales in the southern periphery of the Piltun area used the feeding area far more actively than in the previous year.

In the past three years, practically all whales travelling from the wintering grounds to the northeast coast of Sakhalin Island were concentrated in the Piltun area until the end of August; therefore, the maximum number of sightings recorded during this period provides an indication of the total abundance of the feeding grouping located off the Sakhalin shores. According to onshore survey data, there were 122 sightings (8/22) in 2004, 119 (8/20) in 2005, and 131 (8/23) in 2006. From estimates of population based on models from photo-ID data it appears that the onshore raw sighting data corresponds well with model estimates of 123 individuals (Cooke et al. 2006). This may be due to double counting of whales from adjacent stations being offset by missing whales underwater during the survey. Thus, from the 2006 shore-based data, it is suggested that the total population of gray whales in the grouping continuously feeding from year to year on the northeast Sakhalin shelf is 120-130 whales. At the same time, in recent years information has come forth on sightings of lone gray whales and groups in other areas of the Sea of Okhotsk and even in eastern Kamchatka (Vertyanin et al. 2004, Vladimirov et al. 2006, Maminov and Blokhin 2004; Weller et al. 2002, 2003). Of the 20-25 gray whales that remain continuously in the waters of eastern Kamchatka, six have been matched by photo-ID as belonging to the Okhotsk-Korean population (Yakovlev and Tyurneva 2007). It has also been reported that in July 2006 small groups of gray whales were seen feeding in the inlets along the northern coast of the Sea of Okhotsk (A. Andreyev [Institute of Biological Problems of the North of FERAS, Magadan], V. N. Malakhov [Rosselkhoz nadzor, Magadan], *pers. comm.*) and it is likely they also belong to this population. This demonstrates that the total abundance of the Okhotsk-Korean population of gray whales is not confined to just those

whales that come to feed off the shores of northeastern Sakhalin and that the population likely exceeds the current estimate of 120 whales. Further surveys in shallow-water areas of the Sea of Okhotsk potentially suitable for feeding will be necessary to provide further information.

5. CONCLUSION

The combined program of survey work carried out during the summer-fall period in 2006 in the feeding area of grays whales of the Okhotsk-Korean (western) population off the northeast coast of Sakhalin yielded new information on the distribution and abundance of these animals, as well as on a number of other aspects of their biology. The most important and noteworthy results of the work are as follows:

1. In 2006, the population of gray whales in the Offshore feeding area was higher than the level of the preceding year with 44 being the maximum number of gray whales sighted in this area in one survey (in 2005 - 25). The number in 2006 is similar to that in 2002-2003, when 48-50 whales were observed in an individual survey. Marine Mammal Observers (MMOs) indicated however, that 27 of the maximum number of 44 gray whales were likely resighted from earlier observations during the survey. When the resights are considered, the maximum number of gray whales in the Offshore area was 26 individuals that were observed on a different survey (7 October 2006) which is similar to the maximum number in 2005 and less than maximum numbers reported during 2002-2003.

2. As in the preceding year, the majority of gray whales in 2006 were concentrated in the coastal Piltun feeding area, and the maximum number of sightings appeared similar between each year. According to data from vessel-based surveys, the maximum number of gray whales sighted here was 76 (in 2005 – 69), and according to onshore survey data – 131 (in 2005 – 138).

3. The data obtained suggests that gray whales that had previously fed in the Offshore area have been feeding in the near-shore waters since 2004 (this has been confirmed by photo-ID data). This redistribution was most likely caused by the appearance in the Piltun area in 2004-2005 of large spawning concentrations and groups of young sand lances (*Ammodytes hexapterus*).

4. Using onshore survey sightings as a proxy for abundance, in 2004-2006, the total population of gray whales concentrated in the waters of northeastern Sakhalin during the main feeding season, is approximately 120-130 whales (which fully corresponds to the results of independent population estimates, including those made on the basis of photo-ID data). However, the presence of gray whales in the summer-fall season in other areas of the Sea of Okhotsk, as well as off the east coast of Kamchatka, make it possible to conclude that the total abundance of the Okhotsk-Korean population of gray whales is clearly not confined to

just those whales that come to feed off the shores of northeastern Sakhalin and likely exceeds the current estimate of 120 whales.

5. Whales in the near-shore Piltun area in 2006 generally remained within the normal feeding range in these waters, which extends along the coast of the island from 52°25' to 53°40' north latitude (this utilization not changed for at least the last 20 years).

6. The overall seasonal trend of gray whale distribution in the Piltun feeding area in the summer-fall period of 2006 was similar to 2004-2005; however, in a number of details the whales' location in 2006 differed markedly from previous years. This was primarily manifested in a significant reduction in their abundance during the main feeding period in the northern part of the area (from 65-75% of animals in 2004-2005 to 30-35%), and at the same time, in the appearance of unusually large aggregation of gray whales in the southern part of the area, where more than 30% of the whales were concentrated by September. Most likely this redistribution resulted from a change in the hydrology of the coastal waters of northeastern Sakhalin and the corresponding shifts in the distribution and biomass of the main gray whale food sources.

7. Within the Piltun Area, the majority of gray whales (98%), as in previous years, stayed within a 5-km zone of the coast during the feeding season, with half of the sightings being made (49%) between 1 and 2 km from shore.

8. Gray whale distribution throughout the depths of the Piltun area in 2006 also matched the general pattern established for this area in previous years, namely, that the majority of whales (96%) were located throughout the entire season in waters with depths of no more than 20 m, and the majority of these were concentrated at depths from 6 to 10 m (47.5%) and 11 to 15 m (31.7%).

9. The majority of gray whales in the waters of the Piltun feeding area, as in previous years, spent the entire season alone or in pairs (the frequency of the sightings varied in the ranges of 60-80% and 16-25%, respectively); larger groups (3-6 whales) were rarely sighted.

10. The number of cows with calves observed in the Piltun area in 2006 was estimated at five pairs. These sightings suggest that the birth rate in the Okhotsk-Korean gray whale population, as far as it can be judged based on survey data, has been stable in recent years (six such pairs were observed in 2004, and five each were observed in 2003 and 2005). Most of the cows with calves spent the entire season in the shallows adjacent to the mouth of Piltun Bay and in the southern part of the area. The breakup of mother/calf pairs and the transition of the calves to independent life appeared complete by the end of September.

11. The construction performed in the summer of 2006 to lay a subsea pipeline to the PA-A (Molikpaq) and PA-B platforms for the Sakhalin II project had no observable negative impact on gray whale distribution in the Piltun feeding area. Moreover, an

increased concentration of whales in the area of operations compared to previous years was observed.

In summary, the work conducted in 2006 under the "Program for Study and Monitoring of the Okhotsk-Korean Gray Whale Population" indicates that feeding congregation of whales present in the coastal waters off northeastern Sakhalin during the summer-fall period appears stable, and currently no visible signs of a direct or indirect negative impact of industrial activity under the Sakhalin-1 and Sakhalin II projects on the aggregation have been observed.

Studies of gray whales of the Okhotsk-Korean population in Sakhalin waters are ongoing. This data is needed to develop scientifically substantiated measures to reduce the anthropogenic impact on the animals in the presence of intensification of commercial activities in the region, and further satisfactory monitoring of the distribution and abundance of the gray whales will be important in accomplishing this task.

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TABLES

Table 1. Location of onshore survey stations in 2005 and their characteristics.

Area	Survey station No. ¹	Latitude, N	Longitude, E	Elevation above sea level, m	Max. visibility, ² km	Distance between stations, km	
Odoptu-Piltun section	1	53.41249	143.15274	13.08	14,08	1-2	9.08
	2	53.33517	143.19597	18.13	15,91	2-3	8.25
	3	53.26345	143.22717	27.04	19,13	3-4	9.53
	4	53.17961	143.25584	14.56	14,42	4-5	6.15
	5	53.12498	143.27012	8.99	11,71	5-6	8.12
	6	53.05245	143.28461	7.95	11,13	6-7	8.77
	7	52.97434	143.30208	9.87	12,18	7-8	10.03
	8a ¹	52.88049	143.31970	5.9	9,89	8-9	5.7
Astokh-Chayvo section	9a ¹	52,83012	143,33297	6.00	9,49	9-10	9,3
	10a ¹	52,74660	143,32285	7.00	9,93	10-11	11,2
	11	52.64637	143.31812	7.73	11,01	11-12	9.8
	12	52.55821	143.31059	9.78	12,13	12-13	9.6
	13a ¹	52,47003	143,28668	7.00	9,83	13-14	8.8
	14 ³	52.40051	143.2513	5.29	9,50		
	15 ³	52.33144	143.1877	3.13	7,92	14-15	8.8

- Notes:
- ¹ – the coordinates and elevations of these survey stations varied somewhat from the preceding year, since the previous stations were destroyed by shore erosion during the heavy storms in late the fall of 2005. The letter “a” was added to the station number to show that their location had changed.
 - ² – distance calculated with allowance for the height of the observers, which was assumed as 1.8 m
 - ³ – no observations were made from these stations in 2006.

Table 2. Results of special vessel-based studies of gray whales from the research vessels *Professor Bogorov* (B) and *Akademik Oparin* (O) in the Piltun and Offshore feeding areas and in the Arkutun-Dagi license area in June-October 2006.

Month / vessel	Piltun area	Offshore area	Arkutun-Dagi
	No. of whales / date	No. of whales / date	No. of whales / date
June (B)	25 (27.06)	-- (30.06)	-- (28.06)
July (B)	33 (23.07)		-- (12.07)
August (O)	76 (23.08)	10 (25.08)	1 (11.08)
September (O)	41 (11.09) 67 (30.09)	44 ¹ (15.09)	-- (12.09)
October (O)		26 (7.10)	1 (4.10)

- Notes: ¹ – MMOs indicated that 27 gray whales were likely resighted during the survey.

Table 3. Number of gray whales and other marine mammals recorded in the waters of Sakhalin Island during vessel-based surveys from the research vessels *Professor Bogorov* (B) and *Akademik Oparin* (O) in June-October 2006.

Month (vessel)	Marine mammal species												
	GW	MW	KW	DP	HP	NFS	BS	SL	LS	PWSD	BBW	RS	UW
June (B)	61	25	12	6	40	5	1	1	21			21	1
July (B)	266	20	8	9	26	1	5	5	85			31	
August (B)	270	23	25		31	3	1	9	18			22	
August (O)	211	31	11	4	39	208		1	4			14	
August (B+O)	481	54	36	4	70	211	1	10	22			36	
September (B)	538	10	4		6			1	18		1		
September (O)	503	17	2	79	56		2	6	14			4	
September (B)	1041	27	6	79	62		2	7	32		1	4	
October (O)	222	2	1	16	9	113			7	5		1	
Total (B)	1135	85	49	15	93	9	7	16	142		1	74	1
Total (O)	936	50	14	99	104	321	2	7	25	5		19	
Total (B+O)	2071	135	63	114	197	330	9	23	167	5	1	93	1

Note: GW – gray whale; MW – minke whale; KW – killer whale; DP – Dall’s porpoise; HP – harbor porpoise; NFS – northern fur seal; BS – bearded seal; SL – sea lion; LS – largha seal; PWSD – Pacific white-sided dolphin; BBW – Baird’s beaked whale; RS – ringed seal; UW – unknown whale

Table 4. Time spent on onshore automobile-based surveys of gray whales in the Piltun area in June-October 2006 and their overall results.

Month	Odoptu-Piltun Section (Survey stations 1-8)					
	Complete surveys		Partial surveys		No. of whale sightings	Total number of whales sighted
	<i>n</i>	<i>hours</i>	<i>n</i>	<i>hours</i>		
June	1	2:23	0	0:00	19	23
July	6	14:18	4	3:18	239	283
August	3	7:09	3	2:23	216	257
September	5	11:55	6	5:24	271	318
October	3	7:09	2	2:05	126	143
Total:	18	42:54	15	13:10	871	1024

Month	Astokh-Chayvo Section (Survey stations 9-13)					
	Complete surveys		Partial surveys		No. of whale sightings	Total number of whales sighted
	<i>n</i>	<i>hours</i>	<i>n</i>	<i>hours</i>		
June	2	3:00	0	0:00	24	34
July	6	9:00	1	1:12	168	222
August	4	6:00	1	1:13	154	201
September	7	10:30	2	2:02	244	305
October	5	7:30	0	0:00	129	187
Total:	24	36:00	4	4:27	719	949

Month	T o t a l							
	Complete surveys				Partial surveys		No. of whale sightings	Total number of whales sighted
	synchronized		asynchronous					
	<i>n</i>	<i>hours</i>	<i>n</i>	<i>hours</i>	<i>n</i>	<i>hours</i>		
June	1	3:53	1	1:30	0	0:00	43	57
July	4	15:32	4	7:46	5	4:30	407	505
August	2	7:46	3	5:23	4	3:36	370	458
September	5	19:25	2	3:00	8	7:26	515	623
October	3	11:39	2	3:00	2	2:05	255	330
Total:	15	58:15	12	20:39	19	17:37	1590	1973

Notes:

The times indicated in the table include only the time directly spent on observations; time spent in getting to the survey points and traveling from one point to another were not included.

The number of gray whale sightings and the number of gray whales sighted included all recorded whales and their groups, including those outside of the 1-minute sector-scanning periods (so-called “out of scan”).

Complete surveys within a given section means surveys in which the observations were made in all of their survey stations (stations 1-8 of the Odoptu-Piltun area and stations 9-13 of Astokh-Chayvo); complete synchronized surveys in the entire area means synchronized complete surveys conducted in both section; asynchronous means complete surveys in the sections that were not coincident in time. Partial surveys are those surveys in which observations were not made at all surveys stations for some reason.

Table 5. Results of onshore surveys of gray whales in the Piltun area in June-October 2006.

Survey date	Odoptu-Piltun Section (OPS)								Astokh-Chayvo Section (ACS)					Total* (for complete surveys)		
	Survey station No.								Survey station No.					OPS	ACS	Total
	1	2	3	4	5	6	7	8	9	10	11	12	13			
June																
26									6	7	2	0	0		15	
30	0	0	1	1	0	1	10	10	8	1	8	0	0	23	17	40
July																
1	3	4	5	0	2	0	0	3	10	8	1		2	17	(21)	
2	1	2	10	1					2	4	11	3	0	(14)	20	
5	0	3												(3)		
8	1	4	1											(6)		
15	0	2												(2)		
16	0	2	10	8	10	4	2	1	9	4	5	7	2	37	27	64
17	2	7	12	3	2	3	0	7	5	6	5	7	0	36	23	59
18	1	11	13	6	4	5	3	10	13	4	5	7	0	53	29	82
24	10	9	8	3	0	1	5	14	12	7	3	4	0	50	26	76
25	10	9	11	8	5	3	8	12						66		
26									12	6	18	13	2		41	
August																
19	5	5	23	11	7	8	3	9	23	6	2	1		71	(32)	
20	6	9	11	8	4	5	9	8	8	11	8	2	0	60	29	89
22	4	4	6	9										(23)		
23	11	10	9	10	7	9	7	10	22	15	12	9	0	73	58	131
24							8	11	9	13	4	11	0	(19)	37	
25									20	6	3	7	2		38	
26	2	8												(10)		
September																
12	4	3	10	4							2	12	3	(21)	(17)	
13	0	5	6	7	6	10	7	6	9	4	2	11	12	47	38	85
15	0	3	14	22	10	4	2	3	4	1	0	9	12	58	26	84
16	0	9	12	9	2	3	2	1	1	3	0	10	7	38	21	59
17	3	8	10	13					6	2	2	22	4	(34)	36	
23	0	5	7						1	13	12	2	0	(12)	28	
24	2													(2)		
25	3	6	12	9										(30)		
28	0	2								2	0	7	6	(2)	(15)	
29	7	1	16	3	3	1	3	3	4	7	10	16	10	37	47	84
30	1	7	14	8	1	2	1	3	8	9	7	29	2	37	55	92
October																
1	3	9	13	11	5	2	4	3	10	3	5	24	2	50	44	94
6	0	4	15	5	6	4	4	2	4	3	7	24	21	40	59	99
9									6	0	3	8	6		23	
13	2	6	11	3										(22)		
14	0	1	5	5	2	2	1	5	5	0	5	21	2	21	33	54
15						3	1	6	1	5	8	9	5	(10)	28	

* the cursive number in parentheses indicates the results of partial surveys.

Table 6. Correlative table of variations in gray whale distribution in the Piltun area in late September-October 2006 (based on data from onshore surveys).

	29.09	30.09	1.10	6.10	14.10
29.09		0,96	0,77	0,77	0,92
30.09	0,96		0,87	0,69	0,96
1.10	0,77	0,87		0,64	0,79
6.10	0,77	0,69	0,64		0,76
14.10	0,92	0,96	0,79	0,76	

Table 7. Number of gray whales recorded in 2006 in the Piltun area in the sections of water between the survey stations (based on data from onshore surveys).

Indicator	Sections of water between survey stations														Total
	<1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13>	
June (1 complete synchronized survey)															
Total number of whales	0	0	0	1	1	1	4	8	15	1	5	4	0	0	40
Avg. number of whales	0	0	0	1	1	1	4	8	15	1	5	4	0	0	40
July (4 complete synchronized surveys)															
Total number of whales	5	19	41	34	12	17	8	17	45	32	13	31	6	1	281
Avg. number of whales	1.3	4.8	10.3	8.5	3.0	4.3	2.0	4.3	11.3	8.0	3.3	7.8	1.5	0.3	70.3
August (2 complete + 1 provisionally-complete synchronized surveys)															
Total number of whales	10	19	39	31	27	21	17	24	38	55	16	24	2	0	323
Avg. number of whales	3.3	6.3	13.0	10.3	9.0	7.0	5.7	8.0	12.7	18.3	5.3	8.0	0.7	0.0	107.7
September (5 complete synchronized surveys)															
Total number of whales	0	17	52	56	28	21	19	15	17	31	16	25	106	1	404
Avg. number of whales	0.0	3.4	10.4	11.2	5.6	4.2	3.8	3.0	3.4	6.2	3.2	5.0	21.2	0.2	80.8
October (3 complete synchronized surveys)															
Total number of whales	0	1	33	36	6	13	9	8	14	14	5	26	72	10	247
Avg. number of whales	0.0	0.3	11.0	12.0	2.0	4.3	3.0	2.7	4.7	4.7	1.7	8.7	24.0	3.3	82.3

Table 8. Distribution of gray whales based on distance from the shore in the Piltun area, June-October 2006 (based on data from onshore surveys).

Distance, km	Number of whales per month, %				
	July	August	September	October	Avg. for the season
Odoptu-Piltun Section					
0-0,5	2.8	5.5	14.2	11.9	8.2
0,5 - 1	16.0	26.1	34.9	25.9	25.8
1 - 2	53.9	43.4	36.8	41.2	44.3
2 - 3	12.1	15.2	7.2	11.9	11.3
3 - 5	13.1	9.0	4.7	8.4	8.7
5 - 10	2.1	0.8	2.2	0.7	1.7
Astokh-Chayvo Section					
0-0,5	3.9	7.7	1.4	0.5	3.2
0,5 - 1	16.3	20.1	11.7	5.9	13.7
1 - 2	46.4	55.2	54.5	62.0	54.9
2 - 3	25.6	5.2	22.4	16.0	17.6
3 - 5	4.4	10.8	6.6	12.9	8.0
5 - 10	3.4	1.0	3.4	2.7	2.6
Total for the Piltun area					
0-0,5	3.3	6.4	8.1	5.5	5.9
0,5 - 1	16.1	23.6	23.8	14.6	20.1
1 - 2	50.7	48.4	45.2	53.0	49.3
2 - 3	17.7	10.9	14.5	14.2	14.2
3 - 5	9.5	9.8	5.6	10.9	8.4
5 - 10	2.7	0.9	2.8	1.8	2.1

Table 9. Distribution of gray whales in the Piltun area based on sea depths, June-October 2006 (based on data from onshore surveys).

Depth, m	Number of whales per month, %				
	July	August	September	October	Avg. for the season
Odoptu-Piltun Section					
0-5	6.4	4.7	8.5	7.7	6.7
6-10	25.9	45.7	53.4	44.8	42.5
11-15	43.9	33.6	27.4	32.1	34.4
16-20	13.1	8.2	5.3	13.3	9.2
21-25	8.5	6.6	3.5	2.1	5.7
26-30	1.8	1.2	1.9	0.0	1.4
31-35	0.4	0.0	0.0	0.0	0.1
Astokh-Chayvo Section					
0-5	11.3	20.6	6.9	3.2	10.3
6-10	45.3	54.6	53.8	56.7	52.9
11-15	34.5	18.6	29.7	28.3	28.0
16-20	7.4	6.2	8.6	11.8	8.1
21-25	1.5	0.0	1.0	0.0	0.7
Total for the Piltun area					
0-5	8.3	11.4	7.6	5.2	8.3
6-10	34.3	49.2	54.1	51.5	47.5
11-15	40.6	27.8	28.4	30.0	31.7
16-20	10.3	7.2	6.7	12.4	8.5
21-25	5.3	3.7	2.2	0.9	3.2
26-30	1.0	0.7	1.0	0.0	0.7
31-35	0.2	0.0	0.0	0.0	0.1

Table 10.

Quantitative composition of groups of gray whales recorded in the vessel-based survey areas
in June-October 2006

No. of whales in group	Area of operations					
	Piltun		Offshore ¹		Arkutun-Dagi	
	Number of groups	% of total	Number of groups	% of total	Number of groups	% of total
June						
1	11	64,7%	-	-	-	-
2	4	23,5%	-	-	-	-
3	2	11,8%	-	-	-	-
July						
1	15	68,2%	-	-	-	-
2	5	22,7%	-	-	-	-
3	1	4,5%	-	-	-	-
4	1	4,5%	-	-	-	-
August						
1	33	63,5%	4	57,1%	1	100%
2	14	26,9%	3	42,9	-	-
3	5	9,6%	-	-	-	-
4	-	-	-	-	-	-
September						
1	35	55,6%	3	21,4%	-	-
2	12	19,0%	3	21,4%	-	-
3	15	23,8%	2	14,3%	-	-
4	1	1,6	2	14,3%	-	-
5	-	-	3	21,4%	-	-
6	-	-	1	7,1		
October						
1			8	50%	1	100%
2			6	37,5%	-	-
3			2	12,5%	-	-
4			-	-	-	-

Notes: ¹ – MMOs indicated that seven groups were likely resighted during the Offshore survey on 15 September 2006.

Table 11. Quantitative composition of groups of gray whales recorded in the Piltun area in 2006 (based on data from onshore surveys).

Month	Group size (no. of individuals)											
	1		2		3		4		5		6	
	% of number of sightings	% of number of individuals	% of number of sightings	% of number of individuals	% of number of sightings	% of number of individuals	% of number of sightings	% of number of individuals	% of number of sightings	% of number of individuals	% of number of sightings	% of number of individuals
June	72,09	54,39	23,26	35,09	4,65	10,53	0,00	0,00	0,00	0,00	0,00	0,00
July	80,21	64,33	16,20	25,98	2,57	6,19	0,77	2,47	0,26	1,03	0,00	0,00
August	80,11	64,44	16,02	25,78	3,31	8,00	0,55	1,78	0,00	0,00	0,00	0,00
September	82,11	67,93	15,90	26,32	1,39	3,45	0,40	1,32	0,00	0,00	0,20	0,99
October	77,25	59,70	18,43	28,48	2,35	5,45	1,57	4,85	0,39	1,52	0,00	0,00
Total for season	80,09	64,40	16,62	26,74	2,38	5,75	0,71	2,28	0,13	0,52	0,06	0,31

FIGURES

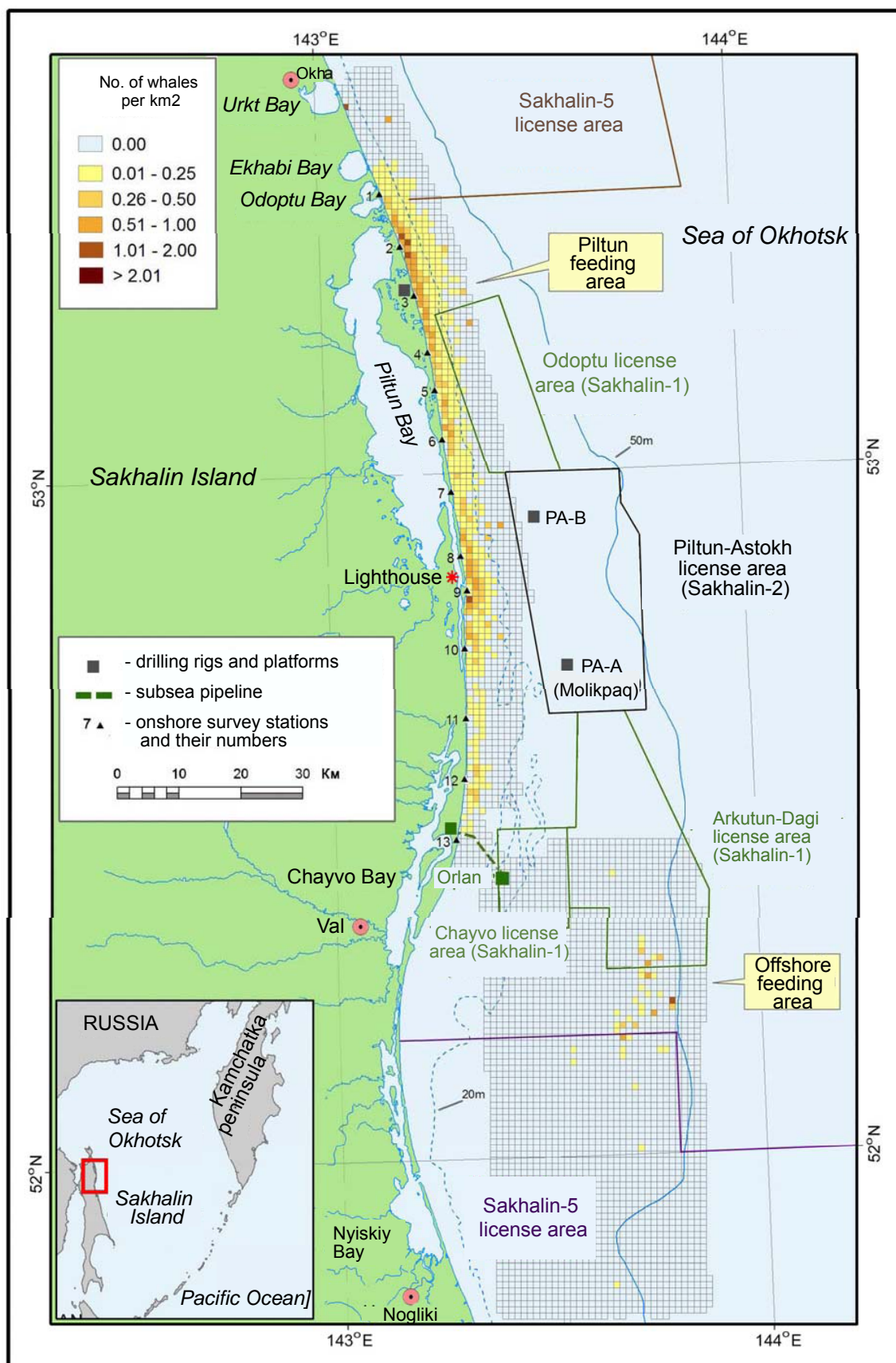


Figure 1. License areas and production facilities of offshore oil and gas projects in northeastern Sakhalin and the distribution of gray whales in the summer-fall feeding areas in 2005 based on combined data of aerial, vessel-based, and onshore surveys (average seasonal whale population density per km²)

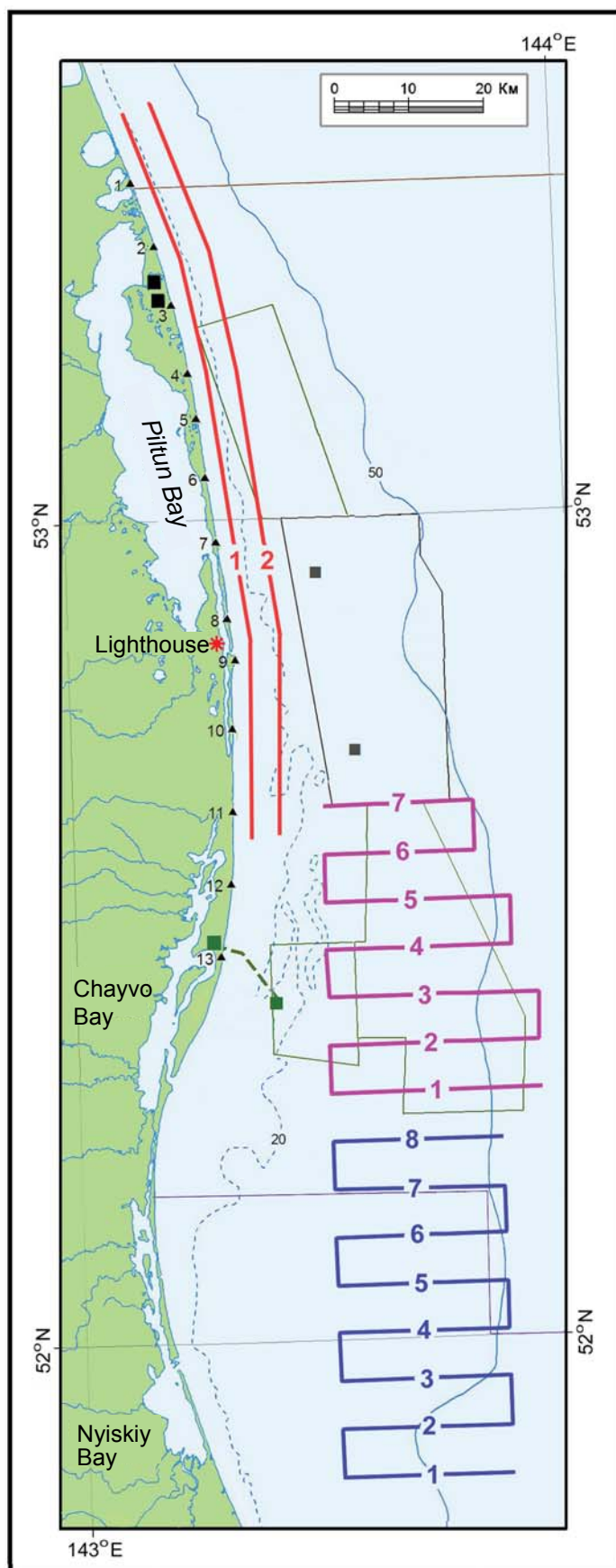


Figure 2. Planned traverses of vessel-based gray whale surveys in the Piltun and Offshore feeding areas and in the Arkutun-Dagi license area in June-October 2006.

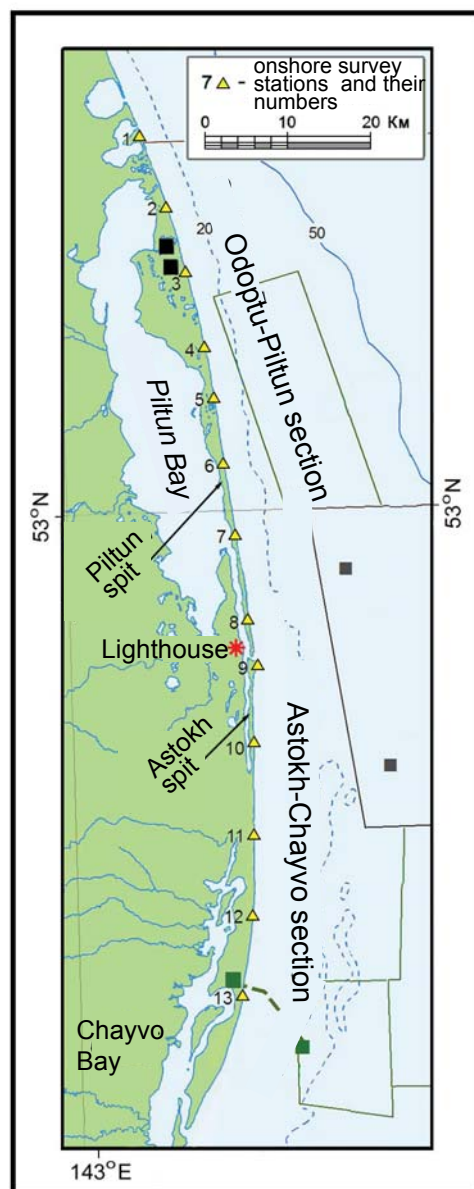


Figure 3. Location of survey stations for automobile-based surveys of gray whales in the Piltun feeding area in June-October 2006.

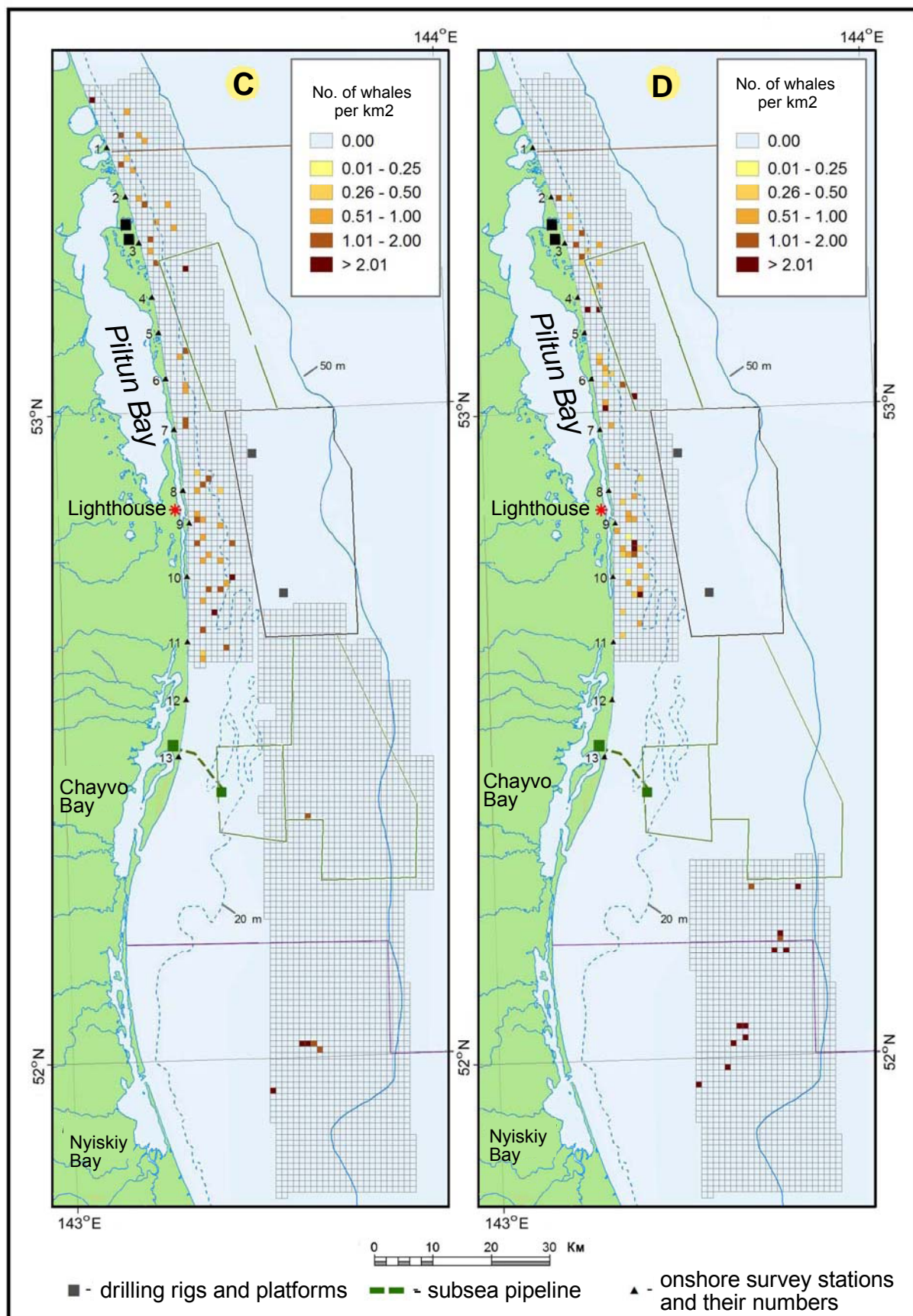


Figure 4 continued....

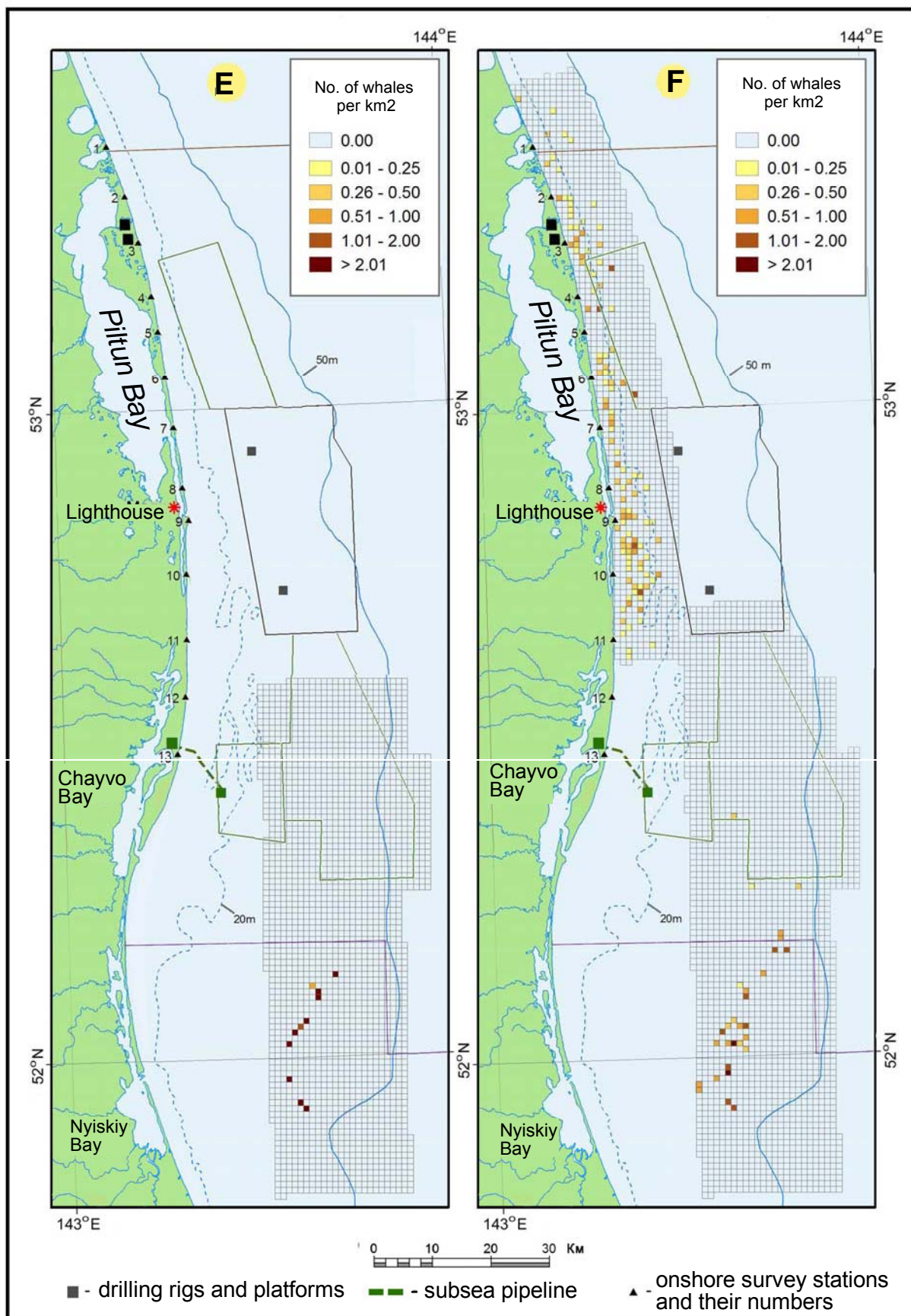


Figure 4 continued.

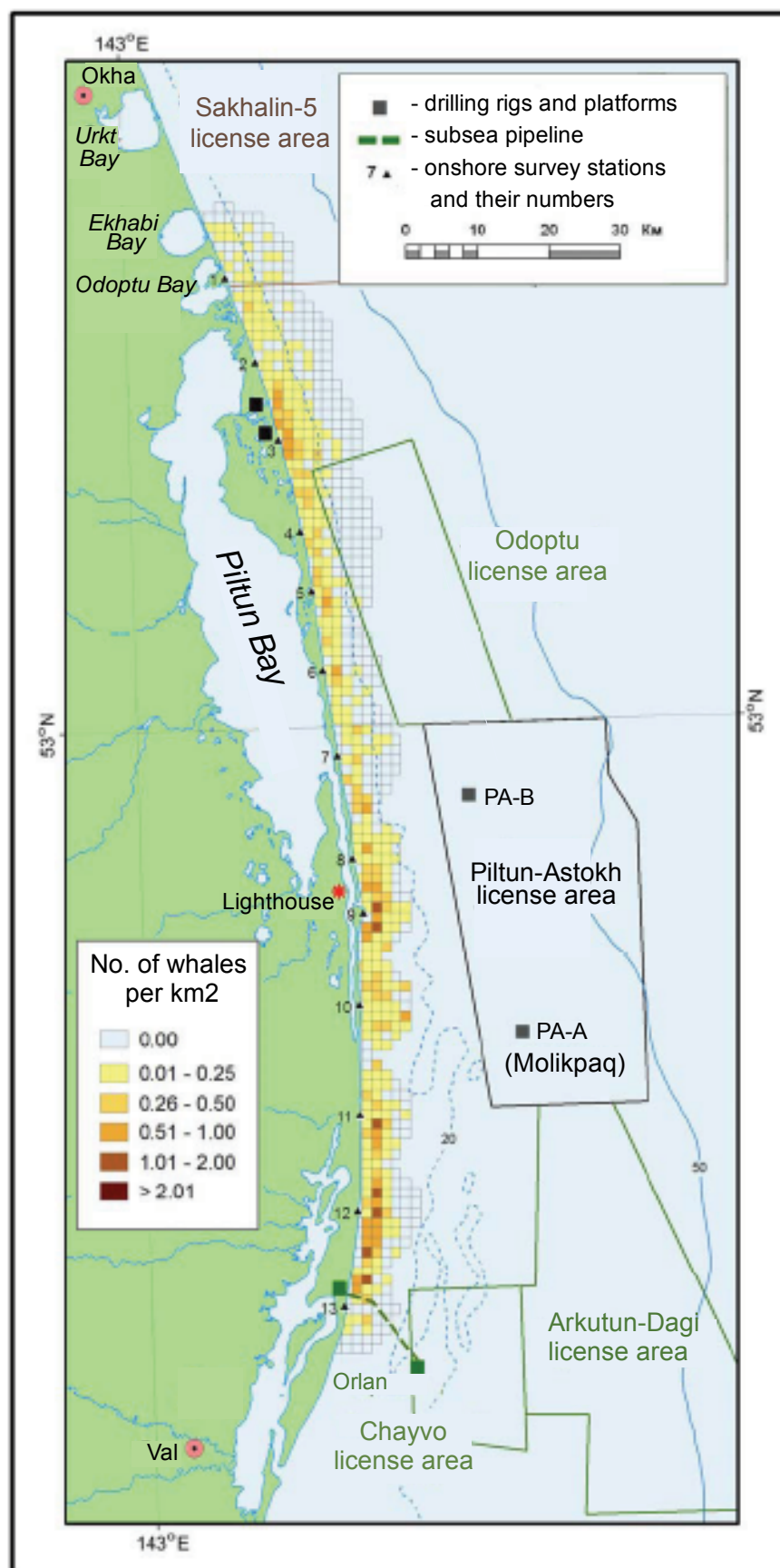


Figure 5. Overall gray whale distribution in the Piltun area in the summer-fall period of 2006, based on data from onshore surveys (average seasonal whale population density per km²).

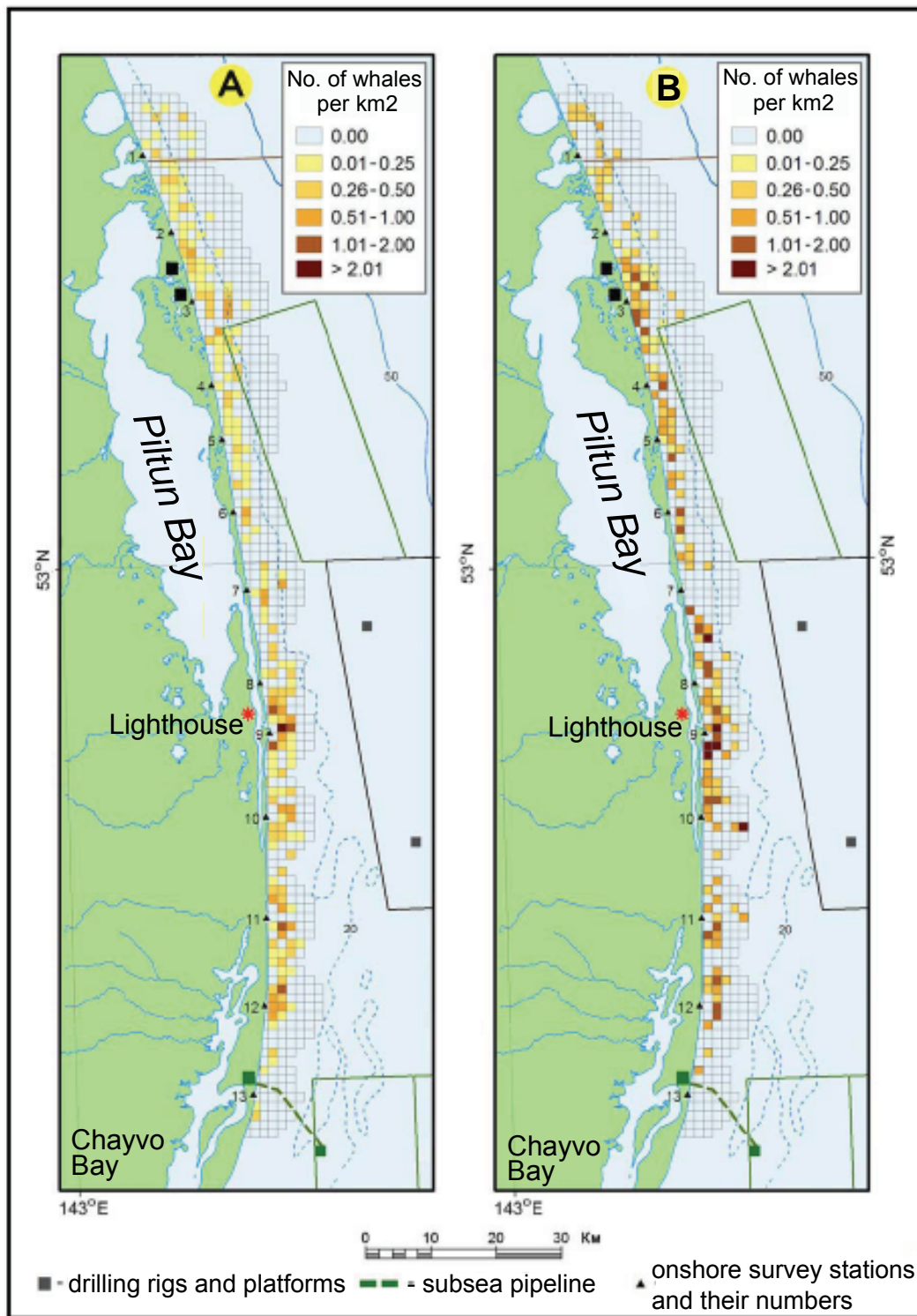


Figure 6. Seasonal dynamic of gray whale distribution in the Piltun area in June-October 2006, based on data from onshore surveys (whale population density per km²).

A – June - July, B – August, B – September, Г – October.

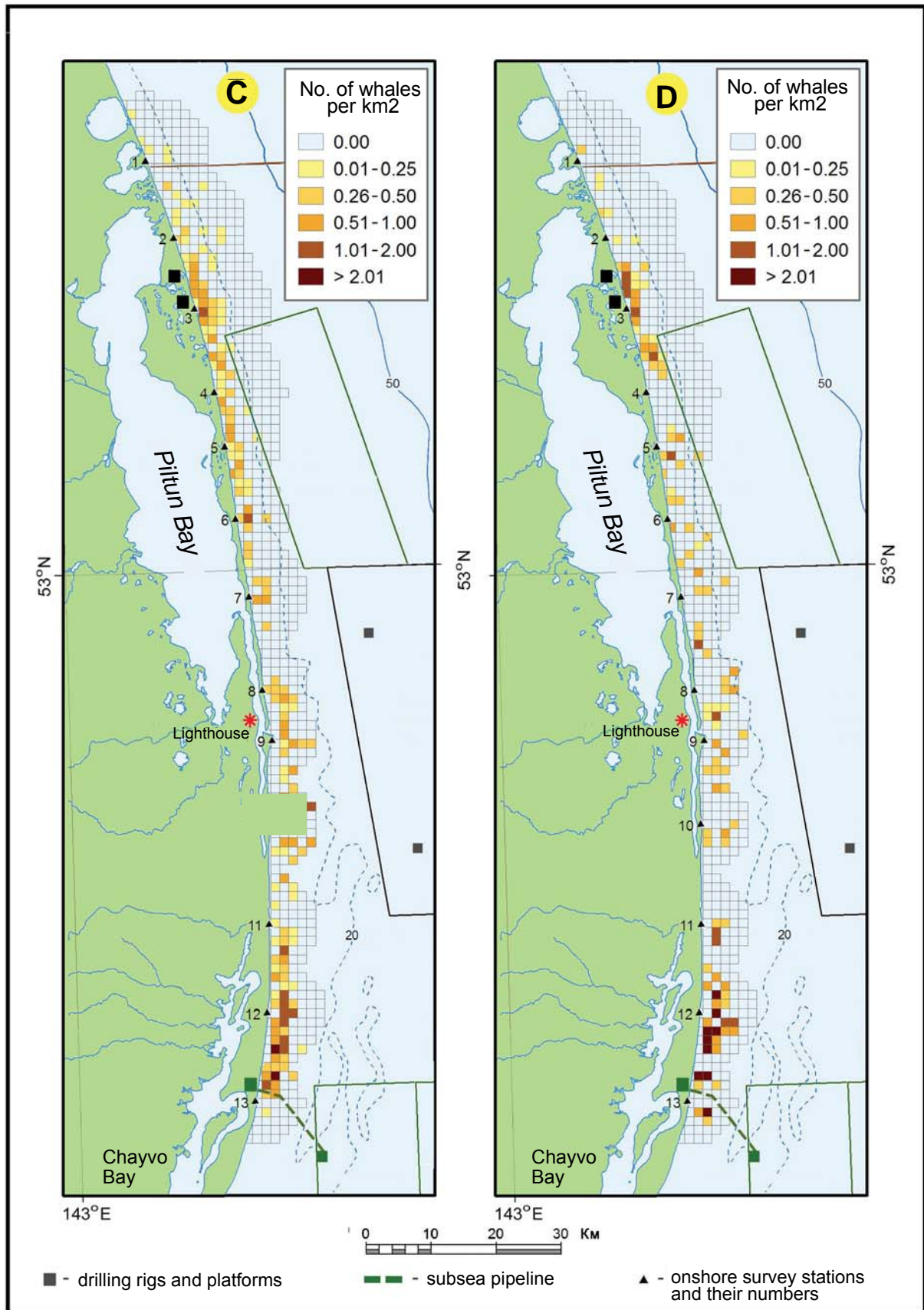


Figure 6 continued.

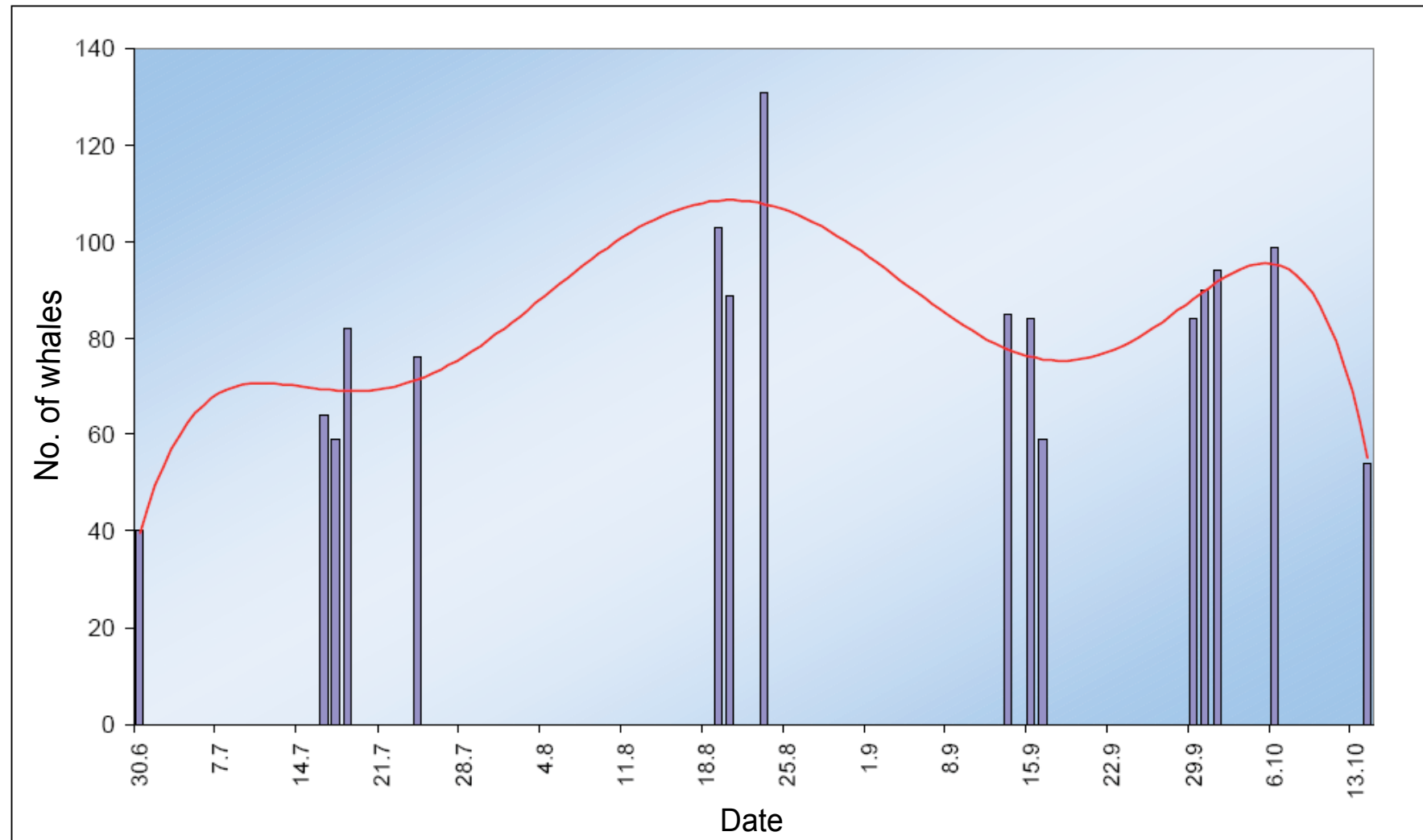


Figure 7. Seasonal dynamic of gray whale abundance in the Piltun area in June-October 2006 (based on data from complete synchronized onshore surveys).

Red line – polynomial trend.

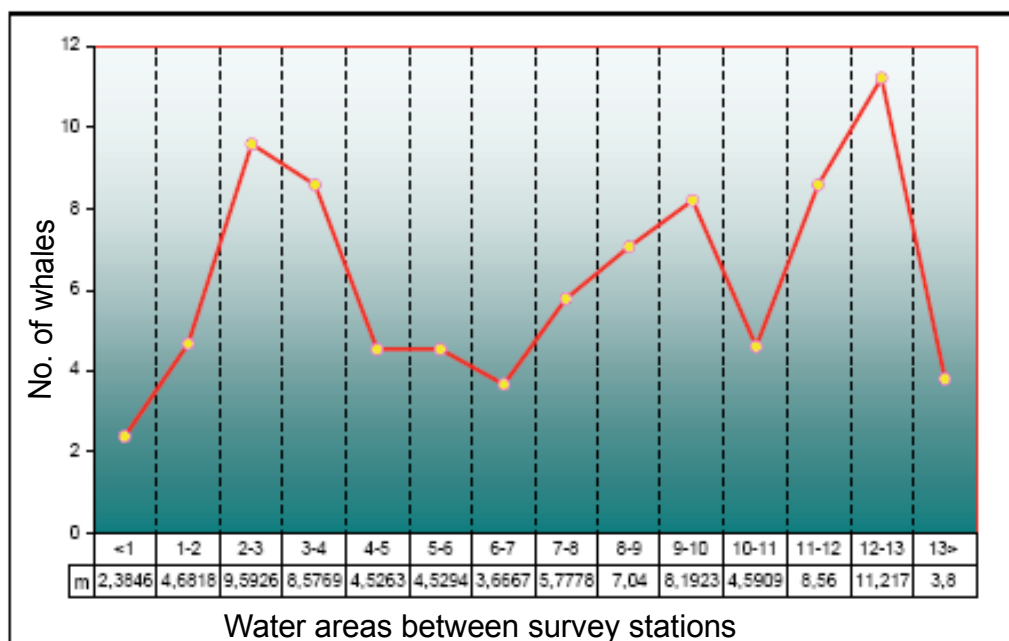


Figure 8. Average abundance of gray whales in different aquatic sections of the Piltun area in June-October 2006 (based on data from onshore surveys).
m – avg. abundance for entire season.

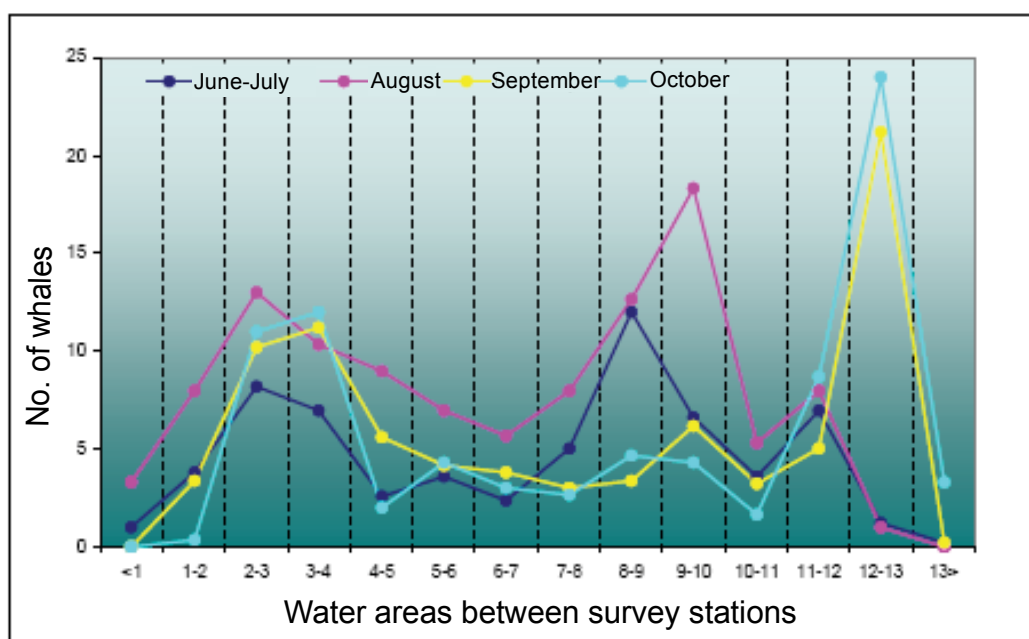


Figure 9. Seasonal variations in average whale abundance in different aquatic sections of the Piltun area in June-October 2006 (based on data from onshore surveys).

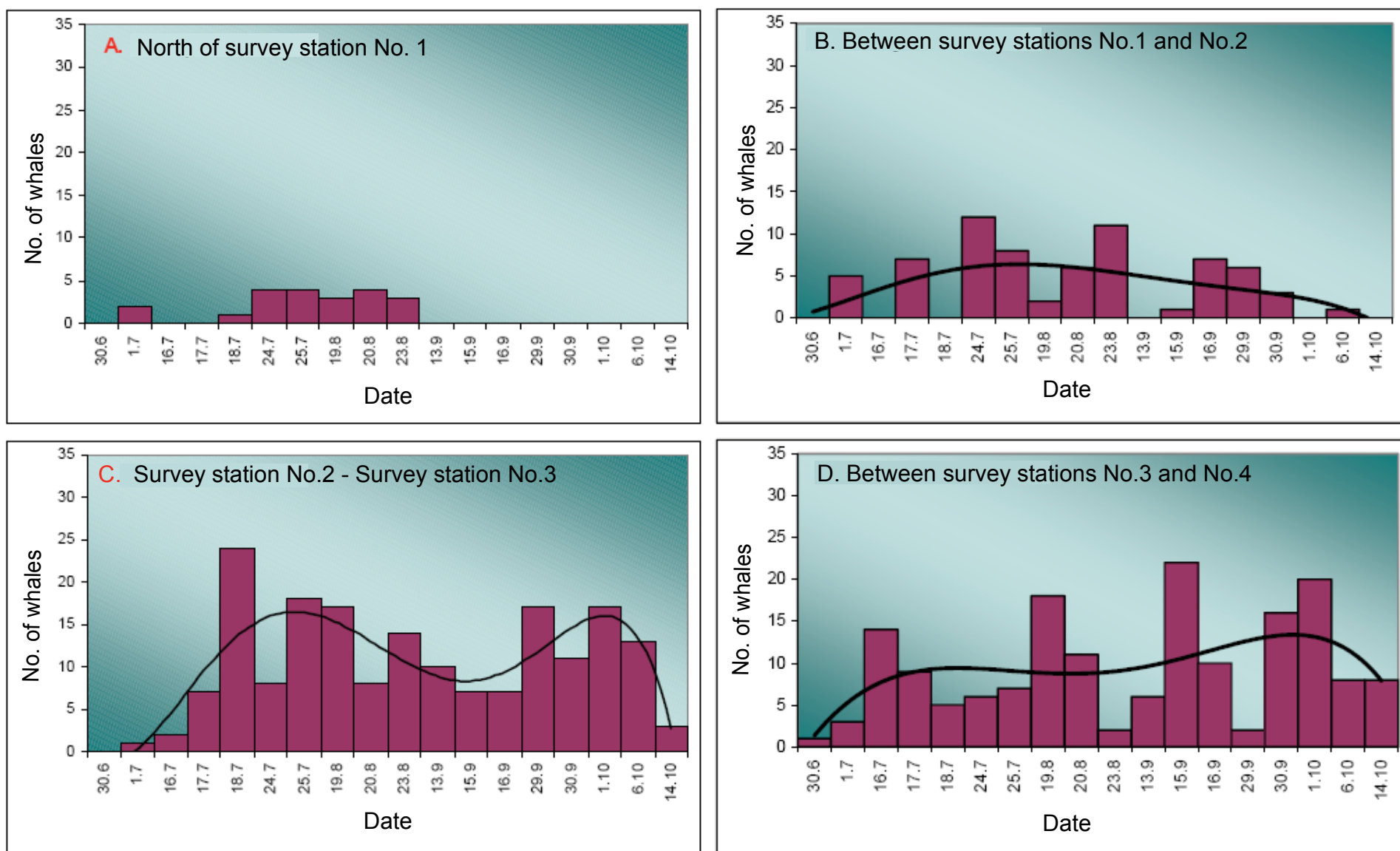


Figure 10. Dynamics of gray whale abundance in different aquatic sections of the Piltun area in 2006 (based on data from onshore surveys).

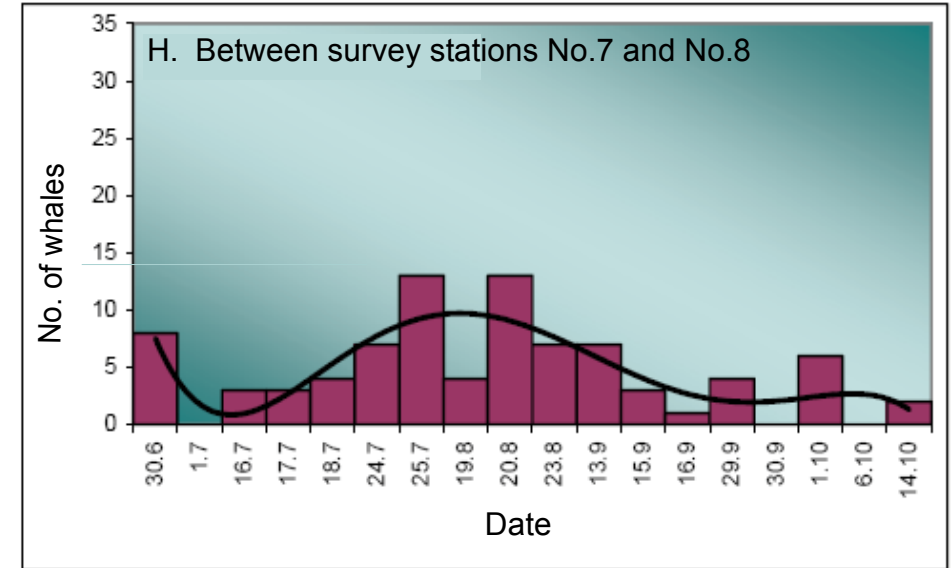
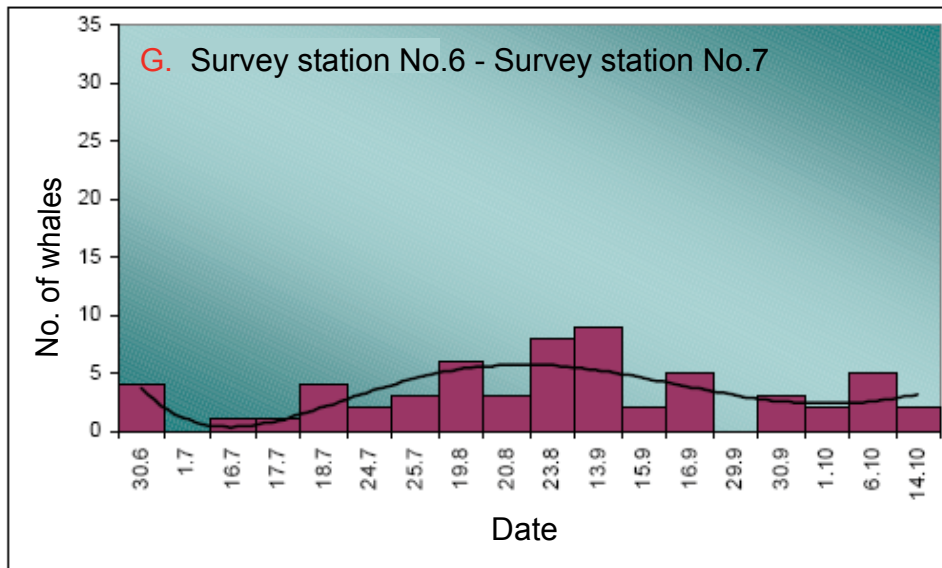
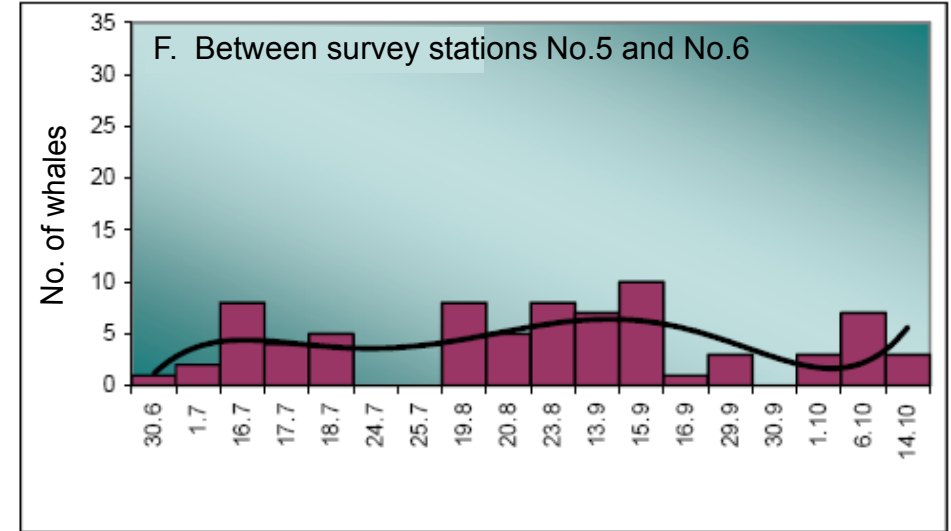
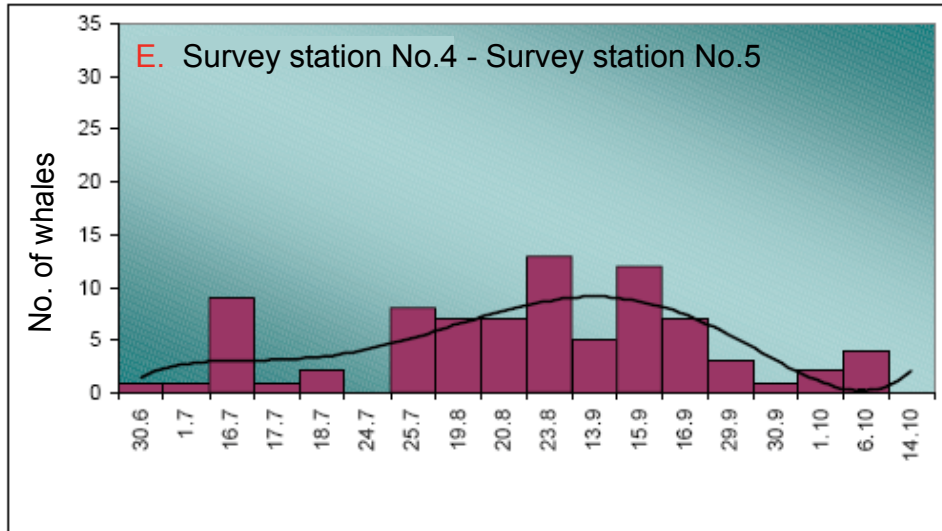


Figure 10 continued...

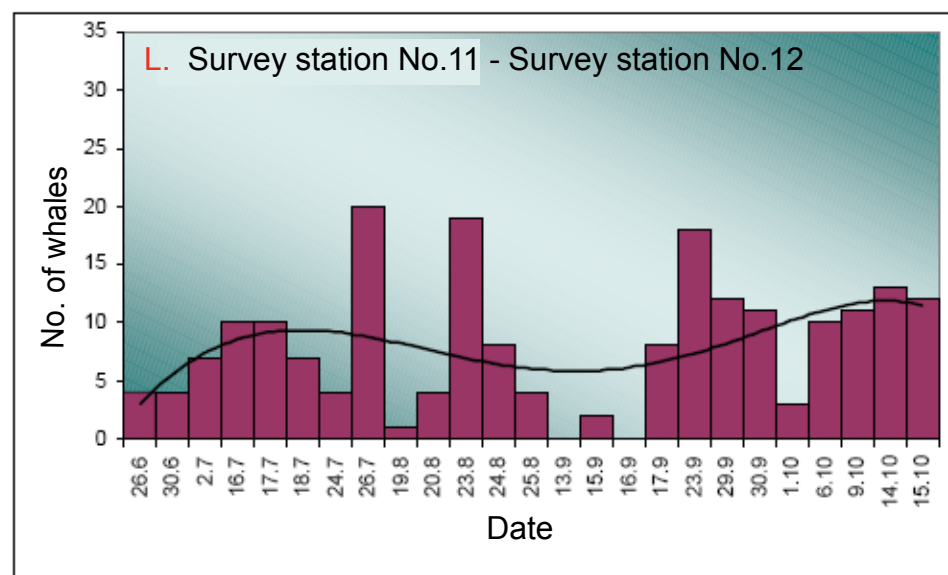
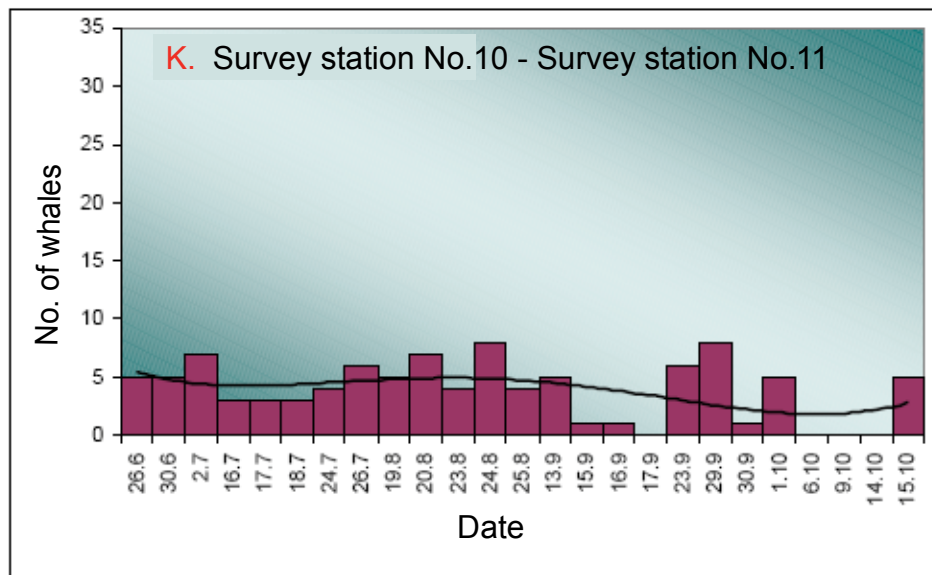
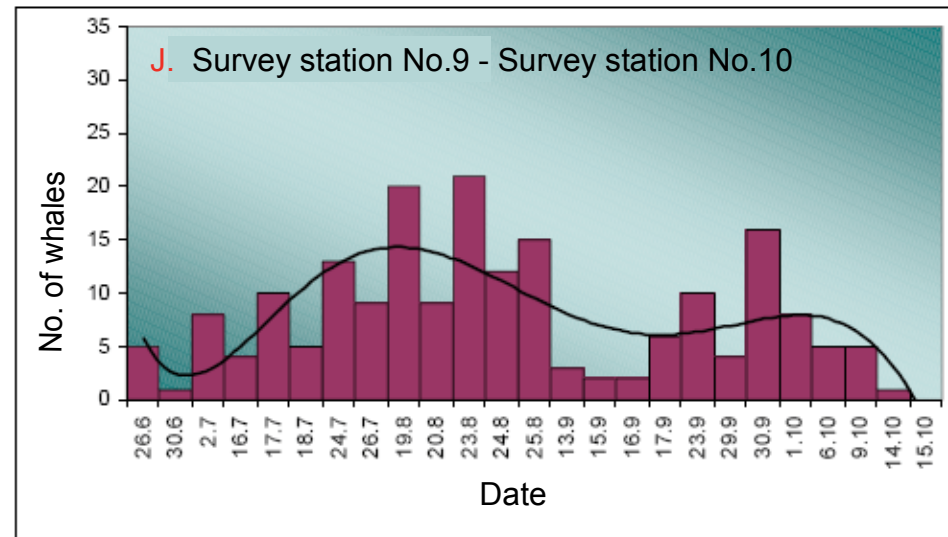
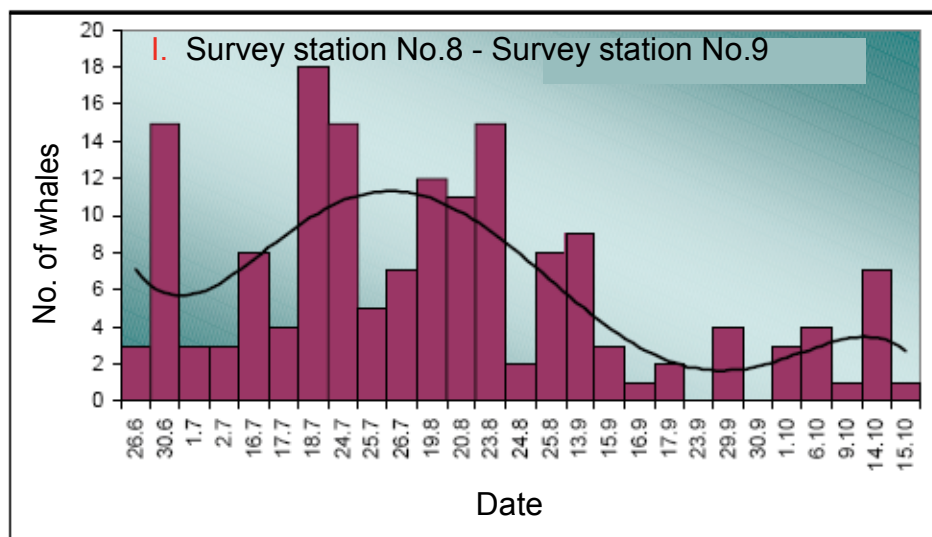


Figure 10 continued...

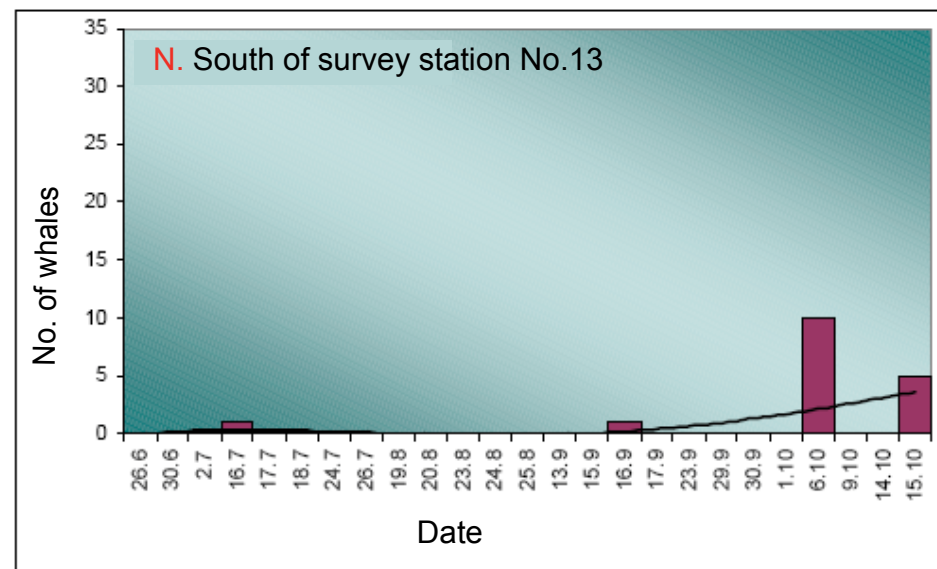
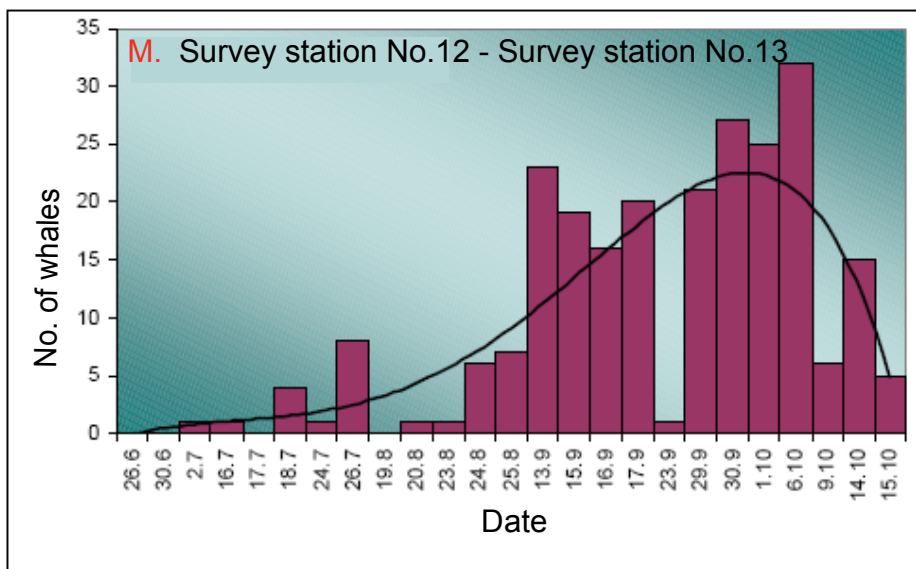


Figure 10 continued.

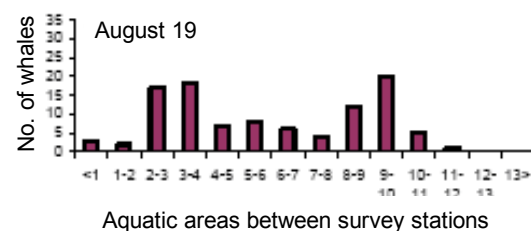
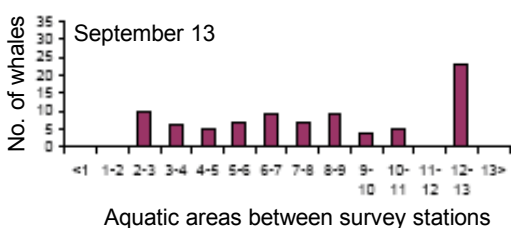
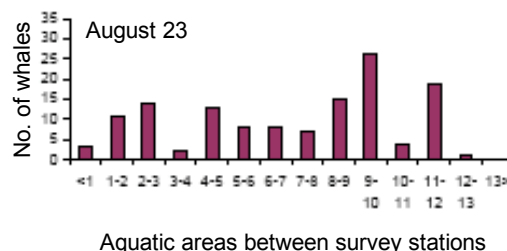
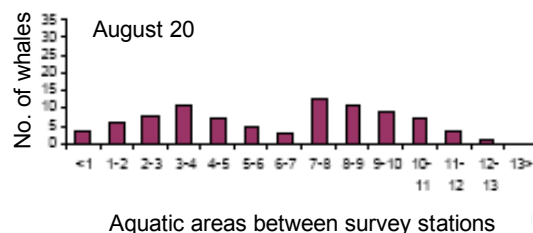
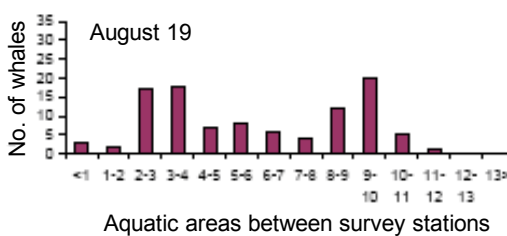
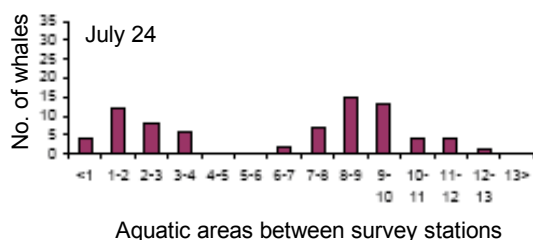
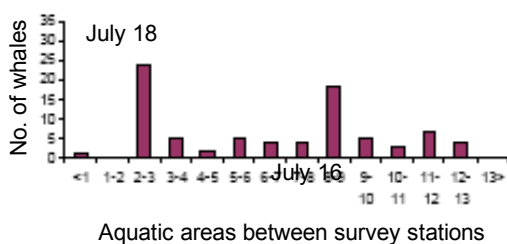
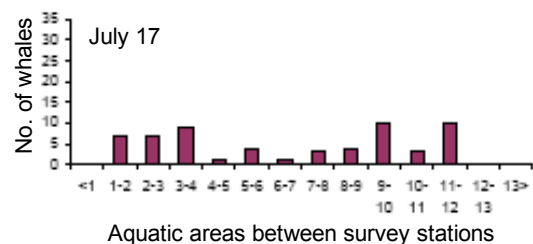
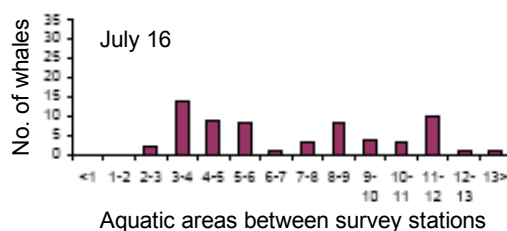
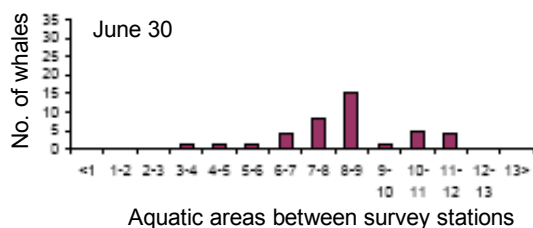


Figure 11. Number of gray whales recorded in the Piltun area in sections of the aquatic area between survey stations in June-October 2006 (based on data from complete synchronized onshore surveys).

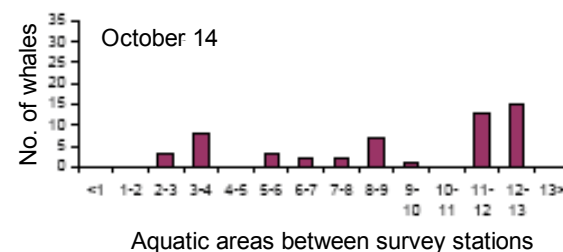
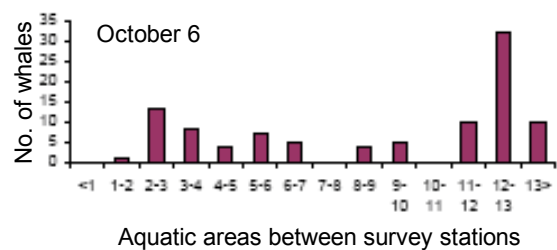
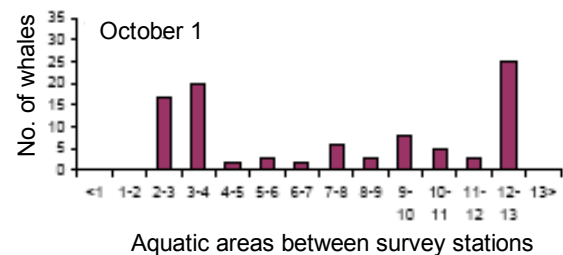
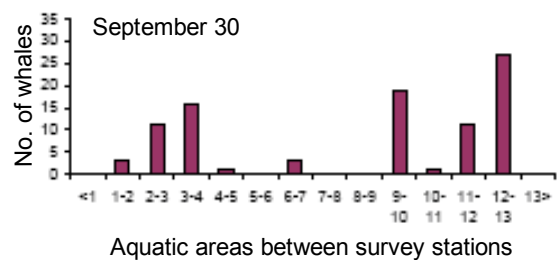
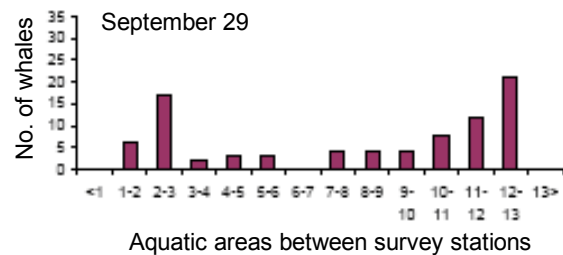
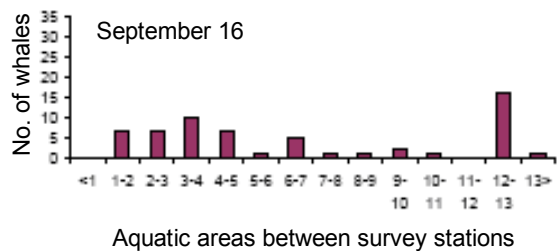


Figure11 continued.

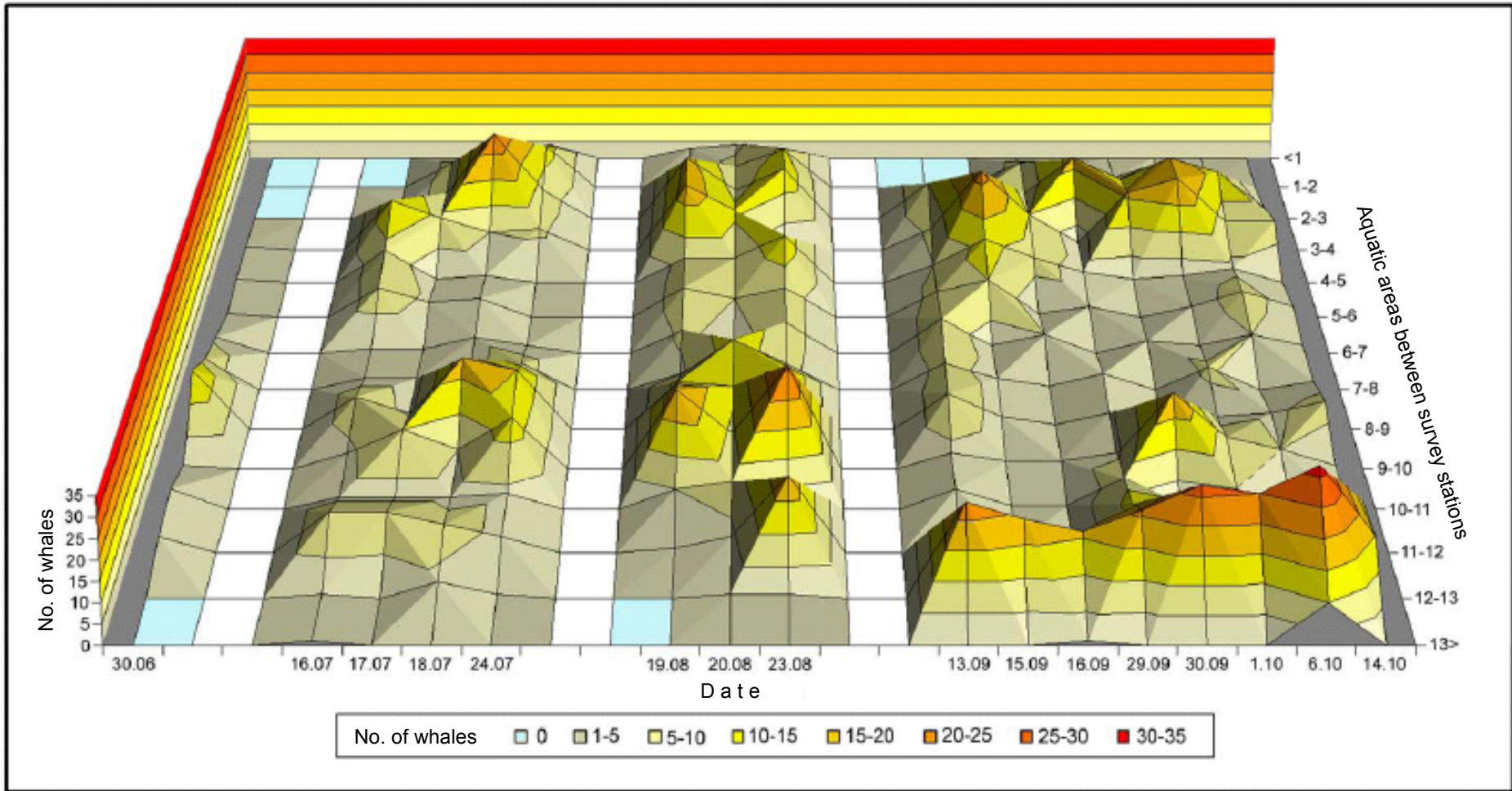


Figure 12. Space-time variations in gray whale distribution in the Piltun area in June-October 2006 (based on data from complete synchronized onshore surveys). White areas represent breaks between survey series.

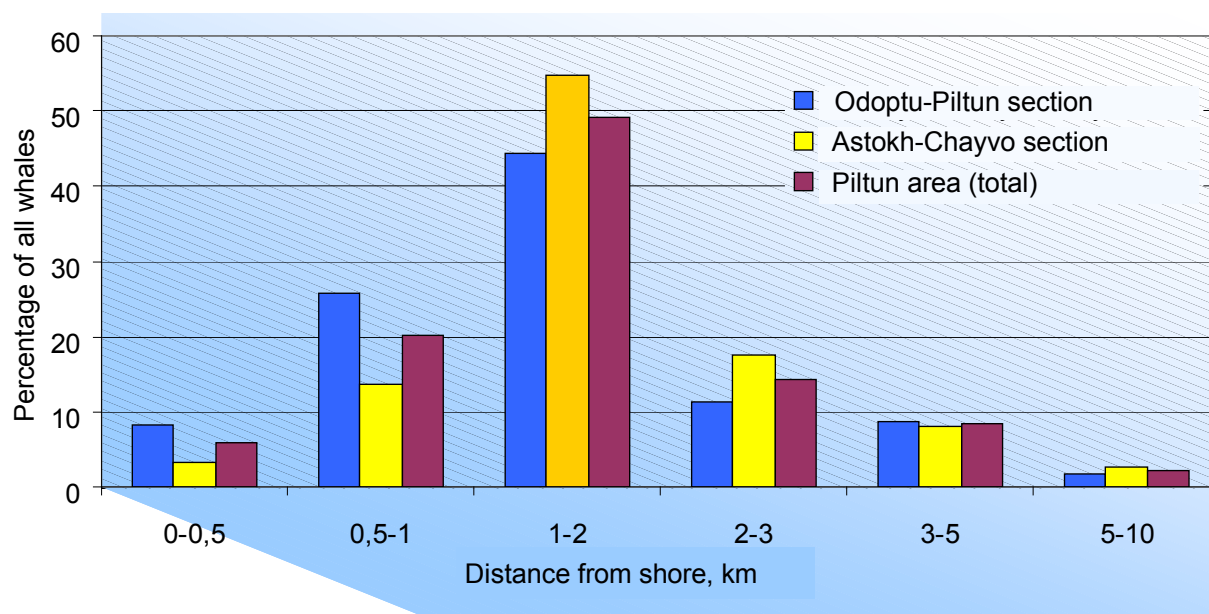


Figure 13. Location of gray whales in the Piltun area in June-October 2006 in terms of their distance from the shore (based on data from onshore surveys).

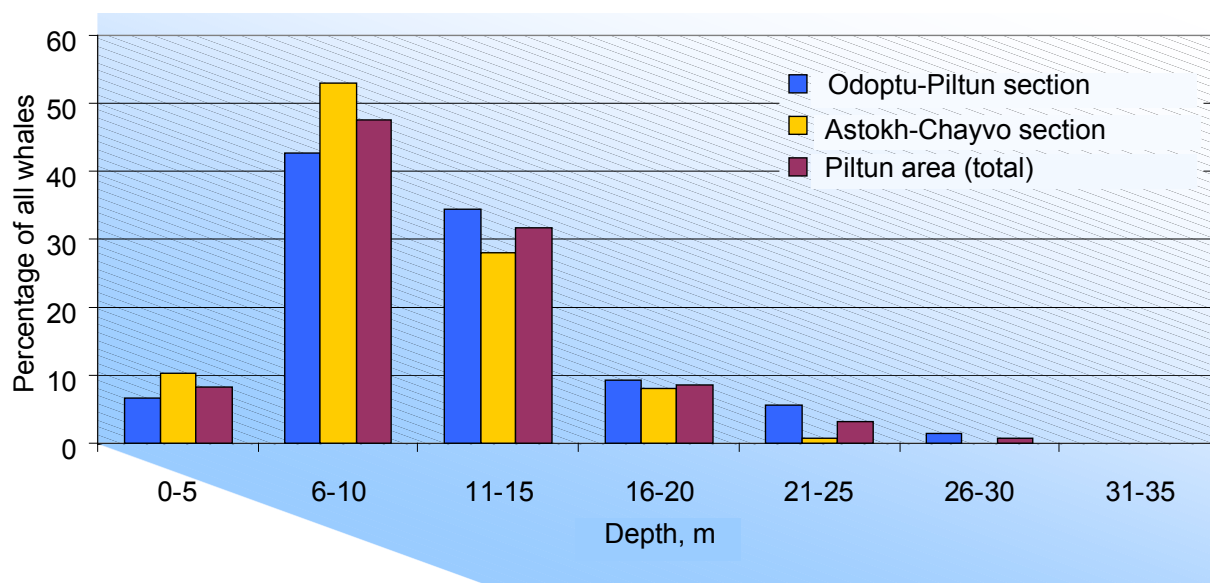


Figure 14. Location of gray whales in the Piltun area in June-October 2006 in terms of water depth (based on data from onshore surveys).

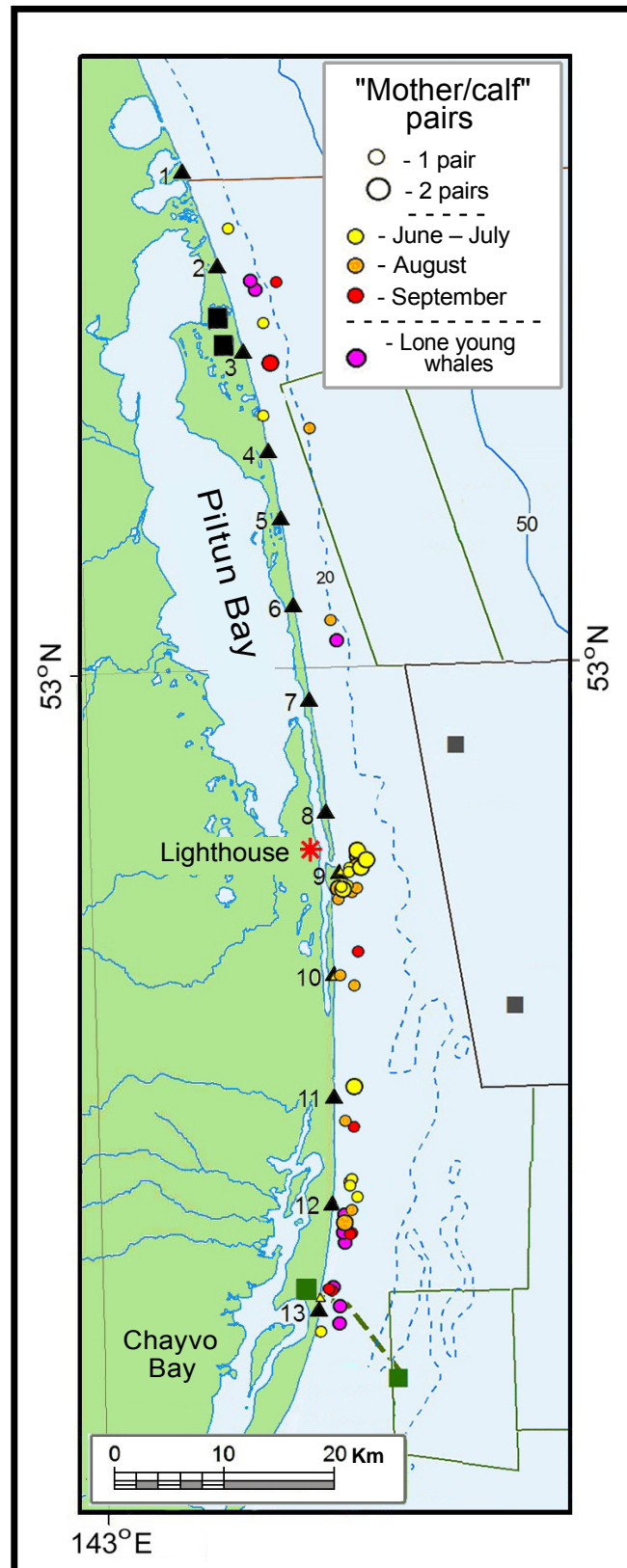


Figure 15. Distribution of mother-calf pairs of gray whales and young separated from their mothers in the Piltun area in 2006 (based on data from onshore surveys).

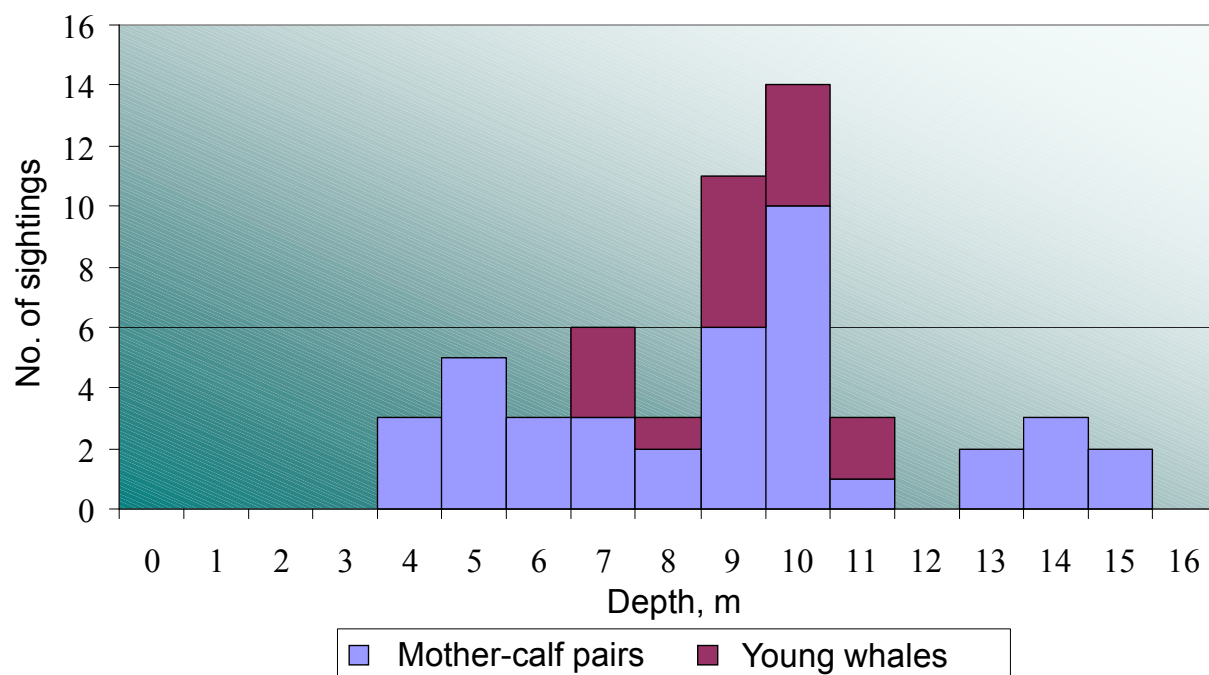


Figure 16. Distribution of mother-calf pairs of gray whales and young separated from their mothers in the Piltun area in 2006 in terms of water depth (based on data from onshore surveys).

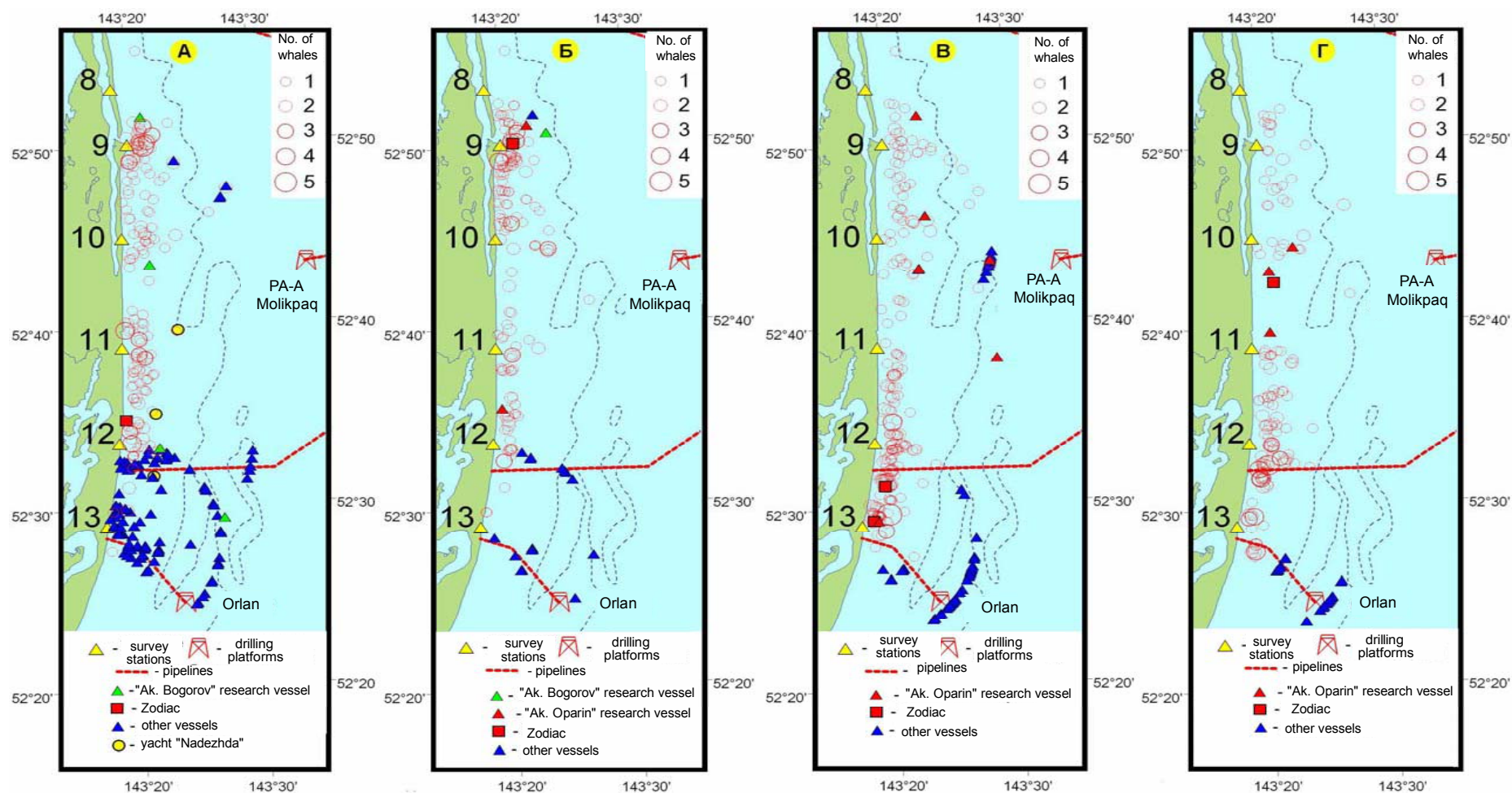


Figure 17. Distribution of gray whales and the location of ships in the southern part of the Piltun area in 2006 (based on data from onshore surveys).

A – late June - July, Б - August, В – September, Г – October.

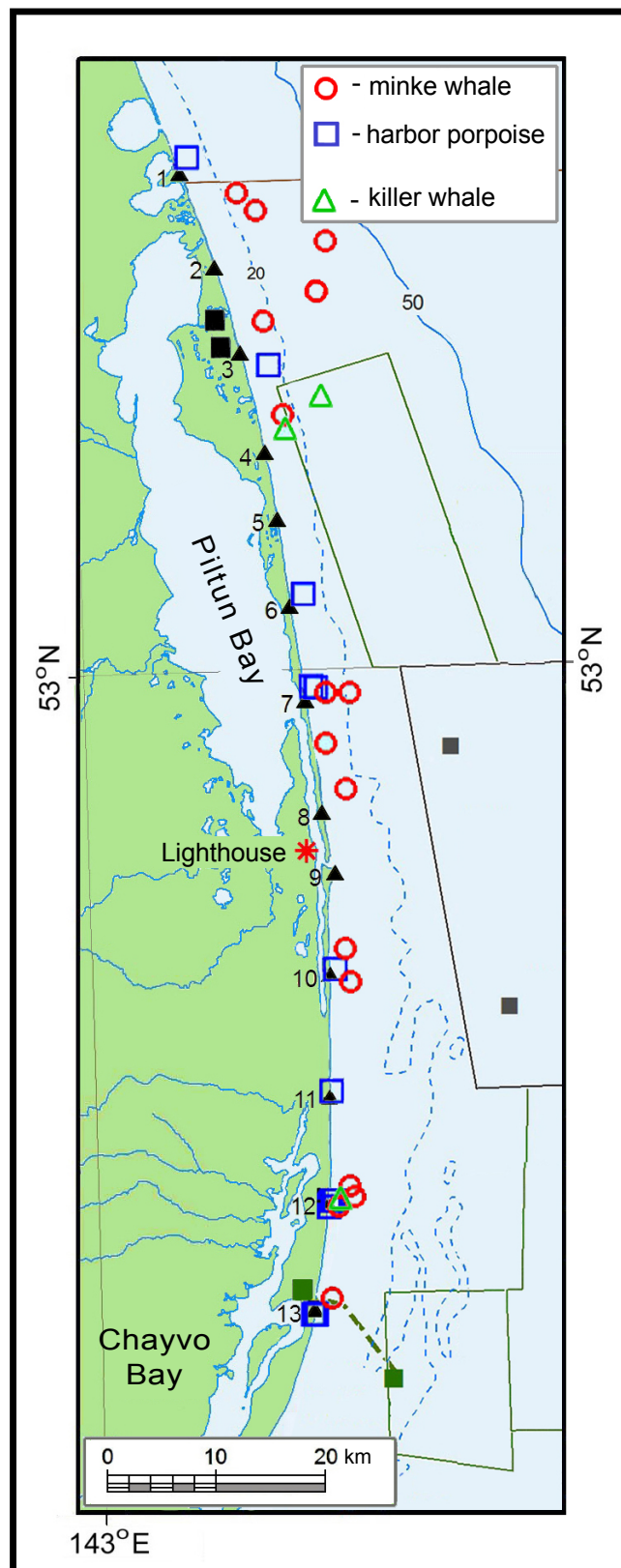


Figure 18. Locations of sightings of other cetacean species (other than gray whales) in the Piltun area in June-October 2006 (based on data from onshore surveys).

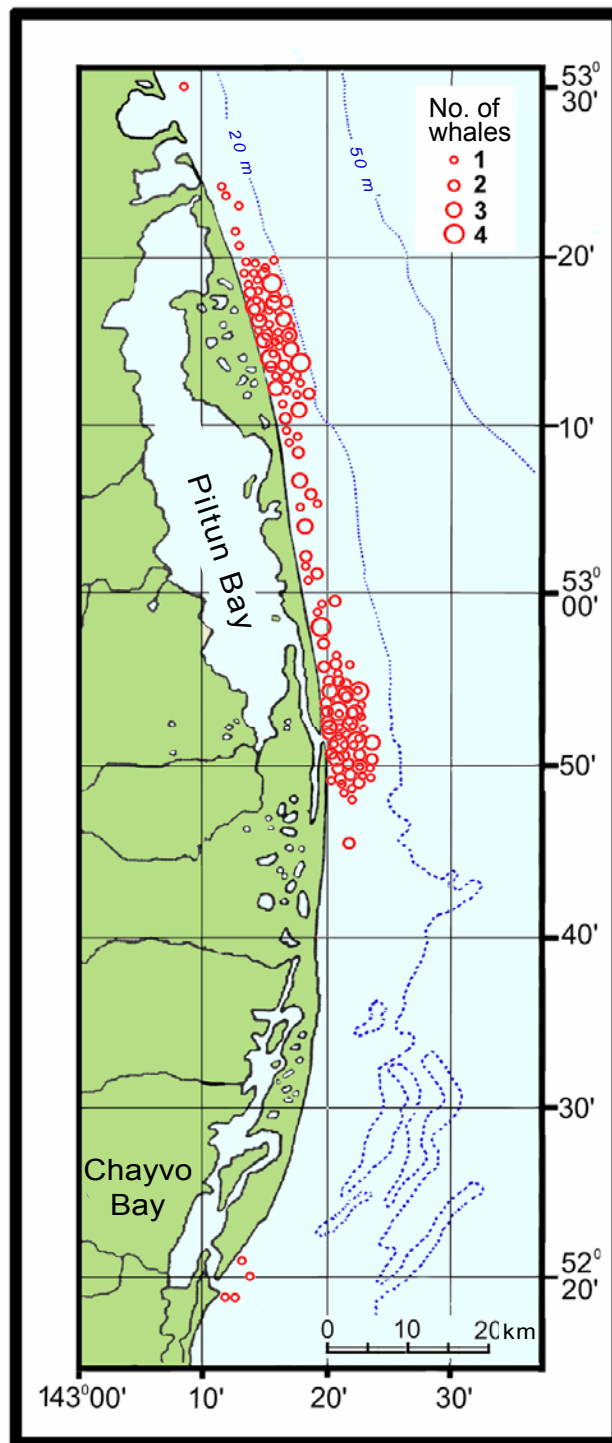


Figure 19. Distribution of gray whales in the Piltun area in 1984-1991 (based on data from TINRO aerial surveys).

The aerial surveys were performed by employees of TINRO's marine mammal laboratory A. A. Berzin, V. L. Vladimirov, N. V. Doroshenko, and S. A. Blokhin from an Mi-8 helicopter on one transect 2-3 km from the shore at an altitude of 200-300 m and a speed of 100-150 km/h, with three observers working simultaneously. The usual transect was from Okha to the southern end of Piltun Bay, and sometimes as far as Lunskeye Bay. The flights ran from late May / early June through late October / early November (the whales near the mouth of Chayvo Bay were sighted on 10/15/1987).

The whale sighting map was graciously provided by N. V. Doroshenko.

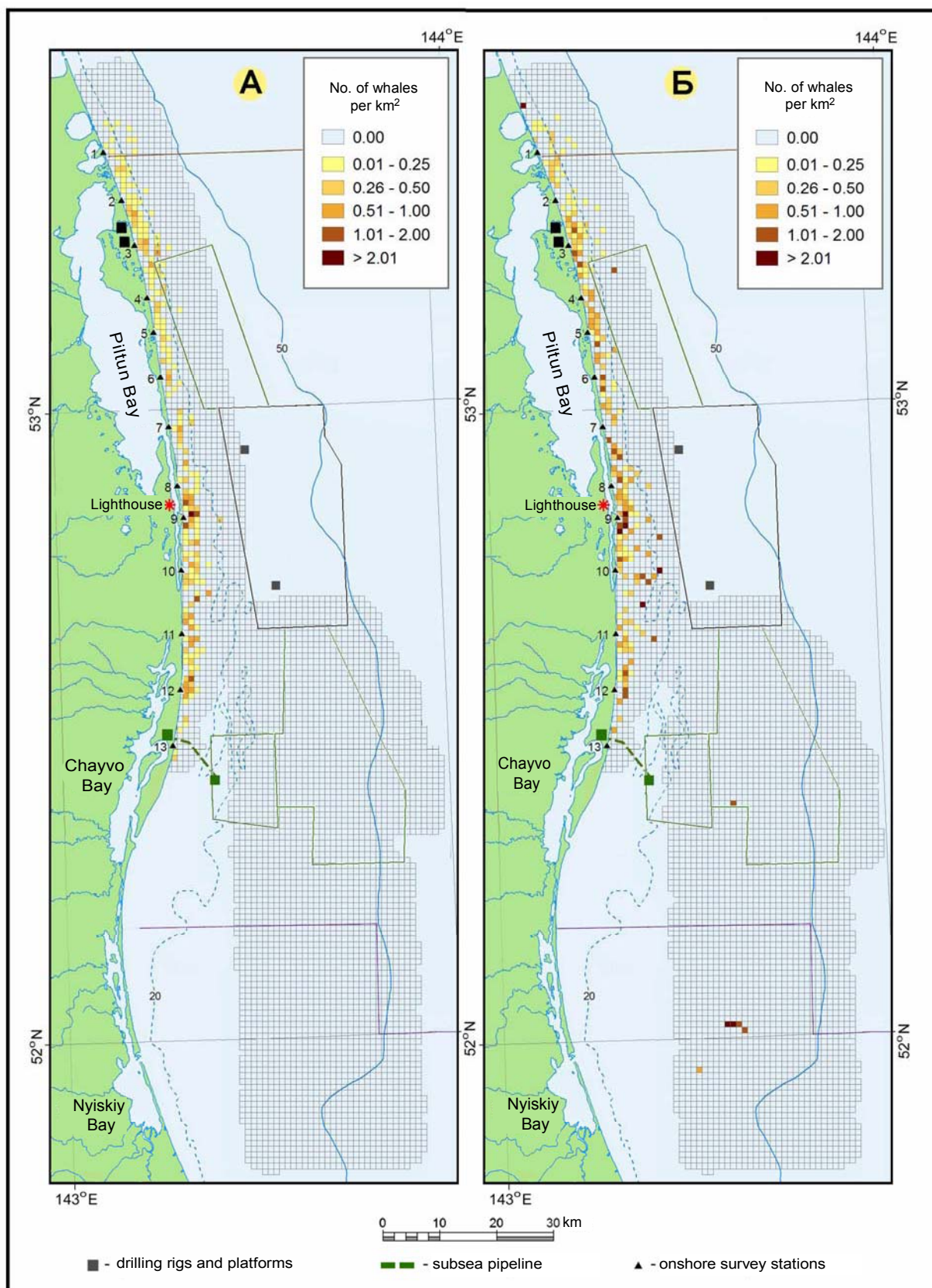


Figure 20. Gray whale distribution in the Piltun and Offshore areas in June-October 2006, based on combined data from vessel-based and onshore surveys (whale population density per km²).

А – June – July, Б – August, В – September, Г – October, Д – June – October

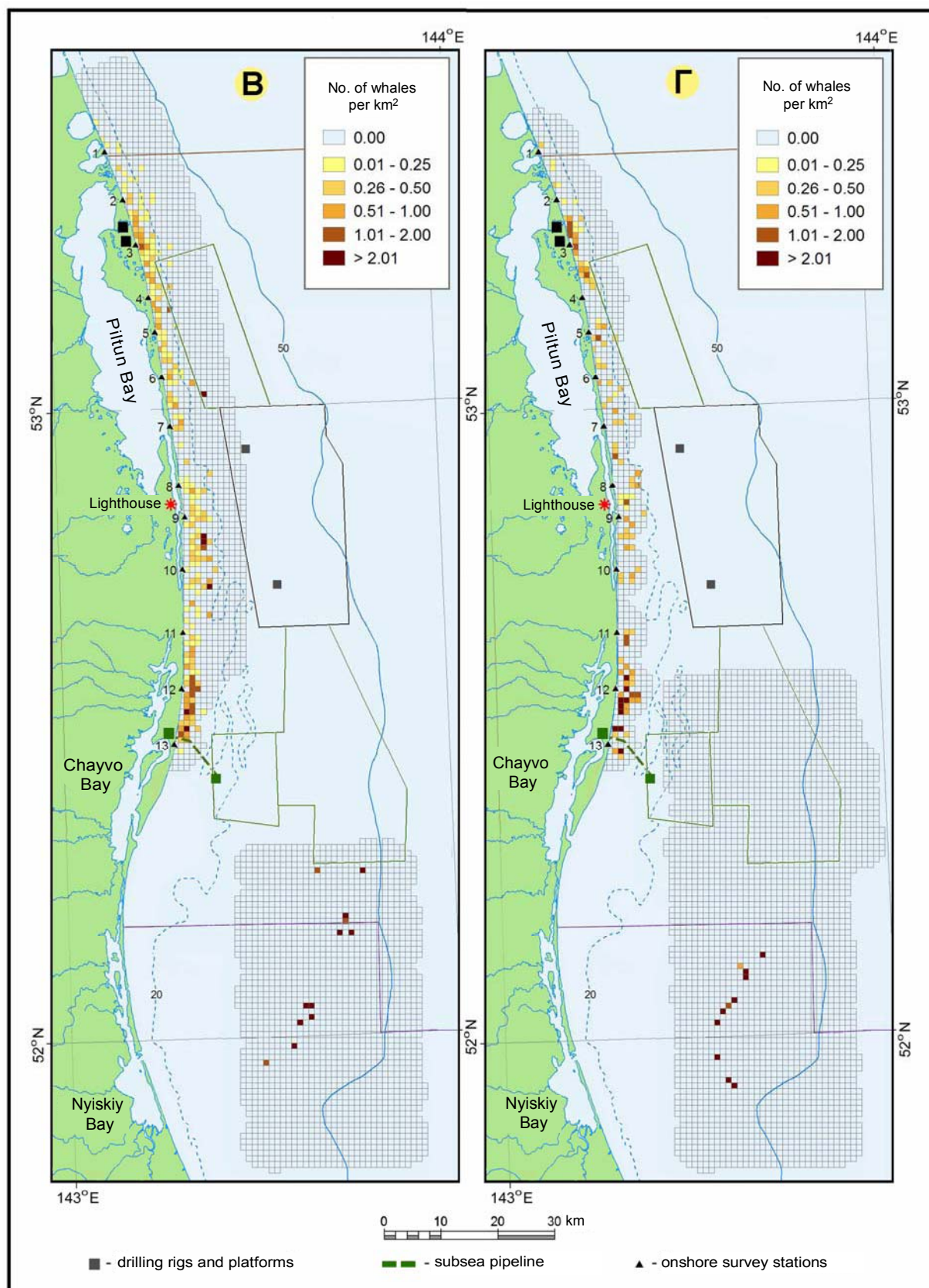


Figure 20 continued....

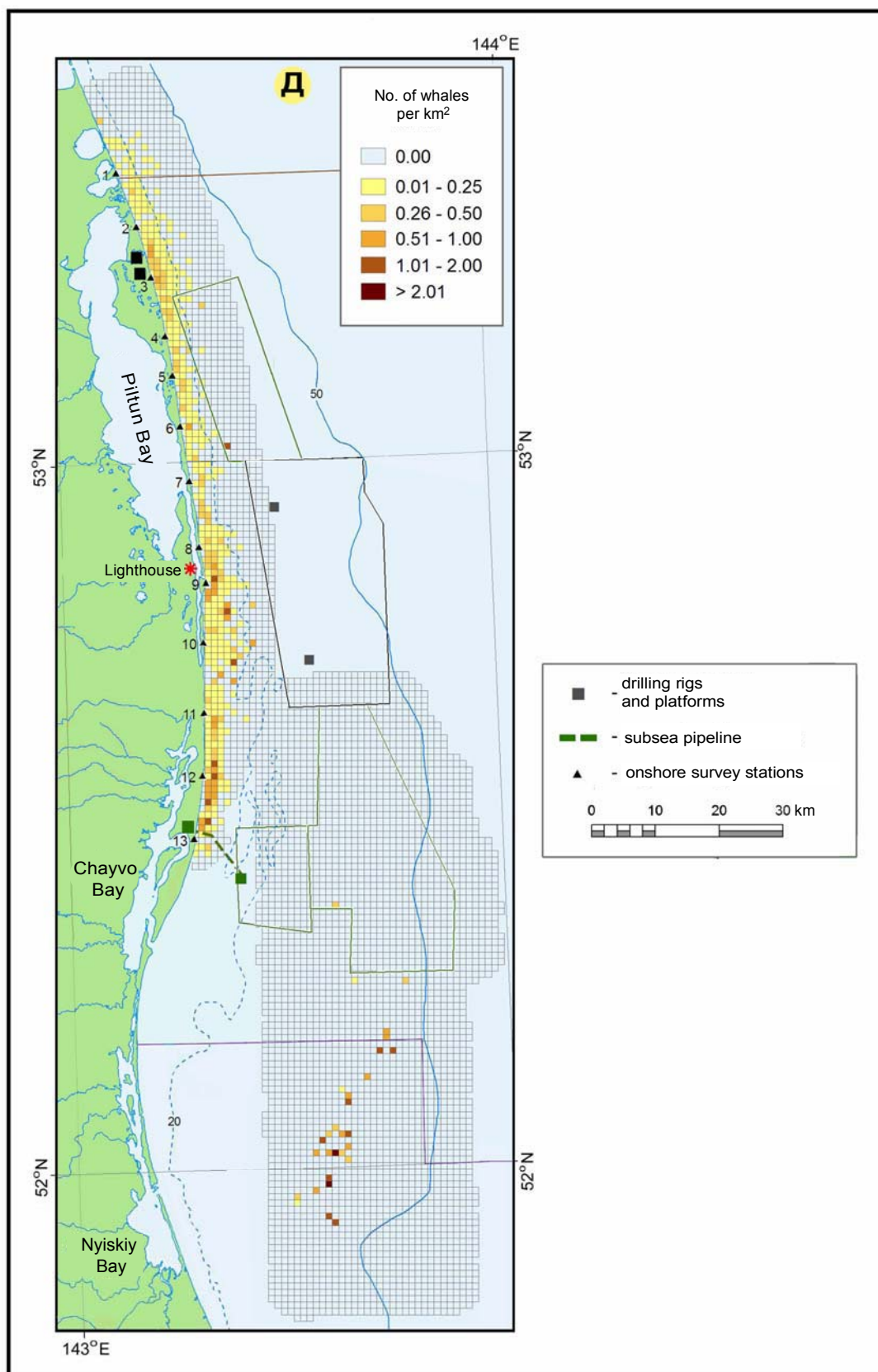


Figure 20 continued.

APPENDICES

Appendix 1

Data on gray whales and other marine mammals recorded during vessel-based surveys in the waters of northeastern Sakhalin in June-October 2006

Animal name codes: GW – gray whale; MW – minke whale; KW – killer whale; DP – Dall’s porpoise; HP – harbor porpoise; NFS – northern fur seal; BS – bearded seal; SL – sea lion; LS – largha seal; PWS – Pacific white-sided dolphin; BBW – Baird’s beaked whale; RS – ringed seal; UW – unknown whale; UMM – unknown marine mammals.

Behavior codes: SI – submerges inverted; FD – forward diving; TH – diving with splash; DI – diving; LO – looking (regarding seals); SH – looking (regarding whales); SW – swimming; BR – breaching; FE – feeding; FL – diving energetically while showing tail; PL – playing; RE – resting; OT – other; UN – unknown; NO – not determined.

Date	Vessel Position						Heading	Species	No. of animals	Behavior 1	Behavior 2	Direction to animal (hrs)	Distance to animal (m)
	Latitude, N.			Longitude, E.									
22.06.06	52	43	76	143	24	19	1	GW	2	FE	FE	9	2500
22.06.06	52	47	69	143	24	46	4	GW	2	FE	FE	9	2500
22.06.06	52	53	17	143	24	11	266	GW	1	FE	FE	10	2500
22.06.06	52	46	6	143	25	24	140	GW	2	FE	FE	3	2500
22.06.06	52	42	76	143	23	53	210	GW	1	FD	FD	12	1300
22.06.06	52	42	9	143	23	29	160	GW	2	FD	FE	2	3600
22.06.06	52	39	14	143	22	52	175	GW	1	FD		9	1000
24.06.06	52	45	38	143	24	68	350	GW	1	FE	FE	11	3600
24.06.06	52	47	36	143	23	83	350	GW	1	FD	FD	10	850
24.06.06	52	49	22	143	23	0	356	GW	1	UN		9	300
24.06.06	52	52	70	143	24	14	11	GW	1	UN		9	1500
25.06.06	53	4	54	143	19	32	9	GW	1	FD	FD	12	1000
25.06.06	53	4	51	143	19	63	14	GW	2	FD	FD	1	520
25.06.06	53	13	4	143	17	90	352	GW	1	FE	FL	11	2500
25.06.06	53	18	26	143	15	10	351	GW	1	FE	FE	9	850
25.06.06	53	20	10	143	14	49	349	GW	1	FD	FD	9	850
25.06.06	53	22	8	143	13	16	345	GW	1	BR	BR	8	600
25.06.06	53	22	30	143	13	7	347	GW	2	FD	FD		500
27.06.06	53	18	30	143	15	28	167	GW	2	FE	FD	1	2500
27.06.06	53	16	66	143	15	78	169	GW	2	FE	FE	1	1000
27.06.06	53	10	64	143	18	79	82	GW	1	FD	FE	1	400
27.06.06	52	58	71	143	20	39	172	GW	1	FD	FD	3	600
27.06.06	52	54	82	143	21	16	171	GW	1	FD	FD	3	400
27.06.06	52	50	18	143	21	94	181	GW	3	FD	FD	11	300
27.06.06	52	47	50	143	21	72	182	GW	3	FD	FD	11	250
27.06.06	52	45	98	143	21	63	181	GW	1	FD	FD	1	250
27.06.06	52	44	39	143	21	54	182	GW	1	FD	FD	11	300
27.06.06	52	42	61	143	21	43	181	GW	1	FD	FD	1	800
27.06.06	52	42	29	143	21	41	181	GW	2	FD	FD	1	200
27.06.06	52	42	29	143	21	41	181	GW	2	FD	FD	1	200

27.06.06	52	41	24	143	21	34	181	GW	1	FD	FD	1	1500
27.06.06	52	40	37	143	21	31	181	GW	1	FD	FD	3	700
27.06.06	52	42	91	143	25	4	2	GW	1	FE	FE	8	1500
27.06.06	52	45	22	143	25	25	3	GW	1	FE	FE	9	1800
27.06.06	52	49	37	143	25	41	359	GW	1	FD	FD	11	350
27.06.06	53	9	44	143	21	72	354	GW	1	FE	FE	9	1200
28.06.06	52	58	64	143	23	64	189	GW	1	FE	FE	2	1200
28.06.06	52	51	54	143	24	14	176	GW	1	FE	FE	2	1500
29.06.06	52	43	19	143	22	76	32	GW	2	FE	FE	5	1500
29.06.06	52	43	11	143	22	74	247	GW	2	FE	FE	4	3600
29.06.06	52	42	58	143	22	56	356	GW	2	FD	FE	2	1800
29.06.06	52	43	29	143	22	45	353	GW	3	FE	FE	10	1500
01.07.06	52	43	24	143	22	59	91	GW	1	FD	FE	8	1000
01.07.06	52	43	64	143	22	38	347	GW	2	FE	FE	9	1000
01.07.06	52	43	64	143	22	38	347	GW	1	FE	FE	12	1200
01.07.06	52	40	24	143	22	67	178	GW	1	FD	FE	8	800
01.07.06	52	38	68	143	22	68	169	GW	1	FD	FE	1	300
01.07.06	52	36	54	143	22	93	200	GW	1	FE	FE	4	6000
02.07.06	52	35	3	143	22	2	30	GW	4	FE	FE	8	800
02.07.06	52	35	4	143	22	1	31	GW	1	FE	FE	10	1500
02.07.06	52	36	91	143	21	98	6	GW	2	FD	FE	11	6000
02.07.06	52	39	13	143	22	11	4	GW	2	FD	FD	9	600
02.07.06	52	42	24	143	22	36	5	GW	2	FD	FE	10	600
02.07.06	52	43	55	143	22	43	357	GW	2	FD	FE	11	3600
02.07.06	52	43	68	143	22	29	274	GW	4	FD	FE	1	3600
02.07.06	52	41	16	143	22	68	182	GW	1	FE	FE	5	3200
02.07.06	52	41	16	143	22	68	182	GW	1	FD	FE	1	2500
02.07.06	52	40	48	143	22	66	180	GW	2	FD	FE	2	2400
02.07.06	52	39	17	143	22	67	182	GW	3	FE	FE	2	2000
02.07.06	52	38	66	143	22	69	341	GW	1	FE	FE	1	1500
02.07.06	52	37	59	143	22	67	171	GW	1	FD	FE	1	1300
02.07.06	52	36	55	143	22	86	169	GW	2	FD	FE	1	3500
02.07.06	52	34	3	143	22	71	184	GW	2	FD	FE	2	1000
02.07.06	52	33	65	143	23	1	359	GW	1	FE	FE	3	1500
02.07.06	52	31	90	143	23	11	208	GW	1	FE	FE	1	6000
02.07.06	52	41	17	143	22	44	1	GW	1	FD	FD	1	500
02.07.06	52	42	45	143	22	42	356	GW	1	FE	FE	1	800
03.07.06	52	45	56	143	26	28	41	GW	2	FE	FE	9	5000
03.07.06	52	49	42	143	23	31	186	GW	1	FE	FE	2	2500
03.07.06	52	41	44	143	22	57	177	GW	1	FD	FE	10	1000
07.07.06	52	59	63	143	21	43	359	GW	1	FD	FE	10	1200
07.07.06	53	0	8	143	21	25	44	GW	1	FE	FE	7	270
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07.07.06	52	55	33	143	22	18	176	GW	1	FD	FE	3	250
07.07.06	52	54	2	143	22	28	176	GW	1	FD	FE	1	210
07.07.06	52	52	92	143	22	26	181	GW	2	FD	FD	2	230
07.07.06	52	51	69	143	22	23	181	GW	2	FD	FD	2	230
07.07.06	52	50	18	143	22	21	178	GW	1	FD	FE	2	230
07.07.06	52	48	30	143	22	28	176	GW	2	FD	FD	1	200
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07.07.06	52	46	78	143	22	38	170	GW	1	FD	FD	1	190
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07.07.06	52	44	21	143	22	39	166	GW	1	FD	FD	2	220
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07.07.06	52	42	40	143	22	53	174	GW	1	BR	FD	2	220
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09.07.06	52	50	60	143	23	1	351	GW	1	FE	FE	9	1200
09.07.06	52	50	60	143	23	1	351	GW	1	FE	FE	11	2500
09.07.06	53	13	59	143	18	44	352	GW	1	FD	FE	10	1200
10.07.06	53	28	60	143	9	32	160	GW	2	FE	FL	9	200
10.07.06	53	24	88	143	11	87	154	GW	1	FD	FL	12	300
10.07.06	53	22	68	143	13	18	166	GW	1	FD	FD	12	100
15.07.06	52	49	31	143	24	93	249	GW	1	FE	FE	12	1860
15.07.06	52	48	46	143	24	73	181	GW	1	FE	FE	2	1500
15.07.06	52	45	99	143	24	22	194	GW	1	FE	FE	3	1500
15.07.06	52	50	13	143	30	22	191	GW	4	FD	FD	2	1500
15.07.06	52	50	13	143	30	22	191	GW	1	FD	FE	1	1260
15.07.06	52	42	9	143	22	97	193	GW	1	FD	FD	1	1860
15.07.06	52	40	27	143	22	53	176	GW	1	FE	FE	2	3600
15.07.06	52	38	61	143	22	89	175	GW	1	FD	FD	3	1080
15.07.06	52	36	80	143	23	37	174	GW	1	FE	FE	1	3600
17.07.06	52	9	41	143	32	70	80	GW	3	FE	FE	3	6000
17.07.06	52	8	24	143	33	54	93	GW	3	FE	FE	2	3600
17.07.06	52	36	92	143	26	33	327	GW	3	FE	FE	11	2500
17.07.06	52	41	25	143	22	82	92	GW	1	FD	FE	4	1500
18.07.06	52	52	59	143	26	81	26	GW	3	FE	FE	3	1500
18.07.06	52	52	59	143	26	82	13	GW	1	FD	FE	7	412
18.07.06	52	52	59	143	26	81	17	GW	2	FE	FE	7	1860
18.07.06	52	52	59	143	26	80	17	GW	2	FE	FE	8	2450
18.07.06	52	52	59	143	23	24	270	GW	1	FD	FE	1	1500
18.07.06	52	51	93	143	21	50	149	GW	1	FD	FE	12	1860
18.07.06	52	49	78	143	23	31	182	GW	2	FD	FD	11	1500
18.07.06	52	41	10	143	22	85	282	GW	1	FD	FE	12	1500
18.07.06	52	44	41	143	22	90	4	GW	1	FE	FD	11	1800
18.07.06	52	46	24	143	22	94	356	GW	1	FE	FD	11	2000
18.07.06	52	48	15	143	22	76	357	GW	1	FE	FD	11	1500
18.07.06	52	48	15	143	22	76	357	GW	1	FD	FE	10	500
18.07.06	52	48	94	143	22	70	357	GW	1	FD	FE	10	100
18.07.06	52	50	14	143	22	62	357	GW	5	FD	FD	10	400
18.07.06	52	50	38	143	22	61	337	GW	2	FE	FE	9	2500
18.07.06	52	50	59	143	22	56	93	GW	1	BR	FD	3	1200
18.07.06	52	42	22	143	22	57	359	GW	2	FD	FE	9	1080
18.07.06	52	44	22	143	22	63	359	GW	1	FE	FE	10	1500
18.07.06	52	52	21	143	29	52	247	GW	1	FD	FE	2	1300
18.07.06	52	51	96	143	28	19	250	GW	2	FD	FE	12	2400
18.07.06	52	51	72	143	26	93	250	GW	5	FD	FE	12	1800
18.07.06	52	53	8	143	24	22	354	GW	3	FD	FL	1	2451
18.07.06	52	53	23	143	24	17	19	GW	3	FD	FD	1	598
18.07.06	52	53	95	143	23	0	321	GW	1	FD	FD	1	392
18.07.06	52	53	95	143	23	7	321	GW	1	FD	FL	11	1000
18.07.06	52	55	17	143	22	65	7	GW	1	FD	FE	4	1200

18.07.06	52	55	50	143	22	86	7	GW	1	FE	FD	11	700
18.07.06	52	59	25	143	23	9	47	GW	1	FE	FE	8	2200
21.07.06	52	40	60	143	23	58	303	GW	1	FE	FD	12	1500
21.07.06	52	41	76	143	22	19	153	GW	1	FD	FD	9	598
21.07.06	52	51	98	143	24	95	336	GW	1	FD	FD	3	1500
21.07.06	52	52	95	143	24	16	336	GW	2	FE	FE	11	2450
21.07.06	52	53	80	143	23	47	339	GW	1	FE	FE	11	3600
21.07.06	52	53	81	143	22	97	83	GW	2	FD	FE	8	1089
22.07.06	52	40	79	143	22	60	35	GW	1	FD	FE	10	1860
22.07.06	52	40	59	143	22	72	330	GW	1	FE	FL	11	2450
22.07.06	52	52	41	143	26	60	1	GW	2	FD	FL	11	1089
22.07.06	52	53	76	143	26	66	12	GW	1	FD	FL	10	412
23.07.06	52	54	52	143	23	19	346	GW	1	FE	FE	7	3600
23.07.06	52	54	53	143	24	15	165	GW	2	FD	FL	1	1089
23.07.06	52	52	45	143	25	11	167	GW	1	FD	FD	7	1500
23.07.06	52	52	44	143	25	11	167	GW	2	FD	FD	9	600
23.07.06	52	52	43	143	25	11	167	GW	1	FE	FE	3	3600
23.07.06	52	37	93	143	22	33	211	GW	3	FD	FE	11	2451
23.07.06	52	37	15	143	21	25	265	GW	2	FD	FE	12	412
23.07.06	52	49	51	143	21	99	1	GW	1	FD	FD	9	598
23.07.06	52	49	92	143	22	3	1	GW	2	FD	FD	10	412
23.07.06	52	50	38	143	22	6	3	GW	2	FD	FE	8	1500
23.07.06	52	50	91	143	22	7	351	GW	1	FD	FD	9	854
23.07.06	52	51	95	143	21	83	354	GW	3	FD	FE	9	598
23.07.06	52	53	34	143	21	52	354	GW	1	FD	FE	9	1089
23.07.06	52	54	76	143	21	21	354	GW	1	FD	FD	10	1089
23.07.06	52	55	19	143	21	13	352	GW	2	FD	FD	9	598
23.07.06	52	56	3	143	20	95	353	GW	1	FD	FD	9	520
23.07.06	52	56	91	143	20	77	353	GW	2	FE	FE	10	854
23.07.06	52	58	4	143	20	52	352	GW	2	FD	FL	10	520
23.07.06	52	58	85	143	20	34	353	GW	1	FD	FL	10	854
23.07.06	52	59	72	143	20	15	351	GW	1	FD	FD	1	208
23.07.06	53	2	7	143	19	62	351	GW	1	FD	FE	2	1089
23.07.06	53	3	17	143	19	36	352	GW	1	FD	FE	10	1500
23.07.06	53	4	33	143	19	11	353	GW	1	FE	FE	9	300
23.07.06	53	12	7	143	17	38	351	GW	1	FD	FL	1	1500
23.07.06	53	13	29	143	16	98	349	GW	1	FD	FE	11	300
23.07.06	53	14	19	143	16	64	351	GW	1	FD	FE	10	460
23.07.06	53	15	87	143	16	5	349	GW	5	FD	BR	10	650
23.07.06	53	18	77	143	15	6	350	GW	1	FD	FE	10	650
23.07.06	53	19	64	143	14	63	345	GW	1	FD	FE	10	850
23.07.06	53	26	7	143	11	0	145	GW	2	FD	FD	4	1262
23.07.06	53	26	7	143	11	0	145	GW	1	FD	FD	5	957
24.07.06	53	24	51	143	12	10	169	GW	1	FD	FE	10	2451
24.07.06	53	22	11	143	13	59	161	GW	2	FE	FE	11	1860
24.07.06	53	22	10	143	13	59	161	GW	1	FE	FE	10	2451
24.07.06	53	20	35	143	14	56	163	GW	2	FE	FE	10	854
24.07.06	53	19	17	143	15	17	176	GW	1	FE	FE	8	3600
24.07.06	53	18	63	143	15	30	169	GW	1	FE	FE	11	1089
24.07.06	53	14	3	143	17	21	160	GW	1	FE	FE	11	1503
24.07.06	53	12	93	143	17	91	160	GW	1	FE	FE	12	1262
24.07.06	53	11	49	143	18	81	160	GW	1	FD	FE	1	1503

24.07.06	52	58	52	143	21	85	168	GW	1	FD	FD	12	600
24.07.06	52	53	70	143	23	61	190	GW	1	FD	FE	5	2451
24.07.06	52	53	67	143	24	35	83	GW	1	FD	FE	12	854
24.07.06	52	53	70	143	25	21	90	GW	2	FD	FL	11	700
24.07.06	52	53	80	143	25	68	98	GW	1	FD	FD	11	600
24.07.06	52	55	12	143	24	41	290	GW	2	FD	FE	12	2500
24.07.06	52	54	27	143	23	10	224	GW	1	FD	FD	1	600
24.07.06	52	54	23	143	22	18	176	GW	1	FD	FL	11	500
24.07.06	52	50	55	143	25	28	172	GW	1	FE	FE	3	2451
24.07.06	52	47	83	143	25	89	172	GW	2	FE	FE	3	2451
24.07.06	52	45	80	143	26	30	174	GW	1	FE	FE	11	1861
24.07.06	52	43	26	143	25	2	211	GW	1	FE	FE	1	3600
24.07.06	52	40	98	143	22	65	55	GW	2	FD	FD	9	1860
24.07.06	52	40	92	143	22	72	256	GW	2	FD	FE	1	1000
25.07.06	52	45	45	143	25	93	70	GW	1	FE	FE	8	3600
25.07.06	52	42	31	143	24	59	188	GW	1	FD	FE	2	1089
25.07.06	52	37	77	143	24	42	181	GW	1	FE	FE	8	2451
25.07.06	53	34	27	143	23	5	290	GW	2	FD	FE	11	1500
26.07.06	52	39	62	143	23	21	344	GW	3	FD	FE	10	1503
26.07.06	52	40	67	143	22	37	309	GW	1	FD	FE	11	2400
26.07.06	52	40	87	143	22	27	50	GW	1	FD	FE	12	800
26.07.06	52	41	40	143	22	90	18	GW	1	FD	FE	10	1200
26.07.06	52	45	34	143	25	6	292	GW	1	FD	FE	1	900
26.07.06	52	44	60	143	26	88	187	GW	1	FD	FD	3	2451
28.07.06	52	38	65	143	32	96	277	GW	3	FD	BR	6	854
28.07.06	52	43	69	143	24	17	1	GW	2	FD	FD	9	1503
28.07.06	52	46	76	143	24	60	1	GW	1	FD	FE	1	1806
28.07.06	52	46	77	143	24	60	1	GW	1	FE	FE	1	3600
28.07.06	52	49	28	143	25	9	359	GW	1	FE	FE	11	1503
28.07.06	52	49	49	143	25	21	33	GW	1	FE	FE	9	3600
28.07.06	52	49	52	143	25	66	104	GW	1	FD	FD	11	1089
28.07.06	52	49	23	143	29	27	232	GW	2	FE	FE	3	2451
04.08.06	52	53	8	143	25	49	220	GW	2	FE	FE	9	2451
05.08.06	52	54	24	143	24	19	61	GW	2	FE	FE	5	2000
05.08.06	52	54	24	143	24	22	59	GW	2	FD	FD	7	2000
05.08.06	52	55	24	143	27	52	245	GW	1	FD	FE	1	1000
05.08.06	52	54	48	143	25	10	320	GW	1	FD	FE	10	900
05.08.06	52	54	48	143	25	10	320	GW	2	FD	FE	1	1200
06.08.06	52	54	63	143	25	37	234	GW	1	FD	FD	12	1860
06.08.06	52	51	9	143	21	41	170	GW	1	FD	FD	1	350
06.08.06	52	51	9	143	21	41	172	GW	4	FE	BR	1	1200
06.08.06	52	51	9	143	21	41	172	GW	1	FD	FE	11	1700
07.08.06	52	54	5	143	22	63	350	GW	1	FD	FD	10	20
08.08.06	53	16	42	143	18	96	175	GW	1	FD	FD	12	100
11.08.06	52	21	50	143	35	90	91	GW	1	FD	FD	10	1500
13.08.06	52	50	59	143	23	80	265	GW	1	FD	FE	10	2400
13.08.06	52	50	86	143	22	16	207	GW	1	FD	FE	3	1200
13.08.06	52	51	16	143	22	95	172	GW	1	FD	FE	2	2000
13.08.06	52	51	16	143	22	96	171	GW	2	FE	FD	3	1503
13.08.06	52	51	16	143	22	97	171	GW	1	FE	FE	4	1860
13.08.06	52	51	16	143	22	95	182	GW	1	FD	FD	3	1860
13.08.06	52	51	16	143	22	96	182	GW	1	FD	FD	3	598

13.08.06	52	51	16	143	22	96	164	GW	5	FE	FE	3	1503
13.08.06	52	51	16	143	22	96	167	GW	1	FE	FD	3	1503
13.08.06	52	51	16	143	22	96	164	GW	3	FE	FD	7	1860
13.08.06	52	51	16	143	22	95	168	GW	1	FE	FE	2	1089
14.08.06	52	50	98	143	23	67	60	GW	1	FE	FE	8	1503
14.08.06	52	50	98	143	23	68	60	GW	1	FE	FE	9	1860
14.08.06	52	51	0	143	23	63	72	GW	1	FE	FE	7	1503
14.08.06	52	50	98	143	23	68	60	GW	2	FE	FE	9	1860
14.08.06	52	50	46	143	23	10	199	GW	4	FE	FE	1	1503
14.08.06	52	1	61	143	19	47	354	GW	1	FD	FD	9	150
16.08.06	52	43	66	143	28	55	132	GW	2	FE	FE	7	1503
19.08.06	53	3	74	143	25	68	298	GW	2	FE	FE	11	1509
19.08.06	53	5	92	143	22	71	308	GW	1	FE	FE	7	1860
19.08.06	53	7	66	143	20	61	308	GW	3	FE	FE	3	1860
19.08.06	53	8	35	143	19	64	300	GW	1	FD	FE	3	1509
19.08.06	53	8	95	143	18	85	9	GW	2	FD	FD	4	1509
19.08.06	53	9	2	143	19	48	145	GW	1	FD	FD	3	460
19.08.06	53	8	58	143	20	39	164	GW	1	FE	FE	12	1860
19.08.06	53	9	0	143	18	74	179	GW	1	FD	FE	1	854
19.08.06	53	11	50	143	18	4	340	GW	2	FD	FE	1	1503
19.08.06	53	13	13	143	18	12	340	GW	4	FD	FE	9	1262
19.08.06	53	14	35	143	17	56	347	GW	1	FD	FD	9	1262
19.08.06	53	14	54	143	17	49	347	GW	3	FE	FE	10	1860
19.08.06	53	14	93	143	17	33	348	GW	3	FD	FD	10	1089
19.08.06	53	15	38	143	17	13	346	GW	6	FD	FE	11	1860
19.08.06	53	16	7	143	16	79	345	GW	2	FD	FD	10	412
19.08.06	53	17	66	143	15	90	346	GW	2	FD	FD	12	2451
19.08.06	53	25	21	143	11	84	5	GW	1	FD	FD	12	2451
19.08.06	53	25	80	143	17	32	332	GW	1	FD	FE	10	1503
22.08.06	53	31	59	143	10	8	151	GW	1	FE	FE	1	3600
22.08.06	53	29	61	143	11	83	153	GW	2	FE	FE	1	2451
22.08.06	53	25	46	143	13	36	154	GW	1	FD	FD	1	1500
22.08.06	53	24	91	143	13	75	157	GW	1	FE	FE	12	2451
22.08.06	53	24	11	143	14	26	160	GW	1	FE	FD	1	703
22.08.06	53	23	83	143	14	28	211	GW	1	FE	FE	11	957
22.08.06	53	23	1	143	14	62	160	GW	2	FD	FE	12	1500
22.08.06	53	18	17	143	15	66	161	GW	3	FI	FI	2	1500
22.08.06	53	16	36	143	16	91	335	GW	2	FD	FD	10	854
22.08.06	53	16	14	143	16	64	18	GW	1	FE	FE	9	1503
22.08.06	53	13	98	143	17	73	191	GW	1	FD	FD	3	1262
22.08.06	53	18	86	143	15	42	345	GW	1	FE	FE	10	1500
22.08.06	53	26	1	143	12	26	346	GW	1	FD	FE	10	1860
22.08.06	53	32	39	143	8	44	315	GW	1	FD	FE	4	1503
24.08.06	53	31	11	143	8	35	177	GW	1	FE	FE	10	3657
23.08.06	53	30	35	143	8	32	180	GW	1	FE	FE	3	1860
23.08.06	53	27	25	143	10	11	160	GW	3	FD	FE	12	2451
23.08.06	53	23	95	143	12	18	161	GW	1	FD	FE	1	520
23.08.06	53	23	97	143	12	17	161	GW	1	FD	FE	2	1300
23.08.06	53	23	6	143	12	68	161	GW	1	FD	FE	1	1262
23.08.06	53	20	65	143	14	18	161	GW	1	FD	FE	1	1503
23.08.06	53	19	76	143	14	57	161	GW	2	FD	FE	1	854
23.08.06	53	17	82	143	15	39	169	GW	1	FD	FD	10	1089

23.08.06	53	16	26	143	15	92	168	GW	2	FD	FE	3	700
23.08.06	53	15	49	143	16	19	168	GW	1	FD	FE	2	750
23.08.06	53	14	56	143	16	49	169	GW	1	FE	FE	1	957
23.08.06	53	14	14	143	16	62	168	GW	2	FD	FD	2	600
23.08.06	53	12	91	143	17	4	169	GW	2	FE	FE	9	3657
23.08.06	53	6	39	143	18	77	173	GW	2	FD	FE	11	1800
23.08.06	53	5	83	143	18	88	173	GW	1	FD	FE	11	1700
23.08.06	53	3	4	143	19	46	173	GW	1	FD	FE	12	1000
23.08.06	53	2	63	143	19	54	173	GW	1	FD	FE	11	1262
23.08.06	53	0	16	143	20	12	173	GW	3	FD	FE	1	1300
23.08.06	52	59	28	143	20	28	173	GW	2	FD	FE	2	703
23.08.06	52	55	12	143	21	14	173	GW	1	FD	FE	12	1500
23.08.06	52	54	47	143	21	28	173	GW	3	FD	FE	11	2400
23.08.06	52	53	62	143	21	65	173	GW	1	FE	FE	9	1860
23.08.06	52	53	61	143	21	65	173	GW	1	FD	FE	1	1503
23.08.06	52	51	48	143	21	91	172	GW	1	FE	FE	12	2451
23.08.06	52	50	66	143	22	2	183	GW	3	FE	FE	1	1503
23.08.06	52	50	65	143	22	2	183	GW	1	FD	FE	2	703
23.08.06	52	48	55	143	21	85	182	GW	1	FD	FE	11	703
23.08.06	52	48	85	143	21	87	182	GW	2	FE	FE	1	1860
23.08.06	52	48	19	143	21	82	182	GW	1	FD	FE	11	2451
23.08.06	52	46	80	143	21	75	182	GW	1	FD	FE	1	598
23.08.06	52	44	19	143	21	61	181	GW	2	FD	FD	10	1503
23.08.06	52	42	96	143	21	54	180	GW	1	FE	FE	11	854
23.08.06	52	42	78	143	21	54	182	GW	1	FE	FE	10	600
23.08.06	52	40	95	143	21	41	183	GW	3	FE	FE	8	2451
23.08.06	52	40	64	143	21	40	183	GW	2	FD	FE	11	1500
23.08.06	52	38	4	143	21	24	181	GW	1	FD	FE	11	854
23.08.06	52	37	51	143	21	22	181	GW	2	FD	BR	12	598
23.08.06	52	37	4	143	21	19	182	GW	2	FD	BR	12	1503
23.08.06	52	37	5	143	21	20	182	GW	1	FD	FE	1	1860
23.08.06	52	38	7	143	24	81	2	GW	2	FD	FD	11	598
23.08.06	52	43	7	143	25	10	1	GW	2	FD	FE	10	1089
23.08.06	52	43	57	143	25	12	1	GW	1	FD	FE	1	1500
23.08.06	52	44	13	143	25	14	1	GW	2	FD	FE	2	1600
23.08.06	52	45	89	143	25	26	3	GW	1	FD	FD	10	1089
23.08.06	52	47	20	143	25	31	1	GW	1	FE	FE	1	1860
23.08.06	52	49	70	143	25	49	2	GW	1	FE	FE	9	854
23.08.06	52	52	54	143	25	22	351	GW	1	FD	FD	1	315
23.08.06	53	16	49	143	19	48	350	GW	1	FD	FE	11	854
23.08.06	53	18	64	143	18	75	348	GW	1	FE	FE	11	1262
23.08.06	53	25	36	143	15	20	340	GW	1	FD	FD	9	315
23.08.06	53	26	29	143	14	62	338	GW	1	FE	FE	8	703
23.08.06	53	27	93	143	13	52	339	GW	1	FE	FE	10	1503
24.08.06	52	50	69	143	24	70	93	GW	2	FD	FD	6	3657
24.08.06	52	50	69	143	24	69	93	GW	1	FE	FE	7	3657
24.08.06	52	50	71	143	24	69	152	GW	5	FE	FE	8	3657
24.08.06	52	50	74	143	24	69	145	GW	5	FE	FE	5	3657
24.08.06	52	50	84	143	22	52	45	GW	5	FD	FE	9	3657
24.08.06	52	52	33	143	22	33	2	GW	1	FE	FD	10	1860
24.08.06	52	52	33	143	22	33	2	GW	1	FE	FD	11	2451
24.08.06	52	52	87	143	22	31	347	GW	1	FD	FD	11	1089

24.08.06	52	54	2	143	21	98	348	GW	4	FD	FE	11	2000
24.08.06	52	55	31	143	21	76	356	GW	1	FD	FE	10	1089
24.08.06	52	59	86	143	23	6	358	GW	1	FD	FE	2	1262
24.08.06	52	58	38	143	22	91	184	GW	1	FD	FE	1	2400
24.08.06	52	57	73	143	22	84	186	GW	1	FE	FE	1	2300
24.08.06	52	57	44	143	22	79	182	GW	1	FE	FE	1	1860
24.08.06	52	57	4	143	22	75	185	GW	1	FD	FE	11	1300
24.08.06	52	55	51	143	22	54	186	GW	2	FD	FE	11	2400
24.08.06	52	53	47	143	22	29	183	GW	1	FD	FD	11	600
24.08.06	52	50	69	143	21	95	180	GW	2	FD	FD	1	460
24.08.06	52	47	22	143	22	37	79	GW	1	FD	FD	2	703
24.08.06	52	46	46	143	22	45	146	GW	1	FD	FE	12	967
24.08.06	52	46	47	143	22	45	145	GW	1	FD	FE	1	600
24.08.06	52	46	47	143	22	46	144	GW	1	FD	FE	4	500
24.08.06	52	46	48	143	22	67	80	GW	1	FD	FE	5	600
25.08.06	51	56	97	143	31	75	269	GW	1	FD	FE	12	2400
25.08.06	52	0	27	143	30	1	1	GW	2	FD	FE	3	1260
25.08.06	52	1	10	143	30	3	358	GW	1	FD	FE	3	1500
25.08.06	52	1	50	143	35	13	88	GW	2	FD	FE	3	703
25.08.06	52	1	52	143	35	13	88	GW	1	FE	FE	1	1300
25.08.06	52	1	53	143	35	14	88	GW	1	FE	FE	2	2400
25.08.06	52	1	54	143	35	14	88	GW	2	FD	FE	4	1000
25.08.06	51	59	60	143	34	51	210	GW	6	FE	FD	11	1089
26.08.06	51	58	74	143	31	74	24	GW	7	FE	FE	12	1867
26.08.06	51	59	93	143	35	25	320	GW	6	FD	FE	1	703
26.08.06	52	2	22	143	34	40	176	GW	3	FD	FE	1	1500
26.08.06	52	2	21	143	34	42	192	GW	1	FD	FD	3	400
27.08.06	52	2	16	143	34	41	281	GW	4	FE	FE	10	2451
30.08.06	53	25	64	143	14	10	296	GW	2	FD	FD	8	800
31.08.06	53	25	23	143	12	74	178	GW	2	FE	FE	12	1089
31.08.06	53	20	9	143	14	91	161	GW	1	FD	FE	10	1262
31.08.06	53	17	44	143	15	90	172	GW	1	FD	FD	2	1503
31.08.06	53	16	12	143	16	19	172	GW	3	FE	FE	11	1503
01.09.06	53	11	21	143	19	54	258	GW	1	FD	FE	11	1089
01.09.06	53	11	9	143	18	26	266	GW	1	FE	FE	8	2451
01.09.06	53	11	62	143	17	65	353	GW	4	FD	FE	11	1503
01.09.06	53	12	18	143	17	51	351	GW	1	FD	FE	10	1262
01.09.06	53	13	16	143	17	15	345	GW	2	FD	FD	9	854
01.09.06	53	16	62	143	19	5	260	GW	2	FE	FE	12	2451
01.09.06	53	17	9	143	15	65	351	GW	2	FD	FE	10	2400
01.09.06	53	17	34	143	15	56	347	GW	2	FE	FE	9	703
01.09.06	53	13	86	143	18	98	270	GW	1	FE	FE	1	2600
02.09.06	53	19	65	143	17	25	316	GW	1	FE	FE	8	1089
02.09.06	53	19	64	143	17	25	322	GW	2	FE	FE	9	4500
02.09.06	53	17	9	143	16	30	160	GW	1	FE	FE	3	315
02.09.06	53	15	29	143	17	29	132	GW	1	FD	FE	11	3657
02.09.06	53	14	18	143	18	35	316	GW	2	FE	FE	1	3600
02.09.06	53	17	93	143	15	24	177	GW	3	FD	FE	2	1200
02.09.06	53	16	1	143	16	8	80	GW	1	FD	FE	2	1262
02.09.06	53	13	71	143	18	5	286	GW	1	FD	FE	10	2451
02.09.06	53	12	49	143	17	31	175	GW	1	FD	FE	12	1089
02.09.06	53	10	84	143	17	76	160	GW	1	FD	FE	1	1860

02.09.06	53	5	55	143	20	30	258	GW	1	FE	FE	2	1503
03.09.06	53	7	79	143	19	55	80	GW	1	FE	FD	3	2451
03.09.06	53	9	73	143	21	37	278	GW	1	FD	FE	2	2400
03.09.06	53	11	23	143	19	29	60	GW	1	FD	FE	1	1500
03.09.06	53	13	82	143	18	75	280	GW	3	FE	FE	11	1089
03.09.06	53	13	74	143	16	95	357	GW	1	FD	FD	9	854
03.09.06	53	14	72	143	18	13	281	GW	2	FD	FE	1	1000
03.09.06	53	16	13	143	16	19	28	GW	5	FE	FE	10	2451
03.09.06	53	16	3	143	18	63	76	GW	2	FD	FE	3	1200
03.09.06	53	18	66	143	17	13	291	GW	2	FE	FE	8	1860
03.09.06	53	18	48	143	15	84	287	GW	3	FD	FE	12	600
03.09.06	53	20	50	143	14	2	4	GW	2	FD	FE	12	1300
03.09.06	53	20	64	143	14	83	72	GW	1	FE	FE	8	1860
03.09.06	53	23	27	143	14	94	85	GW	1	FD	FD	12	1860
03.09.06	53	22	5	143	13	23	290	GW	1	FD	FD	9	1860
03.09.06	53	24	39	143	12	31	333	GW	1	FE	FE	2	460
04.09.06	53	24	50	143	12	27	171	GW	2	FE	FE	1	5500
04.09.06	53	23	79	143	13	0	188	GW	2	FE	FE	9	2451
04.09.06	53	23	4	143	13	66	205	GW	2	FD	FE	11	1860
04.09.06	53	21	71	143	13	72	180	GW	2	FD	FE	12	700
04.09.06	53	19	78	143	14	67	163	GW	1	FD	FE	3	520
04.09.06	53	19	25	143	14	94	165	GW	4	FD	FE	11	1000
04.09.06	53	19	25	143	14	94	165	GW	8	FD	FE	2	703
04.09.06	53	18	92	143	15	21	168	GW	1	FD	FE	3	460
04.09.06	53	18	80	143	15	27	192	GW	2	FD	FE	1	520
04.09.06	53	18	72	143	14	98	304	GW	4	FD	FE	8	1503
04.09.06	53	17	67	143	15	69	144	GW	4	FD	FE	12	315
04.09.06	53	16	86	143	16	84	124	GW	2	BR	FL	11	247
06.09.06	53	14	25	143	19	29	186	GW	4	FE	FE	3	4500
06.09.06	53	15	84	143	17	68	352	GW	3	FE	FE	8	1860
06.09.06	53	22	53	143	16	85	2	GW	4	FE	FE	10	1503
06.09.06	53	23	41	143	15	64	255	GW	3	FD	FE	9	400
06.09.06	53	23	22	143	14	77	255	GW	2	FD	FE	9	854
06.09.06	53	22	92	143	13	14	259	GW	1	FE	FE	9	1803
06.09.06	53	22	80	143	12	56	252	GW	2	FD	BR	1	556
06.09.06	53	20	79	143	15	48	79	GW	1	FD	FL	4	1860
06.09.06	53	21	1	143	16	67	79	GW	1	FD	FE	3	2451
06.09.06	53	20	27	143	18	40	168	GW	1	FD	FE	2	2451
06.09.06	53	18	59	143	16	57	264	GW	2	FD	FE	11	700
06.09.06	53	18	59	143	16	57	264	GW	1	FD	FE	11	2451
06.09.06	53	18	42	143	15	55	265	GW	1	FD	FE	2	854
06.09.06	53	20	72	143	15	6	77	GW	1	FE	FE	10	232
06.09.06	53	16	29	143	15	92	188	GW	1	FD	FE	12	1860
06.09.06	53	16	29	143	15	92	188	GW	1	FD	FE	12	900
06.09.06	53	16	12	143	16	40	53	GW	1	FE	FE	1	854
06.09.06	53	16	25	143	17	4	70	GW	2	FD	FE	4	1000
06.09.06	53	13	71	143	18	28	275	GW	2	FD	FE	11	1200
06.09.06	53	13	62	143	17	68	282	GW	1	FD	FE	11	900
06.09.06	53	11	64	143	17	57	174	GW	4	FD	FE	2	1300
06.09.06	53	10	98	143	17	15	161	GW	1	FD	FE	12	1089
06.09.06	53	10	93	143	18	22	68	GW	1	FD	FE	3	2451
06.09.06	53	10	93	143	18	26	62	GW	1	FE	FE	11	2451

06.09.06	53	9	44	143	21	97	260	GW	1	FE	FE	11	1089
06.09.06	53	9	43	143	19	13	285	GW	1	FD	FE	9	2400
06.09.06	53	9	31	143	18	13	295	GW	2	FD	FE	1	488
06.09.06	53	7	53	143	18	70	30	GW	2	FD	FE	7	488
06.09.06	53	7	53	143	18	70	30	GW	1	FD	FE	7	2400
06.09.06	53	7	53	143	18	70	55	GW	1	FD	FD	6	598
06.09.06	53	7	76	143	19	32	55	GW	1	FE	FE	5	957
06.09.06	53	6	93	143	22	81	173	GW	2	FD	FE	2	1200
06.09.06	53	6	51	143	20	2	282	GW	2	FE	FD	11	1100
06.09.06	53	5	4	143	18	98	106	GW	2	FD	FE	11	2000
06.09.06	53	4	20	143	19	4	96	GW	3	FD	FE	4	520
06.09.06	53	4	20	143	19	4	96	GW	2	FD	FE	3	854
06.09.06	53	1	83	143	20	54	170	GW	1	FE	FD	1	1860
06.09.06	53	1	83	143	20	54	170	GW	1	FD	FE	1	2400
06.09.06	53	1	85	143	20	60	170	GW	1	FD	FE	2	1503
06.09.06	52	59	88	143	20	56	175	GW	1	FD	FE	1	3650
07.09.06	52	59	36	143	20	73	184	GW	2	FD	FE	10	1089
07.09.06	53	1	16	143	21	19	22	GW	2	FE	FE	11	1809
07.09.06	53	1	16	143	21	20	22	GW	1	FD	BR	11	703
07.09.06	53	1	16	143	21	21	22	GW	1	FE	FE	2	957
07.09.06	53	1	16	143	21	19	22	GW	2	FD	FE	3	1089
07.09.06	53	7	75	143	19	31	94	GW	1	FE	FE	9	1089
07.09.06	53	10	62	143	17	81	356	GW	1	FD	FD	10	703
07.09.06	53	11	8	143	17	75	65	GW	2	FD	FE	8	1200
07.09.06	53	13	91	143	19	40	266	GW	3	FD	FE	11	2451
07.09.06	53	13	64	143	17	69	263	GW	1	FD	FE	2	1503
07.09.06	53	13	64	143	17	7	2	GW	1	FD	FE	12	520
07.09.06	53	14	81	143	16	53	352	GW	3	FD	FE	11	1860
07.09.06	53	16	45	143	17	19	83	GW	1	FD	FE	8	3657
07.09.06	53	13	64	143	17	69	265	GW	3	FD	FE	2	1503
07.09.06	53	18	65	143	16	94	264	GW	3	FE	FE	1	1700
07.09.06	53	20	34	143	14	7	350	GW	2	FD	FE	10	1000
07.09.06	53	20	81	143	15	56	76	GW	2	FE	FE	10	1089
07.09.06	53	22	58	143	17	18	350	GW	1	FD	FE	11	3600
07.09.06	53	23	12	143	16	92	350	GW	2	FD	FE	11	2400
07.09.06	53	23	58	143	16	73	246	GW	2	FD	FE	2	4500
07.09.06	53	26	76	143	10	26	10	GW	1	FD	FD	12	1262
08.09.06	53	20	8	143	14	56	174	GW	1	FE	FE	1	1089
08.09.06	53	20	8	143	14	56	173	GW	3	FE	FE	1	3657
08.09.06	53	20	8	143	14	56	172	GW	2	FE	FE	1	2451
08.09.06	53	20	3	143	14	58	176	GW	1	FE	FD	11	2451
08.09.06	53	17	39	143	15	41	165	GW	2	FE	FE	1	1503
08.09.06	53	15	69	143	18	39	146	GW	1	FD	FE	12	2451
08.09.06	53	14	29	143	20	72	156	GW	1	FD	FE	3	292
08.09.06	53	13	53	143	17	1	198	GW	1	FD	FE	2	957
08.09.06	53	12	7	143	17	43	180	GW	1	FD	FE	12	2451
08.09.06	53	11	7	143	17	71	175	GW	1	FD	FE	12	2451
08.09.06	53	9	4	143	13	13	177	GW	1	FE	FE	1	1262
08.09.06	53	8	87	143	19	59	170	GW	1	FD	FD	12	272
08.09.06	53	6	28	143	21	2	175	GW	1	FD	FE	1	2400
08.09.06	53	4	35	143	23	33	80	GW	1	FD	FD	11	374
08.09.06	53	4	31	143	23	59	165	GW	1	FD	FD	9	400

08.09.06	53	9	4	143	13	13	177	GW	1	FD	FE	9	957
08.09.06	53	15	88	143	18	49	342	GW	2	FE	FE	9	2451
09.09.06	53	19	98	143	14	97	186	GW	1	FE	FE	1	1860
09.09.06	53	19	98	143	14	97	186	GW	1	FE	FE	3	520
09.09.06	53	19	96	143	15	3	161	GW	5	FE	FE	1	3657
09.09.06	53	17	90	143	16	95	161	GW	1	FE	FE	1	1860
09.09.06	53	17	88	143	17	18	349	GW	2	FE	FE	12	2451
09.09.06	53	23	52	143	16	33	241	GW	1	FE	FE	11	1860
09.09.06	53	23	31	143	15	22	244	GW	2	FD	FE	10	1503
09.09.06	53	23	31	143	15	22	244	GW	2	FE	FE	11	3651
09.09.06	53	23	31	143	15	21	244	GW	1	FD	FD	11	2451
09.09.06	53	20	99	143	13	72	166	GW	2	FD	BR	3	500
11.09.06	53	20	3	143	15	9	177	GW	2	FD	FD	1	2451
11.09.06	53	15	82	143	19	73	172	GW	2	FE	FE	2	875
11.09.06	52	54	21	143	24	96	179	GW	1	FE	FE	2	1089
11.09.06	52	37	0	143	23	17	273	GW	3	FE	FE	11	2451
11.09.06	52	38	59	143	21	27	110	GW	1	FD	FE	10	1503
11.09.06	52	43	86	143	21	62	7	GW	1	FD	FE	11	850
11.09.06	52	43	81	143	21	62	7	GW	1	FD	FE	1	850
11.09.06	52	44	99	143	21	67	6	GW	1	FD	FE	12	854
11.09.06	52	46	82	143	21	73	7	GW	3	FE	FE	1	1503
11.09.06	52	49	2	143	22	0	7	GW	1	FD	FE	9	1503
11.09.06	52	49	95	143	22	20	10	GW	1	FD	FD	10	646
11.09.06	52	50	6	143	22	23	10	GW	2	FE	FE	11	1503
11.09.06	52	51	33	143	21	94	355	GW	1	FD	FE	11	854
11.09.06	52	53	56	143	21	42	0	GW	3	FE	FE	11	2453
11.09.06	52	58	66	143	20	42	0	GW	3	FD	FE	11	957
11.09.06	53	0	88	143	19	91	0	GW	2	FD	FE	10	850
11.09.06	53	2	48	143	19	55	355	GW	1	FD	FE	11	700
11.09.06	53	2	99	143	19	40	355	GW	1	FE	FE	1	854
11.09.06	53	4	3	143	19	17	2	GW	3	FD	FE	11	1503
11.09.06	53	4	74	143	19	7	0	GW	1	FD	FE	11	1503
11.09.06	53	9	24	143	18	17	0	GW	3	FE	FE	10	1503
11.09.06	53	10	67	143	17	81	356	GW	1	FE	FE	12	1089
11.09.06	53	15	13	143	16	30	358	GW	3	FE	FE	10	1503
11.09.06	53	15	88	143	16	5	357	GW	1	FE	FE	10	1089
11.09.06	53	16	94	143	15	67	356	GW	1	FE	FE	10	1503
12.09.06	52	50	67	143	25	25	231	GW	2	FE	FE	1	2451
13.09.06	52	49	28	143	27	83	319	GW	4	FE	FE	11	2451
13.09.06	52	50	50	143	25	3	307	GW	2	FE	FE	10	1860
13.09.06	53	52	16	143	24	25	325	GW	3	FE	FE	10	1262
13.09.06	52	44	47	143	23	8	185	GW	3	FD	FD	1	520
13.09.06	52	36	85	143	23	76	145	GW	1	FD	FE	3	1300
13.09.06	52	32	17	143	20	80	273	GW	6	FD	FE	10	1200
13.09.06	52	31	60	143	21	4	356	GW	6	FD	BR	9	854
13.09.06	52	31	60	143	21	4	356	GW	5	FD	FE	8	1000
13.09.06	52	31	40	143	21	12	329	GW	1	FD	FE	11	900
13.09.06	52	29	39	143	20	53	61	GW	2	FE	FE	12	2451
13.09.06	52	28	50	143	20	78	313	GW	2	FD	FE	11	520
13.09.06	52	28	44	143	20	67	331	GW	1	FD	FD	9	1860
13.09.06	52	28	44	143	20	67	332	GW	5	FE	FE	12	1503
13.09.06	52	31	37	143	21	62	16	GW	2	FD	FD	9	1262

13.09.06	52	31	38	143	21	63	16	GW	3	FD	FE	10	1860
13.09.06	52	35	86	143	22	67	115	GW	1	FD	FE	11	2451
13.09.06	52	42	25	143	24	33	115	GW	3	FD	FE	11	1800
13.09.06	52	44	11	143	24	80	115	GW	3	FD	FE	9	1100
13.09.06	52	45	93	143	25	32	112	GW	1	FD	FE	9	1500
13.09.06	52	47	52	143	25	67	112	GW	3	FD	FE	11	2451
14.09.06	52	49	67	143	26	36	238	GW	1	FD	FE	2	3657
14.09.06	52	49	66	143	26	35	253	GW	1	FE	FE	1	4500
14.09.06	52	49	68	143	26	35	234	GW	1	FE	FE	7	1503
14.09.06	52	49	69	143	26	35	233	GW	2	FE	FE	3	1860
14.09.06	52	52	29	143	25	36	352	GW	3	FE	FE	10	2451
14.09.06	52	53	30	143	23	42	247	GW	3	FD	FE	10	1262
14.09.06	52	52	93	143	22	44	245	GW	1	FD	FE	1	650
14.09.06	52	52	75	143	22	3	245	GW	1	FE	FE	10	1262
14.09.06	52	52	70	143	22	0	125	GW	2	FD	FE	10	520
14.09.06	52	52	71	143	22	12	125	GW	3	FD	FE	10	500
14.09.06	52	53	46	143	22	57	270	GW	1	FD	FE	12	700
14.09.06	52	53	11	143	22	64	182	GW	2	FD	FE	11	2400
14.09.06	52	52	0	143	22	63	190	GW	1	FD	FL	1	520
14.09.06	52	50	57	143	23	38	9	GW	1	FD	FE	1	3657
14.09.06	52	48	43	143	22	63	152	GW	1	FD	FE	2	2451
14.09.06	52	48	6	143	22	74	130	GW	1	FD	FE	5	771
14.09.06	52	47	47	143	23	67	131	GW	1	FD	FE	9	1262
14.09.06	52	46	93	143	24	52	142	GW	1	FD	FE	3	1860
14.09.06	52	46	20	143	22	88	314	GW	2	FD	FD	10	703
14.09.06	52	43	16	143	22	71	116	GW	2	FE	FE	7	1262
15.09.06	51	54	53	143	30	31	108	GW	1	FD	FE	9	1500
15.09.06	51	56	99	143	37	98	274	GW	4	FE	FE	1	4500
15.09.06	51	56	99	143	34	49	273	GW	2	FE	FE	3	3681
15.09.06	51	57	0	143	30	52	273	GW	1	FD	FE	1	1000
15.09.06	52	1	48	143	32	77	101	GW	6	FD	FE	12	2451
15.09.06	52	1	50	143	36	48	100	GW	5	FD	FE	11	247
15.09.06	52	4	1	143	38	67	269	GW	4	FE	FE	11	2451
15.09.06	52	4	1	143	38	66	269	GW	2	FE	FE	11	3657
15.09.06	52	8	51	143	38	65	101	GW	5	FE	FE	11	3681
15.09.06	52	8	50	143	42	86	101	GW	5	FE	FE	9	2451
15.09.06	52	10	99	143	43	17	272	GW	3	FD	FE	9	771
15.09.06	52	10	99	143	43	17	272	GW	2	FD	FE	3	1089
15.09.06	52	15	49	143	38	66	96	GW	1	FE	FE	9	598
15.09.06	52	15	50	143	43	33	96	GW	3	FD	FE	12	2400
15.09.06	52	13	73	143	48	12	221	GW	3	FE	FE	3	2451
15.09.06	52	11	40	143	45	65	222	GW	5	FE	FE	3	1860
16.09.06	52	1	76	143	34	48	178	GW	2	FE	FE	1	854
16.09.06	52	1	76	143	34	49	178	GW	4	FE	FE	11	3657
16.09.06	52	1	77	143	34	49	178	GW	2	FE	FE	11	4500
16.09.06	52	1	78	143	34	48	173	GW	1	FE	FE	3	957
16.09.06	52	1	78	143	34	49	173	GW	1	FE	FE	1	3657
16.09.06	52	3	44	143	36	57	166	GW	2	FD	FE	11	1503
16.09.06	52	3	14	143	36	77	160	GW	2	FD	FE	3	950
16.09.06	52	2	95	143	36	93	169	GW	1	FD	FE	10	1200
16.09.06	52	3	30	143	37	25	339	GW	2	FD	FE	9	850
16.09.06	52	3	38	143	36	73	258	GW	3	FD	FE	11	771

16.09.06	52	3	26	143	35	86	256	GW	1	FD	FE	11	2451
16.09.06	52	3	4	143	34	9	250	GW	2	FD	FE	10	3657
16.09.06	52	3	45	143	34	3	40	GW	2	FD	FE	11	700
16.09.06	52	3	68	143	34	15	52	GW	2	FD	FD	9	412
16.09.06	52	3	29	143	34	74	193	GW	2	FD	FE	10	520
16.09.06	52	1	76	143	34	80	6	GW	3	FD	FE	10	854
16.09.06	52	2	7	143	35	11	29	GW	3	FE	FE	10	703
16.09.06	52	5	28	143	37	95	35	GW	1	FD	FE	1	700
16.09.06	52	11	21	143	43	48	37	GW	4	FD	FE	11	2451
16.09.06	52	12	24	143	44	62	2	GW	2	FE	FE	1	1503
16.09.06	52	12	36	143	44	65	5	GW	3	FD	FE	1	2451
16.09.06	52	12	56	143	44	94	9	GW	2	FD	FE	12	3657
16.09.06	52	14	33	143	45	95	52	GW	4	FE	FE	11	4500
17.09.06	51	55	71	143	31	12	206	GW	2	FD	FE	9	2450
17.09.06	51	59	30	143	34	98	339	GW	3	FE	FE	12	1860
17.09.06	51	59	31	143	34	99	339	GW	4	FE	FE	12	3657
17.09.06	52	0	48	143	32	77	313	GW	2	FD	FD	5	1860
17.09.06	52	1	7	143	33	70	38	GW	4	FE	FE	12	1860
17.09.06	52	1	78	143	34	39	293	GW	3	FE	FE	3	2000
17.09.06	52	1	92	143	34	62	185	GW	2	FE	FE	11	3657
17.09.06	52	1	65	143	35	50	282	GW	3	FE	FE	1	1262
19.09.06	53	18	69	143	17	58	345	GW	1	FD	FE	9	1800
19.09.06	53	19	26	143	17	26	345	GW	1	FD	FE	8	1860
19.09.06	53	20	10	143	16	73	346	GW	1	FD	FE	9	1600
19.09.06	53	20	86	143	16	33	350	GW	1	FD	FE	9	1500
23.09.06	52	54	55	143	27	35	197	GW	2	FD	FE	1	2451
23.09.06	52	49	28	143	24	21	197	GW	1	FE	FE	3	3657
23.09.06	52	47	92	143	25	16	157	GW	1	FE	FE	3	3657
23.09.06	52	46	81	143	25	2	161	GW	1	FD	FD	3	2451
20.08.06	53	0	45	143	34	64	344	GW	1	NO		12	6000
22.08.06	53	22	30	143	16	21	169,2	GW	1	FD		2	2000
22.08.06	53	21	64	143	16	42	169,6	GW	1	FE		1	1500
22.08.06	53	14	78	143	18	86	187	GW	1	NO		2	1000
22.08.06	53	11	48	143	16	94	273	GW	1	FD		8	2700
22.08.06	53	11	51	143	16	50	308	GW	2	FE		2	700
22.08.06	53	11	61	143	16	40	333	GW	1	FD		2	2700
22.08.06	53	12	72	143	16	29	13	GW	1	FD		11	2500
22.08.06	53	12	73	143	16	94	90	GW	1	FD		3	2500
22.08.06	53	9	16	143	17	44	45	GW	1	FD		1	5000
22.08.06	53	5	95	143	19	6	165	GW	1	FE		10	1300
22.08.06	53	4	59	143	20	28	165	GW	2	FE		2	2500
22.08.06	52	59	23	143	20	45	184	GW	2	FE	FL	12	2500
22.08.06	52	58	46	143	20	38	182	GW	1	FD		2	500
22.08.06	52	57	45	143	20	42	162	GW	1	FD		12	2500
22.08.06	52	56	60	143	20	80	167	GW	1	FE		1	2500
22.08.06	52	55	90	143	21	6	166	GW	2	FD		1	2500
22.08.06	52	55	51	143	21	20	169	GW	1	FD		11	1500
22.08.06	52	55	31	143	21	27	171	GW	2	FD		1	3000
22.08.06	52	54	76	143	21	43	174	GW	1	FD		1	3000
22.08.06	52	54	36	143	21	51	173	GW	1	FD		1	2500
22.08.06	52	53	27	143	21	92	135	GW	1	FD		4	1500
22.08.06	52	52	99	143	22	40	109	GW	1	FD		11	3000

22.08.06	52	53	17	143	21	59	42	GW	1	FL		9	1000
22.08.06	52	53	20	143	21	71	85	GW	1	FD		3	2500
22.08.06	52	53	19	143	21	93	102	GW	4	FD		3	2500
22.08.06	52	52	98	143	23	56	104	GW	1	FD		12	2500
22.08.06	52	52	91	143	23	87	155	GW	1	FD		11	3000
22.08.06	52	52	83	143	23	80	352	GW	2	FD		7	3000
22.08.06	52	52	44	143	23	96	51	GW	1	FD		7	2700
22.08.06	52	52	92	143	24	15	112	GW	1	FD		11	2500
22.08.06	52	52	68	143	24	70	126	GW	1	FD		11	3000
22.08.06	52	51	65	143	26	23	145	GW	1	FD		10	8000
22.08.06	52	51	60	143	26	29	154	GW	1	FD		10	2700
23.08.06	52	51	43	143	26	39	250	GW	1	FD		3	2500
23.08.06	52	51	44	143	26	39	126	GW	3	FD		5	2500
23.08.06	52	52	41	143	22	96	293	GW	3	FD		9	4000
23.08.06	52	53	6	143	20	54	356	GW	2	FE		1	2000
23.08.06	52	53	10	143	20	53	2	GW	1	FE		2	850
23.08.06	53	0	23	143	21	32	4	GW	2	FE		8	2500
23.08.06	53	2	31	143	22	20	19	GW	1	FD		10	3000
23.08.06	53	3	80	143	22	80	310	GW	1	FD		12	2500
23.08.06	53	3	75	143	20	46	259	GW	1	FD		12	2500
23.08.06	53	3	75	143	20	46	259	GW	1	FD		11	1500
23.08.06	53	3	79	143	19	85	338	GW	1	FD		8	3000
23.08.06	53	4	8	143	18	91	132	GW	2	FD		3	1500
23.08.06	53	1	3	143	24	70	9,7	GW	2	FE		11	2500
23.08.06	52	56	93	143	23	36	190	GW	1	UN		12	4500
23.08.06	52	56	62	143	23	28	190	GW	2	UN		12	4500
23.08.06	52	53	77	143	23	22	190	GW	2	FE		1	3200
23.08.06	52	53	72	143	23	20	231	GW	6	FE		11	3200
23.08.06	52	53	27	143	23	6	176	GW	1	UN		11	7000
23.08.06	52	52	86	143	23	14	174,5	GW	2	FE		11	3200
23.08.06	52	51	43	143	23	38	176	GW	1	FD		11	2700
23.08.06	52	50	33	143	23	44	178	GW	2	FE		11	2500
23.08.06	52	48	96	143	23	51	180	GW	3	FL		12	1500
23.08.06	52	48	72	143	23	64	180	GW	1	UN		1	3200
23.08.06	52	48	37	143	23	85	157	GW	1	UN		1	4500
23.08.06	52	47	66	143	24	41	149	GW	1	UN		12	3200
23.08.06	52	46	59	143	25	45	150	GW	1	UN		11	2100
23.08.06	52	46	59	143	25	45	150	GW	2	UN		10	2100
23.08.06	52	45	59	143	26	43	159	GW	1	FL		12	1500
23.08.06	52	45	59	143	26	50	145	GW	2	UN		1	1500
23.08.06	52	45	57	143	26	59	150	GW	1	FL	FE	12	1500
23.08.06	52	44	82	143	26	49	192	GW	2	FD		12	4000
23.08.06	52	38	66	143	23	72	193	GW	1	FD		1	1500
23.08.06	52	35	89	143	23	8	180	GW	1	FD		1	4000
23.08.06	52	34	26	143	22	99	181	GW	2	FD		2	2500
23.08.06	52	34	74	143	23	20	10	GW	1	FD		10	3000
23.08.06	52	35	48	143	23	45	11	GW	2	FD		12	3000
23.08.06	52	39	4	143	24	95	10	GW	2	FD		2	2700
23.08.06	52	41	98	143	25	57	11	GW	1	FE		10	3200
23.08.06	52	43	20	143	25	95	11	GW	1	FD		11	4500
23.08.06	52	43	50	143	26	3	10,5	GW	1	FE		11	3200
23.08.06	52	43	96	143	26	16	6	GW	3	FD		11	4500

23.08.06	52	45	71	143	26	78	12	GW	1	FD		2	2700
24.08.06	52	49	98	143	28	18	47	GW	4	FE	FD	4	4500
24.08.06	52	49	49	143	27	78	300	GW	1	FD		9	4500
24.08.06	52	51	30	143	24	67	0	GW	1	FD		10	3200
24.08.06	52	52	87	143	24	68	359	GW	3	FD		11	2500
24.08.06	52	53	76	143	24	28	240	GW	1	FD		2	3200
24.08.06	52	53	70	143	24	21	180	GW	1	FD		9	2500
24.08.06	53	52	15	143	22	8	250	GW	2	FD		10	3200
24.08.06	53	52	37	143	20	86	333	GW	2	FD		1	2700
24.08.06	53	52	74	143	20	51	326	GW	1	FE		2	1500
24.08.06	53	3	4	143	20	67	356	GW	1	FE		9	300
24.08.06	53	3	94	143	20	40	197	GW	1	FE		9	2500
24.08.06	53	3	64	143	20	44	175	GW	2	FE	FD	2	2100
24.08.06	53	3	27	143	20	47	176	GW	2	FD		1	3200
24.08.06	53	3	31	143	18	57	336	GW	1	FD		10	600
24.08.06	53	3	77	143	18	24	350	GW	1	FD		12	3000
24.08.06	53	3	75	143	18	51	162	GW	2	FD		12	3000
24.08.06	53	3	34	143	18	72	165	GW	1	FD		12	1000
24.08.06	53	2	45	143	19	17	162	GW	1	FD		2	1000
24.08.06	53	0	90	143	19	97	165	GW	1	FD		1	2000
24.08.06	52	58	55	143	20	93	166	GW	1	FD		12	4500
24.08.06	52	57	41	143	21	44	164	GW	1	FD		3	1500
24.08.06	52	55	72	143	22	21	166	GW	1	FD		12	2000
24.08.06	52	55	26	143	22	41	166	GW	1	FD		3	1500
24.08.06	52	52	67	143	23	54	165	GW	1	FE		1	3200
24.08.06	52	51	21	143	24	7	165	GW	1	FD		3	2500
24.08.06	52	50	65	143	24	35	165	GW	1	FD		12	1500
24.08.06	52	42	73	143	27	25	167	GW	1	FD		10	1500
24.08.06	52	42	73	143	27	25	167	GW	1	FD		10	2700
25.08.06	51	58	86	143	35	10	358	GW	3	FE		11	2700
26.08.06	52	43	59	143	28	57	135	GW	2	FE	FL	4	1500
26.08.06	52	43	64	143	28	58	95	GW	1	FD		3	2100
26.08.06	52	43	65	143	28	62	170	GW	2	FD		12	2500
26.08.06	52	44	6	143	27	62	307	GW	4	FD	FL	4	370
26.08.06	52	44	51	143	26	72	309	GW	1	FD		12	3200
26.08.06	52	45	7	143	25	46	309	GW	1	FD		2	6000
26.08.06	52	45	38	143	24	83	0	GW	1	FD		8	3200
26.08.06	52	45	57	143	25	34	245	GW	1	FD		12	2300
26.08.06	52	45	16	143	24	99	200	GW	2	FD		2	1500
26.08.06	52	44	62	143	24	69	195	GW	1	FD		1	3200
26.08.06	52	42	79	143	23	66	195	GW	1	FD		11	2500
26.08.06	52	41	29	143	22	62	6	GW	4	FE		11	3200
26.08.06	52	41	21	143	23	4	20	GW	2	FD		12	4000
26.08.06	52	41	79	143	23	34	16	GW	1	FD		11	2500
26.08.06	52	48	39	143	24	54	352	GW	1	FD		11	2100
26.08.06	52	56	12	143	21	98	143	GW	1	FD		10	4500
26.08.06	52	56	12	143	21	98	143	GW	1	FD		11	2500
26.08.06	52	53	8	143	23	20	175	GW	2	FE		2	2500
27.08.06	52	51	4	143	23	42	180	GW	1	FE		5	1500
27.08.06	52	51	4	143	23	42	180	GW	2	FE		5	2700
27.08.06	52	51	4	143	23	41	175	GW	2	FE		2	4500
27.08.06	52	51	4	143	23	41	175	GW	1	FD		2	2500

27.08.06	52	51	4	143	23	39	165	GW	3	FD		4	2500
27.08.06	52	51	4	143	23	39	170	GW	2	FD	FL	1	2500
27.08.06	52	49	2	143	24	7	170	GW	1	FD		2	1500
27.08.06	52	45	52	143	25	39	225	GW	1	FD		1	1300
27.08.06	52	45	45	143	25	28	190	GW	1	FD		3	3200
27.08.06	52	45	21	143	25	26	180	GW	1	FD		3	1400
27.08.06	52	45	11	143	25	23	190	GW	2	FE		1	2100
29.08.06	52	45	14	143	24	87	346	GW	2	FD		11	3200
31.08.06	53	3	73	143	23	66	80	GW	1	FD		3	8000
31.08.06	53	3	70	143	27	22	29	GW	1	FE		1	2500
31.08.06	53	3	81	143	25	88	274	GW	4	FD		1	3200
31.08.06	53	3	72	143	20	27	280	GW	1	FD		12	2500
31.08.06	53	3	73	143	18	62	80	GW	1	FD		9	2500
31.08.06	53	3	80	143	20	17	80	GW	2	FD		11	850
01.09.06	52	45	21	143	25	43	270	GW	1	FL		12	1500
01.09.06	52	45	28	143	25	23	280	GW	2	FD	FL	11	3200
01.09.06	52	48	71	143	30	73	55	GW	3	FD	FL	10	1500
01.09.06	52	55	14	143	28	68	320	GW	3	FD		10	4500
01.09.06	52	55	27	143	28	49	321	GW	1	FD		9	4500
01.09.06	52	58	94	143	22	95	320	GW	2	FE		11	3200
01.09.06	52	59	86	143	21	38	306	GW	1	FD		11	3200
01.09.06	52	59	95	143	21	15	307	GW	1	FD		3	375
01.09.06	53	2	89	143	21	42	315	GW	1	FD		9	500
01.09.06	53	2	90	143	21	89	118	GW	1	FD		11	1000
02.09.06	53	5	24	143	21	93	128	GW	1	FD		3	1000
02.09.06	53	3	25	143	19	66	305	GW	4	FD		12	1500
02.09.06	53	3	58	143	18	69	310	GW	1	FD		11	1000
02.09.06	53	9	9	143	20	23	340	GW	1	FD		12	2500
03.09.06	53	11	0	143	18	63	5	GW	2	FD	FE	11	1500
03.09.06	53	11	0	143	18	76	325	GW	1	FD		12	2500
03.09.06	53	11	0	143	18	76	339	GW	1	FD		12	8000
03.09.06	53	11	0	143	18	76	339	GW	1	FE		2	1500
03.09.06	53	9	24	143	18	2	85	GW	1	FD		9	4500
03.09.06	53	9	35	143	18	78	350	GW	2	FD		11	2700
03.09.06	53	8	82	143	17	67	270	GW	1	FD		9	800
03.09.06	53	8	82	143	17	67	270	GW	1	FD		9	3200
03.09.06	53	8	75	143	18	13	130	GW	1	FD	BR	9	1500
03.09.06	53	11	80	143	20	53	0	GW	1	FD		11	4500
03.09.06	53	11	80	143	20	53	350	GW	1	FD		11	4500
03.09.06	53	11	80	143	20	53	354	GW	1	FD		11	8000
03.09.06	53	11	80	143	20	53	354	GW	2	FD		11	8000
03.09.06	53	11	80	143	20	54	1	GW	5	FD		10	2500
03.09.06	53	11	21	143	20	19	220	GW	1	FE		11	2500
03.09.06	53	9	10	143	17	84	207	GW	2	FE		10	1800
03.09.06	53	9	6	143	17	84	8	GW	1	FD		2	1000
04.09.06	53	9	19	143	17	51	121	GW	2	FD		11	2500
04.09.06	53	8	98	143	20	14	266	GW	3	FD	FL	9	2500
04.09.06	53	8	96	143	20	5	49	GW	1	FE		9	2500
05.09.06	53	17	16	143	16	22	348	GW	2	FD		12	450
05.09.06	53	17	16	143	16	22	348	GW	1	FD		12	1500
05.09.06	53	17	79	143	16	20	350	GW	1	FD	FL	11	600
05.09.06	53	23	50	143	15	30	338	GW	3	FD		10	1500

05.09.06	53	26	69	143	13	92	334	GW	1	FD		1	1000
05.09.06	53	28	76	143	12	5	335	GW	1	FD		12	1500
06.09.06	53	21	66	143	16	26	173	GW	1	FD		11	600
06.09.06	53	20	56	143	16	44	171	GW	1	FD		2	1500
06.09.06	53	20	7	143	16	53	173	GW	2	FD		1	2100
06.09.06	53	14	1	143	19	11	189	GW	1	FE		4	2500
06.09.06	53	11	67	143	18	28	194	GW	2	FE		2	2100
06.09.06	53	12	66	143	18	72	8	GW	1	FD		11	3200
06.09.06	53	10	81	143	19	34	355	GW	1	FD		12	6000
06.09.06	53	9	8	143	17	38	200	GW	1	FE		2	2500
06.09.06	53	4	53	143	21	17	170	GW	1	FD		11	3200
06.09.06	53	3	32	143	21	56	170	GW	1	FD		12	2700
06.09.06	53	1	0	143	22	30	171	GW	3	FD		2	2500
06.09.06	52	56	74	143	23	0	174	GW	3	FD		2	2500
06.09.06	52	54	37	143	23	46	172	GW	1	FD		11	1900
06.09.06	52	53	87	143	23	45	226	GW	2	FE		2	2500
06.09.06	52	53	9	143	24	0	151	GW	1	FD		1	850
06.09.06	52	50	89	143	25	68	159	GW	3	FE		3	2500
06.09.06	52	43	42	143	25	89	182	GW	1	FD		3	2500
06.09.06	52	37	83	143	25	94	181	GW	1	FE		3	2500
06.09.06	52	36	34	143	25	93	180	GW	3	FD		1	6000
06.09.06	52	34	50	143	25	89	181	GW	2	FD		3	4500
06.09.06	52	31	18	143	25	66	188	GW	1	FD		2	3200
07.09.06	52	37	47	143	24	23	343	GW	1	FD		9	1000
07.09.06	52	37	47	143	24	23	343	GW	3	FD		9	4500
07.09.06	52	45	13	143	25	0	320	GW	5	FD		11	2700
07.09.06	52	45	11	143	25	4	328	GW	1	FD	FE	11	2500
07.09.06	52	45	1	143	25	13	333	GW	2	FD		12	6000
07.09.06	52	48	16	143	24	97	355	GW	2	FE		11	2700
07.09.06	52	49	77	143	24	93	356	GW	3	FE	FD	11	2700
07.09.06	52	49	55	143	24	33	309	GW	1	FD		11	2500
07.09.06	52	50	87	143	23	48	306	GW	1	FD		11	2500
07.09.06	52	50	58	143	22	2	313	GW	3	FD		1	2700
07.09.06	52	50	56	143	22	2	352	GW	3	FD		1	4500
08.09.06	53	4	1	143	22	21	345	GW	3	FD		9	2500
08.09.06	53	4	52	143	22	8	343	GW	1	FD		11	2100
08.09.06	53	9	31	143	17	42	182	GW	1	FE		12	2500
08.09.06	53	9	26	143	17	81	187	GW	1	FD		11	2100
08.09.06	53	9	26	143	17	80	184	GW	2	FE		5	1900
08.09.06	53	9	26	143	17	79	186	GW	1	FD		6	460
08.09.06	53	9	27	143	18	13	180	GW	1	FD		9	2500
08.09.06	53	9	27	143	18	12	174	GW	3	FD		3	1000
08.09.06	53	9	27	143	18	12	180	GW	1	FD		7	1500
09.09.06	53	9	6	143	21	4	252	GW	2	FD		9	1400
09.09.06	53	12	22	143	17	16	346	GW	1	FD		9	1500
09.09.06	53	13	17	143	17	9	339	GW	1	FD		12	1300
09.09.06	53	15	5	143	16	26	344	GW	2	FE		11	1500
11.09.06	53	18	18	143	15	44	174	GW	1	FD		3	2100
11.09.06	53	18	18	143	15	44	174	GW	1	FD		4	2500
11.09.06	53	16	94	143	15	88	172	GW	1	FD		2	1000
11.09.06	53	14	0	143	16	87	169	GW	2	FD		12	4500
11.09.06	53	13	49	143	17	6	169	GW	3	FD		12	4500

11.09.06	53	7	77	143	18	97	166	GW	1	FD		1	1300
11.09.06	52	59	22	143	21	62	171	GW	2	FD	FE	1	2100
11.09.06	52	57	74	143	22	12	173	GW	3	FD		1	2700
11.09.06	52	53	80	143	23	20	175	GW	1	FD		2	2500
11.09.06	52	52	89	143	23	47	174	GW	1	FD		2	450
11.09.06	52	52	70	143	23	52	171	GW	1	FD		2	1500
11.09.06	52	51	63	143	23	83	170	GW	2	FD		2	2100
11.09.06	52	49	38	143	24	88	150	GW	1	FL		3	1500
11.09.06	52	39	67	143	23	47	165	GW	3	FD		1	6000
11.09.06	52	22	4	143	34	73	160	GW	1	FE		12	1900
12.09.06	51	54	79	143	34	84	321	GW	1	FD		12	2500
13.09.06	52	42	99	143	24	32	2	GW	1	FD		11	2700
13.09.06	52	43	17	143	24	31	3	GW	1	FD		11	2700
13.09.06	52	43	53	143	24	29	3	GW	1	FD		11	6000
13.09.06	52	48	29	143	23	93	1	GW	3	FD		11	4500
13.09.06	52	50	64	143	23	73	358	GW	2	FD		11	3200
13.09.06	52	51	24	143	23	66	358	GW	4	FE		9	2500
13.09.06	52	52	70	143	23	44	356	GW	1	BR		10	2500
13.09.06	52	53	74	143	23	46	53	GW	1	FD		11	4500
13.09.06	52	53	17	143	20	44	346	GW	2	FD		12	6000
14.09.06	52	55	43	143	23	27	212	GW	2	FD		12	4500
14.09.06	52	55	43	143	23	27	217	GW	1	FD		12	4500
14.09.06	52	55	43	143	23	27	207	GW	3	FD	FE	1	2500
14.09.06	52	55	43	143	23	26	198	GW	3	FD		12	2100
14.09.06	52	55	43	143	23	26	211	GW	2	FD		12	2500
14.09.06	52	55	42	143	23	27	207	GW	3	FD		11	3200
14.09.06	52	55	12	143	20	96	358	GW	1	FD		12	2500
14.09.06	52	56	12	143	20	92	359	GW	4	FD		12	6000
14.09.06	53	0	90	143	20	40	354	GW	1	FD		12	4500
14.09.06	53	2	64	143	20	12	355	GW	5	FD		12	6000
15.09.06	53	3	59	143	20	7	330	GW	2	FD		12	6000
15.09.06	53	3	59	143	20	7	330	GW	2	FD		12	3200
15.09.06	53	3	60	143	20	2	303	GW	2	FD		1	6000
15.09.06	53	0	38	143	20	41	169	GW	2	FD		12	4500
15.09.06	53	0	4	143	20	55	170	GW	1	FD		2	1500
15.09.06	52	56	50	143	22	7	165	GW	1	FD		2	4500
15.09.06	52	55	80	143	22	39	165	GW	2	FD		1	6000
15.09.06	52	55	71	143	22	44	155	GW	1	FD		2	4500
15.09.06	52	53	64	143	22	84	188	GW	1	FE		2	200
16.09.06	52	43	15	143	28	86	225	GW	3	FD		2	4500
16.09.06	52	43	61	143	28	47	330	GW	4	FD		12	3200
17.09.06	52	55	8	143	34	49	245	GW	1	FD		12	6000
17.09.06	52	55	7	143	34	48	298	GW	1	FD		1	3200
24.09.06	53	19	96	143	16	12	313	GW	2	FD		9	4500
24.09.06	53	16	67	143	16	46	186	GW	1	FD		2	1900
24.09.06	53	14	68	143	16	78	180	GW	1	FD		1	3200
24.09.06	53	14	23	143	16	85	180	GW	5	FD		1	2700
24.09.06	53	11	18	143	17	76	187	GW	2	FE		12	1900
24.09.06	53	9	86	143	18	80	190	GW	2	FD		12	3200
24.09.06	53	7	87	143	18	75	230	GW	2	FD	FE	10	2500
24.09.06	53	2	42	143	19	98	178	GW	1	FD		2	1900
24.09.06	52	54	33	143	21	88	176	GW	3	FD		12	2500

24.09.06	52	52	36	143	22	43	177	GW	1	FD		1	2500
24.09.06	52	51	92	143	22	54	177	GW	2	FD		1	2700
24.09.06	52	51	35	143	22	68	166	GW	1	FD		1	3200
24.09.06	52	51	35	143	22	68	166	GW	1	FD		1	4500
24.09.06	52	50	79	143	22	87	175	GW	2	FD	FE	12	3200
24.09.06	52	49	45	143	23	35	171	GW	1	FD		1	1500
24.09.06	52	48	99	143	23	51	173	GW	2	FD		1	4500
24.09.06	52	48	10	143	23	82	173	GW	2	FD		1	4500
24.09.06	52	48	10	143	23	82	173	GW	1	FD		1	4500
24.09.06	52	45	74	143	23	96	189	GW	1	FD		1	6000
24.09.06	52	39	83	143	23	54	185	GW	1	FD		2	4500
24.09.06	52	37	59	143	23	7	197	GW	1	FD		1	6000
24.09.06	52	36	49	143	22	71	197	GW	1	FD		2	4500
24.09.06	52	35	12	143	22	24	197	GW	2	FD		12	6000
24.09.06	52	34	31	143	21	91	199	GW	1	FD		12	2500
25.09.06	52	28	89	143	22	44	23	GW	2	FD	BR	11	2700
25.09.06	52	28	89	143	22	45	10	GW	3	FD		10	2700
25.09.06	52	28	97	143	22	45	0	GW	3	FD		8	4500
25.09.06	52	30	11	143	20	24	335	GW	1	FD		12	1000
25.09.06	52	30	17	143	20	2	270	GW	1	FD		3	2500
25.09.06	52	26	68	143	19	7	25	GW	4	FD		11	2300
25.09.06	52	27	99	143	19	72	23	GW	4	FD		9	850
25.09.06	52	28	61	143	20	2	23	GW	1	FD		11	2500
25.09.06	52	29	54	143	20	27	15	GW	1	FD		12	6000
25.09.06	52	29	54	143	20	27	15	GW	1	FD		4	1000
25.09.06	52	30	47	143	20	47	15	GW	1	FD		11	2100
25.09.06	52	30	70	143	20	52	15	GW	1	FD		12	270
25.09.06	52	30	92	143	20	57	15	GW	1	FD		8	1000
25.09.06	52	31	14	143	20	62	15	GW	2	FD		5	1500
25.09.06	52	31	49	143	20	70	15	GW	2	FD		11	2500
25.09.06	52	31	63	143	20	73	15	GW	1	FD		9	850
25.09.06	52	32	42	143	20	90	15	GW	1	FL		1	850
25.09.06	52	33	13	143	21	4	15	GW	2	FD		9	850
25.09.06	52	34	40	143	21	28	15	GW	2	FD		11	1500
25.09.06	52	34	93	143	21	37	15	GW	2	FD		11	4500
25.09.06	52	36	53	143	21	47	8	GW	2	FD		10	1000
25.09.06	52	42	26	143	21	77	10	GW	1	FD		2	4500
25.09.06	52	43	34	143	21	84	10	GW	1	FD		12	2500
25.09.06	52	44	31	143	21	89	10	GW	1	FD		11	1000
25.09.06	52	44	67	143	22	91	10	GW	4	FD		12	2100
25.09.06	52	46	30	143	22	4	4	GW	1	FD		11	1500
25.09.06	52	46	30	143	22	4	4	GW	2	FD		11	2700
25.09.06	52	47	84	143	21	17	9	GW	1	FD		11	2700
25.09.06	52	53	97	143	21	46	10	GW	1	FD		12	1000
25.09.06	52	53	97	143	20	46	10	GW	1	FE		1	1000
25.09.06	52	58	34	143	20	56	10	GW	3	FD		10	3200
25.09.06	52	58	34	143	19	56	10	GW	2	FD		11	3200
25.09.06	53	10	13	143	17	45	5	GW	1	FD		12	4500
25.09.06	53	10	13	143	17	45	5	GW	2	FD		12	4500
25.09.06	53	10	13	143	17	45	5	GW	3	FD		12	6000
25.09.06	53	10	45	143	17	33	355	GW	2	FD		11	3200
25.09.06	53	10	60	143	17	28	357	GW	3	FD		11	2500

25.09.06	53	13	54	143	16	16	356	GW	3	FD		11	2700
25.09.06	53	14	3	143	16	6	351	GW	1	FD		12	4500
25.09.06	53	17	78	143	14	63	346	GW	1	FD	FE	11	3200
26.09.06	53	26	26	143	11	3	174	GW	4	FD		12	3200
26.09.06	53	25	64	143	11	94	147	GW	1	FD		1	3200
26.09.06	53	19	99	143	14	93	146	GW	1	FD		1	3200
26.09.06	53	20	0	143	14	98	210	GW	1	FD		11	6000
26.09.06	53	20	1	143	14	94	180	GW	1	FD		2	2500
27.09.06	53	19	96	143	14	96	107	GW	3	FD		3	850
27.09.06	53	19	78	143	14	95	187	GW	3	FD	FL	11	1000
27.09.06	53	16	33	143	16	55	180	GW	3	FD		12	1000
27.09.06	53	14	39	143	16	91	178	GW	1	FD		5	4500
27.09.06	53	13	90	143	17	0	179	GW	3	FD		11	2500
27.09.06	53	12	46	143	16	62	60	GW	1	FD		12	2500
27.09.06	53	13	59	143	16	34	355	GW	1	FD		3	1500
27.09.06	53	15	42	143	16	60	353	GW	4	FD		10	2500
27.09.06	53	15	17	143	16	41	150	GW	3	FD		2	3200
27.09.06	53	14	70	143	16	94	138	GW	2	FD		1	4500
27.09.06	53	6	93	143	25	46	308	GW	1	FD		9	4500
27.09.06	53	4	56	143	21	8	237	GW	2	FD		2	1500
27.09.06	53	4	1	143	20	5	237	GW	4	FD		9	1500
27.09.06	53	3	73	143	19	60	150	GW	1	FD		7	2500
27.09.06	53	1	14	143	20	3	125	GW	1	FD		7	1500
27.09.06	52	59	99	143	20	16	270	GW	1	FD		4	1000
27.09.06	52	58	75	143	21	60	28	GW	1	FD		12	600
27.09.06	52	58	25	143	24	82	315	GW	1	FD		10	2700
27.09.06	52	58	24	143	24	72	230	GW	1	FD		11	4500
27.09.06	52	57	16	143	21	86	224	GW	3	FD		11	2500
28.09.06	52	49	98	143	22	5	268	GW	1	FD		5	600
28.09.06	52	49	97	143	22	4	285	GW	3	FD		4	1000
28.09.06	52	49	96	143	22	4	312	GW	1	FD		12	1500
28.09.06	52	49	94	143	21	99	350	GW	1	FD		12	4500
28.09.06	52	49	94	143	21	99	5	GW	4	FD		6	2700
28.09.06	52	49	94	143	22	2	358	GW	3	FD		12	2700
28.09.06	52	49	95	143	22	3	354	GW	2	FD		3	2300
28.09.06	52	50	86	143	22	15	356	GW	1	FD		12	2500
28.09.06	52	51	50	143	21	27	0	GW	2	FD		12	2500
28.09.06	52	47	61	143	21	75	176	GW	2	FD		9	3200
28.09.06	52	46	44	143	21	82	179	GW	2	FD		10	4500
28.09.06	52	45	23	143	22	6	182	GW	3	FE		12	3200
28.09.06	52	44	82	143	22	3	183	GW	2	FE		1	2700
28.09.06	52	41	98	143	21	81	170	GW	1	FD		12	4500
28.09.06	52	41	78	143	24	65	85	GW	1	FD		12	1500
29.09.06	52	42	59	143	24	85	345	GW	2	FD	FE	11	4500
29.09.06	52	44	39	143	24	13	350	GW	1	FD		1	1500
29.09.06	52	44	93	143	23	94	350	GW	4	FD	SH	12	2500
29.09.06	52	46	49	143	23	43	340	GW	3	FD	FL	1	8000
29.09.06	52	46	66	143	23	33	340	GW	1	FD		12	1000
29.09.06	52	47	72	143	22	86	350	GW	1	FD		12	1000
29.09.06	52	48	23	143	22	67	350	GW	3	FD		1	2500
29.09.06	52	50	98	143	22	62	340	GW	1	FD		1	4500
29.09.06	52	51	45	143	22	22	340	GW	3	FD	BR	1	3200

29.09.06	52	52	57	143	22	46	45	GW	2	FD	FL	1	850
29.09.06	52	52	59	143	22	44	280	GW	2	FD		2	1000
29.09.06	52	53	43	143	22	5	340	GW	1	FD		12	2500
29.09.06	52	55	92	143	21	34	349	GW	1	FE		11	2500
29.09.06	52	57	80	143	20	85	349	GW	3	FD		12	4500
29.09.06	53	9	25	143	18	20	348	GW	2	FD		12	2700
29.09.06	53	10	18	143	17	67	55	GW	1	FD		11	4500
29.09.06	53	9	87	143	18	6	359	GW	1	FD		11	4500
29.09.06	53	14	65	143	16	57	353	GW	4	FD		11	4500
29.09.06	53	14	65	143	16	57	353	GW	1	FD		11	8000
29.09.06	53	14	96	143	16	45	353	GW	6	FD	FL	12	4500
29.09.06	53	16	8	143	16	0	346	GW	6	FD	FE	10	3200
29.09.06	53	17	62	143	15	20	339	GW	1	FD		11	4500
30.09.06	53	19	97	143	15	62	327	GW	2	FD		8	4500
30.09.06	53	19	97	143	15	62	323	GW	1	FD		7	6000
30.09.06	53	20	88	143	13	94	161	GW	2	FD		1	2300
30.09.06	53	20	64	143	14	8	161	GW	1	FD		1	1900
30.09.06	53	18	47	143	15	19	170	GW	1	FD		2	600
30.09.06	53	17	42	143	15	55	169	GW	4	FD		11	1900
30.09.06	53	16	8	143	15	97	170	GW	1	FD		11	1900
30.09.06	53	14	85	143	16	38	169	GW	1	FE		1	1900
30.09.06	53	6	46	143	18	74	178	GW	3	FD		12	4500
30.09.06	53	3	87	143	19	30	178	GW	2	FD		10	4500
30.09.06	53	3	26	143	19	44	177	GW	2	FD		5	300
30.09.06	53	2	62	143	19	58	178	GW	2	FD		12	4500
30.09.06	53	1	85	143	19	74	178	GW	2	FD		9	4500
30.09.06	52	0	32	143	20	96	178	GW	2	FD		3	1000
30.09.06	52	50	47	143	22	0	190	GW	1	FL		2	600
30.09.06	52	49	91	143	21	95	190	GW	1	FD		11	4500
30.09.06	52	49	91	143	21	95	190	GW	3	FD		11	4500
30.09.06	52	48	41	143	21	81	185	GW	1	FD		12	300
30.09.06	52	48	16	143	21	81	185	GW	2	FD		9	1000
30.09.06	52	48	16	143	21	81	185	GW	2	FD		10	1500
30.09.06	52	47	52	143	21	78	185	GW	3	FD		2	850
30.09.06	52	46	90	143	21	75	187	GW	3	FD		9	1000
30.09.06	52	46	54	143	21	73	187	GW	1	FD		5	1000
30.09.06	52	46	54	143	21	73	187	GW	3	FD		5	375
30.09.06	52	45	1	143	21	65	187	GW	1	FD		11	4500
30.09.06	52	43	50	143	21	56	187	GW	1	FD		9	2100
30.09.06	52	41	56	143	21	47	187	GW	1	FD		3	850
30.09.06	52	40	66	143	21	38	188	GW	1	FD		9	2100
30.09.06	52	36	96	143	21	74	138	GW	1	FD		3	375
30.09.06	52	41	87	143	25	2	2	GW	3	FD		10	2500
30.09.06	52	42	48	143	25	5	1	GW	1	FD		11	4500
30.09.06	52	42	97	143	25	8	2	GW	3	FD		9	2300
30.09.06	52	43	68	143	25	12	2	GW	1	FD		10	4500
30.09.06	52	47	17	143	25	33	3	GW	1	FD		9	1900
30.09.06	52	47	17	143	25	33	3	GW	2	FD		9	2500
30.09.06	52	49	98	143	25	50	5	GW	1	FD		9	2500
30.09.06	52	51	53	143	25	49	352	GW	1	FD		9	2500
30.09.06	53	8	97	143	21	81	0	GW	3	FD		9	2500
30.09.06	53	10	22	143	21	58	357	GW	1	FD		10	4500

30.09.06	53	11	16	143	21	25	357	GW	1	FD		11	6000
30.09.06	53	14	40	143	20	18	358	GW	1	FD		9	4500
01.10.06	53	21	88	143	14	66	135	GW	4	FD		12	2500
01.10.06	53	20	56	143	16	29	170	GW	1	FD		8	1500
01.10.06	53	17	41	143	16	36	175	GW	1	FD		2	2500
01.10.06	53	16	44	143	16	62	175	GW	2	FD		2	2100
01.10.06	53	16	44	143	16	62	175	GW	1	SH		2	2100
01.10.06	53	15	83	143	16	78	175	GW	1	FD		2	1500
01.10.06	53	15	83	143	16	78	175	GW	3	FD		2	1500
01.10.06	53	13	93	143	17	31	175	GW	4	FD		11	2500
01.10.06	53	5	76	143	20	15	178	GW	1	FD	BR	2	2500
01.10.06	53	4	39	143	20	41	177	GW	2	FD		3	1000
01.10.06	52	57	17	143	22	52	176	GW	4	FD		1	2500
01.10.06	52	55	52	143	23	3	169	GW	3	FD		12	6000
01.10.06	52	54	4	143	23	48	174	GW	1	FD		2	3200
01.10.06	52	52	68	143	23	90	174	GW	4	FD		1	4500
01.10.06	52	48	51	143	23	73	201	GW	1	FD		12	2500
01.10.06	52	46	71	143	23	32	185	GW	2	FD		11	2700
01.10.06	52	42	73	143	22	85	190	GW	2	FD		11	1000
01.10.06	52	42	73	143	22	85	190	GW	3	FD		2	600
01.10.06	52	41	79	143	22	71	190	GW	1	FD		4	1500
01.10.06	52	41	0	143	22	60	9	GW	3	FD	FL	12	2500
01.10.06	52	41	0	143	22	60	9	GW	6	FD		12	2500
01.10.06	52	41	0	143	22	60	9	GW	2	FD	FL	11	2500
01.10.06	52	41	0	143	22	60	9	GW	1	FD		12	2500
01.10.06	52	40	11	143	23	41	149	GW	1	FD		12	1000
01.10.06	52	39	14	143	23	15	161	GW	2	FD		1	6000
01.10.06	52	38	31	143	23	63	153	GW	4	FD		1	6000
02.10.06	51	57	79	143	33	2	193	GW	1	FD		12	30
03.10.06	51	55	30	143	36	73	357	GW	1	FD	FE	11	3200
03.10.06	51	56	71	143	35	73	3	GW	2	FD		9	6000
03.10.06	51	57	81	143	35	73	2	GW	2	FE		11	2700
03.10.06	51	59	91	143	35	72	346	GW	7	FE		12	4500
03.10.06	51	59	91	143	35	72	346	GW	2	FE		12	2700
03.10.06	52	18	4	143	43	2	34	GW	1	FD		1	4500
03.10.06	52	18	82	143	43	73	34	GW	1	FD		2	2300
03.10.06	52	21	8	143	36	92	292	GW	1	FD		12	1000
04.10.06	52	19	41	143	29	99	0	GW	1	FD		9	2700
05.10.06	52	36	96	143	21	61	262	GW	2	FD		1	700
05.10.06	52	36	94	143	21	61	277	GW	1	FD		12	450
05.10.06	52	36	94	143	21	61	300	GW	1	FD		1	1000
05.10.06	52	36	93	143	21	60	320	GW	1	FD		12	1000
05.10.06	52	36	93	143	21	60	327	GW	2	FD		9	3200
05.10.06	52	36	91	143	21	56	339	GW	2	FD		1	1500
06.10.06	52	45	91	143	26	86	330	GW	3	FD		11	3200
06.10.06	52	47	83	143	25	20	333	GW	1	FD	FE	12	2700
06.10.06	52	49	22	143	23	95	332	GW	1	FE		11	2500
06.10.06	52	50	19	143	23	13	335	GW	1	FE		8	2300
06.10.06	52	52	15	143	21	43	331	GW	1	FD		1	2100
06.10.06	52	57	88	143	21	83	347	GW	1	FD		12	4500
06.10.06	52	57	88	143	21	83	347	GW	2	FD		12	6000
06.10.06	52	57	88	143	21	83	347	GW	4	FD		12	6000

06.10.06	53	0	50	143	20	53	344	GW	1	FD		12	4500
06.10.06	53	3	24	143	19	12	175	GW	3	FD	FL	11	6000
06.10.06	53	3	24	143	19	12	175	GW	1	FD		1	2100
06.10.06	53	0	76	143	20	78	190	GW	3	FD		1	2100
06.10.06	52	56	72	143	20	73	178	GW	1	FD		2	1000
06.10.06	52	54	36	143	21	24	180	GW	2	FD		12	2500
06.10.06	52	53	89	143	21	35	177	GW	2	FD		12	4500
06.10.06	52	41	93	143	21	59	182	GW	3	FD	FE	12	3200
06.10.06	52	40	11	143	21	48	183	GW	2	FD		12	3200
06.10.06	52	40	11	143	21	48	183	GW	8	FD		12	6000
06.10.06	52	36	58	143	20	95	185	GW	1	FD		12	2500
06.10.06	52	33	39	143	20	85	152	GW	1	FE		12	1000
06.10.06	52	32	95	143	21	42	116	GW	3	FD		12	850
06.10.06	52	32	74	143	22	32	75	GW	2	FD		1	2500
06.10.06	52	32	66	143	23	26	226	GW	2	FD		11	6000
06.10.06	52	32	37	143	22	75	226	GW	1	FD		11	4500
06.10.06	52	28	40	143	20	9	187	GW	2	FD		1	2500
07.10.06	51	53	49	143	34	9	5	GW	2	FD		9	4500
07.10.06	51	57	0	143	35	93	271	GW	1	FD		11	3200
07.10.06	51	57	1	143	34	57	270	GW	2	FD		9	2500
07.10.06	51	57	0	143	32	52	275	GW	2	FD		3	2500
07.10.06	51	57	0	143	31	89	275	GW	1	FD		3	6000
07.10.06	51	58	13	143	30	1	0	GW	1	FD		3	2700
07.10.06	52	0	51	143	31	70	91	GW	3	FD	FE	10	1500
07.10.06	52	0	49	143	32	76	92	GW	3	FD		9	3200
07.10.06	52	4	1	143	40	32	272	GW	2	FD		12	6000
07.10.06	52	4	0	143	39	38	272	GW	2	FD		2	4500
07.10.06	52	4	0	143	34	76	272	GW	1	FD		9	2300
07.10.06	52	7	49	143	35	42	100	GW	2	FD		2	3200
07.10.06	52	7	49	143	35	42	100	GW	1	FD		2	6000
07.10.06	52	7	50	143	36	66	90	GW	1	FD		3	1300
07.10.06	52	7	50	143	38	17	91	GW	1	FD		11	2100
07.10.06	52	7	49	143	40	16	100	GW	1	FD		9	600
08.10.06	51	55	31	143	36	3	4	GW	3	FE		12	1500
08.10.06	52	0	97	143	34	52	330	GW	3	FE		12	1500
08.10.06	52	1	65	143	34	62	190	GW	1	NO		11	1500
08.10.06	52	1	49	143	34	64	115	GW	2	FD		8	2500
08.10.06	52	3	37	143	34	68	326	GW	2	FD		12	4500
08.10.06	52	3	58	143	34	15	267	GW	1	FD		12	700
08.10.06	52	3	82	143	34	20	46	GW	2	FD	BR	12	375
08.10.06	52	4	25	143	33	88	42	GW	1	FD		12	2500
08.10.06	52	4	34	143	33	98	47	GW	4	FD		11	2500
08.10.06	52	4	34	143	33	98	47	GW	1	FD		11	2500
08.10.06	52	5	4	143	34	75	44	GW	2	FD		11	2500
08.10.06	52	5	61	143	35	49	0	GW	1	FD		12	1500
08.10.06	52	6	52	143	35	77	30	GW	1	FD		10	1500
08.10.06	52	25	34	143	19	90	13	GW	2	FD		11	2700
08.10.06	52	28	94	143	21	11	12	GW	6	FD	FE	11	2700
08.10.06	52	38	93	143	22	20	0	GW	1	FD		11	4500
08.10.06	52	46	97	143	22	82	8	GW	3	FD		12	4500
08.10.06	52	49	2	143	22	93	7	GW	1	FD		11	4500
09.10.06	53	19	88	143	16	50	186	GW	3	FD		3	2500

09.10.06	53	19	50	143	16	65	167	GW	2	FD		2	3200
09.10.06	53	18	11	143	17	25	240	GW	2	FD		2	4500
09.10.06	53	17	74	143	16	77	6	GW	2	FD		9	2100
09.10.06	53	17	77	143	16	62	10	GW	1	FD		9	2100
09.10.06	53	13	49	143	16	75	166	GW	1	FD		1	2700
09.10.06	53	11	25	143	17	63	166	GW	2	FD		1	2700
09.10.06	53	5	63	143	19	6	136	GW	1	FD		11	375
09.10.06	53	3	41	143	19	61	174	GW	2	FD		12	2700
09.10.06	53	0	78	143	20	30	190	GW	2	FD		2	700
10.10.06	52	1	79	143	36	4	188	GW	1	FD		12	850
30.06.06	52	4	2	143	49	88	90	BS	1	LO	SW	11	850
17.07.06	52	33	35	143	30	5	326	BS	1	LO	SW	1	270
18.07.06	52	51	20	143	24	43	250	BS	1	SW	SW	11	30
23.07.06	52	47	53	143	25	91	195	BS	1	SW	LO	9	100
24.07.06	53	4	23	143	21	39	168	BS	1	LO	FE	8	1089
08.08.06	53	0	38	143	20	50	305	BS	1	LO	TH	1	50
30.08.06	53	23	72	143	16	87	334	BS	1	LO	SW	10	50
17.09.06	51	54	87	143	24	50	82	BS	2	LO	SW	12	232
17.06.06	44	24	51	137	51	5	59	DP	2	TH	TH	11	50
17.06.06	44	37	8	138	19	3	58	DP	2	TH	TH	11	40
18.06.06	45	44	11	142	13	19	83	DP	2	TH	TH	12	150
12.07.06	52	29	90	143	52	8	369	DP	3	TH	FE	10	550
22.07.06	52	16	77	143	30	35	359	DP	6	TH	TH	12	600
25.09.06	46	44	49	144	20	90	214	DP	6	FD	FD	7	100
25.09.06	46	3	16	143	34	9	230	DP	8	FD	FD	10	771
25.09.06	45	54	66	142	54	68	270	DP	35	FD	FE	8	1262
25.09.06	45	53	63	142	43	61	265	DP	20	FD	FE	1	957
25.09.06	45	52	21	142	30	91	266	DP	7	FD	FE	8	1262
25.09.06	45	50	53	142	15	61	264	DP	3	TH	TH	9	600
20.08.06	52	4	93	144	0	2	350	DP	1	TH		11	350
20.08.06	52	10	31	143	57	61	343	DP	1	TH		11	250
23.08.06	52	51	45	143	26	40	152	DP	1	FD		8	270
24.08.06	52	49	98	143	28	18	160	DP	1	FD		7	1500
07.10.06	51	53	9	143	29	28	5	DP	4	SW		3	700
07.10.06	51	55	91	143	50	1	10	DP	2	SW		12	50
12.10.06	45	50	70	142	17	62	264	DP	2	FD		12	460
12.10.06	45	50	7	142	11	5	263	DP	8	FD		2	300
27.09.06	53	7	3	143	25	41	174	BBW	1	FD		11	160
30.06.06	52	14	47	143	45	94	278	HP	2	FD	FE	12	2500
30.06.06	52	10	99	143	44	12	88	HP	6	FD	FE	11	800
30.06.06	52	11	0	143	48	49	89	HP	1	FD	FD	1	300
30.06.06	52	10	4	143	49	93	173	HP	1	FD	FD	12	70
30.06.06	52	10	4	143	49	93	173	HP	5	FE	FE	10	1500
30.06.06	52	7	50	143	44	6	268	HP	5	FD	FE	12	400
30.06.06	52	7	48	143	42	51	270	HP	2	FD	FE	12	70
30.06.06	52	7	50	143	31	43	270	HP	1	FD	FE	11	400
30.06.06	52	6	70	143	29	90	178	HP	1	FD	FE	11	350
30.06.06	52	5	7	143	30	7	178	HP	1	FE	FD	11	400
30.06.06	51	50	1	143	41	1	92	HP	1	FD	FD	11	400
30.06.06	51	49	98	143	43	56	90	HP	4	FD	FD	1	270
30.06.06	51	49	84	143	43	52	310	HP	6	FE	FE	11	1500
30.06.06	51	49	83	143	37	87	278	HP	1	FD	FD	10	700

30.06.06	51	49	81	143	37	25	268	HP	3	FD	FD	2	1200
03.07.06	52	1	31	143	32	18	183	HP	2	FD	FD	12	100
12.07.06	52	39	95	143	44	32	173	HP	2	FD	FD	12	300
16.07.06	51	56	26	143	17	5	97	HP	3	FD	FE	12	1080
17.07.06	52	10	90	143	34	99	313	HP	5	FE	FE	4	850
18.07.06	52	43	14	143	22	84	4	HP	1	FD	FD	3	300
18.07.06	52	52	29	143	30	90	283	HP	3	FD	FE	1	460
24.07.06	53	12	94	143	17	91	160	HP	2	FE	FE	11	520
28.07.06	52	32	53	143	59	35	301	HP	6	FD	FE	11	1860
29.07.06	52	37	57	143	30	33	158	HP	2	FD	FD	12	150
16.01.00	52	13	80	143	34	83	167	HP	2	FE	TH	10	500
16.01.00	52	18	84	143	41	67	0	HP	1	FD	FD	1	20
22.08.06	53	20	26	143	16	22	90	HP	1	FD	FD	12	703
25.08.06	52	3	51	143	49	98	2	HP	5	FD	FE	2	460
25.08.06	52	8	49	143	34	13	88	HP	1	FD	FD	10	600
25.08.06	52	8	50	143	37	59	91	HP	3	FD	FD	12	703
25.08.06	52	6	53	143	41	24	211	HP	3	FD	FD	12	10
25.08.06	52	4	7	143	38	89	208	HP	3	FD	FD	12	100
28.08.06	52	15	23	143	44	55	0	HP	4	FE	FE	12	1503
30.08.06	53	30	41	143	8	6	340	HP	3	FD	FE	12	709
31.08.06	53	13	48	143	16	97	169	HP	3	FE	FE	2	854
31.08.06	53	8	52	143	18	47	169	HP	2	FD	FE	12	303
03.09.06	53	7	77	143	19	50	79	HP	4	FD	FD	10	703
07.09.06	53	18	65	143	16	94	264	HP	3	FD	FD	1	703
11.09.06	53	1	72	143	19	73	8	HP	4	FD	FE	3	303
13.09.06	52	34	23	143	24	3	240	HP	7	FD	FD	12	230
14.09.06	52	50	44	143	22	75	210	HP	3	FD	FD	2	40
15.09.06	52	8	50	143	44	48	101	HP	3	FD	FD	2	598
17.09.06	51	59	88	143	23	90	9	HP	6	FD	FE	2	598
17.09.06	51	59	97	143	23	92	59	HP	3	FE	FE	12	1503
17.09.06	51	57	58	143	22	89	201	HP	2	FD	FD	11	957
17.09.06	51	54	87	143	24	50	82	HP	5	FD	FE	11	1089
17.09.06	51	56	52	143	42	52	290	HP	4	FD	FE	10	450
17.09.06	51	57	86	143	35	69	218	HP	3	FE	FE	12	328
19.09.06	53	30	46	143	10	52	346	HP	3	FD	FE	9	300
22.09.06	54	20	59	142	16	99	65	HP	4	FD	FD	2	80
25.09.06	46	3	16	143	34	9	230	HP	2	FD	FD	12	460
19.08.06	46	38	16	143	54	40	25	HP	2	FD		10	600
19.08.06	46	39	42	143	55	30	25	HP	2	FD		1	700
19.08.06	46	44	70	143	58	18	23	HP	1	NO		10	800
19.08.06	46	44	70	143	58	18	23	HP	1	NO		10	400
19.08.06	46	45	63	143	58	69	23	HP	1	NO		11	800
19.08.06	46	49	64	143	59	51	22	HP	1	NO		11	250
19.08.06	46	53	77	144	3	29	22	HP	3	NO		11	400
19.08.06	46	55	41	144	4	23	22	HP	1	NO		10	200
19.08.06	46	56	82	144	5	2	22	HP	1	NO		11	800
19.08.06	46	58	40	144	5	90	22	HP	2	NO		11	1200
19.08.06	47	17	58	144	16	57	18	HP	3	SW		2	600
20.08.06	51	38	69	144	1	68	357	HP	3	FD		1	1300
20.08.06	51	43	54	144	1	29	357	HP	4	FD		10	700
20.08.06	51	46	15	144	1	13	1	HP	2	FD		10	30
20.08.06	51	48	70	144	1	7	1	HP	1	FD		10	10

20.08.06	51	49	78	144	1	0	357	HP	2	FD		11	15
22.08.06	53	23	76	143	15	81	173,6	HP	1	FD		2	50
22.08.06	53	17	55	143	17	70	172,5	HP	1	FD		2	270
23.08.06	53	0	56	143	23	16	229	HP	1	FD		11	900
23.08.06	52	45	90	143	26	14	150	HP	1	UN		1	170
25.08.06	52	1	49	143	35	9	356	HP	2	FD		11	850
25.08.06	52	8	1	143	35	3	358	HP	2	FD		12	500
25.08.06	52	24	74	143	33	87	344	HP	1	FD		3	600
01.09.06	52	53	9	143	31	78	321	HP	1	FD		2	300
08.09.06	53	9	14	143	18	16	153	HP	1	FD		12	190
11.09.06	53	20	39	143	14	72	174	HP	1	FD		1	100
27.09.06	52	57	79	143	23	74	240	HP	2	FD	BR	11	700
30.09.06	53	24	37	143	11	97	160	HP	1	FD		9	375
12.10.06	45	51	40	142	26	16	275	HP	4	FD		11	100
12.10.06	45	51	33	142	24	25	272	HP	2	FD		11	150
12.10.06	45	51	25	142	23	34	278	HP	2	FD		12	200
12.10.06	45	51	21	142	22	92	278	HP	1	FD		11	50
18.06.06	46	14	55	143	56	64	79	KW	8	FE	FD	9	300
22.06.06	52	48	94	143	24	61	8	KW	3	FD	FD	12	500
24.06.06	52	41	24	143	26	53	341	KW	1	FD	FD	1	300
01.07.06	52	38	91	143	27	18	339	KW	2	FD	FD	12	1500
01.07.06	52	38	91	143	27	18	339	KW	2	FD	FD	2	1000
22.07.06	51	22	64	143	33	5	35	KW	1	FD	FD	1	1500
23.07.06	53	34	63	143	5	93	5	KW	3	FD	FD	2	520
17.01.00	52	18	84	143	44	22	330	KW	2	FD	FD	8	50
23.08.06	53	30	19	143	12	5	339	KW	10	FD	BR	10	957
24.08.06	52	50	69	143	24	68	105	KW	3	FD	FD	5	3657
25.08.06	52	8	48	143	46	4	88	KW	2	FD	FD	11	854
25.08.06	52	10	99	143	42	29	270	KW	4	FD	FD	10	503
29.08.06	52	23	14	143	32	22	345	KW	4	FD	FD	10	854
02.09.06	53	23	52	143	16	68	300	KW	2	FD	FD	9	800
20.08.06	51	26	8	144	2	51	357	KW	2	FD		8	2000
22.08.06	53	11	72	143	21	29	121	KW	1	FD		1	350
22.08.06	52	51	40	143	26	49	244	KW	5	FD		9	1500
25.08.06	52	4	13	143	34	89	357	KW	1	FD		10	600
27.08.06	52	45	7	143	25	23	170	KW	2	FD		4	600
01.09.06	53	2	32	143	24	74	300	KW	1	BR		3	450
24.09.06	53	3	1	143	19	72	177	KW	2	FD		1	460
27.09.06	53	6	93	143	25	46	331	KW	1	FD		9	850
04.10.06	52	18	1	143	50	3	269	KW	1	FD		11	600
25.08.06	51	50	0	143	32	26	268	MW	1	BR	BR	10	600
25.08.06	51	58	94	143	29	98	1	MW	2	FD	FD	9	771
25.08.06	52	4	0	143	34	61	268	MW	1	FE	FE	1	2451
25.08.06	51	56	37	143	31	39	211	MW	1	FD	FD	1	374
31.08.06	53	22	21	143	14	90	20	MW	1	FD	FD	11	460
31.08.06	53	21	85	143	13	71	352	MW	1	FD	FD	7	152
31.08.06	53	6	76	143	19	7	168	MW	1	FD	FD	9	374
31.08.06	53	4	76	143	19	62	112	MW	1	FD	FD	5	854
01.09.06	53	9	64	143	20	43	79	MW	1	FD	FD	1	2451
01.09.06	53	11	15	143	19	17	271	MW	1	FD	FD	1	100
01.09.06	53	14	1	143	19	92	76	MW	1	FD	FE	11	520
01.09.06	53	18	65	143	17	24	65	MW	1	FD	FD	5	550

04.09.06	53	24	50	143	12	26	169	MW	1	FD	FD	4	1089
04.09.06	53	18	72	143	14	98	304	MW	1	FD	FD	6	460
06.09.06	53	19	28	143	18	89	170	MW	1	FD	FD	9	600
06.09.06	53	5	56	143	20	54	280	MW	1	FD	FD	12	703
07.09.06	53	5	39	143	22	47	40	MW	2	FE	FE	3	703
07.09.06	53	20	61	143	14	24	80	MW	1	FD	FD	2	598
09.09.06	53	17	37	143	17	16	166	MW	1	FD	FD	9	600
11.09.06	53	15	82	143	19	73	172	MW	1	FD	FD	9	703
13.09.06	52	37	72	143	23	19	115	MW	1	FD	FD	10	700
14.09.06	52	49	83	143	22	78	103	MW	1	FD	FD	11	500
23.09.06	52	31	32	143	32	62	314	MW	1	FD	FD	11	598
25.09.06	45	55	93	143	5	24	255	MW	1	FD	FD	2	220
18.08.06	45	46	50	138	53	80	85	MW	2	NO		3	3000
19.08.06	48	4	84	144	43	31	25	MW	1	FD		9	300
19.08.06	48	14	7	144	48	54	20	MW	1	FD		12	800
20.08.06	51	41	36	144	1	45	358	MW	1	FD		11	450
20.08.06	51	44	88	144	1	17	0	MW	1	FD		11	120
20.08.06	52	12	14	143	56	70	346	MW	2	FD		11	300
20.08.06	52	12	63	143	56	57	346	MW	1	FD		11	300
22.08.06	53	19	82	143	17	3	167,4	MW	1	FD		11	70
22.08.06	53	19	47	143	17	16	168	MW	1	FD		10	160
22.08.06	53	12	24	143	19	92	122	MW	1	FD		10	450
22.08.06	53	12	53	143	15	89	348	MW	1	FD		3	2000
22.08.06	53	6	71	143	19	35	167	MW	1	FD		9	2700
23.08.06	53	3	94	143	19	80	100	MW	1	FD		12	600
24.08.06	52	49	96	143	28	17	315	MW	1	FD		2	2300
24.08.06	52	29	54	143	32	25	175	MW	1	FD		10	300
25.08.06	51	41	74	143	35	9	356	MW	1	FD		10	2500
25.08.06	51	43	65	143	35	5	2	MW	1	FD		3	600
25.08.06	51	46	61	143	35	10	0	MW	1	FD		1	800
25.08.06	51	49	82	143	34	82	289	MW	1	FD		3	2700
25.08.06	51	57	30	143	35	13	359	MW	1	FD		10	1000
25.08.06	52	1	3	143	35	12	358	MW	1	FD		11	4000
27.08.06	52	51	4	143	23	42	179	MW	1	FD		2	160
27.08.06	52	51	5	143	23	40	60	MW	1	FD		8	850
27.08.06	52	50	56	143	23	59	170	MW	1	FD		11	1000
27.08.06	52	45	11	143	25	23	190	MW	2	FD	FE	2	850
27.08.06	52	31	75	143	26	42	180	MW	1	FD		2	50
31.08.06	53	3	73	143	23	72	70	MW	1	FD		10	1000
31.08.06	53	3	76	143	18	64	150	MW	1	FD		12	1000
01.09.06	52	57	75	143	24	75	322	MW	1	FD		10	350
01.09.06	52	59	17	143	22	58	321	MW	1	FD		11	1500
01.09.06	53	2	59	143	22	18	315	MW	1	FD		1	1000
01.09.06	53	2	43	143	22	21	315	MW	1	FD		3	450
01.09.06	53	2	47	143	24	85	110	MW	1	FD		2	1500
01.09.06	53	2	34	143	24	30	300	MW	1	FD		3	200
01.09.06	53	2	83	143	22	28	290	MW	1	FE		5	300
04.09.06	53	8	94	143	20	7	15	MW	1	FD		10	30
06.09.06	53	14	30	143	19	25	195	MW	1	FD		10	600
24.09.06	52	33	76	143	22	35	84	MW	1	FD		4	460
09.10.06	52	56	98	143	22	8	140	MW	1	FD		3	100
13.10.06	44	25	84	136	13	70	224	MW	1	FD		1	700

17.06.06	43	22	37	135	35	25	54	NFS	1	SW	SW	11	200
17.06.06	43	44	28	136	24	66	66	NFS	1	LO	FD	10	80
17.06.06	44	4	33	137	7	45	56	NFS	1	LO	OT	11	100
19.06.06	48	51	59	145	9	50	336	NFS	1	LO	SW	11	150
19.06.06	49	6	45	145	1	92	334	NFS	1	LO	SW	1	60
07.07.06	52	59	63	143	21	43	359	NFS	1	SW	BR	9	220
11.08.06	52	18	1	143	42	30	270	NFS	1	TH	BR	1	200
28.08.06	52	13	49	143	44	7	25	NFS	1	LO	SI	11	50
29.08.06	52	22	22	143	25	49	240	NFS	1	LO	SI	11	30
19.08.06	47	18	92	144	17	20	19	NFS	2	RE	LO	11	300
19.08.06	47	18	92	144	17	20	19	NFS	1	SW	LO	1	10
19.08.06	47	24	43	144	20	46	20	NFS	1	SW	LO	1	20
19.08.06	47	31	90	144	24	65	19	NFS	1	RE		10	100
19.08.06	47	34	43	144	26	9	19	NFS	1	LO		3	250
19.08.06	47	35	91	144	26	95	19	NFS	1	RE		11	20
19.08.06	47	37	49	144	27	85	19	NFS	1	RE		11	100
19.08.06	47	38	13	144	28	18	18	NFS	1	RE		11	70
19.08.06	47	39	59	144	28	96	19	NFS	1	RE		2	100
19.08.06	47	39	59	144	28	96	19	NFS	1	RE		1	300
19.08.06	47	41	34	144	29	92	20	NFS	1	RE		10	200
19.08.06	47	42	61	144	30	66	20	NFS	1	RE		9	250
19.08.06	47	43	9	144	30	94	20	NFS	1	RE		9	200
19.08.06	47	43	36	144	31	9	20	NFS	2	RE		1	200
19.08.06	47	43	96	144	31	43	20	NFS	1	RE		11	200
19.08.06	47	44	78	144	31	90	20	NFS	1	RE		12	200
19.08.06	47	45	90	144	32	33	20	NFS	3	RE		1	100
19.08.06	47	46	83	144	33	4	20	NFS	1	RE		10	350
19.08.06	47	49	29	144	34	42	22	NFS	1	BR		1	300
19.08.06	47	50	55	144	35	2	5	NFS	3	RE		12	300
19.08.06	47	51	82	144	35	81	2	NFS	1	RE		10	250
19.08.06	47	52	73	144	36	45	19	NFS	1	RE		10	300
19.08.06	47	53	31	144	36	76	20	NFS	1	RE		10	250
19.08.06	47	54	92	144	37	62	21	NFS	1	BR		11	10
19.08.06	47	57	50	144	39	8	24	NFS	1	LO	BR	11	20
19.08.06	48	1	19	144	41	18	24	NFS	1	LO	BR	3	30
19.08.06	48	3	9	144	42	29	24	NFS	1	LO	BR	3	30
19.08.06	48	3	75	144	42	68	24	NFS	1	LO	RE	11	250
19.08.06	48	4	19	144	42	93	25	NFS	1	RE		11	30
19.08.06	48	4	36	144	43	4	23	NFS	1	RE		11	20
19.08.06	48	5	29	144	43	57	24	NFS	1	RE		11	300
19.08.06	48	5	84	144	43	88	24	NFS	2	RE		2	200
19.08.06	48	7	86	144	45	5	21	NFS	2	RE		11	250
19.08.06	48	8	44	144	45	40	21	NFS	3	RE		1	250
19.08.06	48	8	68	144	45	54	22	NFS	1	RE		11	300
19.08.06	48	9	34	144	45	94	21	NFS	1	RE		11	300
19.08.06	48	9	55	144	46	7	21	NFS	3	RE		12	250
19.08.06	48	10	3	144	46	36	21	NFS	6	RE		1	200
19.08.06	48	10	33	144	46	51	21	NFS	3	RE		1	300
19.08.06	48	10	60	144	46	68	21	NFS	1	RE		1	300
19.08.06	48	10	85	144	46	82	21	NFS	2	RE		1	400
19.08.06	48	10	85	144	46	82	21	NFS	3	OT		11	300
19.08.06	48	11	85	144	47	39	25	NFS	3	RE		2	150

19.08.06	48	12	32	144	47	64	25	NFS	3	RE		11	400
19.08.06	48	12	32	144	47	64	25	NFS	2	RE		11	300
19.08.06	48	12	69	144	47	83	19	NFS	6	RE		9	400
19.08.06	48	13	27	144	48	13	19	NFS	1	BR		9	70
19.08.06	48	13	71	144	48	34	19	NFS	2	RE		12	400
19.08.06	48	14	7	144	48	54	20	NFS	3	RE		2	800
19.08.06	48	14	65	144	48	86	21	NFS	1	RE		12	400
19.08.06	48	15	88	144	49	59	23	NFS	1	RE		1	600
19.08.06	48	16	38	144	49	90	22	NFS	1	RE		3	70
19.08.06	48	17	68	144	50	72	21	NFS	2	RE		3	350
19.08.06	48	18	8	144	50	98	22	NFS	1	RE		1	300
19.08.06	48	19	50	144	51	84	22	NFS	1	RE		9	250
19.08.06	48	20	60	144	52	48	21	NFS	3	LO	BR	12	250
19.08.06	48	22	21	144	53	37	20	NFS	1	LO	BR	11	10
19.08.06	48	22	62	144	53	58	19	NFS	2	BR		11	30
19.08.06	48	23	71	144	54	23	21	NFS	1	LO		9	30
19.08.06	48	24	41	144	54	65	21	NFS	25	BR	FE	2	300
19.08.06	48	24	41	144	54	65	21	NFS	1	LO		11	20
19.08.06	48	25	13	144	55	7	19	NFS	1	LO		11	250
19.08.06	48	25	46	144	55	24	19	NFS	6	LO		1	300
19.08.06	48	26	49	144	55	84	21	NFS	2	RE		11	600
19.08.06	48	27	63	144	56	49	19	NFS	4	RE		12	600
19.08.06	48	28	95	144	57	23	23	NFS	2	RE		11	400
19.08.06	48	29	63	144	57	59	22	NFS	2	LO		11	250
19.08.06	48	29	63	144	57	59	22	NFS	1	LO		11	600
19.08.06	48	30	41	144	59	99	346	NFS	1	SW		1	600
19.08.06	48	30	66	144	57	97	346	NFS	2	RE		11	300
19.08.06	48	31	58	144	57	68	345	NFS	2	RE		11	1200
19.08.06	48	32	81	144	57	18	347	NFS	1	RE		11	300
19.08.06	48	33	26	144	57	2	346	NFS	1	RE		11	300
19.08.06	48	33	67	144	56	88	345	NFS	2	SW		3	50
19.08.06	48	34	37	144	56	62	344	NFS	1	RE		1	400
19.08.06	48	34	37	144	56	62	344	NFS	1	RE		11	300
19.08.06	48	34	37	144	56	62	344	NFS	2	RE		1	800
19.08.06	48	35	0	144	56	38	348	NFS	3	RE		1	600
19.08.06	48	35	26	144	56	30	346	NFS	1	RE		1	600
19.08.06	48	35	53	144	56	21	348	NFS	2	RE		12	800
19.08.06	48	35	64	144	56	17	347	NFS	1	RE		11	600
19.08.06	48	35	90	144	56	8	347	NFS	1	RE		11	15
19.08.06	48	36	21	144	55	98	347	NFS	2	RE		11	50
19.08.06	48	36	55	144	55	87	347	NFS	1	RE		12	900
19.08.06	48	36	83	144	55	77	348	NFS	1	RE		1	400
19.08.06	48	36	83	144	55	77	348	NFS	1	RE		1	15
19.08.06	48	37	11	144	55	68	345	NFS	2	RE		11	900
19.08.06	48	37	11	144	55	68	345	NFS	1	LO		12	600
19.08.06	48	37	23	144	55	60	347	NFS	2	RE		11	150
19.08.06	48	37	66	144	55	48	348	NFS	2	SW		1	400
19.08.06	48	38	21	144	55	28	346	NFS	2	SW		1	150
19.08.06	48	38	60	144	55	13	346	NFS	1	SW		11	600
19.08.06	48	39	53	144	54	76	346	NFS	1	SW		1	800
19.08.06	48	40	47	144	54	39	345	NFS	2	RE		1	900
19.08.06	48	40	78	144	54	23	344	NFS	1	RE		11	1300

19.08.06	48	41	6	144	54	16	345	NFS	1	RE		2	50
19.08.06	48	41	72	144	53	90	345	NFS	1	RE		10	150
19.08.06	48	41	0	144	53	77	340	NFS	1	RE		11	700
19.08.06	48	42	36	144	53	62	345	NFS	1	LO		1	50
19.08.06	48	43	65	144	53	56	347	NFS	3	RE		1	900
19.08.06	48	46	55	144	53	20	348	NFS	1	RE		11	1300
19.08.06	48	44	50	144	52	87	347	NFS	2	RE		11	700
19.08.06	48	45	24	144	52	61	348	NFS	2	RE		1	1300
19.08.06	48	45	48	144	52	54	348	NFS	1	RE		11	800
19.08.06	48	46	27	144	52	27	348	NFS	1	RE		2	800
19.08.06	48	46	50	144	52	19	347	NFS	1	RE	BR	11	15
19.08.06	48	47	63	144	51	80	345	NFS	1	RE		1	1300
19.08.06	48	47	84	144	51	72	346	NFS	1	RE		10	50
19.08.06	48	48	71	144	51	41	347	NFS	1	LO		3	300
19.08.06	48	49	31	144	51	19	345	NFS	1	RE		11	800
19.08.06	48	50	10	144	50	89	345	NFS	1	RE		11	250
20.08.06	50	41	87	144	9	53	345	NFS	1	FE		10	350
20.08.06	50	43	82	144	8	77	345	NFS	1	SW		10	700
20.08.06	50	49	89	144	6	50	347	NFS	1	RE		10	600
20.08.06	51	33	36	144	1	96	358	NFS	1	FE		2	500
20.08.06	51	37	48	144	1	73	359	NFS	1	SW		2	30
29.08.06	52	30	98	143	26	34	140	NFS	1	LO	RE	2	20
11.10.06	48	53	91	144	49	31	177	NFS	1	LO		9	60
11.10.06	48	52	20	144	49	97	175	NFS	2	BR		10	150
11.10.06	48	51	21	144	50	35	177	NFS	1	LO		11	50
11.10.06	48	50	88	144	50	48	179	NFS	1	LO	SW	12	50
11.10.06	48	50	41	144	50	63	178	NFS	1	LO		12	50
11.10.06	48	50	20	144	50	71	178	NFS	1	LO		1	60
11.10.06	48	49	99	144	50	78	178	NFS	2	LO		1	50
11.10.06	48	49	64	144	50	90	178	NFS	2	LO		12	70
11.10.06	48	49	48	144	50	95	178	NFS	1	LO		12	100
11.10.06	48	49	14	144	51	8	178	NFS	3	LO		2	70
11.10.06	48	48	78	144	51	21	178	NFS	1	LO		1	100
11.10.06	48	48	62	144	51	27	178	NFS	1	LO		1	30
11.10.06	48	48	40	144	51	35	178	NFS	2	SW		12	70
11.10.06	48	48	13	144	51	45	176	NFS	4	SW	BR	12	100
11.10.06	48	47	99	144	51	52	178	NFS	4	SW		9	150
11.10.06	48	47	77	144	51	59	176	NFS	4	SW		12	100
11.10.06	48	47	60	144	51	66	178	NFS	3	SW		9	120
11.10.06	48	47	38	144	51	74	178	NFS	2	SW		2	200
11.10.06	48	47	26	144	51	80	177	NFS	6	LO		12	70
11.10.06	48	47	7	144	51	88	178	NFS	1	LO	SW	2	40
11.10.06	48	46	83	144	51	96	178	NFS	1	LO		2	30
11.10.06	48	46	49	144	52	9	178	NFS	1	SW		2	200
11.10.06	48	45	92	144	52	29	178	NFS	2	SW		2	200
11.10.06	48	45	78	144	52	34	178	NFS	3	LO		9	50
11.10.06	48	45	58	144	52	41	178	NFS	3	RE		11	70
11.10.06	48	45	31	144	52	50	178	NFS	1	LO		12	100
11.10.06	48	45	19	144	52	55	178	NFS	1	LO		9	50
11.10.06	48	44	80	144	52	69	180	NFS	1	LO		1	100
11.10.06	48	44	65	144	52	75	178	NFS	1	LO		2	50
11.10.06	48	44	15	144	52	93	178	NFS	1	LO		3	50

11.10.06	48	43	91	144	53	2	178	NFS	1	LO		12	30
11.10.06	48	43	69	144	53	9	178	NFS	1	LO		1	30
11.10.06	48	43	43	144	53	19	178	NFS	1	RE		12	100
11.10.06	48	43	6	144	53	33	178	NFS	2	LO		1	100
11.10.06	48	42	80	144	53	43	178	NFS	1	LO		1	150
11.10.06	48	42	60	144	53	51	178	NFS	1	LO		12	70
11.10.06	48	42	46	144	53	56	178	NFS	1	RE		9	120
11.10.06	48	41	87	144	53	80	178	NFS	1	SW		12	150
11.10.06	48	41	50	144	53	92	178	NFS	2	RE	LO	12	200
11.10.06	48	41	19	144	54	4	178	NFS	1	LO		12	100
11.10.06	48	40	66	144	54	25	178	NFS	1	LO	SW	2	200
11.10.06	48	40	35	144	54	36	178	NFS	3	LO		2	30
11.10.06	48	40	12	144	54	44	178	NFS	1	LO		1	100
11.10.06	48	39	97	144	54	50	178	NFS	2	LO		9	70
11.10.06	48	39	66	144	54	61	178	NFS	1	LO		11	150
11.10.06	48	39	4	144	54	83	178	NFS	2	LO		1	100
11.10.06	48	38	37	144	55	9	178	NFS	2	LO		12	30
11.10.06	48	38	8	144	55	20	178	NFS	1	LO		1	50
11.10.06	48	37	90	144	55	27	178	NFS	1	LO		2	100
11.10.06	48	37	30	144	55	51	178	NFS	1	LO	SW	12	40
11.10.06	48	36	97	144	55	63	178	NFS	1	LO		12	60
11.10.06	48	36	78	144	55	71	178	NFS	1	SW		2	60
11.10.06	48	36	50	144	55	82	178	NFS	1	LO		10	100
11.10.06	48	36	0	144	56	0	178	NFS	1	LO		2	300
11.10.06	48	35	68	144	56	11	178	NFS	1	LO		2	100
11.10.06	48	35	22	144	56	29	168	NFS	2	LO		1	100
11.10.06	48	34	95	144	56	38	165	NFS	2	SW		12	30
11.10.06	48	33	41	144	56	95	166	NFS	1	SW		9	40
11.10.06	48	33	12	144	57	7	165	NFS	1	LO		1	50
11.10.06	48	32	54	144	57	28	167	NFS	1	SW		7	50
11.10.06	48	31	48	144	57	69	167	NFS	1	SW		1	60
11.10.06	48	31	18	144	57	79	166	NFS	1	SW		9	60
11.10.06	48	27	1	144	55	96	201	NFS	1	SW		10	20
11.10.06	48	26	8	144	55	43	202	NFS	1	LO		1	70
11.10.06	48	25	33	144	55	1	201	NFS	1	SW		12	80
11.10.06	48	24	29	144	54	41	199	NFS	1	SW		1	150
11.10.06	48	23	59	144	54	2	200	NFS	1	SW		1	100
11.10.06	48	22	72	144	53	46	206	NFS	1	SW		12	50
11.10.06	48	15	24	144	49	22	203	NFS	2	SW		10	70
11.10.06	48	14	15	144	48	57	201	NFS	1	SW		11	80
11.10.06	48	3	72	144	42	53	208	NFS	1	LO		2	100
11.10.06	48	1	74	144	41	51	208	NFS	1	LO		2	60
11.10.06	47	49	48	144	34	30	210	NFS	1	RE		11	30
12.10.06	45	48	71	141	20	46	270	NFS	2	RE	LO	12	160
21.06.06	52	2	75	143	33	19	388	RS	1	LO	LO	1	300
25.06.06	53	6	11	143	28	37	163	RS	1	LO	SW	11	300
25.06.06	53	3	26	143	25	2	248	RS	1	LO	SW	11	150
26.06.06	53	30	76	143	11	61	170	RS	1	LO	LO	1	300
26.06.06	53	23	77	143	16	19	162	RS	1	SW	SW	11	500
26.06.06	53	22	84	143	16	70	163	RS	1	SW	SW	10	800
27.06.06	53	8	3	143	18	3	177	RS	1	LO	SW	12	800
27.06.06	53	6	19	143	18	88	173	RS	1	SW	SW	12	60

27.06.06	52	39	74	143	21	28	181	RS	1	SW	SW	11	60
30.06.06	52	14	18	143	49	89	9	RS	1	SW	SW	3	500
30.06.06	52	10	99	143	37	1	91	RS	1	SW	SW	11	300
30.06.06	52	7	48	143	42	51	270	RS	2	SW	SW	1	40
30.06.06	52	7	50	143	39	28	269	RS	1	SW	SW	11	250
30.06.06	52	3	99	143	38	4	92	RS	1	SW	SW	11	100
30.06.06	52	4	1	143	42	23	90	RS	1	LO	SW	10	300
30.06.06	52	3	98	143	44	18	91	RS	1	LO	SW	10	50
30.06.06	51	53	50	143	39	98	267	RS	1	SW	SW	11	30
30.06.06	51	50	12	143	36	40	93	RS	1	SW	SW	1	500
30.06.06	51	49	98	143	43	56	90	RS	1	LO	LO	10	600
30.06.06	51	49	82	143	43	83	269	RS	1	LO	SW	3	50
01.07.06	52	40	93	143	22	85	0	RS	1	SW	SW	11	20
02.07.06	52	35	78	143	22	65	3	RS	1	SW	TH	11	30
10.07.06	52	45	41	143	25	5	292	RS	1	SW	SW	11	15
11.07.06	52	52	5	143	30	79	319	RS	1	LO	SW	1	420
14.07.06	52	50	11	143	30	20	175	RS	1	SW	SW	4	15
16.07.06	52	4	90	143	27	14	221	RS	1	LO	FE	9	600
17.07.06	52	14	96	143	25	33	305	RS	1	SW	SW	3	300
17.07.06	52	40	8	143	23	50	311	RS	1	SW	LO	2	200
18.07.06	52	51	69	143	35	25	282	RS	2	LO	SW	12	315
18.07.06	52	52	21	143	29	51	247	RS	1	SW	SW	3	450
22.07.06	51	20	79	143	39	32	287	RS	1	SW	FE	11	598
23.07.06	52	50	30	143	25	92	181	RS	2	FE	FE	2	350
23.07.06	52	49	28	143	25	91	195	RS	1	SW	SW	2	412
23.07.06	52	48	59	143	25	91	196	RS	1	SW	SW	12	300
23.07.06	52	47	52	143	25	90	195	RS	3	SW	SW	10	200
23.07.06	52	42	55	143	25	82	181	RS	1	SW	SW	2	200
23.07.06	52	39	66	143	24	44	213	RS	1	SW	SW	2	450
23.07.06	52	40	60	143	21	63	0	RS	1	SW	SW	10	150
24.07.06	53	8	39	143	19	91	167	RS	1	SW	SW	1	272
24.07.06	52	57	19	143	22	31	170	RS	1	SW	TH	1	40
24.07.06	52	56	56	143	22	52	170	RS	1	LO	SW	10	600
24.07.06	52	54	43	143	23	21	172	RS	1	SW	TH	2	100
24.07.06	52	41	15	143	24	17	255	RS	1	SW	SW	12	70
24.07.06	52	42	11	143	23	35	22	RS	1	SW	SW	11	200
24.07.06	52	45	10	143	27	31	37	RS	1	SW	SW	10	10
25.07.06	52	41	22	143	24	36	185	RS	1	SW	TH	2	232
25.07.06	52	40	0	143	24	37	181	RS	1	SW	TH	1	232
25.07.06	52	39	34	143	24	39	181	RS	1	SW	SW	1	300
29.07.06	52	35	98	143	31	52	155	RS	1	SW	TH	11	400
04.08.06	52	47	45	143	22	95	1	RS	1	LO	SW	3	50
11.08.06	52	18	3	143	40	33	272	RS	1	SW	LO	11	40
11.08.06	52	20	0	143	30	1	1	RS	1	SW	TH	12	20
11.08.06	52	21	51	143	39	91	92	RS	1	SW	SW	2	374
11.08.06	52	27	17	143	30	2	357	RS	1	LO	SW	10	374
11.08.06	52	28	49	143	51	81	91	RS	1	LO	SW	9	50
11.08.06	52	31	92	143	34	70	261	RS	1	LO	SW	1	232
11.08.06	52	31	54	143	30	42	265	RS	1	SW	TH	12	100
16.01.00	52	13	9	143	38	53	30	RS	1	LO	SW	12	300
18.08.06	52	39	89	143	23	78	325	RS	1	FE	SW	7	200
18.08.06	52	45	2	143	25	12	120	RS	1	SW	SW	3	400

18.08.06	52	47	49	143	31	0	40	RS	1	SW	SW	2	30
25.08.06	52	3	99	143	32	97	270	RS	2	LO	LO	10	374
25.08.06	52	15	56	143	31	28	77	RS	1	SW	TH	11	300
25.08.06	52	15	49	143	39	65	87	RS	1	SW	TH	2	30
25.08.06	52	14	0	143	48	53	211	RS	1	LO	SI	1	40
25.08.06	51	55	89	143	29	18	270	RS	1	SW	TH	1	15
28.08.06	52	16	33	143	44	66	10	RS	1	SW	FE	12	703
31.08.06	53	24	50	143	12	69	166	RS	1	SW	SW	11	30
31.08.06	53	22	24	143	13	80	163	RS	1	SW	SW	2	80
31.08.06	53	19	84	143	15	0	165	RS	1	LO	SW	11	232
01.09.06	53	11	15	143	19	17	271	RS	1	SW	TH	11	50
01.09.06	53	11	9	143	18	27	266	RS	1	LO	SW	9	315
01.09.06	53	16	28	143	19	76	347	RS	1	LO	LO	10	374
14.09.06	52	45	76	143	24	35	316	RS	1	LO	SW	10	50
22.08.06	53	11	87	143	20	93	120	RS	1	LO		12	190
22.08.06	53	11	87	143	20	93	120	RS	1	SW		3	450
22.08.06	53	11	45	143	22	1	192	RS	1	SW		11	190
22.08.06	53	11	26	143	22	47	127	RS	1	SW		3	450
22.08.06	53	10	83	143	23	26	306	RS	1	LO		10	450
22.08.06	53	11	11	143	22	7	290	RS	1	NO		12	850
23.08.06	52	34	84	143	23	3	183	RS	1	LO		12	350
25.08.06	51	37	25	143	35	11	359	RS	1	SW		12	600
25.08.06	51	38	86	143	35	8	358	RS	1	SW		10	150
25.08.06	52	7	80	143	35	5	357	RS	1	SW		12	370
25.08.06	52	9	93	143	34	92	358	RS	1	SW		2	370
25.08.06	52	12	75	143	34	98	355	RS	1	SW		10	270
25.08.06	52	20	7	143	34	99	359	RS	1	LO		12	450
26.08.06	52	51	57	143	23	85	355	RS	1	SW		3	100
01.10.06	53	20	56	143	16	29	170	RS	1	SW		10	100
12.10.06	45	51	19	142	22	70	268	PWSD	1	FD		11	50
12.10.06	45	50	66	142	17	26	262	PWSD	3	BR		12	50
12.10.06	45	48	95	141	35	89	270	PWSD	1	FD		12	30
07.07.06	52	44	27	143	24	31	24	SL	1	LO	SW	5	100
09.07.06	52	49	56	143	24	80	350	SL	1	SW	SW	11	320
10.07.06	53	20	65	143	5	84	195	SL	1	LO	SW	1	600
23.07.06	53	1	26	143	19	1	353	SL	1	LO	SW	10	460
31.07.06	53	34	7	143	6	41	339	SL	1	LO	TH	2	30
03.08.06	52	26	58	143	36	39	193	SL	1	FE	TH	3	600
04.08.06	51	55	20	143	37	61	256	SL	1	LO	FE	7	20
05.08.06	52	53	95	143	23	99	21	SL	1	FE	LO	11	200
16.01.00	52	43	67	143	28	55	123	SL	3	SW	SW	3	520
17.01.00	51	56	3	143	30	58	133	SL	1	LO	SW	1	100
17.01.00	52	21	26	143	43	43	351	SL	1	LO	FE	11	100
29.08.06	52	17	21	143	22	6	190	SL	1	LO	BR	12	315
01.09.06	53	4	86	143	20	1	45	SL	1	LO	SW	12	100
25.09.06	46	6	2	143	38	0	226	SL	4	FD	TH	3	600
25.09.06	45	57	35	143	18	0	260	SL	1	FD	FD	2	300
24.08.06	53	52	26	143	23	20	250	SL	1	RE		12	600
30.09.06	52	38	36	143	21	27	182	SL	1	SW		2	50
20.06.06	50	55	18	143	57	3	335	LS	1	SW	SW	10	320
20.06.06	50	58	21	143	48	68	336	LS	1	LO	SW	1	300
20.06.06	51	13	73	143	36	55	340	LS	1	LO	SW	1	200

20.06.06	51	21	2	143	31	84	355	LS	1	SW	SW	9	600
21.06.06	52	4	43	143	34	89	85	LS	1	SW	SW	10	250
21.06.06	52	6	40	143	32	19	310	LS	1	SW	SW	11	80
21.06.06	52	8	7	143	28	53	308	LS	1	SW	SW	12	30
21.06.06	52	10	8	143	24	50	309	LS	1	LO	SW	12	40
21.06.06	52	12	60	143	19	34	307	LS	1	LO	SW	12	50
21.06.06	52	13	20	143	18	7	307	LS	1	SW	SW	10	150
21.06.06	52	16	25	143	20	80	95	LS	1	SW	SW	12	100
21.06.06	52	24	3	143	28	72	35	LS	1	SW	SW	9	150
26.06.06	53	34	83	143	5	82	348	LS	2	LO	SW	6	120
27.06.06	53	4	40	143	19	22	172	LS	1	SW	SW	2	200
27.06.06	53	1	19	143	19	85	172	LS	1	SW	SW	11	300
27.06.06	52	53	26	143	21	47	172	LS	1	SW	SW	2	150
27.06.06	53	27	27	143	13	96	338	LS	1	LO	LO	11	50
29.06.06	52	25	83	143	33	22	340	LS	1	LO	SW	11	30
29.06.06	52	43	11	143	22	74	247	LS	1	LO		2	
29.06.06	52	41	0	143	24	83	150	LS	1	SW	SW	11	30
04.07.06	51	27	56	143	31	30	159	LS	1	LO	SW	11	300
05.07.06	51	23	41	143	31	76	2	LS	1	LO	FE	9	300
09.07.06	52	53	70	143	22	34	354	LS	1	LO	LO	3	300
09.07.06	52	59	23	143	21	32	346	LS	1	LO	LO	3	450
11.07.06	52	52	63	143	28	72	176	LS	1	LO	SW	1	420
11.07.06	52	52	41	143	31	29	307	LS	1	LO	FE	12	110
14.07.06	52	50	10	143	30	19	169	LS	2	LO	SI	12	300
15.07.06	52	49	72	143	29	99	72	LS	1	LO	FE	11	460
15.07.06	52	49	75	143	30	0	152	LS	1	FE	SW	1	200
15.07.06	52	49	75	143	30	0	157	LS	1	SW	SW	1	600
15.07.06	52	49	75	143	30	1	162	LS	1	SW	LO	11	15
16.07.06	52	7	62	143	31	30	225	LS	1	SW	SW	9	250
16.07.06	52	7	21	143	30	70	222	LS	1	SW	SW	12	410
16.07.06	52	2	37	143	23	36	226	LS	1	FE	SW	3	460
16.07.06	52	1	36	143	21	80	225	LS	3	FE	FE	1	1080
16.07.06	52	0	6	143	19	80	227	LS	3	FE	FE	9	370
16.07.06	52	0	6	143	19	80	227	LS	2	FE	FE	2	520
16.07.06	51	58	90	143	18	1	229	LS	10	FE	FE	2	340
16.07.06	51	58	17	143	16	93	228	LS	2	LO	SW	12	460
16.07.06	51	57	5	143	15	12	228	LS	5	SW	FE	3	412
16.07.06	51	56	26	143	17	5	97	LS	2	FE	FE	11	370
16.07.06	51	55	89	143	20	7	96	LS	3	FE	FE	1	460
16.07.06	51	55	89	143	20	7	96	LS	2	FE	FE	10	370
16.07.06	51	54	1	143	37	65	98	LS	1	SW	SW	8	300
16.07.06	51	52	25	143	40	56	256	LS	1	SW	SW	10	460
16.07.06	51	52	29	143	36	25	177	LS	1	SW	FE	4	1500
16.07.06	51	58	12	143	27	71	314	LS	2	FE	FE	1	1500
16.07.06	51	58	93	143	26	53	313	LS	1	FE	SW	9	1080
16.07.06	52	0	60	143	23	88	315	LS	1	SW	LO	12	200
17.07.06	52	35	8	143	28	13	327	LS	1	SW	SW	2	230
18.07.06	52	52	59	143	26	80	10	LS	2	FE	FE	12	315
18.07.06	52	53	16	143	20	30	102	LS	2	FE	FE	9	460
18.07.06	52	42	16	143	22	65	177	LS	1	SW	SW	1	460
18.07.06	52	50	31	143	23	2	143	LS	1	SW	SW	4	500
18.07.06	52	49	3	143	24	81	138	LS	1	SW	SW	4	200

18.07.06	52	51	96	143	28	20	250	LS	1	SW	SW	12	200
22.07.06	51	22	50	143	32	78	259	LS	1	SW	LO	11	250
22.07.06	51	37	16	143	30	63	4	LS	1	SW	SW	9	460
23.07.06	52	50	31	143	25	92	181	LS	2	SW	SW	4	600
23.07.06	52	44	75	143	25	89	195	LS	1	SW	LO	2	150
23.07.06	53	3	83	143	19	21	351	LS	2	FE	FE	3	400
23.07.06	53	26	3	143	10	91	341	LS	1	SW	LO	10	180
23.07.06	53	31	15	143	8	0	343	LS	1	SW	LO	11	412
24.07.06	53	9	48	143	19	53	169	LS	2	LO	SW	12	232
24.07.06	53	8	40	143	19	91	167	LS	1	SW	SW	1	315
24.07.06	53	6	41	143	20	62	167	LS	1	SW	SW	1	520
24.07.06	53	5	32	143	20	62	143	LS	2	LO	SW	12	203
24.07.06	52	55	81	143	22	77	170	LS	1	SW	SW	3	50
24.07.06	52	41	28	143	22	93	209	LS	1	SW	SW	1	600
24.07.06	52	45	82	143	28	43	65	LS	1	LO	FE	12	520
25.07.06	52	45	39	143	25	36	268	LS	1	SW	LO	12	598
25.07.06	52	37	33	143	24	42	181	LS	1	LO	FE	12	460
25.07.06	52	20	86	143	27	87	253	LS	2	SW	FE	1	460
26.07.06	52	29	20	143	30	40	12	LS	1	SW	LO	10	800
03.08.06	53	3	7	143	22	79	173	LS	1	LO	SW	11	100
04.08.06	52	53	14	143	20	64	253	LS	1	LO	SW	2	200
05.08.06	52	53	96	143	23	99	21	LS	1	FE	SW	11	50
06.08.06	52	50	99	143	27	92	272	LS	1	LO	SW	10	100
07.08.06	52	52	58	143	23	5	350	LS	1	LO	TH	11	30
08.08.06	53	12	6	143	19	60	174	LS	1	SW	TH	10	15
11.08.06	52	21	5	143	22	96	64	LS	1	LO	SW	11	703
11.08.06	52	32	1	143	38	68	263	LS	1	LO	SW	12	272
11.08.06	52	31	75	143	31	96	249	LS	1	SW	LO	4	147
11.08.06	52	38	36	143	47	97	359	LS	1	LO	SW	12	120
16.01.00	52	42	47	143	22	78	181	LS	1	LO	TH	10	10
18.08.06	52	47	91	143	31	80	45	LS	1	SW	SW	10	150
25.08.06	52	4	23	143	29	91	17	LS	1	SW	SW	1	460
25.08.06	52	8	50	143	31	35	90	LS	2	SW	SW	10	520
25.08.06	52	8	48	143	33	12	91	LS	1	LO	SW	12	703
27.08.06	51	57	82	143	42	0	130	LS	1	SW	SW	11	315
31.08.06	53	12	87	143	17	16	173	LS	1	SW	FE	9	374
01.09.06	53	9	64	143	20	42	79	LS	1	SW	SW	2	460
01.09.06	53	11	21	143	19	26	57	LS	2	SW	SW	10	303
01.09.06	53	13	94	143	20	59	346	LS	1	LO	SW	2	272
01.09.06	53	23	60	143	16	61	74	LS	2	SW	SW	12	30
07.09.06	53	8	35	143	22	52	343	LS	1	SW	SW	10	854
11.09.06	52	52	76	143	21	56	0	LS	1	SW	SW	8	50
11.09.06	52	55	22	143	21	8	0	LS	1	SW	SW	9	30
11.09.06	53	0	88	143	19	91	0	LS	1	SW	TH	11	30
13.09.06	52	29	18	143	21	0	15	LS	1	LO	LO	10	272
17.09.06	51	57	59	143	22	89	201	LS	2	LO	SW	12	272
23.09.06	52	39	58	143	31	8	260	LS	1	SW	SW	4	700
20.08.06	52	8	54	143	58	42	345	LS	1	LO		12	15
26.08.06	52	51	4	143	23	41	220	LS	1	SW		2	10
27.08.06	52	51	4	143	23	39	165	LS	1	SW		5	300
31.08.06	53	3	72	143	25	15	90	LS	1	SW	LO	12	200
01.09.06	52	48	96	143	28	12	140	LS	1	SW		1	600

01.09.06	52	46	17	143	28	6	165	LS	1	SW	LO	11	200
01.09.06	52	45	41	143	25	66	170	LS	1	LO		12	150
01.09.06	52	46	71	143	26	61	50	LS	1	SW	LO	11	50
01.09.06	52	47	24	143	27	68	50	LS	1	LO		2	450
01.09.06	52	49	65	143	32	78	50	LS	2	LO		12	100
01.09.06	52	51	10	143	34	82	315	LS	1	LO		10	100
01.09.06	52	56	85	143	26	13	320	LS	1	LO		12	350
01.09.06	53	0	31	143	26	80	130	LS	1	SW		12	150
01.09.06	53	3	48	143	20	36	315	LS	1	SW		1	160
11.09.06	53	30	67	143	10	96	170	LS	1	SW		1	20
12.09.06	51	23	93	143	37	28	115	LS	1	SW	LO	2	1000
13.09.06	52	34	13	143	28	21	354	LS	1	SW		3	300
18.09.06	52	58	51	143	28	63	318	LS	1	SW		2	30
23.09.06	53	49	52	142	59	89	163	LS	1	LO		1	160
27.09.06	53	7	79	143	25	3	163	LS	1	SW		3	300
29.09.06	52	50	98	143	22	62	340	LS	1	LO		1	270
01.10.06	52	51	35	143	24	33	169	LS	1	SW		2	375
01.10.06	52	50	62	143	24	56	169	LS	1	SW		12	230
01.10.06	52	50	62	143	24	56	169	LS	1	SW		12	700
01.10.06	52	49	42	143	24	95	151	LS	1	SW		1	300
01.10.06	52	49	42	143	24	95	151	LS	1	SW		1	460
06.10.06	52	44	83	143	21	85	183	LS	1	SW		12	460
07.10.06	52	14	50	143	45	39	90	LS	1	SW		7	210
29.07.06	52	42	4	143	26	99	159	UMM	1	NO	NO	1	200
24.06.06	52	52	93	143	24	26	43	UW	1	BR	BR	1	1000
20.08.06	52	0	97	144	0	24	356	UW	1	TH		1	600

Appendix 2.

Data on gray whales and other cetaceans recorded during onshore surveys of the waters of the Piltun area in June-October 2006

1 - Date 2 - Survey station No. 3 - Cetacean species (GW – gray whale, MW – minke whale, HP – harbor porpoise, KW – killer whale)
4 - Number of animals 5 - Latitude 6 - Longitude
7 - Animal's distance from shore (perpendicular)

Odoptu-Piltun Section

1	2	3	4	5	6	7
30.VI	3	GW	1	53,24949	143,39924	5240
30.VI	4	GW	1	53,17977	143,31122	1029
30.VI	6	GW	1	53,09861	143,30814	1017
30.VI	7	GW	1	53,02146	143,33791	1869
30.VI	7	GW	1	52,99184	143,35240	1670
30.VI	7	GW	2	52,97572	143,39500	3909
30.VI	7	GW	1	52,96209	143,36439	1939
30.VI	7	GW	1	52,96190	143,35745	1609
30.VI	7	GW	1	52,95427	143,36367	1955
30.VI	7	GW	1	52,94949	143,36455	2045
30.VI	7	GW	1	52,91850	143,35536	1898
30.VI	7	GW	1	52,90242	143,33445	833
30.VI	8	GW	1	52,94225	143,33354	1122
30.VI	8	GW	1	52,90021	143,37345	1878
30.VI	8	GW	1	52,87026	143,37622	1691
30.VI	8	GW	2	52,86054	143,37322	1564
30.VI	8	GW	1	52,84836	143,37946	2015
30.VI	8	GW	1	52,82369	143,36220	1119
30.VI	8	GW	3	52,82204	143,35553	743
1.VII	8	GW	1	52,84325	143,38428	2077
1.VII	8	GW	1	52,86463	143,37685	1484
1.VII	8	GW	1	52,86410	143,40479	3118
1.VII	5	GW	1	53,08410	143,32014	1590
1.VII	5	GW	1	53,09757	143,32510	1664
1.VII	3	GW	1	53,12897	143,29720	882
1.VII	3	GW	1	53,14428	143,30087	1148
1.VII	3	GW	1	53,17384	143,35418	3293
1.VII	3	GW	1	53,24146	143,32967	1985
1.VII	3	GW	1	53,37306	143,21341	1145
1.VII	2	GW	1	53,38060	143,19436	457
1.VII	2	GW	1	53,41483	143,22382	2427
1.VII	2	GW	2	53,41121	143,20661	1655
1.VII	1	GW	1	53,40359	143,25053	3059
1.VII	1	GW	1	53,41553	143,27928	5343
1.VII	1	GW	1	53,43619	143,27298	5554
2.VII	1	GW	1	53,44612	143,15645	413
2.VII	2	GW	1	53,25484	143,25664	783
2.VII	3	GW	1	53,29232	143,28627	1225
2.VII	3	GW	1	53,28772	143,28463	1108
2.VII	3	GW	1	53,26841	143,30307	1315
2.VII	3	GW	2	53,27313	143,30178	1329

1	2	3	4	5	6	7
2.VII	3	GW	2	53,26553	143,31568	1636
2.VII	3	GW	2	53,21014	143,25156	1533
2.VII	4	GW	1	53,24381	143,26085	1531
5.VII	2	GW	1	53,39565	143,23659	623
5.VII	2	GW	1	53,38935	143,23804	1966
5.VII	2	GW	1	53,31212	143,25331	1798
8.VII	1	HP	3	53,42850	143,16403	898
8.VII	1	GW	1	53,42570	143,21602	1731
8.VII	2	GW	1	53,42271	143,20046	1977
8.VII	2	GW	1	53,32925	143,25791	1138
8.VII	2	GW	1	53,31260	143,28116	1861
8.VII	2	GW	1	53,30529	143,33460	4535
8.VII	3	GW	1	53,17563	143,31996	1756
15.VII	2	GW	1	53,39537	143,22266	1489
15.VII	2	GW	1	53,38217	143,27175	2718
16.VII	2	MW	1	53,38232	143,25748	1415
16.VII	2	MW	1	53,29057	143,26365	1005
16.VII	2	GW	1	53,23756	143,27316	3294
16.VII	2	GW	1	53,24748	143,26220	3782
16.VII	3	GW	4	53,24794	143,36402	1631
16.VII	3	GW	1	53,20730	143,37329	2172
16.VII	3	GW	2	53,21589	143,31955	980
16.VII	3	GW	3	53,18818	143,33385	1566
16.VII	4	GW	1	53,25824	143,26199	3006
16.VII	4	MW	1	53,21271	143,28605	2765
16.VII	4	GW	1	53,21003	143,31567	1180
16.VII	4	GW	1	53,21106	143,34933	1247
16.VII	4	GW	1	53,20657	143,34686	1146
16.VII	4	GW	1	53,14974	143,32026	1103
16.VII	4	GW	1	53,12193	143,31663	922
16.VII	4	GW	1	53,10785	143,30986	996
16.VII	4	GW	1	53,09921	143,30810	983
16.VII	5	GW	1	53,18117	143,27946	1215
16.VII	5	GW	1	53,18106	143,28109	1510
16.VII	5	GW	1	53,17495	143,28435	1385
16.VII	5	GW	1	53,17423	143,29012	1365
16.VII	5	GW	1	53,13658	143,31972	1593
16.VII	5	GW	1	53,10634	143,32037	1222
16.VII	5	GW	2	53,10148	143,31897	1384
16.VII	5	GW	2	53,06561	143,31478	1671
16.VII	6	GW	1	53,10714	143,30925	1316

16.VII	6	GW	1	53,10025	143,31840	1560
16.VII	6	GW	1	53,07559	143,34301	1529
16.VII	6	GW	1	53,02294	143,33853	1989
16.VII	7	HP	2	52,98742	143,31216	788
16.VII	7	GW	1	52,94583	143,35484	1311
16.VII	7	GW	1	52,92383	143,34976	1357
16.VII	8	GW	1	52,90403	143,37480	1491
17.VII	8	GW	1	52,83719	143,35516	1218
17.VII	8	GW	2	52,84207	143,36820	655
17.VII	8	GW	1	52,84258	143,36931	1575
17.VII	8	MW	1	52,90082	143,35673	1373
17.VII	8	GW	1	52,92286	143,35814	1256
17.VII	8	GW	1	52,92505	143,35059	1123
17.VII	8	GW	1	52,91146	143,34117	1749
17.VII	7	MW	1	52,93918	143,33092	1510
17.VII	7	MW	1	52,98082	143,36585	2723
17.VII	7	MW	1	52,98127	143,33319	1001
17.VII	6	GW	1	53,03767	143,34886	1586
17.VII	6	GW	2	53,05774	143,34319	3339
17.VII	5	GW	1	53,08119	143,31274	3173
17.VII	5	GW	1	53,11788	143,31515	3296
17.VII	4	GW	1	53,11305	143,32600	3950
17.VII	4	GW	1	53,22361	143,30477	1101
17.VII	4	GW	1	53,25054	143,31277	641
17.VII	3	GW	1	53,17979	143,29935	788
17.VII	3	GW	1	53,15812	143,31419	1109
17.VII	3	GW	2	53,23566	143,36421	1263
17.VII	3	GW	1	53,23947	143,36057	1978
17.VII	3	GW	2	53,23424	143,36338	1566
17.VII	3	GW	1	53,28623	143,36671	1837
17.VII	3	GW	1	53,36715	143,22023	660
17.VII	3	GW	2	53,35709	143,21267	1755
17.VII	3	GW	1	53,37960	143,19886	1279
17.VII	2	GW	1	53,29057	143,26365	1927
17.VII	2	GW	1	53,30641	143,26501	1945
17.VII	2	GW	1	53,34556	143,27800	1281
17.VII	2	GW	1	53,34558	143,26628	909
17.VII	2	GW	1	53,41078	143,21328	1360
17.VII	2	GW	2	53,39478	143,19207	2431
17.VII	1	GW	1	53,39658	143,22742	777
17.VII	1	GW	1	53,40752	143,21455	824
18.VII	1	GW	1	53,45328	143,20018	724
18.VII	2	GW	1	53,29862	143,28719	737
18.VII	2	GW	2	53,28654	143,26979	806
18.VII	2	GW	2	53,29260	143,25618	1073
18.VII	2	GW	2	53,28335	143,27194	1322
18.VII	2	GW	1	53,26993	143,29511	1477
18.VII	2	GW	1	53,28599	143,25410	1581
18.VII	2	GW	2	53,28660	143,25552	2421
18.VII	3	GW	1	53,35334	143,21853	1800
18.VII	3	GW	3	53,34985	143,22140	4228
18.VII	3	GW	1	53,34989	143,22392	4221
18.VII	3	GW	1	53,34651	143,23619	1143
18.VII	3	GW	1	53,34593	143,24586	1063
18.VII	3	GW	1	53,34892	143,24908	2121
18.VII	3	MW	1	53,31387	143,33796	2389

18.VII	3	GW	1	53,28959	143,30214	1146
18.VII	3	GW	1	53,29510	143,32561	1601
18.VII	3	GW	1	53,28074	143,31484	1219
18.VII	3	GW	1	53,27796	143,37584	1618
18.VII	3	GW	1	53,27641	143,37625	1944
18.VII	4	GW	1	53,25806	143,26656	1138
18.VII	4	GW	1	53,25816	143,26428	1458
18.VII	4	GW	2	53,26409	143,28500	1670
18.VII	4	GW	1	53,26306	143,29233	788
18.VII	4	GW	1	53,10785	143,30986	3674
18.VII	5	GW	1	53,15073	143,31567	5190
18.VII	5	GW	1	53,12268	143,31652	446
18.VII	5	GW	1	53,10809	143,32604	3642
18.VII	5	GW	1	53,10307	143,33156	1594
18.VII	6	GW	1	53,10740	143,30768	1036
18.VII	6	GW	1	53,11305	143,31202	1170
18.VII	6	GW	2	53,04043	143,35050	1077
18.VII	6	GW	1	53,00170	143,32091	1180
18.VII	7	GW	1	52,98385	143,39351	928
18.VII	7	GW	1	52,94589	143,41241	955
18.VII	7	GW	1	52,95513	143,32531	905
18.VII	8	GW	2	52,89197	143,40697	586
18.VII	8	GW	1	52,84476	143,37357	528
18.VII	8	GW	1	52,84406	143,36088	839
18.VII	8	GW	1	52,84012	143,36364	1331
18.VII	8	GW	1	52,84450	143,36192	826
18.VII	8	GW	2	52,83303	143,36205	1130
18.VII	8	GW	2	52,83136	143,35646	2950
24.VII	8	GW	1	52,83757	143,35641	3189
24.VII	8	GW	1	52,83719	143,35516	3487
24.VII	8	GW	1	52,83519	143,34747	1512
24.VII	8	GW	2	52,83490	143,34615	1263
24.VII	8	GW	1	52,82242	143,35722	1174
24.VII	8	GW	1	52,83348	143,36341	1913
24.VII	8	GW	1	52,84913	143,35515	1725
24.VII	8	GW	1	52,86331	143,36403	1776
24.VII	8	GW	1	52,86905	143,39746	1839
24.VII	8	GW	1	52,87990	143,39973	827
24.VII	8	GW	1	52,90929	143,39520	2449
24.VII	8	GW	1	52,93124	143,34981	1966
24.VII	8	GW	1	52,93238	143,34387	1559
24.VII	7	GW	1	52,90368	143,34056	1316
24.VII	7	GW	1	52,91850	143,35536	1503
24.VII	7	GW	1	52,93699	143,35467	1616
24.VII	7	GW	1	52,97093	143,36029	1378
24.VII	7	GW	1	53,00574	143,34736	992
24.VII	6	GW	1	52,98505	143,31932	869
24.VII	4	GW	2	53,25372	143,30008	1318
24.VII	4	GW	1	53,24908	143,29280	1073
24.VII	3	GW	2	53,19458	143,31485	1711
24.VII	3	GW	1	53,18725	143,30769	3269
24.VII	3	GW	1	53,33077	143,26315	2727
24.VII	3	GW	2	53,34495	143,25544	2833
24.VII	3	GW	1	53,40272	143,19322	2086
24.VII	3	GW	1	53,40193	143,18511	1051
24.VII	2	GW	1	53,27248	143,25719	1046

24.VII	2	GW	1	53,24892	143,26727	1662
24.VII	2	GW	2	53,28289	143,26245	1599
24.VII	2	GW	1	53,28228	143,27914	4539
24.VII	2	GW	1	53,41904	143,23837	5094
24.VII	2	GW	1	53,43049	143,20926	4347
24.VII	2	GW	1	53,43034	143,21205	2636
24.VII	2	GW	1	53,42265	143,20303	2443
24.VII	1	GW	1	53,35524	143,21590	3084
24.VII	1	GW	2	53,36562	143,21271	1817
24.VII	1	GW	2	53,36726	143,22687	1967
24.VII	1	GW	1	53,36650	143,22553	3421
24.VII	1	GW	1	53,44178	143,25671	2156
24.VII	1	GW	2	53,46328	143,24643	1313
24.VII	1	GW	1	53,47670	143,21932	3394
25.VII	1	GW	1	53,48708	143,17195	1579
25.VII	1	GW	1	53,47933	143,17807	4334
25.VII	1	GW	1	53,47570	143,19715	1514
25.VII	1	MW	1	53,39742	143,23208	1041
25.VII	1	GW	2	53,36264	143,23162	349
25.VII	1	GW	1	53,36431	143,23450	474
25.VII	1	GW	1	53,31832	143,26887	2071
25.VII	1	GW	2	53,34433	143,23993	733
25.VII	1	GW	1	53,33851	143,22534	737
25.VII	2	GW	1	53,47704	143,17820	922
25.VII	2	GW	1	53,39868	143,22017	2474
25.VII	2	GW	1	53,35767	143,31852	2600
25.VII	2	GW	1	53,31319	143,27163	736
25.VII	2	GW	1	53,30096	143,25770	1532
25.VII	2	GW	1	53,29042	143,23454	963
25.VII	2	GW	1	53,27628	143,24461	2148
25.VII	2	GW	1	53,24100	143,28434	1622
25.VII	2	GW	1	53,25422	143,25429	1526
25.VII	3	GW	2	53,36160	143,21197	875
25.VII	3	GW	1	53,35742	143,22089	1513
25.VII	3	GW	1	53,38044	143,24329	1753
25.VII	3	GW	1	53,38025	143,24670	2647
25.VII	3	GW	1	53,33018	143,23247	2377
25.VII	3	GW	1	53,31414	143,27757	1455
25.VII	3	GW	1	53,29116	143,27313	1959
25.VII	3	GW	1	53,30967	143,30376	2038
25.VII	3	GW	1	53,21728	143,31684	1700
25.VII	3	GW	1	53,15723	143,31110	2015
25.VII	4	GW	1	53,30876	143,22436	1558
25.VII	4	GW	1	53,30957	143,23568	1399
25.VII	4	GW	1	53,25015	143,28668	1107
25.VII	4	GW	1	53,20881	143,33921	1266
25.VII	4	GW	1	53,19795	143,33858	1626
25.VII	4	GW	2	53,16135	143,32518	2389
25.VII	4	GW	1	53,14917	143,33800	3694
25.VII	5	GW	1	53,21721	143,27736	5988
25.VII	5	GW	1	53,21731	143,27199	3956
25.VII	5	GW	1	53,18897	143,29026	1603
25.VII	5	GW	1	53,18007	143,29080	2784
25.VII	5	GW	1	53,17402	143,29155	1914
25.VII	6	GW	1	53,15300	143,28315	1561
25.VII	6	GW	1	53,15299	143,28605	0

25.VII	6	GW	1	53,02084	143,34232	2289
25.VII	7	GW	1	53,01596	143,35241	4226
25.VII	7	GW	1	53,00205	143,38262	4335
25.VII	7	GW	1	52,89940	143,41762	1428
25.VII	7	GW	1	52,88413	143,38434	1860
25.VII	7	GW	1	52,90564	143,34853	1446
25.VII	7	GW	1	52,87845	143,36564	1952
25.VII	7	GW	1	52,87524	143,35164	1381
25.VII	7	GW	1	52,87417	143,34592	4992
25.VII	8	GW	1	52,96851	143,29842	2735
25.VII	8	GW	1	52,91599	143,37398	2768
25.VII	8	GW	3	52,91997	143,39962	961
25.VII	8	GW	2	52,91826	143,40185	693
25.VII	8	GW	1	52,85339	143,37010	3439
25.VII	8	GW	1	52,82781	143,37489	1144
25.VII	8	GW	1	52,83443	143,36610	2281
25.VII	8	GW	1	52,82840	143,37640	1212
25.VII	8	GW	1	52,83395	143,36477	245
19.VIII	1	GW	1	53,52897	143,16886	1352
19.VIII	1	GW	1	53,48708	143,17195	1278
19.VIII	1	GW	1	53,42364	143,23850	1270
19.VIII	1	GW	1	53,38319	143,20610	1302
19.VIII	1	GW	1	53,34545	143,21086	2390
19.VIII	2	GW	1	53,26744	143,31027	2159
19.VIII	2	GW	1	53,29057	143,26365	2192
19.VIII	2	GW	1	53,26692	143,28928	3092
19.VIII	2	GW	1	53,24819	143,26474	2240
19.VIII	2	GW	1	53,24333	143,24386	5107
19.VIII	3	GW	1	53,35319	143,23954	1565
19.VIII	3	GW	1	53,35331	143,23692	1278
19.VIII	3	GW	1	53,33239	143,25319	1446
19.VIII	3	GW	1	53,32542	143,26029	803
19.VIII	3	GW	1	53,31620	143,30585	837
19.VIII	3	GW	3	53,30887	143,30509	1355
19.VIII	3	GW	1	53,31332	143,30155	852
19.VIII	3	GW	1	53,31152	143,32907	676
19.VIII	3	GW	1	53,30463	143,31142	949
19.VIII	3	GW	1	53,26736	143,39195	959
19.VIII	3	GW	1	53,24968	143,31463	489
19.VIII	3	GW	1	53,23439	143,30574	667
19.VIII	3	GW	1	53,22182	143,31094	1012
19.VIII	3	GW	2	53,21646	143,28698	2250
19.VIII	3	GW	1	53,21352	143,28845	1346
19.VIII	3	GW	1	53,18300	143,30893	1333
19.VIII	3	GW	1	53,18652	143,29354	735
19.VIII	3	GW	1	53,19379	143,28472	1934
19.VIII	3	GW	1	53,17423	143,29767	576
19.VIII	3	GW	1	53,19077	143,29534	759
19.VIII	4	GW	1	53,25248	143,25092	668
19.VIII	4	GW	1	53,24381	143,26085	562
19.VIII	4	GW	1	53,24736	143,26908	1186
19.VIII	4	GW	1	53,25460	143,29574	1632
19.VIII	4	GW	1	53,20569	143,30898	1077
19.VIII	4	GW	2	53,19860	143,31229	1148
19.VIII	4	GW	1	53,13489	143,30297	763
19.VIII	4	GW	1	53,11380	143,32792	622

19.VIII	4	GW	1	53,14377	143,29812	633
19.VIII	4	GW	1	53,09722	143,29861	1203
19.VIII	5	GW	1	53,18142	143,27290	1012
19.VIII	5	GW	1	53,16471	143,27789	709
19.VIII	5	GW	1	53,12601	143,31312	812
19.VIII	5	GW	1	53,12458	143,32335	717
19.VIII	5	GW	1	53,11842	143,31175	747
19.VIII	5	GW	1	53,09719	143,31224	1089
19.VIII	5	GW	1	53,08686	143,30289	1348
19.VIII	6	GW	2	53,10904	143,29166	1820
19.VIII	6	GW	1	53,11531	143,28889	2008
19.VIII	6	GW	1	53,10740	143,30768	1348
19.VIII	6	GW	2	53,04003	143,33160	1442
19.VIII	6	GW	2	53,01696	143,31923	1004
19.VIII	7	GW	2	53,02671	143,30973	1685
19.VIII	7	GW	1	52,91173	143,33160	4964
19.VIII	8	GW	1	52,91930	143,34022	1508
19.VIII	8	GW	2	52,91656	143,35108	2294
19.VIII	8	GW	1	52,86449	143,37242	3299
19.VIII	8	GW	1	52,85667	143,38119	949
19.VIII	8	GW	1	52,85162	143,38387	555
19.VIII	8	GW	1	52,85943	143,37204	812
19.VIII	8	GW	1	52,85003	143,37253	702
19.VIII	8	GW	1	52,83879	143,36008	1492
20.VIII	8	GW	2	52,83596	143,37003	1826
20.VIII	8	GW	1	52,86679	143,42045	3597
20.VIII	8	GW	2	52,89100	143,36942	930
20.VIII	8	GW	1	52,89529	143,38260	1224
20.VIII	8	GW	1	52,91390	143,38980	1180
20.VIII	8	GW	1	52,92250	143,34192	1518
20.VIII	7	GW	1	52,91106	143,32801	1804
20.VIII	7	GW	1	52,91210	143,33338	2105
20.VIII	7	GW	3	52,93633	143,32950	1871
20.VIII	7	GW	2	52,91568	143,34720	1105
20.VIII	7	GW	1	52,91790	143,35376	1178
20.VIII	7	GW	1	53,00555	143,37909	1116
20.VIII	6	GW	1	53,02841	143,32715	1189
20.VIII	6	GW	1	53,05060	143,33621	1056
20.VIII	6	GW	1	53,08539	143,32252	883
20.VIII	6	GW	1	53,11334	143,31028	845
20.VIII	6	GW	1	53,12279	143,31012	1071
20.VIII	5	GW	1	53,07945	143,32583	574
20.VIII	5	GW	1	53,11169	143,32867	2183
20.VIII	5	GW	1	53,15092	143,30118	444
20.VIII	5	GW	1	53,14955	143,30412	420
20.VIII	4	GW	1	53,11422	143,30972	1783
20.VIII	4	GW	1	53,11479	143,31162	1018
20.VIII	4	GW	2	53,12872	143,31157	888
20.VIII	4	GW	1	53,22010	143,28407	348
20.VIII	4	GW	3	53,26581	143,25002	342
20.VIII	3	GW	1	53,12972	143,30111	797
20.VIII	3	GW	4	53,20454	143,28019	805
20.VIII	3	GW	1	53,15053	143,32459	1099
20.VIII	3	GW	1	53,22118	143,27182	4169
20.VIII	3	GW	1	53,25084	143,26555	1030
20.VIII	3	GW	1	53,36135	143,24644	1355

20.VIII	3	GW	1	53,34078	143,23784	928
20.VIII	3	GW	1	53,35742	143,22089	706
20.VIII	2	GW	1	53,24384	143,24653	783
20.VIII	2	GW	1	53,27531	143,24116	1961
20.VIII	2	GW	1	53,25484	143,25664	1129
20.VIII	2	GW	1	53,26172	143,25667	316
20.VIII	2	GW	1	53,27018	143,26462	952
20.VIII	2	GW	1	53,37002	143,31004	3028
20.VIII	2	GW	1	53,40021	143,20126	2748
20.VIII	2	GW	1	53,40705	143,20391	2265
20.VIII	2	GW	1	53,40708	143,18913	1492
20.VIII	1	GW	1	53,35276	143,20905	2821
20.VIII	1	GW	1	53,35335	143,21079	2409
20.VIII	1	GW	1	53,47440	143,17431	2866
20.VIII	1	GW	1	53,48071	143,14218	752
20.VIII	1	GW	1	53,46358	143,13411	2052
20.VIII	1	GW	1	53,48674	143,13017	1237
22.VIII	1	GW	1	53,47615	143,19530	895
22.VIII	1	GW	1	53,42978	143,23558	4925
22.VIII	1	GW	1	53,36783	143,23994	492
22.VIII	1	GW	1	53,37105	143,22308	345
22.VIII	2	GW	1	53,43034	143,21205	554
22.VIII	2	GW	1	53,35684	143,28142	1392
22.VIII	2	GW	1	53,33632	143,30076	1449
22.VIII	2	GW	1	53,26110	143,25452	1000
22.VIII	3	GW	1	53,36062	143,25498	4120
22.VIII	3	GW	1	53,29413	143,28366	1923
22.VIII	3	GW	2	53,28698	143,27368	3054
22.VIII	3	GW	1	53,23183	143,39258	4307
22.VIII	3	KW	1	53,22846	143,33846	3002
22.VIII	3	GW	1	53,15128	143,28558	1320
22.VIII	4	GW	2	53,26518	143,23751	1056
22.VIII	4	GW	1	53,26551	143,24250	686
22.VIII	4	GW	1	53,25779	143,27113	438
22.VIII	4	GW	1	53,25127	143,27840	1521
22.VIII	4	GW	2	53,22527	143,28460	1960
22.VIII	4	GW	1	53,27066	143,31322	2702
22.VIII	4	GW	1	53,14237	143,33617	5438
23.VIII	1	GW	2	53,46569	143,21009	1868
23.VIII	1	GW	1	53,41883	143,26724	849
23.VIII	1	GW	3	53,40460	143,25078	2232
23.VIII	1	GW	1	53,36359	143,21997	1645
23.VIII	1	GW	2	53,33705	143,22096	1861
23.VIII	1	GW	1	53,33502	143,21424	980
23.VIII	1	GW	1	53,33379	143,20967	1807
23.VIII	2	GW	1	53,43023	143,17847	2019
23.VIII	2	GW	1	53,43074	143,18965	1855
23.VIII	2	GW	1	53,43049	143,20926	2140
23.VIII	2	MW	1	53,35533	143,35303	3669
23.VIII	2	GW	1	53,33383	143,34320	2914
23.VIII	2	GW	2	53,26321	143,28111	708
23.VIII	2	GW	1	53,29349	143,25287	1267
23.VIII	2	GW	1	53,26692	143,28928	1309
23.VIII	2	GW	1	53,26911	143,27703	1349
23.VIII	2	GW	1	53,25295	143,27955	1635
23.VIII	3	GW	1	53,35747	143,22363	1355

23.VIII	3	GW	1	53,32713	143,27847	1006
23.VIII	3	GW	1	53,32357	143,28933	654
23.VIII	3	GW	2	53,32310	143,28413	1022
23.VIII	3	GW	1	53,31409	143,30009	1195
23.VIII	3	GW	1	53,30160	143,35093	1702
23.VIII	3	GW	1	53,22054	143,35284	1484
23.VIII	3	GW	1	53,16666	143,29026	1676
23.VIII	4	GW	1	53,17716	143,31865	1856
23.VIII	4	GW	1	53,17150	143,32110	1348
23.VIII	4	GW	1	53,16985	143,32257	1150
23.VIII	4	GW	2	53,11864	143,32261	664
23.VIII	4	GW	1	53,10902	143,31400	738
23.VIII	4	GW	2	53,10676	143,30565	1421
23.VIII	4	GW	1	53,10485	143,29705	1128
23.VIII	4	GW	1	53,08666	143,30410	984
23.VIII	5	GW	1	53,16960	143,29102	1311
23.VIII	5	GW	1	53,16674	143,30361	317
23.VIII	5	GW	1	53,14251	143,31461	965
23.VIII	5	GW	1	53,13232	143,32193	1315
23.VIII	5	GW	1	53,11778	143,32796	883
23.VIII	5	GW	1	53,11061	143,31768	1060
23.VIII	5	GW	1	53,08997	143,31141	1368
23.VIII	6	GW	1	53,11531	143,28889	1885
23.VIII	6	GW	1	53,11525	143,29070	823
23.VIII	6	GW	2	53,12371	143,30198	265
23.VIII	6	GW	1	53,01426	143,32986	1724
23.VIII	6	GW	1	53,00250	143,32387	1736
23.VIII	6	GW	2	52,98716	143,32907	1404
23.VIII	6	GW	1	52,98346	143,30931	1469
23.VIII	7	GW	1	53,02643	143,31281	3438
23.VIII	7	GW	1	53,03770	143,31219	2894
23.VIII	7	GW	1	53,02248	143,31316	1642
23.VIII	7	GW	1	52,93742	143,34002	940
23.VIII	7	GW	1	52,92226	143,34538	1444
23.VIII	7	GW	1	52,91850	143,35536	1941
23.VIII	7	GW	1	52,90242	143,33445	1533
23.VIII	8	GW	1	52,92449	143,32442	3200
23.VIII	8	GW	1	52,90945	143,36719	1291
23.VIII	8	GW	1	52,90243	143,37104	1828
23.VIII	8	GW	1	52,85834	143,37079	2159
23.VIII	8	GW	1	52,85447	143,37164	2297
23.VIII	8	GW	2	52,80145	143,38730	919
23.VIII	8	GW	2	52,79820	143,37563	2330
23.VIII	8	GW	1	52,79393	143,35361	2235
24.VIII	8	GW	1	52,82242	143,35722	3668
24.VIII	8	GW	1	52,82511	143,36707	1770
24.VIII	8	GW	1	52,87084	143,38529	975
24.VIII	8	GW	2	52,89627	143,37260	1608
24.VIII	8	GW	2	52,92913	143,38427	1491
24.VIII	8	GW	1	52,94152	143,34064	499
24.VIII	8	GW	1	52,93953	143,35281	2711
24.VIII	8	GW	1	52,96841	143,34199	2206
24.VIII	8	GW	1	52,96817	143,34453	2087
24.VIII	7	GW	1	52,91954	143,33625	2097
24.VIII	7	GW	1	52,91056	143,36369	2169
24.VIII	7	GW	2	52,90988	143,36186	5712

24.VIII	7	GW	2	52,92298	143,38844	5051
24.VIII	7	GW	1	53,03617	143,32511	4364
24.VIII	7	GW	1	53,03145	143,31079	3483
26.VIII	1	GW	1	53,34087	143,23174	5289
26.VIII	1	GW	1	53,34006	143,22963	2973
26.VIII	2	GW	1	53,38061	143,19704	1091
26.VIII	2	GW	1	53,38295	143,27035	650
26.VIII	2	GW	3	53,30977	143,29196	1028
26.VIII	2	GW	1	53,31177	143,28869	860
26.VIII	2	GW	1	53,30681	143,28962	846
26.VIII	2	GW	1	53,26692	143,28928	1625
12.IX	1	GW	1	53,33785	143,30365	949
12.IX	1	GW	1	53,33176	143,29454	1525
12.IX	1	GW	1	53,32607	143,28475	1611
12.IX	1	GW	1	53,31954	143,27161	1043
12.IX	2	GW	1	53,33536	143,34321	1150
12.IX	2	GW	1	53,27762	143,30763	903
12.IX	2	GW	1	53,29057	143,26365	3431
12.IX	3	GW	1	53,37929	143,19547	1585
12.IX	3	GW	1	53,35749	143,22638	565
12.IX	3	GW	1	53,28698	143,27368	1522
12.IX	3	GW	1	53,28794	143,27228	1913
12.IX	3	GW	1	53,29911	143,29760	4457
12.IX	3	GW	1	53,27424	143,28539	3111
12.IX	3	GW	1	53,27658	143,30774	431
12.IX	3	GW	1	53,27179	143,31286	1480
12.IX	3	GW	1	53,25487	143,29610	473
12.IX	3	GW	1	53,23197	143,30309	500
12.IX	4	GW	1	53,27667	143,24362	1884
12.IX	4	GW	1	53,24189	143,33613	8699
12.IX	4	GW	1	53,11163	143,32208	1072
12.IX	4	GW	1	53,08527	143,29592	970
12.IX	4	KW	2	53,20212	143,28812	583
13.IX	8	GW	1	52,83596	143,37003	7818
13.IX	8	GW	1	52,83999	143,37865	1068
13.IX	8	GW	1	52,81470	143,41890	1353
13.IX	8	GW	1	52,86056	143,40269	795
13.IX	8	GW	1	52,88317	143,34411	1422
13.IX	8	GW	1	52,96925	143,32921	344
13.IX	7	GW	1	52,96073	143,32695	400
13.IX	7	GW	1	52,96167	143,32801	1071
13.IX	7	GW	2	52,95780	143,36618	3367
13.IX	7	GW	1	53,03011	143,44120	766
13.IX	7	GW	1	53,04760	143,30356	693
13.IX	7	GW	1	53,04765	143,30141	1746
13.IX	6	GW	1	52,98436	143,31534	1233
13.IX	6	GW	2	53,02450	143,44308	778
13.IX	6	GW	3	53,04896	143,33592	1146
13.IX	6	GW	1	53,06143	143,34207	737
13.IX	6	GW	1	53,06187	143,32532	1330
13.IX	6	GW	1	53,08141	143,33564	1463
13.IX	6	GW	1	53,12448	143,27926	818
13.IX	5	GW	1	53,06133	143,29323	1495
13.IX	5	GW	2	53,06350	143,30599	445
13.IX	5	GW	1	53,13577	143,35267	782
13.IX	5	GW	2	53,13563	143,30178	671

13.IX	4	GW	2	53,09722	143,29861	491
13.IX	4	GW	1	53,24946	143,29077	4888
13.IX	4	GW	1	53,23759	143,28668	2794
13.IX	4	GW	1	53,23993	143,26941	600
13.IX	4	GW	1	53,26584	143,26007	588
13.IX	4	GW	1	53,25250	143,25941	1019
13.IX	3	GW	1	53,19949	143,30860	2578
13.IX	3	GW	1	53,29425	143,29491	422
13.IX	3	GW	2	53,30186	143,26096	651
13.IX	3	GW	2	53,32008	143,27486	570
13.IX	2	GW	1	53,24438	143,24919	1201
13.IX	2	GW	2	53,24616	143,25705	732
13.IX	2	GW	1	53,24554	143,25445	405
13.IX	2	GW	1	53,25306	143,24954	860
15.IX	2	GW	1	53,34950	143,33060	134
15.IX	2	GW	1	53,31065	143,30359	10
15.IX	2	GW	1	53,24494	143,25183	267
15.IX	3	GW	1	53,31728	143,23461	731
15.IX	3	GW	1	53,30913	143,26076	526
15.IX	3	GW	1	53,35199	143,28023	619
15.IX	3	GW	1	53,28419	143,25038	533
15.IX	3	GW	1	53,27337	143,26993	665
15.IX	3	GW	1	53,26126	143,27077	1196
15.IX	3	GW	1	53,26060	143,29968	2190
15.IX	3	GW	3	53,25742	143,28009	1213
15.IX	3	GW	3	53,25379	143,26382	703
15.IX	3	GW	1	53,21417	143,28990	639
15.IX	4	GW	1	53,27538	143,22676	1073
15.IX	4	GW	1	53,26449	143,23006	988
15.IX	4	GW	1	53,27567	143,22955	903
15.IX	4	GW	4	53,26574	143,24751	475
15.IX	4	GW	1	53,26551	143,24250	390
15.IX	4	GW	1	53,25253	143,25516	629
15.IX	4	GW	1	53,27616	143,23516	821
15.IX	4	GW	1	53,27636	143,23798	637
15.IX	4	GW	1	53,23820	143,28329	1313
15.IX	4	GW	1	53,25460	143,29574	1245
15.IX	4	GW	1	53,16879	143,32000	716
15.IX	4	GW	1	53,13489	143,30297	666
15.IX	4	GW	2	53,13927	143,30171	1115
15.IX	4	GW	1	53,10729	143,30776	1510
15.IX	4	GW	1	53,10676	143,30565	761
15.IX	4	GW	1	53,10625	143,30352	525
15.IX	4	GW	1	53,10404	143,29267	1544
15.IX	4	GW	1	53,10366	143,29046	1667
15.IX	5	GW	1	53,17557	143,27556	1145
15.IX	5	GW	1	53,16697	143,28460	1201
15.IX	5	GW	1	53,15186	143,28886	1694
15.IX	5	GW	1	53,11264	143,31923	2316
15.IX	5	GW	1	53,11420	143,31762	1777
15.IX	5	GW	1	53,11163	143,30343	2102
15.IX	5	GW	1	53,09689	143,30085	2401
15.IX	5	GW	1	53,07991	143,30887	1540
15.IX	5	GW	1	53,07572	143,31617	2070
15.IX	5	GW	1	53,07773	143,30080	813
15.IX	6	GW	1	53,12453	143,28340	1331

15.IX	6	GW	1	53,10489	143,32001	1170
15.IX	6	GW	1	53,08202	143,34059	604
15.IX	6	GW	1	52,99695	143,32824	236
15.IX	7	GW	1	53,01273	143,33062	1019
15.IX	7	HP	1	52,98628	143,31896	519
15.IX	7	GW	1	52,91790	143,35376	2811
15.IX	8	GW	1	52,96789	143,34707	692
15.IX	8	GW	1	52,90166	143,37738	2077
15.IX	8	GW	1	52,86930	143,39038	499
16.IX	8	GW	1	52,93799	143,35956	2744
16.IX	7	GW	1	52,98365	143,35255	1741
16.IX	7	GW	1	53,00719	143,35142	205
16.IX	6	GW	2	52,99448	143,31822	707
16.IX	6	GW	1	53,02639	143,33771	1060
16.IX	6	HP	1	53,06379	143,30636	2759
16.IX	5	GW	1	53,12240	143,31294	427
16.IX	5	GW	1	53,18144	143,27126	2458
16.IX	4	GW	1	53,14347	143,28430	563
16.IX	4	GW	1	53,11897	143,30802	1375
16.IX	4	GW	1	53,14599	143,29551	534
16.IX	4	GW	1	53,13601	143,35337	584
16.IX	4	GW	1	53,16719	143,30083	632
16.IX	4	GW	1	53,17809	143,34047	653
16.IX	4	GW	1	53,20659	143,27651	136
16.IX	4	GW	1	53,27556	143,28317	656
16.IX	4	GW	1	53,27691	143,26062	1066
16.IX	3	GW	1	53,16374	143,27592	945
16.IX	3	GW	1	53,20627	143,28527	1082
16.IX	3	GW	1	53,22428	143,29807	1182
16.IX	3	GW	1	53,23851	143,35016	1278
16.IX	3	GW	1	53,25969	143,26353	610
16.IX	3	GW	1	53,24785	143,34254	2217
16.IX	3	GW	1	53,26080	143,27070	2469
16.IX	3	GW	1	53,33672	143,25483	931
16.IX	3	GW	1	53,33406	143,22245	2318
16.IX	3	GW	2	53,35311	143,21329	1016
16.IX	3	GW	1	53,36640	143,20514	5433
16.IX	2	GW	1	53,28149	143,25049	1443
16.IX	2	GW	1	53,31423	143,21798	811
16.IX	2	GW	2	53,33758	143,23680	1041
16.IX	2	GW	1	53,33807	143,25324	1349
16.IX	2	GW	1	53,34153	143,24700	1423
16.IX	2	GW	1	53,36040	143,23987	888
16.IX	2	GW	1	53,36527	143,23984	1040
16.IX	2	GW	1	53,39086	143,21894	704
17.IX	1	GW	1	53,48561	143,12153	1087
17.IX	1	GW	1	53,43035	143,22234	1035
17.IX	1	GW	1	53,41880	143,23535	2787
17.IX	2	GW	2	53,42159	143,17233	1297
17.IX	2	GW	1	53,41536	143,21913	1710
17.IX	2	GW	1	53,36740	143,22971	543
17.IX	2	GW	1	53,41470	143,28522	213
17.IX	2	GW	2	53,28335	143,27194	1089
17.IX	2	GW	1	53,27185	143,25535	974
17.IX	3	GW	1	53,38908	143,19655	1105
17.IX	3	GW	1	53,35319	143,23954	1686

17.IX	3	GW	1	53,35305	143,24216	1189
17.IX	3	GW	2	53,33388	143,23689	339
17.IX	3	GW	1	53,34659	143,23376	1084
17.IX	3	GW	1	53,31811	143,23957	892
17.IX	3	GW	1	53,33805	143,24186	606
17.IX	3	GW	1	53,33819	143,23968	926
17.IX	3	GW	1	53,27116	143,34472	392
17.IX	4	GW	1	53,30934	143,23190	403
17.IX	4	GW	2	53,30976	143,23947	513
17.IX	4	GW	1	53,26551	143,24250	523
17.IX	4	GW	1	53,21733	143,25767	1126
17.IX	4	GW	2	53,23899	143,27813	1180
17.IX	4	GW	2	53,23608	143,27704	1578
17.IX	4	GW	1	53,23534	143,28194	110
17.IX	4	GW	1	53,23932	143,29546	702
17.IX	4	GW	1	53,14583	143,31904	2398
17.IX	4	GW	1	53,08449	143,29040	1333
23.IX	2	GW	1	53,28359	143,26396	1454
23.IX	2	GW	1	53,25548	143,25897	1079
23.IX	2	GW	1	53,25362	143,25192	1171
23.IX	2	GW	1	53,24681	143,25963	3082
23.IX	2	GW	1	53,25885	143,24576	240
23.IX	3	GW	1	53,35651	143,20449	388
23.IX	3	GW	1	53,32528	143,22666	627
23.IX	3	GW	1	53,28133	143,25902	3817
23.IX	3	GW	2	53,28712	143,28533	1279
23.IX	3	GW	1	53,26948	143,29683	897
23.IX	3	GW	1	53,14675	143,31119	909
24.IX	1	GW	1	53,46011	143,12944	1195
24.IX	1	GW	1	53,43863	143,17485	800
25.IX	1	GW	1	53,34714	143,24579	566
25.IX	1	GW	1	53,36429	143,22139	451
25.IX	1	GW	1	53,36575	143,22417	784
25.IX	2	GW	1	53,42203	143,17741	648
25.IX	2	GW	1	53,42222	143,17996	1082
25.IX	2	GW	1	53,35758	143,29879	1246
25.IX	2	GW	2	53,23210	143,24972	1167
25.IX	2	GW	1	53,23268	143,25272	1676
25.IX	3	GW	1	53,35709	143,21267	2619
25.IX	3	GW	1	53,36410	143,30110	3222
25.IX	3	GW	1	53,23689	143,30817	563
25.IX	3	GW	2	53,22456	143,29281	439
25.IX	3	GW	2	53,16165	143,29697	314
25.IX	3	GW	1	53,15555	143,30486	104
25.IX	3	GW	1	53,16094	143,29399	1289
25.IX	3	GW	2	53,16601	143,28743	462
25.IX	3	GW	1	53,15128	143,28558	578
25.IX	4	GW	1	53,26581	143,25002	843
25.IX	4	GW	1	53,22741	143,27232	758
25.IX	4	GW	2	53,23506	143,28356	558
25.IX	4	GW	1	53,23759	143,28668	785
25.IX	4	GW	3	53,23444	143,28678	783
25.IX	4	GW	1	53,22030	143,31218	1556
28.IX	2	GW	1	53,39891	143,25238	1527
28.IX	2	GW	1	53,39860	143,26724	1238
29.IX	1	GW	2	53,33440	143,21197	1463

29.IX	1	GW	1	53,33379	143,20967	1706
29.IX	1	GW	3	53,33321	143,20736	1680
29.IX	1	GW	1	53,30221	143,21760	1373
29.IX	2	GW	1	53,27739	143,26947	1157
29.IX	3	GW	1	53,34939	143,21133	433
29.IX	3	GW	1	53,35311	143,21329	434
29.IX	3	GW	2	53,34101	143,23105	708
29.IX	3	GW	1	53,34666	143,22404	665
29.IX	3	GW	1	53,31310	143,23549	633
29.IX	3	GW	1	53,31765	143,24434	1105
29.IX	3	GW	1	53,31405	143,24628	1567
29.IX	3	GW	1	53,33539	143,26331	2248
29.IX	3	GW	2	53,33281	143,26424	1796
29.IX	3	GW	1	53,32350	143,26121	3371
29.IX	3	GW	1	53,31869	143,27369	3959
29.IX	3	GW	1	53,31428	143,28610	4039
29.IX	3	GW	1	53,31489	143,28461	2465
29.IX	3	GW	1	53,25327	143,30897	1726
29.IX	4	GW	1	53,26584	143,26007	3279
29.IX	4	GW	2	53,15038	143,29295	4324
29.IX	5	GW	1	53,16485	143,27557	2317
29.IX	5	GW	1	53,08686	143,30289	1785
29.IX	5	GW	1	53,08652	143,30178	1462
29.IX	6	GW	1	53,11525	143,29070	820
29.IX	7	GW	3	52,87322	143,34014	785
29.IX	8	GW	1	52,88747	143,37756	654
29.IX	8	GW	1	52,87458	143,39211	1239
29.IX	8	GW	1	52,86810	143,38401	1692
30.IX	8	GW	1	52,80007	143,38269	345
30.IX	8	GW	1	52,80531	143,39846	316
30.IX	8	GW	1	52,80615	143,40062	1600
30.IX	7	GW	1	53,04491	143,33114	521
30.IX	6	GW	1	53,05270	143,34999	398
30.IX	6	GW	1	53,05152	143,37723	475
30.IX	5	GW	1	53,17360	143,34232	1331
30.IX	4	GW	1	53,21549	143,33162	1275
30.IX	4	GW	1	53,24946	143,29077	928
30.IX	4	GW	1	53,25742	143,27567	601
30.IX	4	GW	1	53,25245	143,26153	204
30.IX	4	GW	1	53,27653	143,24080	1054
30.IX	4	GW	2	53,27636	143,23798	678
30.IX	4	GW	1	53,30934	143,23190	2082
30.IX	3	GW	1	53,15905	143,31725	987
30.IX	3	GW	1	53,22545	143,26731	1656
30.IX	3	GW	2	53,23018	143,26509	1290
30.IX	3	GW	2	53,19173	143,31848	675
30.IX	3	GW	1	53,23277	143,27546	494
30.IX	3	GW	1	53,23644	143,26822	95
30.IX	3	GW	1	53,23868	143,27199	0
30.IX	3	GW	1	53,28471	143,29621	1069
30.IX	3	GW	2	53,32506	143,26209	1160
30.IX	3	GW	1	53,31655	143,25218	719
30.IX	3	GW	1	53,36640	143,20514	1010
30.IX	2	GW	1	53,25150	143,24229	817
30.IX	2	GW	1	53,25684	143,26357	1065
30.IX	2	GW	1	53,25422	143,25429	356

30.IX	2	GW	1	53,27549	143,28985	829
30.IX	2	GW	1	53,35051	143,24465	521
30.IX	2	GW	1	53,36276	143,25961	750
30.IX	2	GW	1	53,35805	143,25085	887
30.IX	1	GW	1	53,30438	143,22719	953
1.X	1	GW	1	53,30362	143,22402	897
1.X	1	GW	1	53,30221	143,21760	932
1.X	1	GW	1	53,30155	143,21436	1008
1.X	2	GW	1	53,27890	143,26250	197
1.X	2	GW	1	53,23601	143,26742	1476
1.X	2	GW	1	53,25422	143,25429	1258
1.X	2	GW	2	53,23528	143,26452	1090
1.X	2	GW	1	53,25484	143,25664	90
1.X	2	GW	1	53,24748	143,26220	833
1.X	2	GW	1	53,24384	143,24653	392
1.X	2	GW	1	53,24616	143,25705	1637
1.X	3	GW	1	53,32106	143,23006	1301
1.X	3	GW	1	53,32188	143,24042	1031
1.X	3	GW	1	53,32440	143,24463	1381
1.X	3	GW	1	53,32233	143,24940	1788
1.X	3	GW	1	53,30419	143,26150	1221
1.X	3	GW	1	53,28981	143,27405	1552
1.X	3	GW	3	53,25443	143,29377	2017
1.X	3	GW	1	53,23074	143,25784	2135
1.X	3	GW	1	53,16568	143,31153	2436
1.X	3	GW	1	53,16398	143,30577	441
1.X	3	GW	1	53,18055	143,30178	38
1.X	4	GW	1	53,24728	143,24133	380
1.X	4	GW	1	53,30876	143,22436	1425
1.X	4	GW	1	53,27593	143,23235	855
1.X	4	GW	1	53,30976	143,23947	1425
1.X	4	GW	1	53,27692	143,25211	979
1.X	4	GW	2	53,25217	143,26789	903
1.X	4	GW	1	53,24589	143,28276	580
1.X	4	GW	1	53,21784	143,31678	2890
1.X	4	GW	2	53,08772	143,30949	1310
1.X	5	GW	2	53,21731	143,27199	493
1.X	5	GW	1	53,21712	143,28004	500
1.X	5	GW	1	53,13950	143,33223	964
1.X	5	GW	1	53,13914	143,33756	633
1.X	6	GW	1	53,02546	143,31318	860
1.X	6	GW	1	52,98276	143,30320	1184
1.X	7	GW	1	53,07628	143,28190	818
1.X	7	GW	1	52,92383	143,34976	920
1.X	7	GW	1	52,91248	143,33515	999
1.X	7	GW	1	52,87417	143,34592	1223
1.X	8	GW	2	52,94210	143,33532	329
1.X	8	GW	1	52,94225	143,33354	1835
6.X	2	GW	1	53,39032	143,19237	1555
6.X	2	GW	2	53,27533	143,30421	1977
6.X	2	GW	1	53,26590	143,26915	1072
6.X	3	GW	1	53,35673	143,20721	939
6.X	3	GW	1	53,31859	143,22994	1433
6.X	3	GW	1	53,34088	143,23558	1902
6.X	3	GW	1	53,32522	143,23207	2215
6.X	3	GW	1	53,32993	143,23830	1317

6.X	3	GW	1	53,32835	143,25367	2295
6.X	3	GW	1	53,31384	143,24776	1638
6.X	3	GW	1	53,31042	143,25535	1607
6.X	3	GW	1	53,28707	143,27915	2471
6.X	3	GW	1	53,26439	143,29981	930
6.X	3	GW	1	53,23152	143,26494	1158
6.X	3	GW	1	53,17661	143,32251	1816
6.X	3	GW	1	53,18567	143,31585	2643
6.X	3	GW	2	53,16099	143,32328	1666
6.X	4	GW	1	53,27679	143,24645	2035
6.X	4	GW	1	53,27667	143,24362	2750
6.X	4	GW	1	53,25762	143,27340	2800
6.X	4	GW	1	53,11380	143,32792	2124
6.X	4	GW	1	53,10667	143,33273	595
6.X	5	GW	1	53,14966	143,30808	1381
6.X	5	GW	1	53,13885	143,33264	456
6.X	5	GW	1	53,10106	143,32357	1500
6.X	5	GW	2	53,10050	143,32287	2920
6.X	5	GW	1	53,09467	143,33786	963
6.X	6	GW	1	53,09159	143,31207	222
6.X	6	GW	1	53,10216	143,31002	534
6.X	6	GW	1	53,09595	143,33147	954
6.X	6	GW	1	53,01181	143,36128	731
6.X	7	GW	1	53,03670	143,32145	1071
6.X	7	GW	1	53,01238	143,34965	1612
6.X	7	GW	1	53,01911	143,35860	676
6.X	7	GW	1	52,97538	143,38068	1053
6.X	8	GW	2	52,84191	143,38208	684
13.X	1	GW	1	53,44560	143,16329	1024
13.X	1	GW	1	53,36961	143,22061	765
13.X	2	GW	1	53,39690	143,18280	1273
13.X	2	GW	1	53,43023	143,17847	2737
13.X	2	GW	1	53,32841	143,30505	535
13.X	2	GW	2	53,26879	143,26079	1255
13.X	2	GW	1	53,25150	143,24229	654
13.X	3	GW	1	53,37894	143,19210	1589
13.X	3	GW	2	53,34365	143,23353	791
13.X	3	GW	1	53,34104	143,22652	809
13.X	3	GW	3	53,34347	143,23821	1969
13.X	3	GW	1	53,34841	143,25405	1469
13.X	3	GW	1	53,17698	143,28942	1509
13.X	3	GW	1	53,16952	143,30139	181
13.X	3	GW	1	53,18129	143,28918	1711
13.X	4	GW	1	53,27679	143,24645	3797
13.X	4	GW	1	53,26581	143,25002	347
13.X	4	GW	1	53,25779	143,27113	1916
14.X	2	GW	1	53,26068	143,29783	1776
14.X	3	GW	1	53,33406	143,22245	4450
14.X	3	GW	1	53,27988	143,29440	3350
14.X	3	HP	2	53,25458	143,26836	2486
14.X	3	GW	1	53,19865	143,28307	2201
14.X	3	GW	1	53,16657	143,31436	4735
14.X	3	GW	1	53,16733	143,29307	4780
14.X	4	GW	1	53,26581	143,25002	3252
14.X	4	GW	1	53,24827	143,29682	5249
14.X	4	GW	1	53,24048	143,29019	1283

14.X	4	GW	1	53,23133	143,29921	4816
14.X	4	GW	1	53,08414	143,28763	4038
14.X	5	GW	1	53,21727	143,27468	3441
14.X	5	GW	1	53,10969	143,36072	1952
14.X	6	GW	1	53,12448	143,27926	347
14.X	6	GW	1	52,99157	143,34391	1916
14.X	7	GW	1	52,99184	143,35980	1776
14.X	8	GW	1	52,90109	143,41717	4450
14.X	8	GW	1	52,89197	143,40697	3350
14.X	8	GW	2	52,87755	143,42286	4486

14.X	8	GW	1	52,84606	143,38842	2201
15.X	8	GW	2	52,86051	143,41752	4735
15.X	8	GW	1	52,86154	143,41809	4780
15.X	8	GW	1	52,88159	143,39972	3252
15.X	8	GW	1	52,89902	143,41830	5249
15.X	8	GW	1	52,93238	143,34387	1283
15.X	7	GW	1	52,98720	143,40308	4816
15.X	6	GW	1	53,01054	143,37920	4038
15.X	6	GW	1	53,02427	143,37563	3441
15.X	6	GW	1	53,03669	143,35294	1952

Astokh-Chayvo Section

1	2	3	4	5	6	7
26.VI	9	GW	2	52,85369	143,34467	1256
26.VI	9	GW	1	52,83442	143,34564	741
26.VI	9	GW	1	52,82652	143,35569	1509
26.VI	9	GW	1	52,82017	143,35768	1966
26.VI	9	GW	1	52,81164	143,35985	2513
26.VI	10	GW	2	52,75297	143,34985	1945
26.VI	10	GW	1	52,73953	143,34609	1661
26.VI	10	GW	2	52,73375	143,33788	1104
26.VI	10	GW	1	52,72800	143,33422	863
26.VI	10	GW	1	52,72777	143,33314	785
26.VI	11	GW	2	52,62795	143,33516	1269
26.VI	12	GW	2	52,59563	143,33761	1622
30.VI	11	GW	1	52,63682	143,33776	1436
30.VI	11	GW	3	52,64023	143,34116	1680
30.VI	11	GW	1	52,66845	143,34833	2124
30.VI	11	GW	1	52,66937	143,34638	1972
30.VI	11	GW	1	52,66176	143,33568	1195
30.VI	11	GW	1	52,67039	143,32418	338
30.VI	10	GW	1	52,74463	143,35545	2359
30.VI	9	GW	1	52,82920	143,35641	1545
30.VI	9	GW	1	52,83261	143,35043	1087
30.VI	9	GW	2	52,83388	143,34979	1060
30.VI	9	GW	2	52,83138	143,34570	722
30.VI	9	GW	2	52,83943	143,33478	614
1.VII	9	GW	2	52,85988	143,34407	1180
1.VII	9	GW	1	52,86882	143,35590	2080
1.VII	9	GW	2	52,86746	143,36140	2404
1.VII	9	GW	1	52,83798	143,36470	1882
1.VII	9	GW	1	52,80290	143,47413	7286
1.VII	9	GW	1	52,82234	143,35973	1692
1.VII	9	GW	1	52,79463	143,36729	2835
1.VII	9	GW	1	52,78913	143,33807	949
1.VII	10	GW	1	52,83666	143,37321	2384
1.VII	10	GW	1	52,78715	143,35366	2027
1.VII	10	GW	1	52,77529	143,35099	1835
1.VII	10	GW	1	52,77072	143,36093	2494
1.VII	10	GW	1	52,72381	143,38625	4170
1.VII	10	GW	2	52,72629	143,35233	1921
1.VII	10	GW	1	52,72326	143,34538	1506
1.VII	11	GW	1	52,69163	143,33909	1247

1	2	3	4	5	6	7
1.VII	13	GW	2	52,45256	143,28934	419
2.VII	13	HP	2	52,46779	143,29143	1302
2.VII	12	GW	1	52,53536	143,32678	925
2.VII	12	GW	1	52,61068	143,33004	1244
2.VII	12	GW	1	52,59644	143,33435	928
2.VII	11	GW	1	52,61201	143,33151	1437
2.VII	11	GW	2	52,62583	143,33952	1540
2.VII	11	GW	2	52,63392	143,34115	1574
2.VII	11	GW	3	52,65460	143,34228	1828
2.VII	11	GW	1	52,66334	143,34678	1910
2.VII	11	GW	1	52,67673	143,34783	597
2.VII	11	GW	1	52,66210	143,32791	989
2.VII	10	GW	1	52,72882	143,33737	2537
2.VII	10	GW	2	52,74792	143,36053	2530
2.VII	10	GW	1	52,77151	143,35952	573
2.VII	9	GW	1	52,79961	143,33323	635
2.VII	9	GW	1	52,80599	143,34095	1166
2.VII	9	GW	1	52,80618	143,36426	2791
2.VII	9	GW	1	52,79877	143,37697	3680
2.VII	9	GW	1	52,76941	143,44186	6466
2.VII	9	GW	1	52,83741	143,34825	2198
2.VII	9	GW	1	52,84606	143,35488	1024
2.VII	9	GW	1	52,84432	143,35113	1832
16.VII	13	GW	1	52,45921	143,29546	1571
16.VII	13	GW	1	52,49606	143,29869	640
16.VII	12	GW	4	52,55862	143,32720	216
16.VII	12	GW	1	52,56241	143,32664	1024
16.VII	12	KW	1	52,56228	143,32775	965
16.VII	12	GW	1	52,57055	143,32572	790
16.VII	12	GW	1	52,57482	143,32258	527
16.VII	11	GW	1	52,61394	143,34114	1585
16.VII	11	GW	1	52,62389	143,33332	1029
16.VII	11	GW	1	52,63682	143,34464	1788
16.VII	11	GW	1	52,65434	143,34252	1610
16.VII	11	GW	1	52,68036	143,33387	967
16.VII	10	GW	1	52,73589	143,35042	1839
16.VII	10	GW	2	52,75749	143,35023	1873
16.VII	10	GW	1	52,78191	143,36794	2354
16.VII	9	GW	1	52,80278	143,38376	3125
16.VII	9	GW	5	52,83118	143,35639	4257

16.VII	9	GW	1	52,83175	143,35408	1462
16.VII	9	GW	1	52,83206	143,35062	1296
16.VII	9	GW	1	52,84314	143,34790	1049
17.VII	9	GW	1	52,82987	143,36726	1393
17.VII	9	GW	2	52,79130	143,46648	1357
17.VII	9	GW	1	52,81221	143,33468	1992
17.VII	9	GW	1	52,80031	143,34373	7373
17.VII	10	GW	1	52,77317	143,33114	645
17.VII	10	GW	2	52,76549	143,33281	1317
17.VII	10	GW	1	52,76490	143,33549	542
17.VII	10	GW	1	52,77032	143,36162	680
17.VII	10	GW	1	52,74580	143,36749	856
17.VII	11	GW	1	52,67284	143,33637	2552
17.VII	11	GW	1	52,65165	143,34443	2855
17.VII	11	GW	1	52,64181	143,33803	1770
17.VII	11	GW	1	52,63902	143,33562	2032
17.VII	11	GW	1	52,62654	143,34126	2252
17.VII	12	GW	2	52,57790	143,33562	1093
17.VII	12	GW	3	52,56954	143,32499	1665
17.VII	12	GW	2	52,57285	143,33281	1271
17.VII	13	HP	2	52,46678	143,28943	1119
17.VII	13	HP	1	52,46646	143,28796	1516
18.VII	12	GW	2	52,55641	143,34027	1359
18.VII	12	GW	1	52,55483	143,33529	732
18.VII	12	GW	1	52,55704	143,35147	1214
18.VII	12	MW	1	52,55499	143,32824	1928
18.VII	12	MW	1	52,56309	143,35072	1603
18.VII	12	MW	1	52,57187	143,34480	2667
18.VII	12	GW	2	52,57294	143,34357	1326
18.VII	12	HP	4	52,56068	143,31846	1953
18.VII	12	GW	1	52,58825	143,35618	2712
18.VII	11	GW	1	52,60062	143,33595	1236
18.VII	11	GW	1	52,59997	143,33064	881
18.VII	11	GW	1	52,60011	143,33198	971
18.VII	11	GW	1	52,61898	143,33218	940
18.VII	11	GW	1	52,65751	143,35371	2332
18.VII	10	GW	1	52,70730	143,35781	2452
18.VII	10	GW	1	52,74394	143,35532	2114
18.VII	10	GW	1	52,75642	143,36446	2749
18.VII	10	GW	1	52,77993	143,32545	194
18.VII	9	GW	2	52,81559	143,39661	4409
18.VII	9	GW	1	52,82647	143,34986	1011
18.VII	9	GW	1	52,83582	143,35205	1129
18.VII	9	GW	2	52,83737	143,35055	1109
18.VII	9	GW	1	52,84265	143,35422	1654
18.VII	9	GW	3	52,84959	143,35787	1775
18.VII	9	GW	2	52,84716	143,35249	1553
18.VII	9	GW	1	52,85170	143,35253	2012
24.VII	9	GW	1	52,83669	143,34724	1628
24.VII	9	GW	3	52,83516	143,36147	1694
24.VII	9	GW	1	52,82817	143,35401	1003
24.VII	9	GW	2	52,82018	143,34337	1925
24.VII	9	GW	3	52,81751	143,33714	1385
24.VII	9	GW	1	52,74204	143,35946	1122
24.VII	9	GW	1	52,81601	143,33555	1579
24.VII	10	GW	1	52,79072	143,33400	2021

24.VII	10	GW	1	52,78768	143,33445	782
24.VII	10	GW	2	52,75116	143,35473	2040
24.VII	10	GW	1	52,75015	143,35508	697
24.VII	10	GW	1	52,73263	143,35271	851
24.VII	10	GW	1	52,72018	143,33236	887
24.VII	11	GW	1	52,66987	143,32828	2325
24.VII	11	GW	1	52,66363	143,33002	2350
24.VII	11	GW	1	52,62358	143,33201	2608
24.VII	12	GW	2	52,57216	143,32964	2217
24.VII	12	GW	1	52,57650	143,33834	808
24.VII	12	GW	1	52,55112	143,33105	657
26.VII	9	GW	1	52,91903	143,35026	791
26.VII	9	GW	1	52,85208	143,39047	1040
26.VII	9	GW	3	52,84140	143,36916	1146
26.VII	9	GW	2	52,83697	143,36534	1753
26.VII	9	GW	1	52,82102	143,34530	1529
26.VII	9	GW	1	52,82092	143,34784	2005
26.VII	9	GW	1	52,81309	143,34229	4560
26.VII	9	GW	2	52,81937	143,33525	2684
26.VII	10	GW	1	52,83936	143,35738	2241
26.VII	10	GW	1	52,78612	143,35712	1926
26.VII	10	GW	1	52,75121	143,33971	1930
26.VII	10	GW	2	52,74917	143,39646	1186
26.VII	10	GW	1	52,66136	143,39244	1354
26.VII	11	GW	4	52,66289	143,32326	1246
26.VII	11	GW	1	52,73750	143,38095	599
26.VII	11	GW	2	52,63754	143,34975	2153
26.VII	11	GW	1	52,64020	143,35686	2536
26.VII	11	GW	3	52,63688	143,34923	1203
26.VII	11	GW	1	52,62515	143,34995	5320
26.VII	11	GW	1	52,62198	143,36019	5150
26.VII	11	GW	1	52,62110	143,35876	268
26.VII	11	GW	1	52,61686	143,35007	4240
26.VII	11	GW	1	52,61720	143,35091	2338
26.VII	11	GW	1	52,55109	143,36108	2853
26.VII	11	GW	1	52,55023	143,35558	2301
26.VII	12	GW	1	52,60783	143,34473	2355
26.VII	12	GW	1	52,60708	143,34756	3104
26.VII	12	GW	1	52,60668	143,34896	2999
26.VII	12	GW	2	52,57790	143,33562	2375
26.VII	12	GW	2	52,56313	143,34234	2437
26.VII	12	GW	1	52,54738	143,32859	2661
26.VII	12	GW	1	52,54682	143,32763	2358
26.VII	12	GW	1	52,54719	143,32827	2093
26.VII	12	GW	1	52,54701	143,32796	2301
26.VII	12	GW	2	52,51788	143,32145	2403
26.VII	13	GW	2	52,49746	143,31786	1534
19.VIII	12	GW	1	52,58504	143,32639	1993
19.VIII	11	GW	1	52,66844	143,33485	2203
19.VIII	11	GW	1	52,65394	143,36373	1407
19.VIII	10	GW	1	52,71573	143,34377	1346
19.VIII	10	GW	2	52,74662	143,32968	1387
19.VIII	10	GW	1	52,77110	143,38448	1367
19.VIII	10	GW	1	52,77547	143,37908	3046
19.VIII	10	GW	1	52,75693	143,33915	1342
19.VIII	9	GW	1	52,79966	143,33588	1669

19.VIII	9	GW	1	52,81445	143,33675	767
19.VIII	9	GW	1	52,78945	143,34279	1126
19.VIII	9	GW	1	52,81273	143,34030	3251
19.VIII	9	GW	1	52,81329	143,34327	1617
19.VIII	9	GW	2	52,81495	143,34884	444
19.VIII	9	GW	1	52,81752	143,34886	4474
19.VIII	9	GW	1	52,81804	143,34993	4106
19.VIII	9	GW	2	52,82250	143,34572	1191
19.VIII	9	GW	2	52,81795	143,35479	834
19.VIII	9	GW	1	52,82492	143,34870	821
19.VIII	9	GW	1	52,81835	143,37955	1324
19.VIII	9	GW	2	52,82923	143,34392	1108
19.VIII	9	GW	3	52,84433	143,35793	1324
19.VIII	9	GW	1	52,85298	143,34803	1702
19.VIII	9	GW	1	52,84721	143,34200	1643
19.VIII	9	GW	1	52,86048	143,33798	1683
20.VIII	9	GW	2	52,86062	143,33182	1137
20.VIII	9	GW	1	52,86056	143,33623	1998
20.VIII	9	GW	1	52,86882	143,35590	1157
20.VIII	9	GW	1	52,83535	143,34354	3545
20.VIII	9	GW	1	52,83582	143,35205	629
20.VIII	9	GW	1	52,83351	143,35350	2166
20.VIII	9	GW	1	52,83536	143,37276	1535
20.VIII	10	GW	1	52,77967	143,33024	1001
20.VIII	10	GW	1	52,76897	143,33050	1629
20.VIII	10	GW	2	52,76013	143,33042	1777
20.VIII	10	GW	1	52,79014	143,33906	931
20.VIII	10	GW	1	52,77802	143,34143	482
20.VIII	10	GW	1	52,76515	143,33443	807
20.VIII	10	GW	1	52,76647	143,35314	2415
20.VIII	10	GW	1	52,75428	143,33631	706
20.VIII	10	GW	2	52,73764	143,34777	1308
20.VIII	11	GW	1	52,65910	143,32171	1346
20.VIII	11	GW	1	52,65599	143,32754	2796
20.VIII	11	GW	1	52,65736	143,32930	559
20.VIII	11	GW	2	52,66353	143,33844	576
20.VIII	11	GW	1	52,62654	143,34126	600
20.VIII	11	GW	1	52,62539	143,33832	1225
20.VIII	11	GW	1	52,62518	143,33772	1392
20.VIII	12	GW	1	52,58396	143,34575	891
20.VIII	12	GW	1	52,54763	143,33481	2272
20.VIII	12	HP	3	52,55619	143,31384	967
20.VIII	12	HP	2	52,55559	143,31452	1795
23.VIII	13	HP	1	52,46673	143,29298	2077
23.VIII	12	GW	1	52,51813	143,32376	270
23.VIII	12	GW	1	52,56175	143,33341	633
23.VIII	12	GW	2	52,57571	143,33284	778
23.VIII	12	GW	1	52,57173	143,32657	1363
23.VIII	12	GW	1	52,57154	143,33082	1670
23.VIII	12	GW	1	52,59440	143,34184	1457
23.VIII	12	GW	2	52,58930	143,33094	1413
23.VIII	11	GW	1	52,62816	143,32522	2145
23.VIII	11	GW	1	52,62565	143,32494	1786
23.VIII	11	GW	1	52,62599	143,32731	2036
23.VIII	11	GW	2	52,62620	143,32847	1465
23.VIII	11	GW	1	52,63975	143,34079	1531

23.VIII	11	GW	3	52,63999	143,34098	1302
23.VIII	11	GW	2	52,64594	143,37631	896
23.VIII	11	GW	1	52,67870	143,34151	1203
23.VIII	10	GW	2	52,70316	143,33981	1882
23.VIII	10	GW	1	52,68846	143,44713	1105
23.VIII	10	GW	1	52,75304	143,39581	512
23.VIII	10	GW	1	52,76105	143,36060	491
23.VIII	10	GW	1	52,78239	143,36691	664
23.VIII	10	GW	1	52,78191	143,36794	749
23.VIII	10	GW	1	52,76184	143,33721	1637
23.VIII	10	GW	1	52,76213	143,33632	1650
23.VIII	10	GW	1	52,79014	143,33906	4166
23.VIII	10	GW	1	52,77839	143,33961	1585
23.VIII	10	GW	1	52,83971	143,35470	1344
23.VIII	10	GW	1	52,79059	143,33527	7096
23.VIII	10	GW	1	52,79072	143,33400	5240
23.VIII	10	GW	1	52,77993	143,32545	2797
23.VIII	9	GW	1	52,80552	143,33318	3205
23.VIII	9	GW	2	52,80957	143,33733	3278
23.VIII	9	GW	1	52,78956	143,34396	1092
23.VIII	9	GW	2	52,82034	143,33680	1026
23.VIII	9	GW	2	52,80829	143,36823	1209
23.VIII	9	GW	1	52,81890	143,35615	1239
23.VIII	9	GW	2	52,83394	143,35329	1180
23.VIII	9	GW	1	52,83473	143,34775	934
23.VIII	9	GW	3	52,83623	143,34960	842
23.VIII	9	GW	1	52,85065	143,37032	202
23.VIII	9	GW	1	52,85298	143,34803	626
23.VIII	9	GW	2	52,85963	143,34578	899
23.VIII	9	GW	1	52,85412	143,34192	1399
23.VIII	9	GW	1	52,86028	143,34061	649
23.VIII	9	GW	1	52,87122	143,33380	3110
24.VIII	9	GW	1	52,91934	143,34511	1927
24.VIII	9	GW	1	52,85313	143,34736	1244
24.VIII	9	GW	1	52,85149	143,35315	880
24.VIII	9	GW	1	52,82309	143,35337	1071
24.VIII	9	GW	1	52,82412	143,34971	3004
24.VIII	9	GW	4	52,81837	143,33205	1479
24.VIII	10	GW	2	52,79101	143,33017	1439
24.VIII	10	GW	3	52,76045	143,34630	1051
24.VIII	10	GW	1	52,76117	143,34507	1089
24.VIII	10	GW	3	52,73679	143,39478	813
24.VIII	10	GW	2	52,73527	143,39417	1958
24.VIII	10	GW	1	52,73603	143,39448	1322
24.VIII	10	GW	1	52,73303	143,39309	1677
24.VIII	11	HP	2	52,65160	143,32304	1347
24.VIII	11	GW	1	52,64821	143,34566	1081
24.VIII	11	GW	2	52,60081	143,33726	362
24.VIII	11	GW	1	52,60102	143,33857	526
24.VIII	12	GW	2	52,58389	143,33092	1589
24.VIII	12	GW	1	52,58367	143,33165	1517
24.VIII	12	GW	2	52,57915	143,33270	4781
24.VIII	12	GW	1	52,55353	143,33471	4743
24.VIII	12	GW	1	52,55327	143,33457	4763
24.VIII	12	GW	2	52,55302	143,33443	4688
24.VIII	12	GW	2	52,55252	143,33412	1926

25.VIII	9	GW	1	52,86905	143,35478	1414
25.VIII	9	GW	1	52,84652	143,35394	1506
25.VIII	9	GW	1	52,84905	143,35898	1098
25.VIII	9	GW	2	52,84352	143,35272	1153
25.VIII	9	GW	3	52,83639	143,35705	1268
25.VIII	9	GW	1	52,82227	143,35574	1693
25.VIII	9	GW	1	52,82110	143,35453	1688
25.VIII	9	GW	1	52,81979	143,35285	1682
25.VIII	9	GW	2	52,82199	143,34704	1668
25.VIII	9	GW	1	52,81447	143,34750	2218
25.VIII	9	GW	2	52,81953	143,33679	1791
25.VIII	9	GW	1	52,81241	143,33777	2167
25.VIII	9	GW	1	52,80567	143,33744	1708
25.VIII	9	GW	2	52,80947	143,33016	1557
25.VIII	10	GW	1	52,79101	143,33017	1542
25.VIII	10	GW	1	52,84059	143,34661	1671
25.VIII	10	GW	1	52,76595	143,33005	1668
25.VIII	10	MW	1	52,76856	143,34891	1663
25.VIII	10	GW	1	52,74040	143,37701	1178
25.VIII	10	GW	1	52,73983	143,37683	991
25.VIII	10	GW	1	52,73926	143,37662	1544
25.VIII	10	MW	1	52,74090	143,35423	1685
25.VIII	11	GW	1	52,67940	143,33869	894
25.VIII	11	GW	1	52,63768	143,33881	929
25.VIII	11	GW	1	52,62777	143,33463	387
25.VIII	12	GW	1	52,58605	143,34113	551
25.VIII	12	GW	1	52,58572	143,34193	841
25.VIII	12	GW	1	52,55277	143,33428	538
25.VIII	12	GW	1	52,55158	143,32971	3411
25.VIII	12	GW	3	52,54224	143,32473	3788
25.VIII	13	GW	1	52,49618	143,29794	3772
25.VIII	13	GW	1	52,49606	143,29869	3756
12.IX	13	GW	1	52,48015	143,32030	1356
12.IX	13	GW	1	52,49053	143,31562	1471
12.IX	13	GW	1	52,49607	143,32093	1181
12.IX	12	GW	1	52,51988	143,33391	1813
12.IX	12	GW	1	52,50685	143,33690	1869
12.IX	12	GW	1	52,54523	143,33142	1668
12.IX	12	GW	1	52,54379	143,33817	1365
12.IX	12	GW	1	52,55300	143,33916	1129
12.IX	12	GW	1	52,55430	143,33508	187
12.IX	12	GW	1	52,55178	143,33586	243
12.IX	12	GW	1	52,55359	143,35080	1975
12.IX	12	GW	1	52,56765	143,33944	1451
12.IX	12	GW	1	52,57420	143,33572	1668
12.IX	12	GW	1	52,57018	143,33300	1997
12.IX	12	GW	1	52,57472	143,33479	2411
12.IX	12	GW	2	52,57763	143,33618	1463
12.IX	11	GW	1	52,59997	143,33064	1928
12.IX	11	GW	1	52,60148	143,34116	1849
13.IX	9	GW	1	52,91836	143,35794	1563
13.IX	9	GW	1	52,86546	143,36770	1650
13.IX	9	GW	2	52,84695	143,35298	1604
13.IX	9	GW	1	52,84265	143,35422	2611
13.IX	9	GW	1	52,84352	143,35913	1702
13.IX	9	GW	1	52,83342	143,35165	1388

13.IX	9	GW	1	52,82604	143,40066	1255
13.IX	9	GW	1	52,80232	143,35375	1319
13.IX	10	GW	1	52,77641	143,34762	1675
13.IX	10	GW	1	52,72087	143,47406	1396
13.IX	10	GW	1	52,72866	143,39036	868
13.IX	10	GW	1	52,71358	143,33081	1562
13.IX	11	GW	1	52,68136	143,32592	2328
13.IX	11	GW	1	52,66879	143,33357	2906
13.IX	12	GW	1	52,52038	143,37348	1646
13.IX	12	GW	2	52,53336	143,33353	1634
13.IX	12	GW	2	52,53289	143,33209	1960
13.IX	12	GW	1	52,50810	143,34273	1027
13.IX	12	GW	2	52,52593	143,32511	4350
13.IX	12	GW	1	52,52609	143,32604	2010
13.IX	12	GW	1	52,52578	143,32419	1670
13.IX	12	GW	1	52,51788	143,32145	7907
13.IX	12	GW	2	52,53245	143,33062	4484
13.IX	13	GW	2	52,50103	143,30693	616
13.IX	13	GW	1	52,50081	143,30782	406
13.IX	13	GW	1	52,48858	143,30856	929
13.IX	13	GW	1	52,48811	143,30961	4551
13.IX	13	GW	2	52,48633	143,30521	1753
13.IX	13	GW	1	52,49171	143,31320	1665
13.IX	13	GW	1	52,48786	143,31013	2761
13.IX	13	GW	1	52,48570	143,31397	1284
13.IX	13	GW	2	52,47365	143,31183	1339
13.IX	13	GW	1	52,47317	143,31502	1228
15.IX	13	GW	2	52,49199	143,31258	1204
15.IX	13	GW	1	52,49252	143,31130	1575
15.IX	13	GW	1	52,48835	143,30909	671
15.IX	13	GW	1	52,48988	143,30526	732
15.IX	13	GW	1	52,48743	143,30231	1045
15.IX	13	GW	2	52,48775	143,30131	1121
15.IX	13	GW	1	52,49459	143,30523	851
15.IX	13	GW	1	52,49497	143,30381	1248
15.IX	13	GW	2	52,50199	143,30242	1157
15.IX	12	GW	1	52,51919	143,33058	1430
15.IX	12	GW	1	52,51964	143,33281	1462
15.IX	12	GW	1	52,52682	143,32969	1674
15.IX	12	GW	2	52,54378	143,32867	1293
15.IX	12	GW	1	52,53648	143,34091	1193
15.IX	12	GW	1	52,55361	143,33944	1176
15.IX	12	GW	2	52,56681	143,33685	867
15.IX	10	GW	1	52,74313	143,34194	726
15.IX	9	GW	1	52,80639	143,34372	648
15.IX	9	GW	1	52,82350	143,35679	724
15.IX	9	GW	1	52,83546	143,36132	618
15.IX	9	GW	1	52,83575	143,36116	401
16.IX	9	GW	1	52,83755	143,34602	1862
16.IX	10	GW	1	52,77190	143,35880	2008
16.IX	10	GW	1	52,75147	143,35972	1643
16.IX	10	GW	1	52,72280	143,34402	1352
16.IX	12	GW	1	52,55277	143,33428	2280
16.IX	12	GW	1	52,55227	143,33395	1939
16.IX	12	GW	1	52,54892	143,32450	1606
16.IX	12	GW	2	52,54131	143,32143	1146

16.IX	12	GW	1	52,52519	143,31949	1251
16.IX	12	GW	1	52,52502	143,31758	1410
16.IX	12	GW	2	52,52495	143,31663	2325
16.IX	12	GW	1	52,52551	143,32232	1540
16.IX	13	GW	2	52,49984	143,31129	1537
16.IX	13	GW	1	52,49957	143,31214	1016
16.IX	13	GW	1	52,49439	143,30593	2660
16.IX	13	GW	1	52,49226	143,31195	2693
16.IX	13	GW	1	52,48811	143,30961	1644
16.IX	13	GW	1	52,46231	143,30641	1705
17.IX	13	GW	2	52,48565	143,32290	1690
17.IX	13	GW	1	52,49053	143,31562	1064
17.IX	13	GW	1	52,49113	143,31443	923
17.IX	12	GW	2	52,52510	143,31854	1062
17.IX	12	GW	1	52,51777	143,32029	929
17.IX	12	GW	1	52,52519	143,31949	862
17.IX	12	GW	1	52,52502	143,31758	1258
17.IX	12	GW	2	52,51844	143,32606	1085
17.IX	12	GW	2	52,51879	143,32833	1153
17.IX	12	GW	1	52,52578	143,32419	790
17.IX	12	GW	2	52,53856	143,32727	1261
17.IX	12	GW	1	52,54348	143,33264	1234
17.IX	12	GW	1	52,54279	143,33135	1941
17.IX	12	GW	1	52,55084	143,34104	1400
17.IX	12	GW	1	52,55349	143,34243	2290
17.IX	12	GW	1	52,56545	143,34112	1606
17.IX	12	GW	1	52,56577	143,34091	1506
17.IX	12	GW	2	52,56696	143,34400	992
17.IX	12	GW	2	52,56641	143,34046	1238
17.IX	11	GW	1	52,62584	143,35115	1058
17.IX	11	GW	1	52,63754	143,34975	925
17.IX	10	GW	2	52,76086	143,37269	1637
17.IX	9	GW	1	52,81529	143,35692	1794
17.IX	9	GW	2	52,82246	143,36484	1381
17.IX	9	GW	1	52,82350	143,35679	1394
17.IX	9	GW	1	52,83192	143,35627	1711
17.IX	9	GW	1	52,85784	143,35407	1621
23.IX	9	GW	1	52,81644	143,35218	1698
23.IX	10	GW	1	52,76679	143,35256	2206
23.IX	10	GW	2	52,76582	143,35427	2262
23.IX	10	GW	2	52,76190	143,37183	2021
23.IX	10	GW	2	52,76135	143,39244	2001
23.IX	10	GW	1	52,75926	143,37385	2208
23.IX	10	GW	1	52,75079	143,34154	1960
23.IX	10	GW	1	52,74580	143,33404	2300
23.IX	10	GW	1	52,72758	143,35460	2188
23.IX	10	GW	1	52,71307	143,37151	3424
23.IX	10	GW	1	52,71206	143,36955	2048
23.IX	11	GW	1	52,67504	143,35208	2096
23.IX	11	GW	1	52,65086	143,32984	1555
23.IX	11	GW	1	52,63171	143,33168	1317
23.IX	11	GW	1	52,62812	143,34455	1850
23.IX	11	GW	2	52,62087	143,33981	1658
23.IX	11	GW	2	52,62065	143,33907	1984
23.IX	11	GW	1	52,62160	143,34198	2099
23.IX	11	GW	2	52,62111	143,34054	3247

23.IX	11	GW	1	52,62043	143,33833	4601
23.IX	12	GW	1	52,60999	143,33453	3348
23.IX	12	GW	1	52,60945	143,33749	1166
23.IX	12	GW	2	52,59058	143,32456	667
23.IX	12	GW	2	52,60885	143,34041	2082
23.IX	12	GW	1	52,57950	143,32043	3308
23.IX	12	GW	1	52,58624	143,35952	3180
23.IX	12	GW	1	52,51844	143,32606	2146
28.IX	13	GW	3	52,47720	143,32229	711
28.IX	13	GW	1	52,50716	143,32733	885
28.IX	13	GW	1	52,50628	143,32943	1744
28.IX	13	GW	1	52,51121	143,31495	1432
28.IX	12	GW	1	52,51767	143,31913	1383
28.IX	12	GW	4	52,57790	143,33562	1575
28.IX	12	HP	1	52,56061	143,31424	1480
28.IX	12	GW	2	52,58930	143,33094	1333
28.IX	10	GW	1	52,77300	143,35656	1230
28.IX	10	GW	1	52,78498	143,36049	1430
29.IX	13	GW	1	52,49518	143,34721	583
29.IX	13	GW	6	52,49291	143,32654	1628
29.IX	13	GW	1	52,49415	143,32452	355
29.IX	13	GW	1	52,49142	143,31382	2925
29.IX	13	GW	1	52,49171	143,31320	1525
29.IX	12	GW	2	52,51879	143,32833	2083
29.IX	12	GW	1	52,51919	143,33058	1837
29.IX	12	GW	1	52,51964	143,33281	1989
29.IX	12	GW	1	52,52644	143,32787	970
29.IX	12	GW	1	52,52539	143,32138	1048
29.IX	12	GW	1	52,54341	143,32315	1340
29.IX	12	GW	1	52,55240	143,33885	978
29.IX	12	GW	2	52,55270	143,33901	2195
29.IX	12	GW	1	52,55794	143,34696	2467
29.IX	12	HP	1	52,56049	143,32194	1456
29.IX	12	GW	1	52,56709	143,33660	2123
29.IX	12	GW	1	52,56711	143,33126	1965
29.IX	12	GW	1	52,56688	143,33151	1318
29.IX	12	GW	2	52,61047	143,33154	1269
29.IX	11	GW	2	52,61175	143,32952	1658
29.IX	11	GW	1	52,60043	143,33463	1799
29.IX	11	GW	1	52,62295	143,34545	1938
29.IX	11	GW	1	52,63915	143,34657	1466
29.IX	11	GW	1	52,64043	143,34404	1072
29.IX	11	GW	1	52,64098	143,34436	939
29.IX	11	GW	1	52,68721	143,35651	1796
29.IX	11	GW	1	52,68942	143,34927	1962
29.IX	11	GW	1	52,68873	143,35172	2401
29.IX	10	GW	2	52,72568	143,35114	1844
29.IX	10	GW	2	52,72153	143,35923	1851
29.IX	10	GW	1	52,72313	143,36203	2320
29.IX	10	GW	1	52,76184	143,35975	1525
29.IX	10	GW	1	52,77300	143,35656	1172
29.IX	9	GW	1	52,79110	143,35433	1193
29.IX	9	GW	1	52,79617	143,37131	1017
29.IX	9	GW	1	52,86949	143,35252	758
29.IX	9	GW	1	52,87037	143,34677	1108
30.IX	9	GW	1	52,82896	143,36260	1760

30.IX	9	GW	1	52,82498	143,38274	1803
30.IX	9	GW	1	52,82446	143,38258	1635
30.IX	9	GW	1	52,78713	143,46294	1655
30.IX	9	GW	1	52,77537	143,45021	2356
30.IX	9	GW	1	52,80352	143,35768	1875
30.IX	9	GW	1	52,79360	143,36417	2038
30.IX	9	GW	1	52,79327	143,36311	1810
30.IX	10	GW	1	52,83612	143,37580	2376
30.IX	10	GW	1	52,82919	143,40067	2543
30.IX	10	GW	1	52,83228	143,39097	2370
30.IX	10	GW	2	52,81759	143,42734	2160
30.IX	10	GW	1	52,80810	143,44264	1979
30.IX	10	GW	2	52,75227	143,39598	3057
30.IX	10	GW	1	52,69806	143,45791	1857
30.IX	11	GW	1	52,55205	143,36654	1536
30.IX	11	GW	2	52,55155	143,36382	1961
30.IX	11	GW	1	52,55109	143,36108	3476
30.IX	11	GW	1	52,60200	143,34373	3478
30.IX	11	GW	2	52,60081	143,33726	7865
30.IX	12	GW	1	52,59534	143,33868	7130
30.IX	12	GW	1	52,58836	143,33446	2419
30.IX	12	GW	1	52,57354	143,33152	2884
30.IX	12	GW	1	52,57949	143,34177	2808
30.IX	12	GW	2	52,55601	143,34679	2391
30.IX	12	GW	2	52,55668	143,33579	3912
30.IX	12	GW	1	52,55660	143,35143	3303
30.IX	12	GW	1	52,55531	143,35124	5716
30.IX	12	GW	1	52,55711	143,33253	6692
30.IX	12	GW	2	52,55488	143,35115	5186
30.IX	12	GW	1	52,55653	143,33107	7621
30.IX	12	GW	1	52,55202	143,33378	2869
30.IX	12	GW	1	52,55178	143,33359	2723
30.IX	12	GW	1	52,55153	143,33341	2575
30.IX	12	GW	1	52,53745	143,39221	1860
30.IX	12	GW	2	52,54897	143,33337	1407
30.IX	12	GW	2	52,53289	143,33209	1627
30.IX	12	GW	1	52,53312	143,33281	1330
30.IX	12	GW	1	52,52847	143,33584	1203
30.IX	12	GW	1	52,50566	143,32944	1887
30.IX	12	GW	1	52,50586	143,33094	2493
30.IX	12	GW	1	52,50546	143,32793	1715
30.IX	12	GW	1	52,51777	143,32029	2806
30.IX	12	GW	1	52,45293	143,35796	2812
30.IX	13	GW	1	52,49872	143,31465	1480
30.IX	13	GW	1	52,48641	143,32198	2807
1.X	13	GW	1	52,55955	143,33929	1387
1.X	13	GW	1	52,55897	143,34185	1625
1.X	12	GW	2	52,51861	143,32719	1617
1.X	12	GW	2	52,53610	143,32936	1607
1.X	12	GW	1	52,54020	143,32459	5870
1.X	12	GW	1	52,54067	143,32613	2467
1.X	12	GW	2	52,53790	143,33424	1646
1.X	12	GW	5	52,53816	143,33482	1786
1.X	12	GW	2	52,54085	143,33314	1832
1.X	12	GW	3	52,54409	143,35130	2076
1.X	12	GW	1	52,53921	143,37011	2064

1.X	12	GW	2	52,54112	143,35792	2163
1.X	12	GW	1	52,54265	143,35933	1963
1.X	12	GW	1	52,54804	143,36303	1206
1.X	12	GW	1	52,57496	143,34086	3980
1.X	11	GW	1	52,60200	143,34373	1318
1.X	11	GW	1	52,60173	143,34245	2109
1.X	11	GW	1	52,73612	143,38616	1479
1.X	11	GW	1	52,73538	143,38873	1622
1.X	11	GW	1	52,74310	143,35114	1657
1.X	10	GW	2	52,73617	143,36405	1529
1.X	10	GW	1	52,77887	143,37379	1115
1.X	9	GW	1	52,80031	143,34373	1212
1.X	9	GW	1	52,79237	143,35988	1824
1.X	9	GW	2	52,74853	143,39394	1858
1.X	9	GW	1	52,80070	143,38048	1695
1.X	9	GW	1	52,82701	143,35015	2933
1.X	9	GW	1	52,82791	143,34920	4265
1.X	9	GW	1	52,83177	143,40094	3412
1.X	9	GW	2	52,85127	143,35376	3499
6.X	13	GW	1	52,45368	143,31287	3671
6.X	13	GW	2	52,45836	143,30818	1809
6.X	13	GW	2	52,45846	143,31312	1805
6.X	13	GW	4	52,45903	143,31376	1717
6.X	13	GW	1	52,46081	143,31118	3551
6.X	13	MW	1	52,47913	143,31561	3696
6.X	13	GW	4	52,49142	143,31382	1615
6.X	13	GW	1	52,49226	143,31195	2567
6.X	13	GW	3	52,48926	143,30694	3298
6.X	13	GW	2	52,49374	143,30799	1290
6.X	13	GW	1	52,49439	143,30593	2318
6.X	12	GW	1	52,50442	143,31105	3627
6.X	12	GW	2	52,52609	143,32604	3614
6.X	12	GW	1	52,52593	143,32511	900
6.X	12	GW	4	52,52578	143,32419	818
6.X	12	GW	3	52,52564	143,32325	4041
6.X	12	GW	4	52,53433	143,32208	1619
6.X	12	GW	2	52,52626	143,32696	2056
6.X	12	GW	1	52,53116	143,32531	1613
6.X	12	GW	1	52,53132	143,32608	1955
6.X	12	GW	2	52,54370	143,36019	1981
6.X	12	GW	2	52,58430	143,32943	1748
6.X	12	GW	1	52,59808	143,32537	1389
6.X	11	GW	1	52,60081	143,33726	1242
6.X	11	GW	2	52,63168	143,33724	1003
6.X	11	GW	1	52,63902	143,33562	935
6.X	11	GW	1	52,64223	143,33526	778
6.X	11	GW	1	52,64468	143,33636	835
6.X	11	GW	1	52,64354	143,35262	1456
6.X	10	GW	1	52,78191	143,36794	1397
6.X	10	GW	1	52,77641	143,34762	1338
6.X	10	GW	1	52,77692	143,34588	1278
6.X	9	GW	2	52,79133	143,35545	1063
6.X	9	GW	1	52,85082	143,35497	1514
6.X	9	GW	1	52,85127	143,35376	1312
9.X	9	GW	1	52,85963	143,34578	1367
9.X	9	GW	2	52,81945	143,36966	3588

9.X	9	GW	2	52,77537	143,45021	972
9.X	9	GW	1	52,80866	143,35290	672
9.X	10	HP	1	52,75257	143,33332	1395
9.X	11	GW	1	52,63935	143,34329	1352
9.X	11	GW	1	52,63988	143,34368	1221
9.X	11	GW	1	52,63908	143,34309	1189
9.X	12	GW	1	52,59808	143,32537	1256
9.X	12	GW	1	52,57198	143,36076	2412
9.X	12	GW	1	52,53573	143,39097	3171
9.X	12	GW	1	52,53224	143,32988	1761
9.X	12	GW	1	52,53952	143,33003	1639
9.X	12	GW	1	52,53590	143,32872	2178
9.X	12	GW	2	52,51941	143,33170	1878
9.X	12	GW	1	52,59563	143,33761	1804
9.X	12	GW	1	52,59371	143,34390	1326
9.X	12	GW	2	52,58200	143,34931	2480
9.X	12	GW	1	52,57775	143,34470	6663
9.X	12	GW	1	52,56884	143,34759	1884
14.X	13	GW	1	52,48285	143,32576	1622
14.X	13	GW	1	52,48090	143,30928	1647
14.X	12	GW	1	52,52644	143,32787	1610
14.X	12	GW	2	52,52682	143,32969	629
14.X	12	GW	2	52,54647	143,32697	3075
14.X	12	GW	1	52,55249	143,34198	5512
14.X	12	GW	1	52,55349	143,34243	1542
14.X	12	GW	1	52,55615	143,33568	1420
14.X	12	GW	2	52,55641	143,34027	1408
14.X	12	GW	3	52,55704	143,34036	1866
14.X	12	GW	1	52,56426	143,33611	1457
14.X	12	GW	1	52,56732	143,33100	1872
14.X	12	GW	1	52,57110	143,33558	2253
14.X	12	GW	2	52,57523	143,33383	1971
14.X	12	GW	1	52,57547	143,33333	2243
14.X	12	GW	1	52,60134	143,36346	2429
14.X	12	GW	1	52,60746	143,34615	1334
14.X	11	GW	2	52,60124	143,33987	1539
14.X	11	GW	1	52,60620	143,35838	2776
14.X	11	GW	2	52,62730	143,34294	1688
14.X	9	GW	1	52,79463	143,36729	2760
14.X	9	GW	1	52,86546	143,36770	2694
14.X	9	GW	2	52,85805	143,35327	1665
14.X	9	GW	1	52,85328	143,34670	1203
15.X	9	GW	1	52,84352	143,35272	1795
15.X	10	GW	1	52,74112	143,36658	3195
15.X	10	GW	1	52,69384	143,45353	7534
15.X	10	GW	1	52,73082	143,35912	2684
15.X	10	GW	1	52,73901	143,32989	463
15.X	10	GW	1	52,73249	143,33437	850
15.X	11	GW	1	52,64311	143,35781	2897
15.X	11	GW	1	52,63563	143,37356	4051
15.X	11	GW	2	52,63218	143,37141	3901
15.X	11	GW	1	52,63162	143,37099	3872
15.X	11	GW	1	52,60578	143,35722	2883
15.X	11	GW	1	52,60422	143,35245	2540
15.X	11	GW	1	52,60011	143,33198	1067
15.X	12	GW	2	52,57559	143,33988	1831

15.X	12	GW	1	52,57508	143,34836	2443
15.X	12	GW	1	52,57150	143,39632	5873
15.X	12	GW	2	52,54659	143,34154	2324
15.X	12	GW	2	52,53916	143,35584	3416
15.X	12	GW	1	52,51988	143,33391	2179
15.X	13	GW	1	52,46647	143,31488	1979
15.X	13	GW	2	52,46587	143,31466	1977
15.X	13	GW	2	52,46528	143,31441	1974

Appendix 3.

Weather conditions on the northeastern coast of Sakhalin Island in the onshore survey areas in June-October 2006 (per data from the Odoptu Weather Station)

1 - Date 2 - Time 3 - Wind direction 4 - Wind speed
5 - Air temperature 6 - Pressure at station level

1	2	3	4	5	6
20.VI	11:00	70	2	14,5	1013,0
20.VI	14:00	40	3	5,5	1012,2
21.VI	11:00	10	3	7,9	1011,7
21.VI	14:00	40	3	8,3	1011,3
22.VI	11:00	110	4	7,5	1009,4
22.VI	14:00	90	4	8,6	1008,8
23.VI	11:00	100	4	7,9	1008,3
23.VI	14:00	110	5	9,1	1008,0
24.VI	11:00	130	4	10,3	1005,4
24.VI	14:00	130	7	9,4	1003,9
25.VI	11:00	120	5	14,9	999,4
25.VI	14:00	110	5	11,3	998,2
26.VI	11:00	30	1	13,5	997,5
26.VI	14:00	110	2	13,7	997,9
27.VI	11:00	340	4	10,0	1003,0
27.VI	14:00	10	5	10,1	1003,8
28.VI	11:00	50	7	8,7	1008,4
28.VI	14:00	40	6	8,9	1008,2
29.VI	11:00	30	3	8,4	1003,6
29.VI	14:00	40	1	8,9	1003,9
30.VI	11:00	240	2	11,4	1004,9
30.VI	14:00	120	3	11,2	1005,1
1.VII	11:00	70	3	10,8	1007,1
1.VII	14:00	120	4	12,0	1006,0
2.VII	11:00	140	4	14,6	1003,6
2.VII	14:00	140	7	12,6	1003,5
3.VII	11:00	140	6	7,2	1002,3
3.VII	14:00	140	8	6,7	1000,9
4.VII	11:00	270	8	10,6	1001,4
4.VII	14:00	280	10	11,0	1001,6
5.VII	11:00	180	4	11,3	1005,2
5.VII	14:00	130	8	7,7	1003,3
6.VII	11:00	270	2	12,9	1000,5
6.VII	14:00	330	6	9,0	1001,8
7.VII	11:00	40	6	7,7	1005,2
7.VII	14:00	60	5	7,7	1005,4
8.VII	11:00	140	5	9,7	1010,1
8.VII	14:00	140	9	8,7	1009,7
9.VII	11:00	140	8	7,4	1007,9
9.VII	14:00	140	8	6,8	1008,3
10.VII	11:00	260	5	12,4	1010,1
10.VII	14:00	210	2	12,4	1010,4
11.VII	11:00	50	3	7,6	1009,1

11.VII	14:00	70	2	7,6	1008,7
1	2	3	4	5	6
12.VII	11:00	130	4	7,9	1003,5
12.VII	14:00	90	5	7,9	1003,4
13.VII	11:00	70	4	7,4	1005,8
13.VII	14:00	60	5	7,7	1007,1
14.VII	11:00	50	3	7,7	1009,7
14.VII	14:00	30	2	7,9	1009,7
15.VII	11:00	70	2	8,9	1008,0
15.VII	14:00	120	4	10,8	1006,3
16.VII	11:00	330	2	18,9	1001,6
16.VII	14:00	50	3	14,1	1001,8
17.VII	11:00	290	8	24,0	1001,0
17.VII	14:00	290	9	25,8	1001,1
18.VII	11:00	130	3	20,6	1006,3
18.VII	14:00	140	4	19,4	1006,3
19.VII	11:00	150	7	10,7	1008,1
19.VII	14:00	150	8	10,1	1008,2
20.VII	11:00	140	8	6,6	1009,6
20.VII	14:00	140	9	7,0	1009,1
21.VII	11:00	140	6	8,2	1008,1
21.VII	14:00	140	8	7,3	1007,4
22.VII	11:00	130	6	11,4	1007,7
22.VII	14:00	140	6	13,6	1007,7
23.VII	11:00	270	3	15,5	1008,9
23.VII	14:00	270	5	16,9	1009,1
24.VII	11:00	60	2	18,6	1009,6
24.VII	14:00	110	3	15,1	1009,8
25.VII	11:00	40	2	13,3	1008,5
25.VII	14:00	60	4	13,9	1008,1
26.VII	11:00	10	4	10,5	1006,3
26.VII	14:00	40	3	10,9	1006,8
27.VII	11:00	170	7	18,2	1003,1
27.VII	14:00	130	8	12,6	1002,0
28.VII	11:00	110	3	17,9	1004,3
28.VII	14:00	90	3	14,7	1004,8
29.VII	11:00	130	6	8,7	1011,0
29.VII	14:00	140	6	10,8	1011,8
30.VII	11:00	140	7	8,5	1017,3
30.VII	14:00	140	7	9,7	1017,3
31.VII	11:00	140	5	6,2	1018,2
31.VII	14:00	140	6	6,2	1017,9
1.VIII	11:00	140	5	4,9	1016,8
1.VIII	14:00	150	7	6,4	1016,3

2.VIII	11:00	140	5	5,9	1012,8
2.VIII	14:00	150	4	8,4	1011,8
3.VIII	11:00	350	4	8,7	1010,4
3.VIII	14:00	360	5	9,5	1009,9
4.VIII	11:00	130	5	9,9	1006,9
4.VIII	14:00	130	5	10,9	1005,9
5.VIII	11:00	110	4	9,8	1003,2
5.VIII	14:00	110	5	11,8	1002,8
6.VIII	11:00	130	6	8,7	999,3
6.VIII	14:00	140	3	14,6	999,0
7.VIII	11:00	10	4	10,1	1002,2
7.VIII	14:00	10	4	11,1	1002,2
8.VIII	11:00	30	3	11,7	1007,5
8.VIII	14:00	40	2	12,1	1007,7
9.VIII	11:00	140	5	10,2	1007,5
9.VIII	14:00	140	7	9,6	1007,5
10.VIII	11:00	200	6	16,4	1004,0
10.VIII	14:00	140	4	15,2	1004,6
11.VIII	11:00	100	1	8,9	1006,1
11.VIII	14:00	350	1	18,8	1006,6
12.VIII	11:00	140	6	9,9	1007,8
12.VIII	14:00	110	5	8,5	1007,4
13.VIII	11:00	140	6	11,4	1002,9
13.VIII	14:00	140	6	14,4	1002,4
14.VIII	11:00	140	7	8,1	1004,3
14.VIII	14:00	140	9	8,5	1004,7
15.VIII	11:00	150	5	7,9	1004,3
15.VIII	14:00	130	4	8,3	1003,6
16.VIII	11:00	120	2	11,0	1004,2
16.VIII	14:00	120	4	8,6	1004,1
17.VIII	11:00	90	2	15,4	1006,0
17.VIII	14:00	120	4	15,0	1006,9
18.VIII	11:00	340	4	13,9	1000,6
18.VIII	14:00	360	5	14,8	1001,5
19.VIII	11:00	230	6	20,7	1006,9
19.VIII	14:00	250	6	23,7	1006,6
20.VIII	11:00	220	5	23,2	1008,6
20.VIII	14:00	210	6	26,9	1008,2
21.VIII	11:00	180	9	19,6	1000,0
21.VIII	14:00	210	9	24,7	999,3
22.VIII	11:00	200	5	21,3	1005,6
22.VIII	14:00	240	8	20,6	1004,3
23.VIII	11:00	270	6	17,8	1011,3
23.VIII	14:00	260	6	20,4	1011,3
24.VIII	11:00	120	4	14,8	1011,8
24.VIII	14:00	130	6	13,7	1010,8
25.VIII	11:00	340	4	14,2	1010,9
25.VIII	14:00	30	2	15,0	1011,2
26.VIII	11:00	170	4	18,6	1009,9
26.VIII	14:00	130	7	17,0	1008,9
27.VIII	11:00	240	4	22,1	1007,7
27.VIII	14:00	280	6	25,8	1008,2
28.VIII	11:00	60	6	13,8	1014,3
28.VIII	14:00	60	5	14,5	1013,9
29.VIII	11:00	140	6	13,8	1009,4
29.VIII	14:00	140	6	14,1	1008,7

30.VIII	11:00	140	4	11,3	1011,3
30.VIII	14:00	120	1	14,1	1011,8
31.VIII	11:00	40	1	12,3	1012,3
31.VIII	14:00	50	2	13,3	1011,7
1.IX	11:00	130	2	12,8	1009,4
1.IX	14:00	110	3	14,0	1007,9
2.IX	11:00	350	4	14,0	1005,4
2.IX	14:00	350	5	14,6	1005,0
3.IX	11:00	270	8	13,8	1007,4
3.IX	14:00	270	8	15,7	1007,1
4.IX	11:00	100	3	12,7	1004,6
4.IX	14:00	40	8	12,5	1001,9
5.IX	11:00	270	10	12,2	992,0
5.IX	14:00	270	10	13,5	995,0
6.IX	11:00	270	5	18,5	1002,5
6.IX	14:00	280	6	18,9	1002,8
7.IX	11:00	140	5	14,9	1013,0
7.IX	14:00	120	5	16,8	1013,2
8.IX	11:00	170	7	16,9	1017,7
8.IX	14:00	140	9	14,4	1017,0
9.IX	11:00	170	5	15,0	1016,0
9.IX	14:00	140	7	12,1	1014,2
10.IX	11:00	150	5	10,2	1001,5
10.IX	14:00	140	7	14,0	999,1
11.IX	11:00	220	10	12,3	1002,8
11.IX	14:00	250	11	14,6	1004,6
12.IX	11:00	270	5	8,1	1016,9
12.IX	14:00	270	8	8,7	1017,7
13.IX	11:00	240	6	10,7	1018,7
13.IX	14:00	260	6	12,1	1017,1
14.IX	11:00	220	8	13,0	1012,9
14.IX	14:00	250	7	17,5	1011,8
15.IX	11:00	200	7	15,4	1012,2
15.IX	14:00	190	4	21,0	1011,2
16.IX	11:00	220	4	16,3	1010,4
16.IX	14:00	290	5	21,1	1010,1
17.IX	11:00	10	4	13,1	1014,2
17.IX	14:00	350	5	12,4	1014,8
18.IX	11:00	140	4	9,6	1017,4
18.IX	14:00	130	6	11,0	1017,6
19.IX	11:00	160	7	10,3	1016,2
19.IX	14:00	140	7	12,2	1014,8
20.IX	11:00	90	8	11,3	1007,2
20.IX	14:00	80	8	11,1	1005,7
21.IX	11:00	360	14	10,7	998,3
21.IX	14:00	350	15	10,3	998,0
22.IX	11:00	350	9	10,5	1011,2
22.IX	14:00	350	8	10,7	1012,8
23.IX	11:00	310	4	9,8	1013,4
23.IX	14:00	280	4	12,0	1012,6
24.IX	11:00	310	5	9,6	1011,5
24.IX	14:00	350	8	10,2	1011,9
25.IX	11:00	320	4	10,0	1017,8
25.IX	14:00	40	3	10,4	1017,7
26.IX	11:00	170	7	9,8	1016,8
26.IX	14:00	140	10	11,8	1015,8

27.IX	11:00	210	4	14,9	1014,3
27.IX	14:00	250	5	18,2	1014,0
28.IX	11:00	280	3	11,0	1012,4
28.IX	14:00	100	3	10,6	1010,9
29.IX	11:00	270	5	10,4	1009,3
29.IX	14:00	270	7	13,4	1009,4
30.IX	11:00	240	5	9,4	1011,3
30.IX	14:00	280	9	11,1	1010,8
1.X	11:00	180	1	10,4	1017,6
1.X	14:00	110	3	11,2	1017,4
2.X	11:00	160	8	10,5	1010,5
2.X	14:00	140	7	12,4	1008,1
3.X	11:00	290	3	9,2	1009,9
3.X	14:00	30	2	9,8	1008,9
4.X	11:00	190	6	12,5	996,0
4.X	14:00	220	3	14,0	994,3
5.X	11:00	260	11	1,3	1001,7
5.X	14:00	260	11	2,5	1003,3
6.X	11:00	280	5	8,6	1013,6
6.X	14:00	70	2	9,9	1014,5
7.X	11:00	100	7	8,5	1019,6

7.X	14:00	110	5	9,4	1018,6
8.X	11:00	140	7	9,3	1016,0
8.X	14:00	140	9	9,8	1015,0
9.X	11:00	100	6	8,3	1013,5
9.X	14:00	120	5	9,2	1012,5
10.X	11:00	150	7	7,9	1005,1
10.X	14:00	150	8	7,8	1003,6
11.X	11:00	240	5	2,2	1002,5
11.X	14:00	270	6	3,4	1002,5
12.X	11:00	230	4	0,8	1004,4
12.X	14:00	320	4	5,9	1004,9
13.X	11:00	290	8	3,6	1012,2
13.X	14:00	250	8	2,3	1012,1
14.X	11:00	220	4	3,4	1007,9
14.X	14:00	220	3	5,0	1006,1
15.X	11:00	290	7	2,1	1008,4
15.X	14:00	270	11	3,3	1008,6
16.X	11:00	270	4	3,7	1012,0
16.X	14:00	290	4	6,0	1011,2

