



TRANSNET SOC LTD

**FEASIBILITY STUDY (FEL3) FOR THE DEEPENING OF BERTHS 203-205
PORT OF DURBAN**

**AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED
PARTIES QUERIES REGARDING STORM SURGE AND CYCLONES**

1370 | RPT | 047 REV B

30 July 2014

T: +27 (0) 21 791 9100
F: +27 (0) 21 790 4470
E: ZAAEPNA@ZAAEPNA.COM
WWW.ZAAENGINEERING.COM

PO BOX 26546
HOUT BAY
SOUTH AFRICA
7872

31 MELKHOUT CRES.
HOUT BAY
CAPE TOWN
7806

ZAA
ENGINEERING PROJECTS &
NAVAL ARCHITECTURE (PTY) LTD



AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES

REVISIONS					
REV	DATE	DESCRIPTION	DESIGNED BY	CHECKED BY	APPROVED BY
A	29 July 2014	Internal Review	JZ	MC	JZ
B	30 July 2014	Issue to Client	JZ	MC	JZ
AUTHORISATION					
AUTHORISED BY	NAME	SIGNATURE	DATE		
DIRECTOR	J ZIETSMAN Pr Eng	<i>John Zietsman</i>	30 July 2014		

This document, including all design and information therein, is Confidential Intellectual Property of
ZAA Engineering Projects and Naval Architecture (Pty) Ltd.
Copyright and all other rights are reserved by ZAA Engineering.
This document may only be used for its intended purpose.



CONTENTS

1.0	EXECUTIVE SUMMARY	1
2.0	INTRODUCTION AND TERMS OF REFERENCE	2
3.0	METHODOLOGY	3
3.1	General Procedure and Data Sources	3
3.2	Estimation of Return Periods	4
3.3	Extreme Value Distributions (EVD's)	4
3.3.1	Weibull Distribution	5
3.3.2	Lognormal Distribution.....	5
3.3.3	Gumbel Distribution (Type 1 EVD)	5
3.3.4	Calculation of Fitted Cyclone Relative Intensities and Velocities	6
3.4	Goodness of Fit	6
3.5	Monte Carlo Simulations.....	6
3.6	Relative Intensities, Pressures and Maximum Wind Velocity Relationships.....	7
3.7	Sustained Wind Speeds.....	8
4.0	GENERAL DESCRIPTION	9
5.0	BATHYMETRY AND HYDRODYNAMIC GRID	12
6.0	TIDAL LEVELS	13
7.0	OFFSHORE WIND AND WAVE CONDITIONS INCLUDING EFFECTS OF TROPICAL CYCLONES	14
7.1	Source Data	14
7.2	Correlation between Cyclones and Extreme Offshore Wave Heights off Durban	16
8.0	TROPICAL CYCLONES	20
8.1	Data Source and Processing.....	20
8.2	Storm Surge Associated with Tropical Cyclones	23
8.3	Trends in Numbers of Cyclones per Annum and Cyclone Intensity 1945 – 2013.....	23
9.0	STORM SURGE	27
10.0	CONCLUSIONS	29
11.0	REFERENCES	30
	ANNEXURES	1
	ANNEXURE 1: CYCLONE DATA ANALYSIS FOR DURBAN USING JOINT TYPHOON WARNING CENTRE (JTWC) DATA (1945 TO 2013)	2
	ANNEXURE 2: DELFT-3D ANALYSES OF STORM SURGE COMPONENTS	3



AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES

1.0 EXECUTIVE SUMMARY

The report has been produced in response to queries raised by Interested and Affected Parties (IAP's) as part of the Environmental Impact Assessment (EIA) process for the Berth Deepening Project at Pier 2 in the Port of Durban. These queries relate specifically to the Amended EIA Report for this Project. The EIA process and the application for a Record of Decision (ROD) to authorise the project are vital components of the planning and execution of this upgrade project.

This report specifically addresses the following:

- (1) Cyclones: The Joint Typhoon Warning Centre (JTWC) records from 1945 to 2013 have been analysed and an extreme value analysis has been carried out using this data to calculate the 1:50 and 1:100 year return period local wind velocities at Durban.
- (2) Storm Surge: A detailed sensitivity study using DELFT-3D is described which was used to assess the various components of the Storm Surge. These components include wind and wave setup.
- (3) Pressure Deficit setup values used in the Design Premise for the Pier 2 Project were also reviewed.

The overall conclusions of the report are as follows:

- (1) The calculated extreme cyclone wind velocities are much lower than the 1:50 year wind velocities used in the Design Premise for the Berth Deepening Project.
- (2) The 1:50 year wind velocity used in the Project Design Premise and the extreme value calculated for cyclones are summarised in Table 1.1 for comparison.
- (3) The values used for Storm Surge in the Design Premise for the Pier 2 Project and as reported in ZAA-1370-RPT-028 are conservative. The 1:50 year value used in the Project Design Premise is 759 mm.

Table 1.1 1:50 Year Wind Velocities

Description	One Minute Sustained		3 Second Gust		One Hour Average	
	m/s	knots	m/s	knots	m/s	knots
Design Premise	37.3	72.4	42	81.6	30.8	59.9
Cyclones	13.6	26.4			11.6	22.6

Note: The values from the Project Design Premise have been used in the calculations.



AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES

2.0 INTRODUCTION AND TERMS OF REFERENCE

This report has been produced in response to queries raised by an Interested and Affected Parties (IAP's) as part of the Environmental Impact Assessment (EIA) process for the Berth Deepening Project at Pier 2 in the Port of Durban. These queries relate specifically to the Amended EIA Report for this Project. The EIA process and the application for a Record of Decision (ROD) to authorise the project are vital components of the planning and execution of this upgrade project.

This report specifically addresses the following:

- Cyclones: The Joint Typhoon Warning Centre (JTWC)¹ records from 1945 to 2013 have been analysed and an extreme value analysis has been carried out using this data to calculate the 1:50 and 1:100 year return period local wind velocities at Durban.
- Storm Surge: A detailed sensitivity study using DELFT-3D has been carried to calculate the various components of the Storm Surge. These components include wind and wave setup.

Pressure Deficit setup values used in the Design Premise for the Pier 2 Project have also been reviewed.

¹ The Joint Typhoon Warning Centre is a joint United States Navy – United States Air Force task force located in Pearl Harbor, Hawaii. The JTWC is responsible for issuing and recording tropical cyclone warnings in the North West Pacific Ocean, South Pacific Ocean and Indian Oceans for United States Department of Defense interests, as well as civilian interests.



AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES

3.0 METHODOLOGY

3.1 General Procedure and Data Sources

The following steps have been carried out as part of the Berth Deepening study:

- a) Data Acquisition
 - a. All Tropical Cyclone historical data from the Joint Typhoon Warning Centre (JTWC) for the period 1945 to 2013
 - b. All hind cast wind and wave data from the National Centre for Environmental Protection (NCEP) for the periods 1997 to 2013.
- b) Data Processing (Refs(1) to (8))
 - a. Examine trends in cyclone annual occurrence in the South Hemisphere and also occurrence of the cyclones tracking close to Durban
 - b. Extract (*inter alia*) cyclone tracks, central pressures and sustained wind velocities from the JTWC data within a maximum radius of 1000 nautical mile radius of Durban
 - c. Carry out a statistical analysis of the extracted data for return periods ranging from 5 to 250 years to determine calculated associated sustained wind velocities for use in refraction analyses carried out to calculate extreme wave heights and associated extreme water levels
 - d. Analyse the NCEP data to determine correlation with the occurrence of cyclones in the area and to carry out statistical calculations to determine extreme offshore wave heights, periods and directions for use in the refraction/diffraction analyses.
- c) Refraction/Diffraction Analysis to determine Wave Heights for various Return Periods at the locations of the proposed New Works at Pier 2 in Durban Harbour.
 - a. Update the bathymetry model using most recent survey data
 - b. Carry out a refraction/diffraction analysis to determine the effect of the offshore waves on the wave heights at the locations of the proposed new works
 - c. Carry out refraction/diffraction analyses to determine the extreme wave heights at the locations of the proposed new works for various Return Periods (50 and 100 years).
- d) Evaluate the extreme water levels and associated required marine structure deck levels for the range of Return Periods, together with the associated Risks of exceeding those levels.



AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES

3.2 Estimation of Return Periods

The estimates of the return periods of the tropical cyclones have been based on the Poisson Process to represent the occurrences, combined with Extreme Value Distributions (EVD's) to represent the intensities.

For Durban, scan circles ranging to a maximum of 1000 nautical miles have been used. Let F_i denote the probability that a maximum relative intensity X in any one tropical cyclone is less than a value x :

$$F_i = \frac{i}{(n+1)} \quad (1)$$

Here i is the rank in a set of n maximum relative intensities.

$$Pr(X < x | t) = F_i^t \quad (2)$$

Where $Pr(X < x | t)$ is the probability that the largest X in t tropical cyclones is less than x .

The probability that X is less than x in one year may be written as

$$Pr(X < x) = \sum_{t=0}^{\infty} Pr(X < x | t) Pr(t) \quad (3)$$

Where

$$Pr(t) = \mu^t \frac{e^{-\mu}}{t!} \quad (4)$$

is the Poisson probability that t cyclones will occur in in one year and μ is the average occurrence rate of tropical cyclones per year. Eq. (3) may be written as follows by making use of the Taylor series expansion of a power of e :

$$Pr(X < x) = e^{-\mu[1-F_i]} \quad (5)$$

Which can be rewritten from Eq.(1) as

$$Pr(X < x) = e^{-\mu[1-\frac{i}{(n+1)}]} \quad (6)$$

From Eq.(6) it follows that the Return Period T of $X > x$ (in years) can be estimated as

$$T = \frac{1}{[1-Pr(X < x)]} \quad (7)$$

3.3 Extreme Value Distributions (EVD's)

Relative Intensities (RI) of tropical cyclones are non-negative and positively skewed. In this study, the Weibull (two and three parameter), Lognormal and Gumbel Distributions have been used. In the following $f(x)$ is the Probability Density function (PDF), $F(x)$ the Cumulative probability Distribution Function (CDF), X the random variable of the Relative Intensity (RI) or the sustained wind velocity V_s , as indicated in the text and x is a possible value of X .



3.3.1 Weibull Distribution

a. Two Parameter

$$f(x) = \frac{\alpha}{\beta} \cdot (x/\beta)^{(\alpha-1)} e^{-(x/\beta)^\alpha} \quad (8)$$

Where x , α , β are positive.

$$F(x) = \Pr[X < x] = 1 - e^{-(x/\beta)^\alpha} \quad (9)$$

Where α and β are the shape and scale parameters respectively.

b. Three Parameter

$$f(x) = \frac{\alpha}{\beta} \cdot ((x - \gamma)/\beta)^{(\alpha-1)} e^{-((x-\gamma)/\beta)^\alpha} \quad (10)$$

Where x , α , $\beta > 0$ and $\gamma \geq 0$.

$$F(x) = \Pr[X < x] = 1 - e^{-((x-\gamma)/\beta)^\alpha} \quad (11)$$

Where α , β and γ are the continuous shape, scale and position parameters respectively. Note that $\gamma = 0$ yields the two parameter Weibull distribution.

3.3.2 Lognormal Distribution

The transformation

$$Y = \ln(X) \quad (12)$$

is made if $X > 0$ and X follows the Lognormal distribution. Y , the transformed variable follows the normal distribution in this case, so that

$$f(y) = \frac{1}{\sigma(2\pi)^{0.5}} e^{-(y-\mu)^2/(2\sigma^2)} \quad (13)$$

Where μ and σ are the mean and standard deviation of the transformed variable Y .

$F(y)$ corresponding to Eq. (13) does not have an analytical solution and must be evaluated numerically.

$$F(y) = \Phi\left\{\frac{(y-\mu)}{\sigma}\right\} \quad (14)$$

where $\Phi\{\}$ is the Laplace Integral.

As an alternative, the following approximation to the lognormal CDF distribution can be used

$$F(x, \mu, \sigma) = \left[\left(\frac{e^\mu}{x}\right)\pi/\sigma\sqrt{3} + 1\right]^{-1} \quad (15)$$

3.3.3 Gumbel Distribution (Type 1 EVD)

$$f(x) = \frac{1}{\beta} e^{-e^{[-\frac{x-\xi}{\beta}]}} - \left[-\frac{x-\xi}{\beta}\right] \quad (16)$$

Where ξ and β are location and scale parameters respectively. The Gumbel pdf is positively skewed with its maximum at $x = \xi$.

$$F(x) = e^{-e^{[-\frac{x-\xi}{\beta}]}} \quad (17)$$

The moment estimators for the Gumbel distribution are

$$\beta = \sigma\sqrt{6}/\pi \quad (18)$$

$$\xi = \bar{x} - 0.57721\beta \quad (19)$$



AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES

3.3.4 Calculation of Fitted Cyclone Relative Intensities and Velocities

The theoretical CDF's can be calculated from the various equations given above, as long as the parameters are fitted. The empirical CDF can be calculated from the observed data as

$$F_i(x_{(i)}) = \frac{i}{(n+1)} \quad (20)$$

Where i is the rank of the Relative Intensity or sustained wind velocity and n is the total number of observed maxima. A quantile plot Q-Q is made which compares the observed to the fitted data. The observed RI 's or V_s are calculated from Eq.(1). The fitted data is calculated from the inverse theoretical CDF

$$x_{(i)}^1 = F^{-1} \left[\frac{i}{n+1} \right] \quad (21)$$

3.4 Goodness of Fit

The Kolmogorov-Smirnov statistic (D) is based on the largest vertical difference between the theoretical and the empirical cumulative distribution function. The Lilliefors test (Modified K-S test) uses the absolute value of the largest difference D between the theoretical and empirical CDF's.

$$D = \max |F_n - F(x)| \quad (22)$$

Where $F(x)$ is the theoretical CDF for the distribution of interest.

The null and the alternative hypotheses are:

- H_0 : the data follow the specified distribution;
- H_A : the data do not follow the specified distribution.

The hypothesis regarding the distributional form is rejected at the chosen significance level (α) if the statistic, D , is greater than the critical value obtained from a table. The fixed values of (0.01, 0.05 etc.) are generally used to evaluate the null hypothesis (H_0) at various significance levels. A value of 0.05 is typically used for most applications, however, in some critical industries a lower value may be applied.

The standard tables of critical values used for this test are only valid when testing whether a data set is from a completely specified distribution. If one or more distribution parameters are estimated, the results will be conservative: the actual significance level will be smaller than that given by the standard tables and the probability that the fit will be rejected in error will be lower.

As an alternative it is reasonable to use the average difference between the observed and theoretical CDF's or between the observed and fitted RI 's or V_s (Pao-Shin Chu and Jianxin Wang, 1998), Ref (1).

3.5 Monte Carlo Simulations

In order to obtain improved estimates of the return periods of the tropical cyclone intensities and velocities, Monte Carlo simulations have been undertaken. In this process, up to 10000 cyclone RI 's or V_s 's are generated, based on the chosen fitted theoretical distribution. If RI 's are used, then these are converted back to central pressures and then to maximum wind speeds or vice versa, as described in the following section.

3.6 Relative Intensities, Pressures and Maximum Wind Velocity Relationships

The Relative Intensity (RI) is the actual central pressure drop divided by the maximum possible pressure drop that the mean seasonal climate allows (Darling 1991, Ref (2))

$$RI = \frac{P_{da} - P_d}{P_{da} - P_{dc}} \quad (23)$$

Where P_{da} is the surface value of the partial pressure of ambient dry air, P_d is the partial pressure for dry air in the centre of the tropical cyclone and P_{dc} is the minimum sustainable surface central pressure (for dry air) under the particular climatic condition.

$$RI = \frac{Pa - P_c + (1 - RH)e_s}{(1 - x)[Pa - (RH - e_s)]} \quad (24)$$

Where P_c is the central pressure of the tropical cyclone, e_s is the saturation vapour pressure, RH is the Relative Humidity and

$$P_{dc} = xP_{da} \quad (25)$$

Pa is the ambient surface pressure in the tropical western Indian Ocean.

For tropical cyclones, the central pressures and wind velocities tracking within a radius of 1000 nautical miles and less of Durban are available post 1998. Using this data, a relationship can thus be derived between the Relative Intensities and the cyclone wind velocities. These relationships are shown in Figures 3.5.1 and 3.5.2 as derived from the JTWC.

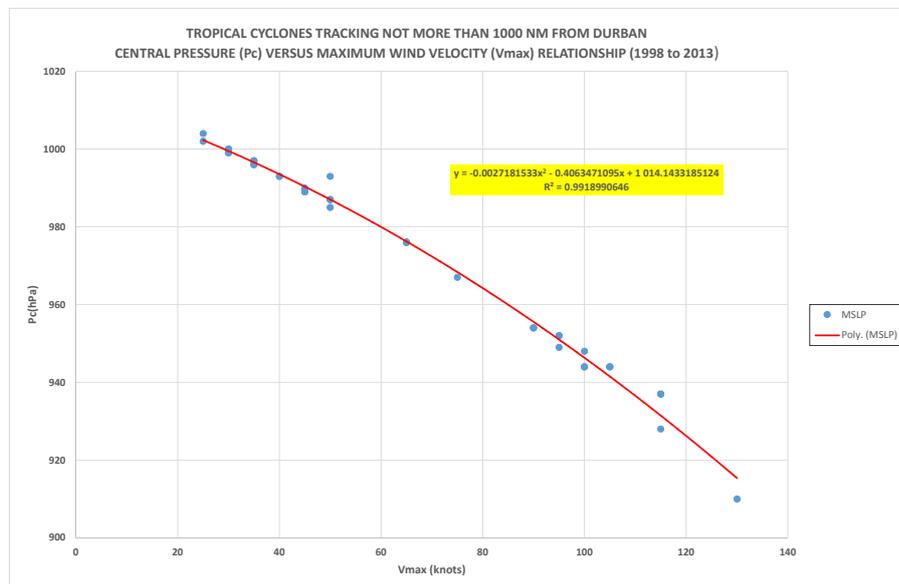


Figure 3.6.1 Tropical Cyclones within less than 1000 Nautical Miles of Durban: Central Pressure (Pc-hPa) vs Max Sustained Wind Velocity (Vmax-knots) Relationship (1998 to 2013)

AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
 QUERIES REGARDING STORM SURGE AND CYCLONES

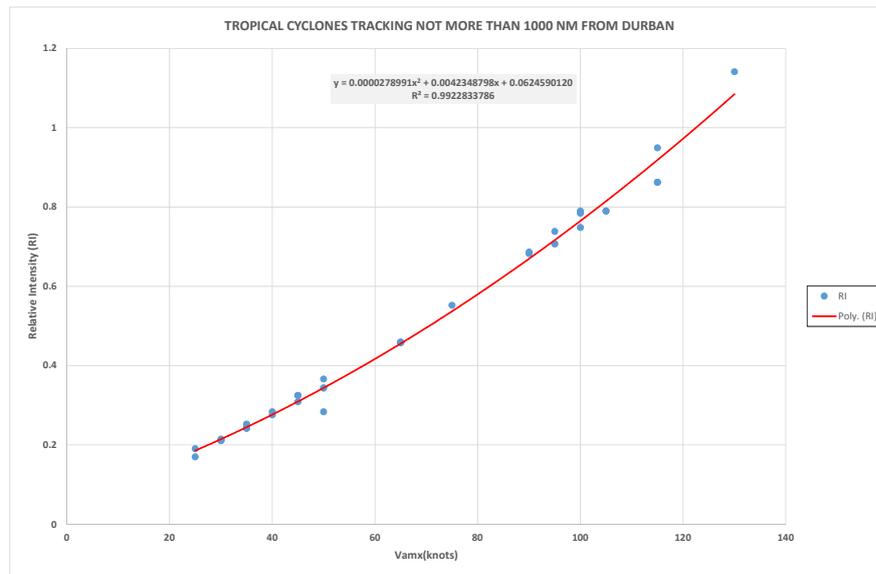


Figure 3.6.2 Tropical Cyclones within less than 1000 Nautical Miles of Durban : Relative Intensity (RI) vs Max Sustained Wind Velocity (Vmax-knots) Relationship (1998 to 2013)

The local wind velocity at Durban has been calculated using the USA National Weather Centre SLOSH wind model for coastal locations and inland waters affected by tropical cyclones (Jelesnianski et al, 1992, Ref(3)). This model is driven by a parametric wind model which has been tested against NOAA Hurricane Research Division’s observation based surface wind fields and found to produce realistic values (Houston and Powell, 1994, Ref (4) and Houston et al, 1999, Ref (5)). The SLOSH wind model calculates the wind velocity as

$$V = V_{max} \frac{2R_{mw}r}{R_{mw}^2 + r^2} \tag{26}$$

Here r is the radial distance from the centre of the storm and R_{mw} is the radius of maximum winds.

The maximum local sustained wind velocity V_{loc} has been derived from the JTWC tracking data using Eq. (26). The values of R_{mw} near Durban have only been recorded from 2002. In instances where this information has not been recorded, a mean value of 30 nautical miles (from the available recorded data) has been used, or a radius that gives a maximum local sustained wind velocity at Durban.

3.7 Sustained Wind Speeds

The local sustained wind velocities derived at Durban have been for the data set from 1998 to 2013, and have been used in regression analysis to determine the maximum local sustained wind velocities for Return Periods from 50 to 100 years and the associated risks of being exceeded. The sustained wind velocity recorded by the JTWC is the one minute average velocity. A correction has therefore been made to convert the recorded velocity to the hourly average, using the recommendations made by the *World Meteorological Organization, Sixth Tropical Cyclone RSMCs/TCWCs Technical Coordination Meeting, TCM-VI/Doc. 2.3, Brisbane Australia, 2-5 November, 2009, Definition of Maximum Sustained Wind Speed of Tropical Cyclones, Guidelines for Converting between Various Wind Averaging Periods in Tropical Cyclone Conditions, July 2009, BA Harper, JD Kepert and JD Ginger, Ref(6)* The conversion Factor from 60 second gust to 3600 seconds (1 hour) is $1 / 1.17 = 0.8547$, for offsea, onshore winds at a coastline.

The bathymetric model of Durban Harbour and the offshore bathymetry were updated to include the most recent surveys. The maximum of the Project Design Premise and the extreme local cyclone wind speeds for the various return periods have then been used in refraction analyses using the computer program Delft3D Ref (9), to calculate the wave heights at critical locations associated with the proposed works at Pier 2, as described in following sections and Annexure 2.

4.0 GENERAL DESCRIPTION

The Port of Durban is located in a sheltered estuary on the East coast of Southern Africa. The geographical position of the proposed new works at Pier 2 is approximately 29.88°S, 31.02°E. The location is shown in Figure 4.1.

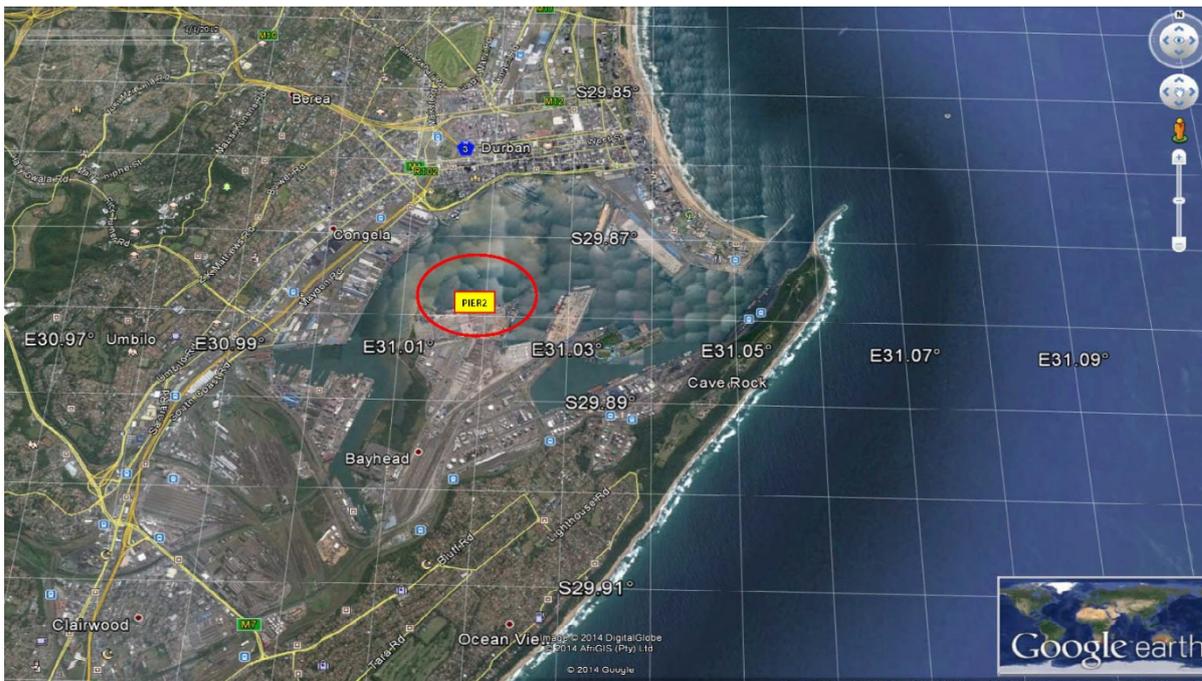


Figure 4.1 Location of Proposed Berth Deepening Works at Pier 2 Port of Durban

Weather Patterns

The heights and periods of wind generated waves are influenced by three factors:

- Wind velocity
- Duration of the wind over a given wave field and
- Fetch length

The actual size of the waves arriving at the coastline is also affected by the distance from the generating area to the point of interest on that coastline.

The wind and thus wave patterns in the Southern Atlantic and Southern Indian oceans are influenced by the following meteorological features:

Cold Fronts

- The Hadley cell is formed by heated air that rises in the tropics near the equator, moves southwards and descends near 30°S. The descending air causes two semi-permanent high pressure systems, the Southern Atlantic high and the Southern Indian high. The air moves in an anticlockwise rotation about the centre of a high pressure system (see Figure 4.2).
- The Ferrel westerly winds spiral eastwards around the globe, South of the Hadley cell.
- The Southern Atlantic low pressure systems are created by disturbed air in the Ferrel westerlies.
- The cold fronts regularly pass the southern tip of Africa at intervals of 3 to 5 days.

AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
 QUERIES REGARDING STORM SURGE AND CYCLONES

- In winter the depressions are frequently intersected by the southern tip of Africa, while in summer the whole system moves further south with fewer intersections. Occasionally a cold front does move further north in the summer.
- The passage of these depressions with associated cold fronts are the main source of large waves affecting the South African Coastline.
- The low pressure systems move rapidly from west to east in the Ferrel westerly wind system, at speeds in excess of the group velocity of the waves. The wind direction normally swings from NW to SE during the passage of a cold front past the south-western and southern Cape coast.
- These factors result in duration limited wave conditions that are seldom fully arisen.

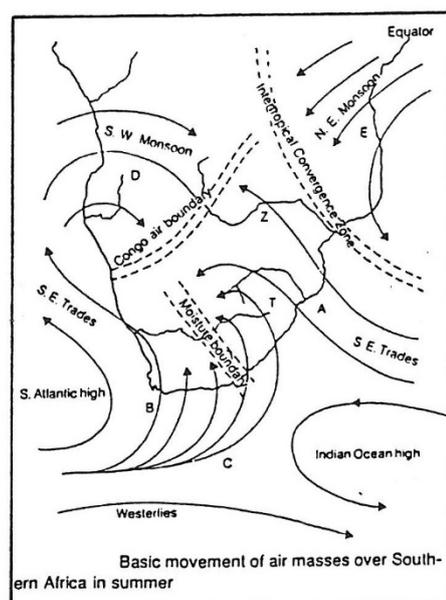
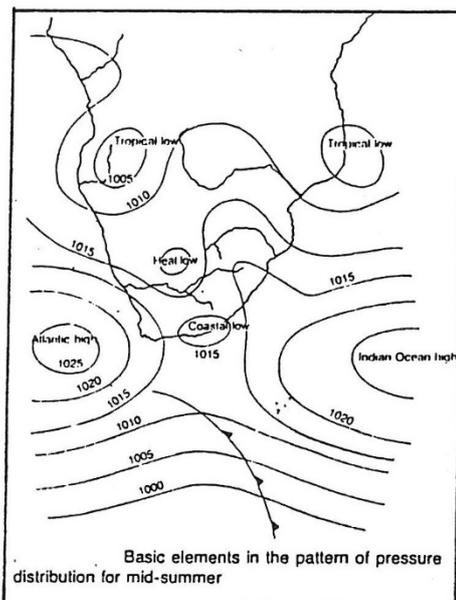
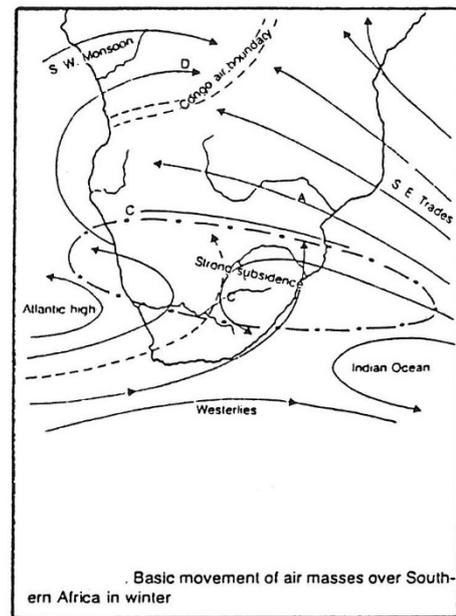
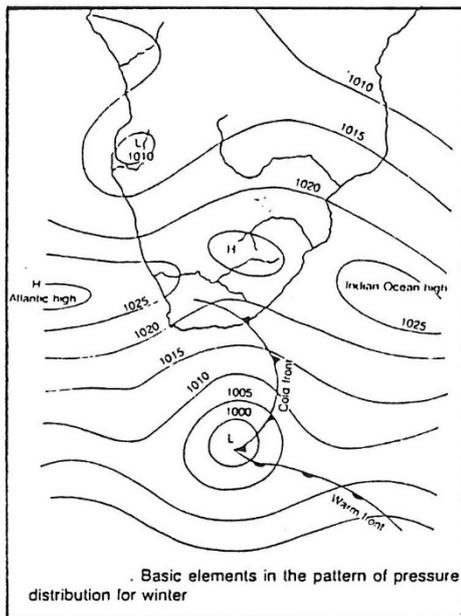


Figure 4.2 Pressure and Wind systems over Southern African Oceans (Hurry and Van Heerden 1982)

Tropical Cyclones

The other possibility of high waves along the eastern edge of the Southern African coastline is the occurrence of tropical cyclones. Whereas the cold fronts of the Southern Cape are regular and predictable, the occurrence and paths of the tropical cyclones are erratic and less predictable. The tropical cyclone systems are much smaller but more intense than the associated cold front systems. The most frequently occurring cyclone tracks of the world are shown in Figure 4.3. From this figure it can be seen that the only part of the Southern African coastline that is influenced by these tropical cyclones is the northern Natal coastline. However these cyclones can cause high waves and should not be ignored when design waves for the northern Natal coastline are considered.

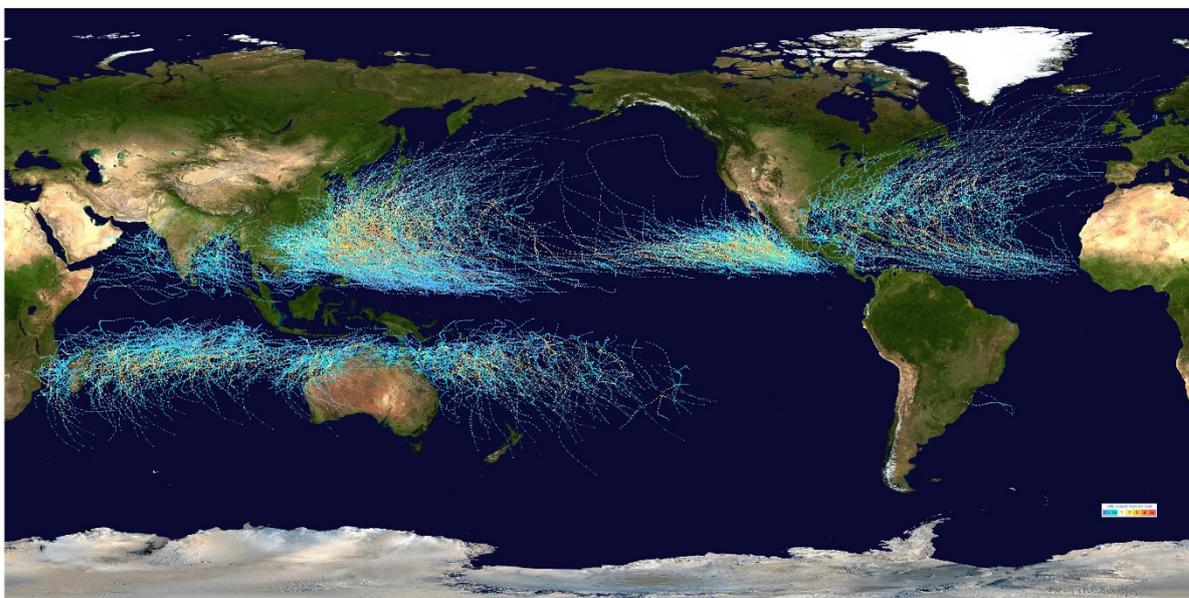


Figure 4.3 Frequent Cyclone Tracks of the World

The wind patterns dominating the South African east coast wave climate are summarised in Figure 4.2 above. A belt of changing wind occurs between the trade winds in the North and the constant westerlies far South (roaring forties). The intensity of the cold fronts usually reduces east of Port Elizabeth. The Southern Indian high also tends to deflect the cold fronts away from the coast in this area. These two factors together with the change in direction of the coastline to a more SW-NE orientation have the effect of reducing the influence of the regular cold fronts east of Port Elizabeth. There is thus a general reduction in wave heights due to the cold fronts, east of Port Elizabeth. The wave fields from east of Port Elizabeth to the Mozambique border are influenced by smaller systems such as coastal lows.

Summary of Systems

The approaches to the Port of Durban are thus affected by the following wave systems:

- Swell arriving from the Southern Indian Ocean, having made its way around the Cape of Good Hope to the South.
- Swell generated by tropical cyclones to the north.
- Local wind generated waves

5.0 BATHYMETRY AND HYDRODYNAMIC GRID

The Port of Durban is located in the sheltered Durban Bay estuary. The bathymetric and hydrodynamic grid model was updated to include all recent surveys undertaken as part of the Pier 2 berth deepening project (refer to Figures 5.1 and 5.2)

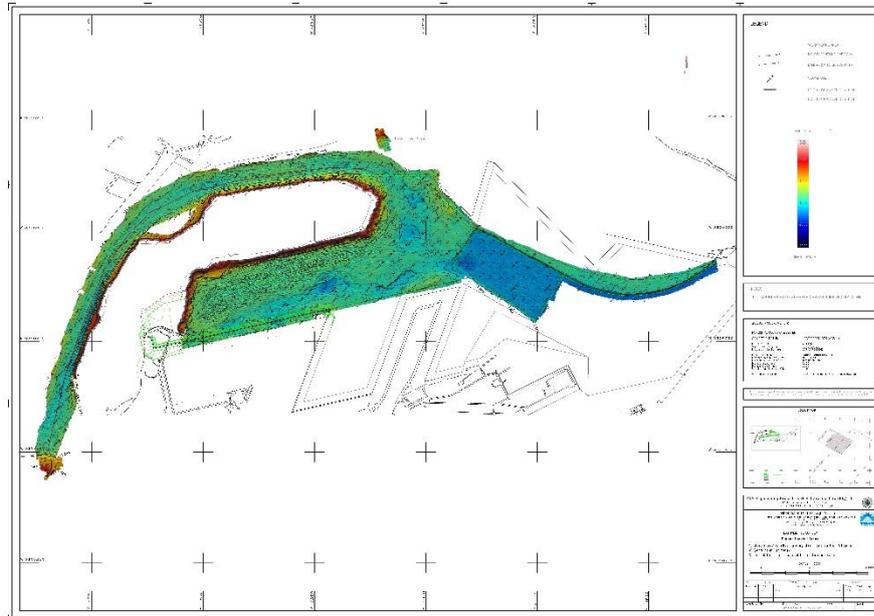


Figure 5.1 Durban Bay Bathymetric Survey

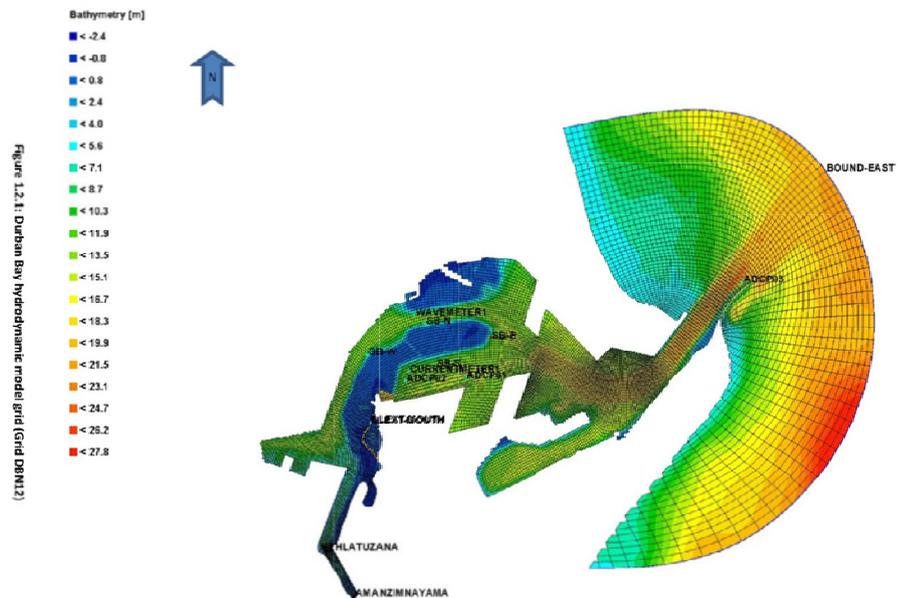


Figure 5.2 Durban Bay Hydrodynamic Grid



AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES

6.0 TIDAL LEVELS

The tidal levels are available in SAN HO-2, SA Navy South African Tide Tables, 2014 which are summarised in Table 6.1 for the Port of Durban.

Table 6.1 Tidal Levels Port of Durban (SAN HO-2, 2014, all values in metres relative to Chart Datum)

PLACE	LAT	MLWS	MLWN	ML	MHWN	MHWS	HAT
Durban	0.0	0.21	0.87	1.11	1.36	2.01	2.3

Notes

- (1) HAT and LAT are the highest and lowest levels respectively which can be predicted to occur under average meteorological conditions under any combination of astronomical conditions. The levels will not be reached every year. HAT and LAT are not the extreme levels which can be reached, as storm surges and other meteorological conditions may cause considerably higher and lower levels to occur. HATOY and LATOY are the HAT and LAT levels for the year in question.
- (2) MHWS (Mean High Water Springs), MLWS (Mean Low Water Springs).
- (3) MHWN (Mean High Water Neaps), MLWN (Mean Low Water Neaps).
- (4) ML (Mean Level) is the mean of the heights of MHWS, MHWN, MLWS and MLWN.
- (5) The predictions of South African Ports are generally based on more than 20 years' observations. HAT and LAT are computed from 19 years predictions. The Mean Levels are computed from the predictions of a recent year when the Moon's declination was 23.5°
- (6) Tides on the South African coasts are regular, semi diurnal and their ranges seldom exceed 2.2m.
- (7) For Durban in 2014 : LATOY = 0.023m, HATOY = 2.256m
- (8) The height of Chart Datum relative to Land Levelling Datum in Durban was -0.838m up to 31 Dec 1978, -0.9m from 1 Jan 1979 to 31 Dec 1997, -1.113 from 1 Jan 1998 to 31 Dec 2002 and has been -0.913 since 1 Jan 2013, however Transnet defines Chart Datum Port (CDP) as -0.9m below LLD.

AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
 QUERIES REGARDING STORM SURGE AND CYCLONES

7.0 OFFSHORE WIND AND WAVE CONDITIONS INCLUDING EFFECTS OF TROPICAL CYCLONES

7.1 Source Data

Available NCEP hind-cast wind and wave data (1997 to 2010) has been processed to obtain the offshore wave height, period and occurrence tables at the location 30°S, 31.5°E (refer to Figure 7.1). The wave occurrence tables from the NCEP data are summarised in Tables 7.1 and 7.2. An extreme wave regression analysis has been carried out using Log-Linear and Extreme-I distributions. The 5 year to 100 Year design waves are summarised in Table 7.3.



Figure 7.1 Location of NCEP Hindcast Data Virtual Buoy

The NCEP wind occurrence data is given in Table 7.4. The 5 to 10 year return period extreme value NCEP wind data is summarised in Table 7.5.

Table 7.1 Hindcast Offshore Directional Wave Occurrence Data (NCEP 1997-2010)

DURBAN HARBOUR OFFSHORE SIGNIFICANT WAVE HEIGHT (M) PERCENTAGE OCCURRENCE DATA FOR PERIOD 1997-2010 (AT LATITUDE 30 S , LONGITUDE 31.5 E) : DIRECTION FROM																	
Significant Wave Height Hs (m)	N-NNE	NNE-NE	NE-E	ENE-E	E-ESE	ESE-SE	SE-SSE	SSE-S	S-SSW	SSW-SW	SW-WSW	WSW-W	W-WNW	WNW-NW	NW-NNW	NNW-N	SUM
0.0 - 0.5				0.002													0.00
0.5 - 1.0	0.010	0.044	0.057	0.113	0.261	0.165	0.128	0.069	0.172	0.180			0.002				1.20
1.0 - 1.5	0.071	0.690	2.161	4.051	6.222	2.526	1.801	1.811	3.437	3.171	0.015		0.015	0.002	0.005	0.027	26.01
1.5 - 2.0	0.049	0.754	4.191	5.086	9.147	3.122	3.019	3.307	8.343	4.908	0.012	0.007			0.002	0.002	41.95
2.0 - 2.5	0.015	0.140	0.998	1.372	3.248	1.355	1.321	1.892	6.042	2.395	0.015						18.79
2.5 - 3.0		0.022	0.138	0.256	0.646	0.461	0.562	0.747	3.287	1.178	0.005						7.30
3.0 - 3.5			0.010	0.081	0.207	0.153	0.227	0.315	1.094	0.690							2.78
3.5 - 4.0				0.007	0.049	0.081	0.057	0.138	0.540	0.308							1.18
4.0 - 4.5					0.025	0.002	0.030	0.079	0.232	0.101							0.47
5.0 - 5.5					0.017	0.010	0.012	0.020	0.103	0.037							0.20
5.5 - 6.0							0.007	0.010	0.049	0.012							0.08
6.0 - 6.5							0.002	0.005	0.015								0.02
6.5 - 7.0								0.002									0.00
7.0 - 7.5								0.002	0.002								0.00
SUM	0.15	1.65	7.56	10.97	19.82	7.88	7.17	8.40	23.32	12.98	0.05	0.01	0.02	0.00	0.01	0.03	100

AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES

Table 7.2 Hindcast Offshore Wave Period Occurrence Data (NCEP 1997-2010)

DURBAN HARBOUR OFFSHORE SIGNIFICANT WAVE HEIGHT (M) AND SPECTRAL PEAK PERIOD (S) OMNI-DIRECTIONAL PERCENTAGE OCCURRENCE DATA FOR PERIOD 1997-2010 (AT LATITUDE 30 S , LONGITUDE 31.5 E)																						
Significant Wave Height Hs (m)	Spectral Peak Period Tp(s)	SPECTRAL PEAK PERIOD Tp(s)										sum										
		0 to 2 1	2 to 4 3	4 to 6 5	6 to 8 7	8 to 10 9	10 to 12 11	12 to 14 13	14 to 16 15	16 to 18 17	18 to 20 19		20 to 22 21									
0-0.5	0.25		0.002																			0.002
0.5-1	0.75		0.022	0.177	0.342	0.257	0.231	0.142	0.027													1.198
1-1.5	1.25		0.491	2.811	7.623	7.732	4.249	2.387	0.653	0.059												26.005
1.5-2	1.75		0.185	5.687	10.944	12.907	6.022	4.498	1.538	0.160	0.007											41.948
2-2.5	2.25			1.786	5.094	5.128	3.578	2.210	0.867	0.126	0.005											18.794
2.5-3	2.75			0.117	2.316	1.783	1.486	1.009	0.483	0.104												7.298
3-3.5	3.25				0.560	0.955	0.746	0.330	0.128	0.054	0.005											2.778
3.5-4	3.75				0.073	0.582	0.310	0.137	0.060	0.017												1.179
4-4.5	4.25				0.009	0.177	0.169	0.096	0.015													0.466
4.5-5	4.75					0.046	0.093	0.052	0.007													0.198
5-5.5	5.25						0.041	0.009	0.022	0.005												0.077
5.5-6	5.75						0.010	0.012														0.022
6-6.5	6.25							0.002														0.002
6.5-7	6.75							0.004														0.004
7-7.5	7.25							0.009														0.009
7.5-8	7.75																					
sum			0.70	10.58	26.96	29.57	16.94	10.89	3.80	0.53	0.02										100.0	

Table 7.3 Extreme Value Offshore Wave Analysis (using NCEP Hindcast data 1997-2010)

Return Period (years)	LN-Linear Hs (m)	Extreme-I Hs (m)	Extreme-I Hs (m) Method of Moments
5	5.8	6.6	7.5
10	6.5	7.0	7.6
50	8.1	7.9	8.1
100	8.8	8.3	8.2

Table 7.4 HindCast NCEP Offshore Wind Occurrence Data (1997-2010)

ANNUAL WIND PERCENTAGE OCCURRENCE DATA (m/s) (FOR THE PERIOD 1997 - 2010)																			
Wind Velocity (+10m CD)		WIND DIRECTION (FROM)																	SUM
knots	m/s	S-SSW	SSW-SW	SW-WSW	WSW-W	W-WNW	WNW-NW	NW-NNW	NNW-N	N-NNE	NNE-NE	NE-ENE	ENE-E	E-ESE	ESE-SE	SE-SSE	SSE-S		
0 - 10	0 - 5	2.932	2.997	3.204	2.900	2.568	2.551	2.868	3.174	2.898	2.104	1.476	1.175	1.037	1.272	1.888	2.415	37.46	
10 - 20	5 - 10	7.620	11.180	7.109	1.801	0.665	0.752	1.358	3.684	8.549	5.355	1.089	0.271	0.222	0.296	0.500	1.932	52.38	
20 - 30	10 - 15	0.586	2.040	0.759	0.025	0.015	0.012	0.044	0.298	2.642	2.846	0.266	0.027	0.002		0.015	0.020	9.60	
30 - 40	15 - 20	0.005	0.047	0.010			0.002	0.002	0.007	0.168	0.229	0.062	0.010					0.54	
40 - 50	20 - 25								0.002	0.007	0.005	0.002						0.02	
sum		11.14	16.26	11.08	4.73	3.25	3.32	4.27	7.17	14.26	10.54	2.90	1.48	1.26	1.57	2.40	4.37	100.00	

Table 7.5 Extreme Value Offshore Wave Analysis (using NCEP Hindcast data 1997-2010)

NCEP EXTREME HINDCAST OFFSHORE WINDS (metres/sec 3 sec gust)		
RETURN PERIOD (YEARS)	GENERAL EXTREME VALUE (k=0)	GUMBEL DISTRIBUTION
5	27.4	27.0
10	28.5	28.0
15	29.1	28.6
20	29.5	29.0
25	29.8	29.4
30	30.1	29.6
35	30.3	29.8
40	30.5	30.0
45	30.7	30.2
50	30.8	30.3
75	31.4	30.9
100	31.8	31.3

Note that the 3 second gust wind velocity at 10 metres above MSL, used for these studies, has been 40 m/s, as prescribed in SANS 0160, conservatively increased by 5% to 2069 and by 10% to 2100.

7.2 Correlation between Cyclones and Extreme Offshore Wave Heights off Durban

The source of the cyclone data is discussed in the following Section 8. Analysis of the NCEP offshore wave data has revealed the extent of correlation of the effects of the cyclones on the wave directions and heights near Durban. For example, Figure 7.2 shows the tracks of cyclones near Durban during the first quarter of 2007. Figure 7.3 shows the significant wave heights and directions during that same period.

Cyclone *DORA* only tracked to within about 1490 nautical miles of Durban and had no significant influence on either the local wind velocities or the wave heights at 30°S, 31.5°E off Durban. The 4-5 metre swells that occurred on the 14th February were due to a well developed cold front from the South.

Cyclone *FAVIO* tracked to within approximately 480 nautical miles of Durban. Again there was no significant effect on the swells or the wind velocity off Durban.

Cyclone *GAMEDE* tracked to a closest distance of about 870 nautical miles from Durban. This cyclone had no significant influence on the wind strength at Durban, but did affect the wave heights which rose to just over 3 m significant wave height.

It noted that the swells due to low pressure systems from the South and not the swells from the North or East (due to cyclones) overwhelmingly dominate the higher wave climate offshore Durban.

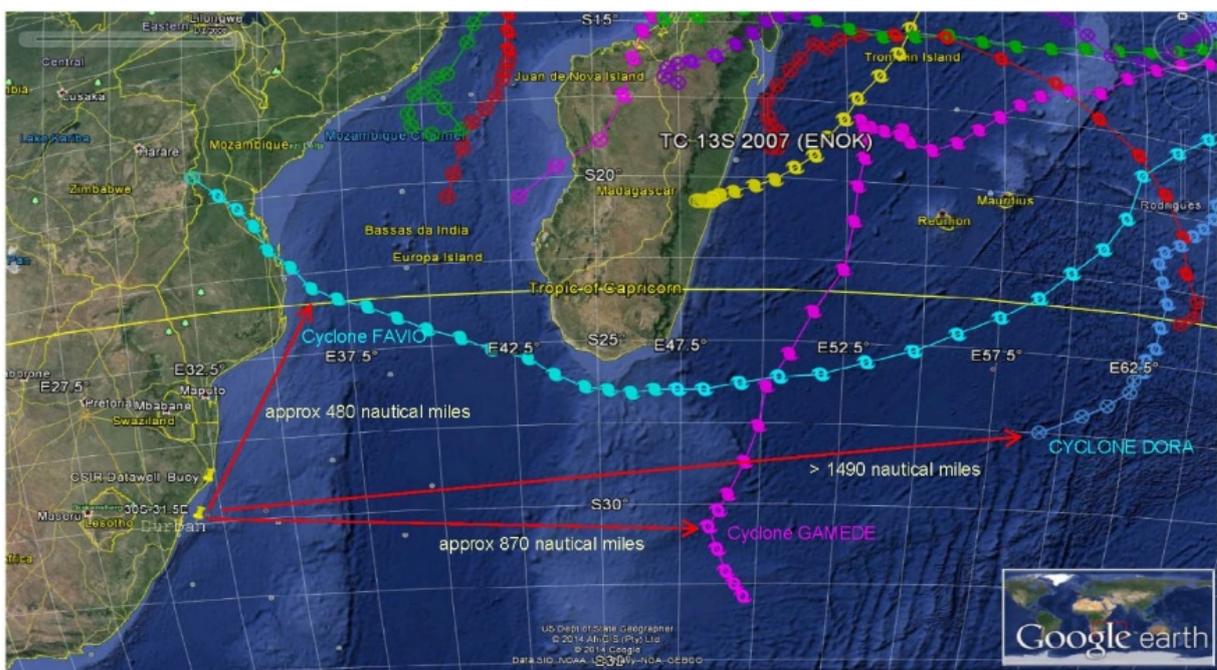


Figure 7.2 Cyclone Tracks Closest to Durban in 2007

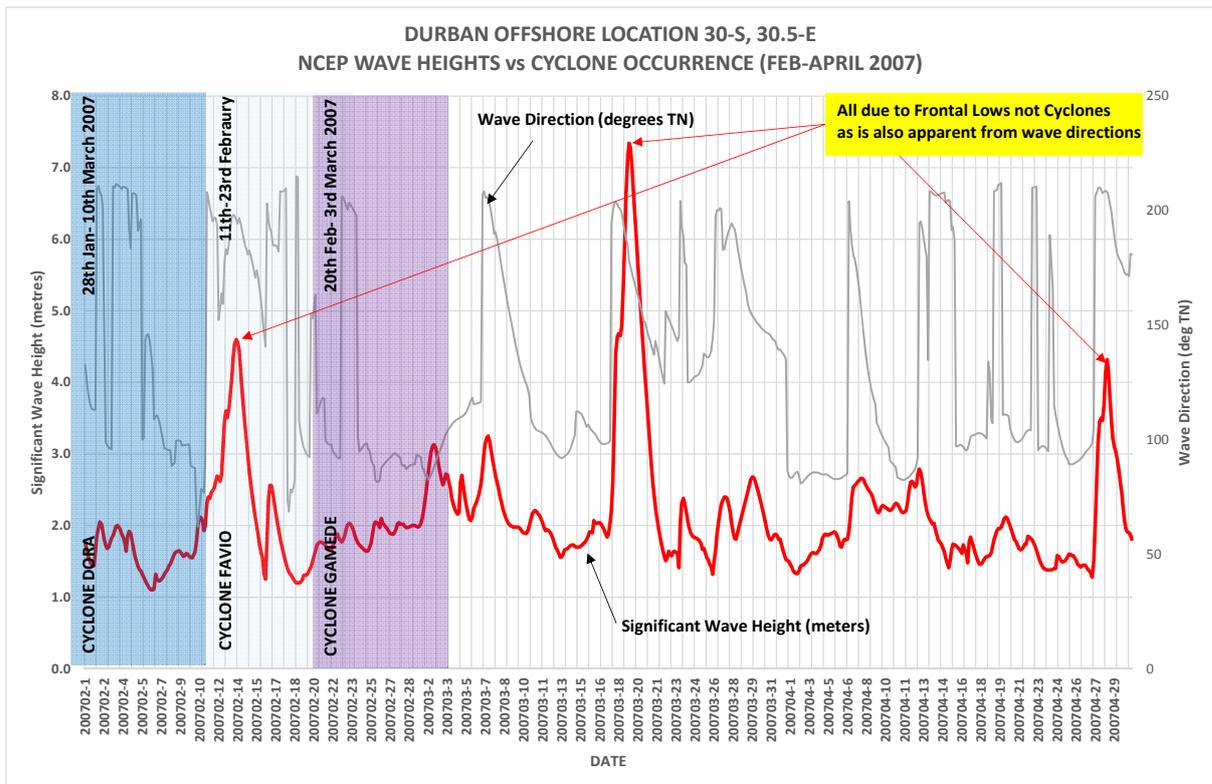


Figure 7.3 NCEP Wave Heights versus Cyclone Occurrence Closest to Durban 2007

(Wave directions show that the higher waves are due to swell from the South and not as a result of the cyclones)

In particular, the storm of the 18th and 19th March 2007 was extreme, but it was not due to cyclone activity. The peak wave heights that occurred on 14th February, 18th March and the 28th April 2007 were all due to swells caused by frontal lows from the South.

On Sunday 18th March 2007, the centre of a semi-stationary cut-off low was located approximately 270 nautical miles south-east of Durban (*Hunter et al, Ref.(12)*). The wind speeds at south-western perimeter were up to 60 knots. The associated southerly to south-easterly swell peaked at approximately the same time as the equinoctial spring high tide early on the morning of 19th March 2007. The sea level pressure analysis carried out by the South African Weather Service gave the peak cut-off low intensity as being at its peak on 18th March 2007 at 18h00 UTC and the winds reached their peak at about the same time. The winds reached their peak of 45 knots at Richards Bay early on morning of Monday 19th March. In Durban, the south-westerly wind velocity had peaked at approximately 35 to 40 knots on afternoon of Sunday 18th March. The highest waves were recorded off Richards Bay early at 5am on 19th March at 8.5 metres significant wave height. The highest significant wave height at East London was 6.25 metres at the same time.

The timing of the high spring-tide played a significant role in the flooding that occurred along the Natal coast on 19th March. However the damage was mainly caused by the additional storm surge associated with the deep, semi-stationary cut-off low that occurred at the same time offshore, together with the associated extremely high waves and the high onshore winds. The peak storm surge has been reported in Ref(10) as being 700 mm at the SA Navy tide recorder at the entrance to the Port of Durban.

However, based on the actual recorded data obtained from the Navy it was less than 700 mm. Refer to Table 7.6 and Figures 7.3 and 7.4 below. The storm surge would have been composed of wind-setup, wave-setup and atmospheric pressure-deficit components which components are discussed further in the following section. *The following data was supplied courtesy of the Hydrographer of the SA Navy.*

AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
 QUERIES REGARDING STORM SURGE AND CYCLONES

Table 7.6 19th March 2007 SA Navy Tidal Data : Durban

Date	Time	Predicted (m)	Actual (m)	Difference (m)
2007/03/19	01:00:00	1.24	1.54	0.30
2007/03/19	02:00:00	1.75	2.03	0.28
2007/03/19	03:00:00	2.13	2.45	0.32
2007/03/19	04:00:00	2.26	2.60	0.34
2007/03/19	05:00:00	2.11	2.48	0.37
2007/03/19	06:00:00	1.72	2.09	0.37
2007/03/19	07:00:00	1.20	1.53	0.33
2007/03/19	08:00:00	0.67	1.13	0.46
2007/03/19	09:00:00	0.26	0.66	0.40
2007/03/19	10:00:00	0.10	0.42	0.32
2007/03/19	11:00:00	0.21	0.51	0.30
2007/03/19	12:00:00	0.55	0.97	0.42
2007/03/19	13:00:00	1.04	1.42	0.38
2007/03/19	14:00:00	1.55	1.98	0.43
2007/03/19	15:00:00	1.95	2.39	0.44
2007/03/19	16:00:00	2.14	2.57	0.43
2007/03/19	17:00:00	2.06	2.44	0.38
2007/03/19	18:00:00	1.73	2.12	0.39
2007/03/19	19:00:00	1.23	1.64	0.41
2007/03/19	20:00:00	0.69	1.00	0.31
2007/03/19	21:00:00	0.25	0.63	0.38
2007/03/19	22:00:00	0.02	0.38	0.36
2007/03/19	23:00:00	0.09	0.47	0.38
2007/03/20	00:00:00	0.42	0.74	0.32

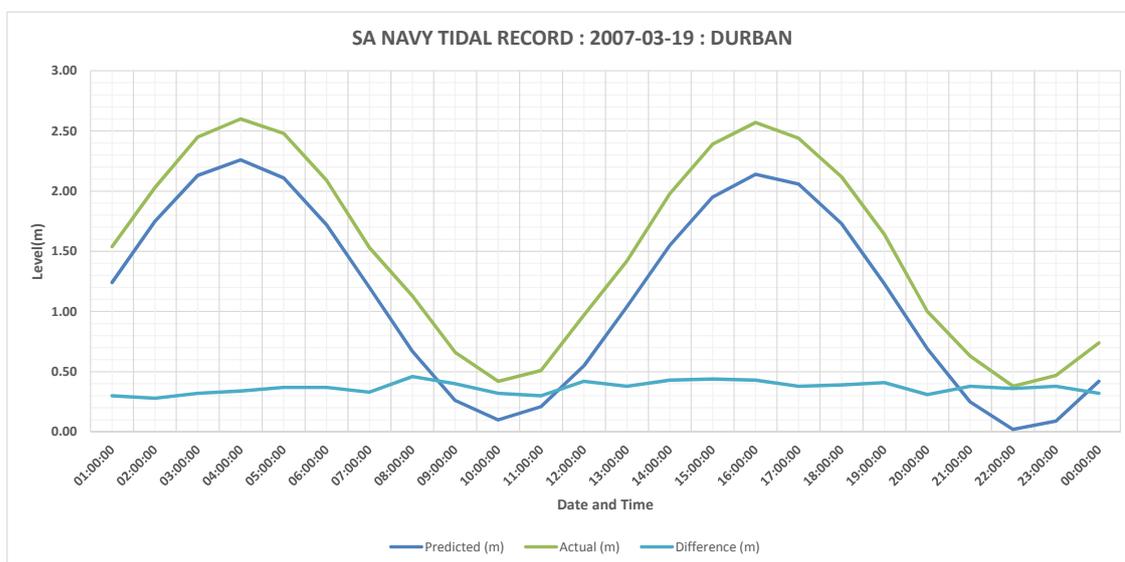


Figure 7.3 SA Navy Durban Tidal Predictions 2007-03-19 (courtesy of the Hydrographer SA Navy)

AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
 QUERIES REGARDING STORM SURGE AND CYCLONES

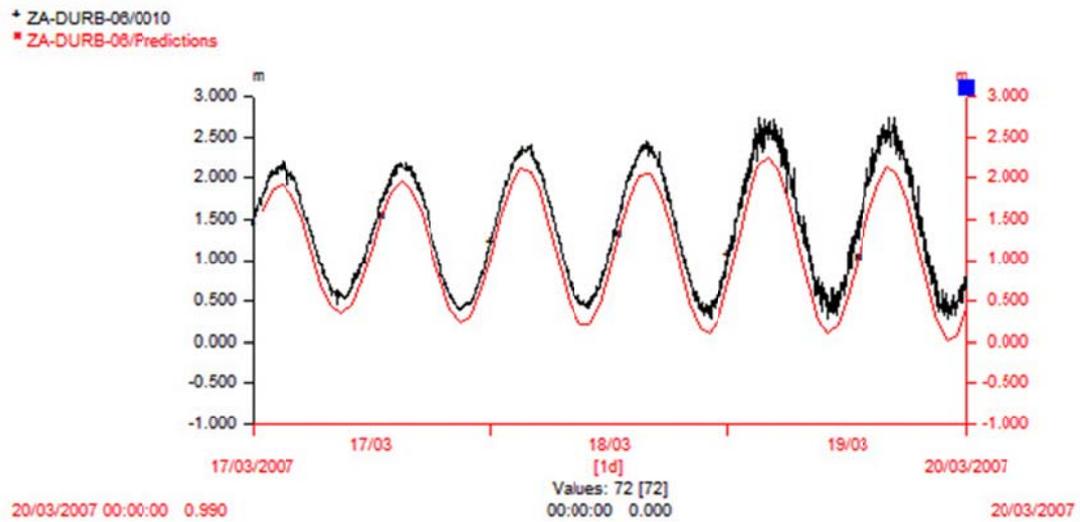


Figure 7.4 SA Navy Durban Tidal Predictions 2007-03-19 (courtesy of the Hydrographer SA Navy)

It should be noted that the dark recorded line in Figure 7.4 includes waves at the location of the tide gauge. This accounts for why the storm surge was overstated by Mather et al in Ref(10), by some 240 mm (700 – 460 = 240 mm), where 460 mm is the maximum residual shown in Table 7.6 and Figure 7.3.

Our calculations indicate that the storm on 19th March 2007 may have been close to a 1:50 year storm in terms of wave height offshore, but not wind velocity at Durban.



**AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES**

8.0 TROPICAL CYCLONES

8.1 Data Source and Processing

The data base on which this study has been based comprises:

All Tropical Cyclone historical data from the Joint Typhoon Warning Centre (JTWC) for the period 1945 to 2013

All hind cast wind and wave data from the National Centre for Environmental Protection (NCEP) for the periods 1997 to 2010 (Grib-1) and 2005 to 2013 (Grib-2)

Data processing has been carried out by extracting (*inter alia*) cyclone tracks, central pressures and sustained wind velocities from the JTWC data within a 1000 nautical mile radius of 30°S, 31.5°E approximately 24 nautical miles offshore Durban. A statistical analysis of the extracted data has been carried out for return periods ranging from 5 to 250 years to determine calculated associated sustained wind velocities for use in refraction analyses. These cyclone wind analyses have been based on Refs (1) to (8). Refraction analyses have been carried out to calculate extreme wave heights and associated extreme water levels.

NCEP data has been analysed to determine correlation with the occurrence of cyclones in the area and to perform statistical calculations to determine extreme offshore wave heights, periods and directions for use in the refraction analyses.

The results of the cyclone and the offshore wind and wave data processing are given in Annexures 1 and 2. Calculated wind velocities are summarized in Table 8.1.1 and in Figures 8.1.1 to 8.1.4.

Table 8.1.1 Maximum Extreme Sustained Local Wind Velocities at Durban due to Cyclones

Return Period (years)	One Minute Sustained Wind Velocity (knots)	Hourly Average Wind Velocity (knots)	One Minute Sustained Wind Velocity (m/s)	Hourly Average Wind Velocity (m/s)
5	12.2	10.4	6.3	5.4
10	15.6	13.3	8.0	6.9
25	21.1	18.1	10.9	9.3
50	26.4	22.6	13.6	11.6
100	33.0	28.2	17.0	14.5
250	44.3	37.9	22.8	19.5

AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
 QUERIES REGARDING STORM SURGE AND CYCLONES

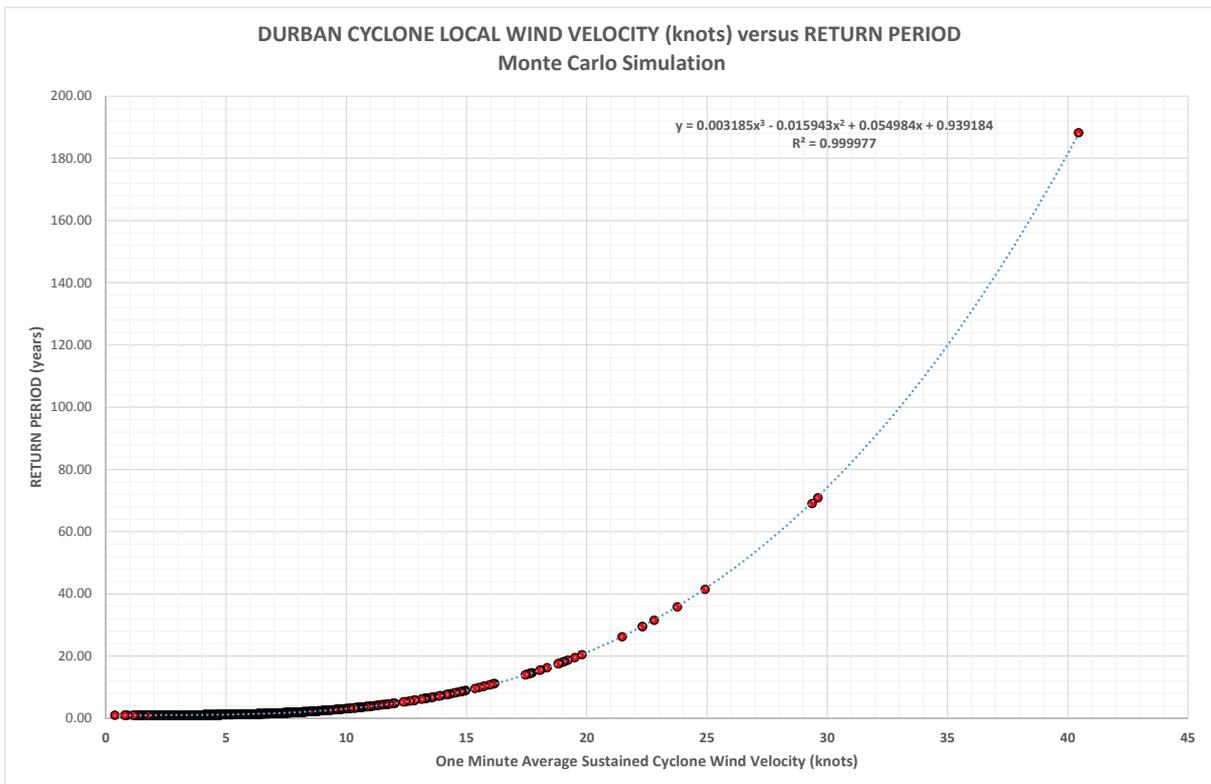


Figure 8.1.1 Monte Carlo Simulation : Cyclone Local Wind Velocities Versus Return Period

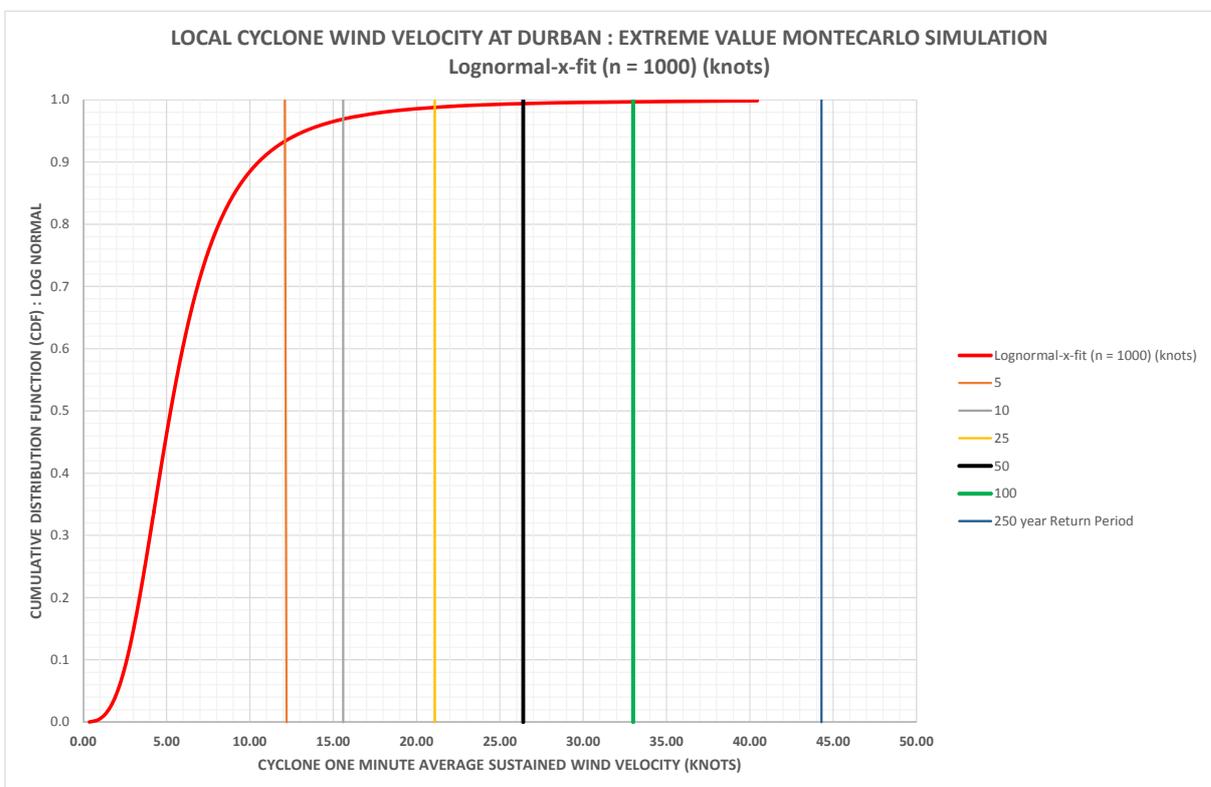


Figure 8.1.2 Monte Carlo Simulation: CDF Cyclone Sustained Wind Velocities

AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
 QUERIES REGARDING STORM SURGE AND CYCLONES

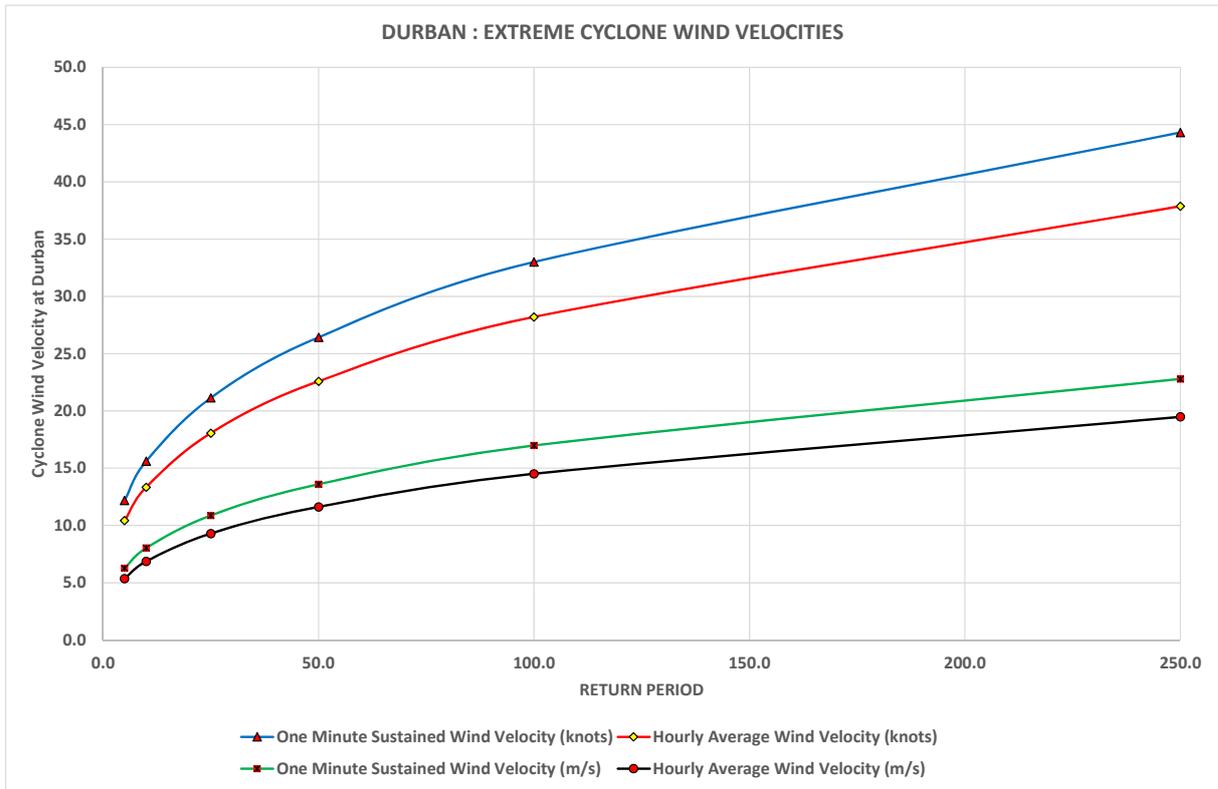


Figure 8.1.3 Cyclone Sustained Wind Velocities

The above wind velocities may be from any direction. This is an important factor because the wave heights generated by the cyclone winds depend also on the direction of the wind. This has the effect of reducing risk significantly as the wind does not always blow from the worst direction.

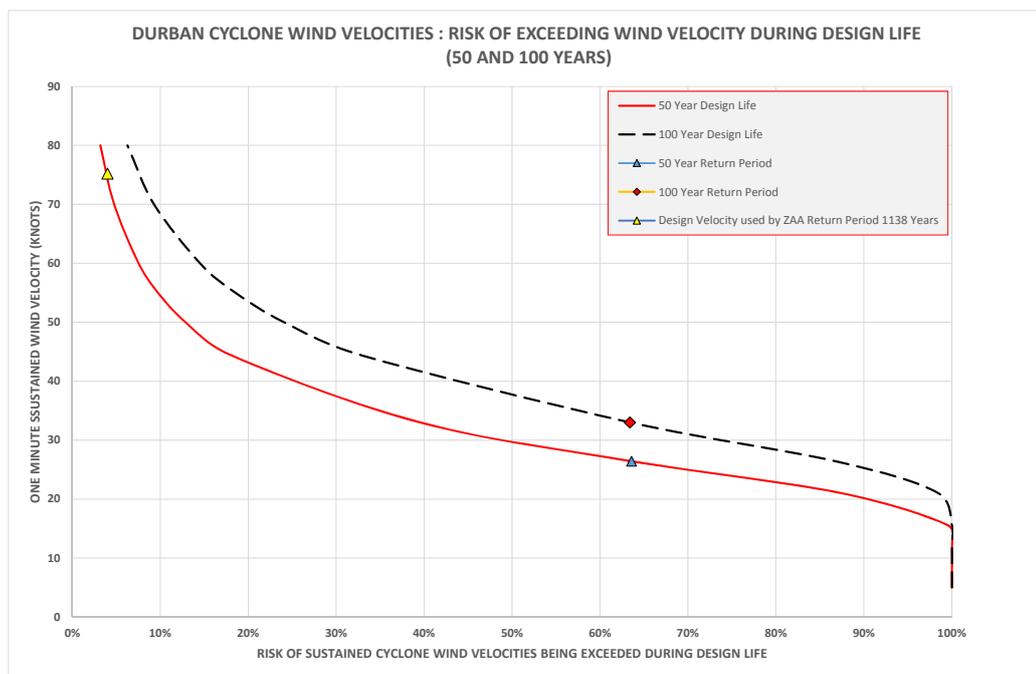


Figure 8.1.4 Risk of Sustained Wind Velocities Being Exceeded During Design Life

AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
 QUERIES REGARDING STORM SURGE AND CYCLONES

The results of the refraction analyses to determine the wave heights at the location of the new works are given in Annexure 2. It is noted that the offshore generated waves have negligible influence on the wave heights at the locations of the proposed new works. Waves at those locations would primarily be caused by the local sustained winds acting on the surface waters within the Port of Durban. All DELFT-3D analyses included the 1:50 year offshore wave conditions which are only marginally lower than the 1:100 year conditions.

8.2 Storm Surge Associated with Tropical Cyclones

The storm surge associated with tropical cyclones also consists of the three components being the setups associated with pressure deficit, wind and wave. However, our analysis indicates that it is much more probable that the design of the Pier 2 facilities will be governed by the frontal systems that presently dominate along that coastline. Storm Surge is therefore discussed in general in Section 9, but including tropical cyclones.

8.3 Trends in Numbers of Cyclones per Annum and Cyclone Intensity 1945 – 2013

The trends in numbers of cyclones per annum since 1945 in the Southern Hemisphere and in those tracking to within less than one thousand nautical miles of Durban are shown in Figures 8.3.1 and 8.3.2. It is noted that in both cases, the trend appears to be slightly negative.

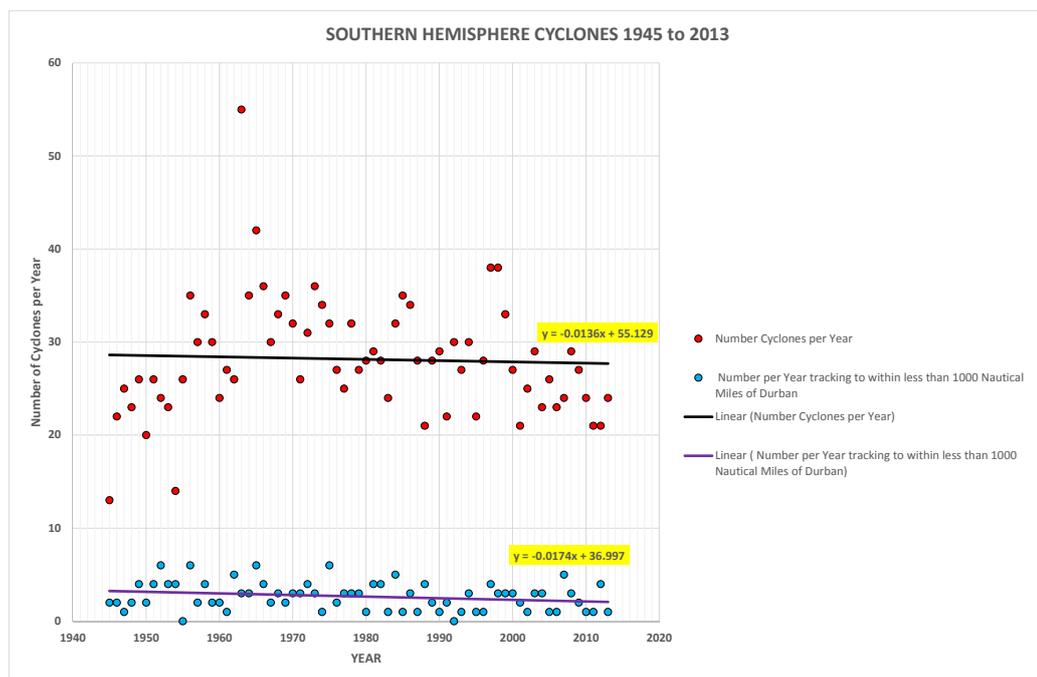


Figure 8.3.1 Trend in No of Cyclones per Annum in Southern Hemisphere and closer to Durban

AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
 QUERIES REGARDING STORM SURGE AND CYCLONES

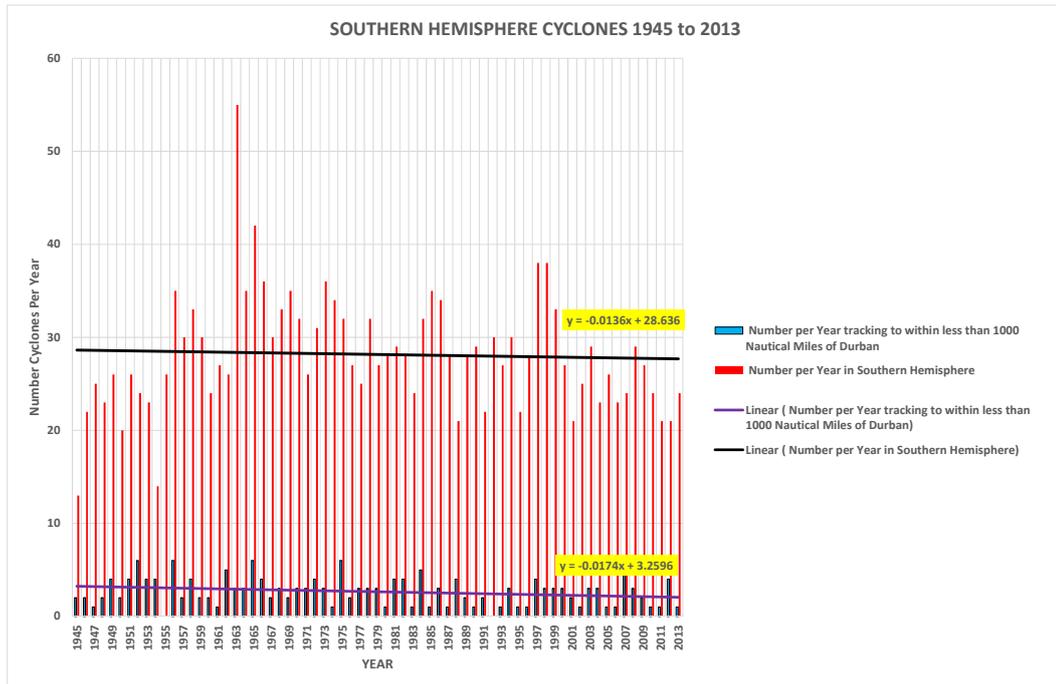


Figure 8.3.2 Trend in No of Cyclones per Annum in Southern Hemisphere and closer to Durban

Cyclone maximum velocity has only been recorded since 1998. The trends are examined in Figures 8.3.3 to 8.3.6 below. It can be seen that apart from maximum cyclone velocity, the trends are all negative.

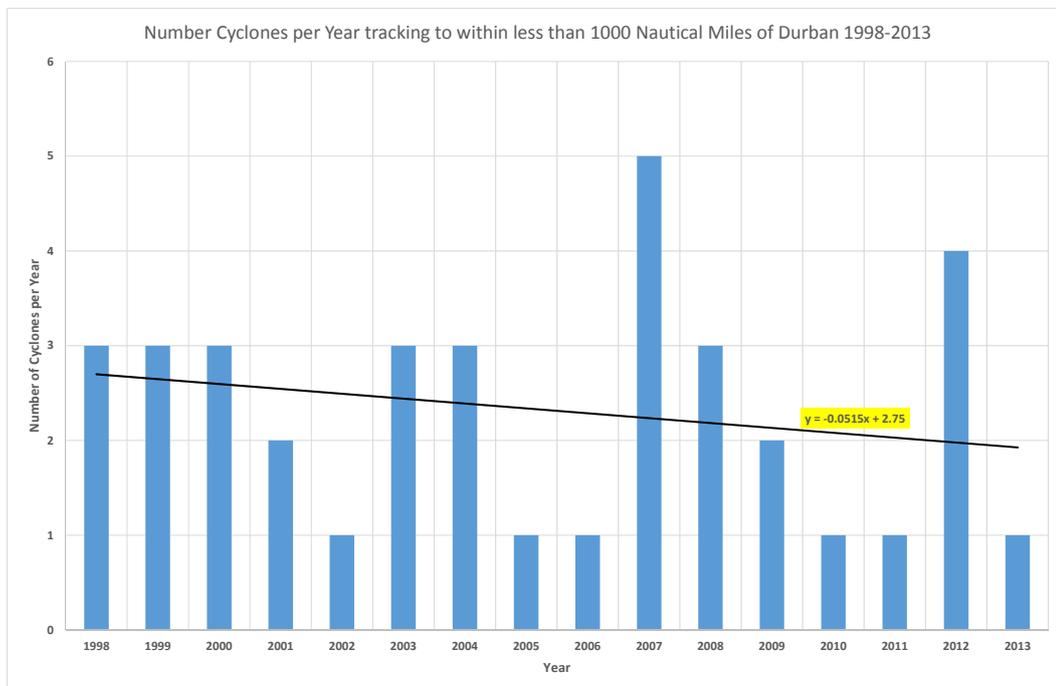


Figure 8.3.3 Number Cyclones tracking within less than 1000 Nautical Miles of Durban (1998 to 2013)

AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
 QUERIES REGARDING STORM SURGE AND CYCLONES

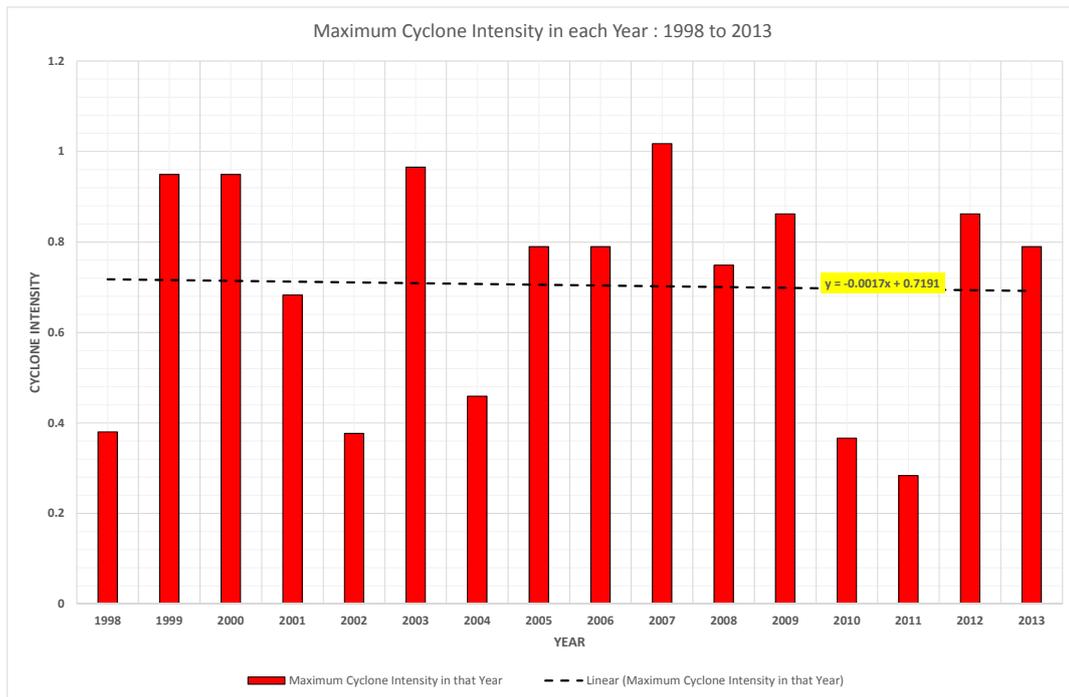


Figure 8.3.4 Maximum Cyclone Intensity in each Year (1998 to 2013)

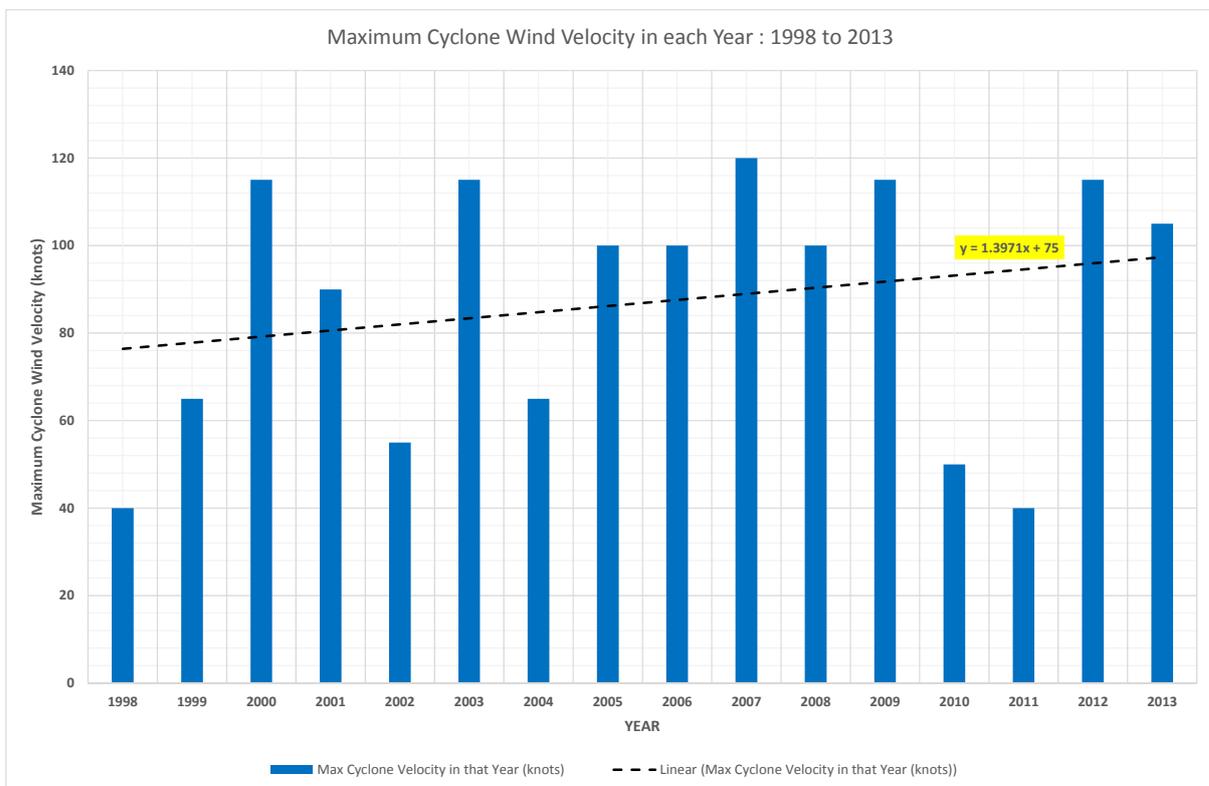


Figure 8.3.5 Maximum Cyclone Wind Velocity in each Year (1998 to 2013)

AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
 QUERIES REGARDING STORM SURGE AND CYCLONES

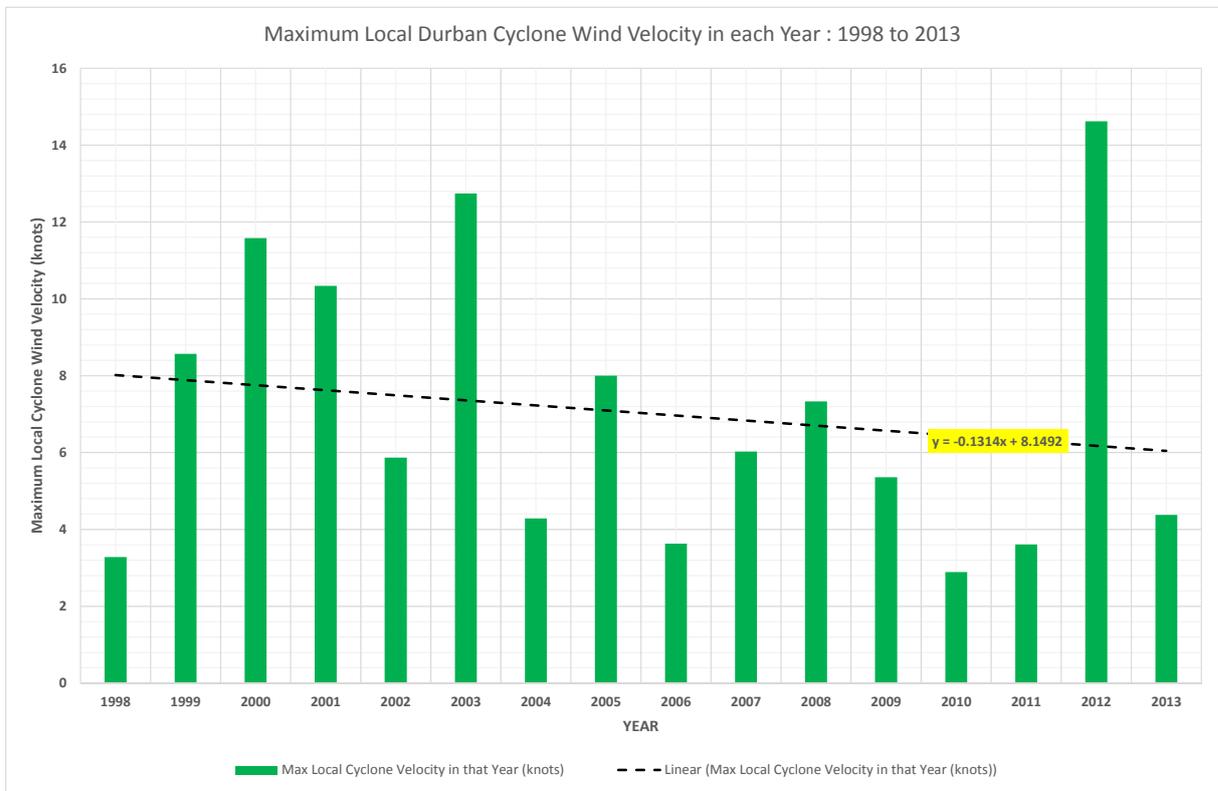


Figure 8.3.6 Durban Maximum Local Cyclone Wind Velocity in each Year (1998 to 2013)

9.0 STORM SURGE

The three main components of storm surge are addressed below.

Pressure Deficit

The pressure deficit is associated with the Tropical Cyclones passing over a specific site with a specific central pressure. The set-ups associated with the range of Return Periods is summarized in Figure 9.1. These have been calculated according to Ref (7), assuming a 10 mm increase on level per hPa relative drop in pressure from ambient pressure P_0 ($P_0 = 1013$ hPa ambient).

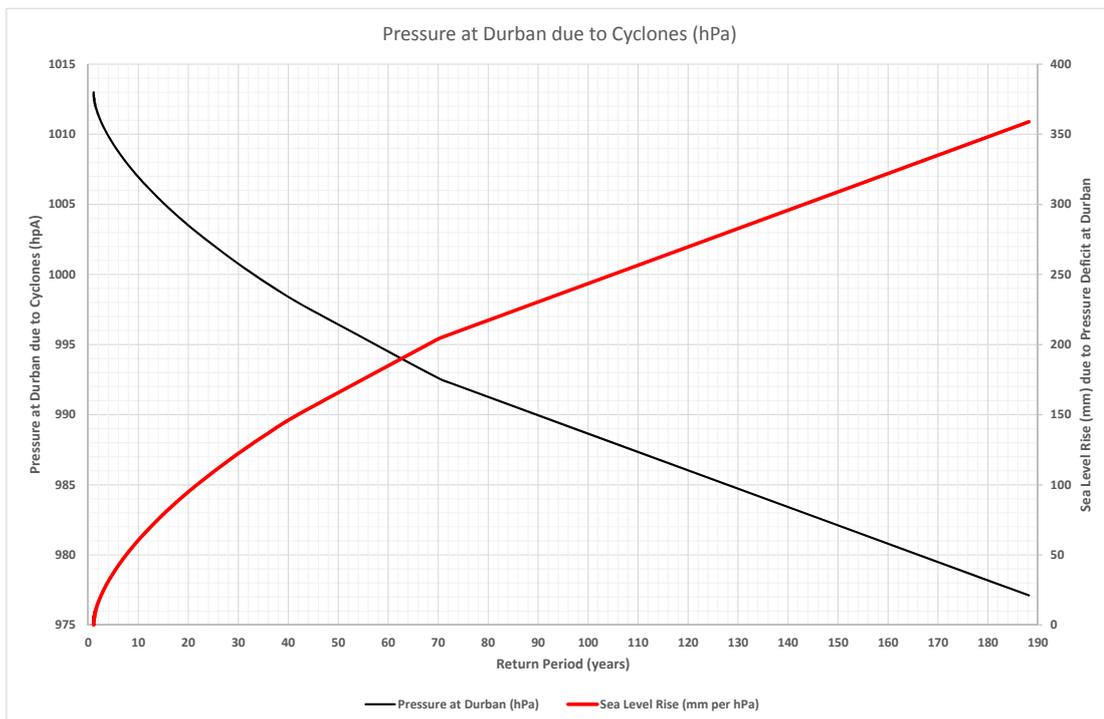


Figure 9.1 Sea Level Rise due to Pressure Deficit

The storm of 19th March 2007 was not associated with cyclone activity, but with a cut-off low system, offshore. The central pressure offshore dropped to below 986 hPa at its peak. This storm was most probably close to a 1:50 year storm and the setup due to pressure deficit would have been of the order of 280 mm. It has therefore been assumed for this study that such a storm could pass directly over the port and that the associated sea level rise would be of the order of 280 mm which is higher than the 1:50 year pressure deficit setup predicted in Figure 8.2.1 above.

Wind Set-up

Wind setup has been calculated at Pier 2 using a series of Delft-3D analyses and the hydrodynamic grid shown in Figure 5.2 and a separate set of analyses using the grid shown in Figure 9.2.

Bathymetry [m]

- < -1.8
- < 17.8
- < 37.3
- < 56.9
- < 76.5
- < 96.1
- < 115.6
- < 135.2
- < 154.8
- < 174.4
- < 193.9
- < 213.5
- < 233.1
- < 252.6
- < 272.2
- < 291.8
- < 311.4
- < 330.9
- < 350.5
- < 370.1

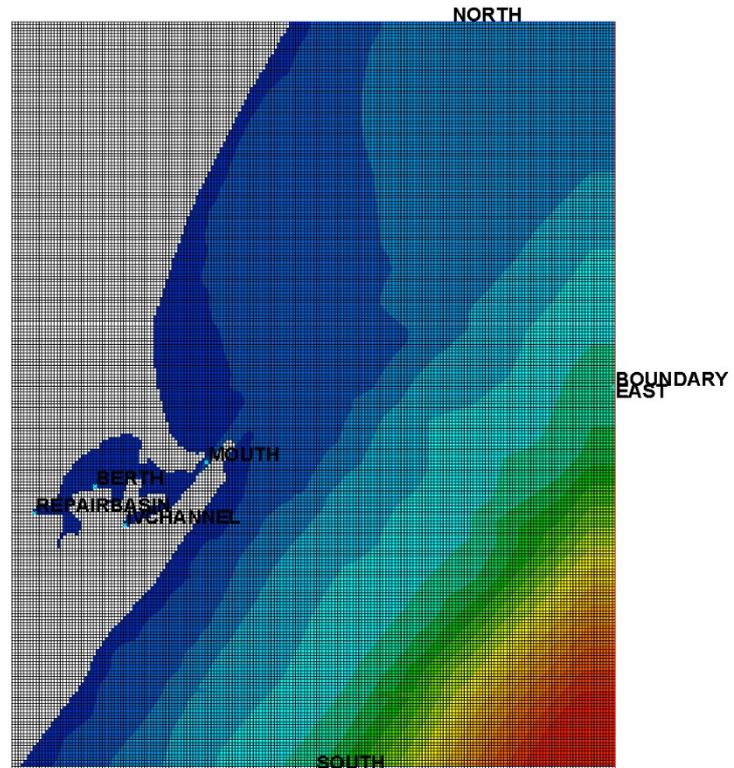


Figure 9.2 DELFT-3D Grid used for second set of wind setup calculations

In Annexure 2, Table A2.1 gives a summary of the wind set-up analyses undertaken using the two different grids. These analyses have yielded confirmation that the 1:50 year wind set-up used in the calculation of the new quay level for Pier 2 was conservative. It should also be noted that the wind velocities used far exceed those associated with cyclone predictions and are therefore also very conservative in that regard. The calculated estimates of wind setup are summarised in Table 8.3.2 for the two different grids. The detailed results of the wind setup analyses are also given in Annexure-2.

Wave Setup

The analyses contained in Annexure 2 have also addressed wave setup. The analyses reveal that the wave setup at Pier 2 associated with a 50 year return period storm is likely to be of the order of 80 mm.



10.0 CONCLUSIONS

The following conclusions are drawn from this response study:

- (1) The JTWC records from 1945 to 2013 have been analysed and an extreme value analysis has been carried out using this data to calculate the 1:50 and 1:100 year return period local wind velocities at Durban.
- (2) The calculated extreme cyclone wind velocities are much lower than the 1:50 year wind velocities used in the Design Premise for the Berth Deepening Project.
- (3) A detailed sensitivity study using DELFT-3D has been carried to calculate the various components of the Storm Surge. These components include wind and wave setup.
- (4) Pressure Deficit setup values used in the Design Premise for the Pier 2 Project have also been reviewed.
- (5) The overall conclusion is that the values used for Storm Surge in the Design Premise for the Pier 2 Project and as reported in ZAA-1370-RPT-028 are conservative.



AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES

11.0 REFERENCES

1. Pao-Shin Chu and Jianxin Wang, *Modelling Return Periods of Tropical Cyclone Intensities in the Vicinity of Hawaii*, American Meteorological Society, September 1998.
2. R.W.R Darling, *Estimating Probabilities of Hurricane Wind Speeds. Using a large-scale Empirical Model*, American Meteorological Society, Vol.4, 1991.
3. Selesnianski et al, 1992, *SLOSH : Sea, Lake and Overland Surges from Hurricanes*. NOAA Technical Report NWS 48.
4. Houston SH and Powell MD, 1994, *Observed and Modelled Wind and Water Level Response from Tropical Storm Marco 1990*, *Wea Forecasting* 9, 424-439.
5. Houston et al, 1999, *Comparisons of HRD and SLOSH Surface Wind Fields in Hurricanes: Implications of Storm Surge Modelling*, *Wea Forecasting*, 14 (5), 671-686.
6. BA Harper, JD Kepert and JD Ginger, *World Meteorological Organization, Sixth Tropical Cyclone RSMCs/TCWCs Technical Coordination Meeting, TCM-VI/Doc. 2.3, Brisbane Australia, 2-5 November, 2009, Definition of Maximum Sustained Wind Speed of Tropical Cyclones, Guidelines for Converting between Various Wind Averaging Periods in Tropical Cyclone Conditions*, July 2009.
7. D Lee Harris, *Characteristics of the Hurricane Storm Surge*, Us Department of Commerce, Weather Bureau, Technical Paper No 48, Washington DC, 1963.
8. Kerry Emanuel, *Tropical Cyclones*, *Ann. Rev. Earth Planet, Sci.* 2003, 31:75-104.
9. DELFT – 3D, *Delft Hydraulics*.
10. Andrew A.Mather and Derek D.Stretch, *A Perspective on Sea Level Rise and Coastal Storm Surge from Southern and Eastern Africa: A Case Study Near Durban, South Africa*, March 2012.
11. Hurray and Van Heerden, *South Africa's Weather Patterns*, Via Africa Ltd, Cape Town.
12. Hunter et al, *The Storm Surge of 19th March 2007 – East Coast of South Africa*, South African Weather Service.



ANNEXURES



ANNEXURE 1: CYCLONE DATA ANALYSIS FOR DURBAN USING JOINT TYPHOON WARNING CENTRE (JTWC) DATA (1945 to 2013)

SOUTHERN HEMISPHERE BEST TRACKS AND STORM/YEAR NOTES:
BASIN - basin, e.g. WP, IO, SH, CP, EP, AL
CY - annual cyclone number: 1 through 99
YYYYMMDDHH - Warning Date-Time-Group: 0000010100 through 9999123123. (note,4 digit year)
TECHNUM - objective technique sorting number: 00 - 99
TECH - acronym for each objective technique or CARQ or WRNG, BEST for best track.
TAU - forecast period: -24 through 120 hours, 0 for best-track, negative taus used for CARQ and WRNG records.
LatN/S - Latitude (tenths of degrees) for the DTG: 0 through 900, N/S is the hemispheric index.
LonE/W - Longitude (tenths of degrees) for the DTG: 0 through 1800, E/W is the hemispheric index.
VMAX - Maximum sustained wind speed in knots: 0 through 300.
MSLP - Minimum sea level pressure, 1 through 1100 MB.
TY - Level of tc development:
TD - tropical depression,
TS - tropical storm,
TY - typhoon,
ST - super typhoon,
TC - tropical cyclone,
HU - hurricane,
SD - subtropical depression,
SS - subtropical storm,
EX - extratropical systems,
IN - inland,
DS - dissipating,
LO - low,
WV - tropical wave,
ET - extrapolated,
XX - unknown.
RAD - Wind intensity (kts) for the radii defined in this record: 35, 50, 65 or 100.
WINDCODE - Radius code:
AAA - full circle
NNS - north semicircle
NES - northeast semicircle
EES - east semicircle
SES - southeast semicircle
SSS - south semicircle
SWS - southwest semicircle
WWS - west semicircle
NWS - northwest semicircle
QQQ - quadrant (NNQ, NEQ, EEQ, SEQ, SSQ, SWQ, WWQ, NWQ)
RAD1 - If full circle, radius of specified wind intensity, If semicircle or quadrant, radius of specified wind intensity of circle portion specified in radius code. 0 - 1200 nm.
RAD2 - If full circle this field not used, If semicircle, radius (nm) of specified wind intensity for semicircle not specified in radius code, If quadrant, radius (nm) of specified wind intensity for 2nd quadrant (counting clockwise from quadrant specified in radius code). 0 through 1200 nm.
RAD3 - If full circle or semicircle this field not used, If quadrant, radius (nm) of specified wind intensity for 3rd quadrant (counting clockwise from quadrant specified in radius code). 0 through 1200 nm.
RAD4 - If full circle or semicircle this field not used, If quadrant, radius (nm) of specified wind intensity for 4th quadrant (counting clockwise from quadrant specified in radius code). 0 through 1200 nm.
RADP - pressure in millibars of the last closed isobar, 900 - 1050 mb.
RRP - radius of the last closed isobar in nm, 0 - 9999 nm.
MRD - radius of max winds, 0 - 999 nm.
GUSTS - gusts, 0 through 995 kts.
EYE - eye diameter, 0 through 999 nm.
SUBREGION - subregion code: W, A, B, S, P, C, E, L.

A - Arabian Sea
B - Bay of Bengal
C - Central Pacific
E - Eastern Pacific
L - Atlantic
P - South Pacific (135E - 120W)
S - South IO (20E - 135E)
W - Western Pacific
MAXSEAS - max seas: 0 through 999 ft.
INITIALS - Forecaster's initials, used for tau 0 WRNG, up to 3 chars.
DIR - storm direction, 0 - 359 degrees.
SPEED - storm speed, 0 - 999 kts.
STORMNAME - literal storm name, NONAME or INVEST. TCcyx used pre-1999, where:
cy = Annual cyclone number 01 through 99
x = Subregion code: W, A, B, S, P, C, E, L.
DEPTH - system depth, D-deep, M-medium, S-shallow, X-unknown
SEAS - Wave height for radii defined in SEAS1-SEAS4, 0-99 ft.
SEASCODE - Radius code:
AAA - full circle
NNS - north semicircle
NES - northeast semicircle
EES - east semicircle
SES - southeast semicircle
SSS - south semicircle
SWS - southwest semicircle
WWS - west semicircle
NWS - northwest semicircle
QQQ - quadrant (NNQ, NEQ, EEQ, SEQ, SSQ, SWQ, WWQ, NWQ)
SEAS1 - first quadrant seas radius as defined by SEASCODE, 0 through 999 nm.
SEAS2 - second quadrant seas radius as defined by SEASCODE, 0 through 999 nm.
SEAS3 - third quadrant seas radius as defined by SEASCODE, 0 through 999 nm.
SEAS4 - fourth quadrant seas radius as defined by SEASCODE, 0 through 999 nm.
Fields currently used for best track records:
BASIN, CY, YYYYMMDDHH, , TECH, TAU, LatN/S, LonE/W, VMAX, MSLP, TY
TECH = BEST
TAU = 0
All fields are used for objective-aids history records (CARQ,WRNG,COMS):
TECHNUM = 01 - CARQ and COMS, 00 - WRNG
TECH = CARQ, WRNG, COMS
INITIALS for WRNG/OFCL record
Repeated for tau -24 through tau 0
Fields for objective-aids forecasts records:
BASIN, CY, YYYYMMDDHH, TECHNUM, TECH, TAU, LatN/S, LonE/W, VMAX,
MSLP, TY, RAD, WINDCODE, RAD1, RAD2, RAD3, RAD4
Repeated for tau 0 through tau 120
Wind records merged in from existing r-decks will be assigned a TECH of CNTR. Wind records created during normal use of the combined abr-deck will be assigned the TECH corresponding to the center name as defined in

CYCLONES PER YEAR		
Year	Number per Year in Southern Hemisphere	Number Cyclones per Year tracking to within less than 1000 Nautical Miles of Durban
1945	13	2
1946	22	2
1947	25	1
1948	23	2
1949	26	4
1950	20	2
1951	26	4
1952	24	6
1953	23	4
1954	14	4
1955	26	0
1956	35	6
1957	30	2
1958	33	4
1959	30	2
1960	24	2
1961	27	1
1962	26	5
1963	55	3
1964	35	3
1965	42	6
1966	36	4
1967	30	2
1968	33	3
1969	35	2
1970	32	3
1971	26	3
1972	31	4
1973	36	3
1974	34	1
1975	32	6
1976	27	2
1977	25	3
1978	32	3
1979	27	3
1980	28	1
1981	29	4
1982	28	4
1983	24	1
1984	32	5
1985	35	1
1986	34	3
1987	28	1
1988	21	4
1989	28	2
1990	29	1
1991	22	2
1992	30	0
1993	27	1
1994	30	3
1995	22	1
1996	28	1
1997	38	4
1998	38	3
1999	33	3
2000	27	3
2001	21	2
2002	25	1
2003	29	3
2004	23	3
2005	26	1
2006	23	1
2007	24	5
2008	29	3
2009	27	2
2010	24	1
2011	21	1
2012	21	4
2013	24	1

BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	6	1945	2	6	12	21	48	0	218S	46	0	0	460E	7531497.925	1852199.341	944.48596	938.39092	TRUE	0	0.063463	0.071782	1013	30	22.518908	135113.45	11	0.054662
SH	6	1945	2	6	18	22	30	0	225S	44	42	0	447E	7464027.101	1709384.459	859.34846	854.95507	TRUE	0	0.069735	0.071782	1013	30	26.325106	157950.63	11	0.054662
SH	6	1945	2	7	0	23	11	60	232S	43	23	60	434E	7568301.375	1568301.375	774.86284	771.80844	TRUE	0	0.077317	0.071782	1013	30	26.118492	156710.95	11	0.054662
SH	6	1945	2	7	6	23	53	60	239S	42	6	0	421E	7326763.392	1428924.017	690.99101	688.96102	TRUE	0	0.086668	0.071782	1013	30	25.923587	155541.52	11	0.054662
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	7	1945	2	16	0	20	0	0	200S	45	17	60	453E	7740393.712	1794314.179	977.55014	972.40317	TRUE	0	0.06132	0.071782	1013	30	17.323507	103941.04	37	0.064987
SH	7	1945	2	16	6	21	0	0	210S	45	23	60	454E	7626922.415	1796287.913	944.44786	939.17296	TRUE	0	0.063465	0.071782	1013	30	18.914744	113488.46	37	0.064987
SH	7	1945	2	16	12	22	0	0	220S	45	42	0	457E	7511655.853	1818721.159	923.48764	917.82114	TRUE	0	0.064903	0.071782	1013	30	19.571543	117429.26	37	0.064987
SH	7	1945	2	16	18	23	0	0	230S	46	17	60	463E	7393294.247	1871609.441	920.77437	914.31176	TRUE	0	0.065093	0.071782	1013	30	21.606738	129640.43	37	0.064987
SH	7	1945	2	17	0	24	0	0	240S	46	53	60	469E	7274307.919	1923170.799	922.58672	915.32519	TRUE	0	0.064966	0.071782	1013	30	21.612959	129677.75	37	0.064987
SH	7	1945	2	17	6	24	41	60	247S	47	17	60	473E	7190863	1956374.465	925.48762	917.69365	TRUE	0	0.064763	0.071782	1013	30	14.968057	89808.34	37	0.064987
SH	7	1945	2	17	12	25	6	0	251S	47	47	60	478E	7139894.444	2002991.455	942.24805	933.72116	TRUE	0	0.063613	0.071782	1013	30	11.511996	69071.973	37	0.064987
SH	7	1945	2	17	18	25	41	60	257S	48	12	0	482E	7067150.571	2036299.817	950.61217	941.51968	TRUE	0	0.063054	0.071782	1013	30	13.334498	80006.987	37	0.064987
SH	7	1945	2	18	0	26	18	0	263S	48	42	0	487E	6992825.741	2079236.017	965.83133	955.99122	TRUE	0	0.062063	0.071782	1013	30	14.305882	85835.294	37	0.064987
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	3	1945	12	14	18	18	23	60	184S	44	12	0	442E	7928499.283	1689068.803	996.44243	992.81932	TRUE	0	0.06016	0.071782	1013	30	22.276128	133656.77	25	0.044519
SH	3	1945	12	15	0	18	53	60	189S	43	6	0	431E	7879495.506	1568059.98	930.44151	928.10133	TRUE	0	0.064419	0.071782	1013	30	21.759101	130544.61	25	0.044519
SH	3	1945	12	15	6	19	11	60	192S	41	47	60	418E	7853465.173	1427966.521	866.79985	865.71428	TRUE	0	0.069137	0.071782	1013	30	23.748541	142491.25	25	0.044519
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	12	1946	2	10	18	21	18	0	213S	38	0	0	380E	7636407.528	1019086.931	634.09391	634.95709	TRUE	0	0.094412	0.071782	1013	30	6.383988	38303.928	25	0.094725
SH	12	1946	2	11	0	21	30	0	215S	38	17	60	383E	7613179.829	1049544.523	634.24804	634.93027	TRUE	0	0.094389	0.071782	1013	30	6.383988	38303.928	25	0.094725
SH	12	1946	2	11	6	21	48	0	218S	38	42	0	387E	7578387.213	1089889.666	633.85501	634.27938	TRUE	0	0.094447	0.071782	1013	30	8.879215	53275.292	25	0.094725
SH	12	1946	2	11	12	22	11	60	222S	39	6	0	391E	7532337.068	1129616.001	630.16679	630.3008	TRUE	0	0.094998	0.071782	1013	30	10.13629	60817.741	25	0.094725
SH	12	1946	2	11	18	22	36	0	226S	39	36	0	396E	7485672.125	1179420.448	631.9578	631.74372	TRUE	0	0.09473	0.071782	1013	30	11.375045	68250.273	25	0.094725
SH	12	1946	2	12	0	23	0	0	230S	40	6	0	401E	7438766.713	1228923.295	635.67482	635.10169	TRUE	0	0.094178	0.071782	1013	30	11.365945	68195.671	25	0.094725
SH	12	1946	2	12	6	23	30	0	235S	40	36	0	406E	7380476.142	1277526.406	637.51197	636.55039	TRUE	0	0.093908	0.071782	1013	30	12.649169	75895.013	25	0.094725
SH	12	1946	2	12	12	24	0	0	240S	41	12	0	412E	7321316.997	1335952.318	646.23577	644.81591	TRUE	0	0.092646	0.071782	1013	30	13.857801	83146.808	25	0.094725
SH	12	1946	2	12	18	24	30	0	245S	41	53	60	419E	7261114.989	1404096.413	662.30655	660.34418	TRUE	0	0.094047	0.071782	1013	30	15.154665	90927.99	25	0.094725
SH	12	1946	2	13	0	24	48	0	248S	42	6	0	426E	7222745.349	1473263.916	686.84305	684.32986	TRUE	0	0.08719	0.071782	1013	30	13.182873	79097.236	25	0.094725
SH	12	1946	2	13	6	25	0	0	250S	43	12	0	432E	7195870.858	1532805.054	710.60064	707.58444	TRUE	0	0.084285	0.071782	1013	30	10.887538	65325.228	25	0.094725
SH	12	1946	2	13	12	25	36	0	256S	43	36	0	436E	7125519.799	1568228.02	715.13613	711.7394	TRUE	0	0.083753	0.071782	1013	30	13.127641	78765.844	25	0.094725
SH	12	1946	2	13	18	26	6	0	261S	43	53	60	439E	7067006.434	1593985.341	718.87903	715.19643	TRUE	0	0.083318	0.071782	1013	30	10.655272	63931.631	25	0.094725
SH	12	1946	2	14	0	26	18	0	263S	44	12	0	442E	7041972.055	1622368.985	730.0396	726.07732	TRUE	0	0.082049	0.071782	1013	30	6.307736	37846.418	25	0.094725
SH	12	1946	2	14	6	26	36	0	266S	44	36	0	446E	7004693.627	1659706.226	744.7916	740.44394	TRUE	0	0.080429	0.071782	1013	30	8.793544	52761.263	25	0.094725
SH	12	1946	2	14	12	26	53	60	269S	45	0	0	450E	6967222.232	1696821.147	760.18737	755.44029	TRUE	0	0.078805	0.071782	1013	30	8.790182	52741.092	25	0.094725
SH	12	1946	2	14	18	27	18	0	273S	45	23	60	454E	6918324.618	1732579.285	774.62139	769.46382	TRUE	0	0.077341	0.071782	1013	30	10.096233	60577.397	25	0.094725
SH	12	1946	2	15	0	27	30	0	275S	45	42	0	457E	6892745.554	1760349.677	787.46045	781.98147	TRUE	0	0.076084	0.071782	1013	30	6.292595	37755.572	25	0.094725
SH	12	1946	2	15	6	27	48	0	278S	46	6	0	461E	6854719.462	1796794.553	804.52356	798.60247	TRUE	0	0.074475	0.071782	1013	30	8.778466	52670.795	25	0.094725
SH	12	1946	2	15	12	28	36	0	286S	46	30	0	465E	6760233.759	1826588.487	816.78234	810.44455	TRUE	0	0.07336	0.071782	1013	30	16.511971	99071.826	25	0.094725
SH	12	1946	2	15	18	29	23	60	294S	46	53	60	469E	6665477.212	1855503.785	831.8338	825.07618	TRUE	0	0.072036	0.071782	1013	30	16.511694	99070.165	25	0.094725
SH	12	1946	2	16	0	30	6	0	301S	47	12	0	472E	6582978.594	1875172.382	844.50861	837.44358	TRUE	0	0.070958	0.071782	1013	30	14.135137	84810.823	25	0.094725
SH	12	1946	2	16	6	30	48	0	308S	47	36	0	476E	6499007.041	1903914.744	864.39964	856.88818	TRUE	0	0.069329	0.071782	1013	30	14.792401	88754.409	25	0.094725
SH	12	1946	2	16	12	31	36	0	316S	48	12	0	482E	6400719.573	1949551.536	896.77018	888.52186	TRUE	0	0.066832	0.071782	1013	30	18.060964	108365.78	25	0.094725
SH	12	1946	2	16	18	32	23	60	324S	49	6	0	491E	6297329.722	2022558.795	946.71212	937.19742	TRUE	0	0.063314	0.071782	1013	30	21.094708	126568.25	25	0.094725
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	19	1947	3	6	18	18	53	60	189S	44	23	60	444E	7870929.705	1706902.574	983.30087	979.39495	TRUE	0	0.060962	0.071782	1013	30	16.183054	97098.323	27	0.068535
SH	19	1947	3	7	0	19	23	60	194S	43	42	0	437E	7819582.786	1628605.103	933.13038	930.06502										

SH	16	1949	2	27	18	34	36	0	346S	48	36	0	486E	6057319.598	1936646.648	941.02373	932.62376	TRUE	0	0.063696	0.071782	1013	30	22.931526	137589.16	51	0.07801
SH	16	1949	2	28	0	35	42	0	357S	49	17	60	493E	5922691.197	1980883.408	991.65002	982.31514	TRUE	0	0.06045	0.071782	1013	30	23.618318	141709.91	51	0.07801
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	18	1949	3	9	0	19	11	60	192S	44	6	0	441E	7839309.896	1672661.674	958.16057	954.62487	TRUE	0	0.062559	0.071782	1013	30	20.00321	120019.26	21	0.042938
SH	18	1949	3	9	0	19	23	60	194S	43	0	0	430E	7824111.722	1554159.401	904.60392	902.31897	TRUE	0	0.066255	0.071782	1013	30	19.91215	119472.9	21	0.042938
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	25	1949	6	5	6	26	11	60	262S	48	23	60	484E	7008015.427	2049991.403	951.67854	942.33082	TRUE	0	0.062984	0.071782	1013	30	26.19604	157176.24	15	0.062024
SH	25	1949	6	5	12	27	41	60	277S	48	47	60	488E	6832859.068	2069074.696	949.84999	940.07441	TRUE	0	0.063105	0.071782	1013	30	29.365476	176192.86	15	0.062024
SH	25	1949	6	5	18	29	11	60	292S	50	0	0	500E	6645430.731	2165367.878	999.35826	987.71756	TRUE	0	0.059984	0.071782	1013	30	35.119541	210717.25	15	0.062024
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	9	1950	1	30	12	20	48	0	208S	38	53	60	389E	7688716.808	1114811.2	688.11615	688.69509	TRUE	0	0.087029	0.071782	1013	30	24.651737	147910.42	3	0.070825
SH	9	1950	1	30	18	21	53	60	219S	38	6	0	381E	7569471.746	1027300.582	608.34283	609.00455	TRUE	0	0.098389	0.071782	1013	30	24.651737	147910.42	3	0.070825
SH	9	1950	1	31	0	23	6	0	231S	37	17	60	373E	7438914.507	940633.53	524.20137	524.83583	TRUE	0	0.114086	0.071782	1013	30	26.117454	156704.72	3	0.070825
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	10	1950	2	7	6	16	30	0	165S	40	6	0	401E	8162341.981	1259364.098	941.51835	942.36699	TRUE	0	0.063662	0.071782	1013	30	25.884082	155304.49	21	0.040962
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	8	1951	1	29	0	23	48	0	238S	47	36	0	476E	7289333.514	1998253.542	963.50191	955.12919	TRUE	0	0.062213	0.071782	1013	30	23.611016	141666.09	101	0.052612
SH	8	1951	1	29	6	24	30	0	245S	47	0	0	470E	7216760.274	1927762.401	914.90375	907.53974	TRUE	0	0.06551	0.071782	1013	30	16.862085	101172.51	101	0.052612
SH	8	1951	1	29	12	24	41	60	247S	46	42	0	467E	7197400.294	1894487.213	894.60533	887.69173	TRUE	0	0.066993	0.071782	1013	30	6.416227	38497.362	101	0.052612
SH	8	1951	1	29	18	24	48	0	248S	46	36	0	466E	7187178.643	1883040.057	887.05115	880.28514	TRUE	0	0.067563	0.071782	1013	30	2.557774	15346.646	101	0.052612
SH	8	1951	1	30	0	24	53	60	249S	46	30	0	465E	7176955.279	1871609.521	879.51846	872.89726	TRUE	0	0.06814	0.071782	1013	30	2.555899	15335.394	101	0.052612
SH	8	1951	1	30	6	25	0	0	250S	46	17	60	463E	7167772.131	1849926.401	866.86967	860.52396	TRUE	0	0.069132	0.071782	1013	30	3.924595	23547.567	101	0.052612
SH	8	1951	1	30	12	25	0	0	250S	46	12	0	462E	7168805.445	1839659.833	861.73709	855.52302	TRUE	0	0.069543	0.071782	1013	30	1.71974	10138.437	101	0.052612
SH	8	1951	1	30	18	24	53	60	249S	46	0	0	460E	7182106.791	1820231.326	853.90107	847.9405	TRUE	0	0.070179	0.071782	1013	30	3.924258	23545.546	101	0.052612
SH	8	1951	1	31	0	24	53	60	249S	45	53	60	459E	7183111.181	1809963.65	848.79447	842.96079	TRUE	0	0.0706	0.071782	1013	30	1.719447	10316.684	101	0.052612
SH	8	1951	1	31	6	24	48	0	248S	45	47	60	458E	7195362.453	1800773.274	846.16053	840.44844	TRUE	0	0.07082	0.071782	1013	30	2.552541	15315.244	101	0.052612
SH	8	1951	1	31	12	24	30	0	245S	45	36	0	456E	7231075.113	1783379.821	843.66626	838.19258	TRUE	0	0.071028	0.071782	1013	30	6.62052	39723.12	101	0.052612
SH	8	1951	1	31	18	24	11	60	242S	45	23	60	454E	7266724.371	1765855.492	841.63303	836.39701	TRUE	0	0.0712	0.071782	1013	30	6.620615	39723.692	101	0.052612
SH	8	1951	2	1	0	23	53	60	239S	45	12	0	452E	7302310.668	1748202.227	840.0653	835.06629	TRUE	0	0.071332	0.071782	1013	30	6.620721	39724.329	101	0.052612
SH	8	1951	2	1	6	23	36	0	236S	44	53	60	449E	7338717.949	1720066.921	834.07571	829.4295	TRUE	0	0.071843	0.071782	1013	30	7.668633	46011.797	101	0.052612
SH	8	1951	2	1	12	23	18	0	233S	44	17	60	443E	7377512.485	1660666.65	814.26224	810.29267	TRUE	0	0.073586	0.071782	1013	30	11.82442	70946.517	101	0.052612
SH	8	1951	2	1	18	22	53	60	229S	43	30	0	435E	7428655.752	1581091.885	789.63124	786.50489	TRUE	0	0.075875	0.071782	1013	30	15.765448	94592.69	101	0.052612
SH	8	1951	2	2	0	22	41	60	227S	42	53	60	429E	7455401.991	1520383.003	769.03269	766.48676	TRUE	0	0.077902	0.071782	1013	30	11.056584	66339.503	101	0.052612
SH	8	1951	2	2	6	22	30	0	225S	42	17	60	423E	7481822.962	1459550.936	749.4265	747.42252	TRUE	0	0.079933	0.071782	1013	30	11.053667	66322.004	101	0.052612
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	10	1951	1	25	12	15	18	0	153S	39	30	0	395E	8297994.518	1199114.955	987.76095	989.33556	TRUE	0	0.060687	0.071782	1013	30	5.712717	34276.305	67	0.049161
SH	10	1951	1	25	18	15	30	0	155S	39	17	60	393E	8276395.888	1176875.192	971.76043	973.42711	TRUE	0	0.061685	0.071782	1013	30	5.166957	31001.74	67	0.049161
SH	10	1951	1	26	0	15	35	60	156S	39	6	0	391E	8265906.737	1154997.231	961.16291	962.93953	TRUE	0	0.062364	0.071782	1013	30	4.043745	24262.47	67	0.049161
SH	10	1951	1	26	6	15	48	0	158S	38	53	60	389E	8244292.354	1132833.789	945.24028	947.09472	TRUE	0	0.063412	0.071782	1013	30	5.159672	30958.032	67	0.049161
SH	10	1951	1	26	12	16	0	0	160S	38	30	0	385E	8223251.661	1089226.53	924.32785	926.37053	TRUE	0	0.064844	0.071782	1013	30	8.069668	48418.011	67	0.049161
SH	10	1951	1	26	18	16	11	60	162S	38	6	0	381E	8202152.239	1045723.679	903.68393	905.89166	TRUE	0	0.066322	0.071782	1013	30	8.058266	48349.598	67	0.049161
SH	10	1951	1	27	0	16	23	60	164S	37	42	0	377E	8180991.384	1002324.635	883.32261	885.67327	TRUE	0	0.067847	0.071782	1013	30	8.047185	48283.111	67	0.049161
SH	10	1951	1	27	6	16	41	60	167S	37	17	60	373E	8148678.023	958789.9358	857.72991	860.17341	TRUE	0	0.069867	0.071782	1013	30	9.036075	54216.449	67	0.049161
SH	10	1951	1	27	12	17	0	0	170S	36	42	0	367E	8116721.096	940668.6137	828.17269	830.76095	TRUE	0	0.072354	0.071782	1013	30	12.030164	72180.986	67	0.049161
SH	10	1951	1	27	18	17	18	0	173S	36	0	0	360E	8084772.325	818938.0832	797.49311	800.21301	TRUE	0	0.075129	0.071782	1013	30	13.606902	81641.415	67	0.049161
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	12	1951	2	1	6	23	6	0	231S	46	30	0	465E	7380040.446	1891439.987	927.6862	920.94164	TRUE	0	0.064609	0.071782	1013	30	29.87853	179271.18	7	0.056197
SH	12	1951	2	1	12	23	18	0	233S	44	47	60	448E	7373296.211	1712516.62	838.34035	833.81385	TRUE	0	0.071478	0.071782	1013	30	29.841738	179050.43	7	0.056197
SH	12	1951	2	1	18																						

SH	4	1952	1	7	18	21	0	0	210S	42	53	60	429E	7645626.884	1532740.085	833.59709	831.23743	TRUE	0	0.071884	0.071782	1013	30	16.518369	99110.215	41	0.071881
SH	4	1952	1	7	0	21	30	0	215S	43	17	60	433E	7586925.789	1571108.536	831.30253	828.49529	TRUE	0	0.072082	0.071782	1013	30	11.688024	70128.144	41	0.071881
SH	4	1952	1	7	6	22	6	0	221S	43	53	60	439E	7515296.839	1629231.173	836.00886	832.53113	TRUE	0	0.071677	0.071782	1013	30	15.373993	92243.956	41	0.071881
SH	4	1952	1	7	12	23	0	0	230S	44	47	60	448E	7407003.27	1715285.292	847.76707	843.24588	TRUE	0	0.070686	0.071782	1013	30	23.053566	138321.4	41	0.071881
SH	4	1952	1	7	18	24	0	0	240S	45	47	60	458E	7285428.13	1809226.776	867.1234	861.3838	TRUE	0	0.069112	0.071782	1013	30	25.606812	153640.87	41	0.071881
SH	4	1952	1	8	0	24	41	60	247S	46	36	0	466E	7198459.119	1884182.596	889.4775	882.70415	TRUE	0	0.067379	0.071782	1013	30	19.13547	114812.82	41	0.071881
SH	4	1952	1	8	6	25	30	0	255S	47	30	0	475E	7098156.468	1967104.139	917.93369	909.925	TRUE	0	0.065294	0.071782	1013	30	21.690118	130140.71	41	0.071881
SH	4	1952	1	8	12	26	30	0	265S	48	30	0	485E	6972752.789	2056023.77	951.7136	942.24624	TRUE	0	0.062982	0.071782	1013	30	25.621596	153729.58	41	0.071881
SH	4	1952	1	8	18	27	30	0	275S	49	30	0	495E	6845783.067	2142773.492	990.07316	979.02854	TRUE	0	0.060546	0.071782	1013	30	25.629207	153775.24	41	0.071881
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	6	1952	1	14	0	16	6	0	161S	41	0	0	410E	8203312.45	1357881.965	989.46158	989.64274	TRUE	0	0.060583	0.071782	1013	30	4.133548	24801.29	45	0.081754
SH	6	1952	1	14	6	16	18	0	163S	41	0	0	410E	8181004.631	1357007.191	979.30865	979.45152	TRUE	0	0.06121	0.071782	1013	30	3.720827	22324.964	45	0.081754
SH	6	1952	1	14	12	16	30	0	165S	40	53	60	409E	8159124.295	1345362.553	966.02741	966.22025	TRUE	0	0.06205	0.071782	1013	30	4.131003	24786.018	45	0.081754
SH	6	1952	1	14	18	16	36	0	166S	40	47	60	408E	8148396.828	1334170.294	957.81327	958.07306	TRUE	0	0.062581	0.071782	1013	30	2.583845	15503.071	45	0.081754
SH	6	1952	1	15	0	16	48	0	168S	40	47	60	408E	8126099.108	1333292.491	947.70803	947.92807	TRUE	0	0.063247	0.071782	1013	30	3.719165	22314.992	45	0.081754
SH	6	1952	1	15	6	17	0	0	170S	40	47	60	408E	8103801.765	1332404.495	937.64566	937.82595	TRUE	0	0.063925	0.071782	1013	30	3.71917	22315.019	45	0.081754
SH	6	1952	1	15	12	17	11	60	172S	40	42	0	407E	8081936.309	1320792.131	924.4057	924.62916	TRUE	0	0.064838	0.071782	1013	30	4.126288	24757.73	45	0.081754
SH	6	1952	1	15	18	17	30	0	175S	40	36	0	406E	8048930.407	1308749.685	906.1777	906.42098	TRUE	0	0.06614	0.071782	1013	30	5.855695	35134.172	45	0.081754
SH	6	1952	1	16	0	17	41	60	177S	40	36	0	406E	8026643.058	1307850.424	896.21658	896.41874	TRUE	0	0.066873	0.071782	1013	30	3.717581	22305.484	45	0.081754
SH	6	1952	1	16	6	18	0	0	180S	40	36	0	406E	7993212.694	1306483.021	881.36663	881.50713	TRUE	0	0.067997	0.071782	1013	30	5.576386	33458.318	45	0.081754
SH	6	1952	1	16	12	18	11	60	182S	40	36	0	406E	7970926.229	1305559.094	871.53026	871.62967	TRUE	0	0.068763	0.071782	1013	30	3.717601	22305.608	45	0.081754
SH	6	1952	1	16	18	18	23	60	184S	40	36	0	406E	7948640.125	1304625.321	861.74679	861.80514	TRUE	0	0.069542	0.071782	1013	30	3.71761	22305.658	45	0.081754
SH	6	1952	1	17	0	18	30	0	185S	40	36	0	406E	7937497.208	1304154.746	856.87547	856.9133	TRUE	0	0.069936	0.071782	1013	30	1.858808	11152.848	45	0.081754
SH	6	1952	1	17	6	18	41	60	187S	40	36	0	406E	7915211.65	1303206.226	847.17483	847.17163	TRUE	0	0.070735	0.071782	1013	30	3.717622	22305.735	45	0.081754
SH	6	1952	1	17	12	18	53	60	189S	40	36	0	406E	7892926.46	1302247.89	837.53182	837.48761	TRUE	0	0.071547	0.071782	1013	30	3.717631	22305.787	45	0.081754
SH	6	1952	1	17	18	19	6	0	191S	40	36	0	406E	7870641.641	1301279.75	827.94845	827.86328	TRUE	0	0.072373	0.071782	1013	30	3.71764	22305.839	45	0.081754
SH	6	1952	1	18	0	19	11	60	192S	40	36	0	406E	7859499.372	1300792.007	823.17979	823.07414	TRUE	0	0.072791	0.071782	1013	30	1.858823	11152.939	45	0.081754
SH	6	1952	1	18	6	19	23	60	194S	40	36	0	406E	7837215.117	1299809.184	813.68986	813.54329	TRUE	0	0.073638	0.071782	1013	30	3.717653	22305.918	45	0.081754
SH	6	1952	1	18	12	19	41	60	197S	40	36	0	406E	7803789.447	1298316.63	799.57768	799.36982	TRUE	0	0.074934	0.071782	1013	30	5.576496	33458.976	45	0.081754
SH	6	1952	1	18	18	20	0	0	200S	40	42	0	407E	7769880.326	1307334.856	789.27561	788.93467	TRUE	0	0.075909	0.071782	1013	30	5.847974	35087.846	45	0.081754
SH	6	1952	1	19	0	20	6	0	201S	40	47	60	408E	7758244.039	1317346.018	788.37296	787.93924	TRUE	0	0.075996	0.071782	1013	30	2.558355	15350.132	45	0.081754
SH	6	1952	1	19	6	20	18	0	203S	40	53	60	409E	7735449.937	1326807.365	783.02234	782.47604	TRUE	0	0.076514	0.071782	1013	30	4.113285	24679.712	45	0.081754
SH	6	1952	1	19	12	21	6	0	211S	41	12	0	412E	7644675.836	1353821.294	759.38966	758.47119	TRUE	0	0.078888	0.071782	1013	30	15.784741	94708.446	45	0.081754
SH	6	1952	1	19	18	22	0	0	220S	41	36	0	416E	7542004.403	1390119.463	738.46974	737.09547	TRUE	0	0.081115	0.071782	1013	30	18.149824	108898.95	45	0.081754
SH	6	1952	1	20	0	22	41	60	227S	42	0	0	420E	7461412.789	1427053.509	728.72323	726.93335	TRUE	0	0.082196	0.071782	1013	30	14.775291	88651.746	45	0.081754
SH	6	1952	1	20	6	23	23	60	234S	42	36	0	426E	7379216.97	1484071.267	730.9248	728.5611	TRUE	0	0.08195	0.071782	1013	30	16.672647	100035.88	45	0.081754
SH	6	1952	1	20	12	24	41	60	247S	43	47	60	438E	7224660.228	1596705.689	748.42359	744.89093	TRUE	0	0.08004	0.071782	1013	30	31.874014	191244.08	45	0.081754
SH	6	1952	1	20	18	26	0	0	260S	45	0	0	450E	7068240.966	1706385.757	777.5265	777.76521	TRUE	0	0.077053	0.071782	1013	30	31.840184	191041.1	45	0.081754
SH	6	1952	1	21	0	27	0	0	270S	45	53	60	459E	6946832.902	1786284.361	805.72367	799.98824	TRUE	0	0.074364	0.071782	1013	30	24.223327	145339.96	45	0.081754
SH	6	1952	1	21	6	28	0	0	280S	46	47	60	468E	6824271.389	1864239.992	839.23103	832.46138	TRUE	0	0.071403	0.071782	1013	30	24.208817	145252.9	45	0.081754
SH	6	1952	1	21	12	29	0	0	290S	47	42	0	477E	6700151.006	1877375.44	869.49448	869.49448	TRUE	0	0.068306	0.071782	1013	30	24.196978	145181.87	45	0.081754
SH	6	1952	1	21	18	30	0	0	300S	48	42	0	487E	6574112.248	2023738.527	924.86449	915.61838	TRUE	0	0.064806	0.071782	1013	30	25.256951	151541.7	45	0.081754
SH	6	1952	1	22	0	31	0	0	310S	49	47	60	498E	6444595	2114627.837	981.0463	970.10643	TRUE	0	0.061102	0.071782	1013	30	26.371062	158226.37	45	0.081754
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	18	1952	3	12	6	16	53	60	169S	42	12	0	422E	8108405.087	1483333.59	989.50584	988.37986	TRUE	0	0.060581	0.071782	1013	30	5.177125	31062.749	49	0.106884
SH	18	1952	3	12	12	17	6	0	171S	42	0	0	420E	8087054.004	1460771.993	972.85977	971.91081	TRUE	0	0.061615	0.071782	1013	30	5.177125	31062.749	49	0.106884
SH	18	1952	3	12	18	17	18	0	173S	41	53	60	419E	8065203.36	1448989.477	959.71158	958.832	TRUE	0	0.062458	0.071782	1013	30	4.137492	24824.954	49	0.106884
SH	18	1952	3	13	0	17	30	0																			

SH	20	1952	3	19	0	23	0	0	230S	43	6	0	431E	7420409.243	1538823.964	767.68365	764.9261	TRUE	0	0.078038	0.071782	1013	30	9.34882	56092.918	9	0.077669
SH	20	1952	3	19	6	23	36	0	236S	43	17	60	433E	7351775.514	1554719.603	757.06605	754.07178	TRUE	0	0.079129	0.071782	1013	30	11.741735	70450.409	9	0.077669
SH	20	1952	3	19	12	24	6	0	241S	44	17	60	443E	7857757.449	1653457.11	789.9881	785.98768	TRUE	0	0.075841	0.071782	1013	30	19.612502	117675.01	9	0.077669
SH	20	1952	3	19	18	24	30	0	245S	45	30	0	455E	7232033.791	1773086.946	838.6247	833.27298	TRUE	0	0.071454	0.071782	1013	30	21.995216	131971.3	9	0.077669
SH	20	1952	3	20	0	24	41	60	247S	46	23	0	464E	7200550.681	1863581.68	879.23879	872.74047	TRUE	0	0.068161	0.071782	1013	30	15.96914	95814.838	9	0.077669
SH	20	1952	3	20	6	24	48	0	248S	47	17	60	473E	7179559.742	1955168.311	923.1205	915.33734	TRUE	0	0.064928	0.071782	1013	30	15.660221	93961.324	9	0.077669
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	24	1952	5	26	12	17	0	0	170S	41	17	60	413E	8101580.89	1386067.152	953.95249	953.69381	TRUE	0	0.062834	0.071782	1013	30	26.227169	157363.01	73	0.089362
SH	24	1952	5	26	18	18	0	0	180S	40	17	60	403E	7994505.814	1274504.547	871.55057	871.91954	TRUE	0	0.068761	0.071782	1013	30	25.772125	154632.75	73	0.089362
SH	24	1952	5	27	0	19	23	60	194S	39	42	0	397E	7841179.608	1204732.657	782.80604	783.27124	TRUE	0	0.076535	0.071782	1013	30	28.075811	168454.87	73	0.089362
SH	24	1952	5	27	6	20	53	60	209S	39	42	0	397E	7674312.158	1197979.762	711.35153	711.46974	TRUE	0	0.084197	0.071782	1013	30	27.834006	167004.03	73	0.089362
SH	24	1952	5	27	12	22	0	0	220S	40	6	0	401E	7550066.703	1234228.8	677.28238	676.92041	TRUE	0	0.088416	0.071782	1013	30	21.570895	129425.37	73	0.089362
SH	24	1952	5	27	18	23	0	0	230S	40	47	60	408E	7435075.581	1301085.987	665.17106	664.17956	TRUE	0	0.090019	0.071782	1013	30	22.169073	133014.44	73	0.089362
SH	24	1952	5	28	0	23	53	60	239S	41	36	0	416E	7330007.107	1377617.185	667.91731	666.24667	TRUE	0	0.089651	0.071782	1013	30	21.664364	129986.19	73	0.089362
SH	24	1952	5	28	6	24	41	60	247S	42	36	0	426E	7233920.132	1474055.291	689.74949	687.2462	TRUE	0	0.086824	0.071782	1013	30	22.689336	136136.02	73	0.089362
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	3	1952	12	20	6	22	48	0	228S	42	17	60	423E	7448302.525	1457436.828	738.38036	736.33699	TRUE	0	0.081125	0.071782	1013	30	26.681982	160091.89	5	0.052565
SH	3	1952	12	20	12	23	23	60	234S	43	42	0	437E	7371108.686	1597688.477	782.45788	779.09941	TRUE	0	0.076569	0.071782	1013	30	26.681982	160091.89	5	0.052565
SH	3	1952	12	20	18	24	0	0	240S	45	0	0	450E	7292881.577	1726565.737	827.32212	822.55726	TRUE	0	0.072428	0.071782	1013	30	25.126805	150760.83	5	0.052565
SH	3	1952	12	21	0	24	36	0	246S	46	17	60	463E	7212855.271	1854396.677	876.61541	870.24604	TRUE	0	0.068365	0.071782	1013	30	25.13572	150814.32	5	0.052565
SH	3	1952	12	21	6	25	11	60	252S	47	36	0	476E	7130915.887	1981143.41	929.60778	921.40935	TRUE	0	0.064476	0.071782	1013	30	25.15441	150926.46	5	0.052565
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	7	1953	1	14	6	18	53	60	189S	35	0	0	350E	7909045.978	710659.2449	688.72905	691.19215	TRUE	0	0.086952	0.071782	1013	30	12.429948	74579.687	29	0.155026
SH	7	1953	1	14	12	19	0	0	190S	35	42	0	357E	7896990.849	784258.1823	695.9985	698.28378	TRUE	0	0.086047	0.071782	1013	30	12.429948	74579.687	29	0.155026
SH	7	1953	1	14	18	19	6	0	191S	36	12	0	362E	7885028.445	836736.4723	700.88182	703.0054	TRUE	0	0.08545	0.071782	1013	30	8.97074	53824.437	29	0.155026
SH	7	1953	1	15	0	19	11	60	192S	36	36	0	366E	7873127.076	878641.2217	704.4727	706.44546	TRUE	0	0.085016	0.071782	1013	30	7.260339	43562.032	29	0.155026
SH	7	1953	1	15	6	19	18	0	193S	37	0	0	370E	7861120.555	920508.1489	708.76653	710.57475	TRUE	0	0.084503	0.071782	1013	30	7.259087	43554.519	29	0.155026
SH	7	1953	1	15	12	19	23	60	194S	37	30	0	375E	7848735.331	972862.8074	716.42121	718.01145	TRUE	0	0.083603	0.071782	1013	30	8.966611	53799.666	29	0.155026
SH	7	1953	1	15	18	19	30	0	195S	38	0	0	380E	7836183.801	1025179.32	725.07249	726.42269	TRUE	0	0.082609	0.071782	1013	30	8.96685	53801.1	29	0.155026
SH	7	1953	1	16	0	19	36	0	196S	38	17	60	383E	7824131.017	1056413.835	728.68097	729.86576	TRUE	0	0.082201	0.071782	1013	30	5.579886	33479.315	29	0.155026
SH	7	1953	1	16	6	19	41	60	197S	38	30	0	385E	7812358.098	1077100.453	729.61586	730.67737	TRUE	0	0.082096	0.071782	1013	30	3.967009	23802.054	29	0.155026
SH	7	1953	1	16	12	19	53	60	199S	38	53	60	389E	7788718.93	1118405.121	732.09662	732.90224	TRUE	0	0.081819	0.071782	1013	30	7.931803	47590.817	29	0.155026
SH	7	1953	1	16	18	20	6	0	201S	39	17	60	393E	7764953.079	1159618.013	735.38301	735.9203	TRUE	0	0.081455	0.071782	1013	30	7.929057	47574.343	29	0.155026
SH	7	1953	1	17	0	20	11	60	202S	39	36	0	396E	7752605.299	1190689.644	740.75522	741.09479	TRUE	0	0.080866	0.071782	1013	30	5.572537	33435.219	29	0.155026
SH	7	1953	1	17	6	20	23	60	204S	39	53	60	399E	7729060.871	1221264.24	741.79424	741.90565	TRUE	0	0.080753	0.071782	1013	30	6.431576	38589.455	29	0.155026
SH	7	1953	1	17	12	20	36	0	206S	40	12	0	402E	7705436.121	1251761.822	743.35598	743.23305	TRUE	0	0.080584	0.071782	1013	30	6.4296	38577.601	29	0.155026
SH	7	1953	1	17	18	20	48	0	208S	40	36	0	406E	7681236.148	1292656.491	749.2189	748.78744	TRUE	0	0.079955	0.071782	1013	30	7.919759	47518.551	29	0.155026
SH	7	1953	1	18	0	21	0	0	210S	40	47	60	408E	7657939.991	1312522.581	748.02787	747.41784	TRUE	0	0.080082	0.071782	1013	30	5.102756	30616.539	29	0.155026
SH	7	1953	1	18	6	21	18	0	213S	41	0	0	410E	7623453.097	1331760.679	742.8664	742.05729	TRUE	0	0.080637	0.071782	1013	30	6.581646	39489.875	29	0.155026
SH	7	1953	1	18	12	22	0	0	220S	41	30	0	415E	7542591.435	1379713.8	734.25939	732.9606	TRUE	0	0.081579	0.071782	1013	30	15.668537	94011.224	29	0.155026
SH	7	1953	1	18	18	23	0	0	230S	42	6	0	421E	7427268.738	1435330.898	722.17143	720.26126	TRUE	0	0.08294	0.071782	1013	30	21.338922	128033.53	29	0.155026
SH	7	1953	1	19	0	24	11	60	242S	42	17	60	423E	7291901.92	1447223.47	690.6439	688.426	TRUE	0	0.086712	0.071782	1013	30	22.648037	135888.22	29	0.155026
SH	7	1953	1	19	6	25	11	60	252S	41	53	60	419E	7182994.433	1398954.985	641.44075	639.39199	TRUE	0	0.093335	0.071782	1013	30	19.854112	119124.67	29	0.155026
SH	7	1953	1	19	12	25	48	0	410E	41	0	0	410E	7121928.276	1303603.703	581.03553	579.46559	TRUE	0	0.102989	0.071782	1013	30	18.8716	113229.26	29	0.155026
SH	7	1953	1	19	18	26	18	0	263S	40	0	0	400E	7072082.728	1199818.681	518.92689	517.78767	TRUE	0	0.115238	0.071782	1013	30	19.189052	115134.31	29	0.155026
SH	7	1953	1	20	0	26	41	60	267S	39	0	0	390E	7032698.061	1097517.97	459.77572	458.97495	TRUE	0	0.129945	0.071782	1013	30	18.270033	109620.2	29	0.155026
SH	7	1953	1	20	6	27	6	0	271S	38	0	0	380E	6992612.409	996007.0804	400.87574	400.32434	TRUE	0	0.148839	0.071782	1013	30	18.189833	109139	29	0.155026
SH	7	1953	1	20	12	28	23	60	284S	37	47	60	378E</														

SH	5	1954	1	20	12	18	6	0	181S	43	47	60	438E	7964813.705	1648198.525	993.53893	990.44451	TRUE	0	0.060335	0.071782	1013	30	5.901935	35411.608	25	0.049416
SH	5	1954	1	20	18	18	0	0	180S	43	36	0	436E	7977296.706	1627386.093	990.12522	987.28572	TRUE	0	0.060543	0.071782	1013	30	4.044827	24268.965	25	0.049416
SH	5	1954	1	21	0	18	6	0	181S	43	23	60	434E	7967315.569	1605283.615	977.83096	975.22427	TRUE	0	0.061303	0.071782	1013	30	4.041942	24251.625	25	0.049416
SH	5	1954	1	21	6	18	30	0	185S	43	12	0	432E	7923700.21	1581309.89	952.11257	949.70086	TRUE	0	0.062955	0.071782	1013	30	8.294977	49769.861	25	0.049416
SH	5	1954	1	21	12	19	0	0	190S	43	23	60	434E	7866405.216	1599390.884	938.03751	935.35156	TRUE	0	0.063898	0.071782	1013	30	10.013378	60080.269	25	0.049416
SH	5	1954	1	21	18	19	30	0	195S	43	47	60	438E	7807688.041	1638538.042	933.06943	929.87931	TRUE	0	0.064237	0.071782	1013	30	11.761763	70570.579	25	0.049416
SH	5	1954	1	22	0	19	48	0	198S	44	0	0	440E	7772635.659	1657622.294	929.0284	925.58091	TRUE	0	0.064516	0.071782	1013	30	6.651813	39910.878	25	0.049416
SH	5	1954	1	22	6	20	11	60	202S	44	12	0	442E	7726292.934	16275834.442	921.40541	921.40541	TRUE	0	0.065049	0.071782	1013	30	8.298813	49792.876	25	0.049416
SH	5	1954	1	22	12	21	0	0	210S	44	36	0	446E	7633397.883	1711767.687	908.07428	903.84252	TRUE	0	0.066002	0.071782	1013	30	16.600442	99602.653	25	0.049416
SH	5	1954	1	22	18	21	48	0	218S	45	6	0	451E	7539382.089	1757528.454	902.04221	897.16825	TRUE	0	0.066442	0.071782	1013	30	17.426845	104561.07	25	0.049416
SH	5	1954	1	23	0	22	36	0	226S	45	23	60	454E	7446755.922	1781576.307	889.40519	884.14914	TRUE	0	0.067384	0.071782	1013	30	15.949491	95696.948	25	0.049416
SH	5	1954	1	23	6	23	30	0	235S	45	42	0	457E	7342684.035	1803994.751	876.34236	870.71658	TRUE	0	0.068386	0.071782	1013	30	17.743187	106459.12	25	0.049416
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	9	1954	3	4	0	20	53	60	209S	46	17	60	463E	7630367.111	1892557.576	989.79536	983.20404	TRUE	0	0.060563	0.071782	1013	30	14.25778	85546.682	39	0.060276
SH	9	1954	3	4	6	21	36	0	216S	46	47	60	468E	7546580.653	1938611.605	989.48717	982.16429	TRUE	0	0.060582	0.071782	1013	30	15.934889	95609.331	39	0.060276
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	10	1954	3	2	12	19	23	60	194S	44	30	0	445E	7814006.972	1713850.227	966.69057	962.63632	TRUE	0	0.062008	0.071782	1013	30	20.972916	125837.5	19	0.067977
SH	10	1954	3	2	18	20	30	0	205S	44	23	60	444E	7691115.65	1694679.333	918.30105	914.33322	TRUE	0	0.062568	0.071782	1013	30	20.729609	124377.65	19	0.067977
SH	10	1954	3	3	0	21	41	60	217S	44	30	0	445E	755530.205	1695389.672	877.81625	873.68261	TRUE	0	0.068272	0.071782	1013	30	22.597884	135587.31	19	0.067977
SH	10	1954	3	3	6	22	48	0	228S	45	6	0	451E	7426896.01	1748377.097	868.56313	863.68498	TRUE	0	0.068997	0.071782	1013	30	23.186696	139120.18	19	0.067977
SH	10	1954	3	3	12	23	23	60	234S	46	6	0	461E	7350126.979	1846594.893	899.05905	892.89715	TRUE	0	0.066662	0.071782	1013	30	20.776736	124660.42	19	0.067977
SH	10	1954	3	3	18	23	30	0	235S	47	17	60	473E	7326564.446	1970497.537	956.34681	948.42086	TRUE	0	0.062677	0.071782	1013	30	21.020531	126123.19	19	0.067977
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	8	1956	1	7	6	19	18	0	193S	41	47	60	418E	7842296.51	1427396.422	862.24871	861.14713	TRUE	0	0.069501	0.071782	1013	30	8.253247	49519.48	21	0.071781
SH	8	1956	1	7	12	19	41	60	197S	42	0	0	420E	7796504.848	1446245.893	851.94675	850.60326	TRUE	0	0.07034	0.071782	1013	30	8.253247	49519.48	21	0.071781
SH	8	1956	1	7	18	20	6	0	201S	42	12	0	422E	7750651.549	1464948.15	842.28675	840.70255	TRUE	0	0.071144	0.071782	1013	30	8.25345	49520.698	21	0.071781
SH	8	1956	1	8	0	20	30	0	205S	42	23	60	424E	7704735.937	1483499.967	833.28957	831.46597	TRUE	0	0.071911	0.071782	1013	30	8.253641	49521.847	21	0.071781
SH	8	1956	1	8	6	20	48	0	208S	42	42	0	427E	7669305.557	1513089.969	833.25681	831.11313	TRUE	0	0.071913	0.071782	1013	30	7.693576	46161.456	21	0.071781
SH	8	1956	1	8	12	21	0	0	210S	43	0	0	430E	7644964.249	1543250.949	837.86131	835.40359	TRUE	0	0.071519	0.071782	1013	30	6.45967	38758.018	21	0.071781
SH	8	1956	1	8	18	21	18	0	213S	43	17	60	433E	7609328.228	1572594.206	839.00678	836.21817	TRUE	0	0.071422	0.071782	1013	30	7.693707	46162.243	21	0.071781
SH	8	1956	1	9	0	21	30	0	215S	43	36	0	436E	7584791.955	1602565.216	844.55977	841.44334	TRUE	0	0.070953	0.071782	1013	30	6.455596	38733.579	21	0.071781
SH	8	1956	1	9	6	21	48	0	218S	43	53	60	439E	7548943.271	1631653.395	846.85636	843.39785	TRUE	0	0.070761	0.071782	1013	30	7.694244	46165.467	21	0.071781
SH	8	1956	1	9	12	22	23	60	224S	44	42	0	447E	7475263.131	1710273.133	862.7102	858.31924	TRUE	0	0.069464	0.071782	1013	30	17.958151	107748.9	21	0.071781
SH	8	1956	1	9	18	22	48	0	228S	46	0	0	460E	7418727.408	1842319.597	912.15068	906.09918	TRUE	0	0.065708	0.071782	1013	30	23.940062	143640.37	21	0.071781
SH	8	1956	1	10	0	22	41	60	227S	47	12	0	472E	7418136.587	1969053.142	974.32105	966.46637	TRUE	0	0.061523	0.071782	1013	30	21.122487	126734.92	21	0.071781
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	12	1956	1	27	0	18	41	60	187S	44	30	0	445E	7892714.742	1719077.556	995.92297	991.89114	TRUE	0	0.060191	0.071782	1013	30	22.820545	136923.27	49	0.1383
SH	12	1956	1	27	6	19	0	0	190S	43	12	0	432E	787670.087	1578068.895	930.02405	927.56331	TRUE	0	0.064447	0.071782	1013	30	23.869249	143215.49	49	0.1383
SH	12	1956	1	27	12	19	23	60	194S	42	17	60	423E	7828318.434	1479838.455	876.92634	875.34746	TRUE	0	0.068341	0.071782	1013	30	17.636588	105819.53	49	0.1383
SH	12	1956	1	27	18	19	48	0	198S	41	42	0	417E	7787007.621	1413934.442	835.90815	834.81311	TRUE	0	0.071686	0.071782	1013	30	12.963541	77781.246	49	0.1383
SH	12	1956	1	28	0	20	23	60	204S	41	0	0	410E	7723790.555	1336780.132	782.311	781.6713	TRUE	0	0.076583	0.071782	1013	30	16.624267	99745.602	49	0.1383
SH	12	1956	1	28	6	21	0	0	210S	40	30	0	405E	7659452.366	1281135.206	736.4981	736.09365	TRUE	0	0.081332	0.071782	1013	30	14.177212	85063.272	49	0.1383
SH	12	1956	1	28	12	21	30	0	215S	40	17	60	403E	7604753.954	1257634.229	706.75932	706.38097	TRUE	0	0.084742	0.071782	1013	30	9.922214	59533.287	49	0.1383
SH	12	1956	1	28	18	22	0	0	220S	40	12	0	402E	7549578.491	1244609.263	681.2212	680.79936	TRUE	0	0.087907	0.071782	1013	30	9.448665	56691.988	49	0.1383
SH	12	1956	1	29	0	22	23	60	224S	40	12	0	402E	7505050.595	1242483.689	664.33144	663.82566	TRUE	0	0.090133	0.071782	1013	30	7.429767	44578.6	49	0.1383
SH	12	1956	1	29	6	22	53	60	229S	40	12	0	402E	7449392.559	1239775.763	643.84124	643.23188	TRUE	0	0.092989	0.071782	1013	30	9.287312	55723.871	49	0.1383
SH	12	1956	1	29	12	23	41	60	237S	40	6	0	401E	7360861.279	1225077.048	608.34316	607.62671	TRUE	0	0.098389	0.071782	1013	30	14.957198	89743.188	49	0.1383
SH	12	1956	1	29	18	24	30	0	245S	39	53	60	399E	7272869.028	1200185.755	570.27965	569.50733	TRUE</									

SH	12	1957	1	15	0	18	53	60	189S	40	0	0	400E	7895567.355	1238650.443	817.24034	817.62413	TRUE	0	0.073319	0.071782	1013	30	21.928562	131571.37	17	0.09232
SH	12	1957	1	15	6	19	48	0	198S	39	12	0	392E	7798696.919	1150352.324	746.73238	747.39924	TRUE	0	0.080221	0.071782	1013	30	21.845696	131074.17	17	0.09232
SH	12	1957	1	15	12	20	36	0	206S	38	36	0	386E	7712051.591	1084242.497	687.88509	688.66359	TRUE	0	0.087058	0.071782	1013	30	18.164313	108985.88	17	0.09232
SH	12	1957	1	15	18	21	30	0	215S	38	17	60	383E	7613179.829	1049544.523	634.24804	634.93027	TRUE	0	0.094389	0.071782	1013	30	17.463911	104783.47	17	0.09232
SH	12	1957	1	16	0	22	41	60	227S	38	12	0	382E	7480309.454	1034593.128	574.49782	574.90877	TRUE	0	0.104155	0.071782	1013	30	22.284823	133708.94	17	0.09232
SH	12	1957	1	16	6	23	48	0	238S	38	6	0	381E	7358559.382	1019991.124	522.16011	522.32686	TRUE	0	0.114529	0.071782	1013	30	20.437098	122622.59	17	0.09232
SH	12	1957	1	16	12	24	30	0	245S	38	6	0	381E	7280852.189	1017153.669	493.19612	493.18721	TRUE	0	0.121207	0.071782	1013	30	12.95983	77758.98	17	0.09232
SH	12	1957	1	16	18	25	11	60	252S	38	6	0	381E	7203143.523	1014239.058	466.18398	466.00572	TRUE	0	0.128174	0.071782	1013	30	12.960551	77763.306	17	0.09232
SH	12	1957	1	17	0	25	53	60	259S	38	6	0	381E	7125433.353	1011247.723	441.48295	441.14454	TRUE	0	0.135281	0.071782	1013	30	12.961287	77767.72	17	0.09232
SH	12	1957	1	17	6	26	41	60	267S	38	12	0	382E	7036215.896	1017707.528	421.35437	420.81888	TRUE	0	0.14168	0.071782	1013	30	14.908502	89451.013	17	0.09232
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	27	1957	3	13	6	22	0	0	220S	42	0	0	420E	7539584.877	1431762.094	755.48109	753.79268	TRUE	0	0.079295	0.071782	1013	30	48.522088	291132.53	9	0.048523
SH	27	1957	3	13	12	21	6	0	211S	44	36	0	446E	7622158.742	1710938.929	904.33402	900.09926	TRUE	0	0.066274	0.071782	1013	30	48.522088	291132.53	9	0.048523
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	3	1957	12	13	12	22	6	0	221S	38	12	0	382E	7546920.058	1036903.274	602.29696	602.86451	TRUE	0	0.099372	0.071782	1013	30	5.058913	30353.478	11	0.100665
SH	3	1957	12	13	18	22	18	0	223S	38	0	0	380E	7525416.422	1015480.686	585.96118	585.57279	TRUE	0	0.102128	0.071782	1013	30	5.058913	30353.478	11	0.100665
SH	3	1957	12	14	0	21	48	0	218S	37	53	60	379E	7581245.809	1006938.828	606.4508	607.22024	TRUE	0	0.098695	0.071782	1013	30	9.413176	56479.056	11	0.100665
SH	3	1957	12	14	6	20	30	0	205S	37	47	60	378E	7725826.154	1000945.974	667.88623	669.04915	TRUE	0	0.089655	0.071782	1013	30	24.117416	144704.49	11	0.100665
SH	3	1957	12	14	12	19	11	60	192S	38	6	0	381E	7869172.422	1036689.158	743.48927	744.87544	TRUE	0	0.080569	0.071782	1013	30	24.622555	147735.33	11	0.100665
SH	3	1957	12	14	18	18	23	60	184S	39	6	0	391E	7954686.466	1145273.353	813.94438	815.01572	TRUE	0	0.073615	0.071782	1013	30	23.035708	138214.25	11	0.100665
SH	3	1957	12	15	0	17	48	0	178S	40	12	0	402E	8017195.322	1264713.748	878.33769	878.82404	TRUE	0	0.068231	0.071782	1013	30	22.468104	134808.62	11	0.100665
SH	3	1957	12	15	6	17	30	0	175S	41	6	0	411E	8046710.871	1362241.273	922.62207	922.44942	TRUE	0	0.064963	0.071782	1013	30	16.982659	101895.96	11	0.100665
SH	3	1957	12	15	12	17	30	0	175S	42	0	0	420E	8042346.521	1458666.034	953.61364	952.60415	TRUE	0	0.062856	0.071782	1013	30	16.087247	96523.479	11	0.100665
SH	3	1957	12	15	18	17	41	60	177S	42	47	60	428E	8015669.247	1543371.905	973.25044	971.37289	TRUE	0	0.061591	0.071782	1013	30	14.80124	88807.44	11	0.100665
SH	3	1957	12	16	0	18	6	0	181S	43	36	0	436E	7966077.162	1626735.419	985.65042	982.80319	TRUE	0	0.060817	0.071782	1013	30	16.166538	96999.23	11	0.100665
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	4	1957	12	31	0	15	41	60	157S	40	0	0	400E	8251777.184	1251656.076	980.31346	981.41916	TRUE	0	0.061148	0.071782	1013	30	11.753244	70519.464	27	0.040012
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	11	1958	1	23	6	20	36	0	206S	42	12	0	422E	7694770.663	1461800.375	820.91183	819.25617	TRUE	0	0.072992	0.071782	1013	30	9.542708	57256.249	25	0.06927
SH	11	1958	1	23	12	20	23	60	204S	41	42	0	417E	7720018.237	1410411.29	809.44068	808.24757	TRUE	0	0.074024	0.071782	1013	30	9.542708	57256.249	25	0.06927
SH	11	1958	1	23	18	20	11	60	202S	41	6	0	411E	7745574.468	1348394.139	795.08303	794.40517	TRUE	0	0.075357	0.071782	1013	30	11.179406	67076.434	25	0.06927
SH	11	1958	1	24	0	20	6	0	201S	40	30	0	405E	7759703.022	1285768.454	777.35134	777.1323	TRUE	0	0.07707	0.071782	1013	30	10.699938	64199.63	25	0.06927
SH	11	1958	1	24	6	20	0	0	200S	40	0	0	400E	7773134.054	1233644.416	764.16627	764.30405	TRUE	0	0.078396	0.071782	1013	30	8.971108	53826.647	25	0.06927
SH	11	1958	1	24	12	20	0	0	200S	39	53	60	399E	7773572.943	1223124.339	760.67358	760.87518	TRUE	0	0.078755	0.071782	1013	30	1.754871	10529.228	25	0.06927
SH	11	1958	1	24	18	20	0	0	200S	40	0	0	400E	7773134.054	1233644.416	764.16627	764.30405	TRUE	0	0.078396	0.071782	1013	30	1.754871	10529.228	25	0.06927
SH	11	1958	1	25	0	20	0	0	200S	40	0	0	400E	7773134.054	1233644.416	764.16627	764.30405	TRUE	0	0.078396	0.071782	1013	30	0	0	25	0.06927
SH	11	1958	1	25	6	20	0	0	200S	40	0	0	400E	7773134.054	1233644.416	764.16627	764.30405	TRUE	0	0.078396	0.071782	1013	30	0	0	25	0.06927
SH	11	1958	1	25	12	20	0	0	200S	40	0	0	400E	7773134.054	1233644.416	764.16627	764.30405	TRUE	0	0.078396	0.071782	1013	30	0	0	25	0.06927
SH	11	1958	1	25	18	20	0	0	200S	40	0	0	400E	7773134.054	1233644.416	764.16627	764.30405	TRUE	0	0.078396	0.071782	1013	30	0	0	25	0.06927
SH	11	1958	1	26	0	20	0	0	200S	40	0	0	400E	7773134.054	1233644.416	764.16627	764.30405	TRUE	0	0.078396	0.071782	1013	30	0	0	25	0.06927
SH	11	1958	1	26	6	20	0	0	200S	40	0	0	400E	7773134.054	1233644.416	764.16627	764.30405	TRUE	0	0.078396	0.071782	1013	30	0	0	25	0.06927
SH	11	1958	1	26	12	20	0	0	200S	40	0	0	400E	7773134.054	1233644.416	764.16627	764.30405	TRUE	0	0.078396	0.071782	1013	30	0	0	25	0.06927
SH	11	1958	1	26	18	20	0	0	200S	40	0	0	400E	7773134.054	1233644.416	764.16627	764.30405	TRUE	0	0.078396	0.071782	1013	30	0	0	25	0.06927
SH	11	1958	1	27	0	20	0	0	200S	40	0	0	400E	7773134.054	1233644.416	764.16627	764.30405	TRUE	0	0.078396	0.071782	1013	30	0	0	25	0.06927
SH	11	1958	1	27	6	20	0	0	200S	40	0	0	400E	7773134.054	1233644.416	764.16627	764.30405	TRUE	0	0.078396	0.071782	1013	30	0	0	25	0.06927
SH	11	1958	1	27	12	20	6	0	201S	39	36	0	396E	7763728.063	1191133	745.54097	745.90396	TRUE	0	0.080348	0.071782	1013	30	7.256593	43539.559	25	0.06927
SH	11	1958	1	27	18	20	11	60	202S	39	0	0	390E	7755007.141	1127714.607	720.56134	721.23854	TRUE	0	0.083124	0.071782	1013	30	10.669202	64015.209	25	0.06927
SH	11	1958	1	28	0	20	18	0	203S	38	36	0	386E	7745372.26	1085384.05	702.678	703.53406	TRUE	0	0.085232	0.071782	1013	30	7.235535	43413.212	25	0.06927
SH	11	1958	1	28	6	20																					

SH	10	1959	1	14	12	23	36	0	236S	43	53	60	439E	7347114.853	1616653.738	785.65558	782.08643	TRUE	0	0.076258	0.071782	1013	30	21.602649	129615.89	13	0.082161
SH	10	1959	1	14	18	24	36	0	246S	45	0	60	450E	7225467.506	1720668.552	810.86046	806.09361	TRUE	0	0.073894	0.071782	1013	30	26.675602	160053.61	13	0.082161
SH	10	1959	1	15	0	25	30	0	255S	45	47	60	458E	7116587.242	1793166.809	823.64044	823.95453	TRUE	0	0.072226	0.071782	1013	30	21.801446	130808.67	13	0.082161
SH	10	1959	1	15	6	26	30	0	265S	46	23	60	464E	6997722.189	1842703.895	840.65522	834.27621	TRUE	0	0.071282	0.071782	1013	30	21.462386	128774.31	13	0.082161
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	11	1960	1	28	12	17	48	0	178S	42	23	60	424E	8006693.189	1499898.781	953.81002	952.35016	TRUE	0	0.062843	0.071782	1013	30	9.999962	59999.77	11	0.057169
SH	11	1960	1	28	18	17	18	0	173S	42	36	0	426E	8061555.915	1524189.801	984.63271	983.02377	TRUE	0	0.06088	0.071782	1013	30	9.999962	59999.77	11	0.057169
SH	11	1960	1	29	0	17	11	60	172S	42	30	0	425E	8073284.793	1513994.65	985.75957	984.27237	TRUE	0	0.06081	0.071782	1013	30	2.590086	15540.518	11	0.057169
SH	11	1960	1	29	6	17	30	0	175S	42	12	0	422E	8041311.735	1480119.807	960.73159	959.52005	TRUE	0	0.062392	0.071782	1013	30	7.763485	46580.913	11	0.057169
SH	11	1960	1	29	12	17	48	0	178S	41	53	60	419E	8009333.742	1446351.027	935.7456	934.78816	TRUE	0	0.064054	0.071782	1013	30	7.751205	46507.231	11	0.057169
SH	11	1960	1	29	18	18	6	0	181S	41	42	0	417E	7976842.837	1423368.543	914.35674	913.54072	TRUE	0	0.065549	0.071782	1013	30	6.632943	39797.657	11	0.057169
SH	11	1960	1	30	0	18	23	60	184S	41	30	0	415E	7944358.08	1400445.604	892.99629	892.31112	TRUE	0	0.067114	0.071782	1013	30	6.626379	39758.277	11	0.057169
SH	11	1960	1	30	6	19	6	0	191S	41	0	0	410E	7868740.036	1343664.443	842.07524	841.68271	TRUE	0	0.071162	0.071782	1013	30	15.760525	94563.147	11	0.057169
SH	11	1960	1	30	12	19	53	60	199S	40	12	0	402E	7783370.586	1255169.732	775.93183	775.96029	TRUE	0	0.077211	0.071782	1013	30	20.493398	122960.39	11	0.057169
SH	11	1960	1	30	18	20	18	0	203S	39	12	0	392E	7743116.352	1148282.144	722.34118	722.88551	TRUE	0	0.08292	0.071782	1013	30	19.036048	114216.29	11	0.057169
SH	11	1960	1	31	0	20	23	60	204S	37	53	60	379E	7736612.826	1011733.92	675.96478	677.11331	TRUE	0	0.088588	0.071782	1013	30	22.783835	136703.01	11	0.057169
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	20	1960	3	21	18	18	11	60	182S	42	0	0	420E	7964114.929	1454867.535	920.45331	919.33767	TRUE	0	0.065116	0.071782	1013	30	7.66987	46019.222	23	0.065714
SH	20	1960	3	22	0	18	36	0	186S	42	6	0	421E	7918872.76	1463288.641	905.54008	904.26811	TRUE	0	0.066186	0.071782	1013	30	7.66987	46019.222	23	0.065714
SH	20	1960	3	22	6	19	0	0	190S	42	42	0	427E	7870719.016	1524809.568	910.2962	908.37135	TRUE	0	0.065841	0.071782	1013	30	13.020931	78125.589	23	0.065714
SH	20	1960	3	22	12	19	30	0	195S	43	47	60	438E	7807688.041	1638538.042	933.06943	929.87931	TRUE	0	0.064237	0.071782	1013	30	21.671198	130027.19	23	0.065714
SH	20	1960	3	22	18	20	0	0	200S	45	0	0	450E	7742757.913	1762382.855	964.26312	959.53156	TRUE	0	0.062164	0.071782	1013	30	23.305614	139833.68	23	0.065714
SH	20	1960	3	23	0	20	6	0	201S	45	42	0	457E	7725863.081	1836061.037	991.63118	985.90819	TRUE	0	0.060451	0.071782	1013	30	12.598401	75590.409	23	0.065714
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	10	1961	1	1	6	18	6	0	181S	39	23	60	394E	7986945.289	1178284.151	838.31561	839.27838	TRUE	0	0.071481	0.071782	1013	30	4.110288	24661.729	21	0.090132
SH	10	1961	1	1	12	18	18	0	183S	39	17	60	393E	7965076.597	1166884.099	825.07946	826.05559	TRUE	0	0.072624	0.071782	1013	30	4.110288	24661.729	21	0.090132
SH	10	1961	1	1	18	18	36	0	186S	39	6	0	391E	7932456.921	1144519.501	803.72512	804.74647	TRUE	0	0.074549	0.071782	1013	30	6.5917	39550.202	21	0.090132
SH	10	1961	1	2	0	18	53	60	189S	38	53	60	389E	7899833.192	1122219.339	782.3884	783.44759	TRUE	0	0.076576	0.071782	1013	30	6.586191	39517.147	21	0.090132
SH	10	1961	1	2	6	19	11	60	192S	38	42	0	387E	7867204.228	1099985.007	761.06916	762.15913	TRUE	0	0.078714	0.071782	1013	30	6.580727	39484.362	21	0.090132
SH	10	1961	1	2	12	19	23	60	194S	38	36	0	386E	7845333.998	1088712.312	747.8724	748.96216	TRUE	0	0.080099	0.071782	1013	30	4.100747	24604.484	21	0.090132
SH	10	1961	1	2	18	19	41	60	197S	38	36	0	386E	7812013.463	1087618.988	732.68003	733.69174	TRUE	0	0.081754	0.071782	1013	30	5.556411	33338.468	21	0.090132
SH	10	1961	1	3	0	20	0	0	200S	38	36	0	386E	7778692.883	1086509.558	717.61254	718.54634	TRUE	0	0.083465	0.071782	1013	30	5.556507	33339.044	21	0.090132
SH	10	1961	1	3	6	20	18	0	203S	38	36	0	386E	7745372.26	1085384.05	702.678	703.53406	TRUE	0	0.085232	0.071782	1013	30	5.556604	33339.627	21	0.090132
SH	10	1961	1	3	12	20	36	0	206S	38	42	0	387E	7711687.422	1094701.278	691.15256	691.88225	TRUE	0	0.086648	0.071782	1013	30	5.824944	34949.664	21	0.090132
SH	10	1961	1	3	18	20	48	0	208S	38	47	60	388E	7689097.068	1104363.605	684.75164	685.38086	TRUE	0	0.087455	0.071782	1013	30	4.094999	24569.995	21	0.090132
SH	10	1961	1	4	0	21	0	0	210S	38	53	60	389E	7666494.209	1113991.914	678.53287	679.06167	TRUE	0	0.088254	0.071782	1013	30	4.09469	24568.142	21	0.090132
SH	10	1961	1	4	6	21	11	60	212S	39	0	0	390E	7643878.738	1123585.822	672.50105	672.92956	TRUE	0	0.089042	0.071782	1013	30	4.094382	24566.289	21	0.090132
SH	10	1961	1	4	12	21	41	60	217S	39	23	60	394E	7586645.17	1163002.381	663.79388	663.89348	TRUE	0	0.090205	0.071782	1013	30	11.58225	69493.499	21	0.090132
SH	10	1961	1	4	18	22	18	0	223S	40	0	0	400E	7517162.311	1222304.309	660.5291	660.16109	TRUE	0	0.090649	0.071782	1013	30	15.224785	91348.708	21	0.090132
SH	10	1961	1	5	0	22	48	0	228S	40	42	0	407E	7457905.31	1291944.381	668.73602	667.84518	TRUE	0	0.089541	0.071782	1013	30	15.239871	91439.224	21	0.090132
SH	10	1961	1	5	6	23	11	60	232S	41	12	0	412E	7410506.912	1341098.189	674.91702	673.62934	TRUE	0	0.088725	0.071782	1013	30	11.380667	68284.003	21	0.090132
SH	10	1961	1	5	12	23	36	0	236S	41	23	60	414E	7364708.391	1359097.251	669.26361	667.77561	TRUE	0	0.089471	0.071782	1013	30	8.201407	49208.442	21	0.090132
SH	10	1961	1	5	18	24	0	0	240S	41	42	0	417E	7318215.68	1387181.672	669.14038	667.38588	TRUE	0	0.089487	0.071782	1013	30	9.052788	54316.727	21	0.090132
SH	10	1961	1	6	0	24	23	60	244S	41	53	60	419E	7272275.925	1404819.874	665.44815	663.49874	TRUE	0	0.089982	0.071782	1013	30	8.20157	49209.423	21	0.090132
SH	10	1961	1	6	6	24	48	0	248S	42	12	0	422E	7225585.891	1432478.752	667.51236	665.29944	TRUE	0	0.089705	0.071782	1013	30	9.0446	54267.603	21	0.090132
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	2	1961	12	22	0	19	36	0	196S	44	23	60	444E	7792249.197	1701671.41	954.23265	950.30021	TRUE	0	0.062816	0.071782	1013	30	26.20144	157208.64	19	0.075035
SH	2	1961	12	22	6	20	30	0	435E	43	20	0	435E	7697588.394	1599522.187												

SH	12	1962	2	16	18	26	48	0	268S	49	0	0	490E	6932150.158	2102619.076	973.46041	963.18475	TRUE	0	0.061577	0.071782	1013	30	29.582847	177497.08	57	0.148611
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	20	1962	2	22	6	25	36	0	256S	48	12	0	482E	7078476.603	2037631.602	952.62101	943.51353	TRUE	0	0.062922	0.071782	1013	30	26.194425	157166.55	13	0.040408
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	24	1962	3	13	0	19	18	0	193S	44	36	0	446E	7824525.687	1725283.816	975.05929	970.87655	TRUE	0	0.061477	0.071782	1013	30	27.100403	162602.42	21	0.074493
SH	24	1962	3	13	6	19	23	60	194S	43	17	60	433E	7822210.437	1586048.902	916.72944	914.1194	TRUE	0	0.06538	0.071782	1013	30	23.209027	139254.16	21	0.074493
SH	24	1962	3	13	12	19	23	60	194S	42	36	0	426E	7826554.767	1511675.588	888.67988	886.80721	TRUE	0	0.067439	0.071782	1013	30	12.416681	74500.087	21	0.074493
SH	24	1962	3	13	18	19	18	0	193S	41	47	60	418E	7842296.51	1427396.422	862.24871	861.14713	TRUE	0	0.069501	0.071782	1013	30	14.289449	85736.692	21	0.074493
SH	24	1962	3	14	0	19	6	0	191S	41	6	0	411E	7868248.91	1354265.67	845.66249	845.18995	TRUE	0	0.070861	0.071782	1013	30	12.933198	77599.188	21	0.074493
SH	24	1962	3	14	6	18	53	60	189S	40	17	60	403E	7894274.758	1270440.715	827.27873	827.45399	TRUE	0	0.072432	0.071782	1013	30	14.628708	87772.249	21	0.074493
SH	24	1962	3	14	12	18	36	0	186S	39	30	0	395E	7930963.089	1186924.311	816.04353	816.823	TRUE	0	0.073426	0.071782	1013	30	15.203274	91219.643	21	0.074493
SH	24	1962	3	14	18	18	18	0	183S	38	36	0	386E	7967508.934	1092582.88	804.5307	805.90797	TRUE	0	0.074474	0.071782	1013	30	16.862108	101172.65	21	0.074493
SH	24	1962	3	15	0	17	53	60	179S	37	36	0	376E	8014851.696	987669.6719	799.16844	801.13949	TRUE	0	0.074972	0.071782	1013	30	19.183412	115100.47	21	0.074493
SH	24	1962	3	15	6	17	18	0	173S	36	36	0	366E	8083677.431	882789.5145	809.35222	811.8859	TRUE	0	0.074032	0.071782	1013	30	20.907753	125446.52	21	0.074493
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	15	1963	1	18	12	24	53	60	249S	48	47	60	488E	7150389.74	2108868.412	999.02094	988.75499	TRUE	0	0.060005	0.071782	1013	30	30.556402	18338.41	35	0.061127
SH	15	1963	1	18	18	27	0	0	270S	49	0	0	490E	6909468.341	2099677.548	970.35732	960.11754	TRUE	0	0.061774	0.071782	1013	30	40.182774	241096.65	35	0.061127
SH	15	1963	1	19	0	28	30	0	285S	49	23	60	494E	6733786.6	2116997.031	973.07172	962.3971	TRUE	0	0.061602	0.071782	1013	30	29.422232	176533.39	35	0.061127
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	29	1963	2	16	6	18	6	0	181S	43	36	0	436E	7966077.162	1626735.419	985.65042	982.80319	TRUE	0	0.060817	0.071782	1013	30	22.274566	133647.4	39	0.050553
SH	29	1963	2	16	12	18	11	60	182S	43	6	0	431E	7957921.665	1572504.807	961.70344	959.43509	TRUE	0	0.062329	0.071782	1013	30	9.14007	54840.418	39	0.050553
SH	29	1963	2	16	18	18	18	0	183S	42	47	60	428E	7948488.826	1539785.581	945.66682	943.71958	TRUE	0	0.063384	0.071782	1013	30	5.675303	34051.817	39	0.050553
SH	29	1963	2	17	0	18	23	60	184S	42	23	60	424E	7939578.529	1496446.505	925.96187	924.42135	TRUE	0	0.06473	0.071782	1013	30	7.374259	44245.552	39	0.050553
SH	29	1963	2	17	6	18	30	0	185S	42	6	0	421E	7930049.979	1463858.261	910.15848	908.90128	TRUE	0	0.065851	0.071782	1013	30	5.658786	33952.716	39	0.050553
SH	29	1963	2	17	12	18	36	0	186S	41	47	60	418E	7920480.666	1431327.382	894.45624	893.46677	TRUE	0	0.067004	0.071782	1013	30	5.651524	33909.142	39	0.050553
SH	29	1963	2	17	18	18	36	0	186S	41	30	0	415E	7922032.55	1399386.779	883.55605	882.83643	TRUE	0	0.067829	0.071782	1013	30	5.329714	31978.281	39	0.050553
SH	29	1963	2	18	0	18	36	0	186S	41	17	60	413E	7923036.133	1378104.163	876.39421	875.84764	TRUE	0	0.068382	0.071782	1013	30	3.551044	21306.264	39	0.050553
SH	29	1963	2	18	6	18	41	60	187S	41	6	0	411E	7912861.532	1356322.525	864.55672	864.15907	TRUE	0	0.069316	0.071782	1013	30	4.006808	24004.846	39	0.050553
SH	29	1963	2	18	12	18	48	0	188S	40	42	0	407E	7903609.242	1313341.043	845.79355	845.69387	TRUE	0	0.07085	0.071782	1013	30	7.327673	43966.04	39	0.050553
SH	29	1963	2	18	18	19	0	0	190S	40	12	0	402E	7883577.357	1259385.291	819.04163	819.2658	TRUE	0	0.073158	0.071782	1013	30	9.592386	57554.318	39	0.050553
SH	29	1963	2	19	0	19	6	0	191S	39	47	60	398E	7874144.524	1216601.981	800.81537	801.2862	TRUE	0	0.074819	0.071782	1013	30	7.301807	43810.844	39	0.050553
SH	29	1963	2	19	6	19	11	60	192S	39	17	60	393E	7865013.771	1163332.954	779.67232	780.42846	TRUE	0	0.076842	0.071782	1013	30	9.007651	54045.905	39	0.050553
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	34	1963	2	27	6	22	48	0	228S	41	6	0	411E	7455680.018	1333272.961	685.75234	684.60088	TRUE	0	0.087328	0.071782	1013	30	7.640978	45845.869	13	0.093735
SH	34	1963	2	27	12	23	11	60	232S	41	12	0	412E	7410098.189	1341098.189	674.91702	673.62934	TRUE	0	0.088725	0.071782	1013	30	7.640978	45845.869	13	0.093735
SH	34	1963	2	27	18	23	36	0	236S	41	17	60	413E	7365313.308	1348820.607	664.77466	663.35391	TRUE	0	0.090073	0.071782	1013	30	7.64144	45848.638	13	0.093735
SH	34	1963	2	28	0	23	53	60	239S	41	23	60	414E	7331251.31	1357107.302	658.78001	657.24505	TRUE	0	0.090889	0.071782	1013	30	5.842585	35055.513	13	0.093735
SH	34	1963	2	28	6	24	18	0	243S	41	36	0	416E	7285384.475	1374861.309	654.60031	652.87163	TRUE	0	0.091467	0.071782	1013	30	8.197173	49183.039	13	0.093735
SH	34	1963	2	28	12	25	6	0	251S	41	53	60	419E	7194153.866	1399697.729	644.29706	642.26015	TRUE	0	0.092923	0.071782	1013	30	15.758483	94550.895	13	0.093735
SH	34	1963	2	28	18	26	0	0	260S	42	12	0	422E	7091608.441	1423170.35	635.1551	632.81868	TRUE	0	0.094255	0.071782	1013	30	17.532928	105197.57	13	0.093735
SH	34	1963	3	1	0	26	36	0	266S	42	30	0	425E	7022406.05	1448473.098	636.7117	634.12023	TRUE	0	0.094025	0.071782	1013	30	12.280517	73683.105	13	0.093735
SH	34	1963	3	1	6	27	23	60	274S	43	0	0	430E	6929116.845	1491532.608	647.45374	644.46351	TRUE	0	0.092472	0.071782	1013	30	17.124541	102747.25	13	0.093735
SH	34	1963	3	1	12	29	11	60	292S	43	53	60	439E	6720034.419	1562979.529	673.83759	670.15749	TRUE	0	0.088866	0.071782	1013	30	36.825461	220952.76	13	0.093735
SH	34	1963	3	1	18	31	18	0	313S	45	0	0	450E	6474014.404	1645847.624	728.4227	723.93049	TRUE	0	0.08223	0.071782	1013	30	43.266926	259601.56	13	0.093735
SH	34	1963	3	2	0	33	0	0	330S	46	0	0	460E	6272224.175	1718645.959	791.61899	786.3205	TRUE	0	0.075685	0.071782	1013	30	35.753358	214520.15	13	0.093735
SH	34	1963	3	2	6	34	30	0	345S	47	6	0	471E	6090067.976	1799087.593	865.50456	859.14236	TRUE	0	0.069241	0.071782	1013	30	33.187907	199127.44	13	0.093735
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	8	1964	1	10	18	19	6	0	191S	39	36	0	396E	7874958.005	1195450.415	794.27812	794.87621	TRUE	0	0.075433							

BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	8	1964	12	18	18	25	41	60	257S	36	0	0	360E	7154118.278	801077.8871	360.4271	360.70499	TRUE	0	0.165324	0.071782	1013	30	2.492923	14957.537	11	0.162716
SH	8	1964	12	19	0	25	48	0	258S	36	6	0	361E	7142802.08	810859.0713	360.17107	360.39935	TRUE	0	0.16544	0.071782	1013	30	2.492923	14957.537	11	0.162716
SH	8	1964	12	19	6	26	18	0	263S	37	0	0	370E	7084907.019	899486.8801	378.8553	378.74004	TRUE	0	0.157385	0.071782	1013	30	17.643638	105861.83	11	0.162716
SH	8	1964	12	19	12	27	18	0	273S	38	42	0	387E	6967426.6	1064561.036	430.25355	429.4578	TRUE	0	0.138778	0.071782	1013	30	33.768462	202610.77	11	0.162716
SH	8	1964	12	19	18	28	11	60	282S	40	30	0	405E	6857745.802	1237224.596	505.39259	503.81782	TRUE	0	0.118303	0.071782	1013	30	34.092432	204554.59	11	0.162716
SH	8	1964	12	20	0	29	0	0	290S	42	6	0	421E	6757591.961	1388327.506	580.35447	577.92821	TRUE	0	0.10311	0.071782	1013	30	30.213537	181281.22	11	0.162716
SH	8	1964	12	20	6	29	53	60	299S	43	47	60	438E	6642681.529	1545801.773	665.07271	661.50328	TRUE	0	0.090033	0.071782	1013	30	32.490405	194942.43	11	0.162716
SH	8	1964	12	20	12	30	48	0	308S	45	36	0	456E	6523449.607	1710015.426	758.87401	753.74508	TRUE	0	0.078941	0.071782	1013	30	33.822402	202934.41	11	0.162716
SH	8	1964	12	20	18	31	41	60	317S	47	23	60	474E	6400403.242	1871008.197	855.1027	847.97623	TRUE	0	0.070081	0.071782	1013	30	33.771734	202630.4	11	0.162716
SH	8	1964	12	21	0	32	42	0	327S	49	17	60	493E	6260405.371	2036362.867	958.67132	948.87536	TRUE	0	0.062525	0.071782	1013	30	36.110006	216660.04	11	0.162716
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	12	1964	12	23	18	22	36	0	226S	41	17	60	413E	7476827.903	1355203.72	702.07469	700.82018	TRUE	0	0.085305	0.071782	1013	30	7.860538	47163.225	7	0.055898
SH	12	1964	12	24	0	22	23	60	224S	41	42	0	417E	7496765.374	1397945.585	727.01417	725.50024	TRUE	0	0.082389	0.071782	1013	30	7.860538	47163.225	7	0.055898
SH	12	1964	12	24	6	22	18	0	223S	42	6	0	421E	7505451.835	1440153.941	748.1927	746.38001	TRUE	0	0.080065	0.071782	1013	30	7.182154	43092.922	7	0.055898
SH	12	1964	12	24	12	22	18	0	223S	42	30	0	425E	7502861.185	1481745.834	765.74014	763.59281	TRUE	0	0.078235	0.071782	1013	30	6.945416	41672.497	7	0.055898
SH	12	1964	12	24	18	22	23	60	224S	43	0	0	430E	7488267.583	1533033.98	784.35288	781.74713	TRUE	0	0.076384	0.071782	1013	30	8.887331	53323.983	7	0.055898
SH	12	1964	12	25	0	22	30	0	225S	43	23	60	434E	7474202.142	1573889.139	798.91787	795.92201	TRUE	0	0.074996	0.071782	1013	30	7.201429	43208.571	7	0.055898
SH	12	1964	12	25	6	22	36	0	225S	43	53	60	439E	7459226.799	1625124.861	818.48085	814.97162	TRUE	0	0.073208	0.071782	1013	30	8.896566	53379.39	7	0.055898
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	15	1965	1	6	6	18	6	0	181S	41	0	0	410E	7980253.165	1348663.648	889.91839	889.71689	TRUE	0	0.067345	0.071782	1013	30	11.71678	70300.679	9	0.073991
SH	15	1965	1	6	12	18	41	60	187S	41	12	0	412E	7912372.96	1366951.984	868.09987	867.61944	TRUE	0	0.069034	0.071782	1013	30	11.71678	70300.679	9	0.073991
SH	15	1965	1	6	18	19	11	60	192S	41	23	60	414E	7855578.138	1385541.259	851.9196	851.18161	TRUE	0	0.070342	0.071782	1013	30	9.959938	59759.627	9	0.073991
SH	15	1965	1	7	0	19	41	60	197S	41	30	0	415E	7799252.633	1393366.792	832.77868	831.86989	TRUE	0	0.071955	0.071782	1013	30	9.477754	56866.523	9	0.073991
SH	15	1965	1	7	6	20	6	0	201S	41	42	0	417E	7753512.172	1412185.427	822.5861	821.44198	TRUE	0	0.072844	0.071782	1013	30	8.243399	49460.396	9	0.073991
SH	15	1965	1	7	12	20	48	0	208S	42	12	0	422E	7672419.757	1460520.633	812.51119	810.82704	TRUE	0	0.073745	0.071782	1013	30	15.734138	94404.83	9	0.073991
SH	15	1965	1	7	18	21	30	0	215S	42	42	0	427E	7590999.459	1508259.945	805.17828	802.95037	TRUE	0	0.074414	0.071782	1013	30	15.730638	94383.827	9	0.073991
SH	15	1965	1	8	0	21	53	60	219S	43	12	0	432E	7542831.783	1557647.664	811.74397	808.99806	TRUE	0	0.073814	0.071782	1013	30	11.497913	68987.476	9	0.073991
SH	15	1965	1	8	6	22	11	60	222S	43	42	0	437E	7505593.433	1607536.612	823.29807	820.02403	TRUE	0	0.072781	0.071782	1013	30	10.375722	62254.332	9	0.073991
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	18	1965	1	15	6	17	30	0	175S	43	0	0	430E	8036934.241	1566036.654	989.99392	987.91263	TRUE	0	0.060551	0.071782	1013	30	11.400846	68405.074	5	0.040093
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	19	1965	1	23	6	20	48	0	208S	46	0	0	460E	7644326.205	1861662.139	979.39619	973.2552	TRUE	0	0.061205	0.071782	1013	30	11.463896	68783.375	43	0.06655
SH	19	1965	1	23	12	21	23	60	214S	46	6	0	461E	7575721.518	1866600.259	962.87406	956.61409	TRUE	0	0.062253	0.071782	1013	30	11.463696	68782.179	43	0.06655
SH	19	1965	1	23	18	22	0	0	220S	46	17	60	463E	7506152.235	1881819.248	952.20765	945.68538	TRUE	0	0.062949	0.071782	1013	30	11.869081	71214.484	43	0.06655
SH	19	1965	1	24	0	22	23	60	224S	46	23	60	464E	7460043.245	1888280.625	944.17217	937.52722	TRUE	0	0.063484	0.071782	1013	30	7.759919	46559.515	43	0.06655
SH	19	1965	1	24	6	22	41	60	227S	46	30	0	465E	7425200.233	1895658.969	939.72474	932.95229	TRUE	0	0.063783	0.071782	1013	30	5.935944	35615.663	43	0.06655
SH	19	1965	1	24	12	23	11	60	232S	46	42	0	467E	7366741.037	1911244.252	934.70176	927.66998	TRUE	0	0.064126	0.071782	1013	30	10.083511	60501.063	43	0.06655
SH	19	1965	1	24	18	23	41	60	237S	46	53	60	469E	7308198.243	1926561.995	930.64782	923.3595	TRUE	0	0.064404	0.071782	1013	30	10.085595	60513.569	43	0.06655
SH	19	1965	1	25	0	24	11	60	242S	47	0	0	470E	7250649.422	1931246.122	922.46768	915.0756	TRUE	0	0.064974	0.071782	1013	30	9.623189	57739.136	43	0.06655
SH	19	1965	1	25	6	24	48	0	248S	47	0	0	470E	7182877.991	1924239.152	907.63028	900.29424	TRUE	0	0.066034	0.071782	1013	30	11.35545	68132.698	43	0.06655
SH	19	1965	1	25	12	25	30	0	255S	47	12	0	472E	7101597.746	1936352.399	902.25691	894.69648	TRUE	0	0.066426	0.071782	1013	30	13.696319	82177.911	43	0.06655
SH	19	1965	1	25	18	26	18	0	263S	47	23	60	474E	7008936.912	1946715.936	896.94071	889.17246	TRUE	0	0.066819	0.071782	1013	30	15.539763	93238.581	43	0.06655
SH	19	1965	1	26	0	26	53	60	269S	47	42	0	477E	6937559.929	1969292.023	902.55399	894.41148	TRUE	0	0.066405	0.071782	1013	30	12.477038	74862.23	43	0.06655
SH	19	1965	1	26	6	27	36	0	276S	48	12	0	482E	6852142.982	2010104.686	919.00253	910.18704	TRUE	0	0.065219	0.071782	1013	30	15.777734	94666.405	43	0.06655
SH	19	1965	1	26	12	28	11	60	282S	49	6	0	491E	6772070.913	2091646.539	960.04454	949.84236	TRUE	0	0.062436	0.071782	1013	30	19.047171	114283.03	43	0.06655
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	28	1965	2	20	6	18	48	0	188S	41	42	0	417E	7898669.805	1419582.393	881.48673	880.55576	TRUE	0	0.067988	0.071782	1013	30	7.660535	45963.208		

SH	6	1966	1	3	6	23	0	0	230S	36	36	0	366E	7451945.272	869103.3607	505.85203	506.73051	TRUE	0	0.118196	0.071782	1013	30	12.666061	75996.368	67	0.238336
SH	6	1966	1	3	12	23	41	60	237S	36	0	0	360E	7375765.655	805931.6713	452.52217	453.36035	TRUE	0	0.13201	0.071782	1013	30	16.494104	98964.622	67	0.238336
SH	6	1966	1	3	18	24	30	0	245S	35	30	0	355E	7288121.694	753338.7103	397.55846	398.28265	TRUE	0	0.150067	0.071782	1013	30	17.035489	102212.93	67	0.238336
SH	6	1966	1	4	0	24	53	60	249S	34	47	60	348E	7244922.39	681803.6542	356.24251	356.99084	TRUE	0	0.167239	0.071782	1013	30	13.927834	83567.004	67	0.238336
SH	6	1966	1	4	6	25	6	0	251S	34	17	60	343E	7223348.423	631083.4975	331.74205	332.51899	TRUE	0	0.179396	0.071782	1013	30	9.186298	55117.786	67	0.238336
SH	6	1966	1	4	12	25	6	0	251S	34	17	60	343E	7223348.423	631083.4975	331.74205	332.51899	TRUE	0	0.179396	0.071782	1013	30	0	0	67	0.238336
SH	6	1966	1	4	18	25	6	0	251S	34	17	60	343E	7223348.423	631083.4975	331.74205	332.51899	TRUE	0	0.179396	0.071782	1013	30	0	0	67	0.238336
SH	6	1966	1	5	0	25	11	60	252S	34	17	60	343E	7212273.508	630976.6868	326.59703	327.34583	TRUE	0	0.182176	0.071782	1013	30	1.845905	11075.43	67	0.238336
SH	6	1966	1	5	6	25	11	60	252S	34	17	60	343E	7212273.508	630976.6868	326.59703	327.34583	TRUE	0	0.182176	0.071782	1013	30	0	0	67	0.238336
SH	6	1966	1	5	12	25	11	60	252S	34	17	60	343E	7212273.508	630976.6868	326.59703	327.34583	TRUE	0	0.182176	0.071782	1013	30	0	0	67	0.238336
SH	6	1966	1	5	18	25	6	0	251S	34	17	60	343E	7223348.423	631083.4975	331.74205	332.51899	TRUE	0	0.179396	0.071782	1013	30	1.845905	11075.43	67	0.238336
SH	6	1966	1	6	0	25	6	0	251S	34	17	60	343E	7223348.423	631083.4975	331.74205	332.51899	TRUE	0	0.179396	0.071782	1013	30	0	0	67	0.238336
SH	6	1966	1	6	6	25	6	0	251S	34	17	60	343E	7223348.423	631083.4975	331.74205	332.51899	TRUE	0	0.179396	0.071782	1013	30	0	0	67	0.238336
SH	6	1966	1	6	12	26	18	0	263S	34	17	60	343E	7090439.978	629775.5522	272.25092	272.69125	TRUE	0	0.217741	0.071782	1013	30	22.15248	132914.88	67	0.238336
SH	6	1966	1	6	18	27	48	0	278S	34	36	0	346E	6923925.757	657617.1913	221.97402	221.96489	TRUE	0	0.265453	0.071782	1013	30	28.137629	168825.78	67	0.238336
SH	6	1966	1	7	0	28	30	0	285S	35	42	0	357E	6844435.26	674289.0257	255.30199	254.98883	TRUE	0	0.231815	0.071782	1013	30	22.172067	133032.4	67	0.238336
SH	6	1966	1	7	6	29	6	0	291S	36	53	60	369E	6774644.81	879649.1023	307.66548	307.09183	TRUE	0	0.19318	0.071782	1013	30	22.471373	134828.24	67	0.238336
SH	6	1966	1	7	12	29	41	60	297S	37	53	60	379E	6704391.152	974304.8918	355.88384	355.085	TRUE	0	0.167405	0.071782	1013	30	19.646384	11878.31	67	0.238336
SH	6	1966	1	7	18	30	11	60	302S	39	0	0	390E	6643789.607	1078047.23	412.85049	411.7704	TRUE	0	0.144568	0.071782	1013	30	20.024305	120145.83	67	0.238336
SH	6	1966	1	8	0	30	36	0	306S	40	0	0	400E	6593761.455	1171845.088	465.82601	464.4277	TRUE	0	0.128271	0.071782	1013	30	17.717579	106305.48	67	0.238336
SH	6	1966	1	8	6	31	6	0	311S	41	6	0	411E	6530928.612	1273674.341	525.15594	523.32532	TRUE	0	0.11388	0.071782	1013	30	19.942391	119654.35	67	0.238336
SH	6	1966	1	8	12	31	48	0	318S	43	12	0	432E	6435951.787	1467807.898	638.01382	635.02728	TRUE	0	0.093834	0.071782	1013	30	36.020224	216121.34	67	0.238336
SH	6	1966	1	8	18	32	42	0	327S	46	0	0	460E	6305837.948	1722855.477	788.75019	783.41389	TRUE	0	0.07596	0.071782	1013	30	47.719923	286319.54	67	0.238336
SH	6	1966	1	9	0	33	42	0	337S	48	30	0	485E	6160003.653	1943105.312	925.4489	917.06509	TRUE	0	0.064765	0.071782	1013	30	44.02576	264154.56	67	0.238336
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	24	1966	2	15	18	16	48	0	168S	41	6	0	411E	8124797.314	1365518.637	957.33937	957.29803	TRUE	0	0.062612	0.071782	1013	30	19.501746	117010.47	11	0.057458
SH	24	1966	2	16	0	17	30	0	175S	40	36	0	406E	8048930.407	1308749.685	906.1777	906.42098	TRUE	0	0.06614	0.071782	1013	30	15.792492	94754.955	11	0.057458
SH	24	1966	2	16	6	18	6	0	181S	40	6	0	401E	7984205.108	1252765.579	860.12343	860.61616	TRUE	0	0.069673	0.071782	1013	30	14.262991	85577.944	11	0.057458
SH	24	1966	2	16	12	18	41	60	187S	39	23	60	394E	7920225.769	1175921.753	807.88225	808.69971	TRUE	0	0.074166	0.071782	1013	30	16.665275	99991.648	11	0.057458
SH	24	1966	2	16	18	19	11	60	192S	38	42	0	387E	7867204.228	1099985.007	761.06916	761.15913	TRUE	0	0.078714	0.071782	1013	30	15.435955	92615.728	11	0.057458
SH	24	1966	2	17	0	19	36	0	196S	37	53	60	379E	7825390.987	1014337.105	717.03328	718.40038	TRUE	0	0.083532	0.071782	1013	30	15.884925	95309.55	11	0.057458
SH	24	1966	2	17	6	20	0	0	200S	37	6	0	371E	7783260.503	929163.9412	674.02735	675.59927	TRUE	0	0.088841	0.071782	1013	30	15.837232	95023.395	11	0.057458
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	25	1966	2	20	18	19	0	0	190S	41	17	60	413E	7878405.146	1376005.692	857.56886	856.95036	TRUE	0	0.06988	0.071782	1013	30	19.459333	116756	11	0.071366
SH	25	1966	2	21	0	19	36	0	196S	42	12	0	422E	768022.033	1468022.033	864.16316	862.65063	TRUE	0	0.069348	0.071782	1013	30	19.459333	116756	11	0.071366
SH	25	1966	2	21	6	20	18	0	203S	43	0	0	430E	7723332.899	1548124.728	866.39941	864.01716	TRUE	0	0.069169	0.071782	1013	30	19.249423	115496.54	11	0.071366
SH	25	1966	2	21	12	21	11	60	212S	43	36	0	436E	7618420.101	1604856.672	856.01035	852.91771	TRUE	0	0.070007	0.071782	1013	30	19.878247	119269.48	11	0.071366
SH	25	1966	2	21	18	22	11	60	222S	44	12	0	442E	7501758.995	1659755.919	846.26167	842.4511	TRUE	0	0.070811	0.071782	1013	30	21.488848	128933.09	11	0.071366
SH	25	1966	2	22	0	23	18	0	233S	44	47	60	448E	7373296.211	1712516.62	838.34035	833.81385	TRUE	0	0.071478	0.071782	1013	30	23.145901	138875.41	11	0.071366
SH	25	1966	2	22	6	24	23	60	244S	45	23	60	454E	7244230.29	1763820.142	836.23683	831.00383	TRUE	0	0.071658	0.071782	1013	30	23.148112	138888.67	11	0.071366
SH	25	1966	2	22	12	25	18	0	253S	46	0	0	460E	7137067.722	1815820.309	844.46199	838.51987	TRUE	0	0.070962	0.071782	1013	30	19.852115	119112.69	11	0.071366
SH	25	1966	2	22	18	26	11	60	262S	46	30	0	465E	7030424.116	1856437.231	851.49662	844.96697	TRUE	0	0.070377	0.071782	1013	30	19.019429	114116.58	11	0.071366
SH	25	1966	2	23	0	27	0	0	270S	47	6	0	471E	6933457.902	1907304.215	869.11796	861.85079	TRUE	0	0.068953	0.071782	1013	30	18.249731	109498.39	11	0.071366
SH	25	1966	2	23	6	27	41	60	277S	47	42	0	477E	6847208.427	1958422.16	890.96946	882.92604	TRUE	0	0.067266	0.071782	1013	30	16.709957	100259.74	11	0.071366
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	31	1966	3	27	12	31	0	0	310S	50	6	0	501E	6439820.139	2143853.669	997.03207	985.54433	TRUE	0	0.060124	0.071782	1013	30	19.178758	115072.55	59	0.059737
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	8	1966	12	22	18	21	0	0	210S	40	12	0	402E	7660903.81	1249763.933	725.16447	724.9555	TRUE	0	0.082598	0.071782	1013	30	3.950221	23701.325		

SH	10	1968	1	11	6	23	0	0	230S	37	0	0	370E	7450879.676	910159.1371	518.81363	519.57233	TRUE	0	0.115263	0.071782	1013	30	11.225114	67350.683	25	0.24358
SH	10	1968	1	11	12	24	0	0	240S	36	30	0	365E	7341345.338	856137.9867	454.5164	455.14105	TRUE	0	0.131436	0.071782	1013	30	20.355218	122131.31	25	0.24358
SH	10	1968	1	11	18	25	0	0	250S	35	42	0	357E	7232337.201	72521.5028	380.41856	380.95745	TRUE	0	0.156746	0.071782	1013	30	22.89741	137384.46	25	0.24358
SH	10	1968	1	12	0	26	0	0	260S	34	30	0	345E	7123454.561	650127.1345	293.04968	293.54014	TRUE	0	0.20262	0.071782	1013	30	27.302732	163816.39	25	0.24358
SH	10	1968	1	12	6	27	6	0	271S	33	47	60	338E	7002236.54	579303.3389	218.18876	218.4881	TRUE	0	0.269889	0.071782	1013	30	23.39861	140391.66	25	0.24358
SH	10	1968	1	12	12	28	36	0	286S	35	12	0	352E	6834351.93	715128.4376	228.40928	228.15034	TRUE	0	0.258232	0.071782	1013	30	35.991395	215948.37	25	0.24358
SH	10	1968	1	12	18	30	11	60	302S	37	0	0	370E	6652282.376	885170.4223	308.64731	308.0329	TRUE	0	0.192577	0.071782	1013	30	41.520945	249125.67	25	0.24358
SH	10	1968	1	13	0	31	23	60	314S	38	17	60	383E	6513894.108	1004176.572	384.8121	384.00475	TRUE	0	0.154978	0.071782	1013	30	30.420103	182520.62	25	0.24358
SH	10	1968	1	13	6	32	42	0	327S	39	42	0	397E	6362052.093	1128595.143	474.81703	473.73895	TRUE	0	0.125862	0.071782	1013	30	32.717638	196305.83	25	0.24358
SH	10	1968	1	13	12	34	6	0	341S	41	36	0	416E	6193146.545	1294370.217	594.41358	592.68843	TRUE	0	0.100683	0.071782	1013	30	39.444215	236665.29	25	0.24358
SH	10	1968	1	13	18	35	30	0	355S	44	0	0	440E	6015216.56	1499617.802	737.7196	734.61359	TRUE	0	0.081197	0.071782	1013	30	45.272524	271635.14	25	0.24358
SH	10	1968	1	14	0	37	6	0	371S	46	42	0	467E	5804400.134	1720496.314	898.71223	893.20541	TRUE	0	0.066688	0.071782	1013	30	50.889554	305337.33	25	0.24358
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	11	1968	1	18	12	16	36	0	166S	41	6	0	411E	8147108.728	1366431.214	967.36079	967.35696	TRUE	0	0.061965	0.071782	1013	30	19.67424	118045.44	89	0.124742
SH	11	1968	1	18	18	17	18	0	173S	40	12	0	402E	8072872.37	1266834.832	903.56988	904.16576	TRUE	0	0.06633	0.071782	1013	30	20.703244	124219.47	89	0.124742
SH	11	1968	1	19	0	18	0	0	180S	39	23	60	394E	7998065.313	1178670.652	843.42876	844.41579	TRUE	0	0.071048	0.071782	1013	30	19.270745	115624.47	89	0.124742
SH	11	1968	1	19	6	18	41	60	187S	38	42	0	387E	7922745.919	1101785.405	786.68322	787.90266	TRUE	0	0.076159	0.071782	1013	30	17.938438	107630.63	89	0.124742
SH	11	1968	1	19	12	19	11	60	192S	38	0	0	380E	7869478.921	1026144.527	740.66356	742.09557	TRUE	0	0.080876	0.071782	1013	30	15.419068	92514.407	89	0.124742
SH	11	1968	1	19	18	19	41	60	197S	37	30	0	375E	7815458.873	971986.4143	700.63246	702.13851	TRUE	0	0.08548	0.071782	1013	30	12.748929	76493.574	89	0.124742
SH	11	1968	1	20	0	20	6	0	201S	37	12	0	372E	7771911.368	939366.463	671.44628	672.95368	TRUE	0	0.089181	0.071782	1013	30	9.068331	54409.985	89	0.124742
SH	11	1968	1	20	6	20	36	0	206S	36	53	60	369E	7717245.86	906630.2738	637.04479	638.51422	TRUE	0	0.093976	0.071782	1013	30	10.619657	63717.939	89	0.124742
SH	11	1968	1	20	12	21	18	0	213S	36	36	0	366E	7640382.823	873573.1932	592.20959	593.57327	TRUE	0	0.101056	0.071782	1013	30	13.945028	83670.168	89	0.124742
SH	11	1968	1	20	18	22	0	0	220S	36	30	0	365E	7563033.993	861435.7656	553.14538	554.33758	TRUE	0	0.108152	0.071782	1013	30	13.049222	78295.33	89	0.124742
SH	11	1968	1	21	0	22	23	60	224S	36	53	60	369E	7517682.864	901644.1677	544.91047	545.86859	TRUE	0	0.109777	0.071782	1013	30	10.101486	60608.914	89	0.124742
SH	11	1968	1	21	6	22	41	60	227S	37	30	0	375E	7482670.148	962515.8617	549.91852	550.59396	TRUE	0	0.108783	0.071782	1013	30	11.703814	70222.884	89	0.124742
SH	11	1968	1	21	12	22	48	0	228S	37	36	0	376E	7471259.143	972464.228	548.63458	549.2474	TRUE	0	0.109036	0.071782	1013	30	2.523121	15138.726	89	0.124742
SH	11	1968	1	21	18	23	0	0	230S	37	42	0	377E	7448742.826	982041.2701	542.83563	543.3587	TRUE	0	0.110194	0.071782	1013	30	4.078072	24468.435	89	0.124742
SH	11	1968	1	22	0	23	6	0	231S	37	42	0	377E	7437646.748	981684.0761	538.23737	538.73369	TRUE	0	0.111113	0.071782	1013	30	1.850304	11101.266	89	0.124742
SH	11	1968	1	22	6	23	18	0	233S	37	42	0	377E	7415454.454	980965.2912	529.12304	529.56602	TRUE	0	0.113032	0.071782	1013	30	3.700655	22203.931	89	0.124742
SH	11	1968	1	22	12	23	30	0	235S	37	12	0	372E	7394849.732	929084.6168	502.09652	502.65402	TRUE	0	0.119074	0.071782	1013	30	9.303761	55822.567	89	0.124742
SH	11	1968	1	22	18	23	36	0	236S	36	36	0	366E	7385432.143	867448.1167	476.79898	477.50828	TRUE	0	0.125343	0.071782	1013	30	10.39197	62351.817	89	0.124742
SH	11	1968	1	23	0	23	23	60	234S	36	6	0	361E	7408792.676	816855.472	470.4667	471.36576	TRUE	0	0.127016	0.071782	1013	30	9.287582	55725.49	89	0.124742
SH	11	1968	1	23	6	23	0	0	230S	36	6	0	361E	7453118.713	817801.1853	490.51291	491.52654	TRUE	0	0.121865	0.071782	1013	30	7.389354	44336.124	89	0.124742
SH	11	1968	1	23	12	22	41	60	227S	36	42	0	367E	7484947.474	880201.2449	523.79794	524.73221	TRUE	0	0.114173	0.071782	1013	30	11.674804	70048.822	89	0.124742
SH	11	1968	1	23	18	22	23	60	224S	37	23	60	374E	7516257.028	953205.2604	560.93703	561.72967	TRUE	0	0.106659	0.071782	1013	30	13.23912	79434.718	89	0.124742
SH	11	1968	1	24	0	22	30	0	225S	38	6	0	381E	7502868.946	1025054.566	580.11579	580.61923	TRUE	0	0.103152	0.071782	1013	30	12.181	73086	89	0.124742
SH	11	1968	1	24	6	22	48	0	228S	38	36	0	386E	7467698.599	1075383.853	584.74274	584.96046	TRUE	0	0.10234	0.071782	1013	30	10.233375	61400.248	89	0.124742
SH	11	1968	1	24	12	22	53	60	229S	38	47	60	388E	7455791.844	1095543.679	587.93202	588.03671	TRUE	0	0.101788	0.071782	1013	30	3.902241	23413.445	89	0.124742
SH	11	1968	1	24	18	22	53	60	229S	39	6	0	391E	7454538.77	1126427.425	599.53274	599.49915	TRUE	0	0.099828	0.071782	1013	30	5.151526	30909.156	89	0.124742
SH	11	1968	1	25	0	22	41	60	227S	39	17	60	393E	7475901.583	1147974.533	615.90929	615.82575	TRUE	0	0.097186	0.071782	1013	30	5.057029	30342.175	89	0.124742
SH	11	1968	1	25	6	22	36	0	226S	39	36	0	396E	7485672.125	1179420.448	631.9578	631.74372	TRUE	0	0.09473	0.071782	1013	30	5.488142	32928.849	89	0.124742
SH	11	1968	1	25	12	22	36	0	226S	39	47	60	398E	7484738.966	1200076.602	639.9019	639.58058	TRUE	0	0.093559	0.071782	1013	30	3.446204	20677.222	89	0.124742
SH	11	1968	1	25	18	22	36	0	226S	40	0	0	400E	7483777.323	1220738.827	647.93338	647.50097	TRUE	0	0.092404	0.071782	1013	30	3.447432	20684.591	89	0.124742
SH	11	1968	1	26	0	22	36	0	226S	40	6	0	401E	7483285.801	1231072.272	651.98095	651.49154	TRUE	0	0.091833	0.071782	1013	30	1.724188	10345.128	89	0.124742
SH	11	1968	1	26	6	22	41	60	227S	40	12	0	402E	7471655.527	1240865.716	651.95069	651.38256	TRUE	0	0.091837	0.071782	1013	30	2.534072	15204.434	89	0.124742
SH	11	1968	1	26	12	22	40	60	229S	40	36	0	406E	7447304.979	1281039.391	660.57362	659.72599	TRUE	0	0.090643	0.071782	1013	30	7.829562	46977.371	89	0.124742
SH	11	1968	1	26	18	23	11	60	232S	41	0	0	410E	7411664.083	1320489.751	666.17688	665.02105	TRUE	0	0.089884	0.071782	1013	30				

SH	22	1969	2	16	18	23	30	0	235S	39	0	0	390E	7388288.649	1113370.727	570.35399	570.22469	TRUE	0	0.104908	0.071782	1013	30	2.52195	15131.698	25	0.10541
SH	22	1969	2	17	0	23	36	0	236S	39	0	0	390E	7377176.208	1112904.044	566.24993	566.09715	TRUE	0	0.105664	0.071782	1013	30	1.853706	11122.236	25	0.10541
SH	22	1969	2	17	6	23	41	60	237S	39	6	0	391E	7365627.609	1122668.839	566.27087	566.04986	TRUE	0	0.10566	0.071782	1013	30	2.520589	15123.537	25	0.10541
SH	22	1969	2	17	12	23	53	60	239S	39	17	60	393E	7342499.952	1142148.847	566.63467	566.2767	TRUE	0	0.105592	0.071782	1013	30	5.039729	30238.374	25	0.10541
SH	22	1969	2	17	18	24	11	60	242S	39	42	0	397E	7307243.522	1181444.7	572.32066	571.70765	TRUE	0	0.104549	0.071782	1013	30	8.798958	52793.748	25	0.10541
SH	22	1969	2	18	0	24	11	60	242S	40	0	0	400E	7305734.82	1212056.531	585.44752	584.68391	TRUE	0	0.102217	0.071782	1013	30	5.108165	30648.987	25	0.10541
SH	22	1969	2	18	6	24	18	0	243S	40	30	0	405E	7291934.592	1262503.439	604.17116	603.11996	TRUE	0	0.099065	0.071782	1013	30	8.716741	52300.448	25	0.10541
SH	22	1969	2	18	12	24	36	0	246S	41	23	60	414E	7253190.753	1352372.574	635.60895	633.96875	TRUE	0	0.094188	0.071782	1013	30	16.310823	97864.939	25	0.10541
SH	22	1969	2	18	18	25	0	0	250S	42	17	60	423E	7202551.495	1441132.044	666.54194	664.23416	TRUE	0	0.089835	0.071782	1013	30	17.031489	102188.93	25	0.10541
SH	22	1969	2	19	0	25	23	60	254S	43	12	0	432E	7151124.369	1529376.706	700.05218	697.00814	TRUE	0	0.085551	0.071782	1013	30	17.022754	102136.52	25	0.10541
SH	22	1969	2	19	6	25	48	0	258S	44	6	0	441E	7098880.319	1617097.994	735.77275	731.91477	TRUE	0	0.081412	0.071782	1013	30	17.016712	102100.27	25	0.10541
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	8	1970	1	7	0	16	41	60	167S	40	47	60	408E	8137247.921	1333732.667	952.75537	952.99529	TRUE	0	0.062913	0.071782	1013	30	7.438339	44630.036	15	0.048418
SH	8	1970	1	7	6	17	6	0	171S	40	47	60	408E	8092653.236	1331956.679	932.63099	932.79141	TRUE	0	0.064268	0.071782	1013	30	7.438339	44630.036	15	0.048418
SH	8	1970	1	7	12	17	30	0	175S	40	53	60	409E	8047616.182	1340838.279	915.97572	915.97351	TRUE	0	0.065434	0.071782	1013	30	7.650743	45904.456	15	0.048418
SH	8	1970	1	7	18	17	48	0	178S	41	0	0	410E	8013709.31	1350112.873	904.54516	904.40103	TRUE	0	0.066259	0.071782	1013	30	5.85874	35152.44	15	0.048418
SH	8	1970	1	8	0	18	0	0	180S	41	6	0	411E	7990938.257	1359821.135	898.19101	897.92457	TRUE	0	0.066726	0.071782	1013	30	4.125703	24754.216	15	0.048418
SH	8	1970	1	8	6	18	23	60	184S	41	12	0	412E	7945840.406	1368486.406	882.38108	881.95574	TRUE	0	0.067919	0.071782	1013	30	7.653799	45922.795	15	0.048418
SH	8	1970	1	8	12	18	41	60	187S	41	17	60	413E	7911878.186	1377583.571	871.66474	871.10018	TRUE	0	0.068752	0.071782	1013	30	5.859917	35159.505	15	0.048418
SH	8	1970	1	8	18	18	53	60	189S	41	17	60	413E	7889562.692	1376534.333	862.25181	861.65129	TRUE	0	0.069501	0.071782	1013	30	3.723358	22340.147	15	0.048418
SH	8	1970	1	9	0	19	6	0	191S	41	23	60	414E	7866737.668	1386081.895	856.55362	855.83322	TRUE	0	0.069962	0.071782	1013	30	4.123569	24741.416	15	0.048418
SH	8	1970	1	9	6	19	23	60	194S	41	36	0	416E	7832206.625	1405633.309	850.16774	849.22504	TRUE	0	0.070487	0.071782	1013	30	6.613645	39681.869	15	0.048418
SH	8	1970	1	9	12	19	41	60	197S	41	47	60	418E	7797623.556	1425087.649	844.22048	843.0549	TRUE	0	0.070982	0.071782	1013	30	6.613244	39679.466	15	0.048418
SH	8	1970	1	9	18	19	53	60	199S	41	53	60	419E	7774727.324	1434480.49	839.2034	837.91839	TRUE	0	0.071405	0.071782	1013	30	4.124665	24747.987	15	0.048418
SH	8	1970	1	10	0	20	6	0	201S	42	6	0	421E	7751237.002	1454391.149	838.3091	836.81561	TRUE	0	0.071481	0.071782	1013	30	5.132223	30793.336	15	0.048418
SH	8	1970	1	10	6	20	23	60	204S	42	12	0	422E	7717122.4	1463068.336	829.39911	827.772	TRUE	0	0.072247	0.071782	1013	30	5.866808	35200.847	15	0.048418
SH	8	1970	1	10	12	20	48	0	208S	42	23	60	424E	7671194.782	1481541.536	820.75849	818.89465	TRUE	0	0.073006	0.071782	1013	30	8.250598	49503.588	15	0.048418
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	11	1970	1	16	18	22	48	0	228S	47	6	0	471E	7407858.579	1957460.077	966.36746	958.68357	TRUE	0	0.062028	0.071782	1013	30	15.54657	93279.421	33	0.061403
SH	11	1970	1	17	0	23	18	0	233S	46	23	60	464E	7358461.003	1878882.885	916.86394	910.27696	TRUE	0	0.06537	0.071782	1013	30	15.469051	92814.307	33	0.061403
SH	11	1970	1	17	6	23	41	60	237S	46	0	0	460E	7317285.104	1833074.342	885.48405	879.47094	TRUE	0	0.067682	0.071782	1013	30	10.265743	61594.459	33	0.061403
SH	11	1970	1	17	12	24	0	0	240S	45	47	60	458E	7285428.13	1809226.776	867.1234	861.3838	TRUE	0	0.069112	0.071782	1013	30	6.632356	39794.135	33	0.061403
SH	11	1970	1	17	18	24	18	0	243S	45	23	60	454E	7255477.051	1764839.758	838.91803	833.6835	TRUE	0	0.071429	0.071782	1013	30	8.92449	53546.937	33	0.061403
SH	11	1970	1	18	0	24	53	60	249S	44	53	60	449E	7192687.065	1707426.842	798.0562	793.39959	TRUE	0	0.075077	0.071782	1013	30	14.180214	85081.286	33	0.061403
SH	11	1970	1	18	6	25	53	60	259S	44	17	60	443E	7085911.012	1636410.872	743.73104	739.6805	TRUE	0	0.080543	0.071782	1013	30	21.372616	128235.69	33	0.061403
SH	11	1970	1	18	12	27	0	0	270S	43	42	0	437E	6967976.689	1565258.396	690.69801	687.16657	TRUE	0	0.086705	0.071782	1013	30	22.955984	137735.91	33	0.061403
SH	11	1970	1	18	18	28	6	0	281S	43	23	60	434E	6847523.883	1524752.003	658.15634	654.85259	TRUE	0	0.090975	0.071782	1013	30	21.18021	127081.26	33	0.061403
SH	11	1970	1	19	0	29	11	60	292S	43	17	60	433E	6725440.29	1504126.248	642.13013	638.91285	TRUE	0	0.093235	0.071782	1013	30	20.635612	123813.67	33	0.061403
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	14	1970	2	23	18	21	23	60	214S	46	47	60	468E	7569200.04	1940647.907	996.18114	988.83984	TRUE	0	0.060175	0.071782	1013	30	14.560944	87365.662	85	0.07675
SH	14	1970	2	24	0	22	0	0	220S	46	6	0	461E	7508017.991	1860774.457	942.59573	936.36603	TRUE	0	0.06359	0.071782	1013	30	16.768863	100613.18	85	0.07675
SH	14	1970	2	24	6	22	41	60	227S	45	42	0	457E	7432786.567	1811961.86	900.68609	895.03863	TRUE	0	0.066542	0.071782	1013	30	14.946606	89679.635	85	0.07675
SH	14	1970	2	24	12	23	30	0	235S	45	12	0	452E	7347288.614	1752111.322	851.74097	846.74062	TRUE	0	0.070357	0.071782	1013	30	17.394114	104364.68	85	0.07675
SH	14	1970	2	24	18	24	18	0	243S	44	47	60	448E	7260970.411	1703046.236	808.99003	804.44847	TRUE	0	0.074065	0.071782	1013	30	16.548091	99288.543	85	0.07675
SH	14	1970	2	25	0	25	6	0	251S	44	17	60	443E	7175602.716	1644127.189	762.76924	758.73685	TRUE	0	0.078539	0.071782	1013	30	17.287678	103726.07	85	0.07675
SH	14	1970	2	25	6	25	48	0	258S	44	47	60	448E	7092574.025	1688150.003	771.55769	767.00626	TRUE	0	0.077647	0.071782	1013	30	15.662918	93977.507	85	0.07675
SH	14	1970	2	25	12	26	18	0	263S	46	0	0	460E	7024515.782	1804510.797	823.42396	817.53152	TRUE	0	0.07277	0.071782	1013	30	22.467111	134802.67	85	0.07675
SH	14	1970	2	25	18	26	36	0	266S	47	12																

SH	19	1971	2	16	6	18	48	0	188S	40	36	0	406E	7904069.009	1302728.284	842.346	842.32229	TRUE	0	0.071139	0.071782	1013	30	7.701715	46210.288	31	0.105712
SH	19	1971	2	16	12	19	18	0	193S	41	0	0	410E	7846438.799	1342633.599	832.6897	832.25903	TRUE	0	0.071962	0.071782	1013	30	11.682935	70097.612	31	0.105712
SH	19	1971	2	16	18	19	53	60	199S	41	30	0	415E	776930.963	1392236.647	823.77197	822.82886	TRUE	0	0.072739	0.071782	1013	30	14.232008	85392.046	31	0.105712
SH	19	1971	2	17	0	20	18	0	203S	42	0	0	420E	7729472.38	1442614.308	825.6697	824.2353	TRUE	0	0.072572	0.071782	1013	30	11.535243	69211.458	31	0.105712
SH	19	1971	2	17	6	20	53	60	209S	42	30	0	425E	7659389.577	1491389.268	820.79231	818.82363	TRUE	0	0.073003	0.071782	1013	30	14.230831	85384.987	31	0.105712
SH	19	1971	2	17	12	21	36	0	216S	43	12	0	432E	7576424.488	1559887.679	823.08108	820.36422	TRUE	0	0.0728	0.071782	1013	30	17.93138	107588.28	31	0.105712
SH	19	1971	2	17	18	22	23	60	224S	44	6	0	441E	7480101.543	1647636.307	834.66498	830.95403	TRUE	0	0.071792	0.071782	1013	30	21.716565	130299.39	31	0.105712
SH	19	1971	2	18	0	23	6	0	231S	45	6	0	451E	7393159.821	1745556.715	859.07397	854.19477	TRUE	0	0.069758	0.071782	1013	30	21.824597	130947.58	31	0.105712
SH	19	1971	2	18	6	23	53	60	239S	46	6	0	461E	7293766.649	1841333.411	884.90538	878.76739	TRUE	0	0.067726	0.071782	1013	30	23.004938	138029.63	31	0.105712
SH	19	1971	2	18	12	24	18	0	243S	47	6	0	471E	7238271.626	1940441.312	925.02964	917.49725	TRUE	0	0.064795	0.071782	1013	30	18.931216	113587.3	31	0.105712
SH	19	1971	2	18	18	24	36	0	246S	48	0	0	480E	7194158.883	2029975.547	964.10194	955.179	TRUE	0	0.062174	0.071782	1013	30	16.635231	99811.388	31	0.105712
SH	19	1971	2	19	0	25	6	0	251S	48	47	60	488E	7127681.223	2106153.508	994.65762	984.42873	TRUE	0	0.060267	0.071782	1013	30	16.850949	101105.69	31	0.105712
SH	19	1971	2	20	0	28	23	60	284S	49	17	60	493E	6746564.162	2108570.33	968.69119	958.17551	TRUE	0	0.06188	0.071782	1013	30	20.388985	122333.91	31	0.105712
SH	19	1971	2	20	6	29	0	0	290S	48	0	0	480E	6696607.934	1969893.485	893.43222	885.11539	TRUE	0	0.067081	0.071782	1013	30	24.566741	147400.45	31	0.105712
SH	19	1971	2	20	12	29	23	60	294S	46	36	0	466E	6669085.735	1825961.03	815.84776	809.46323	TRUE	0	0.073444	0.071782	1013	30	24.423363	146540.18	31	0.105712
SH	19	1971	2	20	18	29	53	60	299S	45	6	0	451E	6629771.951	1672576.705	733.77522	729.06829	TRUE	0	0.081632	0.071782	1013	30	26.390405	158342.43	31	0.105712
SH	19	1971	2	21	0	30	30	0	305S	43	42	0	437E	6576543.507	1529686.654	658.9229	655.46656	TRUE	0	0.090869	0.071782	1013	30	25.413707	152482.24	31	0.105712
SH	19	1971	2	21	6	31	0	0	310S	42	12	0	422E	6533766.197	1380069.648	581.61654	579.20043	TRUE	0	0.102887	0.071782	1013	30	25.935361	155612.17	31	0.105712
SH	19	1971	2	21	12	31	30	0	315S	41	36	0	416E	6482722.529	1318093.271	553.63836	551.59206	TRUE	0	0.108057	0.071782	1013	30	13.381712	80290.27	31	0.105712
SH	19	1971	2	21	18	32	0	0	320S	41	42	0	417E	6426255.378	1323153.193	563.42298	561.37176	TRUE	0	0.106191	0.071782	1013	30	9.448901	56693.403	31	0.105712
SH	19	1971	2	22	0	32	30	0	325S	41	42	0	417E	6370555.095	1318604.74	569.60988	567.61393	TRUE	0	0.105044	0.071782	1013	30	9.314281	55885.686	31	0.105712
SH	19	1971	2	22	6	33	0	0	330S	41	47	60	418E	6314071.288	1323380.041	582.16543	580.17724	TRUE	0	0.102791	0.071782	1013	30	9.447551	56685.306	31	0.105712
SH	19	1971	2	22	12	33	53	60	339S	42	0	0	420E	6212197.546	1333401.052	608.74563	606.76914	TRUE	0	0.098325	0.071782	1013	30	17.060904	102365.42	31	0.105712
SH	19	1971	2	22	18	35	12	0	352S	42	23	60	424E	6063977.609	1356963.703	655.98588	655.98588	TRUE	0	0.090995	0.071782	1013	30	25.013523	150081.14	31	0.105712
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	25	1971	3	15	6	18	30	0	185S	39	53	60	399E	7940501.342	1229784.577	833.75094	834.29286	TRUE	0	0.071871	0.071782	1013	30	18.255894	109535.36	37	0.138791
SH	25	1971	3	15	12	19	18	0	193S	40	30	0	405E	7848820.973	1289723.763	814.91767	814.86461	TRUE	0	0.073527	0.071782	1013	30	18.255894	109535.36	37	0.138791
SH	25	1971	3	15	18	20	0	0	200S	41	6	0	411E	7767877.771	1349485.098	804.1175	803.47687	TRUE	0	0.074512	0.071782	1013	30	16.769035	100614.21	37	0.138791
SH	25	1971	3	16	0	20	30	0	205S	41	36	0	416E	7709415.161	1399296.5	801.14678	800.01984	TRUE	0	0.074788	0.071782	1013	30	12.800882	76805.29	37	0.138791
SH	25	1971	3	16	6	21	0	0	210S	41	53	60	419E	7651869.569	1427757.952	791.85547	790.39997	TRUE	0	0.075663	0.071782	1013	30	10.699882	64199.294	37	0.138791
SH	25	1971	3	16	12	21	23	60	214S	41	36	0	416E	7608964.138	1393864.133	762.89845	761.62227	TRUE	0	0.078526	0.071782	1013	30	9.112975	54677.847	37	0.138791
SH	25	1971	3	16	18	21	48	0	218S	40	53	60	409E	7568255.054	1318473.758	717.68708	716.85411	TRUE	0	0.083456	0.071782	1013	30	14.279879	85679.275	37	0.138791
SH	25	1971	3	17	0	22	11	60	222S	40	0	0	400E	7528290.779	1222821.733	664.7818	664.43537	TRUE	0	0.090072	0.071782	1013	30	17.277517	103665.1	37	0.138791
SH	25	1971	3	17	6	22	30	0	225S	39	12	0	392E	7498568.746	1138588.732	620.69793	620.71092	TRUE	0	0.09644	0.071782	1013	30	14.887166	89322.996	37	0.138791
SH	25	1971	3	17	12	22	36	0	226S	38	47	60	388E	7489121.05	1096852.935	601.11848	601.29693	TRUE	0	0.099566	0.071782	1013	30	7.131962	42791.772	37	0.138791
SH	25	1971	3	17	18	22	41	60	227S	38	23	60	384E	7479571.642	1055196.678	581.78737	582.11584	TRUE	0	0.102857	0.071782	1013	30	7.122802	42736.81	37	0.138791
SH	25	1971	3	18	0	22	48	0	228S	38	0	0	380E	7469919.671	1013618.652	562.72574	563.1897	TRUE	0	0.106322	0.071782	1013	30	7.113939	42683.636	37	0.138791
SH	25	1971	3	18	6	23	0	0	230S	37	36	0	376E	7449069.33	971769.4843	539.30587	539.8647	TRUE	0	0.110911	0.071782	1013	30	7.792606	46755.637	37	0.138791
SH	25	1971	3	18	12	23	6	0	231S	37	17	60	373E	7438914.507	940633.53	524.20137	524.83583	TRUE	0	0.114086	0.071782	1013	30	5.458348	32750.085	37	0.138791
SH	25	1971	3	18	18	23	11	60	232S	37	0	0	370E	7428701.818	909550.6762	509.25675	509.95983	TRUE	0	0.117411	0.071782	1013	30	5.452937	32717.623	37	0.138791
SH	25	1971	3	19	0	23	30	0	235S	36	47	60	368E	7395990.529	888176.0908	488.27409	488.95402	TRUE	0	0.12242	0.071782	1013	30	6.512597	39075.583	37	0.138791
SH	25	1971	3	19	6	23	53	60	239S	36	42	0	367E	7351910.967	876798.3262	466.08151	466.67882	TRUE	0	0.128202	0.071782	1013	30	7.587382	45524.294	37	0.138791
SH	25	1971	3	19	12	24	11	60	242S	36	42	0	367E	7318649.971	875921.749	452.27576	452.7899	TRUE	0	0.132081	0.071782	1013	30	5.545424	33272.544	37	0.138791
SH	25	1971	3	19	18	24	30	0	245S	36	47	60	368E	7285112.422	885180.6479	442.45186	442.85572	TRUE	0	0.134987	0.071782	1013	30	5.798693	34792.16	37	0.138791
SH	25	1971	3	20	0	24	48	0	248S	36	53	60	369E	7251561.648	894381.2673	433.1926	433.4873	TRUE	0	0.137845	0.071782	1013	30	5.798242	34789.451	37	0.138791
SH	25	1971	3	20	6	25	6	0	251S	37	6	0	371E	7217694.169	913621.8192	428.52198	428.68074	TRUE	0	0.139333	0.071782	1013	30	6.491886	38951.315	37	0.138791
SH	25	1971	3	20	12	25	23	60	254S	37	23	60	374E	7183456.312	942831.4311	428.95795	428.95311	TRUE	0	0.139193	0.071782						

SH	14	1972	2	7	0	25	53	60	259S	37	17	60	373E	7128317.726	930949.5288	406.10737	406.00839	TRUE	0	0.146942	0.071782	1013	30	3.699841	22199.044	49	0.111301
SH	14	1972	2	7	6	26	0	0	260S	37	23	60	374E	7116889.671	940610.171	406.91311	406.76233	TRUE	0	0.146654	0.071782	1013	30	2.49404	14964.239	49	0.111301
SH	14	1972	2	7	12	26	11	60	262S	37	36	0	376E	7094004.537	959878.4205	408.96638	408.71279	TRUE	0	0.145926	0.071782	1013	30	4.986077	29916.464	49	0.111301
SH	14	1972	2	7	18	26	30	0	265S	38	6	0	381E	7058823.414	1008622.991	422.45922	421.99374	TRUE	0	0.141313	0.071782	1013	30	10.019071	60114.429	49	0.111301
SH	14	1972	2	8	0	26	41	60	267S	39	0	0	390E	7032698.061	1097517.97	459.77572	458.97495	TRUE	0	0.129945	0.071782	1013	30	15.442412	92654.473	49	0.111301
SH	14	1972	2	8	6	26	41	60	267S	39	42	0	397E	7029200.715	1167409.166	493.97957	492.90912	TRUE	0	0.121016	0.071782	1013	30	11.663107	69978.645	49	0.111301
SH	14	1972	2	8	12	26	30	0	265S	39	53	60	399E	7050376.892	1188594.347	508.83615	507.71083	TRUE	0	0.117508	0.071782	1013	30	4.992334	29954.004	49	0.111301
SH	14	1972	2	8	18	26	18	0	263S	40	12	0	402E	7070974.551	1219876.962	528.6832	527.45226	TRUE	0	0.113125	0.071782	1013	30	6.242474	37454.847	49	0.111301
SH	14	1972	2	9	0	26	0	0	260S	40	23	60	404E	7103229.235	1241852.252	546.43173	545.14918	TRUE	0	0.109473	0.071782	1013	30	6.504866	39029.195	49	0.111301
SH	14	1972	2	9	6	25	48	0	258S	40	42	0	407E	7123746.366	1273352.902	566.46918	565.06253	TRUE	0	0.105623	0.071782	1013	30	6.265522	37593.132	49	0.111301
SH	14	1972	2	9	12	25	41	60	257S	40	36	0	406E	7135471.735	1263917.802	564.45052	563.11132	TRUE	0	0.105999	0.071782	1013	30	2.508349	15050.096	49	0.111301
SH	14	1972	2	9	18	25	30	0	255S	40	30	0	405E	7158319.917	1255096.731	565.46447	564.20843	TRUE	0	0.10581	0.071782	1013	30	4.081975	24491.85	49	0.111301
SH	14	1972	2	10	0	25	23	60	254S	40	47	60	408E	7167703.132	1286072.32	582.71653	581.31516	TRUE	0	0.102694	0.071782	1013	30	5.394266	32365.597	49	0.111301
SH	14	1972	2	10	6	25	11	60	252S	41	0	0	410E	7188781.762	1307648.925	598.19019	596.7057	TRUE	0	0.100051	0.071782	1013	30	5.02731	30163.861	49	0.111301
SH	14	1972	2	10	12	25	0	0	250S	41	0	0	410E	7211067.427	1308977.641	604.27211	602.81776	TRUE	0	0.099049	0.071782	1013	30	3.720873	22325.241	49	0.111301
SH	14	1972	2	10	18	24	41	60	247S	41	0	0	410E	7244497.011	1310952.195	613.71754	612.30976	TRUE	0	0.097532	0.071782	1013	30	5.581308	33487.847	49	0.111301
SH	14	1972	2	11	0	24	23	60	244S	41	0	0	410E	7277927.887	1312904.475	623.53433	622.17459	TRUE	0	0.096003	0.071782	1013	30	5.581305	33487.832	49	0.111301
SH	14	1972	2	11	6	24	6	0	241S	41	0	0	410E	7311360.044	1314834.426	633.70518	632.3948	TRUE	0	0.09447	0.071782	1013	30	5.581303	33487.816	49	0.111301
SH	14	1972	2	11	12	23	48	0	238S	40	53	60	409E	7345372.153	1306488.47	639.74413	638.54649	TRUE	0	0.093582	0.071782	1013	30	5.836853	35021.115	49	0.111301
SH	14	1972	2	11	18	23	30	0	235S	40	36	0	406E	7380476.142	1277526.406	637.51197	636.55039	TRUE	0	0.093908	0.071782	1013	30	7.584874	45509.244	49	0.111301
SH	14	1972	2	12	0	23	11	60	232S	40	17	60	403E	7415482.533	1284813.93	636.12527	635.39754	TRUE	0	0.094112	0.071782	1013	30	7.588338	45530.029	49	0.111301
SH	14	1972	2	12	6	23	18	0	233S	39	47	60	398E	7406866.1	1196455.608	611.211	610.73758	TRUE	0	0.09793	0.071782	1013	30	8.777987	52667.923	49	0.111301
SH	14	1972	2	12	12	23	53	60	239S	39	6	0	391E	7343400.018	1121710.19	558.28413	558.01718	TRUE	0	0.107163	0.071782	1013	30	16.342532	98055.194	49	0.111301
SH	14	1972	2	12	18	24	36	0	246S	38	17	60	383E	7268981.686	1037043.726	497.48738	497.3814	TRUE	0	0.120169	0.071782	1013	30	18.787184	112723.1	49	0.111301
SH	14	1972	2	13	0	25	18	0	253S	38	12	0	382E	7191653.321	1023908.756	466.83931	466.60341	TRUE	0	0.127995	0.071782	1013	30	13.072664	78435.983	49	0.111301
SH	14	1972	2	13	6	26	0	0	260S	38	6	0	381E	7114331.775	1010814.152	438.16619	437.80586	TRUE	0	0.136295	0.071782	1013	30	13.070418	78422.511	49	0.111301
SH	14	1972	2	13	12	26	11	60	262S	37	23	60	374E	7094700.292	939859.0089	400.00857	399.81107	TRUE	0	0.149158	0.071782	1013	30	12.270139	73620.836	49	0.111301
SH	14	1972	2	13	18	25	53	60	259S	36	42	0	367E	7130156.399	870760.7639	380.57179	380.63086	TRUE	0	0.156684	0.071782	1013	30	12.944007	77664.039	49	0.111301
SH	14	1972	2	14	0	25	36	0	256S	36	0	0	360E	7165201.674	801329.3269	364.65491	364.96001	TRUE	0	0.163433	0.071782	1013	30	12.962441	77774.647	49	0.111301
SH	14	1972	2	14	6	25	18	0	253S	35	12	0	352E	7200015.118	721494.0659	349.3917	349.95044	TRUE	0	0.17047	0.071782	1013	30	14.515935	87095.607	49	0.111301
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	17	1972	2	15	0	19	6	0	191S	44	23	60	444E	7848447.716	1705426.511	974.90144	970.98805	TRUE	0	0.061486	0.071782	1013	30	32.740855	196445.13	57	0.090135
SH	17	1972	2	15	6	19	30	0	195S	42	47	60	428E	7814153.006	1532268.625	892.25211	890.16455	TRUE	0	0.06717	0.071782	1013	30	29.420222	176521.33	57	0.090135
SH	17	1972	2	15	12	19	53	60	199S	42	0	0	420E	774159.94	1445046.935	843.10982	841.73599	TRUE	0	0.071075	0.071782	1013	30	15.992245	95953.471	57	0.090135
SH	17	1972	2	15	18	20	18	0	203S	41	30	0	415E	7732289.47	1389943.615	805.98669	804.97509	TRUE	0	0.07434	0.071782	1013	30	11.534384	69206.301	57	0.090135
SH	17	1972	2	16	0	20	41	60	207S	40	36	0	406E	7692376.862	1293183.185	753.69982	753.28859	TRUE	0	0.079481	0.071782	1013	30	17.444831	104668.99	57	0.090135
SH	17	1972	2	16	6	21	6	0	211S	39	47	60	398E	7651618.875	1207482.939	705.79602	705.80988	TRUE	0	0.084857	0.071782	1013	30	15.816435	94898.608	57	0.090135
SH	17	1972	2	16	12	21	11	60	212S	39	6	0	391E	7643479.115	1134007.914	676.00366	676.38094	TRUE	0	0.088582	0.071782	1013	30	12.320754	73924.521	57	0.090135
SH	17	1972	2	16	18	21	6	0	211S	38	30	0	385E	7656881.739	1071881.979	660.22757	660.92405	TRUE	0	0.090691	0.071782	1013	30	10.592532	63555.19	57	0.090135
SH	17	1972	2	17	0	20	53	60	209S	38	6	0	381E	7680474.223	1030915.407	657.03257	657.96067	TRUE	0	0.09113	0.071782	1013	30	7.87906	47274.362	57	0.090135
SH	17	1972	2	17	6	20	48	0	208S	38	0	0	380E	7691901.913	1020830.871	658.86944	659.8672	TRUE	0	0.090877	0.071782	1013	30	2.540177	15241.062	57	0.090135
SH	17	1972	2	17	12	20	41	60	207S	38	12	0	382E	7702341.557	1042064.346	670.12572	671.06344	TRUE	0	0.089356	0.071782	1013	30	3.943513	23661.079	57	0.090135
SH	17	1972	2	17	18	20	36	0	206S	38	30	0	385E	7712409.221	1073785.069	684.64626	685.47264	TRUE	0	0.087469	0.071782	1013	30	5.546676	33280.056	57	0.090135
SH	17	1972	2	18	0	20	36	0	206S	38	42	0	387E	7711687.422	1094701.278	691.15256	691.88225	TRUE	0	0.086648	0.071782	1013	30	3.48811	20928.66	57	0.090135
SH	17	1972	2	18	6	20	41	60	207S	39	0	0	390E	7699442.773	1125674.045	696.30664	696.8592	TRUE	0	0.086009	0.071782	1013	30	5.550885	33305.311	57	0.090135
SH	17	1972	2	18	12	20	53	60	209S	39	0	0	390E	7677217.119	1124844.467	686.72787	687.23073	TRUE	0	0.087204	0.071782	1013	30	3.706855	22241.131	57	0.090135
SH	17	1972	2	18	18	21	18	0	213S	38	42	0	387E	7633928.977	1091926.071	657.38791	657.939	TRUE	0	0.091081	0.071782	1013	30				

BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	13	1973	12	31	6	21	6	0	211S	43	30	0	435E	7630337.83	1595095.543	855.506	852.52774	TRUE	0	0.070048	0.071782	1013	30	28.202975	169217.85	25	0.081513
SH	13	1973	12	31	12	22	30	0	225S	42	53	60	429E	7477777.241	1521883.883	776.21906	773.69446	TRUE	0	0.071782	0.071782	1013	30	28.202975	169217.85	25	0.081513
SH	13	1973	12	31	18	24	0	0	240S	43	0	0	430E	7309255.079	1520598.393	730.13994	727.37665	TRUE	0	0.082038	0.071782	1013	30	28.087844	168527.06	25	0.081513
SH	13	1974	1	1	0	25	23	60	254S	43	47	60	438E	7146252.244	1590372.133	730.10622	726.53992	TRUE	0	0.082041	0.071782	1013	30	29.551414	177308.49	25	0.081513
SH	13	1974	1	1	6	26	53	60	269S	44	42	0	447E	6970110.085	1666650.649	744.51558	740.07155	TRUE	0	0.080459	0.071782	1013	30	31.991523	191949.14	25	0.081513
SH	13	1974	1	1	12	27	53	60	279S	44	53	60	449E	6856027.192	1675883.801	739.72132	735.10228	TRUE	0	0.080978	0.071782	1013	30	19.075987	114455.92	25	0.081513
SH	13	1974	1	1	18	28	18	0	283S	45	17	60	453E	6807101.51	1711136	756.08285	751.07669	TRUE	0	0.079232	0.071782	1013	30	10.050484	60302.901	25	0.081513
SH	13	1974	1	2	0	28	30	0	285S	46	30	0	465E	6771482.906	1827879.178	817.75745	811.4108	TRUE	0	0.073273	0.071782	1013	30	20.342658	122055.95	25	0.081513
SH	13	1974	1	2	6	28	36	0	286S	47	42	0	477E	6745635.145	1945852.489	880.85314	872.92186	TRUE	0	0.068037	0.071782	1013	30	20.12862	120771.72	25	0.081513
SH	13	1974	1	2	12	28	36	0	286S	48	53	60	489E	6729584.754	2065459.386	945.204	935.40948	TRUE	0	0.063414	0.071782	1013	30	20.113169	120679.02	25	0.081513
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	8	1974	12	23	6	21	41	60	217S	42	30	0	425E	7569939.031	1485951.229	788.72098	786.64944	TRUE	0	0.075963	0.071782	1013	30	21.794305	130765.83	3	0.050069
SH	8	1974	12	23	12	22	23	60	224S	43	30	0	435E	7484667.829	1585090.144	807.03519	803.94893	TRUE	0	0.074244	0.071782	1013	30	21.794305	130765.83	3	0.050069
SH	8	1974	12	23	18	23	11	60	232S	44	30	0	445E	7387076.373	1682300.826	827.01704	822.83255	TRUE	0	0.072455	0.071782	1013	30	22.957696	137746.18	3	0.050069
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	9	1975	1	8	6	18	41	60	187S	44	17	60	443E	7894105.016	1697652.955	987.63816	983.87114	TRUE	0	0.060695	0.071782	1013	30	16.120547	96723.284	21	0.116547
SH	9	1975	1	8	12	19	0	0	190S	43	6	0	431E	7868292.793	16567411.866	926.04316	923.69267	TRUE	0	0.064724	0.071782	1013	30	22.129048	132774.29	21	0.116547
SH	9	1975	1	8	18	19	23	60	194S	42	0	0	420E	7830023.603	1448022.59	865.34151	864.04358	TRUE	0	0.069254	0.071782	1013	30	20.895461	125372.76	21	0.116547
SH	9	1975	1	9	0	19	53	60	199S	41	12	0	412E	7778514.763	1360576.086	812.40909	811.70873	TRUE	0	0.073754	0.071782	1013	30	16.914862	101489.17	21	0.116547
SH	9	1975	1	9	6	20	36	0	206S	40	23	60	404E	7704490.213	1272731.055	750.73359	750.4789	TRUE	0	0.079794	0.071782	1013	30	19.145919	114875.51	21	0.116547
SH	9	1975	1	9	12	21	41	60	217S	39	36	0	396E	7585769.045	1183787.323	671.24378	671.23487	TRUE	0	0.089208	0.071782	1013	30	24.723866	148343.19	21	0.116547
SH	9	1975	1	9	18	22	53	60	229S	39	0	0	390E	7454963.598	1116131.53	595.64111	595.65446	TRUE	0	0.100477	0.071782	1013	30	24.544388	147266.33	21	0.116547
SH	9	1975	1	10	0	24	0	0	240S	38	53	60	389E	7333159.536	1100810.539	546.02872	545.8262	TRUE	0	0.109554	0.071782	1013	30	20.460641	122763.85	21	0.116547
SH	9	1975	1	10	6	25	6	0	251S	39	17	60	393E	7209102.824	1136041.369	522.55971	521.94399	TRUE	0	0.114442	0.071782	1013	30	21.493719	128962.32	21	0.116547
SH	9	1975	1	10	12	26	36	0	266S	39	53	60	399E	7039253.026	1187992.618	506.30785	505.16769	TRUE	0	0.11809	0.071782	1013	30	29.602874	177617.25	21	0.116547
SH	9	1975	1	10	18	28	11	60	282S	40	36	0	406E	6857127.21	1247086.126	510.58156	508.96194	TRUE	0	0.117109	0.071782	1013	30	31.912143	191472.86	21	0.116547
SH	9	1975	1	11	0	29	23	60	294S	41	36	0	416E	6716720.625	1336028.055	551.28197	549.13683	TRUE	0	0.108516	0.071782	1013	30	27.701121	166206.73	21	0.116547
SH	9	1975	1	11	6	30	36	0	306S	43	6	0	431E	6570816.221	1470637.483	627.52726	624.51325	TRUE	0	0.095395	0.071782	1013	30	33.08566	198513.96	21	0.116547
SH	9	1975	1	11	12	32	12	0	322S	45	36	0	456E	6366555.55	1691691.584	764.25129	759.27159	TRUE	0	0.078387	0.071782	1013	30	50.162884	300977.3	21	0.116547
SH	9	1975	1	11	18	33	47	60	338S	49	6	0	491E	6139584.627	1997704.223	956.90029	947.60178	TRUE	0	0.062641	0.071782	1013	30	63.499679	380998.08	21	0.116547
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	10	1975	1	17	6	17	0	0	170S	42	0	0	420E	8098231.288	1461291.123	977.7031	976.76926	TRUE	0	0.061311	0.071782	1013	30	9.497177	56983.06	45	0.070715
SH	10	1975	1	17	12	17	30	0	175S	41	47	60	418E	8043357.618	1437221.992	946.5778	945.7644	TRUE	0	0.063323	0.071782	1013	30	9.986717	59920.303	45	0.070715
SH	10	1975	1	17	18	18	0	0	180S	41	23	60	414E	7989501.726	1391849.588	908.55415	908.02738	TRUE	0	0.065967	0.071782	1013	30	11.736827	70420.964	45	0.070715
SH	10	1975	1	18	0	18	36	0	186S	41	12	0	412E	7923528.649	1367466.112	872.84546	872.38339	TRUE	0	0.068666	0.071782	1013	30	11.722487	70334.919	45	0.070715
SH	10	1975	1	18	6	19	11	60	192S	41	12	0	412E	7856596.432	1364341.6	844.60414	844.03195	TRUE	0	0.07095	0.071782	1013	30	11.167518	67005.106	45	0.070715
SH	10	1975	1	18	12	19	48	0	198S	41	47	60	418E	7786455.746	1424503.372	839.75893	838.57736	TRUE	0	0.071358	0.071782	1013	30	15.401258	92407.546	45	0.070715
SH	10	1975	1	18	18	20	23	60	204S	42	53	60	429E	7712783.678	1536883.554	858.09017	855.79785	TRUE	0	0.069837	0.071782	1013	30	22.395981	134375.89	45	0.070715
SH	10	1975	1	19	0	21	30	0	215S	44	6	0	441E	7581090.582	1655043.241	866.92711	863.26514	TRUE	0	0.069127	0.071782	1013	30	29.488596	176931.58	45	0.070715
SH	10	1975	1	19	6	22	36	0	226S	45	12	0	452E	7448519.318	1670681.458	879.81581	874.8139	TRUE	0	0.068117	0.071782	1013	30	28.252125	169512.75	45	0.070715
SH	10	1975	1	19	12	23	11	60	232S	46	17	60	463E	7370730.245	1869516.662	914.82573	908.37482	TRUE	0	0.065516	0.071782	1013	30	22.296139	133776.83	45	0.070715
SH	10	1975	1	19	18	23	41	60	237S	47	17	60	473E	7303939.641	1968188.828	950.89827	942.99466	TRUE	0	0.063035	0.071782	1013	30	19.858654	119151.92	45	0.070715
SH	10	1975	1	20	0	24	6	0	241S	48	23	60	484E	7246112.131	2077855.45	996.94631	987.25602	TRUE	0	0.060129	0.071782	1013	30	20.663164	123978.99	45	0.070715
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	14	1975	1	25	0	25	6	0	251S	48	12	0	482E	7135121.167	2044219.509	963.15773	953.97454	TRUE	0	0.062235	0.071782	1013	30	26.329479	157976.88	53	0.136796
SH	14	1975	1	25	6	25	18	0	253S	46	87	60	466E	7130787.058	1877263.704	875.42931	868.7002	TRUE	0	0.068457	0.071782	1013	30	27.835342	167012.05	53	0.136796
SH	14	1975	1	25	12	25	30	0	255S	45	6	0	451E	7123437.205	1721761.498	793.69163	788.81693										

SH	9	1976	1	26	0	17	11	60	172S	41	17	60	41E	8079261.027	1385109.619	944.07846	943.7838	TRUE	0	0.06349	0.071782	1013	30	5.369997	32219.98	67	0.079595
SH	9	1976	1	26	6	17	23	60	174S	41	0	0	410E	8058319.045	1352008.766	924.2265	924.15889	TRUE	0	0.064851	0.071782	1013	30	6.528215	39169.287	67	0.079595
SH	9	1976	1	26	12	18	18	0	183S	40	0	0	400E	7962352.258	1241266.15	846.93165	847.45019	TRUE	0	0.070755	0.071782	1013	30	24.423094	146538.56	67	0.079595
SH	9	1976	1	26	18	19	36	0	196S	38	42	0	387E	7822770.866	1098511.786	740.80521	741.79188	TRUE	0	0.08086	0.071782	1013	30	33.275689	199654.14	67	0.079595
SH	9	1976	1	27	0	20	30	0	205S	37	53	60	379E	7725515.406	1011401.503	670.8933	672.0146	TRUE	0	0.089255	0.071782	1013	30	21.760582	130563.49	67	0.079595
SH	9	1976	1	27	6	21	23	60	214S	37	0	0	370E	7628292.406	914846.558	598.35853	599.56694	TRUE	0	0.100023	0.071782	1013	30	22.837086	137022.51	67	0.079595
SH	9	1976	1	27	12	22	6	0	221S	36	0	0	360E	7553053.541	809547.0585	534.05478	535.35329	TRUE	0	0.111995	0.071782	1013	30	21.569572	129417.43	67	0.079595
SH	9	1976	1	27	18	22	48	0	228S	35	0	0	350E	7472731.028	705293.1478	471.31103	472.62466	TRUE	0	0.126791	0.071782	1013	30	21.485093	128910.56	67	0.079595
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	23	1976	4	1	12	15	18	0	153S	39	53	60	399E	8296654.98	1242312.985	998.61344	999.88828	TRUE	0	0.060029	0.071782	1013	30	8.112157	48672.94	59	0.073349
SH	23	1976	4	1	18	15	30	0	155S	39	36	0	396E	8275418.139	1209227.928	979.7844	981.23819	TRUE	0	0.061181	0.071782	1013	30	6.552405	39314.43	59	0.073349
SH	23	1976	4	2	0	15	41	60	157S	39	17	60	393E	8254158.194	1176214.931	961.06326	962.6803	TRUE	0	0.06237	0.071782	1013	30	6.544385	39266.312	59	0.073349
SH	23	1976	4	2	6	16	0	0	160S	39	0	0	390E	8221760.112	1142953.16	937.09307	938.83267	TRUE	0	0.063962	0.071782	1013	30	7.738757	46432.544	59	0.073349
SH	23	1976	4	2	12	16	36	0	166S	38	53	60	389E	8155398.986	1130270.777	902.40053	904.04844	TRUE	0	0.066416	0.071782	1013	30	11.260355	67562.133	59	0.073349
SH	23	1976	4	2	18	17	18	0	173S	38	53	60	389E	8077617.668	1127927.303	865.33447	866.80242	TRUE	0	0.069254	0.071782	1013	30	12.969436	77816.614	59	0.073349
SH	23	1976	4	3	0	17	48	0	178S	39	0	0	390E	8021720.551	1136841.024	841.98629	843.2676	TRUE	0	0.07117	0.071782	1013	30	9.433896	56603.376	59	0.073349
SH	23	1976	4	3	6	18	11	60	182S	39	12	0	392E	7976558.409	1156643.115	827.18427	828.24586	TRUE	0	0.07244	0.071782	1013	30	8.218782	49312.695	59	0.073349
SH	23	1976	4	3	12	18	23	60	184S	39	30	0	395E	7953206.393	1187728.513	826.13159	826.95892	TRUE	0	0.072532	0.071782	1013	30	6.479923	38879.54	59	0.073349
SH	23	1976	4	3	18	18	36	0	186S	40	0	0	400E	7928959.538	1239968.46	832.02595	832.47708	TRUE	0	0.07202	0.071782	1013	30	9.598788	57592.725	59	0.073349
SH	23	1976	4	4	0	18	41	60	187S	40	36	0	406E	7915211.65	1303206.226	847.17483	847.17163	TRUE	0	0.070735	0.071782	1013	30	10.785818	64714.91	59	0.073349
SH	23	1976	4	4	6	18	48	0	188S	41	12	0	412E	7901217.398	1366435.204	863.36943	862.87063	TRUE	0	0.069411	0.071782	1013	30	10.793186	64759.113	59	0.073349
SH	23	1976	4	4	12	18	53	60	189S	41	42	0	417E	7887502.86	1419030.238	876.85281	875.90541	TRUE	0	0.068347	0.071782	1013	30	9.058952	54353.713	59	0.073349
SH	23	1976	4	4	18	19	0	0	190S	42	0	0	420E	7874717.843	1450350.86	883.44946	882.2123	TRUE	0	0.067837	0.071782	1013	30	5.638257	33829.544	59	0.073349
SH	23	1976	4	5	0	19	18	0	193S	42	6	0	421E	7840637.421	1459218.743	873.66865	872.29325	TRUE	0	0.068595	0.071782	1013	30	5.86921	35215.259	59	0.073349
SH	23	1976	4	5	6	19	41	60	197S	42	12	0	422E	7795359.924	1467413.18	859.74959	858.22271	TRUE	0	0.069703	0.071782	1013	30	7.668841	46013.047	59	0.073349
SH	23	1976	4	5	12	19	53	60	199S	42	17	60	423E	7772418.09	1476759.84	854.94189	853.2934	TRUE	0	0.070094	0.071782	1013	30	4.128787	24772.723	59	0.073349
SH	23	1976	4	5	18	20	0	0	200S	42	17	60	423E	7761238.645	1476135.131	850.60239	848.93999	TRUE	0	0.070451	0.071782	1013	30	1.866148	11196.886	59	0.073349
SH	23	1976	4	6	0	20	6	0	201S	42	17	60	423E	7750059.41	1475507.431	844.6064	844.6064	TRUE	0	0.070809	0.071782	1013	30	1.866141	11196.844	59	0.073349
SH	23	1976	4	6	6	20	11	60	202S	42	12	0	422E	7739474.961	1464324.499	837.97041	836.37189	TRUE	0	0.07151	0.071782	1013	30	2.56628	15397.679	59	0.073349
SH	23	1976	4	6	12	20	11	60	202S	41	53	60	419E	7741218.455	1432681.292	826.04227	824.7106	TRUE	0	0.07254	0.071782	1013	30	5.281867	31691.202	59	0.073349
SH	23	1976	4	6	18	20	6	0	201S	41	36	0	416E	7754064.353	1401639.441	818.70343	818.70343	TRUE	0	0.073188	0.071782	1013	30	5.599141	33594.844	59	0.073349
SH	23	1976	4	7	0	20	6	0	201S	41	23	60	414E	7755148.846	1380553.826	810.99747	810.10153	TRUE	0	0.073882	0.071782	1013	30	3.518914	21113.486	59	0.073349
SH	23	1976	4	7	6	20	0	0	200S	41	12	0	412E	7767360.77	1360027.617	807.88133	807.16269	TRUE	0	0.074166	0.071782	1013	30	3.980705	23884.228	59	0.073349
SH	23	1976	4	7	12	19	53	60	199S	40	53	60	409E	7780039.748	1328933.898	801.23434	800.76535	TRUE	0	0.07478	0.071782	1013	30	5.596566	33579.396	59	0.073349
SH	23	1976	4	7	18	19	41	60	197S	40	36	0	406E	7803789.447	1298316.63	799.57768	799.36982	TRUE	0	0.074934	0.071782	1013	30	6.458124	38748.746	59	0.073349
SH	23	1976	4	8	0	19	36	0	196S	40	30	0	405E	7815401.065	1288258.57	800.70341	800.58801	TRUE	0	0.074829	0.071782	1013	30	2.560351	15362.104	59	0.073349
SH	23	1976	4	8	6	19	30	0	195S	40	17	60	403E	7827457.473	1267625.564	798.40662	798.45314	TRUE	0	0.075044	0.071782	1013	30	3.982873	23897.236	59	0.073349
SH	23	1976	4	8	12	19	41	60	197S	39	47	60	398E	7807384.622	1213957.588	771.6007	771.93372	TRUE	0	0.077643	0.071782	1013	30	9.549827	57298.962	59	0.073349
SH	23	1976	4	8	18	20	0	0	200S	39	17	60	393E	7776070.825	1160038.844	740.24253	740.80407	TRUE	0	0.080922	0.071782	1013	30	10.392017	62352.103	59	0.073349
SH	23	1976	4	9	0	20	18	0	203S	38	53	60	389E	7744273.457	1116826.612	712.38517	713.08984	TRUE	0	0.084075	0.071782	1013	30	8.94174	53650.439	59	0.073349
SH	23	1976	4	9	6	20	41	60	207S	38	42	0	387E	7700579.074	1094310.245	686.27508	686.97918	TRUE	0	0.087262	0.071782	1013	30	8.192452	49154.714	59	0.073349
SH	23	1976	4	9	12	21	6	0	211S	38	42	0	387E	7656145.679	1092728.021	666.9424	667.54439	TRUE	0	0.089781	0.071782	1013	30	7.41026	44461.557	59	0.073349
SH	23	1976	4	9	18	21	36	0	216S	38	36	0	386E	7600982.366	1080321.838	639.72426	640.24581	TRUE	0	0.093585	0.071782	1013	30	9.423529	56541.175	59	0.073349
SH	23	1976	4	10	0	22	0	0	220S	38	36	0	386E	7556554.53	1078704.017	621.02026	621.43986	TRUE	0	0.09639	0.071782	1013	30	7.409547	44457.283	59	0.073349
SH	23	1976	4	10	6	22	23	60	224S	38	30	0	385E	7512509.148	1066730.55	599.04143	599.40364	TRUE	0	0.099909	0.071782	1013	30	7.607306	45643.834	59	0.073349
SH	23	1976	4	10	12	23	6	0	231S	38	30	0	385E	7434769.357	1063835.719	567.75853	567.94375	TRUE	0	0.105384	0.071782	1013	30	12.965612	77793.67	59	0.073349
SH	23	1976	4	10	18	24	6	0	241S	38	23	60	384E	7324108.911	1049360.27	521.55048	521.52805	TRUE	0	0.114662	0.071782	1013	30	18.600532	111603.19	59	0.073349

SH	10	1977	2	9	18	20	18	0	203S	20	23	60	204E	7704139.807	-823668.3667	821.15789	815.51972	TRUE	0	0.07297	0.071782	1013	30	30.210535	181263.21	67	0.115487
SH	10	1977	2	10	0	20	23	60	204S	19	0	0	190E	7680477.518	-971903.3072	874.87712	867.02069	TRUE	0	0.068501	0.071782	1013	30	25.018605	150111.63	67	0.115487
SH	10	1977	2	10	6	20	30	0	205S	17	53	60	179E	7658344.441	-1088465.51	918.85743	909.00513	TRUE	0	0.065229	0.071782	1013	30	19.774156	118644.93	67	0.115487
SH	10	1977	2	10	12	20	30	0	205S	17	41	60	177E	7656278.527	-1109885.771	927.79741	917.55087	TRUE	0	0.064602	0.071782	1013	30	3.586609	21519.656	67	0.115487
SH	10	1977	2	10	18	20	30	0	205S	18	30	0	185E	7664355.419	-1024293.961	892.38794	883.66724	TRUE	0	0.067159	0.071782	1013	30	14.328676	85972.055	67	0.115487
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	17	1977	2	26	12	18	0	0	180S	43	6	0	431E	7980331.408	1573745.132	970.78058	968.53264	TRUE	0	0.061747	0.071782	1013	30	10.365537	62193.221	87	0.073604
SH	17	1977	2	26	18	18	30	0	185S	42	42	0	427E	7926680.66	1527884.75	932.76222	930.89808	TRUE	0	0.064259	0.071782	1013	30	11.763382	70580.291	87	0.073604
SH	17	1977	2	27	0	19	11	60	192S	42	30	0	425E	7849520.912	1502298.318	893.60211	891.85493	TRUE	0	0.067068	0.071782	1013	30	13.548567	81291.403	87	0.073604
SH	17	1977	2	27	6	19	48	0	198S	42	30	0	425E	7782408.331	1498548.96	867.24793	865.4224	TRUE	0	0.069102	0.071782	1013	30	11.202872	67217.232	87	0.073604
SH	17	1977	2	27	12	20	11	60	202S	42	36	0	426E	7737056.276	1506547.346	854.12835	852.15476	TRUE	0	0.07016	0.071782	1013	30	7.675327	46051.96	87	0.073604
SH	17	1977	2	27	18	20	36	0	206S	42	42	0	427E	7691680.971	1514442.065	841.48806	839.36861	TRUE	0	0.071212	0.071782	1013	30	7.676162	46056.974	87	0.073604
SH	17	1977	2	28	0	21	0	0	210S	42	47	60	428E	7646282.508	1522231.594	829.34862	827.08557	TRUE	0	0.072251	0.071782	1013	30	7.676981	46061.886	87	0.073604
SH	17	1977	2	28	6	21	30	0	215S	43	0	0	430E	7588994.839	1539673.663	818.17363	815.66243	TRUE	0	0.073236	0.071782	1013	30	9.980679	59884.077	87	0.073604
SH	17	1977	2	28	12	22	11	60	222S	43	23	60	434E	7507804.656	1576234.573	809.66844	806.69835	TRUE	0	0.074003	0.071782	1013	30	14.840397	89042.383	87	0.073604
SH	17	1977	2	28	18	23	0	0	230S	44	6	0	441E	7412792.985	1642539.712	814.41624	810.6738	TRUE	0	0.073573	0.071782	1013	30	19.310036	115860.21	87	0.073604
SH	17	1977	3	1	0	23	48	0	238S	44	47	60	448E	7317127.284	1707827.755	823.2551	818.72047	TRUE	0	0.072785	0.071782	1013	30	19.303465	115820.79	87	0.073604
SH	17	1977	3	1	6	24	41	60	247S	45	30	0	455E	7209537.334	1771010.674	833.4556	828.1081	TRUE	0	0.071896	0.071782	1013	30	20.795084	124770.5	87	0.073604
SH	17	1977	3	1	12	25	53	60	259S	46	12	0	462E	7067435.225	1829442.557	841.78898	835.62587	TRUE	0	0.071186	0.071782	1013	30	25.607776	153646.65	87	0.073604
SH	17	1977	3	1	18	27	6	0	271S	47	0	0	470E	6923348.759	1895927.365	862.24961	855.12941	TRUE	0	0.069501	0.071782	1013	30	26.44761	158685.66	87	0.073604
SH	17	1977	3	2	0	28	11	60	282S	47	23	60	474E	6794517.96	1921512.346	868.92665	861.37197	TRUE	0	0.068968	0.071782	1013	30	21.891123	131346.74	87	0.073604
SH	17	1977	3	2	6	29	18	0	293S	48	0	0	480E	6662753.65	1965475.782	891.23152	882.95527	TRUE	0	0.067246	0.071782	1013	30	23.150844	138905.07	87	0.073604
SH	17	1977	3	2	12	30	11	60	302S	49	17	60	493E	6542764.99	2079420.061	956.175	945.97238	TRUE	0	0.062688	0.071782	1013	30	27.578462	165470.77	87	0.073604
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	15	1978	1	27	6	18	0	0	180S	42	30	0	425E	7983769.317	1509464.664	948.16976	946.57894	TRUE	0	0.063217	0.071782	1013	30	11.644754	69868.522	37	0.067966
SH	15	1978	1	27	12	18	23	60	184S	43	0	0	430E	7936112.524	1560557.134	948.81579	946.63851	TRUE	0	0.063174	0.071782	1013	30	11.644754	69868.522	37	0.067966
SH	15	1978	1	27	18	18	48	0	188S	43	30	0	435E	7888191.351	1611402.558	950.76439	947.98018	TRUE	0	0.063044	0.071782	1013	30	11.644856	69869.135	37	0.067966
SH	15	1978	1	28	0	19	11	60	192S	44	0	0	440E	7839997.448	1661993.676	954.00177	950.58985	TRUE	0	0.062831	0.071782	1013	30	11.645354	69872.122	37	0.067966
SH	15	1978	1	28	6	19	41	60	197S	44	30	0	445E	7780280.753	1711553.797	954.44814	950.38394	TRUE	0	0.062802	0.071782	1013	30	12.933902	77603.41	37	0.067966
SH	15	1978	1	28	12	20	41	60	207S	45	17	60	453E	7661543.358	1788334.869	950.9298	945.78905	TRUE	0	0.063033	0.071782	1013	30	23.566632	141399.79	37	0.067966
SH	15	1978	1	28	18	22	0	0	220S	46	6	0	461E	7508017.991	1860774.457	942.59573	936.36603	TRUE	0	0.06359	0.071782	1013	30	28.292879	169757.27	37	0.067966
SH	15	1978	1	29	0	23	23	60	234S	46	42	0	467E	7344153.093	1909066.211	928.95682	921.94098	TRUE	0	0.064521	0.071782	1013	30	28.47211	170832.66	37	0.067966
SH	15	1978	1	29	6	24	30	0	245S	47	0	0	470E	7216760.274	1927762.401	914.90375	907.53974	TRUE	0	0.06551	0.071782	1013	30	21.459573	128757.44	37	0.067966
SH	15	1978	1	29	12	25	6	0	251S	47	6	0	471E	7147895.674	1930955.836	905.83662	898.38278	TRUE	0	0.066165	0.071782	1013	30	11.489767	68938.604	37	0.067966
SH	15	1978	1	29	18	25	30	0	255S	47	12	0	472E	7101597.746	1936352.399	902.25691	894.69648	TRUE	0	0.066426	0.071782	1013	30	7.768564	46611.383	37	0.067966
SH	15	1978	1	30	0	25	53	60	259S	47	12	0	472E	7056428.774	1931396.216	894.04201	886.52249	TRUE	0	0.067035	0.071782	1013	30	7.573345	45440.068	37	0.067966
SH	15	1978	1	30	6	26	23	60	264S	47	17	60	473E	6998819.644	1935264.297	889.84973	882.23795	TRUE	0	0.067351	0.071782	1013	30	9.62314	57738.842	37	0.067966
SH	15	1978	1	30	12	27	6	0	271S	47	23	60	474E	6918616.339	1936297.169	883.4809	875.80183	TRUE	0	0.067835	0.071782	1013	30	13.368326	80209.956	37	0.067966
SH	15	1978	1	30	18	27	48	0	278S	47	30	0	475E	6838404.116	1936978.477	879.01235	871.27038	TRUE	0	0.068179	0.071782	1013	30	13.369186	80215.117	37	0.067966
SH	15	1978	1	31	0	28	23	60	284S	47	42	0	477E	6768200.299	1948676.775	882.82889	874.87258	TRUE	0	0.067885	0.071782	1013	30	11.861968	71171.807	37	0.067966
SH	15	1978	1	31	6	29	0	0	290S	48	0	0	480E	6696607.934	1969893.485	893.43222	885.11539	TRUE	0	0.067081	0.071782	1013	30	12.445007	74670.044	37	0.067966
SH	15	1978	1	31	12	29	30	0	295S	48	23	60	484E	6634775.765	2001984.173	911.36665	902.51523	TRUE	0	0.065764	0.071782	1013	30	11.610615	69663.687	37	0.067966
SH	15	1978	1	31	18	29	53	60	299S	48	47	60	488E	6583984.838	2035161.396	903.65399	921.23223	TRUE	0	0.064404	0.071782	1013	30	10.111114	60666.683	37	0.067966
SH	15	1978	2	1	0	30	6	0	301S	49	12	0	492E	6555560.824	2071252.925	951.20468	941.1551	TRUE	0	0.063015	0.071782	1013	30	7.656738	45940.43	37	0.067966
SH	15	1978	2	1	6	30	23	60	304S	50	6	0	501E	6507789.772	2154522.122	998.3292	986.73089	TRUE	0	0.060046	0.071782	1013	30	15.999855	95999.128	37	0.067966
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	18	1978	2	12	18	17	0	0	170S	42	0	0	420E	8098231.288	1461291.123	977.7031	976.76926	TRUE	0	0.061311	0.071782	1013	30	20.71849	124310.94	17	0.064305
SH	18	1978	2	13	0	18</																					

SH	2	1978	12	23	18	22	30	0	225S	36	6	0	361E	7508524.038	818961.5807	516.03036	517.1878	TRUE	0	0.115881	0.071782	1013	30	8.815937	52895.62	93	0.120222
SH	2	1978	12	24	0	22	30	0	225S	36	36	0	366E	7507370.553	870451.868	530.69561	531.71599	TRUE	0	0.112699	0.071782	1013	30	8.583868	51503.206	93	0.120222
SH	2	1978	12	24	6	22	23	60	224S	37	0	0	370E	7517411.541	911954.546	548.04551	548.97197	TRUE	0	0.109153	0.071782	1013	30	7.116674	42700.044	93	0.120222
SH	2	1978	12	24	12	22	11	60	222S	37	23	60	374E	7538441.894	953853.0228	570.64991	571.49765	TRUE	0	0.104853	0.071782	1013	30	7.813375	46880.253	93	0.120222
SH	2	1978	12	24	18	22	0	0	220S	37	42	0	377E	7559701.135	985532.3452	590.1703	590.96327	TRUE	0	0.101404	0.071782	1013	30	6.358579	38151.472	93	0.120222
SH	2	1978	12	25	0	21	41	60	217S	38	6	0	381E	7591672.458	1028036.424	617.92656	618.64133	TRUE	0	0.096871	0.071782	1013	30	8.864352	53186.109	93	0.120222
SH	2	1978	12	25	6	21	30	0	215S	38	36	0	386E	7612089.312	1080721.877	644.45362	645.00074	TRUE	0	0.092901	0.071782	1013	30	9.41719	56503.141	93	0.120222
SH	2	1978	12	25	12	21	18	0	213S	39	42	0	397E	7629816.011	1196097.902	693.00542	693.03196	TRUE	0	0.086417	0.071782	1013	30	19.454979	116729.87	93	0.120222
SH	2	1978	12	25	18	21	18	0	213S	41	0	0	410E	7623453.097	1331760.679	742.8664	742.05729	TRUE	0	0.080637	0.071782	1013	30	22.635319	135811.91	93	0.120222
SH	2	1978	12	26	0	21	18	0	213S	42	0	0	420E	7617766.935	1436331.012	783.5535	781.96873	TRUE	0	0.076462	0.071782	1013	30	17.454136	104724.82	93	0.120222
SH	2	1978	12	26	6	21	30	0	215S	43	0	0	430E	7588994.839	1539673.663	818.17363	815.66243	TRUE	0	0.073236	0.071782	1013	30	17.878865	107273.19	93	0.120222
SH	2	1978	12	26	12	21	41	60	217S	44	0	0	440E	7559406.363	1642936.654	855.04239	851.48065	TRUE	0	0.070086	0.071782	1013	30	17.903075	107418.45	93	0.120222
SH	2	1978	12	26	18	22	6	0	221S	45	6	0	451E	7505631.139	1754823.533	891.71095	886.83569	TRUE	0	0.06721	0.071782	1013	30	20.689805	124138.83	93	0.120222
SH	2	1978	12	27	0	22	36	0	226S	46	12	0	462E	7439386.87	1865269.45	928.13498	921.79264	TRUE	0	0.064578	0.071782	1013	30	21.464831	128788.99	93	0.120222
SH	2	1978	12	27	6	23	11	60	232S	47	17	60	473E	7360507.478	1973926.583	964.73914	956.77938	TRUE	0	0.062133	0.071782	1013	30	22.37827	134269.62	93	0.120222
SH	2	1978	12	27	12	23	36	0	236S	48	0	0	480E	7304917.604	2042373.614	989.23005	980.15902	TRUE	0	0.060598	0.071782	1013	30	14.429598	86577.59	93	0.120222
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	12	1979	2	4	6	19	6	0	191S	41	12	0	412E	7867751.48	1364868.97	849.27147	848.71762	TRUE	0	0.070561	0.071782	1013	30	7.319437	43916.62	41	0.075507
SH	12	1979	2	4	12	19	11	60	192S	41	36	0	416E	7854534.408	1406749.497	859.3188	858.40971	TRUE	0	0.069738	0.071782	1013	30	7.319437	43916.62	41	0.075507
SH	12	1979	2	4	18	19	23	60	194S	41	53	60	419E	7830579.039	1437421.907	861.5184	860.31133	TRUE	0	0.069556	0.071782	1013	30	6.486431	38918.588	41	0.075507
SH	12	1979	2	5	0	19	36	0	196S	42	12	0	422E	7806537.521	1468022.033	864.16316	862.65063	TRUE	0	0.069348	0.071782	1013	30	6.485801	38914.808	41	0.075507
SH	12	1979	2	5	6	19	53	60	199S	42	23	60	424E	7771824.208	1487335.417	858.92278	857.17994	TRUE	0	0.06977	0.071782	1013	30	6.620719	39724.311	41	0.075507
SH	12	1979	2	5	12	20	0	0	200S	42	36	0	426E	7759429.513	1507847.963	862.64833	860.69995	TRUE	0	0.069469	0.071782	1013	30	3.994416	23966.497	41	0.075507
SH	12	1979	2	5	18	20	11	60	202S	42	47	60	428E	7735806.443	1527672.898	862.31213	860.14252	TRUE	0	0.069496	0.071782	1013	30	5.139924	30839.545	41	0.075507
SH	12	1979	2	6	0	20	23	60	204S	42	53	60	429E	7712783.678	1536883.554	858.09017	855.79785	TRUE	0	0.069837	0.071782	1013	30	4.132809	24796.852	41	0.075507
SH	12	1979	2	6	6	20	41	60	207S	43	6	0	431E	7677887.342	1555894.233	854.18884	851.66256	TRUE	0	0.070156	0.071782	1013	30	6.623108	39738.649	41	0.075507
SH	12	1979	2	6	12	20	53	60	209S	43	17	60	433E	7654136.729	1557526.044	854.70703	851.95586	TRUE	0	0.070113	0.071782	1013	30	5.135659	30813.952	41	0.075507
SH	12	1979	2	6	18	21	6	0	211S	43	36	0	436E	7629630.139	1605613.711	859.87617	856.79148	TRUE	0	0.069693	0.071782	1013	30	6.467527	38805.163	41	0.075507
SH	12	1979	2	7	0	21	48	0	218S	43	47	60	438E	7549691.789	1621180.862	842.33678	838.98593	TRUE	0	0.07114	0.071782	1013	30	13.573336	81440.015	41	0.075507
SH	12	1979	2	7	6	22	11	60	222S	43	53	60	439E	7504082.093	1628416.831	832.4472	828.96311	TRUE	0	0.071983	0.071782	1013	30	7.696687	46180.121	41	0.075507
SH	12	1979	2	7	12	21	53	60	219S	43	17	60	433E	7542124.577	1568097.795	816.19958	813.35535	TRUE	0	0.073412	0.071782	1013	30	11.885585	71313.509	41	0.075507
SH	12	1979	2	7	18	21	36	0	216S	42	30	0	425E	7581119.518	1486641.575	792.64362	790.58484	TRUE	0	0.075588	0.071782	1013	30	15.051505	90309.032	41	0.075507
SH	12	1979	2	8	0	21	18	0	213S	42	12	0	422E	7616546.168	1457269.844	791.90674	790.15173	TRUE	0	0.075658	0.071782	1013	30	7.669829	46018.975	41	0.075507
SH	12	1979	2	8	6	21	0	0	210S	42	0	0	420E	7651276.521	1438246.181	795.95264	794.41277	TRUE	0	0.075274	0.071782	1013	30	6.599868	39599.207	41	0.075507
SH	12	1979	2	8	12	20	53	60	209S	42	0	0	420E	7662446.776	1438878.831	800.13201	798.60714	TRUE	0	0.074882	0.071782	1013	30	1.864693	11188.156	41	0.075507
SH	12	1979	2	8	18	20	53	60	209S	41	53	60	419E	7663037.527	1428383.327	796.05256	794.61247	TRUE	0	0.075265	0.071782	1013	30	1.752019	10512.116	41	0.075507
SH	12	1979	2	9	0	20	41	60	207S	41	47	60	418E	7685953.324	1419117.752	800.48796	799.16303	TRUE	0	0.074849	0.071782	1013	30	4.119684	24718.103	41	0.075507
SH	12	1979	2	9	6	20	30	0	205S	41	42	0	417E	7708853.932	1409814.337	805.09963	803.89022	TRUE	0	0.074422	0.071782	1013	30	4.119707	24718.239	41	0.075507
SH	12	1979	2	9	12	20	18	0	203S	41	42	0	417E	7731182.713	1411005.457	813.80233	812.62554	TRUE	0	0.073628	0.071782	1013	30	3.726755	22360.529	41	0.075507
SH	12	1979	2	9	18	20	6	0	201S	41	42	0	417E	7753512.172	1412185.427	822.5861	821.44198	TRUE	0	0.072844	0.071782	1013	30	3.726769	22360.615	41	0.075507
SH	12	1979	2	10	0	20	0	0	200S	41	42	0	417E	7764677.154	1412771.226	827.00758	825.87981	TRUE	0	0.072455	0.071782	1013	30	1.86339	11180.339	41	0.075507
SH	12	1979	2	10	6	19	48	0	198S	41	36	0	416E	7787552.943	1403367.688	832.07712	831.06728	TRUE	0	0.072015	0.071782	1013	30	4.12219	24733.14	41	0.075507
SH	12	1979	2	10	12	19	0	0	190S	41	42	0	417E	7876336.074	1418475.269	872.23507	871.27125	TRUE	0	0.068708	0.071782	1013	30	15.009889	90059.332	41	0.075507
SH	12	1979	2	10	18	18	0	0	180S	42	0	0	420E	7986465.955	1455967.478	929.85698	928.77117	TRUE	0	0.064459	0.071782	1013	30	19.389471	116336.82	41	0.075507
SH	12	1979	2	11	0	17	11	60	172S	42	30	0	425E	8073284.793	1513994.65	985.75957	984.27237	TRUE	0	0.06081	0.071782	1013	30	17.404233	104425.4	41	0.075507
SH	12	1979	2	12	12	18	36	0	186S	44	12	0	442E	7960262.32	1687656.665	987.80964	984.17715	TRUE	0	0.060684	0.071782	1013	30	9.382339	56294.032	41	0.075507
SH	12	1979	2	12	18	19	0	0	190S	44	12	0	442E	7861084.512	1684788.507	970.75402	967.1025	TRUE	0	0.061749	0.071782	1013	30	7.50554</			

SH	13	1981	2	4	0	24	53	60	249S	43	30	0	435E	7204693.587	1564274.034	728.13202	724.86233	TRUE	0	0.082263	0.071782	1013	30	16.59169	99550.141	31	0.061266
SH	13	1981	2	4	6	25	23	60	254S	42	47	60	428E	7154208.892	1488753.355	680.15819	677.43567	TRUE	0	0.088043	0.071782	1013	30	15.140157	90840.945	31	0.061266
SH	13	1981	2	4	12	26	0	0	260S	42	0	0	420E	7093028.841	1402998.008	625.16928	622.96726	TRUE	0	0.095754	0.071782	1013	30	17.557033	105342.2	31	0.061266
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	17	1981	2	21	12	19	48	0	198S	45	36	0	456E	7760519.058	1827989.408	998.67322	993.08905	TRUE	0	0.060026	0.071782	1013	30	20.85126	125107.56	29	0.059985
SH	17	1981	2	21	18	20	41	60	207S	46	17	60	463E	7652959.404	1894454.205	996.9421	990.33772	TRUE	0	0.06013	0.071782	1013	30	21.073053	126438.32	29	0.059985
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	22	1981	3	1	12	22	0	0	220S	47	6	0	471E	7498372.944	1966123.85	991.0226	983.25422	TRUE	0	0.060488	0.071782	1013	30	6.693632	40161.793	35	0.039939
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	5	1981	12	22	12	17	0	0	170S	41	42	0	417E	8099701.311	1429038.023	967.39624	966.76062	TRUE	0	0.061963	0.071782	1013	30	15.658664	93951.982	25	0.047851
SH	5	1981	12	22	18	17	18	0	173S	41	6	0	411E	8069020.72	1363190.875	932.4824	932.34726	TRUE	0	0.064278	0.071782	1013	30	12.107327	72643.965	25	0.047851
SH	5	1981	12	23	0	17	23	60	174S	40	30	0	405E	8060498.526	1298497.52	907.97148	908.31484	TRUE	0	0.066009	0.071782	1013	30	10.875377	65252.264	25	0.047851
SH	5	1981	12	23	6	17	6	0	171S	39	47	60	398E	8096690.421	1224846.593	901.63053	902.56347	TRUE	0	0.066473	0.071782	1013	30	13.677143	82062.856	25	0.047851
SH	5	1981	12	23	12	16	48	0	168S	39	0	0	390E	8132853.189	1140314.68	894.48091	896.01629	TRUE	0	0.067003	0.071782	1013	30	15.323272	91942.319	25	0.047851
SH	5	1981	12	23	18	17	6	0	171S	38	30	0	385E	8101095.286	1085875.886	865.13722	866.88585	TRUE	0	0.06927	0.071782	1013	30	10.504161	63024.969	25	0.047851
SH	5	1981	12	24	0	18	0	0	180S	38	6	0	381E	8002366.837	1040480.812	806.62057	808.33336	TRUE	0	0.074282	0.071782	1013	30	18.110785	108664.71	25	0.047851
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	16	1982	2	4	6	17	48	0	178S	43	23	60	434E	8000957.284	1607186.76	991.38696	988.80641	TRUE	0	0.060466	0.071782	1013	30	13.119044	78714.267	31	0.072645
SH	16	1982	2	4	12	18	0	0	180S	42	42	0	427E	7982647.917	1530881.067	955.63146	953.82783	TRUE	0	0.062724	0.071782	1013	30	13.0786	78471.598	31	0.072645
SH	16	1982	2	4	18	18	0	0	180S	41	36	0	416E	7988513.963	1413213.002	915.5711	914.86385	TRUE	0	0.065463	0.071782	1013	30	19.635699	117814.19	31	0.072645
SH	16	1982	2	5	0	18	0	0	180S	40	36	0	406E	7993212.694	1306483.021	881.36663	881.50713	TRUE	0	0.067997	0.071782	1013	30	17.80556	106833.36	31	0.072645
SH	16	1982	2	5	6	17	53	60	179S	39	36	0	396E	8008439.284	1200351.22	854.59351	855.4754	TRUE	0	0.070122	0.071782	1013	30	17.869751	107218.51	31	0.072645
SH	16	1982	2	5	12	17	48	0	178S	38	36	0	386E	8023042.814	1094270.124	830.72089	832.22946	TRUE	0	0.072132	0.071782	1013	30	17.846928	107081.57	31	0.072645
SH	16	1982	2	5	18	17	30	0	175S	37	36	0	376E	8059222.046	988755.0925	820.84296	822.9272	TRUE	0	0.072998	0.071782	1013	30	18.590887	111545.32	31	0.072645
SH	16	1982	2	6	0	17	6	0	171S	36	30	0	365E	8106033.577	872546.1428	818.48802	821.11513	TRUE	0	0.073208	0.071782	1013	30	20.880506	125283.04	31	0.072645
SH	16	1982	2	6	6	16	36	0	166S	35	53	60	359E	8162455.436	809444.0314	835.39485	838.35607	TRUE	0	0.07173	0.071782	1013	30	14.108018	84648.111	31	0.072645
SH	16	1982	2	6	12	16	6	0	161S	35	47	60	358E	8217972.329	799528.5256	862.21552	865.35788	TRUE	0	0.069504	0.071782	1013	30	9.399236	56395.414	31	0.072645
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	20	1982	2	22	12	22	36	0	226S	36	12	0	362E	7497225.553	829020.5661	513.76819	514.87081	TRUE	0	0.116387	0.071782	1013	30	17.981632	107889.79	13	0.121462
SH	20	1982	2	22	18	23	30	0	235S	36	36	0	366E	7396517.878	867726.7896	481.57779	482.31519	TRUE	0	0.124109	0.071782	1013	30	17.981632	107889.79	13	0.121462
SH	20	1982	2	23	0	24	6	0	241S	37	23	60	374E	7327676.474	947477.382	482.43013	482.76165	TRUE	0	0.123891	0.071782	1013	30	17.558866	105353.2	13	0.121462
SH	20	1982	2	23	6	24	23	60	244S	38	42	0	387E	7289569.765	12199271	521.99271	521.77997	TRUE	0	0.114566	0.071782	1013	30	22.754723	136528.34	13	0.121462
SH	20	1982	2	23	12	24	41	60	247S	40	0	0	400E	7250100.354	1209228.99	567.80815	566.9472	TRUE	0	0.105375	0.071782	1013	30	22.746809	136480.85	13	0.121462
SH	20	1982	2	23	18	25	23	60	254S	41	6	0	411E	7165881.635	1316431.707	597.0877	595.51611	TRUE	0	0.100235	0.071782	1013	30	22.721267	136327.6	13	0.121462
SH	20	1982	2	24	0	26	30	0	265S	42	12	0	422E	7035794.986	1419171.806	623.60889	621.22975	TRUE	0	0.095992	0.071782	1013	30	27.627515	165765.09	13	0.121462
SH	20	1982	2	24	6	27	53	60	279S	43	17	60	433E	6870738.783	1516746.709	655.55022	652.32445	TRUE	0	0.091335	0.071782	1013	30	31.956747	191740.48	13	0.121462
SH	20	1982	2	24	12	29	18	0	293S	44	23	60	444E	6704083.5	1610967.363	699.64006	695.54206	TRUE	0	0.08561	0.071782	1013	30	31.907642	191445.85	13	0.121462
SH	20	1982	2	24	18	30	18	0	303S	45	23	60	454E	6581718.399	1696929.004	748.60655	743.63546	TRUE	0	0.08002	0.071782	1013	30	24.923562	149541.37	13	0.121462
SH	20	1982	2	25	0	31	18	0	313S	46	17	60	463E	6459231.909	1770952.78	796.3725	790.54006	TRUE	0	0.075235	0.071782	1013	30	23.852824	143116.94	13	0.121462
SH	20	1982	2	25	6	32	30	0	325S	47	30	0	475E	6309136.394	1868260.755	864.22735	857.07642	TRUE	0	0.069343	0.071782	1013	30	29.813078	178878.47	13	0.121462
SH	20	1982	2	25	12	33	42	0	337S	48	47	60	488E	6155476.196	1971299.74	940.67623	931.83622	TRUE	0	0.063719	0.071782	1013	30	30.834905	185009.43	13	0.121462
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	24	1982	3	21	0	16	36	0	166S	41	36	0	416E	8144850.104	1420244.648	983.72089	983.24883	TRUE	0	0.060936	0.071782	1013	30	13.133145	78798.872	39	0.081473
SH	24	1982	3	21	6	16	48	0	168S	40	53	60	409E	8125670.809	1344032.356	950.89566	951.02997	TRUE	0	0.063036	0.071782	1013	30	13.09809	78588.541	39	0.081473
SH	24	1982	3	21	12	17	0	0	170S	40	17	60	403E	8105880.595	1278795.165	921.91575	922.50054	TRUE	0	0.065013	0.071782	1013	30	11.362149	68172.895	39	0.081473
SH	24	1982	3	21	18	17	11	60	172S	39	60	399E	8085182.527	1235151.642	899.48659	900.32528	TRUE	0	0.066631	0.071782	1013	30	8.050478	48302.869	39	0.081473	
SH	24	1982	3	22	0	17	18	0	173S	39	30	0	395E	8075547.005	1192001.396	882.43822	883.52957	TRUE	0	0.067915	0.071782	1013	30	7.368829	44212.974	39	0.081473
SH	24	1982	3	22	6	17	23	60	174S	39	12	0	392E	8065491.169	1159596.659	868.55012	869.8103	TRUE	0	0.068998	0.071782	1013	30	5.654857	33929.144	39	

SH	14	1984	1	25	18	22	11	60	222S	39	53	60	399E	7528768.418	1212459.488	660.84351	660.55431	TRUE	0	0.090606	0.071782	1013	30	10.546622	63279.735	43	0.133968
SH	14	1984	1	26	0	22	11	60	222S	39	30	0	395E	7530608.751	1171025.945	645.31571	645.24566	TRUE	0	0.092777	0.071782	1013	30	6.912399	41474.393	43	0.133968
SH	14	1984	1	26	6	22	18	0	223S	39	12	0	392E	7520799.869	1139509.096	629.48497	629.5455	TRUE	0	0.0951	0.071782	1013	30	5.501328	33007.968	43	0.133968
SH	14	1984	1	26	12	22	23	60	224S	38	47	60	388E	7511340.541	1097716.684	610.04312	610.27101	TRUE	0	0.098116	0.071782	1013	30	7.141593	42849.558	43	0.133968
SH	14	1984	1	26	18	22	30	0	225S	38	23	60	384E	7501780.362	1056003.48	590.85647	591.23611	TRUE	0	0.101286	0.071782	1013	30	7.132454	42794.724	43	0.133968
SH	14	1984	1	27	0	22	36	0	226S	37	53	60	379E	7492461.545	1004062.814	568.42916	568.98456	TRUE	0	0.105261	0.071782	1013	30	8.795	52770.002	43	0.133968
SH	14	1984	1	27	6	22	41	60	227S	37	30	0	375E	7482670.148	962515.8617	549.91852	550.59396	TRUE	0	0.108783	0.071782	1013	30	7.114189	42685.134	43	0.133968
SH	14	1984	1	27	12	22	41	60	227S	37	0	0	370E	7484145.927	911062.4684	533.32913	534.17156	TRUE	0	0.112146	0.071782	1013	30	8.579092	51474.553	43	0.133968
SH	14	1984	1	27	18	22	48	0	228S	36	23	60	364E	7474602.814	849092.7539	509.58115	510.57263	TRUE	0	0.117337	0.071782	1013	30	10.450035	62700.211	43	0.133968
SH	14	1984	1	28	0	23	6	0	231S	35	47	60	358E	7442659.093	786816.024	476.67532	477.73365	TRUE	0	0.125375	0.071782	1013	30	11.665229	69991.374	43	0.133968
SH	14	1984	1	28	6	23	23	60	234S	35	17	60	353E	7410324.886	735050.774	447.21418	448.29595	TRUE	0	0.133563	0.071782	1013	30	10.172324	61033.941	43	0.133968
SH	14	1984	1	28	12	23	48	0	238S	34	42	0	347E	7366878.897	673192.2509	410.4107	411.49035	TRUE	0	0.145418	0.071782	1013	30	12.598535	75591.209	43	0.133968
SH	14	1984	1	28	18	24	6	0	241S	34	12	0	342E	7334180.422	621964.7749	382.14807	383.22177	TRUE	0	0.156046	0.071782	1013	30	10.128953	60773.716	43	0.133968
SH	14	1984	1	29	0	24	30	0	245S	33	36	0	336E	7290282.693	560789.2791	347.01983	348.06069	TRUE	0	0.171618	0.071782	1013	30	12.549294	75295.763	43	0.133968
SH	14	1984	1	29	6	24	53	60	249S	33	0	0	330E	7246125.036	500000	313.16527	314.15915	TRUE	0	0.18985	0.071782	1013	30	12.522463	75134.78	43	0.133968
SH	14	1984	1	29	12	25	18	0	253S	32	17	60	323E	7201649.046	429534.5639	279.72858	280.66623	TRUE	0	0.212055	0.071782	1013	30	13.887936	83327.615	43	0.133968
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	20	1984	2	19	18	26	41	60	267S	49	0	0	490E	6943492.762	2104082.468	975.06309	964.76937	TRUE	0	0.061476	0.071782	1013	30	13.3313	79987.803	55	0.06211
SH	20	1984	2	20	0	27	23	60	274S	48	53	60	489E	6865483.944	2083626.74	959.2005	949.20434	TRUE	0	0.062491	0.071782	1013	30	13.441036	80646.218	55	0.06211
SH	20	1984	2	20	6	28	6	0	281S	49	6	0	491E	6783400.725	2093188.739	961.15624	950.93661	TRUE	0	0.062364	0.071782	1013	30	13.773048	82638.289	55	0.06211
SH	20	1984	2	20	12	28	41	60	287S	49	30	0	495E	6709655.837	2123790.803	976.55653	965.74001	TRUE	0	0.061382	0.071782	1013	30	13.307052	79842.312	55	0.06211
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	22	1984	2	12	6	19	11	60	192S	41	12	0	412E	7856596.432	1364341.6	844.60414	844.03195	TRUE	0	0.07095	0.071782	1013	30	20.547026	123282.16	13	0.092275
SH	22	1984	2	12	12	20	18	0	203S	41	6	0	411E	7734423.01	1347844.768	790.59462	789.89817	TRUE	0	0.075783	0.071782	1013	30	20.547026	123282.16	13	0.092275
SH	22	1984	2	12	18	21	18	0	213S	41	0	0	410E	7623453.097	1331760.679	742.8664	742.05729	TRUE	0	0.080637	0.071782	1013	30	18.688246	112129.48	13	0.092275
SH	22	1984	2	13	0	22	11	60	222S	40	53	60	409E	7523674.396	1316156.218	701.16667	700.25863	TRUE	0	0.085415	0.071782	1013	30	16.831921	100991.53	13	0.092275
SH	22	1984	2	13	6	23	0	0	230S	40	53	60	409E	7434519.141	1311401.617	669.45787	668.40245	TRUE	0	0.089445	0.071782	1013	30	14.880324	89281.945	13	0.092275
SH	22	1984	2	13	12	23	48	0	238S	40	47	60	408E	7345943.331	1296236.62	635.29044	634.15396	TRUE	0	0.094235	0.071782	1013	30	14.977438	89864.627	13	0.092275
SH	22	1984	2	13	18	24	30	0	245S	40	30	0	405E	7269664.398	1261292.16	597.29776	596.21069	TRUE	0	0.1002	0.071782	1013	30	13.983712	83902.27	13	0.092275
SH	22	1984	2	14	0	25	0	0	250S	40	6	0	401E	7216190.047	1217646.998	562.31729	561.35043	TRUE	0	0.106398	0.071782	1013	30	11.504113	69024.679	13	0.092275
SH	22	1984	2	14	6	25	23	60	254S	39	42	0	397E	7173778.532	1174868.037	530.93603	530.08553	TRUE	0	0.112648	0.071782	1013	30	10.039887	60239.323	13	0.092275
SH	22	1984	2	14	12	25	48	0	258S	39	12	0	392E	7131769.9	1122287.615	495.13956	494.42617	TRUE	0	0.120735	0.071782	1013	30	11.216835	67301.01	13	0.092275
SH	22	1984	2	14	18	26	6	0	261S	38	47	60	388E	7100282.753	1080569.826	467.26169	466.64256	TRUE	0	0.127881	0.071782	1013	30	8.711127	52266.761	13	0.092275
SH	22	1984	2	15	0	26	18	0	263S	38	23	60	384E	7079804.09	1039527.706	442.502	441.98157	TRUE	0	0.134972	0.071782	1013	30	7.64459	45867.54	13	0.092275
SH	22	1984	2	15	6	26	23	60	264S	38	0	0	380E	7070318.074	999067.0934	420.83599	420.42143	TRUE	0	0.141852	0.071782	1013	30	6.92629	41557.739	13	0.092275
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	23	1984	2	12	12	20	18	0	203S	41	6	0	411E	7734423.01	1347844.768	790.59462	789.89817	TRUE	0	0.075783	0.071782	1013	30	18.608284	111649.71	11	0.087618
SH	23	1984	2	12	18	21	18	0	213S	41	6	0	411E	7622915.643	1342208.821	746.8499	745.96869	TRUE	0	0.080208	0.071782	1013	30	18.608284	111649.71	11	0.087618
SH	23	1984	2	13	0	22	11	60	222S	41	0	0	410E	7523126.019	1326535.391	705.30791	704.33208	TRUE	0	0.084916	0.071782	1013	30	16.835499	101013	11	0.087618
SH	23	1984	2	13	6	23	0	0	230S	40	53	60	409E	7434519.141	1311401.617	669.45787	668.40245	TRUE	0	0.089445	0.071782	1013	30	14.981665	89889.988	11	0.087618
SH	23	1984	2	13	12	23	48	0	238S	40	47	60	408E	7345943.331	1296236.62	635.29044	634.15396	TRUE	0	0.094235	0.071782	1013	30	14.977438	89864.627	11	0.087618
SH	23	1984	2	13	18	24	30	0	245S	40	30	0	405E	7269664.398	1261292.16	597.29776	596.21069	TRUE	0	0.1002	0.071782	1013	30	13.983712	83902.27	11	0.087618
SH	23	1984	2	14	0	25	0	0	250S	40	6	0	401E	7216190.047	1217646.998	562.31729	561.35043	TRUE	0	0.106398	0.071782	1013	30	11.504113	69024.679	11	0.087618
SH	23	1984	2	14	6	25	23	60	254S	39	42	0	397E	7173778.532	1174868.037	530.93603	530.08553	TRUE	0	0.112648	0.071782	1013	30	10.039887	60239.323	11	0.087618
SH	23	1984	2	14	12	25	48	0	258S	39	12	0	392E	7131769.9	1122287.615	495.13956	494.42617	TRUE	0	0.120735	0.071782	1013	30	11.216835	67301.01	11	0.087618
SH	23	1984	2	14	18	26	6	0	261S	38	47	60	388E	7100282.753	1080569.826	467.26169	466.64256	TRUE	0	0.127881	0.071782	1013	30	8.711127	52266.761	11	0.087618
SH	23	1984	2	14	18	26	6	0	261S	38	47	60	388E	7100282.753	1080569.826	467.26169	466.64256	TRUE	0	0.127881	0.071782	1013	30	8.711127	52266.761	11	0.087618
SH	23	1984	2	15	0	26	18	0</																			

BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	26	1986	3	16	12	20	0	0	200S	45	30	0	455E	7738782.248	1815617.113	986.47301	981.04006	TRUE	0	0.060767	0.071782	1013	30	20.814	124884	51	0.10018
SH	26	1986	3	16	18	20	41	60	207S	44	36	0	446E	7667117.798	1714231.581	919.43625	915.21345	TRUE	0	0.065188	0.071782	1013	30	20.692739	124156.43	51	0.10018
SH	26	1986	3	17	0	21	18	0	213S	43	47	60	438E	7605762.597	1625110.135	861.01372	857.69763	TRUE	0	0.069601	0.071782	1013	30	18.03322	108199.32	51	0.10018
SH	26	1986	3	17	6	22	53	60	229S	42	23	60	424E	7436464.567	1467078.218	739.25926	737.12102	TRUE	0	0.081029	0.071782	1013	30	38.599046	231594.28	51	0.10018
SH	26	1986	3	17	12	24	23	60	244S	41	12	0	412E	7276725.75	133318.061	632.75951	631.27637	TRUE	0	0.09461	0.071782	1013	30	34.724419	208346.51	51	0.10018
SH	26	1986	3	17	18	24	41	60	247S	40	47	60	408E	7245679.163	1290595.229	604.42461	603.13401	TRUE	0	0.099024	0.071782	1013	30	8.802037	52812.223	51	0.10018
SH	26	1986	3	18	0	25	0	0	250S	40	23	60	404E	7214552.202	1248077.069	576.18314	575.06239	TRUE	0	0.103852	0.071782	1013	30	8.782371	52694.228	51	0.10018
SH	26	1986	3	18	6	25	18	0	253S	40	0	0	400E	7183341.458	1205764.6	548.03925	547.06715	TRUE	0	0.109154	0.071782	1013	30	8.763015	52578.089	51	0.10018
SH	26	1986	3	18	12	25	36	0	256S	39	36	0	396E	7152043.572	1163658.906	519.99819	519.15504	TRUE	0	0.115002	0.071782	1013	30	8.743962	52463.771	51	0.10018
SH	26	1986	3	18	18	25	53	60	259S	39	17	60	393E	7120173.986	1131814.498	496.75741	495.98488	TRUE	0	0.120344	0.071782	1013	30	7.508767	45052.601	51	0.10018
SH	26	1986	3	19	0	26	18	0	263S	39	0	0	390E	7077146.016	1099602.55	470.78573	470.05551	TRUE	0	0.126931	0.071782	1013	30	8.958261	53749.566	51	0.10018
SH	26	1986	3	19	6	26	36	0	266S	38	42	0	387E	7045185.363	1068078.704	448.00944	447.33113	TRUE	0	0.133328	0.071782	1013	30	7.481897	44891.382	51	0.10018
SH	26	1986	3	19	12	26	48	0	268S	38	23	60	384E	7024279.157	1037181.591	428.13863	427.52228	TRUE	0	0.139457	0.071782	1013	30	6.217585	37305.51	51	0.10018
SH	26	1986	3	19	18	27	11	60	272S	38	12	0	382E	6980701.253	1015417.721	408.04407	407.41761	TRUE	0	0.146252	0.071782	1013	30	8.118394	48710.366	51	0.10018
SH	26	1986	3	20	0	27	41	60	277S	38	0	0	380E	6926006.1	993325.2875	386.55669	385.90525	TRUE	0	0.154287	0.071782	1013	30	9.831406	58988.434	51	0.10018
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	24	1987	4	22	6	26	23	60	264S	44	0	0	440E	7032537.84	1601208.445	717.69405	713.9137	TRUE	0	0.083455	0.071782	1013	30	8.631772	51790.632	19	0.103723
SH	24	1987	4	22	12	26	30	0	265S	43	30	0	435E	7025627.425	1549880.911	689.94516	686.59508	TRUE	0	0.086799	0.071782	1013	30	8.631772	51790.632	19	0.103723
SH	24	1987	4	22	18	26	48	0	268S	42	53	60	429E	6996969.454	1486890.628	653.12357	650.23201	TRUE	0	0.091673	0.071782	1013	30	11.533833	69203	19	0.103723
SH	24	1987	4	23	0	27	6	0	271S	42	12	0	422E	6968827.149	1414281.001	611.39131	608.96917	TRUE	0	0.097901	0.071782	1013	30	12.978772	77872.635	19	0.103723
SH	24	1987	4	23	6	27	18	0	273S	41	42	0	417E	6950116.024	1362800.618	581.98808	579.86116	TRUE	0	0.102822	0.071782	1013	30	9.12922	54775.323	19	0.103723
SH	24	1987	4	23	12	27	36	0	276S	41	36	0	416E	6917365.425	1350507.743	571.58719	569.49757	TRUE	0	0.104682	0.071782	1013	30	5.830277	34981.66	19	0.103723
SH	24	1987	4	23	18	27	53	60	279S	41	47	60	418E	6882497.684	1367963.526	577.23397	575.01234	TRUE	0	0.103664	0.071782	1013	30	6.498854	38993.125	19	0.103723
SH	24	1987	4	24	0	28	30	0	285S	42	23	60	424E	6811059.035	1422193.979	600.89863	598.2927	TRUE	0	0.099602	0.071782	1013	30	14.948451	89690.705	19	0.103723
SH	24	1987	4	24	6	29	11	60	292S	43	0	0	430E	6728021.59	1474721.483	626.2942	623.291	TRUE	0	0.095582	0.071782	1013	30	16.376097	98256.583	19	0.103723
SH	24	1987	4	24	12	29	48	0	298S	44	6	0	441E	6651029.224	1576124.821	681.25386	677.43718	TRUE	0	0.087902	0.071782	1013	30	21.220052	127320.31	19	0.103723
SH	24	1987	4	24	18	30	18	0	303S	45	47	60	458E	6577274.408	1735849.389	769.7486	764.36276	TRUE	0	0.077829	0.071782	1013	30	29.32183	175930.98	19	0.103723
SH	24	1987	4	25	0	30	48	0	308S	47	30	0	475E	6500326.742	1894201.604	859.10712	851.73105	TRUE	0	0.069755	0.071782	1013	30	29.342975	176057.85	19	0.103723
SH	24	1987	4	25	6	31	11	60	312S	49	0	0	490E	6434237.069	2033447.35	938.48201	928.94135	TRUE	0	0.063868	0.071782	1013	30	25.688964	154133.78	19	0.103723
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	8	1988	1	17	6	20	0	0	200S	44	30	0	445E	7746558.007	1709223.784	942.38687	938.31255	TRUE	0	0.063604	0.071782	1013	30	18.125918	108755.51	29	0.052597
SH	8	1988	1	17	12	20	53	60	209S	44	6	0	441E	7648433.634	1659821.659	889.58789	885.9591	TRUE	0	0.06737	0.071782	1013	30	18.309805	109858.83	29	0.052597
SH	8	1988	1	17	18	21	30	0	215S	44	6	0	441E	7581090.582	1655043.241	866.92711	863.26514	TRUE	0	0.069127	0.071782	1013	30	11.252061	67512.368	29	0.052597
SH	8	1988	1	18	0	21	48	0	218S	43	53	60	439E	7548943.271	1631653.395	846.85636	843.39785	TRUE	0	0.070761	0.071782	1013	30	6.625989	39755.937	29	0.052597
SH	8	1988	1	18	6	22	23	60	224S	43	36	0	436E	7483925.535	1595508.422	811.60987	808.42321	TRUE	0	0.073826	0.071782	1013	30	12.398213	74389.281	29	0.052597
SH	8	1988	1	18	12	22	53	60	229S	43	12	0	432E	7430875.806	1549970.588	775.74361	772.90317	TRUE	0	0.07723	0.071782	1013	30	11.652334	69914.005	29	0.052597
SH	8	1988	1	18	18	23	18	0	233S	42	47	60	428E	7388994.809	1505475.086	743.56809	741.0463	TRUE	0	0.080561	0.071782	1013	30	10.18423	61105.381	29	0.052597
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	9	1988	1	28	6	17	41	60	177S	42	0	0	420E	8019993.785	1457595.416	944.06962	943.02983	TRUE	0	0.063491	0.071782	1013	30	20.208285	121249.71	47	0.142345
SH	9	1988	1	28	12	18	41	60	187S	41	36	0	416E	7910356.573	1409491.367	882.48723	881.66223	TRUE	0	0.067911	0.071782	1013	30	19.954335	119726.01	47	0.142345
SH	9	1988	1	28	18	19	41	60	197S	41	17	60	413E	7800306.136	1372230.261	825.25201	824.50784	TRUE	0	0.072609	0.071782	1013	30	19.364455	116187.3	47	0.142345
SH	9	1988	1	29	0	20	11	60	202S	40	47	60	408E	7747098.699	1316820.047	783.81103	783.35764	TRUE	0	0.076437	0.071782	1013	30	12.803345	76820.07	47	0.142345
SH	9	1988	1	29	6	20	36	0	206S	40	17	60	403E	7704966.492	1262245.555	747.03338	746.84513	TRUE	0	0.080188	0.071782	1013	30	11.490936	68945.617	47	0.142345
SH	9	1988	1	29	12	21	11	60	212S	39	47	60	398E	7640493.155	1207004.232	701.24022	701.23147	TRUE	0	0.085406	0.071782	1013	30	14.150397	84902.384	47	0.142345
SH	9	1988	1	29	18	21	53	60	219S	39	17	60	393E	7564838.421	1151700.491	651.06891	651.17376	TRUE	0	0.091961	0.071782	1013	30	15.618848	93713.086	47	0.142345
SH	9	1988	1	30	0	22	18	0	223S	38	53	60	389E	7522048.173	1108484.624	618.24051	618.44648	TRUE	0	0.096822	0.071782	1013	30	10.136042	60816.252	47	0.142345
SH	9	1988	1	30	6	23	0	0	230S	38	0	0	385E	7445875.072	106												

SH	6	1989	1	10	6	16	0	0	160S	41	0	0	410E	8214466.512	1358315.415	994.55284	994.75313	TRUE	0	0.060274	0.071782	1013	30	2.58834	15530.038	37	0.04332
SH	6	1989	1	10	12	16	11	60	162S	41	0	0	410E	8192158.49	1357445.89	984.38013	984.54215	TRUE	0	0.060896	0.071782	1013	30	3.720827	22324.961	37	0.04332
SH	6	1989	1	10	18	16	23	60	164S	40	53	60	409E	8170275.654	1345800.783	971.0922	971.30456	TRUE	0	0.061727	0.071782	1013	30	4.131408	24788.446	37	0.04332
SH	6	1989	1	11	0	16	41	60	167S	41	0	0	410E	8136390.223	1355226.19	959.12546	959.19178	TRUE	0	0.062496	0.071782	1013	30	5.861979	35171.874	37	0.04332
SH	6	1989	1	11	6	16	53	60	169S	41	12	0	412E	8113194.23	1375798.988	955.61496	955.46528	TRUE	0	0.062725	0.071782	1013	30	5.167457	31004.743	37	0.04332
SH	6	1989	1	11	12	17	6	0	171S	41	23	60	414E	8089957.217	1396323.04	952.35222	951.98389	TRUE	0	0.062939	0.071782	1013	30	5.167192	31003.153	37	0.04332
SH	6	1989	1	11	18	17	11	60	172S	41	36	0	416E	8077845.499	1417298.489	954.21486	953.64208	TRUE	0	0.062817	0.071782	1013	30	4.036855	24221.131	37	0.04332
SH	6	1989	1	12	0	17	18	0	173S	41	42	0	417E	8066192.664	1427525.866	952.77555	952.09077	TRUE	0	0.062912	0.071782	1013	30	2.584074	15504.444	37	0.04332
SH	6	1989	1	12	6	17	18	0	173S	41	53	60	419E	8065203.36	1448989.477	959.71158	958.832	TRUE	0	0.062458	0.071782	1013	30	3.581066	21486.399	37	0.04332
SH	6	1989	1	12	12	17	23	60	174S	42	6	0	421E	8053011.278	1469928.715	961.94002	960.84497	TRUE	0	0.062313	0.071782	1013	30	4.038353	24230.117	37	0.04332
SH	6	1989	1	12	18	17	30	0	175S	42	12	0	422E	8041311.735	1480119.807	960.73159	959.52005	TRUE	0	0.062392	0.071782	1013	30	2.585954	15515.723	37	0.04332
SH	6	1989	1	13	0	17	36	0	176S	42	23	60	424E	8029066.326	1501025.02	963.20945	961.77642	TRUE	0	0.062231	0.071782	1013	30	4.037938	24227.628	37	0.04332
SH	6	1989	1	13	6	17	41	60	177S	42	36	0	426E	8016786.527	1521912.503	965.83799	964.1791	TRUE	0	0.062062	0.071782	1013	30	4.03829	24229.743	37	0.04332
SH	6	1989	1	13	12	17	48	0	178S	42	42	0	427E	8005036.362	1532057.456	964.88563	963.10614	TRUE	0	0.062123	0.071782	1013	30	2.58729	15523.738	37	0.04332
SH	6	1989	1	13	18	17	53	60	179S	42	47	60	428E	7993274.87	1542189.259	963.99589	962.09516	TRUE	0	0.062181	0.071782	1013	30	2.587288	15523.728	37	0.04332
SH	6	1989	1	14	0	18	23	60	184S	43	17	60	433E	7934294.819	1592647.647	960.48991	957.97325	TRUE	0	0.062407	0.071782	1013	30	12.936485	77618.911	37	0.04332
SH	6	1989	1	14	6	18	53	60	189S	43	47	60	438E	7875020.108	1642762.663	958.56055	955.41184	TRUE	0	0.062533	0.071782	1013	30	12.936819	77620.133	37	0.04332
SH	6	1989	1	14	12	19	36	0	196S	44	17	60	443E	7792969.139	1691022.705	949.9708	946.16509	TRUE	0	0.063097	0.071782	1013	30	15.865225	95191.93	37	0.04332
SH	6	1989	1	14	18	20	18	0	203S	44	36	0	446E	7712083.444	1717464.442	934.90427	930.69326	TRUE	0	0.064112	0.071782	1013	30	14.182992	85097.95	37	0.04332
SH	6	1989	1	15	0	20	36	0	206S	44	42	0	447E	767586.941	1725630.347	927.71632	923.36997	TRUE	0	0.064607	0.071782	1013	30	5.908306	35449.834	37	0.04332
SH	6	1989	1	15	6	21	0	0	210S	44	47	60	448E	7631822.848	1732880.483	917.09402	912.61175	TRUE	0	0.065354	0.071782	1013	30	7.722472	46334.832	37	0.04332
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	18	1989	3	7	12	17	18	0	173S	41	23	60	414E	8067632.855	1395348.108	942.53092	942.12739	TRUE	0	0.063594	0.071782	1013	30	13.034903	78209.417	17	0.089344
SH	18	1989	3	7	18	18	0	0	180S	41	23	60	414E	7989501.726	1391849.588	908.55415	908.02738	TRUE	0	0.065967	0.071782	1013	30	13.034903	78209.417	17	0.089344
SH	18	1989	3	8	0	18	36	0	186S	41	23	60	414E	7922537.436	1388744.377	879.96448	879.33207	TRUE	0	0.068105	0.071782	1013	30	11.172708	67036.247	17	0.089344
SH	18	1989	3	8	6	19	23	60	194S	41	23	60	414E	7833259.504	1384451.86	842.70183	841.92868	TRUE	0	0.071109	0.071782	1013	30	14.896844	89381.065	17	0.089344
SH	18	1989	3	8	12	20	11	60	202S	41	23	60	414E	7743990.768	1379986.177	806.5431	805.62966	TRUE	0	0.074289	0.071782	1013	30	14.896728	89380.365	17	0.089344
SH	18	1989	3	8	18	21	18	0	213S	41	23	60	414E	7621261.846	1373564.815	758.91724	757.81257	TRUE	0	0.078937	0.071782	1013	30	20.482799	122896.79	17	0.089344
SH	18	1989	3	9	0	22	18	0	223S	41	30	0	415E	7509120.218	1377827.588	722.34166	720.99329	TRUE	0	0.08292	0.071782	1013	30	18.70377	112222.62	17	0.089344
SH	18	1989	3	9	6	23	53	60	239S	42	12	0	422E	7326091.721	1439191.062	695.64345	693.53803	TRUE	0	0.086091	0.071782	1013	30	32.173534	193041.2	17	0.089344
SH	18	1989	3	9	12	25	18	0	253S	42	47	60	428E	7165386.253	1489580.043	682.78956	680.07528	TRUE	0	0.087705	0.071782	1013	30	28.07	168420	17	0.089344
SH	18	1989	3	9	18	26	23	60	264S	43	17	60	433E	7038468.405	1530656.938	681.7668	678.58458	TRUE	0	0.087837	0.071782	1013	30	22.233265	133399.59	17	0.089344
SH	18	1989	3	10	0	27	41	60	277S	43	23	60	434E	6892248.858	1528593.352	663.6331	660.33271	TRUE	0	0.090227	0.071782	1013	30	24.372351	146234.11	17	0.089344
SH	18	1989	3	10	6	28	53	60	289S	43	42	0	437E	6755420.349	1546433.379	665.54668	662.01761	TRUE	0	0.089969	0.071782	1013	30	22.99777	137986.62	17	0.089344
SH	18	1989	3	10	12	29	53	60	299S	44	12	0	442E	6638877.561	1584779.142	686.18925	682.29488	TRUE	0	0.087273	0.071782	1013	30	20.448186	122689.12	17	0.089344
SH	18	1989	3	10	18	30	23	60	304S	44	42	0	447E	6577927.682	1627714.721	711.54953	707.2539	TRUE	0	0.084173	0.071782	1013	30	12.425726	74554.354	17	0.089344
SH	18	1989	3	11	0	31	6	0	311S	45	36	0	456E	6489818.042	1706149.157	759.25638	754.1571	TRUE	0	0.078902	0.071782	1013	30	19.6605	117963	17	0.089344
SH	18	1989	3	11	6	31	41	60	317S	46	42	0	467E	6409422.423	1803784.078	818.53639	812.28612	TRUE	0	0.073203	0.071782	1013	30	21.079238	126475.43	17	0.089344
SH	18	1989	3	11	12	32	12	0	322S	48	0	0	480E	6335982.251	1920722.349	888.45228	880.57653	TRUE	0	0.067456	0.071782	1013	30	23.014499	138086.99	17	0.089344
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	8	1990	1	2	12	21	48	0	218S	46	23	60	464E	7527793.519	1894353.32	963.61314	956.92841	TRUE	0	0.062205	0.071782	1013	30	14.508693	87052.157	89	0.057865
SH	8	1990	1	2	18	22	18	0	223S	45	36	0	456E	7478751.091	1805366.883	908.76095	903.23736	TRUE	0	0.065952	0.071782	1013	30	16.934306	101605.84	89	0.057865
SH	8	1990	1	3	0	22	53	60	229S	45	6	0	451E	7415650.113	1747440.803	865.37046	860.49194	TRUE	0	0.069251	0.071782	1013	30	14.276208	85657.249	89	0.057865
SH	8	1990	1	3	6	23	30	0	235S	44	36	0	446E	7352548.581	1689938.06	822.49805	818.19377	TRUE	0	0.072852	0.071782	1013	30	14.228657	85371.943	89	0.057865
SH	8	1990	1	3	12	24	0	0	240S	44	0	0	440E	7301466.392	1623466.153	778.28237	774.59179	TRUE	0	0.076978	0.071782	1013	30	13.9721	83832.598	89	0.057865
SH	8	1990	1	3	18	24	41	60	247S	43	42	0	437E	7225476.044	1586473.228	743.48773	740.04834	TRUE	0	0.08057	0.071782	1013	30	14.086054	84516.327	89	0.057865
SH	8	1990	1	4	0	25	6	0	251S	43	36	0	436E	7181496.05	1572713.563	727.75294	724.38225	TRUE	0	0.082306	0.071782	1013	30	7.680365	46082.19	89	0.057865
SH	8	1990	1	4	6	25																					

SH	12	1991	3	2	18	29	36	0	296S	37	30	0	375E	6717068.287	935975.6195	335.34782	334.63644	TRUE	0	0.177498	0.071782	1013	30	22.744665	136467.99	37	0.172734
SH	12	1991	3	3	0	31	11	60	312S	37	23	60	374E	6539880.457	919363.7037	336.95578	336.33631	TRUE	0	0.176665	0.071782	1013	30	29.660806	177964.84	37	0.172734
SH	12	1991	3	3	6	33	12	0	332S	37	42	0	377E	6316683.77	938259.262	393.9393	393.56072	TRUE	0	0.15143	0.071782	1013	30	37.332516	223995.1	37	0.172734
SH	12	1991	3	3	12	35	36	0	356S	38	47	60	388E	6044893.405	1025658.22	520.45492	520.20095	TRUE	0	0.114902	0.071782	1013	30	47.582846	285497.08	37	0.172734
SH	12	1991	3	3	18	38	17	60	383S	40	23	60	404E	5734886.857	1147462.694	686.61267	686.17524	TRUE	0	0.087219	0.071782	1013	30	55.512859	333077.15	37	0.172734
SH	12	1991	3	4	0	40	47	60	408S	43	6	0	431E	5433950.589	1352624.293	882.26212	880.60228	TRUE	0	0.067928	0.071782	1013	30	60.70281	364216.86	37	0.172734
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	11	1993	1	17	6	16	30	0	165S	41	23	60	414E	8156933.375	1399181.925	982.09639	981.8336	TRUE	0	0.061037	0.071782	1013	30	7.768047	46608.28	19	0.072526
SH	11	1993	1	17	12	16	41	60	167S	41	12	0	412E	8135510.095	1376728.546	965.58632	965.47338	TRUE	0	0.062078	0.071782	1013	30	5.172339	31034.032	19	0.072526
SH	11	1993	1	17	18	17	0	0	170S	41	0	0	410E	8102930.509	1353862.963	944.10061	944.10952	TRUE	0	0.063488	0.071782	1013	30	6.633803	39802.818	19	0.072526
SH	11	1993	1	18	0	17	18	0	173S	40	47	60	408E	8070356.465	1331053.416	922.63557	922.75626	TRUE	0	0.064962	0.071782	1013	30	6.627686	39766.114	19	0.072526
SH	11	1993	1	18	6	17	48	0	178S	40	42	0	407E	8015060.831	1318072.926	894.54237	894.64453	TRUE	0	0.066998	0.071782	1013	30	9.466462	56798.77	19	0.072526
SH	11	1993	1	18	12	18	23	60	184S	40	47	60	408E	7947731.247	1325904.108	868.53439	868.43674	TRUE	0	0.069	0.071782	1013	30	11.292747	67783.481	19	0.072526
SH	11	1993	1	18	18	18	53	60	189S	40	53	60	409E	7891522.263	1334072.674	847.99262	847.71772	TRUE	0	0.070667	0.071782	1013	30	9.466572	56799.43	19	0.072526
SH	11	1993	1	19	0	19	11	60	192S	41	6	0	411E	7857096.062	1353744.921	840.97842	840.48717	TRUE	0	0.071255	0.071782	1013	30	6.608414	39650.482	19	0.072526
SH	11	1993	1	19	6	19	30	0	195S	41	17	60	413E	7822619.453	1373322.32	834.39981	833.69151	TRUE	0	0.071815	0.071782	1013	30	6.607889	39647.334	19	0.072526
SH	11	1993	1	19	12	19	48	0	198S	41	23	60	414E	7788623.967	1382240.607	824.47527	823.63189	TRUE	0	0.072677	0.071782	1013	30	5.857637	35145.824	19	0.072526
SH	11	1993	1	19	18	20	0	0	200S	41	36	0	416E	7765227.055	1402218.285	823.14222	822.09886	TRUE	0	0.072795	0.071782	1013	30	5.127602	30765.615	19	0.072526
SH	11	1993	1	20	0	20	11	60	202S	41	47	60	418E	7741786.243	1422137.98	822.1037	820.85829	TRUE	0	0.072886	0.071782	1013	30	5.126906	30761.436	19	0.072526
SH	11	1993	1	20	6	20	23	60	204S	42	17	60	423E	7716522.972	1473606.406	833.44566	831.72771	TRUE	0	0.071897	0.071782	1013	30	9.555731	57334.385	19	0.072526
SH	11	1993	1	20	12	20	41	60	207S	43	6	0	431E	7677887.342	1555894.233	854.18884	851.66256	TRUE	0	0.070156	0.071782	1013	30	15.151089	90906.537	19	0.072526
SH	11	1993	1	20	18	21	11	60	212S	44	17	60	443E	7613246.062	1678503.534	887.09724	883.21975	TRUE	0	0.067559	0.071782	1013	30	23.100947	138605.68	19	0.072526
SH	11	1993	1	21	0	21	41	60	217S	45	30	0	455E	7547218.34	1800500.543	924.24456	918.84383	TRUE	0	0.06485	0.071782	1013	30	23.119815	138718.89	19	0.072526
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	8	1994	1	14	12	21	6	0	211S	46	0	0	460E	7610471.787	1858867.29	968.66892	962.54204	TRUE	0	0.061881	0.071782	1013	30	14.541552	87249.311	32	0.078713
SH	8	1994	1	14	18	21	36	0	216S	45	12	0	452E	7561045.835	1769835.45	913.70711	908.70426	TRUE	0	0.065596	0.071782	1013	30	16.971867	101831.2	32	0.078713
SH	8	1994	1	15	0	22	0	0	220S	44	23	60	444E	7522630.469	1682365.268	862.5325	858.50444	TRUE	0	0.069479	0.071782	1013	30	15.922358	95534.146	32	0.078713
SH	8	1994	1	15	6	22	36	0	226S	43	36	0	436E	7461514.509	1593903.222	804.59147	801.38954	TRUE	0	0.074448	0.071782	1013	30	17.920111	107520.67	32	0.078713
SH	8	1994	1	15	12	22	41	60	227S	43	72	0	432E	7453264.544	1551531.818	782.71211	779.89022	TRUE	0	0.076554	0.071782	1013	30	7.194515	43167.092	32	0.078713
SH	8	1994	1	15	18	23	6	0	231S	43	6	0	431E	7409218.093	1538043.375	764.25979	761.49269	TRUE	0	0.078387	0.071782	1013	30	7.677579	46065.474	32	0.078713
SH	8	1994	1	16	0	23	36	0	236S	43	17	60	433E	7351775.514	1554719.603	757.06605	754.07178	TRUE	0	0.079129	0.071782	1013	30	9.969044	59814.267	32	0.078713
SH	8	1994	1	16	6	23	53	60	239S	43	36	0	436E	7315876.87	1583143.411	761.9603	758.66424	TRUE	0	0.078622	0.071782	1013	30	7.631487	45788.923	32	0.078713
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	13	1994	2	3	18	19	36	0	196S	45	23	60	454E	7784672.625	1808321.973	997.63247	992.33694	TRUE	0	0.060088	0.071782	1013	30	13.116951	78701.704	43	0.04578
SH	13	1994	2	4	0	20	11	60	202S	45	0	0	450E	7720246.506	1760738.253	956.46665	951.73366	TRUE	0	0.062669	0.071782	1013	30	13.348882	80099.29	43	0.04578
SH	13	1994	2	4	6	20	41	60	207S	44	42	0	447E	7666343.072	1724809.082	923.89712	919.54833	TRUE	0	0.064874	0.071782	1013	30	10.796715	64780.287	43	0.04578
SH	13	1994	2	4	12	21	6	0	211S	44	30	0	445E	7622938.38	1700394.294	899.82884	895.71632	TRUE	0	0.066605	0.071782	1013	30	8.300015	49800.092	43	0.04578
SH	13	1994	2	4	18	21	30	0	215S	44	23	60	444E	7578782.124	1686561.257	880.50323	876.4952	TRUE	0	0.068064	0.071782	1013	30	7.712054	46272.323	43	0.04578
SH	13	1994	2	5	0	21	48	0	218S	44	17	60	443E	7545875.399	1673569.129	865.06068	861.15606	TRUE	0	0.069276	0.071782	1013	30	5.89644	35378.637	43	0.04578
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	23	1994	3	25	6	15	11	60	152S	38	36	0	386E	8311817.281	1102311.645	970.29797	972.49577	TRUE	0	0.061778	0.071782	1013	30	19.479513	116877.08	62	0.094329
SH	23	1994	3	25	12	15	35	60	156S	37	36	0	376E	8269972.839	993585.1737	925.26736	927.89418	TRUE	0	0.064778	0.071782	1013	30	19.416776	116500.66	62	0.094329
SH	23	1994	3	25	18	16	11	60	162S	36	53	60	369E	8204976.413	917123.3829	877.02476	879.77702	TRUE	0	0.068333	0.071782	1013	30	16.72568	100354.68	62	0.094329
SH	23	1994	3	26	0	16	48	0	168S	36	17	60	363E	8139639.216	851796.243	831.4194	834.20161	TRUE	0	0.072072	0.071782	1013	30	15.39894	92393.639	62	0.094329
SH	23	1994	3	26	6	17	23	60	174S	35	53	60	359E	8073860.746	808131.8547	789.97232	792.68934	TRUE	0	0.075843	0.071782	1013	30	13.158632	78951.795	62	0.094329
SH	23	1994	3	26	12	18	0	0	180S	35	47	60	358E	8007574.307	796511.4755	754.18399	756.74539	TRUE	0	0.079431	0.071782	1013	30	11.216215	67297.29	62	0.094329
SH	23	1994	3	26	18	18	36	0	186S	35	42	0	357E	7941288.238	784931.406	718.45867	720.86404	TRUE	0	0.083367	0.071782	1013	30	11.214996	67289.977	62	0.094329
SH	23	1994	3	27	0	19	6	0	191S	35	42	0	357E	7885916.27	78												

SH	9	1995	1	25	0	24	48	0	248S	41	6	0	411E	7232749.223	1320468.974	615.21246	613.72919	TRUE	0	0.097296	0.071782	1013	30	16.832301	100993.8	32	0.110365
SH	9	1995	1	25	6	25	48	0	258S	41	17	60	413E	7120038.453	1333868.298	595.6872	593.94488	TRUE	0	0.100469	0.071782	1013	30	18.917408	113504.45	32	0.110365
SH	9	1995	1	25	12	27	0	0	270S	41	17	60	413E	6986286.819	1325191.95	567.34794	565.47351	TRUE	0	0.10546	0.071782	1013	30	22.338792	134032.75	32	0.110365
SH	9	1995	1	25	18	28	11	60	282S	41	17	60	413E	6852560.663	1316153.221	546.98291	545.02231	TRUE	0	0.109364	0.071782	1013	30	22.338546	134031.28	32	0.110365
SH	9	1995	1	26	0	29	30	0	295S	41	17	60	413E	6707720.267	1305957.153	534.97048	532.98056	TRUE	0	0.111804	0.071782	1013	30	24.199805	145198.83	32	0.110365
SH	9	1995	1	26	6	30	41	60	307S	41	30	0	415E	6572594.354	1315428.762	544.16816	542.11538	TRUE	0	0.109926	0.071782	1013	30	22.576244	135457.46	32	0.110365
SH	9	1995	1	26	12	31	48	0	318S	42	6	0	421E	6445385.145	1363022.868	581.75131	579.45968	TRUE	0	0.102863	0.071782	1013	30	22.636856	135821.14	32	0.110365
SH	9	1995	1	26	18	32	30	0	325S	43	12	0	432E	6357822.893	1360326.857	644.74269	641.82954	TRUE	0	0.092859	0.071782	1013	30	21.816924	130901.54	32	0.110365
SH	9	1995	1	27	0	32	47	60	328S	44	23	60	444E	6312560.586	1570253.219	708.62251	704.82397	TRUE	0	0.08452	0.071782	1013	30	19.813352	118880.11	32	0.110365
SH	9	1995	1	27	6	33	0	0	330S	45	36	0	456E	6276963.33	1680901.952	771.37772	766.49471	TRUE	0	0.077665	0.071782	1013	30	19.372308	116233.85	32	0.110365
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	6	1996	1	12	6	17	0	0	170S	42	30	0	425E	8095665.657	1515096.058	995.2928	993.8314	TRUE	0	0.060229	0.071782	1013	30	21.9297	131578.2	59	0.060102
SH	6	1996	1	12	12	17	11	60	172S	41	30	0	415E	8078323.131	1406566.56	950.81438	950.33575	TRUE	0	0.063041	0.071782	1013	30	18.317732	109906.39	59	0.060102
SH	6	1996	1	12	18	17	30	0	175S	40	42	0	407E	8048498.155	1319443.8	909.42055	909.58334	TRUE	0	0.065904	0.071782	1013	30	15.347733	92086.397	59	0.060102
SH	6	1996	1	13	0	17	36	0	176S	39	47	60	398E	8041052.146	1222867.998	875.99124	876.80832	TRUE	0	0.068414	0.071782	1013	30	16.143737	96862.421	59	0.060102
SH	6	1996	1	13	6	17	36	0	176S	38	53	60	389E	8044282.927	1126894.237	849.58217	850.97321	TRUE	0	0.070535	0.071782	1013	30	16.004688	96028.125	59	0.060102
SH	6	1996	1	13	12	17	36	0	176S	38	17	60	383E	8046178.209	1062983.952	833.20138	834.92254	TRUE	0	0.071918	0.071782	1013	30	10.656397	63938.381	59	0.060102
SH	6	1996	1	13	18	17	48	0	178S	37	30	0	375E	8026202.863	977317.7178	802.12667	804.16918	TRUE	0	0.074697	0.071782	1013	30	14.660717	87964.3	59	0.060102
SH	6	1996	1	14	0	18	0	0	180S	36	42	0	367E	8005900.129	891913.591	772.61882	774.91087	TRUE	0	0.077541	0.071782	1013	30	14.6307	87784.201	59	0.060102
SH	6	1996	1	14	6	18	18	0	183S	35	53	60	359E	7974185.409	806584.0953	739.21996	741.66488	TRUE	0	0.081033	0.071782	1013	30	15.172111	91032.666	59	0.060102
SH	6	1996	1	14	12	18	36	0	186S	35	36	0	356E	7941444.121	774372.468	716.54501	718.9743	TRUE	0	0.083589	0.071782	1013	30	7.655029	45930.174	59	0.060102
SH	6	1996	1	14	18	18	53	60	189S	35	17	60	353E	7908661.558	742270.7573	694.01416	696.41921	TRUE	0	0.086292	0.071782	1013	30	7.647106	45882.636	59	0.060102
SH	6	1996	1	15	0	19	6	0	191S	34	47	60	348E	7887134.181	689360.9937	673.95467	676.39186	TRUE	0	0.088851	0.071782	1013	30	9.520258	577121.546	59	0.060102
SH	6	1996	1	15	6	19	18	0	193S	34	17	60	343E	7865465.466	636587.0106	654.67994	657.12797	TRUE	0	0.091456	0.071782	1013	30	9.508222	57049.334	59	0.060102
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	14	1997	1	6	12	18	6	0	181S	43	12	0	432E	7968529.019	1583842.893	970.08192	967.70921	TRUE	0	0.061791	0.071782	1013	30	15.395057	92370.341	58	0.048346
SH	14	1997	1	6	18	18	53	60	189S	43	6	0	431E	7879495.506	1568059.98	930.44151	928.10133	TRUE	0	0.064419	0.071782	1013	30	15.070268	90421.606	58	0.048346
SH	14	1997	1	7	0	19	41	60	197S	43	0	0	430E	7790516.433	1552176.884	891.69158	889.3742	TRUE	0	0.067212	0.071782	1013	30	15.064259	90385.553	58	0.048346
SH	14	1997	1	7	6	20	30	0	205S	43	0	0	430E	7700940.508	1546748.262	858.13502	855.73117	TRUE	0	0.069834	0.071782	1013	30	14.956712	89740.271	58	0.048346
SH	14	1997	1	7	12	21	11	60	212S	43	30	0	435E	7619130.507	1594345.99	851.62449	848.6378	TRUE	0	0.070366	0.071782	1013	30	15.774822	94648.93	58	0.048346
SH	14	1997	1	7	18	21	53	60	219S	44	6	0	441E	7536202.734	1651786.629	852.32124	848.63732	TRUE	0	0.070309	0.071782	1013	30	16.813059	100878.35	58	0.048346
SH	14	1997	1	8	0	22	48	0	228S	44	42	0	447E	7430321.724	1706696.155	849.43509	845.03454	TRUE	0	0.070547	0.071782	1013	30	19.878691	119272.14	58	0.048346
SH	14	1997	1	8	6	23	48	0	238S	45	47	60	458E	7307950.585	1811300	872.69383	866.94763	TRUE	0	0.068671	0.071782	1013	30	26.831087	160986.52	58	0.048346
SH	14	1997	1	8	12	25	6	0	251S	46	12	0	462E	7157539.384	1838540.975	859.37765	853.1691	TRUE	0	0.069733	0.071782	1013	30	25.476351	152858.1	58	0.048346
SH	14	1997	1	8	18	26	23	60	264S	46	12	0	462E	7011142.389	1823623.47	831.99996	825.86684	TRUE	0	0.072022	0.071782	1013	30	24.525844	147155.06	58	0.048346
SH	14	1997	1	9	0	27	23	60	274S	46	17	60	463E	6897506.935	1821721.623	820.64525	814.45532	TRUE	0	0.073016	0.071782	1013	30	18.941895	113651.37	58	0.048346
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	20	1997	1	24	12	22	48	0	228S	47	30	0	475E	7403659.273	1999422.69	986.31887	977.98384	TRUE	0	0.060776	0.071782	1013	30	18.033012	108198.07	56	0.172197
SH	20	1997	1	24	18	23	0	0	230S	46	30	0	465E	7391329.4	1892501.173	930.65298	923.90148	TRUE	0	0.064404	0.071782	1013	30	17.938349	107630.09	56	0.172197
SH	20	1997	1	25	0	23	18	0	233S	45	42	0	457E	7365206.237	1806010.654	882.24893	876.61768	TRUE	0	0.067929	0.071782	1013	30	15.058247	90349.485	56	0.172197
SH	20	1997	1	25	6	23	36	0	236S	44	47	60	448E	7339593.419	1709714.443	829.19323	824.66173	TRUE	0	0.072265	0.071782	1013	30	16.607375	99644.251	56	0.172197
SH	20	1997	1	25	12	23	53	60	239S	43	47	60	438E	7314292.674	1603742.546	771.5989	768.11099	TRUE	0	0.077643	0.071782	1013	30	18.158385	108950.31	56	0.172197
SH	20	1997	1	25	18	24	6	0	241S	42	42	0	427E	7300259.947	1489001.252	712.73869	710.21665	TRUE	0	0.084033	0.071782	1013	30	19.266034	115596.2	56	0.172197
SH	20	1997	1	26	0	24	18	0	243S	41	36	0	416E	7285384.475	1374861.309	654.60031	652.87163	TRUE	0	0.091467	0.071782	1013	30	19.184199	115105.2	56	0.172197
SH	20	1997	1	26	6	24	41	60	247S	40	47	60	408E	7245679.163	1290595.229	604.42461	603.13401	TRUE	0	0.099024	0.071782	1013	30	15.525323	93151.94	56	0.172197
SH	20	1997	1	26	12	25	0	0	250S	40	6	0	401E	7216190.047	1217646.998	562.31729	561.35043	TRUE	0	0.106398	0.071782	1013	30	13.113873	78683.241	56	0.172197
SH	20	1997	1	26	18	25	23	60	254S	39	23	60	394E	7157271.95	1144568.202	517.09719	516.37859	TRUE	0	0.115643	0.071782	1013	30	13.959068	83754.41	56	0.172197
SH	20	1997	1	27	0	25	41	60	257																		

SH	30	1997	2	25	18	14	54	0	149S	38	53	60	389E	8344297.921	1135569.641	993.96575	996.05366	TRUE	0	0.060309	0.071782	1013	30	20.599923	123599.54	21	0.089738
SH	30	1997	2	26	0	15	54	0	159S	39	23	60	394E	8231592.412	1186307.346	953.09466	954.59364	TRUE	0	0.062891	0.071782	1013	30	20.599923	123599.54	21	0.089738
SH	30	1997	2	26	6	16	53	60	169S	39	53	60	399E	8118571.737	1236336.445	914.91905	915.82642	TRUE	0	0.065509	0.071782	1013	30	20.599746	123598.48	21	0.089738
SH	30	1997	2	26	12	17	53	60	179S	40	0	0	400E	8006876.706	1242964.723	866.98196	867.59051	TRUE	0	0.069123	0.071782	1013	30	18.648588	111891.53	21	0.089738
SH	30	1997	2	26	18	18	36	0	186S	40	0	0	400E	7928959.538	1239968.46	832.02595	832.47708	TRUE	0	0.07202	0.071782	1013	30	12.995793	77974.757	21	0.089738
SH	30	1997	2	27	0	19	18	0	193S	40	0	0	400E	7851045.29	1236861.532	797.72456	798.01871	TRUE	0	0.075108	0.071782	1013	30	12.996028	77976.17	21	0.089738
SH	30	1997	2	27	6	19	48	0	198S	40	12	0	402E	7794504.38	1255647.368	780.65698	780.70713	TRUE	0	0.076745	0.071782	1013	30	9.930008	59580.049	21	0.089738
SH	30	1997	2	27	12	20	0	0	200S	40	12	0	402E	7772236.866	1254689.791	771.2239	771.23067	TRUE	0	0.077681	0.071782	1013	30	3.714682	22288.093	21	0.089738
SH	30	1997	2	27	18	20	11	60	202S	40	12	0	402E	7749969.65	1253722.999	761.86094	761.8244	TRUE	0	0.078633	0.071782	1013	30	3.714699	22288.194	21	0.089738
SH	30	1997	2	28	0	20	18	0	203S	39	53	60	399E	7740188.801	1221732.569	746.4873	746.62122	TRUE	0	0.080247	0.071782	1013	30	5.575374	33452.244	21	0.089738
SH	30	1997	2	28	6	20	23	60	204S	39	36	0	396E	7730359.899	1189796.613	731.23582	731.5286	TRUE	0	0.081915	0.071782	1013	30	5.569043	33414.257	21	0.089738
SH	30	1997	2	28	12	20	30	0	205S	39	12	0	392E	7720884.284	1147440.232	712.70067	713.19612	TRUE	0	0.084038	0.071782	1013	30	7.233891	43403.345	21	0.089738
SH	30	1997	2	28	18	20	30	0	205S	38	47	60	388E	772426.533	1105557.585	699.3226	700.0279	TRUE	0	0.08564	0.071782	1013	30	6.985172	41911.032	21	0.089738
SH	30	1997	3	1	0	20	30	0	205S	38	17	60	383E	7724207.575	1053235.73	683.23154	684.17729	TRUE	0	0.087649	0.071782	1013	30	8.72536	52352.16	21	0.089738
SH	30	1997	3	1	6	20	18	0	203S	37	42	0	377E	7748320.284	991127.5411	675.14814	676.40693	TRUE	0	0.088694	0.071782	1013	30	11.104116	66624.694	21	0.089738
SH	30	1997	3	1	12	20	0	0	200S	37	6	0	371E	7783260.503	929163.9412	674.02735	675.59927	TRUE	0	0.088841	0.071782	1013	30	11.855972	71135.832	21	0.089738
SH	30	1997	3	1	18	19	48	0	198S	36	30	0	365E	7806852.571	866755.4331	669.49411	671.32285	TRUE	0	0.08944	0.071782	1013	30	11.119812	66718.87	21	0.089738
SH	30	1997	3	2	0	19	36	0	196S	35	47	60	358E	7830372.84	793718.5804	664.59149	666.67327	TRUE	0	0.090097	0.071782	1013	30	12.788433	76730.6	21	0.089738
SH	30	1997	3	2	6	19	18	0	193S	35	6	0	351E	7864640.683	720664.5354	667.72624	670.05056	TRUE	0	0.089676	0.071782	1013	30	13.448646	80691.874	21	0.089738
SH	30	1997	3	2	12	19	0	0	190S	34	17	60	343E	7898667.096	636834.1747	672.01761	674.55549	TRUE	0	0.089106	0.071782	1013	30	15.078799	90472.793	21	0.089738
SH	30	1997	3	2	18	18	36	0	186S	33	30	0	335E	7943357.301	552749.9499	685.43098	688.15546	TRUE	0	0.087369	0.071782	1013	30	15.870458	95222.745	21	0.089738
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	13	1998	1	17	12	15	35	60	156S	40	0	0	400E	8262909.639	1252024.841	985.57035	986.69872	TRUE	0	0.060822	0.071782	1013	30	14.255775	85534.652	24	0.117179
SH	13	1998	1	17	18	16	18	0	163S	38	53	60	389E	8188733.946	1131246.337	918.40911	920.13436	TRUE	0	0.065261	0.071782	1013	30	23.622894	141737.36	24	0.117179
SH	13	1998	1	18	0	16	48	0	168S	37	42	0	377E	8136617.431	1001282.348	861.39481	863.632	TRUE	0	0.06957	0.071782	1013	30	23.337362	140024.17	24	0.117179
SH	13	1998	1	18	6	17	0	0	170S	36	42	0	367E	8116721.096	894068.6137	828.17269	830.76095	TRUE	0	0.072354	0.071782	1013	30	18.174042	109044.25	24	0.117179
SH	13	1998	1	18	12	17	11	60	172S	36	0	0	360E	8095847.689	819110.209	803.14891	805.89917	TRUE	0	0.074602	0.071782	1013	30	12.968403	77810.421	24	0.117179
SH	13	1998	1	18	18	17	53	60	186S	35	47	60	358E	8018648.643	796678.3995	759.83112	762.42278	TRUE	0	0.078842	0.071782	1013	30	13.398672	80392.032	24	0.117179
SH	13	1998	1	19	0	18	36	0	186S	35	36	0	356E	7941444.121	774372.468	716.54501	718.9743	TRUE	0	0.083589	0.071782	1013	30	13.39371	80362.26	24	0.117179
SH	13	1998	1	19	6	19	18	0	193S	35	17	60	353E	7864373.733	741688.7039	671.39808	673.68293	TRUE	0	0.089188	0.071782	1013	30	13.952372	83714.235	24	0.117179
SH	13	1998	1	19	12	20	6	0	201S	35	0	0	350E	7776198.026	709110.6813	620.64174	622.74568	TRUE	0	0.096449	0.071782	1013	30	15.666917	94001.504	24	0.117179
SH	13	1998	1	19	18	20	53	60	209S	35	0	0	350E	7687623.972	708027.4655	575.72834	577.59576	TRUE	0	0.103934	0.071782	1013	30	14.763446	88580.678	24	0.117179
SH	13	1998	1	20	0	21	41	60	217S	35	17	60	353E	7598611.669	537950.7866	537.99336	539.56835	TRUE	0	0.11118	0.071782	1013	30	15.651229	93907.375	24	0.117179
SH	13	1998	1	20	6	22	23	60	224S	35	42	0	357E	7520400.355	777981.4495	510.29999	511.58401	TRUE	0	0.117173	0.071782	1013	30	14.643413	87860.478	24	0.117179
SH	13	1998	1	20	12	22	53	60	229S	36	23	60	364E	7463519.337	848837.0487	504.57851	505.54146	TRUE	0	0.118492	0.071782	1013	30	15.143725	90862.348	24	0.117179
SH	13	1998	1	20	18	23	11	60	232S	37	12	0	372E	7428122.8	930053.0829	516.06459	516.70435	TRUE	0	0.115873	0.071782	1013	30	14.765725	88594.351	24	0.117179
SH	13	1998	1	21	0	23	36	0	236S	37	53	60	379E	7381477.906	1000329.778	523.1512	523.44321	TRUE	0	0.114314	0.071782	1013	30	14.057975	84347.851	24	0.117179
SH	13	1998	1	21	6	24	6	0	241S	38	36	0	386E	7323306.952	1069749.674	529.68919	529.58767	TRUE	0	0.112912	0.071782	1013	30	15.095052	90570.315	24	0.117179
SH	13	1998	1	21	12	24	41	60	247S	39	17	60	393E	7253568.023	1138108.341	536.59124	536.05895	TRUE	0	0.111469	0.071782	1013	30	16.275771	97654.623	24	0.117179
SH	13	1998	1	21	18	25	11	60	252S	40	23	60	404E	7192286.784	1246850.296	569.85688	568.70201	TRUE	0	0.104999	0.071782	1013	30	20.803447	124820.68	24	0.117179
SH	13	1998	1	22	0	26	0	0	260S	41	47	60	418E	7094416.719	1382832.494	615.21249	613.14029	TRUE	0	0.097296	0.071782	1013	30	27.923361	167540.17	24	0.117179
SH	13	1998	1	22	6	26	11	60	262S	42	47	60	428E	7064800.82	1482031.309	660.67328	657.89133	TRUE	0	0.090663	0.071782	1013	30	17.254232	103525.39	24	0.117179
SH	13	1998	1	22	12	26	11	60	262S	43	53	60	439E	7055807.38	1593034.794	716.72497	713.03948	TRUE	0	0.083568	0.071782	1013	30	18.561202	111367.21	24	0.117179
SH	13	1998	1	22	18	26	11	60	262S	45	0	0	450E	7045788.551	1704286.042	773.38455	768.62559	TRUE	0	0.077465	0.071782	1013	30	18.616911	111701.46	24	0.117179
SH	13	1998	1	23	0	26	18	0	263S	46	6	0	461E	7023462.171	1814651.879	828.65081	822.63582	TRUE	0	0.072312	0.071782	1013	30	18.766907	112601.44	24	0.117179
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	21	1998	2	1	0	18	6	0	181S	35	36	0	356E	7996810.198	775163.9842	744.80836	747.38876	TRUE	25	2.010679	0.186735	1002	30	9.395759	56374.556		

SH	23	1998	2	18	6	23	30	0	235S	42	17	60	423E	7370096.372	1452401.503	713.68884	711.55598	TRUE	35	2.937269	0.244506	996	30	16.439882	98639.294	25	3.27336
SH	23	1998	2	18	12	22	41	60	227S	41	17	60	413E	7465675.735	1354577.133	698.20479	696.93331	TRUE	35	3.002171	0.244506	996	30	22.794384	136766.3	25	3.27336
SH	23	1998	2	18	18	21	53	60	219S	39	47	60	398E	7562614.674	1203592.989	669.97086	669.80474	TRUE	35	3.128192	0.244506	996	30	29.904185	179425.11	25	3.27336
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	12	1999	1	15	12	20	23	60	204S	39	0	0	390E	7732781.354	1126904.112	710.8085	711.43578	TRUE	20	1.685217	0.160376	1004	30	12.239219	73435.313	16	7.563509
SH	12	1999	1	15	18	20	23	60	204S	39	42	0	397E	7729933.446	1200284.181	734.73053	734.96393	TRUE	25	2.038167	0.186735	1002	30	12.239219	73435.313	16	7.563509
SH	12	1999	1	16	0	20	41	60	207S	40	17	60	403E	7693831.433	1261742.471	742.47454	742.26506	TRUE	30	2.420374	0.214779	999	30	11.879577	71277.463	16	7.563509
SH	12	1999	1	16	6	21	18	0	213S	40	30	0	405E	7626037.182	1279547.802	723.2538	722.788	TRUE	30	2.484478	0.214779	999	30	11.68224	70093.44	16	7.563509
SH	12	1999	1	16	12	22	0	0	220S	40	30	0	405E	7548071.806	1275760.641	693.16491	692.5572	TRUE	30	2.59193	0.214779	999	30	13.00955	78057.302	16	7.563509
SH	12	1999	1	16	18	22	41	60	227S	40	17	60	403E	7471147.963	1251194.663	656.06116	655.43434	TRUE	35	3.194242	0.244506	996	30	13.458542	80751.253	16	7.563509
SH	12	1999	1	17	0	23	11	60	232S	39	42	0	397E	7418470.405	1186696.868	611.09678	610.69718	TRUE	35	3.428182	0.244506	996	30	13.879332	83275.991	16	7.563509
SH	12	1999	1	17	6	23	41	60	237S	39	12	0	392E	7365184.1	1132903.479	570.38474	570.11809	TRUE	35	3.671569	0.244506	996	30	12.619605	75717.627	16	7.563509
SH	12	1999	1	17	12	24	23	60	244S	38	47	60	388E	7289146.395	1088753.218	526.20177	525.94842	TRUE	40	4.546211	0.275918	993	30	14.65433	87925.98	16	7.563509
SH	12	1999	1	17	18	25	18	0	253S	38	47	60	388E	7189159.6	1084484.947	493.27644	492.82194	TRUE	45	5.453433	0.309013	990	30	16.679643	100077.86	16	7.563509
SH	12	1999	1	18	0	26	18	0	263S	38	53	60	389E	7077608.75	1089587.391	466.03728	465.34376	TRUE	55	7.051757	0.380257	983	30	18.611247	111667.48	16	7.563509
SH	12	1999	1	18	6	27	23	60	274S	39	12	0	392E	6953938.497	1113637.368	452.97241	451.9936	TRUE	65	8.572196	0.458238	976	30	20.997839	125987.03	16	7.563509
SH	12	1999	1	18	12	28	30	0	285S	39	47	60	398E	6828477.182	1166338.675	465.05196	463.74377	TRUE	55	7.066574	0.380257	983	30	22.680124	136080.75	16	7.563509
SH	12	1999	1	18	18	29	36	0	296S	41	0	0	410E	6698650.173	1275954.52	518.73663	516.89251	TRUE	55	6.340403	0.380257	983	30	28.31896	169913.76	16	7.563509
SH	12	1999	1	19	0	30	48	0	308S	43	36	0	436E	6543951.283	1516811.549	653.98545	650.62575	TRUE	55	5.035388	0.380257	983	30	47.709729	286258.37	16	7.563509
SH	12	1999	1	19	6	32	12	0	322S	46	0	0	460E	6361876.228	1729797.194	784.85254	779.45526	TRUE	45	3.435118	0.309013	990	30	46.700645	280203.87	16	7.563509
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	21	1999	2	12	12	19	23	60	194S	37	36	0	376E	7848457.067	983388.4104	719.12501	720.6746	TRUE	20	1.665796	0.160376	1004	30	10.195403	61172.421	18	4.246779
SH	21	1999	2	12	18	19	48	0	198S	38	0	0	380E	7802888.422	1024199.727	709.59041	710.85898	TRUE	25	2.110124	0.186735	1002	30	10.195403	61172.421	18	4.246779
SH	21	1999	2	13	0	20	48	0	208S	38	17	60	380E	7690899.442	1052146.004	668.35396	669.2204	TRUE	30	2.687768	0.214779	999	30	19.237208	115423.25	18	4.246779
SH	21	1999	2	13	6	21	41	60	217S	37	53	60	379E	7592343.68	1007291.398	611.2995	612.09585	TRUE	30	2.937472	0.214779	999	30	18.04714	108282.84	18	4.246779
SH	21	1999	2	13	12	22	18	0	223S	37	42	0	377E	7526414.11	984500.4899	575.72872	576.44032	TRUE	35	3.637674	0.244506	996	30	11.62628	69757.679	18	4.246779
SH	21	1999	2	13	18	23	11	60	232S	37	47	60	378E	7426214.789	991582.854	537.28138	537.71488	TRUE	40	4.45305	0.25918	993	30	16.741552	100449.31	18	4.246779
SH	21	1999	2	14	0	23	23	60	234S	38	23	60	384E	7401840.65	1052319.682	550.90788	551.05902	TRUE	40	4.343565	0.275918	993	30	10.907516	65445.098	18	4.246779
SH	21	1999	2	14	6	23	6	0	231S	39	6	0	391E	7432310.861	1125499.203	591.03108	590.95015	TRUE	45	4.556548	0.309013	990	30	13.211607	79269.642	18	4.246779
SH	21	1999	2	14	12	22	48	0	228S	39	36	0	396E	7463428.873	1178427.207	623.51992	623.26085	TRUE	40	3.840225	0.275918	993	30	10.232986	61397.917	18	4.246779
SH	21	1999	2	14	18	22	0	0	220S	40	12	0	402E	7549578.491	1244609.263	681.2212	680.79936	TRUE	35	3.076732	0.244506	996	30	18.106031	108636.19	18	4.246779
SH	21	1999	2	15	0	20	48	0	208S	40	30	0	405E	7681729.633	1282181.553	745.43575	745.07235	TRUE	35	2.812589	0.244506	996	30	22.898084	137388.5	18	4.246779
SH	21	1999	2	15	6	19	48	0	198S	40	42	0	407E	7792167.465	1308360.625	798.52729	798.22645	TRUE	30	2.250973	0.214779	999	30	18.916379	113498.28	18	4.246779
SH	21	1999	2	15	12	19	18	0	193S	40	23	60	404E	7849278.436	1279147.611	811.43167	811.45043	TRUE	30	2.215273	0.214779	999	30	10.69146	64148.758	18	4.246779
SH	21	1999	2	15	18	18	41	60	187S	39	53	60	399E	7918243.499	1228925.397	823.82018	824.31658	TRUE	30	2.182049	0.214779	999	30	14.218973	85313.837	18	4.246779
SH	21	1999	2	16	0	18	36	0	186S	39	36	0	396E	7930574.511	1197529.664	819.18897	819.90512	TRUE	30	2.194352	0.214779	999	30	5.621748	33730.49	18	4.246779
SH	21	1999	2	16	6	18	30	0	185S	39	12	0	392E	7943208.964	1155502.477	811.85196	812.83927	TRUE	25	1.845108	0.186735	1002	30	7.314206	43885.234	18	4.246779
SH	21	1999	2	16	12	18	30	0	185S	38	53	60	389E	7944279.124	1123692.008	802.8645	804.02555	TRUE	25	1.865705	0.186735	1002	30	5.304744	31828.465	18	4.246779
SH	21	1999	2	16	18	18	30	0	185S	38	30	0	385E	7945622.132	1081299.399	791.27057	792.64785	TRUE	25	1.892964	0.186735	1002	30	7.068979	42413.877	18	4.246779
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	23	1999	2	24	18	20	23	60	204S	35	23	60	354E	7742424.397	750468.1336	611.76748	613.70384	TRUE	25	2.44603	0.186735	1002	30	3.939075	23634.448	20	2.551073
SH	23	1999	2	25	0	20	30	0	205S	35	36	0	356E	771175.2625	771175.2625	610.51438	612.37712	TRUE	25	2.451026	0.186735	1002	30	3.939075	23634.448	20	2.551073
SH	23	1999	2	25	6	20	36	0	206S	35	47	60	358E	7719609.89	791856.9026	609.50625	611.29232	TRUE	25	2.455061	0.186735	1002	30	3.937637	23625.824	20	2.551073
SH	23	1999	2	25	12	20	41	60	207S	36	0	0	360E	7708159.759	812513.0282	608.74385	610.45028	TRUE	25	2.458121	0.186735	1002	30	3.936231	23617.889	20	2.551073
SH	23	1999	2	25	18	20	41	60	207S	36	12	0	362E	7707760.599	833363.0862	613.60077	615.2538	TRUE	25	2.438757	0.186735	1002	30	3.475646	20853.878	20	2.551073
SH	23	1999	2	26	0	20	41	60	207S	36	23	60	364E	7707335.565	854216.2148	618.613	620.20943	TRUE	25	2.41909	0.186735	1002	30	3.476243	20857.46	20	2.551073
SH	23	1999	2	26	6	20	41	60	207S	36	36	0	366E	7706884.633	875072.6066	623.77692	625.31355	TRUE	25	2.399156	0.186735	1002	30	3.476878	20861.266	20	2.551073
SH	23																										

SH	21	2000	4	6	6	18	0	0	180S	38	53	60	389E	7999836.716	1125490.078	828.71449	830.00317	TRUE	70	5.061458	0.499754	972	30	12.836154	77016.924	72	7.509657
SH	21	2000	4	6	12	18	36	0	186S	38	42	60	387E	7933854.256	1102139.99	791.84146	793.08684	TRUE	70	5.29649	0.499754	972	30	11.665371	69992.275	72	7.509657
SH	21	2000	4	6	18	18	53	60	189S	38	36	0	386E	7900868.13	1090498.643	773.45041	774.67062	TRUE	90	6.971214	0.682662	954	30	5.830012	34980.023	72	7.509657
SH	21	2000	4	7	0	19	0	0	190S	38	23	60	384E	7890423.789	1069017.861	762.46037	763.75608	TRUE	90	7.071388	0.682662	954	30	3.980886	23885.314	72	7.509657
SH	21	2000	4	7	6	18	48	0	188S	38	17	60	383E	7912950.684	1059123.65	769.97298	771.37149	TRUE	100	4.100665	0.784221	944	30	4.100665	24603.992	72	7.509657
SH	21	2000	4	7	12	18	36	0	186S	38	17	60	383E	7935155.433	1059784.102	780.41074	781.86286	TRUE	100	7.676915	0.784221	944	30	3.702428	22214.569	72	7.509657
SH	21	2000	4	7	18	18	18	0	183S	38	30	0	385E	7967832.683	1081974.49	801.70619	803.13711	TRUE	100	7.473566	0.784221	944	30	6.583262	39499.569	72	7.509657
SH	21	2000	4	8	0	18	0	0	180S	38	23	60	384E	8001461.782	1072348.466	814.69019	816.25218	TRUE	90	6.619311	0.682662	954	30	5.829943	34979.667	72	7.509657
SH	21	2000	4	8	6	17	11	60	172S	38	17	60	383E	8090586.874	1064215.957	854.57055	856.39982	TRUE	80	5.609943	0.58784	963	30	14.915894	89495.362	72	7.509657
SH	21	2000	4	8	12	16	41	60	167S	38	23	60	384E	8145809.359	1076417.586	883.99504	885.90569	TRUE	70	4.745692	0.499754	972	30	9.425737	56554.422	72	7.509657
SH	21	2000	4	8	18	16	6	0	161S	38	30	0	385E	8212146.575	1088930.879	918.91086	920.92673	TRUE	55	3.587384	0.380257	983	30	11.251183	67507.101	72	7.509657
SH	21	2000	4	9	0	15	18	0	153S	38	36	0	386E	8300710.621	1102025.183	964.84213	967.01321	TRUE	35	2.17442	0.244506	996	30	14.921136	89526.817	72	7.509657
SH	21	2000	4	9	6	15	0	0	150S	38	30	0	385E	8334302.123	1092084.211	978.84763	981.15949	TRUE	30	1.837171	0.214779	999	30	5.838598	35031.586	72	7.509657
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	15	2001	3	8	6	16	18	0	163S	40	17	60	403E	8183847.107	1281657.134	957.80602	958.54221	TRUE	25	1.564544	0.186735	1002	30	19.928467	119570.8	22	9.920429
SH	15	2001	3	8	12	17	0	0	170S	39	53	60	399E	8107441.95	1235943.756	909.76488	910.64934	TRUE	30	1.976384	0.214779	999	30	14.839382	89036.29	22	9.920429
SH	15	2001	3	8	18	17	23	60	174S	39	47	60	398E	8063307.316	1223666.062	886.21552	887.07892	TRUE	30	2.028784	0.214779	999	30	7.635094	45810.563	22	9.920429
SH	15	2001	3	9	0	18	6	0	181S	40	12	0	402E	7983789.899	1263413.066	863.33901	863.75971	TRUE	35	2.429483	0.244506	996	30	14.816323	88897.941	22	9.920429
SH	15	2001	3	9	6	19	30	0	195S	40	12	0	402E	7827906.202	1257066.43	794.93259	795.04791	TRUE	40	3.01483	0.275918	993	30	26.00214	156012.84	22	9.920429
SH	15	2001	3	9	12	21	0	0	210S	40	0	0	405E	7659452.366	1281135.206	736.4981	736.09365	TRUE	55	4.473241	0.380257	983	30	28.360771	170164.63	22	9.920429
SH	15	2001	3	9	18	22	0	0	220S	40	47	60	408E	7546501.878	1306927.486	705.29259	704.48936	TRUE	55	4.670459	0.380257	983	30	19.309651	115857.91	22	9.920429
SH	15	2001	3	10	0	22	48	0	228S	40	42	0	407E	7457905.31	1291944.381	668.73602	667.84518	TRUE	60	5.372478	0.418405	979	30	14.975763	89854.579	22	9.920429
SH	15	2001	3	10	6	23	36	0	236S	40	30	0	405E	7369883.611	1266669.544	629.42132	628.49986	TRUE	65	6.182123	0.458238	976	30	15.263097	91578.583	22	9.920429
SH	15	2001	3	10	12	24	23	60	244S	40	36	0	406E	7280240.382	1272096.896	605.24966	604.12434	TRUE	70	6.922278	0.499754	972	30	14.967896	89807.375	22	9.920429
SH	15	2001	3	10	18	25	11	60	252S	40	42	0	407E	7190569.406	1277242.761	583.9693	582.65403	TRUE	75	7.685601	0.542955	967	30	14.969751	89818.504	22	9.920429
SH	15	2001	3	11	0	25	53	60	259S	40	30	0	405E	7113785.198	1252553.97	554.02177	552.70406	TRUE	75	8.098678	0.542955	967	30	13.442626	80655.756	22	9.920429
SH	15	2001	3	11	6	26	41	60	267S	40	17	60	403E	7025889.514	1227363.276	523.65569	522.32233	TRUE	80	9.136342	0.58784	963	30	15.239042	91434.252	22	9.920429
SH	15	2001	3	11	12	27	18	0	273S	40	12	0	402E	6959694.853	1213538.259	505.44631	504.08467	TRUE	85	10.054671	0.634409	959	30	11.270493	67622.957	22	9.920429
SH	15	2001	3	11	18	28	11	60	282S	40	36	0	406E	6857127.21	1247086.126	510.58156	508.96194	TRUE	85	9.954244	0.634409	959	30	17.985782	107914.69	22	9.920429
SH	15	2001	3	12	0	29	18	0	293S	41	0	0	410E	6732058.604	1278263.152	520.339	518.49508	TRUE	90	10.343467	0.682662	954	30	21.482656	128895.94	22	9.920429
SH	15	2001	3	12	6	31	30	0	315S	41	53	60	419E	6480412.011	1346734.023	569.0272	566.82032	TRUE	90	9.463576	0.682662	954	30	43.465909	260795.45	22	9.920429
SH	15	2001	3	12	12	34	30	0	345S	43	42	0	437E	6129847.075	1484343.305	701.46431	698.44694	TRUE	85	7.527321	0.634409	959	30	62.767669	376606.01	22	9.920429
SH	15	2001	3	12	18	37	42	0	377S	46	23	60	464E	5741345.82	1683940.292	181.15097	186.07487	TRUE	75	4.988086	0.542955	967	30	72.795792	436774.75	22	9.920429
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	21	2001	6	20	12	30	0	0	300S	34	12	0	342E	6680608.57	615741.4855	162.47119	162.20412	TRUE	25	8.928006	0.186735	1002	30	22.687282	136123.69	12	12.745639
SH	21	2001	6	20	18	28	48	0	288S	33	53	60	339E	6813840.002	587830.0985	160.26739	160.13272	TRUE	30	10.851021	0.214779	999	30	22.687282	136123.69	12	12.745639
SH	21	2001	6	21	0	27	23	60	274S	33	53	60	339E	6968938.197	568977.6816	208.58389	208.78613	TRUE	45	12.682087	0.309013	990	30	25.850407	155102.44	12	12.745639
SH	21	2001	6	21	6	26	36	0	266S	34	42	0	347E	7056742.542	669273.4718	272.77613	273.06488	TRUE	65	14.126569	0.458238	976	30	19.830544	118983.26	12	12.745639
SH	21	2001	6	21	12	26	18	0	263S	35	23	60	354E	7088867.944	739615.92	312.12512	312.36623	TRUE	60	11.42826	0.418405	979	30	12.888519	77331.116	12	12.745639
SH	21	2001	6	21	18	26	0	0	260S	36	17	60	363E	7120142.396	830369.5366	360.17115	360.30056	TRUE	55	10.999182	0.304371	991	30	15.998533	95991.099	12	12.745639
SH	21	2001	6	22	0	26	0	0	260S	37	23	60	374E	7116889.671	940610.171	406.91311	406.76233	TRUE	45	6.599452	0.304371	991	30	18.381435	110288.61	12	12.745639
SH	21	2001	6	22	6	25	53	60	259S	38	53	60	389E	7122051.988	1091608.014	478.07997	477.46331	TRUE	35	4.375342	0.242377	997	30	25.18101	151086.06	12	12.745639
SH	21	2001	6	22	12	25	53	60	259S	40	12	0	402E	7115489.009	1222351.106	539.55023	538.38054	TRUE	35	3.880135	0.242377	997	30	21.817952	130907.71	12	12.745639
SH	21	2001	6	22	18	25	30	0	255S	41	0	0	410E	7155354.358	1305637.375	589.40321	587.87502	TRUE	35	3.553719	0.242377	997	30	15.389254	92335.522	12	12.745639
SH	21	2001	6	23	0	25	6	0	251S	41	62	0	417E	7195491.347	1379378.471	634.64876	632.74562	TRUE	30	2.829891	0.21138	1000	30	13.992783	83956.698	12	12.745639
SH	21	2001	6	23	6	24	36	0	246S	41	53	60	419E	7249954.266	1403370.19	659.20402	657.22884	TRUE	25	2.270769	0.186735	1002	30	9.918854	59513.126	12	12.745639
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	8	2001																									

SH	8	2003	1	8	0	22	6	0	221S	38	17	60	383E	7546562.293	1047249.412	605.7797	606.30517	TRUE	25	2.47009	0.190715	1002	30	14.68822	88129.32	41	3.892706
SH	8	2003	1	8	6	22	53	60	229S	38	30	0	385E	7456980.777	1064671.419	576.56073	576.79623	TRUE	25	2.594609	0.190715	1002	30	15.209988	91259.927	41	3.892706
SH	8	2003	1	8	12	23	41	60	237S	38	23	60	384E	7368527.14	1051061.429	538.1249	538.20111	TRUE	25	2.778821	0.190715	1002	30	14.915761	89494.568	41	3.892706
SH	8	2003	1	8	18	24	30	0	245S	38	23	60	384E	7279690.431	1047632.344	505.5611	505.44179	TRUE	25	2.95659	0.21138	1000	30	14.817144	88902.866	41	3.892706
SH	8	2003	1	9	0	25	30	0	255S	38	30	0	385E	7168228.987	1053274.563	472.99007	472.60363	TRUE	25	3.158607	0.190715	1002	30	18.600693	111604.16	41	3.892706
SH	8	2003	1	9	6	26	30	0	265S	38	36	0	386E	7056735.143	1058579.914	446.04621	445.42027	TRUE	25	3.347737	0.190715	1002	30	18.603333	111620	41	3.892706
SH	8	2003	1	9	12	27	30	0	275S	39	36	0	396E	6940768.966	1152732.29	471.06518	469.92638	TRUE	25	3.17141	0.190715	1002	30	24.895796	149374.78	41	3.892706
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	11	2003	1	29	12	21	6	0	211S	45	47	60	458E	7612230.505	1837698.691	959.34083	953.50566	TRUE	35	2.186684	0.242377	997	30	26.608002	159648.01	47	4.070618
SH	11	2003	1	29	18	22	6	0	221S	43	30	0	435E	7518279.082	1587449.199	817.82253	814.7608	TRUE	35	2.564344	0.242377	997	30	44.550745	267304.47	47	4.070618
SH	11	2003	1	30	0	22	23	60	224S	42	42	0	427E	7490338.559	1501827.628	770.90304	768.56889	TRUE	30	4.64173	0.21138	1000	60	15.010854	90065.122	47	4.070618
SH	11	2003	1	30	6	23	6	0	231S	42	6	0	421E	7416100.593	1434630.432	718.57547	716.65164	TRUE	30	4.975225	0.21138	1000	60	16.688934	100133.6	47	4.070618
SH	11	2003	1	30	12	24	0	0	240S	42	12	0	422E	7314923.463	1438456.701	692.36841	690.25055	TRUE	30	2.5949	0.21138	1000	30	16.874909	101249.45	47	4.070618
SH	11	2003	1	30	18	24	53	60	249S	42	17	60	423E	7213719.43	1441903.563	669.41587	667.11883	TRUE	25	2.236268	0.190715	1002	30	16.877119	101262.71	47	4.070618
SH	11	2003	1	31	0	26	18	0	263S	42	42	0	427E	7054395.769	1471106.752	653.36629	650.6518	TRUE	25	2.290973	0.190715	1002	30	26.996324	161977.95	47	4.070618
SH	11	2003	1	31	6	27	36	0	276S	43	12	0	432E	6905116.576	1509625.794	654.68487	651.5399	TRUE	25	2.286378	0.190715	1002	30	25.694787	154168.72	47	4.070618
SH	11	2003	1	31	12	29	0	0	290S	43	42	0	437E	6744237.34	1545410.485	664.73275	664.20626	TRUE	25	2.251959	0.190715	1002	30	27.468503	164811.02	47	4.070618
SH	11	2003	1	31	18	30	30	0	305S	44	6	0	441E	6572731.937	1568408.894	679.93229	676.15955	TRUE	25	2.201816	0.190715	1002	30	28.840091	173040.54	47	4.070618
SH	11	2003	2	1	0	31	53	60	319S	44	42	0	447E	6410055.851	1609731.322	715.85113	711.69255	TRUE	25	2.091734	0.190715	1002	30	27.973724	167842.34	47	4.070618
SH	11	2003	2	1	6	33	12	0	332S	45	30	0	455E	6255735.039	1668759.109	768.58296	763.82531	TRUE	25	1.948675	0.190715	1002	30	27.537446	165224.67	47	4.070618
SH	11	2003	2	1	12	34	36	0	346S	47	0	0	470E	6080204.252	1788224.904	862.11907	855.89394	TRUE	25	1.737795	0.190715	1002	30	35.387982	212327.89	47	4.070618
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	19	2003	2	24	12	21	23	60	214S	42	17	60	423E	7604748.846	1467076.125	792.07636	790.22056	TRUE	20	1.512835	0.170051	1004	30	6.440269	38641.612	31	10.931585
SH	19	2003	2	24	18	21	11	60	212S	42	36	0	426E	7625204.293	1499859.487	812.81841	810.71941	TRUE	20	1.474336	0.170051	1004	30	6.440269	38641.612	31	10.931585
SH	19	2003	2	25	0	21	23	60	214S	42	53	60	429E	7600860.989	1529914.419	817.73195	815.32768	TRUE	20	0.73349	0.170051	1004	15	6.446134	38676.807	31	10.931585
SH	19	2003	2	25	6	21	41	60	217S	42	47	60	428E	7567962.575	1517305.918	801.72671	799.38277	TRUE	25	3.106188	0.190715	1002	50	5.871967	35231.803	31	10.931585
SH	19	2003	2	25	12	22	6	0	221S	42	42	0	427E	7523889.86	1503999.427	782.0852	779.78611	TRUE	25	3.18351	0.190715	1002	50	7.672945	46037.669	31	10.931585
SH	19	2003	2	25	18	22	23	60	224S	42	23	60	424E	7492343.312	1470641.024	757.57935	755.50473	TRUE	25	3.285672	0.170051	1004	50	7.652102	45912.61	31	10.931585
SH	19	2003	2	26	0	22	18	0	223S	41	30	0	415E	7509120.218	1377827.588	722.34166	720.99329	TRUE	30	4.133355	0.21138	1000	50	15.71959	94317.54	31	10.931585
SH	19	2003	2	26	6	21	53	60	219S	40	23	60	404E	7559716.828	1265915.82	693.40822	692.88399	TRUE	30	4.304077	0.21138	1000	50	20.469666	122818	31	10.931585
SH	19	2003	2	26	12	21	36	0	216S	39	47	60	398E	7595990.831	1205067.855	683.23452	683.13562	TRUE	35	5.095404	0.242377	997	50	11.806634	70839.806	31	10.931585
SH	19	2003	2	26	18	21	39	0	215S	39	30	0	395E	7608451.542	1174327	676.54775	676.64021	TRUE	45	6.615283	0.304371	991	50	5.528385	33107.311	31	10.931585
SH	19	2003	2	27	0	21	23	60	214S	39	12	0	392E	7620841.118	1143554.098	670.23284	670.5095	TRUE	45	6.676926	0.304371	991	50	5.528897	33173.379	31	10.931585
SH	19	2003	2	27	6	21	36	0	216S	38	53	60	389E	7599826.621	1111489.201	650.25018	650.62926	TRUE	55	5.903694	0.376697	984	35	6.389589	38337.537	31	10.931585
SH	19	2003	2	27	12	21	53	60	219S	38	42	0	387E	7567278.858	1089476.989	629.21264	629.61176	TRUE	65	6.184164	0.459356	976	30	6.548737	39292.421	31	10.931585
SH	19	2003	2	27	18	22	11	60	222S	38	23	60	384E	7535093.332	1057200.981	604.64702	605.10378	TRUE	70	6.929144	0.500685	972	30	7.596872	45581.233	31	10.931585
SH	19	2003	2	28	0	22	30	0	225S	38	0	0	380E	7503217.819	1014740.572	576.59398	577.1371	TRUE	75	7.783382	0.552346	967	30	8.84894	53093.64	31	10.931585
SH	19	2003	2	28	6	22	53	60	229S	37	47	60	378E	7459506.388	992677.4525	550.99449	551.50769	TRUE	75	6.791893	0.552346	967	25	8.160662	48963.971	31	10.931585
SH	19	2003	2	28	12	23	11	60	232S	37	36	0	376E	7426879.319	971068.9977	530.08194	530.58697	TRUE	85	4.806728	0.645337	958	15	6.522293	39133.757	31	10.931585
SH	19	2003	2	28	18	23	41	60	237S	37	23	60	374E	7372049.875	948860.7115	500.15853	500.59706	TRUE	100	7.984697	0.78999	944	20	9.859395	59156.369	31	10.931585
SH	19	2003	3	1	0	23	53	60	239S	37	36	0	376E	7349212.705	968572.1909	498.70687	499.02547	TRUE	115	9.209044	0.965639	927	20	5.027919	30167.511	31	10.931585
SH	19	2003	3	1	6	23	48	0	238S	37	42	0	377E	7359972.915	979142.73	506.85109	507.16181	TRUE	115	9.061535	0.965639	927	20	2.513952	15083.713	31	10.931585
SH	19	2003	3	1	12	23	36	0	236S	37	36	0	376E	7382498.699	969650.8294	511.97106	512.36915	TRUE	115	6.732883	0.965639	927	15	4.073993	24443.959	31	10.931585
SH	19	2003	3	1	18	23	18	0	233S	37	17	60	373E	7416730.664	939976.4129	514.86466	515.44444	TRUE	115	8.920926	0.965639	927	20	7.550567	45303.404	31	10.931585
SH	19	2003	3	2	0	23	0	0	230S	36	53	60	369E	7451156.659	899893.9357	515.51846	516.30809	TRUE	105	8.134894	0.78999	944	20	8.806175	52837.053	31	10.931585
SH	19	2003	3	2	6	22	36	0	226S	36	23	60	364E	7496769.5	849600.9789	519.64775	520.69638	TRUE	95	12.739339	0.738328	949	35	11.316056	67896.338	31	10.931585
SH	19	2003	3	2	12	22	6	0	221S	35	42	0	357E	7553633.657	778574.8897	526.17218	527.54332	TRUE	90	11.920523	0.686667	954	35	15.16413			

SH	9	2004	2	1	18	19	0	0	190S	42	36	0	426E	7871309.477	1514165.315	906.40458	904.58236	TRUE	55	3.636774	0.376697	984	30	4.015897	24095.382	55	4.173065
SH	9	2004	2	1	18	19	0	0	190S	42	36	0	426E	7871309.477	1514165.315	906.40458	904.58236	TRUE	55	3.636774	0.376697	984	30	0	0	55	4.173065
SH	9	2004	2	2	18	19	11	60	192S	42	30	0	425E	7849520.912	1502298.318	893.60211	891.85493	TRUE	55	3.688761	0.376697	984	30	4.135104	24810.626	55	4.173065
SH	9	2004	2	2	0	19	11	60	192S	42	30	0	425E	7849520.912	1502298.318	893.60211	891.85493	TRUE	55	3.688761	0.376697	984	30	0	0	55	4.173065
SH	9	2004	2	2	6	19	18	0	193S	42	47	60	428E	7836539.936	1533553.22	900.97933	898.91522	TRUE	55	3.658625	0.376697	984	30	5.640564	33843.384	55	4.173065
SH	9	2004	2	2	6	19	18	0	193S	42	47	60	428E	7836539.936	1533553.22	900.97933	898.91522	TRUE	55	3.658625	0.376697	984	30	0	0	55	4.173065
SH	9	2004	2	2	12	19	18	0	193S	43	6	0	431E	7834686.218	1565447.866	912.95496	910.57351	TRUE	60	3.938986	0.418026	980	30	5.324745	31948.469	55	4.173065
SH	9	2004	2	2	12	19	18	0	193S	43	6	0	431E	7834686.218	1565447.866	912.95496	910.57351	TRUE	60	3.938986	0.418026	980	30	0	0	55	4.173065
SH	9	2004	2	2	18	19	41	60	197S	43	23	60	434E	7787935.179	1594618.362	908.0778	905.32954	TRUE	65	4.290104	0.459356	976	30	9.184192	55105.149	55	4.173065
SH	9	2004	2	2	18	19	41	60	197S	43	23	60	434E	7787935.179	1594618.362	908.0778	905.32954	TRUE	65	4.290104	0.459356	976	30	0	0	55	4.173065
SH	9	2004	2	3	0	20	6	0	201S	44	0	0	440E	7738959.381	1655388.501	916.81109	913.34564	TRUE	65	4.249325	0.459356	976	30	13.008158	78048.95	55	4.173065
SH	9	2004	2	3	0	20	6	0	201S	44	0	0	440E	7738959.381	1655388.501	916.81109	913.34564	TRUE	65	4.249325	0.459356	976	30	0	0	55	4.173065
SH	9	2004	2	3	6	20	41	60	207S	45	0	0	450E	7663975.746	1756558.8	937.357	932.62003	TRUE	55	3.516935	0.376697	984	30	20.988075	125928.45	55	4.173065
SH	9	2004	2	3	6	20	41	60	207S	45	0	0	450E	7663975.746	1756558.8	937.357	932.62003	TRUE	55	3.516935	0.376697	984	30	0	0	55	4.173065
SH	9	2004	2	3	12	21	18	0	213S	46	12	0	462E	7586102.373	1878133.023	971.05722	964.64275	TRUE	45	2.777823	0.304371	991	30	24.062739	144376.43	55	4.173065
SH	9	2004	2	4	18	25	48	0	258S	48	53	60	489E	7046935.341	2106761.733	985.68328	975.40341	TRUE	30	2.430856	0.21138	1000	40	13.954169	83725.016	55	4.173065
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	16	2004	3	8	12	18	23	60	184S	43	17	60	433E	7934294.819	1592647.647	960.48991	957.97325	TRUE	65	3.381399	0.459356	976	25	18.214827	109288.96	76	4.639258
SH	16	2004	3	8	12	18	23	60	184S	43	17	60	433E	7934294.819	1592647.647	960.48991	957.97325	TRUE	65	3.381399	0.459356	976	25	0	0	76	4.639258
SH	16	2004	3	8	18	18	48	0	188S	42	47	60	428E	7892511.444	1536709.174	923.11143	921.10584	TRUE	65	3.518121	0.459356	976	25	11.636823	69820.937	76	4.639258
SH	16	2004	3	8	18	18	48	0	188S	42	47	60	428E	7892511.444	1536709.174	923.11143	921.10584	TRUE	65	3.518121	0.459356	976	25	0	0	76	4.639258
SH	16	2004	3	9	0	19	11	60	192S	42	30	0	425E	7849520.912	1502298.318	893.60211	891.85493	TRUE	65	2.908116	0.459356	976	20	9.17771	55066.259	76	4.639258
SH	16	2004	3	9	0	19	11	60	192S	42	30	0	425E	7849520.912	1502298.318	893.60211	891.85493	TRUE	65	2.908116	0.459356	976	20	0	0	76	4.639258
SH	16	2004	3	9	6	19	36	0	196S	42	12	0	422E	7806537.521	1468022.033	864.16316	862.65063	TRUE	65	3.757719	0.459356	976	25	9.162781	54976.683	76	4.639258
SH	16	2004	3	9	6	19	36	0	196S	42	12	0	422E	7806537.521	1468022.033	864.16316	862.65063	TRUE	65	3.757719	0.459356	976	25	0	0	76	4.639258
SH	16	2004	3	9	12	20	18	0	203S	42	36	0	426E	7725870.008	1505892.408	849.89918	847.91299	TRUE	60	3.526779	0.418026	980	25	14.852434	89114.605	76	4.639258
SH	16	2004	3	9	12	20	18	0	203S	42	36	0	426E	7725870.008	1505892.408	849.89918	847.91299	TRUE	60	3.526779	0.418026	980	25	0	0	76	4.639258
SH	16	2004	3	9	18	20	53	60	209S	43	12	0	432E	7654817.822	1565000.52	850.41286	847.76456	TRUE	60	4.227976	0.418026	980	30	15.403988	92423.926	76	4.639258
SH	16	2004	3	9	18	20	53	60	209S	43	12	0	432E	7654817.822	1565000.52	850.41286	847.76456	TRUE	60	4.227976	0.418026	980	30	0	0	76	4.639258
SH	16	2004	3	10	0	21	41	60	217S	44	0	0	440E	7559406.363	1642936.654	855.04239	851.48065	TRUE	55	3.854713	0.376697	984	30	20.532757	123196.54	76	4.639258
SH	16	2004	3	10	0	21	41	60	217S	44	0	0	440E	7559406.363	1642936.654	855.04239	851.48065	TRUE	55	3.854713	0.376697	984	30	0	0	76	4.639258
SH	16	2004	3	10	6	22	23	60	224S	45	0	0	450E	7472740.755	1741627.117	876.87879	872.12613	TRUE	45	2.563835	0.304371	991	25	21.890342	131342.05	76	4.639258
SH	16	2004	3	10	12	23	6	0	231S	45	17	60	453E	7391382.037	1766363.734	868.77287	863.64795	TRUE	40	2.759227	0.273374	994	30	14.172686	85036.117	76	4.639258
SH	16	2004	3	10	18	23	23	60	234S	45	47	60	458E	7353002.631	1815398.054	884.21315	878.45391	TRUE	40	1.808593	0.273374	994	20	10.378053	62268.317	76	4.639258
SH	16	2004	3	11	0	23	41	60	237S	46	17	60	463E	7314331.538	1864210.985	900.47503	894.05322	TRUE	30	1.996729	0.21138	1000	30	10.37914	62274.84	76	4.639258
SH	16	2004	3	11	6	24	6	0	241S	46	30	0	465E	7267187.885	1880593.022	899.66091	892.98498	TRUE	30	1.333177	0.21138	1000	20	8.318145	49908.868	76	4.639258
SH	16	2004	3	11	12	24	18	0	243S	46	42	0	467E	7242542.138	1899050.64	904.60488	897.65997	TRUE	30	1.325898	0.21138	1000	20	5.131863	30791.176	76	4.639258
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	12	2005	1	21	12	17	6	0	171S	41	53	60	419E	8087552.333	1450024.509	969.38905	968.54057	TRUE	75	1.547202	0.552346	967	10	20.8269	124961.4	55	5.768671
SH	12	2005	1	21	12	17	6	0	171S	41	53	60	419E	8087552.333	1450024.509	969.38905	968.54057	TRUE	75	1.547202	0.552346	967	10	0	0	55	5.768671
SH	12	2005	1	21	12	17	6	0	171S	41	53	60	419E	8087552.333	1450024.509	969.38905	968.54057	TRUE	75	1.547202	0.552346	967	10	0	0	55	5.768671
SH	12	2005	1	21	18	18	11	60	182S	41	53	60	419E	7964640.999	1444188.058	916.82051	915.80071	TRUE	85	5.556753	0.645337	958	30	20.508305	123049.83	55	5.768671
SH	12	2005	1	21	18	18	11	60	182S	41	53	60	419E	7964640.999	1444188.058	916.82051	915.80071	TRUE	85	5.556753	0.645337	958	30	0	0	55	5.768671
SH	12	2005	1	21	18	18	11	60	182S	41	53	60	419E	7964640.999	1444188.058	916.82051	915.80071	TRUE	85	5.556753	0.645337	958	30	0	0	55	5.768671
SH	12	2005	1	22	0	19	30	0	195S	41	53	60	419E	7819408.34	1436839.357	857.0188	855.79613	TRUE	90	1.050116	0.686667	954	5	24.23641	145418.46	55	5.768671
SH	12	2005	1	22	0	19	30	0	195S	41	53	60	419E	7819408.34	1436839.357	857.0188	855.79613	TRUE	90	1.050116	0.686667	954	5	0	0	55	5.768671
SH	12	2005	1	22	6	20	36	0	206S	42	0	0	420E	7695958.71	1440759.529	812.80402	811.32431	TRUE	100	7.371811	0.78999	944	30	20.58531	123511.86	55	5.768671
SH	12	2005	1	22	6	20	36	0	206S	42	0	0	420E	7695958.71	1440759.529	812.80402	811.32431	TRUE	100	7.371811	0.78999	944	30	0	0	55	5.768671
SH	12	2005	1	22	6	20	36																				

SH	9	2006	2	3	6	20	53	60	209S	39	53	60	399E	7673422.107	1218889.618	718.61248	718.6116	TRUE	90	2.504342	0.686667	954	10	13.994548	83967.285	84	3.106213
SH	9	2006	2	3	6	20	53	60	209S	39	53	60	399E	7673422.107	1218889.618	718.61248	718.6116	TRUE	90	2.504342	0.686667	954	10	0	0	84	3.106213
SH	9	2006	2	3	6	20	53	60	209S	39	53	60	399E	7673422.107	1218889.618	718.61248	718.6116	TRUE	90	2.504342	0.686667	954	10	0	0	84	3.106213
SH	9	2006	2	3	12	21	23	60	214S	40	47	60	408E	7613363.355	1310314.227	730.6489	729.96115	TRUE	90	1.231724	0.686667	954	5	18.231164	109386.99	84	3.106213
SH	9	2006	2	3	12	21	23	60	214S	40	47	60	408E	7613363.355	1310314.227	730.6489	729.96115	TRUE	90	1.231724	0.686667	954	5	0	0	84	3.106213
SH	9	2006	2	3	12	21	23	60	214S	40	47	60	408E	7613363.355	1310314.227	730.6489	729.96115	TRUE	90	1.231724	0.686667	954	5	0	0	84	3.106213
SH	9	2006	2	3	18	22	30	0	225S	41	47	60	418E	7484992.571	1407664.581	727.50169	725.89616	TRUE	100	1.374502	0.789999	944	5	26.851521	161109.12	84	3.106213
SH	9	2006	2	3	18	22	30	0	225S	41	47	60	418E	7484992.571	1407664.581	727.50169	725.89616	TRUE	100	1.374502	0.789999	944	5	0	0	84	3.106213
SH	9	2006	2	3	18	22	30	0	225S	41	47	60	418E	7484992.571	1407664.581	727.50169	725.89616	TRUE	100	1.374502	0.789999	944	5	0	0	84	3.106213
SH	9	2006	2	4	0	23	18	0	233S	42	12	0	422E	7393106.145	1443536.849	716.0243	713.99563	TRUE	95	1.326706	0.707331	952	5	16.440072	98640.432	84	3.106213
SH	9	2006	2	4	0	23	18	0	233S	42	12	0	422E	7393106.145	1443536.849	716.0243	713.99563	TRUE	95	1.326706	0.707331	952	5	0	0	84	3.106213
SH	9	2006	2	4	0	23	18	0	233S	42	12	0	422E	7393106.145	1443536.849	716.0243	713.99563	TRUE	95	1.326706	0.707331	952	5	0	0	84	3.106213
SH	9	2006	2	4	6	24	6	0	241S	43	0	0	430E	7298069.344	1519794.511	727.03395	724.26149	TRUE	90	2.475345	0.686667	954	10	20.308198	121849.19	84	3.106213
SH	9	2006	2	4	6	24	6	0	241S	43	0	0	430E	7298069.344	1519794.511	727.03395	724.26149	TRUE	90	2.475345	0.686667	954	10	0	0	84	3.106213
SH	9	2006	2	4	6	24	6	0	241S	43	0	0	430E	7298069.344	1519794.511	727.03395	724.26149	TRUE	90	2.475345	0.686667	954	10	0	0	84	3.106213
SH	9	2006	2	4	12	25	6	0	251S	43	42	0	437E	7180678.767	1582909.01	732.7341	729.27315	TRUE	85	1.159985	0.645337	958	5	22.213602	133281.61	84	3.106213
SH	9	2006	2	4	12	25	6	0	251S	43	42	0	437E	7180678.767	1582909.01	732.7341	729.27315	TRUE	85	1.159985	0.645337	958	5	0	0	84	3.106213
SH	9	2006	2	4	12	25	6	0	251S	43	42	0	437E	7180678.767	1582909.01	732.7341	729.27315	TRUE	85	1.159985	0.645337	958	5	0	0	84	3.106213
SH	9	2006	2	4	18	26	6	0	261S	44	30	0	445E	7061684.658	1654690.507	749.65554	745.40743	TRUE	75	1.000415	0.552346	967	5	23.161379	138968.27	84	3.106213
SH	9	2006	2	4	18	26	6	0	261S	44	30	0	445E	7061684.658	1654690.507	749.65554	745.40743	TRUE	75	1.000415	0.552346	967	5	0	0	84	3.106213
SH	9	2006	2	4	18	26	6	0	261S	44	30	0	445E	7061684.658	1654690.507	749.65554	745.40743	TRUE	75	1.000415	0.552346	967	5	0	0	84	3.106213
SH	9	2006	2	5	0	27	18	0	273S	45	17	60	453E	6919341.797	1722549.957	769.35742	764.30725	TRUE	60	1.55948	0.438691	978	10	26.281804	157690.82	84	3.106213
SH	9	2006	2	5	0	27	18	0	273S	45	17	60	453E	6919341.797	1722549.957	769.35742	764.30725	TRUE	60	1.55948	0.438691	978	10	0	0	84	3.106213
SH	9	2006	2	5	6	28	36	0	286S	46	23	60	464E	6761386.762	1816664.426	811.4553	805.23888	TRUE	55	1.355383	0.397362	982	10	30.644614	183867.69	84	3.106213
SH	9	2006	2	5	6	28	36	0	286S	46	23	60	464E	6761386.762	1816664.426	811.4553	805.23888	TRUE	55	1.355383	0.397362	982	10	0	0	84	3.106213
SH	9	2006	2	5	12	30	30	0	305S	47	42	0	477E	6531460.98	1918147.527	870.05915	862.37099	TRUE	50	1.149195	0.366365	985	10	41.887642	251325.85	84	3.106213
SH	9	2006	2	5	18	32	6	0	321S	49	42	0	497E	6321816.655	2085381.248	976.95142	966.37614	TRUE	40	3.270014	0.273374	994	40	44.695843	268175.06	84	3.106213
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	3	2006	12	2	12	16	53	60	169S	42	23	60	424E	8107378.393	1504870.009	996.53436	995.19493	TRUE	30	2.404473	0.21138	1000	40	5.882976	35297.855	28	2.324419
SH	3	2006	12	2	18	17	23	60	174S	42	12	0	422E	8052493.513	1480662.963	965.4947	964.29744	TRUE	25	1.552129	0.190715	1002	30	9.997682	59986.091	28	2.324419
SH	3	2006	12	3	0	17	48	0	178S	41	53	60	419E	8009333.742	1446351.027	935.7456	934.78816	TRUE	25	1.601354	0.190715	1002	30	9.189479	55136.873	28	2.324419
SH	3	2006	12	3	6	18	11	60	182S	41	30	0	415E	7966684.184	1401493.404	902.49555	901.84481	TRUE	25	2.486904	0.190715	1002	45	10.316103	61896.616	28	2.324419
SH	3	2006	12	3	12	19	0	0	190S	41	12	0	412E	7878906.657	1365393.695	853.95497	853.41946	TRUE	25	2.627503	0.190715	1002	45	15.818487	94910.923	28	2.324419
SH	3	2006	12	3	18	19	48	0	198S	40	53	60	409E	7791187.49	1329459.203	805.83348	805.38385	TRUE	25	1.85885	0.190715	1002	30	15.799033	94794.198	28	2.324419
SH	3	2006	12	4	0	20	30	0	205S	40	42	0	407E	7714164.294	1304727.3	766.47076	766.02984	TRUE	25	1.954028	0.190715	1002	30	13.482746	80896.475	28	2.324419
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	5	2006	12	26	12	19	41	60	197S	43	53	60	439E	7784557.564	1647729.411	928.9253	925.60333	TRUE	25	2.416483	0.170051	1004	45	27.624685	165748.11	97	2.013827
SH	5	2006	12	26	18	20	36	0	206S	42	47	60	428E	7691042.446	1524977.386	845.65413	843.43771	TRUE	20	1.417236	0.170051	1004	30	25.719176	154315.06	97	2.013827
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	14	2007	2	18	6	26	18	0	263S	49	17	60	493E	6984833.32	2140564.513	997.82034	986.90794	TRUE	45	2.2535	0.304371	991	25	21.049154	126294.92	83	6.123281
SH	14	2007	2	18	12	26	30	0	265S	48	12	0	482E	6976577.38	2025475.977	935.75846	926.7842	TRUE	55	2.936696	0.376697	984	25	19.230713	115384.28	83	6.123281
SH	14	2007	2	18	12	26	30	0	265S	48	12	0	482E	6976577.38	2025475.977	935.75846	926.7842	TRUE	55	2.936696	0.376697	984	25	0	0	83	6.123281
SH	14	2007	2	18	18	26	30	0	265S	47	23	60	474E	6986351.543	1944137.768	893.35549	885.60949	TRUE	60	3.355498	0.438691	978	25	13.653895	81923.37	83	6.123281
SH	14	2007	2	18	18	26	30	0	265S	47	23	60	474E	6986351.543	1944137.768	893.35549	885.60949	TRUE	60	3.355498	0.438691	978	25	0	0	83	6.123281
SH	14	2007	2	19	0	26	30	0	265S	46	42	0	467E	6994408.129	1873107.171	856.42901	849.65881	TRUE	65	2.276198	0.459356	976	15	11.91434	71486.043	83	6.123281
SH	14	2007	2	19	0	26	30	0	265S	46	42	0	467E	6994408.129	1873107.171	856.42901	849.65881	TRUE	65	2.276198	0.459356	976	15	0	0	83	6.123281
SH	14	2007	2	19	0	26	30	0	265S	46	42	0	467E	6994408.129	1873107.171	856.42901	849.65881	TRUE	65	2.276198	0.459356	976	15	0	0	83	6.123281
SH	14	2007	2	19	6	26	36	0	266S	46	0	0	460E	6990763.147	1801039.848	817.85685	811.98058	TRUE	65	3.17714	0.459356	976	20	12.026574	72159.441	83	6.123281
SH	14	2007	2	19	6	26	36	0	266S	46	0	0	460E	6990763.147	1801039.848	817.85685											

BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	15	2007	3	1	6	28	41	60	287S	49	30	0	495E	6709655.837	2123790.803	976.55653	965.74001	TRUE	70	3.581675	0.500685	972	25	22.049702	132298.21	108	3.67542
SH	15	2007	3	1	6	28	41	60	287S	49	30	0	495E	6709655.837	2123790.803	976.55653	965.74001	TRUE	70	3.581675	0.500685	972	25	0	0	108	3.67542
SH	15	2007	3	1	6	28	41	60	287S	49	30	0	495E	6709655.837	2123790.803	976.55653	965.74001	TRUE	70	3.581675	0.500685	972	25	0	0	108	3.67542
SH	15	2007	3	1	12	29	41	60	297S	49	0	0	490E	6603718.611	2058066.048	942.36995	932.58917	TRUE	65	2.757759	0.459356	976	20	20.77822	124669.32	108	3.67542
SH	15	2007	3	1	12	29	41	60	297S	49	0	0	490E	6603718.611	2058066.048	942.36995	932.58917	TRUE	65	2.757759	0.459356	976	20	0	0	108	3.67542
SH	15	2007	3	1	12	29	41	60	297S	49	0	0	490E	6603718.611	2058066.048	942.36995	932.58917	TRUE	65	2.757759	0.459356	976	20	0	0	108	3.67542
SH	15	2007	3	1	18	30	11	60	302S	48	42	0	487E	6551523.456	2020555.234	924.1022	914.88683	TRUE	55	2.973685	0.397362	982	25	10.712655	64275.932	108	3.67542
SH	15	2007	3	2	0	30	41	60	307S	48	23	60	484E	6499345.084	1983281.212	906.92119	898.24551	TRUE	50	3.304279	0.3457	987	30	10.687396	64124.373	108	3.67542
SH	15	2007	3	2	6	31	23	60	314S	48	42	0	487E	6416090.042	1901069.031	922.75908	913.72666	TRUE	35	2.651267	0.242377	997	35	14.18901	85134.063	108	3.67542
SH	15	2007	3	2	12	32	6	0	321S	49	0	0	490E	6332683.198	2018172.999	940.23498	930.83511	TRUE	35	2.231213	0.242377	997	30	14.190419	85142.512	108	3.67542
SH	15	2007	3	2	18	32	30	0	325S	49	17	60	493E	6282963.564	2039915.365	957.61872	947.79113	TRUE	35	2.19079	0.242377	997	30	9.044293	54265.757	108	3.67542
SH	15	2007	3	3	0	32	53	60	329S	49	36	0	496E	6233098.913	2061316.561	975.41493	965.14384	TRUE	35	2.150895	0.242377	997	30	9.043866	54263.198	108	3.67542
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	22	2007	4	6	0	16	36	0	166S	40	47	60	408E	8148396.828	1334170.294	957.81327	958.07306	TRUE	30	1.877439	0.21138	1000	30	21.512105	129072.63	78	2.424689
SH	22	2007	4	6	6	16	41	60	167S	40	30	0	405E	8138492.537	1301508.45	943.37395	943.86381	TRUE	30	1.906117	0.21138	1000	30	5.688417	34130.5	78	2.424689
SH	22	2007	4	6	12	17	0	0	170S	40	6	0	401E	8106672.544	1257365.584	915.79119	916.52844	TRUE	30	1.963407	0.21138	1000	30	9.069339	54416.032	78	2.424689
SH	22	2007	4	6	18	17	11	60	172S	39	47	60	398E	8085562.673	1224455.293	896.48195	897.39171	TRUE	30	2.005603	0.21138	1000	30	6.516462	39098.772	78	2.424689
SH	22	2007	4	7	0	17	48	0	178S	39	36	0	396E	8019562.979	1200745.764	859.69786	860.60346	TRUE	25	1.742677	0.190715	1002	30	11.688196	70129.176	78	2.424689
SH	22	2007	4	7	6	18	11	60	182S	39	42	0	397E	7974681.083	1209786.96	842.45485	843.20001	TRUE	25	1.778256	0.190715	1002	30	7.630581	45783.488	78	2.424689
SH	22	2007	4	7	12	18	30	0	185S	40	17	60	403E	7938821.146	1272270.451	846.82059	847.08187	TRUE	25	1.769111	0.190715	1002	30	12.007083	72042.499	78	2.424689
SH	22	2007	4	7	18	18	23	60	184S	41	12	0	412E	7945840.406	1368486.406	882.38108	881.95574	TRUE	25	1.980155	0.190715	1002	35	16.078609	96471.654	78	2.424689
SH	22	2007	4	8	0	17	41	60	177S	40	42	0	407E	8026206.512	1318532.387	899.48955	899.61192	TRUE	25	2.219095	0.190715	1002	40	15.771031	94626.186	78	2.424689
SH	22	2007	4	8	6	17	18	0	173S	40	23	60	404E	8072056.721	1288232.939	909.83005	910.27284	TRUE	25	1.646869	0.190715	1002	30	9.15954	54957.239	78	2.424689
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	9	2007	12	29	12	19	36	0	196S	42	36	0	426E	7804178.766	1510412.101	879.92642	878.0285	TRUE	15	1.021625	0.128721	1008	30	7.677065	46062.389	26	4.886329
SH	9	2007	12	29	18	19	11	60	192S	42	30	0	425E	7849520.912	1502298.318	893.60211	891.85493	TRUE	15	1.006026	0.108057	1010	30	7.677065	46062.389	26	4.886329
SH	9	2007	12	30	0	18	48	0	188S	42	23	60	424E	7894839.459	1494083.84	907.70615	906.11173	TRUE	15	0.990428	0.108057	1010	30	7.676169	46057.011	26	4.886329
SH	9	2007	12	30	6	18	30	0	185S	42	12	0	422E	7929504.041	1474523.228	913.87741	912.52274	TRUE	15	0.983755	0.108057	1010	30	6.633775	39802.648	26	4.886329
SH	9	2007	12	30	12	18	11	60	182S	41	53	60	419E	7964640.999	1444188.058	916.82051	915.80071	TRUE	30	2.612769	0.180383	1003	40	7.736688	46420.129	26	4.886329
SH	9	2007	12	30	18	18	6	0	181S	41	36	0	416E	7977348.175	1412689.715	910.80118	910.07711	TRUE	30	2.622997	0.21138	1000	40	5.660825	33964.952	26	4.886329
SH	9	2007	12	31	0	18	6	0	181S	41	23	60	414E	7978340.671	1391338.867	903.75356	903.20919	TRUE	30	2.650399	0.21138	1000	40	3.562317	21373.903	26	4.886329
SH	9	2007	12	31	6	18	11	60	182S	41	17	60	413E	7967669.241	1380159.651	895.45979	894.98519	TRUE	30	2.67485	0.21138	1000	40	2.575819	15454.912	26	4.886329
SH	9	2007	12	31	12	18	23	60	184S	41	12	0	412E	7945840.406	1368486.406	882.38108	881.95574	TRUE	35	3.166725	0.252709	996	40	4.125674	24754.044	26	4.886329
SH	9	2007	12	31	18	18	36	0	186S	41	12	0	412E	7923528.649	1367466.112	872.84546	872.38339	TRUE	35	3.201176	0.252709	996	40	3.722512	22335.073	26	4.886329
SH	9	2008	1	1	0	19	0	0	190S	41	0	0	410E	7879890.83	1344175.997	846.79205	846.41861	TRUE	40	3.770555	0.283706	993	40	8.244002	49464.014	26	4.886329
SH	9	2008	1	1	6	19	11	60	192S	40	42	0	407E	7859031.329	1311378.613	826.69467	826.51441	TRUE	40	3.861796	0.283706	993	40	6.478141	38868.846	26	4.886329
SH	9	2008	1	1	12	19	23	60	194S	40	23	60	404E	7838140.371	1278668.264	806.65996	806.6576	TRUE	40	3.464581	0.283706	993	35	6.468726	38812.357	26	4.886329
SH	9	2008	1	1	18	19	36	0	196S	40	12	0	402E	7816772.188	1256595.718	790.25124	790.25124	TRUE	35	2.212533	0.252709	996	25	5.120212	30721.271	26	4.886329
SH	9	2008	1	2	0	19	48	0	198S	40	6	0	401E	7794952.448	1245110.203	777.1529	777.26974	TRUE	35	3.593375	0.252709	996	40	4.109671	24658.023	26	4.886329
SH	9	2008	1	2	6	19	53	60	199S	40	6	0	401E	7783820.539	1244639.35	772.40949	772.50432	TRUE	40	4.1318	0.283706	993	40	1.856977	11141.863	26	4.886329
SH	9	2008	1	2	12	20	23	60	204S	40	12	0	402E	7727702.735	1252747.006	752.57072	752.49095	TRUE	40	5.291757	0.283706	993	50	9.450076	56700.469	26	4.886329
SH	9	2008	1	2	18	21	0	0	210S	40	23	60	404E	7659942.94	1270676.358	732.69802	732.35984	TRUE	40	5.43397	0.283706	993	50	11.681956	70091.736	26	4.886329
SH	9	2008	1	3	0	21	48	0	218S	40	42	0	407E	7569315.083	1297660.596	709.62311	708.92516	TRUE	35	3.933259	0.252709	996	40	15.759968	94559.21	26	4.886329
SH	9	2008	1	3	6	22	36	0	226S	41	6	0	411E	7477976.288	1334497.636	693.54216	692.42601	TRUE	35	4.023861	0.252709	996	40	16.414545	98487.273	26	4.886329
SH	9	2008	1	3	12	23	30	0	235S	41	42	0	417E	7374007.256	1390620.353	686.32344	684.64167	TRUE	35	3.053947	0.252709	996	30	19.691594	118149.56	26	4.886329
SH	9	2008	1	3	18	25	0	0	250S	42	17	60	423E	7202551.495	1441132.044	666.54194	664.23416	TRUE	35	4.185712	0.252709	996	40	29.790243	178741.46	26	4.886329
SH	9	2008	1	4	0	25	36	0	256S	42	30	0	425E	7134095.862	145669												

SH	22	2008	3	11	6	23	23	60	2345	41	12	0	412E	7388208.515	1339827.093	667.54207	666.22074	TRUE	90	6.731707	0.666002	956	25	0	0	103	6.797569
SH	22	2008	3	11	12	24	18	0	2435	41	36	0	416E	7285384.475	1374861.309	654.60031	652.87163	TRUE	75	5.720343	0.552346	967	25	18.104772	108628.63	103	6.797569
SH	22	2008	3	11	12	24	18	0	2435	41	36	0	416E	7285384.475	1374861.309	654.60031	652.87163	TRUE	75	5.720343	0.552346	967	25	0	0	103	6.797569
SH	22	2008	3	11	12	24	18	0	2435	41	36	0	416E	7285384.475	1374861.309	654.60031	652.87163	TRUE	75	5.720343	0.552346	967	25	0	0	103	6.797569
SH	22	2008	3	11	18	24	53	60	2495	41	17	60	413E	7220368.426	1340135.338	621.52937	619.90888	TRUE	70	3.376795	0.521349	970	15	12.284792	73708.75	103	6.797569
SH	22	2008	3	11	18	24	53	60	2495	41	17	60	413E	7220368.426	1340135.338	621.52937	619.90888	TRUE	70	3.376795	0.521349	970	15	0	0	103	6.797569
SH	22	2008	3	11	18	24	53	60	2495	41	17	60	413E	7220368.426	1340135.338	621.52937	619.90888	TRUE	70	3.376795	0.521349	970	15	0	0	103	6.797569
SH	22	2008	3	12	0	25	6	0	2515	40	47	60	408E	7201120.649	1288025.139	591.75623	590.40119	TRUE	65	3.29316	0.48002	974	15	9.258554	55551.326	103	6.797569
SH	22	2008	3	12	0	25	6	0	2515	40	47	60	408E	7201120.649	1288025.139	591.75623	590.40119	TRUE	65	3.29316	0.48002	974	15	0	0	103	6.797569
SH	22	2008	3	12	6	25	18	0	2535	40	30	0	405E	7180587.94	1256354.302	571.4742	570.25038	TRUE	55	2.885282	0.397362	982	15	6.290721	37744.324	103	6.797569
SH	22	2008	3	12	12	25	30	0	2555	40	23	60	404E	7158889.426	1244993.058	560.71049	559.50599	TRUE	55	2.940591	0.397362	982	15	4.082154	24492.925	103	6.797569
SH	22	2008	3	12	12	25	30	0	2555	40	23	60	404E	7158889.426	1244993.058	560.71049	559.50599	TRUE	55	2.940591	0.397362	982	15	0	0	103	6.797569
SH	22	2008	3	12	18	25	36	0	2565	40	12	0	402E	7148875.805	1224183.597	548.24214	547.1212	TRUE	55	5.005623	0.397362	982	25	3.848904	23093.426	103	6.797569
SH	22	2008	3	12	18	25	36	0	2565	40	12	0	402E	7148875.805	1224183.597	548.24214	547.1212	TRUE	55	5.005623	0.397362	982	25	0	0	103	6.797569
SH	22	2008	3	13	0	25	30	0	2555	40	0	0	400E	7161089.098	1204592.571	541.81573	540.80821	TRUE	65	3.596253	0.48002	974	15	3.847701	23086.204	103	6.797569
SH	22	2008	3	13	0	25	30	0	2555	40	0	0	400E	7161089.098	1204592.571	541.81573	540.80821	TRUE	65	3.596253	0.48002	974	15	0	0	103	6.797569
SH	22	2008	3	13	6	25	18	0	2535	40	6	0	401E	7182806.322	1215879.71	552.70006	551.67943	TRUE	70	5.059414	0.521349	970	20	4.079206	24475.238	103	6.797569
SH	22	2008	3	13	6	25	18	0	2535	40	6	0	401E	7182806.322	1215879.71	552.70006	551.67943	TRUE	70	5.059414	0.521349	970	20	0	0	103	6.797569
SH	22	2008	3	13	6	25	18	0	2535	40	6	0	401E	7182806.322	1215879.71	552.70006	551.67943	TRUE	70	5.059414	0.521349	970	20	0	0	103	6.797569
SH	22	2008	3	13	12	25	18	0	2535	40	17	60	403E	7181712.715	1236114.136	562.06153	560.94115	TRUE	65	4.619978	0.48002	974	20	3.377326	20263.957	103	6.797569
SH	22	2008	3	13	12	25	18	0	2535	40	17	60	403E	7181712.715	1236114.136	562.06153	560.94115	TRUE	65	4.619978	0.48002	974	20	0	0	103	6.797569
SH	22	2008	3	13	18	25	18	0	2535	40	6	0	401E	7182806.322	1215879.71	552.70006	551.67943	TRUE	55	3.975254	0.397362	982	20	3.377326	20263.957	103	6.797569
SH	22	2008	3	14	0	25	23	60	2545	40	23	60	404E	7170021.775	1245614.412	563.71256	562.52438	TRUE	40	2.834758	0.283706	993	20	5.394434	32366.605	103	6.797569
SH	22	2008	3	14	6	25	23	60	2545	40	17	60	403E	7170581.854	1235503.602	558.99136	557.85412	TRUE	30	3.210837	0.21138	1000	30	1.687718	10126.31	103	6.797569
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	9	2009	1	17	18	20	36	0	2065	42	42	0	427E	7691680.971	1514442.065	841.48806	839.36861	TRUE	20	1.424235	0.139054	1007	30	5.872048	35232.288	41	6.580518
SH	9	2009	1	18	0	20	53	60	2095	42	36	0	426E	7658757.373	1501898.111	824.97539	822.91386	TRUE	25	1.815835	0.170051	1004	30	5.872048	35232.288	41	6.580518
SH	9	2009	1	18	6	21	11	60	2125	42	12	0	422E	7627720.462	1457925.871	795.98082	794.23994	TRUE	30	2.633163	0.21138	1000	35	8.970395	53822.372	41	6.580518
SH	9	2009	1	18	12	21	41	60	2175	42	0	0	420E	7573090.267	1433737.347	767.35943	765.71522	TRUE	30	2.730976	0.21138	1000	35	9.957609	59745.652	41	6.580518
SH	9	2009	1	18	18	21	41	60	2175	42	36	0	416E	7575483.497	1392004.072	750.56997	749.24458	TRUE	30	2.791803	0.21138	1000	35	6.966973	41801.84	41	6.580518
SH	9	2009	1	19	0	21	30	0	2155	41	12	0	412E	7600067.308	1351486.033	742.41017	741.41977	TRUE	40	3.763136	0.283706	993	35	7.898796	47392.775	41	6.580518
SH	9	2009	1	19	6	21	41	60	2175	41	0	0	410E	7578861.982	1329463.661	725.9231	725.03948	TRUE	40	3.300498	0.283706	993	30	5.095343	30572.058	41	6.580518
SH	9	2009	1	19	12	22	0	0	2205	40	53	60	409E	7545964.475	1317319.98	709.37455	708.50396	TRUE	55	4.64368	0.397362	982	30	5.844549	35067.292	41	6.580518
SH	9	2009	1	19	18	21	30	0	2155	41	23	60	414E	7598949.491	1372362.503	750.55012	749.41103	TRUE	65	4.325358	0.48002	974	25	12.733476	76400.858	41	6.580518
SH	9	2009	1	19	18	21	30	0	2155	41	23	60	414E	7598949.491	1372362.503	750.55012	749.41103	TRUE	65	4.325358	0.48002	974	25	0	0	41	6.580518
SH	9	2009	1	20	0	21	6	0	2115	42	0	0	420E	7640106.462	1437610.66	791.7962	790.24133	TRUE	90	4.543726	0.666002	956	20	12.857357	77144.14	41	6.580518
SH	9	2009	1	20	0	21	6	0	2115	42	0	0	420E	7640106.462	1437610.66	791.7962	790.24133	TRUE	90	4.543726	0.666002	956	20	0	0	41	6.580518
SH	9	2009	1	20	0	21	6	0	2115	42	0	0	420E	7640106.462	1437610.66	791.7962	790.24133	TRUE	90	4.543726	0.666002	956	20	0	0	41	6.580518
SH	9	2009	1	20	6	20	30	0	2055	42	17	60	423E	7705344.585	1472966.763	829.20837	827.47656	TRUE	100	4.821073	0.74866	948	20	12.367146	74202.875	41	6.580518
SH	9	2009	1	20	6	20	30	0	2055	42	17	60	423E	7705344.585	1472966.763	829.20837	827.47656	TRUE	100	4.821073	0.74866	948	20	0	0	41	6.580518
SH	9	2009	1	20	6	20	30	0	2055	42	17	60	423E	7705344.585	1472966.763	829.20837	827.47656	TRUE	100	4.821073	0.74866	948	20	0	0	41	6.580518
SH	9	2009	1	20	12	20	6	0	2015	42	36	0	426E	7748242.778	1507199.198	858.37817	856.41719	TRUE	115	5.356036	0.862316	937	20	9.147122	54882.734	41	6.580518
SH	9	2009	1	20	12	20	6	0	2015	42	36	0	426E	7748242.778	1507199.198	858.37817	856.41719	TRUE	115	5.356036	0.862316	937	20	0	0	41	6.580518
SH	9	2009	1	20	12	20	6	0	2015	42	36	0	426E	7748242.778	1507199.198	858.37817	856.41719	TRUE	115	5.356036	0.862316	937	20	0	0	41	6.580518
SH	9	2009	1	20	15	20	0	0	2005	42	53	60	429E	7757560.079	1539582.297	874.85212	872.60486	TRUE	105	7.192759	0.78999	944	30	5.61614	33696.843	41	6.580518
SH	9	2009	1	20	15	20	0	0	2005	42	53	60	429E	7757560.079	1539582.297	874.85212	872.60486	TRUE	105	7.192759	0.78999	944	30	0	0	41	6.580518
SH	9	2009	1	20	15	20	0	0	2005	42	53	60	429E	7757560.079	1539582.297	874.85212	872.60486	TRUE	105	7.192759	0.78999	944	30	0	0	41	6.580518
SH	9	2009	1	20	18	20	6	0	2015	43	12	0	432E	7744427.548	1570647.691	883.03425	880.46495	TRUE	105	4.753889	0.78999	944	20	5.621195	33727.172	41	6.5

BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	13	2010	2	2	12	21	6	0	211S	44	23	60	444E	7623710.756	1689852.416	895.33644	891.34452	TRUE	40	2.232057	0.283706	993	25	16.280842	97685.052	9	2.484714
SH	13	2010	2	2	18	21	6	0	211S	45	53	60	459E	7611354.901	1848281.437	963.99942	958.01932	TRUE	30	1.554972	0.21138	1000	25	26.485018	158910.11	9	2.484714
SH	13	2011	2	16	12	18	41	60	187S	44	6	0	441E	7895469.17	1476240.192	919.41595	975.90683	TRUE	30	2.44636	0.21138	1000	40	19.506652	117039.91	59	3.475773
SH	13	2011	2	16	18	19	36	0	196S	43	53	60	439E	7795781.062	1648456.299	933.07321	929.7577	TRUE	35	2.995332	0.252709	996	40	17.247917	103487.5	59	3.475773
SH	13	2011	2	17	0	20	6	0	201S	43	47	60	438E	7740367.568	1634187.383	908.27469	905.04272	TRUE	35	2.693422	0.252709	996	35	9.536854	57221.126	59	3.475773
SH	13	2011	2	17	6	20	36	0	206S	43	42	0	437E	7684984.225	1619905.641	883.86486	880.70972	TRUE	40	3.613063	0.283706	993	40	9.532522	57195.13	59	3.475773
SH	13	2011	2	17	12	20	48	0	208S	43	53	60	439E	7661121.396	1639501.245	884.67283	881.27928	TRUE	40	3.609777	0.283706	993	40	5.146256	30877.537	59	3.475773
SH	13	2011	2	17	18	21	6	0	211S	44	30	0	445E	7622938.38	1700394.294	899.82884	895.71632	TRUE	35	3.105566	0.252709	996	40	11.97904	71874.238	59	3.475773
SH	13	2011	2	18	0	21	23	60	214S	45	17	60	453E	7582716.546	1782160.951	925.43105	920.29542	TRUE	30	1.942998	0.21138	1000	30	15.187332	91123.994	59	3.475773
SH	5	2012	1	7	6	17	36	0	176S	41	12	0	412E	8035092.397	1372461.182	921.08206	920.80374	TRUE	20	1.733818	0.139054	1007	40	7.736277	46417.664	10	3.503136
SH	5	2012	1	7	12	17	53	60	179S	41	30	0	415E	8000174.406	1403044.403	916.85103	916.25194	TRUE	25	2.177235	0.170051	1004	40	7.736277	46417.664	10	3.503136
SH	5	2012	1	7	18	18	23	60	184S	41	42	0	417E	7943339.171	1421762.84	900.17933	899.31405	TRUE	30	4.964542	0.21138	1000	75	9.973052	59838.314	10	3.503136
SH	5	2012	1	8	0	18	53	60	189S	42	0	0	420E	7885891.856	1450925.654	888.01897	886.79701	TRUE	30	3.36763	0.21138	1000	50	10.737608	64425.645	10	3.503136
SH	5	2012	1	8	6	19	6	0	191S	42	36	0	426E	7860120.463	1513547.545	901.94685	900.11202	TRUE	35	3.098302	0.252709	996	40	11.286258	67717.545	10	3.503136
SH	5	2012	1	8	12	19	23	60	194S	43	12	0	432E	7822850.793	1575416.478	912.6706	910.17047	TRUE	35	3.062038	0.252709	996	40	12.037895	72227.372	10	3.503136
SH	5	2012	1	8	18	20	6	0	201S	43	36	0	436E	7741748.255	1612997.012	899.7988	896.79394	TRUE	35	2.718717	0.252709	996	35	14.897724	89386.342	10	3.503136
SH	5	2012	1	9	0	20	48	0	208S	44	6	0	441E	7659658.774	1606005.601	893.44835	889.8251	TRUE	30	2.012397	0.21138	1000	30	15.816009	94896.052	10	3.503136
SH	5	2012	1	9	6	21	30	0	215S	44	23	60	444E	7578782.124	1686561.257	880.50323	876.4952	TRUE	25	1.701596	0.170051	1004	30	14.156593	84939.558	10	3.503136
SH	5	2012	1	9	12	22	11	60	222S	43	53	60	439E	7504082.093	1628416.831	832.4472	828.96311	TRUE	20	1.439663	0.139054	1007	30	15.776978	94661.867	10	3.503136
SH	8	2012	1	18	6	16	41	60	167S	41	23	60	414E	8134607.482	1398239.961	971.83842	971.83842	TRUE	20	1.23322	0.139054	1007	30	3.724286	22345.717	111	13.293421
SH	8	2012	1	18	12	16	53	60	169S	41	23	60	414E	8112282.094	1397286.995	962.22119	961.88805	TRUE	25	1.557379	0.170051	1004	30	3.724286	22345.717	111	13.293421
SH	8	2012	1	18	18	17	11	60	172S	41	23	60	414E	8078794.971	1395836.946	947.43551	947.04959	TRUE	25	1.581635	0.170051	1004	30	5.586417	33518.503	111	13.293421
SH	8	2012	1	19	0	17	30	0	175S	41	12	0	412E	8046249.445	1372946.032	925.9789	925.71895	TRUE	30	1.941851	0.21138	1000	30	6.631585	39789.511	111	13.293421
SH	8	2012	1	19	6	17	30	0	175S	40	47	60	408E	8048060.082	1330139.989	912.68663	912.7676	TRUE	35	1.915978	0.252709	996	25	7.14072	42844.32	111	13.293421
SH	8	2012	1	19	12	17	53	60	179S	40	30	0	405E	8004790.948	1296273.632	883.02392	883.26275	TRUE	45	2.546022	0.325035	989	25	9.157796	54946.775	111	13.293421
SH	8	2012	1	19	18	18	11	60	182S	39	53	60	399E	7973888.514	1231056.641	848.74371	849.35399	TRUE	55	3.237274	0.397362	982	25	12.027996	72167.973	111	13.293421
SH	8	2012	1	20	0	18	11	60	182S	39	17	60	393E	7976194.817	1167268.521	830.18574	831.18638	TRUE	75	2.709352	0.552346	967	15	10.6383	63829.8	111	13.293421
SH	8	2012	1	20	0	18	11	60	182S	39	17	60	393E	7976194.817	1167268.521	830.18574	831.18638	TRUE	75	2.709352	0.552346	967	15	0	0	111	13.293421
SH	8	2012	1	20	6	18	18	0	183S	38	42	0	387E	7967179.264	1103192.736	807.38294	808.70624	TRUE	75	3.71343	0.552346	967	20	10.784488	64706.927	111	13.293421
SH	8	2012	1	20	6	18	18	0	183S	38	42	0	387E	7967179.264	1103192.736	807.38294	808.70624	TRUE	75	3.71343	0.552346	967	20	0	0	111	13.293421
SH	8	2012	1	20	6	18	18	0	183S	38	42	0	387E	7967179.264	1103192.736	807.38294	808.70624	TRUE	75	3.71343	0.552346	967	20	0	0	111	13.293421
SH	8	2012	1	20	12	18	18	0	183S	38	17	60	383E	7968462.434	1060761.996	796.14611	797.67876	TRUE	75	3.765776	0.552346	967	20	7.075023	42450.138	111	13.293421
SH	8	2012	1	20	12	18	18	0	183S	38	17	60	383E	7968462.434	1060761.996	796.14611	797.67876	TRUE	75	3.765776	0.552346	967	20	0	0	111	13.293421
SH	8	2012	1	20	12	18	18	0	183S	38	17	60	383E	7968462.434	1060761.996	796.14611	797.67876	TRUE	75	3.765776	0.552346	967	20	0	0	111	13.293421
SH	8	2012	1	20	18	18	18	0	183S	38	0	0	380E	7969362.765	1028953.578	788.02557	789.70399	TRUE	80	4.058168	0.593676	963	20	5.303526	31821.157	111	13.293421
SH	8	2012	1	20	18	18	18	0	183S	38	0	0	380E	7969362.765	1028953.578	788.02557	789.70399	TRUE	80	4.058168	0.593676	963	20	0	0	111	13.293421
SH	8	2012	1	21	0	18	6	0	181S	37	42	0	377E	7992398.173	997726.697	790.9027	792.77354	TRUE	85	5.368243	0.635005	959	25	6.467328	38803.97	111	13.293421
SH	8	2012	1	21	0	18	6	0	181S	37	42	0	377E	7992398.173	997726.697	790.9027	792.77354	TRUE	85	5.368243	0.635005	959	25	0	0	111	13.293421
SH	8	2012	1	21	0	18	6	0	181S	37	42	0	377E	7992398.173	997726.697	790.9027	792.77354	TRUE	85	5.368243	0.635005	959	25	0	0	111	13.293421
SH	8	2012	1	21	6	18	0	0	180S	37	42	0	377E	8003492.18	998009.3167	796.27857	798.17747	TRUE	100	5.020201	0.74866	948	20	1.849601	11097.607	111	13.293421
SH	8	2012	1	21	6	18	0	0	180S	37	42	0	377E	8003492.18	998009.3167	796.27857	798.17747	TRUE	100	5.020201	0.74866	948	20	0	0	111	13.293421
SH	8	2012	1	21	6	18	0	0	180S	37	42	0	377E	8003492.18	998009.3167	796.27857	798.17747	TRUE	100	5.020201	0.74866	948	20	0	0	111	13.293421
SH	8	2012	1	21	12	17	53	60	179S	37	47	60	378E	8014314.834	1008912.414	804.18786	806.06972	TRUE	100	3.729174	0.74866	948	15	2.560422	15362.531	111	13.293421
SH	8	2012	1	21	12	17	53	60	179S	37	47	60	378E	8014314.834	1008912.414	804.18786	806.06972	TRUE	100	3.729174	0.74866	948	15	0	0	111	13.293421
SH	8	2012	1	21	12	17	53	60	179S	37	47	60	378E	8014314.834	1008912.414	804.18786	806.06972	TRUE	100	3.729174	0.74866	948	15	0	0	111	13.293421
SH	8	2012	1	21	18	17	48	0	178S	38	0	0	380E	8024852.831	1030457.866	814.67725	816.49323	TRUE	90	4.416266	0.666002	956	20	3.997415	23984.493	111	13.293421
SH	8																										

SH	8	2012	1	25	12	22	53	60	229S	38	47	60	388E	7455791.844	1095543.679	587.93202	588.03671	TRUE	110	7.475208	0.820987	941	20	0	0	111	13.293421
SH	8	2012	1	25	18	23	23	60	234S	38	53	60	389E	7399825.804	1103579.796	570.49872	570.43781	TRUE	110	7.703083	0.820987	941	20	9.423341	56540.046	111	13.293421
SH	8	2012	1	25	18	23	23	60	234S	38	53	60	389E	7399825.804	1103579.796	570.49872	570.43781	TRUE	110	7.703083	0.820987	941	20	0	0	111	13.293421
SH	8	2012	1	26	0	23	41	60	237S	39	6	0	391E	7365627.609	1122668.839	566.27087	566.04986	TRUE	100	8.81252	0.74866	948	25	6.527523	39165.139	111	13.293421
SH	8	2012	1	26	0	23	41	60	237S	39	6	0	391E	7365627.609	1122668.839	566.27087	566.04986	TRUE	100	8.81252	0.74866	948	25	0	0	111	13.293421
SH	8	2012	1	26	0	23	41	60	237S	39	6	0	391E	7365627.609	1122668.839	566.27087	566.04986	TRUE	100	8.81252	0.74866	948	25	0	0	111	13.293421
SH	8	2012	1	26	6	24	0	0	240S	39	17	60	393E	7331383.35	1141650.617	562.74531	562.36509	TRUE	100	10.631802	0.74866	948	30	6.525542	39153.252	111	13.293421
SH	8	2012	1	26	6	24	0	0	240S	39	17	60	393E	7331383.35	1141650.617	562.74531	562.36509	TRUE	100	10.631802	0.74866	948	30	0	0	111	13.293421
SH	8	2012	1	26	6	24	0	0	240S	39	17	60	393E	7331383.35	1141650.617	562.74531	562.36509	TRUE	100	10.631802	0.74866	948	30	0	0	111	13.293421
SH	8	2012	1	26	12	24	30	0	245S	39	23	60	394E	7275331.059	1149302.757	548.22179	547.68721	TRUE	115	14.624231	0.862316	937	35	0	0	111	13.293421
SH	8	2012	1	26	12	24	30	0	245S	39	23	60	394E	7275331.059	1149302.757	548.22179	547.68721	TRUE	115	14.624231	0.862316	937	35	0	0	111	13.293421
SH	8	2012	1	26	18	25	0	0	250S	39	30	0	395E	7219257.84	1156824.577	534.98395	534.3009	TRUE	115	12.857153	0.862316	937	30	0	0	111	13.293421
SH	8	2012	1	26	18	25	0	0	250S	39	30	0	395E	7219257.84	1156824.577	534.98395	534.3009	TRUE	115	12.857153	0.862316	937	30	0	0	111	13.293421
SH	8	2012	1	27	0	25	30	0	255S	39	36	0	396E	7163163.806	1164213.869	523.1287	522.30415	TRUE	115	13.146635	0.862316	937	30	9.429773	56578.638	111	13.293421
SH	8	2012	1	27	0	25	30	0	255S	39	36	0	396E	7163163.806	1164213.869	523.1287	522.30415	TRUE	115	13.146635	0.862316	937	30	0	0	111	13.293421
SH	8	2012	1	27	0	25	30	0	255S	39	36	0	396E	7163163.806	1164213.869	523.1287	522.30415	TRUE	115	13.146635	0.862316	937	30	0	0	111	13.293421
SH	8	2012	1	27	6	25	53	60	259S	39	42	0	397E	7118170.522	1172040.169	515.65375	514.71303	TRUE	95	12.83711	0.707331	952	35	7.61148	45668.88	111	13.293421
SH	8	2012	1	27	6	25	53	60	259S	39	42	0	397E	7118170.522	1172040.169	515.65375	514.71303	TRUE	95	12.83711	0.707331	952	35	0	0	111	13.293421
SH	8	2012	1	27	6	25	53	60	259S	39	42	0	397E	7118170.522	1172040.169	515.65375	514.71303	TRUE	95	12.83711	0.707331	952	35	0	0	111	13.293421
SH	8	2012	1	27	12	26	18	0	263S	39	53	60	399E	7072624.84	1189791.507	514.06355	512.96889	TRUE	90	12.198746	0.666002	956	35	8.147118	48882.708	111	13.293421
SH	8	2012	1	27	12	26	18	0	263S	39	53	60	399E	7072624.84	1189791.507	514.06355	512.96889	TRUE	90	12.198746	0.666002	956	35	0	0	111	13.293421
SH	8	2012	1	27	12	26	18	0	263S	39	53	60	399E	7072624.84	1189791.507	514.06355	512.96889	TRUE	90	12.198746	0.666002	956	35	0	0	111	13.293421
SH	8	2012	1	27	18	26	48	0	268S	40	12	0	402E	7015333.542	1216734.919	516.33281	515.03216	TRUE	90	10.423184	0.666002	956	30	10.551777	63310.665	111	13.293421
SH	8	2012	1	27	18	26	48	0	268S	40	12	0	402E	7015333.542	1216734.919	516.33281	515.03216	TRUE	90	10.423184	0.666002	956	30	0	0	111	13.293421
SH	8	2012	1	28	0	27	11	60	272S	40	36	0	406E	6968455.845	1253991.443	527.74037	526.20642	TRUE	80	10.56481	0.593676	963	35	9.979934	59879.604	111	13.293421
SH	8	2012	1	28	0	27	11	60	272S	40	36	0	406E	6968455.845	1253991.443	527.74037	526.20642	TRUE	80	10.56481	0.593676	963	35	0	0	111	13.293421
SH	8	2012	1	28	0	27	11	60	272S	40	36	0	406E	6968455.845	1253991.443	527.74037	526.20642	TRUE	80	10.56481	0.593676	963	35	0	0	111	13.293421
SH	8	2012	1	28	6	27	53	60	279S	41	17	60	413E	6885989.772	1318446.652	551.27223	549.32823	TRUE	60	7.588153	0.438691	978	35	17.444457	104666.74	111	13.293421
SH	8	2012	1	28	6	27	53	60	279S	41	17	60	413E	6885989.772	1318446.652	551.27223	549.32823	TRUE	60	7.588153	0.438691	978	35	0	0	111	13.293421
SH	8	2012	1	28	12	29	41	60	297S	42	0	0	420E	6680291.716	1372462.432	570.91112	568.54947	TRUE	60	7.329116	0.438691	978	35	35.445339	212672.04	111	13.293421
SH	8	2012	1	28	18	30	53	60	309S	43	0	0	430E	6538201.901	1457960.41	622.89179	619.96614	TRUE	45	5.75576	0.325035	989	40	27.638248	165829.49	111	13.293421
SH	8	2012	1	29	0	32	6	0	321S	44	42	0	447E	6387682.966	1607275.943	717.26718	713.12999	TRUE	45	5.624294	0.325035	989	45	35.336157	212016.94	111	13.293421
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	12	2012	2	14	18	20	11	60	202S	44	0	0	440E	7272734.648	1654636.794	912.78035	909.3089	TRUE	35	2.29818	0.252709	996	30	30.102859	180617.15	101	5.658982
SH	12	2012	2	15	0	21	23	60	214S	43	6	0	431E	7599508.213	1550878.948	826.40751	823.80928	TRUE	35	2.537775	0.252709	996	30	27.491266	164947.6	101	5.658982
SH	12	2012	2	15	6	22	18	0	223S	42	23	60	424E	7503519.779	1471344.682	761.33082	759.26909	TRUE	35	3.211262	0.252709	996	35	20.776241	124657.45	101	5.658982
SH	12	2012	2	15	12	23	23	60	234S	41	30	0	415E	7386405.489	1370705.313	680.89034	679.36506	TRUE	40	3.517967	0.283706	993	30	25.735859	154445.15	101	5.658982
SH	12	2012	2	15	18	24	0	0	240S	41	12	0	412E	7321316.997	1335952.318	646.23577	644.81591	TRUE	50	4.632286	0.366365	985	30	12.297564	73785.382	101	5.658982
SH	12	2012	2	16	0	24	18	0	243S	40	53	60	409E	7289659.58	1303337.683	622.31422	621.03127	TRUE	50	3.210495	0.366365	985	20	7.575374	45452.243	101	5.658982
SH	12	2012	2	16	6	24	36	0	246S	41	12	0	412E	7254431.067	1331985.66	626.25404	624.7401	TRUE	55	5.257363	0.397362	982	30	7.567758	45406.55	101	5.658982
SH	12	2012	2	16	6	24	36	0	246S	41	12	0	412E	7254431.067	1331985.66	626.25404	624.7401	TRUE	55	5.257363	0.397362	982	30	0	0	101	5.658982
SH	12	2012	2	16	12	25	6	0	251S	41	23	60	414E	7197438.405	1348912.51	620.25273	618.54187	TRUE	55	5.307994	0.397362	982	30	9.908865	59453.19	101	5.658982
SH	12	2012	2	16	12	25	6	0	251S	41	23	60	414E	7197438.405	1348912.51	620.25273	618.54187	TRUE	55	5.307994	0.397362	982	30	0	0	101	5.658982
SH	12	2012	2	16	18	25	18	0	253S	41	53	60	419E	7171835.217	1398209.495	638.62747	636.56704	TRUE	55	5.155954	0.397362	982	30	9.258203	55549.22	101	5.658982
SH	12	2012	2	16	18	25	18	0	253S	41	53	60	419E	7171835.217	1398209.495	638.62747	636.56704	TRUE	55	5.155954	0.397362	982	30	0	0	101	5.658982
SH	12	2012	2	17	0	25	23	60	254S	42	17	60	423E	7157882.26	1438017.24	655.4639	653.11486	TRUE	50	4.567343	0.366365	985	30	7.030374	42182.243	101	5.658982
SH	12	2012	2	17	6	25	36	0	256S	42	36	0	426E	7133357.058	1466826.041	665.06453	662.4777	TRUE	50	4.501681	0.366365	985	30	6.305713	37834.277	101	5.658982
SH	12	2012	2	17	12	25	48	0	258S	42	42	0	427E	7110261.704	1475300.769	665.05098	662.37298	TRUE	50	4.501772	0.366365	985</					

SH	14	2012	3	7	12	29	23	60	294S	40	47	60	408E	6722253.219	1257995.296	509.23001	507.47785	TRUE	35	5.464779	0.252709	996	40	3.257674	19546.045	62	16.752785
SH	14	2012	3	7	18	29	23	60	294S	40	36	0	406E	6723549.473	1238499.418	498.72725	497.06357	TRUE	35	5.578407	0.252709	996	40	3.256487	19538.924	62	16.752785
SH	14	2012	3	8	0	29	23	60	294S	40	30	0	405E	6724184.628	1228753.241	493.47737	491.85653	TRUE	40	6.442266	0.283706	993	40	1.627809	9766.8511	62	16.752785
SH	14	2012	3	8	6	29	30	0	295S	40	17	60	403E	6714302.336	1208563.496	482.44426	480.90551	TRUE	45	6.495067	0.325035	989	35	3.746426	22478.557	62	16.752785
SH	14	2012	3	8	12	29	41	60	297S	40	6	0	401E	6693266.755	1187729.787	471.10055	469.64043	TRUE	45	6.649767	0.325035	989	35	4.9344	29606.402	62	16.752785
SH	14	2012	3	8	18	29	30	0	295S	39	42	0	397E	6717836.546	1150181.851	450.97255	449.66107	TRUE	45	6.943084	0.325035	989	35	7.478715	44872.287	62	16.752785
SH	14	2012	3	9	0	29	23	60	294S	39	23	60	394E	6730603.61	1121618.124	435.79275	434.58553	TRUE	40	6.383895	0.283706	993	35	5.214521	31287.129	62	16.752785
SH	14	2012	3	9	6	29	30	0	295S	38	42	0	387E	6723041.599	1052959.461	398.58803	397.59151	TRUE	45	7.842427	0.325035	989	35	11.512307	69073.844	62	16.752785
SH	14	2012	3	9	12	29	30	0	295S	37	47	60	378E	6726999.091	965534.3192	351.51135	350.73885	TRUE	35	6.90148	0.252709	996	35	14.585778	87514.669	62	16.752785
SH	14	2012	3	9	18	29	30	0	295S	36	53	60	369E	6730272.367	878168.6919	304.49928	303.90377	TRUE	30	7.748089	0.21138	1000	40	14.571154	87426.925	62	16.752785
SH	14	2012	3	10	0	29	11	60	292S	36	30	0	365E	6764780.076	840353.1583	285.92648	285.41323	TRUE	30	6.226776	0.21138	1000	30	8.532286	51193.716	62	16.752785
SH	14	2012	3	10	6	29	0	0	290S	36	0	0	360E	6788302.58	792271.0711	262.3085	261.88778	TRUE	25	5.644624	0.170051	1004	30	8.921253	53527.519	62	16.752785
SH	14	2012	3	10	12	28	41	60	287S	35	42	0	357E	6822264.862	763788.5351	251.54935	251.20686	TRUE	25	5.879421	0.170051	1004	30	7.387473	44324.841	62	16.752785
BASIN	CY	YYYY	MM	DD	HH	Lat(deg)	Lat(min)	Lat(sec)	N/S	Lon(deg)	Lon(min)	Lon(sec)	E/W	UTM-Northing	UTM-Easting	R	R_Lat_Long	True/False	VMAX (knots)	VLOC (knots)	RI	MSLP	MRD	S	CycDist	Num6hPeriods	vlocAvg
SH	16	2013	2	14	12	20	6	0	201S	41	47	60	418E	7752953.357	1422733.566	826.48825	825.25878	TRUE	15	1.087512	0.108057	1010	30	5.124945	30749.667	79	3.704082
SH	16	2013	2	14	18	20	18	0	203S	41	36	0	416E	7731739.431	1400473.48	809.88476	808.7912	TRUE	20	1.479662	0.139054	1007	30	5.124945	30749.667	79	3.704082
SH	16	2013	2	15	0	20	41	60	207S	41	6	0	411E	7689818.479	1345621.389	772.84104	772.07041	TRUE	20	1.550376	0.139054	1007	30	11.50618	69037.079	79	3.704082
SH	16	2013	2	15	6	21	0	0	210S	40	30	0	405E	7659452.366	1281135.206	736.4981	736.09365	TRUE	25	2.033291	0.170051	1004	30	11.879684	71278.107	79	3.704082
SH	16	2013	2	15	12	20	48	0	208S	39	47	60	398E	7684996.362	1208906.106	719.58726	719.66915	TRUE	25	2.080911	0.170051	1004	30	12.768819	76612.915	79	3.704082
SH	16	2013	2	15	18	20	11	60	202S	39	30	0	395E	7753021.805	1180189.899	737.32436	737.72281	TRUE	25	2.03102	0.170051	1004	30	12.306368	73838.211	79	3.704082
SH	16	2013	2	16	0	19	48	0	198S	38	36	0	386E	7800906.608	1087250.966	727.64327	728.62899	TRUE	25	2.057952	0.170051	1004	30	17.424918	104549.51	79	3.704082
SH	16	2013	2	16	6	18	36	0	186S	38	6	0	381E	7935770.06	1038614.493	774.87104	776.4202	TRUE	25	1.932909	0.170051	1004	30	23.894245	143365.47	79	3.704082
SH	16	2013	2	16	12	17	11	60	172S	37	42	0	377E	8092242.921	1000215.665	839.57239	841.69647	TRUE	25	1.784346	0.170051	1004	30	26.852595	161115.57	79	3.704082
SH	16	2013	2	16	18	16	36	0	166S	38	12	0	382E	8157480.47	1055307.955	884.37091	886.41607	TRUE	25	1.694171	0.170051	1004	30	14.231321	85387.928	79	3.704082
SH	16	2013	2	17	0	16	30	0	165S	39	0	0	390E	8166193.202	1141318.774	910.40113	912.013	TRUE	20	1.754081	0.139054	1007	40	14.408497	86450.984	79	3.704082
SH	16	2013	2	17	6	16	41	60	167S	39	47	60	398E	8141201.871	1226389.66	922.32316	923.34896	TRUE	20	1.731493	0.139054	1007	40	14.777632	88665.79	79	3.704082
SH	16	2013	2	17	12	17	23	60	174S	40	6	0	401E	8062138.071	1255725.14	895.39248	896.04071	TRUE	20	1.783367	0.139054	1007	40	14.055105	84330.629	79	3.704082
SH	16	2013	2	17	18	18	36	0	186S	41	0	0	410E	7924495.169	1346196.388	865.81346	865.51639	TRUE	25	2.305407	0.170051	1004	40	27.452289	164713.74	79	3.704082
SH	16	2013	2	18	0	19	0	0	190S	40	12	0	402E	7883577.357	1259385.291	819.04163	819.2658	TRUE	25	2.436068	0.170051	1004	40	15.995167	95971.005	79	3.704082
SH	16	2013	2	18	6	19	18	0	193S	40	23	60	404E	7849278.436	1279147.611	811.43167	811.45043	TRUE	25	1.846061	0.170051	1004	30	6.597485	39584.913	79	3.704082
SH	16	2013	2	18	12	19	30	0	195S	40	47	60	408E	7825118.367	1320449.343	816.12515	815.80973	TRUE	30	2.202568	0.21138	1000	30	7.97486	47849.158	79	3.704082
SH	16	2013	2	18	18	19	48	0	198S	41	12	0	412E	7789668.89	1361121.925	816.95534	816.27326	TRUE	30	2.200336	0.21138	1000	30	8.992164	53952.983	79	3.704082
SH	16	2013	2	19	0	20	11	60	202S	41	6	0	411E	7745574.468	1348394.139	795.08303	794.40517	TRUE	30	3.010932	0.21138	1000	40	7.649101	45894.603	79	3.704082
SH	16	2013	2	19	6	20	36	0	206S	41	6	0	411E	7700969.415	1346181.115	777.24874	776.49662	TRUE	30	3.462186	0.21138	1000	45	7.44332	44659.917	79	3.704082
SH	16	2013	2	19	12	21	11	60	212S	41	6	0	411E	7634065.782	1342784.027	751.1257	750.26285	TRUE	40	4.248225	0.283706	993	40	11.164971	66989.823	79	3.704082
SH	16	2013	2	19	15	21	23	60	214S	41	12	0	412E	7611219.228	1352073.757	746.6197	745.64724	TRUE	40	3.209306	0.283706	993	30	4.110502	24663.011	79	3.704082
SH	16	2013	2	19	18	21	23	60	214S	41	0	0	410E	7612305.125	1331190.231	738.59469	737.7669	TRUE	45	4.859867	0.325035	989	40	3.48529	20911.738	79	3.704082
SH	16	2013	2	20	0	21	30	0	215S	40	42	0	407E	7602740.194	1299328.048	722.39953	721.76041	TRUE	55	3.043074	0.397362	982	20	5.544483	33266.9	79	3.704082
SH	16	2013	2	20	0	21	30	0	215S	40	42	0	407E	7602740.194	1299328.048	722.39953	721.76041	TRUE	55	3.043074	0.397362	982	20	0	0	79	3.704082
SH	16	2013	2	20	6	21	41	60	217S	40	53	60	409E	7579400.529	1319046.898	721.88145	721.06737	TRUE	60	3.322096	0.438691	978	20	5.092405	30554.427	79	3.704082
SH	16	2013	2	20	6	21	41	60	217S	40	53	60	409E	7579400.529	1319046.898	721.88145	721.06737	TRUE	60	3.322096	0.438691	978	20	0	0	79	3.704082
SH	16	2013	2	20	12	22	6	0	221S	40	53	60	409E	7534819.373	1316739.346	705.2573	704.36796	TRUE	70	2.97629	0.521349	970	15	7.440139	44640.837	79	3.704082
SH	16	2013	2	20	12	22	6	0	221S	40	53	60	409E	7534819.373	1316739.346	705.2573	704.36796	TRUE	70	2.97629	0.521349	970	15	0	0	79	3.704082
SH	16	2013	2	20	12	22	6	0	221S	40	53	60	409E	7534819.373	1316739.346	705.2573	704.36796	TRUE	70	2.97629	0.521349	970	15	0	0	79	3.704082
SH	16	2013	2	20	18	22	18	0	223S	41	6	0	411E	7511421.752	1336315.527	705.44431	704.38163	TRUE	90	3.825645	0.666002	956	15	5.084496	30506.975	79	3.704082
SH	16	2013	2	20	18	22	18	0	223S	41	6	0	411E	7511421.752	1336315.527	705.44431	704.38163	TRUE	90	3.825645	0.666002	956	15	0	0	79	3.704082
SH	16	2013	2	20	18	22	18	0	223S	41	6	0	411E	7511421.752	1336315.527	70											



ANNEXURE 2: DELFT-3D ANALYSES OF STORM SURGE COMPONENTS

Note in all Analyses:

Blue: values at outer boundary

Red: values at tide gauge

Green: values at berth 205

Analysis Number	DELFT-3D INPUT FOR SENSITIVITY STUDY															COMPUTED OUTPUT								
	Hydrodynamic Grid Number	Water Level and Tide				Storm Duration		Wind				Offshore Waves				Additional Comment	Storm Surge Components					Maximum Water Level including SLR	Freeboard 10	
		Sea (m)	Level (m)	Tide Growth Allowance (m)	Phase	Build-Up (hours)	Duration (hours)	Velocity (m/s)	Direction from (deg TN)	Return Period (years)	Comment	Significant Wave Height Hs (m)	Spectral Peak Period Tp (sec)	Direction from (deg TN)	Return Period		Comment	Wind Setup (mm)	Wave Setup (mm)	Pressure Deficit Setup (mm)	Wave Amplitude (mm)	Comment	(m)	(m)
1	1	0.58	2.287	0.114	HAT but tidal variance not simulated	24	48			50	no wind	5	12	67.5		50		Wind not included in analysis, but 55 mm added to account for wind setup. There was no wave penetration to Pier 2, but 300 mm amplitude added to account for wind/ship waves	80	280	300	50 Year Return Period	3.696	0.554
2	1	0.58	2.287	0.114	HAT but tidal variance not simulated	24	48	24.7	67.5		50 year Avg 48 hour wind					50	no waves	55	280	300		3.616	0.634	
3	1	0.58	2.287	0.114	HAT but tidal variance not simulated	24	48	24.7	67.5		50 year Avg 48 hour wind	5	12	67.5		50		100	280	300		3.661	0.589	
4	1	0.58	2.287	Storm Surge of 759 mm added at outer boundary	HAT with tidal variance simulated	24	48	24.7 gusting up to 38.5 for one hour	67.5		50 year avg 48 hour wind but gusting up to 30sec gust but duration of gust for one hour	5	12	67.5	50		No Reflection from structures	120		550	Setup is over and above that already allowed for in 759 mm. Storm is more severe than 50 year return period storm	4.176	0.074	
5	1	0.58	2.287	Storm Surge of 759 mm added at outer boundary	HAT with variance simulated	24	48	24.7 gusting up to 38.5 for one hour	67.5		50 year avg 48 hour wind but gusting up to 30sec gust but duration of gust for one hour	5	12	67.5	50			125	Included in 759 mm Storm Surge already added	500			4.126	0.124
6	1	0.58	2.287	0.114	HAT with tidal variance simulated	24	48	24.7 gusting up to 38.5 for one hour	67.5		50 year avg 48 hour wind but gusting up to 30sec gust but duration of gust for one hour	5	13	67.5	50			100		500			4.126	0.124
7	1	0.58	2.287	Storm Surge of 759 mm added at outer boundary	HAT with tidal variance simulated	24	48	24.7 gusting up to 38.5 for one hour	67.5		50 year avg 48 hour wind but gusting up to 30sec gust but duration of gust for one hour	8	13	157.5	50		No Reflection from structures	-20		150			3.756	0.494
8	2	0.58	2.287	0.114	HAT but tidal variance not simulated	24	48	38.5	45								no waves	65	external waves not included in setup analysis but 80 mm added to water levels to account for wave setup	280	550	More severe than 100 year Return Period	3.956	0.294
9	2	0.58	2.287	0.114	HAT but tidal variance not simulated	24	48	38.5	70								no waves	245		280			3.586	0.664
VALUES USED IN PROJECT DESIGN PREMISE 50 YEAR DESIGN LIFE TO 2069		0.58	2.287							50					50			759			300	50 Year Return Period	3.926	0.324

SIMULATION ANALYSIS 1: DBN12-3H-SS-01

Grid:

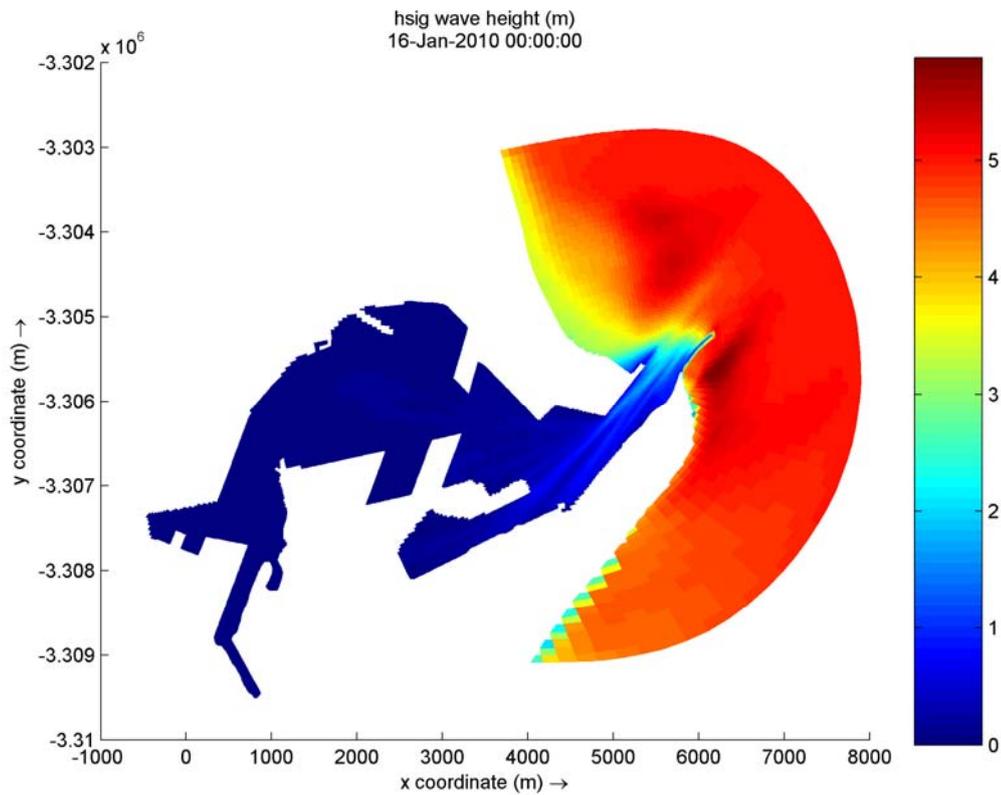
- DBN12

Water levels:

- HAT *1.05 + SLR

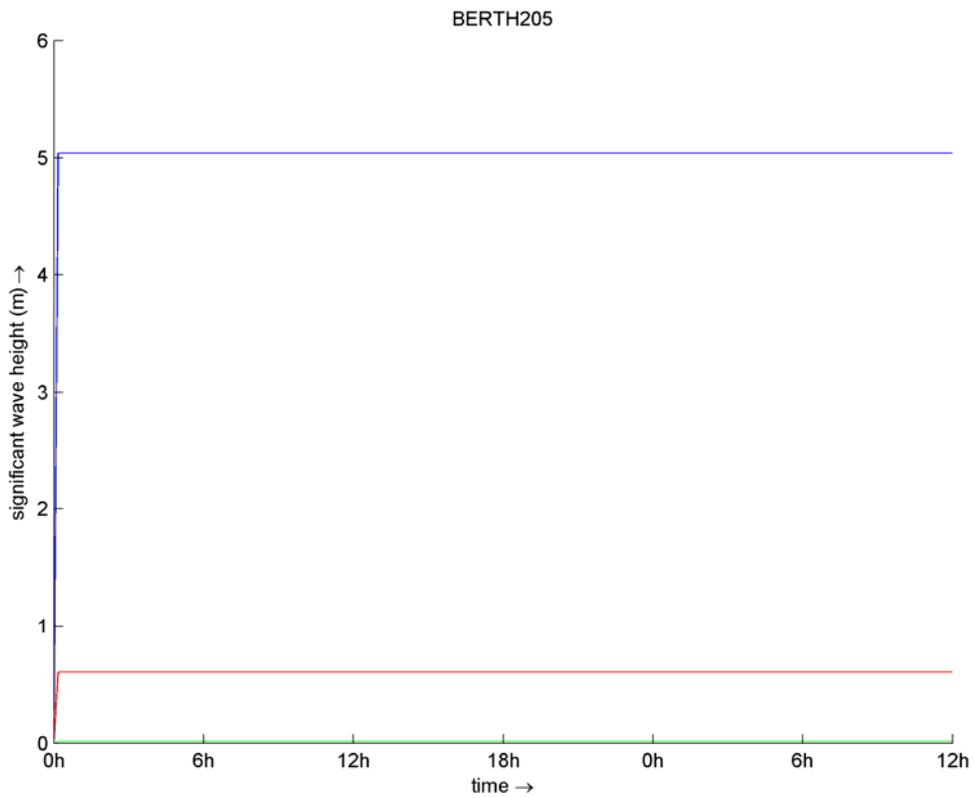
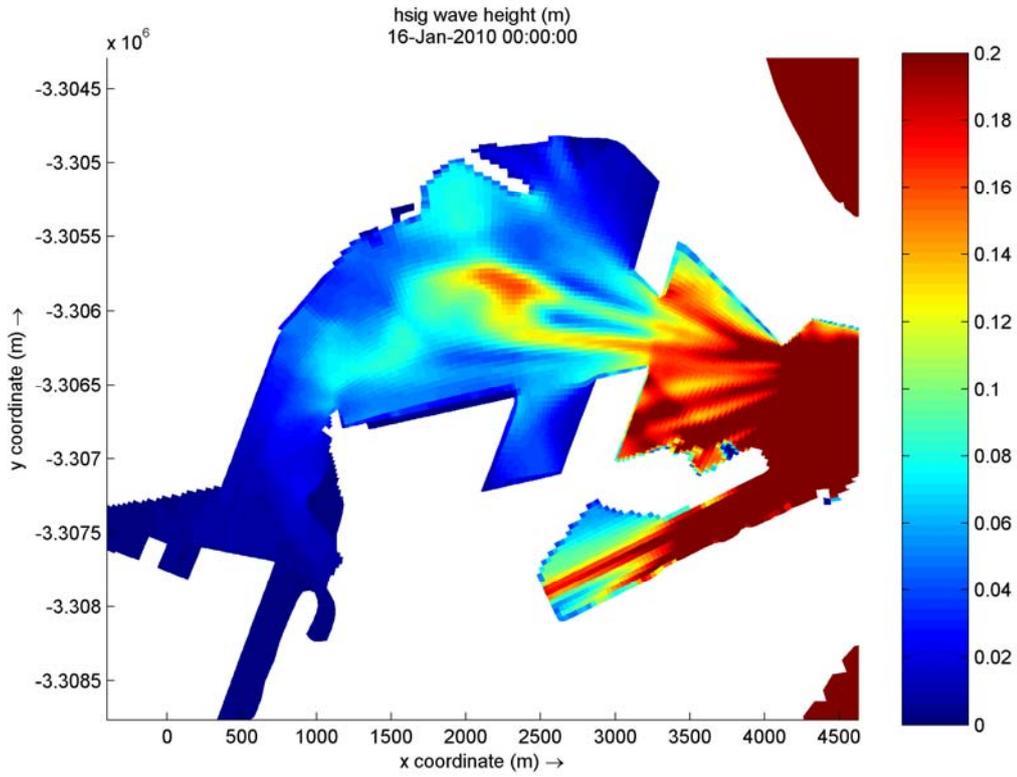
Storm condition:

- wave from 67.5deg
- waves 5m Hs @ 12s
- no wind (external waves only)



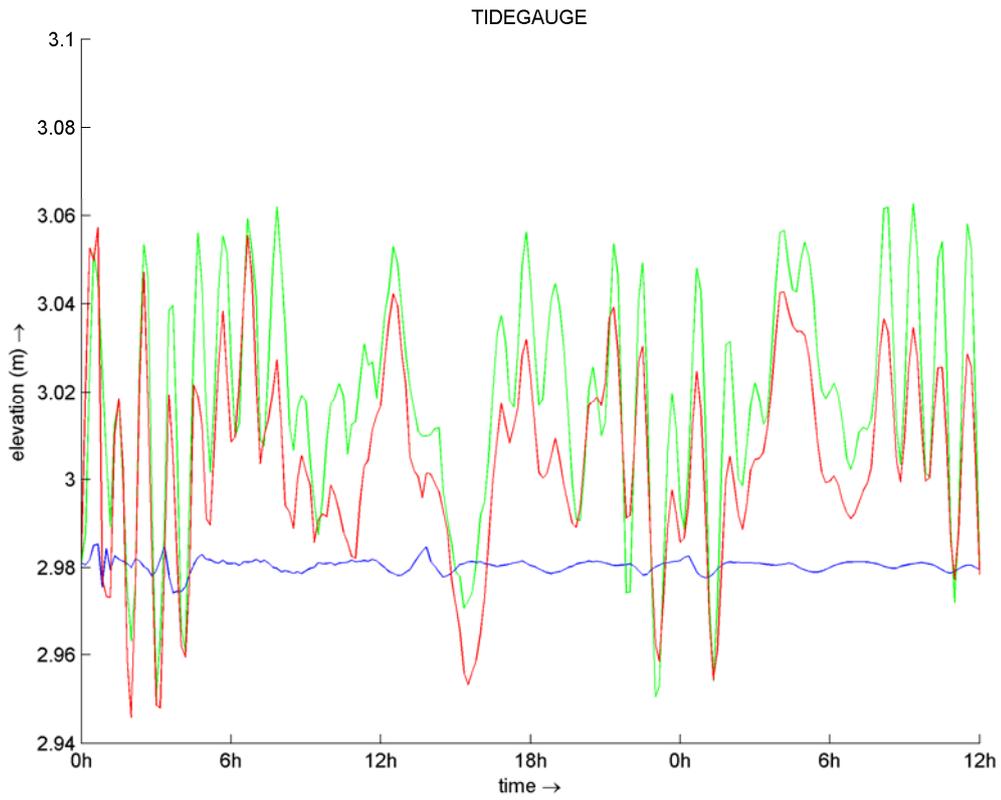


AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES





AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES



SIMULATION ANALYSIS 2: DBN12-3H-SS-03

Grid:

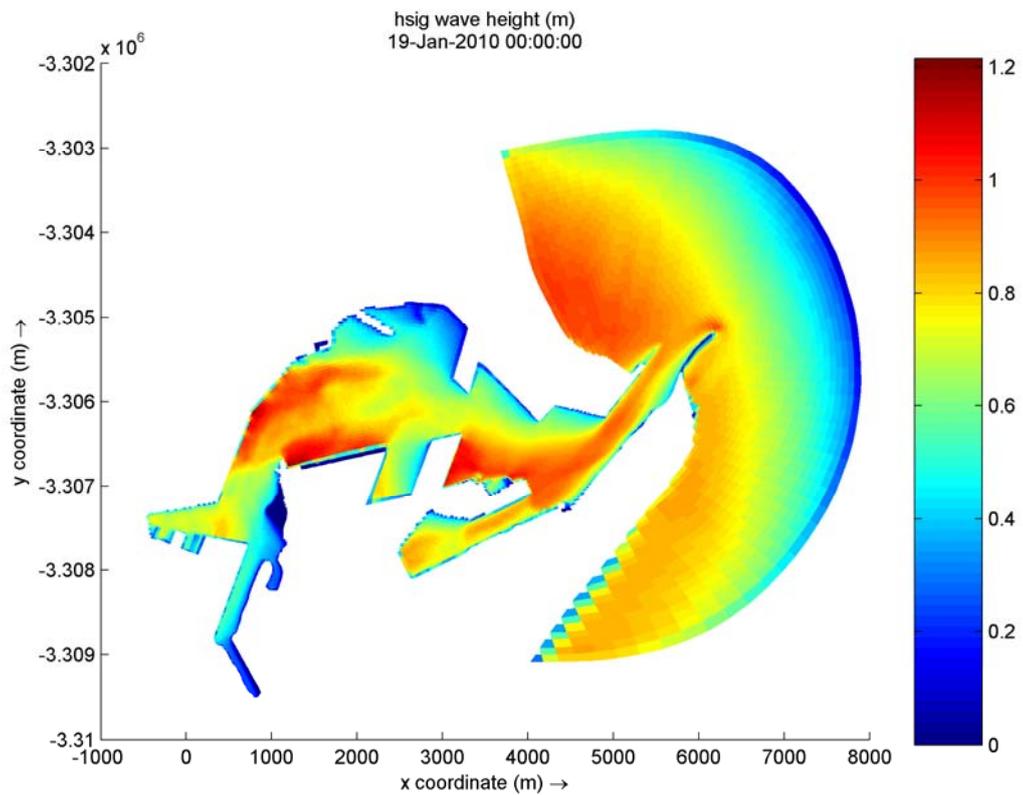
- DBN12

Water levels:

- HAT *1.05 + SLR

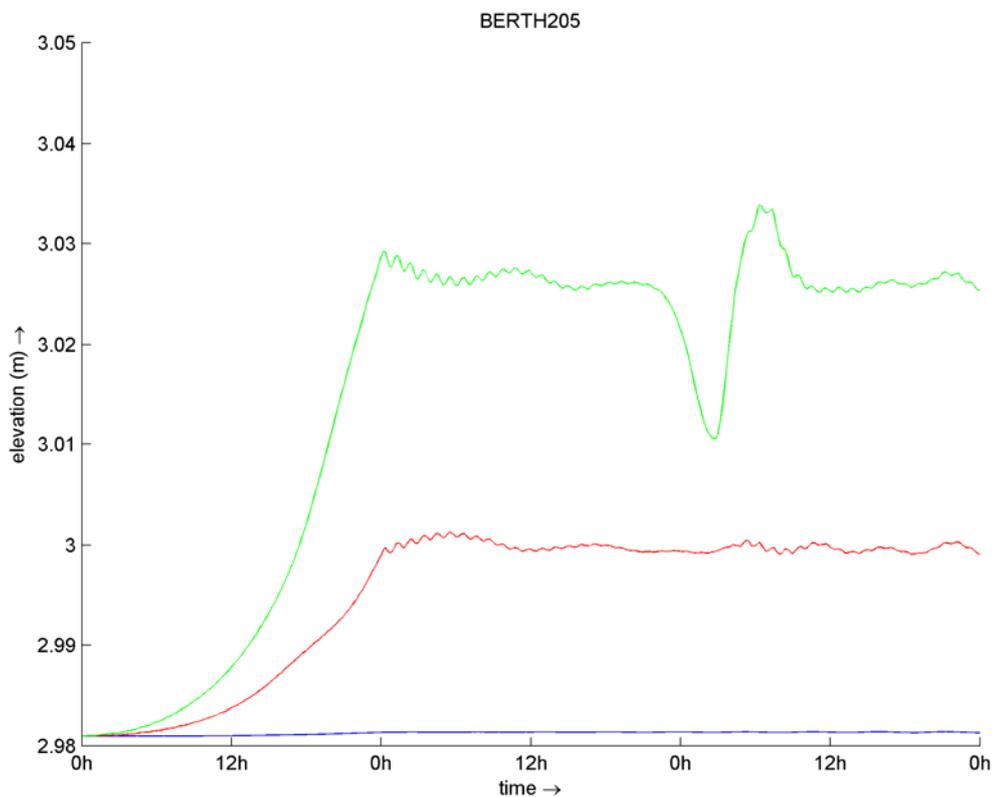
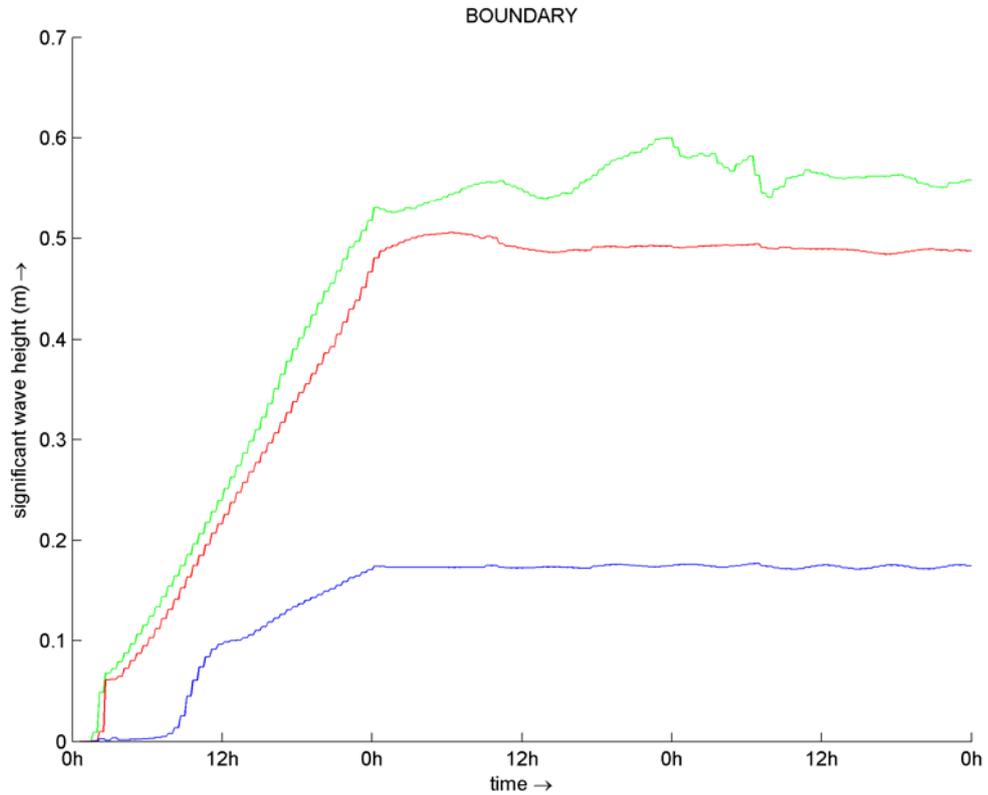
Storm condition:

- wind from 67.5deg, 24.7m/s
- no external waves (wind waves only)





AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES



SIMULATION ANALYSIS 3: DBN12-3H-SS-05

Grid:

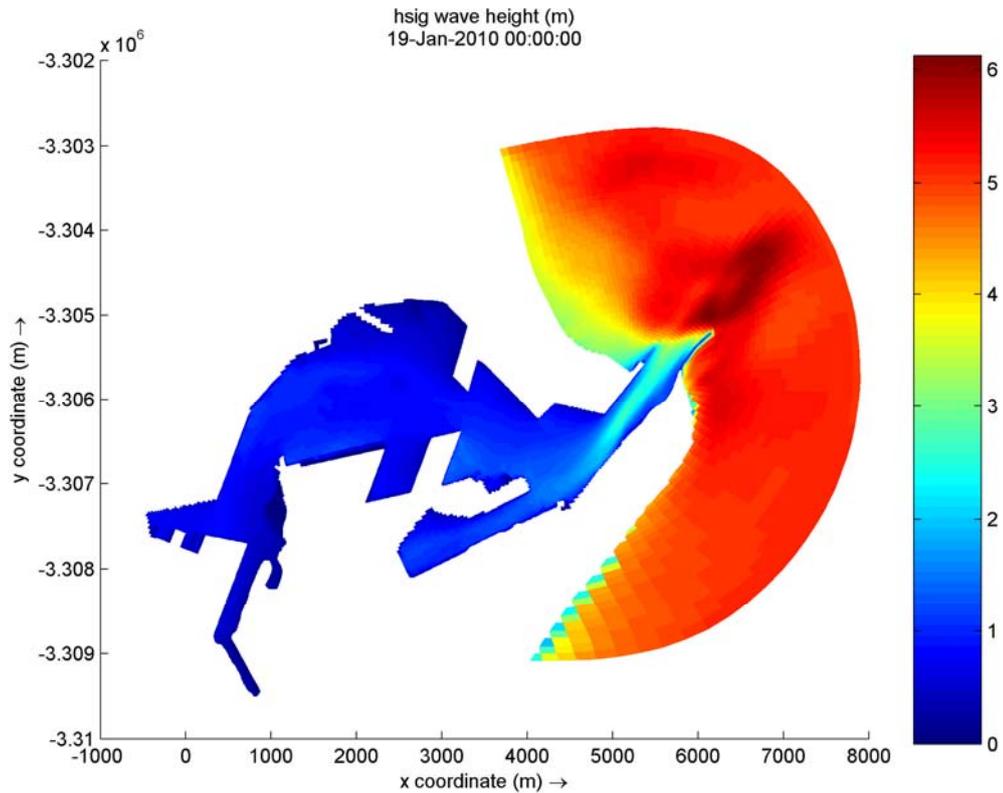
- DBN12

Water levels:

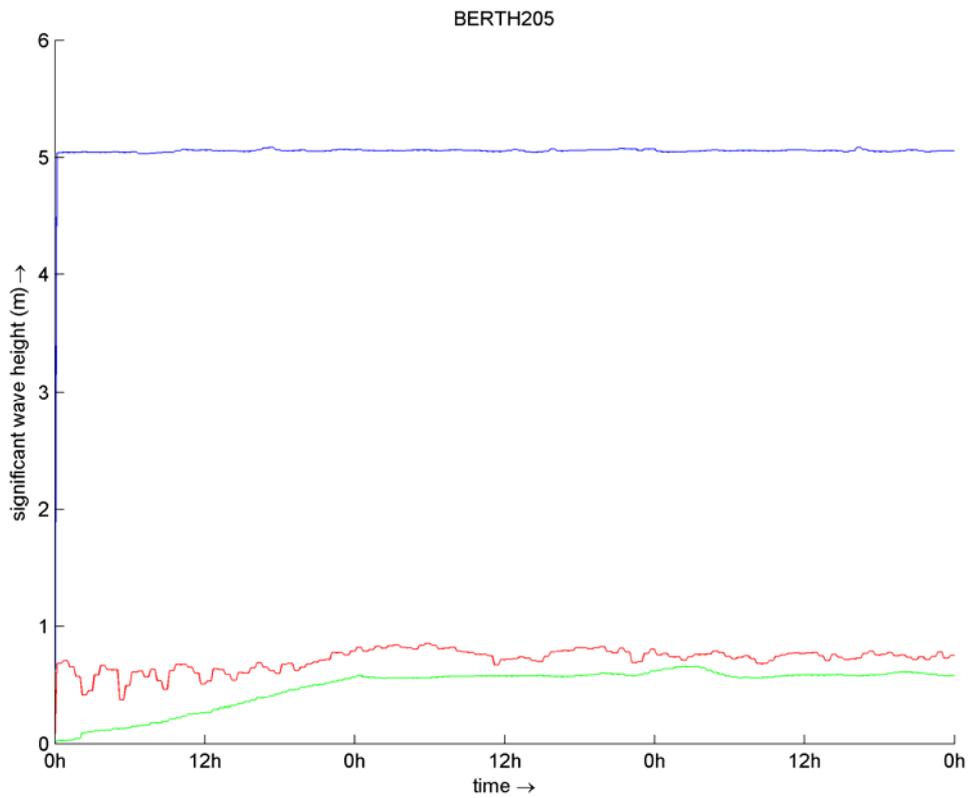
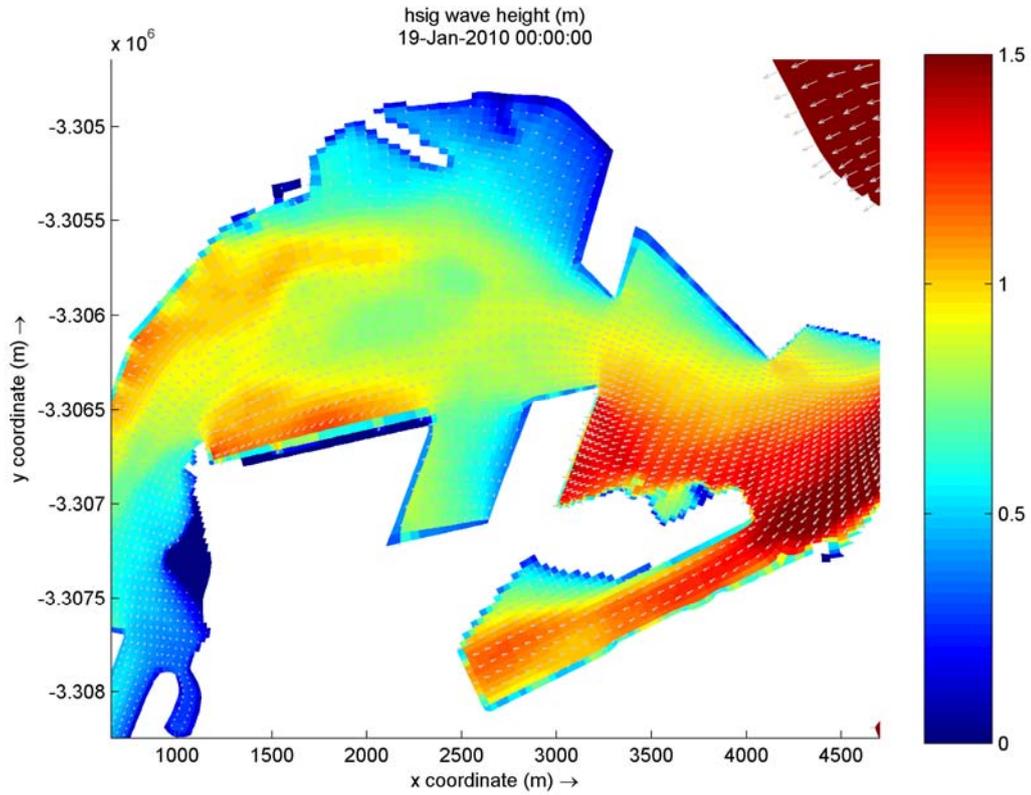
- HAT *1.05 + SLR

Storm condition:

- wave from 67.5deg
- waves 5m Hs @ 12s
- wind from 67.5deg, 24.7m/s
- (combined wind and wave)

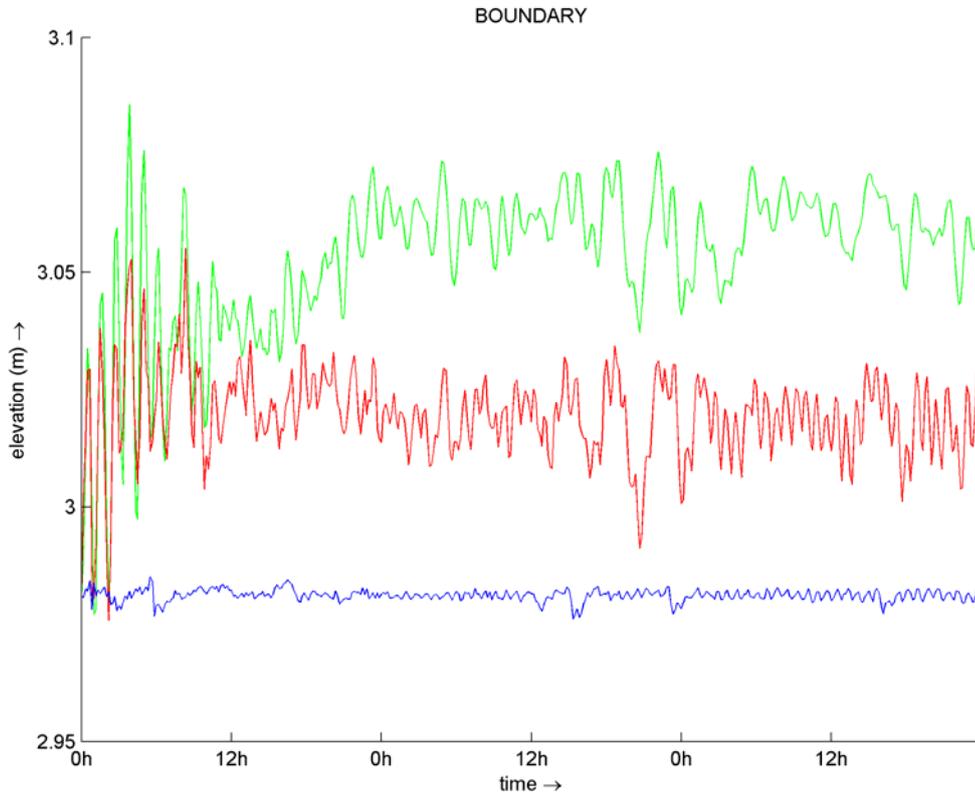


AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
 QUERIES REGARDING STORM SURGE AND CYCLONES





AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES





AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES

SIMULATION ANALYSIS 4: DBN12-3H-SLR-ENE

Grid:

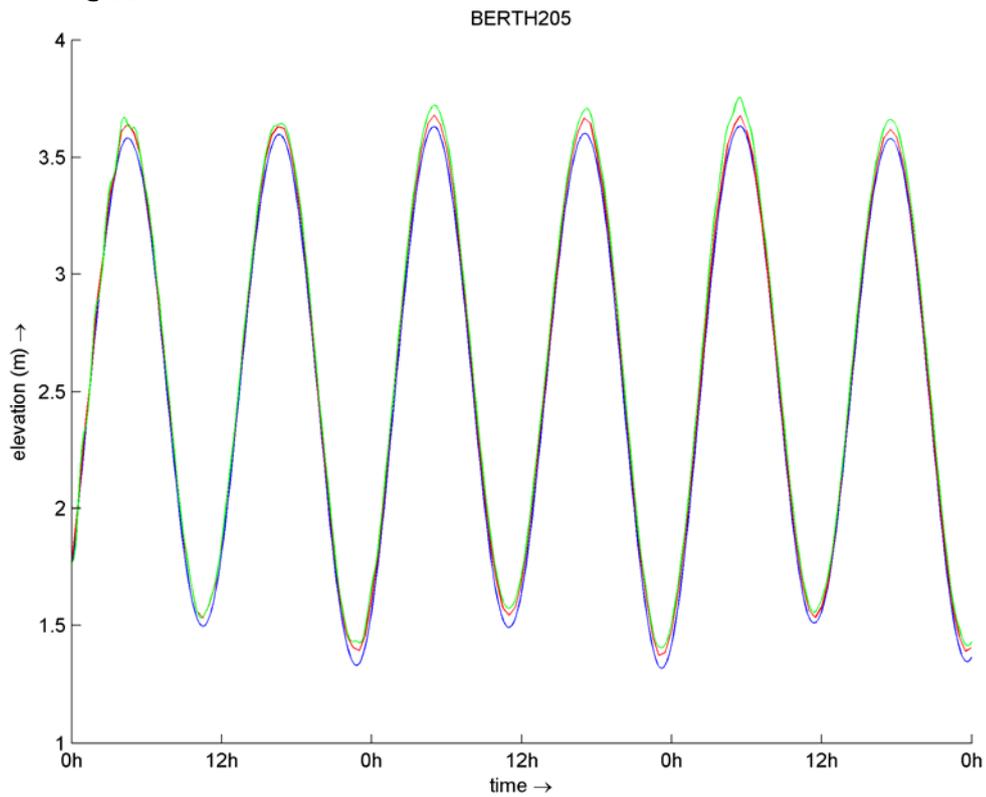
- DBN12 excluding reflection from structures inside port.

Water levels:

- HAT+SLR+SS

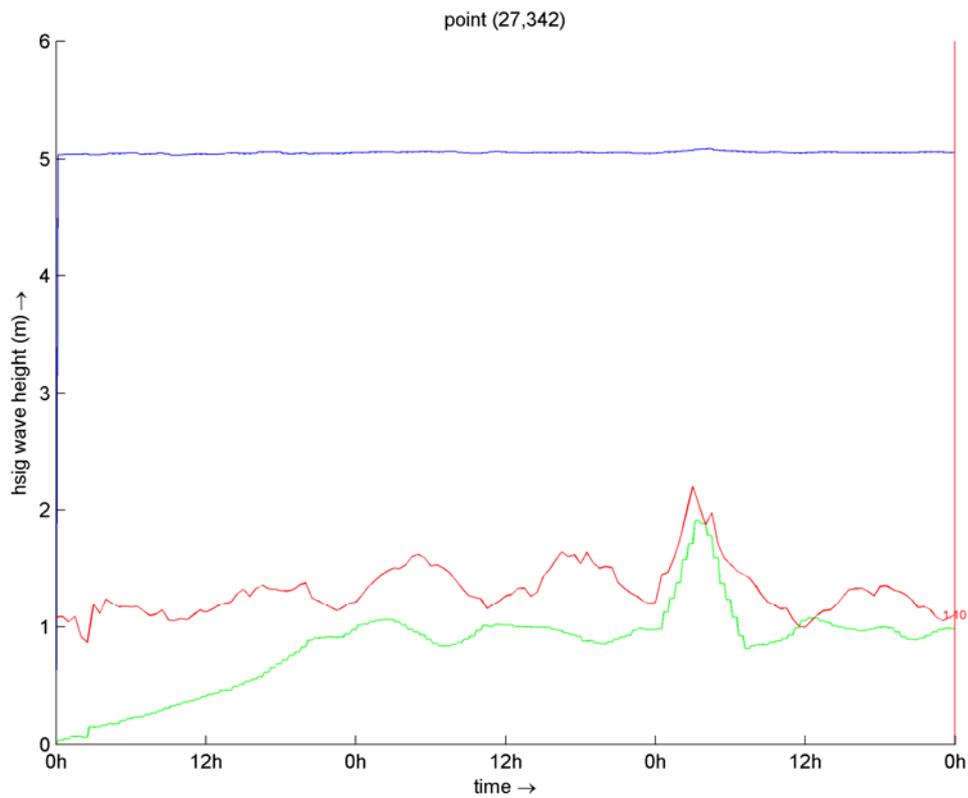
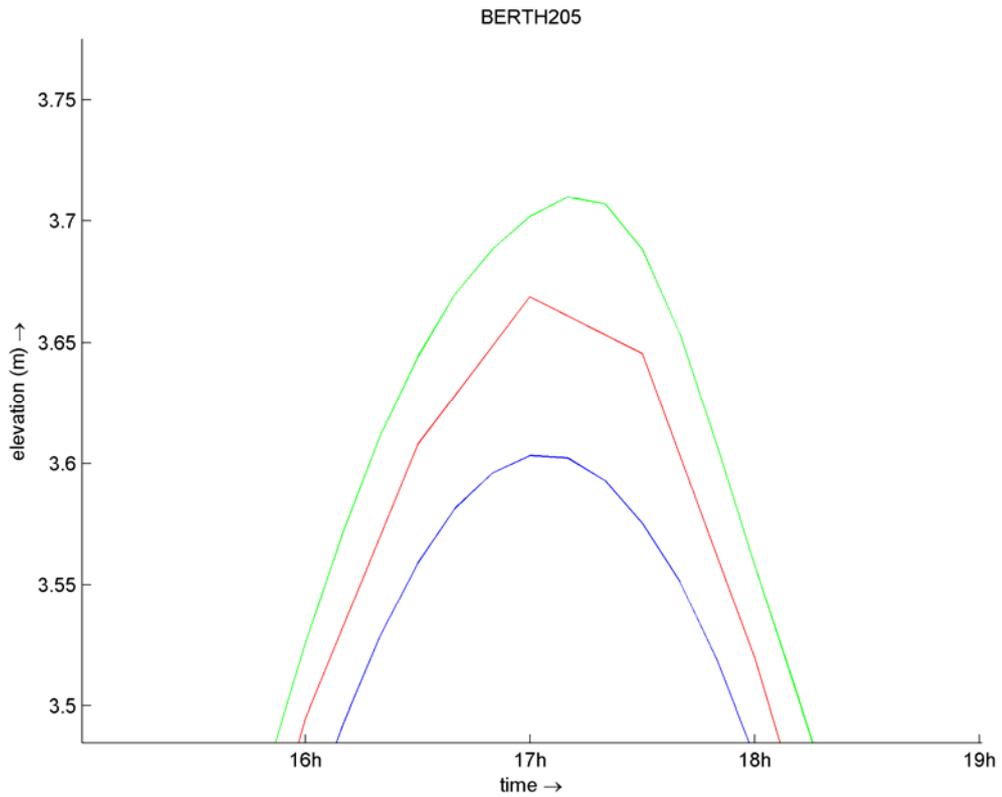
Storm condition:

- Wind and wave from 67.5deg
- wind velocity zero to 24.7m/s over 1st day
- 30 second gust of 38.5m/s
- waves 5m Hs @ 12s



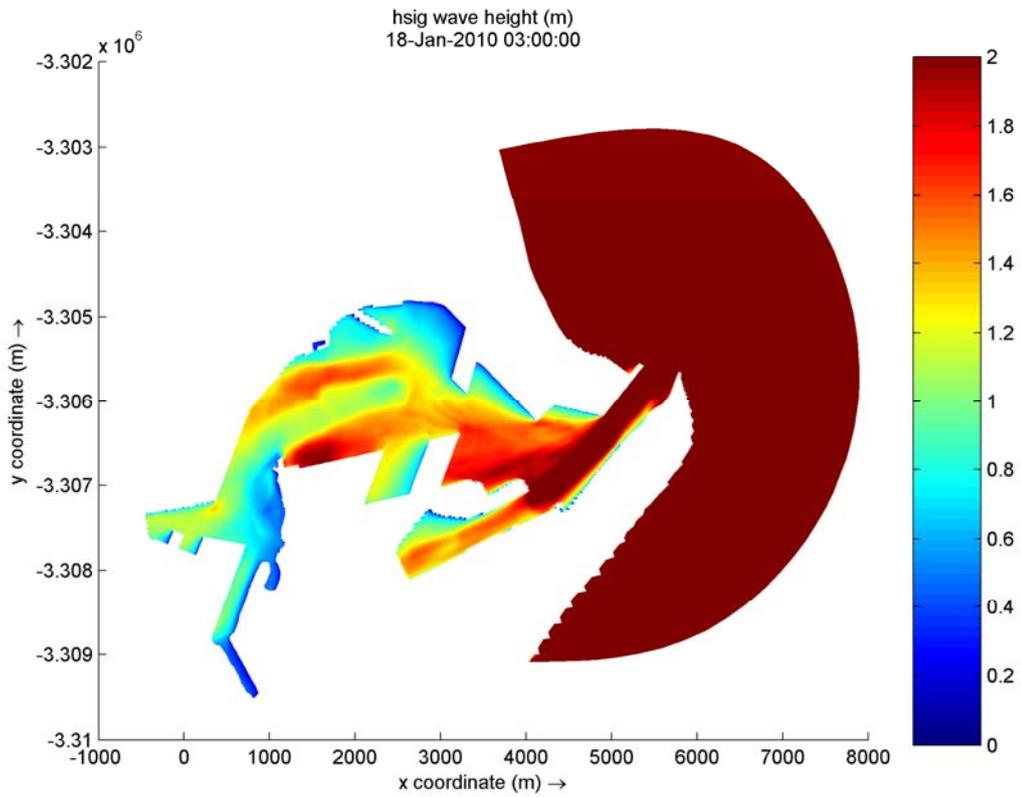


AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES





AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES





SIMULATION ANALYSIS 5: DBN12-3H-SLR-ENE-RFL

Grid:

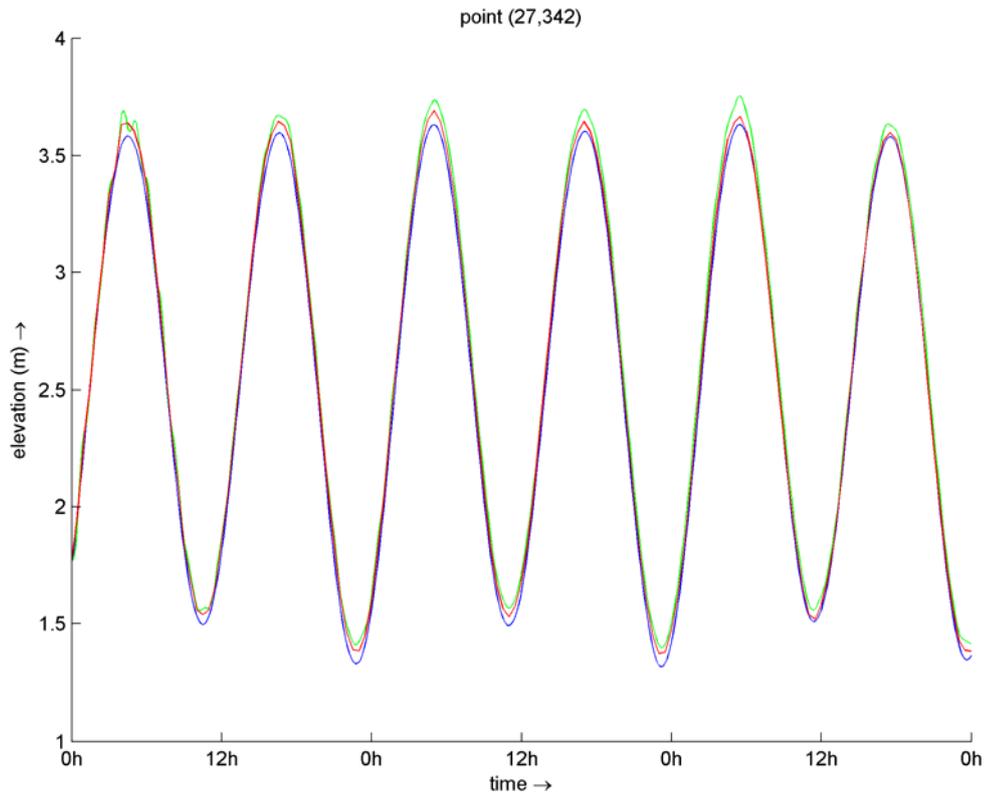
- DBN12 including reflection from structures inside port.

Water levels:

- HAT+SLR+SS

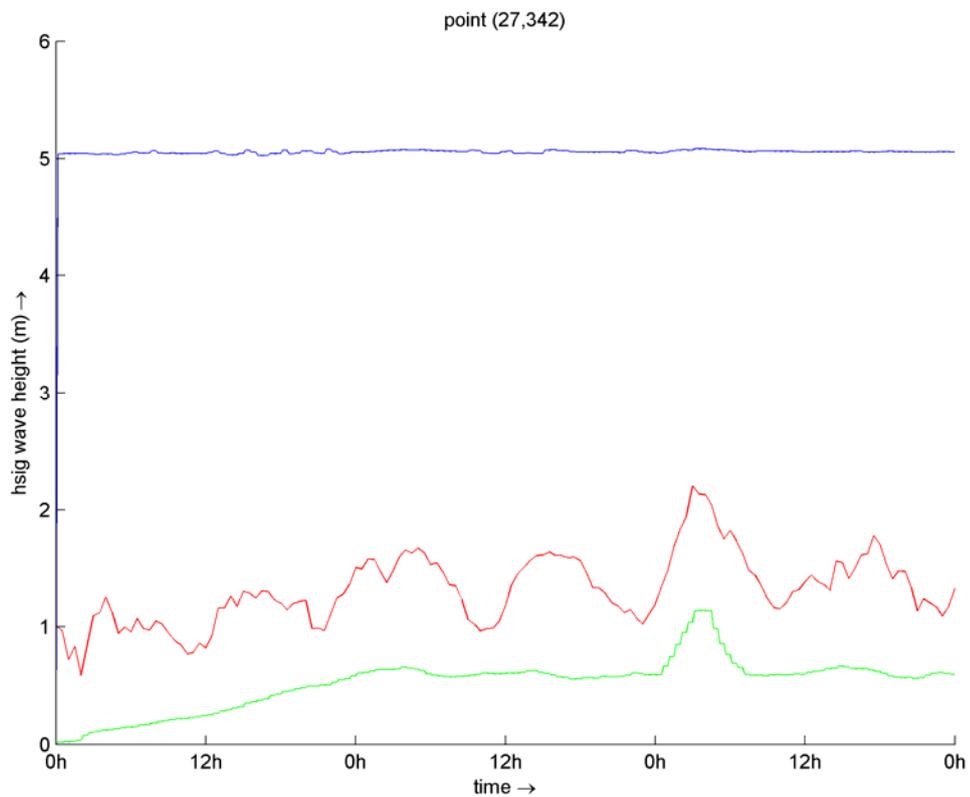
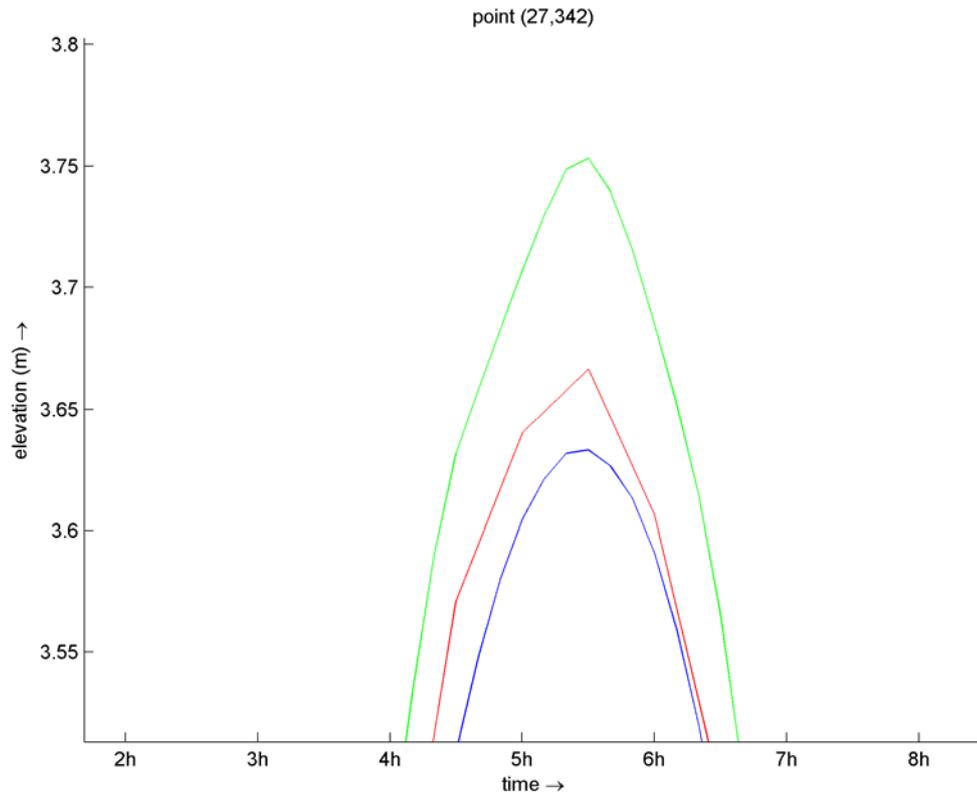
Storm condition:

- Wind and wave from 67.5deg
- wind velocity zero to 24.7m/s over 1st day
- 30 second gust of 38.5m/s
- waves 5m Hs @ 12s



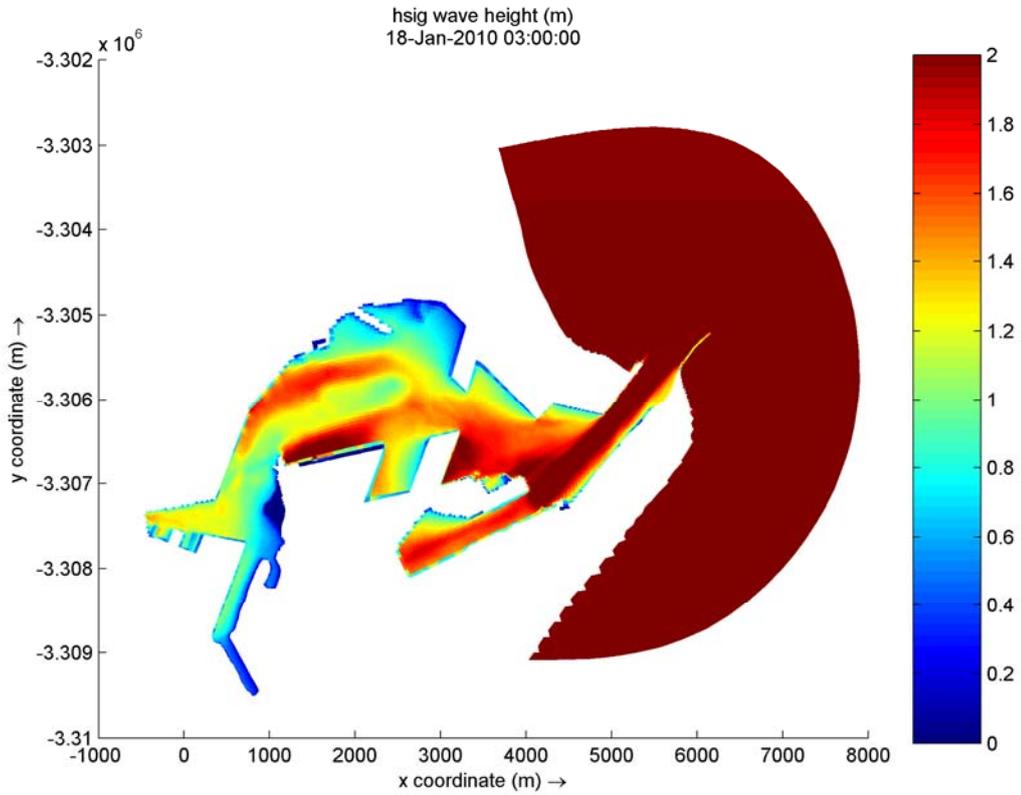


AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES





AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES





SIMULATION ANALYSIS 6:DBN12-3H-SLR-ENE-3

Grid:

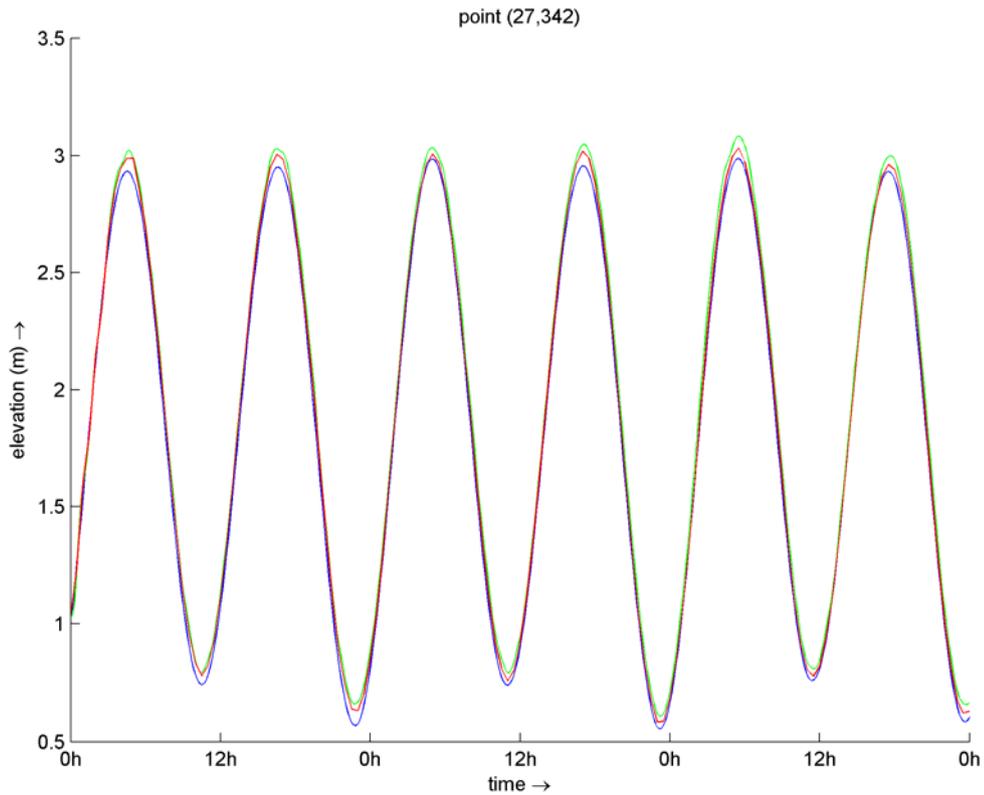
- DBN 12 including reflection from structures inside port.

Water levels:

- 1.05* HAT+SLR (No storm surge)

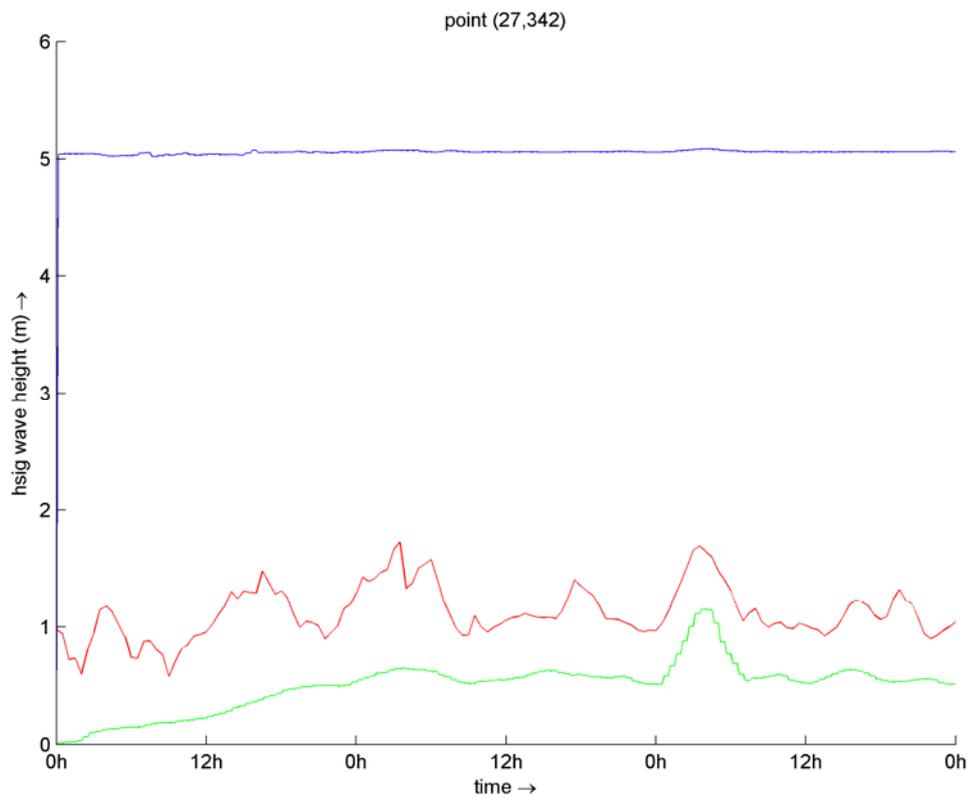
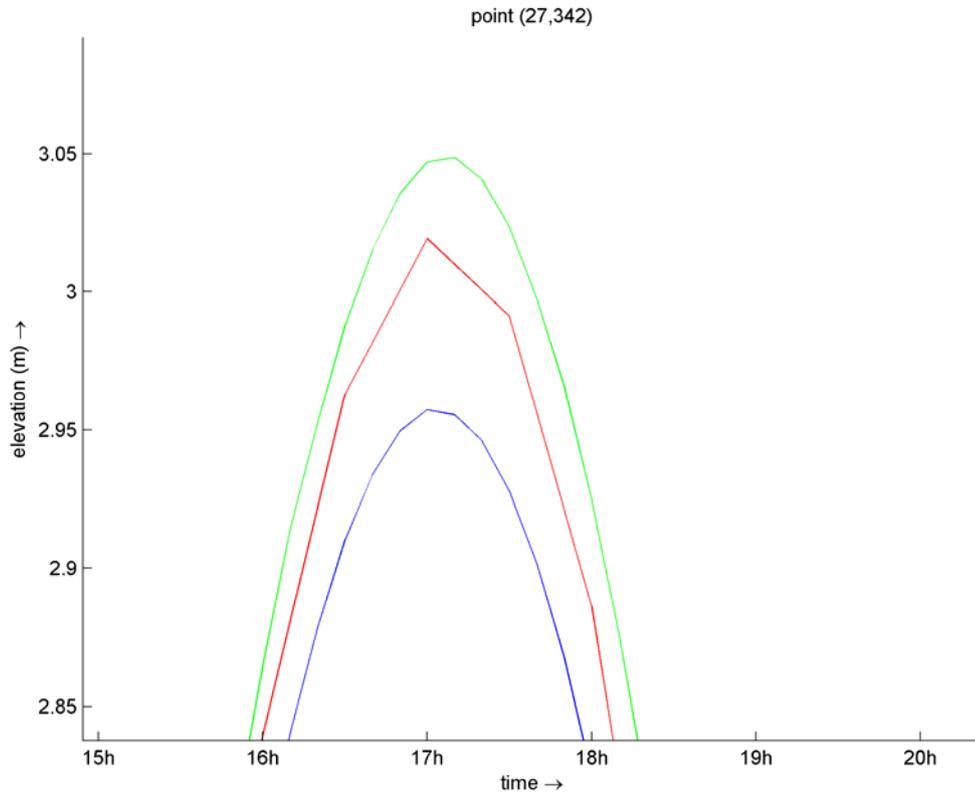
Storm condition:

- Wind and wave from 67.5deg
- wind velocity zero to 24.7m/s over 1st day
- 30 second gust of 38.5m/s
- waves 5m Hs @ 12s





AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES





SIMULATION ANALYSIS 7: DBN12-3H-SLR-SSE

Grid:

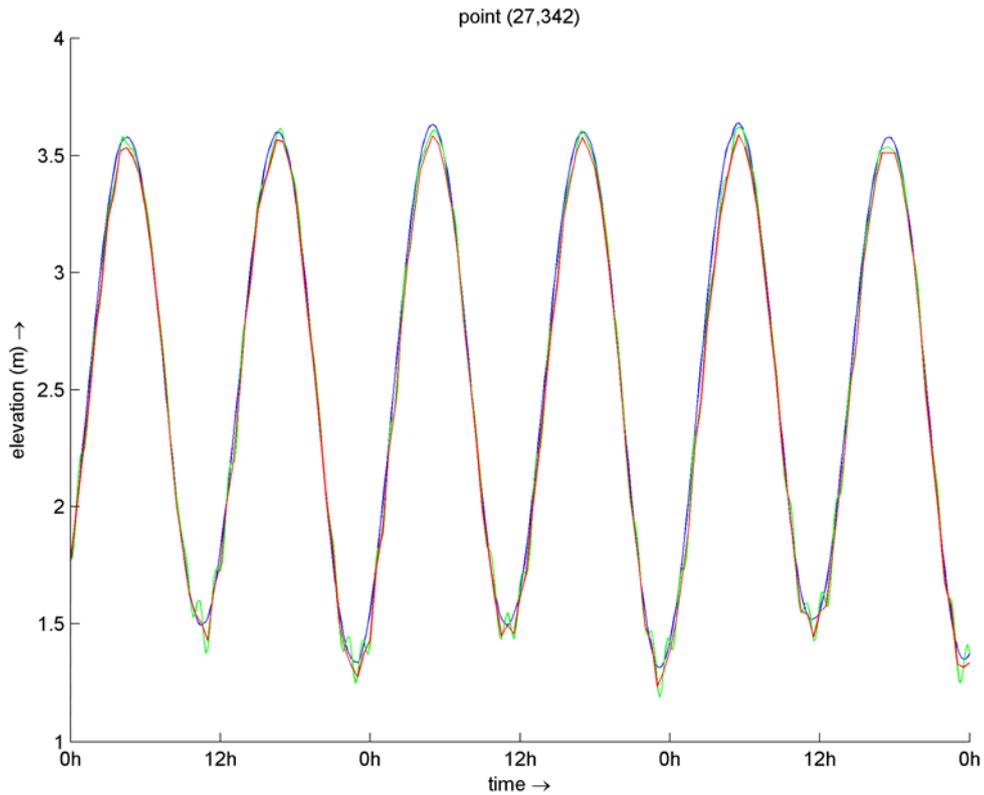
- DBN12 excluding reflection from structures inside port.

Water levels:

- HAT+SLR+SS

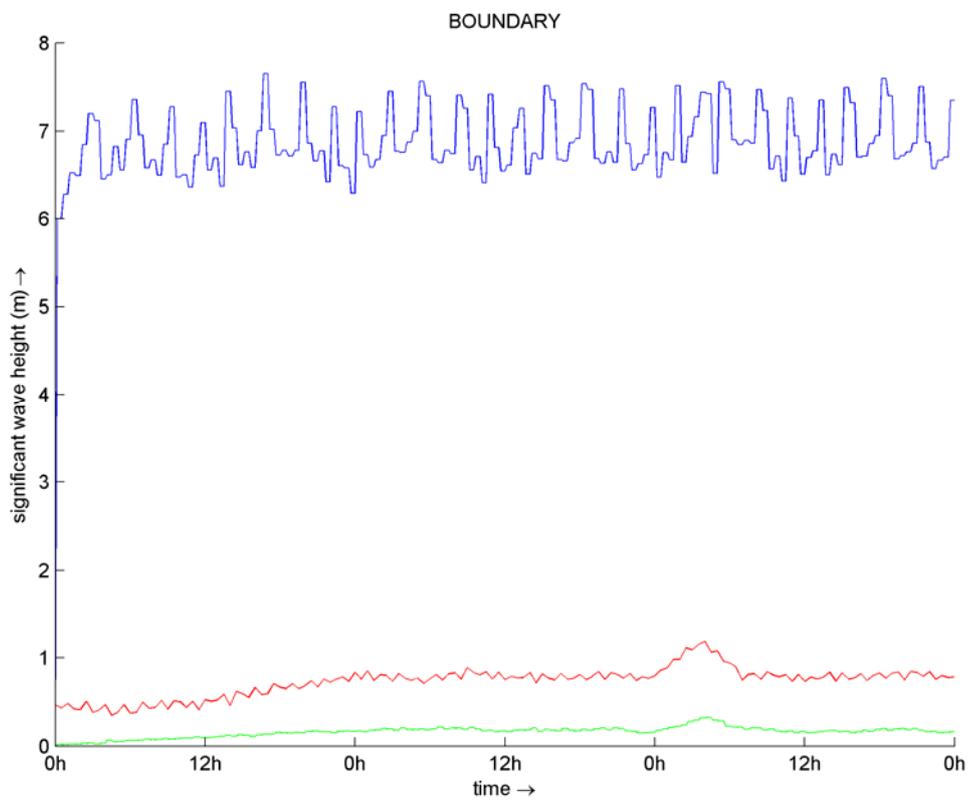
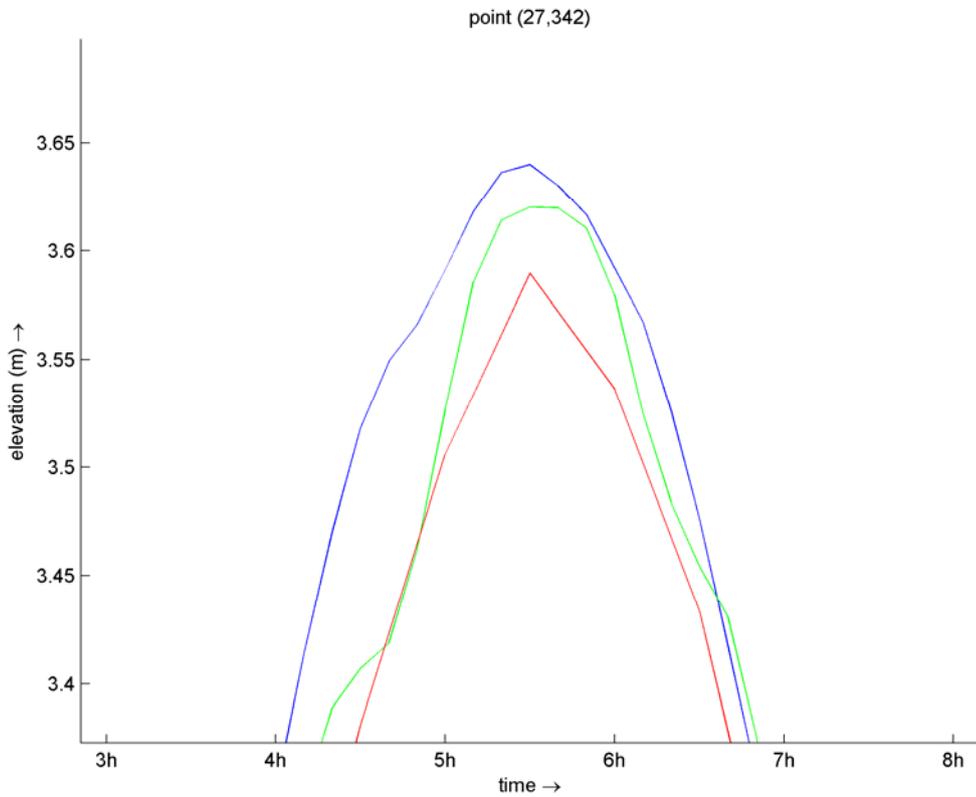
Storm condition:

- Wind and wave from 157.5deg
- wind velocity zero to 24.7m/s over 1st day
- 30 second gust of 38.5m/s
- waves 8m Hs @ 13s



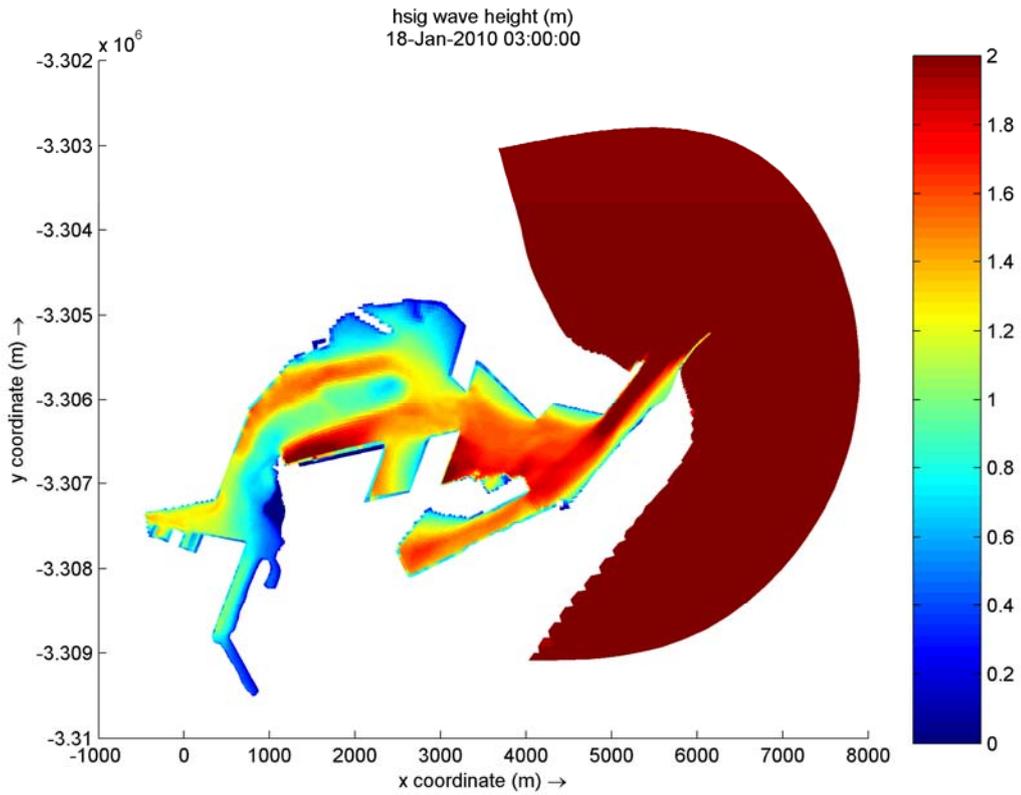


AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES





AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES





AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES

SIMULATION ANALYSIS 8: DBN15-SLR-04

Grid:

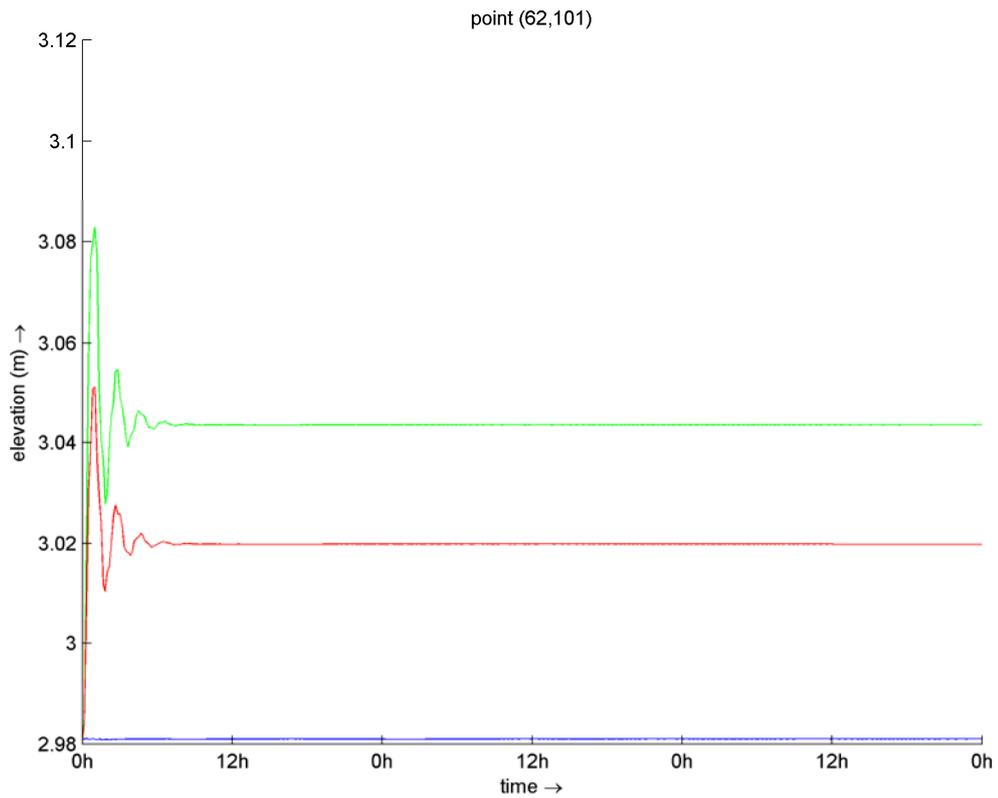
- DBN15 - flow model only (no waves)

Water levels:

- $1.05 \times \text{HAT} + \text{SLR}$ (tidal variance not simulated, i.e. Constant Water Level)

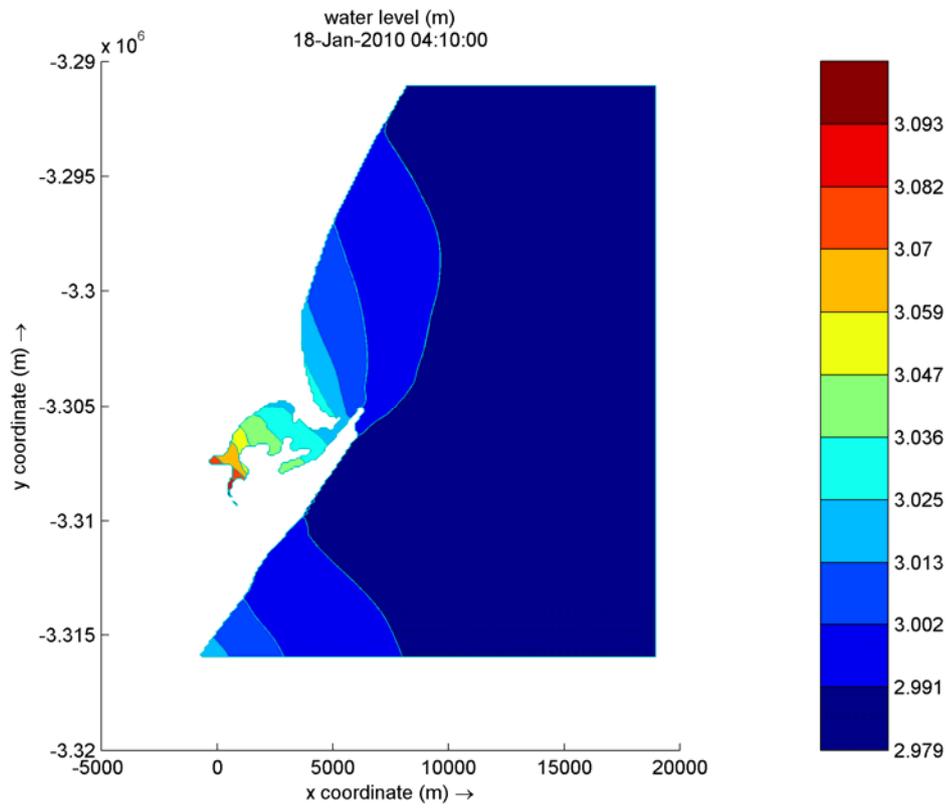
Storm condition:

- Wind from 45deg
- wind velocity 38.5m/s





AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES





SIMULATION ANALYSIS 9: DBN15-SLR-05

Grid:

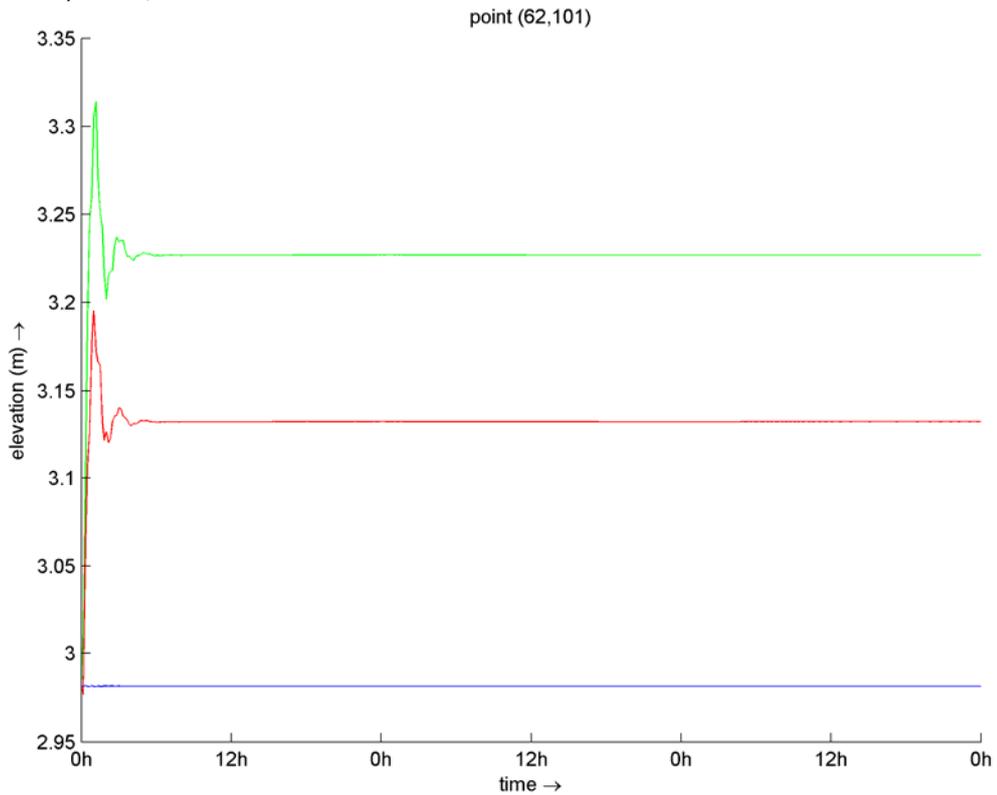
- DBN15 - flow model only (no waves)

Water levels:

- $1.05 \times \text{HAT} + \text{SLR}$ (tidal variance not simulated, i.e. Constant Water Level)

Storm condition:

- Wind from 70deg
- wind velocity 38.5m/s





AMENDED EIA REPORT: RESPONSE TO INTERESTED AND AFFECTED PARTIES
QUERIES REGARDING STORM SURGE AND CYCLONES

