APPENDIX K

Technical Data Report – Air Dispersion Modelling
Bay du Nord Development Project (Stantec 2019)

Technical Data Report – Air Quality and Greenhouse Gas Emissions

Bay Du Nord Development Project

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Prepared for:

Equinor Canada Ltd.

Prepared by:

Stantec Consulting Ltd.
40 Highfield Park Drive
Dartmouth, NS B3A 0A3

File: 121415061

Sign-off Sheet

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Prepared by _____

(signature)

Gillian Hatcher, M.A.Sc.

Reviewed by _____

(signature)

Mike Murphy, PhD, P.Eng.

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Executive Summary

Equinor Canada Ltd. (formerly Statoil Canada Ltd.) and its partner Husky Oil Operations Limited (Husky Energy) are proposing the Bay du Nord Development Project (the Project) located in the offshore in waters off eastern Newfoundland and Labrador. The Project includes the production of oil and gas from the Bay du Nord field (which includes Bay du Nord, Bay de Verde and Bay de Verde East) and the Baccalieu discovery (collectively known as the Core Bay du Nord (BdN) Development). The Core BdN Development includes offshore the activities associated with construction and installation, hook-up and commissioning, drilling, production operations, maintenance and decommissioning activities, as well as associated supporting surveys, field work, and supply and servicing activities. There are no land-based activities associated with this Project. In addition to the Core BdN Development, the Project may also include potential future development within the Project Area. Hence, the Project includes the Core BdN Development and Potential Future Development.

To aid in determining the potential environmental effects that the Project could have on the atmospheric environment, an air emissions and dispersion modelling study was conducted which considered several different operating scenarios.

After careful consideration of the Project activities, the primary air contaminants and greenhouse gases (GHGs) of interest to this study were selected and include the following:

- Criteria Air Contaminants (CACs):
  - Carbon monoxide (CO);
  - Nitrogen dioxide (NO_2);
  - Sulphur dioxide (SO_2);
  - Total Suspended Particulate Matter (TSP);
  - Particulate matter less than 10 microns in diameter (PM_{10});
  - Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$);
- Greenhouse gases (GHGs):
  - Carbon Dioxide (CO_2);
  - Nitrous Oxide (N_2O); and
  - Methane (CH_4).

Emissions inventories were prepared for the following Project phases:

- Hook-up and commissioning
- Concurrent drilling and production, power option 1
- Concurrent drilling and production, power option 2
- Normal production operations
- Accidental release events

Air dispersion modelling was also conducted for the same Project phases using the emissions inventories to predict ground-level concentrations (GLCs) (i.e., in this case sea level concentrations) of the air contaminants of interest from the Project. The latest version of the CALPUFF dispersion model (version

7.2.1) was used to predict the GLCs. The CALPUFF computational domain covered a 20 km by 20 km area centered near the Project. This domain was within a 50 km by 50 km CALMET meteorological grid prepared for the study. The predicted concentrations were compared to Newfoundland and Labrador *Air Pollution Control Regulations* and the Canadian Ambient Air Quality Standards (CAAQS). The CAAQS were developed by the Canada Council of Minister of the Environment (CCME) to reduce emissions and ground-level concentrations of various air contaminants nationally.

The predicted ground-level concentrations are below the Newfoundland and Labrador *Air Pollution Control Regulations* for each Project phase modelled.

The predicted SO_2, $PM_{2.5}$ and annual NO_2 ground-level concentrations are below the CAAQS. However, the hourly predicted NO_2 concentrations are above the CAAQS (that are to be implemented in 2020) for each scenario modelled. Although predicted concentrations are above the hourly NO_2 CAAQS, the Project site is in a remote location well off-shore (>450 km off the coast of Newfoundland) in international waters with no sensitive receptors nearby. The maximum predicted concentrations (above the CAAQS) generally occur approximately 500 m to 1,700 m from the FPSO and/or drilling installation.

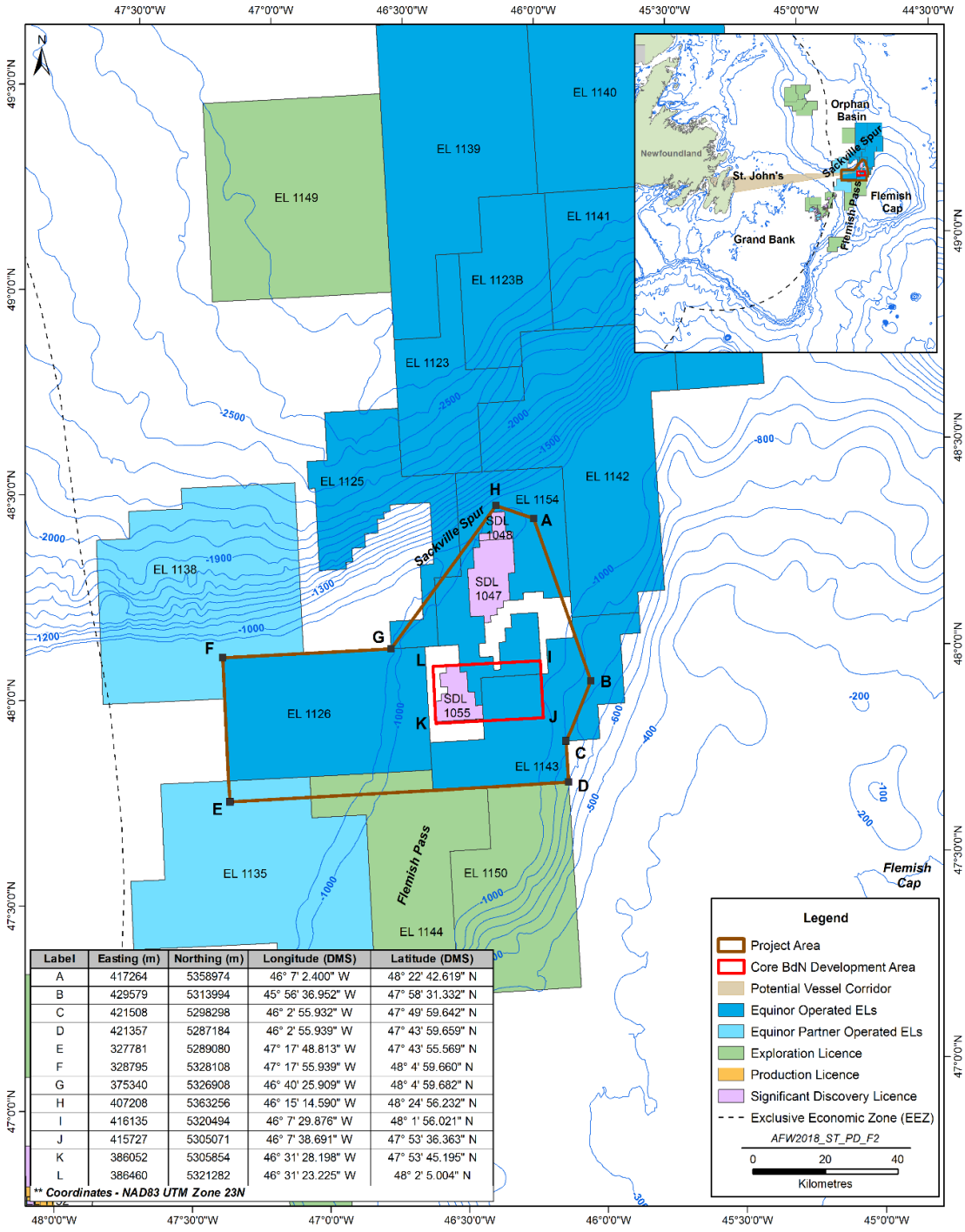
Further, it is our understanding that model predictions should not be directly compared to the CAAQS, because these are intended to be compared with measured ambient air quality data and are not considered directly applicable to industrial fence-line concentrations.

Greenhouse gas emissions from the Project represent 2.4% or less of Newfoundland and Labrador emissions and 0.04% of Canada's GHG emissions reported by ECCC for the year 2016 (the latest year for which this report is available).

1.0 INTRODUCTION

Equinor Canada Ltd. (formerly Statoil Canada Ltd.) and its partner Husky Oil Operations Limited (Husky Energy) are proposing the Bay du Nord Development Project (the Project) located in the offshore area of eastern Newfoundland and Labrador. The Project includes the production of oil and gas from the Bay du Nord field (which includes Bay du Nord, Bay de Verde and Bay de Verde East) and the Baccalieu discovery (collectively known as the Core Bay du Nord (BdN) Development). The Core BdN Development includes the activities associated with offshore construction and installation, hook-up and commissioning, drilling, production operations, maintenance and decommissioning activities, as well as associated supporting surveys, field work, and supply and servicing activities. There are no land-based activities associated with this Project. In addition to the Core BdN Development, the Project may also include potential future development within the Project Area. Hence, the Project includes the Core BdN Development and Potential Future Development. The location of the proposed Project is illustrated in Figure 1.1. The Project scope includes the following components and activities for the Core BdN Development:

- Offshore construction, installation and hook-up and commissioning of the Project
- Production and Maintenance operations
- Development drilling – production and injection wells
- Supply and servicing, including vessel and helicopter support
- Supporting surveys and activities
  - Well intervention
  - 2D/3D/4D seismic surveys
  - Vertical seismic profiling
  - Geotechnical and / or geological surveys, wellsite / geohazard surveys
  - Ice management
  - Environmental surveys
  - Remotely-operated vehicle (ROV)/ autonomous underwater vehicle (AUV) /video surveys
- Decommissioning



Label	Easting (m)	Northing (m)	Longitude (DMS)	Latitude (DMS)
A	417264	5358974	46° 7' 2.400" W	48° 22' 42.619" N
B	429579	5313994	45° 56' 36.952" W	47° 58' 31.332" N
C	421508	5298298	46° 2' 55.932" W	47° 49' 59.642" N
D	421357	5287184	46° 2' 55.939" W	47° 43' 59.659" N
E	327781	5289080	47° 17' 48.813" W	47° 43' 55.569" N
F	328795	5328108	47° 17' 55.939" W	48° 4' 59.660" N
G	375340	5326908	46° 40' 25.909" W	48° 4' 59.682" N
H	407208	5363256	46° 15' 14.590" W	48° 24' 56.232" N
I	416135	5320494	46° 7' 29.876" W	48° 1' 56.021" N
J	415727	5305071	46° 7' 38.691" W	47° 53' 36.363" N
K	386052	5305854	46° 31' 28.198" W	47° 53' 45.195" N
L	386460	5321282	46° 31' 23.225" W	48° 2' 5.004" N

** Coordinates - NAD83 UTM Zone 23N

Figure 1.1 Core BdN Development and Potential Future Development Study Area

Air quality dispersion modelling was conducted to predict ground-level concentrations (i.e., sea level) of air contaminants of interest that could then be compared to provincial and national air quality standards and objectives. Modelling was conducted for a number of Project scenarios (refer to Section 4). The methodology and the results of the study are presented in this Technical Data Report.

This Technical Data Report is presented in nine sections:

- Section 1.0 provides a general introduction to the Project
- Section 2.0 provides an overview of the substances of interest to this study
- Section 3.0 describes the air pollution regulations relevant to the Project
- Section 4.0 provides a description of the Project activities by phase and provides an inventory of air contaminant emissions
- Section 5.0 provides the modelling methodology, model input parameters and assumptions
- Section 6.0 provides the results of the air dispersion modelling by Project phase
- Section 7.0 provides an inventory of GHG emissions by Project phase
- Section 8.0 provides the conclusions of the study
- Section 9.0 provides references used to prepare this study

Additional supporting documentation is provided in the Appendices.

2.0 SUBSTANCES OF INTEREST

The primary air emissions of interest to this study include the following:

- Criteria Air Contaminants (CACs):
  - Carbon monoxide (CO);
  - Nitrogen dioxide (NO_2);
  - Sulphur dioxide (SO_2);
  - Total Suspended Particulate Matter (TSP);
  - Particulate matter less than 10 microns in diameter (PM_{10});
  - Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$); and
- Greenhouse gases (GHGs):
  - Carbon dioxide (CO_2);
  - Nitrous oxide (N_2O); and
  - Methane (CH_4).

These air contaminants and GHGs were selected as these are the ones expected to be released from the different phases of the Project in substantive quantities. Other air contaminants such as VOCs, are not expected to be released in quantities that would substantively influence the air quality in the Project area, and as such these air contaminants are not considered any further.

3.0 AMBIENT AIR QUALITY REGULATIONS

Air quality related to the different phases of the Project is presented in the context of potential Project-related air contaminant emissions and the ground-level concentrations of these. The potential quantities of GHGs released to the atmosphere are estimated and compared with Newfoundland and Labrador provincial and Canadian national GHG emissions.

Since the Project is located off-shore, there are no air quality regulations that directly apply to the Project. Newfoundland and Labrador (NL) is the nearest jurisdiction to the Project. Therefore, the NL provincial and national (Canadian) air quality regulations are considered.

Ambient air quality in the province of Newfoundland and Labrador (NL) is regulated by the *Air Pollution Control Regulations* (2004) (the Regulation) administered under the *Environmental Protection Act* (O.C. 2004-232). Ambient air quality standards for several air contaminants are prescribed in Schedule A of the Regulation.

The Canadian Ambient Air Quality Standards (CAAQS) are being developed to reduce emissions and ground-level concentrations of various air contaminants nationally. The CAAQS have been endorsed by the Canadian Council of Ministers of the Environment (CCME) for sulphur dioxide, fine particulate matter ($PM_{2.5}$) and ozone. More recently CAAQS for NO_2 have been endorsed by the CCME. These CAAQS are adopted for the 2020 to 2025 period and are lowered beyond 2025. For the purpose of this assessment, predicted concentrations are compared with the CAAQS adopted for the 2020 to 2025 period.

The NL air quality standards and CAAQS are presented in Table 3.1.

Table 3.1 Ambient Air Quality Standards – Provincial and Federal

Air Contaminant	Time Averaging Period	Newfoundland and Labrador	Canada		
		Ambient Air Quality Standards (µg/m³)	Canadian Ambient Air Quality Standards (µg/m³)		
			2015	2020	2025
NO_2	1-Hour	400	-	113 (60 ppb)[3]	79 (42 ppb)[3]
	24-Hour	200	-	-	-
	Annual	100	-	32 (17 ppb)[4]	23 (12 ppb)[4]
SO_2	1-Hour	900	-	183 (70 ppb)[5]	170 (65 ppb)[5]
	3-Hour	600	-	-	-
	24-Hour	300	-	-	-
	Annual	60	-	13 (5 ppb)[6]	10 (4 ppb)[6]
CO	1-Hour	35,000	-	-	-
	8-Hour	15,000	-	-	-
TPM	24-Hour	120	-	-	-
	Annual	60[7]	-	-	-

Table 3.1 Ambient Air Quality Standards – Provincial and Federal

Air Contaminant	Time Averaging Period	Newfoundland and Labrador	Canada		
		Ambient Air Quality Standards (µg/m^3)	Canadian Ambient Air Quality Standards (µg/m^3)		
			2015	2020	2025
PM_{10}	24-Hour	50	-	-	-
$PM_{2.5}$	24-Hour	25	28	27[1]	-
	Annual	8.8[8]	10	8.8[2]	-

Notes
"-" denotes no proposed standard for that air contaminant and time averaging period
[1]The 3-year average of the annual 98th percentile of the daily 24-hour average concentrations
[2] The 3-year average of the annual average concentrations.
[3] The 3-year average of the annual 98th percentile of the NO2 daily-maximum 1-hour average concentrations
[4] The average over a single calendar year of all the 1-hour average NO2 concentrations
[5] The 3-year average of the annual 99th percentile of the SO2 daily-maximum 1-hour average concentrations
[6] The average over a single calendar year of all the 1-hour average SO2 concentrations
[7] Geometric Mean
[8] The 3-year average of the annual average concentration

4.0 BAY DU NORD DEVELOPMENT PROJECT EMISSIONS

As stated in Section 1, the Core BdN Development Project includes offshore activities associated with the construction and installation, hook-up and commissioning, drilling, production operations and maintenance and decommissioning, as well as associated supporting surveys, field work, and supply and servicing activities, and potential future development. There are no on land activities within the boundaries of the Project.

An overview of the estimated timeframe for each of the Project phases and associated activities is provided in Table 4.1 and Figure 4.1.

Table 4.1 Estimated Timing of Project Phases and Associated Activities

Project Phase	Anticipated Timeframe
Offshore Construction and Installation and HUC	• Site surveys, commencing as early as 2020 • Offshore construction as early as 2023 • Approximately 5 years; 2020 to 2025; seasonal to year-round • Offshore HUC – likely to be carried out over a four-month timeframe; any time of the year
Production and Maintenance Operations	• Commencement anticipated in 2025 • 12 to 20 years; year-round
Drilling Activities	• Commencement in or around 2023, but may occur earlier • Approximately 3 to 5 years; year-round
Supply and Servicing	• Commencing as early as 2020 • Ongoing throughout life of Project; year-round

Table 4.1 Estimated Timing of Project Phases and Associated Activities

Project Phase	Anticipated Timeframe
Supporting Surveys	• Commencing as early as 2020 • Ongoing throughout life of Project • Short-term (e.g., weeks to months)
Potential Future Development	• Any or all activities as described above, as required • Activities may be carried out at any time post-start up, and could be year-round depending on activity, to end of Project design life
Decommissioning	• Commencing at end of Project life (either at end of Core BdN Development or Potential Future Development) • Approximately 2 to 4 years; year-round

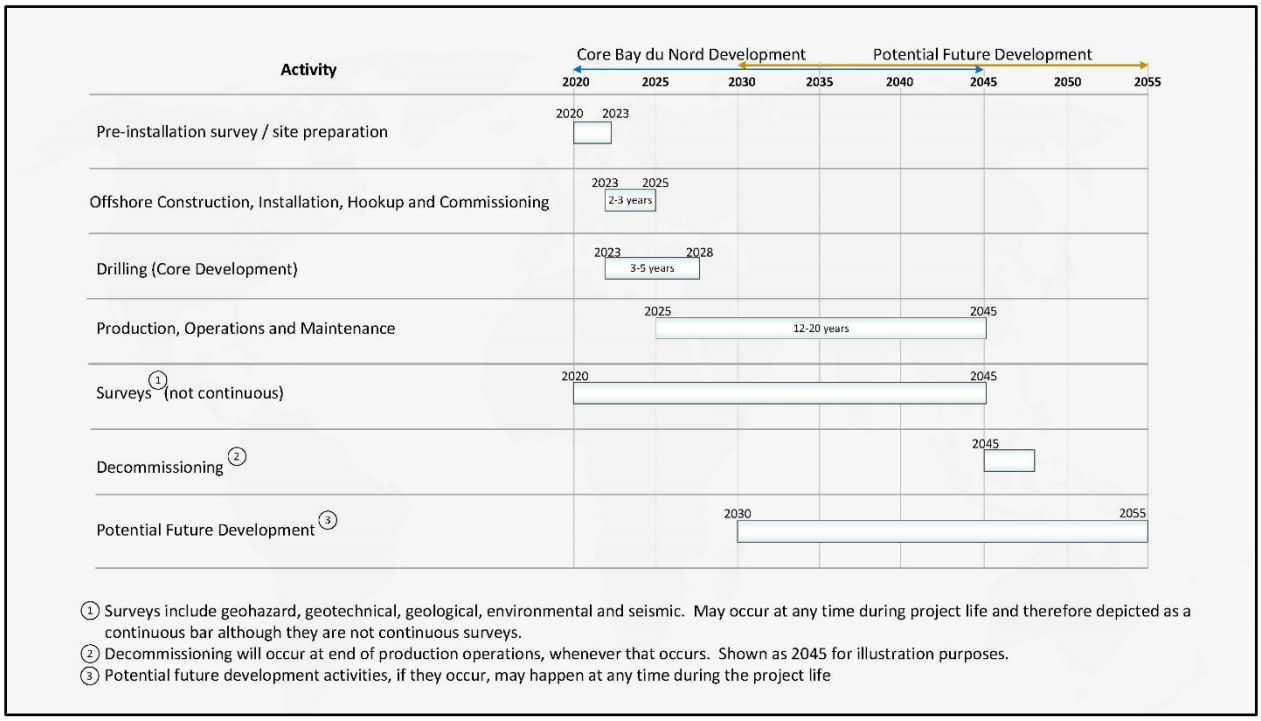


Figure 4.1 Preliminary Project Schedule

The Project, as currently designed, consists of subsea installations tied back to a floating production storage and offloading unit (FPSO). The FPSO will have the capacity to handle the requirements of crude oil production, storage and export, gas management, water injection, and the management of produced water and other wastes for a production life of 30 years. All produced gas will either be re-injected into the reservoir for pressure support or used as fuel gas. Flare gas from continuous low pressure sources will be recovered back to the process; and therefore there will be no routine flaring from the FPSO. In the

unlikely event of an emergency situation or when depressurization of process systems are required, gas will be flared for safety reasons (non-routine, unplanned, flaring). Ignition of the flare gas is typically provided by a pilot flare. An option to select a pilotless design, e.g., ballistic spark ignition, is being considered to reduce air, light and heat emissions typically experienced from a continuously lit pilot flare. Both options are still being considered in the project design.

In addition to the FPSO, during commissioning and the first two to three years of the operation of the Project, as well as various times throughout the life of the Project, a drilling installation (i.e., mobile offshore drilling unit (MODU)) will be required. Support vessels will also be associated with both the FPSO and the drill installation, when on site and supply vessels, helicopters and shuttle tankers will service the FPSO and drill installation on a regular basis throughout the Project.

The sources of air emissions during the life of the Project therefore include the following:

- Power and heat production on the FPSO;
- Non-routine, unplanned, flaring from the FPSO (i.e., during depressurization of process systems and emergency shut-downs);
- Power production on the drill installation;
- Vessel (support, supply and shuttle tankers) traffic; and
- Helicopter traffic

As the magnitude and duration of emissions from each of the sources will vary by Project phase, this emissions inventory and air dispersion modelling study focused on six different operational scenarios. Also, as there is potential for non-routine, unplanned events to occur throughout the life of the Project, two of the operational scenarios include accidental events. These operational scenarios are considered to have the potential to release the maximum amount of project emissions and are further described below. Timeframes and operating assumptions are estimates as design is ongoing.

1) **Hook-up and Commissioning.** The construction, installation, hook-up and commissioning phase of the Project will occur over 2 to 3 years (2022 – 2025), with the hook-up and commissioning portion (i.e., the portion of the construction phases which is expected to release the majority of construction related emissions) occurring in the latter part of the phase (i.e., 2025). The major sources of air emissions during hook-up and commissioning include the operation of the drilling installation, the commissioning and subsequent operation of the FPSO, vessel and helicopter traffic, as well as other marine vessels to support the installation (i.e., marine construction). During hook-up and commissioning it is anticipated that the FPSO will be powered by eight reciprocating engines (4 running, 4 on standby), as this is the preferred design option, and both the drilling installation and FPSO will be fuelled by diesel. During this phase of the Project there will be two support vessels maneuvering within the Core BdN Development Area and one supply vessel making two trips per week between the development area and eastern NL. Helicopter operation during this phase includes transit, take-off, landing, approach, and ground idling for up to five trips per week.

2) **Concurrent Drilling and Production, Power Option 1**. During the first two to three years of production and maintenance, the drilling installation will still be operational within the Core BdN Development Area. The major sources of air emissions during this phase of the Project (2025 –

2027) include the FPSO, the drilling installation and vessel and helicopter traffic. The FPSO will be fuelled by produced gas powered by eight reciprocating engines (7 running, 1 on standby), as this is the preferred power option for the production facility. The drilling installation will be fuelled by diesel. Both are expected to operate 365 days/year. There will be two support vessels maneuvering within the Core BdN Development Area for 365 days/year, and supply vessel operation including transit, maneuvering, and offloading for up to two trips per week. The shuttle tanker operation includes transit, maneuvering and loading for approximately 78 trips per year. Helicopter operation during this phase includes transit, take-off, landing, approach, and ground idling for up to approximately 15 trips per week.

3) **Concurrent Drilling and Production, Power Option 2**. This phase of the Project would be the same as described above under Scenario 2 “Concurrent Drilling and Production, Power Option 1”; however, it considers a second power option for the FPSO which is being considered by the Project design team. Power Option 2 consists of one gas turbine. All other activities and sources of emissions would be the same as presented above under Scenario 2.

4) **Accidental Event 1**. Throughout the production and maintenance phase of the Project there is the potential of accidental events occurring that have the potential to release unplanned air contaminant emissions over relatively short durations. One accidental event considered for this Project was the release of emissions during an emergency non-routine flaring event. All other sources of emissions considered under this operation scenario are the same as those considered under operational Scenario 2, Concurrent Drilling and Production, Power Option 1.

5) **Accidental Event 2**. Throughout the production and maintenance phase of the Project there is the potential that produced gas would not be available at the right specification to power the reciprocating engines, and therefore the engines would have to operate on diesel for up to seven days, until the issue is resolved. The scenario assumes continuous operation of four power generating engines during this event. All other sources of emissions considered under this operational scenario are the same as those considered under operational Scenario 2, Concurrent Drilling and Production, Power Option 1.

6) **Normal Production Operations**. The normal steady state operational phase of the Project is expected to occur from 2028 to the end of the life of the Project in 2054. This phase of the Project considers all of the major sources of Project emissions except for the operation of the drilling installation and non-routine flaring. The FPSO will be fuelled by produced gas powered by eight reciprocating engines (7 running, 1 on standby). There will be one support vessel maneuvering within the Core BdN Development Area and one supply vessel operating (including transit, maneuvering, and offloading) for up to 2 trips per week. The shuttle tanker operation includes transit, maneuvering and loading for 78 trips per year and helicopter operation includes transit, take-off, landing, approach, and ground idling for up to five trips per week. Flaring would occur as needed for safety reasons and includes a continuous pilot flare.

The major sources of air emissions associated with each operational scenario considered in this analysis are further described in the following subsections. Air emissions inventory’s by operational scenario are

also presented. Emission inventory's by Project phase for GHG emissions is presented in Section 7.0 of this Report.

4.1 HOOK-UP AND COMMISSIONING

The potential interactions between the atmospheric environment and offshore hook-up and commissioning are most likely to occur over the 4 month period that this phase takes place. Table 4.2 outlines the sources of CAC emissions anticipated during hook-up and commissioning.

Table 4.2 Sources of Air Contaminants During Hook-Up and Commissioning

Sources	Description
Drilling Installation	Drilling Installation will be fuelled by diesel and is expected to operate 4 months during the hook-up and commissioning phase of the Project.
FPSO	Powered by eight reciprocating engines (4 running, 4 on standby), fuelled by diesel and is expected to operate for 4 months the hook-up and commissioning phase of the Project.
Support and Supply Vessels	Two support vessels, one for the drilling installation and one for the production installation. Support vessel operation includes manoeuvring within the Core BdN Development Area only. Supply vessel operation includes transit, manoeuvring, and offloading for 144 trips/year over the three to five-year period.
Marine Construction	Represents fuel-combusting equipment aboard vessels that are engaged in construction activities.
Helicopter	Operation (five trips/week) during this phase, includes transit, take-off, landing, approach, and ground idling for 260 trips per year.

The operation of the equipment listed in Table 4.2 will result in the release of various air contaminants to the atmosphere. These emissions were estimated for the 4-month hook-up and commissioning phase using anticipated fuel consumption volumes and fuel-based emission factors (Norwegian Oil and Gas Association 2018) provided by Equinor for the FPSO, drilling installation, support vessels and marine construction, with the exception of particulate matter. The emission factor for TSP was acquired from the United States Environmental Protection Agency's (US EPA) AP-42: Compilation of Air Emission Factors, Chapter 3.4, Large Stationary Diesel and All Stationary Dual-fuel Engines (US EPA 1996). As a conservative assumption, it was assumed that the emissions of PM_{10} and $PM_{2.5}$ were equal to that of TSP. Emissions from the operation of the helicopters were calculated by Stantec using guidance and emission factors published by the Swiss Confederation in the "Guidance on the Determination of Helicopter Emissions" document (Rindlisbacher & Chabbey 2015). SO_2 emissions were from helicopter landing and takeoff were estimated using the estimated fuel used per landing and takeoff (LTO) and the assumed sulphur content of jet fuel (4,000 ppm by mass).

An overview of the sources considered in the inventory, the quantity of sources, fuel type, and duration of operation is provided in Table 4.3. The estimated emissions during this phase of the Project are presented in Table 4.4.

Table 4.3 Equipment Requirements for Hook-up and Commissioning

Source	Fuel Type	Engine Power (MW)	No. of Pieces	Months of Operation	Hours per Month	Total Hours
FPSO	Diesel	44.1 (total)	1	4	720	2,880
Drilling Installation	Diesel	42.16	1	4	720	2,880
Support Vessel	Diesel	11.5 (total)	2	4	720	2,880
Supply Vessel	Diesel	11.5 (total)	1	4	720	2,880
Marine Construction	Diesel	Various	Multiple	4	720	2,880
Helicopter	Jet B	3.76	1	4	10	40

Table 4.4 Emissions Estimates for Hook-up and Commissioning

Source	Air Contaminant Emissions (tonnes per phase)					
	NO_2	SO_2	CO	TPM	PM_{10}	$PM_{2.5}$
FPSO	297	4.24	29.7	8.14	8.14	8.14
Drilling Installation	373	5.34	37.3	10.2	10.2	10.2
Offshore Support and Supply Vessels	46.8	0.67	4.68	1.28	1.28	1.28
Marine Construction	147	2.10	14.7	4.04	4.04	4.04
Helicopter	3.69	2.08	0.45	0.09	0.09	0.09
Total	**868**	**14.4**	**86.9**	**23.8**	**23.8**	**23.8**

4.2 PRODUCTION AND MAINTENANCE OPERATIONS

4.2.1 Concurrent Drilling and Production

There are two operational scenarios considered for the concurrent drilling and production phase of the Project: Power Option 1 and Power Option 2. The sources of air emissions anticipated during each of these phases are provided in Tables 4.5 and 4.6.

Table 4.5 Sources of Air Contaminant Emissions During Concurrent Drilling and Production – Power Option 1

Sources	Description
Drilling Installation	Drilling Installation will be fuelled by diesel and is expected to operate 365 days/year for the first two to three years during the operation and maintenance phase of the Project (i.e., years 2025 – 2027, refer to Figure 4.1).
FPSO	Powered by eight reciprocating engines (7 running, 1 on standby), fuelled by produced gas and is expected to operate for 365 days/year.

Table 4.5 Sources of Air Contaminant Emissions During Concurrent Drilling and Production – Power Option 1

Sources	Description
Support and Supply Vessels	Two support vessels, one for the drilling installation and one for the production installation. Support vessel operation includes maneuvering within the Core BdN Development Area only for 365 days/year. Supply vessel operation includes transit, maneuvering and offloading for 2 trips/week.
Shuttle Tanker	Operation during this phase includes transit, manoeuvring and loading for 78 trips/year.
Helicopter	Operation (15 trips/week) during this phase, includes transit, take-off, landing, approach, and ground idling.
Flare	For the purpose of assessing the worst case operational scenarios, this operational scenario assumes a pilot flare would be continuous during production.

Table 4.6 Sources of Air Contaminant Emissions During Concurrent Drilling and Production – Power Option 2

Sources	Description
Drilling Installation	Drilling Installation will be fuelled by diesel and is expected to operate 365 days/year for two to three years during the operation and maintenance phase of the Project (i.e., years 2025 – 2027, refer to Figure 4.1).
FPSO	Powered by 1 50-60 MW gas turbine, fuelled by produced gas and is expected to operate for 365 days/year.
Offshore Support and Supply Vessels	Two support vessels, one for the drilling installation and one for the production installation. Support vessel operation includes manoeuvring within the Core BdN Development Area only for 365 days/year. Supply vessel operation includes transit, manoeuvring, and offloading for 2 trips/week.
Shuttle Tanker	Operation during this phase includes transit, manoeuvring and loading for 78 trips/year.
Helicopter	Operation (15 trips/week) during this phase, includes transit, take-off, landing, approach, and ground idling.
Flare	For the purpose of assessing the worst case operating scenarios, this scenario assumes the pilot flare would be continuous during production.

The operation of the equipment listed in Tables 4.5 and 4.6 will result in emissions of various air contaminants. These emissions were estimated for a one-year period (i.e., the year with the most equipment in operation at the one time) using anticipated fuel consumption volumes and fuel-based emission factors (Norwegian Oil and Gas Association 2018) provided by Equinor for the FPSO, drilling installation, flare, shuttle tanker and support vessels, with the exception of particulate matter. The emission factor for TSP was acquired from the United States Environmental Protection Agency's (US EPA) AP-42: Compilation of Air Emission Factors, Chapter 3.4, Large Stationary Diesel and All Stationary Dual-fuel Engines (US EPA 1996). As a conservative assumption, it was assumed that the emissions of PM_{10} and $PM_{2.5}$ were equal to that of TSP. Emissions from the operation of the helicopters were calculated by Stantec using guidance and emission factors published by the Swiss Confederation in the

"Guidance on the Determination of Helicopter Emissions" document (Rindlisbacher & Chabbey 2015). SO_2 emissions were from helicopter landing and takeoff were estimated using the estimated fuel used per landing and takeoff (LTO) and the assumed sulphur content of jet fuel (4,000 ppm by mass).

An overview of the sources considered in the inventory, the quantity of sources, fuel type, and duration of operation is provided in Table 4.7. The estimated emissions during this phase of the Project are presented in Tables 4.8 and 4.9.

Table 4.7 Equipment Requirements for Concurrent Drilling and Production – Power Option 1 and 2

Source	Fuel Type	Engine Power (MW)	No. of Pieces	Months of operation/Year	Hours per Month	Total hours/Year
FPSO	Produced Gas	Option 1: 44.1 (total) Option 2: 52	1	12	720	8,760
Drilling Installation	Diesel	42.16	1	12	720	8,760
Offshore Supply and Support Vessels	Diesel	11.5 (total)	1	12	720	8,760
Marine Construction	Diesel	Various	Multiple	12	720	8,760
Shuttle Tanker	Diesel	26.6	2	12	720	8,760
Helicopter	JetB	3.76	1	12	720	8,760
Flare	Produced Gas	-	-	12	720	8,760

Table 4.8 Emissions from Concurrent Drilling and Production – Power Option 1

Source	Air Contaminant Emissions (t/yr)					
	NO_2	SO_2	CO	TPM	PM_{10}	$PM_{2.5}$
FPSO	643	4.34	598	55.0	55.0	55.0
Drilling Installation	1,120	16.0	112	30.7	30.7	30.7
Offshore Supply and Support Vessels	140	2.01	14.0	3.85	3.85	3.85
Shuttle Tanker	110	1.58	11.0	3.03	3.03	3.03
Helicopter	33.2	18.7	4.09	0.85	0.85	0.85
Flaring	6.36	0.31	6.81	3.89	3.89	3.89
Total	**2,053**	**42.9**	**746**	**97.4**	**97.4**	**97.4**

Table 4.9 Emissions from Concurrent Drilling and Production – Power Option 2

Source	Air Contaminant Emissions (t/yr)					
	NO_2	SO_2	CO	TPM	PM_{10}	$PM_{2.5}$
FPSO	150	5.64	142	71.5	71.5	71.5
Drilling Installation	1,120	16.0	112	30.7	30.7	30.7
Offshore Supply and Support Vessels	140	2.01	14.0	3.85	3.85	3.85
Shuttle Tanker	110	1.58	11.0	3.03	3.03	3.03
Helicopter	33.2	18.7	4.09	0.85	0.85	0.85
Flaring	6.36	0.31	6.81	3.89	3.89	3.89
Total	**1,561**	**44.3**	**290**	**114**	**114**	**114**

4.2.2 Normal Production Operations

Once the initial drilling program is completed and the drilling installation leaves the Core BdN Development Area, the Project activities are anticipated to be in normal steady state. Table 4.10 outlines the sources of CAC emissions anticipated during steady state production and maintenance operation.

Table 4.10 Sources of Air Contaminant Emissions During Normal Production Operations

Sources	Description
FPSO	Powered by eight reciprocating engines (7 running, 1 on standby), fuelled by produced gas and is expected to operate for 365 days/year throughout the life of the Project
Support and Supply Vessels	One support vessel for the production installation. Support vessel operation includes manoeuvring within the Core BdN Development Area only for 365 days/year. Supply vessel operation includes transit, manoeuvring, and offloading for 2 trips/week.
Shuttle Tanker	Operation during this phase includes transit, manoeuvring and loading for 78 trips/year.
Helicopter	Operation (15 trips/week) during this phase, includes transit, take-off, landing, approach, and ground idling.
Flare	For the purpose of assessing worst case scenarios, this operational scenario assumed the pilot flare would be continuous during production.

The operation of the equipment listed in Table 3.10 will result in emissions of various air contaminants. These emissions were estimated for a one-year period (i.e., the year with the most equipment in operation at the one time) using anticipated fuel consumption volumes and fuel-based emission factors (Norwegian Oil and Gas Association 2018) provided by Equinor for the FPSO, flare, shuttle tanker and support vessels, with the exception of particulate matter. The emission factor for TSP was acquired from the United States Environmental Protection Agency's (US EPA) AP-42: Compilation of Air Emission Factors, Chapter 3.4, Large Stationary Diesel and All Stationary Dual-fuel Engines (US EPA 1996). As a conservative assumption, it was assumed that the emissions of PM_{10} and $PM_{2.5}$ were equal to that of TSP.

Emissions from the operation of the helicopters were calculated by Stantec using guidance and emission factors published by the Swiss Confederation in the "Guidance on the Determination of Helicopter Emissions" document (Rindlisbacher & Chabbey 2015). SO_2 emissions were from helicopter landing and takeoff were estimated using the estimated fuel used per landing and takeoff (LTO) and the assumed sulphur content of jet fuel (4,000 ppm by mass).

An overview of the sources considered in the inventory, the quantity of sources, fuel type, and duration of operation is provided in Table 4.11. The estimated emissions during this phase of the Project are presented in Table 4.12.

Table 4.11 Equipment Requirements for Normal Production Operations

Source	Fuel Type	Engine Power (MW)	No. of Pieces	Months of operation/Year	Hours per Month	Total hours/Year
FPSO	Produced Gas	Option 1: 44.1 (total)	1	12	720	8,760
Offshore Supply and Support Vessels	Diesel	11.5 (total)	1	12	720	8,760
Shuttle Tanker	Diesel	26.6	2	12	720	8,760
Helicopter	JetB	3.76	1	12	720	8,760
Flare	Produced Gas	-	-	12	720	8,760

Table 4.12 Air Contaminant Emissions from Normal Production Operations

Source	Air Contaminant Emissions (t/yr)					
	NO_2	SO_2	CO	TPM	PM_{10}	$PM_{2.5}$
FPSO	664	4.48	618	56.9	56.9	56.9
Offshore Supply and Support Vessels	140	2.01	14.0	3.85	3.85	3.85
Shuttle Tanker	105	1.50	10.5	2.88	2.88	2.88
Helicopter	11.1	6.24	1.36	0.28	0.28	0.28
Flaring	2.79	0.13	2.99	1.71	1.71	1.71
Total	**923**	**14.4**	**647**	**65.6**	**65.6**	**65.6**

4.3 ACCIDENTAL EVENTS

As discussed above, two accidental, unplanned, event scenarios have been considered during the concurrent drilling and production phase of the Project, including:

- Accidental Event 1 - includes the FPSO operating on produced gas with a full system depressurization (i.e., all equipment is depressurized). All other sources are consistent with

operational Scenario 2, Concurrent Drilling and Production, Power Option 1. For inventory purposes, it is assumed that in one year, up to three full system depressurizations may occur. As a full depressurization event is an unplanned event this is likely an overestimate.

- Accidental Event 2 - includes the FPSO operating on diesel for seven days. All other sources are consistent with operational Scenario 2, Concurrent Drilling and Production, Power Option 1. For inventory purposes, it is assumed that in one year up to two events where the FPSO runs on diesel may occur. For the remainder of the year (i.e., 351 days), the FPSO operates on produced gas. As this event is unplanned, the provided estimate of events per year is likely an overestimate.

Air contaminants will be released during each accidental event activities. These emissions were estimated for a one-year period (i.e., the year with the most equipment in operation at the one time) using anticipated fuel consumption volumes and fuel-based emission factors (Norwegian Oil and Gas Association 2018) provided by Equinor for the drilling installation, FPSO, flare, shuttle tanker and support vessels, with the exception of particulate matter. The emission factor for TSP was acquired from the United States Environmental Protection Agency's (US EPA) AP-42: Compilation of Air Emission Factors, Chapter 3.4, Large Stationary Diesel and All Stationary Dual-fuel Engines (US EPA 1996). As a conservative assumption, it was assumed that the emissions of PM_{10} and $PM_{2.5}$ were equal to that of TSP. Emissions from the operation of the helicopters were calculated by Stantec using guidance and emission factors published by the Swiss Confederation in the "Guidance on the Determination of Helicopter Emissions" document (Rindlisbacher & Chabbey 2015). SO_2 emissions were from helicopter landing and takeoff were estimated using the estimated fuel used per landing and takeoff (LTO) and the assumed sulphur content of jet fuel (4,000 ppm by mass).

The estimated emissions during each accidental event scenario considered are presented in Tables 4.13 and 4.14, respectively. The emissions shown in these tables present just the event itself.

Table 4.13 Air Contaminant Emissions from Accidental Event 1 (Per Event)

Source	Air Contaminant Emissions (t/event)					
	NO_2	SO_2	CO	TPM	PM_{10}	$PM_{2.5}$
Flaring	0.40	0.02	0.43	0.25	0.25	0.25

Table 4.14 Air Contaminant Emissions from Accidental Event 2 (Per Event)

Source	Air Contaminant Emissions (t/event)					
	NO_2	SO_2	CO	TPM	PM_{10}	$PM_{2.5}$
FPSO	51.9	0.74	5.19	1.42	1.42	1.42

Annual emissions during a year with either three (Accidental Event 1) or two (Accidental Event 2) events are shown in Tables 4.15 and 4.16.

Table 4.15 Air Contaminant Emissions from Accidental Event 1 (Annual)

Source	Air Contaminant Emissions (t/yr with three events)					
	NO_2	SO_2	CO	TPM	PM_{10}	$PM_{2.5}$
FPSO	643	4.34	598	55.0	55.0	55.0
Drilling Installation	1,120	16.0	112	30.7	30.7	30.7
Offshore Supply and Support Vessels	140	2.01	14.0	3.85	3.85	3.85
Shuttle Tanker	110	1.58	11.0	3.03	3.03	3.03
Helicopter	33.2	18.7	4.08	0.85	0.85	0.85
Flaring	7.57	0.36	8.11	4.63	4.63	4.63
Total	**2,054**	**43.0**	**747**	**98.1**	**98.1**	**98.1**

Table 4.16 Air Contaminant Emissions from Accidental Event 2

Source	Air Contaminant Emissions (t/yr with two events)					
	NO_2	SO_2	CO	TPM	PM_{10}	$PM_{2.5}$
FPSO	722	5.65	585	55.7	55.7	55.7
Drilling Installation	1,120	16.0	112	30.7	30.7	30.7
Offshore Supply and Support Vessels	140	2.01	14.0	3.85	3.85	3.85
Shuttle Tanker	110	1.58	11.0	3.03	3.03	3.03
Helicopter	33.2	18.7	4.08	0.85	0.85	0.85
Flaring	6.36	0.31	6.81	3.89	3.89	3.89
Total	**2,132**	**44.3**	**733**	**98.1**	**98.1**	**98.1**

5.0 AIR DISPERSION MODELLING METHODOLOGY

The potential changes in ambient air quality due to Project activities can be assessed with numerical atmospheric dispersion modelling. Dispersion models are used to predict ground-level concentrations of air contaminants for a wide range of meteorological conditions and account for local terrain influences. Because of the many uncertainties associated with the application of dispersion models, the model results can be viewed as “best estimates” relative to the decision-making process when standardized model approaches are adopted (U.S. EPA 2005). Dispersion models are used to predict how releases of air contaminants to the atmosphere can affect ground-level concentrations during a variety of meteorological conditions and terrain influences.

The proposed Project location is located within the Bay du Nord Development Area and is therefore regulated by the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB). The

Project development area is shown in Figure 1.1 above. There is no one specified dispersion model required for use by the C-NLOPB or Environment and Climate Change Canada. In the past, these agencies have, for the most part, accepted submissions based on:

- SCREEN3
- ISCST3, ISCLT3
- AERMOD
- CALPUFF, and
- Others on a case by case basis.

5.1 APPROACH

Air quality dispersion modelling was conducted for the operation of Project vessels to predict ground-level concentrations (i.e., sea level) of those contaminants of interest to the Project that could then be compared to provincial and national air quality standards and objectives.

The Newfoundland and Labrador Department of Municipal Affairs and Environment (NLDMAE) have developed a guidance document for dispersion modelling, Guidance Document GD-PPD-019.2, "Guideline for Plume Dispersion Modelling" (the Modelling Guideline) (NLDOEC 2012b). The document outlines approved models for the purpose of determining compliance with the provincial ambient air quality standards under the Newfoundland and Labrador Air Pollution Control Regulations. CALPUFF is the province's approved model for most modelling applications.

The CALPUFF Modelling System is used in this air quality assessment.

CALPUFF is a non-steady state Gaussian puff dispersion model that allows for and includes the following:

- Variable and curved pollutant trajectories
- Variable meteorological conditions
- Spatial variability to winds and turbulence fields
- Retention of previous hour emissions
- Calm and low wind speed conditions
- Causality effects
- Chemical removal
- Wet and dry deposition
- Building downwash
- Plume fumigation
- Complex terrain algorithms

There are three major components to the CALPUFF model: CALMET (meteorological modelling package with both diagnostic and prognostic wind field generators), CALPUFF (a Gaussian puff dispersion model) and CALPOST (post processing program). There are also a series of pre-processors available related to geophysical and meteorological data and processing.

Specifics pertaining to the model domain, data pre-processing, CALMET, CALPUFF and CALPOST are described in detail in the following sub-sections. Copies of the CALMET and CALPUFF input files for one modelling scenario have been included in Appendix A.

5.2 CALMET MODELLING

Climate and meteorology (mainly the winds) influence the manner in which air contaminants released from industrial and natural sources disperse into the atmosphere, and hence have a direct effect on air quality. The dispersion in the atmosphere is governed mainly by the winds and the amount of turbulence that exists in the mixed layer of air in contact with the ground. Turbulence levels are dependent on thermal effects (e.g., vertical temperature stratification) and mechanical effects caused by topography, surface roughness, and wind speed. The height of the mixing layer determines the vertical extent to which emissions are able to diffuse. Meteorology varies with time of day and year and can vary from location to location because of terrain and land cover influences on turbulence and wind field.

5.2.1 Weather Research Forecast Model Data

The Weather Research Forecast (WRF) mesoscale model data at 4 km grid resolution for three-year period (2015 to 2017) were developed by Lakes Environmental (Lakes Environmental 2018). The WRF model data were used to characterize the meteorology in the model as there is no surface and upper air meteorological station in the region.

5.2.2 CALMET Meteorological Modelling

The latest version of CALMET (version 6.5.0) was used for this study. The CALMET meteorological domain adopted for this project is summarized below in Table 5.1.

Table 5.1 CALMET Meteorological Modelling Domain Parameters

Feature	Value
Map Projection	UTM
UTM Zone	23N
Datum	WGS-84
Number of Grid Cells (nx,ny)	50,50
SW Corner (x,y) m	371720, 5288202
Grid Spacing	1.0 km

A 50 km by 50 km CALMET model domain at 1 km grid resolution was selected for the assessment. With this grid spacing, it was possible to maximize run time and file size efficiencies while still capturing large-scale terrain feature influences on wind flow patterns. To capture this vertical structure, twelve vertical layers were selected. CALMET defines a vertical layer as the midpoint between two faces (i.e., thirteen faces correspond to twelve layers, with the lowest layer always being the surface level or 10 m). The vertical faces used in this study are 0 m, 20 m, 40 m, 80 m, 120 m, 280 m, 520 m, 880 m, 1,320 m, 1,820 m, 2,380, 3,000 m and 4,000 m.

To initialize the CALMET model, terrain elevation and land use data depicting the geophysical conditions in the selected modelling domain are required. Terrain data were obtained from the U.S. Geological Survey (USGS) Global Multi-resolution Terrain Elevation Data (GMTED2010). Terrain heights are zero metre for the entire CALMET model domain. In addition to terrain elevation data, land use data were obtained from the USGS Global Land Cover 1km dataset (USGS 2018) was used. The land use classes within the CALMET model domain consist of 100% salt water. Based on the weather and climate conditions over open sea water within the model domain, two seasonal categories (shown in Table 5.2) were used and their surface parameters values were selected based on the Modelling Guideline (NLDOEC 2012b).

Table 5.2 Two Seasons Applied in CALMET Modelling

Season	Months	Comments
Non-winter	May 16 to October 31	n/a
Winter without snow cover	Other time of the year	Open sea salt water in this region never frozen.

5.2.3 CALMET Output Quality Assurance and Quality Control

In order to assess the value of the WRF-CALMET model approach for this assessment, CALMET output surface winds, mixing height and PG stability class data were extracted at the Project Site for analysis.

A wind rose plot of the CALMET predicted winds at the project site for the 2015 to 2017 period of the model is provided in Figure 5.1. The predicted winds at 10 m above ground are most frequently from the southwest, west, and northwest.

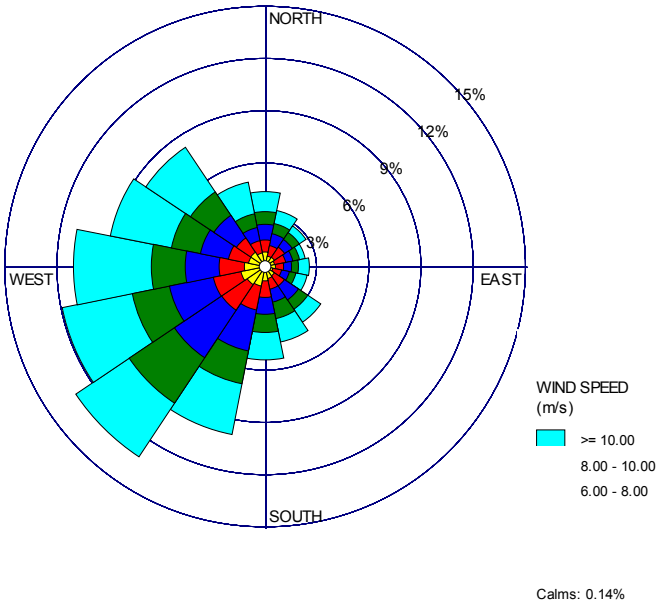


Figure 5.1 CALMET Predicted Wind Rose at Project Site (2015 – 2017)

The CALMET predicted mean diurnal mixing heights extracted from the file for the Project Site for 2015-2017 are provided in Figure 5.2. The results show:

- Winter: the mean maximum values are about 650 m
- Non-winter: the mean maximum afternoon values are about 480 m

The predicted mixing heights are generally lower than those expected over-land. This is due to the lack of diurnal changes because of the large water body (e.g., salt water) surface across the entire CALMET model domain. As such, the lower mixing heights have the potential to result in less vertical movement of the exhaust plumes, leading to less dispersion, and less dilution, as the plumes move downwind from the source.

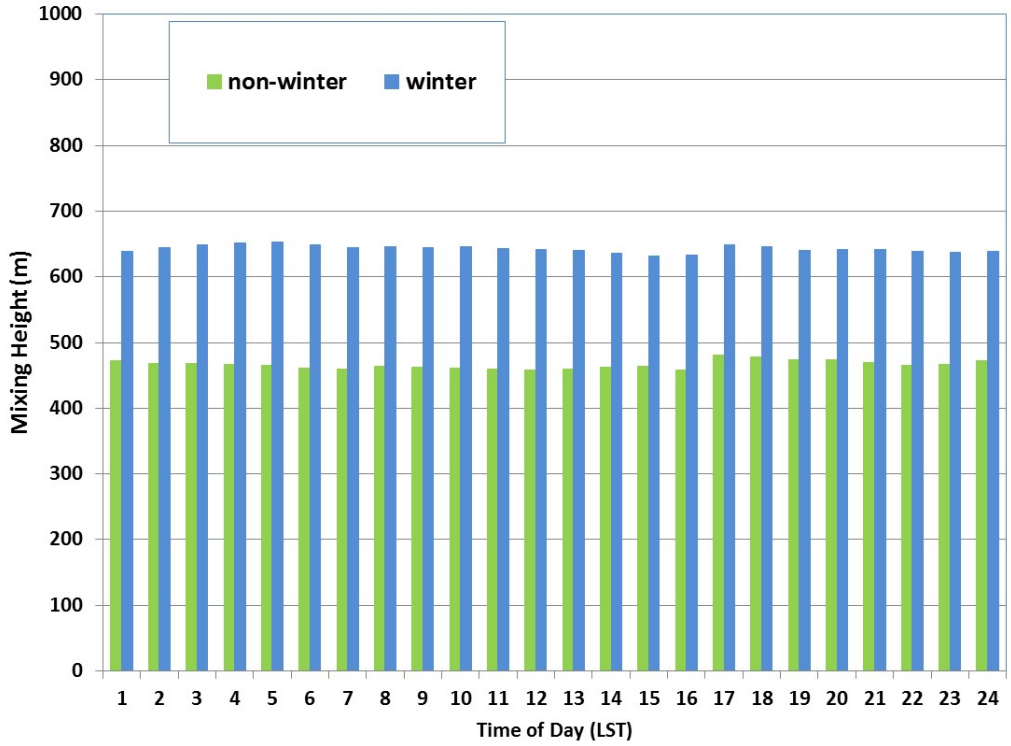


Figure 5.2 CALMET Predicted Mixing Heights at Project Site (2015-2017)

Table 5.3 shows the seasonal predicted stability class frequency distributions for the Project site for 2015–2017:

- The neutral condition (Stability Class D) is the most frequent class and is associated with overcast conditions or high wind speed condition.
- Unstable conditions (Stability Classes A, B and C) are more frequent during the summer and spring seasons, and are associated with daytime periods, clear skies and low wind speeds.
- Stable conditions (Stability Classes E and F) are more frequent during the winter and fall seasons, and are associated with nighttime periods, clear skies and low wind speeds.

Table 5.3 Predicted Stability Class Frequency Distributions (%) at the Project site (2015–2017)

	Number of Hours	A	B	C	D	E	F
Non-winter	12168	0	0	0	100	0	0
Winter	14136	0	0	0	100	0	0
2015–2017	26304	0	0	0	100	0	0
NOTE: Definitions of two seasons refer to Table 5.2							

The predicted stability is neutral nearly 100% of the time. This is likely due to the salt-water land-use characteristics of the model domain. Since the sea surface temperature doesn't change diurnally, unlike the surface of land-masses which warm due to incoming solar radiation, no convective mixing would occur over the sea surface resulting in no unstable conditions. Further, stable conditions are also unlikely to occur frequently in the domain due to a combination of the cold sea surface water temperatures and the frequent high surface winds, which result in frequent occurrence of neutral stability.

5.2.4 CALMET Model Switches

The CALMET model was run for a three-year period, from 2015 - 2017 inclusive, which is consistent with that requested by the NL Modelling Guideline for assessment modelling. Model options were selected based on the Modelling Guideline (i.e., "All parameters of the input files are to be set at default unless justification exists to the contrary or otherwise defined in the guidance document" (NLDOEC 2012b). The CALMET input switches were set to default values based on the NL Modelling Guideline and the CALMET user guide (latter was used as reference for switches with no default values).

5.3 CALPUFF MODELLING

The latest version of the CALPUFF dispersion model (version 7.2.1) was used to predict ground-level concentrations (GLCs) of the air contaminants of interest to this study. The CALPUFF computational domain covered a 20 km by 20 km area centered the Project, within the 50 km by 50 km CALMET meteorological grid, as defined above.

5.3.1 Source Inputs

As described above in Section 4, six operational scenarios were modelled:

- Scenario 1 - Hook-up and Commissioning
- Scenario 2 - Concurrent Drilling and Production, Power Option 1
- Scenario 3 - Concurrent Drilling and Production, Power Option 2
- Scenario 4 - Accidental Event 1 - Flaring
- Scenario 5 - Accidental Event 2 – Production Installation operating on Diesel 7 days per year
- Scenario 6 - Normal Production Operations

The modelled sources of emissions include point sources from the drill installation, FPSO, including the engines/turbines and flares, vessels, and helicopters. These sources and a description of the operating scenarios modelled were previously described in detail in Section 4.

The source characteristics input to the dispersion model are provided in Table 5.4 for Scenarios 1, 2, 3, 5 and 6. The source characteristics for Scenario 4 - Accident Event 1 – Flaring are provided in Table 5.5. The modelled air contaminant emission rates for each of the six model scenarios are presented in Tables 5.6 to 5.11.

The source locations are shown in Figure 5.3.

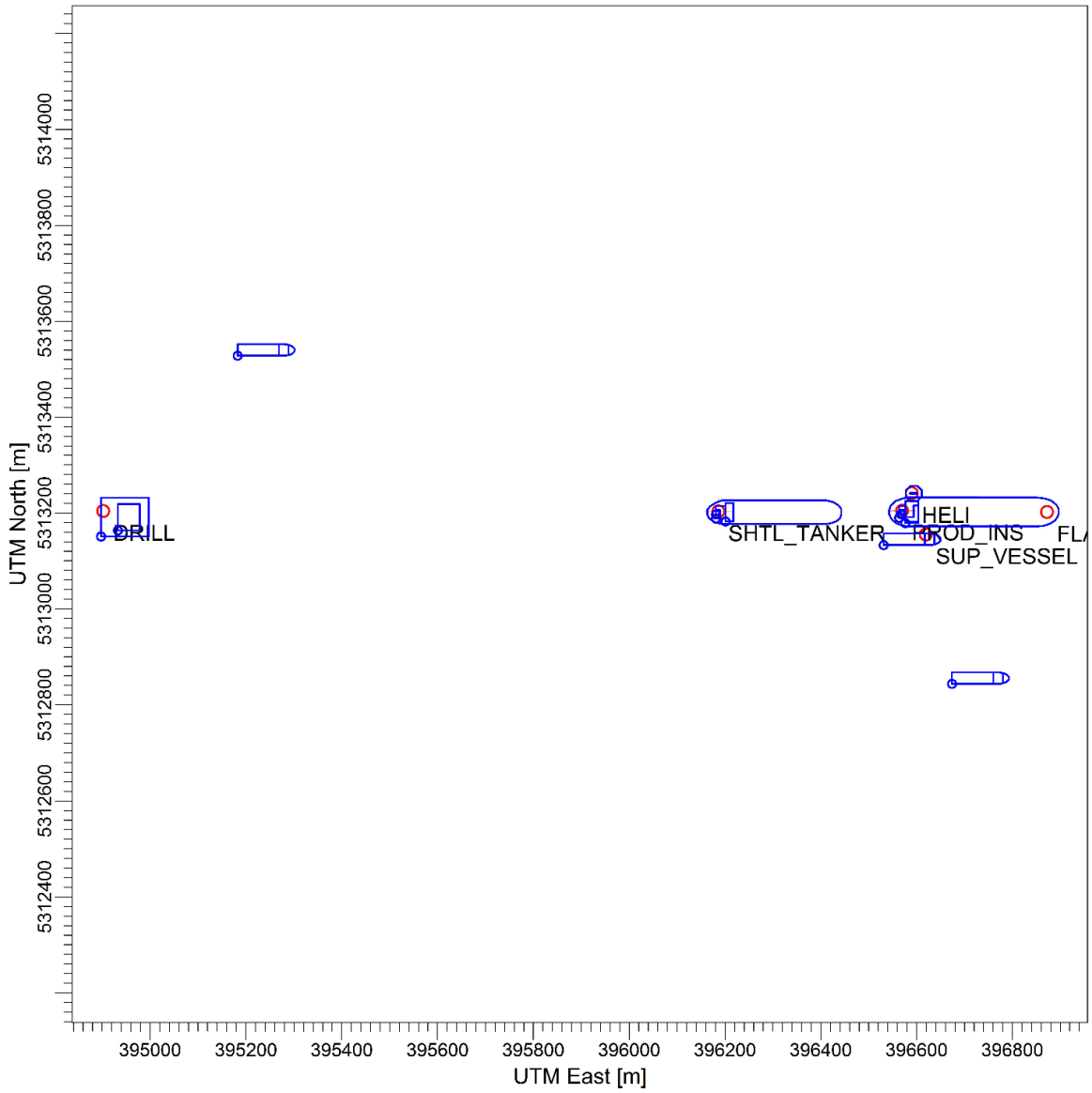


Figure 5.3 Source Locations

Table 5.4 Source Parameters – Scenarios 1, 2, 3, 5 and 6

Source	Location (m)		Base Elevation (m)	Stack Height (m)	Stack Diameter (m)	Stack Gas Exit Velocity (m/s)	Stack Gas Exit Temperature (K)
	Easting	Northing					
FPSO	396569	5313205	0	48.9	0.90	18.4	414
Drilling Installation	395101	5313923	0	42.7	1.00	24.4	598
Supply and Support Vessels	396619	5313155	0	36.0	0.50	15.0	414
Shuttle Tanker	396186	5313203	0	45.5	0.90	20.0	413
Helicopters (LTO)	396590	5313241	0	43.4	0.66	20.0	720
Flaring (Production Installation)	396872	5313202	0	67.1	0.32	9.04	1199

Table 5.5 Source Parameters – Scenario 4

Source	Location (m)		Base Elevation (m)	Stack Height (m)	Stack Diameter (m)	Stack Gas Exit Velocity (m/s)	Stack Gas Exit Temperature (K)
	Easting	Northing					
FPSO	396569	5313205	0	48.9	0.90	18.4	414
Drilling Installation	395101	5313923	0	42.7	1.00	24.4	598
Supply and Support Vessel	396619	5313155	0	36.0	0.50	15.0	414
Shuttle Tanker	396186	5313203	0	45.5	0.90	20.0	413
Helicopters (LTO)	396590	5313241	0	43.4	0.66	20.0	720
Flaring (Production Installation - depressurization) *	396872	5313202	0	67.1	22.0	9.04	1199
Notes: * model input flare diameter estimated using the Alberta Flare model tool (AER 2018)							

The emissions associated with helicopter landing and take-off (LTO) were modelled with variable emission rates for hourly, daily and annual releases. The emissions associated with LTO were prorated to represent the quantity of emissions that would occur on average in hourly, daily, and annual time periods. This approach takes the number of helicopter trips to the FPSO into account; the number of trips vary in each phase. Stantec assumed that the helicopter emissions occur over 2 hours each day that a helicopter visits the FPSO. Annual average emissions are calculated in the same way, as well as assuming that helicopter visits occur throughout the year.

The releases from other sources were modelled with constant emissions for hourly, daily and annual releases as the actual emission rates are expected to be generally consistent throughout the year for each model scenario.

Table 5.6 Modelled Emission Rates – Hook-up and Commissioning

Source	NOx (g/s)		SO_2 (g/s)			CO (g/s)		TPM (g/s)	PM_{10} (g/s)	$PM_{2.5}$ (g/s)
	1-hour	24-hour	1-hour	3-hour	24-hour	1-hour	8-hour	24-hour	24-hour	24-hour
FPSO (Power Option 1)	85.9	85.9	1.22	1.22	1.22	8.59	8.59	2.36	2.36	2.36
Drilling Installation	36.0	36.0	0.515	0.515	0.515	3.60	3.60	0.988	0.988	0.988
Supply and Support Vessel	24.6	24.6	0.352	0.352	0.352	2.46	2.46	0.675	0.675	0.675
Helicopters (LTO)	0.211	0.018	0.156	0.156	0.013	0.104	0.009	4.77E-04	4.77E-04	4.77E-04

Table 5.7 Modelled Emission Rates – Concurrent Drilling and Production, Power Option 1

Source	NOx (g/s)			SO_2 (g/s)				CO (g/s)		TPM (g/s)		PM_{10} (g/s)	$PM_{2.5}$ (g/s)	
	1-hour	24-hour	Annual	1-hour	3-hour	24-hour	Annual	1-hour	8-hour	24-hour	Annual	24-hour	24-hour	Annual
FPSO	20.4	20.38	20.4	0.14	0.14	0.14	0.14	18.9	18.9	1.74	1.74	1.74	1.74	1.74
Drilling Installation	36.0	36.0	36.0	0.52	0.52	0.52	0.52	3.60	3.60	0.99	0.99	0.99	0.988	0.988
Supply and Support Vessel	24.6	24.6	4.45	0.35	0.35	0.35	0.064	2.46	2.46	0.68	0.12	0.68	0.675	0.122
Shuttle Tanker	16.4	16.4	3.50	0.23	0.23	0.23	0.050	1.64	1.64	0.45	0.10	0.45	0.449	0.096
Helicopters (LTO)	0.633	0.05	0.05	0.468	0.469	0.039	0.039	0.311	0.026	0.001	0.001	0.001	0.001	0.001
Flaring (Production Installation)	0.202	0.202	0.202	0.010	0.010	0.010	0.010	0.216	0.216	0.123	0.123	0.123	0.123	0.123

Table 5.8 Modelled Emission Rates – Concurrent Drilling and Production, Power Option 2

Source	NOx (g/s)			SO_2 (g/s)				CO (g/s)		TPM (g/s)		PM_{10} (g/s)	$PM_{2.5}$ (g/s)	
	1-hour	24-hour	Annual	1-hour	3-hour	24-hour	Annual	1-hour	8-hour	24-hour	Annual	24-hour	24-hour	Annual
FPSO	4.77	4.77	4.77	0.179	0.179	0.179	0.179	4.50	4.50	2.27	2.27	2.27	2.27	2.27
Drilling Installation	36.0	36.0	36.0	0.515	0.515	0.515	0.515	3.60	3.60	0.988	0.988	0.988	0.988	0.988
Supply and Support Vessel	24.6	24.6	4.45	0.352	0.352	0.352	0.352	2.46	2.46	0.675	0.122	0.675	0.675	0.122
Shuttle Tanker	16.4	16.4	3.50	0.234	0.234	0.234	0.234	1.64	1.64	0.449	0.096	0.449	0.449	0.096
Helicopters (LTO)	0.633	0.633	0.633	0.469	0.469	0.039	0.039	0.311	0.026	0.001	0.001	0.001	0.001	0.001
Flaring (Production Installation)	0.202	0.202	0.202	0.010	0.010	0.010	0.010	0.216	0.216	0.123	0.123	0.123	0.123	0.123

Table 5.9 Modelled Emission Rates – Accidental Event 1 - Flaring

Source	NOx (g/s)	SO_2 (g/s)		CO (g/s)	TPM (g/s)	PM_{10} (g/s)	$PM_{2.5}$ (g/s)
	1-hour	1-hour	3-hour	1-hour	24-hour	24-hour	24-hour
FPSO	20.4	0.138	0.138	19.0	1.74	1.74	1.74
Drilling Installation	36.0	0.515	0.515	3.602	0.988	0.988	0.988
Supply and Support Vessel	24.6	0.352	0.352	2.461	0.675	0.675	0.675
Shuttle Tanker	16.4	0.234	0.234	1.638	0.449	0.449	0.449
Helicopters (LTO)	0.633	0.469	0.469	0.311	0.017	0.017	0.017
Flaring (Production Installation)	37.3	1.80	1.80	39.9	22.8	22.8	22.8

Table 5.10 Modelled Emission Rates – Accidental Event 2 – Production Installation on Diesel Seven Days

Source	NOx (g/s)		SO_2 (g/s)			CO (g/s)		TPM (g/s)	PM_{10} (g/s)	$PM_{2.5}$ (g/s)
	1-hour	24-hour	1-hour	3-hour	24-hour	1-hour	8-hour	24-hour	24-hour	24-hour
FPSO	85.9	85.9	1.23	1.23	1.23	8.59	8.59	2.36	2.36	2.36
Drilling Installation	36.0	36.0	0.515	0.515	0.515	3.602	3.602	0.988	0.988	0.988
Supply and Support Vessel	24.6	24.6	0.352	0.352	0.352	2.46	2.46	0.675	0.675	0.675
Shuttle Tanker	16.4	16.4	0.234	0.234	0.234	1.64	1.64	0.449	0.449	0.449
Helicopters (LTO)	0.633	0.053	0.469	0.469	0.039	0.311	0.026	0.001	1.43E-03	0.001
Flaring (Production Installation)	0.202	0.202	0.010	0.010	0.010	0.216	0.216	0.123	0.123	0.123

Table 5.11 Modelled Emission Rates – Normal Production Operations

Source	NOx (g/s)			SO_2 (g/s)				CO (g/s)		TPM (g/s)		PM_{10} (g/s)	$PM_{2.5}$ (g/s)	
	1-hour	24-hour	Annual	1-hour	3-hour	24-hour	Annual	1-hour	8-hour	24-hour	Annual	24-hour	24-hour	Annual
FPSO	21.1	21.1	21.1	0.142	0.142	0.142	0.142	19.6	19.6	1.80	1.80	1.80	1.80	1.80
Supply and Support Vessel	24.6	24.6	4.45	0.352	0.352	0.352	0.064	2.46	2.46	0.675	0.122	0.675	0.675	0.122
Shuttle Tanker	15.6	15.6	3.33	0.222	0.222	0.222	0.048	1.56	1.56	0.427	0.091	0.427	0.427	0.091
Helicopters (LTO)	0.211	0.018	0.018	0.156	0.156	0.013	0.013	0.104	0.009	4.77E-04	4.77E-04	4.77E-04	4.77E-04	4.77E-04
Flaring (Production Installation)	0.088	0.088	0.088	0.004	0.004	0.004	0.004	0.095	0.095	0.054	0.054	0.054	0.054	0.054

5.3.2 Building Downwash

The presence of buildings can affect the way pollutants are dispersed within the atmosphere from nearby emission sources. Building downwash can occur when wind flows over and around buildings; on the lee side of certain buildings, turbulent wake zones can be created, reducing plume rise and forcing pollutants towards the surface.

Building downwash effects (due to potential interactions of structures at the site with exhaust plumes) were considered in the model using the Building Profile Input Program (BPIP).

The PRIME module of CALPUFF was used to model downwash.

Three-dimensional renderings of the vessels are provided in Figure 5.4.

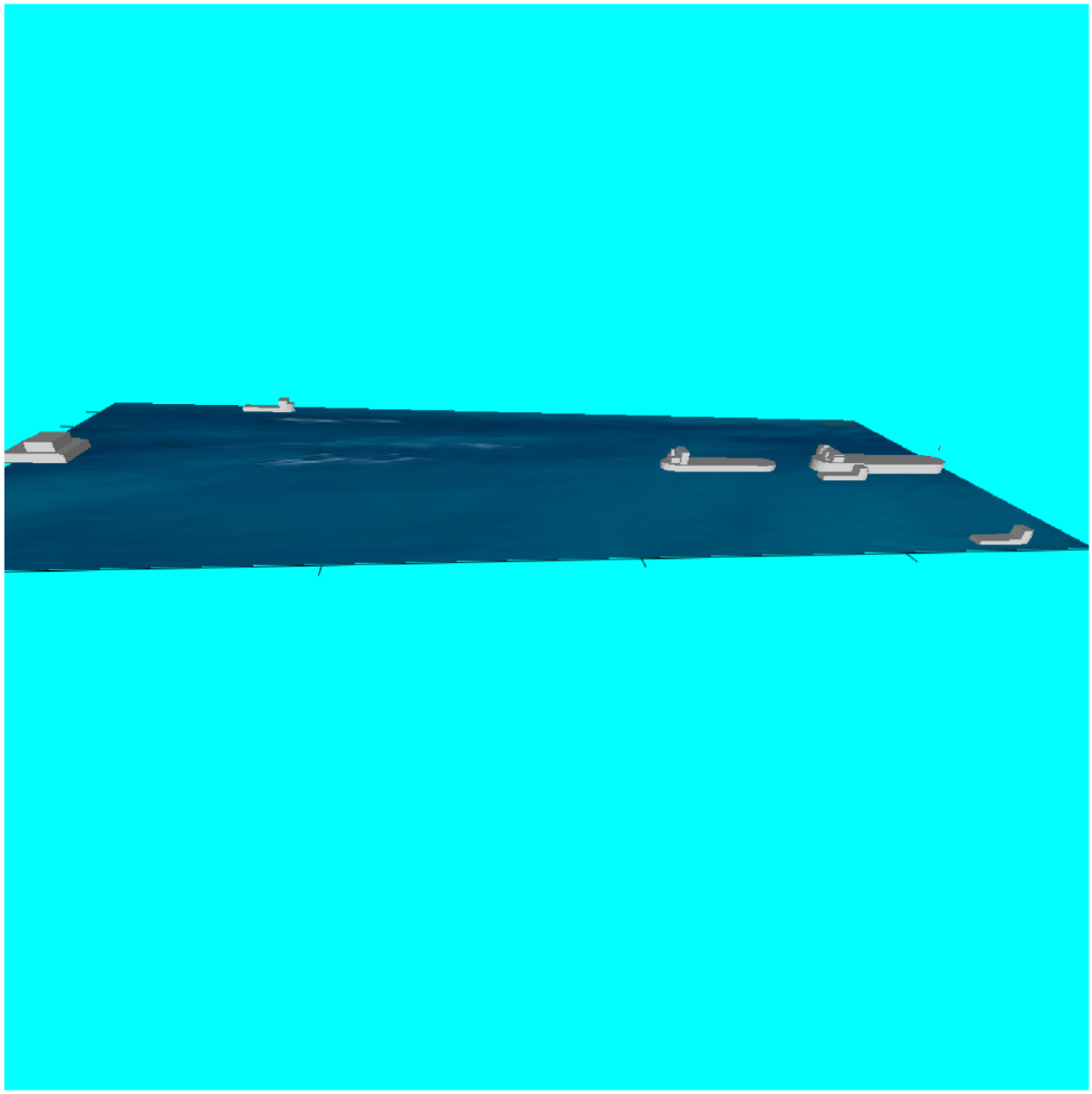


Figure 5.4 Three-dimensional View of Structures Modelled

5.3.3 Receptor Grid

A series of nested Cartesian receptor grids surrounding the project were selected following the NL Modelling Guideline (NLDOEC 2012b). Since the Project is located off-shore, terrain elevations are set to zero (sea-level).

The concentrations of air contaminants are predicted at the nodal points of the grids (the receptor locations), and maximum GLCs beyond the safety zones are determined from these predictions. There is a 500 m safety zone surrounding the drilling installation and a 1,500 m safety zone surrounding the FPSO. The nested receptor grid used in this study is shown in Figure 5.5.

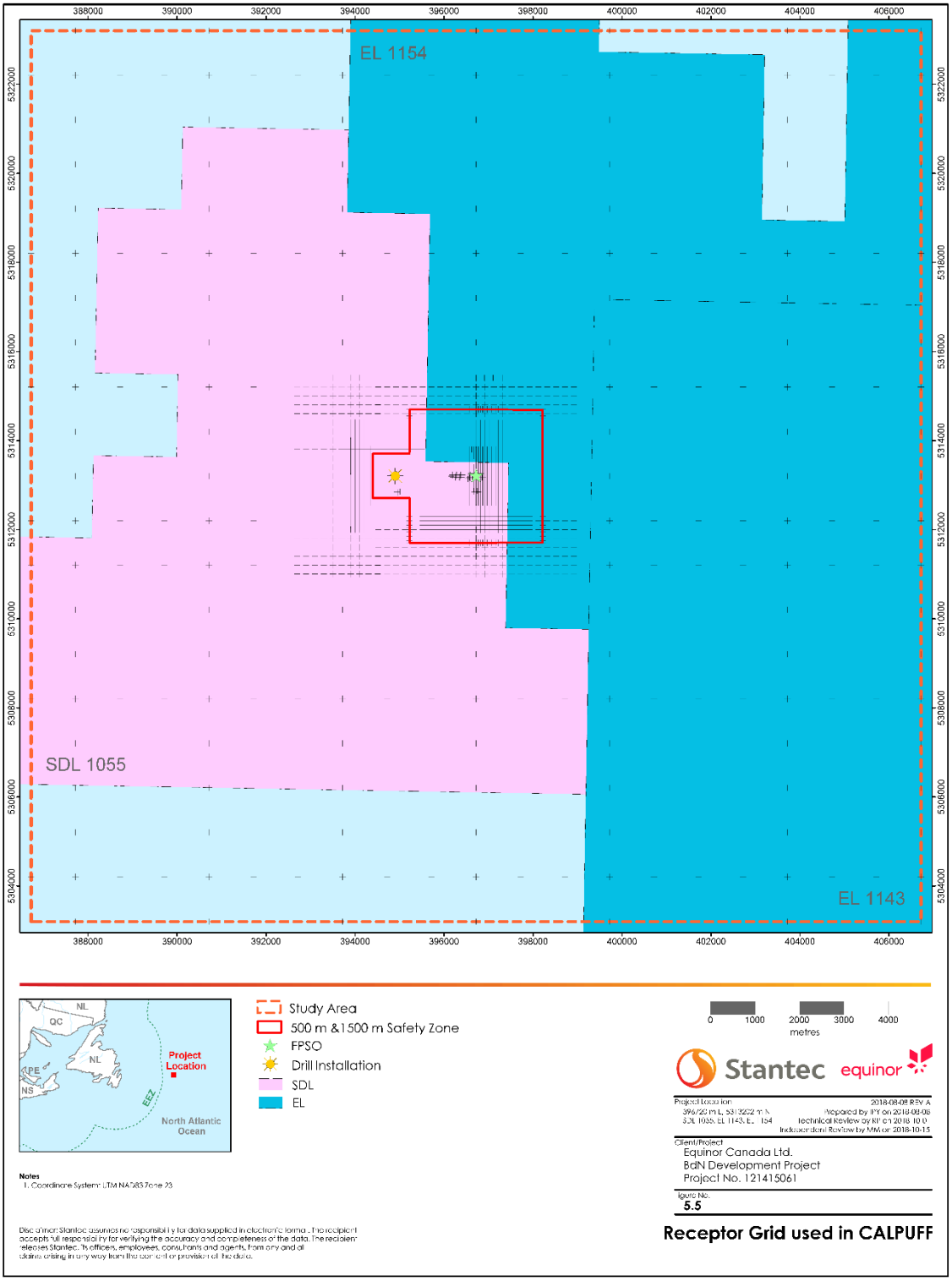


Figure 5.5 Receptor Grid

5.3.4 CALPUFF Model Switches

The NLDMAE Modelling Guideline contains specific model parameters to be used for the purposes of regulatory compliance within the province (provided in Table 4.2.1 in the Modelling Guideline), which were used in this study. For model options with no NLDMAE recommended values, Exponent CALPUFF model default options were used. The default model options are the settings recommended by the model developer. These were used in accordance with the requirements defined the NL Modelling Guideline (NLDOEC 2012b).

5.3.5 Terrain Data

The Offshore Project Area is located offshore eastern Newfoundland and Labrador within the Atlantic Ocean. All elevations within the modelling domain are therefore at sea level.

5.3.6 Post Processing

The air contaminants and averaging periods modelled in this study are represented in Table 5.12.

Table 5.12 Contaminants Modelled and Averaging Periods

Air Contaminant	Averaging Period
TSP	24 hour, annual
PM_{10}	24 hour, annual
$PM_{2.5}$	24 hour, annual
NO_2	1 hour, 24 hour, annual
CO	1 hour, 8 hour
SO_2	1 hour, 3-hour, 24 hour, annual

5.3.7 NO_X to NO_2 Conversion

Nitrogen oxides (NO_X) are produced in most combustion processes, and almost entirely made up of nitric oxide (NO) and NO_2. These are both emitted in combustion processes and together, they are often referred to as nitrogen oxides. Only NO_2 is regulated. Nitric oxide, the dominant form in the exhaust leaving the stack, converts to NO_2 by oxidation in the atmosphere. The oxidation of NO to form NO_2 in the free atmosphere is a complex reaction but is most directly ac
complished by the reaction with ozone.

In this study, the Ozone Limiting Method (OLM) was applied for consideration of conversion of NO_X to NO_2. The OLM accounts for the oxidation of NO to NO_2 due to photochemical reactions in the atmosphere in the presence of ozone. According to the OLM approach, the conversion of NO to NO_2 is limited by the ambient concentration of ozone (O_3) in the atmosphere. It is assumed that 10% (by volume) of the NO_X emission release from the source is in the form of NO_2 and the remaining 90% is converted to NO_2 as follows:

- If 90% of NO_X concentration is less than the ambient O_3 concentration, then $[NO_2] = [NO_X]$(complete conversion);

- If 90% of NO_X concentration is greater than the ambient O_3 concentration, then $[NO_2] = 10\% [NO_X] + [O_3]$ (limited conversion).

In the application of the OLM, the above relationships assume that all concentrations are expressed in parts per million (ppm).

Hourly measured ozone concentrations covering the period of the model were used in the application of the OLM. The measured ozone concentration data were obtained from the Marystown Burin station located in Newfoundland and Labrador (located on the south coast of the Island approximately 180 km southwest of St. John's). The station is classified in the NAPS database as a site outside urban area (i.e., rural) with population < 1,000 and a dominant residential land use category (ECCC 2018a).

6.0 AIR DISPERSION MODELLING RESULTS

Predictions of ground-level concentrations (i.e., sea level) are made at each receptor location for each hour of the three-year period of the model (2015 to 2017). As outlined in the Newfoundland and Labrador Model Guideline, the ninth highest predicted hourly concentrations, the 6th highest (3-hour averaging periods), the 3rd highest (8-hour averaging periods) and the second highest daily (24 hour) concentrations are determined and reported for each receptor location. The maximum of the ninth highest and second highest predictions at each receptor location over the three-year period of the model are presented in the tables below. The ninth highest predictions are considered in order to eliminate predicted concentrations that would be considered statistical outliers, which occur due to meteorological anomalies.

The averaging periods considered for each modelling scenario depend on the duration of the Project phase. For shorter phases (i.e., HUC, Accidental Event 1, Accidental Event 2), fewer averaging periods were considered as emission rates were not variable throughout the year. For example, for the 4-month hook-up and commissioning phase the following time averaging periods were considered:

- 1-hour
- 3-hour
- 8-hour
- 24-hour

The predicted ground level concentrations for 9th highest (1-hour averaging periods), 6th highest (3-hour averaging periods), 3rd highest (8-hour averaging periods) and 2nd highest (24-hour averaging periods) at locations outside the anti-collision/exclusion zones due to emissions from the Project are provided below for each scenario modelled.

The predicted concentrations presented in the following sections are because of Project emissions only, i.e., no background concentrations were considered and no other sources (not associated with the Project) were modelled. Given the off-shore location of the Project it is likely that background air contaminant concentrations would be nominal, as such background was not included.

Concentration contour plots for NO_2 and $PM_{2.5}$ are provided in Appendix B. The location of the maximum predicted concentrations (as defined above), are also identified on the figures.

The predicted ground-level concentrations are below the Newfoundland and Labrador Ambient Air Quality Standards for each modelled emissions scenario.

The predicted SO_2, $PM_{2.5}$ and annual NO_2 ground-level concentrations are below the CAAQS. However, the hourly predicted NO_2 concentrations are above the CAAQS to be implemented in 2020 for the six modelled scenarios, hook-up and commissioning (Scenario 1), the three production and maintenance operational scenarios (Scenarios 2, 3 and 6) and both accidental events (Scenarios 4 and 5). Although predicted concentrations are above the hourly NO_2 CAAQS, the Project site is in a remote location well off-shore (>450 km off the coast of Newfoundland) in international waters with no sensitive receptors nearby. The maximum predicted concentrations (above the CAAQS) generally occur approximately 500 m to 1,700 m from the FPSO and/or drilling installation. Further, the CAAQS are not directly comparable with the model predictions, as the CAAQS are intended to be compared with measured ambient air quality data and are not considered to be directly applicable to industrial fence-line concentrations.

6.1 HOOK-UP AND COMMISSIONING

The predicted ground-level concentrations for CO, NO_2, SO_2, TPM, PM_{10} and $PM_{2.5}$ during offshore hook-up and commissioning (Scenario 1) are provided in Table 6.1.

Table 6.1 Predicted Ground-level Concentrations – Scenario 1 - Hook-up and Commissioning

Substance	Average Period	Maximum Predicted Ground-level Concentrations (µg/m³)	Newfoundland and Labrador Ambient Air Quality Standards (µg/m³)	Canadian Ambient Air Quality Standards (2020) (µg/m³)
CO	1-hour (9th highest)	123	35,000	-
	8-hour (3rd highest)	71.0	15,000	-
NO_2 (OLM)	1-hour (9th highest)	188	400	-
	24-hour (2nd highest)	124	200	-
NO_2 (OLM) (effective January 1, 2020)	Daily max 1-hour (98th percentile) [d]	172	-	113
SO_2	1-hour (9th highest)	18.0	900	183
	3-hour (6th highest)	13.3	600	-
	24-hour (2nd highest)	6.99	300	-
$PM_{2.5}$	24-hour (2nd highest) [c]	15.5	25	27
PM_{10}	24-hour (2nd highest) [c]	15.5	50	-
TSP	24-hour (2nd highest) [c]	15.5	120	-

Notes: Predicted 1-hour, 3-hour and 8-hour average concentrations are based on hourly emission rates
Predicted 24-hour average concentrations are based on daily emission rates
Predicted annual average concentrations are based on annual emission rates
a. Concentration represents the 3-year average of the annual average concentrations
b. Concentration represents the geometric mean annual concentration
c. Includes secondary formation of particulate matter
d. Concentration represents the 3-year average of the annual 98th percentile (8th highest) of the daily maximum 1-hour average concentrations

The predicted concentrations for hook-up and commissioning are below the respective Newfoundland and Labrador Ambient Air Quality Standards.

6.2 OPERATION AND MAINTANENCE

6.2.1 Concurrent Drilling and Production

The predicted ground-level CO, NO_2, SO_2, TPM, PM_{10} and $PM_{2.5}$ concentrations during concurrent drilling and operation (Scenario's 2 and 3) are provided in the following tables.

The predicted ground-level concentrations for Scenario 2 Concurrent Drilling and Production, Power Option 1 are provided in Table 6.2.

Table 6.2 Predicted Ground-level Concentrations – Scenario 2 Concurrent Drilling and Production, Power Option 1

Substance	Average Period	Maximum Predicted Ground-level Concentrations (µg/m³)	Newfoundland and Labrador Ambient Air Quality Standards (µg/m³)	Canadian Ambient Air Quality Standards (2020) (µg/m³)
CO	1-hour (9th highest)	250	35,000	-
	8-hour (3rd highest)	136	15,000	-
NO_2 (OLM)	1-hour (9th highest)	143	400	-
	24-hour (2nd highest)	105	200	-
	Annual (1st highest)	9.8	100	-
NO_2 (OLM) (effective January 1, 2020)	Daily max 1-hour (98th percentile) [d]	134	-	113
	Annual (1st highest)	9.8	-	32
SO_2	1-hour (9th highest)	11.6	900	183
	3-hour (6th highest)	8.99	600	-
	24-hour (2nd highest)	3.95	300	-
	Annual (1st highest)	0.21	60	13
$PM_{2.5}$	24-hour (2nd highest) [c]	14.5	25	27
	Annual (3-year average) [a, c]	0.70	8.8	8.8
PM_{10}	24-hour (2nd highest) [c]	14.5	50	-
TSP	24-hour (2nd highest) [c]	14.5	120	-
	Annual (1st highest) [b, c]	0.92	60	-

Notes:
Predicted 1-hour, 3-hour and 8-hour average concentrations are based on hourly emission rates
Predicted 24-hour average concentrations are based on daily emission rates
Predicted annual average concentrations are based on annual emission rates
a. Concentration represents the 3-year average of the annual average concentrations
b. Concentration represents the geometric mean annual concentration
c. Includes secondary formation of particulate matter
d. Concentration represents the 3-year average of the annual 98th percentile (8th highest) of the daily maximum 1-hour average concentrations

The predicted ground-level concentrations for Scenario 3 Concurrent Drilling and Production, Power Option 2 are provided in Table 6.3.

Table 6.3 Predicted Ground-level Concentrations – Scenario 3 Concurrent Drilling and Production, Power Option 2

Substance	Average Period	Maximum Predicted Ground-level Concentrations (µg/m^3)	Newfoundland and Labrador Ambient Air Quality Standards (µg/m^3)	Canadian Ambient Air Quality Standards (2020) (µg/m^3)
CO	1-hour (9th highest)	60.6	35,000	-
	8-hour (3rd highest)	42.2	15,000	-
NO_2 (OLM)	1-hour (9th highest)	130	400	-
	24-hour (2nd highest)	96.9	200	-
	Annual (1st highest)	9.19	100	-
NO_2 (OLM) (effective January 1, 2020)	Daily max 1-hour (98th percentile) [d]	125	-	113
	Annual (1st highest)	9.19	-	32
SO_2	1-hour (9th highest)	10.6	900	183
	3-hour (6th highest)	8.45	600	-
	24-hour (2nd highest)	3.91	300	-
	Annual (1st highest)	0.21	60	13
$PM_{2.5}$	24-hour (2nd highest) [c]	10.8	25	27
	Annual (3-year average) [a, c]	0.52	8.8	8.8
PM_{10}	24-hour (2nd highest) [c]	10.8	50	-
TSP	24-hour (2nd highest) [c]	10.8	120	-
	Annual (1st highest) [b, c]	0.88	60	-

Notes:
Predicted 1-hour, 3-hour and 8-hour average concentrations are based on hourly emission rates
Predicted 24-hour average concentrations are based on daily emission rates
Predicted annual average concentrations are based on annual emission rates
a. Concentration represents the 3-year average of the annual average concentrations
b. Concentration represents the geometric mean annual concentration
c. Includes secondary formation of particulate matter
d. Concentration represents the 3-year average of the annual 98th percentile (8th highest) of the daily maximum 1-hour average concentrations

The predicted concentrations for the two concurrent drilling and operation operating scenarios are below the respective Newfoundland and Labrador Ambient Air Quality Standards.

6.2.2 Normal Production Operations

The predicted ground-level concentrations for Scenario 6, Normal Production Operations are provided in Table 6.4.

Table 6.4 Predicted Ground-level Concentrations – Scenario 6 Normal Production Operations

Substance	Average Period	Maximum Predicted Ground-level Concentrations (µg/m^3)	Newfoundland and Labrador Ambient Air Quality Standards (µg/m^3)	Canadian Ambient Air Quality Standards (2020) (µg/m^3)
CO	1-hour (9th highest)	259	35,000	-
	8-hour (3rd highest)	141	15,000	-
NO_2 (OLM)	1-hour (9th highest)	126	400	-
	24-hour (2nd highest)	85.9	200	-
	Annual (1st highest)	6.01	100	-
NO_2 (OLM) (effective January 1, 2020)	Daily max 1-hour (98th percentile) [d]	119	-	113
	Annual (1st highest)	6.01	-	32
SO	1-hour (9th highest)	8.78	900	183
	3-hour (6th highest)	6.38	600	-
	24-hour (2nd highest)	2.47	300	-
	Annual (1st highest)	0.06	60	13
$PM_{2.5}$	24-hour (2nd highest) [c]	13.5	25	27
	Annual (3-year average) [a, c]	0.6	8.8	8.8
PM_{10}	24-hour (2nd highest) [c]	13.5	50	-
TSP	24-hour (2nd highest) [c]	13.5	120	-
	Annual (1st highest) [b, c]	0.87	60	-

Notes:
Predicted 1-hour, 3-hour and 8-hour average concentrations are based on hourly emission rates
Predicted 24-hour average concentrations are based on daily emission rates
Predicted annual average concentrations are based on annual emission rates
a. Concentration represents the 3-year average of the annual average concentrations
b. Concentration represents the geometric mean annual concentration
c. Includes secondary formation of particulate matter
d. Concentration represents the 3-year average of the annual 98th percentile (8th highest) of the daily maximum 1-hour average concentrations

The predicted concentrations for the normal production operations are below the respective Newfoundland and Labrador Ambient Air Quality Standards.

6.3 ACCIDENTAL EVENTS

The predicted ground-level concentrations of CO, NO_2, SO_2, during both accidental events (operating Scenarios 4 and 5) are presented in Tables 6.5 and 6.6. Note that TPM, PM_{10} and $PM_{2.5}$ results are not presented for Accidental Event 1 as only those contaminants with averaging periods of less than 24 hours were considered.

Table 6.5 Predicted Ground-level Concentrations – Scenario 4 Accidental Event 1 - Flaring

Substance	Average Period	Maximum Predicted Ground-level Concentrations (µg/m^3)	Newfoundland and Labrador Ambient Air Quality Standards (µg/m^3)	Canadian Ambient Air Quality Standards (2020) (µg/m^3)
CO	1-hour (9th highest)	250	35,000	-
NO_2 (OLM)	1-hour (9th highest)	136	400	-
NO_2 (OLM) (effective January 1, 2020)	Daily max 1-hour (98th percentile) [d]	143	-	113
SO_2	1-hour (9th highest)	11.6	900	183
	3-hour (6th highest)	8.99	600	-

Notes:
Predicted 1-hour, 3-hour and 8-hour average concentrations are based on hourly emission rates
Predicted 24-hour average concentrations are based on daily emission rates
Predicted annual average concentrations are based on annual emission rates
a. Concentration represents the 3-year average of the annual average concentrations
b. Concentration represents the geometric mean annual concentration
c. Includes secondary formation of particulate matter
d. Concentration represents the 3-year average of the annual 98th percentile (8th highest) of the daily maximum 1-hour average concentrations

Table 6.6 Predicted Ground-level Concentrations – Scenario 5 Accidental Event 2 – Production Installation on Diesel Seven Days

Substance	Average Period	Maximum Predicted Ground-level Concentrations (µg/m^3)	Newfoundland and Labrador Ambient Air Quality Standards (µg/m^3)	Canadian Ambient Air Quality Standards (2020) (µg/m^3)
CO	1-hour (9th highest)	126	35,000	-
	8-hour (3rd highest)	73.2	15,000	-
NO_2 (OLM)	1-hour (9th highest)	187	400	-
	24-hour (2nd highest)	115	200	-
NO_2 (OLM) (effective January 1, 2020)	Daily max 1-hour (98th percentile) [d]	172	-	113
SO_2	1-hour (9th highest)	20.4	900	183
	3-hour (6th highest)	15.8	600	-
	24-hour (2nd highest)	6.12	300	-
$PM_{2.5}$	24-hour (2nd highest) [c]	13.4	25	27
PM_{10}	24-hour (2nd highest) [c]	13.4	50	-
TSP	24-hour (2nd highest) [c]	13.4	120	-

Notes:
Predicted 1-hour, 3-hour and 8-hour average concentrations are based on hourly emission rates
Predicted 24-hour average concentrations are based on daily emission rates
Predicted annual average concentrations are based on annual emission rates
a. Concentration represents the 3-year average of the annual average concentrations
b. Concentration represents the geometric mean annual concentration
c. Includes secondary formation of particulate matter
d. Concentration represents the 3-year average of the annual 98th percentile (8th highest) of the daily maximum 1-hour average concentrations

The predicted concentrations for the two accidental release events are below the respective Newfoundland and Labrador Ambient Air Quality Standards.

7.0 GREENHOUSE GAS EMISSIONS

Greenhouse gas emissions inventories by operational scenario are presented in the following sub-sections.

7.1.1 Hook-up and Commissioning

Releases of GHGs will occur from fuel combustion in heavy equipment used for offshore hook-up and commissioning activities.

The CO_2 emissions released during hook-up and commissioning were provided by Equinor (Equinor 2018). Stantec used the produced gas fuel information provided by Equinor (2018) to estimate CH_4 and N_2O emissions from power generation from the FPSO during this phase of the Project. To convert tonnes

of CO_2, CH_4, and N_2O to tonnes of carbon dioxide equivalent, Stantec used the global warming potentials currently required by ECCC (i.e., 1, 25, 298 for CO_2, CH_4, and N_2O, respectively).

A summary of the estimated GHGs during the 4 months of the hook-up and commissioning phase are provided in Table 7.1.

Table 7.1 Estimated Greenhouse Gas Emissions for Hook-up and Commissioning (Scenario 1)

Source	t CO_2e/phase			
	CO_2	CH_4	N_2O	Totals
FPSO – Power Option 1	40,322	NA	758	41,081
Drilling Installation	16,913	NA	318	17,231
OSV /Helicopter	2,667	NA	NA	2,667
Flaring	-	-	-	-
Marine Construction	6,667	NA	NA	6,667
Total	**66,568**	**-**	**1,076**	**67,644**

The total GHG emissions from the hook-up and commissioning activities are estimated to be approximately 67,644 t CO_2e.

7.1.2 Production and Maintenance Operations

Releases of GHGs will occur from fuel combustion in heavy equipment used during the operation and maintenance phase of the Project (including operational Scenarios 2, 3 and 6). Emissions information for CO_2 for Scenarios 2 and 3, Concurrent Drilling and Production, Power Option 1 and 2, as well as Scenario 6, Normal Production Operations (i.e., no drilling activities) were provided by Equinor (Equinor 2018). Stantec used the produced gas fuel information provided by Equinor (2018) to estimate CH_4 and N_2O emissions from power generation from the FPSO during these phases. As noted above, Stantec used the global warming potentials currently required by ECCC to convert tonnes of CO_2, CH_4, and N_2O to tonnes of carbon dioxide equivalent. A summary of the estimated GHGs for Production and Maintenance Operations (i.e., operating Scenario's 2, 3, and 6), over one year, are provided in Tables 7.2, 7.3, and 7.4. Emissions from Scenarios 4 and 5 are presented subsequently in the next section.

Table 7.2 Estimated Greenhouse Gas Emissions for Scenario 2 Concurrent Drilling and Production, Power Option 1

Source	t CO_2e/year			
	CO_2	CH_4	N_2O	Totals
FPSO - Power Option 1	142,562	1,386	345	144,293
Drilling Installation	50,738	NA	954	51,692
OSV /Helicopter	8,000	NA	NA	8,000
Shuttle Tanker	5,000	NA	NA	5,000
Flaring	4,277	NA	NA	4,277
Total	**210,577**	**1,386**	**1,299**	**213,262**

The total GHG emissions for one year of operation during operational Scenario 2, Concurrent Drilling and Production, Power Option 1, are estimated to be approximately 213,262 t CO_2e.

Table 7.3 Estimated Greenhouse Gas Emissions for Scenario 3 Concurrent Drilling and Production, Power Option 2

Source	t CO_2e/year			
	CO_2	CH_4	N_2O	Totals
FPSO – Power Option 2	185,330	1,802	448	187,581
Drilling Installation	50,738	NA	954	51,692
OSV /Helicopter	8,000	NA	NA	8,000
Shuttle Tanker	5,000	NA	NA	5,000
Flaring	4,277	NA	NA	4,277
Total	**253,345**	**1,802**	**1,402**	**256,549**

The total GHG emissions for one year of operation during operational Scenario 3, Concurrent Drilling and Production, Power Option 2, are estimated to be approximately 256,549 t CO_2e.

Table 7.4 Estimated Greenhouse Gas Emissions for Scenario 6 Normal Production Operations

Source	t CO_2e/year			
	CO_2	CH_4	N_2O	Totals
FPSO - Power Option 1	155,463	1,511	376	157,351
OSV / Helicopter	8,000	NA	NA	8,000
Shuttle Tanker	5,000	NA	NA	5,000
Flaring	4,664	NA	NA	4,664
Total	**173,127**	**1,511**	**376**	**175,015**

The total GHG emissions for one year of operation during operational Scenario 6, Normal Production Operations are estimated to be approximately 175,015 t CO_2e.

7.1.3 Accidental Events

Releases of GHGs will occur from fuel combustion in heavy equipment and flaring during the two accidental events considered in this assessment (operational Scenarios 4 and 5).

Stantec calculated the CO_2 emissions from the flaring resulting from a depressurization event using flowrate and composition information from Equinor. It was assumed that there were three depressurization events in the year.

The GHG emissions associated with the combustion of diesel for power generation during a 7-day period when produced gas with the required composition is not available, were calculated by Stantec based on information provided by Equinor. It was assumed that two diesel events occur in the year.

For both scenarios, all other sources of GHG emissions assumed to be in operation during the production and maintenance phase of the Project were the same as those presented above for operational Scenario 2 (refer to Section 7.1.2). To convert tonnes of CO_2, CH_4, and N_2O to tonnes of carbon dioxide equivalent, Stantec used the global warming potentials currently required by ECCC.

A summary of the estimated GHGs from Accidental Event 1 and Accidental Event 2 events is provided in Tables 7.5 and 7.6, respectively. Only the sources that are affected by the Accidental Event have emissions showing.

Table 7.5 Estimated Greenhouse Gas Emissions for Scenario 4 Accidental Event 1 (Per Event)

Source	t CO_2e/event			
	CO_2	CH_4	N_2O	Totals
Flaring	2,027	NA	NA	2,027

Table 7.6 Estimated Greenhouse Gas Emissions for Scenario 5 Accidental Event 2 (Per Event)

Source	t CO_2e/event			
	CO_2	CH_4	N_2O	Totals
FPSO - Power Option 1	2,352	NA	NA	2,352

A summary of the estimated annual GHGs from Project sources during a year with Accidental Event 1 and Accidental Event 2 is provided in Tables 7.7 and 7.8.

Table 7.7 Estimated Greenhouse Gas Emissions for Scenario 4 Accidental Event 1 (Annual)

Source	t CO_2e/year with three events			
	CO_2	CH_4	N_2O	Totals
FPSO – Power Option 1	142,562	1,386	345	144,293
Drill Installation	50,738	NA	954	51,692
OSV / Helicopter	8,000	NA	NA	8,000
Shuttle Tanker	5,000	NA	NA	5,000
Flaring	10,358	NA	NA	10,358
Total	**216,657**	**1,386**	**1,299**	**219,342**

The total GHG emissions for one year of operation during operational Scenario 4, Accidental Event 1, are estimated to be approximately 219,342 t CO_2e.

Table 7.8 Estimated Greenhouse Gas Emissions for Scenario 5 Accidental Event 2 (Annual)

Source	t CO_2e/year with two events			
	CO_2	CH_4	N_2O	Totals
FPSO - Power Option 1	141,798	1,333	332	143,463
Drill Installation	50,738	NA	954	51,692
OSV / Helicopter	8,000	NA	NA	8,000
Shuttle Tanker	5,000	NA	NA	5,000
Flaring	4,277	NA	NA	4,277
Total	**209,813**	**1,333**	**1,286**	**212,431**

The total GHG emissions for one year of operation during operational Scenario 5, Accidental Event 2, are estimated to be approximately 212,431 t CO_2e.

7.2 SUMMARY

In summary, the total GHG emissions from Operation and Maintenance of the Project are estimated to range from 175,015 t CO_2e/year to 256,549 t CO_2e/year, depending on the power option chosen for the Project and whether drilling activities overlap with normal production activities.

For comparison purposes, Stantec retrieved reported GHG emissions from three operating offshore production platforms from the federal GHG Reporting Program for the 2016 reporting year (ECCC 2017). The Project normal production emissions were compared to those from the three offshore production platforms. The comparison is shown in Table 7.9.

Table 7.9 Comparison of Project Normal Production Emissions to Other Production Platforms

Scenario	t CO_2e/year			
	CO_2	CH_4	N_2O	Totals
Terra Nova	527,836	22,556	10,208	560,600
Hibernia	517,524	40,320	4,619	562,463
White Rose	401,696	32,669	11,497	445,861
Project Normal Operations	173,127	1,511	376	175,015

Source: ECCC (2017b)
* 2016 is the most recent year available for reported GHG Emissions. Hebron was not in production at that time.

The latest National Inventory Report, produced by Environment and Climate Change Canada (ECCC), was released in 2018 for the 2016 calendar year (ECCC 2018). The emissions of GHGs from Newfoundland and Labrador, as reported in the National Inventory Report, are 10,800,000 tonnes CO_2e (ECCC 2018b). The Canadian national GHG emissions for the 2016 calendar year are 704,000,000 tonnes CO_2e (ECCC 2018b). According to ECCC, Canada's contribution to global GHG emissions in 2013 was 1.6% (ECCC 2018c).

The GHG emissions in tonnes per year from each operational phase (excluding commissioning and accidental events) are summarized in Table 7.10. Emissions from hook-up and commissioning and accidental events are not shown in the comparison as the emissions during these phases are over a shorter period and are therefore not directly comparable to the annual Newfoundland and Labrador emissions.

Table 7.10 Summary of Greenhouse Gas Emissions for Scenarios 2, 3, and 6

Scenario	t CO_2e/year in each Scenario				Percent of NL Emissions	Percent of National Emissions
	CO_2	CH_4	N_2O	Totals	(%)	(%)
Concurrent Drilling and Production – Power Option 1	210,577	1,386	1,299	213,262	2.0	0.03
Concurrent Drilling and Production – Power Option 2	253,345	1,802	1,402	256,549	2.4	0.04
Normal Production Operations	173,127	1,511	376	175,015	1.6	0.02

The estimated annual emissions in each Project phase represent the total emissions expected from a year of activities during that phase.

Greenhouse gas emissions from the phases considered above represent 2.4% or less of Newfoundland and Labrador emissions and 0.04% or less of Canada's GHG emissions reported by ECCC for the year 2016 (the latest year for which this report is available).

8.0 CONCLUSIONS

Air dispersion modelling was conducted for the construction and operation of Project to predict ground-level concentrations of the air contaminants of interest from the Project. The latest version of the CALPUFF dispersion model (version 7.2.1) was used to predict the ground-level concentrations (GLCs). The CALPUFF computational domain covered a 20 km by 20 km area centered the Project. This domain was within a 50 km by 50 km CALMET meteorological grid prepared for the study. The predicted concentrations were compared to Newfoundland and Labrador and Canadian Ambient Air Quality Standards (CAAQS). The CAAQS are developed by the CCME to reduce emissions and ground-level concentrations of various air contaminants nationally.

The predicted ground-level concentrations are below the Newfoundland and Labrador Ambient Air Quality Standards for each modelled emissions scenario.

The predicted SO_2, $PM_{2.5}$ and annual NO_2 ground-level concentrations are below the CAAQS. However, the predicted hourly NO_2 concentrations are above the CAAQS to be implemented in 2020 for the six modelled scenarios (hook-up and commissioning, the three operational scenarios, and both accidental event scenarios). Although predicted concentrations are above the hourly NO_2 CAAQS, the Project site is in a remote location well off-shore (>450 km off the coast of Newfoundland) in international waters. There are no sensitive human receptors nearby. The maximum predicted concentrations (above the CAAQS) generally occur approximately 500 m to 1,700 m from the FPSO and/or drilling installation. Further, the CAAQS are not directly comparable with the model predictions, as the CAAQS are intended to be compared with measured ambient air quality data and are not considered to be directly applicable to industrial fence-line concentrations.

Greenhouse gas emissions from the phases considered above represent 2.4% or less of Newfoundland and Labrador emissions and 0.04% or less of Canada's GHG emissions reported by ECCC for the year 2016 (the latest year for which this report is available).

9.0 REFERENCES

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APPENDIX A

Modelling Input Files

```
CALPUFF.INP     7.0             Groups 0f,0g added; new emission scaling
Equinor BdN Development Project - 11 species (SO2, SO4, NO, NO2, HNO3, NO3,
NOx, CO, PM0_25, PM25_10, PM10_30)
Scenario: com_h_15
---------------- Run title (3 lines)
------------------------------------------
   MODEL:  Version TNG
SOFTWARE:  CALApps v2.0197 (Beta) - September 22, 2014
------------------------------------------------------------------------------
-

                    CALPUFF MODEL CONTROL FILE
                    --------------------------

------------------------------------------------------------------------------
-

INPUT GROUP: 0 -- Input and Output File Names
--------------

Default Name  Type          File Name
------------  ----          ---------
CALMET.DAT    input    * METDAT =CALMET.DAT   *
    or
ISCMET.DAT    input    * ISCDAT =             *
    or
PLMMET.DAT    input    * PLMDAT =             *
    or
PROFILE.DAT   input    * PRFDAT =             *
SURFACE.DAT   input    * SFCDAT =             *
RESTARTB.DAT  input    * RSTARTB=             *
------------------------------------------------------------------------------
--
CALPUFF.LST   output   ! PUFLST = com_h_15.lst !
CONC.DAT      output   ! CONDAT = com_h_15.con !
DFLX.DAT      output   ! DFDAT  = com_h_15.dry !
WFLX.DAT      output   ! WFDAT  = com_h_15.wet !

VISB.DAT      output   * VISDAT =CALPUFF.VIS  *
TK2D.DAT      output   * T2DDAT =             *
RHO2D.DAT     output   * RHODAT =             *
RESTARTE.DAT  output   * RSTARTE=             *
------------------------------------------------------------------------------
--
Other Files
-----------
OZONE.DAT     input    * OZDAT  = ozone.dat  *                        --> as
per NL model guideline, do not use ozone file
VD.DAT        input    * VDDAT  =            *
CHEM.DAT      input    * CHEMDAT=            *
AUX           input    * AUXEXT = aux        *                        --> as
per NL model guideline, do not use aux file
(Extension added to METDAT filename(s) for files
 with auxiliary 2D and 3D data)
H2O2.DAT      input    * H2O2DAT=            *
NH3Z.DAT      input    * NH3ZDAT=            *
HILL.DAT      input    * HILDAT=             *
HILLRCT.DAT   input    * RCTDAT=             *
COASTLN.DAT   input    * CSTDAT=             *
FLUXBDY.DAT   input    * BDYDAT=             *
BCON.DAT      input    * BCNDAT=             *
DEBUG.DAT     output   * DEBUG =             *
```

```
MASSFLX.DAT   output   * FLXDAT=             *
MASSBAL.DAT   output   ! BALDAT = com_h_15.dat !                          -->
as per NL model guideline, output mass balance for QAQC
FOG.DAT       output   * FOGDAT=             *
RISE.DAT      output   * RISDAT=             *
PFTRAK.DAT    output   * TRKDAT=             *
------------------------------------------------------------------------------
--
All file names will be converted to lower case if LCFILES = T
Otherwise, if LCFILES = F, file names will be converted to UPPER CASE
         T = lower case      ! LCFILES = T !
         F = UPPER CASE
NOTE: (1) file/path names can be up to 132 characters in length


Provision for multiple CALMET Domains and files
-----------------------------------------------------

     Number of CALMET.DAT Domains (NMETDOM)
                                    Default: 1       ! NMETDOM =   1   !

     Number of CALMET.DAT files (NMETDAT)
     (Total for ALL Domains)
                                    Default: 1       ! NMETDAT =   3   !

Variable point/area/volume/flare emissions input files
-----------------------------------------------------------

     Number of POINT source files (PTEMARB.DAT)
     with time-varying data (NPTDAT)
                                    Default: 0       ! NPTDAT =  0   !

     Number of BUOYANT AREA source files (BAEMARB.DAT)
     with time-varying data (NARDAT)
                                    Default: 0       ! NARDAT =  0   !

     Number of VOLUME source files (VOLEMARB.DAT)
     with time-varying data (NVOLDAT)
                                    Default: 0       ! NVOLDAT =  0  !

     Number of FLARE source files (FLEMARB.DAT)
     with time-varying data (NFLDAT)
                                    Default: 0       ! NFLDAT   =  0 !

     Number of ROAD source files (RDEMARB.DAT)
     with time-varying data (NRDDAT)
                                    Default: 0       ! NRDDAT   =  0 !

     Number of BUOYANT LINE source files (LNEMARB.DAT)
     with time-varying data (NLNDAT)
                                    Default: 0       ! NLNDAT   =  0 !
     Note:  Only 1 BUOYANT LINE source file is allowed
     -----

!END!


-------------
Subgroup (0a)
-------------

  Provide a name for each CALMET domain if NMETDOM > 1
```

```
  Enter NMETDOM lines.
                                    a,b
Default Name             Domain Name
------------             ------------
 none                  * DOMAIN1=     *   *END*
 none                  * DOMAIN2=     *   *END*
 none                  * DOMAIN3=     *   *END*


  The following CALMET.DAT filenames are processed in sequence
  if NMETDAT > 1

  Enter NMETDAT lines, 1 line for each file name.

                                      a,c,d
Default Name  Type          File Name
------------  ----          ---------
 none         input    ! METDAT=calmet_2015.dat     !   !END!
 none         input    ! METDAT=calmet_2016.dat     !   !END!
 none         input    ! METDAT=calmet_2017.dat     !   !END!
-------------
    a
     The name for each CALMET domain and each CALMET.DAT file is treated
     as a separate input subgroup and therefore must end with an input
     group terminator.
    b
     Use DOMAIN1= to assign the name for the outermost CALMET domain.
     Use DOMAIN2= to assign the name for the next inner CALMET domain.
     Use DOMAIN3= to assign the name for the next inner CALMET domain, etc.
      ---------------------------------------------------------------------
      |   When inner domains with equal resolution (grid-cell size)      |
      |   overlap, the data from the FIRST such domain in the list will  |
      |   be used if all other criteria for choosing the controlling     |
      |   grid domain are inconclusive.                                  |
      ---------------------------------------------------------------------
    c
     Use METDAT1= to assign the file names for the outermost CALMET domain.
     Use METDAT2= to assign the file names for the next inner CALMET domain.
     Use METDAT3= to assign the file names for the next inner CALMET domain,
     etc.
    d
     The filenames for each domain must be provided in sequential order


-------------
Subgroup (0b) - PTEMARB.DAT files
-------------

  POINT Source File Names
  The following PTEMARB.DAT filenames are processed if NPTDAT>0
  A total of NPTDAT lines is expected with one file name assigned per line
  Each line is treated as an input group and must terminate with END
  (surrounded by delimiters)
  (Each file contains emissions parameters for the entire period modeled
   for 1 or more sources)

Default Name  Type          File Name
------------  ----          ---------
 none         input       * PTDAT=     *   *END*


-------------
```

```
Subgroup (0c) - BAEMARB.DAT files
-------------

  BUOYANT AREA Source File Names
  The following BAEMARB.DAT filenames are processed if NARDAT>0
  A total of NARDAT lines is expected with one file name assigned per line
  Each line is treated as an input group and must terminate with END
  (surrounded by delimiters)
  (Each file contains emissions parameters for the entire period modeled
   for 1 or more sources)

Default Name  Type          File Name
------------  ----          ---------
 none         input       * ARDAT=     *   *END*


-------------
Subgroup (0d) - VOLEMARB.DAT files
-------------

  VOLUME Source File Names
  The following VOLEMARB.DAT filenames are processed if NVOLDAT>0
  A total of NVOLDAT lines is expected with one file name assigned per line
  Each line is treated as an input group and must terminate with END
  (surrounded by delimiters)
  (Each file contains emissions parameters for the entire period modeled
   for 1 or more sources)

Default Name  Type          File Name
------------  ----          ---------
 none         input       * VOLDAT=     *   *END*


-------------
Subgroup (0e) - FLEMARB.DAT files
-------------

  FLARE Source File Names
  The following FLEMARB.DAT filenames are processed if NFLDAT>0
  A total of NFLDAT lines is expected with one file name assigned per line
  Each line is treated as an input group and must terminate with END
  (surrounded by delimiters)
  (Each file contains emissions parameters for the entire period modeled
   for 1 or more sources)

Default Name  Type          File Name
------------  ----          ---------
 none         input       * FLDAT=     *   *END*


-------------
Subgroup (0f) - RDEMARB.DAT files
-------------

  ROAD Source File Names
  The following RDEMARB.DAT filenames are processed if NRDDAT>0
  A total of NRDDAT lines is expected with one file name assigned per line
  Each line is treated as an input group and must terminate with END
  (surrounded by delimiters)
  (Each file contains emissions parameters for the entire period modeled
   for 1 or more sources)
```

```
Default Name  Type          File Name
------------  ----          ---------
 none         input       * RDDAT=     *   *END*


-------------
Subgroup (0g) - LNEMARB.DAT file
-------------

  BUOYANT LINE Source File Name  (not more than 1)
  The following LNEMARB.DAT filename is processed if NLNDAT>0
  The assignment is treated as an input group and must terminate with END
  (surrounded by delimiters)

Default Name  Type          File Name
------------  ----          ---------
LNEMARB.DAT   input       * LNDAT=     *   *END*


------------------------------------------------------------------------------
--

INPUT GROUP: 1 -- General run control parameters
--------------

    Option to run all periods found
    in the met. file     (METRUN)   Default: 0       ! METRUN =   0  !

        METRUN = 0 - Run period explicitly defined below
        METRUN = 1 - Run all periods in met. file

     Starting date:    Year   (IBYR)  --    No default   ! IBYR  =  2015  !
                       Month  (IBMO)  --    No default   ! IBMO  =  1  !
                       Day    (IBDY)  --    No default   ! IBDY  =  1  !
     Starting time:    Hour   (IBHR)  --    No default   ! IBHR  =  0  !
                       Minute (IBMIN) --    No default   ! IBMIN =  0  !
                       Second (IBSEC) --    No default   ! IBSEC =  0  !

     Ending date:      Year   (IEYR)  --    No default   ! IEYR  =  2016  !
                       Month  (IEMO)  --    No default   ! IEMO  =  1  !
                       Day    (IEDY)  --    No default   ! IEDY  =  1  !
     Ending time:      Hour   (IEHR)  --    No default   ! IEHR  =  0  !
                       Minute (IEMIN) --    No default   ! IEMIN =  0  !
                       Second (IESEC) --    No default   ! IESEC =  0  !

     (These are only used if METRUN = 0)

     Base time zone:          (ABTZ)  --    No default   ! ABTZ= UTC-0300 !
      (character*8)
     The modeling domain may span multiple time zones.  ABTZ defines the
     base time zone used for the entire simulation.  This must match the
     base time zone of the meteorological data.
     Examples:
         Greenwich Mean Time (GMT) = UTC+0000
         EST                       = UTC-0500
         CST                       = UTC-0600
         MST                       = UTC-0700
         PST                       = UTC-0800
         Los Angeles, USA          = UTC-0800
         New York, USA             = UTC-0500
         Santiago, Chile           = UTC-0400
         UK                        = UTC+0000
```

```
         Western Europe            = UTC+0100
         Rome, Italy               = UTC+0100
         Cape Town, S.Africa       = UTC+0200
         Sydney, Australia         = UTC+1000

     Length of modeling time-step (seconds)
     Equal to update period in the primary
     meteorological data files, or an
     integer fraction of it (1/2, 1/3 ...)
     Must be no larger than 1 hour
     (NSECDT)                      Default:3600     ! NSECDT =  3600  !
                                   Units: seconds

     Number of chemical species (NSPEC)
                                   Default: 5       ! NSPEC =  11   !

     Number of chemical species
     to be emitted  (NSE)          Default: 3       ! NSE =  8   !

     Flag to stop run after
     SETUP phase (ITEST)           Default: 2       ! ITEST =  2   !
     (Used to allow checking
     of the model inputs, files, etc.)
           ITEST = 1 - STOPS program after SETUP phase
           ITEST = 2 - Continues with execution of program
                       after SETUP

     Restart Configuration:

        Control flag (MRESTART)    Default: 0       ! MRESTART =  0   !

           0 = Do not read or write a restart file
           1 = Read a restart file at the beginning of
               the run
           2 = Write a restart file during run
           3 = Read a restart file at beginning of run
               and write a restart file during run

        Number of periods in Restart
        output cycle (NRESPD)      Default: 0       ! NRESPD =  0   !

           0 = File written only at last period
          >0 = File updated every NRESPD periods

     Meteorological Data Format (METFM)
                                   Default: 1       ! METFM =  1   !

           METFM = 1 - CALMET binary file (CALMET.MET)
           METFM = 2 - ISC ASCII file (ISCMET.MET)
           METFM = 3 - AUSPLUME ASCII file (PLMMET.MET)
           METFM = 4 - CTDM plus tower file (PROFILE.DAT) and
                       surface parameters file (SURFACE.DAT)
           METFM = 5 - AERMET tower file (PROFILE.DAT) and
                       surface parameters file (SURFACE.DAT)

     Meteorological Profile Data Format (MPRFFM)
            (used only for METFM = 1, 2, 3)
                                   Default: 1       ! MPRFFM =  1   !

           MPRFFM = 1 - CTDM plus tower file (PROFILE.DAT)
           MPRFFM = 2 - AERMET tower file (PROFILE.DAT)
```

```
     Sigma-y is adjusted by the factor (AVET/PGTIME)**0.2 to either
     decrease it if the averaging time selected is less than the base
     averaging time, or increase it if the averaging time is greater.
     The base averaging time is denoted as PGTIME due to historical
     reasons as this adjustment was originally applied to the PG sigma
     option.  It is now applied to all dispersion options.
     The factor is applied to the ambient turbulence sigma-v (m/s) and
     does not alter buoyancy enhancement or far-field Heffter growth.

     Averaging Time (minutes) (AVET)
                                    Default: 60.0    ! AVET = 60. !
     Base Averaging Time (minutes) (PGTIME)
                                    Default: 60.0    ! PGTIME = 60. !


     Output units for binary concentration and flux files
     written in Dataset v2.2 or later formats
     (IOUTU)                        Default: 1       ! IOUTU = 1 !
         1 = mass      -  g/m3 (conc) or g/m2/s (dep)
         2 = odour     -  odour_units (conc)
         3 = radiation -  Bq/m3 (conc) or Bq/m2/s (dep)


!END!


------------------------------------------------------------------------------
-

INPUT GROUP: 2 -- Technical options
--------------


     Vertical distribution used in the
     near field (MGAUSS)                  Default: 1     ! MGAUSS =  1    !
        0 = uniform
        1 = Gaussian

     Terrain adjustment method
     (MCTADJ)                             Default: 3     ! MCTADJ =  3    !
        0 = no adjustment
        1 = ISC-type of terrain adjustment
        2 = simple, CALPUFF-type of terrain
            adjustment
        3 = partial plume path adjustment

     Subgrid-scale complex terrain
     flag (MCTSG)                         Default: 0     ! MCTSG =  0    !
        0 = not modeled
        1 = modeled

     Near-field puffs modeled as
     elongated slugs? (MSLUG)             Default: 0     ! MSLUG =  0    !
        0 = no
        1 = yes (slug model used)

     Transitional plume rise modeled?
     (MTRANS)                             Default: 1     ! MTRANS =  1    !
        0 = no  (i.e., final rise only)
        1 = yes (i.e., transitional rise computed)
```

```
Stack tip downwash? (MTIP)            Default: 1     ! MTIP =  1  !
   0 = no  (i.e., no stack tip downwash)
   1 = yes (i.e., use stack tip downwash)

Method used to compute plume rise for
point sources not subject to building
downwash? (MRISE)                     Default: 1     ! MRISE =   1  !
   1 = Briggs plume rise
   2 = Numerical plume rise

Apply stack-tip downwash to FLARE sources?
(MTIP_FL)                             Default: 0     ! MTIP_FL  =  0 !
   0 = no  (no stack-tip downwash)
   1 = yes (apply stack-tip downwash)

Plume rise module for FLARE sources
(MRISE_FL)                            Default: 2     ! MRISE_FL =  2 !
   1 = Briggs module
   2 = Numerical rise module

Method used to simulate building
downwash? (MBDW)                      Default: 1     ! MBDW =  2  !
--> use MBDW=1 for the offshore drill platform
   1 = ISC method
   2 = PRIME method

Vertical wind shear modeled above
stack top (modified Briggs plume rise)?
(MSHEAR)                              Default: 0     ! MSHEAR =  0  !
   --> NL model guideline = 0
   0 = no  (i.e., vertical wind shear not modeled)
   1 = yes (i.e., vertical wind shear modeled)

Puff splitting allowed? (MSPLIT)      Default: 0     ! MSPLIT =  1  !
--> NL model guideline = 1
   0 = no (i.e., puffs not split)
   1 = yes (i.e., puffs are split)

Chemical mechanism flag (MCHEM)       Default: 1     ! MCHEM =  6   !
--> NL model guideline = 6
   0 = chemical transformation not
       modeled
   1 = transformation rates computed
       internally (MESOPUFF II scheme)
   2 = user-specified transformation
       rates used
   3 = transformation rates computed
       internally (RIVAD/ARM3 scheme)
   4 = secondary organic aerosol formation
       computed (MESOPUFF II scheme for OH)
   5 = user-specified half-life with or
       without transfer to child species
   6 = transformation rates computed
       internally (Updated RIVAD scheme with
       ISORROPIA equilibrium)
   7 = transformation rates computed
       internally (Updated RIVAD scheme with
       ISORROPIA equilibrium and CalTech SOA)

Aqueous phase transformation flag (MAQCHEM)
(Used only if MCHEM = 6, or 7)        Default: 0     ! MAQCHEM =  1   !
--> NL model guideline = 1
```

```
        0 = aqueous phase transformation
            not modeled
        1 = transformation rates and wet
            scavenging coefficients adjusted
            for in-cloud aqueous phase reactions
            (adapted from RADM cloud model
             implementation in CMAQ/SCICHEM)

     Liquid Water Content flag (MLWC)
     (Used only if MAQCHEM = 1)            Default: 1     ! MLWC =  0   !
     --> NL model guideline = 0
        0 = water content estimated from cloud cover
            and presence of precipitation
        1 = gridded cloud water data read from CALMET
            water content output files (filenames are
            the CALMET.DAT names PLUS the extension
            AUXEXT provided in Input Group 0)

     Wet removal modeled ? (MWET)          Default: 1     ! MWET =  1   !
     --> NL model guideline = 1
        0 = no
        1 = yes

     Dry deposition modeled ? (MDRY)       Default: 1     ! MDRY =  1   !
     --> NL model guideline = 1
        0 = no
        1 = yes
        (dry deposition method specified
         for each species in Input Group 3)


     Gravitational settling (plume tilt)
     modeled ? (MTILT)                     Default: 0     ! MTILT =  0   !
        0 = no
        1 = yes
        (puff center falls at the gravitational
         settling velocity for 1 particle species)

     Restrictions:
         - MDRY  = 1
         - NSPEC = 1  (must be particle species as well)
         - sg    = 0  GEOMETRIC STANDARD DEVIATION in Group 8 is
                      set to zero for a single particle diameter

     Method used to compute dispersion
     coefficients (MDISP)                  Default: 3     ! MDISP =  2   !
     --> NL model guideline = 2

        1 = dispersion coefficients computed from measured values
            of turbulence, sigma v, sigma w
        2 = dispersion coefficients from internally calculated
            sigma v, sigma w using micrometeorological variables
            (u*, w*, L, etc.)
        3 = PG dispersion coefficients for RURAL areas (computed using
            the ISCST multi-segment approximation) and MP coefficients in
            urban areas
        4 = same as 3 except PG coefficients computed using
            the MESOPUFF II eqns.
        5 = CTDM sigmas used for stable and neutral conditions.
            For unstable conditions, sigmas are computed as in
            MDISP = 3, described above.  MDISP = 5 assumes that
            measured values are read
```

```
Sigma-v/sigma-theta, sigma-w measurements used? (MTURBVW)
(Used only if MDISP = 1 or 5)          Default: 3     ! MTURBVW =  3  !
   1 = use sigma-v or sigma-theta measurements
       from PROFILE.DAT to compute sigma-y
       (valid for METFM = 1, 2, 3, 4, 5)
   2 = use sigma-w measurements
       from PROFILE.DAT to compute sigma-z
       (valid for METFM = 1, 2, 3, 4, 5)
   3 = use both sigma-(v/theta) and sigma-w
       from PROFILE.DAT to compute sigma-y and sigma-z
       (valid for METFM = 1, 2, 3, 4, 5)
   4 = use sigma-theta measurements
       from PLMMET.DAT to compute sigma-y
       (valid only if METFM = 3)

Back-up method used to compute dispersion
when measured turbulence data are
missing (MDISP2)                       Default: 3     ! MDISP2 =  3  !
(used only if MDISP = 1 or 5)
   2 = dispersion coefficients from internally calculated
       sigma v, sigma w using micrometeorological variables
       (u*, w*, L, etc.)
   3 = PG dispersion coefficients for RURAL areas (computed using
       the ISCST multi-segment approximation) and MP coefficients in
       urban areas
   4 = same as 3 except PG coefficients computed using
       the MESOPUFF II eqns.

[DIAGNOSTIC FEATURE]
Method used for Lagrangian timescale for Sigma-y
(used only if MDISP=1,2 or MDISP2=1,2)
(MTAULY)                               Default: 0     ! MTAULY =  0  !
   0 = Draxler default 617.284 (s)
   1 = Computed as Lag. Length / (.75 q) -- after SCIPUFF
  10 < Direct user input (s)             -- e.g., 306.9


[DIAGNOSTIC FEATURE]
Method used for Advective-Decay timescale for Turbulence
(used only if MDISP=2 or MDISP2=2)
(MTAUADV)                              Default: 0     ! MTAUADV =  0  !
   0 = No turbulence advection
   1 = Computed (OPTION NOT IMPLEMENTED)
  10 < Direct user input (s)   -- e.g., 800


Method used to compute turbulence sigma-v &
sigma-w using micrometeorological variables
(Used only if MDISP = 2 or MDISP2 = 2)
(MCTURB)                               Default: 1     ! MCTURB =  1  !
   1 = Standard CALPUFF subroutines
   2 = AERMOD subroutines

PG sigma-y,z adj. for roughness?       Default: 0     ! MROUGH =  0  !
(MROUGH)
   0 = no
   1 = yes

Partial plume penetration of           Default: 1     ! MPARTL =  1  !
elevated inversion modeled for
point sources?
```

```
(MPARTL)
   0 = no
   1 = yes

Partial plume penetration of          Default: 1     ! MPARTLBA =  1  !
elevated inversion modeled for
buoyant area sources?
(MPARTLBA)
   0 = no
   1 = yes

Strength of temperature inversion     Default: 0     ! MTINV =  0  !
provided in PROFILE.DAT extended records?
(MTINV)
   0 = no (computed from measured/default gradients)
   1 = yes

PDF used for dispersion under convective conditions?
                                      Default: 0     ! MPDF =  1  !
                                      --> NL model guideline = 1
(MPDF)
   0 = no
   1 = yes

Sub-Grid TIBL module used for shore line?
                                      Default: 0     ! MSGTIBL = 0  !
(MSGTIBL)
   0 = no
   1 = yes

Boundary conditions (concentration) modeled?
                                      Default: 0     ! MBCON = 0  !
(MBCON)
   0 = no
   1 = yes, using formatted BCON.DAT file
   2 = yes, using unformatted CONC.DAT file

Note:  MBCON > 0 requires that the last species modeled
       be 'BCON'.  Mass is placed in species BCON when
       generating boundary condition puffs so that clean
       air entering the modeling domain can be simulated
       in the same way as polluted air.  Specify zero
       emission of species BCON for all regular sources.

Individual source contributions saved?
                                      Default: 0     ! MSOURCE = 0  !
(MSOURCE)
   0 = no
   1 = yes


Analyses of fogging and icing impacts due to emissions from
arrays of mechanically-forced cooling towers can be performed
using CALPUFF in conjunction with a cooling tower emissions
processor (CTEMISS) and its associated postprocessors.  Hourly
emissions of water vapor and temperature from each cooling tower
cell are computed for the current cell configuration and ambient
conditions by CTEMISS. CALPUFF models the dispersion of these
emissions and provides cloud information in a specialized format
for further analysis. Output to FOG.DAT is provided in either
'plume mode' or 'receptor mode' format.
```

```
     Configure for FOG Model output?
                                          Default: 0     ! MFOG =  0   !
     (MFOG)
        0 = no
        1 = yes  - report results in PLUME Mode format
        2 = yes  - report results in RECEPTOR Mode format


     Test options specified to see if
     they conform to regulatory
     values? (MREG)                       Default: 1     ! MREG =  0   !
     --> NL model guideline = 0

        0 = NO checks are made
        1 = Technical options must conform to USEPA
            Long Range Transport (LRT) guidance
                       METFM    1 or 2
                       AVET     60. (min)
                       PGTIME   60. (min)
                       MGAUSS   1
                       MCTADJ   3
                       MTRANS   1
                       MTIP     1
                       MRISE    1
                       MCHEM    1 or 3 (if modeling SOx, NOx)
                       MWET     1
                       MDRY     1
                       MDISP    2 or 3
                       MPDF     0 if MDISP=3
                                1 if MDISP=2
                       MROUGH   0
                       MPARTL   1
                       MPARTLBA 0
                       SYTDEP   550. (m)
                       MHFTSZ   0
                       SVMIN    0.5 (m/s)


!END!


------------------------------------------------------------------------------
-

INPUT GROUP: 3a, 3b -- Species list
-------------------

------------
Subgroup (3a)
------------

  The following species are modeled:

! CSPEC =          SO2 !         !END!
! CSPEC =          SO4 !         !END!
! CSPEC =           NO !         !END!
! CSPEC =          NO2 !         !END!
! CSPEC =         HNO3 !         !END!
! CSPEC =          NO3 !         !END!
! CSPEC =          NOX !         !END!
! CSPEC =           CO !         !END!
! CSPEC =       PM0_25 !         !END!
```

```
! CSPEC =      PM25_10 !         !END!
! CSPEC =      PM10_30 !         !END!

                                                          Dry
                                                          OUTPUT GROUP
    SPECIES          MODELED          EMITTED       DEPOSITED
    NUMBER
     NAME         (0=NO, 1=YES)    (0=NO, 1=YES)    (0=NO,                  (0=
     NONE,
   (Limit: 12                                         1=COMPUTED-GAS        1=
   1st CGRUP,
    Characters                                        2=COMPUTED-PARTICLE   2=
    2nd CGRUP,
    in length)                                        3=USER-SPECIFIED)     3=
    etc.)

!          SO2  =         1,               1,           1,                  0
!
!          SO4  =         1,               0,           2,                  0
!
!           NO  =         1,               1,           1,                  0
!
!          NO2  =         1,               1,           1,                  0
!
!         HNO3  =         1,               0,           1,                  0
!
!          NO3  =         1,               0,           2,                  0
!
!          NOX  =         1,               1,           0,                  0
!
!           CO  =         1,               1,           0,                  0
!
!       PM0_25  =         1,               1,           2,                  0
!
!      PM25_10  =         1,               1,           2,                  0
!
!      PM10_30  =         1,               1,           2,                  0
!


!END!
```

  Note: The last species in (3a) must be 'BCON' when using the
         boundary condition option (MBCON > 0). Species BCON should
         typically be modeled as inert (no chem transformation or
         removal).

Subgroup (3b)

  The following names are used for Species-Groups in which results
  for certain species are combined (added) prior to output. The
  CGRUP name will be used as the species name in output files.
  Use this feature to model specific particle-size distributions
  by treating each size-range as a separate species.
  Order must be consistent with 3(a) above.

-

```
INPUT GROUP: 4 -- Map Projection and Grid control parameters
--------------

     Projection for all (X,Y):
     -------------------------

     Map projection
     (PMAP)                    Default: UTM    ! PMAP = UTM  !

         UTM :  Universal Transverse Mercator
         TTM :  Tangential Transverse Mercator
         LCC :  Lambert Conformal Conic
          PS :  Polar Stereographic
          EM :  Equatorial Mercator
        LAZA :  Lambert Azimuthal Equal Area

     False Easting and Northing (km) at the projection origin
     (Used only if PMAP= TTM, LCC, or LAZA)
     (FEAST)                   Default=0.0     ! FEAST  = 0.000  !
     (FNORTH)                  Default=0.0     ! FNORTH = 0.000  !

     UTM zone (1 to 60)
     (Used only if PMAP=UTM)
     (IUTMZN)                  No Default      ! IUTMZN =  23   !

     Hemisphere for UTM projection?
     (Used only if PMAP=UTM)
     (UTMHEM)                  Default: N      ! UTMHEM = N  !
         N   :  Northern hemisphere projection
         S   :  Southern hemisphere projection

     Latitude and Longitude (decimal degrees) of projection origin
     (Used only if PMAP= TTM, LCC, PS, EM, or LAZA)
     (RLAT0)                   No Default      ! RLAT0 = 0N  !
     (RLON0)                   No Default      ! RLON0 = 0E  !

         TTM :  RLON0 identifies central (true N/S) meridian of projection
                RLAT0 selected for convenience
         LCC :  RLON0 identifies central (true N/S) meridian of projection
                RLAT0 selected for convenience
         PS  :  RLON0 identifies central (grid N/S) meridian of projection
                RLAT0 selected for convenience
         EM  :  RLON0 identifies central meridian of projection
                RLAT0 is REPLACED by 0.0N (Equator)
         LAZA:  RLON0 identifies longitude of tangent-point of mapping plane
                RLAT0 identifies latitude of tangent-point of mapping plane

     Matching parallel(s) of latitude (decimal degrees) for projection
     (Used only if PMAP= LCC or PS)
     (XLAT1)                   No Default      ! XLAT1 = 0N  !
     (XLAT2)                   No Default      ! XLAT2 = 0N  !

         LCC :  Projection cone slices through Earth's surface at XLAT1 and
         XLAT2
         PS  :  Projection plane slices through Earth at XLAT1
                (XLAT2 is not used)

     ----------
     Note:  Latitudes and longitudes should be positive, and include a
            letter N,S,E, or W indicating north or south latitude, and
```

```
            east or west longitude.  For example,
            35.9  N Latitude  =  35.9N
            118.7 E Longitude = 118.7E


     Datum-region
     ------------

     The Datum-Region for the coordinates is identified by a character
     string.  Many mapping products currently available use the model of the
     Earth known as the World Geodetic System 1984 (WGS-84).  Other local
     models may be in use, and their selection in CALMET will make its output
     consistent with local mapping products.  The list of Datum-Regions with
     official transformation parameters is provided by the National Imagery
     and
     Mapping Agency (NIMA).

     NIMA Datum - Regions(Examples)

     ------------------------------------------------------------------------
     -----
     WGS-84    WGS-84 Reference Ellipsoid and Geoid, Global coverage (WGS84)
     NAS-C     NORTH AMERICAN 1927 Clarke 1866 Spheroid, MEAN FOR CONUS
     (NAD27)
     NAR-C     NORTH AMERICAN 1983 GRS 80 Spheroid, MEAN FOR CONUS (NAD83)
     NWS-84    NWS 6370KM Radius, Sphere
     ESR-S     ESRI REFERENCE 6371KM Radius, Sphere

     Datum-region for output coordinates
     (DATUM)                    Default: WGS-84    ! DATUM = WGS-84  !
        --> Match CALMET


METEOROLOGICAL Grid (outermost if nested CALMET grids are used):

     Rectangular grid defined for projection PMAP,
     with X the Easting and Y the Northing coordinate

            No. X grid cells (NX)      No default     ! NX =  50   !
        --> Match CALMET
            No. Y grid cells (NY)      No default     ! NY =  50   !
        --> Match CALMET
             No. vertical layers (NZ)      No default     ! NZ =  12   !
        --> Match CALMET

           Grid spacing (DGRIDKM)      No default     ! DGRIDKM = 1.0 !
        --> Match CALMET
                                       Units: km

                 Cell face heights
                     (ZFACE(nz+1))     No defaults
                                       Units: m
   ! ZFACE = 0.,20.,40.,80.,120.,280.,520.,880.,1320.,1820.,2380.,3000.,4000.
   !                 --> Match CALMET

            Reference Coordinates
           of SOUTHWEST corner of
                grid cell(1, 1):

            X coordinate (XORIGKM)     No default     ! XORIGKM =  371.720 !
        --> Match CALMET
            Y coordinate (YORIGKM)     No default     ! YORIGKM = 5288.202 !
```

--> Match CALMET

Units: km

COMPUTATIONAL Grid:

The computational grid is identical to or a subset of the MET. grid.
The lower left (LL) corner of the computational grid is at grid point (IBCOMP, JBCOMP) of the MET. grid. The upper right (UR) corner of the computational grid is at grid point (IECOMP, JECOMP) of the MET. grid.
The grid spacing of the computational grid is the same as the MET. grid.

X index of LL corner (IBCOMP) (1 <= IBCOMP <= NX)	No default	! IBCOMP = 1 !
Y index of LL corner (JBCOMP) (1 <= JBCOMP <= NY)	No default	! JBCOMP = 1 !
X index of UR corner (IECOMP) (1 <= IECOMP <= NX)	No default	! IECOMP = 50 !
Y index of UR corner (JECOMP) (1 <= JECOMP <= NY)	No default	! JECOMP = 50 !

SAMPLING Grid (GRIDDED RECEPTORS):

The lower left (LL) corner of the sampling grid is at grid point (IBSAMP, JBSAMP) of the MET. grid. The upper right (UR) corner of the sampling grid is at grid point (IESAMP, JESAMP) of the MET. grid.
The sampling grid must be identical to or a subset of the computational grid. It may be a nested grid inside the computational grid.
The grid spacing of the sampling grid is DGRIDKM/MESHDN.

Logical flag indicating if gridded receptors are used (LSAMP) (T=yes, F=no)	Default: T	! LSAMP = F !
X index of LL corner (IBSAMP) (IBCOMP <= IBSAMP <= IECOMP)	No default	! IBSAMP = 1 !
Y index of LL corner (JBSAMP) (JBCOMP <= JBSAMP <= JECOMP)	No default	! JBSAMP = 1 !
X index of UR corner (IESAMP) (IBCOMP <= IESAMP <= IECOMP)	No default	! IESAMP = 50 !
Y index of UR corner (JESAMP) (JBCOMP <= JESAMP <= JECOMP)	No default	! JESAMP = 50 !
Nesting factor of the sampling grid (MESHDN) (MESHDN is an integer >= 1)	Default: 1	! MESHDN = 1 !

!END!

-

INPUT GROUP: 5 -- Output Options

FILE	DEFAULT VALUE	VALUE THIS RUN
Concentrations (ICON)	1	! ICON = 1 !
Dry Fluxes (IDRY)	1	! IDRY = 1 !
Wet Fluxes (IWET)	1	! IWET = 1 !
2D Temperature (IT2D)	0	! IT2D = 0 !
2D Density (IRHO)	0	! IRHO = 0 !
Relative Humidity (IVIS) (relative humidity file is required for visibility analysis)	1	! IVIS = 0 !
Use data compression option in output file? (LCOMPRS)	Default: T	! LCOMPRS = T !

*
0 = Do not create file, 1 = create file

QA PLOT FILE OUTPUT OPTION:

Create a standard series of output files (e.g. locations of sources, receptors, grids ...) suitable for plotting?
(IQAPLOT) Default: 1 ! IQAPLOT = 0 !
0 = no
1 = yes

DIAGNOSTIC PUFF-TRACKING OUTPUT OPTION:

Puff locations and properties reported to PFTRAK.DAT file for postprocessing?
(IPFTRAK) Default: 0 ! IPFTRAK = 0 !
0 = no
1 = yes, update puff output at end of each timestep
2 = yes, update puff output at end of each sampling step

DIAGNOSTIC MASS FLUX OUTPUT OPTIONS:

Mass flux across specified boundaries for selected species reported?
(IMFLX) Default: 0 ! IMFLX = 0 !
0 = no
1 = yes (FLUXBDY.DAT and MASSFLX.DAT filenames are specified in Input Group 0)

Mass balance for each species reported?
(IMBAL) Default: 0 ! IMBAL = 1 !
--> NL model guideline = 1
0 = no
1 = yes (MASSBAL.DAT filename is specified in Input Group 0)

NUMERICAL RISE OUTPUT OPTION:

```
       Create a file with plume properties for each rise
       increment, for each model timestep?
       This applies to sources modeled with numerical rise
       and is limited to ONE source in the run.
       (INRISE)                        Default: 0         ! INRISE =  0   !
         0 = no
         1 = yes (RISE.DAT filename is
                  specified in Input Group 0)


    LINE PRINTER OUTPUT OPTIONS:

       Print concentrations (ICPRT)    Default: 0         ! ICPRT =  1   !
       Print dry fluxes (IDPRT)        Default: 0         ! IDPRT =  0   !
       Print wet fluxes (IWPRT)        Default: 0         ! IWPRT =  0   !
       (0 = Do not print, 1 = Print)

       Concentration print interval
       (ICFRQ) in timesteps            Default: 1         ! ICFRQ =  24   !
       Dry flux print interval
       (IDFRQ) in timesteps            Default: 1         ! IDFRQ =  24   !
       Wet flux print interval
       (IWFRQ) in timesteps            Default: 1         ! IWFRQ =  24   !

       Units for Line Printer Output
       (IPRTU)                         Default: 1         ! IPRTU =  3   !
                       for             for
                  Concentration    Deposition
           1 =       g/m**3          g/m**2/s
           2 =      mg/m**3         mg/m**2/s
           3 =      ug/m**3         ug/m**2/s
           4 =      ng/m**3         ng/m**2/s
           5 =     Odour Units
           6 =      TBq/m**3        TBq/m**2/s    TBq=terabecquerel
           7 =      GBq/m**3        GBq/m**2/s    GBq=gigabecquerel
           8 =       Bq/m**3         Bq/m**2/s    Bq=becquerel
          (disintegrations/s)

       Messages tracking progress of run
       written to the screen ?
       (IMESG)                         Default: 2         ! IMESG =  2   !
         0 = no
         1 = yes (advection step, puff ID)
         2 = yes (YYYYJJJHH, # old puffs, # emitted puffs)


     SPECIES (or GROUP for combined species) LIST FOR OUTPUT OPTIONS

                  ---- CONCENTRATIONS ----   ------ DRY FLUXES ------   ------
                  WET FLUXES ------   -- MASS FLUX --
   SPECIES
   /GROUP         PRINTED?  SAVED ON DISK?   PRINTED?  SAVED ON DISK?
   PRINTED?  SAVED ON DISK?   SAVED ON DISK?
   -------        ------------------------   ------------------------
   -----------------------   ---------------
!          SO2 =     0,           1,           0,           1,           0,
1,           0   !
!          SO4 =     0,           1,           0,           1,           0,
1,           0   !
!           NO =     0,           1,           0,           1,           0,
1,           0   !
```

```
!          NO2 =     1,           1,           0,           1,           0,
1,           0   !
!         HNO3 =     0,           1,           0,           1,           0,
1,           0   !
!          NO3 =     0,           1,           0,           1,           0,
1,           0   !
!          NOX =     0,           1,           0,           1,           0,
1,           0   !
!           CO =     0,           1,           0,           1,           0,
1,           0   !
!       PM0_25 =     1,           1,           0,           1,           0,
1,           0   !
!      PM25_10 =     0,           1,           0,           1,           0,
1,           0   !
!      PM10_30 =     0,           1,           0,           1,           0,
1,           0   !
```

Note: Species BCON (for MBCON > 0) does not need to be saved on disk.

OPTIONS FOR PRINTING "DEBUG" QUANTITIES (much output)

Logical for debug output
(LDEBUG) Default: F ! LDEBUG = F !

First puff to track
(IPFDEB) Default: 1 ! IPFDEB = 1
!

Number of puffs to track
(NPFDEB) Default: 1 ! NPFDEB = 1
!

Met. period to start output
(NN1) Default: 1 ! NN1 = 1 !

Met. period to end output
(NN2) Default: 10 ! NN2 = 10 !

!END!

INPUT GROUP: 6a, 6b, & 6c -- Subgrid scale complex terrain inputs

---

Subgroup (6a)

Number of terrain features (NHILL) Default: 0 ! NHILL = 0
!

Number of special complex terrain
receptors (NCTREC) Default: 0 ! NCTREC = 0
!

Terrain and CTSG Receptor data for
CTSG hills input in CTDM format ?
(MHILL) No Default ! MHILL = 2

```
       !
       1 = Hill and Receptor data created
           by CTDM processors & read from
           HILL.DAT and HILLRCT.DAT files
       2 = Hill data created by OPTHILL &
           input below in Subgroup (6b);
           Receptor data in Subgroup (6c)

       Factor to convert horizontal dimensions  Default: 1.0   ! XHILL2M = 1.0
       !
       to meters (MHILL=1)

       Factor to convert vertical dimensions    Default: 1.0   ! ZHILL2M = 1.0
       !
       to meters (MHILL=1)

       X-origin of CTDM system relative to      No Default     ! XCTDMKM = 0 !
       CALPUFF coordinate system, in Kilometers (MHILL=1)

       Y-origin of CTDM system relative to      No Default     ! YCTDMKM = 0 !
       CALPUFF coordinate system, in Kilometers (MHILL=1)

! END !

---------------
Subgroup (6b)
---------------

                      1 **
     HILL information


HILL           XC         YC       THETAH  ZGRID  RELIEF    EXPO 1    EXPO 2
SCALE 1    SCALE 2    AMAX1      AMAX2
 NO.           (km)       (km)       (deg.)   (m)      (m)       (m)        (m)
 (m)         (m)        (m)        (m)
----           ----       ----       ------  -----  ------    ------    ------
-------    -------    -----      -----

---------------
Subgroup (6c)
---------------

    COMPLEX TERRAIN RECEPTOR INFORMATION

                      XRCT         YRCT         ZRCT          XHH
                      (km)         (km)          (m)
                     ------       -----       ------         ----


-------------------
1
     Description of Complex Terrain Variables:
          XC, YC  = Coordinates of center of hill
          THETAH  = Orientation of major axis of hill (clockwise from
                    North)
          ZGRID   = Height of the  0  of the grid above mean sea
                    level
          RELIEF  = Height of the crest of the hill above the grid elevation
          EXPO 1  = Hill-shape exponent for the major axis
          EXPO 2  = Hill-shape exponent for the major axis
          SCALE 1 = Horizontal length scale along the major axis
```

```
          SCALE 2 = Horizontal length scale along the minor axis
          AMAX    = Maximum allowed axis length for the major axis
          BMAX    = Maximum allowed axis length for the major axis

          XRCT, YRCT = Coordinates of the complex terrain receptors
          ZRCT    = Height of the ground (MSL) at the complex terrain
                    Receptor
          XHH     = Hill number associated with each complex terrain receptor
                    (NOTE: MUST BE ENTERED AS A REAL NUMBER)

   **
     NOTE: DATA for each hill and CTSG receptor are treated as a separate
           input subgroup and therefore must end with an input group
           terminator.

-------------------------------------------------------------------------------
-


INPUT GROUP: 7 -- Chemical parameters for dry deposition of gases
--------------

      SPECIES     DIFFUSIVITY      ALPHA STAR      REACTIVITY    MESOPHYLL
      RESISTANCE     HENRY'S LAW COEFFICIENT
       NAME        (cm**2/s)                                        (s/cm)
       (dimensionless)
      -------     -----------      ----------      ----------
      --------------------     ------------------------
!          SO2 =      .1509,        1000.0,           8.0,               .0,
.04 !
!           NO =      .1345,           1.0,           2.0,              25.0,
18.0 !
!          NO2 =      .1656,           1.0,           8.0,               5.0,
3.5 !
!         HNO3 =      .1628,           1.0,          18.0,               .0,
.0000001 !
!END!
-------------------------------------------------------------------------------
-


INPUT GROUP: 8 -- Size parameters for dry deposition of particles
--------------

     For SINGLE SPECIES, the mean and standard deviation are used to
     compute a deposition velocity for NINT (see group 9) size-ranges,
     and these are then averaged to obtain a mean deposition velocity.

     For GROUPED SPECIES, the size distribution should be explicitly
     specified (by the 'species' in the group), and the standard deviation
     for each should be entered as 0.  The model will then use the
     deposition velocity for the stated mean diameter.

      SPECIES      GEOMETRIC MASS MEAN        GEOMETRIC STANDARD
       NAME             DIAMETER                 DEVIATION
                        (microns)                (microns)
      -------      -------------------        ------------------
!          SO4 =           .48,                    2.0   !
!          NO3 =           .48,                    2.0   !
!       PM0_25 =          1.25,                    1.2418578  !
--> as per NL model guideline
!      PM25_10 =           5.0,                    1.2418578  !
```

```
--> as per NL model guideline
!      PM10_30 =          20.0,                    1.2418578  !
--> as per NL model guideline
!END!
------------------------------------------------------------------------------
-


INPUT GROUP: 9 -- Miscellaneous dry deposition parameters
--------------

     Reference cuticle resistance (s/cm)
     (RCUTR)                          Default: 30    !  RCUTR = 30.0 !
     Reference ground resistance  (s/cm)
     (RGR)                            Default: 10    !    RGR = 10.0 !
     Reference pollutant reactivity
     (REACTR)                         Default: 8     ! REACTR = 8.0 !

     Number of particle-size intervals used to
     evaluate effective particle deposition velocity
     (NINT)                           Default: 9     !   NINT =  5  !
     --> NL model guideline = 5

     Vegetation state in unirrigated areas
     (IVEG)                           Default: 1     !   IVEG =  1   !
        IVEG=1 for active and unstressed vegetation
        IVEG=2 for active and stressed vegetation
        IVEG=3 for inactive vegetation

!END!


------------------------------------------------------------------------------
-


INPUT GROUP: 10 -- Wet Deposition Parameters
---------------

                      Scavenging Coefficient -- Units: (sec)**(-1)

       Pollutant      Liquid Precip.       Frozen Precip.
       ---------      --------------       --------------
!          SO2 =         3.0E-05,             0.0E00 !
!          SO4 =         1.0E-04,            3.0E-05 !
!           NO =         2.9E-05,             0.0E00 !
!          NO2 =         5.1E-05,             0.0E00 !
!         HNO3 =         6.0E-05,             0.0E00 !
!          NO3 =         1.0E-04,            3.0E-05 !
!       PM0_25 =         6.0E-05,            2.0E-05 !
!      PM25_10 =         4.2E-04,            1.4E-04 !
!      PM10_30 =         6.6E-04,            2.2E-04 !
!END!
------------------------------------------------------------------------------
-


INPUT GROUP: 11a, 11b -- Chemistry Parameters
---------------------

---------------
Subgroup (11a)
```

Several parameters are needed for one or more of the chemical transformation
mechanisms. Those used for each mechanism are:

Mechanism (MCHEM)	MOZ	BCKO3	MNH3	MAVGNH3	BCKNH3	RINITE1	RINITE2	RINITE3	MH2O2	BCKH2O2	RHSIRP	SO4SIRP	BCKPMF	OFRAC	VCNX	NDEAY
0 None	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1 MESOPUFF II	X	X	.	.	X	X	X	X	.	.	.	.	.	.	.	.
2 User Rates	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3 RIVAD	X	X	.	.	X	.	.	.	.	.	.	.	.	.	.	.
4 SOA	X	X	.	.	.	.	.	.	.	.	.	.	X	X	X	.
5 Radioactive Decay	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X
6 RIVAD/ISORRPIA	X	X	X	X	X	X	.	.	X	X	X	X	.	.	.	.
7 RIVAD/ISORRPIA/SOA	X	X	X	X	X	X	.	.	X	X	X	X	X	X	.	.

Ozone data input option (MOZ) Default: 1 ! MOZ = 0 !
--> NL model guideline = 0
(Used only if MCHEM = 1,3,4,6, or 7)
0 = use a monthly background ozone value
1 = read hourly ozone concentrations from
the OZONE.DAT data file

Monthly ozone concentrations in ppb (BCKO3)
(Used only if MCHEM = 1,3,4,6, or 7 and either
MOZ = 0, or
MOZ = 1 and all hourly O3 data missing)
Default: 12*80.
! BCKO3 = 32.00, 34.00, 37.00, 38.00, 32.00, 26.00, 23.00, 21.00, 23.00, 25.00, 28.00, 31.00 ! --> as per NL model guideline

Ammonia data option (MNH3) Default: 0 ! MNH3 = 0 !
--> NL model guideline = 0
(Used only if MCHEM = 6 or 7)
0 = use monthly background ammonia values (BCKNH3) - no vertical variation
1 = read monthly background ammonia values for each layer from
the NH3Z.DAT data file

Ammonia vertical averaging option (MAVGNH3)
(Used only if MCHEM = 6 or 7, and MNH3 = 1)
0 = use NH3 at puff center height (no averaging is done)
1 = average NH3 values over vertical extent of puff
Default: 1 ! MAVGNH3 = 1
! --> NL
model guideline = 1

Monthly ammonia concentrations in ppb (BCKNH3)
(Used only if MCHEM = 1 or 3, or
if MCHEM = 6 or 7, and MNH3 = 0)
Default: 12*10.
! BCKNH3 = 0.50, 0.50, 0.50, 0.50, 0.50, 0.50, 0.50, 0.50, 0.50, 0.50, 0.50, 0.50 ! --> as per NL model guideline

```
     Nighttime SO2 loss rate in %/hour (RNITE1)
     (Used only if MCHEM = 1, 6 or 7)
     This rate is used only at night for MCHEM=1
     and is added to the computed rate both day
     and night for MCHEM=6,7 (heterogeneous reactions)
                                     Default: 0.2          ! RNITE1 = 0.2 !

     Nighttime NOx loss rate in %/hour (RNITE2)
     (Used only if MCHEM = 1)
                                     Default: 2.0          ! RNITE2 = 2.0 !

     Nighttime HNO3 formation rate in %/hour (RNITE3)
     (Used only if MCHEM = 1)
                                     Default: 2.0          ! RNITE3 = 2.0 !

     H2O2 data input option (MH2O2)    Default: 1          ! MH2O2 =  0   !
     --> NL model guideline = 0
     (Used only if MCHEM = 6 or 7, and MAQCHEM = 1)
        0 = use a monthly background H2O2 value
        1 = read hourly H2O2 concentrations from
            the H2O2.DAT data file

     Monthly H2O2 concentrations in ppb (BCKH2O2)
     (Used only if MQACHEM = 1 and either
        MH2O2 = 0 or
        MH2O2 = 1 and all hourly H2O2 data missing)
                                     Default: 12*1.
     !  BCKH2O2 = 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20,
     0.20, 0.20 !                  --> as per NL model guideline


  --- Data for ISORROPIA Option
     (used only if MCHEM = 6 or 7)

     Minimum relative humidity used in ISORROPIA computations (RH_ISRP)
                                     Default: 50.          ! RH_ISRP = 50.0
                                     !
                                     Units: %

     Minimum SO4 used in ISORROPIA computations (SO4_ISRP)
                                     Default: 0.4          ! SO4_ISRP = .4 !
                                     Units: ug/m3


  --- Data for SECONDARY ORGANIC AEROSOL (SOA) Options
     (used only if MCHEM = 4 or 7)

     The MCHEM = 4 SOA module uses monthly values of:
          Fine particulate concentration in ug/m^3 (BCKPMF)
          Organic fraction of fine particulate     (OFRAC)
          VOC / NOX ratio (after reaction)         (VCNX)

     The MCHEM = 7 SOA module uses monthly values of:
          Fine particulate concentration in ug/m^3 (BCKPMF)
          Organic fraction of fine particulate     (OFRAC)

     These characterize the air mass when computing
     the formation of SOA from VOC emissions.
     Typical values for several distinct air mass types are:

        Month    1    2    3    4    5    6    7    8    9   10   11   12
                Jan  Feb  Mar  Apr  May  Jun  Jul  Aug  Sep  Oct  Nov  Dec
```

```
     Clean Continental
        BCKPMF   1.   1.   1.   1.   1.   1.   1.   1.   1.   1.   1.   1.
        OFRAC  .15  .15  .20  .20  .20  .20  .20  .20  .20  .20  .20  .15
        VCNX    50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.

     Clean Marine (surface)
        BCKPMF  .5   .5   .5   .5   .5   .5   .5   .5   .5   .5   .5   .5
        OFRAC  .25  .25  .30  .30  .30  .30  .30  .30  .30  .30  .30  .25
        VCNX    50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.

     Urban - low biogenic (controls present)
        BCKPMF  30.  30.  30.  30.  30.  30.  30.  30.  30.  30.  30.  30.
        OFRAC  .20  .20  .25  .25  .25  .25  .25  .25  .20  .20  .20  .20
        VCNX     4.   4.   4.   4.   4.   4.   4.   4.   4.   4.   4.   4.

     Urban - high biogenic (controls present)
        BCKPMF  60.  60.  60.  60.  60.  60.  60.  60.  60.  60.  60.  60.
        OFRAC  .25  .25  .30  .30  .30  .55  .55  .55  .35  .35  .35  .25
        VCNX    15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.

     Regional Plume
        BCKPMF  20.  20.  20.  20.  20.  20.  20.  20.  20.  20.  20.  20.
        OFRAC  .20  .20  .25  .35  .25  .40  .40  .40  .30  .30  .30  .20
        VCNX    15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.

     Urban - no controls present
        BCKPMF 100. 100. 100. 100. 100. 100. 100. 100. 100. 100. 100. 100.
        OFRAC  .30  .30  .35  .35  .35  .55  .55  .55  .35  .35  .35  .30
        VCNX     2.   2.   2.   2.   2.   2.   2.   2.   2.   2.   2.   2.

     Default: Clean Continental
     !  BCKPMF = 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00,
     1.00, 1.00 !
     !  OFRAC  = 0.15, 0.15, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20,
     0.20, 0.15 !
     !  VCNX   = 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00,
     50.00, 50.00, 50.00, 50.00 !

 --- End Data for SECONDARY ORGANIC AEROSOL (SOA) Options


     Number of half-life decay specification blocks provided in Subgroup 11b
     (Used only if MCHEM = 5)
     (NDECAY)                                    Default: 0      ! NDECAY =  0
     !

!END!


--------------
Subgroup (11b)
--------------

     Each species modeled may be assigned a decay half-life (sec), and the
     associated
     mass lost may be assigned to one or more other modeled species using a
     mass yield
     factor. This information is used only for MCHEM=5.

     Provide NDECAY blocks assigning the half-life for a parent species and
     mass yield
```

factors for each child species (if any) produced by the decay.
Set HALF_LIFE=0.0 for NO decay (infinite half-life).

```
                            a            b
   SPECIES      Half-Life   Mass Yield
    NAME          (sec)       Factor
   -------      ---------   ----------

*   SPEC1   =    3600.,        -1.0   *    (Parent)
*   SPEC2   =     -1.0,         0.0   *    (Child)
*END*
```

---

a
Specify a half life that is greater than or equal to zero for 1 parent species
in each block, and set the yield factor for this species to -1

b
Specify a yield factor that is greater than or equal to zero for 1 or more child
species in each block, and set the half-life for each of these species to -1

NOTE: Assignments in each block are treated as a separate input subgroup and therefore must end with an input group terminator. If NDECAY=0, no assignments and input group terminators should appear.

INPUT GROUP: 12 -- Misc. Dispersion and Computational Parameters

Horizontal size of puff (m) beyond which time-dependent dispersion equations (Heffter) are used to determine sigma-y and sigma-z (SYTDEP) Default: 550. ! SYTDEP = 5.5E02 !

Switch for using Heffter equation for sigma z as above (0 = Not use Heffter; 1 = use Heffter (MHFTSZ) Default: 0 ! MHFTSZ = 0 !

Stability class used to determine plume growth rates for puffs above the boundary layer (JSUP) Default: 5 ! JSUP = 5 !

Vertical dispersion constant for stable conditions (k1 in Eqn. 2.7-3) (CONK1) Default: 0.01 ! CONK1 = .01 !

Vertical dispersion constant for neutral/ unstable conditions (k2 in Eqn. 2.7-4) (CONK2) Default: 0.1 ! CONK2 = .1 !

Factor for determining Transition-point from Schulman-Scire to Huber-Snyder Building Downwash scheme (SS used for Hs < Hb + TBD * HL)

```
(TBD)                                       Default: 0.5    ! TBD = .5 !
   TBD < 0   ==> always use Huber-Snyder
   TBD = 1.5 ==> always use Schulman-Scire
   TBD = 0.5 ==> ISC Transition-point

Range of land use categories for which
urban dispersion is assumed
(IURB1, IURB2)                              Default: 10     ! IURB1 =  10
!
                                                     19     ! IURB2 =  19
                                                     !

Site characterization parameters for single-point Met data files
---------
(needed for METFM = 2,3,4,5)

   Land use category for modeling domain
   (ILANDUIN)                               Default: 20     ! ILANDUIN =
   20  !

   Roughness length (m) for modeling domain
   (Z0IN)                                   Default: 0.25   ! Z0IN = .25 !

   Leaf area index for modeling domain
   (XLAIIN)                                 Default: 3.0    ! XLAIIN = 3.0
   !

   Elevation above sea level (m)
   (ELEVIN)                                 Default: 0.0    ! ELEVIN = .0
   !

   Latitude (degrees) for met location
   (XLATIN)                                 Default: -999.  ! XLATIN =
   -999.0 !

   Longitude (degrees) for met location
   (XLONIN)                                 Default: -999.  ! XLONIN =
   -999.0 !

Specialized information for interpreting single-point Met data files
-----

   Anemometer height (m) (Used only if METFM = 2,3)
   (ANEMHT)                                 Default: 10.    ! ANEMHT =
   10.0 !

   Form of lateral turbulance data in PROFILE.DAT file
   (Used only if METFM = 4,5 or MTURBVW = 1 or 3)
   (ISIGMAV)                                Default: 1      ! ISIGMAV =  1
   !
       0 = read sigma-theta
       1 = read sigma-v

   Choice of mixing heights (Used only if METFM = 4)
   (IMIXCTDM)                               Default: 0      ! IMIXCTDM =
   0  !
       0 = read PREDICTED mixing heights
       1 = read OBSERVED mixing heights

Maximum length of a slug (met. grid units)
(XMXLEN)                                    Default: 1.0    ! XMXLEN = 1.0
!
```

```
Maximum travel distance of a puff/slug (in
grid units) during one sampling step
(XSAMLEN)                                   Default: 1.0    ! XSAMLEN =
1.0 !

Maximum Number of slugs/puffs release from
one source during one time step
(MXNEW)                                     Default: 99     ! MXNEW =  99
!

Maximum Number of sampling steps for
one puff/slug during one time step
(MXSAM)                                     Default: 99     ! MXSAM =  99
!

Number of iterations used when computing
the transport wind for a sampling step
that includes gradual rise (for CALMET
and PROFILE winds)
(NCOUNT)                                    Default: 2      ! NCOUNT =  2
!   ->  NO EPA 1998 recommendation

Minimum sigma y for a new puff/slug (m)
(SYMIN)                                     Default: 1.0    ! SYMIN = 1.0
!

Minimum sigma z for a new puff/slug (m)
(SZMIN)                                     Default: 1.0    ! SZMIN = 1.0
!

Maximum sigma z (m) allowed to avoid
numerical problem in calculating virtual
time or distance.  Cap should be large
enough to have no influence on normal events.
Enter a negative cap to disable.
(SZCAP_M)                                   Default: 5.0e06 ! SZCAP_M =
5.0E06 !   ->  NO EPA 1998 recommendation


Default minimum turbulence velocities sigma-v and sigma-w
for each stability class over land and over water (m/s)
(SVMIN(12) and SWMIN(12))

                ----------  LAND  ----------       ---------  WATER
                ----------
   Stab Class :  A    B    C    D    E    F         A    B    C    D    E
   F
                ---  ---  ---  ---  ---  ---       ---  ---  ---  ---
                ---  ---
Default SVMIN : .50, .50, .50, .50, .50, .50,      .37, .37, .37, .37,
.37, .37
Default SWMIN : .20, .12, .08, .06, .03, .016,     .20, .12, .08, .06,
.03, .016

      ! SVMIN = 0.500, 0.500, 0.500, 0.500, 0.500, 0.500, 0.370, 0.370,
      0.370, 0.370, 0.370, 0.370!   --> EPA recommendsd to use SVMIN
      (6*0.50) for land; no recommendatoin for water
      ! SWMIN = 0.200, 0.120, 0.080, 0.060, 0.030, 0.016, 0.200, 0.120,
      0.080, 0.060, 0.030, 0.016!

Divergence criterion for dw/dz across puff
```

```
     used to initiate adjustment for horizontal
     convergence (1/s)
     Partial adjustment starts at CDIV(1), and
     full adjustment is reached at CDIV(2)
     (CDIV(2))                                  Default: 0.0,0.0  ! CDIV = .0,
     .0 !  --> EPA recommends CDIC = 0.01

     Search radius (number of cells) for nearest
     land and water cells used in the subgrid
     TIBL module
     (NLUTIBL)                                  Default: 4      ! NLUTIBL = 4
     !   ->  NO EPA 1998 recommendation

     Minimum wind speed (m/s) allowed for
     non-calm conditions. Also used as minimum
     speed returned when using power-law
     extrapolation toward surface
     (WSCALM)                                   Default: 0.5    ! WSCALM = .5
     !

     Maximum mixing height (m)
     (XMAXZI)                                   Default: 3000.  ! XMAXZI =
     3000.0 !

     Minimum mixing height (m)
     (XMINZI)                                   Default: 50.    ! XMINZI =
     50.0 !


     Temperatures (K) used for defining upper bound of
     categories for emissions scale-factors
     11 upper bounds (K) are entered; the 12th class has no upper limit
     (TKCAT(11))
                 Default   : 265., 270., 275., 280., 285., 290., 295., 300.,
                 305., 310., 315.  (315.+)
                              <     <     <     <     <     <     <     <
                              <     <     <
         Temperature Class :  1     2     3     4     5     6     7     8
         9     10    11    (12)
                            ----  ----  ----  ----  ----  ----  ----  ----
                            ----  ----  ----
                  ! TKCAT  = 265., 270., 275., 280., 285., 290., 295., 300.,
                  305., 310., 315. !

     Wind Speeds (m/s) used for defining upper bound of
     categories for emissions scale-factors
     5 upper bounds (m/s) are entered; the 6th class has no upper limit
     (WSCAT(5))                      Default   :
                                     ISC RURAL : 1.54, 3.09, 5.14, 8.23, 10.8
                                     (10.8+)

                                Wind Speed Class :  1     2     3     4     5
                                                   ---   ---   ---   ---   ---
                                       ! WSCAT = 1.54, 3.09, 5.14, 8.23, 10.80
                                       !

     Default wind speed profile power-law
     exponents for stabilities 1-6
     (PLX0(6))                       Default   : ISC RURAL values
                                     ISC RURAL : .07, .07, .10, .15, .35, .55
                                     ISC URBAN : .15, .15, .20, .25, .30, .30
```

```
                              Stability Class :  A     B     C     D     E
                              F
                                                 ---   ---   ---   ---   ---
                                                 ---
                                        ! PLX0 = 0.07, 0.07, 0.10, 0.15, 0.35,
                                        0.55 !

     Default potential temperature gradient
     for stable classes E, F (degK/m)
     (PTG0(2))                      Default: 0.020, 0.035
                                       ! PTG0 = 0.020,   0.035 !

     Default plume path coefficients for
     each stability class (used when option
     for partial plume height terrain adjustment
     is selected -- MCTADJ=3)
     (PPC(6))                   Stability Class :  A     B     C     D     E
     F
                                   Default  PPC : .50,  .50,  .50,  .50,  .35,
                                   .35
                                                 ---   ---   ---   ---   ---
                                                 ---
                                        !  PPC = 0.50, 0.50, 0.50, 0.50, 0.35,
                                        0.35 !

     Slug-to-puff transition criterion factor
     equal to sigma-y/length of slug
     (SL2PF)                              Default: 10.        ! SL2PF = 10.0
     !

     Receptor-specific puff/slug properties (e.g., sigmas and height above
     ground at the time when the trajectory is nearest the receptor) may be
     extrapolated forward or backward in time along the current step using
     the current dispersion, for receptors that lie upwind of the puff/slug
     position at the start of a step, or downwind at the end of a step.
     Specify the upwind/downwind extrapolation zone in sigma-y units.
     Using FCLIP=1.0 clips the the upwind zone at one sigma-y at the start
     of the step and the downwind zone at one sigma-y at the end of the step.
     This is consistent with the sampling done in CALPUFF versions through
     v6.42 prior to the introduction of the FCLIP option.
     The default is No Extrapolation, FCLIP=0.0.
     (FCLIP)                              Default: 0.0        ! FCLIP = 0.0 !

     Puff-splitting control variables ------------------------

       VERTICAL SPLIT
       --------------

       Number of puffs that result every time a puff
       is split - nsplit=2 means that 1 puff splits
       into 2
       (NSPLIT)                             Default:   3        ! NSPLIT =  3
       !

       Time(s) of a day when split puffs are eligible to
       be split once again; this is typically set once
       per day, around sunset before nocturnal shear develops.
       24 values: 0 is midnight (00:00) and 23 is 11 PM (23:00)
       0=do not re-split    1=eligible for re-split
       (IRESPLIT(24))                       Default:  Hour 17 = 1
       !  IRESPLIT = 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0 !
```

```
   Split is allowed only if last hour's mixing
   height (m) exceeds a minimum value
   (ZISPLIT)                          Default: 100.       ! ZISPLIT =
   100.0 !

   Split is allowed only if ratio of last hour's
   mixing ht to the maximum mixing ht experienced
   by the puff is less than a maximum value (this
   postpones a split until a nocturnal layer develops)
   (ROLDMAX)                          Default: 0.25       ! ROLDMAX =
   0.25 !


   HORIZONTAL SPLIT
   ----------------

   Number of puffs that result every time a puff
   is split - nsplith=5 means that 1 puff splits
   into 5
   (NSPLITH)                          Default:   5        ! NSPLITH =  5
   !   ->  NO EPA 1998 recommendation

   Minimum sigma-y (Grid Cells Units) of puff
   before it may be split
   (SYSPLITH)                         Default:  1.0       ! SYSPLITH =
   1.0 !   ->  NO EPA 1998 recommendation

   Minimum puff elongation rate (SYSPLITH/hr) due to
   wind shear, before it may be split
   (SHSPLITH)                         Default:  2.        ! SHSPLITH =
   2.0 !   ->  NO EPA 1998 recommendation

   Minimum concentration (g/m^3) of each
   species in puff before it may be split
   Enter array of NSPEC values; if a single value is
   entered, it will be used for ALL species
   (CNSPLITH)                         Default:  1.0E-07   ! CNSPLITH =
   1.0E-07 !   ->  NO EPA 1998 recommendation

 Integration control variables ------------------------

   Fractional convergence criterion for numerical SLUG
   sampling integration
   (EPSSLUG)                          Default:   1.0e-04  ! EPSSLUG =
   1.0E-04 !

   Fractional convergence criterion for numerical AREA
   source integration
   (EPSAREA)                          Default:   1.0e-06  ! EPSAREA =
   1.0E-06 !

   Trajectory step-length (m) used for numerical rise
   integration
   (DSRISE)                           Default:   1.0      ! DSRISE = 1.0
   !   ->  NO EPA 1998 recommendation

   Boundary Condition (BC) Puff control variables ------------------------

   Minimum height (m) to which BC puffs are mixed as they are emitted
   (MBCON=2 ONLY).  Actual height is reset to the current mixing height
   at the release point if greater than this minimum.
   (HTMINBC)                          Default:   500.     ! HTMINBC =
```

```
       500.0 !   ->  NO EPA 1998 recommendation

       Search radius (km) about a receptor for sampling nearest BC puff.
       BC puffs are typically emitted with a spacing of one grid cell
       length, so the search radius should be greater than DGRIDKM.
       (RSAMPBC)                          Default:   10.      ! RSAMPBC =
       10.0 !   ->  NO EPA 1998 recommendation

       Near-Surface depletion adjustment to concentration profile used when
       sampling BC puffs?
       (MDEPBC)                           Default:   1        ! MDEPBC =  1
       !   ->  NO EPA 1998 recommendation
          0 = Concentration is NOT adjusted for depletion
          1 = Adjust Concentration for depletion

!END!


--------------------------------------------------------------------------------
-


INPUT GROUPS: 13a, 13b, 13c, 13d -- Point source parameters
---------------------------------

---------------
Subgroup (13a)
---------------

     Number of point sources with
     parameters provided below      (NPT1)  No default  !  NPT1 =  31 !

     Units used for point source
     emissions below                (IPTU)  Default: 1  !  IPTU =   1  !
           1 =        g/s
           2 =       kg/hr
           3 =       lb/hr
           4 =     tons/yr
           5 =     Odour Unit * m**3/s  (vol. flux of odour compound)
           6 =     Odour Unit * m**3/min
           7 =     metric tons/yr
           8 =     Bq/s  (Bq = becquerel = disintegrations/s)
           9 =     GBq/yr


     Number of source-species
     combinations with variable
     emissions scaling factors
     provided below in (13d)        (NSPT1) Default: 0  !  NSPT1 =  0  !

     Number of point sources with
     variable emission parameters
     provided in external file      (NPT2)  No default  !  NPT2 =  0  !

     (If NPT2 > 0, these point
     source emissions are read from
     the file: PTEMARB.DAT)

!END!

---------------
Subgroup (13b)
```

```
---------------
                                    a
          POINT SOURCE: CONSTANT DATA
          ---------------------------

b
c
  Source       X         Y       Stack    Base     Stack    Exit  Exit
  Bldg.  Emission
   No.     Coordinate Coordinate Height Elevation Diameter  Vel.  Temp.
   Dwash   Rates
              (km)      (km)       (m)      (m)       (m)   (m/s) (deg. K)
  ------   ---------- ---------- ------  ------   -------- ----- --------
  ----- --------
$point
SRCID,X,Y,HT,BELEV,DIAM,VEL,TEMP,DW,EMISS1 to EMISSN
  1   ! SRCNAM = WE1         !
  1   ! x=   396.569,  5313.205,   48.900,    0.000,    0.900,   18.400,
  414.1,      1.0,
     0.307E+00, 0.000E+00, 0.112E+02, 0.429E+01, 0.000E+00, 0.000E+00,
     0.215E+02, 0.215E+01, 0.589E+00, 0.000E+00,
     0.000E+00 !
  1   ! FMFAC = 1.0 !  !END!
  2   ! SRCNAM = WE2         !
  2   ! x=   396.571,  5313.205,   48.900,    0.000,    0.900,   18.400,
  414.1,      1.0,
     0.307E+00, 0.000E+00, 0.112E+02, 0.429E+01, 0.000E+00, 0.000E+00,
     0.215E+02, 0.215E+01, 0.589E+00, 0.000E+00,
     0.000E+00 !
  2   ! FMFAC = 1.0 !  !END!
  3   ! SRCNAM = WE3         !
  3   ! x=   396.569,  5313.203,   48.900,    0.000,    0.900,   18.400,
  414.1,      1.0,
     0.307E+00, 0.000E+00, 0.112E+02, 0.429E+01, 0.000E+00, 0.000E+00,
     0.215E+02, 0.215E+01, 0.589E+00, 0.000E+00,
     0.000E+00 !
  3   ! FMFAC = 1.0 !  !END!
  4   ! SRCNAM = WE4         !
  4   ! x=   396.571,  5313.203,   48.900,    0.000,    0.900,   18.400,
  414.1,      1.0,
     0.307E+00, 0.000E+00, 0.112E+02, 0.429E+01, 0.000E+00, 0.000E+00,
     0.215E+02, 0.215E+01, 0.589E+00, 0.000E+00,
     0.000E+00 !
  4   ! FMFAC = 1.0 !  !END!
  5   ! SRCNAM = WE5         !
  5   ! x=   396.569,  5313.201,   48.900,    0.000,    0.900,   18.400,
  414.1,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
  5   ! FMFAC = 1.0 !  !END!
  6   ! SRCNAM = WE6         !
  6   ! x=   396.571,  5313.201,   48.900,    0.000,    0.900,   18.400,
  414.1,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
  6   ! FMFAC = 1.0 !  !END!
  7   ! SRCNAM = WE7         !
  7   ! x=   396.569,  5313.200,   48.900,    0.000,    0.900,   18.400,
  414.1,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
```

```
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
  7   ! FMFAC = 1.0 !  !END!
  8   ! SRCNAM = WE8        !
  8   ! x=   396.571,  5313.200,   48.900,    0.000,    0.900,   18.400,
 414.1,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
  8   ! FMFAC = 1.0 !  !END!
  9   ! SRCNAM = LMTURB     !
  9   ! x=   396.571,  5313.202,   48.900,    0.000,    4.000,   19.894,
 673.0,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
  9   ! FMFAC = 1.0 !  !END!
 10   ! SRCNAM = HELI1      !
 10   ! x=   396.590,  5313.241,   43.400,    0.000,    0.660,   20.000,
720.0,      1.0,
     0.781E-01, 0.000E+00, 0.550E-01, 0.211E-01, 0.000E+00, 0.000E+00,
     0.105E+00, 0.519E-01, 0.286E-02, 0.000E+00,
     0.000E+00 !
 10   ! FMFAC = 0.0 !  !END!
 11   ! SRCNAM = HELI2      !
 11   ! x=   396.590,  5313.240,   43.400,    0.000,    0.660,   20.000,
720.0,      1.0,
     0.781E-01, 0.000E+00, 0.550E-01, 0.211E-01, 0.000E+00, 0.000E+00,
     0.105E+00, 0.519E-01, 0.286E-02, 0.000E+00,
     0.000E+00 !
 11   ! FMFAC = 0.0 !  !END!
 12   ! SRCNAM = TMAIN      !
 12   ! x=   396.186,  5313.203,   45.450,    0.000,    0.900,   20.000,
413.0,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
 12   ! FMFAC = 1.0 !  !END!
 13   ! SRCNAM = TAUX1      !
 13   ! x=   396.184,  5313.203,   45.450,    0.000,    0.700,   18.000,
413.0,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
 13   ! FMFAC = 1.0 !  !END!
 14   ! SRCNAM = TAUX2      !
 14   ! x=   396.184,  5313.202,   45.450,    0.000,    0.700,   18.000,
413.0,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
 14   ! FMFAC = 1.0 !  !END!
 15   ! SRCNAM = TAUX3      !
 15   ! x=   396.184,  5313.201,   45.450,    0.000,    0.700,   18.000,
413.0,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
 15   ! FMFAC = 1.0 !  !END!
 16   ! SRCNAM = TAUX4      !
 16   ! x=   396.184,  5313.200,   45.450,    0.000,    0.700,   18.000,
413.0,      1.0,
```

```
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
 16   ! FMFAC = 1.0 !  !END!
 17   ! SRCNAM = SPLYM1     !
 17   ! x=   396.619,  5313.155,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.440E-01, 0.000E+00, 0.161E+01, 0.615E+00, 0.000E+00, 0.000E+00,
     0.308E+01, 0.308E+00, 0.844E-01, 0.000E+00,
     0.000E+00 !
 17   ! FMFAC = 1.0 !  !END!
 18   ! SRCNAM = SPLYM2     !
 18   ! x=   396.619,  5313.154,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.440E-01, 0.000E+00, 0.161E+01, 0.615E+00, 0.000E+00, 0.000E+00,
     0.308E+01, 0.308E+00, 0.844E-01, 0.000E+00,
     0.000E+00 !
 18   ! FMFAC = 1.0 !  !END!
 19   ! SRCNAM = SPLYM3     !
 19   ! x=   396.619,  5313.153,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.440E-01, 0.000E+00, 0.161E+01, 0.615E+00, 0.000E+00, 0.000E+00,
     0.308E+01, 0.308E+00, 0.844E-01, 0.000E+00,
     0.000E+00 !
 19   ! FMFAC = 1.0 !  !END!
 20   ! SRCNAM = SPLYM4     !
 20   ! x=   396.619,  5313.152,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.440E-01, 0.000E+00, 0.161E+01, 0.615E+00, 0.000E+00, 0.000E+00,
     0.308E+01, 0.308E+00, 0.844E-01, 0.000E+00,
     0.000E+00 !
 20   ! FMFAC = 1.0 !  !END!
 21   ! SRCNAM = SPLYGEN1   !
 21   ! x=   396.619,  5313.151,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
 21   ! FMFAC = 1.0 !  !END!
 22   ! SRCNAM = PSUPM1     !
 22   ! x=   396.762,  5312.865,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
 22   ! FMFAC = 1.0 !  !END!
 23   ! SRCNAM = PSUPM2     !
 23   ! x=   396.762,  5312.864,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
 23   ! FMFAC = 1.0 !  !END!
 24   ! SRCNAM = PSUPM3     !
 24   ! x=   396.762,  5312.863,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
 24   ! FMFAC = 1.0 !  !END!
 25   ! SRCNAM = PSUPM4     !
 25   ! x=   396.762,  5312.862,   36.000,    0.000,    0.500,   15.000,
```

```
 414.0,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
 25   ! FMFAC = 1.0 !  !END!
 26   ! SRCNAM = PSUPGEN1   !
 26   ! x=   396.762,  5312.861,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
 26   ! FMFAC = 1.0 !  !END!
 27   ! SRCNAM = DSUPM1     !
 27   ! x=   395.023,  5312.854,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.440E-01, 0.000E+00, 0.161E+01, 0.615E+00, 0.000E+00, 0.000E+00,
     0.308E+01, 0.308E+00, 0.844E-01, 0.000E+00,
     0.000E+00 !
 27   ! FMFAC = 1.0 !  !END!
 28   ! SRCNAM = DSUPM2     !
 28   ! x=   395.023,  5312.853,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.440E-01, 0.000E+00, 0.161E+01, 0.615E+00, 0.000E+00, 0.000E+00,
     0.308E+01, 0.308E+00, 0.844E-01, 0.000E+00,
     0.000E+00 !
 28   ! FMFAC = 1.0 !  !END!
 29   ! SRCNAM = DSUPM3     !
 29   ! x=   395.023,  5312.852,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.440E-01, 0.000E+00, 0.161E+01, 0.615E+00, 0.000E+00, 0.000E+00,
     0.308E+01, 0.308E+00, 0.844E-01, 0.000E+00,
     0.000E+00 !
 29   ! FMFAC = 1.0 !  !END!
 30   ! SRCNAM = DSUPM4     !
 30   ! x=   395.023,  5312.851,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.440E-01, 0.000E+00, 0.161E+01, 0.615E+00, 0.000E+00, 0.000E+00,
     0.308E+01, 0.308E+00, 0.844E-01, 0.000E+00,
     0.000E+00 !
 30   ! FMFAC = 1.0 !  !END!
 31   ! SRCNAM = DSUPGEN1   !
 31   ! x=   395.023,  5312.850,   36.000,    0.000,    0.500,   15.000,
 414.0,      1.0,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00, 0.000E+00, 0.000E+00, 0.000E+00,
     0.000E+00 !
 31   ! FMFAC = 1.0 !  !END!


--> use ZPLTFM=19.70 in combination with MBDW=1 for the drilling platform
--------

    a
     Data for each source are treated as a separate input subgroup
     and therefore must end with an input group terminator.

     SRCNAM  is a 12-character name for a source
             (No default)
     X       is an array holding the source data listed by the column headings
             (No default)
     SIGYZI  is an array holding the initial sigma-y and sigma-z (m)
             (Default: 0.,0.)
```

FMFAC is a vertical momentum flux factor (0. or 1.0) used to represent the effect of rain-caps or other physical configurations that reduce momentum rise associated with the actual exit velocity. (Default: 1.0 -- full momentum used)

ZPLTFM is the platform height (m) for sources influenced by an isolated structure that has a significant open area between the surface and the bulk of the structure, such as an offshore oil platform. The Base Elevation is that of the surface (ground or ocean), and the Stack Height is the release height above the Base (not above the platform). Building heights entered in Subgroup 13c must be those of the buildings on the platform, measured from the platform deck. ZPLTFM is used only with MBDW=1 (ISC downwash method) for sources with building downwash. (Default: 0.0)

b

0. = No building downwash modeled
1. = Downwash modeled for buildings resting on the surface
2. = Downwash modeled for buildings raised above the surface (ZPLTFM > 0.)
NOTE: must be entered as a REAL number (i.e., with decimal point)

c

An emission rate must be entered for every pollutant modeled. Enter emission rate of zero for secondary pollutants that are modeled, but not emitted. Units are specified by IPTU (e.g. 1 for g/s).

Subgroup (13c)

BUILDING DIMENSION DATA FOR SOURCES SUBJECT TO DOWNWASH

Source a
No. Effective building height, width, length and X/Y offset (in meters) every 10 degrees. LENGTH, XBADJ, and YBADJ are only needed for MBDW=2 (PRIME downwash option)

```
$pointbdwash
   ! SRCNAM = WE1 !
   ! HEIGHT =   39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
                39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

   !  WIDTH =   40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
                40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

   ! LENGTH =   81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
                81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
```

```
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

   !  XBADJ =  -24.44,   -22.09,   -16.73,   -13.37,    -9.61,    -5.55,
                -1.32,     2.95,     7.13,     9.36,     3.16,    12.77,
                11.62,   -17.65,   -23.79,   -29.20,   -48.21,   -52.07,
               -56.78,   -30.69,   -47.68,   -48.68,   -48.20,   -46.26,
               -42.92,   -38.26,   -34.10,   -37.51,   -39.93,   -41.13,
               -41.08,   -39.79,   -37.28,   -33.64,   -28.98,    -7.16 !

   !  YBADJ =  -17.91,   -20.33,   -18.58,   -15.05,   -11.07,    -6.75,
                -2.22,     2.37,     6.91,     9.97,    12.87,     4.93,
                 8.49,    19.30,    20.36,    20.80,    25.61,    19.70,
                17.91,    20.33,    18.58,    15.05,    11.07,     6.75,
                 2.22,    -2.37,    -6.91,    -9.97,   -12.87,    -4.93,
                -8.49,   -19.30,   -20.36,   -20.80,   -25.61,   -19.70 !
   ! END !
   ! SRCNAM = WE2 !
   ! HEIGHT =   39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
                39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

   !  WIDTH =   40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
                40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

   ! LENGTH =   81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
                81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

   !  XBADJ =  -24.78,   -22.77,   -17.72,   -14.65,   -11.12,    -7.26,
                -3.18,     1.00,     5.15,     7.41,     1.30,    11.05,
                10.11,   -18.92,   -24.78,   -29.88,   -48.55,   -52.07,
               -56.44,   -30.02,   -46.69,   -47.41,   -46.69,   -44.55,
               -41.05,   -36.31,   -32.12,   -35.56,   -38.07,   -39.42,
               -39.57,   -38.51,   -36.29,   -32.96,   -28.64,    -7.16 !

   !  YBADJ =  -15.96,   -18.47,   -16.87,   -13.54,    -9.79,    -5.76,
                -1.54,     2.72,     6.91,     9.63,    12.20,     3.94,
                 7.22,    17.78,    18.64,    18.94,    23.67,    17.72,
                15.96,    18.47,    16.87,    13.54,     9.79,     5.76,
                 1.54,    -2.72,    -6.91,    -9.63,   -12.20,    -3.94,
                -7.22,   -17.78,   -18.64,   -18.94,   -23.67,   -17.72 !
   ! END !
   ! SRCNAM = WE3 !
   ! HEIGHT =   39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
                39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

   !  WIDTH =   40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
```

```
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
                40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

   ! LENGTH =   81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
                81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

   !  XBADJ =  -22.79,   -20.51,   -15.28,   -12.08,    -8.52,    -4.69,
                -0.73,     3.26,     7.15,     9.09,     2.60,    11.95,
                10.56,   -18.92,   -25.22,   -30.76,   -49.85,   -53.74,
               -58.43,   -32.27,   -49.14,   -49.97,   -49.29,   -47.11,
               -43.51,   -38.57,   -34.12,   -37.24,   -39.38,   -40.31,
               -40.02,   -38.52,   -35.84,   -32.08,   -27.34,    -5.49 !

   !  YBADJ =  -17.64,   -19.78,   -17.76,   -13.99,    -9.80,    -5.31,
                -0.66,     4.01,     8.58,    11.62,    14.45,     6.38,
                 9.78,    20.39,    21.21,    21.39,    25.92,    19.72,
                17.64,    19.78,    17.76,    13.99,     9.80,     5.31,
                 0.66,    -4.01,    -8.58,   -11.62,   -14.45,    -6.38,
                -9.78,   -20.39,   -21.21,   -21.39,   -25.92,   -19.72 !
   ! END !
   ! SRCNAM = WE4 !
   ! HEIGHT =   39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
                39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

   !  WIDTH =   40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
                40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

   ! LENGTH =   81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
                81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

   !  XBADJ =  -23.11,   -21.19,   -16.28,   -13.38,   -10.07,    -6.45,
                -2.64,     1.25,     5.10,     7.06,     0.67,    10.16,
                 8.97,   -20.26,   -26.27,   -31.49,   -50.24,   -53.77,
               -58.10,   -31.60,   -48.14,   -48.68,   -47.74,   -45.35,
               -41.59,   -36.56,   -32.07,   -35.22,   -37.44,   -38.52,
               -38.43,   -37.18,   -34.79,   -31.35,   -26.95,    -5.46 !

   !  YBADJ =  -15.61,   -17.84,   -15.97,   -12.40,    -8.46,    -4.26,
                 0.07,     4.40,     8.60,    11.29,    13.78,     5.38,
                 8.49,    18.84,    19.45,    19.47,    23.91,    17.67,
                15.61,    17.84,    15.97,    12.40,     8.46,     4.26,
                -0.07,    -4.40,    -8.61,   -11.29,   -13.78,    -5.38,
                -8.49,   -18.84,   -19.45,   -19.47,   -23.91,   -17.67 !
   ! END !
```

```
 ! SRCNAM = WE5 !
 ! HEIGHT =   39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
              42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
              42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
              39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
              42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
              42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

 !  WIDTH =   40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
              62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
              43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
              40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
              62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
              43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

 ! LENGTH =   81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
              44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
              29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
              81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
              44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
              29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

 !  XBADJ =  -20.92,   -18.73,   -13.63,   -10.63,    -7.29,    -3.74,
              -0.08,     3.59,     7.15,     8.76,     1.95,    11.00,
               9.34,   -20.37,   -26.87,   -32.55,   -51.72,   -55.64,
             -60.30,   -34.06,   -50.78,   -51.43,   -50.51,   -48.06,
             -44.15,   -38.90,   -34.12,   -36.91,   -38.73,   -39.36,
             -38.80,   -37.06,   -34.20,   -30.29,   -25.47,    -3.59 !

 !  YBADJ =  -17.31,   -19.13,   -16.81,   -12.77,    -8.35,    -3.66,
               1.13,     5.89,    10.48,    13.49,    16.23,     8.03,
              11.24,    21.61,    22.16,    22.04,    26.25,    19.72,
              17.31,    19.13,    16.81,    12.77,     8.35,     3.66,
              -1.13,    -5.89,   -10.48,   -13.49,   -16.23,    -8.03,
             -11.24,   -21.61,   -22.16,   -22.04,   -26.25,   -19.72 !
 ! END !
 ! SRCNAM = WE6 !
 ! HEIGHT =   39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
              42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
              42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
              39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
              42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
              42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

 !  WIDTH =   40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
              62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
              43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
              40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
              62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
              43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

 ! LENGTH =   81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
              44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
              29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
              81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
              44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
              29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

 !  XBADJ =  -21.26,   -19.40,   -14.62,   -11.90,    -8.81,    -5.46,
              -1.94,     1.64,     5.17,     6.81,     0.09,     9.28,
               7.83,   -21.64,   -27.86,   -33.23,   -52.06,   -55.64,
             -59.96,   -33.38,   -49.79,   -50.16,   -49.00,   -46.35,
```

```
                -42.29,   -36.95,   -32.14,   -34.96,   -36.87,   -37.65,
                -37.29,   -35.79,   -33.21,   -29.62,   -25.12,    -3.59 !

   !  YBADJ =  -15.36,   -17.27,   -15.10,   -11.26,    -7.07,    -2.67,
                 1.80,     6.23,    10.48,    13.15,    15.56,     7.04,
                 9.97,    20.09,    20.45,    20.18,    24.30,    17.74,
                15.36,    17.27,    15.10,    11.26,     7.07,     2.67,
                -1.80,    -6.23,   -10.48,   -13.15,   -15.56,    -7.04,
                -9.97,   -20.09,   -20.45,   -20.18,   -24.30,   -17.74 !
   ! END !
   ! SRCNAM = WE7 !
   ! HEIGHT =   39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
                39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

   !  WIDTH =   40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
                40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

   ! LENGTH =   81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
                81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

   !  XBADJ =  -19.27,   -17.15,   -12.18,    -9.33,    -6.21,    -2.89,
                 0.51,     3.90,     7.17,     8.49,     1.40,    10.18,
                 8.28,   -21.64,   -28.31,   -34.11,   -53.36,   -57.31,
               -61.95,   -35.63,   -52.24,   -52.72,   -51.60,   -48.92,
               -44.74,   -39.21,   -34.14,   -36.64,   -38.17,   -38.54,
               -37.74,   -35.80,   -32.76,   -28.73,   -23.83,    -1.92 !

   !  YBADJ =  -17.04,   -18.57,   -15.99,   -11.71,    -7.08,    -2.23,
                 2.69,     7.53,    12.15,    15.14,    17.81,     9.48,
                12.53,    22.70,    23.01,    22.63,    26.56,    19.74,
                17.04,    18.57,    15.99,    11.71,     7.08,     2.23,
                -2.69,    -7.53,   -12.15,   -15.14,   -17.81,    -9.48,
               -12.53,   -22.70,   -23.01,   -22.63,   -26.56,   -19.74 !
   ! END !
   ! SRCNAM = WE8 !
   ! HEIGHT =   39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
                39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

   !  WIDTH =   40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
                40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

   ! LENGTH =   81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
```

```
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
                81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

   !  XBADJ =  -19.59,   -17.82,   -13.18,   -10.63,    -7.76,    -4.65,
               -1.40,     1.89,     5.12,     6.46,    -0.53,     8.39,
                6.69,   -22.98,   -29.36,   -34.84,   -53.75,   -57.34,
              -61.62,   -34.96,   -51.24,   -51.43,   -50.05,   -47.16,
              -42.83,   -37.20,   -32.09,   -34.62,   -36.24,   -36.75,
              -36.15,   -34.46,   -31.71,   -28.00,   -23.44,    -1.89 !

   !  YBADJ =  -15.01,   -16.64,   -14.20,   -10.13,    -5.74,    -1.18,
                3.42,     7.91,    12.18,    14.81,    17.14,     8.48,
               11.24,    21.15,    21.25,    20.71,    24.55,    17.69,
               15.01,    16.64,    14.20,    10.13,     5.74,     1.18,
               -3.42,    -7.91,   -12.18,   -14.81,   -17.14,    -8.48,
              -11.24,   -21.15,   -21.25,   -20.71,   -24.55,   -17.69 !
   ! END !
   ! SRCNAM = HELI1 !
   ! HEIGHT =   39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
                39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

   !  WIDTH =   40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
                40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

   ! LENGTH =   81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
                81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

   !  XBADJ =  -64.12,   -63.56,   -58.73,   -54.62,   -48.85,   -41.59,
              -33.07,   -23.55,   -13.31,    -4.40,    -3.50,    13.41,
               19.55,    -2.68,    -2.23,    -1.71,   -15.63,   -15.38,
              -17.10,    10.77,    -5.68,    -7.44,    -8.96,   -10.22,
              -11.16,   -11.76,   -13.66,   -23.76,   -33.27,   -41.77,
              -49.01,   -54.75,   -58.83,   -61.13,   -61.56,   -43.85 !

   !  YBADJ =   -4.15,   -13.67,   -19.22,   -22.98,   -26.04,   -28.30,
              -29.71,   -30.21,   -29.79,   -29.71,   -28.60,   -37.07,
              -32.75,   -19.94,   -15.69,   -10.96,    -0.89,    -0.73,
                4.15,    13.67,    19.22,    22.98,    26.04,    28.30,
               29.71,    30.21,    29.79,    29.71,    28.60,    37.07,
               32.75,    19.94,    15.69,    10.96,     0.89,     0.73 !
   ! END !
   ! SRCNAM = HELI2 !
   ! HEIGHT =   39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
                39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
```

```
              42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

   !  WIDTH =   40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
              62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
              43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
              40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
              62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
              43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

   ! LENGTH =   81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
              44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
              29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
              81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
              44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
              29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

   !  XBADJ =  -62.56,   -62.07,   -57.36,   -53.41,   -47.83,   -40.80,
             -32.53,   -23.27,   -13.31,    -4.67,    -4.04,    12.62,
              18.53,    -3.89,    -3.60,    -3.20,   -17.18,   -16.96,
             -18.66,     9.29,    -7.05,    -8.65,    -9.98,   -11.01,
             -11.70,   -12.04,   -13.66,   -23.48,   -32.73,   -40.98,
             -47.99,   -53.54,   -57.47,   -59.64,   -60.01,   -42.27 !

   !  YBADJ =   -3.87,   -13.13,   -18.43,   -21.96,   -24.82,   -26.93,
             -28.22,   -28.65,   -28.21,   -28.16,   -27.11,   -35.70,
             -31.54,   -18.93,   -14.90,   -10.42,    -0.61,    -0.73,
               3.87,    13.13,    18.43,    21.96,    24.82,    26.93,
              28.22,    28.65,    28.20,    28.16,    27.11,    35.70,
              31.54,    18.93,    14.90,    10.42,     0.61,     0.73 !
   ! END !
   ! SRCNAM = TAUX1 !
   ! HEIGHT =   28.00,    43.45,    43.45,    43.45,    43.45,    43.45,
              43.45,    43.45,    43.45,    43.45,    43.45,    43.45,
              43.45,    43.45,    43.45,    43.45,    28.00,    28.00,
              28.00,    43.45,    43.45,    43.45,    43.45,    43.45,
              43.45,    43.45,    43.45,    43.45,    43.45,    43.45,
              43.45,    43.45,    43.45,    43.45,    28.00,    28.00 !

   !  WIDTH =   24.20,    28.65,    33.44,    37.21,    39.84,    41.27,
              41.45,    40.36,    38.05,    40.36,    41.45,    41.27,
              39.84,    37.21,    33.44,    28.65,    24.20,    19.91,
              24.20,    28.65,    33.44,    37.21,    39.84,    41.27,
              41.45,    40.36,    38.05,    40.36,    41.45,    41.27,
              39.84,    37.21,    33.44,    28.65,    24.20,    19.91 !

   ! LENGTH =   29.52,    41.45,    41.27,    39.84,    37.21,    33.44,
              28.65,    22.99,    16.64,    22.99,    28.65,    33.44,
              37.21,    39.84,    41.27,    41.45,    29.52,    26.46,
              29.52,    41.45,    41.27,    39.84,    37.21,    33.44,
              28.65,    22.99,    16.64,    22.99,    28.65,    33.44,
              37.21,    39.84,    41.27,    41.45,    29.52,    26.46 !

   !  XBADJ =  -15.33,   -13.67,    -9.48,    -4.99,    -0.36,     4.29,
               8.80,    13.05,    16.90,    13.63,     9.95,     5.96,
               1.79,    -2.43,    -6.58,   -10.52,   -11.77,   -11.42,
             -14.18,   -27.78,   -31.80,   -34.85,   -36.85,   -37.72,
             -37.45,   -36.04,   -33.54,   -36.62,   -38.60,   -39.40,
             -39.00,   -37.42,   -34.70,   -30.92,   -17.75,   -15.04 !

   !  YBADJ =   -7.16,   -24.27,   -22.68,   -20.40,   -17.49,   -14.06,
             -10.20,    -6.03,    -1.67,     2.73,     7.05,    11.16,
              14.93,    18.24,    21.00,    23.13,     6.54,     6.95,
```

```
                7.16,    24.27,    22.68,    20.40,    17.49,    14.06,
               10.20,     6.03,     1.67,    -2.73,    -7.05,   -11.16,
              -14.93,   -18.24,   -21.00,   -23.13,    -6.54,    -6.95 !
   ! END !
   ! SRCNAM = TAUX2 !
   ! HEIGHT =   28.00,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    28.00,    28.00,
               28.00,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    28.00,    28.00 !

   !  WIDTH =   24.20,    28.65,    33.44,    37.21,    39.84,    41.27,
               41.45,    40.36,    38.05,    40.36,    41.45,    41.27,
               39.84,    37.21,    33.44,    28.65,    24.20,    19.91,
               24.20,    28.65,    33.44,    37.21,    39.84,    41.27,
               41.45,    40.36,    38.05,    40.36,    41.45,    41.27,
               39.84,    37.21,    33.44,    28.65,    24.20,    19.91 !

   ! LENGTH =   29.52,    41.45,    41.27,    39.84,    37.21,    33.44,
               28.65,    22.99,    16.64,    22.99,    28.65,    33.44,
               37.21,    39.84,    41.27,    41.45,    29.52,    26.46,
               29.52,    41.45,    41.27,    39.84,    37.21,    33.44,
               28.65,    22.99,    16.64,    22.99,    28.65,    33.44,
               37.21,    39.84,    41.27,    41.45,    29.52,    26.46 !

   !  XBADJ =  -14.13,   -12.53,    -8.43,    -4.07,     0.42,     4.89,
                9.21,    13.25,    16.89,    13.41,     9.52,     5.34,
                1.00,    -3.37,    -7.64,   -11.67,   -12.97,   -12.64,
              -15.38,   -28.92,   -32.85,   -35.78,   -37.62,   -38.32,
              -37.86,   -36.25,   -33.53,   -36.40,   -38.17,   -38.78,
              -38.21,   -36.48,   -33.64,   -29.77,   -16.54,   -13.82 !

   !  YBADJ =   -6.94,   -23.85,   -22.06,   -19.60,   -16.55,   -13.00,
               -9.05,    -4.83,    -0.45,     3.93,     8.19,    12.21,
               15.86,    19.02,    21.60,    23.53,     6.74,     6.95,
                6.94,    23.85,    22.06,    19.60,    16.55,    13.00,
                9.05,     4.83,     0.45,    -3.93,    -8.19,   -12.21,
              -15.86,   -19.02,   -21.61,   -23.53,    -6.74,    -6.95 !
   ! END !
   ! SRCNAM = TAUX3 !
   ! HEIGHT =   28.00,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    28.00,    28.00,
               28.00,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    28.00,    28.00 !

   !  WIDTH =   24.20,    28.65,    33.44,    37.21,    39.84,    41.27,
               41.45,    40.36,    38.05,    40.36,    41.45,    41.27,
               39.84,    37.21,    33.44,    28.65,    24.20,    19.91,
               24.20,    28.65,    33.44,    37.21,    39.84,    41.27,
               41.45,    40.36,    38.05,    40.36,    41.45,    41.27,
               39.84,    37.21,    33.44,    28.65,    24.20,    19.91 !

   ! LENGTH =   29.52,    41.45,    41.27,    39.84,    37.21,    33.44,
               28.65,    22.99,    16.64,    22.99,    28.65,    33.44,
               37.21,    39.84,    41.27,    41.45,    29.52,    26.46,
               29.52,    41.45,    41.27,    39.84,    37.21,    33.44,
               28.65,    22.99,    16.64,    22.99,    28.65,    33.44,
               37.21,    39.84,    41.27,    41.45,    29.52,    26.46 !
```

```
   !  XBADJ =  -13.02,   -11.47,    -7.46,    -3.22,     1.12,     5.42,
                9.56,    13.41,    16.85,    13.17,     9.09,     4.74,
                0.24,    -4.27,    -8.64,   -12.76,   -14.10,   -13.78,
              -16.50,   -29.98,   -33.81,   -36.63,   -38.32,   -38.86,
              -38.21,   -36.40,   -33.49,   -36.17,   -37.74,   -38.17,
              -37.44,   -35.58,   -32.63,   -28.69,   -15.42,   -12.68 !

   !  YBADJ =   -6.70,   -23.42,   -21.46,   -18.84,   -15.65,   -11.99,
               -7.96,    -3.70,     0.69,     5.05,     9.25,    13.18,
               16.70,    19.72,    22.14,    23.89,     6.90,     6.90,
                6.70,    23.42,    21.46,    18.84,    15.65,    11.99,
                7.96,     3.70,    -0.69,    -5.05,    -9.25,   -13.18,
              -16.70,   -19.72,   -22.14,   -23.89,    -6.90,    -6.90 !
   ! END !
   ! SRCNAM = TAUX4 !
   ! HEIGHT =   28.00,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    28.00,    28.00,
               28.00,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    28.00,    28.00 !

   !  WIDTH =   24.20,    28.65,    33.44,    37.21,    39.84,    41.27,
               41.45,    40.36,    38.05,    40.36,    41.45,    41.27,
               39.84,    37.21,    33.44,    28.65,    24.20,    19.91,
               24.20,    28.65,    33.44,    37.21,    39.84,    41.27,
               41.45,    40.36,    38.05,    40.36,    41.45,    41.27,
               39.84,    37.21,    33.44,    28.65,    24.20,    19.91 !

   ! LENGTH =   29.52,    41.45,    41.27,    39.84,    37.21,    33.44,
               28.65,    22.99,    16.64,    22.99,    28.65,    33.44,
               37.21,    39.84,    41.27,    41.45,    29.52,    26.46,
               29.52,    41.45,    41.27,    39.84,    37.21,    33.44,
               28.65,    22.99,    16.64,    22.99,    28.65,    33.44,
               37.21,    39.84,    41.27,    41.45,    29.52,    26.46 !

   !  XBADJ =  -11.80,   -10.31,    -6.38,    -2.27,     1.92,     6.04,
                9.99,    13.62,    16.85,    12.96,     8.67,     4.12,
               -0.56,    -5.22,    -9.72,   -13.92,   -15.32,   -15.02,
              -17.72,   -31.14,   -34.89,   -37.58,   -39.12,   -39.48,
              -38.64,   -36.62,   -33.49,   -35.95,   -37.32,   -37.55,
              -36.65,   -34.63,   -31.55,   -27.52,   -14.19,   -11.44 !

   !  YBADJ =   -6.49,   -22.99,   -20.84,   -18.04,   -14.70,   -10.92,
               -6.80,    -2.47,     1.93,     6.27,    10.42,    14.25,
               17.65,    20.52,    22.76,    24.31,     7.11,     6.90,
                6.49,    22.99,    20.84,    18.04,    14.70,    10.92,
                6.80,     2.47,    -1.93,    -6.27,   -10.42,   -14.25,
              -17.65,   -20.52,   -22.76,   -24.31,    -7.11,    -6.90 !
   ! END !
   ! SRCNAM = TMAIN !
   ! HEIGHT =   28.00,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    43.45,    28.00,
               28.00,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    43.45,    43.45,
               43.45,    43.45,    43.45,    43.45,    43.45,    28.00 !

   !  WIDTH =   24.20,    28.65,    33.44,    37.21,    39.84,    41.27,
               41.45,    40.36,    38.05,    40.36,    41.45,    41.27,
               39.84,    37.21,    33.44,    28.65,    22.99,    19.91,
               24.20,    28.65,    33.44,    37.21,    39.84,    41.27,
```

```
                41.45,    40.36,    38.05,    40.36,    41.45,    41.27,
                39.84,    37.21,    33.44,    28.65,    22.99,    19.91 !

   ! LENGTH =   29.52,    41.45,    41.27,    39.84,    37.21,    33.44,
                28.65,    22.99,    16.64,    22.99,    28.65,    33.44,
                37.21,    39.84,    41.27,    41.45,    40.36,    26.46,
                29.52,    41.45,    41.27,    39.84,    37.21,    33.44,
                28.65,    22.99,    16.64,    22.99,    28.65,    33.44,
                37.21,    39.84,    41.27,    41.45,    40.36,    26.46 !

   !  XBADJ =  -15.73,   -14.43,   -10.57,    -6.39,    -2.01,     2.43,
                 6.79,    10.95,    14.77,    11.54,     7.96,     4.13,
                 0.18,    -3.77,    -7.61,   -11.22,   -14.49,   -11.39,
               -13.78,   -27.02,   -30.70,   -33.46,   -35.19,   -35.86,
               -35.44,   -33.94,   -31.41,   -34.53,   -36.61,   -37.57,
               -37.39,   -36.07,   -33.66,   -30.22,   -25.87,   -15.07 !

   !  YBADJ =   -5.07,   -22.28,   -20.85,   -18.78,   -16.15,   -13.02,
                -9.50,    -5.69,    -1.70,     2.33,     6.30,    10.07,
                13.54,    16.59,    19.14,    21.11,    22.44,     4.83,
                 5.07,    22.28,    20.85,    18.78,    16.15,    13.02,
                 9.50,     5.69,     1.70,    -2.33,    -6.30,   -10.07,
               -13.54,   -16.59,   -19.14,   -21.11,   -22.44,    -4.83 !
   ! END !
   ! SRCNAM = SPLYM1 !
   ! HEIGHT =   39.40,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
                39.40,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

   !  WIDTH =   40.57,    88.00,    97.79,   104.61,    30.07,   108.60,
               105.65,    99.90,    91.86,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
                40.57,    88.00,    97.79,   104.61,    30.07,   108.60,
               105.65,    99.90,    91.86,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

   ! LENGTH =   81.22,    81.56,    72.65,    61.53,    29.84,    46.71,
                49.32,    55.92,    60.81,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
                81.22,    81.56,    72.65,    61.53,    29.84,    46.71,
                49.32,    55.92,    60.81,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

   !  XBADJ =   15.61,   -21.44,   -20.13,   -18.20,   -15.72,   -25.40,
               -32.25,   -38.13,   -42.84,   -48.27,   -60.55,   -55.08,
               -58.31,   -87.53,   -91.50,   -92.69,  -105.55,  -101.51,
               -96.82,   -60.12,   -52.52,   -43.33,   -14.11,   -21.31,
               -17.07,   -17.79,   -17.97,    20.11,    23.78,    26.72,
                28.85,    30.10,    30.44,    29.85,    28.36,    42.28 !

   !  YBADJ =   39.72,    20.08,    23.03,    25.29,   -12.32,    27.45,
                27.29,    26.09,    23.73,    50.01,    42.30,    22.84,
                14.35,    12.93,     1.95,    -9.09,   -14.84,   -30.10,
               -39.72,   -20.08,   -23.03,   -25.29,    12.32,   -27.45,
               -27.29,   -26.09,   -23.73,   -50.01,   -42.30,   -22.84,
               -14.35,   -12.93,    -1.95,     9.09,    14.84,    30.10 !
   ! END !
   ! SRCNAM = SPLYM2 !
   ! HEIGHT =   39.40,    30.00,    30.00,    30.00,    30.00,    30.00,
```

```
                30.00,    30.00,    30.00,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
                39.40,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

   !  WIDTH =   40.57,    88.00,    97.79,   104.61,    30.07,   108.60,
               105.65,    99.90,    91.86,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
                40.57,    88.00,    97.79,   104.61,    30.07,   108.60,
               105.65,    99.90,    91.86,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

   ! LENGTH =   81.22,    81.56,    72.65,    61.53,    29.84,    46.71,
                49.32,    55.92,    60.81,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
                81.22,    81.56,    72.65,    61.53,    29.84,    46.71,
                49.32,    55.92,    60.81,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

   !  XBADJ =   16.67,   -20.42,   -19.19,   -17.37,   -15.03,   -24.86,
               -31.88,   -37.94,   -42.84,   -48.46,   -60.92,   -55.62,
               -59.00,   -88.36,   -92.44,   -93.71,  -106.61,  -102.59,
               -97.89,   -61.13,   -53.46,   -44.16,   -14.81,   -21.85,
               -17.44,   -17.98,   -17.97,    20.30,    24.15,    27.26,
                29.54,    30.93,    31.37,    30.86,    29.42,    43.36 !

   !  YBADJ =   39.91,    20.45,    23.57,    25.98,   -11.49,    28.38,
                28.30,    27.15,    24.81,    51.08,    43.31,    23.78,
                15.18,    13.62,     2.49,    -8.72,   -14.66,   -30.10,
               -39.91,   -20.45,   -23.57,   -25.98,    11.49,   -28.38,
               -28.30,   -27.15,   -24.81,   -51.08,   -43.31,   -23.78,
               -15.18,   -13.62,    -2.49,     8.72,    14.66,    30.10 !
   ! END !
   ! SRCNAM = SPLYM3 !
   ! HEIGHT =   30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

   !  WIDTH =   75.54,    88.00,    97.79,   104.61,    30.07,   108.60,
               105.65,    99.90,    91.86,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
                75.54,    88.00,    97.79,   104.61,    30.07,   108.60,
               105.65,    99.90,    91.86,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

   ! LENGTH =   87.99,    81.56,    72.65,    61.53,    29.84,    46.71,
                49.32,    55.92,    60.81,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
                87.99,    81.56,    72.65,    61.53,    29.84,    46.71,
                49.32,    55.92,    60.81,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

   !  XBADJ =  -20.03,   -19.46,   -18.30,   -16.59,   -14.37,   -24.34,
               -31.53,   -37.75,   -42.83,   -48.62,   -61.26,   -56.12,
               -59.65,   -89.14,   -93.32,   -94.66,  -107.61,  -103.61,
               -67.96,   -62.10,   -54.35,   -44.94,   -15.47,   -22.37,
               -17.80,   -18.17,   -17.98,    20.47,    24.49,    27.76,
                30.19,    31.70,    32.25,    31.82,    30.42,    44.38 !
```

```
!  YBADJ =   16.87,    20.79,    24.08,    26.63,   -10.71,    29.26,
             29.26,    28.16,    25.83,    52.08,    44.28,    24.67,
             15.97,    14.29,     3.01,    -8.36,   -14.47,   -30.09,
            -16.87,   -20.79,   -24.08,   -26.63,    10.71,   -29.26,
            -29.26,   -28.16,   -25.83,   -52.08,   -44.28,   -24.67,
            -15.97,   -14.29,    -3.01,     8.36,    14.47,    30.09 !
! END !
! SRCNAM = SPLYM4 !
! HEIGHT =   30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
             30.00,    30.00,    30.00,    42.90,    42.90,    42.90,
             42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
             30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
             30.00,    30.00,    30.00,    42.90,    42.90,    42.90,
             42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

!  WIDTH =   75.54,    88.00,    97.79,   104.61,    30.07,   108.60,
            105.65,    99.90,    91.86,    63.63,    64.92,    43.32,
             43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
             75.54,    88.00,    97.79,   104.61,    30.07,   108.60,
            105.65,    99.90,    91.86,    63.63,    64.92,    43.32,
             43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

! LENGTH =   87.99,    81.56,    72.65,    61.53,    29.84,    46.71,
             49.32,    55.92,    60.81,    28.16,    36.77,    28.36,
             29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
             87.99,    81.56,    72.65,    61.53,    29.84,    46.71,
             49.32,    55.92,    60.81,    28.16,    36.77,    28.36,
             29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

!  XBADJ =  -19.05,   -18.54,   -17.46,   -15.85,   -13.75,   -23.88,
            -31.22,   -37.62,   -42.87,   -48.84,   -61.64,   -56.66,
            -60.32,   -89.93,   -94.20,   -95.62,  -108.60,  -104.61,
            -68.94,   -63.02,   -55.19,   -45.68,   -16.08,   -22.84,
            -18.10,   -18.30,   -17.94,    20.68,    24.87,    28.29,
             30.86,    32.49,    33.14,    32.77,    31.41,    45.38 !

!  YBADJ =   17.08,    21.17,    24.61,    27.30,    -9.92,    30.15,
             30.21,    29.15,    26.83,    53.06,    45.20,    25.51,
             16.71,    14.90,     3.47,    -8.06,   -14.33,   -30.13,
            -17.08,   -21.17,   -24.61,   -27.30,     9.92,   -30.15,
            -30.21,   -29.15,   -26.83,   -53.06,   -45.20,   -25.51,
            -16.71,   -14.90,    -3.47,     8.06,    14.33,    30.13 !
! END !
! SRCNAM = SPLYGEN1 !
! HEIGHT =   30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
             30.00,    30.00,    30.00,    30.00,    42.90,    42.90,
             42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
             30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
             30.00,    30.00,    30.00,    30.00,    42.90,    42.90,
             42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

!  WIDTH =   75.54,    88.00,    97.79,   104.61,    30.07,   108.60,
            105.65,    99.90,    91.86,    87.99,    64.92,    43.32,
             43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
             75.54,    88.00,    97.79,   104.61,    30.07,   108.60,
            105.65,    99.90,    91.86,    87.99,    64.92,    43.32,
             43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

! LENGTH =   87.99,    81.56,    72.65,    61.53,    29.84,    46.71,
             49.32,    55.92,    60.81,    75.54,    36.77,    28.36,
             29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
```

```
              87.99,    81.56,    72.65,    61.53,    29.84,    46.71,
              49.32,    55.92,    60.81,    75.54,    36.77,    28.36,
              29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

  !  XBADJ =  -17.96,   -17.50,   -16.51,   -15.01,   -13.06,   -23.35,
             -30.87,   -37.45,   -42.90,   -55.08,   -62.05,   -57.24,
             -61.06,   -90.80,   -95.18,   -96.67,  -109.70,  -105.72,
             -70.03,   -64.06,   -56.14,   -46.52,   -16.77,   -23.36,
             -18.45,   -18.46,   -17.91,   -20.46,    25.27,    28.87,
              31.60,    33.36,    34.11,    33.83,    32.51,    46.49 !

  !  YBADJ =   17.31,    21.58,    25.19,    28.04,    -9.05,    31.12,
              31.26,    30.25,    27.94,    26.03,    46.23,    26.46,
              17.54,    15.59,     4.00,    -7.70,   -14.17,   -30.16,
             -17.31,   -21.58,   -25.19,   -28.04,     9.05,   -31.12,
             -31.26,   -30.25,   -27.94,   -26.03,   -46.23,   -26.46,
             -17.54,   -15.59,    -4.00,     7.70,    14.17,    30.16 !
  ! END !
  ! SRCNAM = PSUPGEN1 !
  ! HEIGHT =   30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00 !

  !  WIDTH =   23.54,    26.43,    28.52,    29.75,    30.07,    29.48,
              27.99,    26.06,    24.12,    25.75,    28.09,    29.58,
              30.17,    29.84,    28.60,    26.50,    23.59,    19.96,
              23.54,    26.43,    28.52,    29.75,    30.07,    29.48,
              27.99,    26.06,    24.12,    25.75,    28.09,    29.58,
              30.17,    29.84,    28.60,    26.50,    23.59,    19.96 !

  ! LENGTH =   25.75,    28.09,    29.58,    30.17,    29.84,    28.60,
              26.50,    23.59,    19.96,    23.54,    26.43,    28.52,
              29.75,    30.07,    29.48,    27.99,    26.06,    24.12,
              25.75,    28.09,    29.58,    30.17,    29.84,    28.60,
              26.50,    23.59,    19.96,    23.54,    26.43,    28.52,
              29.75,    30.07,    29.48,    27.99,    26.06,    24.12 !

  !  XBADJ =  -17.75,   -17.27,   -16.27,   -14.77,   -12.83,   -10.49,
              -7.84,    -4.94,    -1.90,    -2.96,    -3.93,    -4.79,
              -5.49,    -6.03,    -6.39,    -6.55,    -6.51,    -6.32,
              -8.00,   -10.82,   -13.31,   -15.39,   -17.01,   -18.11,
             -18.66,   -18.64,   -18.06,   -20.58,   -22.50,   -23.74,
             -24.26,   -24.04,   -23.09,   -21.44,   -19.54,   -17.80 !

  !  YBADJ =   -8.81,    -9.28,    -9.48,    -9.38,    -9.00,    -8.35,
              -7.44,    -6.51,    -5.74,    -4.88,    -3.23,    -1.48,
               0.31,     2.09,     3.81,     5.41,     6.85,     8.08,
               8.81,     9.28,     9.48,     9.38,     9.00,     8.35,
               7.44,     6.51,     5.74,     4.88,     3.23,     1.48,
              -0.31,    -2.09,    -3.81,    -5.41,    -6.85,    -8.08 !
  ! END !
  ! SRCNAM = PSUPM1 !
  ! HEIGHT =   30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00 !
```

```
   !  WIDTH =   23.54,    26.43,    28.52,    29.75,    30.07,    29.48,
                27.99,    26.06,    24.12,    25.75,    28.09,    29.58,
                30.17,    29.84,    28.60,    26.50,    23.59,    19.96,
                23.54,    26.43,    28.52,    29.75,    30.07,    29.48,
                27.99,    26.06,    24.12,    25.75,    28.09,    29.58,
                30.17,    29.84,    28.60,    26.50,    23.59,    19.96 !

   ! LENGTH =   25.75,    28.09,    29.58,    30.17,    29.84,    28.60,
                26.50,    23.59,    19.96,    23.54,    26.43,    28.52,
                29.75,    30.07,    29.48,    27.99,    26.06,    24.12,
                25.75,    28.09,    29.58,    30.17,    29.84,    28.60,
                26.50,    23.59,    19.96,    23.54,    26.43,    28.52,
                29.75,    30.07,    29.48,    27.99,    26.06,    24.12 !

   !  XBADJ =  -21.67,   -21.01,   -19.71,   -17.82,   -15.38,   -12.47,
                -9.19,    -5.62,    -1.89,    -2.26,    -2.56,    -2.79,
                -2.93,    -2.98,    -2.94,    -2.81,    -2.59,    -2.34,
                -4.08,    -7.08,    -9.87,   -12.35,   -14.46,   -16.13,
               -17.31,   -17.96,   -18.07,   -21.28,   -23.87,   -25.74,
               -26.82,   -27.09,   -26.54,   -25.18,   -23.46,   -21.78 !

   !  YBADJ =   -9.51,   -10.65,   -11.48,   -11.95,   -12.06,   -11.80,
               -11.19,   -10.44,    -9.72,    -8.79,    -6.96,    -4.92,
                -2.73,    -0.46,     1.83,     4.06,     6.17,     8.09,
                 9.51,    10.65,    11.48,    11.95,    12.06,    11.80,
                11.19,    10.44,     9.72,     8.79,     6.96,     4.92,
                 2.73,     0.46,    -1.83,    -4.06,    -6.17,    -8.09 !
   ! END !
   ! SRCNAM = PSUPM2 !
   ! HEIGHT =   30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00 !

   !  WIDTH =   23.54,    26.43,    28.52,    29.75,    30.07,    29.48,
                27.99,    26.06,    24.12,    25.75,    28.09,    29.58,
                30.17,    29.84,    28.60,    26.50,    23.59,    19.96,
                23.54,    26.43,    28.52,    29.75,    30.07,    29.48,
                27.99,    26.06,    24.12,    25.75,    28.09,    29.58,
                30.17,    29.84,    28.60,    26.50,    23.59,    19.96 !

   ! LENGTH =   25.75,    28.09,    29.58,    30.17,    29.84,    28.60,
                26.50,    23.59,    19.96,    23.54,    26.43,    28.52,
                29.75,    30.07,    29.48,    27.99,    26.06,    24.12,
                25.75,    28.09,    29.58,    30.17,    29.84,    28.60,
                26.50,    23.59,    19.96,    23.54,    26.43,    28.52,
                29.75,    30.07,    29.48,    27.99,    26.06,    24.12 !

   !  XBADJ =  -20.70,   -20.09,   -18.86,   -17.06,   -14.75,   -11.98,
                -8.85,    -5.45,    -1.89,    -2.43,    -2.90,    -3.28,
                -3.56,    -3.73,    -3.79,    -3.73,    -3.56,    -3.32,
                -5.05,    -8.00,   -10.72,   -13.10,   -15.09,   -16.62,
               -17.64,   -18.13,   -18.07,   -21.11,   -23.54,   -25.25,
               -26.19,   -26.34,   -25.69,   -24.26,   -22.50,   -20.80 !

   !  YBADJ =   -9.34,   -10.32,   -10.99,   -11.32,   -11.31,   -10.95,
               -10.27,    -9.47,    -8.74,    -7.83,    -6.04,    -4.07,
                -1.98,     0.17,     2.32,     4.40,     6.34,     8.09,
                 9.34,    10.32,    10.99,    11.32,    11.31,    10.95,
                10.27,     9.47,     8.74,     7.83,     6.04,     4.07,
```

```
                1.98,    -0.17,    -2.32,    -4.40,    -6.34,    -8.09 !
   ! END !
   ! SRCNAM = PSUPM3 !
   ! HEIGHT =   30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00 !

   !  WIDTH =   23.54,    26.43,    28.52,    29.75,    30.07,    29.48,
                27.99,    26.06,    24.12,    25.75,    28.09,    29.58,
                30.17,    29.84,    28.60,    26.50,    23.59,    19.96,
                23.54,    26.43,    28.52,    29.75,    30.07,    29.48,
                27.99,    26.06,    24.12,    25.75,    28.09,    29.58,
                30.17,    29.84,    28.60,    26.50,    23.59,    19.96 !

   ! LENGTH =   25.75,    28.09,    29.58,    30.17,    29.84,    28.60,
                26.50,    23.59,    19.96,    23.54,    26.43,    28.52,
                29.75,    30.07,    29.48,    27.99,    26.06,    24.12,
                25.75,    28.09,    29.58,    30.17,    29.84,    28.60,
                26.50,    23.59,    19.96,    23.54,    26.43,    28.52,
                29.75,    30.07,    29.48,    27.99,    26.06,    24.12 !

   !  XBADJ =  -19.69,   -19.12,   -17.97,   -16.28,   -14.09,   -11.47,
                -8.50,    -5.28,    -1.89,    -2.61,    -3.25,    -3.79,
                -4.22,    -4.52,    -4.68,    -4.70,    -4.57,    -4.35,
                -6.06,    -8.97,   -11.61,   -13.89,   -15.75,   -17.13,
               -18.00,   -18.31,   -18.07,   -20.93,   -23.18,   -24.73,
               -25.53,   -25.55,   -24.80,   -23.29,   -21.49,   -19.77 !

   !  YBADJ =   -9.16,    -9.97,   -10.47,   -10.66,   -10.52,   -10.06,
                -9.30,    -8.46,    -7.71,    -6.81,    -5.07,    -3.18,
                -1.19,     0.83,     2.83,     4.75,     6.52,     8.09,
                 9.16,     9.97,    10.47,    10.66,    10.52,    10.06,
                 9.30,     8.46,     7.71,     6.81,     5.07,     3.18,
                 1.19,    -0.83,    -2.83,    -4.75,    -6.52,    -8.09 !
   ! END !
   ! SRCNAM = PSUPM4 !
   ! HEIGHT =   30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00 !

   !  WIDTH =   23.54,    26.43,    28.52,    29.75,    30.07,    29.48,
                27.99,    26.06,    24.12,    25.75,    28.09,    29.58,
                30.17,    29.84,    28.60,    26.50,    23.59,    19.96,
                23.54,    26.43,    28.52,    29.75,    30.07,    29.48,
                27.99,    26.06,    24.12,    25.75,    28.09,    29.58,
                30.17,    29.84,    28.60,    26.50,    23.59,    19.96 !

   ! LENGTH =   25.75,    28.09,    29.58,    30.17,    29.84,    28.60,
                26.50,    23.59,    19.96,    23.54,    26.43,    28.52,
                29.75,    30.07,    29.48,    27.99,    26.06,    24.12,
                25.75,    28.09,    29.58,    30.17,    29.84,    28.60,
                26.50,    23.59,    19.96,    23.54,    26.43,    28.52,
                29.75,    30.07,    29.48,    27.99,    26.06,    24.12 !

   !  XBADJ =  -18.73,   -18.21,   -17.13,   -15.54,   -13.47,   -10.99,
                -8.18,    -5.12,    -1.91,    -2.80,    -3.60,    -4.30,
```

```
                -4.86,    -5.28,    -5.54,    -5.62,    -5.54,    -5.33,
                -7.02,    -9.89,   -12.45,   -14.63,   -16.37,   -17.61,
               -18.31,   -18.46,   -18.05,   -20.74,   -22.83,   -24.23,
               -24.89,   -24.79,   -23.94,   -22.36,   -20.52,   -18.79 !

   !  YBADJ =   -8.97,    -9.61,    -9.96,   -10.01,    -9.75,    -9.20,
                -8.37,    -7.49,    -6.73,    -5.85,    -4.16,    -2.34,
                -0.45,     1.45,     3.31,     5.06,     6.67,     8.07,
                 8.97,     9.61,     9.96,    10.01,     9.75,     9.20,
                 8.37,     7.49,     6.73,     5.85,     4.16,     2.34,
                 0.45,    -1.45,    -3.31,    -5.06,    -6.67,    -8.07 !
   ! END !
   ! SRCNAM = LMTURB !
   ! HEIGHT =   39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40,
                39.40,    39.40,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    42.90,    42.90,
                42.90,    42.90,    42.90,    42.90,    39.40,    39.40 !

   !  WIDTH =   40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61,
                40.57,    41.41,    45.10,    52.06,    57.44,    61.07,
                62.84,    62.71,    60.69,    63.63,    64.92,    43.32,
                43.73,    57.81,    51.81,    44.23,    45.33,    43.61 !

   ! LENGTH =   81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23,
                81.22,    52.78,    64.41,    62.05,    57.81,    51.81,
                44.23,    35.31,    26.97,    28.16,    36.77,    28.36,
                29.46,    57.44,    61.07,    62.84,    77.19,    59.23 !

   !  XBADJ =  -22.04,   -19.99,   -15.01,   -12.07,    -8.76,    -5.18,
                -1.45,     2.32,     6.03,     7.82,     1.22,    10.50,
                 9.09,   -20.37,   -26.61,   -32.05,   -50.99,   -54.70,
               -59.18,   -32.79,   -49.41,   -49.99,   -49.05,   -46.62,
               -42.78,   -37.64,   -33.00,   -35.97,   -38.00,   -38.86,
               -38.55,   -37.06,   -34.45,   -30.79,   -26.20,    -4.53 !

   !  YBADJ =  -16.37,   -18.40,   -16.31,   -12.52,    -8.35,    -3.92,
                 0.63,     5.15,     9.53,    12.37,    14.97,     6.65,
                 9.80,    20.15,    20.72,    20.66,    24.99,    18.60,
                16.37,    18.40,    16.31,    12.52,     8.35,     3.92,
                -0.63,    -5.15,    -9.54,   -12.37,   -14.97,    -6.65,
                -9.80,   -20.15,   -20.72,   -20.66,   -24.99,   -18.60 !
   ! END !
   ! SRCNAM = DSUPGEN1 !
   ! HEIGHT =   30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00 !

   !  WIDTH =   23.53,    26.42,    28.52,    29.74,    30.06,    29.47,
                27.98,    26.06,    24.12,    25.75,    28.09,    29.57,
                30.16,    29.83,    28.59,    26.49,    23.58,    19.95,
                23.53,    26.42,    28.52,    29.74,    30.06,    29.47,
                27.98,    26.06,    24.12,    25.75,    28.09,    29.57,
                30.16,    29.83,    28.59,    26.49,    23.58,    19.95 !
```

```
! LENGTH =   25.75,    28.09,    29.57,    30.16,    29.83,    28.59,
              26.49,    23.58,    19.95,    23.53,    26.42,    28.52,
              29.74,    30.06,    29.47,    27.98,    26.06,    24.12,
              25.75,    28.09,    29.57,    30.16,    29.83,    28.59,
              26.49,    23.58,    19.95,    23.53,    26.42,    28.52,
              29.74,    30.06,    29.47,    27.98,    26.06,    24.12 !

!  XBADJ =  -17.79,   -17.30,   -16.29,   -14.79,   -12.84,   -10.49,
              -7.83,    -4.93,    -1.88,    -2.94,    -3.90,    -4.75,
              -5.45,    -5.99,    -6.34,    -6.51,    -6.47,    -6.28,
              -7.96,   -10.78,   -13.28,   -15.37,   -16.99,   -18.10,
             -18.66,   -18.65,   -18.07,   -20.59,   -22.52,   -23.77,
             -24.29,   -24.07,   -23.13,   -21.48,   -19.58,   -17.84 !

!  YBADJ =   -8.83,    -9.31,    -9.51,    -9.42,    -9.04,    -8.39,
              -7.49,    -6.56,    -5.78,    -4.91,    -3.26,    -1.51,
               0.29,     2.08,     3.80,     5.41,     6.86,     8.09,
               8.83,     9.31,     9.51,     9.42,     9.04,     8.39,
               7.49,     6.56,     5.78,     4.91,     3.26,     1.51,
              -0.29,    -2.08,    -3.80,    -5.41,    -6.86,    -8.09 !
! END !
! SRCNAM = DSUPM1 !
! HEIGHT =   30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00 !

!  WIDTH =   23.53,    26.42,    28.52,    29.74,    30.06,    29.47,
              27.98,    26.06,    24.12,    25.75,    28.09,    29.57,
              30.16,    29.83,    28.59,    26.49,    23.58,    19.95,
              23.53,    26.42,    28.52,    29.74,    30.06,    29.47,
              27.98,    26.06,    24.12,    25.75,    28.09,    29.57,
              30.16,    29.83,    28.59,    26.49,    23.58,    19.95 !

! LENGTH =   25.75,    28.09,    29.57,    30.16,    29.83,    28.59,
              26.49,    23.58,    19.95,    23.53,    26.42,    28.52,
              29.74,    30.06,    29.47,    27.98,    26.06,    24.12,
              25.75,    28.09,    29.57,    30.16,    29.83,    28.59,
              26.49,    23.58,    19.95,    23.53,    26.42,    28.52,
              29.74,    30.06,    29.47,    27.98,    26.06,    24.12 !

!  XBADJ =  -22.23,   -21.52,   -20.16,   -18.18,   -15.66,   -12.65,
              -9.27,    -5.60,    -1.76,    -2.03,    -2.24,    -2.38,
              -2.45,    -2.44,    -2.36,    -2.21,    -1.99,    -1.75,
              -3.52,    -6.57,    -9.42,   -11.98,   -14.17,   -15.94,
             -17.22,   -17.98,   -18.19,   -21.50,   -24.19,   -26.14,
             -27.29,   -27.62,   -27.11,   -25.78,   -24.07,   -22.37 !

!  YBADJ =   -9.73,   -10.97,   -11.88,   -12.42,   -12.59,   -12.37,
             -11.78,   -11.04,   -10.31,    -9.35,    -7.48,    -5.37,
              -3.10,    -0.74,     1.64,     3.98,     6.19,     8.21,
               9.73,    10.97,    11.88,    12.42,    12.59,    12.37,
              11.78,    11.04,    10.31,     9.35,     7.48,     5.37,
               3.10,     0.74,    -1.64,    -3.98,    -6.19,    -8.21 !
! END !
! SRCNAM = DSUPM2 !
! HEIGHT =   30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
              30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
```

```
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00 !

   !  WIDTH =   23.53,    26.42,    28.52,    29.74,    30.06,    29.47,
                27.98,    26.06,    24.12,    25.75,    28.09,    29.57,
                30.16,    29.83,    28.59,    26.49,    23.58,    19.95,
                23.53,    26.42,    28.52,    29.74,    30.06,    29.47,
                27.98,    26.06,    24.12,    25.75,    28.09,    29.57,
                30.16,    29.83,    28.59,    26.49,    23.58,    19.95 !

   ! LENGTH =   25.75,    28.09,    29.57,    30.16,    29.83,    28.59,
                26.49,    23.58,    19.95,    23.53,    26.42,    28.52,
                29.74,    30.06,    29.47,    27.98,    26.06,    24.12,
                25.75,    28.09,    29.57,    30.16,    29.83,    28.59,
                26.49,    23.58,    19.95,    23.53,    26.42,    28.52,
                29.74,    30.06,    29.47,    27.98,    26.06,    24.12 !

   !  XBADJ =  -21.13,   -20.48,   -19.20,   -17.34,   -14.96,   -12.12,
                -8.91,    -5.43,    -1.79,    -2.25,    -2.65,    -2.97,
                -3.19,    -3.32,    -3.35,    -3.27,    -3.10,    -2.87,
                -4.62,    -7.61,   -10.37,   -12.81,   -14.87,   -16.47,
               -17.57,   -18.14,   -18.16,   -21.28,   -23.77,   -25.55,
               -26.55,   -26.74,   -26.13,   -24.71,   -22.96,   -21.25 !

   !  YBADJ =   -9.51,   -10.56,   -11.29,   -11.68,   -11.71,   -11.39,
               -10.72,    -9.93,    -9.19,    -8.25,    -6.43,    -4.42,
                -2.27,    -0.05,     2.18,     4.33,     6.35,     8.19,
                 9.51,    10.56,    11.29,    11.68,    11.71,    11.39,
                10.72,     9.93,     9.19,     8.25,     6.43,     4.42,
                 2.27,     0.05,    -2.18,    -4.33,    -6.35,    -8.19 !
   ! END !
   ! SRCNAM = DSUPM3 !
   ! HEIGHT =   30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00 !

   !  WIDTH =   23.53,    26.42,    28.52,    29.74,    30.06,    29.47,
                27.98,    26.06,    24.12,    25.75,    28.09,    29.57,
                30.16,    29.83,    28.59,    26.49,    23.58,    19.95,
                23.53,    26.42,    28.52,    29.74,    30.06,    29.47,
                27.98,    26.06,    24.12,    25.75,    28.09,    29.57,
                30.16,    29.83,    28.59,    26.49,    23.58,    19.95 !

   ! LENGTH =   25.75,    28.09,    29.57,    30.16,    29.83,    28.59,
                26.49,    23.58,    19.95,    23.53,    26.42,    28.52,
                29.74,    30.06,    29.47,    27.98,    26.06,    24.12,
                25.75,    28.09,    29.57,    30.16,    29.83,    28.59,
                26.49,    23.58,    19.95,    23.53,    26.42,    28.52,
                29.74,    30.06,    29.47,    27.98,    26.06,    24.12 !

   !  XBADJ =  -20.01,   -19.42,   -18.24,   -16.50,   -14.27,   -11.60,
                -8.58,    -5.29,    -1.85,    -2.51,    -3.10,    -3.59,
                -3.98,    -4.24,    -4.37,    -4.37,    -4.24,    -4.02,
                -5.74,    -8.67,   -11.34,   -13.66,   -15.56,   -16.99,
               -17.91,   -18.28,   -18.10,   -21.02,   -23.32,   -24.92,
               -25.77,   -25.83,   -25.10,   -23.61,   -21.82,   -20.10 !

   !  YBADJ =   -9.25,   -10.11,   -10.67,   -10.90,   -10.79,   -10.36,
```

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                -9.62,    -8.79,    -8.04,    -7.13,    -5.37,    -3.45,
                -1.42,     0.65,     2.70,     4.67,     6.50,     8.12,
                 9.25,    10.11,    10.67,    10.90,    10.79,    10.36,
                 9.62,     8.79,     8.04,     7.13,     5.37,     3.45,
                 1.42,    -0.65,    -2.70,    -4.67,    -6.50,    -8.12 !
   ! END !
   ! SRCNAM = DSUPM4 !
   ! HEIGHT =   30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00,
                30.00,    30.00,    30.00,    30.00,    30.00,    30.00 !

   !  WIDTH =   23.53,    26.42,    28.52,    29.74,    30.06,    29.47,
                27.98,    26.06,    24.12,    25.75,    28.09,    29.57,
                30.16,    29.83,    28.59,    26.49,    23.58,    19.95,
                23.53,    26.42,    28.52,    29.74,    30.06,    29.47,
                27.98,    26.06,    24.12,    25.75,    28.09,    29.57,
                30.16,    29.83,    28.59,    26.49,    23.58,    19.95 !

   ! LENGTH =   25.75,    28.09,    29.57,    30.16,    29.83,    28.59,
                26.49,    23.58,    19.95,    23.53,    26.42,    28.52,
                29.74,    30.06,    29.47,    27.98,    26.06,    24.12,
                25.75,    28.09,    29.57,    30.16,    29.83,    28.59,
                26.49,    23.58,    19.95,    23.53,    26.42,    28.52,
                29.74,    30.06,    29.47,    27.98,    26.06,    24.12 !

   !  XBADJ =  -18.93,   -18.39,   -17.28,   -15.65,   -13.55,   -11.03,
                -8.18,    -5.08,    -1.83,    -2.68,    -3.45,    -4.12,
                -4.66,    -5.06,    -5.31,    -5.39,    -5.31,    -5.11,
                -6.82,    -9.70,   -12.29,   -14.50,   -16.28,   -17.56,
               -18.30,   -18.49,   -18.12,   -20.85,   -22.97,   -24.40,
               -25.08,   -25.00,   -24.17,   -22.59,   -20.75,   -19.01 !

   !  YBADJ =   -9.08,    -9.76,   -10.14,   -10.21,    -9.97,    -9.43,
                -8.60,    -7.72,    -6.95,    -6.06,    -4.34,    -2.50,
                -0.57,     1.36,     3.26,     5.06,     6.70,     8.15,
                 9.08,     9.76,    10.14,    10.21,     9.97,     9.43,
                 8.60,     7.72,     6.95,     6.06,     4.34,     2.50,
                 0.57,    -1.36,    -3.26,    -5.06,    -6.70,    -8.15 !
   ! END !
```

---

[a] Building height, width, length, and X/Y offset from the source are treated as a separate input subgroup for each source and therefore must end with an input group terminator. The X/Y offset is the position, relative to the stack, of the center of the upwind face of the projected building, with the x-axis pointing along the flow direction.

Subgroup (13d)

POINT SOURCE: EMISSION-RATE SCALING FACTORS[a]

Use this subgroup to identify temporal variations in the emission rates given in 13b. Factors assigned multiply the rates in 13b. Skip sources here that have constant emissions. For more elaborate variation in source parameters, use PTEMARB.DAT and NPT2 > 0.

Sets of emission-rate scale factors are defined in Input Group 19, and are referenced by the FACTORNAME. Provide NSPT1 lines that identify the emission-rate scale factor table for each source-species combination that
uses the scaling option. Note that a scale-factor table can be used with
more than one source-species combination so a FACTORNAME can be repeated.

Source-Species No.	Source Name b (SRCNAM)	Species Name c (CSPEC)	Scale-factor table Name d (FACTORNAME)

$pointscalingfactor

---

a
Assignment for each source-specie is treated as a separate input subgroup and therefore must end with an input group terminator.

b
Source name must match one of the SRCNAM names defined in Input Group 13b

c
Species name must match one of the CSPEC names of emitted species defined in Input Group 3

d
Scale-factor name must match one of the FACTORNAME names defined in Input Group 19

INPUT GROUPS: 14a, 14b, 14c, 14d -- Area source parameters

Subgroup (14a)

Number of polygon area sources with parameters specified below (NAR1) No default ! NAR1 = 0 !

Units used for area source emissions below (IARU) Default: 1 ! IARU = 1 !

1 = g/m**2/s
2 = kg/m**2/hr
3 = lb/m**2/hr
4 = tons/m**2/yr
5 = Odour Unit * m/s (vol. flux/m**2 of odour compound)
6 = Odour Unit * m/min
7 = metric tons/m**2/yr
8 = Bq/m**2/s (Bq = becquerel = disintegrations/s)
9 = GBq/m**2/yr

```
     Number of source-species
     combinations with variable
     emissions scaling factors
     provided below in (14d)        (NSAR1) Default: 0  !  NSAR1 =  0  !

     Number of buoyant polygon area sources
     with variable location and emission
     parameters (NAR2)                      No default  !  NAR2 =  0   !
     (If NAR2 > 0, ALL parameter data for
     these sources are read from the file: BAEMARB.DAT)

!END!

---------------
Subgroup (14b)
---------------
                                    a
          AREA SOURCE: CONSTANT DATA
          --------------------------
                                                                  b
Source           Effect.    Base      Initial    Emission
 No.             Height   Elevation   Sigma z     Rates
                   (m)       (m)        (m)
-------          ------    ------     --------   ---------

$area


--------
    a
     Data for each source are treated as a separate input subgroup
     and therefore must end with an input group terminator.
    b
     An emission rate must be entered for every pollutant modeled.
     Enter emission rate of zero for secondary pollutants that are
     modeled, but not emitted.  Units are specified by IARU
     (e.g. 1 for g/m**2/s).

---------------
Subgroup (14c)
---------------

           COORDINATES (km) FOR EACH VERTEX(4) OF EACH POLYGON
           ---------------------------------------------------------
Source                                                              a
 No.       Ordered list of X followed by list of Y, grouped by source
------     ------------------------------------------------------------

$areacoordinate


--------
    a
     Data for each source are treated as a separate input subgroup
     and therefore must end with an input group terminator.


---------------
Subgroup (14d)
---------------
                                                    a
```

AREA SOURCE: EMISSION-RATE SCALING FACTORS

Use this subgroup to identify temporal variations in the emission rates given in 14b. Factors assigned multiply the rates in 14b. Skip sources here that have constant emissions. For more elaborate variation in source parameters, use BAEMARB.DAT and NAR2 > 0.

Sets of emission-rate scale factors are defined in Input Group 19, and are referenced by the FACTORNAME. Provide NSAR1 lines that identify the emission-rate scale factor table for each source-species combination that
uses the scaling option. Note that a scale-factor table can be used with
more than one source-species combination so a FACTORNAME can be repeated.

Source-Species No.	Source Name b (SRCNAM)	Species Name c (CSPEC)	Scale-factor table Name d (FACTORNAME)

$areascalingfactor

---

a
Assignment for each source-specie is treated as a separate input subgroup and therefore must end with an input group terminator.

b
Source name must match one of the SRCNAM names defined in Input Group 14b

c
Species name must match one of the CSPEC names of emitted species defined in Input Group 3

d
Scale-factor name must match one of the FACTORNAME names defined in Input Group 19

INPUT GROUPS: 15a, 15b, 15c -- Line source parameters

Subgroup (15a)

Number of buoyant line sources with variable location and emission parameters (NLN2) No default ! NLN2 = 0
!

(If NLN2 > 0, ALL parameter data for these sources are read from the file: LNEMARB.DAT)

Number of buoyant line sources (NLINES) No default ! NLINES = 0
!

Units used for line source

```
     emissions below                (ILNU)          Default: 1  !  ILNU =   1
     !
           1 =        g/s
           2 =       kg/hr
           3 =       lb/hr
           4 =     tons/yr
           5 =     Odour Unit * m**3/s  (vol. flux of odour compound)
           6 =     Odour Unit * m**3/min
           7 =     metric tons/yr
           8 =     Bq/s  (Bq = becquerel = disintegrations/s)
           9 =     GBq/yr

     Number of source-species
     combinations with variable
     emissions scaling factors
     provided below in (15c)        (NSLN1)         Default: 0  !  NSLN1 =  0
     !

     Maximum number of segments used to model
     each line (MXNSEG)                             Default: 7   ! MXNSEG =  7
     !

     The following variables are required only if NLINES > 0.  They are
     used in the buoyant line source plume rise calculations.

        Number of distances at which                Default: 6   ! NLRISE =  6
        !
        transitional rise is computed

        Average building length (XL)                No default   ! XL = .0 !
                                                    (in meters)

        Average building height (HBL)               No default   ! HBL = .0 !
                                                    (in meters)

        Average building width (WBL)                No default   ! WBL = .0 !
                                                    (in meters)

        Average line source width (WML)             No default   ! WML = .0 !
                                                    (in meters)

        Average separation between buildings (DXL)  No default   ! DXL = .0 !
                                                    (in meters)

        Average buoyancy parameter (FPRIMEL)        No default   ! FPRIMEL =
        .0 !
                                                    (in m**4/s**3)

!END!

---------------
Subgroup (15b)
---------------

          BUOYANT LINE SOURCE: CONSTANT DATA
          ----------------------------------

a
Source     Beg. X      Beg. Y      End. X    End. Y     Release    Base
Emission
 No.     Coordinate  Coordinate  Coordinate Coordinate  Height    Elevation
 Rates
```

```
             (km)         (km)         (km)        (km)        (m)        (m)
------   ----------  ----------  ---------  ----------  -------   ---------
---------

--------
```

a
Data for each source are treated as a separate input subgroup
and therefore must end with an input group terminator.

b
An emission rate must be entered for every pollutant modeled.
Enter emission rate of zero for secondary pollutants that are
modeled, but not emitted. Units are specified by ILNTU
(e.g. 1 for g/s).

Subgroup (15c)
---

a
BUOYANT LINE SOURCE: EMISSION-RATE SCALING FACTORS

Use this subgroup to identify temporal variations in the emission
rates given in 15b. Factors assigned multiply the rates in 15b.
Skip sources here that have constant emissions. For more elaborate
variation in source parameters, use LNEMARB.DAT and NLN2 > 0.

Sets of emission-rate scale factors are defined in Input Group 19, and
are referenced by the FACTORNAME. Provide NSLN1 lines that identify the
emission-rate scale factor table for each source-species combination
that
uses the scaling option. Note that a scale-factor table can be used
with
more than one source-species combination so a FACTORNAME can be
repeated.

```
  Source-              Source      Species      Scale-factor table
  Species              Name   b    Name   c     Name        d
   No.                (SRCNAM)     (CSPEC)      (FACTORNAME)
  ------              ------------ ------------ ---------------------

    1  * SCALEFACTOR  =   1,           SO2,       LINES               *  *END*

--------
```

a
Assignment for each source-specie is treated as a separate input subgroup
and therefore must end with an input group terminator.

b
Source name must match one of the SRCNAM names defined in Input Group 15b

c
Species name must match one of the CSPEC names of emitted species defined
in Input Group 3

d
Scale-factor name must match one of the FACTORNAME names defined in Input
Group 19

```
-------------------------------------------------------------------------------
-
```

INPUT GROUPS: 16a, 16b, 16c -- Volume source parameters

Subgroup (16a)

Number of volume sources with parameters provided in 16b,c (NVL1) No default ! NVL1 = 0 !

Units used for volume source emissions below in 16b (IVLU) Default: 1 ! IVLU = 1 !

1 = g/s
2 = kg/hr
3 = lb/hr
4 = tons/yr
5 = Odour Unit * m**3/s (vol. flux of odour compound)
6 = Odour Unit * m**3/min
7 = metric tons/yr
8 = Bq/s (Bq = becquerel = disintegrations/s)
9 = GBq/yr

Number of source-species combinations with variable emissions scaling factors provided below in (16c) (NSVL1) Default: 0 ! NSVL1 = 0 !

Number of volume sources with variable location and emission parameters (NVL2) No default ! NVL2 = 0 !

(If NVL2 > 0, ALL parameter data for these sources are read from the VOLEMARB.DAT file(s))

!END!

Subgroup (16b)

VOLUME SOURCE: CONSTANT DATA [a]

Source No.	X Coordinate (km)	Y Coordinate (km)	Effect. Height (m)	Base Elevation (m)	Initial Sigma y (m)	Initial Sigma z (m)	Emission Rates [b]
$volume							

---

a
Data for each source are treated as a separate input subgroup and therefore must end with an input group terminator.

b
An emission rate must be entered for every pollutant modeled.

Enter emission rate of zero for secondary pollutants that are modeled, but not emitted. Units are specified by IVLU (e.g. 1 for g/s).

Subgroup (16c)

VOLUME SOURCE: EMISSION-RATE SCALING FACTORS[a]

Use this subgroup to identify temporal variations in the emission rates given in 16b. Factors assigned multiply the rates in 16b. Skip sources here that have constant emissions. For more elaborate variation in source parameters, use VOLEMARB.DAT and NVL2 > 0.

Sets of emission-rate scale factors are defined in Input Group 19, and are referenced by the FACTORNAME. Provide NSVL1 lines that identify the emission-rate scale factor table for each source-species combination that uses the scaling option. Note that a scale-factor table can be used with more than one source-species combination so a FACTORNAME can be repeated.

Source-Species No.	Source Name[b] (SRCNAM)	Species Name[c] (CSPEC)	Scale-factor table Name[d] (FACTORNAME)

$volumescalingfactor

---

a Assignment for each source-specie is treated as a separate input subgroup and therefore must end with an input group terminator.

b Source name must match one of the SRCNAM names defined in Input Group 16b

c Species name must match one of the CSPEC names of emitted species defined in Input Group 3

d Scale-factor name must match one of the FACTORNAME names defined in Input Group 19

INPUT GROUP: 17 -- FLARE source control parameters (variable emissions file)

Number of flare sources defined in FLEMARB.DAT file(s) (NFL2) Default: 0 ! NFL2 = 0 !

(At least 1 FLEMARB.DAT file is needed if NFL2 > 0)

!END!

-

INPUT GROUPS: 18a, 18b, 18c -- Road Emissions parameters

Subgroup (18a)

Emissions from roads are generated from individual line segments defined by a sequence of coordinates provided for each road-link. Each link is entered as a discrete source and is defined as a section of the road for which emissions are uniform.

A long, winding isolated road might be characterized by a single link made
up of many coordinate triples (x,y,z) that describe its pathway. These points should be sufficient to resolve curves, but need not have uniform spacing. For example, a straight flat segment can be defined by 2 points,
regardless of the distance covered. Long line segments are automatically divided further within the model into segments that are limited by the grid-cell boundaries (no segment may extend across multiple cells). One emission rate (g/m/s) for each species is used for the entire road.

Near a congested intersection, many short links may be required to resolve
the spatial and temporal distribution of emissions. Each is entered and modeled as a discrete source.

Number of road-links with emission parameters
provided in Subgroup 18b (NRD1) No default ! NRD1 = 0 !

Number of road-links with arbitrarily time-varying
emission parameters (NRD2) No default ! NRD2 = 0 !
(If NRD2 > 0, ALL variable road data
are read from the file: RDEMARB.DAT)

Emissions from one or more of the roads presented in Subgroup 18b may vary over time-based cycles or by meteorology. This variability is modeled by applying an emission-rate scale factor specified for particular road links and species in Subgroup 18c.

Number of road links and species combinations
with variable emission-rate scale-factors
(NSFRDS) Default: 0 ! NSFRDS = 0 !

!END!

Subgroup (18b)
---

a

DATA FOR ROADS WITH CONSTANT OR SCALED EMISSION PARAMETERS

b

Road No.	Effect. Height (mAGL)	Initial Sigma z (m)	Initial Sigma y (m)	Emission Rates (g/s/m)

-------	------	------	--------	---------

$road

---

a
Data for each of the NRD1 roads are treated as a separate input subgroup and therefore must end with an input group terminator.

b
NSPEC Emission rates must be entered (one for every pollutant modeled). Enter emission rate of zero for secondary pollutants.

c
Road-source names are entered without spaces, and may be 16 characters long.

Subgroup (18c)

---

a

EMISSION-RATE SCALING FACTORS

Use this subgroup to identify temporal variations in the emission rates given in 18b. Factors assigned multiply the rates in 18b. Skip sources here that have constant emissions. For more elaborate variation in source parameters, use RDEMARB.DAT and NRD2 > 0.

Sets of emission-rate scale factors are defined in Input Group 19, and are referenced by the FACTORNAME. Provide NSFRDS lines that identify the emission-rate scale factor table for each source-species combination that uses the scaling option. Note that a scale-factor table can be used with more than one source-species combination so a FACTORNAME can be repeated.

Source-Species No.	Source Name (SRCNAM) b	Species Name (CSPEC) c	Scale-factor table Name (FACTORNAME) d
------	----------	----------	----------

$roadscalingfactor

---

a
Assignment for each source-specie is treated as a separate input subgroup and therefore must end with an input group terminator.

b
Source name must match one of the SRCNAM names defined in Input Group 18b

c
Species name must match one of the CSPEC names of emitted species defined in Input Group 3

d
Scale-factor name must match one of the FACTORNAME names defined in Input Group 19

Subgroup (18d)

COORDINATES FOR EACH NAMED ROAD[a]

Coordinate No.	X Coordinate (km)	Y Coordinate (km)	Ground Elevation (m)
$roadcoordinate			

---
[a] Each line of coordinates is treated as a separate input subgroup and therefore must end with an input group terminator.

INPUT GROUPS: 19a, 19b -- Emission rate scale-factor tables

Use this group to enter variation factors applied to emission rates for any source-specie combinations that use this feature. The tables of emission-rate scale factors are referenced by the name assigned to FACTORNAME. These names do not need to include specific source or species names used in the simulation, particularly if one factor table is used for many types of sources and species, but should be descriptive. But if a factor table applies to just one source, the reference name for it should generally contain that source-name. FACTORNAME must NOT include spaces.

The FACTORTYPE for each table must be one of the following:

CONSTANT1	1 scaling factor
MONTH12	12 scaling factors: months 1-12
DAY7	7 scaling factors: days 1-7 [SUNDAY,MONDAY, ... FRIDAY,SATURDAY]
HOUR24	24 scaling factors: hours 1-24
HOUR24_DAY7	168 scaling factors: hours 1-24, repeated 7 times: SUNDAY, MONDAY, ... SATURDAY
HOUR24_MONTH12	288 scaling factors: hours 1-24, repeated 12 times: months 1-12
WSP6	6 scaling factors: wind speed classes 1-6 [speed classes (WSCAT) defined in Group 12]
WSP6_PGCLASS6	36 scaling factors: wind speed classes 1-6 repeated 6 times: PG classes A,B,C,D,E,F [speed classes (WSCAT) defined in Group 12]
TEMPERATURE12	12 scaling factors: temperature classes 1-12 [temperature classes (TKCAT) defined in Group 12]

The number of tables defined may exceed the number of tables referenced

in the
input groups for each source type above (for convenience), but tables for all
FACTORNAME names referenced must be present here.

Subgroup (19a)

Number of Emission Scale-Factor
tables (NSFTAB) Default: 0 ! NSFTAB = 0 !

!END!

Subgroup (19b)

$emissionratescalingfactor

---
a
Assignments for each table are treated as a separate input subgroup
and therefore must end with an input group terminator.
b
FACTORNAME must be no longer than 40 characters
c
Spaces are NOT allowed in any FACTORNAME or FACTORTYPE assignment,
and the names are NOT case-sensitive

-

INPUT GROUPS: 20a, 20b, 20c -- Non-gridded (discrete) receptor information
---

Subgroup (20a)

Number of non-gridded receptors (NREC) No default ! NREC = 3313 !

Group names can be used to assign receptor locations in
Subgroup 20c and thereby provide an identification that
can be referenced when postprocessing receptors. The
default assignment name X is used when NRGRP = 0.

Number of receptor group names (NRGRP) Default: 0 ! NRGRP = 0 !

!END!

Subgroup (20b)

Provide a name for each receptor group if NRGRP>0.
Enter NRGRP lines.

a,b

Group Name
* RGRPNAM = Group_A * *END*
* RGRPNAM = Group_B * *END*
* RGRPNAM = Group_C * *END*
* RGRPNAM = Group_D * *END*
* RGRPNAM = Group_E * *END*

---

a
Each group name provided is treated as a separate input subgroup and therefore must end with an input group terminator.

b
Receptor group names must not include blanks.

Subgroup (20c)

---

a

NON-GRIDDED (DISCRETE) RECEPTOR DATA

Receptor No.	c Group Name	X Coordinate (km)	Y Coordinate (km)	Ground Elevation (m)	Height b Above Ground (m)	
! X =	396.542,	5313.205,	0.0,	0.00!	!END!	
! X =	396.553,	5313.222,	0.0,	0.00!	!END!	
! X =	396.571,	5313.231,	0.0,	0.00!	!END!	
! X =	396.590,	5313.233,	0.0,	0.00!	!END!	
! X =	396.610,	5313.233,	0.0,	0.00!	!END!	
! X =	396.630,	5313.233,	0.0,	0.00!	!END!	
! X =	396.650,	5313.233,	0.0,	0.00!	!END!	
! X =	396.670,	5313.233,	0.0,	0.00!	!END!	
! X =	396.690,	5313.233,	0.0,	0.00!	!END!	
! X =	396.710,	5313.232,	0.0,	0.00!	!END!	
! X =	396.730,	5313.232,	0.0,	0.00!	!END!	
! X =	396.750,	5313.232,	0.0,	0.00!	!END!	
! X =	396.770,	5313.232,	0.0,	0.00!	!END!	
! X =	396.790,	5313.232,	0.0,	0.00!	!END!	
! X =	396.810,	5313.232,	0.0,	0.00!	!END!	
! X =	396.830,	5313.232,	0.0,	0.00!	!END!	
! X =	396.850,	5313.232,	0.0,	0.00!	!END!	
! X =	396.870,	5313.230,	0.0,	0.00!	!END!	
! X =	396.888,	5313.220,	0.0,	0.00!	!END!	
! X =	396.897,	5313.204,	0.0,	0.00!	!END!	
! X =	396.890,	5313.186,	0.0,	0.00!	!END!	
! X =	396.873,	5313.175,	0.0,	0.00!	!END!	
! X =	396.853,	5313.172,	0.0,	0.00!	!END!	
! X =	396.833,	5313.172,	0.0,	0.00!	!END!	
! X =	396.813,	5313.172,	0.0,	0.00!	!END!	
! X =	396.793,	5313.172,	0.0,	0.00!	!END!	
! X =	396.773,	5313.172,	0.0,	0.00!	!END!	
! X =	396.753,	5313.172,	0.0,	0.00!	!END!	
! X =	396.733,	5313.172,	0.0,	0.00!	!END!	
! X =	396.713,	5313.172,	0.0,	0.00!	!END!	
! X =	396.693,	5313.172,	0.0,	0.00!	!END!	
! X =	396.673,	5313.172,	0.0,	0.00!	!END!	
! X =	396.653,	5313.172,	0.0,	0.00!	!END!	

```
! X =     396.633,     5313.172,         0.0,  0.00!  !END!
! X =     396.613,     5313.172,         0.0,  0.00!  !END!
! X =     396.593,     5313.172,         0.0,  0.00!  !END!
! X =     396.573,     5313.174,         0.0,  0.00!  !END!
! X =     396.555,     5313.181,         0.0,  0.00!  !END!
! X =     396.543,     5313.197,         0.0,  0.00!  !END!
! X =     396.193,     5313.226,         0.0,  0.00!  !END!
! X =     396.213,     5313.226,         0.0,  0.00!  !END!
! X =     396.233,     5313.226,         0.0,  0.00!  !END!
! X =     396.253,     5313.226,         0.0,  0.00!  !END!
! X =     396.273,     5313.226,         0.0,  0.00!  !END!
! X =     396.293,     5313.226,         0.0,  0.00!  !END!
! X =     396.313,     5313.226,         0.0,  0.00!  !END!
! X =     396.333,     5313.226,         0.0,  0.00!  !END!
! X =     396.353,     5313.226,         0.0,  0.00!  !END!
! X =     396.373,     5313.226,         0.0,  0.00!  !END!
! X =     396.393,     5313.226,         0.0,  0.00!  !END!
! X =     396.413,     5313.226,         0.0,  0.00!  !END!
! X =     396.432,     5313.219,         0.0,  0.00!  !END!
! X =     396.443,     5313.204,         0.0,  0.00!  !END!
! X =     396.437,     5313.186,         0.0,  0.00!  !END!
! X =     396.419,     5313.178,         0.0,  0.00!  !END!
! X =     396.399,     5313.177,         0.0,  0.00!  !END!
! X =     396.379,     5313.177,         0.0,  0.00!  !END!
! X =     396.359,     5313.177,         0.0,  0.00!  !END!
! X =     396.339,     5313.177,         0.0,  0.00!  !END!
! X =     396.319,     5313.177,         0.0,  0.00!  !END!
! X =     396.299,     5313.177,         0.0,  0.00!  !END!
! X =     396.279,     5313.177,         0.0,  0.00!  !END!
! X =     396.259,     5313.177,         0.0,  0.00!  !END!
! X =     396.239,     5313.177,         0.0,  0.00!  !END!
! X =     396.219,     5313.177,         0.0,  0.00!  !END!
! X =     396.199,     5313.177,         0.0,  0.00!  !END!
! X =     396.179,     5313.181,         0.0,  0.00!  !END!
! X =     396.165,     5313.193,         0.0,  0.00!  !END!
! X =     396.167,     5313.212,         0.0,  0.00!  !END!
! X =     396.183,     5313.223,         0.0,  0.00!  !END!
! X =     396.531,     5313.157,         0.0,  0.00!  !END!
! X =     396.551,     5313.157,         0.0,  0.00!  !END!
! X =     396.571,     5313.157,         0.0,  0.00!  !END!
! X =     396.591,     5313.157,         0.0,  0.00!  !END!
! X =     396.611,     5313.157,         0.0,  0.00!  !END!
! X =     396.631,     5313.157,         0.0,  0.00!  !END!
! X =     396.649,     5313.149,         0.0,  0.00!  !END!
! X =     396.639,     5313.135,         0.0,  0.00!  !END!
! X =     396.619,     5313.133,         0.0,  0.00!  !END!
! X =     396.599,     5313.133,         0.0,  0.00!  !END!
! X =     396.579,     5313.133,         0.0,  0.00!  !END!
! X =     396.559,     5313.133,         0.0,  0.00!  !END!
! X =     396.539,     5313.133,         0.0,  0.00!  !END!
! X =     396.531,     5313.145,         0.0,  0.00!  !END!
! X =     396.674,     5312.868,         0.0,  0.00!  !END!
! X =     396.694,     5312.868,         0.0,  0.00!  !END!
! X =     396.714,     5312.868,         0.0,  0.00!  !END!
! X =     396.734,     5312.868,         0.0,  0.00!  !END!
! X =     396.754,     5312.868,         0.0,  0.00!  !END!
! X =     396.774,     5312.867,         0.0,  0.00!  !END!
! X =     396.792,     5312.859,         0.0,  0.00!  !END!
! X =     396.782,     5312.846,         0.0,  0.00!  !END!
! X =     396.762,     5312.844,         0.0,  0.00!  !END!
! X =     396.742,     5312.844,         0.0,  0.00!  !END!
! X =     396.722,     5312.844,         0.0,  0.00!  !END!
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! X =     396.702,     5312.844,         0.0,  0.00!  !END!
! X =     396.682,     5312.844,         0.0,  0.00!  !END!
! X =     396.674,     5312.855,         0.0,  0.00!  !END!
! X =     394.852,     5313.164,         0.0,  0.00!  !END!
! X =     394.872,     5313.164,         0.0,  0.00!  !END!
! X =     394.892,     5313.164,         0.0,  0.00!  !END!
! X =     394.912,     5313.164,         0.0,  0.00!  !END!
! X =     394.932,     5313.164,         0.0,  0.00!  !END!
! X =     394.952,     5313.164,         0.0,  0.00!  !END!
! X =     394.952,     5313.184,         0.0,  0.00!  !END!
! X =     394.952,     5313.204,         0.0,  0.00!  !END!
! X =     394.952,     5313.224,         0.0,  0.00!  !END!
! X =     394.952,     5313.244,         0.0,  0.00!  !END!
! X =     394.932,     5313.244,         0.0,  0.00!  !END!
! X =     394.912,     5313.244,         0.0,  0.00!  !END!
! X =     394.892,     5313.244,         0.0,  0.00!  !END!
! X =     394.872,     5313.244,         0.0,  0.00!  !END!
! X =     394.852,     5313.244,         0.0,  0.00!  !END!
! X =     394.852,     5313.225,         0.0,  0.00!  !END!
! X =     394.852,     5313.205,         0.0,  0.00!  !END!
! X =     394.852,     5313.185,         0.0,  0.00!  !END!
! X =     394.852,     5313.165,         0.0,  0.00!  !END!
! X =     394.935,     5312.856,         0.0,  0.00!  !END!
! X =     394.955,     5312.856,         0.0,  0.00!  !END!
! X =     394.975,     5312.856,         0.0,  0.00!  !END!
! X =     394.995,     5312.856,         0.0,  0.00!  !END!
! X =     395.015,     5312.856,         0.0,  0.00!  !END!
! X =     395.035,     5312.856,         0.0,  0.00!  !END!
! X =     395.053,     5312.848,         0.0,  0.00!  !END!
! X =     395.043,     5312.834,         0.0,  0.00!  !END!
! X =     395.024,     5312.832,         0.0,  0.00!  !END!
! X =     395.004,     5312.832,         0.0,  0.00!  !END!
! X =     394.984,     5312.832,         0.0,  0.00!  !END!
! X =     394.964,     5312.832,         0.0,  0.00!  !END!
! X =     394.944,     5312.832,         0.0,  0.00!  !END!
! X =     394.935,     5312.844,         0.0,  0.00!  !END!
! X =     396.020,     5312.602,         0.0,  0.00!  !END!
! X =     396.070,     5312.602,         0.0,  0.00!  !END!
! X =     396.120,     5312.602,         0.0,  0.00!  !END!
! X =     396.170,     5312.602,         0.0,  0.00!  !END!
! X =     396.220,     5312.602,         0.0,  0.00!  !END!
! X =     396.270,     5312.602,         0.0,  0.00!  !END!
! X =     396.320,     5312.602,         0.0,  0.00!  !END!
! X =     396.370,     5312.602,         0.0,  0.00!  !END!
! X =     396.420,     5312.602,         0.0,  0.00!  !END!
! X =     396.470,     5312.602,         0.0,  0.00!  !END!
! X =     396.520,     5312.602,         0.0,  0.00!  !END!
! X =     396.570,     5312.602,         0.0,  0.00!  !END!
! X =     396.620,     5312.602,         0.0,  0.00!  !END!
! X =     396.670,     5312.602,         0.0,  0.00!  !END!
! X =     396.720,     5312.602,         0.0,  0.00!  !END!
! X =     396.770,     5312.602,         0.0,  0.00!  !END!
! X =     396.820,     5312.602,         0.0,  0.00!  !END!
! X =     396.870,     5312.602,         0.0,  0.00!  !END!
! X =     396.920,     5312.602,         0.0,  0.00!  !END!
! X =     396.970,     5312.602,         0.0,  0.00!  !END!
! X =     397.020,     5312.602,         0.0,  0.00!  !END!
! X =     397.070,     5312.602,         0.0,  0.00!  !END!
! X =     397.120,     5312.602,         0.0,  0.00!  !END!
! X =     397.170,     5312.602,         0.0,  0.00!  !END!
! X =     397.220,     5312.602,         0.0,  0.00!  !END!
! X =     397.270,     5312.602,         0.0,  0.00!  !END!
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! X =     397.320,     5312.602,         0.0,  0.00!  !END!
! X =     397.370,     5312.602,         0.0,  0.00!  !END!
! X =     396.020,     5312.652,         0.0,  0.00!  !END!
! X =     396.070,     5312.652,         0.0,  0.00!  !END!
! X =     396.120,     5312.652,         0.0,  0.00!  !END!
! X =     396.170,     5312.652,         0.0,  0.00!  !END!
! X =     396.220,     5312.652,         0.0,  0.00!  !END!
! X =     396.270,     5312.652,         0.0,  0.00!  !END!
! X =     396.320,     5312.652,         0.0,  0.00!  !END!
! X =     396.370,     5312.652,         0.0,  0.00!  !END!
! X =     396.420,     5312.652,         0.0,  0.00!  !END!
! X =     396.470,     5312.652,         0.0,  0.00!  !END!
! X =     396.520,     5312.652,         0.0,  0.00!  !END!
! X =     396.570,     5312.652,         0.0,  0.00!  !END!
! X =     396.620,     5312.652,         0.0,  0.00!  !END!
! X =     396.670,     5312.652,         0.0,  0.00!  !END!
! X =     396.720,     5312.652,         0.0,  0.00!  !END!
! X =     396.770,     5312.652,         0.0,  0.00!  !END!
! X =     396.820,     5312.652,         0.0,  0.00!  !END!
! X =     396.870,     5312.652,         0.0,  0.00!  !END!
! X =     396.920,     5312.652,         0.0,  0.00!  !END!
! X =     396.970,     5312.652,         0.0,  0.00!  !END!
! X =     397.020,     5312.652,         0.0,  0.00!  !END!
! X =     397.070,     5312.652,         0.0,  0.00!  !END!
! X =     397.120,     5312.652,         0.0,  0.00!  !END!
! X =     397.170,     5312.652,         0.0,  0.00!  !END!
! X =     397.220,     5312.652,         0.0,  0.00!  !END!
! X =     397.270,     5312.652,         0.0,  0.00!  !END!
! X =     397.320,     5312.652,         0.0,  0.00!  !END!
! X =     397.370,     5312.652,         0.0,  0.00!  !END!
! X =     396.020,     5312.702,         0.0,  0.00!  !END!
! X =     396.070,     5312.702,         0.0,  0.00!  !END!
! X =     396.120,     5312.702,         0.0,  0.00!  !END!
! X =     396.170,     5312.702,         0.0,  0.00!  !END!
! X =     396.220,     5312.702,         0.0,  0.00!  !END!
! X =     396.270,     5312.702,         0.0,  0.00!  !END!
! X =     396.320,     5312.702,         0.0,  0.00!  !END!
! X =     396.370,     5312.702,         0.0,  0.00!  !END!
! X =     396.420,     5312.702,         0.0,  0.00!  !END!
! X =     396.470,     5312.702,         0.0,  0.00!  !END!
! X =     396.520,     5312.702,         0.0,  0.00!  !END!
! X =     396.570,     5312.702,         0.0,  0.00!  !END!
! X =     396.620,     5312.702,         0.0,  0.00!  !END!
! X =     396.670,     5312.702,         0.0,  0.00!  !END!
! X =     396.720,     5312.702,         0.0,  0.00!  !END!
! X =     396.770,     5312.702,         0.0,  0.00!  !END!
! X =     396.820,     5312.702,         0.0,  0.00!  !END!
! X =     396.870,     5312.702,         0.0,  0.00!  !END!
! X =     396.920,     5312.702,         0.0,  0.00!  !END!
! X =     396.970,     5312.702,         0.0,  0.00!  !END!
! X =     397.020,     5312.702,         0.0,  0.00!  !END!
! X =     397.070,     5312.702,         0.0,  0.00!  !END!
! X =     397.120,     5312.702,         0.0,  0.00!  !END!
! X =     397.170,     5312.702,         0.0,  0.00!  !END!
! X =     397.220,     5312.702,         0.0,  0.00!  !END!
! X =     397.270,     5312.702,         0.0,  0.00!  !END!
! X =     397.320,     5312.702,         0.0,  0.00!  !END!
! X =     397.370,     5312.702,         0.0,  0.00!  !END!
! X =     396.020,     5312.752,         0.0,  0.00!  !END!
! X =     396.070,     5312.752,         0.0,  0.00!  !END!
! X =     396.120,     5312.752,         0.0,  0.00!  !END!
! X =     396.170,     5312.752,         0.0,  0.00!  !END!
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! X =     396.220,     5312.752,         0.0,  0.00!  !END!
! X =     396.270,     5312.752,         0.0,  0.00!  !END!
! X =     396.320,     5312.752,         0.0,  0.00!  !END!
! X =     396.370,     5312.752,         0.0,  0.00!  !END!
! X =     396.420,     5312.752,         0.0,  0.00!  !END!
! X =     396.470,     5312.752,         0.0,  0.00!  !END!
! X =     396.520,     5312.752,         0.0,  0.00!  !END!
! X =     396.570,     5312.752,         0.0,  0.00!  !END!
! X =     396.620,     5312.752,         0.0,  0.00!  !END!
! X =     396.670,     5312.752,         0.0,  0.00!  !END!
! X =     396.720,     5312.752,         0.0,  0.00!  !END!
! X =     396.770,     5312.752,         0.0,  0.00!  !END!
! X =     396.820,     5312.752,         0.0,  0.00!  !END!
! X =     396.870,     5312.752,         0.0,  0.00!  !END!
! X =     396.920,     5312.752,         0.0,  0.00!  !END!
! X =     396.970,     5312.752,         0.0,  0.00!  !END!
! X =     397.020,     5312.752,         0.0,  0.00!  !END!
! X =     397.070,     5312.752,         0.0,  0.00!  !END!
! X =     397.120,     5312.752,         0.0,  0.00!  !END!
! X =     397.170,     5312.752,         0.0,  0.00!  !END!
! X =     397.220,     5312.752,         0.0,  0.00!  !END!
! X =     397.270,     5312.752,         0.0,  0.00!  !END!
! X =     397.320,     5312.752,         0.0,  0.00!  !END!
! X =     397.370,     5312.752,         0.0,  0.00!  !END!
! X =     396.020,     5312.802,         0.0,  0.00!  !END!
! X =     396.070,     5312.802,         0.0,  0.00!  !END!
! X =     396.120,     5312.802,         0.0,  0.00!  !END!
! X =     396.170,     5312.802,         0.0,  0.00!  !END!
! X =     396.220,     5312.802,         0.0,  0.00!  !END!
! X =     396.270,     5312.802,         0.0,  0.00!  !END!
! X =     396.320,     5312.802,         0.0,  0.00!  !END!
! X =     396.370,     5312.802,         0.0,  0.00!  !END!
! X =     396.420,     5312.802,         0.0,  0.00!  !END!
! X =     396.470,     5312.802,         0.0,  0.00!  !END!
! X =     396.520,     5312.802,         0.0,  0.00!  !END!
! X =     396.570,     5312.802,         0.0,  0.00!  !END!
! X =     396.620,     5312.802,         0.0,  0.00!  !END!
! X =     396.670,     5312.802,         0.0,  0.00!  !END!
! X =     396.720,     5312.802,         0.0,  0.00!  !END!
! X =     396.770,     5312.802,         0.0,  0.00!  !END!
! X =     396.820,     5312.802,         0.0,  0.00!  !END!
! X =     396.870,     5312.802,         0.0,  0.00!  !END!
! X =     396.920,     5312.802,         0.0,  0.00!  !END!
! X =     396.970,     5312.802,         0.0,  0.00!  !END!
! X =     397.020,     5312.802,         0.0,  0.00!  !END!
! X =     397.070,     5312.802,         0.0,  0.00!  !END!
! X =     397.120,     5312.802,         0.0,  0.00!  !END!
! X =     397.170,     5312.802,         0.0,  0.00!  !END!
! X =     397.220,     5312.802,         0.0,  0.00!  !END!
! X =     397.270,     5312.802,         0.0,  0.00!  !END!
! X =     397.320,     5312.802,         0.0,  0.00!  !END!
! X =     397.370,     5312.802,         0.0,  0.00!  !END!
! X =     396.020,     5312.852,         0.0,  0.00!  !END!
! X =     396.070,     5312.852,         0.0,  0.00!  !END!
! X =     396.120,     5312.852,         0.0,  0.00!  !END!
! X =     396.170,     5312.852,         0.0,  0.00!  !END!
! X =     396.220,     5312.852,         0.0,  0.00!  !END!
! X =     396.270,     5312.852,         0.0,  0.00!  !END!
! X =     396.320,     5312.852,         0.0,  0.00!  !END!
! X =     396.370,     5312.852,         0.0,  0.00!  !END!
! X =     396.420,     5312.852,         0.0,  0.00!  !END!
! X =     396.470,     5312.852,         0.0,  0.00!  !END!
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! X =     396.520,     5312.852,         0.0,  0.00!  !END!
! X =     396.570,     5312.852,         0.0,  0.00!  !END!
! X =     396.620,     5312.852,         0.0,  0.00!  !END!
! X =     396.670,     5312.852,         0.0,  0.00!  !END!
! X =     396.820,     5312.852,         0.0,  0.00!  !END!
! X =     396.870,     5312.852,         0.0,  0.00!  !END!
! X =     396.920,     5312.852,         0.0,  0.00!  !END!
! X =     396.970,     5312.852,         0.0,  0.00!  !END!
! X =     397.020,     5312.852,         0.0,  0.00!  !END!
! X =     397.070,     5312.852,         0.0,  0.00!  !END!
! X =     397.120,     5312.852,         0.0,  0.00!  !END!
! X =     397.170,     5312.852,         0.0,  0.00!  !END!
! X =     397.220,     5312.852,         0.0,  0.00!  !END!
! X =     397.270,     5312.852,         0.0,  0.00!  !END!
! X =     397.320,     5312.852,         0.0,  0.00!  !END!
! X =     397.370,     5312.852,         0.0,  0.00!  !END!
! X =     396.020,     5312.902,         0.0,  0.00!  !END!
! X =     396.070,     5312.902,         0.0,  0.00!  !END!
! X =     396.120,     5312.902,         0.0,  0.00!  !END!
! X =     396.170,     5312.902,         0.0,  0.00!  !END!
! X =     396.220,     5312.902,         0.0,  0.00!  !END!
! X =     396.270,     5312.902,         0.0,  0.00!  !END!
! X =     396.320,     5312.902,         0.0,  0.00!  !END!
! X =     396.370,     5312.902,         0.0,  0.00!  !END!
! X =     396.420,     5312.902,         0.0,  0.00!  !END!
! X =     396.470,     5312.902,         0.0,  0.00!  !END!
! X =     396.520,     5312.902,         0.0,  0.00!  !END!
! X =     396.570,     5312.902,         0.0,  0.00!  !END!
! X =     396.620,     5312.902,         0.0,  0.00!  !END!
! X =     396.670,     5312.902,         0.0,  0.00!  !END!
! X =     396.720,     5312.902,         0.0,  0.00!  !END!
! X =     396.770,     5312.902,         0.0,  0.00!  !END!
! X =     396.820,     5312.902,         0.0,  0.00!  !END!
! X =     396.870,     5312.902,         0.0,  0.00!  !END!
! X =     396.920,     5312.902,         0.0,  0.00!  !END!
! X =     396.970,     5312.902,         0.0,  0.00!  !END!
! X =     397.020,     5312.902,         0.0,  0.00!  !END!
! X =     397.070,     5312.902,         0.0,  0.00!  !END!
! X =     397.120,     5312.902,         0.0,  0.00!  !END!
! X =     397.170,     5312.902,         0.0,  0.00!  !END!
! X =     397.220,     5312.902,         0.0,  0.00!  !END!
! X =     397.270,     5312.902,         0.0,  0.00!  !END!
! X =     397.320,     5312.902,         0.0,  0.00!  !END!
! X =     397.370,     5312.902,         0.0,  0.00!  !END!
! X =     396.020,     5312.952,         0.0,  0.00!  !END!
! X =     396.070,     5312.952,         0.0,  0.00!  !END!
! X =     396.120,     5312.952,         0.0,  0.00!  !END!
! X =     396.170,     5312.952,         0.0,  0.00!  !END!
! X =     396.220,     5312.952,         0.0,  0.00!  !END!
! X =     396.270,     5312.952,         0.0,  0.00!  !END!
! X =     396.320,     5312.952,         0.0,  0.00!  !END!
! X =     396.370,     5312.952,         0.0,  0.00!  !END!
! X =     396.420,     5312.952,         0.0,  0.00!  !END!
! X =     396.470,     5312.952,         0.0,  0.00!  !END!
! X =     396.520,     5312.952,         0.0,  0.00!  !END!
! X =     396.570,     5312.952,         0.0,  0.00!  !END!
! X =     396.620,     5312.952,         0.0,  0.00!  !END!
! X =     396.670,     5312.952,         0.0,  0.00!  !END!
! X =     396.720,     5312.952,         0.0,  0.00!  !END!
! X =     396.770,     5312.952,         0.0,  0.00!  !END!
! X =     396.820,     5312.952,         0.0,  0.00!  !END!
! X =     396.870,     5312.952,         0.0,  0.00!  !END!
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! X =     396.920,     5312.952,         0.0,  0.00!  !END!
! X =     396.970,     5312.952,         0.0,  0.00!  !END!
! X =     397.020,     5312.952,         0.0,  0.00!  !END!
! X =     397.070,     5312.952,         0.0,  0.00!  !END!
! X =     397.120,     5312.952,         0.0,  0.00!  !END!
! X =     397.170,     5312.952,         0.0,  0.00!  !END!
! X =     397.220,     5312.952,         0.0,  0.00!  !END!
! X =     397.270,     5312.952,         0.0,  0.00!  !END!
! X =     397.320,     5312.952,         0.0,  0.00!  !END!
! X =     397.370,     5312.952,         0.0,  0.00!  !END!
! X =     396.020,     5313.002,         0.0,  0.00!  !END!
! X =     396.070,     5313.002,         0.0,  0.00!  !END!
! X =     396.120,     5313.002,         0.0,  0.00!  !END!
! X =     396.170,     5313.002,         0.0,  0.00!  !END!
! X =     396.220,     5313.002,         0.0,  0.00!  !END!
! X =     396.270,     5313.002,         0.0,  0.00!  !END!
! X =     396.320,     5313.002,         0.0,  0.00!  !END!
! X =     396.370,     5313.002,         0.0,  0.00!  !END!
! X =     396.420,     5313.002,         0.0,  0.00!  !END!
! X =     396.470,     5313.002,         0.0,  0.00!  !END!
! X =     396.520,     5313.002,         0.0,  0.00!  !END!
! X =     396.570,     5313.002,         0.0,  0.00!  !END!
! X =     396.620,     5313.002,         0.0,  0.00!  !END!
! X =     396.670,     5313.002,         0.0,  0.00!  !END!
! X =     396.720,     5313.002,         0.0,  0.00!  !END!
! X =     396.770,     5313.002,         0.0,  0.00!  !END!
! X =     396.820,     5313.002,         0.0,  0.00!  !END!
! X =     396.870,     5313.002,         0.0,  0.00!  !END!
! X =     396.920,     5313.002,         0.0,  0.00!  !END!
! X =     396.970,     5313.002,         0.0,  0.00!  !END!
! X =     397.020,     5313.002,         0.0,  0.00!  !END!
! X =     397.070,     5313.002,         0.0,  0.00!  !END!
! X =     397.120,     5313.002,         0.0,  0.00!  !END!
! X =     397.170,     5313.002,         0.0,  0.00!  !END!
! X =     397.220,     5313.002,         0.0,  0.00!  !END!
! X =     397.270,     5313.002,         0.0,  0.00!  !END!
! X =     397.320,     5313.002,         0.0,  0.00!  !END!
! X =     397.370,     5313.002,         0.0,  0.00!  !END!
! X =     396.020,     5313.052,         0.0,  0.00!  !END!
! X =     396.070,     5313.052,         0.0,  0.00!  !END!
! X =     396.120,     5313.052,         0.0,  0.00!  !END!
! X =     396.170,     5313.052,         0.0,  0.00!  !END!
! X =     396.220,     5313.052,         0.0,  0.00!  !END!
! X =     396.270,     5313.052,         0.0,  0.00!  !END!
! X =     396.320,     5313.052,         0.0,  0.00!  !END!
! X =     396.370,     5313.052,         0.0,  0.00!  !END!
! X =     396.420,     5313.052,         0.0,  0.00!  !END!
! X =     396.470,     5313.052,         0.0,  0.00!  !END!
! X =     396.520,     5313.052,         0.0,  0.00!  !END!
! X =     396.570,     5313.052,         0.0,  0.00!  !END!
! X =     396.620,     5313.052,         0.0,  0.00!  !END!
! X =     396.670,     5313.052,         0.0,  0.00!  !END!
! X =     396.720,     5313.052,         0.0,  0.00!  !END!
! X =     396.770,     5313.052,         0.0,  0.00!  !END!
! X =     396.820,     5313.052,         0.0,  0.00!  !END!
! X =     396.870,     5313.052,         0.0,  0.00!  !END!
! X =     396.920,     5313.052,         0.0,  0.00!  !END!
! X =     396.970,     5313.052,         0.0,  0.00!  !END!
! X =     397.020,     5313.052,         0.0,  0.00!  !END!
! X =     397.070,     5313.052,         0.0,  0.00!  !END!
! X =     397.120,     5313.052,         0.0,  0.00!  !END!
! X =     397.170,     5313.052,         0.0,  0.00!  !END!
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! X =     397.220,     5313.052,         0.0,  0.00!  !END!
! X =     397.270,     5313.052,         0.0,  0.00!  !END!
! X =     397.320,     5313.052,         0.0,  0.00!  !END!
! X =     397.370,     5313.052,         0.0,  0.00!  !END!
! X =     396.020,     5313.102,         0.0,  0.00!  !END!
! X =     396.070,     5313.102,         0.0,  0.00!  !END!
! X =     396.120,     5313.102,         0.0,  0.00!  !END!
! X =     396.170,     5313.102,         0.0,  0.00!  !END!
! X =     396.220,     5313.102,         0.0,  0.00!  !END!
! X =     396.270,     5313.102,         0.0,  0.00!  !END!
! X =     396.320,     5313.102,         0.0,  0.00!  !END!
! X =     396.370,     5313.102,         0.0,  0.00!  !END!
! X =     396.420,     5313.102,         0.0,  0.00!  !END!
! X =     396.470,     5313.102,         0.0,  0.00!  !END!
! X =     396.520,     5313.102,         0.0,  0.00!  !END!
! X =     396.570,     5313.102,         0.0,  0.00!  !END!
! X =     396.620,     5313.102,         0.0,  0.00!  !END!
! X =     396.670,     5313.102,         0.0,  0.00!  !END!
! X =     396.720,     5313.102,         0.0,  0.00!  !END!
! X =     396.770,     5313.102,         0.0,  0.00!  !END!
! X =     396.820,     5313.102,         0.0,  0.00!  !END!
! X =     396.870,     5313.102,         0.0,  0.00!  !END!
! X =     396.920,     5313.102,         0.0,  0.00!  !END!
! X =     396.970,     5313.102,         0.0,  0.00!  !END!
! X =     397.020,     5313.102,         0.0,  0.00!  !END!
! X =     397.070,     5313.102,         0.0,  0.00!  !END!
! X =     397.120,     5313.102,         0.0,  0.00!  !END!
! X =     397.170,     5313.102,         0.0,  0.00!  !END!
! X =     397.220,     5313.102,         0.0,  0.00!  !END!
! X =     397.270,     5313.102,         0.0,  0.00!  !END!
! X =     397.320,     5313.102,         0.0,  0.00!  !END!
! X =     397.370,     5313.102,         0.0,  0.00!  !END!
! X =     396.020,     5313.152,         0.0,  0.00!  !END!
! X =     396.070,     5313.152,         0.0,  0.00!  !END!
! X =     396.120,     5313.152,         0.0,  0.00!  !END!
! X =     396.170,     5313.152,         0.0,  0.00!  !END!
! X =     396.220,     5313.152,         0.0,  0.00!  !END!
! X =     396.270,     5313.152,         0.0,  0.00!  !END!
! X =     396.320,     5313.152,         0.0,  0.00!  !END!
! X =     396.370,     5313.152,         0.0,  0.00!  !END!
! X =     396.420,     5313.152,         0.0,  0.00!  !END!
! X =     396.470,     5313.152,         0.0,  0.00!  !END!
! X =     396.520,     5313.152,         0.0,  0.00!  !END!
! X =     396.670,     5313.152,         0.0,  0.00!  !END!
! X =     396.720,     5313.152,         0.0,  0.00!  !END!
! X =     396.770,     5313.152,         0.0,  0.00!  !END!
! X =     396.820,     5313.152,         0.0,  0.00!  !END!
! X =     396.870,     5313.152,         0.0,  0.00!  !END!
! X =     396.920,     5313.152,         0.0,  0.00!  !END!
! X =     396.970,     5313.152,         0.0,  0.00!  !END!
! X =     397.020,     5313.152,         0.0,  0.00!  !END!
! X =     397.070,     5313.152,         0.0,  0.00!  !END!
! X =     397.120,     5313.152,         0.0,  0.00!  !END!
! X =     397.170,     5313.152,         0.0,  0.00!  !END!
! X =     397.220,     5313.152,         0.0,  0.00!  !END!
! X =     397.270,     5313.152,         0.0,  0.00!  !END!
! X =     397.320,     5313.152,         0.0,  0.00!  !END!
! X =     397.370,     5313.152,         0.0,  0.00!  !END!
! X =     396.020,     5313.202,         0.0,  0.00!  !END!
! X =     396.070,     5313.202,         0.0,  0.00!  !END!
! X =     396.120,     5313.202,         0.0,  0.00!  !END!
! X =     396.470,     5313.202,         0.0,  0.00!  !END!
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! X =     396.520,     5313.202,         0.0,  0.00!  !END!
! X =     396.920,     5313.202,         0.0,  0.00!  !END!
! X =     396.970,     5313.202,         0.0,  0.00!  !END!
! X =     397.020,     5313.202,         0.0,  0.00!  !END!
! X =     397.070,     5313.202,         0.0,  0.00!  !END!
! X =     397.120,     5313.202,         0.0,  0.00!  !END!
! X =     397.170,     5313.202,         0.0,  0.00!  !END!
! X =     397.220,     5313.202,         0.0,  0.00!  !END!
! X =     397.270,     5313.202,         0.0,  0.00!  !END!
! X =     397.320,     5313.202,         0.0,  0.00!  !END!
! X =     397.370,     5313.202,         0.0,  0.00!  !END!
! X =     396.020,     5313.252,         0.0,  0.00!  !END!
! X =     396.070,     5313.252,         0.0,  0.00!  !END!
! X =     396.120,     5313.252,         0.0,  0.00!  !END!
! X =     396.170,     5313.252,         0.0,  0.00!  !END!
! X =     396.220,     5313.252,         0.0,  0.00!  !END!
! X =     396.270,     5313.252,         0.0,  0.00!  !END!
! X =     396.320,     5313.252,         0.0,  0.00!  !END!
! X =     396.370,     5313.252,         0.0,  0.00!  !END!
! X =     396.420,     5313.252,         0.0,  0.00!  !END!
! X =     396.470,     5313.252,         0.0,  0.00!  !END!
! X =     396.520,     5313.252,         0.0,  0.00!  !END!
! X =     396.570,     5313.252,         0.0,  0.00!  !END!
! X =     396.620,     5313.252,         0.0,  0.00!  !END!
! X =     396.670,     5313.252,         0.0,  0.00!  !END!
! X =     396.720,     5313.252,         0.0,  0.00!  !END!
! X =     396.770,     5313.252,         0.0,  0.00!  !END!
! X =     396.820,     5313.252,         0.0,  0.00!  !END!
! X =     396.870,     5313.252,         0.0,  0.00!  !END!
! X =     396.920,     5313.252,         0.0,  0.00!  !END!
! X =     396.970,     5313.252,         0.0,  0.00!  !END!
! X =     397.020,     5313.252,         0.0,  0.00!  !END!
! X =     397.070,     5313.252,         0.0,  0.00!  !END!
! X =     397.120,     5313.252,         0.0,  0.00!  !END!
! X =     397.170,     5313.252,         0.0,  0.00!  !END!
! X =     397.220,     5313.252,         0.0,  0.00!  !END!
! X =     397.270,     5313.252,         0.0,  0.00!  !END!
! X =     397.320,     5313.252,         0.0,  0.00!  !END!
! X =     397.370,     5313.252,         0.0,  0.00!  !END!
! X =     396.020,     5313.302,         0.0,  0.00!  !END!
! X =     396.070,     5313.302,         0.0,  0.00!  !END!
! X =     396.120,     5313.302,         0.0,  0.00!  !END!
! X =     396.170,     5313.302,         0.0,  0.00!  !END!
! X =     396.220,     5313.302,         0.0,  0.00!  !END!
! X =     396.270,     5313.302,         0.0,  0.00!  !END!
! X =     396.320,     5313.302,         0.0,  0.00!  !END!
! X =     396.370,     5313.302,         0.0,  0.00!  !END!
! X =     396.420,     5313.302,         0.0,  0.00!  !END!
! X =     396.470,     5313.302,         0.0,  0.00!  !END!
! X =     396.520,     5313.302,         0.0,  0.00!  !END!
! X =     396.570,     5313.302,         0.0,  0.00!  !END!
! X =     396.620,     5313.302,         0.0,  0.00!  !END!
! X =     396.670,     5313.302,         0.0,  0.00!  !END!
! X =     396.720,     5313.302,         0.0,  0.00!  !END!
! X =     396.770,     5313.302,         0.0,  0.00!  !END!
! X =     396.820,     5313.302,         0.0,  0.00!  !END!
! X =     396.870,     5313.302,         0.0,  0.00!  !END!
! X =     396.920,     5313.302,         0.0,  0.00!  !END!
! X =     396.970,     5313.302,         0.0,  0.00!  !END!
! X =     397.020,     5313.302,         0.0,  0.00!  !END!
! X =     397.070,     5313.302,         0.0,  0.00!  !END!
! X =     397.120,     5313.302,         0.0,  0.00!  !END!
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! X =     397.170,     5313.302,         0.0,  0.00!  !END!
! X =     397.220,     5313.302,         0.0,  0.00!  !END!
! X =     397.270,     5313.302,         0.0,  0.00!  !END!
! X =     397.320,     5313.302,         0.0,  0.00!  !END!
! X =     397.370,     5313.302,         0.0,  0.00!  !END!
! X =     396.020,     5313.352,         0.0,  0.00!  !END!
! X =     396.070,     5313.352,         0.0,  0.00!  !END!
! X =     396.120,     5313.352,         0.0,  0.00!  !END!
! X =     396.170,     5313.352,         0.0,  0.00!  !END!
! X =     396.220,     5313.352,         0.0,  0.00!  !END!
! X =     396.270,     5313.352,         0.0,  0.00!  !END!
! X =     396.320,     5313.352,         0.0,  0.00!  !END!
! X =     396.370,     5313.352,         0.0,  0.00!  !END!
! X =     396.420,     5313.352,         0.0,  0.00!  !END!
! X =     396.470,     5313.352,         0.0,  0.00!  !END!
! X =     396.520,     5313.352,         0.0,  0.00!  !END!
! X =     396.570,     5313.352,         0.0,  0.00!  !END!
! X =     396.620,     5313.352,         0.0,  0.00!  !END!
! X =     396.670,     5313.352,         0.0,  0.00!  !END!
! X =     396.720,     5313.352,         0.0,  0.00!  !END!
! X =     396.770,     5313.352,         0.0,  0.00!  !END!
! X =     396.820,     5313.352,         0.0,  0.00!  !END!
! X =     396.870,     5313.352,         0.0,  0.00!  !END!
! X =     396.920,     5313.352,         0.0,  0.00!  !END!
! X =     396.970,     5313.352,         0.0,  0.00!  !END!
! X =     397.020,     5313.352,         0.0,  0.00!  !END!
! X =     397.070,     5313.352,         0.0,  0.00!  !END!
! X =     397.120,     5313.352,         0.0,  0.00!  !END!
! X =     397.170,     5313.352,         0.0,  0.00!  !END!
! X =     397.220,     5313.352,         0.0,  0.00!  !END!
! X =     397.270,     5313.352,         0.0,  0.00!  !END!
! X =     397.320,     5313.352,         0.0,  0.00!  !END!
! X =     397.370,     5313.352,         0.0,  0.00!  !END!
! X =     396.020,     5313.402,         0.0,  0.00!  !END!
! X =     396.070,     5313.402,         0.0,  0.00!  !END!
! X =     396.120,     5313.402,         0.0,  0.00!  !END!
! X =     396.170,     5313.402,         0.0,  0.00!  !END!
! X =     396.220,     5313.402,         0.0,  0.00!  !END!
! X =     396.270,     5313.402,         0.0,  0.00!  !END!
! X =     396.320,     5313.402,         0.0,  0.00!  !END!
! X =     396.370,     5313.402,         0.0,  0.00!  !END!
! X =     396.420,     5313.402,         0.0,  0.00!  !END!
! X =     396.470,     5313.402,         0.0,  0.00!  !END!
! X =     396.520,     5313.402,         0.0,  0.00!  !END!
! X =     396.570,     5313.402,         0.0,  0.00!  !END!
! X =     396.620,     5313.402,         0.0,  0.00!  !END!
! X =     396.670,     5313.402,         0.0,  0.00!  !END!
! X =     396.720,     5313.402,         0.0,  0.00!  !END!
! X =     396.770,     5313.402,         0.0,  0.00!  !END!
! X =     396.820,     5313.402,         0.0,  0.00!  !END!
! X =     396.870,     5313.402,         0.0,  0.00!  !END!
! X =     396.920,     5313.402,         0.0,  0.00!  !END!
! X =     396.970,     5313.402,         0.0,  0.00!  !END!
! X =     397.020,     5313.402,         0.0,  0.00!  !END!
! X =     397.070,     5313.402,         0.0,  0.00!  !END!
! X =     397.120,     5313.402,         0.0,  0.00!  !END!
! X =     397.170,     5313.402,         0.0,  0.00!  !END!
! X =     397.220,     5313.402,         0.0,  0.00!  !END!
! X =     397.270,     5313.402,         0.0,  0.00!  !END!
! X =     397.320,     5313.402,         0.0,  0.00!  !END!
! X =     397.370,     5313.402,         0.0,  0.00!  !END!
! X =     396.020,     5313.452,         0.0,  0.00!  !END!
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! X =     396.070,     5313.452,         0.0,  0.00!  !END!
! X =     396.120,     5313.452,         0.0,  0.00!  !END!
! X =     396.170,     5313.452,         0.0,  0.00!  !END!
! X =     396.220,     5313.452,         0.0,  0.00!  !END!
! X =     396.270,     5313.452,         0.0,  0.00!  !END!
! X =     396.320,     5313.452,         0.0,  0.00!  !END!
! X =     396.370,     5313.452,         0.0,  0.00!  !END!
! X =     396.420,     5313.452,         0.0,  0.00!  !END!
! X =     396.470,     5313.452,         0.0,  0.00!  !END!
! X =     396.520,     5313.452,         0.0,  0.00!  !END!
! X =     396.570,     5313.452,         0.0,  0.00!  !END!
! X =     396.620,     5313.452,         0.0,  0.00!  !END!
! X =     396.670,     5313.452,         0.0,  0.00!  !END!
! X =     396.720,     5313.452,         0.0,  0.00!  !END!
! X =     396.770,     5313.452,         0.0,  0.00!  !END!
! X =     396.820,     5313.452,         0.0,  0.00!  !END!
! X =     396.870,     5313.452,         0.0,  0.00!  !END!
! X =     396.920,     5313.452,         0.0,  0.00!  !END!
! X =     396.970,     5313.452,         0.0,  0.00!  !END!
! X =     397.020,     5313.452,         0.0,  0.00!  !END!
! X =     397.070,     5313.452,         0.0,  0.00!  !END!
! X =     397.120,     5313.452,         0.0,  0.00!  !END!
! X =     397.170,     5313.452,         0.0,  0.00!  !END!
! X =     397.220,     5313.452,         0.0,  0.00!  !END!
! X =     397.270,     5313.452,         0.0,  0.00!  !END!
! X =     397.320,     5313.452,         0.0,  0.00!  !END!
! X =     397.370,     5313.452,         0.0,  0.00!  !END!
! X =     396.020,     5313.502,         0.0,  0.00!  !END!
! X =     396.070,     5313.502,         0.0,  0.00!  !END!
! X =     396.120,     5313.502,         0.0,  0.00!  !END!
! X =     396.170,     5313.502,         0.0,  0.00!  !END!
! X =     396.220,     5313.502,         0.0,  0.00!  !END!
! X =     396.270,     5313.502,         0.0,  0.00!  !END!
! X =     396.320,     5313.502,         0.0,  0.00!  !END!
! X =     396.370,     5313.502,         0.0,  0.00!  !END!
! X =     396.420,     5313.502,         0.0,  0.00!  !END!
! X =     396.470,     5313.502,         0.0,  0.00!  !END!
! X =     396.520,     5313.502,         0.0,  0.00!  !END!
! X =     396.570,     5313.502,         0.0,  0.00!  !END!
! X =     396.620,     5313.502,         0.0,  0.00!  !END!
! X =     396.670,     5313.502,         0.0,  0.00!  !END!
! X =     396.720,     5313.502,         0.0,  0.00!  !END!
! X =     396.770,     5313.502,         0.0,  0.00!  !END!
! X =     396.820,     5313.502,         0.0,  0.00!  !END!
! X =     396.870,     5313.502,         0.0,  0.00!  !END!
! X =     396.920,     5313.502,         0.0,  0.00!  !END!
! X =     396.970,     5313.502,         0.0,  0.00!  !END!
! X =     397.020,     5313.502,         0.0,  0.00!  !END!
! X =     397.070,     5313.502,         0.0,  0.00!  !END!
! X =     397.120,     5313.502,         0.0,  0.00!  !END!
! X =     397.170,     5313.502,         0.0,  0.00!  !END!
! X =     397.220,     5313.502,         0.0,  0.00!  !END!
! X =     397.270,     5313.502,         0.0,  0.00!  !END!
! X =     397.320,     5313.502,         0.0,  0.00!  !END!
! X =     397.370,     5313.502,         0.0,  0.00!  !END!
! X =     396.020,     5313.552,         0.0,  0.00!  !END!
! X =     396.070,     5313.552,         0.0,  0.00!  !END!
! X =     396.120,     5313.552,         0.0,  0.00!  !END!
! X =     396.170,     5313.552,         0.0,  0.00!  !END!
! X =     396.220,     5313.552,         0.0,  0.00!  !END!
! X =     396.270,     5313.552,         0.0,  0.00!  !END!
! X =     396.320,     5313.552,         0.0,  0.00!  !END!
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! X =     396.370,     5313.552,         0.0,  0.00!  !END!
! X =     396.420,     5313.552,         0.0,  0.00!  !END!
! X =     396.470,     5313.552,         0.0,  0.00!  !END!
! X =     396.520,     5313.552,         0.0,  0.00!  !END!
! X =     396.570,     5313.552,         0.0,  0.00!  !END!
! X =     396.620,     5313.552,         0.0,  0.00!  !END!
! X =     396.670,     5313.552,         0.0,  0.00!  !END!
! X =     396.720,     5313.552,         0.0,  0.00!  !END!
! X =     396.770,     5313.552,         0.0,  0.00!  !END!
! X =     396.820,     5313.552,         0.0,  0.00!  !END!
! X =     396.870,     5313.552,         0.0,  0.00!  !END!
! X =     396.920,     5313.552,         0.0,  0.00!  !END!
! X =     396.970,     5313.552,         0.0,  0.00!  !END!
! X =     397.020,     5313.552,         0.0,  0.00!  !END!
! X =     397.070,     5313.552,         0.0,  0.00!  !END!
! X =     397.120,     5313.552,         0.0,  0.00!  !END!
! X =     397.170,     5313.552,         0.0,  0.00!  !END!
! X =     397.220,     5313.552,         0.0,  0.00!  !END!
! X =     397.270,     5313.552,         0.0,  0.00!  !END!
! X =     397.320,     5313.552,         0.0,  0.00!  !END!
! X =     397.370,     5313.552,         0.0,  0.00!  !END!
! X =     396.020,     5313.602,         0.0,  0.00!  !END!
! X =     396.070,     5313.602,         0.0,  0.00!  !END!
! X =     396.120,     5313.602,         0.0,  0.00!  !END!
! X =     396.170,     5313.602,         0.0,  0.00!  !END!
! X =     396.220,     5313.602,         0.0,  0.00!  !END!
! X =     396.270,     5313.602,         0.0,  0.00!  !END!
! X =     396.320,     5313.602,         0.0,  0.00!  !END!
! X =     396.370,     5313.602,         0.0,  0.00!  !END!
! X =     396.420,     5313.602,         0.0,  0.00!  !END!
! X =     396.470,     5313.602,         0.0,  0.00!  !END!
! X =     396.520,     5313.602,         0.0,  0.00!  !END!
! X =     396.570,     5313.602,         0.0,  0.00!  !END!
! X =     396.620,     5313.602,         0.0,  0.00!  !END!
! X =     396.670,     5313.602,         0.0,  0.00!  !END!
! X =     396.720,     5313.602,         0.0,  0.00!  !END!
! X =     396.770,     5313.602,         0.0,  0.00!  !END!
! X =     396.820,     5313.602,         0.0,  0.00!  !END!
! X =     396.870,     5313.602,         0.0,  0.00!  !END!
! X =     396.920,     5313.602,         0.0,  0.00!  !END!
! X =     396.970,     5313.602,         0.0,  0.00!  !END!
! X =     397.020,     5313.602,         0.0,  0.00!  !END!
! X =     397.070,     5313.602,         0.0,  0.00!  !END!
! X =     397.120,     5313.602,         0.0,  0.00!  !END!
! X =     397.170,     5313.602,         0.0,  0.00!  !END!
! X =     397.220,     5313.602,         0.0,  0.00!  !END!
! X =     397.270,     5313.602,         0.0,  0.00!  !END!
! X =     397.320,     5313.602,         0.0,  0.00!  !END!
! X =     397.370,     5313.602,         0.0,  0.00!  !END!
! X =     396.020,     5313.652,         0.0,  0.00!  !END!
! X =     396.070,     5313.652,         0.0,  0.00!  !END!
! X =     396.120,     5313.652,         0.0,  0.00!  !END!
! X =     396.170,     5313.652,         0.0,  0.00!  !END!
! X =     396.220,     5313.652,         0.0,  0.00!  !END!
! X =     396.270,     5313.652,         0.0,  0.00!  !END!
! X =     396.320,     5313.652,         0.0,  0.00!  !END!
! X =     396.370,     5313.652,         0.0,  0.00!  !END!
! X =     396.420,     5313.652,         0.0,  0.00!  !END!
! X =     396.470,     5313.652,         0.0,  0.00!  !END!
! X =     396.520,     5313.652,         0.0,  0.00!  !END!
! X =     396.570,     5313.652,         0.0,  0.00!  !END!
! X =     396.620,     5313.652,         0.0,  0.00!  !END!
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! X =     396.670,     5313.652,         0.0,  0.00!  !END!
! X =     396.720,     5313.652,         0.0,  0.00!  !END!
! X =     396.770,     5313.652,         0.0,  0.00!  !END!
! X =     396.820,     5313.652,         0.0,  0.00!  !END!
! X =     396.870,     5313.652,         0.0,  0.00!  !END!
! X =     396.920,     5313.652,         0.0,  0.00!  !END!
! X =     396.970,     5313.652,         0.0,  0.00!  !END!
! X =     397.020,     5313.652,         0.0,  0.00!  !END!
! X =     397.070,     5313.652,         0.0,  0.00!  !END!
! X =     397.120,     5313.652,         0.0,  0.00!  !END!
! X =     397.170,     5313.652,         0.0,  0.00!  !END!
! X =     397.220,     5313.652,         0.0,  0.00!  !END!
! X =     397.270,     5313.652,         0.0,  0.00!  !END!
! X =     397.320,     5313.652,         0.0,  0.00!  !END!
! X =     397.370,     5313.652,         0.0,  0.00!  !END!
! X =     396.020,     5313.702,         0.0,  0.00!  !END!
! X =     396.070,     5313.702,         0.0,  0.00!  !END!
! X =     396.120,     5313.702,         0.0,  0.00!  !END!
! X =     396.170,     5313.702,         0.0,  0.00!  !END!
! X =     396.220,     5313.702,         0.0,  0.00!  !END!
! X =     396.270,     5313.702,         0.0,  0.00!  !END!
! X =     396.320,     5313.702,         0.0,  0.00!  !END!
! X =     396.370,     5313.702,         0.0,  0.00!  !END!
! X =     396.420,     5313.702,         0.0,  0.00!  !END!
! X =     396.470,     5313.702,         0.0,  0.00!  !END!
! X =     396.520,     5313.702,         0.0,  0.00!  !END!
! X =     396.570,     5313.702,         0.0,  0.00!  !END!
! X =     396.620,     5313.702,         0.0,  0.00!  !END!
! X =     396.670,     5313.702,         0.0,  0.00!  !END!
! X =     396.720,     5313.702,         0.0,  0.00!  !END!
! X =     396.770,     5313.702,         0.0,  0.00!  !END!
! X =     396.820,     5313.702,         0.0,  0.00!  !END!
! X =     396.870,     5313.702,         0.0,  0.00!  !END!
! X =     396.920,     5313.702,         0.0,  0.00!  !END!
! X =     396.970,     5313.702,         0.0,  0.00!  !END!
! X =     397.020,     5313.702,         0.0,  0.00!  !END!
! X =     397.070,     5313.702,         0.0,  0.00!  !END!
! X =     397.120,     5313.702,         0.0,  0.00!  !END!
! X =     397.170,     5313.702,         0.0,  0.00!  !END!
! X =     397.220,     5313.702,         0.0,  0.00!  !END!
! X =     397.270,     5313.702,         0.0,  0.00!  !END!
! X =     397.320,     5313.702,         0.0,  0.00!  !END!
! X =     397.370,     5313.702,         0.0,  0.00!  !END!
! X =     396.020,     5313.752,         0.0,  0.00!  !END!
! X =     396.070,     5313.752,         0.0,  0.00!  !END!
! X =     396.120,     5313.752,         0.0,  0.00!  !END!
! X =     396.170,     5313.752,         0.0,  0.00!  !END!
! X =     396.220,     5313.752,         0.0,  0.00!  !END!
! X =     396.270,     5313.752,         0.0,  0.00!  !END!
! X =     396.320,     5313.752,         0.0,  0.00!  !END!
! X =     396.370,     5313.752,         0.0,  0.00!  !END!
! X =     396.420,     5313.752,         0.0,  0.00!  !END!
! X =     396.470,     5313.752,         0.0,  0.00!  !END!
! X =     396.520,     5313.752,         0.0,  0.00!  !END!
! X =     396.570,     5313.752,         0.0,  0.00!  !END!
! X =     396.620,     5313.752,         0.0,  0.00!  !END!
! X =     396.670,     5313.752,         0.0,  0.00!  !END!
! X =     396.720,     5313.752,         0.0,  0.00!  !END!
! X =     396.770,     5313.752,         0.0,  0.00!  !END!
! X =     396.820,     5313.752,         0.0,  0.00!  !END!
! X =     396.870,     5313.752,         0.0,  0.00!  !END!
! X =     396.920,     5313.752,         0.0,  0.00!  !END!
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! X =     396.970,     5313.752,         0.0,  0.00!  !END!
! X =     397.020,     5313.752,         0.0,  0.00!  !END!
! X =     397.070,     5313.752,         0.0,  0.00!  !END!
! X =     397.120,     5313.752,         0.0,  0.00!  !END!
! X =     397.170,     5313.752,         0.0,  0.00!  !END!
! X =     397.220,     5313.752,         0.0,  0.00!  !END!
! X =     397.270,     5313.752,         0.0,  0.00!  !END!
! X =     397.320,     5313.752,         0.0,  0.00!  !END!
! X =     397.370,     5313.752,         0.0,  0.00!  !END!
! X =     396.020,     5313.802,         0.0,  0.00!  !END!
! X =     396.070,     5313.802,         0.0,  0.00!  !END!
! X =     396.120,     5313.802,         0.0,  0.00!  !END!
! X =     396.170,     5313.802,         0.0,  0.00!  !END!
! X =     396.220,     5313.802,         0.0,  0.00!  !END!
! X =     396.270,     5313.802,         0.0,  0.00!  !END!
! X =     396.320,     5313.802,         0.0,  0.00!  !END!
! X =     396.370,     5313.802,         0.0,  0.00!  !END!
! X =     396.420,     5313.802,         0.0,  0.00!  !END!
! X =     396.470,     5313.802,         0.0,  0.00!  !END!
! X =     396.520,     5313.802,         0.0,  0.00!  !END!
! X =     396.570,     5313.802,         0.0,  0.00!  !END!
! X =     396.620,     5313.802,         0.0,  0.00!  !END!
! X =     396.670,     5313.802,         0.0,  0.00!  !END!
! X =     396.720,     5313.802,         0.0,  0.00!  !END!
! X =     396.770,     5313.802,         0.0,  0.00!  !END!
! X =     396.820,     5313.802,         0.0,  0.00!  !END!
! X =     396.870,     5313.802,         0.0,  0.00!  !END!
! X =     396.920,     5313.802,         0.0,  0.00!  !END!
! X =     396.970,     5313.802,         0.0,  0.00!  !END!
! X =     397.020,     5313.802,         0.0,  0.00!  !END!
! X =     397.070,     5313.802,         0.0,  0.00!  !END!
! X =     397.120,     5313.802,         0.0,  0.00!  !END!
! X =     397.170,     5313.802,         0.0,  0.00!  !END!
! X =     397.220,     5313.802,         0.0,  0.00!  !END!
! X =     397.270,     5313.802,         0.0,  0.00!  !END!
! X =     397.320,     5313.802,         0.0,  0.00!  !END!
! X =     397.370,     5313.802,         0.0,  0.00!  !END!
! X =     395.520,     5312.002,         0.0,  0.00!  !END!
! X =     395.620,     5312.002,         0.0,  0.00!  !END!
! X =     395.720,     5312.002,         0.0,  0.00!  !END!
! X =     395.820,     5312.002,         0.0,  0.00!  !END!
! X =     395.920,     5312.002,         0.0,  0.00!  !END!
! X =     396.020,     5312.002,         0.0,  0.00!  !END!
! X =     396.120,     5312.002,         0.0,  0.00!  !END!
! X =     396.220,     5312.002,         0.0,  0.00!  !END!
! X =     396.320,     5312.002,         0.0,  0.00!  !END!
! X =     396.420,     5312.002,         0.0,  0.00!  !END!
! X =     396.520,     5312.002,         0.0,  0.00!  !END!
! X =     396.620,     5312.002,         0.0,  0.00!  !END!
! X =     396.720,     5312.002,         0.0,  0.00!  !END!
! X =     396.820,     5312.002,         0.0,  0.00!  !END!
! X =     396.920,     5312.002,         0.0,  0.00!  !END!
! X =     397.020,     5312.002,         0.0,  0.00!  !END!
! X =     397.120,     5312.002,         0.0,  0.00!  !END!
! X =     397.220,     5312.002,         0.0,  0.00!  !END!
! X =     397.320,     5312.002,         0.0,  0.00!  !END!
! X =     397.420,     5312.002,         0.0,  0.00!  !END!
! X =     397.520,     5312.002,         0.0,  0.00!  !END!
! X =     397.620,     5312.002,         0.0,  0.00!  !END!
! X =     397.720,     5312.002,         0.0,  0.00!  !END!
! X =     397.820,     5312.002,         0.0,  0.00!  !END!
! X =     397.920,     5312.002,         0.0,  0.00!  !END!
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! X =     395.520,     5312.102,         0.0,  0.00!  !END!
! X =     395.620,     5312.102,         0.0,  0.00!  !END!
! X =     395.720,     5312.102,         0.0,  0.00!  !END!
! X =     395.820,     5312.102,         0.0,  0.00!  !END!
! X =     395.920,     5312.102,         0.0,  0.00!  !END!
! X =     396.020,     5312.102,         0.0,  0.00!  !END!
! X =     396.120,     5312.102,         0.0,  0.00!  !END!
! X =     396.220,     5312.102,         0.0,  0.00!  !END!
! X =     396.320,     5312.102,         0.0,  0.00!  !END!
! X =     396.420,     5312.102,         0.0,  0.00!  !END!
! X =     396.520,     5312.102,         0.0,  0.00!  !END!
! X =     396.620,     5312.102,         0.0,  0.00!  !END!
! X =     396.720,     5312.102,         0.0,  0.00!  !END!
! X =     396.820,     5312.102,         0.0,  0.00!  !END!
! X =     396.920,     5312.102,         0.0,  0.00!  !END!
! X =     397.020,     5312.102,         0.0,  0.00!  !END!
! X =     397.120,     5312.102,         0.0,  0.00!  !END!
! X =     397.220,     5312.102,         0.0,  0.00!  !END!
! X =     397.320,     5312.102,         0.0,  0.00!  !END!
! X =     397.420,     5312.102,         0.0,  0.00!  !END!
! X =     397.520,     5312.102,         0.0,  0.00!  !END!
! X =     397.620,     5312.102,         0.0,  0.00!  !END!
! X =     397.720,     5312.102,         0.0,  0.00!  !END!
! X =     397.820,     5312.102,         0.0,  0.00!  !END!
! X =     397.920,     5312.102,         0.0,  0.00!  !END!
! X =     395.520,     5312.202,         0.0,  0.00!  !END!
! X =     395.620,     5312.202,         0.0,  0.00!  !END!
! X =     395.720,     5312.202,         0.0,  0.00!  !END!
! X =     395.820,     5312.202,         0.0,  0.00!  !END!
! X =     395.920,     5312.202,         0.0,  0.00!  !END!
! X =     396.020,     5312.202,         0.0,  0.00!  !END!
! X =     396.120,     5312.202,         0.0,  0.00!  !END!
! X =     396.220,     5312.202,         0.0,  0.00!  !END!
! X =     396.320,     5312.202,         0.0,  0.00!  !END!
! X =     396.420,     5312.202,         0.0,  0.00!  !END!
! X =     396.520,     5312.202,         0.0,  0.00!  !END!
! X =     396.620,     5312.202,         0.0,  0.00!  !END!
! X =     396.720,     5312.202,         0.0,  0.00!  !END!
! X =     396.820,     5312.202,         0.0,  0.00!  !END!
! X =     396.920,     5312.202,         0.0,  0.00!  !END!
! X =     397.020,     5312.202,         0.0,  0.00!  !END!
! X =     397.120,     5312.202,         0.0,  0.00!  !END!
! X =     397.220,     5312.202,         0.0,  0.00!  !END!
! X =     397.320,     5312.202,         0.0,  0.00!  !END!
! X =     397.420,     5312.202,         0.0,  0.00!  !END!
! X =     397.520,     5312.202,         0.0,  0.00!  !END!
! X =     397.620,     5312.202,         0.0,  0.00!  !END!
! X =     397.720,     5312.202,         0.0,  0.00!  !END!
! X =     397.820,     5312.202,         0.0,  0.00!  !END!
! X =     397.920,     5312.202,         0.0,  0.00!  !END!
! X =     395.520,     5312.302,         0.0,  0.00!  !END!
! X =     395.620,     5312.302,         0.0,  0.00!  !END!
! X =     395.720,     5312.302,         0.0,  0.00!  !END!
! X =     395.820,     5312.302,         0.0,  0.00!  !END!
! X =     395.920,     5312.302,         0.0,  0.00!  !END!
! X =     396.020,     5312.302,         0.0,  0.00!  !END!
! X =     396.120,     5312.302,         0.0,  0.00!  !END!
! X =     396.220,     5312.302,         0.0,  0.00!  !END!
! X =     396.320,     5312.302,         0.0,  0.00!  !END!
! X =     396.420,     5312.302,         0.0,  0.00!  !END!
! X =     396.520,     5312.302,         0.0,  0.00!  !END!
! X =     396.620,     5312.302,         0.0,  0.00!  !END!
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! X =     396.720,     5312.302,         0.0,  0.00!  !END!
! X =     396.820,     5312.302,         0.0,  0.00!  !END!
! X =     396.920,     5312.302,         0.0,  0.00!  !END!
! X =     397.020,     5312.302,         0.0,  0.00!  !END!
! X =     397.120,     5312.302,         0.0,  0.00!  !END!
! X =     397.220,     5312.302,         0.0,  0.00!  !END!
! X =     397.320,     5312.302,         0.0,  0.00!  !END!
! X =     397.420,     5312.302,         0.0,  0.00!  !END!
! X =     397.520,     5312.302,         0.0,  0.00!  !END!
! X =     397.620,     5312.302,         0.0,  0.00!  !END!
! X =     397.720,     5312.302,         0.0,  0.00!  !END!
! X =     397.820,     5312.302,         0.0,  0.00!  !END!
! X =     397.920,     5312.302,         0.0,  0.00!  !END!
! X =     395.520,     5312.402,         0.0,  0.00!  !END!
! X =     395.620,     5312.402,         0.0,  0.00!  !END!
! X =     395.720,     5312.402,         0.0,  0.00!  !END!
! X =     395.820,     5312.402,         0.0,  0.00!  !END!
! X =     395.920,     5312.402,         0.0,  0.00!  !END!
! X =     396.020,     5312.402,         0.0,  0.00!  !END!
! X =     396.120,     5312.402,         0.0,  0.00!  !END!
! X =     396.220,     5312.402,         0.0,  0.00!  !END!
! X =     396.320,     5312.402,         0.0,  0.00!  !END!
! X =     396.420,     5312.402,         0.0,  0.00!  !END!
! X =     396.520,     5312.402,         0.0,  0.00!  !END!
! X =     396.620,     5312.402,         0.0,  0.00!  !END!
! X =     396.720,     5312.402,         0.0,  0.00!  !END!
! X =     396.820,     5312.402,         0.0,  0.00!  !END!
! X =     396.920,     5312.402,         0.0,  0.00!  !END!
! X =     397.020,     5312.402,         0.0,  0.00!  !END!
! X =     397.120,     5312.402,         0.0,  0.00!  !END!
! X =     397.220,     5312.402,         0.0,  0.00!  !END!
! X =     397.320,     5312.402,         0.0,  0.00!  !END!
! X =     397.420,     5312.402,         0.0,  0.00!  !END!
! X =     397.520,     5312.402,         0.0,  0.00!  !END!
! X =     397.620,     5312.402,         0.0,  0.00!  !END!
! X =     397.720,     5312.402,         0.0,  0.00!  !END!
! X =     397.820,     5312.402,         0.0,  0.00!  !END!
! X =     397.920,     5312.402,         0.0,  0.00!  !END!
! X =     395.520,     5312.502,         0.0,  0.00!  !END!
! X =     395.620,     5312.502,         0.0,  0.00!  !END!
! X =     395.720,     5312.502,         0.0,  0.00!  !END!
! X =     395.820,     5312.502,         0.0,  0.00!  !END!
! X =     395.920,     5312.502,         0.0,  0.00!  !END!
! X =     396.020,     5312.502,         0.0,  0.00!  !END!
! X =     396.120,     5312.502,         0.0,  0.00!  !END!
! X =     396.220,     5312.502,         0.0,  0.00!  !END!
! X =     396.320,     5312.502,         0.0,  0.00!  !END!
! X =     396.420,     5312.502,         0.0,  0.00!  !END!
! X =     396.520,     5312.502,         0.0,  0.00!  !END!
! X =     396.620,     5312.502,         0.0,  0.00!  !END!
! X =     396.720,     5312.502,         0.0,  0.00!  !END!
! X =     396.820,     5312.502,         0.0,  0.00!  !END!
! X =     396.920,     5312.502,         0.0,  0.00!  !END!
! X =     397.020,     5312.502,         0.0,  0.00!  !END!
! X =     397.120,     5312.502,         0.0,  0.00!  !END!
! X =     397.220,     5312.502,         0.0,  0.00!  !END!
! X =     397.320,     5312.502,         0.0,  0.00!  !END!
! X =     397.420,     5312.502,         0.0,  0.00!  !END!
! X =     397.520,     5312.502,         0.0,  0.00!  !END!
! X =     397.620,     5312.502,         0.0,  0.00!  !END!
! X =     397.720,     5312.502,         0.0,  0.00!  !END!
! X =     397.820,     5312.502,         0.0,  0.00!  !END!
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! X =     397.920,     5312.502,         0.0,  0.00!  !END!
! X =     395.520,     5312.602,         0.0,  0.00!  !END!
! X =     395.620,     5312.602,         0.0,  0.00!  !END!
! X =     395.720,     5312.602,         0.0,  0.00!  !END!
! X =     395.820,     5312.602,         0.0,  0.00!  !END!
! X =     395.920,     5312.602,         0.0,  0.00!  !END!
! X =     397.420,     5312.602,         0.0,  0.00!  !END!
! X =     397.520,     5312.602,         0.0,  0.00!  !END!
! X =     397.620,     5312.602,         0.0,  0.00!  !END!
! X =     397.720,     5312.602,         0.0,  0.00!  !END!
! X =     397.820,     5312.602,         0.0,  0.00!  !END!
! X =     397.920,     5312.602,         0.0,  0.00!  !END!
! X =     395.520,     5312.702,         0.0,  0.00!  !END!
! X =     395.620,     5312.702,         0.0,  0.00!  !END!
! X =     395.720,     5312.702,         0.0,  0.00!  !END!
! X =     395.820,     5312.702,         0.0,  0.00!  !END!
! X =     395.920,     5312.702,         0.0,  0.00!  !END!
! X =     397.420,     5312.702,         0.0,  0.00!  !END!
! X =     397.520,     5312.702,         0.0,  0.00!  !END!
! X =     397.620,     5312.702,         0.0,  0.00!  !END!
! X =     397.720,     5312.702,         0.0,  0.00!  !END!
! X =     397.820,     5312.702,         0.0,  0.00!  !END!
! X =     397.920,     5312.702,         0.0,  0.00!  !END!
! X =     395.520,     5312.802,         0.0,  0.00!  !END!
! X =     395.620,     5312.802,         0.0,  0.00!  !END!
! X =     395.720,     5312.802,         0.0,  0.00!  !END!
! X =     395.820,     5312.802,         0.0,  0.00!  !END!
! X =     395.920,     5312.802,         0.0,  0.00!  !END!
! X =     397.420,     5312.802,         0.0,  0.00!  !END!
! X =     397.520,     5312.802,         0.0,  0.00!  !END!
! X =     397.620,     5312.802,         0.0,  0.00!  !END!
! X =     397.720,     5312.802,         0.0,  0.00!  !END!
! X =     397.820,     5312.802,         0.0,  0.00!  !END!
! X =     397.920,     5312.802,         0.0,  0.00!  !END!
! X =     395.520,     5312.902,         0.0,  0.00!  !END!
! X =     395.620,     5312.902,         0.0,  0.00!  !END!
! X =     395.720,     5312.902,         0.0,  0.00!  !END!
! X =     395.820,     5312.902,         0.0,  0.00!  !END!
! X =     395.920,     5312.902,         0.0,  0.00!  !END!
! X =     397.420,     5312.902,         0.0,  0.00!  !END!
! X =     397.520,     5312.902,         0.0,  0.00!  !END!
! X =     397.620,     5312.902,         0.0,  0.00!  !END!
! X =     397.720,     5312.902,         0.0,  0.00!  !END!
! X =     397.820,     5312.902,         0.0,  0.00!  !END!
! X =     397.920,     5312.902,         0.0,  0.00!  !END!
! X =     395.520,     5313.002,         0.0,  0.00!  !END!
! X =     395.620,     5313.002,         0.0,  0.00!  !END!
! X =     395.720,     5313.002,         0.0,  0.00!  !END!
! X =     395.820,     5313.002,         0.0,  0.00!  !END!
! X =     395.920,     5313.002,         0.0,  0.00!  !END!
! X =     397.420,     5313.002,         0.0,  0.00!  !END!
! X =     397.520,     5313.002,         0.0,  0.00!  !END!
! X =     397.620,     5313.002,         0.0,  0.00!  !END!
! X =     397.720,     5313.002,         0.0,  0.00!  !END!
! X =     397.820,     5313.002,         0.0,  0.00!  !END!
! X =     397.920,     5313.002,         0.0,  0.00!  !END!
! X =     395.520,     5313.102,         0.0,  0.00!  !END!
! X =     395.620,     5313.102,         0.0,  0.00!  !END!
! X =     395.720,     5313.102,         0.0,  0.00!  !END!
! X =     395.820,     5313.102,         0.0,  0.00!  !END!
! X =     395.920,     5313.102,         0.0,  0.00!  !END!
! X =     397.420,     5313.102,         0.0,  0.00!  !END!
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! X =     397.520,     5313.102,         0.0,  0.00!  !END!
! X =     397.620,     5313.102,         0.0,  0.00!  !END!
! X =     397.720,     5313.102,         0.0,  0.00!  !END!
! X =     397.820,     5313.102,         0.0,  0.00!  !END!
! X =     397.920,     5313.102,         0.0,  0.00!  !END!
! X =     395.520,     5313.202,         0.0,  0.00!  !END!
! X =     395.620,     5313.202,         0.0,  0.00!  !END!
! X =     395.720,     5313.202,         0.0,  0.00!  !END!
! X =     395.820,     5313.202,         0.0,  0.00!  !END!
! X =     395.920,     5313.202,         0.0,  0.00!  !END!
! X =     397.420,     5313.202,         0.0,  0.00!  !END!
! X =     397.520,     5313.202,         0.0,  0.00!  !END!
! X =     397.620,     5313.202,         0.0,  0.00!  !END!
! X =     397.720,     5313.202,         0.0,  0.00!  !END!
! X =     397.820,     5313.202,         0.0,  0.00!  !END!
! X =     397.920,     5313.202,         0.0,  0.00!  !END!
! X =     395.520,     5313.302,         0.0,  0.00!  !END!
! X =     395.620,     5313.302,         0.0,  0.00!  !END!
! X =     395.720,     5313.302,         0.0,  0.00!  !END!
! X =     395.820,     5313.302,         0.0,  0.00!  !END!
! X =     395.920,     5313.302,         0.0,  0.00!  !END!
! X =     397.420,     5313.302,         0.0,  0.00!  !END!
! X =     397.520,     5313.302,         0.0,  0.00!  !END!
! X =     397.620,     5313.302,         0.0,  0.00!  !END!
! X =     397.720,     5313.302,         0.0,  0.00!  !END!
! X =     397.820,     5313.302,         0.0,  0.00!  !END!
! X =     397.920,     5313.302,         0.0,  0.00!  !END!
! X =     395.520,     5313.402,         0.0,  0.00!  !END!
! X =     395.620,     5313.402,         0.0,  0.00!  !END!
! X =     395.720,     5313.402,         0.0,  0.00!  !END!
! X =     395.820,     5313.402,         0.0,  0.00!  !END!
! X =     395.920,     5313.402,         0.0,  0.00!  !END!
! X =     397.420,     5313.402,         0.0,  0.00!  !END!
! X =     397.520,     5313.402,         0.0,  0.00!  !END!
! X =     397.620,     5313.402,         0.0,  0.00!  !END!
! X =     397.720,     5313.402,         0.0,  0.00!  !END!
! X =     397.820,     5313.402,         0.0,  0.00!  !END!
! X =     397.920,     5313.402,         0.0,  0.00!  !END!
! X =     395.520,     5313.502,         0.0,  0.00!  !END!
! X =     395.620,     5313.502,         0.0,  0.00!  !END!
! X =     395.720,     5313.502,         0.0,  0.00!  !END!
! X =     395.820,     5313.502,         0.0,  0.00!  !END!
! X =     395.920,     5313.502,         0.0,  0.00!  !END!
! X =     397.420,     5313.502,         0.0,  0.00!  !END!
! X =     397.520,     5313.502,         0.0,  0.00!  !END!
! X =     397.620,     5313.502,         0.0,  0.00!  !END!
! X =     397.720,     5313.502,         0.0,  0.00!  !END!
! X =     397.820,     5313.502,         0.0,  0.00!  !END!
! X =     397.920,     5313.502,         0.0,  0.00!  !END!
! X =     395.520,     5313.602,         0.0,  0.00!  !END!
! X =     395.620,     5313.602,         0.0,  0.00!  !END!
! X =     395.720,     5313.602,         0.0,  0.00!  !END!
! X =     395.820,     5313.602,         0.0,  0.00!  !END!
! X =     395.920,     5313.602,         0.0,  0.00!  !END!
! X =     397.420,     5313.602,         0.0,  0.00!  !END!
! X =     397.520,     5313.602,         0.0,  0.00!  !END!
! X =     397.620,     5313.602,         0.0,  0.00!  !END!
! X =     397.720,     5313.602,         0.0,  0.00!  !END!
! X =     397.820,     5313.602,         0.0,  0.00!  !END!
! X =     397.920,     5313.602,         0.0,  0.00!  !END!
! X =     395.520,     5313.702,         0.0,  0.00!  !END!
! X =     395.620,     5313.702,         0.0,  0.00!  !END!
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! X =     395.720,     5313.702,         0.0,  0.00!  !END!
! X =     395.820,     5313.702,         0.0,  0.00!  !END!
! X =     395.920,     5313.702,         0.0,  0.00!  !END!
! X =     397.420,     5313.702,         0.0,  0.00!  !END!
! X =     397.520,     5313.702,         0.0,  0.00!  !END!
! X =     397.620,     5313.702,         0.0,  0.00!  !END!
! X =     397.720,     5313.702,         0.0,  0.00!  !END!
! X =     397.820,     5313.702,         0.0,  0.00!  !END!
! X =     397.920,     5313.702,         0.0,  0.00!  !END!
! X =     395.520,     5313.802,         0.0,  0.00!  !END!
! X =     395.620,     5313.802,         0.0,  0.00!  !END!
! X =     395.720,     5313.802,         0.0,  0.00!  !END!
! X =     395.820,     5313.802,         0.0,  0.00!  !END!
! X =     395.920,     5313.802,         0.0,  0.00!  !END!
! X =     397.420,     5313.802,         0.0,  0.00!  !END!
! X =     397.520,     5313.802,         0.0,  0.00!  !END!
! X =     397.620,     5313.802,         0.0,  0.00!  !END!
! X =     397.720,     5313.802,         0.0,  0.00!  !END!
! X =     397.820,     5313.802,         0.0,  0.00!  !END!
! X =     397.920,     5313.802,         0.0,  0.00!  !END!
! X =     395.520,     5313.902,         0.0,  0.00!  !END!
! X =     395.620,     5313.902,         0.0,  0.00!  !END!
! X =     395.720,     5313.902,         0.0,  0.00!  !END!
! X =     395.820,     5313.902,         0.0,  0.00!  !END!
! X =     395.920,     5313.902,         0.0,  0.00!  !END!
! X =     396.020,     5313.902,         0.0,  0.00!  !END!
! X =     396.120,     5313.902,         0.0,  0.00!  !END!
! X =     396.220,     5313.902,         0.0,  0.00!  !END!
! X =     396.320,     5313.902,         0.0,  0.00!  !END!
! X =     396.420,     5313.902,         0.0,  0.00!  !END!
! X =     396.520,     5313.902,         0.0,  0.00!  !END!
! X =     396.620,     5313.902,         0.0,  0.00!  !END!
! X =     396.720,     5313.902,         0.0,  0.00!  !END!
! X =     396.820,     5313.902,         0.0,  0.00!  !END!
! X =     396.920,     5313.902,         0.0,  0.00!  !END!
! X =     397.020,     5313.902,         0.0,  0.00!  !END!
! X =     397.120,     5313.902,         0.0,  0.00!  !END!
! X =     397.220,     5313.902,         0.0,  0.00!  !END!
! X =     397.320,     5313.902,         0.0,  0.00!  !END!
! X =     397.420,     5313.902,         0.0,  0.00!  !END!
! X =     397.520,     5313.902,         0.0,  0.00!  !END!
! X =     397.620,     5313.902,         0.0,  0.00!  !END!
! X =     397.720,     5313.902,         0.0,  0.00!  !END!
! X =     397.820,     5313.902,         0.0,  0.00!  !END!
! X =     397.920,     5313.902,         0.0,  0.00!  !END!
! X =     395.520,     5314.002,         0.0,  0.00!  !END!
! X =     395.620,     5314.002,         0.0,  0.00!  !END!
! X =     395.720,     5314.002,         0.0,  0.00!  !END!
! X =     395.820,     5314.002,         0.0,  0.00!  !END!
! X =     395.920,     5314.002,         0.0,  0.00!  !END!
! X =     396.020,     5314.002,         0.0,  0.00!  !END!
! X =     396.120,     5314.002,         0.0,  0.00!  !END!
! X =     396.220,     5314.002,         0.0,  0.00!  !END!
! X =     396.320,     5314.002,         0.0,  0.00!  !END!
! X =     396.420,     5314.002,         0.0,  0.00!  !END!
! X =     396.520,     5314.002,         0.0,  0.00!  !END!
! X =     396.620,     5314.002,         0.0,  0.00!  !END!
! X =     396.720,     5314.002,         0.0,  0.00!  !END!
! X =     396.820,     5314.002,         0.0,  0.00!  !END!
! X =     396.920,     5314.002,         0.0,  0.00!  !END!
! X =     397.020,     5314.002,         0.0,  0.00!  !END!
! X =     397.120,     5314.002,         0.0,  0.00!  !END!
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! X =     397.220,     5314.002,         0.0,  0.00!  !END!
! X =     397.320,     5314.002,         0.0,  0.00!  !END!
! X =     397.420,     5314.002,         0.0,  0.00!  !END!
! X =     397.520,     5314.002,         0.0,  0.00!  !END!
! X =     397.620,     5314.002,         0.0,  0.00!  !END!
! X =     397.720,     5314.002,         0.0,  0.00!  !END!
! X =     397.820,     5314.002,         0.0,  0.00!  !END!
! X =     397.920,     5314.002,         0.0,  0.00!  !END!
! X =     395.520,     5314.102,         0.0,  0.00!  !END!
! X =     395.620,     5314.102,         0.0,  0.00!  !END!
! X =     395.720,     5314.102,         0.0,  0.00!  !END!
! X =     395.820,     5314.102,         0.0,  0.00!  !END!
! X =     395.920,     5314.102,         0.0,  0.00!  !END!
! X =     396.020,     5314.102,         0.0,  0.00!  !END!
! X =     396.120,     5314.102,         0.0,  0.00!  !END!
! X =     396.220,     5314.102,         0.0,  0.00!  !END!
! X =     396.320,     5314.102,         0.0,  0.00!  !END!
! X =     396.420,     5314.102,         0.0,  0.00!  !END!
! X =     396.520,     5314.102,         0.0,  0.00!  !END!
! X =     396.620,     5314.102,         0.0,  0.00!  !END!
! X =     396.720,     5314.102,         0.0,  0.00!  !END!
! X =     396.820,     5314.102,         0.0,  0.00!  !END!
! X =     396.920,     5314.102,         0.0,  0.00!  !END!
! X =     397.020,     5314.102,         0.0,  0.00!  !END!
! X =     397.120,     5314.102,         0.0,  0.00!  !END!
! X =     397.220,     5314.102,         0.0,  0.00!  !END!
! X =     397.320,     5314.102,         0.0,  0.00!  !END!
! X =     397.420,     5314.102,         0.0,  0.00!  !END!
! X =     397.520,     5314.102,         0.0,  0.00!  !END!
! X =     397.620,     5314.102,         0.0,  0.00!  !END!
! X =     397.720,     5314.102,         0.0,  0.00!  !END!
! X =     397.820,     5314.102,         0.0,  0.00!  !END!
! X =     397.920,     5314.102,         0.0,  0.00!  !END!
! X =     395.520,     5314.202,         0.0,  0.00!  !END!
! X =     395.620,     5314.202,         0.0,  0.00!  !END!
! X =     395.720,     5314.202,         0.0,  0.00!  !END!
! X =     395.820,     5314.202,         0.0,  0.00!  !END!
! X =     395.920,     5314.202,         0.0,  0.00!  !END!
! X =     396.020,     5314.202,         0.0,  0.00!  !END!
! X =     396.120,     5314.202,         0.0,  0.00!  !END!
! X =     396.220,     5314.202,         0.0,  0.00!  !END!
! X =     396.320,     5314.202,         0.0,  0.00!  !END!
! X =     396.420,     5314.202,         0.0,  0.00!  !END!
! X =     396.520,     5314.202,         0.0,  0.00!  !END!
! X =     396.620,     5314.202,         0.0,  0.00!  !END!
! X =     396.720,     5314.202,         0.0,  0.00!  !END!
! X =     396.820,     5314.202,         0.0,  0.00!  !END!
! X =     396.920,     5314.202,         0.0,  0.00!  !END!
! X =     397.020,     5314.202,         0.0,  0.00!  !END!
! X =     397.120,     5314.202,         0.0,  0.00!  !END!
! X =     397.220,     5314.202,         0.0,  0.00!  !END!
! X =     397.320,     5314.202,         0.0,  0.00!  !END!
! X =     397.420,     5314.202,         0.0,  0.00!  !END!
! X =     397.520,     5314.202,         0.0,  0.00!  !END!
! X =     397.620,     5314.202,         0.0,  0.00!  !END!
! X =     397.720,     5314.202,         0.0,  0.00!  !END!
! X =     397.820,     5314.202,         0.0,  0.00!  !END!
! X =     397.920,     5314.202,         0.0,  0.00!  !END!
! X =     395.520,     5314.302,         0.0,  0.00!  !END!
! X =     395.620,     5314.302,         0.0,  0.00!  !END!
! X =     395.720,     5314.302,         0.0,  0.00!  !END!
! X =     395.820,     5314.302,         0.0,  0.00!  !END!
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! X =     395.920,     5314.302,         0.0,  0.00!  !END!
! X =     396.020,     5314.302,         0.0,  0.00!  !END!
! X =     396.120,     5314.302,         0.0,  0.00!  !END!
! X =     396.220,     5314.302,         0.0,  0.00!  !END!
! X =     396.320,     5314.302,         0.0,  0.00!  !END!
! X =     396.420,     5314.302,         0.0,  0.00!  !END!
! X =     396.520,     5314.302,         0.0,  0.00!  !END!
! X =     396.620,     5314.302,         0.0,  0.00!  !END!
! X =     396.720,     5314.302,         0.0,  0.00!  !END!
! X =     396.820,     5314.302,         0.0,  0.00!  !END!
! X =     396.920,     5314.302,         0.0,  0.00!  !END!
! X =     397.020,     5314.302,         0.0,  0.00!  !END!
! X =     397.120,     5314.302,         0.0,  0.00!  !END!
! X =     397.220,     5314.302,         0.0,  0.00!  !END!
! X =     397.320,     5314.302,         0.0,  0.00!  !END!
! X =     397.420,     5314.302,         0.0,  0.00!  !END!
! X =     397.520,     5314.302,         0.0,  0.00!  !END!
! X =     397.620,     5314.302,         0.0,  0.00!  !END!
! X =     397.720,     5314.302,         0.0,  0.00!  !END!
! X =     397.820,     5314.302,         0.0,  0.00!  !END!
! X =     397.920,     5314.302,         0.0,  0.00!  !END!
! X =     395.520,     5314.402,         0.0,  0.00!  !END!
! X =     395.620,     5314.402,         0.0,  0.00!  !END!
! X =     395.720,     5314.402,         0.0,  0.00!  !END!
! X =     395.820,     5314.402,         0.0,  0.00!  !END!
! X =     395.920,     5314.402,         0.0,  0.00!  !END!
! X =     396.020,     5314.402,         0.0,  0.00!  !END!
! X =     396.120,     5314.402,         0.0,  0.00!  !END!
! X =     396.220,     5314.402,         0.0,  0.00!  !END!
! X =     396.320,     5314.402,         0.0,  0.00!  !END!
! X =     396.420,     5314.402,         0.0,  0.00!  !END!
! X =     396.520,     5314.402,         0.0,  0.00!  !END!
! X =     396.620,     5314.402,         0.0,  0.00!  !END!
! X =     396.720,     5314.402,         0.0,  0.00!  !END!
! X =     396.820,     5314.402,         0.0,  0.00!  !END!
! X =     396.920,     5314.402,         0.0,  0.00!  !END!
! X =     397.020,     5314.402,         0.0,  0.00!  !END!
! X =     397.120,     5314.402,         0.0,  0.00!  !END!
! X =     397.220,     5314.402,         0.0,  0.00!  !END!
! X =     397.320,     5314.402,         0.0,  0.00!  !END!
! X =     397.420,     5314.402,         0.0,  0.00!  !END!
! X =     397.520,     5314.402,         0.0,  0.00!  !END!
! X =     397.620,     5314.402,         0.0,  0.00!  !END!
! X =     397.720,     5314.402,         0.0,  0.00!  !END!
! X =     397.820,     5314.402,         0.0,  0.00!  !END!
! X =     397.920,     5314.402,         0.0,  0.00!  !END!
! X =     394.520,     5311.002,         0.0,  0.00!  !END!
! X =     394.720,     5311.002,         0.0,  0.00!  !END!
! X =     394.920,     5311.002,         0.0,  0.00!  !END!
! X =     395.120,     5311.002,         0.0,  0.00!  !END!
! X =     395.320,     5311.002,         0.0,  0.00!  !END!
! X =     395.520,     5311.002,         0.0,  0.00!  !END!
! X =     395.720,     5311.002,         0.0,  0.00!  !END!
! X =     395.920,     5311.002,         0.0,  0.00!  !END!
! X =     396.120,     5311.002,         0.0,  0.00!  !END!
! X =     396.320,     5311.002,         0.0,  0.00!  !END!
! X =     396.520,     5311.002,         0.0,  0.00!  !END!
! X =     396.720,     5311.002,         0.0,  0.00!  !END!
! X =     396.920,     5311.002,         0.0,  0.00!  !END!
! X =     397.120,     5311.002,         0.0,  0.00!  !END!
! X =     397.320,     5311.002,         0.0,  0.00!  !END!
! X =     397.520,     5311.002,         0.0,  0.00!  !END!
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! X =     397.720,     5311.002,         0.0,  0.00!  !END!
! X =     397.920,     5311.002,         0.0,  0.00!  !END!
! X =     398.120,     5311.002,         0.0,  0.00!  !END!
! X =     398.320,     5311.002,         0.0,  0.00!  !END!
! X =     398.520,     5311.002,         0.0,  0.00!  !END!
! X =     398.720,     5311.002,         0.0,  0.00!  !END!
! X =     398.920,     5311.002,         0.0,  0.00!  !END!
! X =     394.520,     5311.202,         0.0,  0.00!  !END!
! X =     394.720,     5311.202,         0.0,  0.00!  !END!
! X =     394.920,     5311.202,         0.0,  0.00!  !END!
! X =     395.120,     5311.202,         0.0,  0.00!  !END!
! X =     395.320,     5311.202,         0.0,  0.00!  !END!
! X =     395.520,     5311.202,         0.0,  0.00!  !END!
! X =     395.720,     5311.202,         0.0,  0.00!  !END!
! X =     395.920,     5311.202,         0.0,  0.00!  !END!
! X =     396.120,     5311.202,         0.0,  0.00!  !END!
! X =     396.320,     5311.202,         0.0,  0.00!  !END!
! X =     396.520,     5311.202,         0.0,  0.00!  !END!
! X =     396.720,     5311.202,         0.0,  0.00!  !END!
! X =     396.920,     5311.202,         0.0,  0.00!  !END!
! X =     397.120,     5311.202,         0.0,  0.00!  !END!
! X =     397.320,     5311.202,         0.0,  0.00!  !END!
! X =     397.520,     5311.202,         0.0,  0.00!  !END!
! X =     397.720,     5311.202,         0.0,  0.00!  !END!
! X =     397.920,     5311.202,         0.0,  0.00!  !END!
! X =     398.120,     5311.202,         0.0,  0.00!  !END!
! X =     398.320,     5311.202,         0.0,  0.00!  !END!
! X =     398.520,     5311.202,         0.0,  0.00!  !END!
! X =     398.720,     5311.202,         0.0,  0.00!  !END!
! X =     398.920,     5311.202,         0.0,  0.00!  !END!
! X =     394.520,     5311.402,         0.0,  0.00!  !END!
! X =     394.720,     5311.402,         0.0,  0.00!  !END!
! X =     394.920,     5311.402,         0.0,  0.00!  !END!
! X =     395.120,     5311.402,         0.0,  0.00!  !END!
! X =     395.320,     5311.402,         0.0,  0.00!  !END!
! X =     395.520,     5311.402,         0.0,  0.00!  !END!
! X =     395.720,     5311.402,         0.0,  0.00!  !END!
! X =     395.920,     5311.402,         0.0,  0.00!  !END!
! X =     396.120,     5311.402,         0.0,  0.00!  !END!
! X =     396.320,     5311.402,         0.0,  0.00!  !END!
! X =     396.520,     5311.402,         0.0,  0.00!  !END!
! X =     396.720,     5311.402,         0.0,  0.00!  !END!
! X =     396.920,     5311.402,         0.0,  0.00!  !END!
! X =     397.120,     5311.402,         0.0,  0.00!  !END!
! X =     397.320,     5311.402,         0.0,  0.00!  !END!
! X =     397.520,     5311.402,         0.0,  0.00!  !END!
! X =     397.720,     5311.402,         0.0,  0.00!  !END!
! X =     397.920,     5311.402,         0.0,  0.00!  !END!
! X =     398.120,     5311.402,         0.0,  0.00!  !END!
! X =     398.320,     5311.402,         0.0,  0.00!  !END!
! X =     398.520,     5311.402,         0.0,  0.00!  !END!
! X =     398.720,     5311.402,         0.0,  0.00!  !END!
! X =     398.920,     5311.402,         0.0,  0.00!  !END!
! X =     394.520,     5311.602,         0.0,  0.00!  !END!
! X =     394.720,     5311.602,         0.0,  0.00!  !END!
! X =     394.920,     5311.602,         0.0,  0.00!  !END!
! X =     395.120,     5311.602,         0.0,  0.00!  !END!
! X =     395.320,     5311.602,         0.0,  0.00!  !END!
! X =     395.520,     5311.602,         0.0,  0.00!  !END!
! X =     395.720,     5311.602,         0.0,  0.00!  !END!
! X =     395.920,     5311.602,         0.0,  0.00!  !END!
! X =     396.120,     5311.602,         0.0,  0.00!  !END!
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! X =     396.320,     5311.602,         0.0,  0.00!  !END!
! X =     396.520,     5311.602,         0.0,  0.00!  !END!
! X =     396.720,     5311.602,         0.0,  0.00!  !END!
! X =     396.920,     5311.602,         0.0,  0.00!  !END!
! X =     397.120,     5311.602,         0.0,  0.00!  !END!
! X =     397.320,     5311.602,         0.0,  0.00!  !END!
! X =     397.520,     5311.602,         0.0,  0.00!  !END!
! X =     397.720,     5311.602,         0.0,  0.00!  !END!
! X =     397.920,     5311.602,         0.0,  0.00!  !END!
! X =     398.120,     5311.602,         0.0,  0.00!  !END!
! X =     398.320,     5311.602,         0.0,  0.00!  !END!
! X =     398.520,     5311.602,         0.0,  0.00!  !END!
! X =     398.720,     5311.602,         0.0,  0.00!  !END!
! X =     398.920,     5311.602,         0.0,  0.00!  !END!
! X =     394.520,     5311.802,         0.0,  0.00!  !END!
! X =     394.720,     5311.802,         0.0,  0.00!  !END!
! X =     394.920,     5311.802,         0.0,  0.00!  !END!
! X =     395.120,     5311.802,         0.0,  0.00!  !END!
! X =     395.320,     5311.802,         0.0,  0.00!  !END!
! X =     395.520,     5311.802,         0.0,  0.00!  !END!
! X =     395.720,     5311.802,         0.0,  0.00!  !END!
! X =     395.920,     5311.802,         0.0,  0.00!  !END!
! X =     396.120,     5311.802,         0.0,  0.00!  !END!
! X =     396.320,     5311.802,         0.0,  0.00!  !END!
! X =     396.520,     5311.802,         0.0,  0.00!  !END!
! X =     396.720,     5311.802,         0.0,  0.00!  !END!
! X =     396.920,     5311.802,         0.0,  0.00!  !END!
! X =     397.120,     5311.802,         0.0,  0.00!  !END!
! X =     397.320,     5311.802,         0.0,  0.00!  !END!
! X =     397.520,     5311.802,         0.0,  0.00!  !END!
! X =     397.720,     5311.802,         0.0,  0.00!  !END!
! X =     397.920,     5311.802,         0.0,  0.00!  !END!
! X =     398.120,     5311.802,         0.0,  0.00!  !END!
! X =     398.320,     5311.802,         0.0,  0.00!  !END!
! X =     398.520,     5311.802,         0.0,  0.00!  !END!
! X =     398.720,     5311.802,         0.0,  0.00!  !END!
! X =     398.920,     5311.802,         0.0,  0.00!  !END!
! X =     394.520,     5312.002,         0.0,  0.00!  !END!
! X =     394.720,     5312.002,         0.0,  0.00!  !END!
! X =     394.920,     5312.002,         0.0,  0.00!  !END!
! X =     395.120,     5312.002,         0.0,  0.00!  !END!
! X =     395.320,     5312.002,         0.0,  0.00!  !END!
! X =     398.120,     5312.002,         0.0,  0.00!  !END!
! X =     398.320,     5312.002,         0.0,  0.00!  !END!
! X =     398.520,     5312.002,         0.0,  0.00!  !END!
! X =     398.720,     5312.002,         0.0,  0.00!  !END!
! X =     398.920,     5312.002,         0.0,  0.00!  !END!
! X =     398.120,     5312.202,         0.0,  0.00!  !END!
! X =     398.320,     5312.202,         0.0,  0.00!  !END!
! X =     398.520,     5312.202,         0.0,  0.00!  !END!
! X =     398.720,     5312.202,         0.0,  0.00!  !END!
! X =     398.920,     5312.202,         0.0,  0.00!  !END!
! X =     398.120,     5312.402,         0.0,  0.00!  !END!
! X =     398.320,     5312.402,         0.0,  0.00!  !END!
! X =     398.520,     5312.402,         0.0,  0.00!  !END!
! X =     398.720,     5312.402,         0.0,  0.00!  !END!
! X =     398.920,     5312.402,         0.0,  0.00!  !END!
! X =     398.120,     5312.602,         0.0,  0.00!  !END!
! X =     398.320,     5312.602,         0.0,  0.00!  !END!
! X =     398.520,     5312.602,         0.0,  0.00!  !END!
! X =     398.720,     5312.602,         0.0,  0.00!  !END!
! X =     398.920,     5312.602,         0.0,  0.00!  !END!
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! X =     398.120,     5312.802,         0.0,  0.00!  !END!
! X =     398.320,     5312.802,         0.0,  0.00!  !END!
! X =     398.520,     5312.802,         0.0,  0.00!  !END!
! X =     398.720,     5312.802,         0.0,  0.00!  !END!
! X =     398.920,     5312.802,         0.0,  0.00!  !END!
! X =     398.120,     5313.002,         0.0,  0.00!  !END!
! X =     398.320,     5313.002,         0.0,  0.00!  !END!
! X =     398.520,     5313.002,         0.0,  0.00!  !END!
! X =     398.720,     5313.002,         0.0,  0.00!  !END!
! X =     398.920,     5313.002,         0.0,  0.00!  !END!
! X =     398.120,     5313.202,         0.0,  0.00!  !END!
! X =     398.320,     5313.202,         0.0,  0.00!  !END!
! X =     398.520,     5313.202,         0.0,  0.00!  !END!
! X =     398.720,     5313.202,         0.0,  0.00!  !END!
! X =     398.920,     5313.202,         0.0,  0.00!  !END!
! X =     398.120,     5313.402,         0.0,  0.00!  !END!
! X =     398.320,     5313.402,         0.0,  0.00!  !END!
! X =     398.520,     5313.402,         0.0,  0.00!  !END!
! X =     398.720,     5313.402,         0.0,  0.00!  !END!
! X =     398.920,     5313.402,         0.0,  0.00!  !END!
! X =     398.120,     5313.602,         0.0,  0.00!  !END!
! X =     398.320,     5313.602,         0.0,  0.00!  !END!
! X =     398.520,     5313.602,         0.0,  0.00!  !END!
! X =     398.720,     5313.602,         0.0,  0.00!  !END!
! X =     398.920,     5313.602,         0.0,  0.00!  !END!
! X =     398.120,     5313.802,         0.0,  0.00!  !END!
! X =     398.320,     5313.802,         0.0,  0.00!  !END!
! X =     398.520,     5313.802,         0.0,  0.00!  !END!
! X =     398.720,     5313.802,         0.0,  0.00!  !END!
! X =     398.920,     5313.802,         0.0,  0.00!  !END!
! X =     398.120,     5314.002,         0.0,  0.00!  !END!
! X =     398.320,     5314.002,         0.0,  0.00!  !END!
! X =     398.520,     5314.002,         0.0,  0.00!  !END!
! X =     398.720,     5314.002,         0.0,  0.00!  !END!
! X =     398.920,     5314.002,         0.0,  0.00!  !END!
! X =     398.120,     5314.202,         0.0,  0.00!  !END!
! X =     398.320,     5314.202,         0.0,  0.00!  !END!
! X =     398.520,     5314.202,         0.0,  0.00!  !END!
! X =     398.720,     5314.202,         0.0,  0.00!  !END!
! X =     398.920,     5314.202,         0.0,  0.00!  !END!
! X =     398.120,     5314.402,         0.0,  0.00!  !END!
! X =     398.320,     5314.402,         0.0,  0.00!  !END!
! X =     398.520,     5314.402,         0.0,  0.00!  !END!
! X =     398.720,     5314.402,         0.0,  0.00!  !END!
! X =     398.920,     5314.402,         0.0,  0.00!  !END!
! X =     394.520,     5314.602,         0.0,  0.00!  !END!
! X =     394.720,     5314.602,         0.0,  0.00!  !END!
! X =     394.920,     5314.602,         0.0,  0.00!  !END!
! X =     395.120,     5314.602,         0.0,  0.00!  !END!
! X =     395.320,     5314.602,         0.0,  0.00!  !END!
! X =     395.520,     5314.602,         0.0,  0.00!  !END!
! X =     395.720,     5314.602,         0.0,  0.00!  !END!
! X =     395.920,     5314.602,         0.0,  0.00!  !END!
! X =     396.120,     5314.602,         0.0,  0.00!  !END!
! X =     396.320,     5314.602,         0.0,  0.00!  !END!
! X =     396.520,     5314.602,         0.0,  0.00!  !END!
! X =     396.720,     5314.602,         0.0,  0.00!  !END!
! X =     396.920,     5314.602,         0.0,  0.00!  !END!
! X =     397.120,     5314.602,         0.0,  0.00!  !END!
! X =     397.320,     5314.602,         0.0,  0.00!  !END!
! X =     397.520,     5314.602,         0.0,  0.00!  !END!
! X =     397.720,     5314.602,         0.0,  0.00!  !END!
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! X =     397.920,     5314.602,         0.0,  0.00!  !END!
! X =     398.120,     5314.602,         0.0,  0.00!  !END!
! X =     398.320,     5314.602,         0.0,  0.00!  !END!
! X =     398.520,     5314.602,         0.0,  0.00!  !END!
! X =     398.720,     5314.602,         0.0,  0.00!  !END!
! X =     398.920,     5314.602,         0.0,  0.00!  !END!
! X =     394.520,     5314.802,         0.0,  0.00!  !END!
! X =     394.720,     5314.802,         0.0,  0.00!  !END!
! X =     394.920,     5314.802,         0.0,  0.00!  !END!
! X =     395.120,     5314.802,         0.0,  0.00!  !END!
! X =     395.320,     5314.802,         0.0,  0.00!  !END!
! X =     395.520,     5314.802,         0.0,  0.00!  !END!
! X =     395.720,     5314.802,         0.0,  0.00!  !END!
! X =     395.920,     5314.802,         0.0,  0.00!  !END!
! X =     396.120,     5314.802,         0.0,  0.00!  !END!
! X =     396.320,     5314.802,         0.0,  0.00!  !END!
! X =     396.520,     5314.802,         0.0,  0.00!  !END!
! X =     396.720,     5314.802,         0.0,  0.00!  !END!
! X =     396.920,     5314.802,         0.0,  0.00!  !END!
! X =     397.120,     5314.802,         0.0,  0.00!  !END!
! X =     397.320,     5314.802,         0.0,  0.00!  !END!
! X =     397.520,     5314.802,         0.0,  0.00!  !END!
! X =     397.720,     5314.802,         0.0,  0.00!  !END!
! X =     397.920,     5314.802,         0.0,  0.00!  !END!
! X =     398.120,     5314.802,         0.0,  0.00!  !END!
! X =     398.320,     5314.802,         0.0,  0.00!  !END!
! X =     398.520,     5314.802,         0.0,  0.00!  !END!
! X =     398.720,     5314.802,         0.0,  0.00!  !END!
! X =     398.920,     5314.802,         0.0,  0.00!  !END!
! X =     394.520,     5315.002,         0.0,  0.00!  !END!
! X =     394.720,     5315.002,         0.0,  0.00!  !END!
! X =     394.920,     5315.002,         0.0,  0.00!  !END!
! X =     395.120,     5315.002,         0.0,  0.00!  !END!
! X =     395.320,     5315.002,         0.0,  0.00!  !END!
! X =     395.520,     5315.002,         0.0,  0.00!  !END!
! X =     395.720,     5315.002,         0.0,  0.00!  !END!
! X =     395.920,     5315.002,         0.0,  0.00!  !END!
! X =     396.120,     5315.002,         0.0,  0.00!  !END!
! X =     396.320,     5315.002,         0.0,  0.00!  !END!
! X =     396.520,     5315.002,         0.0,  0.00!  !END!
! X =     396.720,     5315.002,         0.0,  0.00!  !END!
! X =     396.920,     5315.002,         0.0,  0.00!  !END!
! X =     397.120,     5315.002,         0.0,  0.00!  !END!
! X =     397.320,     5315.002,         0.0,  0.00!  !END!
! X =     397.520,     5315.002,         0.0,  0.00!  !END!
! X =     397.720,     5315.002,         0.0,  0.00!  !END!
! X =     397.920,     5315.002,         0.0,  0.00!  !END!
! X =     398.120,     5315.002,         0.0,  0.00!  !END!
! X =     398.320,     5315.002,         0.0,  0.00!  !END!
! X =     398.520,     5315.002,         0.0,  0.00!  !END!
! X =     398.720,     5315.002,         0.0,  0.00!  !END!
! X =     398.920,     5315.002,         0.0,  0.00!  !END!
! X =     394.520,     5315.202,         0.0,  0.00!  !END!
! X =     394.720,     5315.202,         0.0,  0.00!  !END!
! X =     394.920,     5315.202,         0.0,  0.00!  !END!
! X =     395.120,     5315.202,         0.0,  0.00!  !END!
! X =     395.320,     5315.202,         0.0,  0.00!  !END!
! X =     395.520,     5315.202,         0.0,  0.00!  !END!
! X =     395.720,     5315.202,         0.0,  0.00!  !END!
! X =     395.920,     5315.202,         0.0,  0.00!  !END!
! X =     396.120,     5315.202,         0.0,  0.00!  !END!
! X =     396.320,     5315.202,         0.0,  0.00!  !END!
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! X =     396.520,     5315.202,         0.0,  0.00!  !END!
! X =     396.720,     5315.202,         0.0,  0.00!  !END!
! X =     396.920,     5315.202,         0.0,  0.00!  !END!
! X =     397.120,     5315.202,         0.0,  0.00!  !END!
! X =     397.320,     5315.202,         0.0,  0.00!  !END!
! X =     397.520,     5315.202,         0.0,  0.00!  !END!
! X =     397.720,     5315.202,         0.0,  0.00!  !END!
! X =     397.920,     5315.202,         0.0,  0.00!  !END!
! X =     398.120,     5315.202,         0.0,  0.00!  !END!
! X =     398.320,     5315.202,         0.0,  0.00!  !END!
! X =     398.520,     5315.202,         0.0,  0.00!  !END!
! X =     398.720,     5315.202,         0.0,  0.00!  !END!
! X =     398.920,     5315.202,         0.0,  0.00!  !END!
! X =     394.520,     5315.402,         0.0,  0.00!  !END!
! X =     394.720,     5315.402,         0.0,  0.00!  !END!
! X =     394.920,     5315.402,         0.0,  0.00!  !END!
! X =     395.120,     5315.402,         0.0,  0.00!  !END!
! X =     395.320,     5315.402,         0.0,  0.00!  !END!
! X =     395.520,     5315.402,         0.0,  0.00!  !END!
! X =     395.720,     5315.402,         0.0,  0.00!  !END!
! X =     395.920,     5315.402,         0.0,  0.00!  !END!
! X =     396.120,     5315.402,         0.0,  0.00!  !END!
! X =     396.320,     5315.402,         0.0,  0.00!  !END!
! X =     396.520,     5315.402,         0.0,  0.00!  !END!
! X =     396.720,     5315.402,         0.0,  0.00!  !END!
! X =     396.920,     5315.402,         0.0,  0.00!  !END!
! X =     397.120,     5315.402,         0.0,  0.00!  !END!
! X =     397.320,     5315.402,         0.0,  0.00!  !END!
! X =     397.520,     5315.402,         0.0,  0.00!  !END!
! X =     397.720,     5315.402,         0.0,  0.00!  !END!
! X =     397.920,     5315.402,         0.0,  0.00!  !END!
! X =     398.120,     5315.402,         0.0,  0.00!  !END!
! X =     398.320,     5315.402,         0.0,  0.00!  !END!
! X =     398.520,     5315.402,         0.0,  0.00!  !END!
! X =     398.720,     5315.402,         0.0,  0.00!  !END!
! X =     398.920,     5315.402,         0.0,  0.00!  !END!
! X =     386.720,     5303.202,         0.0,  0.00!  !END!
! X =     387.720,     5303.202,         0.0,  0.00!  !END!
! X =     388.720,     5303.202,         0.0,  0.00!  !END!
! X =     389.720,     5303.202,         0.0,  0.00!  !END!
! X =     390.720,     5303.202,         0.0,  0.00!  !END!
! X =     391.720,     5303.202,         0.0,  0.00!  !END!
! X =     392.720,     5303.202,         0.0,  0.00!  !END!
! X =     393.720,     5303.202,         0.0,  0.00!  !END!
! X =     394.720,     5303.202,         0.0,  0.00!  !END!
! X =     395.720,     5303.202,         0.0,  0.00!  !END!
! X =     396.720,     5303.202,         0.0,  0.00!  !END!
! X =     397.720,     5303.202,         0.0,  0.00!  !END!
! X =     398.720,     5303.202,         0.0,  0.00!  !END!
! X =     399.720,     5303.202,         0.0,  0.00!  !END!
! X =     400.720,     5303.202,         0.0,  0.00!  !END!
! X =     401.720,     5303.202,         0.0,  0.00!  !END!
! X =     402.720,     5303.202,         0.0,  0.00!  !END!
! X =     403.720,     5303.202,         0.0,  0.00!  !END!
! X =     404.720,     5303.202,         0.0,  0.00!  !END!
! X =     405.720,     5303.202,         0.0,  0.00!  !END!
! X =     406.720,     5303.202,         0.0,  0.00!  !END!
! X =     386.720,     5304.202,         0.0,  0.00!  !END!
! X =     387.720,     5304.202,         0.0,  0.00!  !END!
! X =     388.720,     5304.202,         0.0,  0.00!  !END!
! X =     389.720,     5304.202,         0.0,  0.00!  !END!
! X =     390.720,     5304.202,         0.0,  0.00!  !END!
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! X =     391.720,     5304.202,         0.0,  0.00!  !END!
! X =     392.720,     5304.202,         0.0,  0.00!  !END!
! X =     393.720,     5304.202,         0.0,  0.00!  !END!
! X =     394.720,     5304.202,         0.0,  0.00!  !END!
! X =     395.720,     5304.202,         0.0,  0.00!  !END!
! X =     396.720,     5304.202,         0.0,  0.00!  !END!
! X =     397.720,     5304.202,         0.0,  0.00!  !END!
! X =     398.720,     5304.202,         0.0,  0.00!  !END!
! X =     399.720,     5304.202,         0.0,  0.00!  !END!
! X =     400.720,     5304.202,         0.0,  0.00!  !END!
! X =     401.720,     5304.202,         0.0,  0.00!  !END!
! X =     402.720,     5304.202,         0.0,  0.00!  !END!
! X =     403.720,     5304.202,         0.0,  0.00!  !END!
! X =     404.720,     5304.202,         0.0,  0.00!  !END!
! X =     405.720,     5304.202,         0.0,  0.00!  !END!
! X =     406.720,     5304.202,         0.0,  0.00!  !END!
! X =     386.720,     5305.202,         0.0,  0.00!  !END!
! X =     387.720,     5305.202,         0.0,  0.00!  !END!
! X =     388.720,     5305.202,         0.0,  0.00!  !END!
! X =     389.720,     5305.202,         0.0,  0.00!  !END!
! X =     390.720,     5305.202,         0.0,  0.00!  !END!
! X =     391.720,     5305.202,         0.0,  0.00!  !END!
! X =     392.720,     5305.202,         0.0,  0.00!  !END!
! X =     393.720,     5305.202,         0.0,  0.00!  !END!
! X =     394.720,     5305.202,         0.0,  0.00!  !END!
! X =     395.720,     5305.202,         0.0,  0.00!  !END!
! X =     396.720,     5305.202,         0.0,  0.00!  !END!
! X =     397.720,     5305.202,         0.0,  0.00!  !END!
! X =     398.720,     5305.202,         0.0,  0.00!  !END!
! X =     399.720,     5305.202,         0.0,  0.00!  !END!
! X =     400.720,     5305.202,         0.0,  0.00!  !END!
! X =     401.720,     5305.202,         0.0,  0.00!  !END!
! X =     402.720,     5305.202,         0.0,  0.00!  !END!
! X =     403.720,     5305.202,         0.0,  0.00!  !END!
! X =     404.720,     5305.202,         0.0,  0.00!  !END!
! X =     405.720,     5305.202,         0.0,  0.00!  !END!
! X =     406.720,     5305.202,         0.0,  0.00!  !END!
! X =     386.720,     5306.202,         0.0,  0.00!  !END!
! X =     387.720,     5306.202,         0.0,  0.00!  !END!
! X =     388.720,     5306.202,         0.0,  0.00!  !END!
! X =     389.720,     5306.202,         0.0,  0.00!  !END!
! X =     390.720,     5306.202,         0.0,  0.00!  !END!
! X =     391.720,     5306.202,         0.0,  0.00!  !END!
! X =     392.720,     5306.202,         0.0,  0.00!  !END!
! X =     393.720,     5306.202,         0.0,  0.00!  !END!
! X =     394.720,     5306.202,         0.0,  0.00!  !END!
! X =     395.720,     5306.202,         0.0,  0.00!  !END!
! X =     396.720,     5306.202,         0.0,  0.00!  !END!
! X =     397.720,     5306.202,         0.0,  0.00!  !END!
! X =     398.720,     5306.202,         0.0,  0.00!  !END!
! X =     399.720,     5306.202,         0.0,  0.00!  !END!
! X =     400.720,     5306.202,         0.0,  0.00!  !END!
! X =     401.720,     5306.202,         0.0,  0.00!  !END!
! X =     402.720,     5306.202,         0.0,  0.00!  !END!
! X =     403.720,     5306.202,         0.0,  0.00!  !END!
! X =     404.720,     5306.202,         0.0,  0.00!  !END!
! X =     405.720,     5306.202,         0.0,  0.00!  !END!
! X =     406.720,     5306.202,         0.0,  0.00!  !END!
! X =     386.720,     5307.202,         0.0,  0.00!  !END!
! X =     387.720,     5307.202,         0.0,  0.00!  !END!
! X =     388.720,     5307.202,         0.0,  0.00!  !END!
! X =     389.720,     5307.202,         0.0,  0.00!  !END!
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! X =     390.720,     5307.202,         0.0,  0.00!  !END!
! X =     391.720,     5307.202,         0.0,  0.00!  !END!
! X =     392.720,     5307.202,         0.0,  0.00!  !END!
! X =     393.720,     5307.202,         0.0,  0.00!  !END!
! X =     394.720,     5307.202,         0.0,  0.00!  !END!
! X =     395.720,     5307.202,         0.0,  0.00!  !END!
! X =     396.720,     5307.202,         0.0,  0.00!  !END!
! X =     397.720,     5307.202,         0.0,  0.00!  !END!
! X =     398.720,     5307.202,         0.0,  0.00!  !END!
! X =     399.720,     5307.202,         0.0,  0.00!  !END!
! X =     400.720,     5307.202,         0.0,  0.00!  !END!
! X =     401.720,     5307.202,         0.0,  0.00!  !END!
! X =     402.720,     5307.202,         0.0,  0.00!  !END!
! X =     403.720,     5307.202,         0.0,  0.00!  !END!
! X =     404.720,     5307.202,         0.0,  0.00!  !END!
! X =     405.720,     5307.202,         0.0,  0.00!  !END!
! X =     406.720,     5307.202,         0.0,  0.00!  !END!
! X =     386.720,     5308.202,         0.0,  0.00!  !END!
! X =     387.720,     5308.202,         0.0,  0.00!  !END!
! X =     388.720,     5308.202,         0.0,  0.00!  !END!
! X =     389.720,     5308.202,         0.0,  0.00!  !END!
! X =     390.720,     5308.202,         0.0,  0.00!  !END!
! X =     391.720,     5308.202,         0.0,  0.00!  !END!
! X =     392.720,     5308.202,         0.0,  0.00!  !END!
! X =     393.720,     5308.202,         0.0,  0.00!  !END!
! X =     394.720,     5308.202,         0.0,  0.00!  !END!
! X =     395.720,     5308.202,         0.0,  0.00!  !END!
! X =     396.720,     5308.202,         0.0,  0.00!  !END!
! X =     397.720,     5308.202,         0.0,  0.00!  !END!
! X =     398.720,     5308.202,         0.0,  0.00!  !END!
! X =     399.720,     5308.202,         0.0,  0.00!  !END!
! X =     400.720,     5308.202,         0.0,  0.00!  !END!
! X =     401.720,     5308.202,         0.0,  0.00!  !END!
! X =     402.720,     5308.202,         0.0,  0.00!  !END!
! X =     403.720,     5308.202,         0.0,  0.00!  !END!
! X =     404.720,     5308.202,         0.0,  0.00!  !END!
! X =     405.720,     5308.202,         0.0,  0.00!  !END!
! X =     406.720,     5308.202,         0.0,  0.00!  !END!
! X =     386.720,     5309.202,         0.0,  0.00!  !END!
! X =     387.720,     5309.202,         0.0,  0.00!  !END!
! X =     388.720,     5309.202,         0.0,  0.00!  !END!
! X =     389.720,     5309.202,         0.0,  0.00!  !END!
! X =     390.720,     5309.202,         0.0,  0.00!  !END!
! X =     391.720,     5309.202,         0.0,  0.00!  !END!
! X =     392.720,     5309.202,         0.0,  0.00!  !END!
! X =     393.720,     5309.202,         0.0,  0.00!  !END!
! X =     394.720,     5309.202,         0.0,  0.00!  !END!
! X =     395.720,     5309.202,         0.0,  0.00!  !END!
! X =     396.720,     5309.202,         0.0,  0.00!  !END!
! X =     397.720,     5309.202,         0.0,  0.00!  !END!
! X =     398.720,     5309.202,         0.0,  0.00!  !END!
! X =     399.720,     5309.202,         0.0,  0.00!  !END!
! X =     400.720,     5309.202,         0.0,  0.00!  !END!
! X =     401.720,     5309.202,         0.0,  0.00!  !END!
! X =     402.720,     5309.202,         0.0,  0.00!  !END!
! X =     403.720,     5309.202,         0.0,  0.00!  !END!
! X =     404.720,     5309.202,         0.0,  0.00!  !END!
! X =     405.720,     5309.202,         0.0,  0.00!  !END!
! X =     406.720,     5309.202,         0.0,  0.00!  !END!
! X =     386.720,     5310.202,         0.0,  0.00!  !END!
! X =     387.720,     5310.202,         0.0,  0.00!  !END!
! X =     388.720,     5310.202,         0.0,  0.00!  !END!
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! X =     389.720,     5310.202,         0.0,  0.00!  !END!
! X =     390.720,     5310.202,         0.0,  0.00!  !END!
! X =     391.720,     5310.202,         0.0,  0.00!  !END!
! X =     392.720,     5310.202,         0.0,  0.00!  !END!
! X =     393.720,     5310.202,         0.0,  0.00!  !END!
! X =     394.720,     5310.202,         0.0,  0.00!  !END!
! X =     395.720,     5310.202,         0.0,  0.00!  !END!
! X =     396.720,     5310.202,         0.0,  0.00!  !END!
! X =     397.720,     5310.202,         0.0,  0.00!  !END!
! X =     398.720,     5310.202,         0.0,  0.00!  !END!
! X =     399.720,     5310.202,         0.0,  0.00!  !END!
! X =     400.720,     5310.202,         0.0,  0.00!  !END!
! X =     401.720,     5310.202,         0.0,  0.00!  !END!
! X =     402.720,     5310.202,         0.0,  0.00!  !END!
! X =     403.720,     5310.202,         0.0,  0.00!  !END!
! X =     404.720,     5310.202,         0.0,  0.00!  !END!
! X =     405.720,     5310.202,         0.0,  0.00!  !END!
! X =     406.720,     5310.202,         0.0,  0.00!  !END!
! X =     386.720,     5311.202,         0.0,  0.00!  !END!
! X =     387.720,     5311.202,         0.0,  0.00!  !END!
! X =     388.720,     5311.202,         0.0,  0.00!  !END!
! X =     389.720,     5311.202,         0.0,  0.00!  !END!
! X =     390.720,     5311.202,         0.0,  0.00!  !END!
! X =     391.720,     5311.202,         0.0,  0.00!  !END!
! X =     399.720,     5311.202,         0.0,  0.00!  !END!
! X =     400.720,     5311.202,         0.0,  0.00!  !END!
! X =     401.720,     5311.202,         0.0,  0.00!  !END!
! X =     402.720,     5311.202,         0.0,  0.00!  !END!
! X =     403.720,     5311.202,         0.0,  0.00!  !END!
! X =     404.720,     5311.202,         0.0,  0.00!  !END!
! X =     405.720,     5311.202,         0.0,  0.00!  !END!
! X =     406.720,     5311.202,         0.0,  0.00!  !END!
! X =     386.720,     5312.202,         0.0,  0.00!  !END!
! X =     387.720,     5312.202,         0.0,  0.00!  !END!
! X =     388.720,     5312.202,         0.0,  0.00!  !END!
! X =     389.720,     5312.202,         0.0,  0.00!  !END!
! X =     390.720,     5312.202,         0.0,  0.00!  !END!
! X =     391.720,     5312.202,         0.0,  0.00!  !END!
! X =     399.720,     5312.202,         0.0,  0.00!  !END!
! X =     400.720,     5312.202,         0.0,  0.00!  !END!
! X =     401.720,     5312.202,         0.0,  0.00!  !END!
! X =     402.720,     5312.202,         0.0,  0.00!  !END!
! X =     403.720,     5312.202,         0.0,  0.00!  !END!
! X =     404.720,     5312.202,         0.0,  0.00!  !END!
! X =     405.720,     5312.202,         0.0,  0.00!  !END!
! X =     406.720,     5312.202,         0.0,  0.00!  !END!
! X =     386.720,     5313.202,         0.0,  0.00!  !END!
! X =     387.720,     5313.202,         0.0,  0.00!  !END!
! X =     388.720,     5313.202,         0.0,  0.00!  !END!
! X =     389.720,     5313.202,         0.0,  0.00!  !END!
! X =     390.720,     5313.202,         0.0,  0.00!  !END!
! X =     391.720,     5313.202,         0.0,  0.00!  !END!
! X =     399.720,     5313.202,         0.0,  0.00!  !END!
! X =     400.720,     5313.202,         0.0,  0.00!  !END!
! X =     401.720,     5313.202,         0.0,  0.00!  !END!
! X =     402.720,     5313.202,         0.0,  0.00!  !END!
! X =     403.720,     5313.202,         0.0,  0.00!  !END!
! X =     404.720,     5313.202,         0.0,  0.00!  !END!
! X =     405.720,     5313.202,         0.0,  0.00!  !END!
! X =     406.720,     5313.202,         0.0,  0.00!  !END!
! X =     386.720,     5314.202,         0.0,  0.00!  !END!
! X =     387.720,     5314.202,         0.0,  0.00!  !END!
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! X =     388.720,     5314.202,         0.0,  0.00!  !END!
! X =     389.720,     5314.202,         0.0,  0.00!  !END!
! X =     390.720,     5314.202,         0.0,  0.00!  !END!
! X =     391.720,     5314.202,         0.0,  0.00!  !END!
! X =     399.720,     5314.202,         0.0,  0.00!  !END!
! X =     400.720,     5314.202,         0.0,  0.00!  !END!
! X =     401.720,     5314.202,         0.0,  0.00!  !END!
! X =     402.720,     5314.202,         0.0,  0.00!  !END!
! X =     403.720,     5314.202,         0.0,  0.00!  !END!
! X =     404.720,     5314.202,         0.0,  0.00!  !END!
! X =     405.720,     5314.202,         0.0,  0.00!  !END!
! X =     406.720,     5314.202,         0.0,  0.00!  !END!
! X =     386.720,     5315.202,         0.0,  0.00!  !END!
! X =     387.720,     5315.202,         0.0,  0.00!  !END!
! X =     388.720,     5315.202,         0.0,  0.00!  !END!
! X =     389.720,     5315.202,         0.0,  0.00!  !END!
! X =     390.720,     5315.202,         0.0,  0.00!  !END!
! X =     391.720,     5315.202,         0.0,  0.00!  !END!
! X =     399.720,     5315.202,         0.0,  0.00!  !END!
! X =     400.720,     5315.202,         0.0,  0.00!  !END!
! X =     401.720,     5315.202,         0.0,  0.00!  !END!
! X =     402.720,     5315.202,         0.0,  0.00!  !END!
! X =     403.720,     5315.202,         0.0,  0.00!  !END!
! X =     404.720,     5315.202,         0.0,  0.00!  !END!
! X =     405.720,     5315.202,         0.0,  0.00!  !END!
! X =     406.720,     5315.202,         0.0,  0.00!  !END!
! X =     386.720,     5316.202,         0.0,  0.00!  !END!
! X =     387.720,     5316.202,         0.0,  0.00!  !END!
! X =     388.720,     5316.202,         0.0,  0.00!  !END!
! X =     389.720,     5316.202,         0.0,  0.00!  !END!
! X =     390.720,     5316.202,         0.0,  0.00!  !END!
! X =     391.720,     5316.202,         0.0,  0.00!  !END!
! X =     392.720,     5316.202,         0.0,  0.00!  !END!
! X =     393.720,     5316.202,         0.0,  0.00!  !END!
! X =     394.720,     5316.202,         0.0,  0.00!  !END!
! X =     395.720,     5316.202,         0.0,  0.00!  !END!
! X =     396.720,     5316.202,         0.0,  0.00!  !END!
! X =     397.720,     5316.202,         0.0,  0.00!  !END!
! X =     398.720,     5316.202,         0.0,  0.00!  !END!
! X =     399.720,     5316.202,         0.0,  0.00!  !END!
! X =     400.720,     5316.202,         0.0,  0.00!  !END!
! X =     401.720,     5316.202,         0.0,  0.00!  !END!
! X =     402.720,     5316.202,         0.0,  0.00!  !END!
! X =     403.720,     5316.202,         0.0,  0.00!  !END!
! X =     404.720,     5316.202,         0.0,  0.00!  !END!
! X =     405.720,     5316.202,         0.0,  0.00!  !END!
! X =     406.720,     5316.202,         0.0,  0.00!  !END!
! X =     386.720,     5317.202,         0.0,  0.00!  !END!
! X =     387.720,     5317.202,         0.0,  0.00!  !END!
! X =     388.720,     5317.202,         0.0,  0.00!  !END!
! X =     389.720,     5317.202,         0.0,  0.00!  !END!
! X =     390.720,     5317.202,         0.0,  0.00!  !END!
! X =     391.720,     5317.202,         0.0,  0.00!  !END!
! X =     392.720,     5317.202,         0.0,  0.00!  !END!
! X =     393.720,     5317.202,         0.0,  0.00!  !END!
! X =     394.720,     5317.202,         0.0,  0.00!  !END!
! X =     395.720,     5317.202,         0.0,  0.00!  !END!
! X =     396.720,     5317.202,         0.0,  0.00!  !END!
! X =     397.720,     5317.202,         0.0,  0.00!  !END!
! X =     398.720,     5317.202,         0.0,  0.00!  !END!
! X =     399.720,     5317.202,         0.0,  0.00!  !END!
! X =     400.720,     5317.202,         0.0,  0.00!  !END!
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! X =     401.720,     5317.202,         0.0,  0.00!  !END!
! X =     402.720,     5317.202,         0.0,  0.00!  !END!
! X =     403.720,     5317.202,         0.0,  0.00!  !END!
! X =     404.720,     5317.202,         0.0,  0.00!  !END!
! X =     405.720,     5317.202,         0.0,  0.00!  !END!
! X =     406.720,     5317.202,         0.0,  0.00!  !END!
! X =     386.720,     5318.202,         0.0,  0.00!  !END!
! X =     387.720,     5318.202,         0.0,  0.00!  !END!
! X =     388.720,     5318.202,         0.0,  0.00!  !END!
! X =     389.720,     5318.202,         0.0,  0.00!  !END!
! X =     390.720,     5318.202,         0.0,  0.00!  !END!
! X =     391.720,     5318.202,         0.0,  0.00!  !END!
! X =     392.720,     5318.202,         0.0,  0.00!  !END!
! X =     393.720,     5318.202,         0.0,  0.00!  !END!
! X =     394.720,     5318.202,         0.0,  0.00!  !END!
! X =     395.720,     5318.202,         0.0,  0.00!  !END!
! X =     396.720,     5318.202,         0.0,  0.00!  !END!
! X =     397.720,     5318.202,         0.0,  0.00!  !END!
! X =     398.720,     5318.202,         0.0,  0.00!  !END!
! X =     399.720,     5318.202,         0.0,  0.00!  !END!
! X =     400.720,     5318.202,         0.0,  0.00!  !END!
! X =     401.720,     5318.202,         0.0,  0.00!  !END!
! X =     402.720,     5318.202,         0.0,  0.00!  !END!
! X =     403.720,     5318.202,         0.0,  0.00!  !END!
! X =     404.720,     5318.202,         0.0,  0.00!  !END!
! X =     405.720,     5318.202,         0.0,  0.00!  !END!
! X =     406.720,     5318.202,         0.0,  0.00!  !END!
! X =     386.720,     5319.202,         0.0,  0.00!  !END!
! X =     387.720,     5319.202,         0.0,  0.00!  !END!
! X =     388.720,     5319.202,         0.0,  0.00!  !END!
! X =     389.720,     5319.202,         0.0,  0.00!  !END!
! X =     390.720,     5319.202,         0.0,  0.00!  !END!
! X =     391.720,     5319.202,         0.0,  0.00!  !END!
! X =     392.720,     5319.202,         0.0,  0.00!  !END!
! X =     393.720,     5319.202,         0.0,  0.00!  !END!
! X =     394.720,     5319.202,         0.0,  0.00!  !END!
! X =     395.720,     5319.202,         0.0,  0.00!  !END!
! X =     396.720,     5319.202,         0.0,  0.00!  !END!
! X =     397.720,     5319.202,         0.0,  0.00!  !END!
! X =     398.720,     5319.202,         0.0,  0.00!  !END!
! X =     399.720,     5319.202,         0.0,  0.00!  !END!
! X =     400.720,     5319.202,         0.0,  0.00!  !END!
! X =     401.720,     5319.202,         0.0,  0.00!  !END!
! X =     402.720,     5319.202,         0.0,  0.00!  !END!
! X =     403.720,     5319.202,         0.0,  0.00!  !END!
! X =     404.720,     5319.202,         0.0,  0.00!  !END!
! X =     405.720,     5319.202,         0.0,  0.00!  !END!
! X =     406.720,     5319.202,         0.0,  0.00!  !END!
! X =     386.720,     5320.202,         0.0,  0.00!  !END!
! X =     387.720,     5320.202,         0.0,  0.00!  !END!
! X =     388.720,     5320.202,         0.0,  0.00!  !END!
! X =     389.720,     5320.202,         0.0,  0.00!  !END!
! X =     390.720,     5320.202,         0.0,  0.00!  !END!
! X =     391.720,     5320.202,         0.0,  0.00!  !END!
! X =     392.720,     5320.202,         0.0,  0.00!  !END!
! X =     393.720,     5320.202,         0.0,  0.00!  !END!
! X =     394.720,     5320.202,         0.0,  0.00!  !END!
! X =     395.720,     5320.202,         0.0,  0.00!  !END!
! X =     396.720,     5320.202,         0.0,  0.00!  !END!
! X =     397.720,     5320.202,         0.0,  0.00!  !END!
! X =     398.720,     5320.202,         0.0,  0.00!  !END!
! X =     399.720,     5320.202,         0.0,  0.00!  !END!
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! X =     400.720,     5320.202,         0.0,  0.00!  !END!
! X =     401.720,     5320.202,         0.0,  0.00!  !END!
! X =     402.720,     5320.202,         0.0,  0.00!  !END!
! X =     403.720,     5320.202,         0.0,  0.00!  !END!
! X =     404.720,     5320.202,         0.0,  0.00!  !END!
! X =     405.720,     5320.202,         0.0,  0.00!  !END!
! X =     406.720,     5320.202,         0.0,  0.00!  !END!
! X =     386.720,     5321.202,         0.0,  0.00!  !END!
! X =     387.720,     5321.202,         0.0,  0.00!  !END!
! X =     388.720,     5321.202,         0.0,  0.00!  !END!
! X =     389.720,     5321.202,         0.0,  0.00!  !END!
! X =     390.720,     5321.202,         0.0,  0.00!  !END!
! X =     391.720,     5321.202,         0.0,  0.00!  !END!
! X =     392.720,     5321.202,         0.0,  0.00!  !END!
! X =     393.720,     5321.202,         0.0,  0.00!  !END!
! X =     394.720,     5321.202,         0.0,  0.00!  !END!
! X =     395.720,     5321.202,         0.0,  0.00!  !END!
! X =     396.720,     5321.202,         0.0,  0.00!  !END!
! X =     397.720,     5321.202,         0.0,  0.00!  !END!
! X =     398.720,     5321.202,         0.0,  0.00!  !END!
! X =     399.720,     5321.202,         0.0,  0.00!  !END!
! X =     400.720,     5321.202,         0.0,  0.00!  !END!
! X =     401.720,     5321.202,         0.0,  0.00!  !END!
! X =     402.720,     5321.202,         0.0,  0.00!  !END!
! X =     403.720,     5321.202,         0.0,  0.00!  !END!
! X =     404.720,     5321.202,         0.0,  0.00!  !END!
! X =     405.720,     5321.202,         0.0,  0.00!  !END!
! X =     406.720,     5321.202,         0.0,  0.00!  !END!
! X =     386.720,     5322.202,         0.0,  0.00!  !END!
! X =     387.720,     5322.202,         0.0,  0.00!  !END!
! X =     388.720,     5322.202,         0.0,  0.00!  !END!
! X =     389.720,     5322.202,         0.0,  0.00!  !END!
! X =     390.720,     5322.202,         0.0,  0.00!  !END!
! X =     391.720,     5322.202,         0.0,  0.00!  !END!
! X =     392.720,     5322.202,         0.0,  0.00!  !END!
! X =     393.720,     5322.202,         0.0,  0.00!  !END!
! X =     394.720,     5322.202,         0.0,  0.00!  !END!
! X =     395.720,     5322.202,         0.0,  0.00!  !END!
! X =     396.720,     5322.202,         0.0,  0.00!  !END!
! X =     397.720,     5322.202,         0.0,  0.00!  !END!
! X =     398.720,     5322.202,         0.0,  0.00!  !END!
! X =     399.720,     5322.202,         0.0,  0.00!  !END!
! X =     400.720,     5322.202,         0.0,  0.00!  !END!
! X =     401.720,     5322.202,         0.0,  0.00!  !END!
! X =     402.720,     5322.202,         0.0,  0.00!  !END!
! X =     403.720,     5322.202,         0.0,  0.00!  !END!
! X =     404.720,     5322.202,         0.0,  0.00!  !END!
! X =     405.720,     5322.202,         0.0,  0.00!  !END!
! X =     406.720,     5322.202,         0.0,  0.00!  !END!
! X =     386.720,     5323.202,         0.0,  0.00!  !END!
! X =     387.720,     5323.202,         0.0,  0.00!  !END!
! X =     388.720,     5323.202,         0.0,  0.00!  !END!
! X =     389.720,     5323.202,         0.0,  0.00!  !END!
! X =     390.720,     5323.202,         0.0,  0.00!  !END!
! X =     391.720,     5323.202,         0.0,  0.00!  !END!
! X =     392.720,     5323.202,         0.0,  0.00!  !END!
! X =     393.720,     5323.202,         0.0,  0.00!  !END!
! X =     394.720,     5323.202,         0.0,  0.00!  !END!
! X =     395.720,     5323.202,         0.0,  0.00!  !END!
! X =     396.720,     5323.202,         0.0,  0.00!  !END!
! X =     397.720,     5323.202,         0.0,  0.00!  !END!
! X =     398.720,     5323.202,         0.0,  0.00!  !END!
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! X =     399.720,     5323.202,         0.0,  0.00!  !END!
! X =     400.720,     5323.202,         0.0,  0.00!  !END!
! X =     401.720,     5323.202,         0.0,  0.00!  !END!
! X =     402.720,     5323.202,         0.0,  0.00!  !END!
! X =     403.720,     5323.202,         0.0,  0.00!  !END!
! X =     404.720,     5323.202,         0.0,  0.00!  !END!
! X =     405.720,     5323.202,         0.0,  0.00!  !END!
! X =     406.720,     5323.202,         0.0,  0.00!  !END!
! X =     394.302,     5312.604,         0.0,  0.00!  !END!
! X =     394.352,     5312.604,         0.0,  0.00!  !END!
! X =     394.402,     5312.604,         0.0,  0.00!  !END!
! X =     394.452,     5312.604,         0.0,  0.00!  !END!
! X =     394.502,     5312.604,         0.0,  0.00!  !END!
! X =     394.552,     5312.604,         0.0,  0.00!  !END!
! X =     394.602,     5312.604,         0.0,  0.00!  !END!
! X =     394.652,     5312.604,         0.0,  0.00!  !END!
! X =     394.702,     5312.604,         0.0,  0.00!  !END!
! X =     394.752,     5312.604,         0.0,  0.00!  !END!
! X =     394.802,     5312.604,         0.0,  0.00!  !END!
! X =     394.852,     5312.604,         0.0,  0.00!  !END!
! X =     394.902,     5312.604,         0.0,  0.00!  !END!
! X =     394.952,     5312.604,         0.0,  0.00!  !END!
! X =     395.002,     5312.604,         0.0,  0.00!  !END!
! X =     395.052,     5312.604,         0.0,  0.00!  !END!
! X =     395.102,     5312.604,         0.0,  0.00!  !END!
! X =     395.152,     5312.604,         0.0,  0.00!  !END!
! X =     395.202,     5312.604,         0.0,  0.00!  !END!
! X =     395.252,     5312.604,         0.0,  0.00!  !END!
! X =     395.302,     5312.604,         0.0,  0.00!  !END!
! X =     395.352,     5312.604,         0.0,  0.00!  !END!
! X =     395.402,     5312.604,         0.0,  0.00!  !END!
! X =     395.452,     5312.604,         0.0,  0.00!  !END!
! X =     395.502,     5312.604,         0.0,  0.00!  !END!
! X =     394.302,     5312.654,         0.0,  0.00!  !END!
! X =     394.352,     5312.654,         0.0,  0.00!  !END!
! X =     394.402,     5312.654,         0.0,  0.00!  !END!
! X =     394.452,     5312.654,         0.0,  0.00!  !END!
! X =     394.502,     5312.654,         0.0,  0.00!  !END!
! X =     394.552,     5312.654,         0.0,  0.00!  !END!
! X =     394.602,     5312.654,         0.0,  0.00!  !END!
! X =     394.652,     5312.654,         0.0,  0.00!  !END!
! X =     394.702,     5312.654,         0.0,  0.00!  !END!
! X =     394.752,     5312.654,         0.0,  0.00!  !END!
! X =     394.802,     5312.654,         0.0,  0.00!  !END!
! X =     394.852,     5312.654,         0.0,  0.00!  !END!
! X =     394.902,     5312.654,         0.0,  0.00!  !END!
! X =     394.952,     5312.654,         0.0,  0.00!  !END!
! X =     395.002,     5312.654,         0.0,  0.00!  !END!
! X =     395.052,     5312.654,         0.0,  0.00!  !END!
! X =     395.102,     5312.654,         0.0,  0.00!  !END!
! X =     395.152,     5312.654,         0.0,  0.00!  !END!
! X =     395.202,     5312.654,         0.0,  0.00!  !END!
! X =     395.252,     5312.654,         0.0,  0.00!  !END!
! X =     395.302,     5312.654,         0.0,  0.00!  !END!
! X =     395.352,     5312.654,         0.0,  0.00!  !END!
! X =     395.402,     5312.654,         0.0,  0.00!  !END!
! X =     395.452,     5312.654,         0.0,  0.00!  !END!
! X =     395.502,     5312.654,         0.0,  0.00!  !END!
! X =     394.302,     5312.704,         0.0,  0.00!  !END!
! X =     394.352,     5312.704,         0.0,  0.00!  !END!
! X =     394.402,     5312.704,         0.0,  0.00!  !END!
! X =     394.452,     5312.704,         0.0,  0.00!  !END!
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! X =     394.502,     5312.704,         0.0,  0.00!  !END!
! X =     394.552,     5312.704,         0.0,  0.00!  !END!
! X =     394.602,     5312.704,         0.0,  0.00!  !END!
! X =     394.652,     5312.704,         0.0,  0.00!  !END!
! X =     394.702,     5312.704,         0.0,  0.00!  !END!
! X =     394.752,     5312.704,         0.0,  0.00!  !END!
! X =     394.802,     5312.704,         0.0,  0.00!  !END!
! X =     394.852,     5312.704,         0.0,  0.00!  !END!
! X =     394.902,     5312.704,         0.0,  0.00!  !END!
! X =     394.952,     5312.704,         0.0,  0.00!  !END!
! X =     395.002,     5312.704,         0.0,  0.00!  !END!
! X =     395.052,     5312.704,         0.0,  0.00!  !END!
! X =     395.102,     5312.704,         0.0,  0.00!  !END!
! X =     395.152,     5312.704,         0.0,  0.00!  !END!
! X =     395.202,     5312.704,         0.0,  0.00!  !END!
! X =     395.252,     5312.704,         0.0,  0.00!  !END!
! X =     395.302,     5312.704,         0.0,  0.00!  !END!
! X =     395.352,     5312.704,         0.0,  0.00!  !END!
! X =     395.402,     5312.704,         0.0,  0.00!  !END!
! X =     395.452,     5312.704,         0.0,  0.00!  !END!
! X =     395.502,     5312.704,         0.0,  0.00!  !END!
! X =     394.302,     5312.754,         0.0,  0.00!  !END!
! X =     394.352,     5312.754,         0.0,  0.00!  !END!
! X =     394.402,     5312.754,         0.0,  0.00!  !END!
! X =     394.452,     5312.754,         0.0,  0.00!  !END!
! X =     394.502,     5312.754,         0.0,  0.00!  !END!
! X =     394.552,     5312.754,         0.0,  0.00!  !END!
! X =     394.602,     5312.754,         0.0,  0.00!  !END!
! X =     394.652,     5312.754,         0.0,  0.00!  !END!
! X =     394.702,     5312.754,         0.0,  0.00!  !END!
! X =     394.752,     5312.754,         0.0,  0.00!  !END!
! X =     394.802,     5312.754,         0.0,  0.00!  !END!
! X =     394.852,     5312.754,         0.0,  0.00!  !END!
! X =     394.902,     5312.754,         0.0,  0.00!  !END!
! X =     394.952,     5312.754,         0.0,  0.00!  !END!
! X =     395.002,     5312.754,         0.0,  0.00!  !END!
! X =     395.052,     5312.754,         0.0,  0.00!  !END!
! X =     395.102,     5312.754,         0.0,  0.00!  !END!
! X =     395.152,     5312.754,         0.0,  0.00!  !END!
! X =     395.202,     5312.754,         0.0,  0.00!  !END!
! X =     395.252,     5312.754,         0.0,  0.00!  !END!
! X =     395.302,     5312.754,         0.0,  0.00!  !END!
! X =     395.352,     5312.754,         0.0,  0.00!  !END!
! X =     395.402,     5312.754,         0.0,  0.00!  !END!
! X =     395.452,     5312.754,         0.0,  0.00!  !END!
! X =     395.502,     5312.754,         0.0,  0.00!  !END!
! X =     394.302,     5312.804,         0.0,  0.00!  !END!
! X =     394.352,     5312.804,         0.0,  0.00!  !END!
! X =     394.402,     5312.804,         0.0,  0.00!  !END!
! X =     394.452,     5312.804,         0.0,  0.00!  !END!
! X =     394.502,     5312.804,         0.0,  0.00!  !END!
! X =     394.552,     5312.804,         0.0,  0.00!  !END!
! X =     394.602,     5312.804,         0.0,  0.00!  !END!
! X =     394.652,     5312.804,         0.0,  0.00!  !END!
! X =     394.702,     5312.804,         0.0,  0.00!  !END!
! X =     394.752,     5312.804,         0.0,  0.00!  !END!
! X =     394.802,     5312.804,         0.0,  0.00!  !END!
! X =     394.852,     5312.804,         0.0,  0.00!  !END!
! X =     394.902,     5312.804,         0.0,  0.00!  !END!
! X =     394.952,     5312.804,         0.0,  0.00!  !END!
! X =     395.002,     5312.804,         0.0,  0.00!  !END!
! X =     395.052,     5312.804,         0.0,  0.00!  !END!
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! X =     395.102,     5312.804,         0.0,  0.00!  !END!
! X =     395.152,     5312.804,         0.0,  0.00!  !END!
! X =     395.202,     5312.804,         0.0,  0.00!  !END!
! X =     395.252,     5312.804,         0.0,  0.00!  !END!
! X =     395.302,     5312.804,         0.0,  0.00!  !END!
! X =     395.352,     5312.804,         0.0,  0.00!  !END!
! X =     395.402,     5312.804,         0.0,  0.00!  !END!
! X =     395.452,     5312.804,         0.0,  0.00!  !END!
! X =     395.502,     5312.804,         0.0,  0.00!  !END!
! X =     394.302,     5312.854,         0.0,  0.00!  !END!
! X =     394.352,     5312.854,         0.0,  0.00!  !END!
! X =     394.402,     5312.854,         0.0,  0.00!  !END!
! X =     394.452,     5312.854,         0.0,  0.00!  !END!
! X =     394.502,     5312.854,         0.0,  0.00!  !END!
! X =     394.552,     5312.854,         0.0,  0.00!  !END!
! X =     394.602,     5312.854,         0.0,  0.00!  !END!
! X =     394.652,     5312.854,         0.0,  0.00!  !END!
! X =     394.702,     5312.854,         0.0,  0.00!  !END!
! X =     394.752,     5312.854,         0.0,  0.00!  !END!
! X =     394.802,     5312.854,         0.0,  0.00!  !END!
! X =     394.852,     5312.854,         0.0,  0.00!  !END!
! X =     394.902,     5312.854,         0.0,  0.00!  !END!
! X =     395.052,     5312.854,         0.0,  0.00!  !END!
! X =     395.102,     5312.854,         0.0,  0.00!  !END!
! X =     395.152,     5312.854,         0.0,  0.00!  !END!
! X =     395.202,     5312.854,         0.0,  0.00!  !END!
! X =     395.252,     5312.854,         0.0,  0.00!  !END!
! X =     395.302,     5312.854,         0.0,  0.00!  !END!
! X =     395.352,     5312.854,         0.0,  0.00!  !END!
! X =     395.402,     5312.854,         0.0,  0.00!  !END!
! X =     395.452,     5312.854,         0.0,  0.00!  !END!
! X =     395.502,     5312.854,         0.0,  0.00!  !END!
! X =     394.302,     5312.904,         0.0,  0.00!  !END!
! X =     394.352,     5312.904,         0.0,  0.00!  !END!
! X =     394.402,     5312.904,         0.0,  0.00!  !END!
! X =     394.452,     5312.904,         0.0,  0.00!  !END!
! X =     394.502,     5312.904,         0.0,  0.00!  !END!
! X =     394.552,     5312.904,         0.0,  0.00!  !END!
! X =     394.602,     5312.904,         0.0,  0.00!  !END!
! X =     394.652,     5312.904,         0.0,  0.00!  !END!
! X =     394.702,     5312.904,         0.0,  0.00!  !END!
! X =     394.752,     5312.904,         0.0,  0.00!  !END!
! X =     394.802,     5312.904,         0.0,  0.00!  !END!
! X =     394.852,     5312.904,         0.0,  0.00!  !END!
! X =     394.902,     5312.904,         0.0,  0.00!  !END!
! X =     394.952,     5312.904,         0.0,  0.00!  !END!
! X =     395.002,     5312.904,         0.0,  0.00!  !END!
! X =     395.052,     5312.904,         0.0,  0.00!  !END!
! X =     395.102,     5312.904,         0.0,  0.00!  !END!
! X =     395.152,     5312.904,         0.0,  0.00!  !END!
! X =     395.202,     5312.904,         0.0,  0.00!  !END!
! X =     395.252,     5312.904,         0.0,  0.00!  !END!
! X =     395.302,     5312.904,         0.0,  0.00!  !END!
! X =     395.352,     5312.904,         0.0,  0.00!  !END!
! X =     395.402,     5312.904,         0.0,  0.00!  !END!
! X =     395.452,     5312.904,         0.0,  0.00!  !END!
! X =     395.502,     5312.904,         0.0,  0.00!  !END!
! X =     394.302,     5312.954,         0.0,  0.00!  !END!
! X =     394.352,     5312.954,         0.0,  0.00!  !END!
! X =     394.402,     5312.954,         0.0,  0.00!  !END!
! X =     394.452,     5312.954,         0.0,  0.00!  !END!
! X =     394.502,     5312.954,         0.0,  0.00!  !END!
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! X =     394.552,     5312.954,         0.0,  0.00!  !END!
! X =     394.602,     5312.954,         0.0,  0.00!  !END!
! X =     394.652,     5312.954,         0.0,  0.00!  !END!
! X =     394.702,     5312.954,         0.0,  0.00!  !END!
! X =     394.752,     5312.954,         0.0,  0.00!  !END!
! X =     394.802,     5312.954,         0.0,  0.00!  !END!
! X =     394.852,     5312.954,         0.0,  0.00!  !END!
! X =     394.902,     5312.954,         0.0,  0.00!  !END!
! X =     394.952,     5312.954,         0.0,  0.00!  !END!
! X =     395.002,     5312.954,         0.0,  0.00!  !END!
! X =     395.052,     5312.954,         0.0,  0.00!  !END!
! X =     395.102,     5312.954,         0.0,  0.00!  !END!
! X =     395.152,     5312.954,         0.0,  0.00!  !END!
! X =     395.202,     5312.954,         0.0,  0.00!  !END!
! X =     395.252,     5312.954,         0.0,  0.00!  !END!
! X =     395.302,     5312.954,         0.0,  0.00!  !END!
! X =     395.352,     5312.954,         0.0,  0.00!  !END!
! X =     395.402,     5312.954,         0.0,  0.00!  !END!
! X =     395.452,     5312.954,         0.0,  0.00!  !END!
! X =     395.502,     5312.954,         0.0,  0.00!  !END!
! X =     394.302,     5313.004,         0.0,  0.00!  !END!
! X =     394.352,     5313.004,         0.0,  0.00!  !END!
! X =     394.402,     5313.004,         0.0,  0.00!  !END!
! X =     394.452,     5313.004,         0.0,  0.00!  !END!
! X =     394.502,     5313.004,         0.0,  0.00!  !END!
! X =     394.552,     5313.004,         0.0,  0.00!  !END!
! X =     394.602,     5313.004,         0.0,  0.00!  !END!
! X =     394.652,     5313.004,         0.0,  0.00!  !END!
! X =     394.702,     5313.004,         0.0,  0.00!  !END!
! X =     394.752,     5313.004,         0.0,  0.00!  !END!
! X =     394.802,     5313.004,         0.0,  0.00!  !END!
! X =     394.852,     5313.004,         0.0,  0.00!  !END!
! X =     394.902,     5313.004,         0.0,  0.00!  !END!
! X =     394.952,     5313.004,         0.0,  0.00!  !END!
! X =     395.002,     5313.004,         0.0,  0.00!  !END!
! X =     395.052,     5313.004,         0.0,  0.00!  !END!
! X =     395.102,     5313.004,         0.0,  0.00!  !END!
! X =     395.152,     5313.004,         0.0,  0.00!  !END!
! X =     395.202,     5313.004,         0.0,  0.00!  !END!
! X =     395.252,     5313.004,         0.0,  0.00!  !END!
! X =     395.302,     5313.004,         0.0,  0.00!  !END!
! X =     395.352,     5313.004,         0.0,  0.00!  !END!
! X =     395.402,     5313.004,         0.0,  0.00!  !END!
! X =     395.452,     5313.004,         0.0,  0.00!  !END!
! X =     395.502,     5313.004,         0.0,  0.00!  !END!
! X =     394.302,     5313.054,         0.0,  0.00!  !END!
! X =     394.352,     5313.054,         0.0,  0.00!  !END!
! X =     394.402,     5313.054,         0.0,  0.00!  !END!
! X =     394.452,     5313.054,         0.0,  0.00!  !END!
! X =     394.502,     5313.054,         0.0,  0.00!  !END!
! X =     394.552,     5313.054,         0.0,  0.00!  !END!
! X =     394.602,     5313.054,         0.0,  0.00!  !END!
! X =     394.652,     5313.054,         0.0,  0.00!  !END!
! X =     394.702,     5313.054,         0.0,  0.00!  !END!
! X =     394.752,     5313.054,         0.0,  0.00!  !END!
! X =     394.802,     5313.054,         0.0,  0.00!  !END!
! X =     394.852,     5313.054,         0.0,  0.00!  !END!
! X =     394.902,     5313.054,         0.0,  0.00!  !END!
! X =     394.952,     5313.054,         0.0,  0.00!  !END!
! X =     395.002,     5313.054,         0.0,  0.00!  !END!
! X =     395.052,     5313.054,         0.0,  0.00!  !END!
! X =     395.102,     5313.054,         0.0,  0.00!  !END!
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! X =     395.152,     5313.054,         0.0,  0.00!  !END!
! X =     395.202,     5313.054,         0.0,  0.00!  !END!
! X =     395.252,     5313.054,         0.0,  0.00!  !END!
! X =     395.302,     5313.054,         0.0,  0.00!  !END!
! X =     395.352,     5313.054,         0.0,  0.00!  !END!
! X =     395.402,     5313.054,         0.0,  0.00!  !END!
! X =     395.452,     5313.054,         0.0,  0.00!  !END!
! X =     395.502,     5313.054,         0.0,  0.00!  !END!
! X =     394.302,     5313.104,         0.0,  0.00!  !END!
! X =     394.352,     5313.104,         0.0,  0.00!  !END!
! X =     394.402,     5313.104,         0.0,  0.00!  !END!
! X =     394.452,     5313.104,         0.0,  0.00!  !END!
! X =     394.502,     5313.104,         0.0,  0.00!  !END!
! X =     394.552,     5313.104,         0.0,  0.00!  !END!
! X =     394.602,     5313.104,         0.0,  0.00!  !END!
! X =     394.652,     5313.104,         0.0,  0.00!  !END!
! X =     394.702,     5313.104,         0.0,  0.00!  !END!
! X =     394.752,     5313.104,         0.0,  0.00!  !END!
! X =     394.802,     5313.104,         0.0,  0.00!  !END!
! X =     394.852,     5313.104,         0.0,  0.00!  !END!
! X =     394.902,     5313.104,         0.0,  0.00!  !END!
! X =     394.952,     5313.104,         0.0,  0.00!  !END!
! X =     395.002,     5313.104,         0.0,  0.00!  !END!
! X =     395.052,     5313.104,         0.0,  0.00!  !END!
! X =     395.102,     5313.104,         0.0,  0.00!  !END!
! X =     395.152,     5313.104,         0.0,  0.00!  !END!
! X =     395.202,     5313.104,         0.0,  0.00!  !END!
! X =     395.252,     5313.104,         0.0,  0.00!  !END!
! X =     395.302,     5313.104,         0.0,  0.00!  !END!
! X =     395.352,     5313.104,         0.0,  0.00!  !END!
! X =     395.402,     5313.104,         0.0,  0.00!  !END!
! X =     395.452,     5313.104,         0.0,  0.00!  !END!
! X =     395.502,     5313.104,         0.0,  0.00!  !END!
! X =     394.302,     5313.154,         0.0,  0.00!  !END!
! X =     394.352,     5313.154,         0.0,  0.00!  !END!
! X =     394.402,     5313.154,         0.0,  0.00!  !END!
! X =     394.452,     5313.154,         0.0,  0.00!  !END!
! X =     394.502,     5313.154,         0.0,  0.00!  !END!
! X =     394.552,     5313.154,         0.0,  0.00!  !END!
! X =     394.602,     5313.154,         0.0,  0.00!  !END!
! X =     394.652,     5313.154,         0.0,  0.00!  !END!
! X =     394.702,     5313.154,         0.0,  0.00!  !END!
! X =     394.752,     5313.154,         0.0,  0.00!  !END!
! X =     394.802,     5313.154,         0.0,  0.00!  !END!
! X =     394.852,     5313.154,         0.0,  0.00!  !END!
! X =     394.902,     5313.154,         0.0,  0.00!  !END!
! X =     394.952,     5313.154,         0.0,  0.00!  !END!
! X =     395.002,     5313.154,         0.0,  0.00!  !END!
! X =     395.052,     5313.154,         0.0,  0.00!  !END!
! X =     395.102,     5313.154,         0.0,  0.00!  !END!
! X =     395.152,     5313.154,         0.0,  0.00!  !END!
! X =     395.202,     5313.154,         0.0,  0.00!  !END!
! X =     395.252,     5313.154,         0.0,  0.00!  !END!
! X =     395.302,     5313.154,         0.0,  0.00!  !END!
! X =     395.352,     5313.154,         0.0,  0.00!  !END!
! X =     395.402,     5313.154,         0.0,  0.00!  !END!
! X =     395.452,     5313.154,         0.0,  0.00!  !END!
! X =     395.502,     5313.154,         0.0,  0.00!  !END!
! X =     394.302,     5313.204,         0.0,  0.00!  !END!
! X =     394.352,     5313.204,         0.0,  0.00!  !END!
! X =     394.402,     5313.204,         0.0,  0.00!  !END!
! X =     394.452,     5313.204,         0.0,  0.00!  !END!
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! X =     394.502,     5313.204,         0.0,  0.00!  !END!
! X =     394.552,     5313.204,         0.0,  0.00!  !END!
! X =     394.602,     5313.204,         0.0,  0.00!  !END!
! X =     394.652,     5313.204,         0.0,  0.00!  !END!
! X =     394.702,     5313.204,         0.0,  0.00!  !END!
! X =     394.752,     5313.204,         0.0,  0.00!  !END!
! X =     394.802,     5313.204,         0.0,  0.00!  !END!
! X =     395.002,     5313.204,         0.0,  0.00!  !END!
! X =     395.052,     5313.204,         0.0,  0.00!  !END!
! X =     395.102,     5313.204,         0.0,  0.00!  !END!
! X =     395.152,     5313.204,         0.0,  0.00!  !END!
! X =     395.202,     5313.204,         0.0,  0.00!  !END!
! X =     395.252,     5313.204,         0.0,  0.00!  !END!
! X =     395.302,     5313.204,         0.0,  0.00!  !END!
! X =     395.352,     5313.204,         0.0,  0.00!  !END!
! X =     395.402,     5313.204,         0.0,  0.00!  !END!
! X =     395.452,     5313.204,         0.0,  0.00!  !END!
! X =     395.502,     5313.204,         0.0,  0.00!  !END!
! X =     394.302,     5313.254,         0.0,  0.00!  !END!
! X =     394.352,     5313.254,         0.0,  0.00!  !END!
! X =     394.402,     5313.254,         0.0,  0.00!  !END!
! X =     394.452,     5313.254,         0.0,  0.00!  !END!
! X =     394.502,     5313.254,         0.0,  0.00!  !END!
! X =     394.552,     5313.254,         0.0,  0.00!  !END!
! X =     394.602,     5313.254,         0.0,  0.00!  !END!
! X =     394.652,     5313.254,         0.0,  0.00!  !END!
! X =     394.702,     5313.254,         0.0,  0.00!  !END!
! X =     394.752,     5313.254,         0.0,  0.00!  !END!
! X =     394.802,     5313.254,         0.0,  0.00!  !END!
! X =     394.852,     5313.254,         0.0,  0.00!  !END!
! X =     394.902,     5313.254,         0.0,  0.00!  !END!
! X =     394.952,     5313.254,         0.0,  0.00!  !END!
! X =     395.002,     5313.254,         0.0,  0.00!  !END!
! X =     395.052,     5313.254,         0.0,  0.00!  !END!
! X =     395.102,     5313.254,         0.0,  0.00!  !END!
! X =     395.152,     5313.254,         0.0,  0.00!  !END!
! X =     395.202,     5313.254,         0.0,  0.00!  !END!
! X =     395.252,     5313.254,         0.0,  0.00!  !END!
! X =     395.302,     5313.254,         0.0,  0.00!  !END!
! X =     395.352,     5313.254,         0.0,  0.00!  !END!
! X =     395.402,     5313.254,         0.0,  0.00!  !END!
! X =     395.452,     5313.254,         0.0,  0.00!  !END!
! X =     395.502,     5313.254,         0.0,  0.00!  !END!
! X =     394.302,     5313.304,         0.0,  0.00!  !END!
! X =     394.352,     5313.304,         0.0,  0.00!  !END!
! X =     394.402,     5313.304,         0.0,  0.00!  !END!
! X =     394.452,     5313.304,         0.0,  0.00!  !END!
! X =     394.502,     5313.304,         0.0,  0.00!  !END!
! X =     394.552,     5313.304,         0.0,  0.00!  !END!
! X =     394.602,     5313.304,         0.0,  0.00!  !END!
! X =     394.652,     5313.304,         0.0,  0.00!  !END!
! X =     394.702,     5313.304,         0.0,  0.00!  !END!
! X =     394.752,     5313.304,         0.0,  0.00!  !END!
! X =     394.802,     5313.304,         0.0,  0.00!  !END!
! X =     394.852,     5313.304,         0.0,  0.00!  !END!
! X =     394.902,     5313.304,         0.0,  0.00!  !END!
! X =     394.952,     5313.304,         0.0,  0.00!  !END!
! X =     395.002,     5313.304,         0.0,  0.00!  !END!
! X =     395.052,     5313.304,         0.0,  0.00!  !END!
! X =     395.102,     5313.304,         0.0,  0.00!  !END!
! X =     395.152,     5313.304,         0.0,  0.00!  !END!
! X =     395.202,     5313.304,         0.0,  0.00!  !END!
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! X =     395.252,     5313.304,         0.0,  0.00!  !END!
! X =     395.302,     5313.304,         0.0,  0.00!  !END!
! X =     395.352,     5313.304,         0.0,  0.00!  !END!
! X =     395.402,     5313.304,         0.0,  0.00!  !END!
! X =     395.452,     5313.304,         0.0,  0.00!  !END!
! X =     395.502,     5313.304,         0.0,  0.00!  !END!
! X =     394.302,     5313.354,         0.0,  0.00!  !END!
! X =     394.352,     5313.354,         0.0,  0.00!  !END!
! X =     394.402,     5313.354,         0.0,  0.00!  !END!
! X =     394.452,     5313.354,         0.0,  0.00!  !END!
! X =     394.502,     5313.354,         0.0,  0.00!  !END!
! X =     394.552,     5313.354,         0.0,  0.00!  !END!
! X =     394.602,     5313.354,         0.0,  0.00!  !END!
! X =     394.652,     5313.354,         0.0,  0.00!  !END!
! X =     394.702,     5313.354,         0.0,  0.00!  !END!
! X =     394.752,     5313.354,         0.0,  0.00!  !END!
! X =     394.802,     5313.354,         0.0,  0.00!  !END!
! X =     394.852,     5313.354,         0.0,  0.00!  !END!
! X =     394.902,     5313.354,         0.0,  0.00!  !END!
! X =     394.952,     5313.354,         0.0,  0.00!  !END!
! X =     395.002,     5313.354,         0.0,  0.00!  !END!
! X =     395.052,     5313.354,         0.0,  0.00!  !END!
! X =     395.102,     5313.354,         0.0,  0.00!  !END!
! X =     395.152,     5313.354,         0.0,  0.00!  !END!
! X =     395.202,     5313.354,         0.0,  0.00!  !END!
! X =     395.252,     5313.354,         0.0,  0.00!  !END!
! X =     395.302,     5313.354,         0.0,  0.00!  !END!
! X =     395.352,     5313.354,         0.0,  0.00!  !END!
! X =     395.402,     5313.354,         0.0,  0.00!  !END!
! X =     395.452,     5313.354,         0.0,  0.00!  !END!
! X =     395.502,     5313.354,         0.0,  0.00!  !END!
! X =     394.302,     5313.404,         0.0,  0.00!  !END!
! X =     394.352,     5313.404,         0.0,  0.00!  !END!
! X =     394.402,     5313.404,         0.0,  0.00!  !END!
! X =     394.452,     5313.404,         0.0,  0.00!  !END!
! X =     394.502,     5313.404,         0.0,  0.00!  !END!
! X =     394.552,     5313.404,         0.0,  0.00!  !END!
! X =     394.602,     5313.404,         0.0,  0.00!  !END!
! X =     394.652,     5313.404,         0.0,  0.00!  !END!
! X =     394.702,     5313.404,         0.0,  0.00!  !END!
! X =     394.752,     5313.404,         0.0,  0.00!  !END!
! X =     394.802,     5313.404,         0.0,  0.00!  !END!
! X =     394.852,     5313.404,         0.0,  0.00!  !END!
! X =     394.902,     5313.404,         0.0,  0.00!  !END!
! X =     394.952,     5313.404,         0.0,  0.00!  !END!
! X =     395.002,     5313.404,         0.0,  0.00!  !END!
! X =     395.052,     5313.404,         0.0,  0.00!  !END!
! X =     395.102,     5313.404,         0.0,  0.00!  !END!
! X =     395.152,     5313.404,         0.0,  0.00!  !END!
! X =     395.202,     5313.404,         0.0,  0.00!  !END!
! X =     395.252,     5313.404,         0.0,  0.00!  !END!
! X =     395.302,     5313.404,         0.0,  0.00!  !END!
! X =     395.352,     5313.404,         0.0,  0.00!  !END!
! X =     395.402,     5313.404,         0.0,  0.00!  !END!
! X =     395.452,     5313.404,         0.0,  0.00!  !END!
! X =     395.502,     5313.404,         0.0,  0.00!  !END!
! X =     394.302,     5313.454,         0.0,  0.00!  !END!
! X =     394.352,     5313.454,         0.0,  0.00!  !END!
! X =     394.402,     5313.454,         0.0,  0.00!  !END!
! X =     394.452,     5313.454,         0.0,  0.00!  !END!
! X =     394.502,     5313.454,         0.0,  0.00!  !END!
! X =     394.552,     5313.454,         0.0,  0.00!  !END!
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! X =     394.602,     5313.454,         0.0,  0.00!  !END!
! X =     394.652,     5313.454,         0.0,  0.00!  !END!
! X =     394.702,     5313.454,         0.0,  0.00!  !END!
! X =     394.752,     5313.454,         0.0,  0.00!  !END!
! X =     394.802,     5313.454,         0.0,  0.00!  !END!
! X =     394.852,     5313.454,         0.0,  0.00!  !END!
! X =     394.902,     5313.454,         0.0,  0.00!  !END!
! X =     394.952,     5313.454,         0.0,  0.00!  !END!
! X =     395.002,     5313.454,         0.0,  0.00!  !END!
! X =     395.052,     5313.454,         0.0,  0.00!  !END!
! X =     395.102,     5313.454,         0.0,  0.00!  !END!
! X =     395.152,     5313.454,         0.0,  0.00!  !END!
! X =     395.202,     5313.454,         0.0,  0.00!  !END!
! X =     395.252,     5313.454,         0.0,  0.00!  !END!
! X =     395.302,     5313.454,         0.0,  0.00!  !END!
! X =     395.352,     5313.454,         0.0,  0.00!  !END!
! X =     395.402,     5313.454,         0.0,  0.00!  !END!
! X =     395.452,     5313.454,         0.0,  0.00!  !END!
! X =     395.502,     5313.454,         0.0,  0.00!  !END!
! X =     394.302,     5313.504,         0.0,  0.00!  !END!
! X =     394.352,     5313.504,         0.0,  0.00!  !END!
! X =     394.402,     5313.504,         0.0,  0.00!  !END!
! X =     394.452,     5313.504,         0.0,  0.00!  !END!
! X =     394.502,     5313.504,         0.0,  0.00!  !END!
! X =     394.552,     5313.504,         0.0,  0.00!  !END!
! X =     394.602,     5313.504,         0.0,  0.00!  !END!
! X =     394.652,     5313.504,         0.0,  0.00!  !END!
! X =     394.702,     5313.504,         0.0,  0.00!  !END!
! X =     394.752,     5313.504,         0.0,  0.00!  !END!
! X =     394.802,     5313.504,         0.0,  0.00!  !END!
! X =     394.852,     5313.504,         0.0,  0.00!  !END!
! X =     394.902,     5313.504,         0.0,  0.00!  !END!
! X =     394.952,     5313.504,         0.0,  0.00!  !END!
! X =     395.002,     5313.504,         0.0,  0.00!  !END!
! X =     395.052,     5313.504,         0.0,  0.00!  !END!
! X =     395.102,     5313.504,         0.0,  0.00!  !END!
! X =     395.152,     5313.504,         0.0,  0.00!  !END!
! X =     395.202,     5313.504,         0.0,  0.00!  !END!
! X =     395.252,     5313.504,         0.0,  0.00!  !END!
! X =     395.302,     5313.504,         0.0,  0.00!  !END!
! X =     395.352,     5313.504,         0.0,  0.00!  !END!
! X =     395.402,     5313.504,         0.0,  0.00!  !END!
! X =     395.452,     5313.504,         0.0,  0.00!  !END!
! X =     395.502,     5313.504,         0.0,  0.00!  !END!
! X =     394.302,     5313.554,         0.0,  0.00!  !END!
! X =     394.352,     5313.554,         0.0,  0.00!  !END!
! X =     394.402,     5313.554,         0.0,  0.00!  !END!
! X =     394.452,     5313.554,         0.0,  0.00!  !END!
! X =     394.502,     5313.554,         0.0,  0.00!  !END!
! X =     394.552,     5313.554,         0.0,  0.00!  !END!
! X =     394.602,     5313.554,         0.0,  0.00!  !END!
! X =     394.652,     5313.554,         0.0,  0.00!  !END!
! X =     394.702,     5313.554,         0.0,  0.00!  !END!
! X =     394.752,     5313.554,         0.0,  0.00!  !END!
! X =     394.802,     5313.554,         0.0,  0.00!  !END!
! X =     394.852,     5313.554,         0.0,  0.00!  !END!
! X =     394.902,     5313.554,         0.0,  0.00!  !END!
! X =     394.952,     5313.554,         0.0,  0.00!  !END!
! X =     395.002,     5313.554,         0.0,  0.00!  !END!
! X =     395.052,     5313.554,         0.0,  0.00!  !END!
! X =     395.102,     5313.554,         0.0,  0.00!  !END!
! X =     395.152,     5313.554,         0.0,  0.00!  !END!
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! X =     395.202,     5313.554,         0.0,  0.00!  !END!
! X =     395.252,     5313.554,         0.0,  0.00!  !END!
! X =     395.302,     5313.554,         0.0,  0.00!  !END!
! X =     395.352,     5313.554,         0.0,  0.00!  !END!
! X =     395.402,     5313.554,         0.0,  0.00!  !END!
! X =     395.452,     5313.554,         0.0,  0.00!  !END!
! X =     395.502,     5313.554,         0.0,  0.00!  !END!
! X =     394.302,     5313.604,         0.0,  0.00!  !END!
! X =     394.352,     5313.604,         0.0,  0.00!  !END!
! X =     394.402,     5313.604,         0.0,  0.00!  !END!
! X =     394.452,     5313.604,         0.0,  0.00!  !END!
! X =     394.502,     5313.604,         0.0,  0.00!  !END!
! X =     394.552,     5313.604,         0.0,  0.00!  !END!
! X =     394.602,     5313.604,         0.0,  0.00!  !END!
! X =     394.652,     5313.604,         0.0,  0.00!  !END!
! X =     394.702,     5313.604,         0.0,  0.00!  !END!
! X =     394.752,     5313.604,         0.0,  0.00!  !END!
! X =     394.802,     5313.604,         0.0,  0.00!  !END!
! X =     394.852,     5313.604,         0.0,  0.00!  !END!
! X =     394.902,     5313.604,         0.0,  0.00!  !END!
! X =     394.952,     5313.604,         0.0,  0.00!  !END!
! X =     395.002,     5313.604,         0.0,  0.00!  !END!
! X =     395.052,     5313.604,         0.0,  0.00!  !END!
! X =     395.102,     5313.604,         0.0,  0.00!  !END!
! X =     395.152,     5313.604,         0.0,  0.00!  !END!
! X =     395.202,     5313.604,         0.0,  0.00!  !END!
! X =     395.252,     5313.604,         0.0,  0.00!  !END!
! X =     395.302,     5313.604,         0.0,  0.00!  !END!
! X =     395.352,     5313.604,         0.0,  0.00!  !END!
! X =     395.402,     5313.604,         0.0,  0.00!  !END!
! X =     395.452,     5313.604,         0.0,  0.00!  !END!
! X =     395.502,     5313.604,         0.0,  0.00!  !END!
! X =     394.302,     5313.654,         0.0,  0.00!  !END!
! X =     394.352,     5313.654,         0.0,  0.00!  !END!
! X =     394.402,     5313.654,         0.0,  0.00!  !END!
! X =     394.452,     5313.654,         0.0,  0.00!  !END!
! X =     394.502,     5313.654,         0.0,  0.00!  !END!
! X =     394.552,     5313.654,         0.0,  0.00!  !END!
! X =     394.602,     5313.654,         0.0,  0.00!  !END!
! X =     394.652,     5313.654,         0.0,  0.00!  !END!
! X =     394.702,     5313.654,         0.0,  0.00!  !END!
! X =     394.752,     5313.654,         0.0,  0.00!  !END!
! X =     394.802,     5313.654,         0.0,  0.00!  !END!
! X =     394.852,     5313.654,         0.0,  0.00!  !END!
! X =     394.902,     5313.654,         0.0,  0.00!  !END!
! X =     394.952,     5313.654,         0.0,  0.00!  !END!
! X =     395.002,     5313.654,         0.0,  0.00!  !END!
! X =     395.052,     5313.654,         0.0,  0.00!  !END!
! X =     395.102,     5313.654,         0.0,  0.00!  !END!
! X =     395.152,     5313.654,         0.0,  0.00!  !END!
! X =     395.202,     5313.654,         0.0,  0.00!  !END!
! X =     395.252,     5313.654,         0.0,  0.00!  !END!
! X =     395.302,     5313.654,         0.0,  0.00!  !END!
! X =     395.352,     5313.654,         0.0,  0.00!  !END!
! X =     395.402,     5313.654,         0.0,  0.00!  !END!
! X =     395.452,     5313.654,         0.0,  0.00!  !END!
! X =     395.502,     5313.654,         0.0,  0.00!  !END!
! X =     394.302,     5313.704,         0.0,  0.00!  !END!
! X =     394.352,     5313.704,         0.0,  0.00!  !END!
! X =     394.402,     5313.704,         0.0,  0.00!  !END!
! X =     394.452,     5313.704,         0.0,  0.00!  !END!
! X =     394.502,     5313.704,         0.0,  0.00!  !END!
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! X =     394.552,     5313.704,         0.0,  0.00!  !END!
! X =     394.602,     5313.704,         0.0,  0.00!  !END!
! X =     394.652,     5313.704,         0.0,  0.00!  !END!
! X =     394.702,     5313.704,         0.0,  0.00!  !END!
! X =     394.752,     5313.704,         0.0,  0.00!  !END!
! X =     394.802,     5313.704,         0.0,  0.00!  !END!
! X =     394.852,     5313.704,         0.0,  0.00!  !END!
! X =     394.902,     5313.704,         0.0,  0.00!  !END!
! X =     394.952,     5313.704,         0.0,  0.00!  !END!
! X =     395.002,     5313.704,         0.0,  0.00!  !END!
! X =     395.052,     5313.704,         0.0,  0.00!  !END!
! X =     395.102,     5313.704,         0.0,  0.00!  !END!
! X =     395.152,     5313.704,         0.0,  0.00!  !END!
! X =     395.202,     5313.704,         0.0,  0.00!  !END!
! X =     395.252,     5313.704,         0.0,  0.00!  !END!
! X =     395.302,     5313.704,         0.0,  0.00!  !END!
! X =     395.352,     5313.704,         0.0,  0.00!  !END!
! X =     395.402,     5313.704,         0.0,  0.00!  !END!
! X =     395.452,     5313.704,         0.0,  0.00!  !END!
! X =     395.502,     5313.704,         0.0,  0.00!  !END!
! X =     394.302,     5313.754,         0.0,  0.00!  !END!
! X =     394.352,     5313.754,         0.0,  0.00!  !END!
! X =     394.402,     5313.754,         0.0,  0.00!  !END!
! X =     394.452,     5313.754,         0.0,  0.00!  !END!
! X =     394.502,     5313.754,         0.0,  0.00!  !END!
! X =     394.552,     5313.754,         0.0,  0.00!  !END!
! X =     394.602,     5313.754,         0.0,  0.00!  !END!
! X =     394.652,     5313.754,         0.0,  0.00!  !END!
! X =     394.702,     5313.754,         0.0,  0.00!  !END!
! X =     394.752,     5313.754,         0.0,  0.00!  !END!
! X =     394.802,     5313.754,         0.0,  0.00!  !END!
! X =     394.852,     5313.754,         0.0,  0.00!  !END!
! X =     394.902,     5313.754,         0.0,  0.00!  !END!
! X =     394.952,     5313.754,         0.0,  0.00!  !END!
! X =     395.002,     5313.754,         0.0,  0.00!  !END!
! X =     395.052,     5313.754,         0.0,  0.00!  !END!
! X =     395.102,     5313.754,         0.0,  0.00!  !END!
! X =     395.152,     5313.754,         0.0,  0.00!  !END!
! X =     395.202,     5313.754,         0.0,  0.00!  !END!
! X =     395.252,     5313.754,         0.0,  0.00!  !END!
! X =     395.302,     5313.754,         0.0,  0.00!  !END!
! X =     395.352,     5313.754,         0.0,  0.00!  !END!
! X =     395.402,     5313.754,         0.0,  0.00!  !END!
! X =     395.452,     5313.754,         0.0,  0.00!  !END!
! X =     395.502,     5313.754,         0.0,  0.00!  !END!
! X =     394.302,     5313.804,         0.0,  0.00!  !END!
! X =     394.352,     5313.804,         0.0,  0.00!  !END!
! X =     394.402,     5313.804,         0.0,  0.00!  !END!
! X =     394.452,     5313.804,         0.0,  0.00!  !END!
! X =     394.502,     5313.804,         0.0,  0.00!  !END!
! X =     394.552,     5313.804,         0.0,  0.00!  !END!
! X =     394.602,     5313.804,         0.0,  0.00!  !END!
! X =     394.652,     5313.804,         0.0,  0.00!  !END!
! X =     394.702,     5313.804,         0.0,  0.00!  !END!
! X =     394.752,     5313.804,         0.0,  0.00!  !END!
! X =     394.802,     5313.804,         0.0,  0.00!  !END!
! X =     394.852,     5313.804,         0.0,  0.00!  !END!
! X =     394.902,     5313.804,         0.0,  0.00!  !END!
! X =     394.952,     5313.804,         0.0,  0.00!  !END!
! X =     395.002,     5313.804,         0.0,  0.00!  !END!
! X =     395.052,     5313.804,         0.0,  0.00!  !END!
! X =     395.102,     5313.804,         0.0,  0.00!  !END!
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! X =     395.152,     5313.804,         0.0,  0.00!  !END!
! X =     395.202,     5313.804,         0.0,  0.00!  !END!
! X =     395.252,     5313.804,         0.0,  0.00!  !END!
! X =     395.302,     5313.804,         0.0,  0.00!  !END!
! X =     395.352,     5313.804,         0.0,  0.00!  !END!
! X =     395.402,     5313.804,         0.0,  0.00!  !END!
! X =     395.452,     5313.804,         0.0,  0.00!  !END!
! X =     395.502,     5313.804,         0.0,  0.00!  !END!
! X =     393.702,     5312.004,         0.0,  0.00!  !END!
! X =     393.802,     5312.004,         0.0,  0.00!  !END!
! X =     393.902,     5312.004,         0.0,  0.00!  !END!
! X =     394.002,     5312.004,         0.0,  0.00!  !END!
! X =     394.102,     5312.004,         0.0,  0.00!  !END!
! X =     394.202,     5312.004,         0.0,  0.00!  !END!
! X =     394.302,     5312.004,         0.0,  0.00!  !END!
! X =     394.402,     5312.004,         0.0,  0.00!  !END!
! X =     394.502,     5312.004,         0.0,  0.00!  !END!
! X =     394.602,     5312.004,         0.0,  0.00!  !END!
! X =     394.702,     5312.004,         0.0,  0.00!  !END!
! X =     394.802,     5312.004,         0.0,  0.00!  !END!
! X =     394.902,     5312.004,         0.0,  0.00!  !END!
! X =     395.002,     5312.004,         0.0,  0.00!  !END!
! X =     395.102,     5312.004,         0.0,  0.00!  !END!
! X =     395.202,     5312.004,         0.0,  0.00!  !END!
! X =     395.302,     5312.004,         0.0,  0.00!  !END!
! X =     395.402,     5312.004,         0.0,  0.00!  !END!
! X =     395.502,     5312.004,         0.0,  0.00!  !END!
! X =     393.702,     5312.104,         0.0,  0.00!  !END!
! X =     393.802,     5312.104,         0.0,  0.00!  !END!
! X =     393.902,     5312.104,         0.0,  0.00!  !END!
! X =     394.002,     5312.104,         0.0,  0.00!  !END!
! X =     394.102,     5312.104,         0.0,  0.00!  !END!
! X =     394.202,     5312.104,         0.0,  0.00!  !END!
! X =     394.302,     5312.104,         0.0,  0.00!  !END!
! X =     394.402,     5312.104,         0.0,  0.00!  !END!
! X =     394.502,     5312.104,         0.0,  0.00!  !END!
! X =     394.602,     5312.104,         0.0,  0.00!  !END!
! X =     394.702,     5312.104,         0.0,  0.00!  !END!
! X =     394.802,     5312.104,         0.0,  0.00!  !END!
! X =     394.902,     5312.104,         0.0,  0.00!  !END!
! X =     395.002,     5312.104,         0.0,  0.00!  !END!
! X =     395.102,     5312.104,         0.0,  0.00!  !END!
! X =     395.202,     5312.104,         0.0,  0.00!  !END!
! X =     395.302,     5312.104,         0.0,  0.00!  !END!
! X =     395.402,     5312.104,         0.0,  0.00!  !END!
! X =     395.502,     5312.104,         0.0,  0.00!  !END!
! X =     393.702,     5312.204,         0.0,  0.00!  !END!
! X =     393.802,     5312.204,         0.0,  0.00!  !END!
! X =     393.902,     5312.204,         0.0,  0.00!  !END!
! X =     394.002,     5312.204,         0.0,  0.00!  !END!
! X =     394.102,     5312.204,         0.0,  0.00!  !END!
! X =     394.202,     5312.204,         0.0,  0.00!  !END!
! X =     394.302,     5312.204,         0.0,  0.00!  !END!
! X =     394.402,     5312.204,         0.0,  0.00!  !END!
! X =     394.502,     5312.204,         0.0,  0.00!  !END!
! X =     394.602,     5312.204,         0.0,  0.00!  !END!
! X =     394.702,     5312.204,         0.0,  0.00!  !END!
! X =     394.802,     5312.204,         0.0,  0.00!  !END!
! X =     394.902,     5312.204,         0.0,  0.00!  !END!
! X =     395.002,     5312.204,         0.0,  0.00!  !END!
! X =     395.102,     5312.204,         0.0,  0.00!  !END!
! X =     395.202,     5312.204,         0.0,  0.00!  !END!
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! X =     395.302,     5312.204,         0.0,  0.00!  !END!
! X =     395.402,     5312.204,         0.0,  0.00!  !END!
! X =     395.502,     5312.204,         0.0,  0.00!  !END!
! X =     393.702,     5312.304,         0.0,  0.00!  !END!
! X =     393.802,     5312.304,         0.0,  0.00!  !END!
! X =     393.902,     5312.304,         0.0,  0.00!  !END!
! X =     394.002,     5312.304,         0.0,  0.00!  !END!
! X =     394.102,     5312.304,         0.0,  0.00!  !END!
! X =     394.202,     5312.304,         0.0,  0.00!  !END!
! X =     394.302,     5312.304,         0.0,  0.00!  !END!
! X =     394.402,     5312.304,         0.0,  0.00!  !END!
! X =     394.502,     5312.304,         0.0,  0.00!  !END!
! X =     394.602,     5312.304,         0.0,  0.00!  !END!
! X =     394.702,     5312.304,         0.0,  0.00!  !END!
! X =     394.802,     5312.304,         0.0,  0.00!  !END!
! X =     394.902,     5312.304,         0.0,  0.00!  !END!
! X =     395.002,     5312.304,         0.0,  0.00!  !END!
! X =     395.102,     5312.304,         0.0,  0.00!  !END!
! X =     395.202,     5312.304,         0.0,  0.00!  !END!
! X =     395.302,     5312.304,         0.0,  0.00!  !END!
! X =     395.402,     5312.304,         0.0,  0.00!  !END!
! X =     395.502,     5312.304,         0.0,  0.00!  !END!
! X =     393.702,     5312.404,         0.0,  0.00!  !END!
! X =     393.802,     5312.404,         0.0,  0.00!  !END!
! X =     393.902,     5312.404,         0.0,  0.00!  !END!
! X =     394.002,     5312.404,         0.0,  0.00!  !END!
! X =     394.102,     5312.404,         0.0,  0.00!  !END!
! X =     394.202,     5312.404,         0.0,  0.00!  !END!
! X =     394.302,     5312.404,         0.0,  0.00!  !END!
! X =     394.402,     5312.404,         0.0,  0.00!  !END!
! X =     394.502,     5312.404,         0.0,  0.00!  !END!
! X =     394.602,     5312.404,         0.0,  0.00!  !END!
! X =     394.702,     5312.404,         0.0,  0.00!  !END!
! X =     394.802,     5312.404,         0.0,  0.00!  !END!
! X =     394.902,     5312.404,         0.0,  0.00!  !END!
! X =     395.002,     5312.404,         0.0,  0.00!  !END!
! X =     395.102,     5312.404,         0.0,  0.00!  !END!
! X =     395.202,     5312.404,         0.0,  0.00!  !END!
! X =     395.302,     5312.404,         0.0,  0.00!  !END!
! X =     395.402,     5312.404,         0.0,  0.00!  !END!
! X =     395.502,     5312.404,         0.0,  0.00!  !END!
! X =     393.702,     5312.504,         0.0,  0.00!  !END!
! X =     393.802,     5312.504,         0.0,  0.00!  !END!
! X =     393.902,     5312.504,         0.0,  0.00!  !END!
! X =     394.002,     5312.504,         0.0,  0.00!  !END!
! X =     394.102,     5312.504,         0.0,  0.00!  !END!
! X =     394.202,     5312.504,         0.0,  0.00!  !END!
! X =     394.302,     5312.504,         0.0,  0.00!  !END!
! X =     394.402,     5312.504,         0.0,  0.00!  !END!
! X =     394.502,     5312.504,         0.0,  0.00!  !END!
! X =     394.602,     5312.504,         0.0,  0.00!  !END!
! X =     394.702,     5312.504,         0.0,  0.00!  !END!
! X =     394.802,     5312.504,         0.0,  0.00!  !END!
! X =     394.902,     5312.504,         0.0,  0.00!  !END!
! X =     395.002,     5312.504,         0.0,  0.00!  !END!
! X =     395.102,     5312.504,         0.0,  0.00!  !END!
! X =     395.202,     5312.504,         0.0,  0.00!  !END!
! X =     395.302,     5312.504,         0.0,  0.00!  !END!
! X =     395.402,     5312.504,         0.0,  0.00!  !END!
! X =     395.502,     5312.504,         0.0,  0.00!  !END!
! X =     393.702,     5312.604,         0.0,  0.00!  !END!
! X =     393.802,     5312.604,         0.0,  0.00!  !END!
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! X =     393.902,     5312.604,         0.0,  0.00!  !END!
! X =     394.002,     5312.604,         0.0,  0.00!  !END!
! X =     394.102,     5312.604,         0.0,  0.00!  !END!
! X =     394.202,     5312.604,         0.0,  0.00!  !END!
! X =     393.702,     5312.704,         0.0,  0.00!  !END!
! X =     393.802,     5312.704,         0.0,  0.00!  !END!
! X =     393.902,     5312.704,         0.0,  0.00!  !END!
! X =     394.002,     5312.704,         0.0,  0.00!  !END!
! X =     394.102,     5312.704,         0.0,  0.00!  !END!
! X =     394.202,     5312.704,         0.0,  0.00!  !END!
! X =     393.702,     5312.804,         0.0,  0.00!  !END!
! X =     393.802,     5312.804,         0.0,  0.00!  !END!
! X =     393.902,     5312.804,         0.0,  0.00!  !END!
! X =     394.002,     5312.804,         0.0,  0.00!  !END!
! X =     394.102,     5312.804,         0.0,  0.00!  !END!
! X =     394.202,     5312.804,         0.0,  0.00!  !END!
! X =     393.702,     5312.904,         0.0,  0.00!  !END!
! X =     393.802,     5312.904,         0.0,  0.00!  !END!
! X =     393.902,     5312.904,         0.0,  0.00!  !END!
! X =     394.002,     5312.904,         0.0,  0.00!  !END!
! X =     394.102,     5312.904,         0.0,  0.00!  !END!
! X =     394.202,     5312.904,         0.0,  0.00!  !END!
! X =     393.702,     5313.004,         0.0,  0.00!  !END!
! X =     393.802,     5313.004,         0.0,  0.00!  !END!
! X =     393.902,     5313.004,         0.0,  0.00!  !END!
! X =     394.002,     5313.004,         0.0,  0.00!  !END!
! X =     394.102,     5313.004,         0.0,  0.00!  !END!
! X =     394.202,     5313.004,         0.0,  0.00!  !END!
! X =     393.702,     5313.104,         0.0,  0.00!  !END!
! X =     393.802,     5313.104,         0.0,  0.00!  !END!
! X =     393.902,     5313.104,         0.0,  0.00!  !END!
! X =     394.002,     5313.104,         0.0,  0.00!  !END!
! X =     394.102,     5313.104,         0.0,  0.00!  !END!
! X =     394.202,     5313.104,         0.0,  0.00!  !END!
! X =     393.702,     5313.204,         0.0,  0.00!  !END!
! X =     393.802,     5313.204,         0.0,  0.00!  !END!
! X =     393.902,     5313.204,         0.0,  0.00!  !END!
! X =     394.002,     5313.204,         0.0,  0.00!  !END!
! X =     394.102,     5313.204,         0.0,  0.00!  !END!
! X =     394.202,     5313.204,         0.0,  0.00!  !END!
! X =     393.702,     5313.304,         0.0,  0.00!  !END!
! X =     393.802,     5313.304,         0.0,  0.00!  !END!
! X =     393.902,     5313.304,         0.0,  0.00!  !END!
! X =     394.002,     5313.304,         0.0,  0.00!  !END!
! X =     394.102,     5313.304,         0.0,  0.00!  !END!
! X =     394.202,     5313.304,         0.0,  0.00!  !END!
! X =     393.702,     5313.404,         0.0,  0.00!  !END!
! X =     393.802,     5313.404,         0.0,  0.00!  !END!
! X =     393.902,     5313.404,         0.0,  0.00!  !END!
! X =     394.002,     5313.404,         0.0,  0.00!  !END!
! X =     394.102,     5313.404,         0.0,  0.00!  !END!
! X =     394.202,     5313.404,         0.0,  0.00!  !END!
! X =     393.702,     5313.504,         0.0,  0.00!  !END!
! X =     393.802,     5313.504,         0.0,  0.00!  !END!
! X =     393.902,     5313.504,         0.0,  0.00!  !END!
! X =     394.002,     5313.504,         0.0,  0.00!  !END!
! X =     394.102,     5313.504,         0.0,  0.00!  !END!
! X =     394.202,     5313.504,         0.0,  0.00!  !END!
! X =     393.702,     5313.604,         0.0,  0.00!  !END!
! X =     393.802,     5313.604,         0.0,  0.00!  !END!
! X =     393.902,     5313.604,         0.0,  0.00!  !END!
! X =     394.002,     5313.604,         0.0,  0.00!  !END!
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! X =     394.102,     5313.604,         0.0,  0.00!  !END!
! X =     394.202,     5313.604,         0.0,  0.00!  !END!
! X =     393.702,     5313.704,         0.0,  0.00!  !END!
! X =     393.802,     5313.704,         0.0,  0.00!  !END!
! X =     393.902,     5313.704,         0.0,  0.00!  !END!
! X =     394.002,     5313.704,         0.0,  0.00!  !END!
! X =     394.102,     5313.704,         0.0,  0.00!  !END!
! X =     394.202,     5313.704,         0.0,  0.00!  !END!
! X =     393.702,     5313.804,         0.0,  0.00!  !END!
! X =     393.802,     5313.804,         0.0,  0.00!  !END!
! X =     393.902,     5313.804,         0.0,  0.00!  !END!
! X =     394.002,     5313.804,         0.0,  0.00!  !END!
! X =     394.102,     5313.804,         0.0,  0.00!  !END!
! X =     394.202,     5313.804,         0.0,  0.00!  !END!
! X =     393.702,     5313.904,         0.0,  0.00!  !END!
! X =     393.802,     5313.904,         0.0,  0.00!  !END!
! X =     393.902,     5313.904,         0.0,  0.00!  !END!
! X =     394.002,     5313.904,         0.0,  0.00!  !END!
! X =     394.102,     5313.904,         0.0,  0.00!  !END!
! X =     394.202,     5313.904,         0.0,  0.00!  !END!
! X =     394.302,     5313.904,         0.0,  0.00!  !END!
! X =     394.402,     5313.904,         0.0,  0.00!  !END!
! X =     394.502,     5313.904,         0.0,  0.00!  !END!
! X =     394.602,     5313.904,         0.0,  0.00!  !END!
! X =     394.702,     5313.904,         0.0,  0.00!  !END!
! X =     394.802,     5313.904,         0.0,  0.00!  !END!
! X =     394.902,     5313.904,         0.0,  0.00!  !END!
! X =     395.002,     5313.904,         0.0,  0.00!  !END!
! X =     395.102,     5313.904,         0.0,  0.00!  !END!
! X =     395.202,     5313.904,         0.0,  0.00!  !END!
! X =     395.302,     5313.904,         0.0,  0.00!  !END!
! X =     395.402,     5313.904,         0.0,  0.00!  !END!
! X =     395.502,     5313.904,         0.0,  0.00!  !END!
! X =     393.702,     5314.004,         0.0,  0.00!  !END!
! X =     393.802,     5314.004,         0.0,  0.00!  !END!
! X =     393.902,     5314.004,         0.0,  0.00!  !END!
! X =     394.002,     5314.004,         0.0,  0.00!  !END!
! X =     394.102,     5314.004,         0.0,  0.00!  !END!
! X =     394.202,     5314.004,         0.0,  0.00!  !END!
! X =     394.302,     5314.004,         0.0,  0.00!  !END!
! X =     394.402,     5314.004,         0.0,  0.00!  !END!
! X =     394.502,     5314.004,         0.0,  0.00!  !END!
! X =     394.602,     5314.004,         0.0,  0.00!  !END!
! X =     394.702,     5314.004,         0.0,  0.00!  !END!
! X =     394.802,     5314.004,         0.0,  0.00!  !END!
! X =     394.902,     5314.004,         0.0,  0.00!  !END!
! X =     395.002,     5314.004,         0.0,  0.00!  !END!
! X =     395.102,     5314.004,         0.0,  0.00!  !END!
! X =     395.202,     5314.004,         0.0,  0.00!  !END!
! X =     395.302,     5314.004,         0.0,  0.00!  !END!
! X =     395.402,     5314.004,         0.0,  0.00!  !END!
! X =     395.502,     5314.004,         0.0,  0.00!  !END!
! X =     393.702,     5314.104,         0.0,  0.00!  !END!
! X =     393.802,     5314.104,         0.0,  0.00!  !END!
! X =     393.902,     5314.104,         0.0,  0.00!  !END!
! X =     394.002,     5314.104,         0.0,  0.00!  !END!
! X =     394.102,     5314.104,         0.0,  0.00!  !END!
! X =     394.202,     5314.104,         0.0,  0.00!  !END!
! X =     394.302,     5314.104,         0.0,  0.00!  !END!
! X =     394.402,     5314.104,         0.0,  0.00!  !END!
! X =     394.502,     5314.104,         0.0,  0.00!  !END!
! X =     394.602,     5314.104,         0.0,  0.00!  !END!
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! X =     394.702,     5314.104,         0.0,  0.00!  !END!
! X =     394.802,     5314.104,         0.0,  0.00!  !END!
! X =     394.902,     5314.104,         0.0,  0.00!  !END!
! X =     395.002,     5314.104,         0.0,  0.00!  !END!
! X =     395.102,     5314.104,         0.0,  0.00!  !END!
! X =     395.202,     5314.104,         0.0,  0.00!  !END!
! X =     395.302,     5314.104,         0.0,  0.00!  !END!
! X =     395.402,     5314.104,         0.0,  0.00!  !END!
! X =     395.502,     5314.104,         0.0,  0.00!  !END!
! X =     393.702,     5314.204,         0.0,  0.00!  !END!
! X =     393.802,     5314.204,         0.0,  0.00!  !END!
! X =     393.902,     5314.204,         0.0,  0.00!  !END!
! X =     394.002,     5314.204,         0.0,  0.00!  !END!
! X =     394.102,     5314.204,         0.0,  0.00!  !END!
! X =     394.202,     5314.204,         0.0,  0.00!  !END!
! X =     394.302,     5314.204,         0.0,  0.00!  !END!
! X =     394.402,     5314.204,         0.0,  0.00!  !END!
! X =     394.502,     5314.204,         0.0,  0.00!  !END!
! X =     394.602,     5314.204,         0.0,  0.00!  !END!
! X =     394.702,     5314.204,         0.0,  0.00!  !END!
! X =     394.802,     5314.204,         0.0,  0.00!  !END!
! X =     394.902,     5314.204,         0.0,  0.00!  !END!
! X =     395.002,     5314.204,         0.0,  0.00!  !END!
! X =     395.102,     5314.204,         0.0,  0.00!  !END!
! X =     395.202,     5314.204,         0.0,  0.00!  !END!
! X =     395.302,     5314.204,         0.0,  0.00!  !END!
! X =     395.402,     5314.204,         0.0,  0.00!  !END!
! X =     395.502,     5314.204,         0.0,  0.00!  !END!
! X =     393.702,     5314.304,         0.0,  0.00!  !END!
! X =     393.802,     5314.304,         0.0,  0.00!  !END!
! X =     393.902,     5314.304,         0.0,  0.00!  !END!
! X =     394.002,     5314.304,         0.0,  0.00!  !END!
! X =     394.102,     5314.304,         0.0,  0.00!  !END!
! X =     394.202,     5314.304,         0.0,  0.00!  !END!
! X =     394.302,     5314.304,         0.0,  0.00!  !END!
! X =     394.402,     5314.304,         0.0,  0.00!  !END!
! X =     394.502,     5314.304,         0.0,  0.00!  !END!
! X =     394.602,     5314.304,         0.0,  0.00!  !END!
! X =     394.702,     5314.304,         0.0,  0.00!  !END!
! X =     394.802,     5314.304,         0.0,  0.00!  !END!
! X =     394.902,     5314.304,         0.0,  0.00!  !END!
! X =     395.002,     5314.304,         0.0,  0.00!  !END!
! X =     395.102,     5314.304,         0.0,  0.00!  !END!
! X =     395.202,     5314.304,         0.0,  0.00!  !END!
! X =     395.302,     5314.304,         0.0,  0.00!  !END!
! X =     395.402,     5314.304,         0.0,  0.00!  !END!
! X =     395.502,     5314.304,         0.0,  0.00!  !END!
! X =     393.702,     5314.404,         0.0,  0.00!  !END!
! X =     393.802,     5314.404,         0.0,  0.00!  !END!
! X =     393.902,     5314.404,         0.0,  0.00!  !END!
! X =     394.002,     5314.404,         0.0,  0.00!  !END!
! X =     394.102,     5314.404,         0.0,  0.00!  !END!
! X =     394.202,     5314.404,         0.0,  0.00!  !END!
! X =     394.302,     5314.404,         0.0,  0.00!  !END!
! X =     394.402,     5314.404,         0.0,  0.00!  !END!
! X =     394.502,     5314.404,         0.0,  0.00!  !END!
! X =     394.602,     5314.404,         0.0,  0.00!  !END!
! X =     394.702,     5314.404,         0.0,  0.00!  !END!
! X =     394.802,     5314.404,         0.0,  0.00!  !END!
! X =     394.902,     5314.404,         0.0,  0.00!  !END!
! X =     395.002,     5314.404,         0.0,  0.00!  !END!
! X =     395.102,     5314.404,         0.0,  0.00!  !END!
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! X =     395.202,     5314.404,         0.0,  0.00!  !END!
! X =     395.302,     5314.404,         0.0,  0.00!  !END!
! X =     395.402,     5314.404,         0.0,  0.00!  !END!
! X =     395.502,     5314.404,         0.0,  0.00!  !END!
! X =     395.602,     5314.404,         0.0,  0.00!  !END!
! X =     395.702,     5314.404,         0.0,  0.00!  !END!
! X =     395.802,     5314.404,         0.0,  0.00!  !END!
! X =     395.902,     5314.404,         0.0,  0.00!  !END!
! X =     396.002,     5314.404,         0.0,  0.00!  !END!
! X =     396.102,     5314.404,         0.0,  0.00!  !END!
! X =     392.702,     5311.004,         0.0,  0.00!  !END!
! X =     392.902,     5311.004,         0.0,  0.00!  !END!
! X =     393.102,     5311.004,         0.0,  0.00!  !END!
! X =     393.302,     5311.004,         0.0,  0.00!  !END!
! X =     393.502,     5311.004,         0.0,  0.00!  !END!
! X =     393.702,     5311.004,         0.0,  0.00!  !END!
! X =     393.902,     5311.004,         0.0,  0.00!  !END!
! X =     394.102,     5311.004,         0.0,  0.00!  !END!
! X =     394.302,     5311.004,         0.0,  0.00!  !END!
! X =     394.502,     5311.004,         0.0,  0.00!  !END!
! X =     392.702,     5311.204,         0.0,  0.00!  !END!
! X =     392.902,     5311.204,         0.0,  0.00!  !END!
! X =     393.102,     5311.204,         0.0,  0.00!  !END!
! X =     393.302,     5311.204,         0.0,  0.00!  !END!
! X =     393.502,     5311.204,         0.0,  0.00!  !END!
! X =     393.702,     5311.204,         0.0,  0.00!  !END!
! X =     393.902,     5311.204,         0.0,  0.00!  !END!
! X =     394.102,     5311.204,         0.0,  0.00!  !END!
! X =     394.302,     5311.204,         0.0,  0.00!  !END!
! X =     394.502,     5311.204,         0.0,  0.00!  !END!
! X =     392.702,     5311.404,         0.0,  0.00!  !END!
! X =     392.902,     5311.404,         0.0,  0.00!  !END!
! X =     393.102,     5311.404,         0.0,  0.00!  !END!
! X =     393.302,     5311.404,         0.0,  0.00!  !END!
! X =     393.502,     5311.404,         0.0,  0.00!  !END!
! X =     393.702,     5311.404,         0.0,  0.00!  !END!
! X =     393.902,     5311.404,         0.0,  0.00!  !END!
! X =     394.102,     5311.404,         0.0,  0.00!  !END!
! X =     394.302,     5311.404,         0.0,  0.00!  !END!
! X =     394.502,     5311.404,         0.0,  0.00!  !END!
! X =     392.702,     5311.604,         0.0,  0.00!  !END!
! X =     392.902,     5311.604,         0.0,  0.00!  !END!
! X =     393.102,     5311.604,         0.0,  0.00!  !END!
! X =     393.302,     5311.604,         0.0,  0.00!  !END!
! X =     393.502,     5311.604,         0.0,  0.00!  !END!
! X =     393.702,     5311.604,         0.0,  0.00!  !END!
! X =     393.902,     5311.604,         0.0,  0.00!  !END!
! X =     394.102,     5311.604,         0.0,  0.00!  !END!
! X =     394.302,     5311.604,         0.0,  0.00!  !END!
! X =     394.502,     5311.604,         0.0,  0.00!  !END!
! X =     392.702,     5311.804,         0.0,  0.00!  !END!
! X =     392.902,     5311.804,         0.0,  0.00!  !END!
! X =     393.102,     5311.804,         0.0,  0.00!  !END!
! X =     393.302,     5311.804,         0.0,  0.00!  !END!
! X =     393.502,     5311.804,         0.0,  0.00!  !END!
! X =     393.702,     5311.804,         0.0,  0.00!  !END!
! X =     393.902,     5311.804,         0.0,  0.00!  !END!
! X =     394.102,     5311.804,         0.0,  0.00!  !END!
! X =     394.302,     5311.804,         0.0,  0.00!  !END!
! X =     394.502,     5311.804,         0.0,  0.00!  !END!
! X =     392.702,     5312.004,         0.0,  0.00!  !END!
! X =     392.902,     5312.004,         0.0,  0.00!  !END!
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! X =     393.102,     5312.004,         0.0,  0.00!  !END!
! X =     393.302,     5312.004,         0.0,  0.00!  !END!
! X =     393.502,     5312.004,         0.0,  0.00!  !END!
! X =     392.702,     5312.204,         0.0,  0.00!  !END!
! X =     392.902,     5312.204,         0.0,  0.00!  !END!
! X =     393.102,     5312.204,         0.0,  0.00!  !END!
! X =     393.302,     5312.204,         0.0,  0.00!  !END!
! X =     393.502,     5312.204,         0.0,  0.00!  !END!
! X =     392.702,     5312.404,         0.0,  0.00!  !END!
! X =     392.902,     5312.404,         0.0,  0.00!  !END!
! X =     393.102,     5312.404,         0.0,  0.00!  !END!
! X =     393.302,     5312.404,         0.0,  0.00!  !END!
! X =     393.502,     5312.404,         0.0,  0.00!  !END!
! X =     392.702,     5312.604,         0.0,  0.00!  !END!
! X =     392.902,     5312.604,         0.0,  0.00!  !END!
! X =     393.102,     5312.604,         0.0,  0.00!  !END!
! X =     393.302,     5312.604,         0.0,  0.00!  !END!
! X =     393.502,     5312.604,         0.0,  0.00!  !END!
! X =     392.702,     5312.804,         0.0,  0.00!  !END!
! X =     392.902,     5312.804,         0.0,  0.00!  !END!
! X =     393.102,     5312.804,         0.0,  0.00!  !END!
! X =     393.302,     5312.804,         0.0,  0.00!  !END!
! X =     393.502,     5312.804,         0.0,  0.00!  !END!
! X =     392.702,     5313.004,         0.0,  0.00!  !END!
! X =     392.902,     5313.004,         0.0,  0.00!  !END!
! X =     393.102,     5313.004,         0.0,  0.00!  !END!
! X =     393.302,     5313.004,         0.0,  0.00!  !END!
! X =     393.502,     5313.004,         0.0,  0.00!  !END!
! X =     392.702,     5313.204,         0.0,  0.00!  !END!
! X =     392.902,     5313.204,         0.0,  0.00!  !END!
! X =     393.102,     5313.204,         0.0,  0.00!  !END!
! X =     393.302,     5313.204,         0.0,  0.00!  !END!
! X =     393.502,     5313.204,         0.0,  0.00!  !END!
! X =     392.702,     5313.404,         0.0,  0.00!  !END!
! X =     392.902,     5313.404,         0.0,  0.00!  !END!
! X =     393.102,     5313.404,         0.0,  0.00!  !END!
! X =     393.302,     5313.404,         0.0,  0.00!  !END!
! X =     393.502,     5313.404,         0.0,  0.00!  !END!
! X =     392.702,     5313.604,         0.0,  0.00!  !END!
! X =     392.902,     5313.604,         0.0,  0.00!  !END!
! X =     393.102,     5313.604,         0.0,  0.00!  !END!
! X =     393.302,     5313.604,         0.0,  0.00!  !END!
! X =     393.502,     5313.604,         0.0,  0.00!  !END!
! X =     392.702,     5313.804,         0.0,  0.00!  !END!
! X =     392.902,     5313.804,         0.0,  0.00!  !END!
! X =     393.102,     5313.804,         0.0,  0.00!  !END!
! X =     393.302,     5313.804,         0.0,  0.00!  !END!
! X =     393.502,     5313.804,         0.0,  0.00!  !END!
! X =     392.702,     5314.004,         0.0,  0.00!  !END!
! X =     392.902,     5314.004,         0.0,  0.00!  !END!
! X =     393.102,     5314.004,         0.0,  0.00!  !END!
! X =     393.302,     5314.004,         0.0,  0.00!  !END!
! X =     393.502,     5314.004,         0.0,  0.00!  !END!
! X =     392.702,     5314.204,         0.0,  0.00!  !END!
! X =     392.902,     5314.204,         0.0,  0.00!  !END!
! X =     393.102,     5314.204,         0.0,  0.00!  !END!
! X =     393.302,     5314.204,         0.0,  0.00!  !END!
! X =     393.502,     5314.204,         0.0,  0.00!  !END!
! X =     392.702,     5314.404,         0.0,  0.00!  !END!
! X =     392.902,     5314.404,         0.0,  0.00!  !END!
! X =     393.102,     5314.404,         0.0,  0.00!  !END!
! X =     393.302,     5314.404,         0.0,  0.00!  !END!
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! X =     393.502,     5314.404,         0.0,  0.00!  !END!
! X =     392.702,     5314.604,         0.0,  0.00!  !END!
! X =     392.902,     5314.604,         0.0,  0.00!  !END!
! X =     393.102,     5314.604,         0.0,  0.00!  !END!
! X =     393.302,     5314.604,         0.0,  0.00!  !END!
! X =     393.502,     5314.604,         0.0,  0.00!  !END!
! X =     393.702,     5314.604,         0.0,  0.00!  !END!
! X =     393.902,     5314.604,         0.0,  0.00!  !END!
! X =     394.102,     5314.604,         0.0,  0.00!  !END!
! X =     394.302,     5314.604,         0.0,  0.00!  !END!
! X =     394.502,     5314.604,         0.0,  0.00!  !END!
! X =     392.702,     5314.804,         0.0,  0.00!  !END!
! X =     392.902,     5314.804,         0.0,  0.00!  !END!
! X =     393.102,     5314.804,         0.0,  0.00!  !END!
! X =     393.302,     5314.804,         0.0,  0.00!  !END!
! X =     393.502,     5314.804,         0.0,  0.00!  !END!
! X =     393.702,     5314.804,         0.0,  0.00!  !END!
! X =     393.902,     5314.804,         0.0,  0.00!  !END!
! X =     394.102,     5314.804,         0.0,  0.00!  !END!
! X =     394.302,     5314.804,         0.0,  0.00!  !END!
! X =     394.502,     5314.804,         0.0,  0.00!  !END!
! X =     392.702,     5315.004,         0.0,  0.00!  !END!
! X =     392.902,     5315.004,         0.0,  0.00!  !END!
! X =     393.102,     5315.004,         0.0,  0.00!  !END!
! X =     393.302,     5315.004,         0.0,  0.00!  !END!
! X =     393.502,     5315.004,         0.0,  0.00!  !END!
! X =     393.702,     5315.004,         0.0,  0.00!  !END!
! X =     393.902,     5315.004,         0.0,  0.00!  !END!
! X =     394.102,     5315.004,         0.0,  0.00!  !END!
! X =     394.302,     5315.004,         0.0,  0.00!  !END!
! X =     394.502,     5315.004,         0.0,  0.00!  !END!
! X =     392.702,     5315.204,         0.0,  0.00!  !END!
! X =     392.902,     5315.204,         0.0,  0.00!  !END!
! X =     393.102,     5315.204,         0.0,  0.00!  !END!
! X =     393.302,     5315.204,         0.0,  0.00!  !END!
! X =     393.502,     5315.204,         0.0,  0.00!  !END!
! X =     393.702,     5315.204,         0.0,  0.00!  !END!
! X =     393.902,     5315.204,         0.0,  0.00!  !END!
! X =     394.102,     5315.204,         0.0,  0.00!  !END!
! X =     394.302,     5315.204,         0.0,  0.00!  !END!
! X =     394.502,     5315.204,         0.0,  0.00!  !END!
! X =     392.702,     5315.404,         0.0,  0.00!  !END!
! X =     392.902,     5315.404,         0.0,  0.00!  !END!
! X =     393.102,     5315.404,         0.0,  0.00!  !END!
! X =     393.302,     5315.404,         0.0,  0.00!  !END!
! X =     393.502,     5315.404,         0.0,  0.00!  !END!
! X =     393.702,     5315.404,         0.0,  0.00!  !END!
! X =     393.902,     5315.404,         0.0,  0.00!  !END!
! X =     394.102,     5315.404,         0.0,  0.00!  !END!
! X =     394.302,     5315.404,         0.0,  0.00!  !END!
! X =     394.502,     5315.404,         0.0,  0.00!  !END!
! X =     394.702,     5315.404,         0.0,  0.00!  !END!
! X =     394.902,     5315.404,         0.0,  0.00!  !END!
! X =     395.102,     5315.404,         0.0,  0.00!  !END!
! X =     395.302,     5315.404,         0.0,  0.00!  !END!
! X =     395.502,     5315.404,         0.0,  0.00!  !END!
! X =     395.702,     5315.404,         0.0,  0.00!  !END!
! X =     395.902,     5315.404,         0.0,  0.00!  !END!
! X =     396.102,     5315.404,         0.0,  0.00!  !END!
! X =     396.302,     5315.404,         0.0,  0.00!  !END!
! X =     396.502,     5315.404,         0.0,  0.00!  !END!
! X =     396.702,     5315.404,         0.0,  0.00!  !END!
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! X =     396.902,     5315.404,         0.0,  0.00!  !END!
! X =     397.102,     5315.404,         0.0,  0.00!  !END!
! X =     395.220,     5311.702,         0.0,  0.00!  !END!
! X =     395.220,     5311.752,         0.0,  0.00!  !END!
! X =     395.220,     5311.802,         0.0,  0.00!  !END!
! X =     395.220,     5311.852,         0.0,  0.00!  !END!
! X =     395.220,     5311.902,         0.0,  0.00!  !END!
! X =     395.220,     5311.952,         0.0,  0.00!  !END!
! X =     395.220,     5312.002,         0.0,  0.00!  !END!
! X =     395.220,     5312.052,         0.0,  0.00!  !END!
! X =     395.220,     5312.102,         0.0,  0.00!  !END!
! X =     395.220,     5312.152,         0.0,  0.00!  !END!
! X =     395.220,     5312.202,         0.0,  0.00!  !END!
! X =     395.220,     5312.252,         0.0,  0.00!  !END!
! X =     395.220,     5312.302,         0.0,  0.00!  !END!
! X =     395.220,     5312.352,         0.0,  0.00!  !END!
! X =     395.220,     5312.402,         0.0,  0.00!  !END!
! X =     395.220,     5312.452,         0.0,  0.00!  !END!
! X =     395.220,     5312.502,         0.0,  0.00!  !END!
! X =     395.220,     5312.552,         0.0,  0.00!  !END!
! X =     395.220,     5312.602,         0.0,  0.00!  !END!
! X =     395.220,     5312.652,         0.0,  0.00!  !END!
! X =     395.220,     5312.702,         0.0,  0.00!  !END!
! X =     395.220,     5312.752,         0.0,  0.00!  !END!
! X =     395.220,     5312.802,         0.0,  0.00!  !END!
! X =     395.220,     5312.852,         0.0,  0.00!  !END!
! X =     395.220,     5312.902,         0.0,  0.00!  !END!
! X =     395.220,     5312.952,         0.0,  0.00!  !END!
! X =     395.220,     5313.002,         0.0,  0.00!  !END!
! X =     395.220,     5313.052,         0.0,  0.00!  !END!
! X =     395.220,     5313.102,         0.0,  0.00!  !END!
! X =     395.220,     5313.152,         0.0,  0.00!  !END!
! X =     395.220,     5313.202,         0.0,  0.00!  !END!
! X =     395.220,     5313.252,         0.0,  0.00!  !END!
! X =     395.220,     5313.302,         0.0,  0.00!  !END!
! X =     395.220,     5313.352,         0.0,  0.00!  !END!
! X =     395.220,     5313.402,         0.0,  0.00!  !END!
! X =     395.220,     5313.452,         0.0,  0.00!  !END!
! X =     395.220,     5313.502,         0.0,  0.00!  !END!
! X =     395.220,     5313.552,         0.0,  0.00!  !END!
! X =     395.220,     5313.602,         0.0,  0.00!  !END!
! X =     395.220,     5313.652,         0.0,  0.00!  !END!
! X =     395.220,     5313.702,         0.0,  0.00!  !END!
! X =     395.220,     5313.752,         0.0,  0.00!  !END!
! X =     395.220,     5313.802,         0.0,  0.00!  !END!
! X =     395.220,     5313.852,         0.0,  0.00!  !END!
! X =     395.220,     5313.902,         0.0,  0.00!  !END!
! X =     395.220,     5313.952,         0.0,  0.00!  !END!
! X =     395.220,     5314.002,         0.0,  0.00!  !END!
! X =     395.220,     5314.052,         0.0,  0.00!  !END!
! X =     395.220,     5314.102,         0.0,  0.00!  !END!
! X =     395.220,     5314.152,         0.0,  0.00!  !END!
! X =     395.220,     5314.202,         0.0,  0.00!  !END!
! X =     395.220,     5314.252,         0.0,  0.00!  !END!
! X =     395.220,     5314.302,         0.0,  0.00!  !END!
! X =     395.220,     5314.352,         0.0,  0.00!  !END!
! X =     395.220,     5314.402,         0.0,  0.00!  !END!
! X =     395.220,     5314.452,         0.0,  0.00!  !END!
! X =     395.220,     5314.502,         0.0,  0.00!  !END!
! X =     395.220,     5314.552,         0.0,  0.00!  !END!
! X =     395.220,     5314.602,         0.0,  0.00!  !END!
! X =     395.220,     5314.652,         0.0,  0.00!  !END!
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! X =     395.220,     5314.702,         0.0,  0.00!  !END!
! X =     395.270,     5314.702,         0.0,  0.00!  !END!
! X =     395.320,     5314.702,         0.0,  0.00!  !END!
! X =     395.370,     5314.702,         0.0,  0.00!  !END!
! X =     395.420,     5314.702,         0.0,  0.00!  !END!
! X =     395.470,     5314.702,         0.0,  0.00!  !END!
! X =     395.520,     5314.702,         0.0,  0.00!  !END!
! X =     395.570,     5314.702,         0.0,  0.00!  !END!
! X =     395.620,     5314.702,         0.0,  0.00!  !END!
! X =     395.670,     5314.702,         0.0,  0.00!  !END!
! X =     395.720,     5314.702,         0.0,  0.00!  !END!
! X =     395.770,     5314.702,         0.0,  0.00!  !END!
! X =     395.820,     5314.702,         0.0,  0.00!  !END!
! X =     395.870,     5314.702,         0.0,  0.00!  !END!
! X =     395.920,     5314.702,         0.0,  0.00!  !END!
! X =     395.970,     5314.702,         0.0,  0.00!  !END!
! X =     396.020,     5314.702,         0.0,  0.00!  !END!
! X =     396.070,     5314.702,         0.0,  0.00!  !END!
! X =     396.120,     5314.702,         0.0,  0.00!  !END!
! X =     396.170,     5314.702,         0.0,  0.00!  !END!
! X =     396.220,     5314.702,         0.0,  0.00!  !END!
! X =     396.270,     5314.702,         0.0,  0.00!  !END!
! X =     396.320,     5314.702,         0.0,  0.00!  !END!
! X =     396.370,     5314.702,         0.0,  0.00!  !END!
! X =     396.420,     5314.702,         0.0,  0.00!  !END!
! X =     396.470,     5314.702,         0.0,  0.00!  !END!
! X =     396.520,     5314.702,         0.0,  0.00!  !END!
! X =     396.570,     5314.702,         0.0,  0.00!  !END!
! X =     396.620,     5314.702,         0.0,  0.00!  !END!
! X =     396.670,     5314.702,         0.0,  0.00!  !END!
! X =     396.720,     5314.702,         0.0,  0.00!  !END!
! X =     396.770,     5314.702,         0.0,  0.00!  !END!
! X =     396.820,     5314.702,         0.0,  0.00!  !END!
! X =     396.870,     5314.702,         0.0,  0.00!  !END!
! X =     396.920,     5314.702,         0.0,  0.00!  !END!
! X =     396.970,     5314.702,         0.0,  0.00!  !END!
! X =     397.020,     5314.702,         0.0,  0.00!  !END!
! X =     397.070,     5314.702,         0.0,  0.00!  !END!
! X =     397.120,     5314.702,         0.0,  0.00!  !END!
! X =     397.170,     5314.702,         0.0,  0.00!  !END!
! X =     397.220,     5314.702,         0.0,  0.00!  !END!
! X =     397.270,     5314.702,         0.0,  0.00!  !END!
! X =     397.320,     5314.702,         0.0,  0.00!  !END!
! X =     397.370,     5314.702,         0.0,  0.00!  !END!
! X =     397.420,     5314.702,         0.0,  0.00!  !END!
! X =     397.470,     5314.702,         0.0,  0.00!  !END!
! X =     397.520,     5314.702,         0.0,  0.00!  !END!
! X =     397.570,     5314.702,         0.0,  0.00!  !END!
! X =     397.620,     5314.702,         0.0,  0.00!  !END!
! X =     397.670,     5314.702,         0.0,  0.00!  !END!
! X =     397.720,     5314.702,         0.0,  0.00!  !END!
! X =     397.770,     5314.702,         0.0,  0.00!  !END!
! X =     397.820,     5314.702,         0.0,  0.00!  !END!
! X =     397.870,     5314.702,         0.0,  0.00!  !END!
! X =     397.920,     5314.702,         0.0,  0.00!  !END!
! X =     397.970,     5314.702,         0.0,  0.00!  !END!
! X =     398.020,     5314.702,         0.0,  0.00!  !END!
! X =     398.070,     5314.702,         0.0,  0.00!  !END!
! X =     398.120,     5314.702,         0.0,  0.00!  !END!
! X =     398.170,     5314.702,         0.0,  0.00!  !END!
! X =     398.220,     5314.702,         0.0,  0.00!  !END!
! X =     398.220,     5314.652,         0.0,  0.00!  !END!
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! X =     398.220,     5314.602,         0.0,  0.00!  !END!
! X =     398.220,     5314.552,         0.0,  0.00!  !END!
! X =     398.220,     5314.502,         0.0,  0.00!  !END!
! X =     398.220,     5314.452,         0.0,  0.00!  !END!
! X =     398.220,     5314.402,         0.0,  0.00!  !END!
! X =     398.220,     5314.352,         0.0,  0.00!  !END!
! X =     398.220,     5314.302,         0.0,  0.00!  !END!
! X =     398.220,     5314.252,         0.0,  0.00!  !END!
! X =     398.220,     5314.202,         0.0,  0.00!  !END!
! X =     398.220,     5314.152,         0.0,  0.00!  !END!
! X =     398.220,     5314.102,         0.0,  0.00!  !END!
! X =     398.220,     5314.052,         0.0,  0.00!  !END!
! X =     398.220,     5314.002,         0.0,  0.00!  !END!
! X =     398.220,     5313.952,         0.0,  0.00!  !END!
! X =     398.220,     5313.902,         0.0,  0.00!  !END!
! X =     398.220,     5313.852,         0.0,  0.00!  !END!
! X =     398.220,     5313.802,         0.0,  0.00!  !END!
! X =     398.220,     5313.752,         0.0,  0.00!  !END!
! X =     398.220,     5313.702,         0.0,  0.00!  !END!
! X =     398.220,     5313.652,         0.0,  0.00!  !END!
! X =     398.220,     5313.602,         0.0,  0.00!  !END!
! X =     398.220,     5313.552,         0.0,  0.00!  !END!
! X =     398.220,     5313.502,         0.0,  0.00!  !END!
! X =     398.220,     5313.452,         0.0,  0.00!  !END!
! X =     398.220,     5313.402,         0.0,  0.00!  !END!
! X =     398.220,     5313.352,         0.0,  0.00!  !END!
! X =     398.220,     5313.302,         0.0,  0.00!  !END!
! X =     398.220,     5313.252,         0.0,  0.00!  !END!
! X =     398.220,     5313.202,         0.0,  0.00!  !END!
! X =     398.220,     5313.152,         0.0,  0.00!  !END!
! X =     398.220,     5313.102,         0.0,  0.00!  !END!
! X =     398.220,     5313.052,         0.0,  0.00!  !END!
! X =     398.220,     5313.002,         0.0,  0.00!  !END!
! X =     398.220,     5312.952,         0.0,  0.00!  !END!
! X =     398.220,     5312.902,         0.0,  0.00!  !END!
! X =     398.220,     5312.852,         0.0,  0.00!  !END!
! X =     398.220,     5312.802,         0.0,  0.00!  !END!
! X =     398.220,     5312.752,         0.0,  0.00!  !END!
! X =     398.220,     5312.702,         0.0,  0.00!  !END!
! X =     398.220,     5312.652,         0.0,  0.00!  !END!
! X =     398.220,     5312.602,         0.0,  0.00!  !END!
! X =     398.220,     5312.552,         0.0,  0.00!  !END!
! X =     398.220,     5312.502,         0.0,  0.00!  !END!
! X =     398.220,     5312.452,         0.0,  0.00!  !END!
! X =     398.220,     5312.402,         0.0,  0.00!  !END!
! X =     398.220,     5312.352,         0.0,  0.00!  !END!
! X =     398.220,     5312.302,         0.0,  0.00!  !END!
! X =     398.220,     5312.252,         0.0,  0.00!  !END!
! X =     398.220,     5312.202,         0.0,  0.00!  !END!
! X =     398.220,     5312.152,         0.0,  0.00!  !END!
! X =     398.220,     5312.102,         0.0,  0.00!  !END!
! X =     398.220,     5312.052,         0.0,  0.00!  !END!
! X =     398.220,     5312.002,         0.0,  0.00!  !END!
! X =     398.220,     5311.952,         0.0,  0.00!  !END!
! X =     398.220,     5311.902,         0.0,  0.00!  !END!
! X =     398.220,     5311.852,         0.0,  0.00!  !END!
! X =     398.220,     5311.802,         0.0,  0.00!  !END!
! X =     398.220,     5311.752,         0.0,  0.00!  !END!
! X =     398.220,     5311.702,         0.0,  0.00!  !END!
! X =     398.170,     5311.702,         0.0,  0.00!  !END!
! X =     398.120,     5311.702,         0.0,  0.00!  !END!
! X =     398.070,     5311.702,         0.0,  0.00!  !END!
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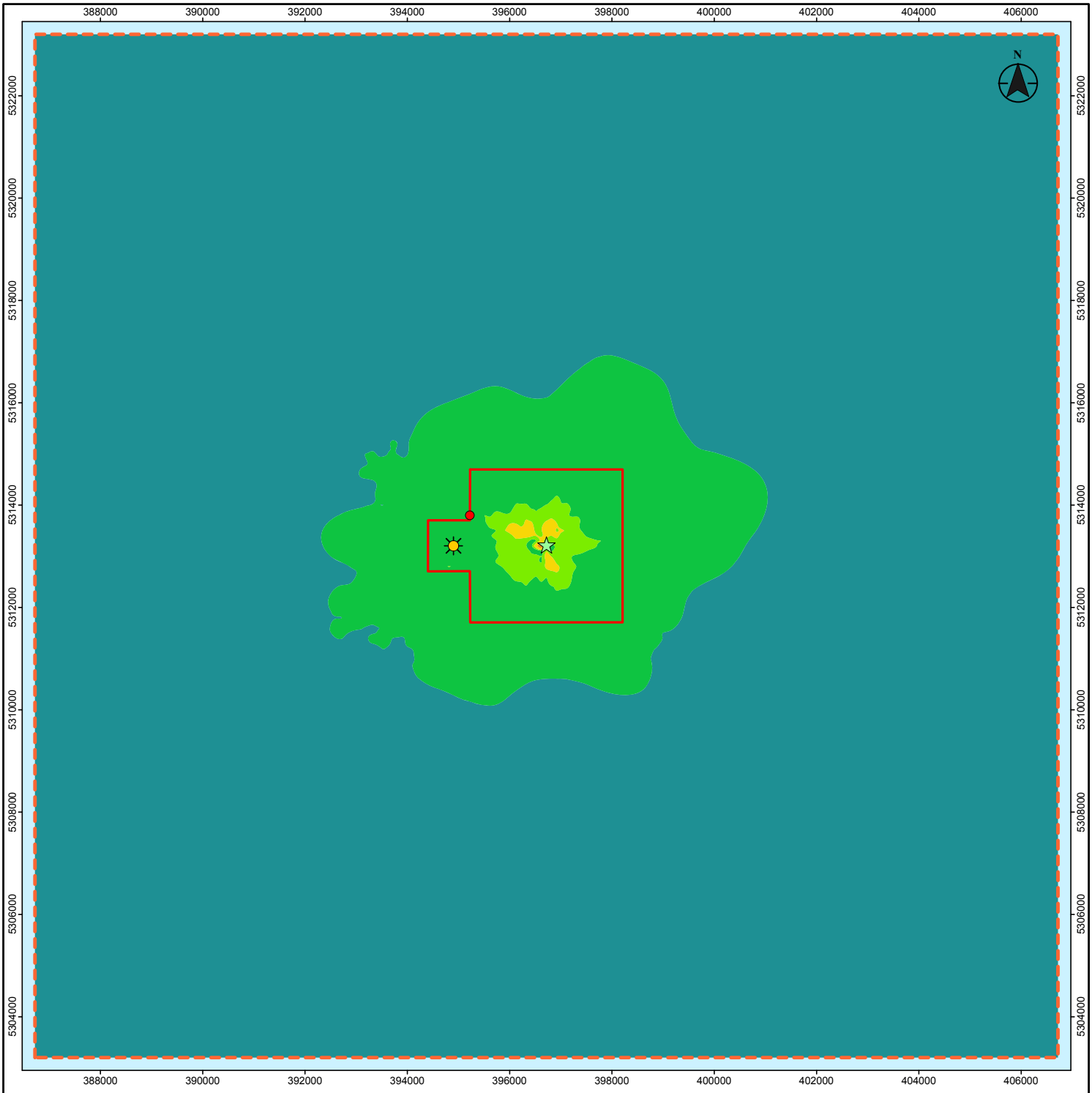
! X =     398.020,     5311.702,         0.0,  0.00!  !END!
! X =     397.970,     5311.702,         0.0,  0.00!  !END!
! X =     397.920,     5311.702,         0.0,  0.00!  !END!
! X =     397.870,     5311.702,         0.0,  0.00!  !END!
! X =     397.820,     5311.702,         0.0,  0.00!  !END!
! X =     397.770,     5311.702,         0.0,  0.00!  !END!
! X =     397.720,     5311.702,         0.0,  0.00!  !END!
! X =     397.670,     5311.702,         0.0,  0.00!  !END!
! X =     397.620,     5311.702,         0.0,  0.00!  !END!
! X =     397.570,     5311.702,         0.0,  0.00!  !END!
! X =     397.520,     5311.702,         0.0,  0.00!  !END!
! X =     397.470,     5311.702,         0.0,  0.00!  !END!
! X =     397.420,     5311.702,         0.0,  0.00!  !END!
! X =     397.370,     5311.702,         0.0,  0.00!  !END!
! X =     397.320,     5311.702,         0.0,  0.00!  !END!
! X =     397.270,     5311.702,         0.0,  0.00!  !END!
! X =     397.220,     5311.702,         0.0,  0.00!  !END!
! X =     397.170,     5311.702,         0.0,  0.00!  !END!
! X =     397.120,     5311.702,         0.0,  0.00!  !END!
! X =     397.070,     5311.702,         0.0,  0.00!  !END!
! X =     397.020,     5311.702,         0.0,  0.00!  !END!
! X =     396.970,     5311.702,         0.0,  0.00!  !END!
! X =     396.920,     5311.702,         0.0,  0.00!  !END!
! X =     396.870,     5311.702,         0.0,  0.00!  !END!
! X =     396.820,     5311.702,         0.0,  0.00!  !END!
! X =     396.770,     5311.702,         0.0,  0.00!  !END!
! X =     396.720,     5311.702,         0.0,  0.00!  !END!
! X =     396.670,     5311.702,         0.0,  0.00!  !END!
! X =     396.620,     5311.702,         0.0,  0.00!  !END!
! X =     396.570,     5311.702,         0.0,  0.00!  !END!
! X =     396.520,     5311.702,         0.0,  0.00!  !END!
! X =     396.470,     5311.702,         0.0,  0.00!  !END!
! X =     396.420,     5311.702,         0.0,  0.00!  !END!
! X =     396.370,     5311.702,         0.0,  0.00!  !END!
! X =     396.320,     5311.702,         0.0,  0.00!  !END!
! X =     396.270,     5311.702,         0.0,  0.00!  !END!
! X =     396.220,     5311.702,         0.0,  0.00!  !END!
! X =     396.170,     5311.702,         0.0,  0.00!  !END!
! X =     396.120,     5311.702,         0.0,  0.00!  !END!
! X =     396.070,     5311.702,         0.0,  0.00!  !END!
! X =     396.020,     5311.702,         0.0,  0.00!  !END!
! X =     395.970,     5311.702,         0.0,  0.00!  !END!
! X =     395.920,     5311.702,         0.0,  0.00!  !END!
! X =     395.870,     5311.702,         0.0,  0.00!  !END!
! X =     395.820,     5311.702,         0.0,  0.00!  !END!
! X =     395.770,     5311.702,         0.0,  0.00!  !END!
! X =     395.720,     5311.702,         0.0,  0.00!  !END!
! X =     395.670,     5311.702,         0.0,  0.00!  !END!
! X =     395.620,     5311.702,         0.0,  0.00!  !END!
! X =     395.570,     5311.702,         0.0,  0.00!  !END!
! X =     395.520,     5311.702,         0.0,  0.00!  !END!
! X =     395.470,     5311.702,         0.0,  0.00!  !END!
! X =     395.420,     5311.702,         0.0,  0.00!  !END!
! X =     395.370,     5311.702,         0.0,  0.00!  !END!
! X =     395.320,     5311.702,         0.0,  0.00!  !END!
! X =     395.270,     5311.702,         0.0,  0.00!  !END!

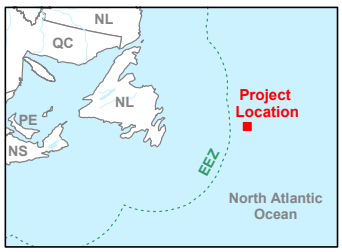
-------------
    a
     Data for each receptor are treated as a separate input subgroup
     and therefore must end with an input group terminator.
    b
```

```
     Receptor height above ground is optional.  If no value is entered,
     the receptor is placed on the ground.
    c
     Receptors can be assigned using group names provided in 20b.  If no
     group names are used (NRGRP=0) then the default assignment name X
     must be used.
```

APPENDIX B

Concentration Contour Mapping





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum
Predicted Concentration: 188 µg/m³

1-hour NL AAQS for NO_2: 400 µg/m³

Note: Background concentration is not added

Concentration µg/m³

40 80 120 200 240 320 400

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

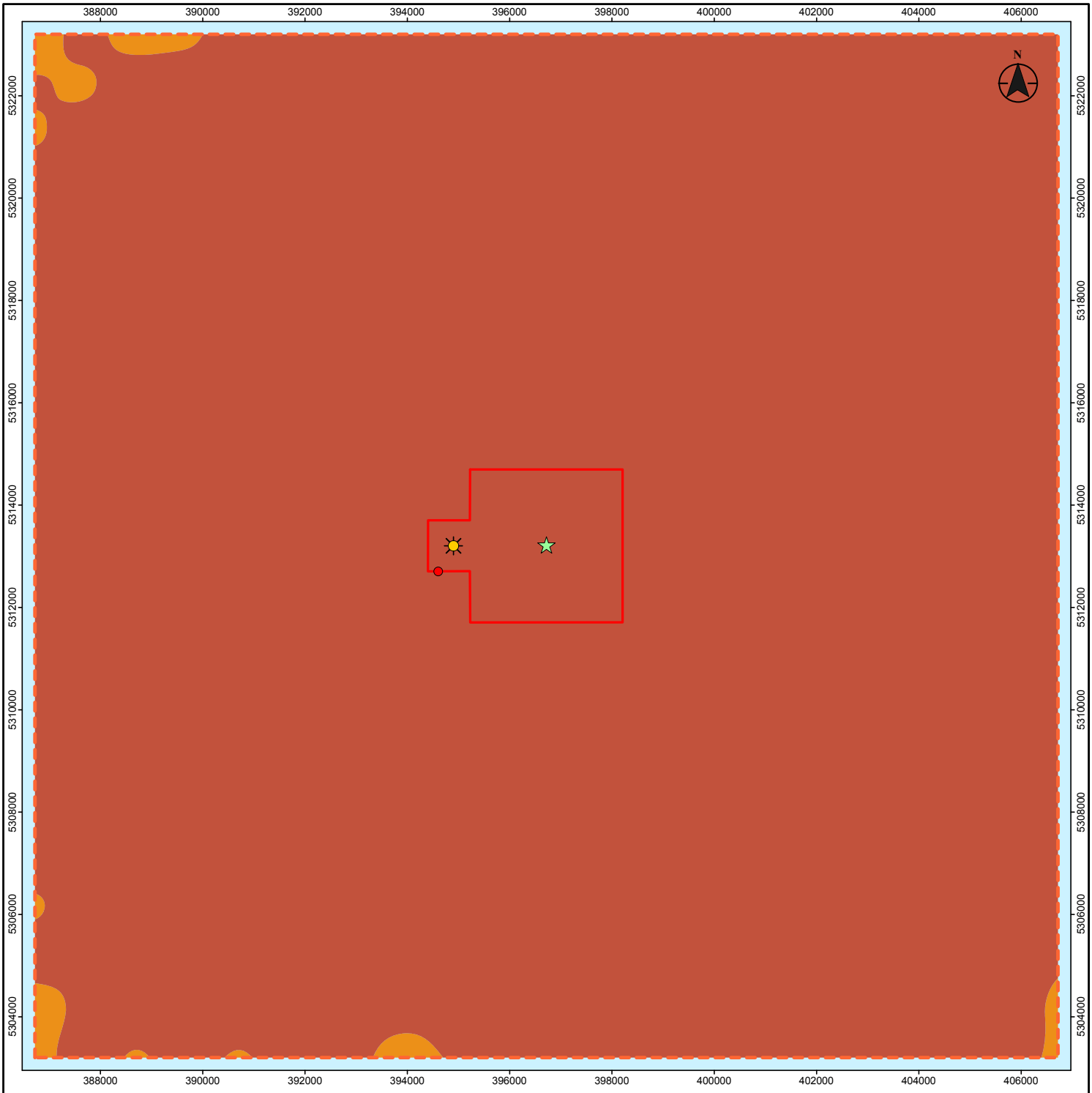
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

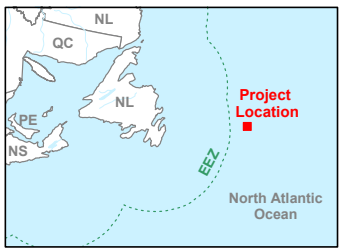
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-1

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 9th highest 1-hour Average NO_2 (OLM) Concentrations (µg/m³) (Scenario 1)





Study Area
Anti-Collision Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 172 µg/m³

1-hour CAAQS for NO_2: 79 µg/m³

Note: Background concentration is not added

Concentration µg/m³

8 16 24 40 47 63 79

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

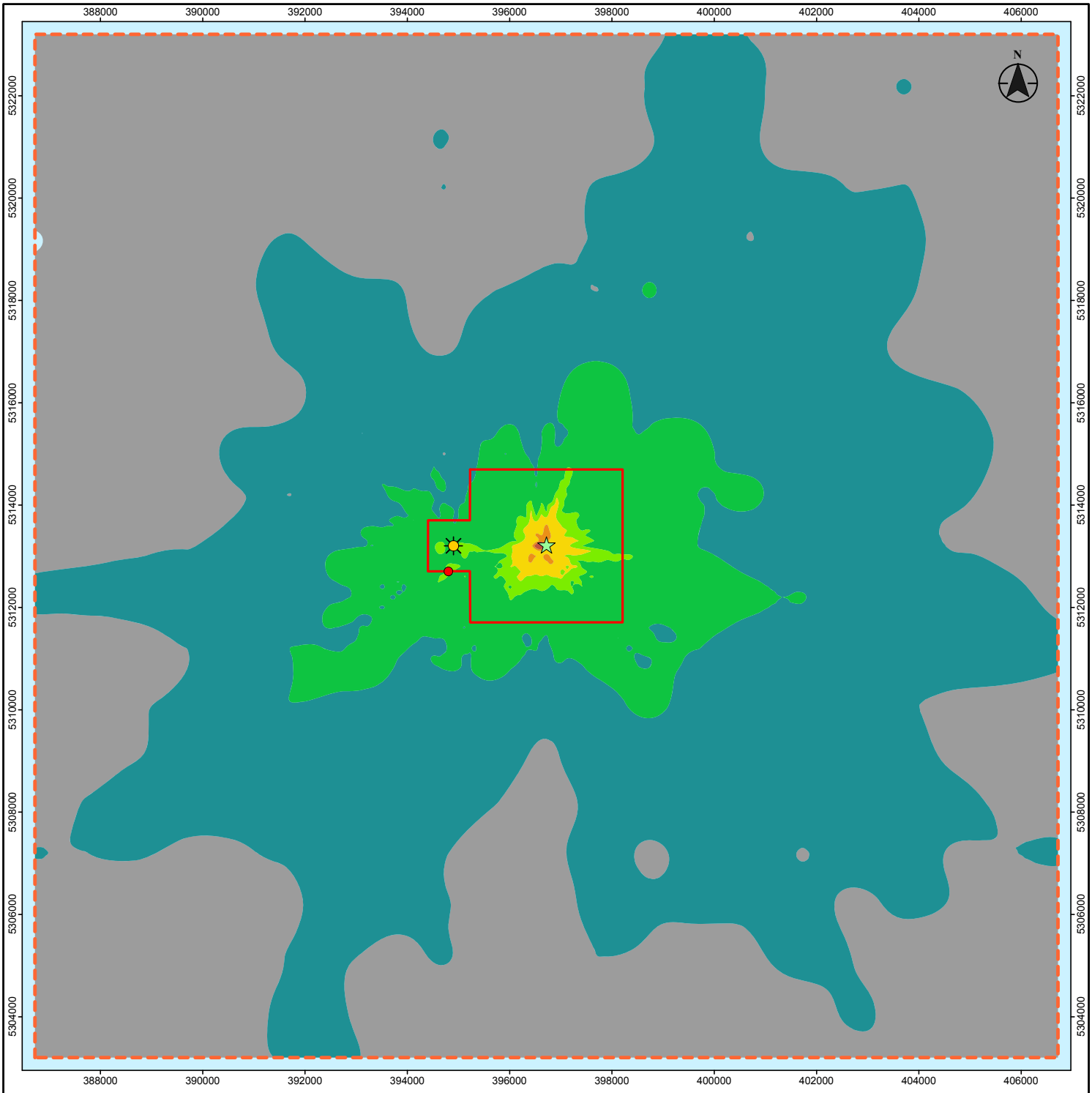
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

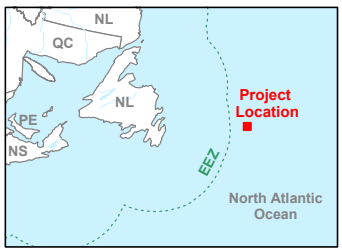
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-2

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 98th percentile Daily Maximum NO_2 (OLM) Concentrations (µg/m³) (Scenario 1)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 124 µg/m³

24-hour NL AAQS for NO_2: 200 µg/m³

Note: Background concentration is not added

Concentration µg/m³

20 40 60 100 120 160 200

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

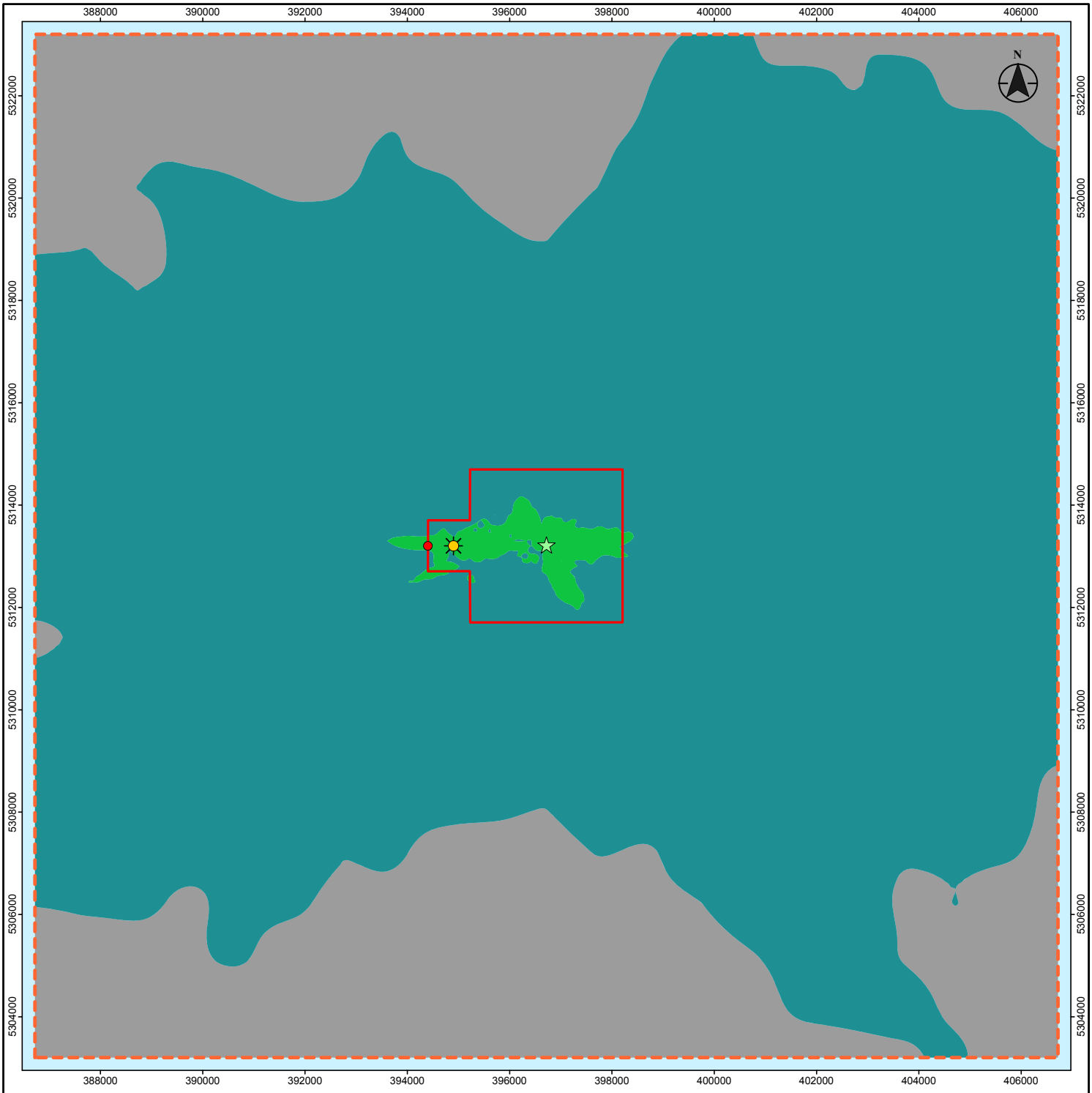
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

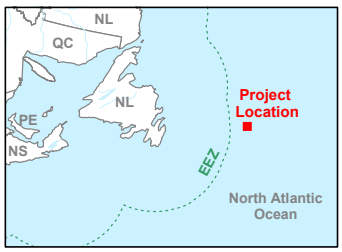
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-3

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 2nd highest 24-hour Average NO_2 (OLM) Concentrations (µg/m³) (Scenario 1)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum
Predicted Concentration: 143 µg/m³

1-hour NL AAQS for NO_2: 400 µg/m³

Note: Background concentration is not added

Concentration µg/m³

40 80 120 200 240 320 400

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

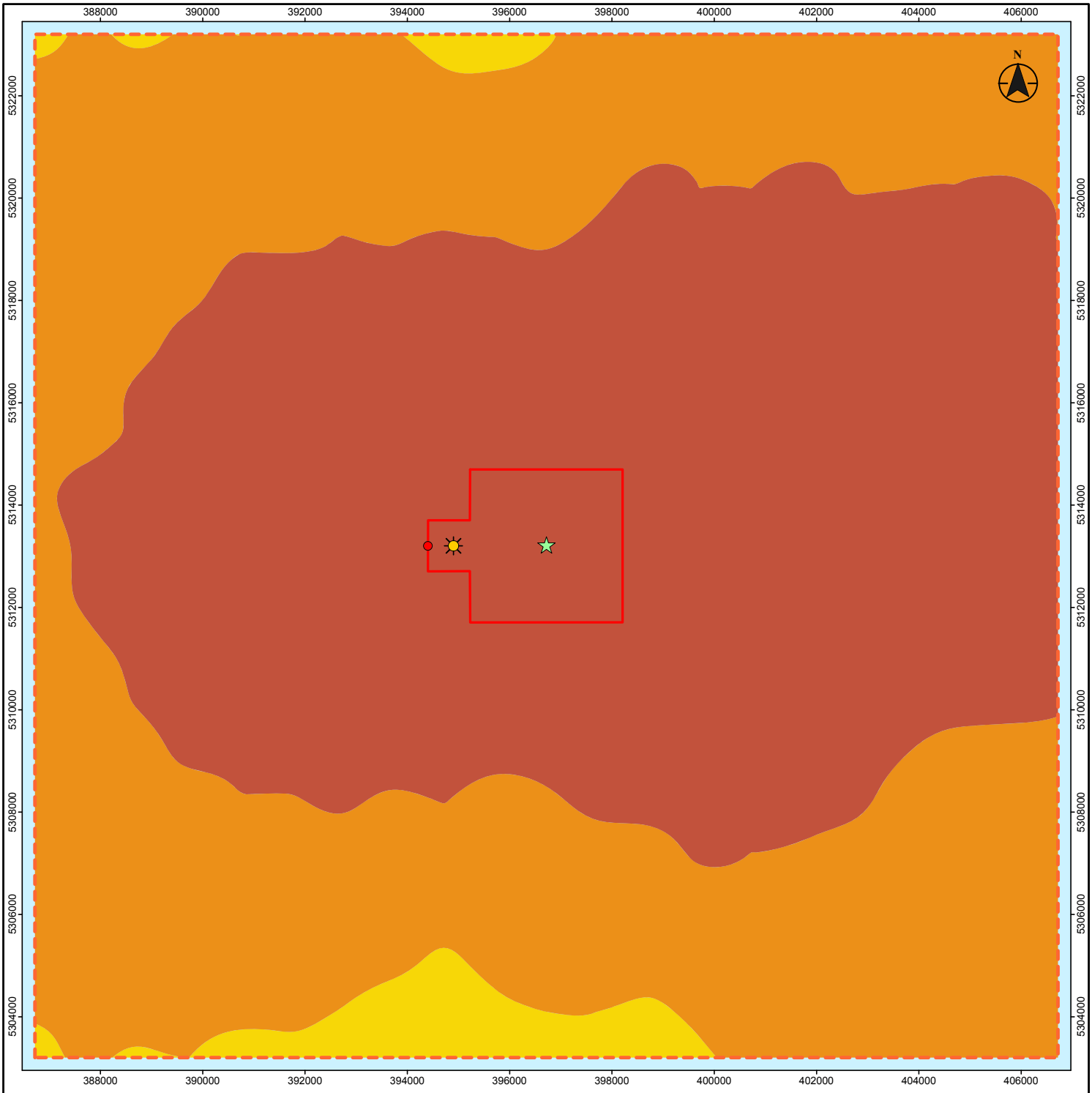
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

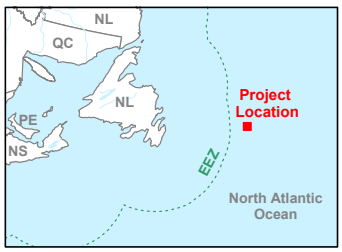
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-4

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 9th highest 1-hour Average NO_2 (OLM) Concentrations (µg/m³) (Scenario 2)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 134 µg/m³

1-hour CAAQS for NO_2: 79 µg/m³

Note: Background concentration is not added

Concentration µg/m³

8 16 24 40 47 63 79

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

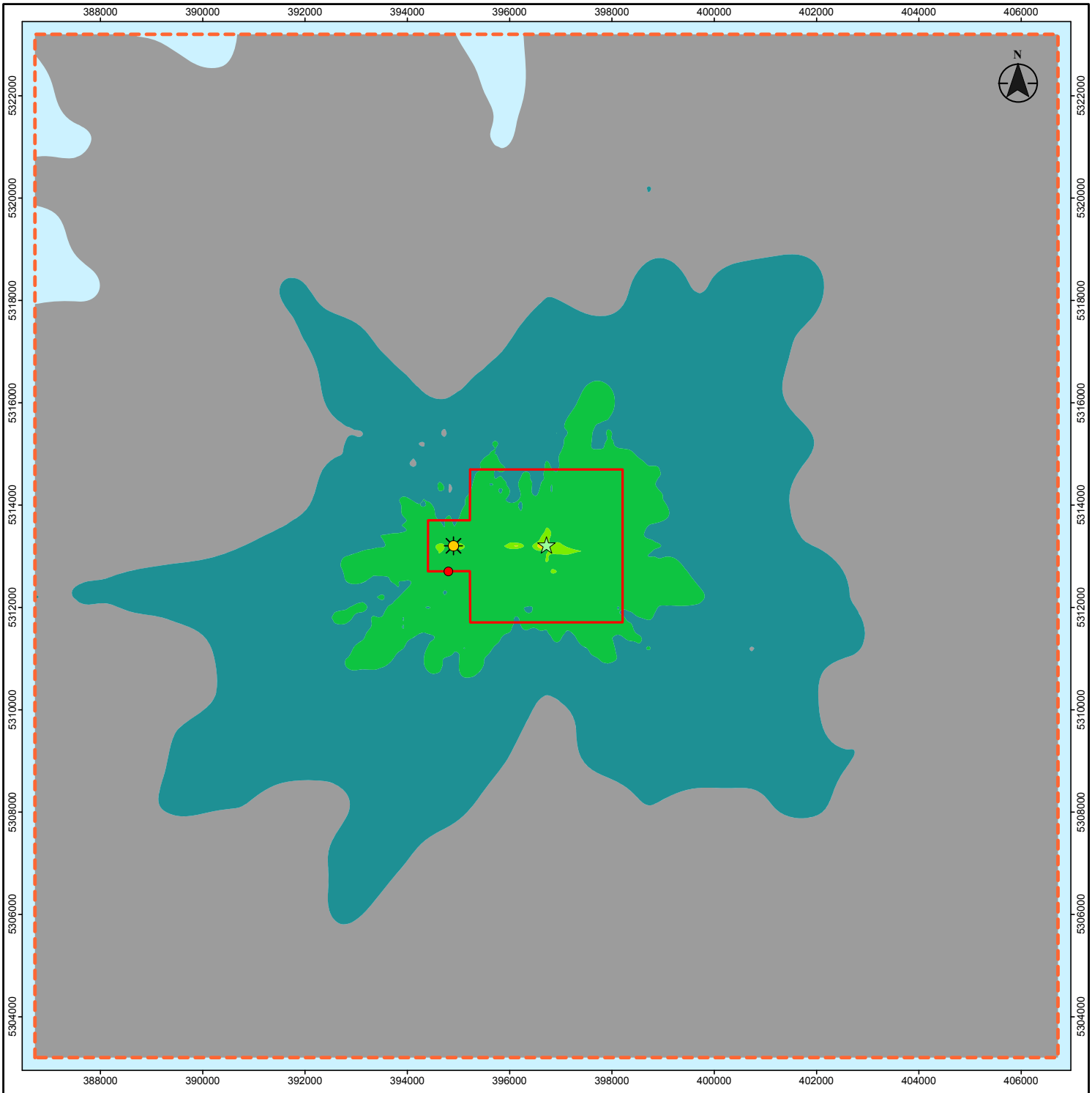
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

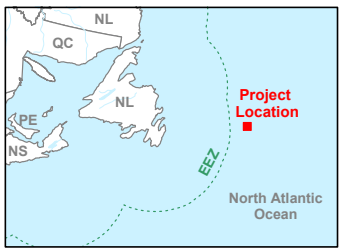
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-5

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 98th percentile Daily Maximum NO_2 (OLM) Concentrations (µg/m³) (Scenario 2)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum
Predicted Concentration: 105 µg/m³

24-hour NL AAQS for NO_2: 200 µg/m³

Note: Background concentration is not added

Concentration µg/m³

20 40 60 100 120 160 200

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

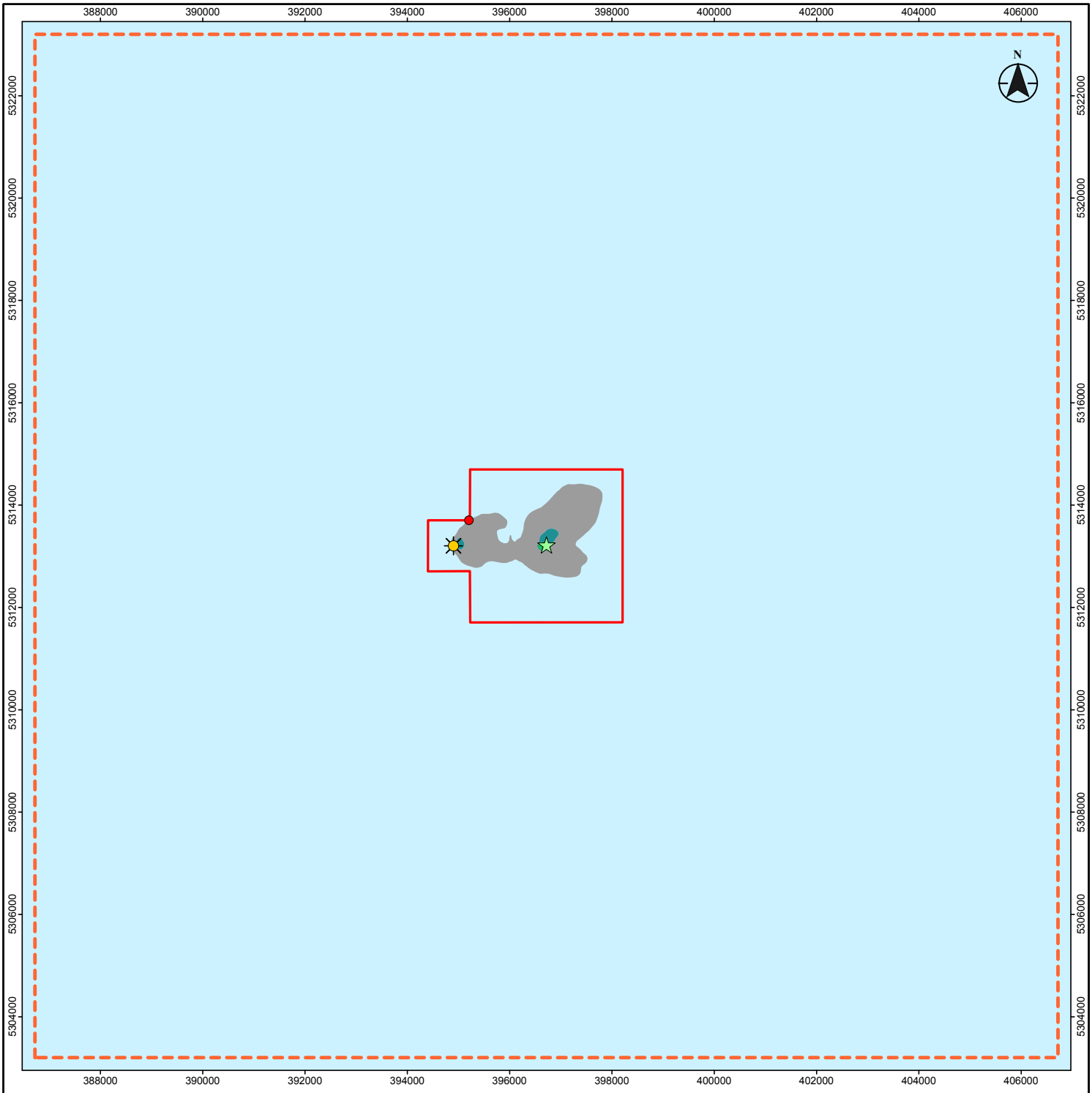
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

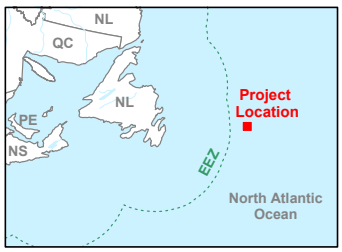
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-6

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 2nd highest 24-hour Average NO_2 (OLM) Concentrations (µg/m³) (Scenario 2)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 10 µg/m³

Annual NL AAQS for NO_2: 100 µg/m³

Note: Background concentration is not added

Concentration µg/m³

10 20 30 50 60 80 100

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

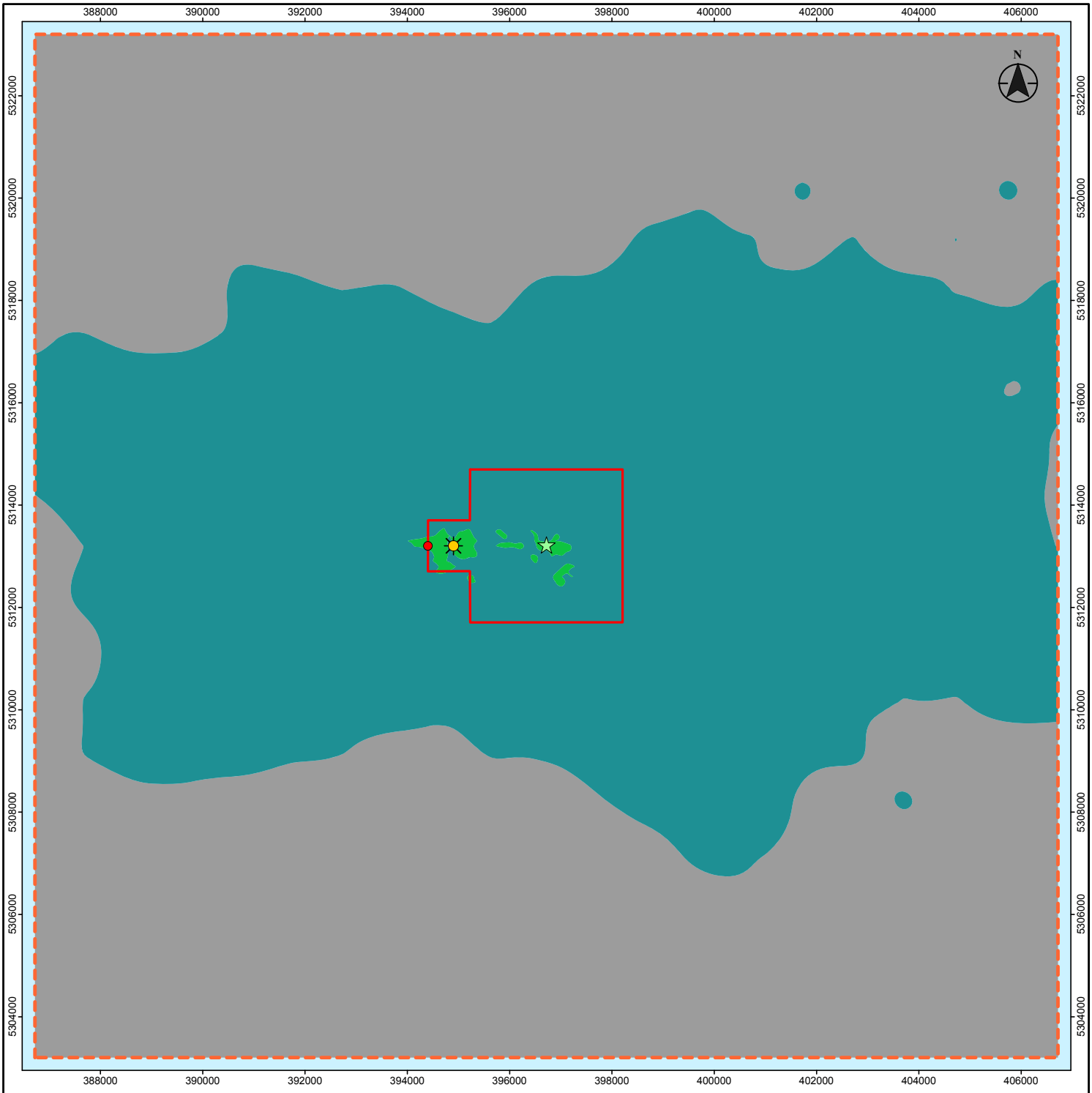
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

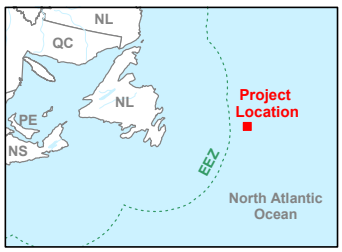
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-7

Notes
1. Coordinate System: UTM NAD83 Zone 23

Maximum Predicted Annual Average NO_2 (OLM) Concentrations (µg/m³) (Scenario 2)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 130 µg/m³

1-hour NL AAQS for NO_2: 400 µg/m³

Note: Background concentration is not added

Concentration µg/m³

40 80 120 200 240 320 400

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

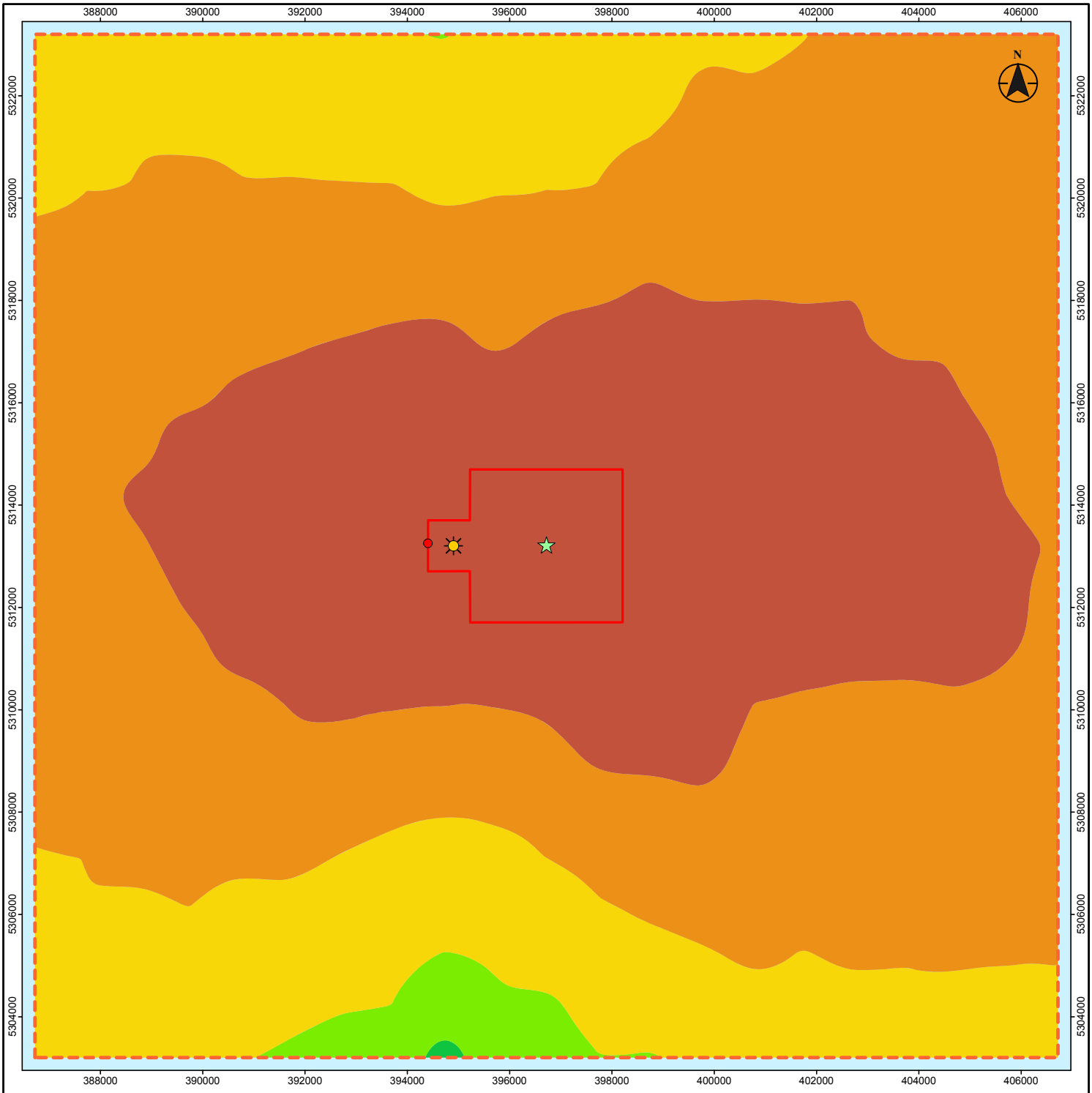
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

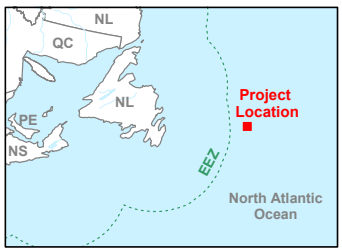
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-8

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 9th highest 1-hour Average NO_2 (OLM) Concentrations (µg/m³) (Scenario 3)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 125 µg/m³

1-hour CAAQS for NO_2: 79 µg/m³

Note: Background concentration is not added

Concentration µg/m³

8 16 24 40 47 63 79

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

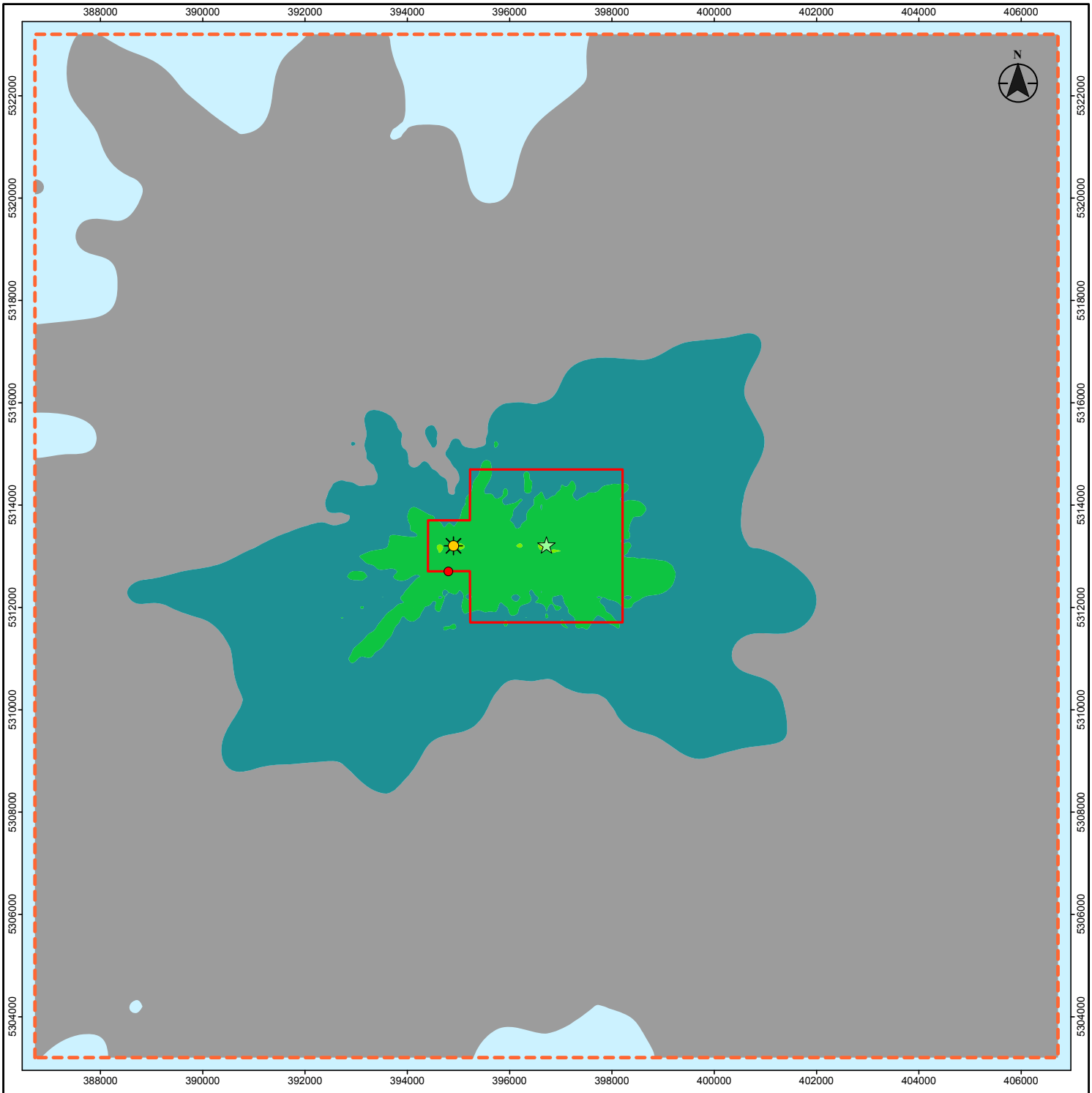
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

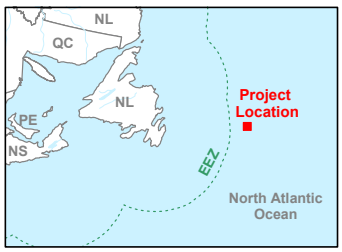
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-9

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 98th percentile Daily Maximum NO_2 (OLM) Concentrations (µg/m³) (Scenario 3)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 97 µg/m³

24-hour NL AAQS for NO_2: 200 µg/m³

Note: Background concentration is not added

Concentration µg/m³

20 40 60 100 120 160 200

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

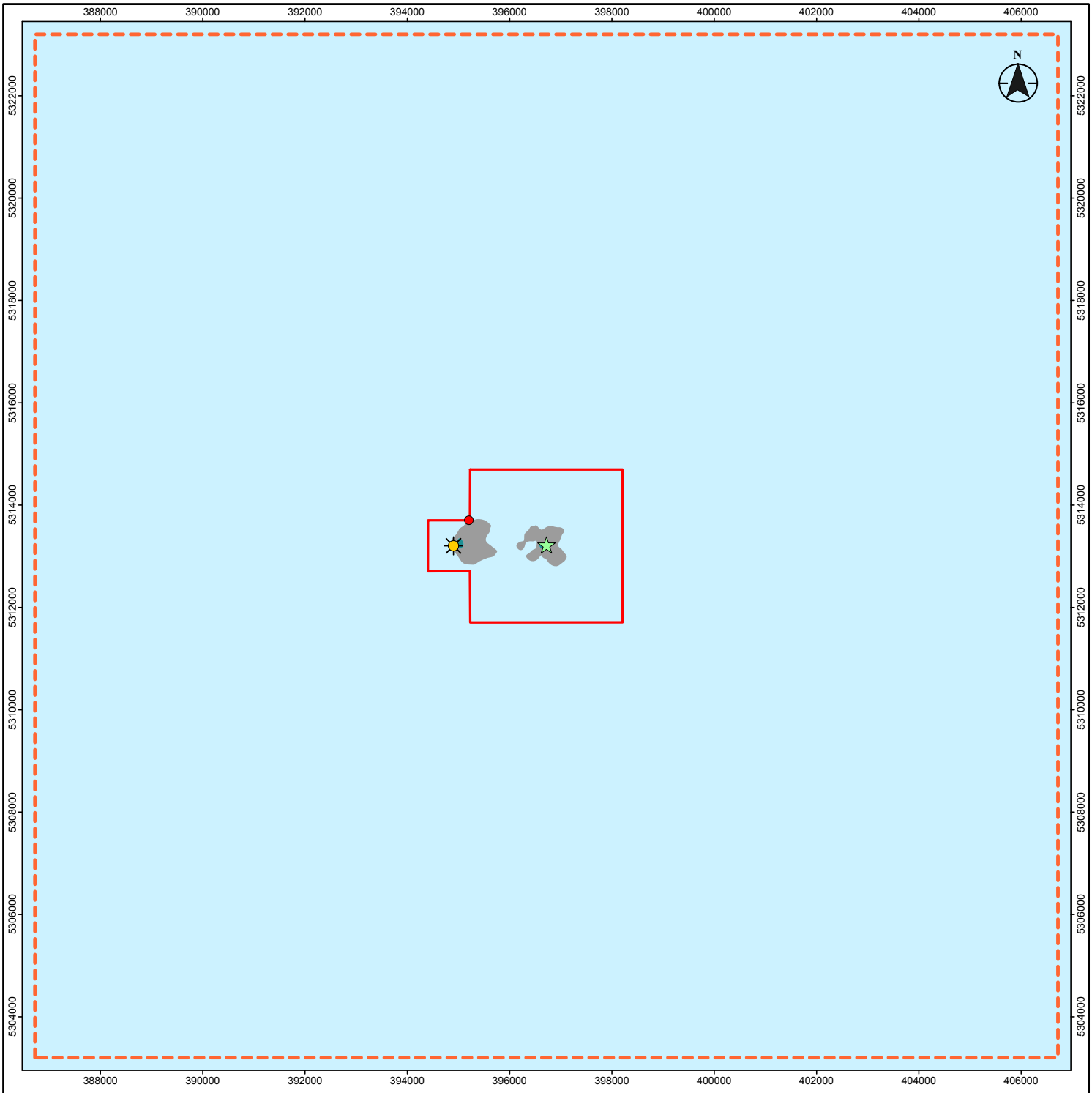
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

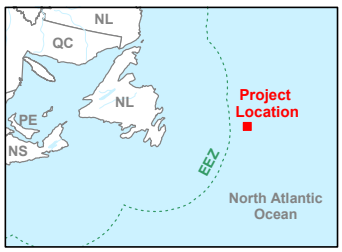
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-10

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 2nd highest 24-hour Average NO_2 (OLM) Concentrations (µg/m³) (Scenario 3)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 9 µg/m³

Annual NL AAQS for NO_2: 100 µg/m³

Note: Background concentration is not added

Concentration µg/m³

10 20 30 50 60 80 100

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

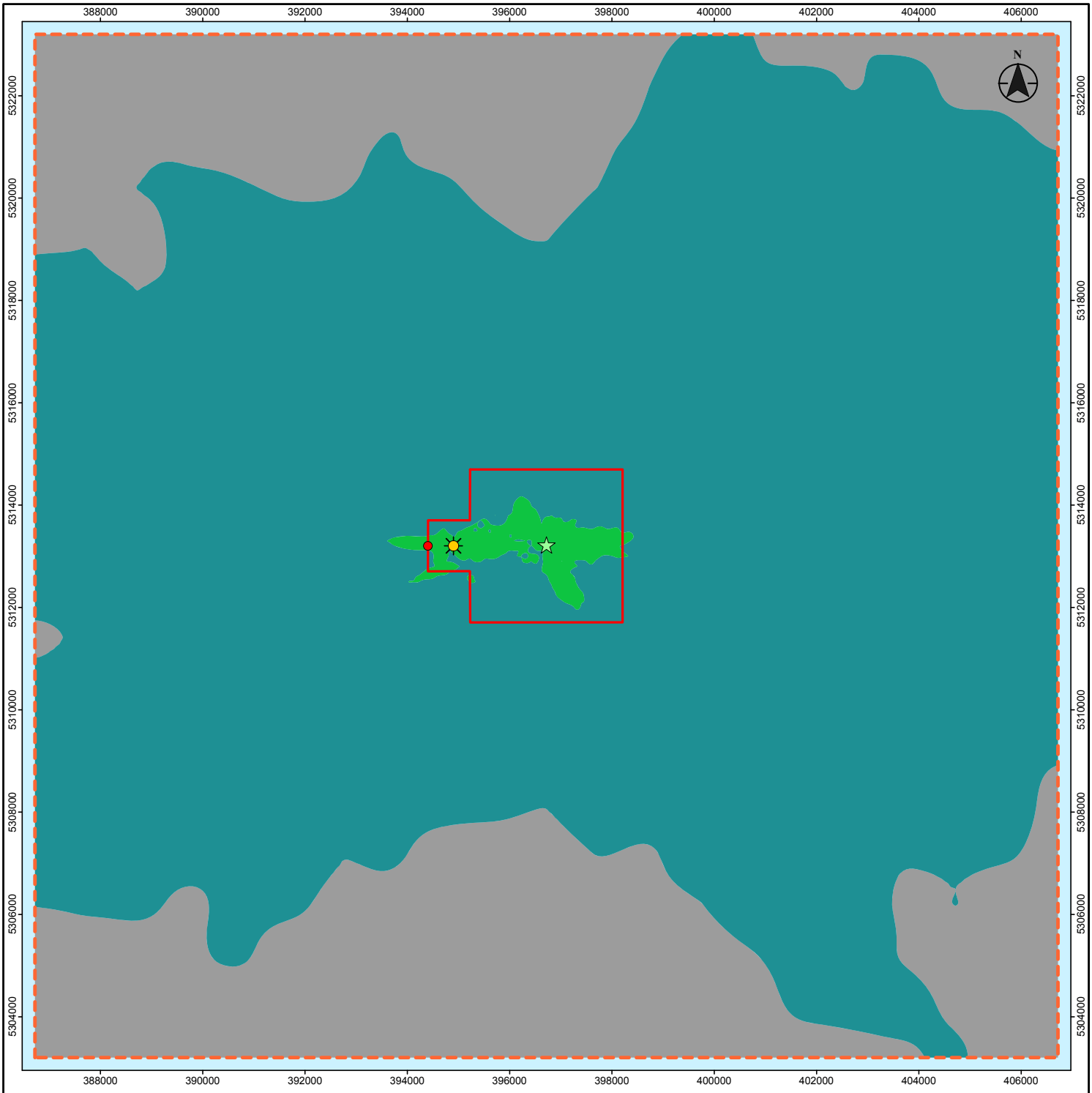
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

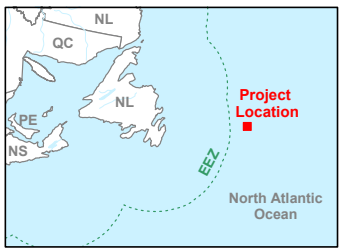
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-11

Notes
1. Coordinate System: UTM NAD83 Zone 23

Maximum Predicted Annual Average NO_2 (OLM) Concentrations (µg/m³) (Scenario 3)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum
Predicted Concentration: 143 µg/m³

1-hour NL AAQS for NO_2: 400 µg/m³

Note: Background concentration is not added

Concentration µg/m³

40 80 120 200 240 320 400

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

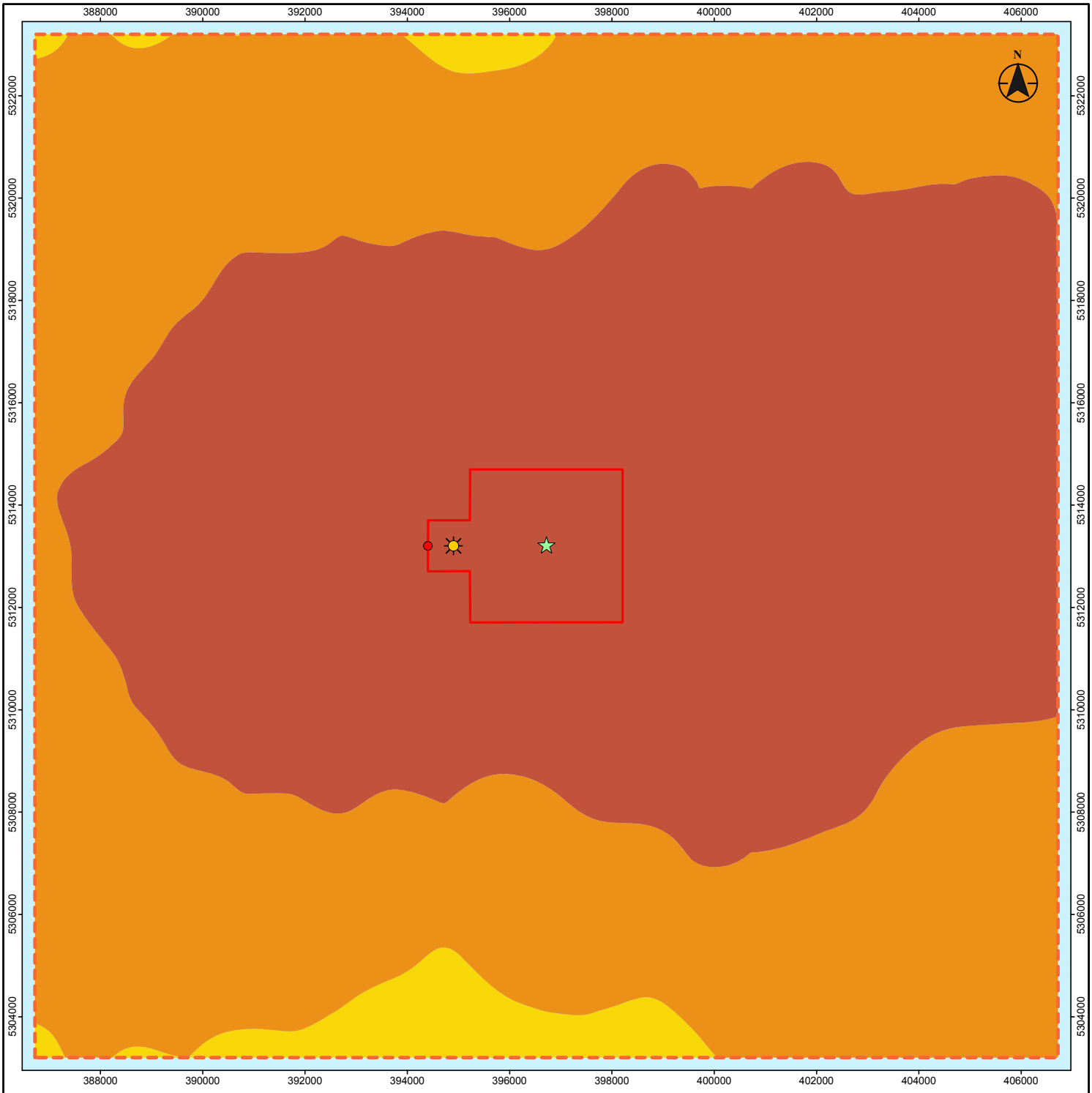
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

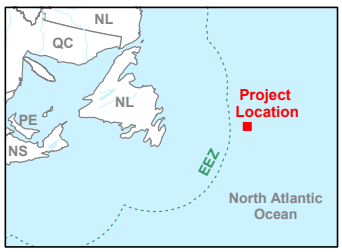
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-12

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 9th highest 1-hour Average NO_2 (OLM) Concentrations (µg/m³) (Scenario 4)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 134 µg/m³

1-hour CAAQS for NO_2: 79 µg/m³

Note: Background concentration is not added

Concentration µg/m³

8 16 24 40 47 63 79

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

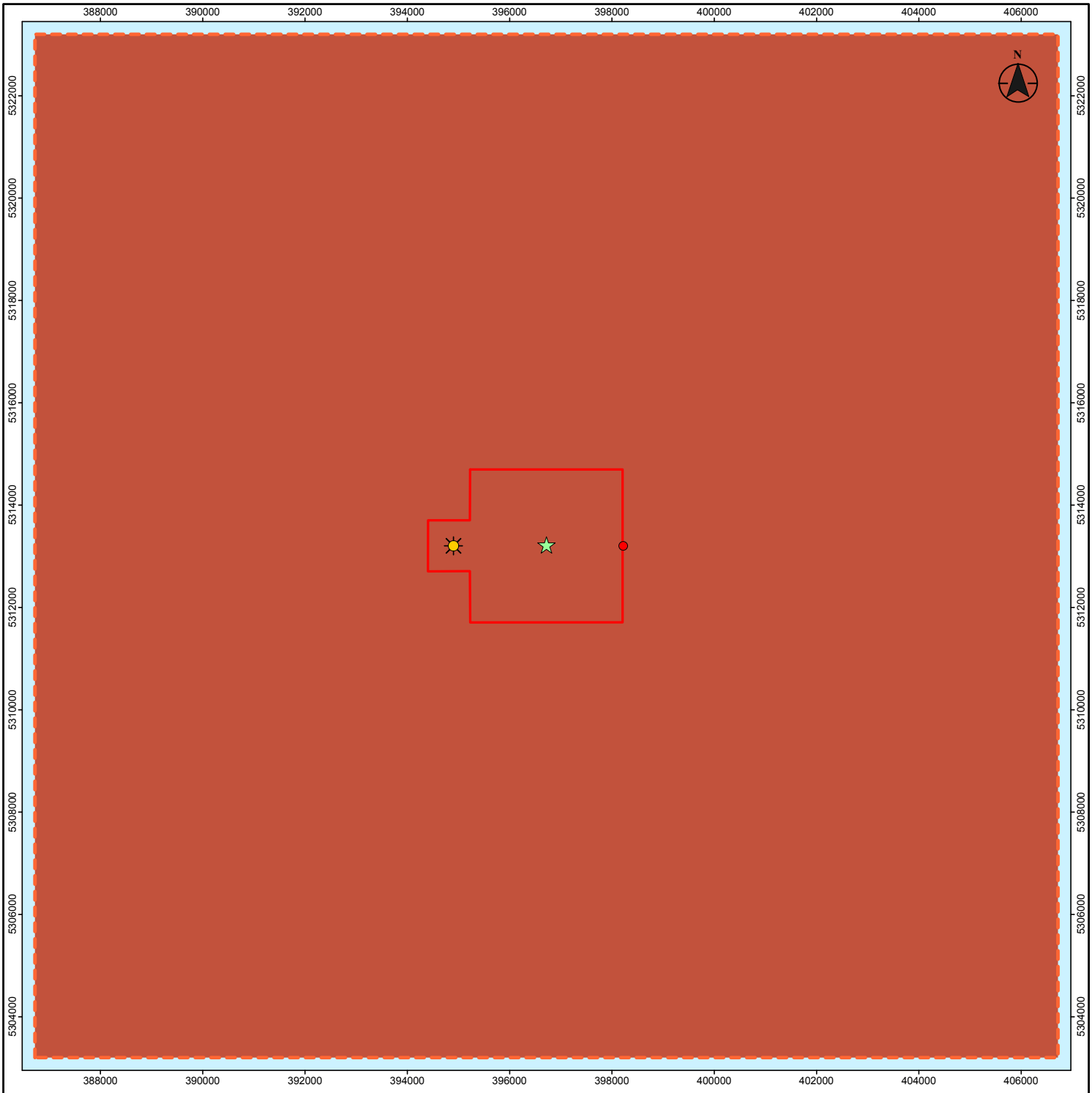
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

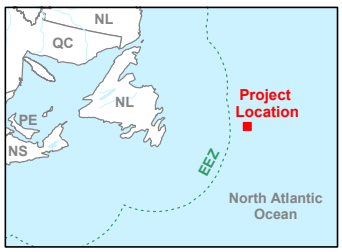
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-13

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 98th percentile Daily Maximum NO_2 (OLM) Concentrations (µg/m³) (Scenario 4)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum
Predicted Concentration: 172 µg/m³

1-hour CAAQS for NO_2: 79 µg/m³

Note: Background concentration is not added

Concentration µg/m³

8 16 24 40 47 63 79

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

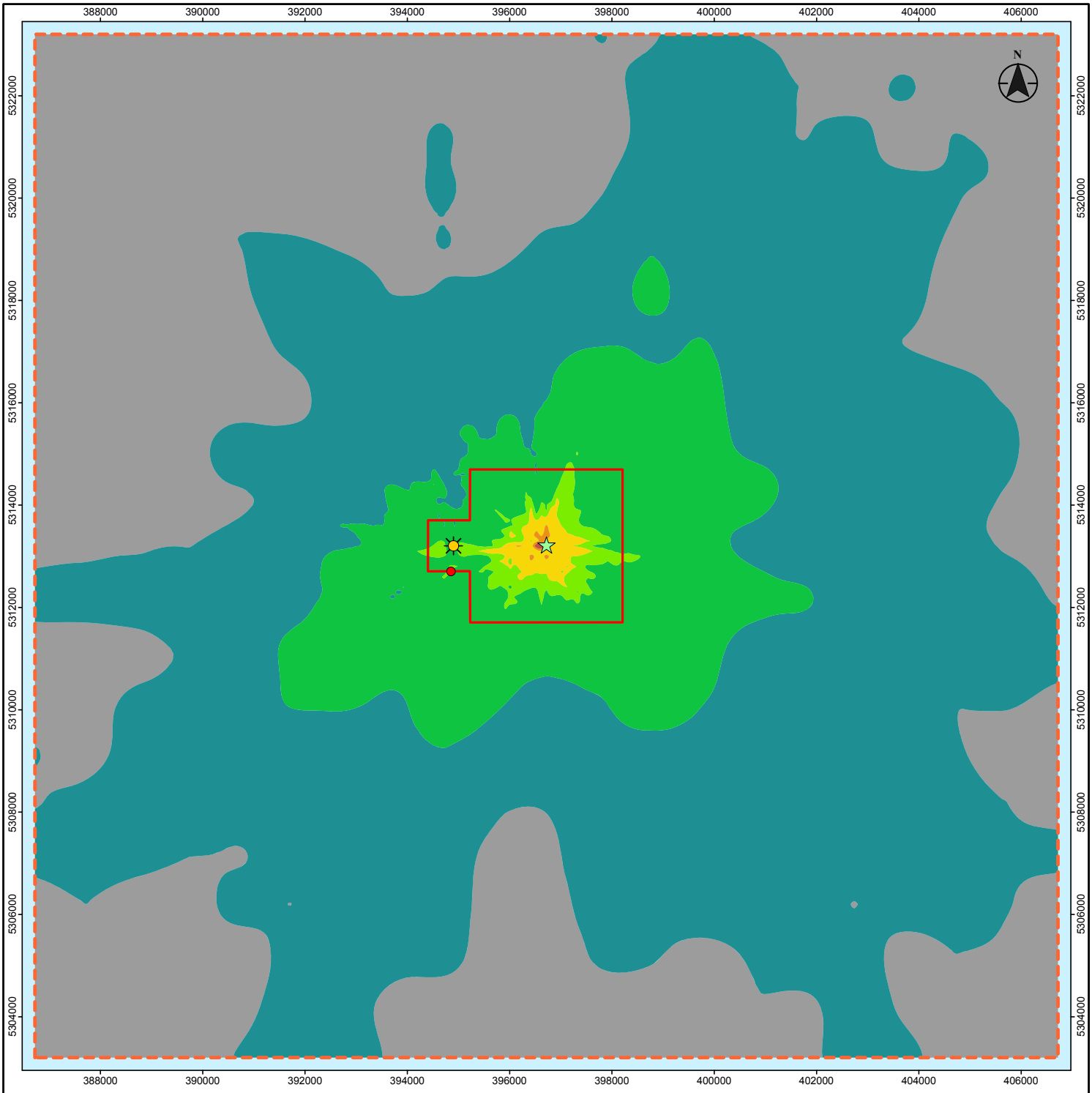
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

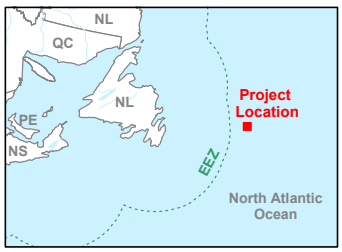
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-15

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 98th percentile Daily Maximum NO_2 (OLM) Concentrations (µg/m³) (Scenario 5)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum
Predicted Concentration: 115 µg/m³

24-hour NL AAQS for NO_2: 200 µg/m³

Note: Background concentration is not added

Concentration µg/m³

20 40 60 100 120 160 200

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

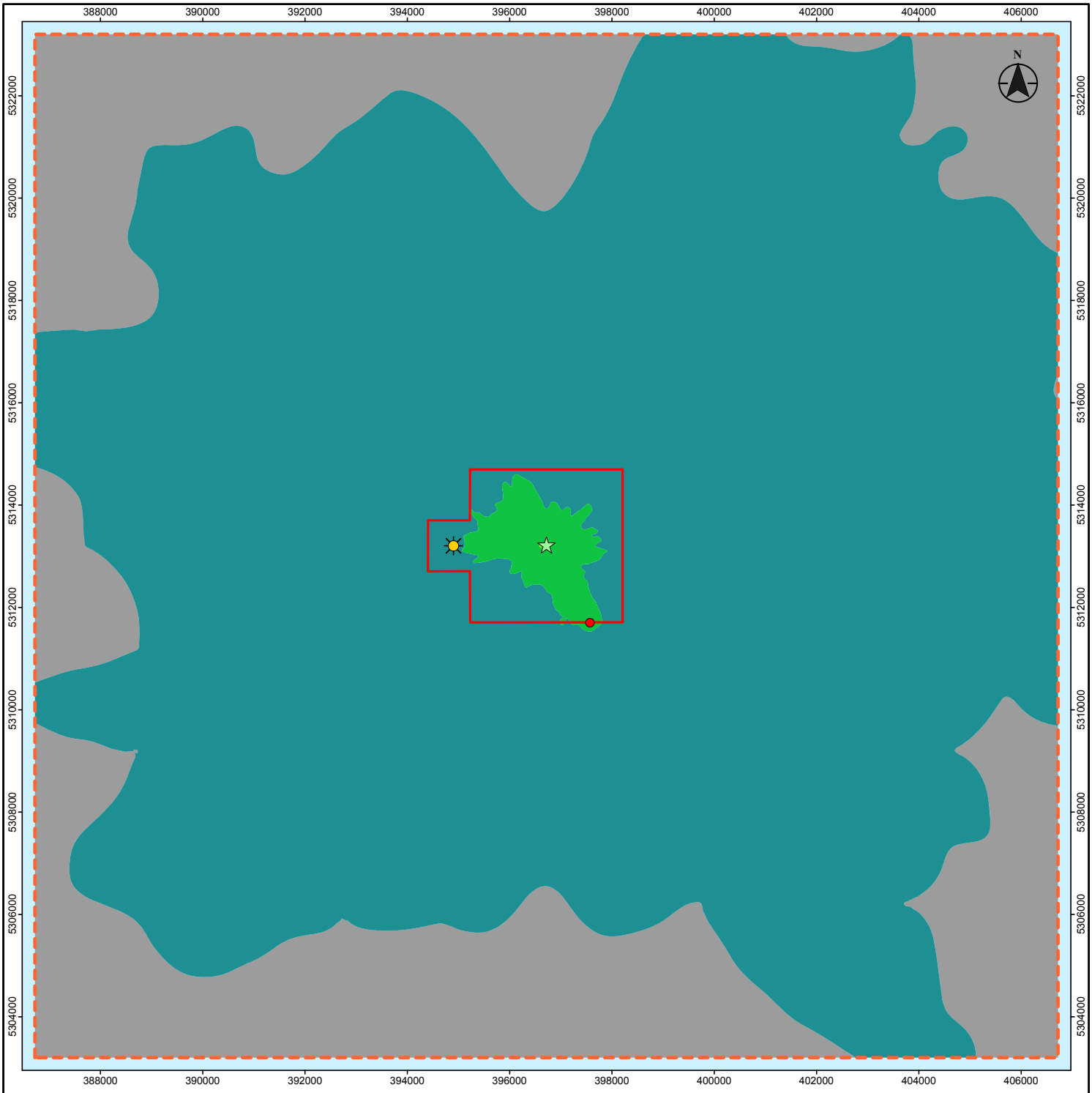
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

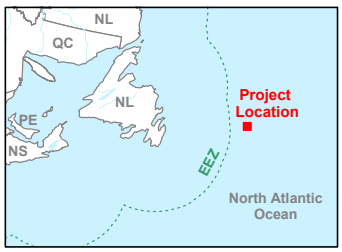
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-16

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 2nd highest 24-hour Average NO_2 (OLM) Concentrations (µg/m³) (Scenario 5)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum
Predicted Concentration: 126 µg/m³

1-hour NL AAQS for NO_2: 400 µg/m³

Note: Background concentration is not added

Concentration µg/m³

40 80 120 200 240 320 400

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

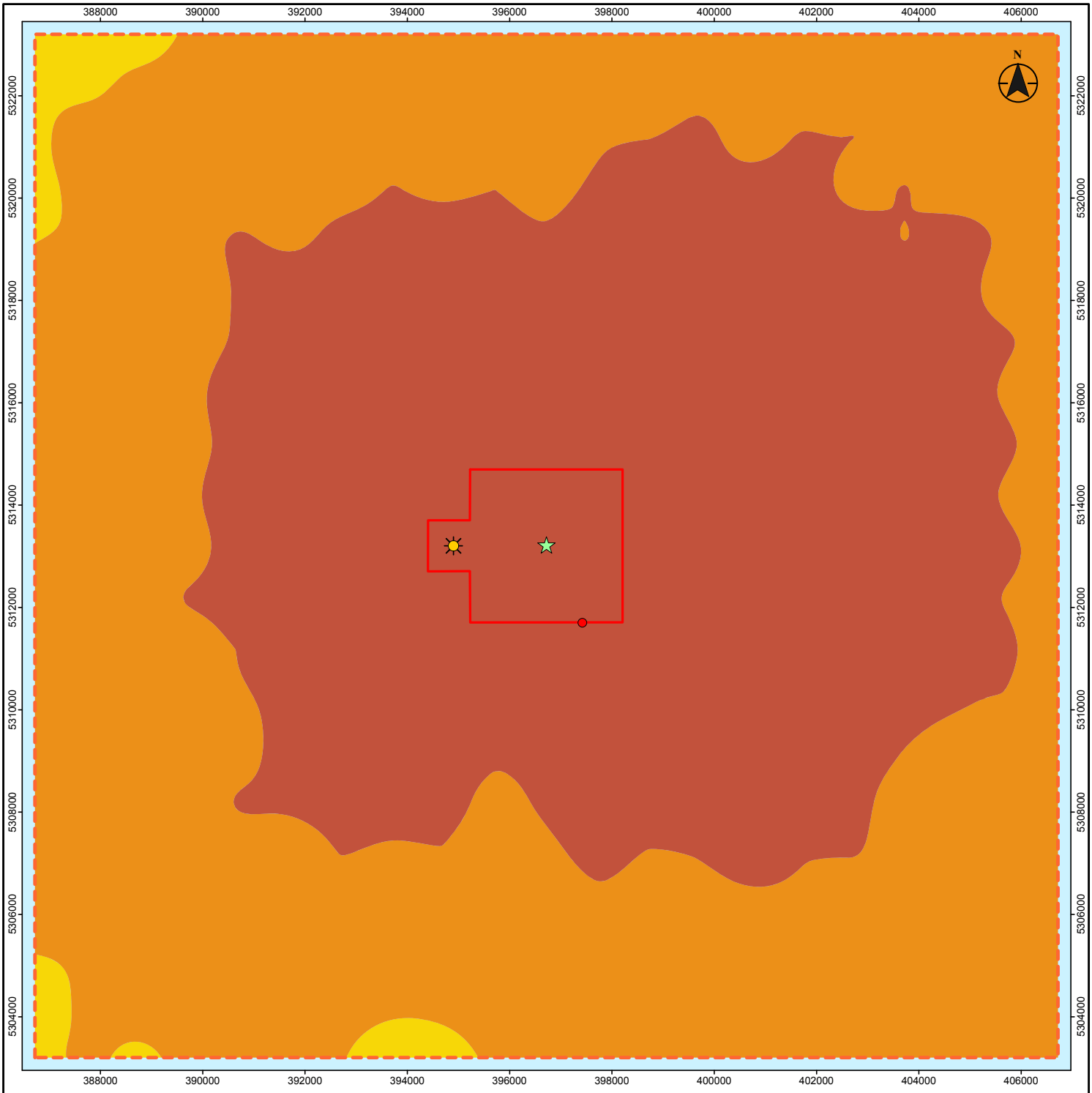
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

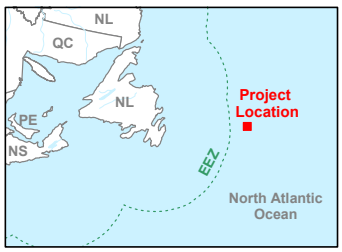
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-17

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 9th highest 1-hour Average NO_2 (OLM) Concentrations (µg/m³) (Scenario 6)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 119 µg/m³

1-hour CAAQS for NO_2: 79 µg/m³

Note: Background concentration is not added

Concentration µg/m³

8 16 24 40 47 63 79

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

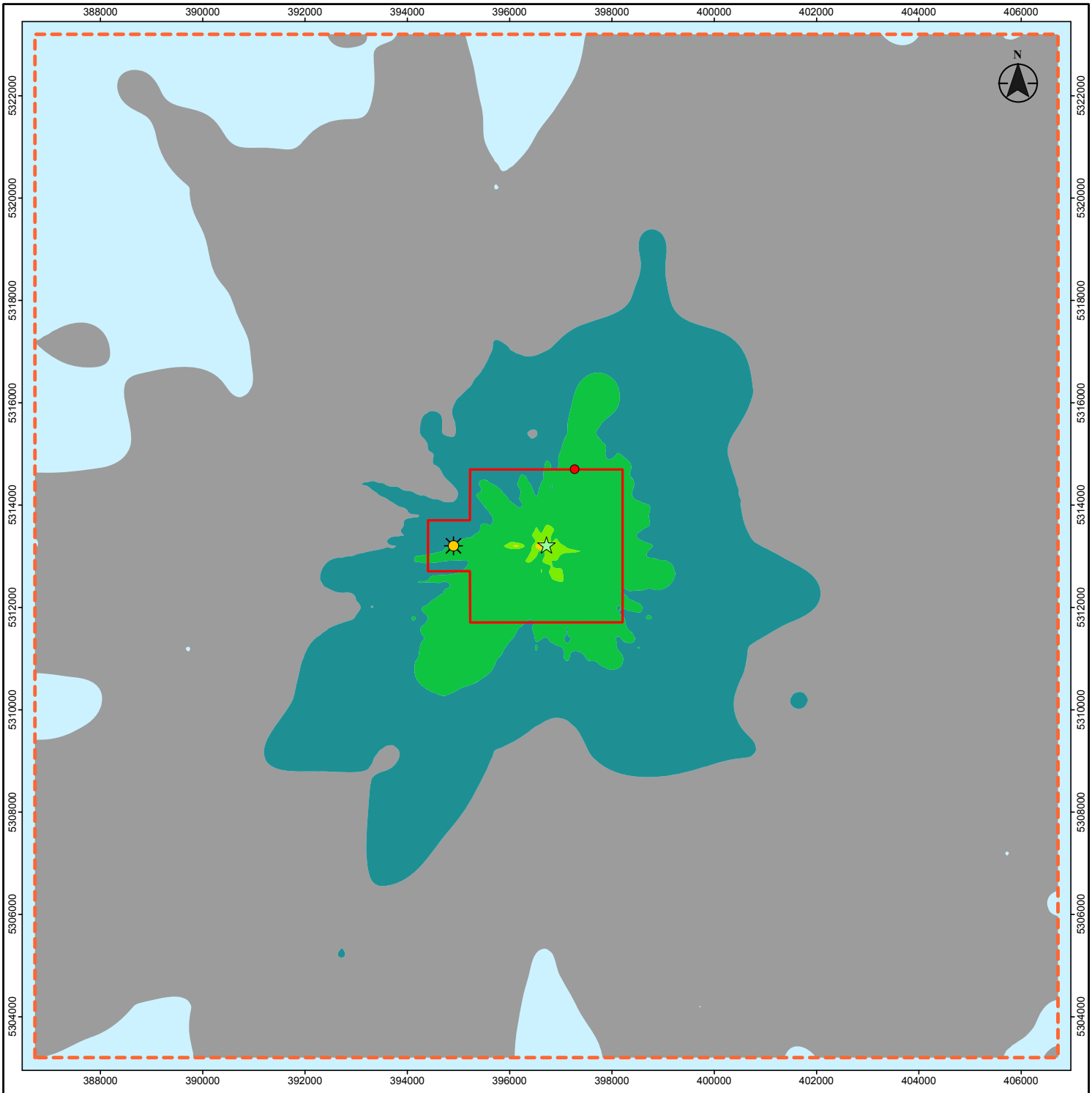
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

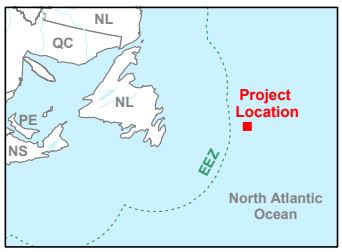
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-18

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 98th percentile Daily Maximum NO_2 (OLM) Concentrations (µg/m³) (Scenario 6)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 86 µg/m³

24-hour NL AAQS for NO_2: 200 µg/m³

Note: Background concentration is not added

Concentration µg/m³

20 40 60 100 120 160 200

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

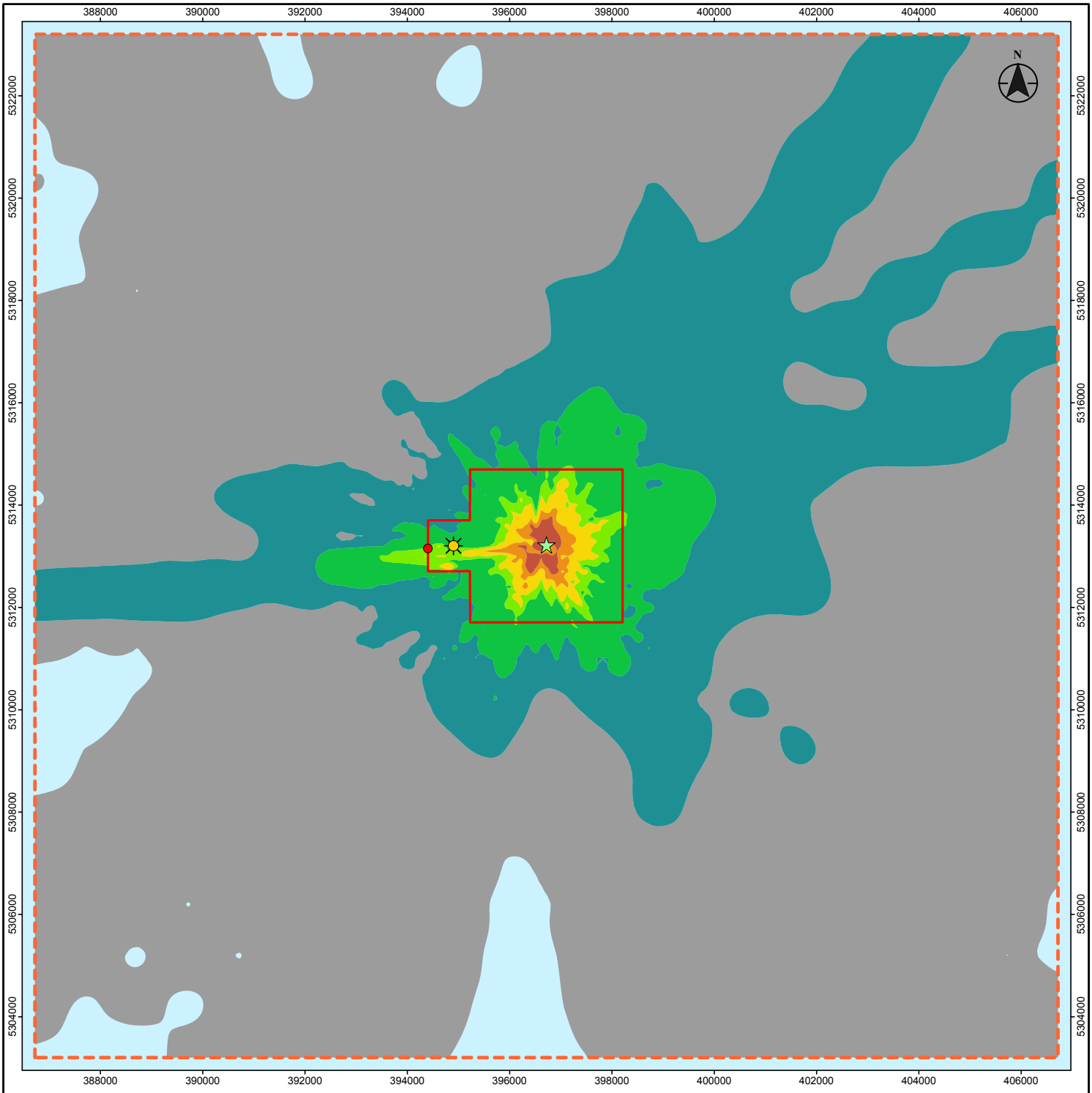
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

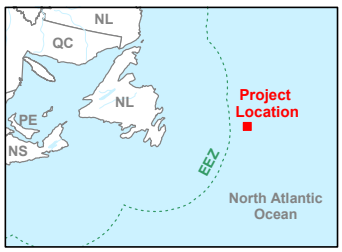
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-19

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 2nd highest 24-hour Average NO_2 (OLM) Concentrations (µg/m³) (Scenario 6)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum
Predicted Concentration: 15.5 µg/m³

24-hour NL AAQS for $PM_{2.5}$: 25 µg/m³

Note: Background concentration is not added

Concentration µg/m³

2.5 5 7.5 12.5 15 20 25

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

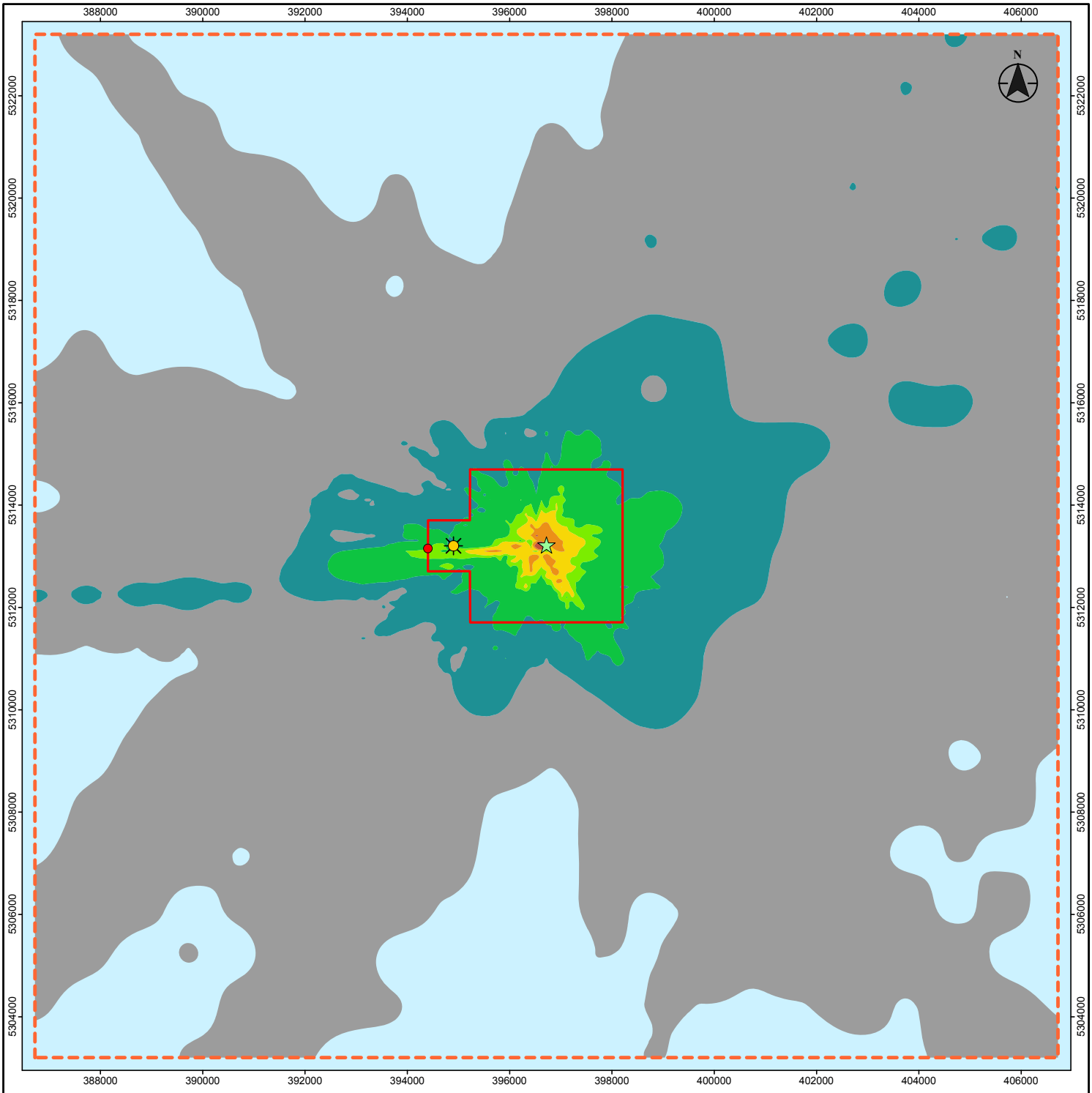
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

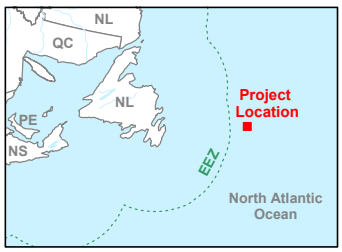
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-21

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 2nd highest 24-hour Average $PM_{2.5}$ Concentrations (µg/m³) (Scenario 1)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum
Predicted Concentration: 14.5 µg/m³

24-hour NL AAQS for $PM_{2.5}$: 25 µg/m³

Note: Background concentration is not added

Concentration µg/m³

2.5 5 7.5 12.5 15 20 25

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

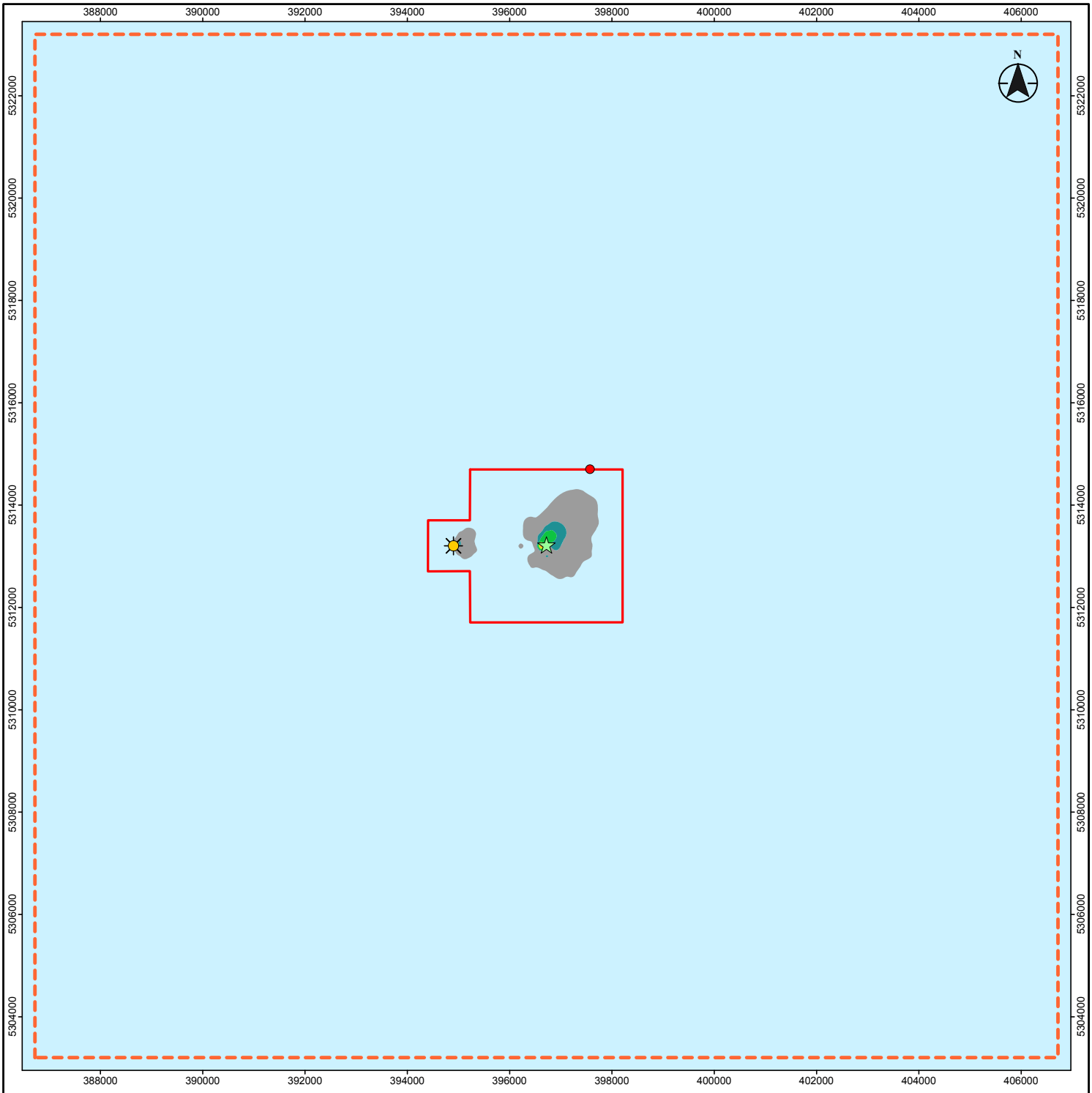
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

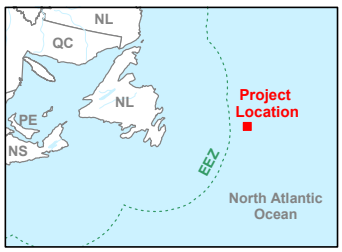
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-22

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 2nd highest 24-hour Average $PM_{2.5}$ Concentrations (µg/m³) (Scenario 2)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 0.7 µg/m³

Annual NL AAQS for $PM_{2.5}$: 8.8 µg/m³

Note: Background concentration is not added

Concentration µg/m³

0.9 1.8 2.6 4.4 5.3 7 8.8

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

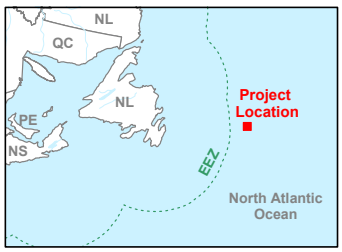
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-23

Notes
1. Coordinate System: UTM NAD83 Zone 23

Maximum Predicted Annual Average $PM_{2.5}$ Concentrations (µg/m³) (Scenario 2)



Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum
Predicted Concentration: 10.8 µg/m³

24-hour NL AAQS for $PM_{2.5}$: 25 µg/m³

Note: Background concentration is not added

Concentration µg/m³

2.5 5 7.5 12.5 15 20 25

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

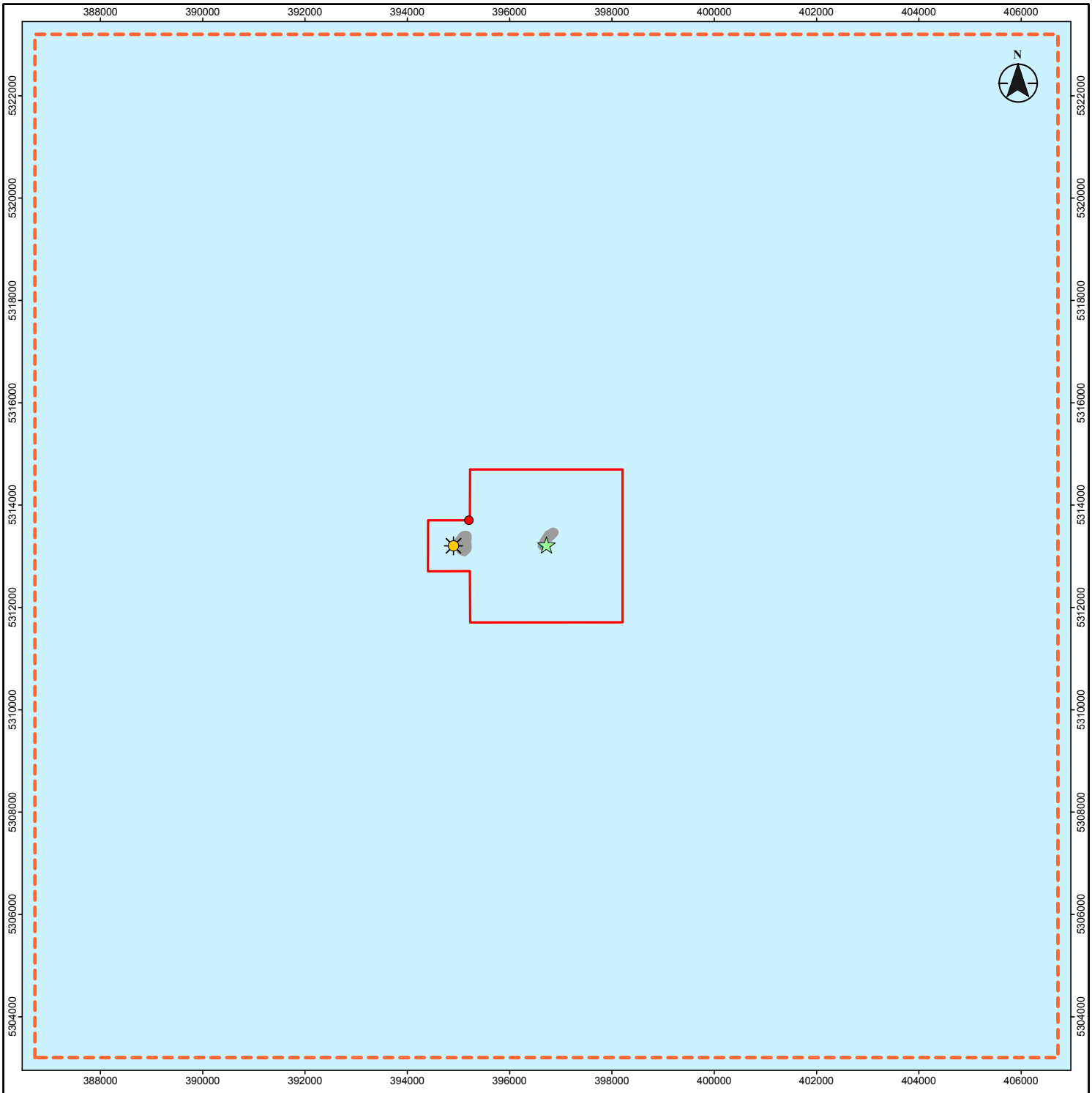
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

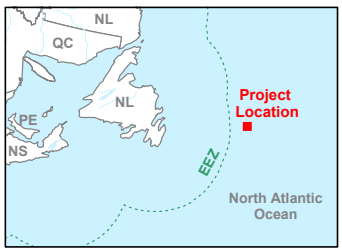
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-24

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 2nd highest 24-hour Average $PM_{2.5}$ Concentrations (µg/m³) (Scenario 3)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 0.5 µg/m³

Annual NL AAQS for $PM_{2.5}$: 8.8 µg/m³

Note: Background concentration is not added

Concentration µg/m³

0.9 1.8 2.6 4.4 5.3 7 8.8

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

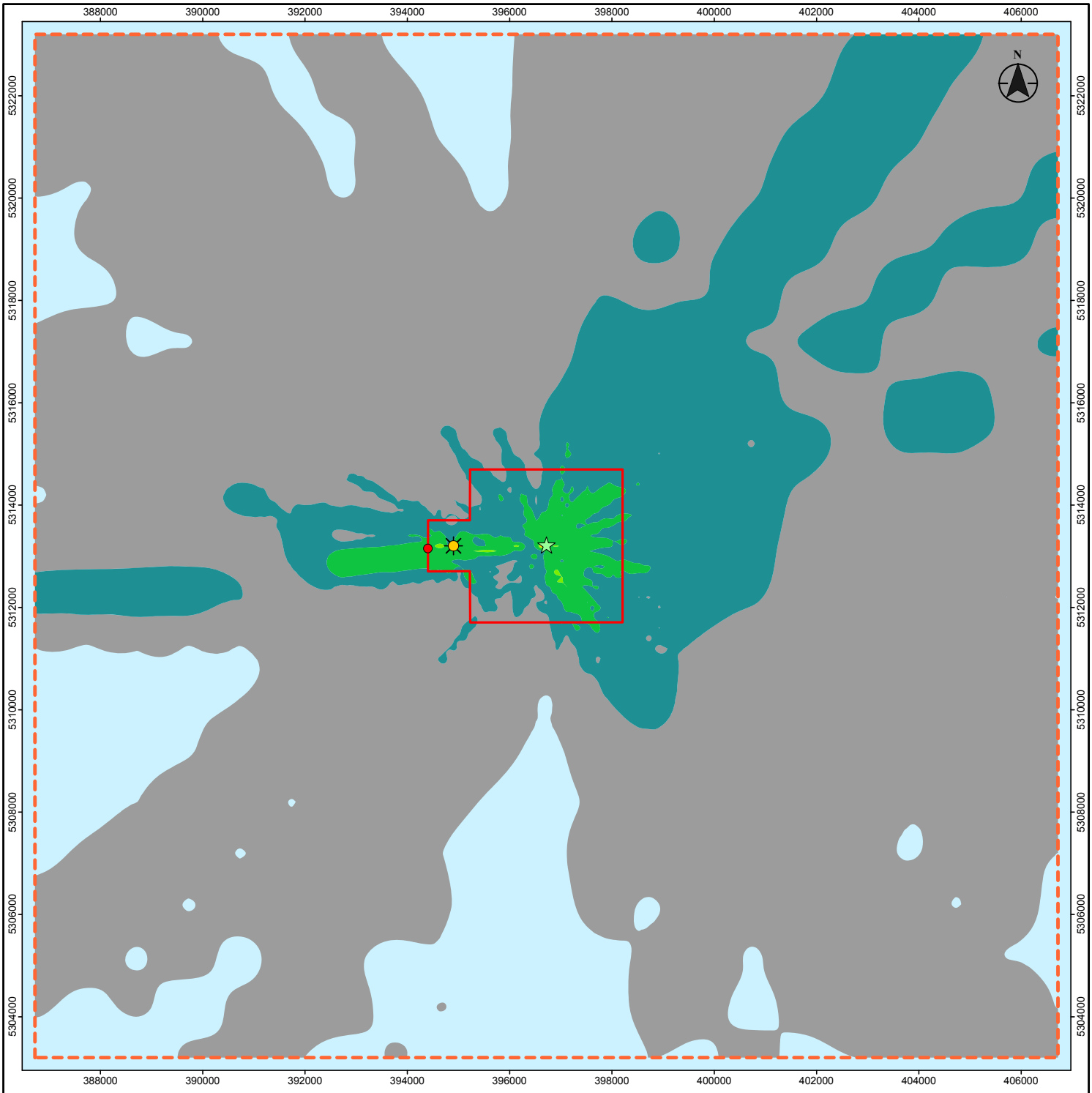
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

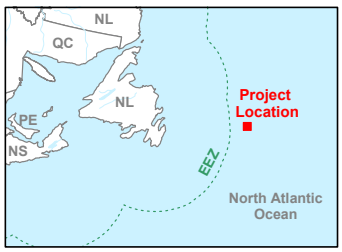
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-25

Notes
1. Coordinate System: UTM NAD83 Zone 23

Maximum Predicted Annual Average $PM_{2.5}$ Concentrations (µg/m³) (Scenario 3)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum
Predicted Concentration: 13.4 µg/m³

24-hour NL AAQS for $PM_{2.5}$: 25 µg/m³

Note: Background concentration is not added

Concentration µg/m³

2.5 5 7.5 12.5 15 20 25

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

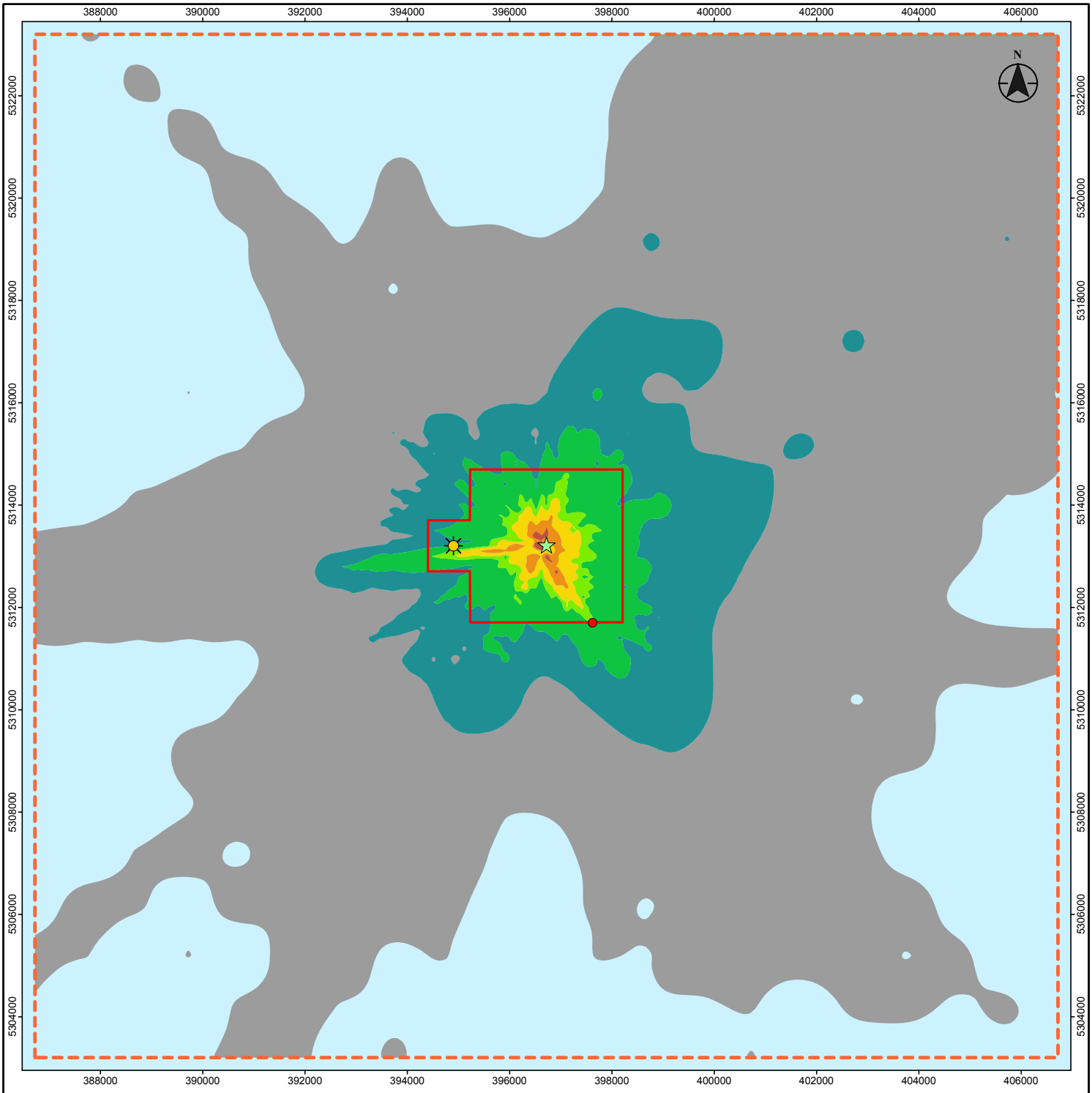
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

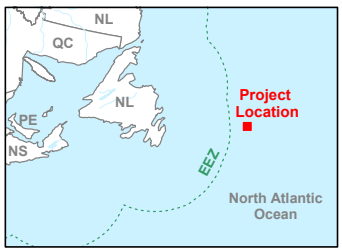
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-26

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 2nd highest 24-hour Average $PM_{2.5}$ Concentrations (µg/m³) (Scenario 5)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum
Predicted Concentration: 13.5 µg/m³

24-hour NL AAQS for $PM_{2.5}$: 25 µg/m³

Note: Background concentration is not added

Concentration µg/m³

2.5 5 7.5 12.5 15 20 25

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

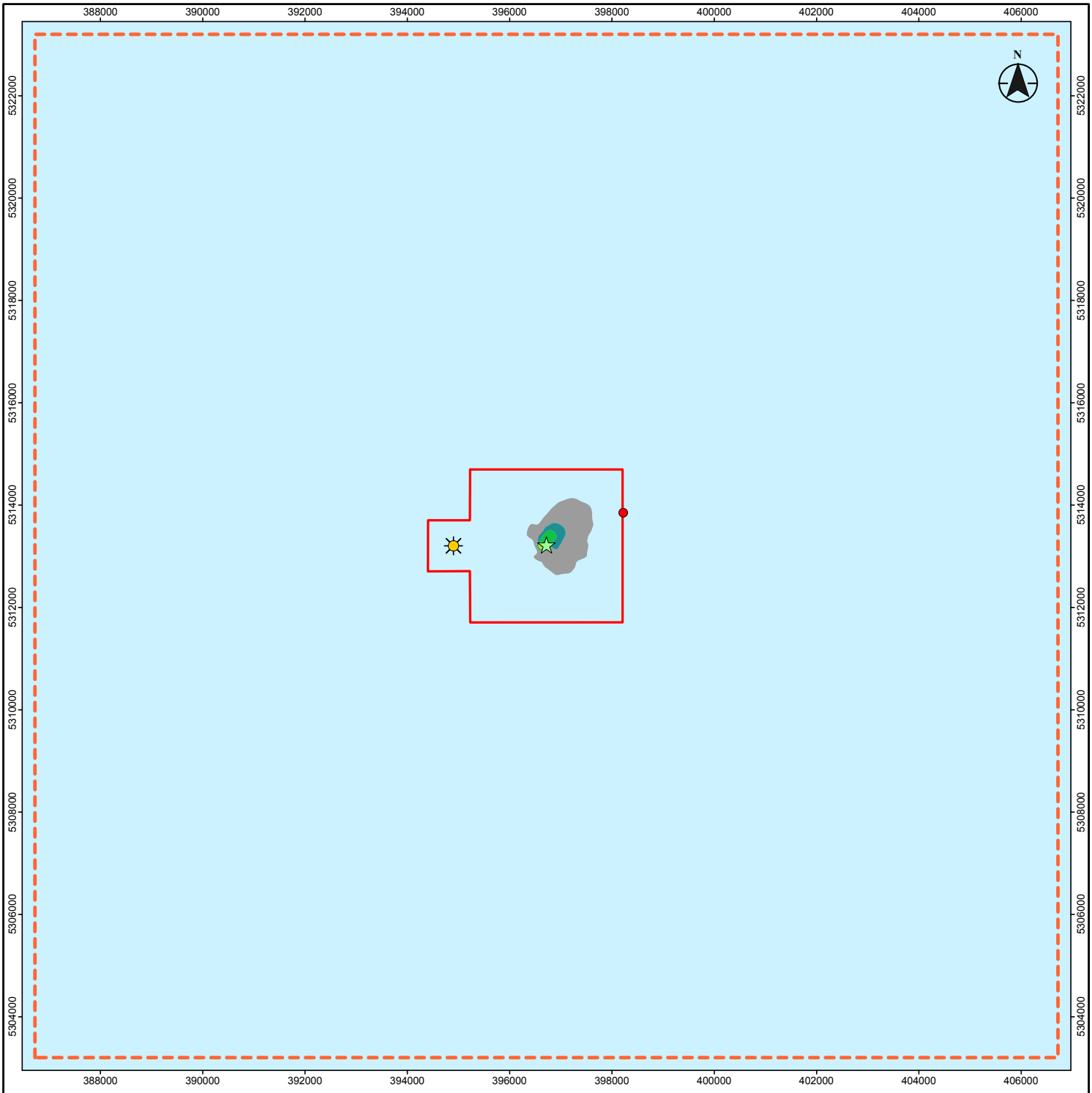
2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

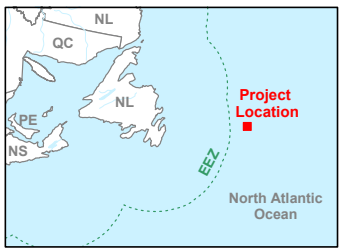
Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-27

Notes
1. Coordinate System: UTM NAD83 Zone 23

Predicted 2nd highest 24-hour Average $PM_{2.5}$ Concentrations (µg/m³) (Scenario 6)





Study Area
Safety Zone
FPSO Vessel
Drilling Installation

Location of Maximum Predicted Concentration: 0.6 µg/m³

Annual NL AAQS for $PM_{2.5}$: 8.8 µg/m³

Note: Background concentration is not added

Concentration µg/m³

0.9 1.8 2.6 4.4 5.3 7 8.8

0 1000 2000 3000 4000
metres

Stantec equinor

Project Location
396720 m E, 5313202 m N
SDL 1055, EL 1143, EL 1154

2018-08-08 REV A
Prepared by IPY on 2018-08-08
Technical Review by RP on 2018-10-01
Independent Review by MM on 2018-10-15

Client/Project
Equinor Canada Ltd.
BdN Development Project
Project No. 121415061

Figure No.
Figure B-28

Notes
1. Coordinate System: UTM NAD83 Zone 23

Maximum Predicted Annual Average $PM_{2.5}$ Concentrations (µg/m³) (Scenario 6)