Tier II Antidegradation Study

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EXECUTIVE SUMMARY

The State of Washington Department of Ecology (Ecology) requested that Lamb Weston, Inc., Richland, Washington (Lamb Weston) submit a Tier II Antidegradation Study (Study) to support its application for a permit modification of National Pollutant Discharge Elimination System (NPDES) Waste Discharge Permit No. WA0052141 (Permit). Currently, the Permit limits treated process wastewater (treated effluent) discharge to the Yakima River to a monthly average of 1.7 million gallons per day (MGD) with a daily maximum of 2.0 MGD from October 1 through May 15. To accommodate an expansion of potato processing, Lamb Weston seeks to modify the Permit to allow average monthly flow of 3.0 MGD, daily maximum flow of 4.02 MGD, and year-round discharge to the Yakima River.

The expanded discharge requires authorization through NPDES and must comply with the antidegradation standards. This report has been prepared to address the Tier II Antidegradation requirements. The upgrades to the process wastewater treatment train for the facility expansion are detailed in the Engineering Report Volume I by The Stover Group (The Stover Group, 2016). Cascade Earth Sciences (CES) prepared Volume II of the Engineering Report, detailing the land treatment aspects of the expanded discharge (CES, 2016). The Engineering Report was written to accompany the modified Permit application in accordance with Washington Administrative Code (WAC) 173-240-130.

The modeling and calculations discussed in this Study show that the proposed discharge will not cause a “measureable change” in water quality at the chronic mixing zone boundary, as defined by WAC 173-201A-320(3). In addition, the proposed treated effluent discharge will not violate the water quality standards for acute or chronic conditions. This Study demonstrates that the proposed expanded discharge along with the improved wastewater treatment train, as described, complies with the antidegradation standards regulations and will not cause measureable degradation.

1.0 INTRODUCTION AND PURPOSE

The State of Washington Department of Ecology (Ecology) requested that Lamb Weston, Inc., Richland, Washington (Lamb Weston) submit a Tier II Antidegradation Study (Study) to support its application for a permit modification of National Pollutant Discharge Elimination System (NPDES) Waste Discharge Permit No. WA0052141 (Permit). Currently, the Permit limits treated process wastewater (treated effluent) discharge to the Yakima River to a monthly average of 1.7 million gallons per day (MGD) with a daily maximum of 2.0 MGD from October 1 through May 15. To accommodate an expansion of processing, Lamb Weston seeks to modify the Permit to allow average monthly flow of 3.0 MGD, daily maximum flow of 4.0 MGD, and year-round discharge to the Yakima River.

Federal regulations (40 CFR 131.12) and the Washington Administrative Code (WAC) Chapter 173-201A establish surface water quality antidegradation standards. The proposed expanded discharge as described above requires authorization through NPDES and must comply with the antidegradation standards. This report has been prepared to address the Tier II Antidegradation requirements.

A Tier II Antidegradation Study is required when the following three conditions are met, as stated in the Water Quality Program Guidance Manual Tier II Antidegradation (Ecology, 2011):

1. "It must be an action associated with specified authorizations by Ecology.
2. It must be a new or expanded action.
3. The action must have the potential to cause measureable degradation to existing water quality at the edge of a chronic mixing zone."

The proposed discharge is regulated by Ecology (Condition #1) and is more than a 10% increase from the current discharge (Condition #2). Because of the proposed discharge during summer months and low flow conditions, it has been assumed that the new discharge has the potential to cause measureable degradation (Condition #3) and therefore requires a Tier II Antidegradation Study.

2.0 PROJECT BACKGROUND

Lamb Weston operates a potato processing plant in Richland, Washington (Figure 1) that manufactures frozen french fries and specialty potato products. The process wastewater produced as a result of potato processing (e.g., washing, transporting, grading, etc.) is managed under the current NPDES Permit. Following primary and secondary treatment, the treated process wastewater (treated effluent) is permitted for discharge to the Yakima River from October 1 through May 15, and to a land treatment system for the remaining part of the year and as a bypass option.

Treated effluent is currently discharged to the Yakima River at Outfall 001 with a monthly average of 1.7 MGD and a daily maximum of 2.0 MGD. The quality of treated effluent is limited for five-day biochemical oxygen demand (BOD), total suspended solids, ammonia-nitrogen, temperature, and pH. Lamb Weston has applied for a modified Permit to allow a facility expansion to accommodate an average monthly flow of 3.0 MGD and a daily maximum flow of 4.02 MGD with

year-round discharge to the Yakima River. Land treatment is included in the modified Permit for treated effluent application at agronomic rates in March through November and as a bypass option in December through February.

The upgrades to the process wastewater treatment train for the facility expansion are detailed in the Engineering Report prepared by The Stover Group (The Stover Group, 2016) and Cascade Earth Sciences (CES) (CES, 2016). The Engineering Report was written to accompany the modified Permit application in accordance with WAC 173-240-130. An outfall and mixing zone analysis, as well as the required considerations for the land treatment system are included in the Engineering Report.

2.1 Discharge to the Yakima River

The discharge location of Outfall 001 is the Lower Yakima River (WRIA 37) between river mile 9 and 10, approximately 9.5 miles upstream of the confluence with the Columbia River (Figure 1). The diffuser box is a seven-foot square concrete box (Figure 2) situated at the edge of the river on a reed canary grass-covered bank and is submerged for 8 to 11 months of the year. A 12-inch pipe delivers treated effluent at the bottom of the diffuser box (Figure 2). The opening size is approximately 40 square feet and is covered by a stainless steel mesh screen and 6- to 12-inch diameter, smooth river rock. The Yakima River in the outfall area averages 250 feet wide and has a shallow, U-shaped channel. River channel geometry were confirmed by CES on November 9, 1999, which is included in Appendix A1.

2.2 Applicable Water Quality Standards

The Yakima River, at various locations, is included on the 303(d) list of impaired waters in Category 5. Category 5 is summarized as "placement in this category means that Ecology has data showing that the water quality standards have been violated for one or more pollutants, and there is no total maximum daily load (TMDL) or pollution control plan" (Ecology, 2015a). In 2010, Ecology published the findings of a water quality study (Ecology, 2010a) which listed the impacts on the Yakima River from 2008 (Table 1). In addition, the Category 5 listings are available on Ecology's Water Quality Assessment webpage (Ecology, 2017a). The facility does not discharge any of the toxics or bacteria included on the 303(d) list. Temperature, dissolved oxygen, and pH will be discussed in this report.

2.3 Applicable Regulations and Guidance

This Study was prepared using the statutes promulgated in the Water Quality Standards for Surface Water in the State of Washington (WAC 173-201A). WAC 173-201A-320(1) states: "…new or expanded actions that are expected to cause a measureable change in the quality of the water may not be allowed unless the department determines that the lowering of water quality is necessary and in the overriding public interest." Each parameter listed in this section of the WAC is discussed below. Ecology has issued three guidance documents on implementing the Tier II antidegradation standards in NPDES permits (Ecology, 2005; Ecology, 2010b; and Ecology, 2011).

3.0 ANTIDEGRADATION TECHNICAL DISCUSSION

The United States Geological Survey (USGS) maintains a gauging station at Kiona, approximately 20 miles upriver from the discharge location (Figure 1). Ecology collects water quality samples near the USGS gauging station. Flow and water quality data from the Kiona station (USGS, 2016 and Ecology, 2016a) were used to determine the river characteristics necessary to conduct this Study including the seven-day, consecutive low flow with a ten-year return frequency (7Q10). The 7Q10 flow is the lowest stream flow over seven consecutive days that would be expected to occur once every ten years and was calculated as 703 cubic feet per second (Appendix A2) using 21 years of historical data. Other parameters monitored at the Kiona station and used in this Study include, but are not limited to, temperature, dissolved oxygen, pH, and turbidity.

The antidegradation modeling conducted in this Study consisted of using a United States Environmental Protection Agency-supported mixing zone model and decision support system for environmental assessment of regulatory mixing zones called the CORMIX model.

CORMIX3 version 10.0 was used to conduct an outfall analysis for this Study. Ecology's Permit Writer's Manual (Ecology, 2015b) and the Temperature Guidance (Ecology, 2010b) were used to develop the dilution modeling parameters. The CORMIX3 model (model) was run to simulate summer river conditions. The chronic condition uses the projected design average daily treated effluent flow of 3.0 MGD (4.64 cubic feet per second, cfs) while the acute condition assumes the projected design peak daily flow of 4.02 MGD (6.22 cfs). In both cases, the 7Q10 low flow condition of the Yakima River was used, per Ecology guidance. The diffuser box is not covered with river water during the low flow condition, which is modeled by CORMIX3 for buoyant surface discharges. The CORMIX3 output reports are included in Appendix B for these simulations. Inputs to the CORMIX3 model for chronic and acute simulations are summarized in Table 2 and 3, respectively. In accordance with WAC 173-201A-400 the regulatory chronic mixing zone is 300 feet (91.46 meters) long and the acute mixing zone is 30 feet (9.15 m).

The calculations conducted in this Study were taken from Ecology's PermitCalc Workbook (Ecology, 2016b). The PermitCalc Workbook is used by Ecology during the discharge permitting process to evaluate the impact of proposed discharges. Ecology was consulted during the preparation of these calculations to understand the use and intent of the Workbook.

In 1999, CES performed a river geometry assessment to construct a depth profile of the Yakima River at the outfall location. The measurements from this assessment were used to estimate river depth, along with other input parameters, during the 7Q10 conditions for the CORMIX3 model in this Study. The 1999 measurements, as well as the estimated 7Q10 conditions, are included in Appendix A1. Aerial images from Google Earth during low flow conditions were also used to verify the width of the Yakima River (Appendix A3).

3.1 Temperature

The annual maximum daily temperature criterion for the Yakima River is 21 degrees Celsius (°C, WAC 173-201A Table 602 WRIA37 Lower Yakima). The Yakima River is warmer than 21°C during summer months (June through September). Temperature is included on the 303(d) list as impaired, as shown in the Washington State Water Quality Assessment at locations upstream of the discharge location (Ecology, 2017a). The impaired locations are mapped based on sampling

locations and the Yakima River may be impaired at other locations as well. According to the procedures given in the Ecology Temperature Guidance (Ecology, 2010b), the background Yakima River temperature was selected as the maximum observed temperature (27.9°C) in the past 11 years of available data. The background temperature was used as the criterion due to the warmer conditions during summer months, also per Ecology Temperature Guidance (Ecology, 2010b). A "measureable change" in temperature under the Tier II regulations is considered 0.3°C or greater.

The maximum possible effluent temperature to meet the Tier II requirement was determined to be 30.3°C by the CORMIX3 model. The temperature difference between the discharge plume and background at the end of the regulatory mixing zone was calculated by CORMIX3 to be 0.2995°C during chronic discharge. However, per discussions with Ecology, the updated permit will retain the current maximum discharge temperature of 29°C to provide additional assurance that the discharge will meet the Tier II requirements. The maximum allowable width at the end of the regulatory mixing zone is 25% of the river width. During 7Q10 conditions, the Yakima River was estimated to be 237 feet (72.1 meters) wide (Appendix A3). The modeled plume width (12.4 feet or 3.78 meters) is less than 25% of the river width (59.25 feet or 18.06 meters). At the end of the mixing zone, the dilution factor calculated by CORMIX3 is 8, which is well below the maximum chronic dilution factor of 38.88, as given by the equation below.

$$DF_{max} = \frac{0.25Q_a + Q_e}{Q_e}$$

Where:

DF_{max}	=	Maximum allowed dilution factor.
Q_a	=	Ambient flowrate (Yakima River 7Q10, 703 cfs).
Q_e	=	Treated effluent flowrate (4.64 cfs).

As shown in the Ecology PermitCalc Workbook (Page 2 of Appendix C, Results Item #17), with a 30.3°C treated effluent temperature, there is no "measureable" temperature increase. Both the PermitCalc Workbook and the CORMIX3 model show that no "measureable change" (0.3°C or greater) in the Yakima River temperature will occur at the end of the mixing zone.

3.2 Dissolved Oxygen

The dissolved oxygen (DO) criterion for the Yakima River is 8 milligrams per liter (mg/L) because of the Salmonid Spawning and Rearing designation (WAC 173-201A Table 602 WRIA37 Lower Yakima). The Yakima River is impaired for DO at locations upstream and downstream of the discharge location, as shown in the Washington State Water Quality Atlas (Ecology, 2017b) because of high nitrogen and phosphorous loadings, which contribute to elevated BOD, as discussed below. The impaired locations are mapped based on sampling locations and the Yakima River may be impaired at other locations as well. A "measureable change" in DO concentrations under the Tier II regulations is considered 0.2 mg/L.

DO modeling is complex, as discussed in Appendix E of the Permit Writer's Manual (Ecology, 2015b) and Appendix B of the Tier II Guidance (Ecology, 2011) and is dependent on multiple parameters, such as BOD, nitrogen, temperature, pH, and vegetation. Therefore, the DO concentrations were evaluated within the mixing zone (near-field depression) and at the point of the

critical DO (the largest decrease in DO, far-field depression), as required by the Tier II Guidance (Ecology, 2011). The critical DO deficit often occurs many miles downstream, which is the point of compliance, as stated in the Tier II Guidance (Ecology, 2011).

The United State Geological Survey (USGS) published a study on nitrogen and phosphorous concentrations in the Middle Columbia Basin, with a focus on the Yakima River (USGS, 2013). The USGS study used the Spatially Related Regressions on Watershed attributes (SPARROW) model to estimate surface nutrient loads. Significant sources of nitrogen and phosphorous in the Yakima River are attributed to natural sources (forestland) near the headwaters and anthropogenic sources (agricultural and point sources such as municipal wastewater treatment plants) downstream of the City of Yakima. The report states, "High concentrations of nitrogen and phosphorus nourish communities of algae and photosynthetic cyanobacteria, which can cause large diurnal swings in dissolved oxygen and pH…" Algae and other photosynthetic organisms increase background BOD, which in turn lowers dissolved oxygen.

During summer months (May – September 2006 – 2015), the 10th percentile of DO concentrations measured at the Ecology Kiona gaging station is 9.47 mg/L. The 10th percentile of the current treated effluent DO concentration is 7.35 mg/L (May – September 2014 – 2016), which is close to the saturation concentration of 7.69 mg/L at 29°C. Because of the planned upgrades in the wastewater treatment train as part of this expanded discharge, which includes an aerobic system and cooling towers, the treated effluent is assumed to be saturated for DO. DO concentrations in the treated effluent above saturation is not easily obtainable as the excess oxygen will dissipate, resulting in saturation concentrations. Reaching saturation for DO concentrations in the treated effluent constitutes the application of all known, available, and reasonable methods of treatment (AKART).

3.2.1 Near-Field Depression Analysis (Within the Mixing Zone)

The PermitCalc Workbook was used to evaluate DO concentrations (Appendix C). A mass balance of DO concentrations shows that the initial mixed DO concentration decreases 0.01 mg/L (Page 3 of Appendix C, Output Item #1 compared to Input Item #2).

$$DO_{initial} = \frac{DO_{river} * Q_{river} + DO_{effluent} * Q_{effluent}}{Q_{river} + Q_{effuent}}$$

Where:

$DO_{initial}$ = DO at the initial mixed river.
DO_{river} = 10th Percentile of DO concentration in the Yakima River during summer months (9.47 mg/L).
Q_{river} = 7Q10 flow (703 cfs).
$DO_{effluent}$ = Saturation concentration of treated effluent (7.69 mg/L).
$Q_{effluent}$ = Average daily maximum flow (4.64 cfs).

3.2.2 Far-Field Depression Analysis (Critical DO)

The Yakima River is impaired for DO at locations upstream and downstream of the discharge location, as shown in the Washington State Water Quality Atlas (Ecology, 2017b). Therefore, Tier II regulations do not apply, as Tier II is to protect waters of higher quality than the water quality standards. DO will be considered under the Tier I regulations (WAC 173-201A-310) which state, "Whenever the natural conditions of a water body are of a lower quality than the assigned criteria, the natural conditions constitute the water quality criteria."

As mentioned above, the DO concentration at the critical DO deficit was evaluated. CORMIX is not a suitable model for calculating the DO deficit due to the number of factors affecting the critical DO. Also, CORMIX is designed to model concentrations in excess of criteria, whereas the critical DO is a deficit. Qual2K is another model available to analyze the impacts of discharges on surface water DO and is maintained by Region 4 of the EPA (Southeast). Qual2K is difficult to use in order to obtain meaningful results and therefore has not been evaluated during this Study. The most common model for calculating the critical DO deficit is the Streeter-Phelps equation.

$$t_c = \left(\frac{1}{K_r + K_d}\right) * \ln(\left(\frac{K_d * BOD - K_r * DO_{def} + K_d * DO_{def}}{K_d * BOD}\right)\left(\frac{K_r}{K_d}\right))$$

Where:

t_c	=	Time to critical DO deficit.
K_r	=	Reoxygenation constant (estimated by O'Conner and Dobbins at 4.49 per day).
K_d	=	BOD decay rate (estimated by Wright and McDonnel, 0.59 per day).
BOD	=	BOD at initial mixed river (9.4 mg/L).
DO_{def}	=	Initial DO deficit compared with saturation values (-1.71 mg/L).

Using this equation, the time to critical DO is calculated to be 0.72 days (Page 3 of Appendix C). The velocity of the Yakima River during 7Q10 conditions is estimated at 1.21 feet per second (Table 2), or almost 20 miles per day. At this velocity, the time to the critical DO deficit is estimated at 14.29 miles downstream (Page 3 in Appendix C), which is beyond the confluence with the Columbia River. The quantity of water in the Columbia River should provide sufficient dilution to negate decreases to the DO before the critical DO is reached.

As stated above, the Yakima River is listed by Ecology as impaired for DO due to high BOD and nutrient levels in background conditions. If the Streeter-Phelps equation is used to calculate the critical DO deficit with no additional BOD from the treated effluent, a critical DO deficit of 0.74 mg/L is calculated at 14.5 miles downstream (Page 5 of Appendix C). The critical DO deficit with the treated effluent is calculated to be 0.81 mg/L (Page 3 of Appendix C). The difference between the critical DO deficit with and without the contribution from the treated effluent is 0.07 mg/L.

3.2.3 Summary of DO Calculations

DO modeling is complex due to many factors that may differ greatly over the course of a river flow. Several methods have been employed in this Study to evaluate the potential effect that the treated effluent will have on DO levels downstream in the Yakima River, including a mass balance and the Streeter-Phelps equation for critical DO. The mass balance shows a 0.01 mg/L decrease in DO concentration at the start of the mixing zone. The Streeter-Phelps equation for the critical DO deficit

shows that the treated effluent will decrease the DO concentration by 0.07 mg/L when compared with the natural river conditions and no additional BOD contribution from the treated effluent. The calculated DO values in this Study within the mixing zone and at the critical DO deficit are less than the defined "measureable change" (0.2 mg/L).

3.3 Bacteria

Sanitary wastewater is not discharged through the process wastewater treatment train. Therefore, fecal coliform is not expected to be present in the water discharged to the Yakima River. The treated effluent is not monitored for fecal coliform or other bacteria.

3.4 pH

The pH criterion for the Yakima River is between 6.5 and 8.5 standard units. At various locations, the Yakima River is listed on the 303 (d) list as impaired for pH (Ecology, 2017b). During summer months (May through September, 2006 – 2015) the 90th percentile of pH in the Yakima River at the Kiona monitoring station, is 8.95 and the average is 8.52. The 95th percentile of the treated effluent pH during the summer months is 8.15 (May – September 2014-2016). Using the PermitCalc Workbook (Page 6 of Appendix C), the pH at the end of the chronic mixing zone is calculated to be 8.34. The definition for a "measureable change" in pH according to WAC 173-201A-320(3) is 0.1 units. Although this discharge creates a measureable change at the end of the chronic mixing zone, the change makes the pH of the river more neutral and within the water quality standards.

3.5 Turbidity

The criterion for turbidity in the Yakima River is that turbidity should not exceed 5 nephelometric turbidity units (NTUs) over background when background is 50 NTU or less, or a 10% increase in turbidity when turbidity is more than 50 NTU (Table 200(1)(e) in WAC 173-201A-200). The 90th percentile of turbidity during the summer months (May – September 2006 – 2015) is 24.4 NTUs, and therefore the criterion is no more than a 5 NTU increase at the end of the chronic mixing zone. A measureable change is defined as an increase of 0.5 NTU or greater per WAC 173-201A-320(3).

The 95th percentile of turbidity in the treated effluent during the summer months (May – September 2014 – 2016) is 9.40 NTU. This turbidity value is measured by Lamb Weston, but it is not required by the Permit and therefore not reported to Ecology. The expanded discharge treatment train will have fine-grained sand filters and clarifiers, which are expected to have the same performance as the current wastewater treatment train. Because the treated effluent turbidity is lower than the turbidity in the Yakima River, no measureable increase is anticipated.

3.6 Toxics

Treated effluent samples have been collected and analyzed once a year for the past three years (2014, 2015, and 2016) for the Priority Pollutant (PP) list. Several toxics were detected in these samples and each will be discussed here. The antidegradation guidance states that a measureable change is considered "any detectable increase in the concentration of a toxic or radioactive substance" at the end of the chronic mixing zone. Detectable increases are defined in Appendix A of the current Permit by the detection limit (DL) or quantitation limit (QL) of the specified analytical methods.

In addition, the toxics concentrations need to be evaluated with respect to human health and aquatic life water quality criteria. CORMIX3 was used to determine an acute dilution factor and the inputs for the acute modeling are shown in Table 3. The calculated acute dilution factor of 1.8 was entered into the PermitCalc Workbook (Appendix C). The maximum allowable width at the end of the regulatory mixing zone is 2.5% of the river width. During 7Q10 conditions, the Yakima River was estimated to be 237 feet (72.1 meters) wide (Appendix A3). The modeled plume width (4.95 feet or 1.51 meters) is less than 2.5% of the river width (5.93 feet or 1.81 meters). At the end of the acute mixing zone, the dilution factor calculated by CORMIX3 (1.5) is well below the maximum acute dilution factor of 3.8, as given by the equation below.

$$DF_{max} = \frac{0.025Q_a + Q_e}{Q_e}$$

Where:

DF_{max} = Maximum allowed dilution factor
Q_a = Ambient Flowrate (Yakima River 7Q10, 703 cfs)
Q_e = Treated Effluent Flowrate (6.22 cfs)

3.6.1 Ammonia

Ammonia is present in the wastewater as a byproduct from processing potatoes. The concentration in the treated effluent is monitored on a weekly basis as part of the current Permit, which specifies the average monthly discharge limit at 1.8 mg/L and maximum daily discharge limit at 3.2 mg/L. During the summer months (May – September 2014 – 2016), the 95th percentile of ammonia discharge concentrations is 126 micrograms per liter (µg/L), which was calculated using half the detection limit for samples when ammonia was not detected.

Ammonia concentrations were measured at the USGS Kiona gaging station one to two times per month from 2001 through 2016. The 95th percentile of ammonia concentrations in the Yakima River during the summer months (May – September) was calculated to be 20 µg/L, using half of the detection limit for non-detect samples.

These data were entered into the PermitCalc Workbook as well as CORMIX3. The PermitCalc Workbook (Page 7 of Appendix C) calculated an ammonia concentration at the end of the chronic mixing zone of 33 µg/L, which is a 13 µg/L increase in concentration from background ammonia concentrations of 20 µg/L. The QL in Appendix A of the Permit is 20 µg/L; therefore, the 13 µg/L increase in ammonia concentration at the end of the mixing zone is not considered detectable.

The CORMIX3 model requires an ammonia decay rate. Decay rates vary considerably based on river conditions, including BOD, temperature, flow rate, and other parameters. A study was performed in New Zealand in order to quantify ammonia decay rate constants (McBride and Wilcock, 2001) in several rivers to be used for a model. The conclusions of the study based the decay rate on the velocity of the river, where the decay rate constant was equal to two per day (2/day) in streams with a velocity greater than 0.08 meters per second (m/s). The calculated velocity in the Yakima River at 7Q10 conditions is 0.37 m/s. Therefore, 2/day was used in the CORMIX3 model. CORMIX3 also requires an excess discharge concentration, which is the concentration of the pollutant above the water quality criteria. The excess discharge concentration of ammonia was

the 95th percentile treated effluent (126 µg/L) minus the 95th percentile river concentration (20 µg/L), or 106 µg/L. At the end of the chronic mixing zone, the increase in concentration of ammonia was calculated in CORMIX3 to be 13.2 µg/L (Appendix B), which is below the QL (20 µg/L) of Appendix A in the Permit and does not constitute a detectable increase. The decay rate constant was varied between 0.1/day and 20/day in CORMIX3to conduct a brief sensitivity analysis. The variation did not significantly affect the concentration increase modeled at the end of the mixing zone (13.2 µg/L to 12.5 µg/L).

The PermitCalc Workbook and the CORMIX3 model both show slight increases in the ammonia concentration at the end of the chronic mixing zone. However, the predicted increases of 13 µg/L in the PermitCalc Workbook and 13.2 µg/L in CORMIX3, are below the detectable level as defined in Appendix A of the Permit (20 µg/L). Therefore, the proposed discharge will not create a detectable increase in ammonia concentrations at the end of the mixing zone.

The chronic and acute aquatic life criteria are 91 µg/L and 958 µg/L, respectively, as given in the PermitCalc Workbook (Page 7 of Appendix C). The concentrations at the end of chronic and acute mixing zones are 33 µg/L and 91 µg/L, respectively, which are below the applicable water quality standards (Page 7 of Appendix C).

3.6.2 Arsenic

Arsenic was detected in the treated effluent samples collected in 2014, 2015, and 2016 with concentrations ranging from 0.28 µg/L to 1.03 µg/L. Arsenic is a naturally occurring metal found in certain geologic units and is not used or added to the process water inside the facility. The 95th percentile of arsenic concentrations in the treated effluent samples was calculated to be 0.973 µg/L.

Arsenic concentrations have been measured at the USGS Kiona gaging station one to two times per month from October 2012 through September 2016. The geometric mean (per the PermitCalc Workbook, Page 7 of Appendix C) of arsenic concentrations in the Yakima River during the summer months (May through September) was calculated to be 1.35 µg/L. The discharge concentrations of arsenic are less than the background concentrations in the Yakima River, and therefore will not cause a detectable increase. Concentrations were not modeled in CORMIX3 as no excess concentration exists.

The human health criterion for arsenic is 0.018 µg/L, and there is no aquatic life criteria (Page 7 of Appendix C). Background concentrations of arsenic in the Yakima River are above the human health criterion, a condition known to Ecology for this and other rivers in Washington. Therefore, Tier II regulations do not apply, as Tier II is to protect waters of higher quality than the water quality standards. Arsenic is considered under the Tier I regulations (WAC 173-201A-310) which state, “Whenever the natural conditions of a water body are of a lower quality than the assigned criteria, the natural conditions constitute the water quality criteria.” The proposed discharge will not increase the concentration of arsenic above the natural conditions.

3.6.3 Bis(2-Ethylhexyl)Phthalate

Bis(2-ethylhexyl)phthalate was detected in the treated effluent sample collected on July 8, 2015 at a concentration of 2.36 µg/L. This chemical is a common laboratory contaminant and is used in the production of plastics. It can seep out of plastics into the environment and is not used or added to

the process water inside the facility. Bis(2-ethylhexyl)phthalate was detected only in one of the treated effluent samples and is therefore attributed to laboratory contamination. However, no field or laboratory blank was analyzed to confirm this contamination.

3.6.4 Copper

Copper was detected in the treated effluent samples collected in 2014, 2015, and 2016 with concentrations ranging from 4.72 µg/L to 5.33 µg/L (not shown). Copper is a naturally occurring metal found in certain geologic units and is not used or added to the process water inside the facility. The 95th percentile of copper concentrations in the 2014, 2015, and 2016 treated effluent samples was calculated to be 5.29 µg/L.

The expanded wastewater treatment train will contain an anaerobic digester. Copper is a critical micronutrient for the anaerobic bacteria and therefore, the majority of the copper present in the wastewater will be consumed or will precipitate out as copper sulfide (Stover et. el., 2007). The precipitate and remaining concentration of copper in the treated effluent are governed by solubility. The concentration of copper assumed for the treated effluent is 6.7×10^{-11} µg/L, based on solubility limits (EPA, 1980).

The copper concentration was measured once at the USGS Kiona gaging station and was not detected, so zero was used as the background concentration of copper in the Yakima River. The PermitCalc Workbook (Appendix C) calculated the concentration of copper at the end of the chronic mixing zone to be 8.34×10^{-12} µg/L. In order to perform this calculation, the PemitCalc Workbook requires the number of samples collected and the coefficient of variation for the sample results. One sample with a coefficient of variation of zero was assumed because the treated effluent concentration is based on solubility and not actual sampling results. CORMIX3 calculated the increase in the copper concentration at the end of the chronic mixing zone to be 8×10^{-12} µg/L. Copper was modeled as a conservative pollutant, meaning it does not degrade over time. The DL in Appendix A of the Permit is 0.4 µg/L. Therefore, the treated effluent will not create a detectable increase in copper concentrations at the end of the mixing zone.

The aquatic life criterion for copper is 8.839 µg/L and 6.267 µg/L for acute and chronic mixing, respectively. The human health criteria is 1,300 µg/L. The copper concentrations in the treated effluent and at the end of the mixing zones are below these criteria (Page 7 of Appendix C).

3.6.5 1,1-Dichloroethane

1,1-Dichlorethane (1,1-DCA) was detected in the treated effluent sample collected on July 8, 2015 at a concentration of 0.1 µg/L. 1,1-DCA is used in the production of other chlorinated compounds or as a degreasing solvent and is not used or added inside the facility. The DL listed in Appendix A of the Permit is 1 µg/L. The detected concentration of 1,1-DCA in the treated effluent is below the DL listed in Appendix A of the Permit and therefore the treated effluent would not create a detectable increase in 1,1-DCA concentrations at the end of the mixing zone. There are no human health or aquatic life criteria (Page 7 of Appendix C).

3.6.6 Endosulfan Sulfate

Endosulfan sulfate was detected in the treated effluent sample collected on June 17, 2014, at a concentration of 0.013 µg/L. Endosulfan sulfate is used in insecticides and is not added to the

process water inside the facility. Potential sources of endosulfan sulfate could be the soil washed off from the potatoes. However, this compound was only detected in one of the three samples analyzed. The DL listed in Appendix A of the Permit is 0.025 µg/L. The detected concentration of endosulfan sulfate in the treated effluent is below the DL listed in Appendix A of the Permit and therefore the treated effluent would not create a detectable increase in endosulfan sulfate concentrations at the end of mixing zone.

The human health water quality criterion for endosulfan sulfate is 0.93 µg/L and there is no aquatic life criterion. The concentration detected is below the human health criterion (Page 7 of Appendix C).

3.6.7 Endrin Aldehyde

Endrin aldehyde was detected in the treated effluent sample collected on June 17, 2014, at a concentration of 0.002 micrograms per liter (µg/L). Endrin aldehyde is used in pesticides and is not added to the process water inside the facility. Potential sources of endrin aldehyde could be the soil washed off from the potatoes. The DL listed in Appendix A of the Permit is 0.025 µg/L. The detected concentration of endrin aldehyde in the treated effluent is below the DL listed in Appendix A of the Permit and therefore would not create a detectable increase in endrin aldehyde concentrations at the end of the mixing zone.

The human health water quality criterion for endrin aldehyde is 0.76 µg/L and there is no aquatic life criterion. The concentration detected is below the human health criterion (Page 7 of Appendix C).

3.6.8 Mercury

Mercury was detected in the treated effluent sample collected on June 17, 2014, at a concentration of 0.00074 µg/L. Mercury can be a component of air pollution and is not used or added to the process water inside the facility.

The mercury concentration was measured once at the USGS Kiona gaging station in June 2002. Because of the date of that sample, zero was used as the background concentration of mercury in the Yakima River, per Ecology guidance (Ecology, 2011). The PermitCalc Workbook (Page 7 of Appendix C) calculated the concentration of mercury at the end of the chronic mixing zone to be 0.0001 µg/L. CORMIX3 calculated the increase in the mercury concentration at the end of the chronic mixing zone to be 0.000092 µg/L. Mercury was modeled as a conservative pollutant, meaning it does not degrade over time. The DL in Appendix A of the Permit is 0.0002 µg/L. Therefore, both the PermitCalc Workbook and CORMIX show no detectable increase in mercury concentrations at the end of the chronic mixing zone.

The aquatic life criterion for mercury is 2.1 µg/L and 0.012 µg/L for acute and chronic mixing, respectively. The human health criteria is 0.14 µg/L. The mercury concentrations in the treated effluent and at the end of the mixing zones are below these criteria (Page 7 of Appendix C).

3.6.9 Nickel

Nickel was detected in the treated effluent samples collected in 2014, 2015, and 2016 with concentrations ranging from 0.97 µg/L to 1.89 µg/L (not shown). Nickel is a naturally occurring

metal found in certain geologic units and is not used or added to the process water inside the facility. The 95th percentile of nickel concentrations in the 2014, 2015, and 2016 treated effluent samples was calculated to be 1.81 µg/L.

The expanded wastewater treatment train will contain an anaerobic digester. Nickel is a critical micronutrient for the anaerobic bacteria and therefore, the majority of the nickel present in the wastewater will be consumed or will precipitate out as nickel sulfide (Stover et. el., 2007). The precipitate and remaining concentration of nickel in the wastewater are governed by solubility. The concentration of nickel assumed for the treated effluent is 0.52 µg/L, based on solubility limits (EPA, 1980).

The nickel concentration was measured once at the USGS Kiona gaging station and was not detected, so zero was used as the background concentration of nickel in the Yakima River. The PermitCalc Workbook (Page 7 of Appendix C) calculated the concentration of nickel at the end of the chronic mixing zone to be 0.065 µg/L. In order to perform this calculation, the PermitCalc Workbook requires the number of samples collected and the coefficient of variation for the sample results. One sample with a coefficient of variation of zero was assumed because the treated effluent concentration is based on solubility and not actual sampling results. CORMIX3 calculated the increase in the copper concentration at the end of the chronic mixing zone to be 0.062 µg/L. Nickel was modeled as a conservative pollutant, meaning it does not degrade over time. The DL in Appendix A of the Permit is 0.1 µg/L. Therefore, the treated effluent will not create a detectable increase in nickel concentrations at the end of the mixing zone.

The aquatic life criterion for nickel is 786.094 µg/L and 87.302 µg/L for acute and chronic mixing, respectively. The human health criteria is 610 µg/L. The nickel concentrations in the treated effluent and at the end of the mixing zones are below these criteria (Page 7 of Appendix C).

3.6.10 Reasonable Potential for Chlorine

The potential for residual chlorine in the treated effluent from the current process wastewater treatment system is low due to the long retention time and organic content of the existing wastewater treatment system. The new upgraded/expanded system will include the addition of a Low Rate Anaerobic Digester that provides a significant increase in hydraulic retention time and treatment capacity resulting in less opportunity for chlorine to be present in the system effluent once the new system has been implemented (Stover, 2017).

3.6.11 Zinc

Zinc was detected in the treated effluent samples collected in 2014, 2015, and 2016 with concentrations ranging from 7.9 µg/L to 10.2 µg/L (not shown). Zinc is a naturally occurring metal found in certain geologic units and is not used or added to the process water inside the facility. The 95th percentile of zinc concentrations in the 2014, 2015, and 2016 treated effluent samples was calculated to be 10.03 µg/L.

The expanded wastewater treatment train will contain an anaerobic digester. Zinc is a critical micronutrient for the anaerobic bacteria and therefore, the majority of the zinc present in the wastewater will be consumed or will precipitate out as zinc sulfide (Stover et. el., 2007). The precipitate and remaining concentration of zinc in the wastewater are governed by solubility. The

concentration of zinc assumed for the treated effluent is 1.34 µg/L, based on solubility limits (EPA, 1980).

The zinc concentration was measured at the USGS Kiona gaging station in January 2000. Because of the date of the sample, zero was used as the background concentration of zinc in the Yakima River, per Ecology guidance (Ecology, 2011). The PermitCalc Workbook (Page 7 of Appendix C) calculated the concentration of zinc at the end of the chronic mixing zone to be 0.167 µg/L. In order to perform this calculation, the PermitCalc Workbook requires the number of samples collected and the coefficient of variation for the sample results. One sample with a coefficient of variation of zero was assumed because the treated effluent concentration is based on solubility and not actual sampling results. CORMIX3 calculated the increase in the zinc concentration at the end of the chronic mixing zone to be 0.167 µg/L. Zinc was modeled as a conservative pollutant, meaning it does not degrade over time. The DL in Appendix A of the Permit is 0.5 µg/L. Therefore, the treated effluent will not create a detectable increase in zinc concentrations at the end of the mixing zone.

The aquatic life criterion for zinc is 63.505 µg/L and 57.989 µg/L for acute and chronic mixing, respectively. There is no human health criteria. The zinc concentrations in the treated effluent and at the end of the mixing zones are below these criteria (Page 7 of Appendix C).

3.6.12 Radioactive Substances

This facility does not use or generate and radioactive substances.

4.0 CONCLUSIONS

The modeling and calculations discussed in Section 3 show that the proposed discharge of treated effluent will not cause a “measureable change” in water quality at the chronic mixing zone boundary, as defined by WAC 173-201A-320(3). In addition, the treated effluent will not violate the water quality standards for acute or chronic conditions. This Study demonstrates that the expanded discharge along with the improved wastewater treatment train, as described, complies with the antidegradation standards regulations and will not cause measureable degradation.

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TABLES

Table 1. **Summary of 303(d) Listings (Category 5)**
Table 2. **CORMIX3 Model Input Parameters for Chronic Simulations**
Table 3. **CORMIX3 Model Input Parameters for Acute Simulation**

Table 1. Summary of 303(d) Listings (Category 5)

Parameter	Medium
Alpha-BHC	Fish tissue
Bacteria	Water
Chlordane	Fish tissue
Chlorpyrifos	Water
DDD	Fish tissue, water
DDE	Fish tissue, water
DDT	Fish tissue, water
Dieldrin	Fish tissue, water
Dioxin	Fish tissue
Dissolved Oxygen	Water
Endosulfan	Water
PCBs	Fish tissue
pH	Water
Temperature	Water
Toxaphene	Fish tissue

NOTE:
Abbreviations: Alpha-BHC = alpha benzene hydrochloride, DDD = dichlorodiphenyldichloroethane, DDE = dichlorodiphenyldichloroethylene, DDT= dichlorodiphenyltrichloroethane, PCBs = polychlorinated biphenyls.

Table 2. CORMIX3 Model Input Parameters for Chronic Simulations

Common Input Parameters	Imperial Value		SI Value		Comments
Effluent					
Treated Effluent Flow Rate	4.64	ft^3/s	0.132	m^3/s	3 million gallons per day
Treated Effluent Velocity	0.12	ft/s	0.0354	m/s	Velocity = effluent flow rate / diffuser area Concrete box is 84" square, with 4" thick concrete walls
Treated Effluent Outlet Width	24.44	ft	7.45	m	Adjusted to make flow rate in CORMIX3 correct based on calculated velocity from diffuser box
Treated Effluent Channel Depth (H_0)	1.65	ft	0.50	m	Adjusted to make flow rate in CORMIX3 correct based on calculated velocity from diffuser box
Treated Effluent Location	Left Bank				Port location
Horizontal Treated Effluent Angle (sigma)	85°				Discharge pipe orientation
Bottom Slope	7.8%				Estimated in Appendix A using river profile
Local Depth at Treated Effluent Outlet (H_{D0})	1.65	ft	0.50	m	Estimated in Appendix A using river profile
Maximum Treated Effluent Temperature	86.54	°F	30.3	°C	Calculated by Model (CORMIX3)
Treated Effluent Concentration	4.3	°F	2.4	°C	Excess of ambient river temperature, calculated
Ambient (Yakima River)					
Width	237	ft	72.10	m	Estimated from Google Earth (Average of July 2013 and August 2016 widths)
Velocity	1.21	ft/s	0.37	m/s	Calculated from average depth, width, and flow rate, entered in model
Flowrate (7Q10, 1996-2016)	703	cfs	19.92	m^3/s	Calculated from USGS Kiona gauge station (not entered in model)
Surface Temperature	82.2	°F	27.9	°C	Maximum observed temperature, 2006 - 2016
Average Depth (H_A)	2.45	ft	0.75	m	Estimated in Appendix A using river profile
Depth at Treated Effluent Discharge Location (H_D)	2.45	ft	0.75	m	Estimated in Appendix A using river profile
Channel Regularity	2 (slight meandering)				Fact Sheet (Ecology, 2013)
Wind Velocity	3.28	ft/s	1	m/s	Fact Sheet (Ecology, 2013)
Coefficients / Other					
Manning's (n)	0.04				Fact Sheet (Ecology, 2013), and CORMIX users manual
Heat Loss Coefficient (Heated Discharge)	NA	NA	17.8	W/m^2	CORMIX User Manual (2014)
Discharge Configuration	Flush				Port location
Allowable Temperature Increase	0.54	°F	0.3	°C	WAC 173-201A-200

NOTES:

Abbreviations: SI = International System of units, ft = feet, m = meters, " = inches, ft^2 = square feet, m^2 = square meters, ° = degrees, cfs = cubic feet per second, m^3/s = cubic meters per second, °F = degrees Fahrenheit, °C = degrees Celsius, 7Q10 = seven-day consecutive low flow with a ten-year return frequency, NA = not applicable WAC = Washington Administrative Code, USGS = Unites States Geological Survey.

Reference: Ecology, 2013. Fact Sheet for NPDES Permit No. WA0052141: ConAgra Foods Lamb-Weston Richland Facility. Washington Department of Ecology. Yakima, Washington. November 2013.

Table 3. CORMIX3 Model Input Parameters for Acute Simulation

Common Input Parameters	Imperial Value		SI Value		Comments
Effluent					
Treated Effluent Flow Rate	6.19	ft^3/s	0.1750	m^3/s	4 million gallons per day
Treated Effluent Velocity	0.15	ft/s	0.0470	m/s	Velocity = effluent flow rate / diffuser area Concrete box is 84" square, with 4" thick concrete walls
Treated Effluent Outlet Width	24.44	ft	7.45	m	Adjusted to make flow rate in CORMIX3 correct based on calculated velocity from diffuser box
Treated Effluent Channel Depth (H_0)	1.65	ft	0.50	m	Adjusted to make flow rate in CORMIX3 correct based on calculated velocity from diffuser box
Treated Effluent Location	Left Bank				Port location
Horizontal Treated Effluent Angle (sigma)	85°				Discharge pipe orientation
Bottom Slope	7.8%				Estimated in Appendix A using river profile
Local Depth at Treated Effluent Outlet (H_{D0})	1.65	ft	0.50	m	Estimated in Appendix A using river profile
Maximum Treated Effluent Temperature	86.54	°F	30.3	°C	Calculated by Model (CORMIX3)
Treated Effluent Concentration	4.3	°F	2.4	°C	Excess of ambient river temperature, calculated
Ambient (Yakima River)					
Width	237	ft	72.10	m	Estimated from Google Earth (Average of July 2013 and August 2016 widths)
Velocity	1.21	ft/s	0.37	m/s	Calculated from average depth, width, and flow rate, entered in model
Flowrate (7Q10, 1996-2016)	703	cfs	19.92	m^3/s	Calculated from USGS Kiona gauge station (not entered in model)
Surface Temperature	82.2	°F	27.9	°C	Maximum observed temperature during summer months from April 2006 - March 2016
Average Depth (H_A)	2.45	ft	0.75	m	Estimated in Appendix A using river profile
Depth at Treated Effluent Discharge Location (H_D)	2.45	ft	0.75	m	Estimated in Appendix A using river profile
Channel Regularity	2 (slight meandering)				Fact Sheet (Ecology, 2013)
Wind Velocity	3.28	ft/s	1	m/s	Fact Sheet (Ecology, 2013)
Coefficients / Other					
Manning's (n)	0.04				Fact Sheet (Ecology, 2013), and CORMIX users manual
Heat Loss Coefficient (Heated Discharge)	NC		17.8	W/m^2	CORMIX User Manual (2014)
Discharge Configuration	Flush				Port location
Allowable Temperature Increase	0.54	°F	0.3	°C	WAC 173-201A-200

NOTES:

Abbreviations: SI = International System of units, ft = feet, m = meters, " = inches, ft^2 = square feet, m^2 = square meters, ° = degrees, cfs = cubic feet per second, m^3/s = cubic meters per second, °F = degrees Fahrenheit, °C = degrees Celsius, 7Q10 = seven-day consecutive low flow with a ten-year return frequency, WAC = Washington Administrative Code, USGS = Unites States Geological Survey.

Reference: Ecology, 2013. Fact Sheet for NPDES Permit No. WA0052141: ConAgra Foods Lamb-Weston Richland Facility. Washington Department of Ecology. Yakima, Washington. November 2013.

FIGURES

Figure 1. Site Location Map
Figure 2. Outfall Diffuser Box and Pipeline Connection

0 5000'

SCALE: 1"=5000'
(SCALE & LOCATIONS
ARE APPROXIMATE)

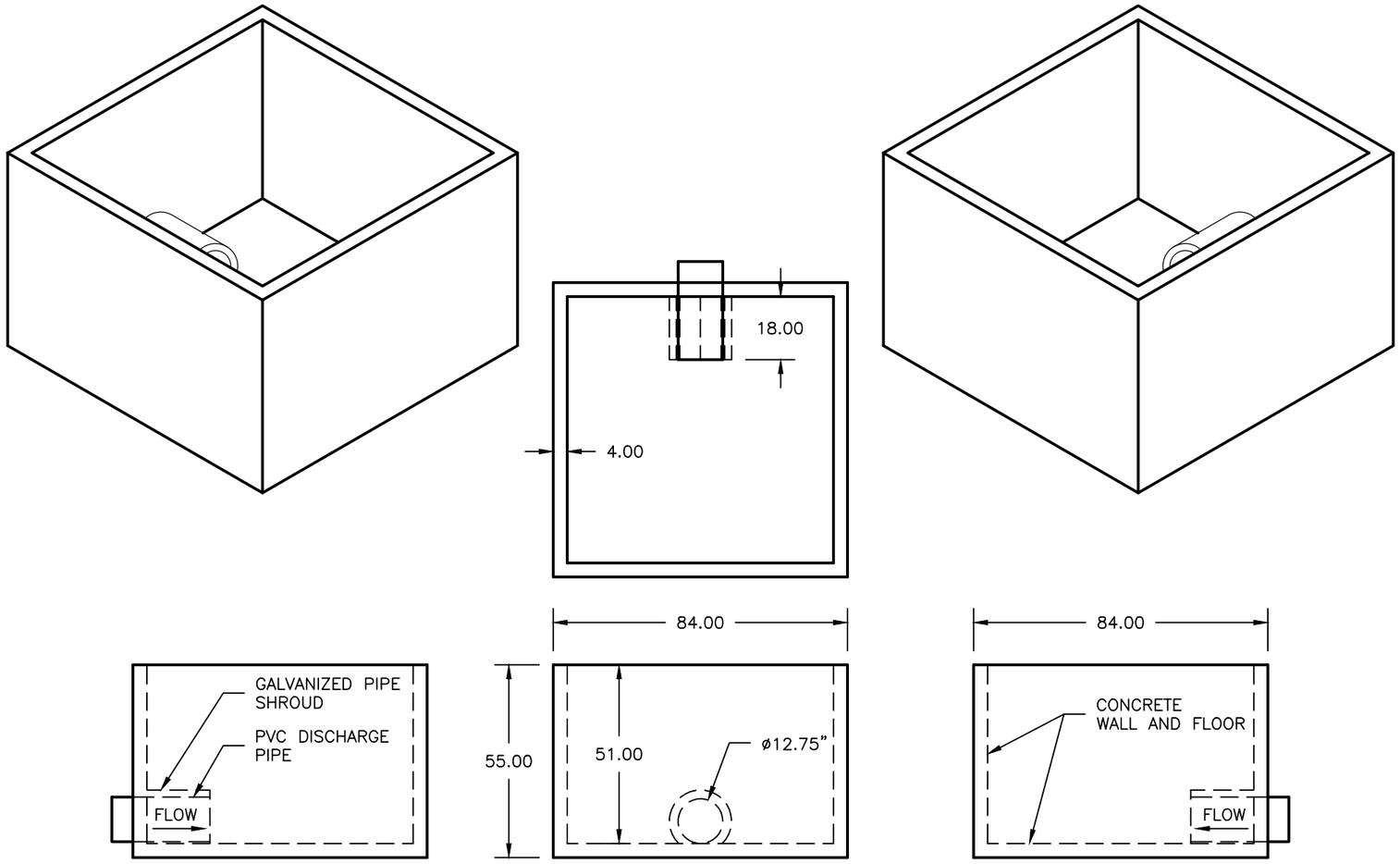
N

Figure 1. Site Location Map

PROJECT NUMBER: 2016210016	Tier II Antidegradation Study
DATE: 3/16/2017	
DWG NO: 2016210016 F1.dwg	ConAgra Foods Lamb Weston Richland, Washington
DWG BY: 6BDD / PROJECT MANAGER: 6DJB	
REVISED:	CASCADE EARTH SCIENCES

(SOURCE: Google Earth Pro Image April 2015, ©2015 Google)

S:\[Working Drafting]\2016210016 Stover Group\DWGS\2016210016 F1.dwg March 16, 2017 BD701479



DIFFUSER BOX AND OUTFALL PIPELINE CONNECTION

NOT TO SCALE

Figure 2. Outfall Diffuser Box and Pipeline Connection

PROJECT NUMBER: 2016210016	Tier II Antidegradation Study
DATE: 3/16/2017	
DWG NO: 2016210016 F2.dwg	ConAgra Foods Lamb Weston Richland, Washington
DWG BY: 6BDD / PROJECT MANAGER: 6DJB	
REVISED:	CASCADE EARTH SCIENCES

S:\[Working Drafting]\2016210016 Stover Group\DWGS\2016210016 F2.dwg March 16, 2017 BD701479

APPENDICES

Appendix A1.	**Yakima River Flow and Geometry Calculations**
Appendix A2.	**7Q10 Calculations**
Appendix A3.	**River Images**
Appendix B.	**CORMIX3 Reports**
Appendix C.	**PermitCalc Workbook**

Appendix A1.

Yakima River Flow and Geometry Calculations

Appendix A1. Yakima River Geometry

Distance (ft)	Measured depth (ft) 1999	Calculated Water Depth (ft)1999	Notes
0	2.2	--	
8	4.08	--	
18	5.2	--	
	6.79	0.16	Waterline, Outfall. Estimated to be at 30 feet from measuring point
47	8.35	1.72	
59	9.59	2.96	
71	10	3.37	
83.5	9.65	3.02	
97.5	10.31	3.68	
111.5	10.33	3.7	
126.2	10.54	3.91	
139	10.7	4.07	
153	10.87	4.24	
167	11.23	4.6	
181	11.55	4.92	
196.5	11.58	4.95	
211	11.71	5.08	
225	11.15	4.52	
236.5	11.2	4.57	
247	10.7	4.07	
257	10.56	3.93	
267	10.73	4.1	
277	10.76	4.13	
288	9.26	2.63	
298.5	6.63	0	Waterline

Measurements collected on November 9, 1999 (Table 1, CES)

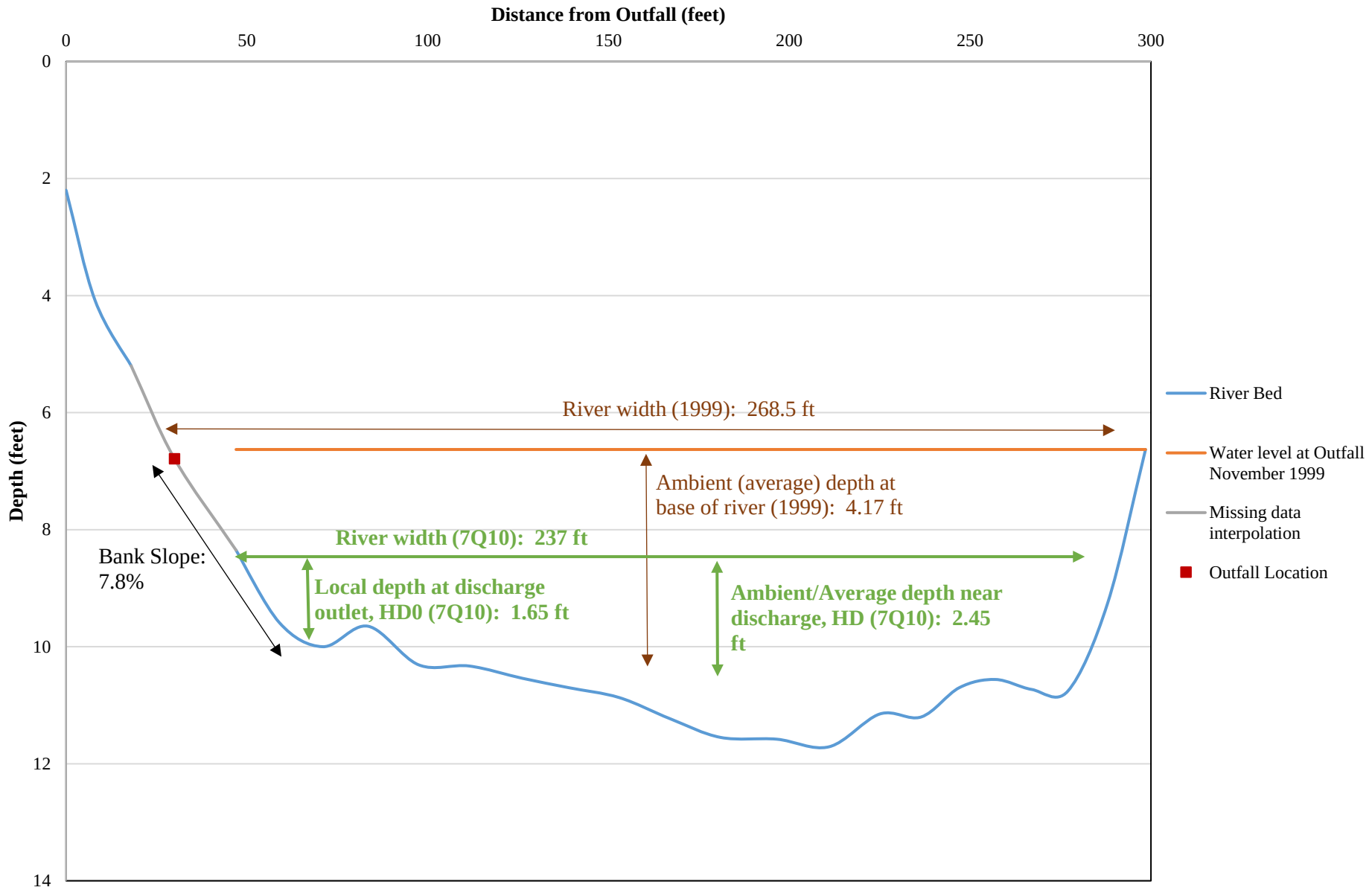
w (ft)	River width, 1999	268.5	Waterline width
d (ft)	Ambient average depth, 1999	4.17	Average at base of river (distances 71 to 277 ft)
Bank Slope		7.8%	Outfall (estimated distance 30 ft) to distance 71 ft
Q (cfs)	Flow rate Nov 9, 1999	2680	USGS Kiona Station
V (ft/sec)	Velocity, 1999	2.39	V = Q / (d * w)

Appendix A1. Yakima River Geometry
7Q10 Calculations

Distance (ft)	Measured depth (ft) 1999	Calculated Water Depth 7Q10	Notes
0	2.2	--	
8	4.08	--	
18	5.2	--	
	6.79	--	1999 Waterline, Outfall. Estimated to be at 30 feet from measuring point
47	8.35	0	Estimated waterline at 7Q10
59	9.59	1.24	
71	10	1.65	
83.5	9.65	1.3	
97.5	10.31	1.96	
111.5	10.33	1.98	
126.2	10.54	2.19	
139	10.7	2.35	
153	10.87	2.52	
167	11.23	2.88	
181	11.55	3.2	
196.5	11.58	3.23	
211	11.71	3.36	
225	11.15	2.8	
236.5	11.2	2.85	
247	10.7	2.35	
257	10.56	2.21	
267	10.73	2.38	
277	10.76	2.41	
288	9.26	0.91	Estimated waterline at 7Q10
298.5	6.63	--	

w (ft), estimated	7Q10 Width	237	Estimated from Google Earth in July 2013 and 2016
w (ft)	7Q10 Width	241	Corresponds from distances 47 to 288
d (ft), (H_D in CORMIX3)	7Q10 Ambient average depth	2.45	Average at base of river (distances 71 to 277 ft)
H_{D0} (ft)	7Q10 Local ambient depth at discharge	1.65	Water depth at distance 71
Q (cfs)	7Q10	703	USGS Kiona Station
V (ft/sec)	Velocity, 7Q10	1.21	V = Q / (d * w)

Appendix A1. Yakima River Bed Profile at Outfall



Appendix A2.

7Q10 Calculations

Appendix A2. 7Q10 Calculations

Rank (m)	Year	7 Day Min Avg Flow (Q, cfs)	log(Q)	Return Period Tr = (n+1)/m	Exceedance Probability ExPr =1/Tr	ln(Q)
1	2015	591	2.771692446	22.00	0.0455	6.382058
2	2001	678	2.831138177	11.00	0.0909	6.518937
3	2005	685	2.835871678	7.33	0.1364	6.529836
4	2006	825	2.916453949	5.50	0.1818	6.715383
5	2008	828	2.917880451	4.40	0.2273	6.718668
6	2007	854	2.931312549	3.67	0.2727	6.749597
7	2004	861	2.935147244	3.14	0.3182	6.758426
8	2009	917	2.962572261	2.75	0.3636	6.821575
9	2016	923	2.965201701	2.44	0.4091	6.827629
10	2003	940	2.972995829	2.20	0.4545	6.845576
11	2014	1094	3.038847155	2.00	0.5000	6.997204
12	2002	1112	3.045993186	1.83	0.5455	7.013659
13	2011	1246	3.095418445	1.69	0.5909	7.127464
14	2010	1251	3.097406066	1.57	0.6364	7.132041
15	2000	1384	3.141225737	1.47	0.6818	7.23294
16	1998	1437	3.157499941	1.38	0.7273	7.270412
17	2013	1536	3.186310424	1.29	0.7727	7.336751
18	1996	1537	3.186714231	1.22	0.8182	7.337681
19	2012	1580	3.198657087	1.16	0.8636	7.36518
20	1999	1787	3.252159270	1.10	0.9091	7.488373
21	1997	1911	3.281358073	1.05	0.9545	7.555606

Average Q	**Avg log(Q)**		**Avg ln(Q)**
1141.78	**3.03**		**6.99**
Variance	**0.021375**	**Variance**	**0.113329**
St Dev	**0.146203**	**St Dev**	**0.336644**
Skew	**-0.002**	**Skew**	**-0.002**

Frequency Factor (K) values*

K @ -0.2	K @ 0	K @ -0.002
-1.301	-1.282	-1.282

10-yr Recurrence Interval Q (cfs)	**703**

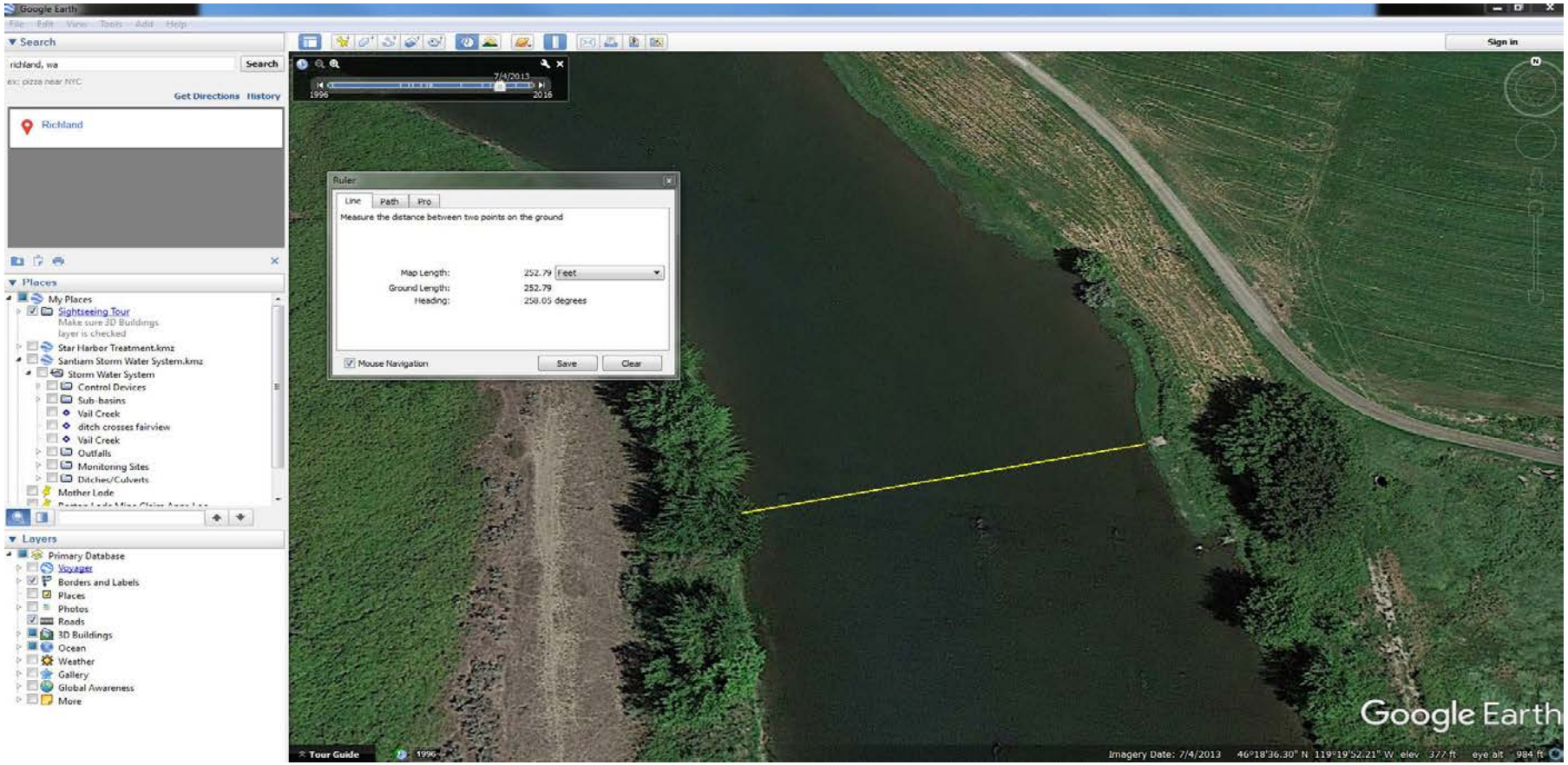
Q=exp(avg(lnQ)+K*StDev(lnQ))

*Source: Environmental Protection Agency, 1986. Technical Guidance Manual for Performing Wasteload Allocations, Book VI: Design Conditions. EPA Document EPA440/4/86-014. Appendix A. United States Environmental Protection Agency. Washington D.C.

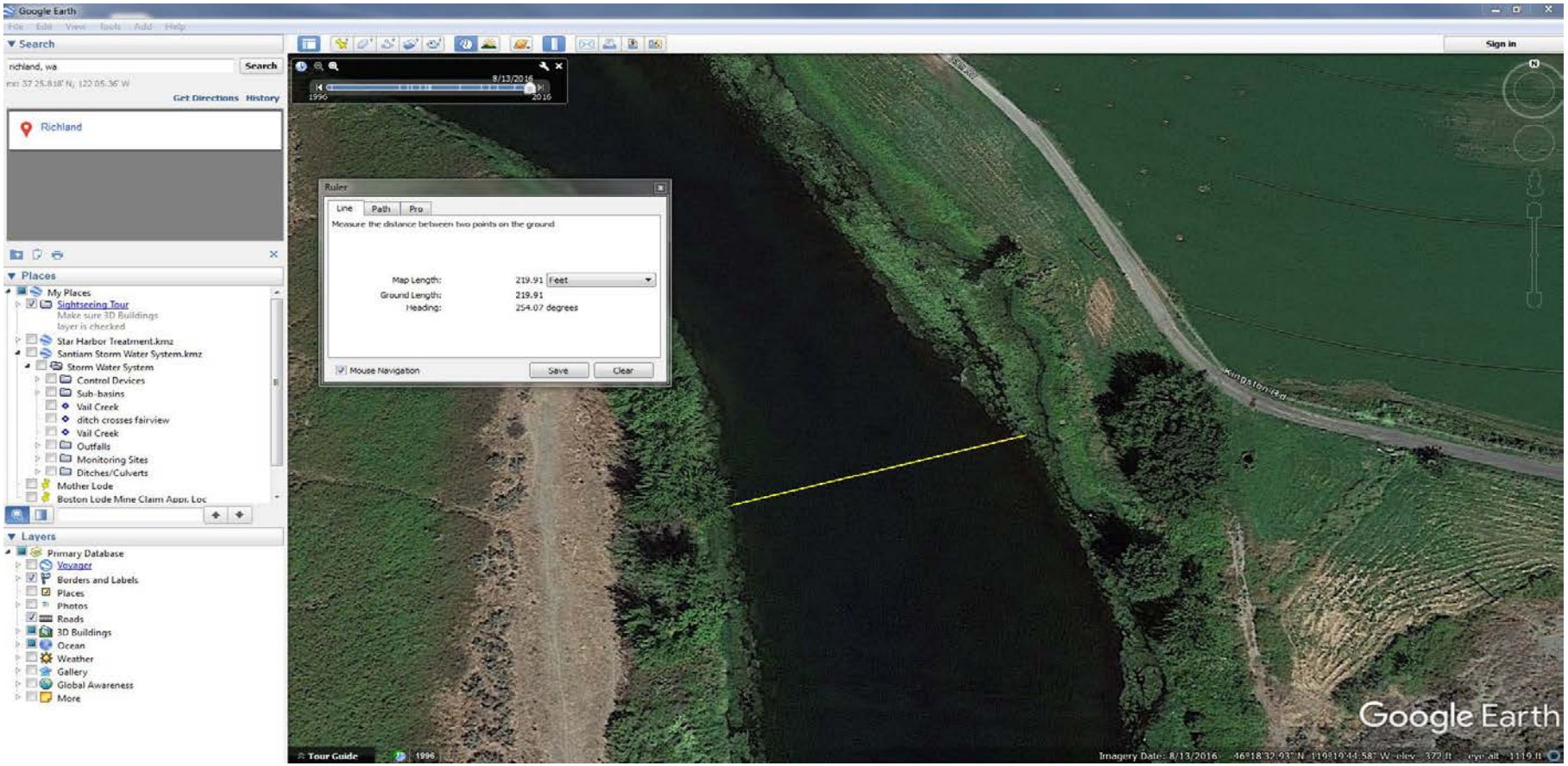
Appendix A3.

River Images

Appendix A3. River Width Image



Appendix A3. River Width Image



Appendix B.

CORMIX3 Reports

```
CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                       CORMIX MIXING ZONE EXPERT SYSTEM
                           CORMIX Version 10.0G
                        HYDRO3:Version-10.0.0.0  July,2016
SITE NAME/LABEL:                Richland
  DESIGN CASE:                  Summer Chronic  (3 MGD) 7Q10
  FILE NAME:                    C:\Program Files (x86)\CORMIX 10.0\Simulations\Chronic 3MGD.prd
  Using subsystem CORMIX3:     Buoyant Surface Discharges
  Start of session:             02/17/2017--13:53:00
*****************************************************************************
SUMMARY OF INPUT DATA:
-----------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                         = bounded
  Width                         BS      = 72.10 m
  Channel regularity            ICHREG = 2
  Ambient flowrate              QA      = 20.01 m^3/s
  Average depth                 HA      = 0.75 m
  Depth at discharge            HD      = 0.75 m
  Ambient velocity              UA      = 0.37 m/s
  Darcy-Weisbach friction factor F      = 0.1381
    Calculated from Manning's n         = 0.04
  Wind velocity                 UW      = 1 m/s
  Stratification Type           STRCND = U
  Surface temperature                   = 27.90 degC
  Bottom temperature                    = 27.90 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density               RHOAS   = 996.2622 kg/m^3
  Bottom density                RHOAB   = 996.2622 kg/m^3
-----------------------------------------------------------------------------
DISCHARGE PARAMETERS:           Surface Discharge
  Discharge located on                  = left bank/shoreline
  Discharge configuration               = flush discharge
  Distance from bank to outlet  DISTB   = 0 m
  Discharge angle               SIGMA   = 85 deg
  Depth near discharge outlet   HD0     = 0.5 m
  Bottom slope at discharge     SLOPE   = 4.46 deg
  Rectangular discharge:
    Discharge cross-section area A0     = 3.725 m^2
    Discharge channel width     B0      = 7.45 m
    Discharge channel depth     H0      = 0.5 m
    Discharge aspect ratio      AR      = 0.067114
  Discharge flowrate            Q0      = 0.131865 m^3/s
  Discharge velocity            U0      = 0.04 m/s
  Discharge temperature (freshwater)    = 30.30 degC
  Corresponding density         RHO0    = 995.5560 kg/m^3
  Density difference            DRHO    = 0.7062 kg/m^3
  Buoyant acceleration          GP0     = 0.007 m/s^2
  Discharge concentration       C0      = 2.4 deg.C
  Surface heat exchange coeff.  KS      = 0.000004 m/s
  Coefficient of decay          KD      = 0 /s
-----------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 1.93 m        Lm  = 0.18 m        Lbb = 0.02 m
  LM  = 0.59 m
-----------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Densimetric Froude number     FR0     = 0.31 (based on LQ)
  Channel densimetric Froude no. FRCH   = 0.60 (based on H0)
  Velocity ratio                R       = 0.10
-----------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                       = no
  Water quality standard specified      = yes
  Water quality standard        CSTD    = 0.3 deg.C
  Regulatory mixing zone                = yes
  Regulatory mixing zone specification  = distance
  Regulatory mixing zone value          = 91.46 m (m^2 if area)
  Region of interest                    = 1000 m
*****************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *------------------------*
  | FLOW CLASS   = PL2 |
  *------------------------*

  Limiting Dilution S = (QA/Q0)+ 1.0 = 152.7

*****************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

-----------------------------------------------------------------------------
X-Y-Z Coordinate system:
Origin is located at WATER SURFACE and at centerline of discharge channel:
    0 m from the left bank/shore.
  Number of display steps NSTEP = 500 per module.
-----------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
```

```
  implication.  However, this information may be useful for the discharge
  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 2.4 deg.C
  Dilution at edge of NFR              s = 1
  NFR Location:                        x = 3.73 m
    (centerline coordinates)           y = -0.20 m
                                       z = 0 m
  NFR plume dimensions:  half-width (bh) = 0.85 m
                          thickness (bv) = 0.42 m
Cumulative travel time:       10.0676 sec.
-------------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is less than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards
  the surface.
-------------------------------------------------------------------------------
FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed at 21.71 m downstream.
-------------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts one bank only at 0 m downstream.
************************ TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
********************** REGULATORY MIXING ZONE SUMMARY **********************
The plume conditions at the boundary of the specified RMZ are as follows:
  Pollutant concentration              c = 0.299541  deg.C
  Corresponding dilution               s = 8.0
  Plume location:                      x = 91.46 m
    (centerline coordinates)           y = 0 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 3.78 m
                          thickness (bv) = 0.75 m
Cumulative travel time:       245.6366 sec.

Note:
Plume concentration c and dilution s values are reported based on prediction
file values - assuming linear interpolation between predicted points just
before and just after the RMZ boundary has been detected.

Please ensure a small step size is used in the prediction file to account
for this linear interpolation. Step size can be controlled by increasing
(reduces the prediction step size) or decreasing (increases the prediction
step size) the - Output Steps per Module - in CORMIX input.

At this position, the plume is CONTACTING the LEFT bank.
Furthermore, the specified water quality standard has indeed been met
  within the RMZ. In particular:
The ambient water quality standard was encountered at the following
  plume position:
  Water quality standard                 = 0.3  deg.C
  Corresponding dilution               s = 8.0
  Plume location:                      x = 91.18 m
    (centerline coordinates)           y = 0 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 3.77 m
                          thickness (bv) = 0.75 m
******************** FINAL DESIGN ADVICE AND COMMENTS **********************
REMINDER:  The user must take note that HYDRODYNAMIC MODELING by any known
  technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the
  CORMIX predictions on dilutions and concentrations (with associated
  plume geometries) are reliable for the majority of cases and are accurate
  to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges
  the design configuration as highly complex and uncertain for prediction.
```

```
CORMIX3 PREDICTION FILE:
3333333333333333333333333333333333333333333333333333333333333333333333333333333333
                        CORMIX MIXING ZONE EXPERT SYSTEM
                 Subsystem CORMIX3: Buoyant Surface Discharges
                              CORMIX Version 10.0G
                       HYDRO3 Version 10.0.0.0 July 2016
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
CASE DESCRIPTION
 Site name/label:   Richland
 Design case:       Summer Chronic  (3 MGD) 7Q10
 FILE NAME:         C:\...es (x86)\CORMIX 10.0\Simulations\Chronic_3MGD.prd
 Time stamp:        02/17/2017--13:56:26

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     72.10  AS    =     54.07  QA    =     20.01  ICHREG= 2
 HA    =      0.75  HD    =      0.75
 UA    =      0.370 F     =      0.138 USTAR =0.4862E-01
 UW    =      1.000 UWSTAR=0.1071E-02
 Uniform density environment
 STRCND=  U         RHOAM =  996.2622

DISCHARGE PARAMETERS (metric units)
 BANK  =  LEFT      DISTB =      0.00  Configuration: flush_discharge
 SIGMA =     85.00  HDO   =      0.50  SLOPE =    4.46 deg.
 Rectangular channel geometry:
 B0    =      7.450 H0    =      0.500 A0    =0.3725E+01  AR    =      0.067
 U0    =      0.035 Q0    =      0.132       =0.1319E+00
 RHO0  =  995.5560  DRHO0 =0.7062E+00  GP0   =0.6952E-02
 C0    =0.2400E+01  CUNITS=  deg.C
 IPOLL =  3         KS    =0.4251E-05  KD    =0.0000E+00

FLUX VARIABLES (metric units)
 Q0    =0.1319E+00  M0    =0.4668E-02  J0    =0.9167E-03
 Associated length scales (meters)
 LQ    =      1.93  LM    =      0.59  Lm    =      0.18  Lb    =      0.02

NON-DIMENSIONAL PARAMETERS
 FR0   =      0.31  FRCH  =      0.60  R     =      0.10

FLOW CLASSIFICATION
 3333333333333333333333333333333333333333333
 3  Flow class (CORMIX3)      =    PL2    3
 3  Applicable layer depth HS =     0.75  3
 3  Limiting Dilution S =QA/Q0=   152.73  3
 3333333333333333333333333333333333333333333

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.2400E+01  CUNITS=  deg.C
 NTOX  =  0
 NSTD  =  1         CSTD  =0.3000E+00
 REGMZ =  1
 REGSPC=  1         XREG  =     91.46  WREG  =      0.00  AREG  =      0.00
 XINT  =   1000.00  XMAX  =   1000.00

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the WATER SURFACE and at center of discharge
      channel/outlet:      0.00 m  from the LEFT  bank/shore.
    X-axis points downstream
    Y-axis points to left as seen by an observer looking downstream
    Z-axis points vertically upward (in CORMIX3, all values Z = 0.00)
NSTEP = 500 display intervals per module
-------------------------------------------------------------------------------

NOTE on dilution/concentration values for this HEATED DISCHARGE (IPOLL=3):
   S  = hydrodynamic dilutions, include buoyancy (heat) loss effects
   C  = corresponding temperature values (in "deg.C"!) include heat loss
-------------------------------------------------------------------------------
BEGIN MOD301: DISCHARGE MODULE

 Efflux conditions:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.240E+01   0.50     3.72 .00000E+00

END OF MOD301: DISCHARGE MODULE
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
BEGIN MOD302: ZONE OF FLOW ESTABLISHMENT

  Control volume inflow:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.240E+01   0.50     3.72 .00000E+00

 RAPID DEFLECTION by ambient current:
 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
```

```
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

  Control volume outflow:                                  SIGMAE=    347.29
       X        Y       Z        S       C       BV       BH        TT
      3.72    -0.20    0.00     1.0 0.240E+01   0.42     0.85 .10068E+02
 Cumulative travel time =          10.0676 sec  (    0.00 hrs)

END OF MOD302: ZONE OF FLOW ESTABLISHMENT
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
** End of NEAR-FIELD REGION (NFR) **
--------------------------------------------------------------------------------

 WAKE FLOW CONDITIONS: The discharge velocity (U0) is less than or equal to the
 ambient velocity (Ua) and results in wake flow conditions. There is no discharge
 momentum induced mixing. The mixing characteristics are UNDESIRABLE.
--------------------------------------------------------------------------------
BEGIN MOD341: BUOYANT AMBIENT SPREADING

 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

 Plume Stage 2 (bank attached):
       X        Y       Z        S       C       BV       BH        TT
      3.72     0.00    0.00     1.0 0.240E+01   0.42     0.84 .10068E+02
      3.73     0.00    0.00     1.0 0.240E+01   0.42     0.84 .10079E+02
      3.73     0.00    0.00     1.0 0.240E+01   0.42     0.84 .10090E+02
      3.74     0.00    0.00     1.0 0.240E+01   0.42     0.84 .10101E+02
      3.74     0.00    0.00     1.0 0.240E+01   0.42     0.84 .10112E+02
      3.75     0.00    0.00     1.0 0.240E+01   0.42     0.85 .10123E+02
      3.75     0.00    0.00     1.0 0.239E+01   0.42     0.85 .10135E+02
      3.75     0.00    0.00     1.0 0.239E+01   0.42     0.85 .10146E+02
      3.76     0.00    0.00     1.0 0.239E+01   0.42     0.85 .10157E+02
      3.76     0.00    0.00     1.0 0.239E+01   0.42     0.85 .10168E+02
      3.77     0.00    0.00     1.0 0.239E+01   0.42     0.85 .10179E+02
      3.77     0.00    0.00     1.0 0.239E+01   0.42     0.85 .10191E+02
      3.77     0.00    0.00     1.0 0.239E+01   0.42     0.85 .10202E+02
      3.78     0.00    0.00     1.0 0.239E+01   0.42     0.85 .10213E+02
      3.78     0.00    0.00     1.0 0.239E+01   0.42     0.85 .10224E+02
      3.79     0.00    0.00     1.0 0.239E+01   0.42     0.85 .10235E+02
      3.79     0.00    0.00     1.0 0.239E+01   0.42     0.85 .10246E+02
      3.80     0.00    0.00     1.0 0.239E+01   0.42     0.85 .10258E+02
      3.80     0.00    0.00     1.0 0.238E+01   0.42     0.85 .10269E+02
      3.80     0.00    0.00     1.0 0.238E+01   0.42     0.85 .10280E+02
      3.81     0.00    0.00     1.0 0.238E+01   0.42     0.85 .10291E+02
      3.81     0.00    0.00     1.0 0.238E+01   0.42     0.85 .10302E+02
      3.82     0.00    0.00     1.0 0.238E+01   0.42     0.85 .10314E+02
      3.82     0.00    0.00     1.0 0.238E+01   0.42     0.85 .10325E+02
      3.82     0.00    0.00     1.0 0.238E+01   0.42     0.85 .10336E+02
      3.83     0.00    0.00     1.0 0.238E+01   0.42     0.85 .10347E+02
      3.83     0.00    0.00     1.0 0.238E+01   0.42     0.85 .10358E+02
      3.84     0.00    0.00     1.0 0.238E+01   0.42     0.85 .10369E+02
      3.84     0.00    0.00     1.0 0.238E+01   0.42     0.85 .10381E+02
      3.85     0.00    0.00     1.0 0.237E+01   0.42     0.86 .10392E+02
      3.85     0.00    0.00     1.0 0.237E+01   0.42     0.86 .10403E+02
      3.85     0.00    0.00     1.0 0.237E+01   0.42     0.86 .10414E+02
      3.86     0.00    0.00     1.0 0.237E+01   0.42     0.86 .10425E+02
      3.86     0.00    0.00     1.0 0.237E+01   0.42     0.86 .10437E+02
      3.87     0.00    0.00     1.0 0.237E+01   0.42     0.86 .10448E+02
      3.87     0.00    0.00     1.0 0.237E+01   0.42     0.86 .10459E+02
      3.87     0.00    0.00     1.0 0.237E+01   0.42     0.86 .10470E+02
      3.88     0.00    0.00     1.0 0.237E+01   0.42     0.86 .10481E+02
      3.88     0.00    0.00     1.0 0.237E+01   0.42     0.86 .10492E+02
      3.89     0.00    0.00     1.0 0.237E+01   0.42     0.86 .10504E+02
      3.89     0.00    0.00     1.0 0.236E+01   0.42     0.86 .10515E+02
      3.90     0.00    0.00     1.0 0.236E+01   0.42     0.86 .10526E+02
      3.90     0.00    0.00     1.0 0.236E+01   0.42     0.86 .10537E+02
      3.90     0.00    0.00     1.0 0.236E+01   0.42     0.86 .10548E+02
      3.91     0.00    0.00     1.0 0.236E+01   0.42     0.86 .10560E+02
      3.91     0.00    0.00     1.0 0.236E+01   0.42     0.86 .10571E+02
      3.92     0.00    0.00     1.0 0.236E+01   0.42     0.86 .10582E+02
      3.92     0.00    0.00     1.0 0.236E+01   0.42     0.86 .10593E+02
      3.92     0.00    0.00     1.0 0.236E+01   0.42     0.86 .10604E+02
      3.93     0.00    0.00     1.0 0.236E+01   0.42     0.86 .10615E+02
      3.93     0.00    0.00     1.0 0.236E+01   0.42     0.86 .10627E+02
      3.94     0.00    0.00     1.0 0.236E+01   0.42     0.86 .10638E+02
      3.94     0.00    0.00     1.0 0.235E+01   0.42     0.87 .10649E+02
      3.95     0.00    0.00     1.0 0.235E+01   0.42     0.87 .10660E+02
      3.95     0.00    0.00     1.0 0.235E+01   0.42     0.87 .10671E+02
      3.95     0.00    0.00     1.0 0.235E+01   0.42     0.87 .10683E+02
      3.96     0.00    0.00     1.0 0.235E+01   0.42     0.87 .10694E+02
      3.96     0.00    0.00     1.0 0.235E+01   0.42     0.87 .10705E+02
      3.97     0.00    0.00     1.0 0.235E+01   0.42     0.87 .10716E+02
      3.97     0.00    0.00     1.0 0.235E+01   0.42     0.87 .10727E+02
```

3.97	0.00	0.00	1.0	0.235E+01	0.42	0.87	.10738E+02
3.98	0.00	0.00	1.0	0.235E+01	0.42	0.87	.10750E+02
3.98	0.00	0.00	1.0	0.235E+01	0.42	0.87	.10761E+02
3.99	0.00	0.00	1.0	0.234E+01	0.42	0.87	.10772E+02
3.99	0.00	0.00	1.0	0.234E+01	0.42	0.87	.10783E+02
4.00	0.00	0.00	1.0	0.234E+01	0.42	0.87	.10794E+02
4.00	0.00	0.00	1.0	0.234E+01	0.42	0.87	.10805E+02
4.00	0.00	0.00	1.0	0.234E+01	0.42	0.87	.10817E+02
4.01	0.00	0.00	1.0	0.234E+01	0.42	0.87	.10828E+02
4.01	0.00	0.00	1.0	0.234E+01	0.42	0.87	.10839E+02
4.02	0.00	0.00	1.0	0.234E+01	0.42	0.87	.10850E+02
4.02	0.00	0.00	1.0	0.234E+01	0.42	0.87	.10861E+02
4.02	0.00	0.00	1.0	0.234E+01	0.42	0.87	.10873E+02
4.03	0.00	0.00	1.0	0.234E+01	0.42	0.87	.10884E+02
4.03	0.00	0.00	1.0	0.234E+01	0.42	0.87	.10895E+02
4.04	0.00	0.00	1.0	0.233E+01	0.42	0.87	.10906E+02
4.04	0.00	0.00	1.0	0.233E+01	0.42	0.88	.10917E+02
4.05	0.00	0.00	1.0	0.233E+01	0.42	0.88	.10928E+02
4.05	0.00	0.00	1.0	0.233E+01	0.42	0.88	.10940E+02
4.05	0.00	0.00	1.0	0.233E+01	0.42	0.88	.10951E+02
4.06	0.00	0.00	1.0	0.233E+01	0.42	0.88	.10962E+02
4.06	0.00	0.00	1.0	0.233E+01	0.42	0.88	.10973E+02
4.07	0.00	0.00	1.0	0.233E+01	0.42	0.88	.10984E+02
4.07	0.00	0.00	1.0	0.233E+01	0.42	0.88	.10996E+02
4.07	0.00	0.00	1.0	0.233E+01	0.42	0.88	.11007E+02
4.08	0.00	0.00	1.0	0.233E+01	0.42	0.88	.11018E+02
4.08	0.00	0.00	1.0	0.232E+01	0.42	0.88	.11029E+02
4.09	0.00	0.00	1.0	0.232E+01	0.42	0.88	.11040E+02
4.09	0.00	0.00	1.0	0.232E+01	0.42	0.88	.11051E+02
4.10	0.00	0.00	1.0	0.232E+01	0.42	0.88	.11063E+02
4.10	0.00	0.00	1.0	0.232E+01	0.42	0.88	.11074E+02
4.10	0.00	0.00	1.0	0.232E+01	0.42	0.88	.11085E+02
4.11	0.00	0.00	1.0	0.232E+01	0.42	0.88	.11096E+02
4.11	0.00	0.00	1.0	0.232E+01	0.42	0.88	.11107E+02
4.12	0.00	0.00	1.0	0.232E+01	0.42	0.88	.11119E+02
4.12	0.00	0.00	1.0	0.232E+01	0.42	0.88	.11130E+02
4.12	0.00	0.00	1.0	0.232E+01	0.42	0.88	.11141E+02
4.13	0.00	0.00	1.0	0.232E+01	0.42	0.88	.11152E+02
4.13	0.00	0.00	1.0	0.231E+01	0.42	0.88	.11163E+02
4.14	0.00	0.00	1.0	0.231E+01	0.42	0.88	.11174E+02
4.14	0.00	0.00	1.0	0.231E+01	0.42	0.89	.11186E+02
4.15	0.00	0.00	1.0	0.231E+01	0.42	0.89	.11197E+02
4.15	0.00	0.00	1.0	0.231E+01	0.42	0.89	.11208E+02
4.15	0.00	0.00	1.0	0.231E+01	0.42	0.89	.11219E+02
4.16	0.00	0.00	1.0	0.231E+01	0.41	0.89	.11230E+02
4.16	0.00	0.00	1.0	0.231E+01	0.41	0.89	.11242E+02
4.17	0.00	0.00	1.0	0.231E+01	0.41	0.89	.11253E+02
4.17	0.00	0.00	1.0	0.231E+01	0.41	0.89	.11264E+02
4.17	0.00	0.00	1.0	0.231E+01	0.41	0.89	.11275E+02
4.18	0.00	0.00	1.0	0.230E+01	0.41	0.89	.11286E+02
4.18	0.00	0.00	1.0	0.230E+01	0.41	0.89	.11297E+02
4.19	0.00	0.00	1.0	0.230E+01	0.41	0.89	.11309E+02
4.19	0.00	0.00	1.0	0.230E+01	0.41	0.89	.11320E+02
4.20	0.00	0.00	1.0	0.230E+01	0.41	0.89	.11331E+02
4.20	0.00	0.00	1.0	0.230E+01	0.41	0.89	.11342E+02
4.20	0.00	0.00	1.0	0.230E+01	0.41	0.89	.11353E+02
4.21	0.00	0.00	1.0	0.230E+01	0.41	0.89	.11365E+02
4.21	0.00	0.00	1.0	0.230E+01	0.41	0.89	.11376E+02
4.22	0.00	0.00	1.0	0.230E+01	0.41	0.89	.11387E+02
4.22	0.00	0.00	1.0	0.230E+01	0.41	0.89	.11398E+02
4.22	0.00	0.00	1.0	0.230E+01	0.41	0.89	.11409E+02
4.23	0.00	0.00	1.0	0.229E+01	0.41	0.89	.11420E+02
4.23	0.00	0.00	1.0	0.229E+01	0.41	0.89	.11432E+02
4.24	0.00	0.00	1.0	0.229E+01	0.41	0.89	.11443E+02
4.24	0.00	0.00	1.0	0.229E+01	0.41	0.90	.11454E+02
4.25	0.00	0.00	1.0	0.229E+01	0.41	0.90	.11465E+02
4.25	0.00	0.00	1.0	0.229E+01	0.41	0.90	.11476E+02
4.25	0.00	0.00	1.0	0.229E+01	0.41	0.90	.11488E+02
4.26	0.00	0.00	1.0	0.229E+01	0.41	0.90	.11499E+02
4.26	0.00	0.00	1.0	0.229E+01	0.41	0.90	.11510E+02
4.27	0.00	0.00	1.0	0.229E+01	0.41	0.90	.11521E+02
4.27	0.00	0.00	1.0	0.229E+01	0.41	0.90	.11532E+02
4.27	0.00	0.00	1.1	0.229E+01	0.41	0.90	.11543E+02
4.28	0.00	0.00	1.1	0.228E+01	0.41	0.90	.11555E+02
4.28	0.00	0.00	1.1	0.228E+01	0.41	0.90	.11566E+02
4.29	0.00	0.00	1.1	0.228E+01	0.41	0.90	.11577E+02
4.29	0.00	0.00	1.1	0.228E+01	0.41	0.90	.11588E+02
4.30	0.00	0.00	1.1	0.228E+01	0.41	0.90	.11599E+02
4.30	0.00	0.00	1.1	0.228E+01	0.41	0.90	.11610E+02
4.30	0.00	0.00	1.1	0.228E+01	0.41	0.90	.11622E+02
4.31	0.00	0.00	1.1	0.228E+01	0.41	0.90	.11633E+02
4.31	0.00	0.00	1.1	0.228E+01	0.41	0.90	.11644E+02
4.32	0.00	0.00	1.1	0.228E+01	0.41	0.90	.11655E+02
4.32	0.00	0.00	1.1	0.228E+01	0.41	0.90	.11666E+02
4.32	0.00	0.00	1.1	0.227E+01	0.41	0.90	.11678E+02
4.33	0.00	0.00	1.1	0.227E+01	0.41	0.90	.11689E+02
4.33	0.00	0.00	1.1	0.227E+01	0.41	0.90	.11700E+02
4.34	0.00	0.00	1.1	0.227E+01	0.41	0.90	.11711E+02
4.34	0.00	0.00	1.1	0.227E+01	0.41	0.91	.11722E+02

4.35	0.00	0.00	1.1	0.227E+01	0.41	0.91	.11733E+02
4.35	0.00	0.00	1.1	0.227E+01	0.41	0.91	.11745E+02
4.35	0.00	0.00	1.1	0.227E+01	0.41	0.91	.11756E+02
4.36	0.00	0.00	1.1	0.227E+01	0.41	0.91	.11767E+02
4.36	0.00	0.00	1.1	0.227E+01	0.41	0.91	.11778E+02
4.37	0.00	0.00	1.1	0.227E+01	0.41	0.91	.11789E+02
4.37	0.00	0.00	1.1	0.227E+01	0.41	0.91	.11801E+02
4.37	0.00	0.00	1.1	0.226E+01	0.41	0.91	.11812E+02
4.38	0.00	0.00	1.1	0.226E+01	0.41	0.91	.11823E+02
4.38	0.00	0.00	1.1	0.226E+01	0.41	0.91	.11834E+02
4.39	0.00	0.00	1.1	0.226E+01	0.41	0.91	.11845E+02
4.39	0.00	0.00	1.1	0.226E+01	0.41	0.91	.11856E+02
4.40	0.00	0.00	1.1	0.226E+01	0.41	0.91	.11868E+02
4.40	0.00	0.00	1.1	0.226E+01	0.41	0.91	.11879E+02
4.40	0.00	0.00	1.1	0.226E+01	0.41	0.91	.11890E+02
4.41	0.00	0.00	1.1	0.226E+01	0.41	0.91	.11901E+02
4.41	0.00	0.00	1.1	0.226E+01	0.41	0.91	.11912E+02
4.42	0.00	0.00	1.1	0.226E+01	0.41	0.91	.11924E+02
4.42	0.00	0.00	1.1	0.226E+01	0.41	0.91	.11935E+02
4.42	0.00	0.00	1.1	0.225E+01	0.41	0.91	.11946E+02
4.43	0.00	0.00	1.1	0.225E+01	0.41	0.91	.11957E+02
4.43	0.00	0.00	1.1	0.225E+01	0.41	0.91	.11968E+02
4.44	0.00	0.00	1.1	0.225E+01	0.41	0.91	.11979E+02
4.44	0.00	0.00	1.1	0.225E+01	0.41	0.91	.11991E+02
4.45	0.00	0.00	1.1	0.225E+01	0.41	0.92	.12002E+02
4.45	0.00	0.00	1.1	0.225E+01	0.41	0.92	.12013E+02
4.45	0.00	0.00	1.1	0.225E+01	0.41	0.92	.12024E+02
4.46	0.00	0.00	1.1	0.225E+01	0.41	0.92	.12035E+02
4.46	0.00	0.00	1.1	0.225E+01	0.41	0.92	.12047E+02
4.47	0.00	0.00	1.1	0.225E+01	0.41	0.92	.12058E+02
4.47	0.00	0.00	1.1	0.224E+01	0.41	0.92	.12069E+02
4.47	0.00	0.00	1.1	0.224E+01	0.41	0.92	.12080E+02
4.48	0.00	0.00	1.1	0.224E+01	0.41	0.92	.12091E+02
4.48	0.00	0.00	1.1	0.224E+01	0.41	0.92	.12102E+02
4.49	0.00	0.00	1.1	0.224E+01	0.41	0.92	.12114E+02
4.49	0.00	0.00	1.1	0.224E+01	0.41	0.92	.12125E+02
4.50	0.00	0.00	1.1	0.224E+01	0.41	0.92	.12136E+02
4.50	0.00	0.00	1.1	0.224E+01	0.41	0.92	.12147E+02
4.50	0.00	0.00	1.1	0.224E+01	0.41	0.92	.12158E+02
4.51	0.00	0.00	1.1	0.224E+01	0.41	0.92	.12170E+02
4.51	0.00	0.00	1.1	0.224E+01	0.41	0.92	.12181E+02
4.52	0.00	0.00	1.1	0.224E+01	0.41	0.92	.12192E+02
4.52	0.00	0.00	1.1	0.223E+01	0.41	0.92	.12203E+02
4.52	0.00	0.00	1.1	0.223E+01	0.41	0.92	.12214E+02
4.53	0.00	0.00	1.1	0.223E+01	0.41	0.92	.12225E+02
4.53	0.00	0.00	1.1	0.223E+01	0.41	0.92	.12237E+02
4.54	0.00	0.00	1.1	0.223E+01	0.41	0.92	.12248E+02
4.54	0.00	0.00	1.1	0.223E+01	0.41	0.92	.12259E+02
4.55	0.00	0.00	1.1	0.223E+01	0.41	0.93	.12270E+02
4.55	0.00	0.00	1.1	0.223E+01	0.41	0.93	.12281E+02
4.55	0.00	0.00	1.1	0.223E+01	0.41	0.93	.12293E+02
4.56	0.00	0.00	1.1	0.223E+01	0.41	0.93	.12304E+02
4.56	0.00	0.00	1.1	0.223E+01	0.41	0.93	.12315E+02
4.57	0.00	0.00	1.1	0.223E+01	0.41	0.93	.12326E+02
4.57	0.00	0.00	1.1	0.222E+01	0.41	0.93	.12337E+02
4.57	0.00	0.00	1.1	0.222E+01	0.41	0.93	.12348E+02
4.58	0.00	0.00	1.1	0.222E+01	0.41	0.93	.12360E+02
4.58	0.00	0.00	1.1	0.222E+01	0.41	0.93	.12371E+02
4.59	0.00	0.00	1.1	0.222E+01	0.41	0.93	.12382E+02
4.59	0.00	0.00	1.1	0.222E+01	0.41	0.93	.12393E+02
4.60	0.00	0.00	1.1	0.222E+01	0.41	0.93	.12404E+02
4.60	0.00	0.00	1.1	0.222E+01	0.41	0.93	.12416E+02
4.60	0.00	0.00	1.1	0.222E+01	0.41	0.93	.12427E+02
4.61	0.00	0.00	1.1	0.222E+01	0.41	0.93	.12438E+02
4.61	0.00	0.00	1.1	0.222E+01	0.41	0.93	.12449E+02
4.62	0.00	0.00	1.1	0.222E+01	0.41	0.93	.12460E+02
4.62	0.00	0.00	1.1	0.221E+01	0.41	0.93	.12471E+02
4.62	0.00	0.00	1.1	0.221E+01	0.41	0.93	.12483E+02
4.63	0.00	0.00	1.1	0.221E+01	0.41	0.93	.12494E+02
4.63	0.00	0.00	1.1	0.221E+01	0.41	0.93	.12505E+02
4.64	0.00	0.00	1.1	0.221E+01	0.41	0.93	.12516E+02
4.64	0.00	0.00	1.1	0.221E+01	0.41	0.93	.12527E+02
4.65	0.00	0.00	1.1	0.221E+01	0.41	0.93	.12538E+02
4.65	0.00	0.00	1.1	0.221E+01	0.41	0.94	.12550E+02
4.65	0.00	0.00	1.1	0.221E+01	0.41	0.94	.12561E+02
4.66	0.00	0.00	1.1	0.221E+01	0.41	0.94	.12572E+02
4.66	0.00	0.00	1.1	0.221E+01	0.41	0.94	.12583E+02
4.67	0.00	0.00	1.1	0.221E+01	0.41	0.94	.12594E+02
4.67	0.00	0.00	1.1	0.220E+01	0.41	0.94	.12606E+02
4.67	0.00	0.00	1.1	0.220E+01	0.41	0.94	.12617E+02
4.68	0.00	0.00	1.1	0.220E+01	0.41	0.94	.12628E+02
4.68	0.00	0.00	1.1	0.220E+01	0.41	0.94	.12639E+02
4.69	0.00	0.00	1.1	0.220E+01	0.41	0.94	.12650E+02
4.69	0.00	0.00	1.1	0.220E+01	0.41	0.94	.12661E+02
4.70	0.00	0.00	1.1	0.220E+01	0.41	0.94	.12673E+02
4.70	0.00	0.00	1.1	0.220E+01	0.41	0.94	.12684E+02
4.70	0.00	0.00	1.1	0.220E+01	0.41	0.94	.12695E+02
4.71	0.00	0.00	1.1	0.220E+01	0.41	0.94	.12706E+02
4.71	0.00	0.00	1.1	0.220E+01	0.41	0.94	.12717E+02

4.72	0.00	0.00	1.1	0.219E+01	0.41	0.94	.12729E+02
4.72	0.00	0.00	1.1	0.219E+01	0.41	0.94	.12740E+02
4.72	0.00	0.00	1.1	0.219E+01	0.41	0.94	.12751E+02
4.73	0.00	0.00	1.1	0.219E+01	0.41	0.94	.12762E+02
4.73	0.00	0.00	1.1	0.219E+01	0.41	0.94	.12773E+02
4.74	0.00	0.00	1.1	0.219E+01	0.41	0.94	.12784E+02
4.74	0.00	0.00	1.1	0.219E+01	0.41	0.94	.12796E+02
4.75	0.00	0.00	1.1	0.219E+01	0.41	0.94	.12807E+02
4.75	0.00	0.00	1.1	0.219E+01	0.41	0.94	.12818E+02
4.75	0.00	0.00	1.1	0.219E+01	0.41	0.95	.12829E+02
4.76	0.00	0.00	1.1	0.219E+01	0.41	0.95	.12840E+02
4.76	0.00	0.00	1.1	0.219E+01	0.41	0.95	.12852E+02
4.77	0.00	0.00	1.1	0.218E+01	0.41	0.95	.12863E+02
4.77	0.00	0.00	1.1	0.218E+01	0.41	0.95	.12874E+02
4.77	0.00	0.00	1.1	0.218E+01	0.41	0.95	.12885E+02
4.78	0.00	0.00	1.1	0.218E+01	0.41	0.95	.12896E+02
4.78	0.00	0.00	1.1	0.218E+01	0.41	0.95	.12907E+02
4.79	0.00	0.00	1.1	0.218E+01	0.41	0.95	.12919E+02
4.79	0.00	0.00	1.1	0.218E+01	0.41	0.95	.12930E+02
4.80	0.00	0.00	1.1	0.218E+01	0.41	0.95	.12941E+02
4.80	0.00	0.00	1.1	0.218E+01	0.41	0.95	.12952E+02
4.80	0.00	0.00	1.1	0.218E+01	0.41	0.95	.12963E+02
4.81	0.00	0.00	1.1	0.218E+01	0.41	0.95	.12975E+02
4.81	0.00	0.00	1.1	0.218E+01	0.41	0.95	.12986E+02
4.82	0.00	0.00	1.1	0.217E+01	0.41	0.95	.12997E+02
4.82	0.00	0.00	1.1	0.217E+01	0.41	0.95	.13008E+02
4.82	0.00	0.00	1.1	0.217E+01	0.41	0.95	.13019E+02
4.83	0.00	0.00	1.1	0.217E+01	0.41	0.95	.13030E+02
4.83	0.00	0.00	1.1	0.217E+01	0.41	0.95	.13042E+02
4.84	0.00	0.00	1.1	0.217E+01	0.41	0.95	.13053E+02
4.84	0.00	0.00	1.1	0.217E+01	0.41	0.95	.13064E+02
4.85	0.00	0.00	1.1	0.217E+01	0.41	0.95	.13075E+02
4.85	0.00	0.00	1.1	0.217E+01	0.41	0.95	.13086E+02
4.85	0.00	0.00	1.1	0.217E+01	0.41	0.95	.13098E+02
4.86	0.00	0.00	1.1	0.217E+01	0.41	0.96	.13109E+02
4.86	0.00	0.00	1.1	0.217E+01	0.41	0.96	.13120E+02
4.87	0.00	0.00	1.1	0.216E+01	0.41	0.96	.13131E+02
4.87	0.00	0.00	1.1	0.216E+01	0.41	0.96	.13142E+02
4.87	0.00	0.00	1.1	0.216E+01	0.41	0.96	.13153E+02
4.88	0.00	0.00	1.1	0.216E+01	0.41	0.96	.13165E+02
4.88	0.00	0.00	1.1	0.216E+01	0.41	0.96	.13176E+02
4.89	0.00	0.00	1.1	0.216E+01	0.41	0.96	.13187E+02
4.89	0.00	0.00	1.1	0.216E+01	0.41	0.96	.13198E+02
4.90	0.00	0.00	1.1	0.216E+01	0.41	0.96	.13209E+02
4.90	0.00	0.00	1.1	0.216E+01	0.41	0.96	.13221E+02
4.90	0.00	0.00	1.1	0.216E+01	0.41	0.96	.13232E+02
4.91	0.00	0.00	1.1	0.216E+01	0.41	0.96	.13243E+02
4.91	0.00	0.00	1.1	0.216E+01	0.41	0.96	.13254E+02
4.92	0.00	0.00	1.1	0.215E+01	0.41	0.96	.13265E+02
4.92	0.00	0.00	1.1	0.215E+01	0.41	0.96	.13276E+02
4.92	0.00	0.00	1.1	0.215E+01	0.41	0.96	.13288E+02
4.93	0.00	0.00	1.1	0.215E+01	0.41	0.96	.13299E+02
4.93	0.00	0.00	1.1	0.215E+01	0.41	0.96	.13310E+02
4.94	0.00	0.00	1.1	0.215E+01	0.41	0.96	.13321E+02
4.94	0.00	0.00	1.1	0.215E+01	0.41	0.96	.13332E+02
4.95	0.00	0.00	1.1	0.215E+01	0.41	0.96	.13343E+02
4.95	0.00	0.00	1.1	0.215E+01	0.41	0.96	.13355E+02
4.95	0.00	0.00	1.1	0.215E+01	0.41	0.96	.13366E+02
4.96	0.00	0.00	1.1	0.215E+01	0.41	0.96	.13377E+02
4.96	0.00	0.00	1.1	0.215E+01	0.41	0.97	.13388E+02
4.97	0.00	0.00	1.1	0.214E+01	0.41	0.97	.13399E+02
4.97	0.00	0.00	1.1	0.214E+01	0.41	0.97	.13411E+02
4.97	0.00	0.00	1.1	0.214E+01	0.41	0.97	.13422E+02
4.98	0.00	0.00	1.1	0.214E+01	0.41	0.97	.13433E+02
4.98	0.00	0.00	1.1	0.214E+01	0.41	0.97	.13444E+02
4.99	0.00	0.00	1.1	0.214E+01	0.41	0.97	.13455E+02
4.99	0.00	0.00	1.1	0.214E+01	0.41	0.97	.13466E+02
5.00	0.00	0.00	1.1	0.214E+01	0.41	0.97	.13478E+02
5.00	0.00	0.00	1.1	0.214E+01	0.41	0.97	.13489E+02
5.00	0.00	0.00	1.1	0.214E+01	0.41	0.97	.13500E+02
5.01	0.00	0.00	1.1	0.214E+01	0.41	0.97	.13511E+02
5.01	0.00	0.00	1.1	0.214E+01	0.41	0.97	.13522E+02
5.02	0.00	0.00	1.1	0.213E+01	0.41	0.97	.13534E+02
5.02	0.00	0.00	1.1	0.213E+01	0.41	0.97	.13545E+02
5.02	0.00	0.00	1.1	0.213E+01	0.41	0.97	.13556E+02
5.03	0.00	0.00	1.1	0.213E+01	0.41	0.97	.13567E+02
5.03	0.00	0.00	1.1	0.213E+01	0.41	0.97	.13578E+02
5.04	0.00	0.00	1.1	0.213E+01	0.41	0.97	.13589E+02
5.04	0.00	0.00	1.1	0.213E+01	0.41	0.97	.13601E+02
5.05	0.00	0.00	1.1	0.213E+01	0.41	0.97	.13612E+02
5.05	0.00	0.00	1.1	0.213E+01	0.41	0.97	.13623E+02
5.05	0.00	0.00	1.1	0.213E+01	0.41	0.97	.13634E+02
5.06	0.00	0.00	1.1	0.213E+01	0.41	0.97	.13645E+02
5.06	0.00	0.00	1.1	0.213E+01	0.41	0.97	.13657E+02
5.07	0.00	0.00	1.1	0.213E+01	0.41	0.98	.13668E+02
5.07	0.00	0.00	1.1	0.212E+01	0.41	0.98	.13679E+02
5.07	0.00	0.00	1.1	0.212E+01	0.41	0.98	.13690E+02
5.08	0.00	0.00	1.1	0.212E+01	0.41	0.98	.13701E+02
5.08	0.00	0.00	1.1	0.212E+01	0.41	0.98	.13712E+02

5.09	0.00	0.00	1.1	0.212E+01	0.41	0.98	.13724E+02
5.09	0.00	0.00	1.1	0.212E+01	0.41	0.98	.13735E+02
5.09	0.00	0.00	1.1	0.212E+01	0.41	0.98	.13746E+02
5.10	0.00	0.00	1.1	0.212E+01	0.41	0.98	.13757E+02
5.10	0.00	0.00	1.1	0.212E+01	0.41	0.98	.13768E+02
5.11	0.00	0.00	1.1	0.212E+01	0.41	0.98	.13780E+02
5.11	0.00	0.00	1.1	0.212E+01	0.41	0.98	.13791E+02
5.12	0.00	0.00	1.1	0.212E+01	0.41	0.98	.13802E+02
5.12	0.00	0.00	1.1	0.211E+01	0.41	0.98	.13813E+02
5.12	0.00	0.00	1.1	0.211E+01	0.41	0.98	.13824E+02
5.13	0.00	0.00	1.1	0.211E+01	0.41	0.98	.13835E+02
5.13	0.00	0.00	1.1	0.211E+01	0.41	0.98	.13847E+02
5.14	0.00	0.00	1.1	0.211E+01	0.41	0.98	.13858E+02
5.14	0.00	0.00	1.1	0.211E+01	0.41	0.98	.13869E+02
5.14	0.00	0.00	1.1	0.211E+01	0.41	0.98	.13880E+02
5.15	0.00	0.00	1.1	0.211E+01	0.41	0.98	.13891E+02
5.15	0.00	0.00	1.1	0.211E+01	0.41	0.98	.13903E+02
5.16	0.00	0.00	1.1	0.211E+01	0.41	0.98	.13914E+02
5.16	0.00	0.00	1.1	0.211E+01	0.41	0.98	.13925E+02
5.17	0.00	0.00	1.1	0.211E+01	0.41	0.98	.13936E+02
5.17	0.00	0.00	1.1	0.210E+01	0.41	0.99	.13947E+02
5.17	0.00	0.00	1.1	0.210E+01	0.41	0.99	.13958E+02
5.18	0.00	0.00	1.1	0.210E+01	0.41	0.99	.13970E+02
5.18	0.00	0.00	1.1	0.210E+01	0.41	0.99	.13981E+02
5.19	0.00	0.00	1.1	0.210E+01	0.41	0.99	.13992E+02
5.19	0.00	0.00	1.1	0.210E+01	0.41	0.99	.14003E+02
5.19	0.00	0.00	1.1	0.210E+01	0.41	0.99	.14014E+02
5.20	0.00	0.00	1.1	0.210E+01	0.41	0.99	.14026E+02
5.20	0.00	0.00	1.1	0.210E+01	0.41	0.99	.14037E+02
5.21	0.00	0.00	1.1	0.210E+01	0.41	0.99	.14048E+02
5.21	0.00	0.00	1.1	0.210E+01	0.41	0.99	.14059E+02
5.22	0.00	0.00	1.1	0.210E+01	0.41	0.99	.14070E+02
5.22	0.00	0.00	1.1	0.209E+01	0.41	0.99	.14081E+02
5.22	0.00	0.00	1.1	0.209E+01	0.41	0.99	.14093E+02
5.23	0.00	0.00	1.1	0.209E+01	0.41	0.99	.14104E+02
5.23	0.00	0.00	1.1	0.209E+01	0.41	0.99	.14115E+02
5.24	0.00	0.00	1.1	0.209E+01	0.41	0.99	.14126E+02
5.24	0.00	0.00	1.1	0.209E+01	0.41	0.99	.14137E+02
5.24	0.00	0.00	1.1	0.209E+01	0.41	0.99	.14148E+02
5.25	0.00	0.00	1.1	0.209E+01	0.41	0.99	.14160E+02
5.25	0.00	0.00	1.1	0.209E+01	0.41	0.99	.14171E+02
5.26	0.00	0.00	1.1	0.209E+01	0.41	0.99	.14182E+02
5.26	0.00	0.00	1.2	0.209E+01	0.41	0.99	.14193E+02
5.27	0.00	0.00	1.2	0.209E+01	0.41	0.99	.14204E+02
5.27	0.00	0.00	1.2	0.208E+01	0.41	0.99	.14216E+02
5.27	0.00	0.00	1.2	0.208E+01	0.41	1.00	.14227E+02
5.28	0.00	0.00	1.2	0.208E+01	0.41	1.00	.14238E+02
5.28	0.00	0.00	1.2	0.208E+01	0.41	1.00	.14249E+02
5.29	0.00	0.00	1.2	0.208E+01	0.41	1.00	.14260E+02
5.29	0.00	0.00	1.2	0.208E+01	0.41	1.00	.14271E+02
5.29	0.00	0.00	1.2	0.208E+01	0.41	1.00	.14283E+02
5.30	0.00	0.00	1.2	0.208E+01	0.41	1.00	.14294E+02
5.30	0.00	0.00	1.2	0.208E+01	0.41	1.00	.14305E+02
5.31	0.00	0.00	1.2	0.208E+01	0.41	1.00	.14316E+02
5.31	0.00	0.00	1.2	0.208E+01	0.41	1.00	.14327E+02
5.32	0.00	0.00	1.2	0.208E+01	0.41	1.00	.14339E+02
5.32	0.00	0.00	1.2	0.208E+01	0.41	1.00	.14350E+02
5.32	0.00	0.00	1.2	0.207E+01	0.41	1.00	.14361E+02
5.33	0.00	0.00	1.2	0.207E+01	0.41	1.00	.14372E+02
5.33	0.00	0.00	1.2	0.207E+01	0.41	1.00	.14383E+02
5.34	0.00	0.00	1.2	0.207E+01	0.41	1.00	.14394E+02
5.34	0.00	0.00	1.2	0.207E+01	0.41	1.00	.14406E+02
5.34	0.00	0.00	1.2	0.207E+01	0.41	1.00	.14417E+02
5.35	0.00	0.00	1.2	0.207E+01	0.41	1.00	.14428E+02
5.35	0.00	0.00	1.2	0.207E+01	0.41	1.00	.14439E+02
5.36	0.00	0.00	1.2	0.207E+01	0.41	1.00	.14450E+02
5.36	0.00	0.00	1.2	0.207E+01	0.41	1.00	.14462E+02
5.37	0.00	0.00	1.2	0.207E+01	0.41	1.00	.14473E+02
5.37	0.00	0.00	1.2	0.207E+01	0.41	1.00	.14484E+02
5.37	0.00	0.00	1.2	0.206E+01	0.41	1.00	.14495E+02
5.38	0.00	0.00	1.2	0.206E+01	0.41	1.00	.14506E+02
5.38	0.00	0.00	1.2	0.206E+01	0.41	1.01	.14517E+02
5.39	0.00	0.00	1.2	0.206E+01	0.41	1.01	.14529E+02
5.39	0.00	0.00	1.2	0.206E+01	0.41	1.01	.14540E+02
5.39	0.00	0.00	1.2	0.206E+01	0.41	1.01	.14551E+02
5.40	0.00	0.00	1.2	0.206E+01	0.41	1.01	.14562E+02
5.40	0.00	0.00	1.2	0.206E+01	0.41	1.01	.14573E+02
5.41	0.00	0.00	1.2	0.206E+01	0.41	1.01	.14585E+02
5.41	0.00	0.00	1.2	0.206E+01	0.41	1.01	.14596E+02
5.42	0.00	0.00	1.2	0.206E+01	0.41	1.01	.14607E+02
5.42	0.00	0.00	1.2	0.206E+01	0.41	1.01	.14618E+02
5.42	0.00	0.00	1.2	0.205E+01	0.41	1.01	.14629E+02
5.43	0.00	0.00	1.2	0.205E+01	0.41	1.01	.14640E+02
5.43	0.00	0.00	1.2	0.205E+01	0.41	1.01	.14652E+02
5.44	0.00	0.00	1.2	0.205E+01	0.41	1.01	.14663E+02
5.44	0.00	0.00	1.2	0.205E+01	0.41	1.01	.14674E+02
5.44	0.00	0.00	1.2	0.205E+01	0.41	1.01	.14685E+02
5.45	0.00	0.00	1.2	0.205E+01	0.41	1.01	.14696E+02
5.45	0.00	0.00	1.2	0.205E+01	0.41	1.01	.14708E+02

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      5.46     0.00    0.00     1.2 0.205E+01   0.41     1.01 .14719E+02
      5.46     0.00    0.00     1.2 0.205E+01   0.41     1.01 .14730E+02
      5.47     0.00    0.00     1.2 0.205E+01   0.41     1.01 .14741E+02
      5.47     0.00    0.00     1.2 0.205E+01   0.41     1.01 .14752E+02
      5.47     0.00    0.00     1.2 0.205E+01   0.41     1.01 .14763E+02
      5.48     0.00    0.00     1.2 0.204E+01   0.41     1.01 .14775E+02
      5.48     0.00    0.00     1.2 0.204E+01   0.41     1.01 .14786E+02
      5.49     0.00    0.00     1.2 0.204E+01   0.41     1.02 .14797E+02
      5.49     0.00    0.00     1.2 0.204E+01   0.41     1.02 .14808E+02
      5.49     0.00    0.00     1.2 0.204E+01   0.41     1.02 .14819E+02
      5.50     0.00    0.00     1.2 0.204E+01   0.41     1.02 .14831E+02
      5.50     0.00    0.00     1.2 0.204E+01   0.41     1.02 .14842E+02
      5.51     0.00    0.00     1.2 0.204E+01   0.41     1.02 .14853E+02
      5.51     0.00    0.00     1.2 0.204E+01   0.41     1.02 .14864E+02
      5.52     0.00    0.00     1.2 0.204E+01   0.41     1.02 .14875E+02
      5.52     0.00    0.00     1.2 0.204E+01   0.41     1.02 .14886E+02
      5.52     0.00    0.00     1.2 0.204E+01   0.41     1.02 .14898E+02
      5.53     0.00    0.00     1.2 0.203E+01   0.41     1.02 .14909E+02
      5.53     0.00    0.00     1.2 0.203E+01   0.41     1.02 .14920E+02
      5.54     0.00    0.00     1.2 0.203E+01   0.41     1.02 .14931E+02
      5.54     0.00    0.00     1.2 0.203E+01   0.41     1.02 .14942E+02
      5.54     0.00    0.00     1.2 0.203E+01   0.41     1.02 .14954E+02
      5.55     0.00    0.00     1.2 0.203E+01   0.41     1.02 .14965E+02
      5.55     0.00    0.00     1.2 0.203E+01   0.41     1.02 .14976E+02
      5.56     0.00    0.00     1.2 0.203E+01   0.41     1.02 .14987E+02
      5.56     0.00    0.00     1.2 0.203E+01   0.41     1.02 .14998E+02
      5.57     0.00    0.00     1.2 0.203E+01   0.41     1.02 .15009E+02
      5.57     0.00    0.00     1.2 0.203E+01   0.41     1.02 .15021E+02
      5.57     0.00    0.00     1.2 0.203E+01   0.41     1.02 .15032E+02
      5.58     0.00    0.00     1.2 0.203E+01   0.41     1.02 .15043E+02
      5.58     0.00    0.00     1.2 0.202E+01   0.41     1.02 .15054E+02
      5.59     0.00    0.00     1.2 0.202E+01   0.41     1.02 .15065E+02
      5.59     0.00    0.00     1.2 0.202E+01   0.41     1.02 .15076E+02
      5.59     0.00    0.00     1.2 0.202E+01   0.41     1.03 .15088E+02
      5.60     0.00    0.00     1.2 0.202E+01   0.41     1.03 .15099E+02
      5.60     0.00    0.00     1.2 0.202E+01   0.41     1.03 .15110E+02
      5.61     0.00    0.00     1.2 0.202E+01   0.41     1.03 .15121E+02
      5.61     0.00    0.00     1.2 0.202E+01   0.41     1.03 .15132E+02
      5.62     0.00    0.00     1.2 0.202E+01   0.41     1.03 .15144E+02
      5.62     0.00    0.00     1.2 0.202E+01   0.41     1.03 .15155E+02
      5.62     0.00    0.00     1.2 0.202E+01   0.41     1.03 .15166E+02
      5.63     0.00    0.00     1.2 0.202E+01   0.41     1.03 .15177E+02
      5.63     0.00    0.00     1.2 0.201E+01   0.41     1.03 .15188E+02
      5.64     0.00    0.00     1.2 0.201E+01   0.41     1.03 .15199E+02
      5.64     0.00    0.00     1.2 0.201E+01   0.41     1.03 .15211E+02
      5.64     0.00    0.00     1.2 0.201E+01   0.41     1.03 .15222E+02
      5.65     0.00    0.00     1.2 0.201E+01   0.41     1.03 .15233E+02
      5.65     0.00    0.00     1.2 0.201E+01   0.41     1.03 .15244E+02
      5.66     0.00    0.00     1.2 0.201E+01   0.41     1.03 .15255E+02
      5.66     0.00    0.00     1.2 0.201E+01   0.41     1.03 .15267E+02
      5.67     0.00    0.00     1.2 0.201E+01   0.41     1.03 .15278E+02
      5.67     0.00    0.00     1.2 0.201E+01   0.41     1.03 .15289E+02
      5.67     0.00    0.00     1.2 0.201E+01   0.41     1.03 .15300E+02
      5.68     0.00    0.00     1.2 0.201E+01   0.41     1.03 .15311E+02
      5.68     0.00    0.00     1.2 0.201E+01   0.41     1.03 .15322E+02
      5.69     0.00    0.00     1.2 0.200E+01   0.41     1.03 .15334E+02
      5.69     0.00    0.00     1.2 0.200E+01   0.41     1.03 .15345E+02
      5.69     0.00    0.00     1.2 0.200E+01   0.41     1.03 .15356E+02
      5.70     0.00    0.00     1.2 0.200E+01   0.41     1.03 .15367E+02
      5.70     0.00    0.00     1.2 0.200E+01   0.41     1.04 .15378E+02
      5.71     0.00    0.00     1.2 0.200E+01   0.41     1.04 .15390E+02
      5.71     0.00    0.00     1.2 0.200E+01   0.41     1.04 .15401E+02
      5.72     0.00    0.00     1.2 0.200E+01   0.41     1.04 .15412E+02
      5.72     0.00    0.00     1.2 0.200E+01   0.41     1.04 .15423E+02
      5.72     0.00    0.00     1.2 0.200E+01   0.41     1.04 .15434E+02
      5.73     0.00    0.00     1.2 0.200E+01   0.41     1.04 .15445E+02
      5.73     0.00    0.00     1.2 0.200E+01   0.41     1.04 .15457E+02
      5.74     0.00    0.00     1.2 0.199E+01   0.41     1.04 .15468E+02
      5.74     0.00    0.00     1.2 0.199E+01   0.41     1.04 .15479E+02
      5.74     0.00    0.00     1.2 0.199E+01   0.41     1.04 .15490E+02
      5.75     0.00    0.00     1.2 0.199E+01   0.41     1.04 .15501E+02
      5.75     0.00    0.00     1.2 0.199E+01   0.41     1.04 .15513E+02
      5.76     0.00    0.00     1.2 0.199E+01   0.41     1.04 .15524E+02
      5.76     0.00    0.00     1.2 0.199E+01   0.41     1.04 .15535E+02
      5.77     0.00    0.00     1.2 0.199E+01   0.41     1.04 .15546E+02
      5.77     0.00    0.00     1.2 0.199E+01   0.41     1.04 .15557E+02
      5.77     0.00    0.00     1.2 0.199E+01   0.41     1.04 .15568E+02
      5.78     0.00    0.00     1.2 0.199E+01   0.41     1.04 .15580E+02
      5.78     0.00    0.00     1.2 0.199E+01   0.41     1.04 .15591E+02
      5.79     0.00    0.00     1.2 0.199E+01   0.41     1.04 .15602E+02
      5.79     0.00    0.00     1.2 0.198E+01   0.41     1.04 .15613E+02
      5.79     0.00    0.00     1.2 0.198E+01   0.41     1.04 .15624E+02
      5.80     0.00    0.00     1.2 0.198E+01   0.41     1.04 .15636E+02
      5.80     0.00    0.00     1.2 0.198E+01   0.41     1.04 .15647E+02
      5.81     0.00    0.00     1.2 0.198E+01   0.41     1.04 .15658E+02
 Cumulative travel time =          15.6579 sec  (    0.00 hrs)

END OF MOD341: BUOYANT AMBIENT SPREADING
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-------------------------------------------------------------------------------
BEGIN MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

  Vertical diffusivity (initial value)   = 0.730E-02 m^2/s
  Horizontal diffusivity (initial value) = 0.182E-01 m^2/s

 Profile definitions:
   BV = Gaussian s.d.*sqrt(pi/2) (46%) thickness, measured vertically
      = or equal to water depth, if fully mixed
   BH = Gaussian s.d.*sqrt(pi/2) (46%) half-width,
        measured horizontally in Y-direction
   S  = hydrodynamic centerline dilution
   C  = centerline concentration (includes reaction efects, if any)
   TT = Cumulative travel time

 Plume Stage 2 (bank attached):
       X        Y        Z        S        C        BV       BH        TT
      5.81     0.00     0.00     1.2 0.198E+01   0.41     1.04 .15658E+02
      7.80     0.00     0.00     1.5 0.161E+01   0.45     1.18 .20997E+02
      9.78     0.00     0.00     1.8 0.134E+01   0.49     1.31 .26336E+02
     11.77     0.00     0.00     2.1 0.112E+01   0.53     1.42 .31674E+02
     13.76     0.00     0.00     2.5 0.956E+00   0.58     1.52 .37013E+02
     15.75     0.00     0.00     2.9 0.824E+00   0.64     1.62 .42352E+02
     17.74     0.00     0.00     3.3 0.718E+00   0.69     1.71 .47691E+02
     19.73     0.00     0.00     3.8 0.633E+00   0.75     1.80 .53030E+02
 Plume interacts with BOTTOM.
 The passive diffusion plume becomes VERTICALLY FULLY MIXED within this
   prediction interval.
     21.71     0.00     0.00     4.0 0.602E+00   0.75     1.88 .58369E+02
     23.70     0.00     0.00     4.2 0.578E+00   0.75     1.96 .63707E+02
     25.69     0.00     0.00     4.3 0.556E+00   0.75     2.04 .69046E+02
     27.68     0.00     0.00     4.5 0.537E+00   0.75     2.11 .74385E+02
     29.67     0.00     0.00     4.6 0.519E+00   0.75     2.18 .79724E+02
     31.66     0.00     0.00     4.8 0.503E+00   0.75     2.25 .85063E+02
     33.64     0.00     0.00     4.9 0.489E+00   0.75     2.32 .90401E+02
     35.63     0.00     0.00     5.0 0.475E+00   0.75     2.38 .95740E+02
     37.62     0.00     0.00     5.2 0.463E+00   0.75     2.45 .10108E+03
     39.61     0.00     0.00     5.3 0.451E+00   0.75     2.51 .10642E+03
     41.60     0.00     0.00     5.4 0.441E+00   0.75     2.57 .11176E+03
     43.59     0.00     0.00     5.6 0.431E+00   0.75     2.63 .11710E+03
     45.57     0.00     0.00     5.7 0.422E+00   0.75     2.69 .12243E+03
     47.56     0.00     0.00     5.8 0.413E+00   0.75     2.74 .12777E+03
     49.55     0.00     0.00     5.9 0.405E+00   0.75     2.80 .13311E+03
     51.54     0.00     0.00     6.0 0.397E+00   0.75     2.85 .13845E+03
     53.53     0.00     0.00     6.2 0.390E+00   0.75     2.90 .14379E+03
     55.52     0.00     0.00     6.3 0.383E+00   0.75     2.96 .14913E+03
     57.51     0.00     0.00     6.4 0.376E+00   0.75     3.01 .15447E+03
     59.49     0.00     0.00     6.5 0.370E+00   0.75     3.06 .15981E+03
     61.48     0.00     0.00     6.6 0.364E+00   0.75     3.11 .16515E+03
     63.47     0.00     0.00     6.7 0.359E+00   0.75     3.16 .17048E+03
     65.46     0.00     0.00     6.8 0.353E+00   0.75     3.20 .17582E+03
     67.45     0.00     0.00     6.9 0.348E+00   0.75     3.25 .18116E+03
     69.44     0.00     0.00     7.0 0.343E+00   0.75     3.30 .18650E+03
     71.42     0.00     0.00     7.1 0.338E+00   0.75     3.34 .19184E+03
     73.41     0.00     0.00     7.2 0.334E+00   0.75     3.39 .19718E+03
     75.40     0.00     0.00     7.3 0.329E+00   0.75     3.43 .20252E+03
     77.39     0.00     0.00     7.4 0.325E+00   0.75     3.48 .20786E+03
     79.38     0.00     0.00     7.5 0.321E+00   0.75     3.52 .21319E+03
     81.37     0.00     0.00     7.6 0.317E+00   0.75     3.57 .21853E+03
     83.35     0.00     0.00     7.6 0.314E+00   0.75     3.61 .22387E+03
     85.34     0.00     0.00     7.7 0.310E+00   0.75     3.65 .22921E+03
     87.33     0.00     0.00     7.8 0.306E+00   0.75     3.69 .23455E+03
     89.32     0.00     0.00     7.9 0.303E+00   0.75     3.73 .23989E+03
** WATER QUALITY STANDARD OR CCC HAS BEEN FOUND **
 The pollutant concentration in the plume falls below water quality standard
   or CCC value of 0.300E+00 in the current prediction interval.
 This is the spatial extent of concentrations exceeding the water quality
   standard or CCC value.
     91.31     0.00     0.00     8.0 0.300E+00   0.75     3.77 .24523E+03
 ** REGULATORY MIXING ZONE BOUNDARY **
 In this prediction interval the plume DOWNSTREAM distance meets or exceeds
 the regulatory value =    91.46 m.
 This is the extent of the REGULATORY MIXING ZONE.
     93.30     0.00     0.00     8.1 0.297E+00   0.75     3.81 .25057E+03
     95.28     0.00     0.00     8.2 0.294E+00   0.75     3.85 .25591E+03
     97.27     0.00     0.00     8.2 0.291E+00   0.75     3.89 .26124E+03
     99.26     0.00     0.00     8.3 0.288E+00   0.75     3.93 .26658E+03
    101.25     0.00     0.00     8.4 0.285E+00   0.75     3.97 .27192E+03
    103.24     0.00     0.00     8.5 0.282E+00   0.75     4.01 .27726E+03
    105.23     0.00     0.00     8.6 0.279E+00   0.75     4.05 .28260E+03
    107.21     0.00     0.00     8.7 0.277E+00   0.75     4.09 .28794E+03
    109.20     0.00     0.00     8.7 0.274E+00   0.75     4.12 .29328E+03
    111.19     0.00     0.00     8.8 0.272E+00   0.75     4.16 .29862E+03
    113.18     0.00     0.00     8.9 0.270E+00   0.75     4.20 .30395E+03
    115.17     0.00     0.00     9.0 0.267E+00   0.75     4.23 .30929E+03
    117.16     0.00     0.00     9.0 0.265E+00   0.75     4.27 .31463E+03
    119.15     0.00     0.00     9.1 0.263E+00   0.75     4.30 .31997E+03
    121.13     0.00     0.00     9.2 0.261E+00   0.75     4.34 .32531E+03
    123.12     0.00     0.00     9.3 0.259E+00   0.75     4.37 .33065E+03
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125.11	0.00	0.00	9.3	0.256E+00	0.75	4.41	.33599E+03
127.10	0.00	0.00	9.4	0.254E+00	0.75	4.44	.34133E+03
129.09	0.00	0.00	9.5	0.252E+00	0.75	4.48	.34667E+03
131.08	0.00	0.00	9.6	0.251E+00	0.75	4.51	.35200E+03
133.06	0.00	0.00	9.6	0.249E+00	0.75	4.55	.35734E+03
135.05	0.00	0.00	9.7	0.247E+00	0.75	4.58	.36268E+03
137.04	0.00	0.00	9.8	0.245E+00	0.75	4.61	.36802E+03
139.03	0.00	0.00	9.8	0.243E+00	0.75	4.65	.37336E+03
141.02	0.00	0.00	9.9	0.242E+00	0.75	4.68	.37870E+03
143.01	0.00	0.00	10.0	0.240E+00	0.75	4.71	.38404E+03
144.99	0.00	0.00	10.0	0.238E+00	0.75	4.74	.38938E+03
146.98	0.00	0.00	10.1	0.237E+00	0.75	4.78	.39471E+03
148.97	0.00	0.00	10.2	0.235E+00	0.75	4.81	.40005E+03
150.96	0.00	0.00	10.3	0.234E+00	0.75	4.84	.40539E+03
152.95	0.00	0.00	10.3	0.232E+00	0.75	4.87	.41073E+03
154.94	0.00	0.00	10.4	0.231E+00	0.75	4.90	.41607E+03
156.92	0.00	0.00	10.5	0.229E+00	0.75	4.93	.42141E+03
158.91	0.00	0.00	10.5	0.228E+00	0.75	4.96	.42675E+03
160.90	0.00	0.00	10.6	0.226E+00	0.75	5.00	.43209E+03
162.89	0.00	0.00	10.6	0.225E+00	0.75	5.03	.43743E+03
164.88	0.00	0.00	10.7	0.224E+00	0.75	5.06	.44276E+03
166.87	0.00	0.00	10.8	0.222E+00	0.75	5.09	.44810E+03
168.85	0.00	0.00	10.8	0.221E+00	0.75	5.12	.45344E+03
170.84	0.00	0.00	10.9	0.220E+00	0.75	5.15	.45878E+03
172.83	0.00	0.00	11.0	0.218E+00	0.75	5.18	.46412E+03
174.82	0.00	0.00	11.0	0.217E+00	0.75	5.21	.46946E+03
176.81	0.00	0.00	11.1	0.216E+00	0.75	5.23	.47480E+03
178.80	0.00	0.00	11.1	0.215E+00	0.75	5.26	.48014E+03
180.79	0.00	0.00	11.2	0.213E+00	0.75	5.29	.48548E+03
182.77	0.00	0.00	11.3	0.212E+00	0.75	5.32	.49081E+03
184.76	0.00	0.00	11.3	0.211E+00	0.75	5.35	.49615E+03
186.75	0.00	0.00	11.4	0.210E+00	0.75	5.38	.50149E+03
188.74	0.00	0.00	11.5	0.209E+00	0.75	5.41	.50683E+03
190.73	0.00	0.00	11.5	0.208E+00	0.75	5.44	.51217E+03
192.72	0.00	0.00	11.6	0.207E+00	0.75	5.46	.51751E+03
194.70	0.00	0.00	11.6	0.206E+00	0.75	5.49	.52285E+03
196.69	0.00	0.00	11.7	0.205E+00	0.75	5.52	.52819E+03
198.68	0.00	0.00	11.7	0.204E+00	0.75	5.55	.53352E+03
200.67	0.00	0.00	11.8	0.203E+00	0.75	5.57	.53886E+03
202.66	0.00	0.00	11.9	0.202E+00	0.75	5.60	.54420E+03
204.65	0.00	0.00	11.9	0.201E+00	0.75	5.63	.54954E+03
206.63	0.00	0.00	12.0	0.200E+00	0.75	5.66	.55488E+03
208.62	0.00	0.00	12.0	0.199E+00	0.75	5.68	.56022E+03
210.61	0.00	0.00	12.1	0.198E+00	0.75	5.71	.56556E+03
212.60	0.00	0.00	12.2	0.197E+00	0.75	5.74	.57090E+03
214.59	0.00	0.00	12.2	0.196E+00	0.75	5.76	.57624E+03
216.58	0.00	0.00	12.3	0.195E+00	0.75	5.79	.58157E+03
218.56	0.00	0.00	12.3	0.194E+00	0.75	5.82	.58691E+03
220.55	0.00	0.00	12.4	0.193E+00	0.75	5.84	.59225E+03
222.54	0.00	0.00	12.4	0.192E+00	0.75	5.87	.59759E+03
224.53	0.00	0.00	12.5	0.192E+00	0.75	5.89	.60293E+03
226.52	0.00	0.00	12.5	0.191E+00	0.75	5.92	.60827E+03
228.51	0.00	0.00	12.6	0.190E+00	0.75	5.95	.61361E+03
230.49	0.00	0.00	12.6	0.189E+00	0.75	5.97	.61895E+03
232.48	0.00	0.00	12.7	0.188E+00	0.75	6.00	.62428E+03
234.47	0.00	0.00	12.8	0.187E+00	0.75	6.02	.62962E+03
236.46	0.00	0.00	12.8	0.187E+00	0.75	6.05	.63496E+03
238.45	0.00	0.00	12.9	0.186E+00	0.75	6.07	.64030E+03
240.44	0.00	0.00	12.9	0.185E+00	0.75	6.10	.64564E+03
242.43	0.00	0.00	13.0	0.184E+00	0.75	6.12	.65098E+03
244.41	0.00	0.00	13.0	0.184E+00	0.75	6.15	.65632E+03
246.40	0.00	0.00	13.1	0.183E+00	0.75	6.17	.66166E+03
248.39	0.00	0.00	13.1	0.182E+00	0.75	6.20	.66700E+03
250.38	0.00	0.00	13.2	0.181E+00	0.75	6.22	.67233E+03
252.37	0.00	0.00	13.2	0.181E+00	0.75	6.25	.67767E+03
254.36	0.00	0.00	13.3	0.180E+00	0.75	6.27	.68301E+03
256.34	0.00	0.00	13.3	0.179E+00	0.75	6.30	.68835E+03
258.33	0.00	0.00	13.4	0.179E+00	0.75	6.32	.69369E+03
260.32	0.00	0.00	13.4	0.178E+00	0.75	6.34	.69903E+03
262.31	0.00	0.00	13.5	0.177E+00	0.75	6.37	.70437E+03
264.30	0.00	0.00	13.5	0.177E+00	0.75	6.39	.70971E+03
266.29	0.00	0.00	13.6	0.176E+00	0.75	6.42	.71504E+03
268.27	0.00	0.00	13.6	0.175E+00	0.75	6.44	.72038E+03
270.26	0.00	0.00	13.7	0.175E+00	0.75	6.46	.72572E+03
272.25	0.00	0.00	13.7	0.174E+00	0.75	6.49	.73106E+03
274.24	0.00	0.00	13.8	0.173E+00	0.75	6.51	.73640E+03
276.23	0.00	0.00	13.8	0.173E+00	0.75	6.53	.74174E+03
278.22	0.00	0.00	13.9	0.172E+00	0.75	6.56	.74708E+03
280.20	0.00	0.00	13.9	0.171E+00	0.75	6.58	.75242E+03
282.19	0.00	0.00	14.0	0.171E+00	0.75	6.60	.75776E+03
284.18	0.00	0.00	14.0	0.170E+00	0.75	6.63	.76309E+03
286.17	0.00	0.00	14.1	0.170E+00	0.75	6.65	.76843E+03
288.16	0.00	0.00	14.1	0.169E+00	0.75	6.67	.77377E+03
290.15	0.00	0.00	14.2	0.168E+00	0.75	6.70	.77911E+03
292.13	0.00	0.00	14.2	0.168E+00	0.75	6.72	.78445E+03
294.12	0.00	0.00	14.3	0.167E+00	0.75	6.74	.78979E+03
296.11	0.00	0.00	14.3	0.167E+00	0.75	6.76	.79513E+03
298.10	0.00	0.00	14.4	0.166E+00	0.75	6.79	.80047E+03
300.09	0.00	0.00	14.4	0.166E+00	0.75	6.81	.80580E+03

302.08	0.00	0.00	14.5	0.165E+00	0.75	6.83	.81114E+03
304.06	0.00	0.00	14.5	0.165E+00	0.75	6.85	.81648E+03
306.05	0.00	0.00	14.6	0.164E+00	0.75	6.88	.82182E+03
308.04	0.00	0.00	14.6	0.163E+00	0.75	6.90	.82716E+03
310.03	0.00	0.00	14.7	0.163E+00	0.75	6.92	.83250E+03
312.02	0.00	0.00	14.7	0.162E+00	0.75	6.94	.83784E+03
314.01	0.00	0.00	14.8	0.162E+00	0.75	6.96	.84318E+03
316.00	0.00	0.00	14.8	0.161E+00	0.75	6.99	.84851E+03
317.98	0.00	0.00	14.8	0.161E+00	0.75	7.01	.85385E+03
319.97	0.00	0.00	14.9	0.160E+00	0.75	7.03	.85919E+03
321.96	0.00	0.00	14.9	0.160E+00	0.75	7.05	.86453E+03
323.95	0.00	0.00	15.0	0.159E+00	0.75	7.07	.86987E+03
325.94	0.00	0.00	15.0	0.159E+00	0.75	7.10	.87521E+03
327.93	0.00	0.00	15.1	0.158E+00	0.75	7.12	.88055E+03
329.91	0.00	0.00	15.1	0.158E+00	0.75	7.14	.88589E+03
331.90	0.00	0.00	15.2	0.157E+00	0.75	7.16	.89123E+03
333.89	0.00	0.00	15.2	0.157E+00	0.75	7.18	.89656E+03
335.88	0.00	0.00	15.3	0.157E+00	0.75	7.20	.90190E+03
337.87	0.00	0.00	15.3	0.156E+00	0.75	7.22	.90724E+03
339.86	0.00	0.00	15.3	0.156E+00	0.75	7.24	.91258E+03
341.84	0.00	0.00	15.4	0.155E+00	0.75	7.27	.91792E+03
343.83	0.00	0.00	15.4	0.155E+00	0.75	7.29	.92326E+03
345.82	0.00	0.00	15.5	0.154E+00	0.75	7.31	.92860E+03
347.81	0.00	0.00	15.5	0.154E+00	0.75	7.33	.93394E+03
349.80	0.00	0.00	15.6	0.153E+00	0.75	7.35	.93927E+03
351.79	0.00	0.00	15.6	0.153E+00	0.75	7.37	.94461E+03
353.77	0.00	0.00	15.7	0.152E+00	0.75	7.39	.94995E+03
355.76	0.00	0.00	15.7	0.152E+00	0.75	7.41	.95529E+03
357.75	0.00	0.00	15.7	0.152E+00	0.75	7.43	.96063E+03
359.74	0.00	0.00	15.8	0.151E+00	0.75	7.45	.96597E+03
361.73	0.00	0.00	15.8	0.151E+00	0.75	7.47	.97131E+03
363.72	0.00	0.00	15.9	0.150E+00	0.75	7.49	.97665E+03
365.70	0.00	0.00	15.9	0.150E+00	0.75	7.51	.98198E+03
367.69	0.00	0.00	16.0	0.150E+00	0.75	7.53	.98732E+03
369.68	0.00	0.00	16.0	0.149E+00	0.75	7.55	.99266E+03
371.67	0.00	0.00	16.0	0.149E+00	0.75	7.57	.99800E+03
373.66	0.00	0.00	16.1	0.148E+00	0.75	7.59	.10033E+04
375.65	0.00	0.00	16.1	0.148E+00	0.75	7.62	.10087E+04
377.63	0.00	0.00	16.2	0.148E+00	0.75	7.64	.10140E+04
379.62	0.00	0.00	16.2	0.147E+00	0.75	7.66	.10194E+04
381.61	0.00	0.00	16.3	0.147E+00	0.75	7.68	.10247E+04
383.60	0.00	0.00	16.3	0.146E+00	0.75	7.70	.10300E+04
385.59	0.00	0.00	16.3	0.146E+00	0.75	7.71	.10354E+04
387.58	0.00	0.00	16.4	0.146E+00	0.75	7.73	.10407E+04
389.56	0.00	0.00	16.4	0.145E+00	0.75	7.75	.10460E+04
391.55	0.00	0.00	16.5	0.145E+00	0.75	7.77	.10514E+04
393.54	0.00	0.00	16.5	0.145E+00	0.75	7.79	.10567E+04
395.53	0.00	0.00	16.6	0.144E+00	0.75	7.81	.10621E+04
397.52	0.00	0.00	16.6	0.144E+00	0.75	7.83	.10674E+04
399.51	0.00	0.00	16.6	0.143E+00	0.75	7.85	.10727E+04
401.50	0.00	0.00	16.7	0.143E+00	0.75	7.87	.10781E+04
403.48	0.00	0.00	16.7	0.143E+00	0.75	7.89	.10834E+04
405.47	0.00	0.00	16.8	0.142E+00	0.75	7.91	.10888E+04
407.46	0.00	0.00	16.8	0.142E+00	0.75	7.93	.10941E+04
409.45	0.00	0.00	16.8	0.142E+00	0.75	7.95	.10994E+04
411.44	0.00	0.00	16.9	0.141E+00	0.75	7.97	.11048E+04
413.43	0.00	0.00	16.9	0.141E+00	0.75	7.99	.11101E+04
415.41	0.00	0.00	17.0	0.141E+00	0.75	8.01	.11155E+04
417.40	0.00	0.00	17.0	0.140E+00	0.75	8.03	.11208E+04
419.39	0.00	0.00	17.0	0.140E+00	0.75	8.04	.11261E+04
421.38	0.00	0.00	17.1	0.140E+00	0.75	8.06	.11315E+04
423.37	0.00	0.00	17.1	0.139E+00	0.75	8.08	.11368E+04
425.36	0.00	0.00	17.2	0.139E+00	0.75	8.10	.11421E+04
427.34	0.00	0.00	17.2	0.139E+00	0.75	8.12	.11475E+04
429.33	0.00	0.00	17.2	0.138E+00	0.75	8.14	.11528E+04
431.32	0.00	0.00	17.3	0.138E+00	0.75	8.16	.11582E+04
433.31	0.00	0.00	17.3	0.138E+00	0.75	8.18	.11635E+04
435.30	0.00	0.00	17.4	0.137E+00	0.75	8.20	.11688E+04
437.29	0.00	0.00	17.4	0.137E+00	0.75	8.21	.11742E+04
439.27	0.00	0.00	17.4	0.137E+00	0.75	8.23	.11795E+04
441.26	0.00	0.00	17.5	0.136E+00	0.75	8.25	.11849E+04
443.25	0.00	0.00	17.5	0.136E+00	0.75	8.27	.11902E+04
445.24	0.00	0.00	17.6	0.136E+00	0.75	8.29	.11955E+04
447.23	0.00	0.00	17.6	0.135E+00	0.75	8.31	.12009E+04
449.22	0.00	0.00	17.6	0.135E+00	0.75	8.33	.12062E+04
451.20	0.00	0.00	17.7	0.135E+00	0.75	8.34	.12116E+04
453.19	0.00	0.00	17.7	0.135E+00	0.75	8.36	.12169E+04
455.18	0.00	0.00	17.8	0.134E+00	0.75	8.38	.12222E+04
457.17	0.00	0.00	17.8	0.134E+00	0.75	8.40	.12276E+04
459.16	0.00	0.00	17.8	0.134E+00	0.75	8.42	.12329E+04
461.15	0.00	0.00	17.9	0.133E+00	0.75	8.43	.12382E+04
463.13	0.00	0.00	17.9	0.133E+00	0.75	8.45	.12436E+04
465.12	0.00	0.00	17.9	0.133E+00	0.75	8.47	.12489E+04
467.11	0.00	0.00	18.0	0.133E+00	0.75	8.49	.12543E+04
469.10	0.00	0.00	18.0	0.132E+00	0.75	8.51	.12596E+04
471.09	0.00	0.00	18.1	0.132E+00	0.75	8.52	.12649E+04
473.08	0.00	0.00	18.1	0.132E+00	0.75	8.54	.12703E+04
475.06	0.00	0.00	18.1	0.131E+00	0.75	8.56	.12756E+04
477.05	0.00	0.00	18.2	0.131E+00	0.75	8.58	.12810E+04

479.04	0.00	0.00	18.2	0.131E+00	0.75	8.60	.12863E+04
481.03	0.00	0.00	18.2	0.131E+00	0.75	8.61	.12916E+04
483.02	0.00	0.00	18.3	0.130E+00	0.75	8.63	.12970E+04
485.01	0.00	0.00	18.3	0.130E+00	0.75	8.65	.13023E+04
487.00	0.00	0.00	18.4	0.130E+00	0.75	8.67	.13077E+04
488.98	0.00	0.00	18.4	0.129E+00	0.75	8.68	.13130E+04
490.97	0.00	0.00	18.4	0.129E+00	0.75	8.70	.13183E+04
492.96	0.00	0.00	18.5	0.129E+00	0.75	8.72	.13237E+04
494.95	0.00	0.00	18.5	0.129E+00	0.75	8.74	.13290E+04
496.94	0.00	0.00	18.5	0.128E+00	0.75	8.75	.13343E+04
498.93	0.00	0.00	18.6	0.128E+00	0.75	8.77	.13397E+04
500.91	0.00	0.00	18.6	0.128E+00	0.75	8.79	.13450E+04
502.90	0.00	0.00	18.7	0.128E+00	0.75	8.81	.13504E+04
504.89	0.00	0.00	18.7	0.127E+00	0.75	8.82	.13557E+04
506.88	0.00	0.00	18.7	0.127E+00	0.75	8.84	.13610E+04
508.87	0.00	0.00	18.8	0.127E+00	0.75	8.86	.13664E+04
510.86	0.00	0.00	18.8	0.127E+00	0.75	8.88	.13717E+04
512.84	0.00	0.00	18.8	0.126E+00	0.75	8.89	.13771E+04
514.83	0.00	0.00	18.9	0.126E+00	0.75	8.91	.13824E+04
516.82	0.00	0.00	18.9	0.126E+00	0.75	8.93	.13877E+04
518.81	0.00	0.00	18.9	0.126E+00	0.75	8.95	.13931E+04
520.80	0.00	0.00	19.0	0.125E+00	0.75	8.96	.13984E+04
522.79	0.00	0.00	19.0	0.125E+00	0.75	8.98	.14037E+04
524.77	0.00	0.00	19.1	0.125E+00	0.75	9.00	.14091E+04
526.76	0.00	0.00	19.1	0.125E+00	0.75	9.01	.14144E+04
528.75	0.00	0.00	19.1	0.124E+00	0.75	9.03	.14198E+04
530.74	0.00	0.00	19.2	0.124E+00	0.75	9.05	.14251E+04
532.73	0.00	0.00	19.2	0.124E+00	0.75	9.06	.14304E+04
534.72	0.00	0.00	19.2	0.124E+00	0.75	9.08	.14358E+04
536.70	0.00	0.00	19.3	0.124E+00	0.75	9.10	.14411E+04
538.69	0.00	0.00	19.3	0.123E+00	0.75	9.11	.14465E+04
540.68	0.00	0.00	19.3	0.123E+00	0.75	9.13	.14518E+04
542.67	0.00	0.00	19.4	0.123E+00	0.75	9.15	.14571E+04
544.66	0.00	0.00	19.4	0.123E+00	0.75	9.16	.14625E+04
546.65	0.00	0.00	19.4	0.122E+00	0.75	9.18	.14678E+04
548.64	0.00	0.00	19.5	0.122E+00	0.75	9.20	.14732E+04
550.62	0.00	0.00	19.5	0.122E+00	0.75	9.21	.14785E+04
552.61	0.00	0.00	19.6	0.122E+00	0.75	9.23	.14838E+04
554.60	0.00	0.00	19.6	0.121E+00	0.75	9.25	.14892E+04
556.59	0.00	0.00	19.6	0.121E+00	0.75	9.26	.14945E+04
558.58	0.00	0.00	19.7	0.121E+00	0.75	9.28	.14998E+04
560.57	0.00	0.00	19.7	0.121E+00	0.75	9.30	.15052E+04
562.55	0.00	0.00	19.7	0.121E+00	0.75	9.31	.15105E+04
564.54	0.00	0.00	19.8	0.120E+00	0.75	9.33	.15159E+04
566.53	0.00	0.00	19.8	0.120E+00	0.75	9.35	.15212E+04
568.52	0.00	0.00	19.8	0.120E+00	0.75	9.36	.15265E+04
570.51	0.00	0.00	19.9	0.120E+00	0.75	9.38	.15319E+04
572.50	0.00	0.00	19.9	0.120E+00	0.75	9.40	.15372E+04
574.48	0.00	0.00	19.9	0.119E+00	0.75	9.41	.15426E+04
576.47	0.00	0.00	20.0	0.119E+00	0.75	9.43	.15479E+04
578.46	0.00	0.00	20.0	0.119E+00	0.75	9.44	.15532E+04
580.45	0.00	0.00	20.0	0.119E+00	0.75	9.46	.15586E+04
582.44	0.00	0.00	20.1	0.119E+00	0.75	9.48	.15639E+04
584.43	0.00	0.00	20.1	0.118E+00	0.75	9.49	.15693E+04
586.41	0.00	0.00	20.1	0.118E+00	0.75	9.51	.15746E+04
588.40	0.00	0.00	20.2	0.118E+00	0.75	9.52	.15799E+04
590.39	0.00	0.00	20.2	0.118E+00	0.75	9.54	.15853E+04
592.38	0.00	0.00	20.2	0.117E+00	0.75	9.56	.15906E+04
594.37	0.00	0.00	20.3	0.117E+00	0.75	9.57	.15959E+04
596.36	0.00	0.00	20.3	0.117E+00	0.75	9.59	.16013E+04
598.35	0.00	0.00	20.3	0.117E+00	0.75	9.60	.16066E+04
600.33	0.00	0.00	20.4	0.117E+00	0.75	9.62	.16120E+04
602.32	0.00	0.00	20.4	0.117E+00	0.75	9.64	.16173E+04
604.31	0.00	0.00	20.4	0.116E+00	0.75	9.65	.16226E+04
606.30	0.00	0.00	20.5	0.116E+00	0.75	9.67	.16280E+04
608.29	0.00	0.00	20.5	0.116E+00	0.75	9.68	.16333E+04
610.28	0.00	0.00	20.5	0.116E+00	0.75	9.70	.16387E+04
612.26	0.00	0.00	20.6	0.116E+00	0.75	9.72	.16440E+04
614.25	0.00	0.00	20.6	0.115E+00	0.75	9.73	.16493E+04
616.24	0.00	0.00	20.6	0.115E+00	0.75	9.75	.16547E+04
618.23	0.00	0.00	20.7	0.115E+00	0.75	9.76	.16600E+04
620.22	0.00	0.00	20.7	0.115E+00	0.75	9.78	.16654E+04
622.21	0.00	0.00	20.7	0.115E+00	0.75	9.79	.16707E+04
624.19	0.00	0.00	20.8	0.114E+00	0.75	9.81	.16760E+04
626.18	0.00	0.00	20.8	0.114E+00	0.75	9.83	.16814E+04
628.17	0.00	0.00	20.8	0.114E+00	0.75	9.84	.16867E+04
630.16	0.00	0.00	20.9	0.114E+00	0.75	9.86	.16920E+04
632.15	0.00	0.00	20.9	0.114E+00	0.75	9.87	.16974E+04
634.14	0.00	0.00	20.9	0.113E+00	0.75	9.89	.17027E+04
636.12	0.00	0.00	21.0	0.113E+00	0.75	9.90	.17081E+04
638.11	0.00	0.00	21.0	0.113E+00	0.75	9.92	.17134E+04
640.10	0.00	0.00	21.0	0.113E+00	0.75	9.93	.17187E+04
642.09	0.00	0.00	21.1	0.113E+00	0.75	9.95	.17241E+04
644.08	0.00	0.00	21.1	0.113E+00	0.75	9.96	.17294E+04
646.07	0.00	0.00	21.1	0.112E+00	0.75	9.98	.17348E+04
648.06	0.00	0.00	21.2	0.112E+00	0.75	9.99	.17401E+04
650.04	0.00	0.00	21.2	0.112E+00	0.75	10.01	.17454E+04
652.03	0.00	0.00	21.2	0.112E+00	0.75	10.03	.17508E+04
654.02	0.00	0.00	21.3	0.112E+00	0.75	10.04	.17561E+04

656.01	0.00	0.00	21.3	0.112E+00	0.75	10.06	.17615E+04
658.00	0.00	0.00	21.3	0.111E+00	0.75	10.07	.17668E+04
659.99	0.00	0.00	21.4	0.111E+00	0.75	10.09	.17721E+04
661.97	0.00	0.00	21.4	0.111E+00	0.75	10.10	.17775E+04
663.96	0.00	0.00	21.4	0.111E+00	0.75	10.12	.17828E+04
665.95	0.00	0.00	21.5	0.111E+00	0.75	10.13	.17881E+04
667.94	0.00	0.00	21.5	0.111E+00	0.75	10.15	.17935E+04
669.93	0.00	0.00	21.5	0.110E+00	0.75	10.16	.17988E+04
671.92	0.00	0.00	21.6	0.110E+00	0.75	10.18	.18042E+04
673.90	0.00	0.00	21.6	0.110E+00	0.75	10.19	.18095E+04
675.89	0.00	0.00	21.6	0.110E+00	0.75	10.21	.18148E+04
677.88	0.00	0.00	21.7	0.110E+00	0.75	10.22	.18202E+04
679.87	0.00	0.00	21.7	0.110E+00	0.75	10.24	.18255E+04
681.86	0.00	0.00	21.7	0.109E+00	0.75	10.25	.18309E+04
683.85	0.00	0.00	21.7	0.109E+00	0.75	10.27	.18362E+04
685.84	0.00	0.00	21.8	0.109E+00	0.75	10.28	.18415E+04
687.82	0.00	0.00	21.8	0.109E+00	0.75	10.30	.18469E+04
689.81	0.00	0.00	21.8	0.109E+00	0.75	10.31	.18522E+04
691.80	0.00	0.00	21.9	0.109E+00	0.75	10.33	.18576E+04
693.79	0.00	0.00	21.9	0.108E+00	0.75	10.34	.18629E+04
695.78	0.00	0.00	21.9	0.108E+00	0.75	10.36	.18682E+04
697.77	0.00	0.00	22.0	0.108E+00	0.75	10.37	.18736E+04
699.75	0.00	0.00	22.0	0.108E+00	0.75	10.39	.18789E+04
701.74	0.00	0.00	22.0	0.108E+00	0.75	10.40	.18842E+04
703.73	0.00	0.00	22.1	0.108E+00	0.75	10.41	.18896E+04
705.72	0.00	0.00	22.1	0.107E+00	0.75	10.43	.18949E+04
707.71	0.00	0.00	22.1	0.107E+00	0.75	10.44	.19003E+04
709.70	0.00	0.00	22.2	0.107E+00	0.75	10.46	.19056E+04
711.68	0.00	0.00	22.2	0.107E+00	0.75	10.47	.19109E+04
713.67	0.00	0.00	22.2	0.107E+00	0.75	10.49	.19163E+04
715.66	0.00	0.00	22.2	0.107E+00	0.75	10.50	.19216E+04
717.65	0.00	0.00	22.3	0.107E+00	0.75	10.52	.19270E+04
719.64	0.00	0.00	22.3	0.106E+00	0.75	10.53	.19323E+04
721.63	0.00	0.00	22.3	0.106E+00	0.75	10.55	.19376E+04
723.61	0.00	0.00	22.4	0.106E+00	0.75	10.56	.19430E+04
725.60	0.00	0.00	22.4	0.106E+00	0.75	10.57	.19483E+04
727.59	0.00	0.00	22.4	0.106E+00	0.75	10.59	.19537E+04
729.58	0.00	0.00	22.5	0.106E+00	0.75	10.60	.19590E+04
731.57	0.00	0.00	22.5	0.106E+00	0.75	10.62	.19643E+04
733.56	0.00	0.00	22.5	0.105E+00	0.75	10.63	.19697E+04
735.55	0.00	0.00	22.6	0.105E+00	0.75	10.65	.19750E+04
737.53	0.00	0.00	22.6	0.105E+00	0.75	10.66	.19803E+04
739.52	0.00	0.00	22.6	0.105E+00	0.75	10.68	.19857E+04
741.51	0.00	0.00	22.6	0.105E+00	0.75	10.69	.19910E+04
743.50	0.00	0.00	22.7	0.105E+00	0.75	10.70	.19964E+04
745.49	0.00	0.00	22.7	0.105E+00	0.75	10.72	.20017E+04
747.48	0.00	0.00	22.7	0.104E+00	0.75	10.73	.20070E+04
749.46	0.00	0.00	22.8	0.104E+00	0.75	10.75	.20124E+04
751.45	0.00	0.00	22.8	0.104E+00	0.75	10.76	.20177E+04
753.44	0.00	0.00	22.8	0.104E+00	0.75	10.78	.20231E+04
755.43	0.00	0.00	22.9	0.104E+00	0.75	10.79	.20284E+04
757.42	0.00	0.00	22.9	0.104E+00	0.75	10.80	.20337E+04
759.41	0.00	0.00	22.9	0.104E+00	0.75	10.82	.20391E+04
761.39	0.00	0.00	22.9	0.103E+00	0.75	10.83	.20444E+04
763.38	0.00	0.00	23.0	0.103E+00	0.75	10.85	.20498E+04
765.37	0.00	0.00	23.0	0.103E+00	0.75	10.86	.20551E+04
767.36	0.00	0.00	23.0	0.103E+00	0.75	10.87	.20604E+04
769.35	0.00	0.00	23.1	0.103E+00	0.75	10.89	.20658E+04
771.34	0.00	0.00	23.1	0.103E+00	0.75	10.90	.20711E+04
773.32	0.00	0.00	23.1	0.103E+00	0.75	10.92	.20764E+04
775.31	0.00	0.00	23.2	0.102E+00	0.75	10.93	.20818E+04
777.30	0.00	0.00	23.2	0.102E+00	0.75	10.94	.20871E+04
779.29	0.00	0.00	23.2	0.102E+00	0.75	10.96	.20925E+04
781.28	0.00	0.00	23.2	0.102E+00	0.75	10.97	.20978E+04
783.27	0.00	0.00	23.3	0.102E+00	0.75	10.99	.21031E+04
785.26	0.00	0.00	23.3	0.102E+00	0.75	11.00	.21085E+04
787.24	0.00	0.00	23.3	0.102E+00	0.75	11.01	.21138E+04
789.23	0.00	0.00	23.4	0.102E+00	0.75	11.03	.21192E+04
791.22	0.00	0.00	23.4	0.101E+00	0.75	11.04	.21245E+04
793.21	0.00	0.00	23.4	0.101E+00	0.75	11.06	.21298E+04
795.20	0.00	0.00	23.4	0.101E+00	0.75	11.07	.21352E+04
797.19	0.00	0.00	23.5	0.101E+00	0.75	11.08	.21405E+04
799.17	0.00	0.00	23.5	0.101E+00	0.75	11.10	.21459E+04
801.16	0.00	0.00	23.5	0.101E+00	0.75	11.11	.21512E+04
803.15	0.00	0.00	23.6	0.101E+00	0.75	11.12	.21565E+04
805.14	0.00	0.00	23.6	0.100E+00	0.75	11.14	.21619E+04
807.13	0.00	0.00	23.6	0.100E+00	0.75	11.15	.21672E+04
809.12	0.00	0.00	23.7	0.100E+00	0.75	11.17	.21725E+04
811.10	0.00	0.00	23.7	0.100E+00	0.75	11.18	.21779E+04
813.09	0.00	0.00	23.7	0.100E+00	0.75	11.19	.21832E+04
815.08	0.00	0.00	23.7	0.999E-01	0.75	11.21	.21886E+04
817.07	0.00	0.00	23.8	0.997E-01	0.75	11.22	.21939E+04
819.06	0.00	0.00	23.8	0.996E-01	0.75	11.23	.21992E+04
821.05	0.00	0.00	23.8	0.995E-01	0.75	11.25	.22046E+04
823.03	0.00	0.00	23.9	0.994E-01	0.75	11.26	.22099E+04
825.02	0.00	0.00	23.9	0.992E-01	0.75	11.27	.22153E+04
827.01	0.00	0.00	23.9	0.991E-01	0.75	11.29	.22206E+04
829.00	0.00	0.00	23.9	0.990E-01	0.75	11.30	.22259E+04
830.99	0.00	0.00	24.0	0.989E-01	0.75	11.32	.22313E+04

```
   832.98     0.00    0.00    24.0 0.988E-01   0.75    11.33 .22366E+04
   834.97     0.00    0.00    24.0 0.986E-01   0.75    11.34 .22420E+04
   836.95     0.00    0.00    24.1 0.985E-01   0.75    11.36 .22473E+04
   838.94     0.00    0.00    24.1 0.984E-01   0.75    11.37 .22526E+04
   840.93     0.00    0.00    24.1 0.983E-01   0.75    11.38 .22580E+04
   842.92     0.00    0.00    24.1 0.982E-01   0.75    11.40 .22633E+04
   844.91     0.00    0.00    24.2 0.980E-01   0.75    11.41 .22686E+04
   846.90     0.00    0.00    24.2 0.979E-01   0.75    11.42 .22740E+04
   848.88     0.00    0.00    24.2 0.978E-01   0.75    11.44 .22793E+04
   850.87     0.00    0.00    24.3 0.977E-01   0.75    11.45 .22847E+04
   852.86     0.00    0.00    24.3 0.976E-01   0.75    11.46 .22900E+04
   854.85     0.00    0.00    24.3 0.975E-01   0.75    11.48 .22953E+04
   856.84     0.00    0.00    24.3 0.973E-01   0.75    11.49 .23007E+04
   858.83     0.00    0.00    24.4 0.972E-01   0.75    11.50 .23060E+04
   860.81     0.00    0.00    24.4 0.971E-01   0.75    11.52 .23114E+04
   862.80     0.00    0.00    24.4 0.970E-01   0.75    11.53 .23167E+04
   864.79     0.00    0.00    24.5 0.969E-01   0.75    11.54 .23220E+04
   866.78     0.00    0.00    24.5 0.968E-01   0.75    11.56 .23274E+04
   868.77     0.00    0.00    24.5 0.966E-01   0.75    11.57 .23327E+04
   870.76     0.00    0.00    24.5 0.965E-01   0.75    11.58 .23381E+04
   872.74     0.00    0.00    24.6 0.964E-01   0.75    11.60 .23434E+04
   874.73     0.00    0.00    24.6 0.963E-01   0.75    11.61 .23487E+04
   876.72     0.00    0.00    24.6 0.962E-01   0.75    11.62 .23541E+04
   878.71     0.00    0.00    24.6 0.961E-01   0.75    11.64 .23594E+04
   880.70     0.00    0.00    24.7 0.960E-01   0.75    11.65 .23647E+04
   882.69     0.00    0.00    24.7 0.959E-01   0.75    11.66 .23701E+04
   884.68     0.00    0.00    24.7 0.958E-01   0.75    11.67 .23754E+04
   886.66     0.00    0.00    24.8 0.956E-01   0.75    11.69 .23808E+04
   888.65     0.00    0.00    24.8 0.955E-01   0.75    11.70 .23861E+04
   890.64     0.00    0.00    24.8 0.954E-01   0.75    11.71 .23914E+04
   892.63     0.00    0.00    24.8 0.953E-01   0.75    11.73 .23968E+04
   894.62     0.00    0.00    24.9 0.952E-01   0.75    11.74 .24021E+04
   896.61     0.00    0.00    24.9 0.951E-01   0.75    11.75 .24075E+04
   898.59     0.00    0.00    24.9 0.950E-01   0.75    11.77 .24128E+04
   900.58     0.00    0.00    25.0 0.949E-01   0.75    11.78 .24181E+04
   902.57     0.00    0.00    25.0 0.948E-01   0.75    11.79 .24235E+04
   904.56     0.00    0.00    25.0 0.947E-01   0.75    11.81 .24288E+04
   906.55     0.00    0.00    25.0 0.946E-01   0.75    11.82 .24342E+04
   908.54     0.00    0.00    25.1 0.945E-01   0.75    11.83 .24395E+04
   910.52     0.00    0.00    25.1 0.943E-01   0.75    11.84 .24448E+04
   912.51     0.00    0.00    25.1 0.942E-01   0.75    11.86 .24502E+04
   914.50     0.00    0.00    25.1 0.941E-01   0.75    11.87 .24555E+04
   916.49     0.00    0.00    25.2 0.940E-01   0.75    11.88 .24608E+04
   918.48     0.00    0.00    25.2 0.939E-01   0.75    11.90 .24662E+04
   920.47     0.00    0.00    25.2 0.938E-01   0.75    11.91 .24715E+04
   922.46     0.00    0.00    25.3 0.937E-01   0.75    11.92 .24769E+04
   924.44     0.00    0.00    25.3 0.936E-01   0.75    11.93 .24822E+04
   926.43     0.00    0.00    25.3 0.935E-01   0.75    11.95 .24875E+04
   928.42     0.00    0.00    25.3 0.934E-01   0.75    11.96 .24929E+04
   930.41     0.00    0.00    25.4 0.933E-01   0.75    11.97 .24982E+04
   932.40     0.00    0.00    25.4 0.932E-01   0.75    11.99 .25036E+04
   934.39     0.00    0.00    25.4 0.931E-01   0.75    12.00 .25089E+04
   936.37     0.00    0.00    25.4 0.930E-01   0.75    12.01 .25142E+04
   938.36     0.00    0.00    25.5 0.929E-01   0.75    12.02 .25196E+04
   940.35     0.00    0.00    25.5 0.928E-01   0.75    12.04 .25249E+04
   942.34     0.00    0.00    25.5 0.927E-01   0.75    12.05 .25303E+04
   944.33     0.00    0.00    25.5 0.926E-01   0.75    12.06 .25356E+04
   946.32     0.00    0.00    25.6 0.925E-01   0.75    12.07 .25409E+04
   948.30     0.00    0.00    25.6 0.924E-01   0.75    12.09 .25463E+04
   950.29     0.00    0.00    25.6 0.923E-01   0.75    12.10 .25516E+04
   952.28     0.00    0.00    25.7 0.922E-01   0.75    12.11 .25569E+04
   954.27     0.00    0.00    25.7 0.921E-01   0.75    12.12 .25623E+04
   956.26     0.00    0.00    25.7 0.920E-01   0.75    12.14 .25676E+04
   958.25     0.00    0.00    25.7 0.919E-01   0.75    12.15 .25730E+04
   960.23     0.00    0.00    25.8 0.918E-01   0.75    12.16 .25783E+04
   962.22     0.00    0.00    25.8 0.917E-01   0.75    12.18 .25836E+04
   964.21     0.00    0.00    25.8 0.916E-01   0.75    12.19 .25890E+04
   966.20     0.00    0.00    25.8 0.915E-01   0.75    12.20 .25943E+04
   968.19     0.00    0.00    25.9 0.914E-01   0.75    12.21 .25997E+04
   970.18     0.00    0.00    25.9 0.913E-01   0.75    12.23 .26050E+04
   972.17     0.00    0.00    25.9 0.912E-01   0.75    12.24 .26103E+04
   974.15     0.00    0.00    25.9 0.911E-01   0.75    12.25 .26157E+04
   976.14     0.00    0.00    26.0 0.910E-01   0.75    12.26 .26210E+04
   978.13     0.00    0.00    26.0 0.909E-01   0.75    12.28 .26264E+04
   980.12     0.00    0.00    26.0 0.908E-01   0.75    12.29 .26317E+04
   982.11     0.00    0.00    26.1 0.908E-01   0.75    12.30 .26370E+04
   984.10     0.00    0.00    26.1 0.907E-01   0.75    12.31 .26424E+04
   986.08     0.00    0.00    26.1 0.906E-01   0.75    12.32 .26477E+04
   988.07     0.00    0.00    26.1 0.905E-01   0.75    12.34 .26530E+04
   990.06     0.00    0.00    26.2 0.904E-01   0.75    12.35 .26584E+04
   992.05     0.00    0.00    26.2 0.903E-01   0.75    12.36 .26637E+04
   994.04     0.00    0.00    26.2 0.902E-01   0.75    12.37 .26691E+04
   996.03     0.00    0.00    26.2 0.901E-01   0.75    12.39 .26744E+04
   998.01     0.00    0.00    26.3 0.900E-01   0.75    12.40 .26797E+04
  1000.00     0.00    0.00    26.3 0.899E-01   0.75    12.41 .26851E+04
Cumulative travel time =        2685.0725 sec  (    0.75 hrs)

Simulation limit based on maximum specified distance =   1000.00 m.
  This is the REGION OF INTEREST limitation.
```

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END OF MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
CORMIX3: Buoyant Surface Discharges                    End of Prediction File
3333333333333333333333333333333333333333333333333333333333333333333333333333333
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CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 10.0G
                       HYDRO3:Version-10.0.0.0  July,2016
SITE NAME/LABEL:                Richland
  DESIGN CASE:                  Summer Acute (4MGD) 7Q10
  FILE NAME:                    C:\Program Files (x86)\CORMIX 10.0\Simulations\Acute 4MGD.prd
  Using subsystem CORMIX3:     Buoyant Surface Discharges
  Start of session:             03/15/2017--11:19:44
*****************************************************************************
SUMMARY OF INPUT DATA:
-----------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                           BS     = 72.10 m
  Channel regularity              ICHREG = 2
  Ambient flowrate                QA     = 20.01 m^3/s
  Average depth                   HA     = 0.75 m
  Depth at discharge              HD     = 0.75 m
  Ambient velocity                UA     = 0.37 m/s
  Darcy-Weisbach friction factor  F      = 0.1381
    Calculated from Manning's n          = 0.04
  Wind velocity                   UW     = 1 m/s
  Stratification Type             STRCND = U
  Surface temperature                    = 27.90 degC
  Bottom temperature                     = 27.90 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density                 RHOAS  = 996.2622 kg/m^3
  Bottom density                  RHOAB  = 996.2622 kg/m^3
-----------------------------------------------------------------------------
DISCHARGE PARAMETERS:             Surface Discharge
  Discharge located on                   = left bank/shoreline
  Discharge configuration                = flush discharge
  Distance from bank to outlet    DISTB  = 0 m
  Discharge angle                 SIGMA  = 85 deg
  Depth near discharge outlet     HD0    = 0.5 m
  Bottom slope at discharge       SLOPE  = 4.46 deg
  Rectangular discharge:
    Discharge cross-section area  A0     = 3.725 m^2
    Discharge channel width       B0     = 7.45 m
    Discharge channel depth       H0     = 0.5 m
    Discharge aspect ratio        AR     = 0.067114
  Discharge flowrate              Q0     = 0.175075 m^3/s
  Discharge velocity              U0     = 0.05 m/s
  Discharge temperature (freshwater)     = 30.30 degC
  Corresponding density           RHO0   = 995.5560 kg/m^3
  Density difference              DRHO   = 0.7062 kg/m^3
  Buoyant acceleration            GP0    = 0.007 m/s^2
  Discharge concentration         C0     = 2.4 deg.C
  Surface heat exchange coeff.    KS     = 0.000004 m/s
  Coefficient of decay            KD     = 0 /s
-----------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 1.93 m         Lm  = 0.25 m         Lbb = 0.02 m
  LM  = 0.78 m
-----------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Densimetric Froude number       FR0    = 0.41 (based on LQ)
  Channel densimetric Froude no.  FRCH   = 0.80 (based on H0)
  Velocity ratio                  R      = 0.13
-----------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = yes
  Water quality standard          CSTD   = 0.3 deg.C
  Regulatory mixing zone                 = yes
  Regulatory mixing zone specification   = distance
  Regulatory mixing zone value           = 9.15 m (m^2 if area)
  Region of interest                     = 1000 m
*****************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *------------------------*
  | FLOW CLASS   = PL2 |
  *------------------------*

  Limiting Dilution S = (QA/Q0)+ 1.0 = 115.3

*****************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

-----------------------------------------------------------------------------
X-Y-Z Coordinate system:
Origin is located at WATER SURFACE and at centerline of discharge channel:
    0 m from the left bank/shore.
  Number of display steps NSTEP = 500 per module.
-----------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
  implication.  However, this information may be useful for the discharge
```

```
  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 2.4 deg.C
  Dilution at edge of NFR              s = 1
  NFR Location:                        x = 3.73 m
    (centerline coordinates)           y = -0.26 m
                                       z = 0 m
  NFR plume dimensions:  half-width (bh) = 1.08 m
                          thickness (bv) = 0.44 m
Cumulative travel time:       10.0676 sec.
-------------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is less than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards
  the surface.
-------------------------------------------------------------------------------
FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed at 21.11 m downstream.
-------------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts one bank only at 0 m downstream.
************************ TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
********************** REGULATORY MIXING ZONE SUMMARY ***********************
The plume conditions at the boundary of the specified RMZ are as follows:
  Pollutant concentration              c = 1.555982  deg.C
  Corresponding dilution               s = 1.5
  Plume location:                      x = 9.15 m
    (centerline coordinates)           y = 0 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 1.51 m
                          thickness (bv) = 0.48 m
Cumulative travel time:       24.5918 sec.

Note:
Plume concentration c and dilution s values are reported based on prediction
file values - assuming linear interpolation between predicted points just
before and just after the RMZ boundary has been detected.

Please ensure a small step size is used in the prediction file to account
for this linear interpolation. Step size can be controlled by increasing
(reduces the prediction step size) or decreasing (increases the prediction
step size) the - Output Steps per Module - in CORMIX input.

At this position, the plume is CONTACTING the LEFT bank.
However, the specified water quality standard has not been met
  within the RMZ. In particular:
The ambient water quality standard was encountered at the following
  plume position:
  Water quality standard                 = 0.3  deg.C
  Corresponding dilution               s = 8.0
  Plume location:                      x = 156.58 m
    (centerline coordinates)           y = 0 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 4.99 m
                          thickness (bv) = 0.75 m
********************* FINAL DESIGN ADVICE AND COMMENTS **********************
REMINDER:  The user must take note that HYDRODYNAMIC MODELING by any known
  technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the
  CORMIX predictions on dilutions and concentrations (with associated
  plume geometries) are reliable for the majority of cases and are accurate
  to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges
  the design configuration as highly complex and uncertain for prediction.
```

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CORMIX3 PREDICTION FILE:
3333333333333333333333333333333333333333333333333333333333333333333333333333333333
                      CORMIX MIXING ZONE EXPERT SYSTEM
                Subsystem CORMIX3: Buoyant Surface Discharges
                             CORMIX Version 10.0G
                     HYDRO3 Version 10.0.0.0 July 2016
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
CASE DESCRIPTION
 Site name/label:   Richland
 Design case:       Summer Acute (4MGD) 7Q10
 FILE NAME:         C:\...iles (x86)\CORMIX 10.0\Simulations\Acute_4MGD.prd
 Time stamp:        03/15/2017--11:19:44

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     72.10  AS    =     54.07  QA    =     20.01  ICHREG= 2
 HA    =      0.75  HD    =      0.75
 UA    =      0.370 F     =      0.138 USTAR =0.4862E-01
 UW    =      1.000 UWSTAR=0.1071E-02
 Uniform density environment
 STRCND=  U         RHOAM =  996.2622

DISCHARGE PARAMETERS (metric units)
 BANK  =  LEFT      DISTB =      0.00  Configuration: flush_discharge
 SIGMA =     85.00  HDO   =      0.50  SLOPE =    4.46 deg.
 Rectangular channel geometry:
 B0    =      7.450 H0    =      0.500 A0    =0.3725E+01  AR    =      0.067
 U0    =      0.047 Q0    =      0.175       =0.1751E+00
 RHO0  =  995.5560  DRHO0 =0.7062E+00  GP0   =0.6952E-02
 C0    =0.2400E+01  CUNITS=  deg.C
 IPOLL =  3         KS    =0.4251E-05  KD    =0.0000E+00

FLUX VARIABLES (metric units)
 Q0    =0.1751E+00  M0    =0.8229E-02  J0    =0.1217E-02
 Associated length scales (meters)
 LQ    =      1.93  LM    =      0.78  Lm    =      0.25  Lb    =      0.02

NON-DIMENSIONAL PARAMETERS
 FR0   =      0.41  FRCH  =      0.80  R     =      0.13

FLOW CLASSIFICATION
 3333333333333333333333333333333333333333333
 3  Flow class (CORMIX3)      =    PL2    3
 3  Applicable layer depth HS =     0.75  3
 3  Limiting Dilution S =QA/Q0=   115.28  3
 3333333333333333333333333333333333333333333

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.2400E+01  CUNITS=  deg.C
 NTOX  =  0
 NSTD  =  1         CSTD  =0.3000E+00
 REGMZ =  1
 REGSPC=  1         XREG  =      9.15  WREG  =      0.00  AREG  =      0.00
 XINT  =   1000.00  XMAX  =   1000.00

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the WATER SURFACE and at center of discharge
      channel/outlet:      0.00 m  from the LEFT  bank/shore.
    X-axis points downstream
    Y-axis points to left as seen by an observer looking downstream
    Z-axis points vertically upward (in CORMIX3, all values Z = 0.00)
NSTEP = 500 display intervals per module
-------------------------------------------------------------------------------

NOTE on dilution/concentration values for this HEATED DISCHARGE (IPOLL=3):
   S  = hydrodynamic dilutions, include buoyancy (heat) loss effects
   C  = corresponding temperature values (in "deg.C"!) include heat loss
-------------------------------------------------------------------------------
BEGIN MOD301: DISCHARGE MODULE

 Efflux conditions:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.240E+01   0.50     3.72 .00000E+00

END OF MOD301: DISCHARGE MODULE
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
BEGIN MOD302: ZONE OF FLOW ESTABLISHMENT

  Control volume inflow:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.240E+01   0.50     3.72 .00000E+00

 RAPID DEFLECTION by ambient current:
 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
```

```
   TT = Cumulative travel time

  Control volume outflow:                                  SIGMAE=    343.43
       X        Y       Z        S       C       BV       BH        TT
      3.72    -0.26    0.00     1.0 0.240E+01   0.44     1.08 .10068E+02
 Cumulative travel time =          10.0676 sec  (    0.00 hrs)

END OF MOD302: ZONE OF FLOW ESTABLISHMENT
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
** End of NEAR-FIELD REGION (NFR) **
-------------------------------------------------------------------------------

 WAKE FLOW CONDITIONS: The discharge velocity (U0) is less than or equal to the
 ambient velocity (Ua) and results in wake flow conditions. There is no discharge
 momentum induced mixing. The mixing characteristics are UNDESIRABLE.
-------------------------------------------------------------------------------
BEGIN MOD341: BUOYANT AMBIENT SPREADING

 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

 Plume Stage 2 (bank attached):
       X        Y       Z        S       C       BV       BH        TT
      3.72     0.00    0.00     1.0 0.240E+01   0.44     1.07 .10068E+02
      3.73     0.00    0.00     1.0 0.240E+01   0.44     1.07 .10086E+02
      3.74     0.00    0.00     1.0 0.240E+01   0.44     1.07 .10105E+02
      3.75     0.00    0.00     1.0 0.240E+01   0.44     1.07 .10124E+02
      3.75     0.00    0.00     1.0 0.239E+01   0.44     1.07 .10142E+02
      3.76     0.00    0.00     1.0 0.239E+01   0.44     1.08 .10161E+02
      3.77     0.00    0.00     1.0 0.239E+01   0.44     1.08 .10180E+02
      3.77     0.00    0.00     1.0 0.239E+01   0.44     1.08 .10198E+02
      3.78     0.00    0.00     1.0 0.239E+01   0.44     1.08 .10217E+02
      3.79     0.00    0.00     1.0 0.239E+01   0.44     1.08 .10236E+02
      3.79     0.00    0.00     1.0 0.239E+01   0.44     1.08 .10254E+02
      3.80     0.00    0.00     1.0 0.239E+01   0.44     1.08 .10273E+02
      3.81     0.00    0.00     1.0 0.238E+01   0.44     1.08 .10292E+02
      3.82     0.00    0.00     1.0 0.238E+01   0.44     1.08 .10311E+02
      3.82     0.00    0.00     1.0 0.238E+01   0.44     1.08 .10329E+02
      3.83     0.00    0.00     1.0 0.238E+01   0.44     1.08 .10348E+02
      3.84     0.00    0.00     1.0 0.238E+01   0.44     1.08 .10367E+02
      3.84     0.00    0.00     1.0 0.238E+01   0.44     1.08 .10385E+02
      3.85     0.00    0.00     1.0 0.238E+01   0.44     1.08 .10404E+02
      3.86     0.00    0.00     1.0 0.238E+01   0.44     1.09 .10423E+02
      3.86     0.00    0.00     1.0 0.237E+01   0.44     1.09 .10441E+02
      3.87     0.00    0.00     1.0 0.237E+01   0.44     1.09 .10460E+02
      3.88     0.00    0.00     1.0 0.237E+01   0.44     1.09 .10479E+02
      3.89     0.00    0.00     1.0 0.237E+01   0.44     1.09 .10497E+02
      3.89     0.00    0.00     1.0 0.237E+01   0.44     1.09 .10516E+02
      3.90     0.00    0.00     1.0 0.237E+01   0.44     1.09 .10535E+02
      3.91     0.00    0.00     1.0 0.237E+01   0.44     1.09 .10554E+02
      3.91     0.00    0.00     1.0 0.237E+01   0.44     1.09 .10572E+02
      3.92     0.00    0.00     1.0 0.236E+01   0.44     1.09 .10591E+02
      3.93     0.00    0.00     1.0 0.236E+01   0.44     1.09 .10610E+02
      3.93     0.00    0.00     1.0 0.236E+01   0.44     1.09 .10628E+02
      3.94     0.00    0.00     1.0 0.236E+01   0.44     1.09 .10647E+02
      3.95     0.00    0.00     1.0 0.236E+01   0.44     1.09 .10666E+02
      3.96     0.00    0.00     1.0 0.236E+01   0.44     1.10 .10684E+02
      3.96     0.00    0.00     1.0 0.236E+01   0.44     1.10 .10703E+02
      3.97     0.00    0.00     1.0 0.235E+01   0.44     1.10 .10722E+02
      3.98     0.00    0.00     1.0 0.235E+01   0.44     1.10 .10740E+02
      3.98     0.00    0.00     1.0 0.235E+01   0.44     1.10 .10759E+02
      3.99     0.00    0.00     1.0 0.235E+01   0.44     1.10 .10778E+02
      4.00     0.00    0.00     1.0 0.235E+01   0.44     1.10 .10796E+02
      4.00     0.00    0.00     1.0 0.235E+01   0.44     1.10 .10815E+02
      4.01     0.00    0.00     1.0 0.235E+01   0.44     1.10 .10834E+02
      4.02     0.00    0.00     1.0 0.235E+01   0.44     1.10 .10853E+02
      4.02     0.00    0.00     1.0 0.234E+01   0.44     1.10 .10871E+02
      4.03     0.00    0.00     1.0 0.234E+01   0.44     1.10 .10890E+02
      4.04     0.00    0.00     1.0 0.234E+01   0.44     1.10 .10909E+02
      4.05     0.00    0.00     1.0 0.234E+01   0.44     1.10 .10927E+02
      4.05     0.00    0.00     1.0 0.234E+01   0.44     1.11 .10946E+02
      4.06     0.00    0.00     1.0 0.234E+01   0.44     1.11 .10965E+02
      4.07     0.00    0.00     1.0 0.234E+01   0.44     1.11 .10983E+02
      4.07     0.00    0.00     1.0 0.234E+01   0.44     1.11 .11002E+02
      4.08     0.00    0.00     1.0 0.233E+01   0.44     1.11 .11021E+02
      4.09     0.00    0.00     1.0 0.233E+01   0.44     1.11 .11039E+02
      4.09     0.00    0.00     1.0 0.233E+01   0.44     1.11 .11058E+02
      4.10     0.00    0.00     1.0 0.233E+01   0.43     1.11 .11077E+02
      4.11     0.00    0.00     1.0 0.233E+01   0.43     1.11 .11096E+02
      4.12     0.00    0.00     1.0 0.233E+01   0.43     1.11 .11114E+02
      4.12     0.00    0.00     1.0 0.233E+01   0.43     1.11 .11133E+02
      4.13     0.00    0.00     1.0 0.233E+01   0.43     1.11 .11152E+02
      4.14     0.00    0.00     1.0 0.232E+01   0.43     1.11 .11170E+02
      4.14     0.00    0.00     1.0 0.232E+01   0.43     1.11 .11189E+02
      4.15     0.00    0.00     1.0 0.232E+01   0.43     1.12 .11208E+02
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4.16	0.00	0.00	1.0	0.232E+01	0.43	1.12	.11226E+02
4.16	0.00	0.00	1.0	0.232E+01	0.43	1.12	.11245E+02
4.17	0.00	0.00	1.0	0.232E+01	0.43	1.12	.11264E+02
4.18	0.00	0.00	1.0	0.232E+01	0.43	1.12	.11282E+02
4.19	0.00	0.00	1.0	0.232E+01	0.43	1.12	.11301E+02
4.19	0.00	0.00	1.0	0.231E+01	0.43	1.12	.11320E+02
4.20	0.00	0.00	1.0	0.231E+01	0.43	1.12	.11338E+02
4.21	0.00	0.00	1.0	0.231E+01	0.43	1.12	.11357E+02
4.21	0.00	0.00	1.0	0.231E+01	0.43	1.12	.11376E+02
4.22	0.00	0.00	1.0	0.231E+01	0.43	1.12	.11395E+02
4.23	0.00	0.00	1.0	0.231E+01	0.43	1.12	.11413E+02
4.23	0.00	0.00	1.0	0.231E+01	0.43	1.12	.11432E+02
4.24	0.00	0.00	1.0	0.230E+01	0.43	1.12	.11451E+02
4.25	0.00	0.00	1.0	0.230E+01	0.43	1.13	.11469E+02
4.26	0.00	0.00	1.0	0.230E+01	0.43	1.13	.11488E+02
4.26	0.00	0.00	1.0	0.230E+01	0.43	1.13	.11507E+02
4.27	0.00	0.00	1.0	0.230E+01	0.43	1.13	.11525E+02
4.28	0.00	0.00	1.0	0.230E+01	0.43	1.13	.11544E+02
4.28	0.00	0.00	1.0	0.230E+01	0.43	1.13	.11563E+02
4.29	0.00	0.00	1.0	0.230E+01	0.43	1.13	.11581E+02
4.30	0.00	0.00	1.0	0.229E+01	0.43	1.13	.11600E+02
4.30	0.00	0.00	1.0	0.229E+01	0.43	1.13	.11619E+02
4.31	0.00	0.00	1.0	0.229E+01	0.43	1.13	.11638E+02
4.32	0.00	0.00	1.0	0.229E+01	0.43	1.13	.11656E+02
4.32	0.00	0.00	1.0	0.229E+01	0.43	1.13	.11675E+02
4.33	0.00	0.00	1.0	0.229E+01	0.43	1.13	.11694E+02
4.34	0.00	0.00	1.0	0.229E+01	0.43	1.13	.11712E+02
4.35	0.00	0.00	1.0	0.229E+01	0.43	1.14	.11731E+02
4.35	0.00	0.00	1.1	0.228E+01	0.43	1.14	.11750E+02
4.36	0.00	0.00	1.1	0.228E+01	0.43	1.14	.11768E+02
4.37	0.00	0.00	1.1	0.228E+01	0.43	1.14	.11787E+02
4.37	0.00	0.00	1.1	0.228E+01	0.43	1.14	.11806E+02
4.38	0.00	0.00	1.1	0.228E+01	0.43	1.14	.11824E+02
4.39	0.00	0.00	1.1	0.228E+01	0.43	1.14	.11843E+02
4.39	0.00	0.00	1.1	0.228E+01	0.43	1.14	.11862E+02
4.40	0.00	0.00	1.1	0.228E+01	0.43	1.14	.11880E+02
4.41	0.00	0.00	1.1	0.227E+01	0.43	1.14	.11899E+02
4.42	0.00	0.00	1.1	0.227E+01	0.43	1.14	.11918E+02
4.42	0.00	0.00	1.1	0.227E+01	0.43	1.14	.11937E+02
4.43	0.00	0.00	1.1	0.227E+01	0.43	1.14	.11955E+02
4.44	0.00	0.00	1.1	0.227E+01	0.43	1.14	.11974E+02
4.44	0.00	0.00	1.1	0.227E+01	0.43	1.15	.11993E+02
4.45	0.00	0.00	1.1	0.227E+01	0.43	1.15	.12011E+02
4.46	0.00	0.00	1.1	0.227E+01	0.43	1.15	.12030E+02
4.46	0.00	0.00	1.1	0.226E+01	0.43	1.15	.12049E+02
4.47	0.00	0.00	1.1	0.226E+01	0.43	1.15	.12067E+02
4.48	0.00	0.00	1.1	0.226E+01	0.43	1.15	.12086E+02
4.49	0.00	0.00	1.1	0.226E+01	0.43	1.15	.12105E+02
4.49	0.00	0.00	1.1	0.226E+01	0.43	1.15	.12123E+02
4.50	0.00	0.00	1.1	0.226E+01	0.43	1.15	.12142E+02
4.51	0.00	0.00	1.1	0.226E+01	0.43	1.15	.12161E+02
4.51	0.00	0.00	1.1	0.226E+01	0.43	1.15	.12180E+02
4.52	0.00	0.00	1.1	0.225E+01	0.43	1.15	.12198E+02
4.53	0.00	0.00	1.1	0.225E+01	0.43	1.15	.12217E+02
4.53	0.00	0.00	1.1	0.225E+01	0.43	1.15	.12236E+02
4.54	0.00	0.00	1.1	0.225E+01	0.43	1.16	.12254E+02
4.55	0.00	0.00	1.1	0.225E+01	0.43	1.16	.12273E+02
4.56	0.00	0.00	1.1	0.225E+01	0.43	1.16	.12292E+02
4.56	0.00	0.00	1.1	0.225E+01	0.43	1.16	.12310E+02
4.57	0.00	0.00	1.1	0.225E+01	0.43	1.16	.12329E+02
4.58	0.00	0.00	1.1	0.224E+01	0.43	1.16	.12348E+02
4.58	0.00	0.00	1.1	0.224E+01	0.43	1.16	.12366E+02
4.59	0.00	0.00	1.1	0.224E+01	0.43	1.16	.12385E+02
4.60	0.00	0.00	1.1	0.224E+01	0.43	1.16	.12404E+02
4.60	0.00	0.00	1.1	0.224E+01	0.43	1.16	.12422E+02
4.61	0.00	0.00	1.1	0.224E+01	0.43	1.16	.12441E+02
4.62	0.00	0.00	1.1	0.224E+01	0.43	1.16	.12460E+02
4.62	0.00	0.00	1.1	0.224E+01	0.43	1.16	.12479E+02
4.63	0.00	0.00	1.1	0.223E+01	0.43	1.16	.12497E+02
4.64	0.00	0.00	1.1	0.223E+01	0.43	1.16	.12516E+02
4.65	0.00	0.00	1.1	0.223E+01	0.43	1.17	.12535E+02
4.65	0.00	0.00	1.1	0.223E+01	0.43	1.17	.12553E+02
4.66	0.00	0.00	1.1	0.223E+01	0.43	1.17	.12572E+02
4.67	0.00	0.00	1.1	0.223E+01	0.43	1.17	.12591E+02
4.67	0.00	0.00	1.1	0.223E+01	0.43	1.17	.12609E+02
4.68	0.00	0.00	1.1	0.223E+01	0.43	1.17	.12628E+02
4.69	0.00	0.00	1.1	0.222E+01	0.43	1.17	.12647E+02
4.69	0.00	0.00	1.1	0.222E+01	0.43	1.17	.12665E+02
4.70	0.00	0.00	1.1	0.222E+01	0.43	1.17	.12684E+02
4.71	0.00	0.00	1.1	0.222E+01	0.43	1.17	.12703E+02
4.72	0.00	0.00	1.1	0.222E+01	0.43	1.17	.12722E+02
4.72	0.00	0.00	1.1	0.222E+01	0.43	1.17	.12740E+02
4.73	0.00	0.00	1.1	0.222E+01	0.43	1.17	.12759E+02
4.74	0.00	0.00	1.1	0.222E+01	0.43	1.17	.12778E+02
4.74	0.00	0.00	1.1	0.221E+01	0.43	1.18	.12796E+02
4.75	0.00	0.00	1.1	0.221E+01	0.43	1.18	.12815E+02
4.76	0.00	0.00	1.1	0.221E+01	0.43	1.18	.12834E+02
4.76	0.00	0.00	1.1	0.221E+01	0.43	1.18	.12852E+02
4.77	0.00	0.00	1.1	0.221E+01	0.43	1.18	.12871E+02
4.78	0.00	0.00	1.1	0.221E+01	0.43	1.18	.12890E+02

4.79	0.00	0.00	1.1	0.221E+01	0.43	1.18	.12908E+02
4.79	0.00	0.00	1.1	0.221E+01	0.43	1.18	.12927E+02
4.80	0.00	0.00	1.1	0.220E+01	0.43	1.18	.12946E+02
4.81	0.00	0.00	1.1	0.220E+01	0.43	1.18	.12964E+02
4.81	0.00	0.00	1.1	0.220E+01	0.43	1.18	.12983E+02
4.82	0.00	0.00	1.1	0.220E+01	0.43	1.18	.13002E+02
4.83	0.00	0.00	1.1	0.220E+01	0.43	1.18	.13021E+02
4.83	0.00	0.00	1.1	0.220E+01	0.43	1.18	.13039E+02
4.84	0.00	0.00	1.1	0.220E+01	0.43	1.19	.13058E+02
4.85	0.00	0.00	1.1	0.220E+01	0.43	1.19	.13077E+02
4.86	0.00	0.00	1.1	0.219E+01	0.43	1.19	.13095E+02
4.86	0.00	0.00	1.1	0.219E+01	0.43	1.19	.13114E+02
4.87	0.00	0.00	1.1	0.219E+01	0.43	1.19	.13133E+02
4.88	0.00	0.00	1.1	0.219E+01	0.43	1.19	.13151E+02
4.88	0.00	0.00	1.1	0.219E+01	0.43	1.19	.13170E+02
4.89	0.00	0.00	1.1	0.219E+01	0.43	1.19	.13189E+02
4.90	0.00	0.00	1.1	0.219E+01	0.43	1.19	.13207E+02
4.90	0.00	0.00	1.1	0.219E+01	0.43	1.19	.13226E+02
4.91	0.00	0.00	1.1	0.218E+01	0.43	1.19	.13245E+02
4.92	0.00	0.00	1.1	0.218E+01	0.43	1.19	.13264E+02
4.92	0.00	0.00	1.1	0.218E+01	0.43	1.19	.13282E+02
4.93	0.00	0.00	1.1	0.218E+01	0.43	1.19	.13301E+02
4.94	0.00	0.00	1.1	0.218E+01	0.43	1.19	.13320E+02
4.95	0.00	0.00	1.1	0.218E+01	0.43	1.20	.13338E+02
4.95	0.00	0.00	1.1	0.218E+01	0.43	1.20	.13357E+02
4.96	0.00	0.00	1.1	0.218E+01	0.43	1.20	.13376E+02
4.97	0.00	0.00	1.1	0.218E+01	0.43	1.20	.13394E+02
4.97	0.00	0.00	1.1	0.217E+01	0.43	1.20	.13413E+02
4.98	0.00	0.00	1.1	0.217E+01	0.43	1.20	.13432E+02
4.99	0.00	0.00	1.1	0.217E+01	0.43	1.20	.13450E+02
4.99	0.00	0.00	1.1	0.217E+01	0.43	1.20	.13469E+02
5.00	0.00	0.00	1.1	0.217E+01	0.43	1.20	.13488E+02
5.01	0.00	0.00	1.1	0.217E+01	0.43	1.20	.13506E+02
5.02	0.00	0.00	1.1	0.217E+01	0.43	1.20	.13525E+02
5.02	0.00	0.00	1.1	0.217E+01	0.43	1.20	.13544E+02
5.03	0.00	0.00	1.1	0.216E+01	0.43	1.20	.13563E+02
5.04	0.00	0.00	1.1	0.216E+01	0.43	1.20	.13581E+02
5.04	0.00	0.00	1.1	0.216E+01	0.43	1.21	.13600E+02
5.05	0.00	0.00	1.1	0.216E+01	0.43	1.21	.13619E+02
5.06	0.00	0.00	1.1	0.216E+01	0.43	1.21	.13637E+02
5.06	0.00	0.00	1.1	0.216E+01	0.43	1.21	.13656E+02
5.07	0.00	0.00	1.1	0.216E+01	0.43	1.21	.13675E+02
5.08	0.00	0.00	1.1	0.216E+01	0.43	1.21	.13693E+02
5.09	0.00	0.00	1.1	0.215E+01	0.43	1.21	.13712E+02
5.09	0.00	0.00	1.1	0.215E+01	0.43	1.21	.13731E+02
5.10	0.00	0.00	1.1	0.215E+01	0.43	1.21	.13749E+02
5.11	0.00	0.00	1.1	0.215E+01	0.43	1.21	.13768E+02
5.11	0.00	0.00	1.1	0.215E+01	0.43	1.21	.13787E+02
5.12	0.00	0.00	1.1	0.215E+01	0.43	1.21	.13806E+02
5.13	0.00	0.00	1.1	0.215E+01	0.43	1.21	.13824E+02
5.13	0.00	0.00	1.1	0.215E+01	0.43	1.21	.13843E+02
5.14	0.00	0.00	1.1	0.214E+01	0.43	1.21	.13862E+02
5.15	0.00	0.00	1.1	0.214E+01	0.43	1.22	.13880E+02
5.16	0.00	0.00	1.1	0.214E+01	0.43	1.22	.13899E+02
5.16	0.00	0.00	1.1	0.214E+01	0.43	1.22	.13918E+02
5.17	0.00	0.00	1.1	0.214E+01	0.43	1.22	.13936E+02
5.18	0.00	0.00	1.1	0.214E+01	0.43	1.22	.13955E+02
5.18	0.00	0.00	1.1	0.214E+01	0.43	1.22	.13974E+02
5.19	0.00	0.00	1.1	0.214E+01	0.43	1.22	.13992E+02
5.20	0.00	0.00	1.1	0.213E+01	0.43	1.22	.14011E+02
5.20	0.00	0.00	1.1	0.213E+01	0.43	1.22	.14030E+02
5.21	0.00	0.00	1.1	0.213E+01	0.43	1.22	.14048E+02
5.22	0.00	0.00	1.1	0.213E+01	0.43	1.22	.14067E+02
5.22	0.00	0.00	1.1	0.213E+01	0.43	1.22	.14086E+02
5.23	0.00	0.00	1.1	0.213E+01	0.43	1.22	.14105E+02
5.24	0.00	0.00	1.1	0.213E+01	0.43	1.22	.14123E+02
5.25	0.00	0.00	1.1	0.213E+01	0.43	1.23	.14142E+02
5.25	0.00	0.00	1.1	0.213E+01	0.43	1.23	.14161E+02
5.26	0.00	0.00	1.1	0.212E+01	0.43	1.23	.14179E+02
5.27	0.00	0.00	1.1	0.212E+01	0.43	1.23	.14198E+02
5.27	0.00	0.00	1.1	0.212E+01	0.43	1.23	.14217E+02
5.28	0.00	0.00	1.1	0.212E+01	0.43	1.23	.14235E+02
5.29	0.00	0.00	1.1	0.212E+01	0.43	1.23	.14254E+02
5.29	0.00	0.00	1.1	0.212E+01	0.43	1.23	.14273E+02
5.30	0.00	0.00	1.1	0.212E+01	0.43	1.23	.14291E+02
5.31	0.00	0.00	1.1	0.212E+01	0.43	1.23	.14310E+02
5.32	0.00	0.00	1.1	0.211E+01	0.43	1.23	.14329E+02
5.32	0.00	0.00	1.1	0.211E+01	0.43	1.23	.14348E+02
5.33	0.00	0.00	1.1	0.211E+01	0.43	1.23	.14366E+02
5.34	0.00	0.00	1.1	0.211E+01	0.43	1.23	.14385E+02
5.34	0.00	0.00	1.1	0.211E+01	0.43	1.23	.14404E+02
5.35	0.00	0.00	1.1	0.211E+01	0.43	1.24	.14422E+02
5.36	0.00	0.00	1.1	0.211E+01	0.43	1.24	.14441E+02
5.36	0.00	0.00	1.1	0.211E+01	0.43	1.24	.14460E+02
5.37	0.00	0.00	1.1	0.210E+01	0.43	1.24	.14478E+02
5.38	0.00	0.00	1.1	0.210E+01	0.43	1.24	.14497E+02
5.39	0.00	0.00	1.1	0.210E+01	0.43	1.24	.14516E+02
5.39	0.00	0.00	1.1	0.210E+01	0.43	1.24	.14534E+02
5.40	0.00	0.00	1.1	0.210E+01	0.43	1.24	.14553E+02
5.41	0.00	0.00	1.1	0.210E+01	0.43	1.24	.14572E+02

5.41	0.00	0.00	1.1	0.210E+01	0.43	1.24	.14590E+02
5.42	0.00	0.00	1.1	0.210E+01	0.43	1.24	.14609E+02
5.43	0.00	0.00	1.1	0.209E+01	0.43	1.24	.14628E+02
5.43	0.00	0.00	1.1	0.209E+01	0.43	1.24	.14647E+02
5.44	0.00	0.00	1.1	0.209E+01	0.43	1.24	.14665E+02
5.45	0.00	0.00	1.1	0.209E+01	0.43	1.24	.14684E+02
5.45	0.00	0.00	1.1	0.209E+01	0.43	1.25	.14703E+02
5.46	0.00	0.00	1.1	0.209E+01	0.43	1.25	.14721E+02
5.47	0.00	0.00	1.1	0.209E+01	0.43	1.25	.14740E+02
5.48	0.00	0.00	1.2	0.209E+01	0.43	1.25	.14759E+02
5.48	0.00	0.00	1.2	0.209E+01	0.43	1.25	.14777E+02
5.49	0.00	0.00	1.2	0.208E+01	0.43	1.25	.14796E+02
5.50	0.00	0.00	1.2	0.208E+01	0.43	1.25	.14815E+02
5.50	0.00	0.00	1.2	0.208E+01	0.43	1.25	.14833E+02
5.51	0.00	0.00	1.2	0.208E+01	0.43	1.25	.14852E+02
5.52	0.00	0.00	1.2	0.208E+01	0.43	1.25	.14871E+02
5.52	0.00	0.00	1.2	0.208E+01	0.43	1.25	.14890E+02
5.53	0.00	0.00	1.2	0.208E+01	0.43	1.25	.14908E+02
5.54	0.00	0.00	1.2	0.208E+01	0.43	1.25	.14927E+02
5.55	0.00	0.00	1.2	0.207E+01	0.43	1.25	.14946E+02
5.55	0.00	0.00	1.2	0.207E+01	0.43	1.25	.14964E+02
5.56	0.00	0.00	1.2	0.207E+01	0.43	1.26	.14983E+02
5.57	0.00	0.00	1.2	0.207E+01	0.43	1.26	.15002E+02
5.57	0.00	0.00	1.2	0.207E+01	0.43	1.26	.15020E+02
5.58	0.00	0.00	1.2	0.207E+01	0.43	1.26	.15039E+02
5.59	0.00	0.00	1.2	0.207E+01	0.43	1.26	.15058E+02
5.59	0.00	0.00	1.2	0.207E+01	0.43	1.26	.15076E+02
5.60	0.00	0.00	1.2	0.207E+01	0.43	1.26	.15095E+02
5.61	0.00	0.00	1.2	0.206E+01	0.43	1.26	.15114E+02
5.62	0.00	0.00	1.2	0.206E+01	0.43	1.26	.15132E+02
5.62	0.00	0.00	1.2	0.206E+01	0.43	1.26	.15151E+02
5.63	0.00	0.00	1.2	0.206E+01	0.43	1.26	.15170E+02
5.64	0.00	0.00	1.2	0.206E+01	0.43	1.26	.15189E+02
5.64	0.00	0.00	1.2	0.206E+01	0.43	1.26	.15207E+02
5.65	0.00	0.00	1.2	0.206E+01	0.43	1.26	.15226E+02
5.66	0.00	0.00	1.2	0.206E+01	0.43	1.26	.15245E+02
5.66	0.00	0.00	1.2	0.205E+01	0.43	1.27	.15263E+02
5.67	0.00	0.00	1.2	0.205E+01	0.43	1.27	.15282E+02
5.68	0.00	0.00	1.2	0.205E+01	0.43	1.27	.15301E+02
5.69	0.00	0.00	1.2	0.205E+01	0.43	1.27	.15319E+02
5.69	0.00	0.00	1.2	0.205E+01	0.43	1.27	.15338E+02
5.70	0.00	0.00	1.2	0.205E+01	0.43	1.27	.15357E+02
5.71	0.00	0.00	1.2	0.205E+01	0.43	1.27	.15375E+02
5.71	0.00	0.00	1.2	0.205E+01	0.43	1.27	.15394E+02
5.72	0.00	0.00	1.2	0.205E+01	0.43	1.27	.15413E+02
5.73	0.00	0.00	1.2	0.204E+01	0.43	1.27	.15431E+02
5.73	0.00	0.00	1.2	0.204E+01	0.43	1.27	.15450E+02
5.74	0.00	0.00	1.2	0.204E+01	0.43	1.27	.15469E+02
5.75	0.00	0.00	1.2	0.204E+01	0.43	1.27	.15488E+02
5.75	0.00	0.00	1.2	0.204E+01	0.43	1.27	.15506E+02
5.76	0.00	0.00	1.2	0.204E+01	0.43	1.27	.15525E+02
5.77	0.00	0.00	1.2	0.204E+01	0.43	1.28	.15544E+02
5.78	0.00	0.00	1.2	0.204E+01	0.43	1.28	.15562E+02
5.78	0.00	0.00	1.2	0.203E+01	0.43	1.28	.15581E+02
5.79	0.00	0.00	1.2	0.203E+01	0.43	1.28	.15600E+02
5.80	0.00	0.00	1.2	0.203E+01	0.43	1.28	.15618E+02
5.80	0.00	0.00	1.2	0.203E+01	0.43	1.28	.15637E+02
5.81	0.00	0.00	1.2	0.203E+01	0.43	1.28	.15656E+02
5.82	0.00	0.00	1.2	0.203E+01	0.43	1.28	.15674E+02
5.82	0.00	0.00	1.2	0.203E+01	0.43	1.28	.15693E+02
5.83	0.00	0.00	1.2	0.203E+01	0.43	1.28	.15712E+02
5.84	0.00	0.00	1.2	0.203E+01	0.43	1.28	.15731E+02
5.85	0.00	0.00	1.2	0.202E+01	0.43	1.28	.15749E+02
5.85	0.00	0.00	1.2	0.202E+01	0.43	1.28	.15768E+02
5.86	0.00	0.00	1.2	0.202E+01	0.43	1.28	.15787E+02
5.87	0.00	0.00	1.2	0.202E+01	0.43	1.28	.15805E+02
5.87	0.00	0.00	1.2	0.202E+01	0.43	1.29	.15824E+02
5.88	0.00	0.00	1.2	0.202E+01	0.43	1.29	.15843E+02
5.89	0.00	0.00	1.2	0.202E+01	0.43	1.29	.15861E+02
5.89	0.00	0.00	1.2	0.202E+01	0.43	1.29	.15880E+02
5.90	0.00	0.00	1.2	0.201E+01	0.43	1.29	.15899E+02
5.91	0.00	0.00	1.2	0.201E+01	0.43	1.29	.15917E+02
5.92	0.00	0.00	1.2	0.201E+01	0.43	1.29	.15936E+02
5.92	0.00	0.00	1.2	0.201E+01	0.43	1.29	.15955E+02
5.93	0.00	0.00	1.2	0.201E+01	0.43	1.29	.15973E+02
5.94	0.00	0.00	1.2	0.201E+01	0.43	1.29	.15992E+02
5.94	0.00	0.00	1.2	0.201E+01	0.43	1.29	.16011E+02
5.95	0.00	0.00	1.2	0.201E+01	0.43	1.29	.16030E+02
5.96	0.00	0.00	1.2	0.201E+01	0.43	1.29	.16048E+02
5.96	0.00	0.00	1.2	0.200E+01	0.43	1.29	.16067E+02
5.97	0.00	0.00	1.2	0.200E+01	0.43	1.29	.16086E+02
5.98	0.00	0.00	1.2	0.200E+01	0.43	1.30	.16104E+02
5.99	0.00	0.00	1.2	0.200E+01	0.43	1.30	.16123E+02
5.99	0.00	0.00	1.2	0.200E+01	0.43	1.30	.16142E+02
6.00	0.00	0.00	1.2	0.200E+01	0.43	1.30	.16160E+02
6.01	0.00	0.00	1.2	0.200E+01	0.43	1.30	.16179E+02
6.01	0.00	0.00	1.2	0.200E+01	0.43	1.30	.16198E+02
6.02	0.00	0.00	1.2	0.199E+01	0.43	1.30	.16216E+02
6.03	0.00	0.00	1.2	0.199E+01	0.43	1.30	.16235E+02
6.03	0.00	0.00	1.2	0.199E+01	0.43	1.30	.16254E+02

6.04	0.00	0.00	1.2	0.199E+01	0.43	1.30	.16273E+02
6.05	0.00	0.00	1.2	0.199E+01	0.43	1.30	.16291E+02
6.05	0.00	0.00	1.2	0.199E+01	0.43	1.30	.16310E+02
6.06	0.00	0.00	1.2	0.199E+01	0.43	1.30	.16329E+02
6.07	0.00	0.00	1.2	0.199E+01	0.43	1.30	.16347E+02
6.08	0.00	0.00	1.2	0.199E+01	0.43	1.30	.16366E+02
6.08	0.00	0.00	1.2	0.198E+01	0.43	1.31	.16385E+02
6.09	0.00	0.00	1.2	0.198E+01	0.43	1.31	.16403E+02
6.10	0.00	0.00	1.2	0.198E+01	0.43	1.31	.16422E+02
6.10	0.00	0.00	1.2	0.198E+01	0.43	1.31	.16441E+02
6.11	0.00	0.00	1.2	0.198E+01	0.43	1.31	.16459E+02
6.12	0.00	0.00	1.2	0.198E+01	0.43	1.31	.16478E+02
6.12	0.00	0.00	1.2	0.198E+01	0.43	1.31	.16497E+02
6.13	0.00	0.00	1.2	0.198E+01	0.43	1.31	.16515E+02
6.14	0.00	0.00	1.2	0.198E+01	0.43	1.31	.16534E+02
6.15	0.00	0.00	1.2	0.197E+01	0.43	1.31	.16553E+02
6.15	0.00	0.00	1.2	0.197E+01	0.43	1.31	.16572E+02
6.16	0.00	0.00	1.2	0.197E+01	0.43	1.31	.16590E+02
6.17	0.00	0.00	1.2	0.197E+01	0.43	1.31	.16609E+02
6.17	0.00	0.00	1.2	0.197E+01	0.44	1.31	.16628E+02
6.18	0.00	0.00	1.2	0.197E+01	0.44	1.31	.16646E+02
6.19	0.00	0.00	1.2	0.197E+01	0.44	1.32	.16665E+02
6.19	0.00	0.00	1.2	0.197E+01	0.44	1.32	.16684E+02
6.20	0.00	0.00	1.2	0.196E+01	0.44	1.32	.16702E+02
6.21	0.00	0.00	1.2	0.196E+01	0.44	1.32	.16721E+02
6.22	0.00	0.00	1.2	0.196E+01	0.44	1.32	.16740E+02
6.22	0.00	0.00	1.2	0.196E+01	0.44	1.32	.16758E+02
6.23	0.00	0.00	1.2	0.196E+01	0.44	1.32	.16777E+02
6.24	0.00	0.00	1.2	0.196E+01	0.44	1.32	.16796E+02
6.24	0.00	0.00	1.2	0.196E+01	0.44	1.32	.16815E+02
6.25	0.00	0.00	1.2	0.196E+01	0.44	1.32	.16833E+02
6.26	0.00	0.00	1.2	0.196E+01	0.44	1.32	.16852E+02
6.26	0.00	0.00	1.2	0.195E+01	0.44	1.32	.16871E+02
6.27	0.00	0.00	1.2	0.195E+01	0.44	1.32	.16889E+02
6.28	0.00	0.00	1.2	0.195E+01	0.44	1.32	.16908E+02
6.29	0.00	0.00	1.2	0.195E+01	0.44	1.32	.16927E+02
6.29	0.00	0.00	1.2	0.195E+01	0.44	1.33	.16945E+02
6.30	0.00	0.00	1.2	0.195E+01	0.44	1.33	.16964E+02
6.31	0.00	0.00	1.2	0.195E+01	0.44	1.33	.16983E+02
6.31	0.00	0.00	1.2	0.195E+01	0.44	1.33	.17001E+02
6.32	0.00	0.00	1.2	0.195E+01	0.44	1.33	.17020E+02
6.33	0.00	0.00	1.2	0.194E+01	0.44	1.33	.17039E+02
6.33	0.00	0.00	1.2	0.194E+01	0.44	1.33	.17057E+02
6.34	0.00	0.00	1.2	0.194E+01	0.44	1.33	.17076E+02
6.35	0.00	0.00	1.2	0.194E+01	0.44	1.33	.17095E+02
6.35	0.00	0.00	1.2	0.194E+01	0.44	1.33	.17114E+02
6.36	0.00	0.00	1.2	0.194E+01	0.44	1.33	.17132E+02
6.37	0.00	0.00	1.2	0.194E+01	0.44	1.33	.17151E+02
6.38	0.00	0.00	1.2	0.194E+01	0.44	1.33	.17170E+02
6.38	0.00	0.00	1.2	0.194E+01	0.44	1.33	.17188E+02
6.39	0.00	0.00	1.2	0.193E+01	0.44	1.33	.17207E+02
6.40	0.00	0.00	1.2	0.193E+01	0.44	1.33	.17226E+02
6.40	0.00	0.00	1.2	0.193E+01	0.44	1.34	.17244E+02
6.41	0.00	0.00	1.2	0.193E+01	0.44	1.34	.17263E+02
6.42	0.00	0.00	1.2	0.193E+01	0.44	1.34	.17282E+02
6.42	0.00	0.00	1.2	0.193E+01	0.44	1.34	.17300E+02
6.43	0.00	0.00	1.2	0.193E+01	0.44	1.34	.17319E+02
6.44	0.00	0.00	1.2	0.193E+01	0.44	1.34	.17338E+02
6.45	0.00	0.00	1.2	0.192E+01	0.44	1.34	.17357E+02
6.45	0.00	0.00	1.2	0.192E+01	0.44	1.34	.17375E+02
6.46	0.00	0.00	1.2	0.192E+01	0.44	1.34	.17394E+02
6.47	0.00	0.00	1.2	0.192E+01	0.44	1.34	.17413E+02
6.47	0.00	0.00	1.2	0.192E+01	0.44	1.34	.17431E+02
6.48	0.00	0.00	1.3	0.192E+01	0.44	1.34	.17450E+02
6.49	0.00	0.00	1.3	0.192E+01	0.44	1.34	.17469E+02
6.49	0.00	0.00	1.3	0.192E+01	0.44	1.34	.17487E+02
6.50	0.00	0.00	1.3	0.192E+01	0.44	1.34	.17506E+02
6.51	0.00	0.00	1.3	0.191E+01	0.44	1.35	.17525E+02
6.52	0.00	0.00	1.3	0.191E+01	0.44	1.35	.17543E+02
6.52	0.00	0.00	1.3	0.191E+01	0.44	1.35	.17562E+02
6.53	0.00	0.00	1.3	0.191E+01	0.44	1.35	.17581E+02
6.54	0.00	0.00	1.3	0.191E+01	0.44	1.35	.17599E+02
6.54	0.00	0.00	1.3	0.191E+01	0.44	1.35	.17618E+02
6.55	0.00	0.00	1.3	0.191E+01	0.44	1.35	.17637E+02
6.56	0.00	0.00	1.3	0.191E+01	0.44	1.35	.17656E+02
6.56	0.00	0.00	1.3	0.191E+01	0.44	1.35	.17674E+02
6.57	0.00	0.00	1.3	0.190E+01	0.44	1.35	.17693E+02
6.58	0.00	0.00	1.3	0.190E+01	0.44	1.35	.17712E+02
6.59	0.00	0.00	1.3	0.190E+01	0.44	1.35	.17730E+02
6.59	0.00	0.00	1.3	0.190E+01	0.44	1.35	.17749E+02
6.60	0.00	0.00	1.3	0.190E+01	0.44	1.35	.17768E+02
6.61	0.00	0.00	1.3	0.190E+01	0.44	1.35	.17786E+02
6.61	0.00	0.00	1.3	0.190E+01	0.44	1.36	.17805E+02
6.62	0.00	0.00	1.3	0.190E+01	0.44	1.36	.17824E+02
6.63	0.00	0.00	1.3	0.190E+01	0.44	1.36	.17842E+02
6.63	0.00	0.00	1.3	0.189E+01	0.44	1.36	.17861E+02
6.64	0.00	0.00	1.3	0.189E+01	0.44	1.36	.17880E+02
6.65	0.00	0.00	1.3	0.189E+01	0.44	1.36	.17899E+02
6.65	0.00	0.00	1.3	0.189E+01	0.44	1.36	.17917E+02
6.66	0.00	0.00	1.3	0.189E+01	0.44	1.36	.17936E+02

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      6.67     0.00    0.00     1.3 0.189E+01   0.44     1.36 .17955E+02
      6.68     0.00    0.00     1.3 0.189E+01   0.44     1.36 .17973E+02
      6.68     0.00    0.00     1.3 0.189E+01   0.44     1.36 .17992E+02
      6.69     0.00    0.00     1.3 0.189E+01   0.44     1.36 .18011E+02
      6.70     0.00    0.00     1.3 0.188E+01   0.44     1.36 .18029E+02
      6.70     0.00    0.00     1.3 0.188E+01   0.44     1.36 .18048E+02
      6.71     0.00    0.00     1.3 0.188E+01   0.44     1.36 .18067E+02
      6.72     0.00    0.00     1.3 0.188E+01   0.44     1.36 .18085E+02
      6.72     0.00    0.00     1.3 0.188E+01   0.44     1.37 .18104E+02
      6.73     0.00    0.00     1.3 0.188E+01   0.44     1.37 .18123E+02
      6.74     0.00    0.00     1.3 0.188E+01   0.44     1.37 .18141E+02
      6.75     0.00    0.00     1.3 0.188E+01   0.44     1.37 .18160E+02
      6.75     0.00    0.00     1.3 0.188E+01   0.44     1.37 .18179E+02
      6.76     0.00    0.00     1.3 0.187E+01   0.44     1.37 .18198E+02
      6.77     0.00    0.00     1.3 0.187E+01   0.44     1.37 .18216E+02
      6.77     0.00    0.00     1.3 0.187E+01   0.44     1.37 .18235E+02
      6.78     0.00    0.00     1.3 0.187E+01   0.44     1.37 .18254E+02
      6.79     0.00    0.00     1.3 0.187E+01   0.44     1.37 .18272E+02
      6.79     0.00    0.00     1.3 0.187E+01   0.44     1.37 .18291E+02
      6.80     0.00    0.00     1.3 0.187E+01   0.44     1.37 .18310E+02
      6.81     0.00    0.00     1.3 0.187E+01   0.44     1.37 .18328E+02
      6.82     0.00    0.00     1.3 0.187E+01   0.44     1.37 .18347E+02
      6.82     0.00    0.00     1.3 0.186E+01   0.44     1.37 .18366E+02
      6.83     0.00    0.00     1.3 0.186E+01   0.44     1.38 .18384E+02
      6.84     0.00    0.00     1.3 0.186E+01   0.44     1.38 .18403E+02
      6.84     0.00    0.00     1.3 0.186E+01   0.44     1.38 .18422E+02
      6.85     0.00    0.00     1.3 0.186E+01   0.44     1.38 .18441E+02
      6.86     0.00    0.00     1.3 0.186E+01   0.44     1.38 .18459E+02
      6.86     0.00    0.00     1.3 0.186E+01   0.44     1.38 .18478E+02
      6.87     0.00    0.00     1.3 0.186E+01   0.44     1.38 .18497E+02
      6.88     0.00    0.00     1.3 0.186E+01   0.44     1.38 .18515E+02
      6.88     0.00    0.00     1.3 0.185E+01   0.44     1.38 .18534E+02
      6.89     0.00    0.00     1.3 0.185E+01   0.44     1.38 .18553E+02
      6.90     0.00    0.00     1.3 0.185E+01   0.44     1.38 .18571E+02
      6.91     0.00    0.00     1.3 0.185E+01   0.44     1.38 .18590E+02
      6.91     0.00    0.00     1.3 0.185E+01   0.44     1.38 .18609E+02
      6.92     0.00    0.00     1.3 0.185E+01   0.44     1.38 .18627E+02
      6.93     0.00    0.00     1.3 0.185E+01   0.44     1.38 .18646E+02
      6.93     0.00    0.00     1.3 0.185E+01   0.44     1.38 .18665E+02
      6.94     0.00    0.00     1.3 0.185E+01   0.44     1.39 .18683E+02
      6.95     0.00    0.00     1.3 0.184E+01   0.44     1.39 .18702E+02
      6.95     0.00    0.00     1.3 0.184E+01   0.44     1.39 .18721E+02
      6.96     0.00    0.00     1.3 0.184E+01   0.44     1.39 .18740E+02
      6.97     0.00    0.00     1.3 0.184E+01   0.44     1.39 .18758E+02
      6.98     0.00    0.00     1.3 0.184E+01   0.44     1.39 .18777E+02
      6.98     0.00    0.00     1.3 0.184E+01   0.44     1.39 .18796E+02
      6.99     0.00    0.00     1.3 0.184E+01   0.44     1.39 .18814E+02
      7.00     0.00    0.00     1.3 0.184E+01   0.44     1.39 .18833E+02
      7.00     0.00    0.00     1.3 0.184E+01   0.44     1.39 .18852E+02
      7.01     0.00    0.00     1.3 0.183E+01   0.44     1.39 .18870E+02
      7.02     0.00    0.00     1.3 0.183E+01   0.44     1.39 .18889E+02
      7.02     0.00    0.00     1.3 0.183E+01   0.44     1.39 .18908E+02
      7.03     0.00    0.00     1.3 0.183E+01   0.44     1.39 .18926E+02
      7.04     0.00    0.00     1.3 0.183E+01   0.44     1.39 .18945E+02
      7.05     0.00    0.00     1.3 0.183E+01   0.44     1.39 .18964E+02
      7.05     0.00    0.00     1.3 0.183E+01   0.44     1.40 .18983E+02
      7.06     0.00    0.00     1.3 0.183E+01   0.44     1.40 .19001E+02
      7.07     0.00    0.00     1.3 0.183E+01   0.44     1.40 .19020E+02
      7.07     0.00    0.00     1.3 0.183E+01   0.44     1.40 .19039E+02
      7.08     0.00    0.00     1.3 0.182E+01   0.44     1.40 .19057E+02
      7.09     0.00    0.00     1.3 0.182E+01   0.44     1.40 .19076E+02
      7.09     0.00    0.00     1.3 0.182E+01   0.44     1.40 .19095E+02
      7.10     0.00    0.00     1.3 0.182E+01   0.44     1.40 .19113E+02
      7.11     0.00    0.00     1.3 0.182E+01   0.44     1.40 .19132E+02
      7.12     0.00    0.00     1.3 0.182E+01   0.44     1.40 .19151E+02
      7.12     0.00    0.00     1.3 0.182E+01   0.44     1.40 .19169E+02
      7.13     0.00    0.00     1.3 0.182E+01   0.44     1.40 .19188E+02
      7.14     0.00    0.00     1.3 0.182E+01   0.44     1.40 .19207E+02
      7.14     0.00    0.00     1.3 0.181E+01   0.44     1.40 .19225E+02
      7.15     0.00    0.00     1.3 0.181E+01   0.44     1.40 .19244E+02
      7.16     0.00    0.00     1.3 0.181E+01   0.44     1.41 .19263E+02
      7.16     0.00    0.00     1.3 0.181E+01   0.44     1.41 .19282E+02
      7.17     0.00    0.00     1.3 0.181E+01   0.44     1.41 .19300E+02
      7.18     0.00    0.00     1.3 0.181E+01   0.44     1.41 .19319E+02
      7.18     0.00    0.00     1.3 0.181E+01   0.44     1.41 .19338E+02
      7.19     0.00    0.00     1.3 0.181E+01   0.44     1.41 .19356E+02
      7.20     0.00    0.00     1.3 0.181E+01   0.44     1.41 .19375E+02
      7.21     0.00    0.00     1.3 0.180E+01   0.44     1.41 .19394E+02
      7.21     0.00    0.00     1.3 0.180E+01   0.44     1.41 .19412E+02
 Cumulative travel time =          19.4127 sec  (    0.01 hrs)

END OF MOD341: BUOYANT AMBIENT SPREADING
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BEGIN MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

  Vertical diffusivity (initial value)   = 0.730E-02 m^2/s
  Horizontal diffusivity (initial value) = 0.182E-01 m^2/s

 Profile definitions:
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  BV = Gaussian s.d.*sqrt(pi/2) (46%) thickness, measured vertically
     = or equal to water depth, if fully mixed
  BH = Gaussian s.d.*sqrt(pi/2) (46%) half-width,
       measured horizontally in Y-direction
  S  = hydrodynamic centerline dilution
  C  = centerline concentration (includes reaction efects, if any)
  TT = Cumulative travel time

Plume Stage 2 (bank attached):
      X        Y       Z        S       C       BV       BH        TT
     7.21     0.00    0.00     1.3 0.180E+01   0.44     1.41 .19412E+02
** REGULATORY MIXING ZONE BOUNDARY **
In this prediction interval the plume DOWNSTREAM distance meets or exceeds
the regulatory value =     9.15 m.
This is the extent of the REGULATORY MIXING ZONE.
     9.20     0.00    0.00     1.5 0.155E+01   0.48     1.51 .24732E+02
    11.18     0.00    0.00     1.8 0.134E+01   0.52     1.61 .30052E+02
    13.17     0.00    0.00     2.1 0.117E+01   0.57     1.70 .35372E+02
    15.16     0.00    0.00     2.3 0.102E+01   0.61     1.79 .40692E+02
    17.14     0.00    0.00     2.6 0.906E+00   0.66     1.87 .46012E+02
    19.13     0.00    0.00     3.0 0.808E+00   0.71     1.95 .51332E+02
Plume interacts with BOTTOM.
The passive diffusion plume becomes VERTICALLY FULLY MIXED within this
  prediction interval.
    21.11     0.00    0.00     3.2 0.739E+00   0.75     2.03 .56651E+02
    23.10     0.00    0.00     3.4 0.713E+00   0.75     2.10 .61971E+02
    25.08     0.00    0.00     3.5 0.690E+00   0.75     2.18 .67291E+02
    27.07     0.00    0.00     3.6 0.669E+00   0.75     2.24 .72611E+02
    29.05     0.00    0.00     3.7 0.649E+00   0.75     2.31 .77931E+02
    31.04     0.00    0.00     3.8 0.631E+00   0.75     2.38 .83251E+02
    33.03     0.00    0.00     3.9 0.615E+00   0.75     2.44 .88571E+02
    35.01     0.00    0.00     4.0 0.600E+00   0.75     2.50 .93891E+02
    37.00     0.00    0.00     4.1 0.586E+00   0.75     2.56 .99210E+02
    38.98     0.00    0.00     4.2 0.573E+00   0.75     2.62 .10453E+03
    40.97     0.00    0.00     4.3 0.560E+00   0.75     2.68 .10985E+03
    42.95     0.00    0.00     4.4 0.549E+00   0.75     2.73 .11517E+03
    44.94     0.00    0.00     4.5 0.538E+00   0.75     2.79 .12049E+03
    46.92     0.00    0.00     4.5 0.528E+00   0.75     2.84 .12581E+03
    48.91     0.00    0.00     4.6 0.518E+00   0.75     2.90 .13113E+03
    50.90     0.00    0.00     4.7 0.509E+00   0.75     2.95 .13645E+03
    52.88     0.00    0.00     4.8 0.500E+00   0.75     3.00 .14177E+03
    54.87     0.00    0.00     4.9 0.492E+00   0.75     3.05 .14709E+03
    56.85     0.00    0.00     5.0 0.484E+00   0.75     3.10 .15241E+03
    58.84     0.00    0.00     5.0 0.476E+00   0.75     3.15 .15773E+03
    60.82     0.00    0.00     5.1 0.469E+00   0.75     3.20 .16305E+03
    62.81     0.00    0.00     5.2 0.462E+00   0.75     3.24 .16837E+03
    64.79     0.00    0.00     5.3 0.456E+00   0.75     3.29 .17369E+03
    66.78     0.00    0.00     5.3 0.449E+00   0.75     3.34 .17901E+03
    68.77     0.00    0.00     5.4 0.443E+00   0.75     3.38 .18433E+03
    70.75     0.00    0.00     5.5 0.438E+00   0.75     3.43 .18965E+03
    72.74     0.00    0.00     5.5 0.432E+00   0.75     3.47 .19497E+03
    74.72     0.00    0.00     5.6 0.427E+00   0.75     3.51 .20029E+03
    76.71     0.00    0.00     5.7 0.421E+00   0.75     3.56 .20561E+03
    78.69     0.00    0.00     5.8 0.416E+00   0.75     3.60 .21093E+03
    80.68     0.00    0.00     5.8 0.412E+00   0.75     3.64 .21625E+03
    82.66     0.00    0.00     5.9 0.407E+00   0.75     3.68 .22157E+03
    84.65     0.00    0.00     6.0 0.402E+00   0.75     3.73 .22689E+03
    86.64     0.00    0.00     6.0 0.398E+00   0.75     3.77 .23221E+03
    88.62     0.00    0.00     6.1 0.394E+00   0.75     3.81 .23753E+03
    90.61     0.00    0.00     6.1 0.390E+00   0.75     3.85 .24285E+03
    92.59     0.00    0.00     6.2 0.386E+00   0.75     3.89 .24817E+03
    94.58     0.00    0.00     6.3 0.382E+00   0.75     3.92 .25349E+03
    96.56     0.00    0.00     6.3 0.378E+00   0.75     3.96 .25881E+03
    98.55     0.00    0.00     6.4 0.375E+00   0.75     4.00 .26413E+03
   100.53     0.00    0.00     6.5 0.371E+00   0.75     4.04 .26945E+03
   102.52     0.00    0.00     6.5 0.368E+00   0.75     4.08 .27477E+03
   104.51     0.00    0.00     6.6 0.364E+00   0.75     4.11 .28009E+03
   106.49     0.00    0.00     6.6 0.361E+00   0.75     4.15 .28541E+03
   108.48     0.00    0.00     6.7 0.358E+00   0.75     4.19 .29073E+03
   110.46     0.00    0.00     6.8 0.355E+00   0.75     4.22 .29605E+03
   112.45     0.00    0.00     6.8 0.352E+00   0.75     4.26 .30137E+03
   114.43     0.00    0.00     6.9 0.349E+00   0.75     4.30 .30669E+03
   116.42     0.00    0.00     6.9 0.346E+00   0.75     4.33 .31200E+03
   118.40     0.00    0.00     7.0 0.343E+00   0.75     4.37 .31732E+03
   120.39     0.00    0.00     7.0 0.341E+00   0.75     4.40 .32264E+03
   122.38     0.00    0.00     7.1 0.338E+00   0.75     4.43 .32796E+03
   124.36     0.00    0.00     7.1 0.335E+00   0.75     4.47 .33328E+03
   126.35     0.00    0.00     7.2 0.333E+00   0.75     4.50 .33860E+03
   128.33     0.00    0.00     7.3 0.330E+00   0.75     4.54 .34392E+03
   130.32     0.00    0.00     7.3 0.328E+00   0.75     4.57 .34924E+03
   132.30     0.00    0.00     7.4 0.325E+00   0.75     4.60 .35456E+03
   134.29     0.00    0.00     7.4 0.323E+00   0.75     4.64 .35988E+03
   136.28     0.00    0.00     7.5 0.321E+00   0.75     4.67 .36520E+03
   138.26     0.00    0.00     7.5 0.319E+00   0.75     4.70 .37052E+03
   140.25     0.00    0.00     7.6 0.316E+00   0.75     4.73 .37584E+03
   142.23     0.00    0.00     7.6 0.314E+00   0.75     4.77 .38116E+03
   144.22     0.00    0.00     7.7 0.312E+00   0.75     4.80 .38648E+03
   146.20     0.00    0.00     7.7 0.310E+00   0.75     4.83 .39180E+03
   148.19     0.00    0.00     7.8 0.308E+00   0.75     4.86 .39712E+03
   150.17     0.00    0.00     7.8 0.306E+00   0.75     4.89 .40244E+03
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    152.16     0.00    0.00     7.9 0.304E+00   0.75     4.92 .40776E+03
    154.15     0.00    0.00     7.9 0.302E+00   0.75     4.95 .41308E+03
    156.13     0.00    0.00     8.0 0.300E+00   0.75     4.98 .41840E+03
** WATER QUALITY STANDARD OR CCC HAS BEEN FOUND **
 The pollutant concentration in the plume falls below water quality standard
   or CCC value of 0.300E+00 in the current prediction interval.
 This is the spatial extent of concentrations exceeding the water quality
   standard or CCC value.
    158.12     0.00    0.00     8.0 0.299E+00   0.75     5.02 .42372E+03
    160.10     0.00    0.00     8.1 0.297E+00   0.75     5.05 .42904E+03
    162.09     0.00    0.00     8.1 0.295E+00   0.75     5.08 .43436E+03
    164.07     0.00    0.00     8.2 0.293E+00   0.75     5.11 .43968E+03
    166.06     0.00    0.00     8.2 0.292E+00   0.75     5.14 .44500E+03
    168.04     0.00    0.00     8.3 0.290E+00   0.75     5.17 .45032E+03
    170.03     0.00    0.00     8.3 0.288E+00   0.75     5.19 .45564E+03
    172.02     0.00    0.00     8.4 0.287E+00   0.75     5.22 .46096E+03
    174.00     0.00    0.00     8.4 0.285E+00   0.75     5.25 .46628E+03
    175.99     0.00    0.00     8.4 0.283E+00   0.75     5.28 .47160E+03
    177.97     0.00    0.00     8.5 0.282E+00   0.75     5.31 .47692E+03
    179.96     0.00    0.00     8.5 0.280E+00   0.75     5.34 .48224E+03
    181.94     0.00    0.00     8.6 0.279E+00   0.75     5.37 .48756E+03
    183.93     0.00    0.00     8.6 0.277E+00   0.75     5.40 .49288E+03
    185.91     0.00    0.00     8.7 0.276E+00   0.75     5.42 .49820E+03
    187.90     0.00    0.00     8.7 0.275E+00   0.75     5.45 .50352E+03
    189.89     0.00    0.00     8.8 0.273E+00   0.75     5.48 .50884E+03
    191.87     0.00    0.00     8.8 0.272E+00   0.75     5.51 .51416E+03
    193.86     0.00    0.00     8.9 0.270E+00   0.75     5.54 .51948E+03
    195.84     0.00    0.00     8.9 0.269E+00   0.75     5.56 .52480E+03
    197.83     0.00    0.00     8.9 0.268E+00   0.75     5.59 .53012E+03
    199.81     0.00    0.00     9.0 0.266E+00   0.75     5.62 .53544E+03
    201.80     0.00    0.00     9.0 0.265E+00   0.75     5.64 .54076E+03
    203.78     0.00    0.00     9.1 0.264E+00   0.75     5.67 .54608E+03
    205.77     0.00    0.00     9.1 0.263E+00   0.75     5.70 .55140E+03
    207.76     0.00    0.00     9.2 0.261E+00   0.75     5.72 .55672E+03
    209.74     0.00    0.00     9.2 0.260E+00   0.75     5.75 .56204E+03
    211.73     0.00    0.00     9.2 0.259E+00   0.75     5.78 .56736E+03
    213.71     0.00    0.00     9.3 0.258E+00   0.75     5.80 .57268E+03
    215.70     0.00    0.00     9.3 0.257E+00   0.75     5.83 .57800E+03
    217.68     0.00    0.00     9.4 0.255E+00   0.75     5.86 .58332E+03
    219.67     0.00    0.00     9.4 0.254E+00   0.75     5.88 .58864E+03
    221.66     0.00    0.00     9.4 0.253E+00   0.75     5.91 .59396E+03
    223.64     0.00    0.00     9.5 0.252E+00   0.75     5.93 .59928E+03
    225.63     0.00    0.00     9.5 0.251E+00   0.75     5.96 .60460E+03
    227.61     0.00    0.00     9.6 0.250E+00   0.75     5.99 .60992E+03
    229.60     0.00    0.00     9.6 0.249E+00   0.75     6.01 .61524E+03
    231.58     0.00    0.00     9.7 0.248E+00   0.75     6.04 .62056E+03
    233.57     0.00    0.00     9.7 0.247E+00   0.75     6.06 .62588E+03
    235.55     0.00    0.00     9.7 0.246E+00   0.75     6.09 .63120E+03
    237.54     0.00    0.00     9.8 0.245E+00   0.75     6.11 .63652E+03
    239.53     0.00    0.00     9.8 0.244E+00   0.75     6.14 .64184E+03
    241.51     0.00    0.00     9.9 0.243E+00   0.75     6.16 .64716E+03
    243.50     0.00    0.00     9.9 0.242E+00   0.75     6.19 .65248E+03
    245.48     0.00    0.00     9.9 0.241E+00   0.75     6.21 .65780E+03
    247.47     0.00    0.00    10.0 0.240E+00   0.75     6.23 .66312E+03
    249.45     0.00    0.00    10.0 0.239E+00   0.75     6.26 .66844E+03
    251.44     0.00    0.00    10.0 0.238E+00   0.75     6.28 .67376E+03
    253.42     0.00    0.00    10.1 0.237E+00   0.75     6.31 .67908E+03
    255.41     0.00    0.00    10.1 0.236E+00   0.75     6.33 .68440E+03
    257.40     0.00    0.00    10.2 0.235E+00   0.75     6.36 .68972E+03
    259.38     0.00    0.00    10.2 0.234E+00   0.75     6.38 .69504E+03
    261.37     0.00    0.00    10.2 0.233E+00   0.75     6.40 .70036E+03
    263.35     0.00    0.00    10.3 0.233E+00   0.75     6.43 .70568E+03
    265.34     0.00    0.00    10.3 0.232E+00   0.75     6.45 .71100E+03
    267.32     0.00    0.00    10.4 0.231E+00   0.75     6.47 .71632E+03
    269.31     0.00    0.00    10.4 0.230E+00   0.75     6.50 .72164E+03
    271.29     0.00    0.00    10.4 0.229E+00   0.75     6.52 .72696E+03
    273.28     0.00    0.00    10.5 0.228E+00   0.75     6.54 .73228E+03
    275.27     0.00    0.00    10.5 0.228E+00   0.75     6.57 .73760E+03
    277.25     0.00    0.00    10.5 0.227E+00   0.75     6.59 .74291E+03
    279.24     0.00    0.00    10.6 0.226E+00   0.75     6.61 .74823E+03
    281.22     0.00    0.00    10.6 0.225E+00   0.75     6.64 .75355E+03
    283.21     0.00    0.00    10.6 0.224E+00   0.75     6.66 .75887E+03
    285.19     0.00    0.00    10.7 0.224E+00   0.75     6.68 .76419E+03
    287.18     0.00    0.00    10.7 0.223E+00   0.75     6.71 .76951E+03
    289.16     0.00    0.00    10.8 0.222E+00   0.75     6.73 .77483E+03
    291.15     0.00    0.00    10.8 0.221E+00   0.75     6.75 .78015E+03
    293.14     0.00    0.00    10.8 0.221E+00   0.75     6.77 .78547E+03
    295.12     0.00    0.00    10.9 0.220E+00   0.75     6.80 .79079E+03
    297.11     0.00    0.00    10.9 0.219E+00   0.75     6.82 .79611E+03
    299.09     0.00    0.00    10.9 0.218E+00   0.75     6.84 .80143E+03
    301.08     0.00    0.00    11.0 0.218E+00   0.75     6.86 .80675E+03
    303.06     0.00    0.00    11.0 0.217E+00   0.75     6.89 .81207E+03
    305.05     0.00    0.00    11.0 0.216E+00   0.75     6.91 .81739E+03
    307.03     0.00    0.00    11.1 0.216E+00   0.75     6.93 .82271E+03
    309.02     0.00    0.00    11.1 0.215E+00   0.75     6.95 .82803E+03
    311.01     0.00    0.00    11.1 0.214E+00   0.75     6.97 .83335E+03
    312.99     0.00    0.00    11.2 0.214E+00   0.75     7.00 .83867E+03
    314.98     0.00    0.00    11.2 0.213E+00   0.75     7.02 .84399E+03
    316.96     0.00    0.00    11.3 0.212E+00   0.75     7.04 .84931E+03
    318.95     0.00    0.00    11.3 0.212E+00   0.75     7.06 .85463E+03
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320.93	0.00	0.00	11.3	0.211E+00	0.75	7.08	.85995E+03
322.92	0.00	0.00	11.4	0.210E+00	0.75	7.10	.86527E+03
324.90	0.00	0.00	11.4	0.210E+00	0.75	7.12	.87059E+03
326.89	0.00	0.00	11.4	0.209E+00	0.75	7.15	.87591E+03
328.88	0.00	0.00	11.5	0.208E+00	0.75	7.17	.88123E+03
330.86	0.00	0.00	11.5	0.208E+00	0.75	7.19	.88655E+03
332.85	0.00	0.00	11.5	0.207E+00	0.75	7.21	.89187E+03
334.83	0.00	0.00	11.6	0.207E+00	0.75	7.23	.89719E+03
336.82	0.00	0.00	11.6	0.206E+00	0.75	7.25	.90251E+03
338.80	0.00	0.00	11.6	0.205E+00	0.75	7.27	.90783E+03
340.79	0.00	0.00	11.7	0.205E+00	0.75	7.29	.91315E+03
342.77	0.00	0.00	11.7	0.204E+00	0.75	7.31	.91847E+03
344.76	0.00	0.00	11.7	0.204E+00	0.75	7.34	.92379E+03
346.75	0.00	0.00	11.8	0.203E+00	0.75	7.36	.92911E+03
348.73	0.00	0.00	11.8	0.202E+00	0.75	7.38	.93443E+03
350.72	0.00	0.00	11.8	0.202E+00	0.75	7.40	.93975E+03
352.70	0.00	0.00	11.9	0.201E+00	0.75	7.42	.94507E+03
354.69	0.00	0.00	11.9	0.201E+00	0.75	7.44	.95039E+03
356.67	0.00	0.00	11.9	0.200E+00	0.75	7.46	.95571E+03
358.66	0.00	0.00	12.0	0.200E+00	0.75	7.48	.96103E+03
360.64	0.00	0.00	12.0	0.199E+00	0.75	7.50	.96635E+03
362.63	0.00	0.00	12.0	0.199E+00	0.75	7.52	.97167E+03
364.62	0.00	0.00	12.1	0.198E+00	0.75	7.54	.97699E+03
366.60	0.00	0.00	12.1	0.197E+00	0.75	7.56	.98231E+03
368.59	0.00	0.00	12.1	0.197E+00	0.75	7.58	.98763E+03
370.57	0.00	0.00	12.2	0.196E+00	0.75	7.60	.99295E+03
372.56	0.00	0.00	12.2	0.196E+00	0.75	7.62	.99827E+03
374.54	0.00	0.00	12.2	0.195E+00	0.75	7.64	.10036E+04
376.53	0.00	0.00	12.2	0.195E+00	0.75	7.66	.10089E+04
378.52	0.00	0.00	12.3	0.194E+00	0.75	7.68	.10142E+04
380.50	0.00	0.00	12.3	0.194E+00	0.75	7.70	.10195E+04
382.49	0.00	0.00	12.3	0.193E+00	0.75	7.72	.10249E+04
384.47	0.00	0.00	12.4	0.193E+00	0.75	7.74	.10302E+04
386.46	0.00	0.00	12.4	0.192E+00	0.75	7.76	.10355E+04
388.44	0.00	0.00	12.4	0.192E+00	0.75	7.78	.10408E+04
390.43	0.00	0.00	12.5	0.191E+00	0.75	7.80	.10461E+04
392.41	0.00	0.00	12.5	0.191E+00	0.75	7.82	.10515E+04
394.40	0.00	0.00	12.5	0.190E+00	0.75	7.84	.10568E+04
396.39	0.00	0.00	12.6	0.190E+00	0.75	7.86	.10621E+04
398.37	0.00	0.00	12.6	0.189E+00	0.75	7.88	.10674E+04
400.36	0.00	0.00	12.6	0.189E+00	0.75	7.90	.10727E+04
402.34	0.00	0.00	12.7	0.188E+00	0.75	7.92	.10781E+04
404.33	0.00	0.00	12.7	0.188E+00	0.75	7.93	.10834E+04
406.31	0.00	0.00	12.7	0.188E+00	0.75	7.95	.10887E+04
408.30	0.00	0.00	12.7	0.187E+00	0.75	7.97	.10940E+04
410.28	0.00	0.00	12.8	0.187E+00	0.75	7.99	.10993E+04
412.27	0.00	0.00	12.8	0.186E+00	0.75	8.01	.11047E+04
414.26	0.00	0.00	12.8	0.186E+00	0.75	8.03	.11100E+04
416.24	0.00	0.00	12.9	0.185E+00	0.75	8.05	.11153E+04
418.23	0.00	0.00	12.9	0.185E+00	0.75	8.07	.11206E+04
420.21	0.00	0.00	12.9	0.184E+00	0.75	8.09	.11259E+04
422.20	0.00	0.00	13.0	0.184E+00	0.75	8.11	.11313E+04
424.18	0.00	0.00	13.0	0.184E+00	0.75	8.12	.11366E+04
426.17	0.00	0.00	13.0	0.183E+00	0.75	8.14	.11419E+04
428.15	0.00	0.00	13.0	0.183E+00	0.75	8.16	.11472E+04
430.14	0.00	0.00	13.1	0.182E+00	0.75	8.18	.11525E+04
432.13	0.00	0.00	13.1	0.182E+00	0.75	8.20	.11579E+04
434.11	0.00	0.00	13.1	0.181E+00	0.75	8.22	.11632E+04
436.10	0.00	0.00	13.2	0.181E+00	0.75	8.24	.11685E+04
438.08	0.00	0.00	13.2	0.181E+00	0.75	8.25	.11738E+04
440.07	0.00	0.00	13.2	0.180E+00	0.75	8.27	.11791E+04
442.05	0.00	0.00	13.3	0.180E+00	0.75	8.29	.11845E+04
444.04	0.00	0.00	13.3	0.179E+00	0.75	8.31	.11898E+04
446.02	0.00	0.00	13.3	0.179E+00	0.75	8.33	.11951E+04
448.01	0.00	0.00	13.3	0.179E+00	0.75	8.35	.12004E+04
450.00	0.00	0.00	13.4	0.178E+00	0.75	8.36	.12057E+04
451.98	0.00	0.00	13.4	0.178E+00	0.75	8.38	.12111E+04
453.97	0.00	0.00	13.4	0.177E+00	0.75	8.40	.12164E+04
455.95	0.00	0.00	13.5	0.177E+00	0.75	8.42	.12217E+04
457.94	0.00	0.00	13.5	0.177E+00	0.75	8.44	.12270E+04
459.92	0.00	0.00	13.5	0.176E+00	0.75	8.45	.12323E+04
461.91	0.00	0.00	13.5	0.176E+00	0.75	8.47	.12377E+04
463.89	0.00	0.00	13.6	0.176E+00	0.75	8.49	.12430E+04
465.88	0.00	0.00	13.6	0.175E+00	0.75	8.51	.12483E+04
467.87	0.00	0.00	13.6	0.175E+00	0.75	8.53	.12536E+04
469.85	0.00	0.00	13.7	0.174E+00	0.75	8.54	.12589E+04
471.84	0.00	0.00	13.7	0.174E+00	0.75	8.56	.12643E+04
473.82	0.00	0.00	13.7	0.174E+00	0.75	8.58	.12696E+04
475.81	0.00	0.00	13.7	0.173E+00	0.75	8.60	.12749E+04
477.79	0.00	0.00	13.8	0.173E+00	0.75	8.62	.12802E+04
479.78	0.00	0.00	13.8	0.173E+00	0.75	8.63	.12855E+04
481.76	0.00	0.00	13.8	0.172E+00	0.75	8.65	.12909E+04
483.75	0.00	0.00	13.9	0.172E+00	0.75	8.67	.12962E+04
485.74	0.00	0.00	13.9	0.172E+00	0.75	8.69	.13015E+04
487.72	0.00	0.00	13.9	0.171E+00	0.75	8.70	.13068E+04
489.71	0.00	0.00	13.9	0.171E+00	0.75	8.72	.13121E+04
491.69	0.00	0.00	14.0	0.171E+00	0.75	8.74	.13175E+04
493.68	0.00	0.00	14.0	0.170E+00	0.75	8.76	.13228E+04
495.66	0.00	0.00	14.0	0.170E+00	0.75	8.77	.13281E+04
497.65	0.00	0.00	14.1	0.169E+00	0.75	8.79	.13334E+04

499.63	0.00	0.00	14.1	0.169E+00	0.75	8.81	.13387E+04
501.62	0.00	0.00	14.1	0.169E+00	0.75	8.83	.13441E+04
503.61	0.00	0.00	14.1	0.168E+00	0.75	8.84	.13494E+04
505.59	0.00	0.00	14.2	0.168E+00	0.75	8.86	.13547E+04
507.58	0.00	0.00	14.2	0.168E+00	0.75	8.88	.13600E+04
509.56	0.00	0.00	14.2	0.167E+00	0.75	8.89	.13653E+04
511.55	0.00	0.00	14.2	0.167E+00	0.75	8.91	.13707E+04
513.53	0.00	0.00	14.3	0.167E+00	0.75	8.93	.13760E+04
515.52	0.00	0.00	14.3	0.166E+00	0.75	8.95	.13813E+04
517.50	0.00	0.00	14.3	0.166E+00	0.75	8.96	.13866E+04
519.49	0.00	0.00	14.4	0.166E+00	0.75	8.98	.13919E+04
521.48	0.00	0.00	14.4	0.166E+00	0.75	9.00	.13973E+04
523.46	0.00	0.00	14.4	0.165E+00	0.75	9.01	.14026E+04
525.45	0.00	0.00	14.4	0.165E+00	0.75	9.03	.14079E+04
527.43	0.00	0.00	14.5	0.165E+00	0.75	9.05	.14132E+04
529.42	0.00	0.00	14.5	0.164E+00	0.75	9.06	.14185E+04
531.40	0.00	0.00	14.5	0.164E+00	0.75	9.08	.14239E+04
533.39	0.00	0.00	14.5	0.164E+00	0.75	9.10	.14292E+04
535.38	0.00	0.00	14.6	0.163E+00	0.75	9.11	.14345E+04
537.36	0.00	0.00	14.6	0.163E+00	0.75	9.13	.14398E+04
539.35	0.00	0.00	14.6	0.163E+00	0.75	9.15	.14451E+04
541.33	0.00	0.00	14.7	0.162E+00	0.75	9.16	.14505E+04
543.32	0.00	0.00	14.7	0.162E+00	0.75	9.18	.14558E+04
545.30	0.00	0.00	14.7	0.162E+00	0.75	9.20	.14611E+04
547.29	0.00	0.00	14.7	0.162E+00	0.75	9.21	.14664E+04
549.27	0.00	0.00	14.8	0.161E+00	0.75	9.23	.14717E+04
551.26	0.00	0.00	14.8	0.161E+00	0.75	9.25	.14771E+04
553.25	0.00	0.00	14.8	0.161E+00	0.75	9.26	.14824E+04
555.23	0.00	0.00	14.8	0.160E+00	0.75	9.28	.14877E+04
557.22	0.00	0.00	14.9	0.160E+00	0.75	9.30	.14930E+04
559.20	0.00	0.00	14.9	0.160E+00	0.75	9.31	.14983E+04
561.19	0.00	0.00	14.9	0.160E+00	0.75	9.33	.15037E+04
563.17	0.00	0.00	14.9	0.159E+00	0.75	9.35	.15090E+04
565.16	0.00	0.00	15.0	0.159E+00	0.75	9.36	.15143E+04
567.14	0.00	0.00	15.0	0.159E+00	0.75	9.38	.15196E+04
569.13	0.00	0.00	15.0	0.158E+00	0.75	9.39	.15249E+04
571.12	0.00	0.00	15.0	0.158E+00	0.75	9.41	.15303E+04
573.10	0.00	0.00	15.1	0.158E+00	0.75	9.43	.15356E+04
575.09	0.00	0.00	15.1	0.158E+00	0.75	9.44	.15409E+04
577.07	0.00	0.00	15.1	0.157E+00	0.75	9.46	.15462E+04
579.06	0.00	0.00	15.1	0.157E+00	0.75	9.48	.15515E+04
581.04	0.00	0.00	15.2	0.157E+00	0.75	9.49	.15569E+04
583.03	0.00	0.00	15.2	0.157E+00	0.75	9.51	.15622E+04
585.01	0.00	0.00	15.2	0.156E+00	0.75	9.52	.15675E+04
587.00	0.00	0.00	15.3	0.156E+00	0.75	9.54	.15728E+04
588.99	0.00	0.00	15.3	0.156E+00	0.75	9.56	.15781E+04
590.97	0.00	0.00	15.3	0.155E+00	0.75	9.57	.15835E+04
592.96	0.00	0.00	15.3	0.155E+00	0.75	9.59	.15888E+04
594.94	0.00	0.00	15.4	0.155E+00	0.75	9.60	.15941E+04
596.93	0.00	0.00	15.4	0.155E+00	0.75	9.62	.15994E+04
598.91	0.00	0.00	15.4	0.154E+00	0.75	9.63	.16047E+04
600.90	0.00	0.00	15.4	0.154E+00	0.75	9.65	.16101E+04
602.89	0.00	0.00	15.5	0.154E+00	0.75	9.67	.16154E+04
604.87	0.00	0.00	15.5	0.154E+00	0.75	9.68	.16207E+04
606.86	0.00	0.00	15.5	0.153E+00	0.75	9.70	.16260E+04
608.84	0.00	0.00	15.5	0.153E+00	0.75	9.71	.16313E+04
610.83	0.00	0.00	15.6	0.153E+00	0.75	9.73	.16367E+04
612.81	0.00	0.00	15.6	0.153E+00	0.75	9.74	.16420E+04
614.80	0.00	0.00	15.6	0.152E+00	0.75	9.76	.16473E+04
616.78	0.00	0.00	15.6	0.152E+00	0.75	9.78	.16526E+04
618.77	0.00	0.00	15.7	0.152E+00	0.75	9.79	.16579E+04
620.76	0.00	0.00	15.7	0.152E+00	0.75	9.81	.16633E+04
622.74	0.00	0.00	15.7	0.151E+00	0.75	9.82	.16686E+04
624.73	0.00	0.00	15.7	0.151E+00	0.75	9.84	.16739E+04
626.71	0.00	0.00	15.8	0.151E+00	0.75	9.85	.16792E+04
628.70	0.00	0.00	15.8	0.151E+00	0.75	9.87	.16845E+04
630.68	0.00	0.00	15.8	0.150E+00	0.75	9.88	.16899E+04
632.67	0.00	0.00	15.8	0.150E+00	0.75	9.90	.16952E+04
634.65	0.00	0.00	15.9	0.150E+00	0.75	9.92	.17005E+04
636.64	0.00	0.00	15.9	0.150E+00	0.75	9.93	.17058E+04
638.63	0.00	0.00	15.9	0.149E+00	0.75	9.95	.17111E+04
640.61	0.00	0.00	15.9	0.149E+00	0.75	9.96	.17165E+04
642.60	0.00	0.00	16.0	0.149E+00	0.75	9.98	.17218E+04
644.58	0.00	0.00	16.0	0.149E+00	0.75	9.99	.17271E+04
646.57	0.00	0.00	16.0	0.149E+00	0.75	10.01	.17324E+04
648.55	0.00	0.00	16.0	0.148E+00	0.75	10.02	.17377E+04
650.54	0.00	0.00	16.0	0.148E+00	0.75	10.04	.17431E+04
652.53	0.00	0.00	16.1	0.148E+00	0.75	10.05	.17484E+04
654.51	0.00	0.00	16.1	0.148E+00	0.75	10.07	.17537E+04
656.50	0.00	0.00	16.1	0.147E+00	0.75	10.08	.17590E+04
658.48	0.00	0.00	16.1	0.147E+00	0.75	10.10	.17643E+04
660.47	0.00	0.00	16.2	0.147E+00	0.75	10.11	.17697E+04
662.45	0.00	0.00	16.2	0.147E+00	0.75	10.13	.17750E+04
664.44	0.00	0.00	16.2	0.147E+00	0.75	10.14	.17803E+04
666.42	0.00	0.00	16.2	0.146E+00	0.75	10.16	.17856E+04
668.41	0.00	0.00	16.3	0.146E+00	0.75	10.17	.17909E+04
670.40	0.00	0.00	16.3	0.146E+00	0.75	10.19	.17963E+04
672.38	0.00	0.00	16.3	0.146E+00	0.75	10.20	.18016E+04
674.37	0.00	0.00	16.3	0.145E+00	0.75	10.22	.18069E+04
676.35	0.00	0.00	16.4	0.145E+00	0.75	10.23	.18122E+04

678.34	0.00	0.00	16.4	0.145E+00	0.75	10.25	.18175E+04
680.32	0.00	0.00	16.4	0.145E+00	0.75	10.26	.18228E+04
682.31	0.00	0.00	16.4	0.145E+00	0.75	10.28	.18282E+04
684.29	0.00	0.00	16.5	0.144E+00	0.75	10.29	.18335E+04
686.28	0.00	0.00	16.5	0.144E+00	0.75	10.31	.18388E+04
688.27	0.00	0.00	16.5	0.144E+00	0.75	10.32	.18441E+04
690.25	0.00	0.00	16.5	0.144E+00	0.75	10.34	.18494E+04
692.24	0.00	0.00	16.6	0.143E+00	0.75	10.35	.18548E+04
694.22	0.00	0.00	16.6	0.143E+00	0.75	10.37	.18601E+04
696.21	0.00	0.00	16.6	0.143E+00	0.75	10.38	.18654E+04
698.19	0.00	0.00	16.6	0.143E+00	0.75	10.40	.18707E+04
700.18	0.00	0.00	16.6	0.143E+00	0.75	10.41	.18760E+04
702.17	0.00	0.00	16.7	0.142E+00	0.75	10.42	.18814E+04
704.15	0.00	0.00	16.7	0.142E+00	0.75	10.44	.18867E+04
706.14	0.00	0.00	16.7	0.142E+00	0.75	10.45	.18920E+04
708.12	0.00	0.00	16.7	0.142E+00	0.75	10.47	.18973E+04
710.11	0.00	0.00	16.8	0.142E+00	0.75	10.48	.19026E+04
712.09	0.00	0.00	16.8	0.141E+00	0.75	10.50	.19080E+04
714.08	0.00	0.00	16.8	0.141E+00	0.75	10.51	.19133E+04
716.06	0.00	0.00	16.8	0.141E+00	0.75	10.53	.19186E+04
718.05	0.00	0.00	16.9	0.141E+00	0.75	10.54	.19239E+04
720.04	0.00	0.00	16.9	0.141E+00	0.75	10.56	.19292E+04
722.02	0.00	0.00	16.9	0.140E+00	0.75	10.57	.19346E+04
724.01	0.00	0.00	16.9	0.140E+00	0.75	10.58	.19399E+04
725.99	0.00	0.00	16.9	0.140E+00	0.75	10.60	.19452E+04
727.98	0.00	0.00	17.0	0.140E+00	0.75	10.61	.19505E+04
729.96	0.00	0.00	17.0	0.140E+00	0.75	10.63	.19558E+04
731.95	0.00	0.00	17.0	0.139E+00	0.75	10.64	.19612E+04
733.93	0.00	0.00	17.0	0.139E+00	0.75	10.66	.19665E+04
735.92	0.00	0.00	17.1	0.139E+00	0.75	10.67	.19718E+04
737.91	0.00	0.00	17.1	0.139E+00	0.75	10.68	.19771E+04
739.89	0.00	0.00	17.1	0.139E+00	0.75	10.70	.19824E+04
741.88	0.00	0.00	17.1	0.139E+00	0.75	10.71	.19878E+04
743.86	0.00	0.00	17.2	0.138E+00	0.75	10.73	.19931E+04
745.85	0.00	0.00	17.2	0.138E+00	0.75	10.74	.19984E+04
747.83	0.00	0.00	17.2	0.138E+00	0.75	10.76	.20037E+04
749.82	0.00	0.00	17.2	0.138E+00	0.75	10.77	.20090E+04
751.80	0.00	0.00	17.2	0.138E+00	0.75	10.78	.20144E+04
753.79	0.00	0.00	17.3	0.137E+00	0.75	10.80	.20197E+04
755.78	0.00	0.00	17.3	0.137E+00	0.75	10.81	.20250E+04
757.76	0.00	0.00	17.3	0.137E+00	0.75	10.83	.20303E+04
759.75	0.00	0.00	17.3	0.137E+00	0.75	10.84	.20356E+04
761.73	0.00	0.00	17.4	0.137E+00	0.75	10.85	.20410E+04
763.72	0.00	0.00	17.4	0.137E+00	0.75	10.87	.20463E+04
765.70	0.00	0.00	17.4	0.136E+00	0.75	10.88	.20516E+04
767.69	0.00	0.00	17.4	0.136E+00	0.75	10.90	.20569E+04
769.68	0.00	0.00	17.4	0.136E+00	0.75	10.91	.20622E+04
771.66	0.00	0.00	17.5	0.136E+00	0.75	10.92	.20676E+04
773.65	0.00	0.00	17.5	0.136E+00	0.75	10.94	.20729E+04
775.63	0.00	0.00	17.5	0.135E+00	0.75	10.95	.20782E+04
777.62	0.00	0.00	17.5	0.135E+00	0.75	10.97	.20835E+04
779.60	0.00	0.00	17.6	0.135E+00	0.75	10.98	.20888E+04
781.59	0.00	0.00	17.6	0.135E+00	0.75	10.99	.20942E+04
783.57	0.00	0.00	17.6	0.135E+00	0.75	11.01	.20995E+04
785.56	0.00	0.00	17.6	0.135E+00	0.75	11.02	.21048E+04
787.55	0.00	0.00	17.6	0.134E+00	0.75	11.04	.21101E+04
789.53	0.00	0.00	17.7	0.134E+00	0.75	11.05	.21154E+04
791.52	0.00	0.00	17.7	0.134E+00	0.75	11.06	.21208E+04
793.50	0.00	0.00	17.7	0.134E+00	0.75	11.08	.21261E+04
795.49	0.00	0.00	17.7	0.134E+00	0.75	11.09	.21314E+04
797.47	0.00	0.00	17.8	0.134E+00	0.75	11.10	.21367E+04
799.46	0.00	0.00	17.8	0.133E+00	0.75	11.12	.21420E+04
801.44	0.00	0.00	17.8	0.133E+00	0.75	11.13	.21474E+04
803.43	0.00	0.00	17.8	0.133E+00	0.75	11.15	.21527E+04
805.42	0.00	0.00	17.8	0.133E+00	0.75	11.16	.21580E+04
807.40	0.00	0.00	17.9	0.133E+00	0.75	11.17	.21633E+04
809.39	0.00	0.00	17.9	0.133E+00	0.75	11.19	.21686E+04
811.37	0.00	0.00	17.9	0.132E+00	0.75	11.20	.21740E+04
813.36	0.00	0.00	17.9	0.132E+00	0.75	11.21	.21793E+04
815.34	0.00	0.00	18.0	0.132E+00	0.75	11.23	.21846E+04
817.33	0.00	0.00	18.0	0.132E+00	0.75	11.24	.21899E+04
819.32	0.00	0.00	18.0	0.132E+00	0.75	11.25	.21952E+04
821.30	0.00	0.00	18.0	0.132E+00	0.75	11.27	.22006E+04
823.29	0.00	0.00	18.0	0.131E+00	0.75	11.28	.22059E+04
825.27	0.00	0.00	18.1	0.131E+00	0.75	11.29	.22112E+04
827.26	0.00	0.00	18.1	0.131E+00	0.75	11.31	.22165E+04
829.24	0.00	0.00	18.1	0.131E+00	0.75	11.32	.22218E+04
831.23	0.00	0.00	18.1	0.131E+00	0.75	11.34	.22272E+04
833.21	0.00	0.00	18.1	0.131E+00	0.75	11.35	.22325E+04
835.20	0.00	0.00	18.2	0.130E+00	0.75	11.36	.22378E+04
837.19	0.00	0.00	18.2	0.130E+00	0.75	11.38	.22431E+04
839.17	0.00	0.00	18.2	0.130E+00	0.75	11.39	.22484E+04
841.16	0.00	0.00	18.2	0.130E+00	0.75	11.40	.22538E+04
843.14	0.00	0.00	18.3	0.130E+00	0.75	11.42	.22591E+04
845.13	0.00	0.00	18.3	0.130E+00	0.75	11.43	.22644E+04
847.11	0.00	0.00	18.3	0.130E+00	0.75	11.44	.22697E+04
849.10	0.00	0.00	18.3	0.129E+00	0.75	11.46	.22750E+04
851.08	0.00	0.00	18.3	0.129E+00	0.75	11.47	.22804E+04
853.07	0.00	0.00	18.4	0.129E+00	0.75	11.48	.22857E+04
855.06	0.00	0.00	18.4	0.129E+00	0.75	11.50	.22910E+04

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    857.04     0.00    0.00    18.4 0.129E+00   0.75    11.51 .22963E+04
    859.03     0.00    0.00    18.4 0.129E+00   0.75    11.52 .23016E+04
    861.01     0.00    0.00    18.4 0.128E+00   0.75    11.54 .23070E+04
    863.00     0.00    0.00    18.5 0.128E+00   0.75    11.55 .23123E+04
    864.98     0.00    0.00    18.5 0.128E+00   0.75    11.56 .23176E+04
    866.97     0.00    0.00    18.5 0.128E+00   0.75    11.57 .23229E+04
    868.96     0.00    0.00    18.5 0.128E+00   0.75    11.59 .23282E+04
    870.94     0.00    0.00    18.5 0.128E+00   0.75    11.60 .23336E+04
    872.93     0.00    0.00    18.6 0.128E+00   0.75    11.61 .23389E+04
    874.91     0.00    0.00    18.6 0.127E+00   0.75    11.63 .23442E+04
    876.90     0.00    0.00    18.6 0.127E+00   0.75    11.64 .23495E+04
    878.88     0.00    0.00    18.6 0.127E+00   0.75    11.65 .23548E+04
    880.87     0.00    0.00    18.7 0.127E+00   0.75    11.67 .23602E+04
    882.85     0.00    0.00    18.7 0.127E+00   0.75    11.68 .23655E+04
    884.84     0.00    0.00    18.7 0.127E+00   0.75    11.69 .23708E+04
    886.83     0.00    0.00    18.7 0.127E+00   0.75    11.71 .23761E+04
    888.81     0.00    0.00    18.7 0.126E+00   0.75    11.72 .23814E+04
    890.80     0.00    0.00    18.8 0.126E+00   0.75    11.73 .23868E+04
    892.78     0.00    0.00    18.8 0.126E+00   0.75    11.74 .23921E+04
    894.77     0.00    0.00    18.8 0.126E+00   0.75    11.76 .23974E+04
    896.75     0.00    0.00    18.8 0.126E+00   0.75    11.77 .24027E+04
    898.74     0.00    0.00    18.8 0.126E+00   0.75    11.78 .24080E+04
    900.72     0.00    0.00    18.9 0.126E+00   0.75    11.80 .24134E+04
    902.71     0.00    0.00    18.9 0.125E+00   0.75    11.81 .24187E+04
    904.70     0.00    0.00    18.9 0.125E+00   0.75    11.82 .24240E+04
    906.68     0.00    0.00    18.9 0.125E+00   0.75    11.84 .24293E+04
    908.67     0.00    0.00    18.9 0.125E+00   0.75    11.85 .24346E+04
    910.65     0.00    0.00    19.0 0.125E+00   0.75    11.86 .24400E+04
    912.64     0.00    0.00    19.0 0.125E+00   0.75    11.87 .24453E+04
    914.62     0.00    0.00    19.0 0.125E+00   0.75    11.89 .24506E+04
    916.61     0.00    0.00    19.0 0.124E+00   0.75    11.90 .24559E+04
    918.59     0.00    0.00    19.0 0.124E+00   0.75    11.91 .24612E+04
    920.58     0.00    0.00    19.1 0.124E+00   0.75    11.92 .24666E+04
    922.57     0.00    0.00    19.1 0.124E+00   0.75    11.94 .24719E+04
    924.55     0.00    0.00    19.1 0.124E+00   0.75    11.95 .24772E+04
    926.54     0.00    0.00    19.1 0.124E+00   0.75    11.96 .24825E+04
    928.52     0.00    0.00    19.1 0.124E+00   0.75    11.98 .24878E+04
    930.51     0.00    0.00    19.2 0.123E+00   0.75    11.99 .24932E+04
    932.49     0.00    0.00    19.2 0.123E+00   0.75    12.00 .24985E+04
    934.48     0.00    0.00    19.2 0.123E+00   0.75    12.01 .25038E+04
    936.47     0.00    0.00    19.2 0.123E+00   0.75    12.03 .25091E+04
    938.45     0.00    0.00    19.2 0.123E+00   0.75    12.04 .25144E+04
    940.44     0.00    0.00    19.3 0.123E+00   0.75    12.05 .25198E+04
    942.42     0.00    0.00    19.3 0.123E+00   0.75    12.06 .25251E+04
    944.41     0.00    0.00    19.3 0.123E+00   0.75    12.08 .25304E+04
    946.39     0.00    0.00    19.3 0.122E+00   0.75    12.09 .25357E+04
    948.38     0.00    0.00    19.4 0.122E+00   0.75    12.10 .25410E+04
    950.36     0.00    0.00    19.4 0.122E+00   0.75    12.12 .25464E+04
    952.35     0.00    0.00    19.4 0.122E+00   0.75    12.13 .25517E+04
    954.34     0.00    0.00    19.4 0.122E+00   0.75    12.14 .25570E+04
    956.32     0.00    0.00    19.4 0.122E+00   0.75    12.15 .25623E+04
    958.31     0.00    0.00    19.5 0.122E+00   0.75    12.17 .25676E+04
    960.29     0.00    0.00    19.5 0.121E+00   0.75    12.18 .25730E+04
    962.28     0.00    0.00    19.5 0.121E+00   0.75    12.19 .25783E+04
    964.26     0.00    0.00    19.5 0.121E+00   0.75    12.20 .25836E+04
    966.25     0.00    0.00    19.5 0.121E+00   0.75    12.22 .25889E+04
    968.23     0.00    0.00    19.6 0.121E+00   0.75    12.23 .25942E+04
    970.22     0.00    0.00    19.6 0.121E+00   0.75    12.24 .25996E+04
    972.21     0.00    0.00    19.6 0.121E+00   0.75    12.25 .26049E+04
    974.19     0.00    0.00    19.6 0.121E+00   0.75    12.27 .26102E+04
    976.18     0.00    0.00    19.6 0.120E+00   0.75    12.28 .26155E+04
    978.16     0.00    0.00    19.7 0.120E+00   0.75    12.29 .26208E+04
    980.15     0.00    0.00    19.7 0.120E+00   0.75    12.30 .26262E+04
    982.13     0.00    0.00    19.7 0.120E+00   0.75    12.31 .26315E+04
    984.12     0.00    0.00    19.7 0.120E+00   0.75    12.33 .26368E+04
    986.11     0.00    0.00    19.7 0.120E+00   0.75    12.34 .26421E+04
    988.09     0.00    0.00    19.7 0.120E+00   0.75    12.35 .26474E+04
    990.08     0.00    0.00    19.8 0.120E+00   0.75    12.36 .26528E+04
    992.06     0.00    0.00    19.8 0.119E+00   0.75    12.38 .26581E+04
    994.05     0.00    0.00    19.8 0.119E+00   0.75    12.39 .26634E+04
    996.03     0.00    0.00    19.8 0.119E+00   0.75    12.40 .26687E+04
    998.02     0.00    0.00    19.8 0.119E+00   0.75    12.41 .26740E+04
   1000.00     0.00    0.00    19.9 0.119E+00   0.75    12.43 .26794E+04
 Cumulative travel time =        2679.3457 sec  (    0.74 hrs)

 Simulation limit based on maximum specified distance =   1000.00 m.
   This is the REGION OF INTEREST limitation.

END OF MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
CORMIX3: Buoyant Surface Discharges                    End of Prediction File
333333333333333333333333333333333333333333333333333333333333333333333333333333
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CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 10.0G
                       HYDRO3:Version-10.0.0.0  July,2016
SITE NAME/LABEL:                Richland
  DESIGN CASE:                  Ammonia Cronic  (3 MGD) 7Q10
  FILE NAME:                    C:\Program Files (x86)\CORMIX 10.0\Simulations\Ammonia Chronic 3MGD.prd
  Using subsystem CORMIX3:     Buoyant Surface Discharges
  Start of session:             03/15/2017--11:09:12
*****************************************************************************
SUMMARY OF INPUT DATA:
-----------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                          BS      = 72.10 m
  Channel regularity             ICHREG = 2
  Ambient flowrate               QA      = 20.01 m^3/s
  Average depth                  HA      = 0.75 m
  Depth at discharge             HD      = 0.75 m
  Ambient velocity               UA      = 0.37 m/s
  Darcy-Weisbach friction factor  F      = 0.1381
    Calculated from Manning's n          = 0.04
  Wind velocity                  UW      = 1 m/s
  Stratification Type            STRCND = U
  Surface temperature                    = 27.90 degC
  Bottom temperature                     = 27.90 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density                RHOAS   = 996.2622 kg/m^3
  Bottom density                 RHOAB   = 996.2622 kg/m^3
-----------------------------------------------------------------------------
DISCHARGE PARAMETERS:            Surface Discharge
  Discharge located on                   = left bank/shoreline
  Discharge configuration                = flush discharge
  Distance from bank to outlet   DISTB   = 0 m
  Discharge angle                SIGMA   = 85 deg
  Depth near discharge outlet    HD0     = 0.5 m
  Bottom slope at discharge      SLOPE   = 4.46 deg
  Rectangular discharge:
    Discharge cross-section area  A0     = 3.725 m^2
    Discharge channel width       B0     = 7.45 m
    Discharge channel depth       H0     = 0.5 m
    Discharge aspect ratio        AR     = 0.067114
  Discharge flowrate             Q0      = 0.131865 m^3/s
  Discharge velocity             U0      = 0.04 m/s
  Discharge temperature (freshwater)     = 30.30 degC
  Corresponding density          RHO0    = 995.5560 kg/m^3
  Density difference             DRHO    = 0.7062 kg/m^3
  Buoyant acceleration           GP0     = 0.007 m/s^2
  Discharge concentration        C0      = 0.106 mg/l
  Surface heat exchange coeff.   KS      = 0 m/s
  Coefficient of decay           KD      = 0.000023 /s
-----------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 1.93 m         Lm  = 0.18 m         Lbb = 0.02 m
  LM  = 0.59 m
-----------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Densimetric Froude number      FR0     = 0.31 (based on LQ)
  Channel densimetric Froude no. FRCH    = 0.60 (based on H0)
  Velocity ratio                 R       = 0.10
-----------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = yes
  Water quality standard         CSTD    = 0.02 mg/l
  Regulatory mixing zone                 = yes
  Regulatory mixing zone specification   = distance
  Regulatory mixing zone value           = 91.46 m (m^2 if area)
  Region of interest                     = 1000 m
*****************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *------------------------*
  | FLOW CLASS   = PL2 |
  *------------------------*

  Limiting Dilution S = (QA/Q0)+ 1.0 = 152.7

*****************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

-----------------------------------------------------------------------------
X-Y-Z Coordinate system:
Origin is located at WATER SURFACE and at centerline of discharge channel:
    0 m from the left bank/shore.
  Number of display steps NSTEP = 500 per module.
-----------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
  implication.  However, this information may be useful for the discharge
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  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 0.106 mg/l
  Dilution at edge of NFR              s = 1
  NFR Location:                        x = 3.73 m
    (centerline coordinates)           y = -0.20 m
                                       z = 0 m
  NFR plume dimensions:  half-width (bh) = 0.85 m
                          thickness (bv) = 0.42 m
Cumulative travel time:       10.0676 sec.
-----------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is less than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards
  the surface.
-----------------------------------------------------------------------------
FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed at 21.73 m downstream.
-----------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts one bank only at 0 m downstream.
************************ TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
********************** REGULATORY MIXING ZONE SUMMARY ***********************
The plume conditions at the boundary of the specified RMZ are as follows:
  Pollutant concentration              c = 0.013172  mg/l
  Corresponding dilution               s = 8.0
  Plume location:                      x = 91.46 m
    (centerline coordinates)           y = 0 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 3.78 m
                          thickness (bv) = 0.75 m
Cumulative travel time:       245.6366 sec.

Note:
Plume concentration c and dilution s values are reported based on prediction
file values - assuming linear interpolation between predicted points just
before and just after the RMZ boundary has been detected.

Please ensure a small step size is used in the prediction file to account
for this linear interpolation. Step size can be controlled by increasing
(reduces the prediction step size) or decreasing (increases the prediction
step size) the - Output Steps per Module - in CORMIX input.

At this position, the plume is CONTACTING the LEFT bank.
Furthermore, the specified water quality standard has indeed been met
  within the RMZ. In particular:
The ambient water quality standard was encountered at the following
  plume position:
  Water quality standard                 = 0.02  mg/l
  Corresponding dilution               s = 5.3
  Plume location:                      x = 39.21 m
    (centerline coordinates)           y = 0 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 2.50 m
                          thickness (bv) = 0.75 m
********************* FINAL DESIGN ADVICE AND COMMENTS **********************
REMINDER:  The user must take note that HYDRODYNAMIC MODELING by any known
  technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the
  CORMIX predictions on dilutions and concentrations (with associated
  plume geometries) are reliable for the majority of cases and are accurate
  to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges
  the design configuration as highly complex and uncertain for prediction.
```

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CORMIX3 PREDICTION FILE:
3333333333333333333333333333333333333333333333333333333333333333333333333333333333
                        CORMIX MIXING ZONE EXPERT SYSTEM
                 Subsystem CORMIX3: Buoyant Surface Discharges
                              CORMIX Version 10.0G
                      HYDRO3 Version 10.0.0.0 July 2016
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
CASE DESCRIPTION
 Site name/label:   Richland
 Design case:       Ammonia Cronic  (3 MGD) 7Q10
 FILE NAME:         C:\...\CORMIX 10.0\Simulations\Ammonia Chronic_3MGD.prd
 Time stamp:        03/15/2017--11:09:12

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     72.10  AS    =     54.07  QA    =     20.01  ICHREG= 2
 HA    =      0.75  HD    =      0.75
 UA    =      0.370 F     =      0.138 USTAR =0.4862E-01
 UW    =      1.000 UWSTAR=0.1071E-02
 Uniform density environment
 STRCND=  U         RHOAM =  996.2622

DISCHARGE PARAMETERS (metric units)
 BANK  =  LEFT      DISTB =      0.00  Configuration: flush_discharge
 SIGMA =     85.00  HDO   =      0.50  SLOPE =    4.46 deg.
 Rectangular channel geometry:
 B0    =      7.450 H0    =      0.500 A0    =0.3725E+01  AR    =      0.067
 U0    =      0.035 Q0    =      0.132       =0.1319E+00
 RHO0  =  995.5560  DRHO0 =0.7062E+00  GP0   =0.6952E-02
 C0    =0.1060E+00  CUNITS=  mg/l
 IPOLL =  2         KS    =0.0000E+00  KD    =0.2315E-04

FLUX VARIABLES (metric units)
 Q0    =0.1319E+00  M0    =0.4668E-02  J0    =0.9167E-03
 Associated length scales (meters)
 LQ    =      1.93  LM    =      0.59  Lm    =      0.18  Lb    =      0.02

NON-DIMENSIONAL PARAMETERS
 FR0   =      0.31  FRCH  =      0.60  R     =      0.10

FLOW CLASSIFICATION
 3333333333333333333333333333333333333333333
 3  Flow class (CORMIX3)      =    PL2    3
 3  Applicable layer depth HS =     0.75  3
 3  Limiting Dilution S =QA/Q0=   152.73  3
 3333333333333333333333333333333333333333333

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.1060E+00  CUNITS=  mg/l
 NTOX  =  0
 NSTD  =  1         CSTD  =0.2000E-01
 REGMZ =  1
 REGSPC=  1         XREG  =     91.46  WREG  =      0.00  AREG  =      0.00
 XINT  =   1000.00  XMAX  =   1000.00

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the WATER SURFACE and at center of discharge
      channel/outlet:      0.00 m  from the LEFT  bank/shore.
    X-axis points downstream
    Y-axis points to left as seen by an observer looking downstream
    Z-axis points vertically upward (in CORMIX3, all values Z = 0.00)
NSTEP = 500 display intervals per module
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
BEGIN MOD301: DISCHARGE MODULE

 Efflux conditions:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.106E+00   0.50     3.72 .00000E+00

END OF MOD301: DISCHARGE MODULE
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
BEGIN MOD302: ZONE OF FLOW ESTABLISHMENT

  Control volume inflow:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.106E+00   0.50     3.72 .00000E+00

 RAPID DEFLECTION by ambient current:
 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

  Control volume outflow:                                SIGMAE=    347.29
       X        Y       Z        S       C       BV       BH        TT
```

```
      3.72    -0.20    0.00     1.0 0.106E+00   0.42     0.85 .10068E+02
 Cumulative travel time =          10.0676 sec  (    0.00 hrs)

END OF MOD302: ZONE OF FLOW ESTABLISHMENT
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
** End of NEAR-FIELD REGION (NFR) **
-------------------------------------------------------------------------------

 WAKE FLOW CONDITIONS: The discharge velocity (U0) is less than or equal to the
 ambient velocity (Ua) and results in wake flow conditions. There is no discharge
 momentum induced mixing. The mixing characteristics are UNDESIRABLE.
-------------------------------------------------------------------------------
BEGIN MOD341: BUOYANT AMBIENT SPREADING

 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

 Plume Stage 2 (bank attached):
       X        Y        Z        S        C        BV        BH        TT
      3.72     0.00     0.00     1.0 0.106E+00   0.42     0.84 .10068E+02
      3.73     0.00     0.00     1.0 0.106E+00   0.42     0.84 .10079E+02
      3.73     0.00     0.00     1.0 0.106E+00   0.42     0.84 .10090E+02
      3.74     0.00     0.00     1.0 0.106E+00   0.42     0.84 .10101E+02
      3.74     0.00     0.00     1.0 0.106E+00   0.42     0.84 .10113E+02
      3.75     0.00     0.00     1.0 0.106E+00   0.42     0.85 .10124E+02
      3.75     0.00     0.00     1.0 0.106E+00   0.42     0.85 .10135E+02
      3.75     0.00     0.00     1.0 0.106E+00   0.42     0.85 .10146E+02
      3.76     0.00     0.00     1.0 0.106E+00   0.42     0.85 .10158E+02
      3.76     0.00     0.00     1.0 0.106E+00   0.42     0.85 .10169E+02
      3.77     0.00     0.00     1.0 0.106E+00   0.42     0.85 .10180E+02
      3.77     0.00     0.00     1.0 0.106E+00   0.42     0.85 .10191E+02
      3.78     0.00     0.00     1.0 0.106E+00   0.42     0.85 .10203E+02
      3.78     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10214E+02
      3.78     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10225E+02
      3.79     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10236E+02
      3.79     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10248E+02
      3.80     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10259E+02
      3.80     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10270E+02
      3.80     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10281E+02
      3.81     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10293E+02
      3.81     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10304E+02
      3.82     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10315E+02
      3.82     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10326E+02
      3.83     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10338E+02
      3.83     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10349E+02
      3.83     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10360E+02
      3.84     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10371E+02
      3.84     0.00     0.00     1.0 0.105E+00   0.42     0.85 .10383E+02
      3.85     0.00     0.00     1.0 0.105E+00   0.42     0.86 .10394E+02
      3.85     0.00     0.00     1.0 0.105E+00   0.42     0.86 .10405E+02
      3.85     0.00     0.00     1.0 0.105E+00   0.42     0.86 .10416E+02
      3.86     0.00     0.00     1.0 0.105E+00   0.42     0.86 .10428E+02
      3.86     0.00     0.00     1.0 0.105E+00   0.42     0.86 .10439E+02
      3.87     0.00     0.00     1.0 0.105E+00   0.42     0.86 .10450E+02
      3.87     0.00     0.00     1.0 0.105E+00   0.42     0.86 .10461E+02
      3.88     0.00     0.00     1.0 0.105E+00   0.42     0.86 .10473E+02
      3.88     0.00     0.00     1.0 0.105E+00   0.42     0.86 .10484E+02
      3.88     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10495E+02
      3.89     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10506E+02
      3.89     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10517E+02
      3.90     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10529E+02
      3.90     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10540E+02
      3.91     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10551E+02
      3.91     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10562E+02
      3.91     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10574E+02
      3.92     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10585E+02
      3.92     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10596E+02
      3.93     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10607E+02
      3.93     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10619E+02
      3.93     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10630E+02
      3.94     0.00     0.00     1.0 0.104E+00   0.42     0.86 .10641E+02
      3.94     0.00     0.00     1.0 0.104E+00   0.42     0.87 .10652E+02
      3.95     0.00     0.00     1.0 0.104E+00   0.42     0.87 .10664E+02
      3.95     0.00     0.00     1.0 0.104E+00   0.42     0.87 .10675E+02
      3.96     0.00     0.00     1.0 0.104E+00   0.42     0.87 .10686E+02
      3.96     0.00     0.00     1.0 0.104E+00   0.42     0.87 .10697E+02
      3.96     0.00     0.00     1.0 0.104E+00   0.42     0.87 .10709E+02
      3.97     0.00     0.00     1.0 0.104E+00   0.42     0.87 .10720E+02
      3.97     0.00     0.00     1.0 0.104E+00   0.42     0.87 .10731E+02
      3.98     0.00     0.00     1.0 0.104E+00   0.42     0.87 .10742E+02
      3.98     0.00     0.00     1.0 0.104E+00   0.42     0.87 .10754E+02
      3.98     0.00     0.00     1.0 0.104E+00   0.42     0.87 .10765E+02
      3.99     0.00     0.00     1.0 0.104E+00   0.42     0.87 .10776E+02
      3.99     0.00     0.00     1.0 0.103E+00   0.42     0.87 .10787E+02
      4.00     0.00     0.00     1.0 0.103E+00   0.42     0.87 .10799E+02
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4.00	0.00	0.00	1.0	0.103E+00	0.42	0.87	.10810E+02
4.01	0.00	0.00	1.0	0.103E+00	0.42	0.87	.10821E+02
4.01	0.00	0.00	1.0	0.103E+00	0.42	0.87	.10832E+02
4.01	0.00	0.00	1.0	0.103E+00	0.42	0.87	.10844E+02
4.02	0.00	0.00	1.0	0.103E+00	0.42	0.87	.10855E+02
4.02	0.00	0.00	1.0	0.103E+00	0.42	0.87	.10866E+02
4.03	0.00	0.00	1.0	0.103E+00	0.42	0.87	.10877E+02
4.03	0.00	0.00	1.0	0.103E+00	0.42	0.87	.10889E+02
4.04	0.00	0.00	1.0	0.103E+00	0.42	0.87	.10900E+02
4.04	0.00	0.00	1.0	0.103E+00	0.42	0.87	.10911E+02
4.04	0.00	0.00	1.0	0.103E+00	0.42	0.88	.10922E+02
4.05	0.00	0.00	1.0	0.103E+00	0.42	0.88	.10934E+02
4.05	0.00	0.00	1.0	0.103E+00	0.42	0.88	.10945E+02
4.06	0.00	0.00	1.0	0.103E+00	0.42	0.88	.10956E+02
4.06	0.00	0.00	1.0	0.103E+00	0.42	0.88	.10967E+02
4.06	0.00	0.00	1.0	0.103E+00	0.42	0.88	.10979E+02
4.07	0.00	0.00	1.0	0.103E+00	0.42	0.88	.10990E+02
4.07	0.00	0.00	1.0	0.103E+00	0.42	0.88	.11001E+02
4.08	0.00	0.00	1.0	0.103E+00	0.42	0.88	.11012E+02
4.08	0.00	0.00	1.0	0.103E+00	0.42	0.88	.11024E+02
4.09	0.00	0.00	1.0	0.103E+00	0.42	0.88	.11035E+02
4.09	0.00	0.00	1.0	0.103E+00	0.42	0.88	.11046E+02
4.09	0.00	0.00	1.0	0.103E+00	0.42	0.88	.11057E+02
4.10	0.00	0.00	1.0	0.103E+00	0.42	0.88	.11069E+02
4.10	0.00	0.00	1.0	0.102E+00	0.42	0.88	.11080E+02
4.11	0.00	0.00	1.0	0.102E+00	0.42	0.88	.11091E+02
4.11	0.00	0.00	1.0	0.102E+00	0.42	0.88	.11102E+02
4.11	0.00	0.00	1.0	0.102E+00	0.42	0.88	.11114E+02
4.12	0.00	0.00	1.0	0.102E+00	0.42	0.88	.11125E+02
4.12	0.00	0.00	1.0	0.102E+00	0.42	0.88	.11136E+02
4.13	0.00	0.00	1.0	0.102E+00	0.42	0.88	.11147E+02
4.13	0.00	0.00	1.0	0.102E+00	0.42	0.88	.11159E+02
4.14	0.00	0.00	1.0	0.102E+00	0.42	0.88	.11170E+02
4.14	0.00	0.00	1.0	0.102E+00	0.42	0.88	.11181E+02
4.14	0.00	0.00	1.0	0.102E+00	0.42	0.89	.11192E+02
4.15	0.00	0.00	1.0	0.102E+00	0.42	0.89	.11204E+02
4.15	0.00	0.00	1.0	0.102E+00	0.42	0.89	.11215E+02
4.16	0.00	0.00	1.0	0.102E+00	0.41	0.89	.11226E+02
4.16	0.00	0.00	1.0	0.102E+00	0.41	0.89	.11237E+02
4.16	0.00	0.00	1.0	0.102E+00	0.41	0.89	.11249E+02
4.17	0.00	0.00	1.0	0.102E+00	0.41	0.89	.11260E+02
4.17	0.00	0.00	1.0	0.102E+00	0.41	0.89	.11271E+02
4.18	0.00	0.00	1.0	0.102E+00	0.41	0.89	.11282E+02
4.18	0.00	0.00	1.0	0.102E+00	0.41	0.89	.11294E+02
4.19	0.00	0.00	1.0	0.102E+00	0.41	0.89	.11305E+02
4.19	0.00	0.00	1.0	0.102E+00	0.41	0.89	.11316E+02
4.19	0.00	0.00	1.0	0.102E+00	0.41	0.89	.11327E+02
4.20	0.00	0.00	1.0	0.102E+00	0.41	0.89	.11339E+02
4.20	0.00	0.00	1.0	0.102E+00	0.41	0.89	.11350E+02
4.21	0.00	0.00	1.0	0.102E+00	0.41	0.89	.11361E+02
4.21	0.00	0.00	1.0	0.101E+00	0.41	0.89	.11372E+02
4.22	0.00	0.00	1.0	0.101E+00	0.41	0.89	.11384E+02
4.22	0.00	0.00	1.0	0.101E+00	0.41	0.89	.11395E+02
4.22	0.00	0.00	1.0	0.101E+00	0.41	0.89	.11406E+02
4.23	0.00	0.00	1.0	0.101E+00	0.41	0.89	.11417E+02
4.23	0.00	0.00	1.0	0.101E+00	0.41	0.89	.11429E+02
4.24	0.00	0.00	1.0	0.101E+00	0.41	0.89	.11440E+02
4.24	0.00	0.00	1.0	0.101E+00	0.41	0.89	.11451E+02
4.24	0.00	0.00	1.0	0.101E+00	0.41	0.90	.11462E+02
4.25	0.00	0.00	1.0	0.101E+00	0.41	0.90	.11474E+02
4.25	0.00	0.00	1.0	0.101E+00	0.41	0.90	.11485E+02
4.26	0.00	0.00	1.0	0.101E+00	0.41	0.90	.11496E+02
4.26	0.00	0.00	1.0	0.101E+00	0.41	0.90	.11507E+02
4.27	0.00	0.00	1.0	0.101E+00	0.41	0.90	.11519E+02
4.27	0.00	0.00	1.0	0.101E+00	0.41	0.90	.11530E+02
4.27	0.00	0.00	1.1	0.101E+00	0.41	0.90	.11541E+02
4.28	0.00	0.00	1.1	0.101E+00	0.41	0.90	.11552E+02
4.28	0.00	0.00	1.1	0.101E+00	0.41	0.90	.11564E+02
4.29	0.00	0.00	1.1	0.101E+00	0.41	0.90	.11575E+02
4.29	0.00	0.00	1.1	0.101E+00	0.41	0.90	.11586E+02
4.29	0.00	0.00	1.1	0.101E+00	0.41	0.90	.11597E+02
4.30	0.00	0.00	1.1	0.101E+00	0.41	0.90	.11609E+02
4.30	0.00	0.00	1.1	0.101E+00	0.41	0.90	.11620E+02
4.31	0.00	0.00	1.1	0.101E+00	0.41	0.90	.11631E+02
4.31	0.00	0.00	1.1	0.101E+00	0.41	0.90	.11642E+02
4.32	0.00	0.00	1.1	0.101E+00	0.41	0.90	.11654E+02
4.32	0.00	0.00	1.1	0.100E+00	0.41	0.90	.11665E+02
4.32	0.00	0.00	1.1	0.100E+00	0.41	0.90	.11676E+02
4.33	0.00	0.00	1.1	0.100E+00	0.41	0.90	.11687E+02
4.33	0.00	0.00	1.1	0.100E+00	0.41	0.90	.11699E+02
4.34	0.00	0.00	1.1	0.100E+00	0.41	0.90	.11710E+02
4.34	0.00	0.00	1.1	0.100E+00	0.41	0.90	.11721E+02
4.35	0.00	0.00	1.1	0.100E+00	0.41	0.91	.11732E+02
4.35	0.00	0.00	1.1	0.100E+00	0.41	0.91	.11744E+02
4.35	0.00	0.00	1.1	0.100E+00	0.41	0.91	.11755E+02
4.36	0.00	0.00	1.1	0.100E+00	0.41	0.91	.11766E+02
4.36	0.00	0.00	1.1	0.100E+00	0.41	0.91	.11777E+02
4.37	0.00	0.00	1.1	0.100E+00	0.41	0.91	.11789E+02
4.37	0.00	0.00	1.1	0.100E+00	0.41	0.91	.11800E+02
4.37	0.00	0.00	1.1	0.100E+00	0.41	0.91	.11811E+02

4.38	0.00	0.00	1.1	0.100E+00	0.41	0.91	.11822E+02
4.38	0.00	0.00	1.1	0.999E-01	0.41	0.91	.11834E+02
4.39	0.00	0.00	1.1	0.999E-01	0.41	0.91	.11845E+02
4.39	0.00	0.00	1.1	0.998E-01	0.41	0.91	.11856E+02
4.40	0.00	0.00	1.1	0.998E-01	0.41	0.91	.11867E+02
4.40	0.00	0.00	1.1	0.998E-01	0.41	0.91	.11879E+02
4.40	0.00	0.00	1.1	0.997E-01	0.41	0.91	.11890E+02
4.41	0.00	0.00	1.1	0.997E-01	0.41	0.91	.11901E+02
4.41	0.00	0.00	1.1	0.996E-01	0.41	0.91	.11912E+02
4.42	0.00	0.00	1.1	0.996E-01	0.41	0.91	.11924E+02
4.42	0.00	0.00	1.1	0.996E-01	0.41	0.91	.11935E+02
4.42	0.00	0.00	1.1	0.995E-01	0.41	0.91	.11946E+02
4.43	0.00	0.00	1.1	0.995E-01	0.41	0.91	.11957E+02
4.43	0.00	0.00	1.1	0.995E-01	0.41	0.91	.11969E+02
4.44	0.00	0.00	1.1	0.994E-01	0.41	0.91	.11980E+02
4.44	0.00	0.00	1.1	0.994E-01	0.41	0.91	.11991E+02
4.45	0.00	0.00	1.1	0.993E-01	0.41	0.92	.12002E+02
4.45	0.00	0.00	1.1	0.993E-01	0.41	0.92	.12014E+02
4.45	0.00	0.00	1.1	0.993E-01	0.41	0.92	.12025E+02
4.46	0.00	0.00	1.1	0.992E-01	0.41	0.92	.12036E+02
4.46	0.00	0.00	1.1	0.992E-01	0.41	0.92	.12047E+02
4.47	0.00	0.00	1.1	0.992E-01	0.41	0.92	.12058E+02
4.47	0.00	0.00	1.1	0.991E-01	0.41	0.92	.12070E+02
4.47	0.00	0.00	1.1	0.991E-01	0.41	0.92	.12081E+02
4.48	0.00	0.00	1.1	0.990E-01	0.41	0.92	.12092E+02
4.48	0.00	0.00	1.1	0.990E-01	0.41	0.92	.12103E+02
4.49	0.00	0.00	1.1	0.990E-01	0.41	0.92	.12115E+02
4.49	0.00	0.00	1.1	0.989E-01	0.41	0.92	.12126E+02
4.50	0.00	0.00	1.1	0.989E-01	0.41	0.92	.12137E+02
4.50	0.00	0.00	1.1	0.989E-01	0.41	0.92	.12148E+02
4.50	0.00	0.00	1.1	0.988E-01	0.41	0.92	.12160E+02
4.51	0.00	0.00	1.1	0.988E-01	0.41	0.92	.12171E+02
4.51	0.00	0.00	1.1	0.987E-01	0.41	0.92	.12182E+02
4.52	0.00	0.00	1.1	0.987E-01	0.41	0.92	.12193E+02
4.52	0.00	0.00	1.1	0.987E-01	0.41	0.92	.12205E+02
4.53	0.00	0.00	1.1	0.986E-01	0.41	0.92	.12216E+02
4.53	0.00	0.00	1.1	0.986E-01	0.41	0.92	.12227E+02
4.53	0.00	0.00	1.1	0.986E-01	0.41	0.92	.12238E+02
4.54	0.00	0.00	1.1	0.985E-01	0.41	0.92	.12250E+02
4.54	0.00	0.00	1.1	0.985E-01	0.41	0.92	.12261E+02
4.55	0.00	0.00	1.1	0.984E-01	0.41	0.93	.12272E+02
4.55	0.00	0.00	1.1	0.984E-01	0.41	0.93	.12283E+02
4.55	0.00	0.00	1.1	0.984E-01	0.41	0.93	.12295E+02
4.56	0.00	0.00	1.1	0.983E-01	0.41	0.93	.12306E+02
4.56	0.00	0.00	1.1	0.983E-01	0.41	0.93	.12317E+02
4.57	0.00	0.00	1.1	0.982E-01	0.41	0.93	.12328E+02
4.57	0.00	0.00	1.1	0.982E-01	0.41	0.93	.12340E+02
4.58	0.00	0.00	1.1	0.982E-01	0.41	0.93	.12351E+02
4.58	0.00	0.00	1.1	0.981E-01	0.41	0.93	.12362E+02
4.58	0.00	0.00	1.1	0.981E-01	0.41	0.93	.12373E+02
4.59	0.00	0.00	1.1	0.981E-01	0.41	0.93	.12385E+02
4.59	0.00	0.00	1.1	0.980E-01	0.41	0.93	.12396E+02
4.60	0.00	0.00	1.1	0.980E-01	0.41	0.93	.12407E+02
4.60	0.00	0.00	1.1	0.979E-01	0.41	0.93	.12418E+02
4.60	0.00	0.00	1.1	0.979E-01	0.41	0.93	.12430E+02
4.61	0.00	0.00	1.1	0.979E-01	0.41	0.93	.12441E+02
4.61	0.00	0.00	1.1	0.978E-01	0.41	0.93	.12452E+02
4.62	0.00	0.00	1.1	0.978E-01	0.41	0.93	.12463E+02
4.62	0.00	0.00	1.1	0.978E-01	0.41	0.93	.12475E+02
4.63	0.00	0.00	1.1	0.977E-01	0.41	0.93	.12486E+02
4.63	0.00	0.00	1.1	0.977E-01	0.41	0.93	.12497E+02
4.63	0.00	0.00	1.1	0.976E-01	0.41	0.93	.12508E+02
4.64	0.00	0.00	1.1	0.976E-01	0.41	0.93	.12520E+02
4.64	0.00	0.00	1.1	0.976E-01	0.41	0.93	.12531E+02
4.65	0.00	0.00	1.1	0.975E-01	0.41	0.93	.12542E+02
4.65	0.00	0.00	1.1	0.975E-01	0.41	0.94	.12553E+02
4.66	0.00	0.00	1.1	0.975E-01	0.41	0.94	.12565E+02
4.66	0.00	0.00	1.1	0.974E-01	0.41	0.94	.12576E+02
4.66	0.00	0.00	1.1	0.974E-01	0.41	0.94	.12587E+02
4.67	0.00	0.00	1.1	0.973E-01	0.41	0.94	.12598E+02
4.67	0.00	0.00	1.1	0.973E-01	0.41	0.94	.12610E+02
4.68	0.00	0.00	1.1	0.973E-01	0.41	0.94	.12621E+02
4.68	0.00	0.00	1.1	0.972E-01	0.41	0.94	.12632E+02
4.68	0.00	0.00	1.1	0.972E-01	0.41	0.94	.12643E+02
4.69	0.00	0.00	1.1	0.972E-01	0.41	0.94	.12655E+02
4.69	0.00	0.00	1.1	0.971E-01	0.41	0.94	.12666E+02
4.70	0.00	0.00	1.1	0.971E-01	0.41	0.94	.12677E+02
4.70	0.00	0.00	1.1	0.970E-01	0.41	0.94	.12688E+02
4.71	0.00	0.00	1.1	0.970E-01	0.41	0.94	.12700E+02
4.71	0.00	0.00	1.1	0.970E-01	0.41	0.94	.12711E+02
4.71	0.00	0.00	1.1	0.969E-01	0.41	0.94	.12722E+02
4.72	0.00	0.00	1.1	0.969E-01	0.41	0.94	.12733E+02
4.72	0.00	0.00	1.1	0.969E-01	0.41	0.94	.12745E+02
4.73	0.00	0.00	1.1	0.968E-01	0.41	0.94	.12756E+02
4.73	0.00	0.00	1.1	0.968E-01	0.41	0.94	.12767E+02
4.73	0.00	0.00	1.1	0.968E-01	0.41	0.94	.12778E+02
4.74	0.00	0.00	1.1	0.967E-01	0.41	0.94	.12790E+02
4.74	0.00	0.00	1.1	0.967E-01	0.41	0.94	.12801E+02
4.75	0.00	0.00	1.1	0.966E-01	0.41	0.94	.12812E+02
4.75	0.00	0.00	1.1	0.966E-01	0.41	0.95	.12823E+02

4.76	0.00	0.00	1.1	0.966E-01	0.41	0.95	.12835E+02
4.76	0.00	0.00	1.1	0.965E-01	0.41	0.95	.12846E+02
4.76	0.00	0.00	1.1	0.965E-01	0.41	0.95	.12857E+02
4.77	0.00	0.00	1.1	0.965E-01	0.41	0.95	.12868E+02
4.77	0.00	0.00	1.1	0.964E-01	0.41	0.95	.12880E+02
4.78	0.00	0.00	1.1	0.964E-01	0.41	0.95	.12891E+02
4.78	0.00	0.00	1.1	0.963E-01	0.41	0.95	.12902E+02
4.78	0.00	0.00	1.1	0.963E-01	0.41	0.95	.12913E+02
4.79	0.00	0.00	1.1	0.963E-01	0.41	0.95	.12925E+02
4.79	0.00	0.00	1.1	0.962E-01	0.41	0.95	.12936E+02
4.80	0.00	0.00	1.1	0.962E-01	0.41	0.95	.12947E+02
4.80	0.00	0.00	1.1	0.962E-01	0.41	0.95	.12958E+02
4.81	0.00	0.00	1.1	0.961E-01	0.41	0.95	.12970E+02
4.81	0.00	0.00	1.1	0.961E-01	0.41	0.95	.12981E+02
4.81	0.00	0.00	1.1	0.960E-01	0.41	0.95	.12992E+02
4.82	0.00	0.00	1.1	0.960E-01	0.41	0.95	.13003E+02
4.82	0.00	0.00	1.1	0.960E-01	0.41	0.95	.13015E+02
4.83	0.00	0.00	1.1	0.959E-01	0.41	0.95	.13026E+02
4.83	0.00	0.00	1.1	0.959E-01	0.41	0.95	.13037E+02
4.84	0.00	0.00	1.1	0.959E-01	0.41	0.95	.13048E+02
4.84	0.00	0.00	1.1	0.958E-01	0.41	0.95	.13060E+02
4.84	0.00	0.00	1.1	0.958E-01	0.41	0.95	.13071E+02
4.85	0.00	0.00	1.1	0.957E-01	0.41	0.95	.13082E+02
4.85	0.00	0.00	1.1	0.957E-01	0.41	0.95	.13093E+02
4.86	0.00	0.00	1.1	0.957E-01	0.41	0.96	.13105E+02
4.86	0.00	0.00	1.1	0.956E-01	0.41	0.96	.13116E+02
4.86	0.00	0.00	1.1	0.956E-01	0.41	0.96	.13127E+02
4.87	0.00	0.00	1.1	0.956E-01	0.41	0.96	.13138E+02
4.87	0.00	0.00	1.1	0.955E-01	0.41	0.96	.13150E+02
4.88	0.00	0.00	1.1	0.955E-01	0.41	0.96	.13161E+02
4.88	0.00	0.00	1.1	0.955E-01	0.41	0.96	.13172E+02
4.89	0.00	0.00	1.1	0.954E-01	0.41	0.96	.13183E+02
4.89	0.00	0.00	1.1	0.954E-01	0.41	0.96	.13195E+02
4.89	0.00	0.00	1.1	0.953E-01	0.41	0.96	.13206E+02
4.90	0.00	0.00	1.1	0.953E-01	0.41	0.96	.13217E+02
4.90	0.00	0.00	1.1	0.953E-01	0.41	0.96	.13228E+02
4.91	0.00	0.00	1.1	0.952E-01	0.41	0.96	.13240E+02
4.91	0.00	0.00	1.1	0.952E-01	0.41	0.96	.13251E+02
4.91	0.00	0.00	1.1	0.952E-01	0.41	0.96	.13262E+02
4.92	0.00	0.00	1.1	0.951E-01	0.41	0.96	.13273E+02
4.92	0.00	0.00	1.1	0.951E-01	0.41	0.96	.13285E+02
4.93	0.00	0.00	1.1	0.950E-01	0.41	0.96	.13296E+02
4.93	0.00	0.00	1.1	0.950E-01	0.41	0.96	.13307E+02
4.94	0.00	0.00	1.1	0.950E-01	0.41	0.96	.13318E+02
4.94	0.00	0.00	1.1	0.949E-01	0.41	0.96	.13330E+02
4.94	0.00	0.00	1.1	0.949E-01	0.41	0.96	.13341E+02
4.95	0.00	0.00	1.1	0.949E-01	0.41	0.96	.13352E+02
4.95	0.00	0.00	1.1	0.948E-01	0.41	0.96	.13363E+02
4.96	0.00	0.00	1.1	0.948E-01	0.41	0.96	.13375E+02
4.96	0.00	0.00	1.1	0.947E-01	0.41	0.97	.13386E+02
4.97	0.00	0.00	1.1	0.947E-01	0.41	0.97	.13397E+02
4.97	0.00	0.00	1.1	0.947E-01	0.41	0.97	.13408E+02
4.97	0.00	0.00	1.1	0.946E-01	0.41	0.97	.13420E+02
4.98	0.00	0.00	1.1	0.946E-01	0.41	0.97	.13431E+02
4.98	0.00	0.00	1.1	0.946E-01	0.41	0.97	.13442E+02
4.99	0.00	0.00	1.1	0.945E-01	0.41	0.97	.13453E+02
4.99	0.00	0.00	1.1	0.945E-01	0.41	0.97	.13465E+02
4.99	0.00	0.00	1.1	0.945E-01	0.41	0.97	.13476E+02
5.00	0.00	0.00	1.1	0.944E-01	0.41	0.97	.13487E+02
5.00	0.00	0.00	1.1	0.944E-01	0.41	0.97	.13498E+02
5.01	0.00	0.00	1.1	0.943E-01	0.41	0.97	.13510E+02
5.01	0.00	0.00	1.1	0.943E-01	0.41	0.97	.13521E+02
5.02	0.00	0.00	1.1	0.943E-01	0.41	0.97	.13532E+02
5.02	0.00	0.00	1.1	0.942E-01	0.41	0.97	.13543E+02
5.02	0.00	0.00	1.1	0.942E-01	0.41	0.97	.13554E+02
5.03	0.00	0.00	1.1	0.942E-01	0.41	0.97	.13566E+02
5.03	0.00	0.00	1.1	0.941E-01	0.41	0.97	.13577E+02
5.04	0.00	0.00	1.1	0.941E-01	0.41	0.97	.13588E+02
5.04	0.00	0.00	1.1	0.941E-01	0.41	0.97	.13599E+02
5.04	0.00	0.00	1.1	0.940E-01	0.41	0.97	.13611E+02
5.05	0.00	0.00	1.1	0.940E-01	0.41	0.97	.13622E+02
5.05	0.00	0.00	1.1	0.939E-01	0.41	0.97	.13633E+02
5.06	0.00	0.00	1.1	0.939E-01	0.41	0.97	.13644E+02
5.06	0.00	0.00	1.1	0.939E-01	0.41	0.97	.13656E+02
5.07	0.00	0.00	1.1	0.938E-01	0.41	0.98	.13667E+02
5.07	0.00	0.00	1.1	0.938E-01	0.41	0.98	.13678E+02
5.07	0.00	0.00	1.1	0.938E-01	0.41	0.98	.13689E+02
5.08	0.00	0.00	1.1	0.937E-01	0.41	0.98	.13701E+02
5.08	0.00	0.00	1.1	0.937E-01	0.41	0.98	.13712E+02
5.09	0.00	0.00	1.1	0.936E-01	0.41	0.98	.13723E+02
5.09	0.00	0.00	1.1	0.936E-01	0.41	0.98	.13734E+02
5.09	0.00	0.00	1.1	0.936E-01	0.41	0.98	.13746E+02
5.10	0.00	0.00	1.1	0.935E-01	0.41	0.98	.13757E+02
5.10	0.00	0.00	1.1	0.935E-01	0.41	0.98	.13768E+02
5.11	0.00	0.00	1.1	0.935E-01	0.41	0.98	.13779E+02
5.11	0.00	0.00	1.1	0.934E-01	0.41	0.98	.13791E+02
5.12	0.00	0.00	1.1	0.934E-01	0.41	0.98	.13802E+02
5.12	0.00	0.00	1.1	0.934E-01	0.41	0.98	.13813E+02
5.12	0.00	0.00	1.1	0.933E-01	0.41	0.98	.13824E+02
5.13	0.00	0.00	1.1	0.933E-01	0.41	0.98	.13836E+02

5.13	0.00	0.00	1.1	0.932E-01	0.41	0.98	.13847E+02
5.14	0.00	0.00	1.1	0.932E-01	0.41	0.98	.13858E+02
5.14	0.00	0.00	1.1	0.932E-01	0.41	0.98	.13869E+02
5.15	0.00	0.00	1.1	0.931E-01	0.41	0.98	.13881E+02
5.15	0.00	0.00	1.1	0.931E-01	0.41	0.98	.13892E+02
5.15	0.00	0.00	1.1	0.931E-01	0.41	0.98	.13903E+02
5.16	0.00	0.00	1.1	0.930E-01	0.41	0.98	.13914E+02
5.16	0.00	0.00	1.1	0.930E-01	0.41	0.98	.13926E+02
5.17	0.00	0.00	1.1	0.930E-01	0.41	0.98	.13937E+02
5.17	0.00	0.00	1.1	0.929E-01	0.41	0.99	.13948E+02
5.17	0.00	0.00	1.1	0.929E-01	0.41	0.99	.13959E+02
5.18	0.00	0.00	1.1	0.928E-01	0.41	0.99	.13971E+02
5.18	0.00	0.00	1.1	0.928E-01	0.41	0.99	.13982E+02
5.19	0.00	0.00	1.1	0.928E-01	0.41	0.99	.13993E+02
5.19	0.00	0.00	1.1	0.927E-01	0.41	0.99	.14004E+02
5.20	0.00	0.00	1.1	0.927E-01	0.41	0.99	.14016E+02
5.20	0.00	0.00	1.1	0.927E-01	0.41	0.99	.14027E+02
5.20	0.00	0.00	1.1	0.926E-01	0.41	0.99	.14038E+02
5.21	0.00	0.00	1.1	0.926E-01	0.41	0.99	.14049E+02
5.21	0.00	0.00	1.1	0.926E-01	0.41	0.99	.14061E+02
5.22	0.00	0.00	1.1	0.925E-01	0.41	0.99	.14072E+02
5.22	0.00	0.00	1.1	0.925E-01	0.41	0.99	.14083E+02
5.22	0.00	0.00	1.1	0.924E-01	0.41	0.99	.14094E+02
5.23	0.00	0.00	1.1	0.924E-01	0.41	0.99	.14106E+02
5.23	0.00	0.00	1.1	0.924E-01	0.41	0.99	.14117E+02
5.24	0.00	0.00	1.1	0.923E-01	0.41	0.99	.14128E+02
5.24	0.00	0.00	1.1	0.923E-01	0.41	0.99	.14139E+02
5.25	0.00	0.00	1.1	0.923E-01	0.41	0.99	.14151E+02
5.25	0.00	0.00	1.1	0.922E-01	0.41	0.99	.14162E+02
5.25	0.00	0.00	1.1	0.922E-01	0.41	0.99	.14173E+02
5.26	0.00	0.00	1.1	0.922E-01	0.41	0.99	.14184E+02
5.26	0.00	0.00	1.2	0.921E-01	0.41	0.99	.14196E+02
5.27	0.00	0.00	1.2	0.921E-01	0.41	0.99	.14207E+02
5.27	0.00	0.00	1.2	0.920E-01	0.41	0.99	.14218E+02
5.28	0.00	0.00	1.2	0.920E-01	0.41	1.00	.14229E+02
5.28	0.00	0.00	1.2	0.920E-01	0.41	1.00	.14241E+02
5.28	0.00	0.00	1.2	0.919E-01	0.41	1.00	.14252E+02
5.29	0.00	0.00	1.2	0.919E-01	0.41	1.00	.14263E+02
5.29	0.00	0.00	1.2	0.919E-01	0.41	1.00	.14274E+02
5.30	0.00	0.00	1.2	0.918E-01	0.41	1.00	.14286E+02
5.30	0.00	0.00	1.2	0.918E-01	0.41	1.00	.14297E+02
5.30	0.00	0.00	1.2	0.918E-01	0.41	1.00	.14308E+02
5.31	0.00	0.00	1.2	0.917E-01	0.41	1.00	.14319E+02
5.31	0.00	0.00	1.2	0.917E-01	0.41	1.00	.14331E+02
5.32	0.00	0.00	1.2	0.916E-01	0.41	1.00	.14342E+02
5.32	0.00	0.00	1.2	0.916E-01	0.41	1.00	.14353E+02
5.33	0.00	0.00	1.2	0.916E-01	0.41	1.00	.14364E+02
5.33	0.00	0.00	1.2	0.915E-01	0.41	1.00	.14376E+02
5.33	0.00	0.00	1.2	0.915E-01	0.41	1.00	.14387E+02
5.34	0.00	0.00	1.2	0.915E-01	0.41	1.00	.14398E+02
5.34	0.00	0.00	1.2	0.914E-01	0.41	1.00	.14409E+02
5.35	0.00	0.00	1.2	0.914E-01	0.41	1.00	.14421E+02
5.35	0.00	0.00	1.2	0.914E-01	0.41	1.00	.14432E+02
5.35	0.00	0.00	1.2	0.913E-01	0.41	1.00	.14443E+02
5.36	0.00	0.00	1.2	0.913E-01	0.41	1.00	.14454E+02
5.36	0.00	0.00	1.2	0.913E-01	0.41	1.00	.14466E+02
5.37	0.00	0.00	1.2	0.912E-01	0.41	1.00	.14477E+02
5.37	0.00	0.00	1.2	0.912E-01	0.41	1.00	.14488E+02
5.38	0.00	0.00	1.2	0.911E-01	0.41	1.00	.14499E+02
5.38	0.00	0.00	1.2	0.911E-01	0.41	1.01	.14511E+02
5.38	0.00	0.00	1.2	0.911E-01	0.41	1.01	.14522E+02
5.39	0.00	0.00	1.2	0.910E-01	0.41	1.01	.14533E+02
5.39	0.00	0.00	1.2	0.910E-01	0.41	1.01	.14544E+02
5.40	0.00	0.00	1.2	0.910E-01	0.41	1.01	.14556E+02
5.40	0.00	0.00	1.2	0.909E-01	0.41	1.01	.14567E+02
5.40	0.00	0.00	1.2	0.909E-01	0.41	1.01	.14578E+02
5.41	0.00	0.00	1.2	0.909E-01	0.41	1.01	.14589E+02
5.41	0.00	0.00	1.2	0.908E-01	0.41	1.01	.14601E+02
5.42	0.00	0.00	1.2	0.908E-01	0.41	1.01	.14612E+02
5.42	0.00	0.00	1.2	0.907E-01	0.41	1.01	.14623E+02
5.43	0.00	0.00	1.2	0.907E-01	0.41	1.01	.14634E+02
5.43	0.00	0.00	1.2	0.907E-01	0.41	1.01	.14646E+02
5.43	0.00	0.00	1.2	0.906E-01	0.41	1.01	.14657E+02
5.44	0.00	0.00	1.2	0.906E-01	0.41	1.01	.14668E+02
5.44	0.00	0.00	1.2	0.906E-01	0.41	1.01	.14679E+02
5.45	0.00	0.00	1.2	0.905E-01	0.41	1.01	.14691E+02
5.45	0.00	0.00	1.2	0.905E-01	0.41	1.01	.14702E+02
5.46	0.00	0.00	1.2	0.905E-01	0.41	1.01	.14713E+02
5.46	0.00	0.00	1.2	0.904E-01	0.41	1.01	.14724E+02
5.46	0.00	0.00	1.2	0.904E-01	0.41	1.01	.14736E+02
5.47	0.00	0.00	1.2	0.904E-01	0.41	1.01	.14747E+02
5.47	0.00	0.00	1.2	0.903E-01	0.41	1.01	.14758E+02
5.48	0.00	0.00	1.2	0.903E-01	0.41	1.01	.14769E+02
5.48	0.00	0.00	1.2	0.902E-01	0.41	1.01	.14781E+02
5.48	0.00	0.00	1.2	0.902E-01	0.41	1.01	.14792E+02
5.49	0.00	0.00	1.2	0.902E-01	0.41	1.02	.14803E+02
5.49	0.00	0.00	1.2	0.901E-01	0.41	1.02	.14814E+02
5.50	0.00	0.00	1.2	0.901E-01	0.41	1.02	.14826E+02
5.50	0.00	0.00	1.2	0.901E-01	0.41	1.02	.14837E+02
5.51	0.00	0.00	1.2	0.900E-01	0.41	1.02	.14848E+02

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      5.51     0.00    0.00     1.2 0.900E-01   0.41     1.02 .14859E+02
      5.51     0.00    0.00     1.2 0.900E-01   0.41     1.02 .14871E+02
      5.52     0.00    0.00     1.2 0.899E-01   0.41     1.02 .14882E+02
      5.52     0.00    0.00     1.2 0.899E-01   0.41     1.02 .14893E+02
      5.53     0.00    0.00     1.2 0.899E-01   0.41     1.02 .14904E+02
      5.53     0.00    0.00     1.2 0.898E-01   0.41     1.02 .14916E+02
      5.53     0.00    0.00     1.2 0.898E-01   0.41     1.02 .14927E+02
      5.54     0.00    0.00     1.2 0.897E-01   0.41     1.02 .14938E+02
      5.54     0.00    0.00     1.2 0.897E-01   0.41     1.02 .14949E+02
      5.55     0.00    0.00     1.2 0.897E-01   0.41     1.02 .14961E+02
      5.55     0.00    0.00     1.2 0.896E-01   0.41     1.02 .14972E+02
      5.56     0.00    0.00     1.2 0.896E-01   0.41     1.02 .14983E+02
      5.56     0.00    0.00     1.2 0.896E-01   0.41     1.02 .14994E+02
      5.56     0.00    0.00     1.2 0.895E-01   0.41     1.02 .15006E+02
      5.57     0.00    0.00     1.2 0.895E-01   0.41     1.02 .15017E+02
      5.57     0.00    0.00     1.2 0.895E-01   0.41     1.02 .15028E+02
      5.58     0.00    0.00     1.2 0.894E-01   0.41     1.02 .15039E+02
      5.58     0.00    0.00     1.2 0.894E-01   0.41     1.02 .15051E+02
      5.59     0.00    0.00     1.2 0.894E-01   0.41     1.02 .15062E+02
      5.59     0.00    0.00     1.2 0.893E-01   0.41     1.02 .15073E+02
      5.59     0.00    0.00     1.2 0.893E-01   0.41     1.02 .15084E+02
      5.60     0.00    0.00     1.2 0.892E-01   0.41     1.03 .15095E+02
      5.60     0.00    0.00     1.2 0.892E-01   0.41     1.03 .15107E+02
      5.61     0.00    0.00     1.2 0.892E-01   0.41     1.03 .15118E+02
      5.61     0.00    0.00     1.2 0.891E-01   0.41     1.03 .15129E+02
      5.61     0.00    0.00     1.2 0.891E-01   0.41     1.03 .15140E+02
      5.62     0.00    0.00     1.2 0.891E-01   0.41     1.03 .15152E+02
      5.62     0.00    0.00     1.2 0.890E-01   0.41     1.03 .15163E+02
      5.63     0.00    0.00     1.2 0.890E-01   0.41     1.03 .15174E+02
      5.63     0.00    0.00     1.2 0.890E-01   0.41     1.03 .15185E+02
      5.64     0.00    0.00     1.2 0.889E-01   0.41     1.03 .15197E+02
      5.64     0.00    0.00     1.2 0.889E-01   0.41     1.03 .15208E+02
      5.64     0.00    0.00     1.2 0.889E-01   0.41     1.03 .15219E+02
      5.65     0.00    0.00     1.2 0.888E-01   0.41     1.03 .15230E+02
      5.65     0.00    0.00     1.2 0.888E-01   0.41     1.03 .15242E+02
      5.66     0.00    0.00     1.2 0.888E-01   0.41     1.03 .15253E+02
      5.66     0.00    0.00     1.2 0.887E-01   0.41     1.03 .15264E+02
      5.66     0.00    0.00     1.2 0.887E-01   0.41     1.03 .15275E+02
      5.67     0.00    0.00     1.2 0.886E-01   0.41     1.03 .15287E+02
      5.67     0.00    0.00     1.2 0.886E-01   0.41     1.03 .15298E+02
      5.68     0.00    0.00     1.2 0.886E-01   0.41     1.03 .15309E+02
      5.68     0.00    0.00     1.2 0.885E-01   0.41     1.03 .15320E+02
      5.69     0.00    0.00     1.2 0.885E-01   0.41     1.03 .15332E+02
      5.69     0.00    0.00     1.2 0.885E-01   0.41     1.03 .15343E+02
      5.69     0.00    0.00     1.2 0.884E-01   0.41     1.03 .15354E+02
      5.70     0.00    0.00     1.2 0.884E-01   0.41     1.03 .15365E+02
      5.70     0.00    0.00     1.2 0.884E-01   0.41     1.04 .15377E+02
      5.71     0.00    0.00     1.2 0.883E-01   0.41     1.04 .15388E+02
      5.71     0.00    0.00     1.2 0.883E-01   0.41     1.04 .15399E+02
      5.71     0.00    0.00     1.2 0.883E-01   0.41     1.04 .15410E+02
      5.72     0.00    0.00     1.2 0.882E-01   0.41     1.04 .15422E+02
      5.72     0.00    0.00     1.2 0.882E-01   0.41     1.04 .15433E+02
      5.73     0.00    0.00     1.2 0.882E-01   0.41     1.04 .15444E+02
      5.73     0.00    0.00     1.2 0.881E-01   0.41     1.04 .15455E+02
      5.74     0.00    0.00     1.2 0.881E-01   0.41     1.04 .15467E+02
      5.74     0.00    0.00     1.2 0.880E-01   0.41     1.04 .15478E+02
      5.74     0.00    0.00     1.2 0.880E-01   0.41     1.04 .15489E+02
      5.75     0.00    0.00     1.2 0.880E-01   0.41     1.04 .15500E+02
      5.75     0.00    0.00     1.2 0.879E-01   0.41     1.04 .15512E+02
      5.76     0.00    0.00     1.2 0.879E-01   0.41     1.04 .15523E+02
      5.76     0.00    0.00     1.2 0.879E-01   0.41     1.04 .15534E+02
      5.77     0.00    0.00     1.2 0.878E-01   0.41     1.04 .15545E+02
      5.77     0.00    0.00     1.2 0.878E-01   0.41     1.04 .15557E+02
      5.77     0.00    0.00     1.2 0.878E-01   0.41     1.04 .15568E+02
      5.78     0.00    0.00     1.2 0.877E-01   0.41     1.04 .15579E+02
      5.78     0.00    0.00     1.2 0.877E-01   0.41     1.04 .15590E+02
      5.79     0.00    0.00     1.2 0.877E-01   0.41     1.04 .15602E+02
      5.79     0.00    0.00     1.2 0.876E-01   0.41     1.04 .15613E+02
      5.79     0.00    0.00     1.2 0.876E-01   0.41     1.04 .15624E+02
      5.80     0.00    0.00     1.2 0.876E-01   0.41     1.04 .15635E+02
      5.80     0.00    0.00     1.2 0.875E-01   0.41     1.04 .15647E+02
      5.81     0.00    0.00     1.2 0.875E-01   0.41     1.04 .15658E+02
      5.81     0.00    0.00     1.2 0.875E-01   0.41     1.05 .15669E+02
      5.82     0.00    0.00     1.2 0.874E-01   0.41     1.05 .15680E+02
      5.82     0.00    0.00     1.2 0.874E-01   0.41     1.05 .15692E+02
 Cumulative travel time =          15.6917 sec  (    0.00 hrs)

END OF MOD341: BUOYANT AMBIENT SPREADING
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BEGIN MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

  Vertical diffusivity (initial value)   = 0.730E-02 m^2/s
  Horizontal diffusivity (initial value) = 0.182E-01 m^2/s

 Profile definitions:
   BV = Gaussian s.d.*sqrt(pi/2) (46%) thickness, measured vertically
      = or equal to water depth, if fully mixed
   BH = Gaussian s.d.*sqrt(pi/2) (46%) half-width,
        measured horizontally in Y-direction
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  S  = hydrodynamic centerline dilution
  C  = centerline concentration (includes reaction efects, if any)
  TT = Cumulative travel time

Plume Stage 2 (bank attached):
      X        Y        Z        S        C        BV        BH        TT
    5.82     0.00     0.00      1.2 0.874E-01   0.41      1.05 .15692E+02
    7.81     0.00     0.00      1.5 0.711E-01   0.45      1.18 .21030E+02
    9.80     0.00     0.00      1.8 0.589E-01   0.49      1.31 .26369E+02
   11.78     0.00     0.00      2.1 0.495E-01   0.53      1.42 .31708E+02
   13.77     0.00     0.00      2.5 0.421E-01   0.58      1.52 .37047E+02
   15.76     0.00     0.00      2.9 0.363E-01   0.64      1.62 .42385E+02
   17.75     0.00     0.00      3.3 0.317E-01   0.69      1.71 .47724E+02
   19.74     0.00     0.00      3.8 0.279E-01   0.75      1.80 .53063E+02
Plume interacts with BOTTOM.
The passive diffusion plume becomes VERTICALLY FULLY MIXED within this
  prediction interval.
   21.73     0.00     0.00      4.0 0.266E-01   0.75      1.88 .58402E+02
   23.71     0.00     0.00      4.2 0.255E-01   0.75      1.96 .63741E+02
   25.70     0.00     0.00      4.3 0.245E-01   0.75      2.04 .69079E+02
   27.69     0.00     0.00      4.5 0.237E-01   0.75      2.11 .74418E+02
   29.68     0.00     0.00      4.6 0.229E-01   0.75      2.18 .79757E+02
   31.67     0.00     0.00      4.8 0.222E-01   0.75      2.25 .85096E+02
   33.66     0.00     0.00      4.9 0.215E-01   0.75      2.32 .90434E+02
   35.65     0.00     0.00      5.0 0.209E-01   0.75      2.38 .95773E+02
   37.63     0.00     0.00      5.2 0.204E-01   0.75      2.45 .10111E+03
** WATER QUALITY STANDARD OR CCC HAS BEEN FOUND **
The pollutant concentration in the plume falls below water quality standard
  or CCC value of 0.200E-01 in the current prediction interval.
This is the spatial extent of concentrations exceeding the water quality
  standard or CCC value.
   39.62     0.00     0.00      5.3 0.199E-01   0.75      2.51 .10645E+03
   41.61     0.00     0.00      5.4 0.194E-01   0.75      2.57 .11179E+03
   43.60     0.00     0.00      5.6 0.190E-01   0.75      2.63 .11713E+03
   45.59     0.00     0.00      5.7 0.186E-01   0.75      2.69 .12247E+03
   47.58     0.00     0.00      5.8 0.182E-01   0.75      2.74 .12781E+03
   49.56     0.00     0.00      5.9 0.178E-01   0.75      2.80 .13314E+03
   51.55     0.00     0.00      6.0 0.175E-01   0.75      2.85 .13848E+03
   53.54     0.00     0.00      6.2 0.172E-01   0.75      2.90 .14382E+03
   55.53     0.00     0.00      6.3 0.169E-01   0.75      2.96 .14916E+03
   57.52     0.00     0.00      6.4 0.166E-01   0.75      3.01 .15450E+03
   59.51     0.00     0.00      6.5 0.163E-01   0.75      3.06 .15984E+03
   61.49     0.00     0.00      6.6 0.160E-01   0.75      3.11 .16518E+03
   63.48     0.00     0.00      6.7 0.158E-01   0.75      3.16 .17052E+03
   65.47     0.00     0.00      6.8 0.156E-01   0.75      3.20 .17585E+03
   67.46     0.00     0.00      6.9 0.153E-01   0.75      3.25 .18119E+03
   69.45     0.00     0.00      7.0 0.151E-01   0.75      3.30 .18653E+03
   71.44     0.00     0.00      7.1 0.149E-01   0.75      3.34 .19187E+03
   73.42     0.00     0.00      7.2 0.147E-01   0.75      3.39 .19721E+03
   75.41     0.00     0.00      7.3 0.145E-01   0.75      3.44 .20255E+03
   77.40     0.00     0.00      7.4 0.143E-01   0.75      3.48 .20789E+03
   79.39     0.00     0.00      7.5 0.141E-01   0.75      3.52 .21323E+03
   81.38     0.00     0.00      7.6 0.140E-01   0.75      3.57 .21856E+03
   83.37     0.00     0.00      7.6 0.138E-01   0.75      3.61 .22390E+03
   85.35     0.00     0.00      7.7 0.136E-01   0.75      3.65 .22924E+03
   87.34     0.00     0.00      7.8 0.135E-01   0.75      3.69 .23458E+03
   89.33     0.00     0.00      7.9 0.133E-01   0.75      3.73 .23992E+03
   91.32     0.00     0.00      8.0 0.132E-01   0.75      3.77 .24526E+03
** REGULATORY MIXING ZONE BOUNDARY **
In this prediction interval the plume DOWNSTREAM distance meets or exceeds
the regulatory value =    91.46 m.
This is the extent of the REGULATORY MIXING ZONE.
   93.31     0.00     0.00      8.1 0.130E-01   0.75      3.81 .25060E+03
   95.30     0.00     0.00      8.2 0.129E-01   0.75      3.85 .25594E+03
   97.28     0.00     0.00      8.2 0.128E-01   0.75      3.89 .26127E+03
   99.27     0.00     0.00      8.3 0.126E-01   0.75      3.93 .26661E+03
  101.26     0.00     0.00      8.4 0.125E-01   0.75      3.97 .27195E+03
  103.25     0.00     0.00      8.5 0.124E-01   0.75      4.01 .27729E+03
  105.24     0.00     0.00      8.6 0.123E-01   0.75      4.05 .28263E+03
  107.23     0.00     0.00      8.7 0.122E-01   0.75      4.09 .28797E+03
  109.21     0.00     0.00      8.7 0.121E-01   0.75      4.12 .29331E+03
  111.20     0.00     0.00      8.8 0.119E-01   0.75      4.16 .29865E+03
  113.19     0.00     0.00      8.9 0.118E-01   0.75      4.20 .30398E+03
  115.18     0.00     0.00      9.0 0.117E-01   0.75      4.23 .30932E+03
  117.17     0.00     0.00      9.0 0.116E-01   0.75      4.27 .31466E+03
  119.16     0.00     0.00      9.1 0.115E-01   0.75      4.30 .32000E+03
  121.14     0.00     0.00      9.2 0.114E-01   0.75      4.34 .32534E+03
  123.13     0.00     0.00      9.3 0.114E-01   0.75      4.38 .33068E+03
  125.12     0.00     0.00      9.3 0.113E-01   0.75      4.41 .33602E+03
  127.11     0.00     0.00      9.4 0.112E-01   0.75      4.44 .34136E+03
  129.10     0.00     0.00      9.5 0.111E-01   0.75      4.48 .34669E+03
  131.09     0.00     0.00      9.6 0.110E-01   0.75      4.51 .35203E+03
  133.07     0.00     0.00      9.6 0.109E-01   0.75      4.55 .35737E+03
  135.06     0.00     0.00      9.7 0.108E-01   0.75      4.58 .36271E+03
  137.05     0.00     0.00      9.8 0.108E-01   0.75      4.61 .36805E+03
  139.04     0.00     0.00      9.8 0.107E-01   0.75      4.65 .37339E+03
  141.03     0.00     0.00      9.9 0.106E-01   0.75      4.68 .37873E+03
  143.02     0.00     0.00     10.0 0.105E-01   0.75      4.71 .38407E+03
  145.00     0.00     0.00     10.0 0.105E-01   0.75      4.74 .38940E+03
  146.99     0.00     0.00     10.1 0.104E-01   0.75      4.78 .39474E+03
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148.98	0.00	0.00	10.2	0.103E-01	0.75	4.81	.40008E+03
150.97	0.00	0.00	10.3	0.102E-01	0.75	4.84	.40542E+03
152.96	0.00	0.00	10.3	0.102E-01	0.75	4.87	.41076E+03
154.95	0.00	0.00	10.4	0.101E-01	0.75	4.90	.41610E+03
156.93	0.00	0.00	10.5	0.100E-01	0.75	4.93	.42144E+03
158.92	0.00	0.00	10.5	0.998E-02	0.75	4.96	.42678E+03
160.91	0.00	0.00	10.6	0.992E-02	0.75	5.00	.43211E+03
162.90	0.00	0.00	10.6	0.986E-02	0.75	5.03	.43745E+03
164.89	0.00	0.00	10.7	0.980E-02	0.75	5.06	.44279E+03
166.88	0.00	0.00	10.8	0.974E-02	0.75	5.09	.44813E+03
168.87	0.00	0.00	10.8	0.968E-02	0.75	5.12	.45347E+03
170.85	0.00	0.00	10.9	0.962E-02	0.75	5.15	.45881E+03
172.84	0.00	0.00	11.0	0.956E-02	0.75	5.18	.46415E+03
174.83	0.00	0.00	11.0	0.951E-02	0.75	5.21	.46949E+03
176.82	0.00	0.00	11.1	0.945E-02	0.75	5.23	.47482E+03
178.81	0.00	0.00	11.2	0.940E-02	0.75	5.26	.48016E+03
180.80	0.00	0.00	11.2	0.935E-02	0.75	5.29	.48550E+03
182.78	0.00	0.00	11.3	0.930E-02	0.75	5.32	.49084E+03
184.77	0.00	0.00	11.3	0.925E-02	0.75	5.35	.49618E+03
186.76	0.00	0.00	11.4	0.920E-02	0.75	5.38	.50152E+03
188.75	0.00	0.00	11.5	0.915E-02	0.75	5.41	.50686E+03
190.74	0.00	0.00	11.5	0.910E-02	0.75	5.44	.51220E+03
192.73	0.00	0.00	11.6	0.905E-02	0.75	5.46	.51753E+03
194.71	0.00	0.00	11.6	0.900E-02	0.75	5.49	.52287E+03
196.70	0.00	0.00	11.7	0.896E-02	0.75	5.52	.52821E+03
198.69	0.00	0.00	11.7	0.891E-02	0.75	5.55	.53355E+03
200.68	0.00	0.00	11.8	0.887E-02	0.75	5.57	.53889E+03
202.67	0.00	0.00	11.9	0.882E-02	0.75	5.60	.54423E+03
204.66	0.00	0.00	11.9	0.878E-02	0.75	5.63	.54957E+03
206.64	0.00	0.00	12.0	0.873E-02	0.75	5.66	.55491E+03
208.63	0.00	0.00	12.0	0.869E-02	0.75	5.68	.56024E+03
210.62	0.00	0.00	12.1	0.865E-02	0.75	5.71	.56558E+03
212.61	0.00	0.00	12.2	0.861E-02	0.75	5.74	.57092E+03
214.60	0.00	0.00	12.2	0.857E-02	0.75	5.76	.57626E+03
216.59	0.00	0.00	12.3	0.853E-02	0.75	5.79	.58160E+03
218.57	0.00	0.00	12.3	0.849E-02	0.75	5.82	.58694E+03
220.56	0.00	0.00	12.4	0.845E-02	0.75	5.84	.59228E+03
222.55	0.00	0.00	12.4	0.841E-02	0.75	5.87	.59762E+03
224.54	0.00	0.00	12.5	0.837E-02	0.75	5.89	.60295E+03
226.53	0.00	0.00	12.5	0.833E-02	0.75	5.92	.60829E+03
228.52	0.00	0.00	12.6	0.830E-02	0.75	5.95	.61363E+03
230.50	0.00	0.00	12.6	0.826E-02	0.75	5.97	.61897E+03
232.49	0.00	0.00	12.7	0.822E-02	0.75	6.00	.62431E+03
234.48	0.00	0.00	12.8	0.819E-02	0.75	6.02	.62965E+03
236.47	0.00	0.00	12.8	0.815E-02	0.75	6.05	.63499E+03
238.46	0.00	0.00	12.9	0.812E-02	0.75	6.07	.64033E+03
240.45	0.00	0.00	12.9	0.808E-02	0.75	6.10	.64566E+03
242.43	0.00	0.00	13.0	0.805E-02	0.75	6.12	.65100E+03
244.42	0.00	0.00	13.0	0.802E-02	0.75	6.15	.65634E+03
246.41	0.00	0.00	13.1	0.798E-02	0.75	6.17	.66168E+03
248.40	0.00	0.00	13.1	0.795E-02	0.75	6.20	.66702E+03
250.39	0.00	0.00	13.2	0.792E-02	0.75	6.22	.67236E+03
252.38	0.00	0.00	13.2	0.789E-02	0.75	6.25	.67770E+03
254.36	0.00	0.00	13.3	0.785E-02	0.75	6.27	.68304E+03
256.35	0.00	0.00	13.3	0.782E-02	0.75	6.30	.68837E+03
258.34	0.00	0.00	13.4	0.779E-02	0.75	6.32	.69371E+03
260.33	0.00	0.00	13.4	0.776E-02	0.75	6.34	.69905E+03
262.32	0.00	0.00	13.5	0.773E-02	0.75	6.37	.70439E+03
264.31	0.00	0.00	13.5	0.770E-02	0.75	6.39	.70973E+03
266.29	0.00	0.00	13.6	0.767E-02	0.75	6.42	.71507E+03
268.28	0.00	0.00	13.6	0.764E-02	0.75	6.44	.72041E+03
270.27	0.00	0.00	13.7	0.761E-02	0.75	6.46	.72575E+03
272.26	0.00	0.00	13.7	0.758E-02	0.75	6.49	.73109E+03
274.25	0.00	0.00	13.8	0.756E-02	0.75	6.51	.73642E+03
276.24	0.00	0.00	13.8	0.753E-02	0.75	6.53	.74176E+03
278.22	0.00	0.00	13.9	0.750E-02	0.75	6.56	.74710E+03
280.21	0.00	0.00	13.9	0.747E-02	0.75	6.58	.75244E+03
282.20	0.00	0.00	14.0	0.745E-02	0.75	6.60	.75778E+03
284.19	0.00	0.00	14.0	0.742E-02	0.75	6.63	.76312E+03
286.18	0.00	0.00	14.1	0.739E-02	0.75	6.65	.76846E+03
288.17	0.00	0.00	14.1	0.737E-02	0.75	6.67	.77380E+03
290.16	0.00	0.00	14.2	0.734E-02	0.75	6.70	.77913E+03
292.14	0.00	0.00	14.2	0.731E-02	0.75	6.72	.78447E+03
294.13	0.00	0.00	14.3	0.729E-02	0.75	6.74	.78981E+03
296.12	0.00	0.00	14.3	0.726E-02	0.75	6.76	.79515E+03
298.11	0.00	0.00	14.4	0.724E-02	0.75	6.79	.80049E+03
300.10	0.00	0.00	14.4	0.721E-02	0.75	6.81	.80583E+03
302.09	0.00	0.00	14.5	0.719E-02	0.75	6.83	.81117E+03
304.07	0.00	0.00	14.5	0.716E-02	0.75	6.85	.81651E+03
306.06	0.00	0.00	14.6	0.714E-02	0.75	6.88	.82184E+03
308.05	0.00	0.00	14.6	0.712E-02	0.75	6.90	.82718E+03
310.04	0.00	0.00	14.7	0.709E-02	0.75	6.92	.83252E+03
312.03	0.00	0.00	14.7	0.707E-02	0.75	6.94	.83786E+03
314.02	0.00	0.00	14.8	0.705E-02	0.75	6.96	.84320E+03
316.00	0.00	0.00	14.8	0.702E-02	0.75	6.99	.84854E+03
317.99	0.00	0.00	14.8	0.700E-02	0.75	7.01	.85388E+03
319.98	0.00	0.00	14.9	0.698E-02	0.75	7.03	.85922E+03
321.97	0.00	0.00	14.9	0.696E-02	0.75	7.05	.86455E+03
323.96	0.00	0.00	15.0	0.693E-02	0.75	7.07	.86989E+03
325.95	0.00	0.00	15.0	0.691E-02	0.75	7.10	.87523E+03

327.93	0.00	0.00	15.1	0.689E-02	0.75	7.12	.88057E+03
329.92	0.00	0.00	15.1	0.687E-02	0.75	7.14	.88591E+03
331.91	0.00	0.00	15.2	0.685E-02	0.75	7.16	.89125E+03
333.90	0.00	0.00	15.2	0.683E-02	0.75	7.18	.89659E+03
335.89	0.00	0.00	15.3	0.680E-02	0.75	7.20	.90193E+03
337.88	0.00	0.00	15.3	0.678E-02	0.75	7.22	.90727E+03
339.86	0.00	0.00	15.3	0.676E-02	0.75	7.24	.91260E+03
341.85	0.00	0.00	15.4	0.674E-02	0.75	7.27	.91794E+03
343.84	0.00	0.00	15.4	0.672E-02	0.75	7.29	.92328E+03
345.83	0.00	0.00	15.5	0.670E-02	0.75	7.31	.92862E+03
347.82	0.00	0.00	15.5	0.668E-02	0.75	7.33	.93396E+03
349.81	0.00	0.00	15.6	0.666E-02	0.75	7.35	.93930E+03
351.79	0.00	0.00	15.6	0.664E-02	0.75	7.37	.94464E+03
353.78	0.00	0.00	15.7	0.662E-02	0.75	7.39	.94998E+03
355.77	0.00	0.00	15.7	0.660E-02	0.75	7.41	.95531E+03
357.76	0.00	0.00	15.7	0.658E-02	0.75	7.43	.96065E+03
359.75	0.00	0.00	15.8	0.657E-02	0.75	7.45	.96599E+03
361.74	0.00	0.00	15.8	0.655E-02	0.75	7.47	.97133E+03
363.72	0.00	0.00	15.9	0.653E-02	0.75	7.49	.97667E+03
365.71	0.00	0.00	15.9	0.651E-02	0.75	7.51	.98201E+03
367.70	0.00	0.00	16.0	0.649E-02	0.75	7.53	.98735E+03
369.69	0.00	0.00	16.0	0.647E-02	0.75	7.55	.99269E+03
371.68	0.00	0.00	16.0	0.646E-02	0.75	7.57	.99802E+03
373.67	0.00	0.00	16.1	0.644E-02	0.75	7.60	.10034E+04
375.66	0.00	0.00	16.1	0.642E-02	0.75	7.62	.10087E+04
377.64	0.00	0.00	16.2	0.640E-02	0.75	7.64	.10140E+04
379.63	0.00	0.00	16.2	0.638E-02	0.75	7.66	.10194E+04
381.62	0.00	0.00	16.3	0.637E-02	0.75	7.68	.10247E+04
383.61	0.00	0.00	16.3	0.635E-02	0.75	7.70	.10301E+04
385.60	0.00	0.00	16.3	0.633E-02	0.75	7.71	.10354E+04
387.59	0.00	0.00	16.4	0.632E-02	0.75	7.73	.10407E+04
389.57	0.00	0.00	16.4	0.630E-02	0.75	7.75	.10461E+04
391.56	0.00	0.00	16.5	0.628E-02	0.75	7.77	.10514E+04
393.55	0.00	0.00	16.5	0.627E-02	0.75	7.79	.10568E+04
395.54	0.00	0.00	16.6	0.625E-02	0.75	7.81	.10621E+04
397.53	0.00	0.00	16.6	0.623E-02	0.75	7.83	.10674E+04
399.52	0.00	0.00	16.6	0.622E-02	0.75	7.85	.10728E+04
401.50	0.00	0.00	16.7	0.620E-02	0.75	7.87	.10781E+04
403.49	0.00	0.00	16.7	0.618E-02	0.75	7.89	.10834E+04
405.48	0.00	0.00	16.8	0.617E-02	0.75	7.91	.10888E+04
407.47	0.00	0.00	16.8	0.615E-02	0.75	7.93	.10941E+04
409.46	0.00	0.00	16.8	0.614E-02	0.75	7.95	.10995E+04
411.45	0.00	0.00	16.9	0.612E-02	0.75	7.97	.11048E+04
413.43	0.00	0.00	16.9	0.611E-02	0.75	7.99	.11101E+04
415.42	0.00	0.00	17.0	0.609E-02	0.75	8.01	.11155E+04
417.41	0.00	0.00	17.0	0.608E-02	0.75	8.03	.11208E+04
419.40	0.00	0.00	17.0	0.606E-02	0.75	8.04	.11262E+04
421.39	0.00	0.00	17.1	0.605E-02	0.75	8.06	.11315E+04
423.38	0.00	0.00	17.1	0.603E-02	0.75	8.08	.11368E+04
425.36	0.00	0.00	17.2	0.602E-02	0.75	8.10	.11422E+04
427.35	0.00	0.00	17.2	0.600E-02	0.75	8.12	.11475E+04
429.34	0.00	0.00	17.2	0.599E-02	0.75	8.14	.11528E+04
431.33	0.00	0.00	17.3	0.597E-02	0.75	8.16	.11582E+04
433.32	0.00	0.00	17.3	0.596E-02	0.75	8.18	.11635E+04
435.31	0.00	0.00	17.4	0.594E-02	0.75	8.20	.11689E+04
437.29	0.00	0.00	17.4	0.593E-02	0.75	8.21	.11742E+04
439.28	0.00	0.00	17.4	0.591E-02	0.75	8.23	.11795E+04
441.27	0.00	0.00	17.5	0.590E-02	0.75	8.25	.11849E+04
443.26	0.00	0.00	17.5	0.589E-02	0.75	8.27	.11902E+04
445.25	0.00	0.00	17.6	0.587E-02	0.75	8.29	.11956E+04
447.24	0.00	0.00	17.6	0.586E-02	0.75	8.31	.12009E+04
449.22	0.00	0.00	17.6	0.585E-02	0.75	8.33	.12062E+04
451.21	0.00	0.00	17.7	0.583E-02	0.75	8.34	.12116E+04
453.20	0.00	0.00	17.7	0.582E-02	0.75	8.36	.12169E+04
455.19	0.00	0.00	17.8	0.580E-02	0.75	8.38	.12223E+04
457.18	0.00	0.00	17.8	0.579E-02	0.75	8.40	.12276E+04
459.17	0.00	0.00	17.8	0.578E-02	0.75	8.42	.12329E+04
461.16	0.00	0.00	17.9	0.576E-02	0.75	8.43	.12383E+04
463.14	0.00	0.00	17.9	0.575E-02	0.75	8.45	.12436E+04
465.13	0.00	0.00	17.9	0.574E-02	0.75	8.47	.12489E+04
467.12	0.00	0.00	18.0	0.573E-02	0.75	8.49	.12543E+04
469.11	0.00	0.00	18.0	0.571E-02	0.75	8.51	.12596E+04
471.10	0.00	0.00	18.1	0.570E-02	0.75	8.52	.12650E+04
473.09	0.00	0.00	18.1	0.569E-02	0.75	8.54	.12703E+04
475.07	0.00	0.00	18.1	0.568E-02	0.75	8.56	.12756E+04
477.06	0.00	0.00	18.2	0.566E-02	0.75	8.58	.12810E+04
479.05	0.00	0.00	18.2	0.565E-02	0.75	8.60	.12863E+04
481.04	0.00	0.00	18.2	0.564E-02	0.75	8.61	.12917E+04
483.03	0.00	0.00	18.3	0.563E-02	0.75	8.63	.12970E+04
485.02	0.00	0.00	18.3	0.561E-02	0.75	8.65	.13023E+04
487.00	0.00	0.00	18.4	0.560E-02	0.75	8.67	.13077E+04
488.99	0.00	0.00	18.4	0.559E-02	0.75	8.68	.13130E+04
490.98	0.00	0.00	18.4	0.558E-02	0.75	8.70	.13184E+04
492.97	0.00	0.00	18.5	0.557E-02	0.75	8.72	.13237E+04
494.96	0.00	0.00	18.5	0.555E-02	0.75	8.74	.13290E+04
496.95	0.00	0.00	18.5	0.554E-02	0.75	8.76	.13344E+04
498.93	0.00	0.00	18.6	0.553E-02	0.75	8.77	.13397E+04
500.92	0.00	0.00	18.6	0.552E-02	0.75	8.79	.13450E+04
502.91	0.00	0.00	18.7	0.551E-02	0.75	8.81	.13504E+04
504.90	0.00	0.00	18.7	0.550E-02	0.75	8.82	.13557E+04

506.89	0.00	0.00	18.7	0.548E-02	0.75	8.84	.13611E+04
508.88	0.00	0.00	18.8	0.547E-02	0.75	8.86	.13664E+04
510.86	0.00	0.00	18.8	0.546E-02	0.75	8.88	.13717E+04
512.85	0.00	0.00	18.8	0.545E-02	0.75	8.89	.13771E+04
514.84	0.00	0.00	18.9	0.544E-02	0.75	8.91	.13824E+04
516.83	0.00	0.00	18.9	0.543E-02	0.75	8.93	.13878E+04
518.82	0.00	0.00	18.9	0.542E-02	0.75	8.95	.13931E+04
520.81	0.00	0.00	19.0	0.541E-02	0.75	8.96	.13984E+04
522.79	0.00	0.00	19.0	0.539E-02	0.75	8.98	.14038E+04
524.78	0.00	0.00	19.1	0.538E-02	0.75	9.00	.14091E+04
526.77	0.00	0.00	19.1	0.537E-02	0.75	9.01	.14145E+04
528.76	0.00	0.00	19.1	0.536E-02	0.75	9.03	.14198E+04
530.75	0.00	0.00	19.2	0.535E-02	0.75	9.05	.14251E+04
532.74	0.00	0.00	19.2	0.534E-02	0.75	9.06	.14305E+04
534.72	0.00	0.00	19.2	0.533E-02	0.75	9.08	.14358E+04
536.71	0.00	0.00	19.3	0.532E-02	0.75	9.10	.14411E+04
538.70	0.00	0.00	19.3	0.531E-02	0.75	9.11	.14465E+04
540.69	0.00	0.00	19.3	0.530E-02	0.75	9.13	.14518E+04
542.68	0.00	0.00	19.4	0.529E-02	0.75	9.15	.14572E+04
544.67	0.00	0.00	19.4	0.528E-02	0.75	9.16	.14625E+04
546.65	0.00	0.00	19.4	0.527E-02	0.75	9.18	.14678E+04
548.64	0.00	0.00	19.5	0.526E-02	0.75	9.20	.14732E+04
550.63	0.00	0.00	19.5	0.525E-02	0.75	9.21	.14785E+04
552.62	0.00	0.00	19.6	0.524E-02	0.75	9.23	.14839E+04
554.61	0.00	0.00	19.6	0.523E-02	0.75	9.25	.14892E+04
556.60	0.00	0.00	19.6	0.522E-02	0.75	9.26	.14945E+04
558.58	0.00	0.00	19.7	0.521E-02	0.75	9.28	.14999E+04
560.57	0.00	0.00	19.7	0.520E-02	0.75	9.30	.15052E+04
562.56	0.00	0.00	19.7	0.519E-02	0.75	9.31	.15105E+04
564.55	0.00	0.00	19.8	0.518E-02	0.75	9.33	.15159E+04
566.54	0.00	0.00	19.8	0.517E-02	0.75	9.35	.15212E+04
568.53	0.00	0.00	19.8	0.516E-02	0.75	9.36	.15266E+04
570.51	0.00	0.00	19.9	0.515E-02	0.75	9.38	.15319E+04
572.50	0.00	0.00	19.9	0.514E-02	0.75	9.40	.15372E+04
574.49	0.00	0.00	19.9	0.513E-02	0.75	9.41	.15426E+04
576.48	0.00	0.00	20.0	0.512E-02	0.75	9.43	.15479E+04
578.47	0.00	0.00	20.0	0.511E-02	0.75	9.44	.15533E+04
580.46	0.00	0.00	20.0	0.510E-02	0.75	9.46	.15586E+04
582.44	0.00	0.00	20.1	0.509E-02	0.75	9.48	.15639E+04
584.43	0.00	0.00	20.1	0.508E-02	0.75	9.49	.15693E+04
586.42	0.00	0.00	20.1	0.507E-02	0.75	9.51	.15746E+04
588.41	0.00	0.00	20.2	0.506E-02	0.75	9.52	.15800E+04
590.40	0.00	0.00	20.2	0.506E-02	0.75	9.54	.15853E+04
592.39	0.00	0.00	20.2	0.505E-02	0.75	9.56	.15906E+04
594.37	0.00	0.00	20.3	0.504E-02	0.75	9.57	.15960E+04
596.36	0.00	0.00	20.3	0.503E-02	0.75	9.59	.16013E+04
598.35	0.00	0.00	20.3	0.502E-02	0.75	9.60	.16066E+04
600.34	0.00	0.00	20.4	0.501E-02	0.75	9.62	.16120E+04
602.33	0.00	0.00	20.4	0.500E-02	0.75	9.64	.16173E+04
604.32	0.00	0.00	20.4	0.499E-02	0.75	9.65	.16227E+04
606.30	0.00	0.00	20.5	0.498E-02	0.75	9.67	.16280E+04
608.29	0.00	0.00	20.5	0.498E-02	0.75	9.68	.16333E+04
610.28	0.00	0.00	20.5	0.497E-02	0.75	9.70	.16387E+04
612.27	0.00	0.00	20.6	0.496E-02	0.75	9.72	.16440E+04
614.26	0.00	0.00	20.6	0.495E-02	0.75	9.73	.16494E+04
616.25	0.00	0.00	20.6	0.494E-02	0.75	9.75	.16547E+04
618.23	0.00	0.00	20.7	0.493E-02	0.75	9.76	.16600E+04
620.22	0.00	0.00	20.7	0.492E-02	0.75	9.78	.16654E+04
622.21	0.00	0.00	20.7	0.492E-02	0.75	9.79	.16707E+04
624.20	0.00	0.00	20.8	0.491E-02	0.75	9.81	.16760E+04
626.19	0.00	0.00	20.8	0.490E-02	0.75	9.83	.16814E+04
628.18	0.00	0.00	20.8	0.489E-02	0.75	9.84	.16867E+04
630.17	0.00	0.00	20.9	0.488E-02	0.75	9.86	.16921E+04
632.15	0.00	0.00	20.9	0.487E-02	0.75	9.87	.16974E+04
634.14	0.00	0.00	20.9	0.487E-02	0.75	9.89	.17027E+04
636.13	0.00	0.00	21.0	0.486E-02	0.75	9.90	.17081E+04
638.12	0.00	0.00	21.0	0.485E-02	0.75	9.92	.17134E+04
640.11	0.00	0.00	21.0	0.484E-02	0.75	9.93	.17188E+04
642.10	0.00	0.00	21.1	0.483E-02	0.75	9.95	.17241E+04
644.08	0.00	0.00	21.1	0.482E-02	0.75	9.96	.17294E+04
646.07	0.00	0.00	21.1	0.482E-02	0.75	9.98	.17348E+04
648.06	0.00	0.00	21.2	0.481E-02	0.75	9.99	.17401E+04
650.05	0.00	0.00	21.2	0.480E-02	0.75	10.01	.17455E+04
652.04	0.00	0.00	21.2	0.479E-02	0.75	10.03	.17508E+04
654.03	0.00	0.00	21.3	0.479E-02	0.75	10.04	.17561E+04
656.01	0.00	0.00	21.3	0.478E-02	0.75	10.06	.17615E+04
658.00	0.00	0.00	21.3	0.477E-02	0.75	10.07	.17668E+04
659.99	0.00	0.00	21.4	0.476E-02	0.75	10.09	.17721E+04
661.98	0.00	0.00	21.4	0.475E-02	0.75	10.10	.17775E+04
663.97	0.00	0.00	21.4	0.475E-02	0.75	10.12	.17828E+04
665.96	0.00	0.00	21.5	0.474E-02	0.75	10.13	.17882E+04
667.94	0.00	0.00	21.5	0.473E-02	0.75	10.15	.17935E+04
669.93	0.00	0.00	21.5	0.472E-02	0.75	10.16	.17988E+04
671.92	0.00	0.00	21.6	0.472E-02	0.75	10.18	.18042E+04
673.91	0.00	0.00	21.6	0.471E-02	0.75	10.19	.18095E+04
675.90	0.00	0.00	21.6	0.470E-02	0.75	10.21	.18149E+04
677.89	0.00	0.00	21.7	0.469E-02	0.75	10.22	.18202E+04
679.87	0.00	0.00	21.7	0.469E-02	0.75	10.24	.18255E+04
681.86	0.00	0.00	21.7	0.468E-02	0.75	10.25	.18309E+04
683.85	0.00	0.00	21.7	0.467E-02	0.75	10.27	.18362E+04

685.84	0.00	0.00	21.8	0.466E-02	0.75	10.28	.18415E+04
687.83	0.00	0.00	21.8	0.466E-02	0.75	10.30	.18469E+04
689.82	0.00	0.00	21.8	0.465E-02	0.75	10.31	.18522E+04
691.80	0.00	0.00	21.9	0.464E-02	0.75	10.33	.18576E+04
693.79	0.00	0.00	21.9	0.463E-02	0.75	10.34	.18629E+04
695.78	0.00	0.00	21.9	0.463E-02	0.75	10.36	.18682E+04
697.77	0.00	0.00	22.0	0.462E-02	0.75	10.37	.18736E+04
699.76	0.00	0.00	22.0	0.461E-02	0.75	10.39	.18789E+04
701.75	0.00	0.00	22.0	0.461E-02	0.75	10.40	.18843E+04
703.73	0.00	0.00	22.1	0.460E-02	0.75	10.41	.18896E+04
705.72	0.00	0.00	22.1	0.459E-02	0.75	10.43	.18949E+04
707.71	0.00	0.00	22.1	0.459E-02	0.75	10.44	.19003E+04
709.70	0.00	0.00	22.2	0.458E-02	0.75	10.46	.19056E+04
711.69	0.00	0.00	22.2	0.457E-02	0.75	10.47	.19110E+04
713.68	0.00	0.00	22.2	0.456E-02	0.75	10.49	.19163E+04
715.66	0.00	0.00	22.2	0.456E-02	0.75	10.50	.19216E+04
717.65	0.00	0.00	22.3	0.455E-02	0.75	10.52	.19270E+04
719.64	0.00	0.00	22.3	0.454E-02	0.75	10.53	.19323E+04
721.63	0.00	0.00	22.3	0.454E-02	0.75	10.55	.19376E+04
723.62	0.00	0.00	22.4	0.453E-02	0.75	10.56	.19430E+04
725.61	0.00	0.00	22.4	0.452E-02	0.75	10.57	.19483E+04
727.59	0.00	0.00	22.4	0.452E-02	0.75	10.59	.19537E+04
729.58	0.00	0.00	22.5	0.451E-02	0.75	10.60	.19590E+04
731.57	0.00	0.00	22.5	0.450E-02	0.75	10.62	.19643E+04
733.56	0.00	0.00	22.5	0.450E-02	0.75	10.63	.19697E+04
735.55	0.00	0.00	22.6	0.449E-02	0.75	10.65	.19750E+04
737.54	0.00	0.00	22.6	0.448E-02	0.75	10.66	.19804E+04
739.52	0.00	0.00	22.6	0.448E-02	0.75	10.68	.19857E+04
741.51	0.00	0.00	22.6	0.447E-02	0.75	10.69	.19910E+04
743.50	0.00	0.00	22.7	0.446E-02	0.75	10.70	.19964E+04
745.49	0.00	0.00	22.7	0.446E-02	0.75	10.72	.20017E+04
747.48	0.00	0.00	22.7	0.445E-02	0.75	10.73	.20070E+04
749.47	0.00	0.00	22.8	0.444E-02	0.75	10.75	.20124E+04
751.45	0.00	0.00	22.8	0.444E-02	0.75	10.76	.20177E+04
753.44	0.00	0.00	22.8	0.443E-02	0.75	10.78	.20231E+04
755.43	0.00	0.00	22.9	0.443E-02	0.75	10.79	.20284E+04
757.42	0.00	0.00	22.9	0.442E-02	0.75	10.80	.20337E+04
759.41	0.00	0.00	22.9	0.441E-02	0.75	10.82	.20391E+04
761.40	0.00	0.00	22.9	0.441E-02	0.75	10.83	.20444E+04
763.38	0.00	0.00	23.0	0.440E-02	0.75	10.85	.20498E+04
765.37	0.00	0.00	23.0	0.439E-02	0.75	10.86	.20551E+04
767.36	0.00	0.00	23.0	0.439E-02	0.75	10.87	.20604E+04
769.35	0.00	0.00	23.1	0.438E-02	0.75	10.89	.20658E+04
771.34	0.00	0.00	23.1	0.437E-02	0.75	10.90	.20711E+04
773.33	0.00	0.00	23.1	0.437E-02	0.75	10.92	.20765E+04
775.31	0.00	0.00	23.2	0.436E-02	0.75	10.93	.20818E+04
777.30	0.00	0.00	23.2	0.436E-02	0.75	10.94	.20871E+04
779.29	0.00	0.00	23.2	0.435E-02	0.75	10.96	.20925E+04
781.28	0.00	0.00	23.2	0.434E-02	0.75	10.97	.20978E+04
783.27	0.00	0.00	23.3	0.434E-02	0.75	10.99	.21031E+04
785.26	0.00	0.00	23.3	0.433E-02	0.75	11.00	.21085E+04
787.24	0.00	0.00	23.3	0.433E-02	0.75	11.01	.21138E+04
789.23	0.00	0.00	23.4	0.432E-02	0.75	11.03	.21192E+04
791.22	0.00	0.00	23.4	0.431E-02	0.75	11.04	.21245E+04
793.21	0.00	0.00	23.4	0.431E-02	0.75	11.06	.21298E+04
795.20	0.00	0.00	23.4	0.430E-02	0.75	11.07	.21352E+04
797.19	0.00	0.00	23.5	0.430E-02	0.75	11.08	.21405E+04
799.17	0.00	0.00	23.5	0.429E-02	0.75	11.10	.21459E+04
801.16	0.00	0.00	23.5	0.428E-02	0.75	11.11	.21512E+04
803.15	0.00	0.00	23.6	0.428E-02	0.75	11.12	.21565E+04
805.14	0.00	0.00	23.6	0.427E-02	0.75	11.14	.21619E+04
807.13	0.00	0.00	23.6	0.427E-02	0.75	11.15	.21672E+04
809.12	0.00	0.00	23.7	0.426E-02	0.75	11.17	.21725E+04
811.10	0.00	0.00	23.7	0.426E-02	0.75	11.18	.21779E+04
813.09	0.00	0.00	23.7	0.425E-02	0.75	11.19	.21832E+04
815.08	0.00	0.00	23.7	0.424E-02	0.75	11.21	.21886E+04
817.07	0.00	0.00	23.8	0.424E-02	0.75	11.22	.21939E+04
819.06	0.00	0.00	23.8	0.423E-02	0.75	11.23	.21992E+04
821.05	0.00	0.00	23.8	0.423E-02	0.75	11.25	.22046E+04
823.03	0.00	0.00	23.9	0.422E-02	0.75	11.26	.22099E+04
825.02	0.00	0.00	23.9	0.422E-02	0.75	11.27	.22153E+04
827.01	0.00	0.00	23.9	0.421E-02	0.75	11.29	.22206E+04
829.00	0.00	0.00	23.9	0.421E-02	0.75	11.30	.22259E+04
830.99	0.00	0.00	24.0	0.420E-02	0.75	11.32	.22313E+04
832.98	0.00	0.00	24.0	0.419E-02	0.75	11.33	.22366E+04
834.96	0.00	0.00	24.0	0.419E-02	0.75	11.34	.22420E+04
836.95	0.00	0.00	24.1	0.418E-02	0.75	11.36	.22473E+04
838.94	0.00	0.00	24.1	0.418E-02	0.75	11.37	.22526E+04
840.93	0.00	0.00	24.1	0.417E-02	0.75	11.38	.22580E+04
842.92	0.00	0.00	24.1	0.417E-02	0.75	11.40	.22633E+04
844.91	0.00	0.00	24.2	0.416E-02	0.75	11.41	.22686E+04
846.89	0.00	0.00	24.2	0.416E-02	0.75	11.42	.22740E+04
848.88	0.00	0.00	24.2	0.415E-02	0.75	11.44	.22793E+04
850.87	0.00	0.00	24.3	0.415E-02	0.75	11.45	.22847E+04
852.86	0.00	0.00	24.3	0.414E-02	0.75	11.46	.22900E+04
854.85	0.00	0.00	24.3	0.413E-02	0.75	11.48	.22953E+04
856.84	0.00	0.00	24.3	0.413E-02	0.75	11.49	.23007E+04
858.82	0.00	0.00	24.4	0.412E-02	0.75	11.50	.23060E+04
860.81	0.00	0.00	24.4	0.412E-02	0.75	11.52	.23114E+04
862.80	0.00	0.00	24.4	0.411E-02	0.75	11.53	.23167E+04

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    864.79     0.00    0.00    24.5 0.411E-02   0.75    11.54 .23220E+04
    866.78     0.00    0.00    24.5 0.410E-02   0.75    11.56 .23274E+04
    868.77     0.00    0.00    24.5 0.410E-02   0.75    11.57 .23327E+04
    870.75     0.00    0.00    24.5 0.409E-02   0.75    11.58 .23380E+04
    872.74     0.00    0.00    24.6 0.409E-02   0.75    11.60 .23434E+04
    874.73     0.00    0.00    24.6 0.408E-02   0.75    11.61 .23487E+04
    876.72     0.00    0.00    24.6 0.408E-02   0.75    11.62 .23541E+04
    878.71     0.00    0.00    24.6 0.407E-02   0.75    11.64 .23594E+04
    880.70     0.00    0.00    24.7 0.407E-02   0.75    11.65 .23647E+04
    882.68     0.00    0.00    24.7 0.406E-02   0.75    11.66 .23701E+04
    884.67     0.00    0.00    24.7 0.406E-02   0.75    11.67 .23754E+04
    886.66     0.00    0.00    24.8 0.405E-02   0.75    11.69 .23808E+04
    888.65     0.00    0.00    24.8 0.405E-02   0.75    11.70 .23861E+04
    890.64     0.00    0.00    24.8 0.404E-02   0.75    11.71 .23914E+04
    892.63     0.00    0.00    24.8 0.404E-02   0.75    11.73 .23968E+04
    894.61     0.00    0.00    24.9 0.403E-02   0.75    11.74 .24021E+04
    896.60     0.00    0.00    24.9 0.403E-02   0.75    11.75 .24075E+04
    898.59     0.00    0.00    24.9 0.402E-02   0.75    11.77 .24128E+04
    900.58     0.00    0.00    25.0 0.402E-02   0.75    11.78 .24181E+04
    902.57     0.00    0.00    25.0 0.401E-02   0.75    11.79 .24235E+04
    904.56     0.00    0.00    25.0 0.401E-02   0.75    11.81 .24288E+04
    906.54     0.00    0.00    25.0 0.400E-02   0.75    11.82 .24341E+04
    908.53     0.00    0.00    25.1 0.400E-02   0.75    11.83 .24395E+04
    910.52     0.00    0.00    25.1 0.399E-02   0.75    11.84 .24448E+04
    912.51     0.00    0.00    25.1 0.399E-02   0.75    11.86 .24502E+04
    914.50     0.00    0.00    25.1 0.398E-02   0.75    11.87 .24555E+04
    916.49     0.00    0.00    25.2 0.398E-02   0.75    11.88 .24608E+04
    918.47     0.00    0.00    25.2 0.397E-02   0.75    11.90 .24662E+04
    920.46     0.00    0.00    25.2 0.397E-02   0.75    11.91 .24715E+04
    922.45     0.00    0.00    25.3 0.396E-02   0.75    11.92 .24769E+04
    924.44     0.00    0.00    25.3 0.396E-02   0.75    11.93 .24822E+04
    926.43     0.00    0.00    25.3 0.395E-02   0.75    11.95 .24875E+04
    928.42     0.00    0.00    25.3 0.395E-02   0.75    11.96 .24929E+04
    930.40     0.00    0.00    25.4 0.394E-02   0.75    11.97 .24982E+04
    932.39     0.00    0.00    25.4 0.394E-02   0.75    11.99 .25035E+04
    934.38     0.00    0.00    25.4 0.394E-02   0.75    12.00 .25089E+04
    936.37     0.00    0.00    25.4 0.393E-02   0.75    12.01 .25142E+04
    938.36     0.00    0.00    25.5 0.393E-02   0.75    12.02 .25196E+04
    940.35     0.00    0.00    25.5 0.392E-02   0.75    12.04 .25249E+04
    942.33     0.00    0.00    25.5 0.392E-02   0.75    12.05 .25302E+04
    944.32     0.00    0.00    25.5 0.391E-02   0.75    12.06 .25356E+04
    946.31     0.00    0.00    25.6 0.391E-02   0.75    12.07 .25409E+04
    948.30     0.00    0.00    25.6 0.390E-02   0.75    12.09 .25463E+04
    950.29     0.00    0.00    25.6 0.390E-02   0.75    12.10 .25516E+04
    952.28     0.00    0.00    25.7 0.389E-02   0.75    12.11 .25569E+04
    954.26     0.00    0.00    25.7 0.389E-02   0.75    12.12 .25623E+04
    956.25     0.00    0.00    25.7 0.388E-02   0.75    12.14 .25676E+04
    958.24     0.00    0.00    25.7 0.388E-02   0.75    12.15 .25730E+04
    960.23     0.00    0.00    25.8 0.388E-02   0.75    12.16 .25783E+04
    962.22     0.00    0.00    25.8 0.387E-02   0.75    12.18 .25836E+04
    964.21     0.00    0.00    25.8 0.387E-02   0.75    12.19 .25890E+04
    966.19     0.00    0.00    25.8 0.386E-02   0.75    12.20 .25943E+04
    968.18     0.00    0.00    25.9 0.386E-02   0.75    12.21 .25996E+04
    970.17     0.00    0.00    25.9 0.385E-02   0.75    12.23 .26050E+04
    972.16     0.00    0.00    25.9 0.385E-02   0.75    12.24 .26103E+04
    974.15     0.00    0.00    25.9 0.384E-02   0.75    12.25 .26157E+04
    976.14     0.00    0.00    26.0 0.384E-02   0.75    12.26 .26210E+04
    978.12     0.00    0.00    26.0 0.384E-02   0.75    12.28 .26263E+04
    980.11     0.00    0.00    26.0 0.383E-02   0.75    12.29 .26317E+04
    982.10     0.00    0.00    26.1 0.383E-02   0.75    12.30 .26370E+04
    984.09     0.00    0.00    26.1 0.382E-02   0.75    12.31 .26424E+04
    986.08     0.00    0.00    26.1 0.382E-02   0.75    12.32 .26477E+04
    988.07     0.00    0.00    26.1 0.381E-02   0.75    12.34 .26530E+04
    990.05     0.00    0.00    26.2 0.381E-02   0.75    12.35 .26584E+04
    992.04     0.00    0.00    26.2 0.381E-02   0.75    12.36 .26637E+04
    994.03     0.00    0.00    26.2 0.380E-02   0.75    12.37 .26690E+04
    996.02     0.00    0.00    26.2 0.380E-02   0.75    12.39 .26744E+04
    998.01     0.00    0.00    26.3 0.379E-02   0.75    12.40 .26797E+04
   1000.00     0.00    0.00    26.3 0.379E-02   0.75    12.41 .26851E+04
 Cumulative travel time =        2685.0723 sec  (    0.75 hrs)

 Simulation limit based on maximum specified distance =   1000.00 m.
   This is the REGION OF INTEREST limitation.

END OF MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
CORMIX3: Buoyant Surface Discharges                    End of Prediction File
3333333333333333333333333333333333333333333333333333333333333333333333333333333
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CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 10.0G
                       HYDRO3:Version-10.0.0.0  July,2016
SITE NAME/LABEL:                Richland
  DESIGN CASE:                  Summer Chronic  (3 MGD) 7Q10
  FILE NAME:                    C:\Program Files (x86)\CORMIX 10.0\Simulations\Copper Chronic 3MGD.prd
  Using subsystem CORMIX3:     Buoyant Surface Discharges
  Start of session:             03/20/2017--12:02:32
*****************************************************************************
SUMMARY OF INPUT DATA:
-----------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                          BS      = 72.10 m
  Channel regularity             ICHREG = 2
  Ambient flowrate               QA      = 20.01 m^3/s
  Average depth                  HA      = 0.75 m
  Depth at discharge             HD      = 0.75 m
  Ambient velocity               UA      = 0.37 m/s
  Darcy-Weisbach friction factor F       = 0.1381
    Calculated from Manning's n          = 0.04
  Wind velocity                  UW      = 1 m/s
  Stratification Type            STRCND = U
  Surface temperature                    = 27.90 degC
  Bottom temperature                     = 27.90 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density                RHOAS   = 996.2622 kg/m^3
  Bottom density                 RHOAB   = 996.2622 kg/m^3
-----------------------------------------------------------------------------
DISCHARGE PARAMETERS:            Surface Discharge
  Discharge located on                   = left bank/shoreline
  Discharge configuration                = flush discharge
  Distance from bank to outlet   DISTB   = 0 m
  Discharge angle                SIGMA   = 85 deg
  Depth near discharge outlet    HD0     = 0.5 m
  Bottom slope at discharge      SLOPE   = 4.46 deg
  Rectangular discharge:
    Discharge cross-section area A0      = 3.725 m^2
    Discharge channel width      B0      = 7.45 m
    Discharge channel depth      H0      = 0.5 m
    Discharge aspect ratio       AR      = 0.067114
  Discharge flowrate             Q0      = 0.131865 m^3/s
  Discharge velocity             U0      = 0.04 m/s
  Discharge temperature (freshwater)     = 30.30 degC
  Corresponding density          RHO0    = 995.5560 kg/m^3
  Density difference             DRHO    = 0.7062 kg/m^3
  Buoyant acceleration           GP0     = 0.007 m/s^2
  Discharge concentration        C0      = 0.000067 picograms
  Surface heat exchange coeff.   KS      = 0 m/s
  Coefficient of decay           KD      = 0 /s
-----------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 1.93 m         Lm  = 0.18 m         Lbb = 0.02 m
  LM  = 0.59 m
-----------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Densimetric Froude number      FR0     = 0.31 (based on LQ)
  Channel densimetric Froude no. FRCH    = 0.60 (based on H0)
  Velocity ratio                 R       = 0.10
-----------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = yes
  Water quality standard         CSTD    = 400000 picograms
  Regulatory mixing zone                 = yes
  Regulatory mixing zone specification   = distance
  Regulatory mixing zone value           = 91.46 m (m^2 if area)
  Region of interest                     = 1000 m
*****************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *------------------------*
  | FLOW CLASS   = PL2 |
  *------------------------*

  Limiting Dilution S = (QA/Q0)+ 1.0 = 152.7

*****************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

-----------------------------------------------------------------------------
X-Y-Z Coordinate system:
Origin is located at WATER SURFACE and at centerline of discharge channel:
    0 m from the left bank/shore.
  Number of display steps NSTEP = 500 per module.
-----------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
  implication.  However, this information may be useful for the discharge
```

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  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 0.0001 picograms
  Dilution at edge of NFR              s = 1
  NFR Location:                        x = 3.73 m
    (centerline coordinates)           y = -0.20 m
                                       z = 0 m
  NFR plume dimensions:  half-width (bh) = 0.85 m
                          thickness (bv) = 0.42 m
Cumulative travel time:       10.0676 sec.
-------------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is less than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards
  the surface.
-------------------------------------------------------------------------------
FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed at 21.73 m downstream.
-------------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts one bank only at 0 m downstream.
************************ TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
********************** REGULATORY MIXING ZONE SUMMARY ***********************
The plume conditions at the boundary of the specified RMZ are as follows:
  Pollutant concentration              c = 0.000008  picograms
  Corresponding dilution               s = 8.0
  Plume location:                      x = 91.46 m
    (centerline coordinates)           y = 0 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 3.78 m
                          thickness (bv) = 0.75 m
Cumulative travel time:       245.6366 sec.

Note:
Plume concentration c and dilution s values are reported based on prediction
file values - assuming linear interpolation between predicted points just
before and just after the RMZ boundary has been detected.

Please ensure a small step size is used in the prediction file to account
for this linear interpolation. Step size can be controlled by increasing
(reduces the prediction step size) or decreasing (increases the prediction
step size) the - Output Steps per Module - in CORMIX input.

At this position, the plume is CONTACTING the LEFT bank.
Furthermore, the specified water quality standard has indeed been met
  within the RMZ. In particular:
The ambient water quality standard was encountered within a control
  volume describing a portion of the discharge plume.
Therefore, the following plume conditions are a conservative estimate (with
  lower concentrations or with larger dimensions) for the region at whose
  boundary the standard is met:
  Local boundary concentration           = 0.0001  picograms
Corresponding dilution                   = 1
  Water quality standard                 = 400000  picograms
  Corresponding dilution               s = 1
  Plume location:                      x = 3.73 m
    (centerline coordinates)           y = -0.20 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 0.85 m
                          thickness (bv) = 0.42 m
********************* FINAL DESIGN ADVICE AND COMMENTS **********************
REMINDER:  The user must take note that HYDRODYNAMIC MODELING by any known
  technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the
  CORMIX predictions on dilutions and concentrations (with associated
  plume geometries) are reliable for the majority of cases and are accurate
  to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges
  the design configuration as highly complex and uncertain for prediction.
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CORMIX3 PREDICTION FILE:
3333333333333333333333333333333333333333333333333333333333333333333333333333333333
                        CORMIX MIXING ZONE EXPERT SYSTEM
                 Subsystem CORMIX3: Buoyant Surface Discharges
                                CORMIX Version 10.0G
                      HYDRO3 Version 10.0.0.0 July 2016
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
CASE DESCRIPTION
 Site name/label:   Richland
 Design case:       Summer Chronic  (3 MGD) 7Q10
 FILE NAME:         C:\...)\CORMIX 10.0\Simulations\Copper Chronic_3MGD.prd
 Time stamp:        03/20/2017--12:02:32

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     72.10  AS    =     54.07  QA    =     20.01  ICHREG= 2
 HA    =      0.75  HD    =      0.75
 UA    =      0.370 F     =      0.138 USTAR =0.4862E-01
 UW    =      1.000 UWSTAR=0.1071E-02
 Uniform density environment
 STRCND=  U         RHOAM =  996.2622

DISCHARGE PARAMETERS (metric units)
 BANK  =  LEFT      DISTB =      0.00  Configuration: flush_discharge
 SIGMA =     85.00  HDO   =      0.50  SLOPE =    4.46 deg.
 Rectangular channel geometry:
 B0    =      7.450 H0    =      0.500 A0    =0.3725E+01  AR    =      0.067
 U0    =      0.035 Q0    =      0.132       =0.1319E+00
 RHO0  =  995.5560  DRHO0 =0.7062E+00  GP0   =0.6952E-02
 C0    =0.6700E-04  CUNITS=  picograms
 IPOLL =  1         KS    =0.0000E+00  KD    =0.0000E+00

FLUX VARIABLES (metric units)
 Q0    =0.1319E+00  M0    =0.4668E-02  J0    =0.9167E-03
 Associated length scales (meters)
 LQ    =      1.93  LM    =      0.59  Lm    =      0.18  Lb    =      0.02

NON-DIMENSIONAL PARAMETERS
 FR0   =      0.31  FRCH  =      0.60  R     =      0.10

FLOW CLASSIFICATION
 3333333333333333333333333333333333333333333
 3  Flow class (CORMIX3)      =    PL2    3
 3  Applicable layer depth HS =     0.75  3
 3  Limiting Dilution S =QA/Q0=   152.73  3
 3333333333333333333333333333333333333333333

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.6700E-04  CUNITS=  picograms
 NTOX  =  0
 NSTD  =  1         CSTD  =0.4000E+06
 REGMZ =  1
 REGSPC=  1         XREG  =     91.46  WREG  =      0.00  AREG  =      0.00
 XINT  =   1000.00  XMAX  =   1000.00

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the WATER SURFACE and at center of discharge
      channel/outlet:      0.00 m  from the LEFT  bank/shore.
    X-axis points downstream
    Y-axis points to left as seen by an observer looking downstream
    Z-axis points vertically upward (in CORMIX3, all values Z = 0.00)
NSTEP = 500 display intervals per module
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
BEGIN MOD301: DISCHARGE MODULE

 Efflux conditions:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.670E-04   0.50     3.72 .00000E+00

END OF MOD301: DISCHARGE MODULE
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
BEGIN MOD302: ZONE OF FLOW ESTABLISHMENT

  Control volume inflow:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.670E-04   0.50     3.72 .00000E+00

 RAPID DEFLECTION by ambient current:
 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

** WATER QUALITY STANDARD OR CCC HAS BEEN FOUND **
 The pollutant concentration in the plume falls below water quality standard
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   or CCC value of 0.400E+06 due to mixing in this control volume.
 The actual extent of the zone at whose boundary the water quality
   standard or the CCC is exceeded will be smaller than the control
   volume outflow values predicted below.

  Control volume outflow:                                  SIGMAE=    347.29
       X        Y       Z        S       C       BV       BH        TT
      3.72    -0.20    0.00     1.0 0.670E-04   0.42     0.85 .10068E+02
 Cumulative travel time =          10.0676 sec  (    0.00 hrs)

END OF MOD302: ZONE OF FLOW ESTABLISHMENT
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
** End of NEAR-FIELD REGION (NFR) **
-------------------------------------------------------------------------------

 WAKE FLOW CONDITIONS: The discharge velocity (U0) is less than or equal to the
 ambient velocity (Ua) and results in wake flow conditions. There is no discharge
 momentum induced mixing. The mixing characteristics are UNDESIRABLE.
-------------------------------------------------------------------------------
BEGIN MOD341: BUOYANT AMBIENT SPREADING

 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

 Plume Stage 2 (bank attached):
       X        Y       Z        S       C       BV       BH        TT
      3.72     0.00    0.00     1.0 0.670E-04   0.42     0.84 .10068E+02
      3.73     0.00    0.00     1.0 0.670E-04   0.42     0.84 .10079E+02
      3.73     0.00    0.00     1.0 0.670E-04   0.42     0.84 .10090E+02
      3.74     0.00    0.00     1.0 0.669E-04   0.42     0.84 .10101E+02
      3.74     0.00    0.00     1.0 0.669E-04   0.42     0.84 .10113E+02
      3.75     0.00    0.00     1.0 0.669E-04   0.42     0.85 .10124E+02
      3.75     0.00    0.00     1.0 0.669E-04   0.42     0.85 .10135E+02
      3.75     0.00    0.00     1.0 0.668E-04   0.42     0.85 .10146E+02
      3.76     0.00    0.00     1.0 0.668E-04   0.42     0.85 .10158E+02
      3.76     0.00    0.00     1.0 0.668E-04   0.42     0.85 .10169E+02
      3.77     0.00    0.00     1.0 0.668E-04   0.42     0.85 .10180E+02
      3.77     0.00    0.00     1.0 0.667E-04   0.42     0.85 .10191E+02
      3.78     0.00    0.00     1.0 0.667E-04   0.42     0.85 .10203E+02
      3.78     0.00    0.00     1.0 0.667E-04   0.42     0.85 .10214E+02
      3.78     0.00    0.00     1.0 0.667E-04   0.42     0.85 .10225E+02
      3.79     0.00    0.00     1.0 0.666E-04   0.42     0.85 .10236E+02
      3.79     0.00    0.00     1.0 0.666E-04   0.42     0.85 .10248E+02
      3.80     0.00    0.00     1.0 0.666E-04   0.42     0.85 .10259E+02
      3.80     0.00    0.00     1.0 0.666E-04   0.42     0.85 .10270E+02
      3.80     0.00    0.00     1.0 0.665E-04   0.42     0.85 .10281E+02
      3.81     0.00    0.00     1.0 0.665E-04   0.42     0.85 .10293E+02
      3.81     0.00    0.00     1.0 0.665E-04   0.42     0.85 .10304E+02
      3.82     0.00    0.00     1.0 0.665E-04   0.42     0.85 .10315E+02
      3.82     0.00    0.00     1.0 0.664E-04   0.42     0.85 .10326E+02
      3.83     0.00    0.00     1.0 0.664E-04   0.42     0.85 .10338E+02
      3.83     0.00    0.00     1.0 0.664E-04   0.42     0.85 .10349E+02
      3.83     0.00    0.00     1.0 0.664E-04   0.42     0.85 .10360E+02
      3.84     0.00    0.00     1.0 0.663E-04   0.42     0.85 .10371E+02
      3.84     0.00    0.00     1.0 0.663E-04   0.42     0.85 .10383E+02
      3.85     0.00    0.00     1.0 0.663E-04   0.42     0.86 .10394E+02
      3.85     0.00    0.00     1.0 0.663E-04   0.42     0.86 .10405E+02
      3.85     0.00    0.00     1.0 0.662E-04   0.42     0.86 .10416E+02
      3.86     0.00    0.00     1.0 0.662E-04   0.42     0.86 .10428E+02
      3.86     0.00    0.00     1.0 0.662E-04   0.42     0.86 .10439E+02
      3.87     0.00    0.00     1.0 0.662E-04   0.42     0.86 .10450E+02
      3.87     0.00    0.00     1.0 0.661E-04   0.42     0.86 .10461E+02
      3.88     0.00    0.00     1.0 0.661E-04   0.42     0.86 .10473E+02
      3.88     0.00    0.00     1.0 0.661E-04   0.42     0.86 .10484E+02
      3.88     0.00    0.00     1.0 0.661E-04   0.42     0.86 .10495E+02
      3.89     0.00    0.00     1.0 0.660E-04   0.42     0.86 .10506E+02
      3.89     0.00    0.00     1.0 0.660E-04   0.42     0.86 .10517E+02
      3.90     0.00    0.00     1.0 0.660E-04   0.42     0.86 .10529E+02
      3.90     0.00    0.00     1.0 0.660E-04   0.42     0.86 .10540E+02
      3.91     0.00    0.00     1.0 0.659E-04   0.42     0.86 .10551E+02
      3.91     0.00    0.00     1.0 0.659E-04   0.42     0.86 .10562E+02
      3.91     0.00    0.00     1.0 0.659E-04   0.42     0.86 .10574E+02
      3.92     0.00    0.00     1.0 0.659E-04   0.42     0.86 .10585E+02
      3.92     0.00    0.00     1.0 0.658E-04   0.42     0.86 .10596E+02
      3.93     0.00    0.00     1.0 0.658E-04   0.42     0.86 .10607E+02
      3.93     0.00    0.00     1.0 0.658E-04   0.42     0.86 .10619E+02
      3.93     0.00    0.00     1.0 0.658E-04   0.42     0.86 .10630E+02
      3.94     0.00    0.00     1.0 0.657E-04   0.42     0.86 .10641E+02
      3.94     0.00    0.00     1.0 0.657E-04   0.42     0.87 .10652E+02
      3.95     0.00    0.00     1.0 0.657E-04   0.42     0.87 .10664E+02
      3.95     0.00    0.00     1.0 0.657E-04   0.42     0.87 .10675E+02
      3.96     0.00    0.00     1.0 0.656E-04   0.42     0.87 .10686E+02
      3.96     0.00    0.00     1.0 0.656E-04   0.42     0.87 .10697E+02
      3.96     0.00    0.00     1.0 0.656E-04   0.42     0.87 .10709E+02
      3.97     0.00    0.00     1.0 0.656E-04   0.42     0.87 .10720E+02
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3.97	0.00	0.00	1.0	0.655E-04	0.42	0.87	.10731E+02
3.98	0.00	0.00	1.0	0.655E-04	0.42	0.87	.10742E+02
3.98	0.00	0.00	1.0	0.655E-04	0.42	0.87	.10754E+02
3.98	0.00	0.00	1.0	0.655E-04	0.42	0.87	.10765E+02
3.99	0.00	0.00	1.0	0.654E-04	0.42	0.87	.10776E+02
3.99	0.00	0.00	1.0	0.654E-04	0.42	0.87	.10787E+02
4.00	0.00	0.00	1.0	0.654E-04	0.42	0.87	.10799E+02
4.00	0.00	0.00	1.0	0.654E-04	0.42	0.87	.10810E+02
4.01	0.00	0.00	1.0	0.653E-04	0.42	0.87	.10821E+02
4.01	0.00	0.00	1.0	0.653E-04	0.42	0.87	.10832E+02
4.01	0.00	0.00	1.0	0.653E-04	0.42	0.87	.10844E+02
4.02	0.00	0.00	1.0	0.653E-04	0.42	0.87	.10855E+02
4.02	0.00	0.00	1.0	0.653E-04	0.42	0.87	.10866E+02
4.03	0.00	0.00	1.0	0.652E-04	0.42	0.87	.10877E+02
4.03	0.00	0.00	1.0	0.652E-04	0.42	0.87	.10889E+02
4.04	0.00	0.00	1.0	0.652E-04	0.42	0.87	.10900E+02
4.04	0.00	0.00	1.0	0.652E-04	0.42	0.87	.10911E+02
4.04	0.00	0.00	1.0	0.651E-04	0.42	0.88	.10922E+02
4.05	0.00	0.00	1.0	0.651E-04	0.42	0.88	.10934E+02
4.05	0.00	0.00	1.0	0.651E-04	0.42	0.88	.10945E+02
4.06	0.00	0.00	1.0	0.651E-04	0.42	0.88	.10956E+02
4.06	0.00	0.00	1.0	0.650E-04	0.42	0.88	.10967E+02
4.06	0.00	0.00	1.0	0.650E-04	0.42	0.88	.10979E+02
4.07	0.00	0.00	1.0	0.650E-04	0.42	0.88	.10990E+02
4.07	0.00	0.00	1.0	0.650E-04	0.42	0.88	.11001E+02
4.08	0.00	0.00	1.0	0.649E-04	0.42	0.88	.11012E+02
4.08	0.00	0.00	1.0	0.649E-04	0.42	0.88	.11024E+02
4.09	0.00	0.00	1.0	0.649E-04	0.42	0.88	.11035E+02
4.09	0.00	0.00	1.0	0.649E-04	0.42	0.88	.11046E+02
4.09	0.00	0.00	1.0	0.648E-04	0.42	0.88	.11057E+02
4.10	0.00	0.00	1.0	0.648E-04	0.42	0.88	.11069E+02
4.10	0.00	0.00	1.0	0.648E-04	0.42	0.88	.11080E+02
4.11	0.00	0.00	1.0	0.648E-04	0.42	0.88	.11091E+02
4.11	0.00	0.00	1.0	0.647E-04	0.42	0.88	.11102E+02
4.11	0.00	0.00	1.0	0.647E-04	0.42	0.88	.11114E+02
4.12	0.00	0.00	1.0	0.647E-04	0.42	0.88	.11125E+02
4.12	0.00	0.00	1.0	0.647E-04	0.42	0.88	.11136E+02
4.13	0.00	0.00	1.0	0.646E-04	0.42	0.88	.11147E+02
4.13	0.00	0.00	1.0	0.646E-04	0.42	0.88	.11159E+02
4.14	0.00	0.00	1.0	0.646E-04	0.42	0.88	.11170E+02
4.14	0.00	0.00	1.0	0.646E-04	0.42	0.88	.11181E+02
4.14	0.00	0.00	1.0	0.645E-04	0.42	0.89	.11192E+02
4.15	0.00	0.00	1.0	0.645E-04	0.42	0.89	.11204E+02
4.15	0.00	0.00	1.0	0.645E-04	0.42	0.89	.11215E+02
4.16	0.00	0.00	1.0	0.645E-04	0.41	0.89	.11226E+02
4.16	0.00	0.00	1.0	0.644E-04	0.41	0.89	.11237E+02
4.16	0.00	0.00	1.0	0.644E-04	0.41	0.89	.11249E+02
4.17	0.00	0.00	1.0	0.644E-04	0.41	0.89	.11260E+02
4.17	0.00	0.00	1.0	0.644E-04	0.41	0.89	.11271E+02
4.18	0.00	0.00	1.0	0.644E-04	0.41	0.89	.11282E+02
4.18	0.00	0.00	1.0	0.643E-04	0.41	0.89	.11294E+02
4.19	0.00	0.00	1.0	0.643E-04	0.41	0.89	.11305E+02
4.19	0.00	0.00	1.0	0.643E-04	0.41	0.89	.11316E+02
4.19	0.00	0.00	1.0	0.643E-04	0.41	0.89	.11327E+02
4.20	0.00	0.00	1.0	0.642E-04	0.41	0.89	.11339E+02
4.20	0.00	0.00	1.0	0.642E-04	0.41	0.89	.11350E+02
4.21	0.00	0.00	1.0	0.642E-04	0.41	0.89	.11361E+02
4.21	0.00	0.00	1.0	0.642E-04	0.41	0.89	.11372E+02
4.22	0.00	0.00	1.0	0.641E-04	0.41	0.89	.11384E+02
4.22	0.00	0.00	1.0	0.641E-04	0.41	0.89	.11395E+02
4.22	0.00	0.00	1.0	0.641E-04	0.41	0.89	.11406E+02
4.23	0.00	0.00	1.0	0.641E-04	0.41	0.89	.11417E+02
4.23	0.00	0.00	1.0	0.640E-04	0.41	0.89	.11429E+02
4.24	0.00	0.00	1.0	0.640E-04	0.41	0.89	.11440E+02
4.24	0.00	0.00	1.0	0.640E-04	0.41	0.89	.11451E+02
4.24	0.00	0.00	1.0	0.640E-04	0.41	0.90	.11462E+02
4.25	0.00	0.00	1.0	0.639E-04	0.41	0.90	.11474E+02
4.25	0.00	0.00	1.0	0.639E-04	0.41	0.90	.11485E+02
4.26	0.00	0.00	1.0	0.639E-04	0.41	0.90	.11496E+02
4.26	0.00	0.00	1.0	0.639E-04	0.41	0.90	.11507E+02
4.27	0.00	0.00	1.0	0.638E-04	0.41	0.90	.11519E+02
4.27	0.00	0.00	1.0	0.638E-04	0.41	0.90	.11530E+02
4.27	0.00	0.00	1.1	0.638E-04	0.41	0.90	.11541E+02
4.28	0.00	0.00	1.1	0.638E-04	0.41	0.90	.11552E+02
4.28	0.00	0.00	1.1	0.637E-04	0.41	0.90	.11564E+02
4.29	0.00	0.00	1.1	0.637E-04	0.41	0.90	.11575E+02
4.29	0.00	0.00	1.1	0.637E-04	0.41	0.90	.11586E+02
4.29	0.00	0.00	1.1	0.637E-04	0.41	0.90	.11597E+02
4.30	0.00	0.00	1.1	0.637E-04	0.41	0.90	.11609E+02
4.30	0.00	0.00	1.1	0.636E-04	0.41	0.90	.11620E+02
4.31	0.00	0.00	1.1	0.636E-04	0.41	0.90	.11631E+02
4.31	0.00	0.00	1.1	0.636E-04	0.41	0.90	.11642E+02
4.32	0.00	0.00	1.1	0.636E-04	0.41	0.90	.11654E+02
4.32	0.00	0.00	1.1	0.635E-04	0.41	0.90	.11665E+02
4.32	0.00	0.00	1.1	0.635E-04	0.41	0.90	.11676E+02
4.33	0.00	0.00	1.1	0.635E-04	0.41	0.90	.11687E+02
4.33	0.00	0.00	1.1	0.635E-04	0.41	0.90	.11699E+02
4.34	0.00	0.00	1.1	0.634E-04	0.41	0.90	.11710E+02
4.34	0.00	0.00	1.1	0.634E-04	0.41	0.90	.11721E+02
4.35	0.00	0.00	1.1	0.634E-04	0.41	0.91	.11732E+02

4.35	0.00	0.00	1.1	0.634E-04	0.41	0.91	.11744E+02
4.35	0.00	0.00	1.1	0.633E-04	0.41	0.91	.11755E+02
4.36	0.00	0.00	1.1	0.633E-04	0.41	0.91	.11766E+02
4.36	0.00	0.00	1.1	0.633E-04	0.41	0.91	.11777E+02
4.37	0.00	0.00	1.1	0.633E-04	0.41	0.91	.11789E+02
4.37	0.00	0.00	1.1	0.632E-04	0.41	0.91	.11800E+02
4.37	0.00	0.00	1.1	0.632E-04	0.41	0.91	.11811E+02
4.38	0.00	0.00	1.1	0.632E-04	0.41	0.91	.11822E+02
4.38	0.00	0.00	1.1	0.632E-04	0.41	0.91	.11834E+02
4.39	0.00	0.00	1.1	0.631E-04	0.41	0.91	.11845E+02
4.39	0.00	0.00	1.1	0.631E-04	0.41	0.91	.11856E+02
4.40	0.00	0.00	1.1	0.631E-04	0.41	0.91	.11867E+02
4.40	0.00	0.00	1.1	0.631E-04	0.41	0.91	.11879E+02
4.40	0.00	0.00	1.1	0.630E-04	0.41	0.91	.11890E+02
4.41	0.00	0.00	1.1	0.630E-04	0.41	0.91	.11901E+02
4.41	0.00	0.00	1.1	0.630E-04	0.41	0.91	.11912E+02
4.42	0.00	0.00	1.1	0.630E-04	0.41	0.91	.11924E+02
4.42	0.00	0.00	1.1	0.630E-04	0.41	0.91	.11935E+02
4.42	0.00	0.00	1.1	0.629E-04	0.41	0.91	.11946E+02
4.43	0.00	0.00	1.1	0.629E-04	0.41	0.91	.11957E+02
4.43	0.00	0.00	1.1	0.629E-04	0.41	0.91	.11969E+02
4.44	0.00	0.00	1.1	0.629E-04	0.41	0.91	.11980E+02
4.44	0.00	0.00	1.1	0.628E-04	0.41	0.91	.11991E+02
4.45	0.00	0.00	1.1	0.628E-04	0.41	0.92	.12002E+02
4.45	0.00	0.00	1.1	0.628E-04	0.41	0.92	.12014E+02
4.45	0.00	0.00	1.1	0.628E-04	0.41	0.92	.12025E+02
4.46	0.00	0.00	1.1	0.627E-04	0.41	0.92	.12036E+02
4.46	0.00	0.00	1.1	0.627E-04	0.41	0.92	.12047E+02
4.47	0.00	0.00	1.1	0.627E-04	0.41	0.92	.12058E+02
4.47	0.00	0.00	1.1	0.627E-04	0.41	0.92	.12070E+02
4.47	0.00	0.00	1.1	0.626E-04	0.41	0.92	.12081E+02
4.48	0.00	0.00	1.1	0.626E-04	0.41	0.92	.12092E+02
4.48	0.00	0.00	1.1	0.626E-04	0.41	0.92	.12103E+02
4.49	0.00	0.00	1.1	0.626E-04	0.41	0.92	.12115E+02
4.49	0.00	0.00	1.1	0.625E-04	0.41	0.92	.12126E+02
4.50	0.00	0.00	1.1	0.625E-04	0.41	0.92	.12137E+02
4.50	0.00	0.00	1.1	0.625E-04	0.41	0.92	.12148E+02
4.50	0.00	0.00	1.1	0.625E-04	0.41	0.92	.12160E+02
4.51	0.00	0.00	1.1	0.625E-04	0.41	0.92	.12171E+02
4.51	0.00	0.00	1.1	0.624E-04	0.41	0.92	.12182E+02
4.52	0.00	0.00	1.1	0.624E-04	0.41	0.92	.12193E+02
4.52	0.00	0.00	1.1	0.624E-04	0.41	0.92	.12205E+02
4.53	0.00	0.00	1.1	0.624E-04	0.41	0.92	.12216E+02
4.53	0.00	0.00	1.1	0.623E-04	0.41	0.92	.12227E+02
4.53	0.00	0.00	1.1	0.623E-04	0.41	0.92	.12238E+02
4.54	0.00	0.00	1.1	0.623E-04	0.41	0.92	.12250E+02
4.54	0.00	0.00	1.1	0.623E-04	0.41	0.92	.12261E+02
4.55	0.00	0.00	1.1	0.622E-04	0.41	0.93	.12272E+02
4.55	0.00	0.00	1.1	0.622E-04	0.41	0.93	.12283E+02
4.55	0.00	0.00	1.1	0.622E-04	0.41	0.93	.12295E+02
4.56	0.00	0.00	1.1	0.622E-04	0.41	0.93	.12306E+02
4.56	0.00	0.00	1.1	0.621E-04	0.41	0.93	.12317E+02
4.57	0.00	0.00	1.1	0.621E-04	0.41	0.93	.12328E+02
4.57	0.00	0.00	1.1	0.621E-04	0.41	0.93	.12340E+02
4.58	0.00	0.00	1.1	0.621E-04	0.41	0.93	.12351E+02
4.58	0.00	0.00	1.1	0.620E-04	0.41	0.93	.12362E+02
4.58	0.00	0.00	1.1	0.620E-04	0.41	0.93	.12373E+02
4.59	0.00	0.00	1.1	0.620E-04	0.41	0.93	.12385E+02
4.59	0.00	0.00	1.1	0.620E-04	0.41	0.93	.12396E+02
4.60	0.00	0.00	1.1	0.620E-04	0.41	0.93	.12407E+02
4.60	0.00	0.00	1.1	0.619E-04	0.41	0.93	.12418E+02
4.60	0.00	0.00	1.1	0.619E-04	0.41	0.93	.12430E+02
4.61	0.00	0.00	1.1	0.619E-04	0.41	0.93	.12441E+02
4.61	0.00	0.00	1.1	0.619E-04	0.41	0.93	.12452E+02
4.62	0.00	0.00	1.1	0.618E-04	0.41	0.93	.12463E+02
4.62	0.00	0.00	1.1	0.618E-04	0.41	0.93	.12475E+02
4.63	0.00	0.00	1.1	0.618E-04	0.41	0.93	.12486E+02
4.63	0.00	0.00	1.1	0.618E-04	0.41	0.93	.12497E+02
4.63	0.00	0.00	1.1	0.617E-04	0.41	0.93	.12508E+02
4.64	0.00	0.00	1.1	0.617E-04	0.41	0.93	.12520E+02
4.64	0.00	0.00	1.1	0.617E-04	0.41	0.93	.12531E+02
4.65	0.00	0.00	1.1	0.617E-04	0.41	0.93	.12542E+02
4.65	0.00	0.00	1.1	0.616E-04	0.41	0.94	.12553E+02
4.66	0.00	0.00	1.1	0.616E-04	0.41	0.94	.12565E+02
4.66	0.00	0.00	1.1	0.616E-04	0.41	0.94	.12576E+02
4.66	0.00	0.00	1.1	0.616E-04	0.41	0.94	.12587E+02
4.67	0.00	0.00	1.1	0.615E-04	0.41	0.94	.12598E+02
4.67	0.00	0.00	1.1	0.615E-04	0.41	0.94	.12610E+02
4.68	0.00	0.00	1.1	0.615E-04	0.41	0.94	.12621E+02
4.68	0.00	0.00	1.1	0.615E-04	0.41	0.94	.12632E+02
4.68	0.00	0.00	1.1	0.615E-04	0.41	0.94	.12643E+02
4.69	0.00	0.00	1.1	0.614E-04	0.41	0.94	.12655E+02
4.69	0.00	0.00	1.1	0.614E-04	0.41	0.94	.12666E+02
4.70	0.00	0.00	1.1	0.614E-04	0.41	0.94	.12677E+02
4.70	0.00	0.00	1.1	0.614E-04	0.41	0.94	.12688E+02
4.71	0.00	0.00	1.1	0.613E-04	0.41	0.94	.12700E+02
4.71	0.00	0.00	1.1	0.613E-04	0.41	0.94	.12711E+02
4.71	0.00	0.00	1.1	0.613E-04	0.41	0.94	.12722E+02
4.72	0.00	0.00	1.1	0.613E-04	0.41	0.94	.12733E+02
4.72	0.00	0.00	1.1	0.612E-04	0.41	0.94	.12745E+02

4.73	0.00	0.00	1.1	0.612E-04	0.41	0.94	.12756E+02
4.73	0.00	0.00	1.1	0.612E-04	0.41	0.94	.12767E+02
4.73	0.00	0.00	1.1	0.612E-04	0.41	0.94	.12778E+02
4.74	0.00	0.00	1.1	0.611E-04	0.41	0.94	.12790E+02
4.74	0.00	0.00	1.1	0.611E-04	0.41	0.94	.12801E+02
4.75	0.00	0.00	1.1	0.611E-04	0.41	0.94	.12812E+02
4.75	0.00	0.00	1.1	0.611E-04	0.41	0.95	.12823E+02
4.76	0.00	0.00	1.1	0.611E-04	0.41	0.95	.12835E+02
4.76	0.00	0.00	1.1	0.610E-04	0.41	0.95	.12846E+02
4.76	0.00	0.00	1.1	0.610E-04	0.41	0.95	.12857E+02
4.77	0.00	0.00	1.1	0.610E-04	0.41	0.95	.12868E+02
4.77	0.00	0.00	1.1	0.610E-04	0.41	0.95	.12880E+02
4.78	0.00	0.00	1.1	0.609E-04	0.41	0.95	.12891E+02
4.78	0.00	0.00	1.1	0.609E-04	0.41	0.95	.12902E+02
4.78	0.00	0.00	1.1	0.609E-04	0.41	0.95	.12913E+02
4.79	0.00	0.00	1.1	0.609E-04	0.41	0.95	.12925E+02
4.79	0.00	0.00	1.1	0.608E-04	0.41	0.95	.12936E+02
4.80	0.00	0.00	1.1	0.608E-04	0.41	0.95	.12947E+02
4.80	0.00	0.00	1.1	0.608E-04	0.41	0.95	.12958E+02
4.81	0.00	0.00	1.1	0.608E-04	0.41	0.95	.12970E+02
4.81	0.00	0.00	1.1	0.607E-04	0.41	0.95	.12981E+02
4.81	0.00	0.00	1.1	0.607E-04	0.41	0.95	.12992E+02
4.82	0.00	0.00	1.1	0.607E-04	0.41	0.95	.13003E+02
4.82	0.00	0.00	1.1	0.607E-04	0.41	0.95	.13015E+02
4.83	0.00	0.00	1.1	0.607E-04	0.41	0.95	.13026E+02
4.83	0.00	0.00	1.1	0.606E-04	0.41	0.95	.13037E+02
4.84	0.00	0.00	1.1	0.606E-04	0.41	0.95	.13048E+02
4.84	0.00	0.00	1.1	0.606E-04	0.41	0.95	.13060E+02
4.84	0.00	0.00	1.1	0.606E-04	0.41	0.95	.13071E+02
4.85	0.00	0.00	1.1	0.605E-04	0.41	0.95	.13082E+02
4.85	0.00	0.00	1.1	0.605E-04	0.41	0.95	.13093E+02
4.86	0.00	0.00	1.1	0.605E-04	0.41	0.96	.13105E+02
4.86	0.00	0.00	1.1	0.605E-04	0.41	0.96	.13116E+02
4.86	0.00	0.00	1.1	0.604E-04	0.41	0.96	.13127E+02
4.87	0.00	0.00	1.1	0.604E-04	0.41	0.96	.13138E+02
4.87	0.00	0.00	1.1	0.604E-04	0.41	0.96	.13150E+02
4.88	0.00	0.00	1.1	0.604E-04	0.41	0.96	.13161E+02
4.88	0.00	0.00	1.1	0.604E-04	0.41	0.96	.13172E+02
4.89	0.00	0.00	1.1	0.603E-04	0.41	0.96	.13183E+02
4.89	0.00	0.00	1.1	0.603E-04	0.41	0.96	.13195E+02
4.89	0.00	0.00	1.1	0.603E-04	0.41	0.96	.13206E+02
4.90	0.00	0.00	1.1	0.603E-04	0.41	0.96	.13217E+02
4.90	0.00	0.00	1.1	0.602E-04	0.41	0.96	.13228E+02
4.91	0.00	0.00	1.1	0.602E-04	0.41	0.96	.13240E+02
4.91	0.00	0.00	1.1	0.602E-04	0.41	0.96	.13251E+02
4.91	0.00	0.00	1.1	0.602E-04	0.41	0.96	.13262E+02
4.92	0.00	0.00	1.1	0.601E-04	0.41	0.96	.13273E+02
4.92	0.00	0.00	1.1	0.601E-04	0.41	0.96	.13285E+02
4.93	0.00	0.00	1.1	0.601E-04	0.41	0.96	.13296E+02
4.93	0.00	0.00	1.1	0.601E-04	0.41	0.96	.13307E+02
4.94	0.00	0.00	1.1	0.600E-04	0.41	0.96	.13318E+02
4.94	0.00	0.00	1.1	0.600E-04	0.41	0.96	.13330E+02
4.94	0.00	0.00	1.1	0.600E-04	0.41	0.96	.13341E+02
4.95	0.00	0.00	1.1	0.600E-04	0.41	0.96	.13352E+02
4.95	0.00	0.00	1.1	0.600E-04	0.41	0.96	.13363E+02
4.96	0.00	0.00	1.1	0.599E-04	0.41	0.96	.13375E+02
4.96	0.00	0.00	1.1	0.599E-04	0.41	0.97	.13386E+02
4.97	0.00	0.00	1.1	0.599E-04	0.41	0.97	.13397E+02
4.97	0.00	0.00	1.1	0.599E-04	0.41	0.97	.13408E+02
4.97	0.00	0.00	1.1	0.598E-04	0.41	0.97	.13420E+02
4.98	0.00	0.00	1.1	0.598E-04	0.41	0.97	.13431E+02
4.98	0.00	0.00	1.1	0.598E-04	0.41	0.97	.13442E+02
4.99	0.00	0.00	1.1	0.598E-04	0.41	0.97	.13453E+02
4.99	0.00	0.00	1.1	0.597E-04	0.41	0.97	.13465E+02
4.99	0.00	0.00	1.1	0.597E-04	0.41	0.97	.13476E+02
5.00	0.00	0.00	1.1	0.597E-04	0.41	0.97	.13487E+02
5.00	0.00	0.00	1.1	0.597E-04	0.41	0.97	.13498E+02
5.01	0.00	0.00	1.1	0.597E-04	0.41	0.97	.13510E+02
5.01	0.00	0.00	1.1	0.596E-04	0.41	0.97	.13521E+02
5.02	0.00	0.00	1.1	0.596E-04	0.41	0.97	.13532E+02
5.02	0.00	0.00	1.1	0.596E-04	0.41	0.97	.13543E+02
5.02	0.00	0.00	1.1	0.596E-04	0.41	0.97	.13554E+02
5.03	0.00	0.00	1.1	0.595E-04	0.41	0.97	.13566E+02
5.03	0.00	0.00	1.1	0.595E-04	0.41	0.97	.13577E+02
5.04	0.00	0.00	1.1	0.595E-04	0.41	0.97	.13588E+02
5.04	0.00	0.00	1.1	0.595E-04	0.41	0.97	.13599E+02
5.04	0.00	0.00	1.1	0.594E-04	0.41	0.97	.13611E+02
5.05	0.00	0.00	1.1	0.594E-04	0.41	0.97	.13622E+02
5.05	0.00	0.00	1.1	0.594E-04	0.41	0.97	.13633E+02
5.06	0.00	0.00	1.1	0.594E-04	0.41	0.97	.13644E+02
5.06	0.00	0.00	1.1	0.593E-04	0.41	0.97	.13656E+02
5.07	0.00	0.00	1.1	0.593E-04	0.41	0.98	.13667E+02
5.07	0.00	0.00	1.1	0.593E-04	0.41	0.98	.13678E+02
5.07	0.00	0.00	1.1	0.593E-04	0.41	0.98	.13689E+02
5.08	0.00	0.00	1.1	0.593E-04	0.41	0.98	.13701E+02
5.08	0.00	0.00	1.1	0.592E-04	0.41	0.98	.13712E+02
5.09	0.00	0.00	1.1	0.592E-04	0.41	0.98	.13723E+02
5.09	0.00	0.00	1.1	0.592E-04	0.41	0.98	.13734E+02
5.09	0.00	0.00	1.1	0.592E-04	0.41	0.98	.13746E+02
5.10	0.00	0.00	1.1	0.591E-04	0.41	0.98	.13757E+02

5.10	0.00	0.00	1.1	0.591E-04	0.41	0.98	.13768E+02
5.11	0.00	0.00	1.1	0.591E-04	0.41	0.98	.13779E+02
5.11	0.00	0.00	1.1	0.591E-04	0.41	0.98	.13791E+02
5.12	0.00	0.00	1.1	0.590E-04	0.41	0.98	.13802E+02
5.12	0.00	0.00	1.1	0.590E-04	0.41	0.98	.13813E+02
5.12	0.00	0.00	1.1	0.590E-04	0.41	0.98	.13824E+02
5.13	0.00	0.00	1.1	0.590E-04	0.41	0.98	.13836E+02
5.13	0.00	0.00	1.1	0.590E-04	0.41	0.98	.13847E+02
5.14	0.00	0.00	1.1	0.589E-04	0.41	0.98	.13858E+02
5.14	0.00	0.00	1.1	0.589E-04	0.41	0.98	.13869E+02
5.15	0.00	0.00	1.1	0.589E-04	0.41	0.98	.13881E+02
5.15	0.00	0.00	1.1	0.589E-04	0.41	0.98	.13892E+02
5.15	0.00	0.00	1.1	0.588E-04	0.41	0.98	.13903E+02
5.16	0.00	0.00	1.1	0.588E-04	0.41	0.98	.13914E+02
5.16	0.00	0.00	1.1	0.588E-04	0.41	0.98	.13926E+02
5.17	0.00	0.00	1.1	0.588E-04	0.41	0.98	.13937E+02
5.17	0.00	0.00	1.1	0.587E-04	0.41	0.99	.13948E+02
5.17	0.00	0.00	1.1	0.587E-04	0.41	0.99	.13959E+02
5.18	0.00	0.00	1.1	0.587E-04	0.41	0.99	.13971E+02
5.18	0.00	0.00	1.1	0.587E-04	0.41	0.99	.13982E+02
5.19	0.00	0.00	1.1	0.587E-04	0.41	0.99	.13993E+02
5.19	0.00	0.00	1.1	0.586E-04	0.41	0.99	.14004E+02
5.20	0.00	0.00	1.1	0.586E-04	0.41	0.99	.14016E+02
5.20	0.00	0.00	1.1	0.586E-04	0.41	0.99	.14027E+02
5.20	0.00	0.00	1.1	0.586E-04	0.41	0.99	.14038E+02
5.21	0.00	0.00	1.1	0.585E-04	0.41	0.99	.14049E+02
5.21	0.00	0.00	1.1	0.585E-04	0.41	0.99	.14061E+02
5.22	0.00	0.00	1.1	0.585E-04	0.41	0.99	.14072E+02
5.22	0.00	0.00	1.1	0.585E-04	0.41	0.99	.14083E+02
5.22	0.00	0.00	1.1	0.585E-04	0.41	0.99	.14094E+02
5.23	0.00	0.00	1.1	0.584E-04	0.41	0.99	.14106E+02
5.23	0.00	0.00	1.1	0.584E-04	0.41	0.99	.14117E+02
5.24	0.00	0.00	1.1	0.584E-04	0.41	0.99	.14128E+02
5.24	0.00	0.00	1.1	0.584E-04	0.41	0.99	.14139E+02
5.25	0.00	0.00	1.1	0.583E-04	0.41	0.99	.14151E+02
5.25	0.00	0.00	1.1	0.583E-04	0.41	0.99	.14162E+02
5.25	0.00	0.00	1.1	0.583E-04	0.41	0.99	.14173E+02
5.26	0.00	0.00	1.1	0.583E-04	0.41	0.99	.14184E+02
5.26	0.00	0.00	1.2	0.582E-04	0.41	0.99	.14196E+02
5.27	0.00	0.00	1.2	0.582E-04	0.41	0.99	.14207E+02
5.27	0.00	0.00	1.2	0.582E-04	0.41	0.99	.14218E+02
5.28	0.00	0.00	1.2	0.582E-04	0.41	1.00	.14229E+02
5.28	0.00	0.00	1.2	0.582E-04	0.41	1.00	.14241E+02
5.28	0.00	0.00	1.2	0.581E-04	0.41	1.00	.14252E+02
5.29	0.00	0.00	1.2	0.581E-04	0.41	1.00	.14263E+02
5.29	0.00	0.00	1.2	0.581E-04	0.41	1.00	.14274E+02
5.30	0.00	0.00	1.2	0.581E-04	0.41	1.00	.14286E+02
5.30	0.00	0.00	1.2	0.580E-04	0.41	1.00	.14297E+02
5.30	0.00	0.00	1.2	0.580E-04	0.41	1.00	.14308E+02
5.31	0.00	0.00	1.2	0.580E-04	0.41	1.00	.14319E+02
5.31	0.00	0.00	1.2	0.580E-04	0.41	1.00	.14331E+02
5.32	0.00	0.00	1.2	0.579E-04	0.41	1.00	.14342E+02
5.32	0.00	0.00	1.2	0.579E-04	0.41	1.00	.14353E+02
5.33	0.00	0.00	1.2	0.579E-04	0.41	1.00	.14364E+02
5.33	0.00	0.00	1.2	0.579E-04	0.41	1.00	.14376E+02
5.33	0.00	0.00	1.2	0.579E-04	0.41	1.00	.14387E+02
5.34	0.00	0.00	1.2	0.578E-04	0.41	1.00	.14398E+02
5.34	0.00	0.00	1.2	0.578E-04	0.41	1.00	.14409E+02
5.35	0.00	0.00	1.2	0.578E-04	0.41	1.00	.14421E+02
5.35	0.00	0.00	1.2	0.578E-04	0.41	1.00	.14432E+02
5.35	0.00	0.00	1.2	0.577E-04	0.41	1.00	.14443E+02
5.36	0.00	0.00	1.2	0.577E-04	0.41	1.00	.14454E+02
5.36	0.00	0.00	1.2	0.577E-04	0.41	1.00	.14466E+02
5.37	0.00	0.00	1.2	0.577E-04	0.41	1.00	.14477E+02
5.37	0.00	0.00	1.2	0.577E-04	0.41	1.00	.14488E+02
5.38	0.00	0.00	1.2	0.576E-04	0.41	1.00	.14499E+02
5.38	0.00	0.00	1.2	0.576E-04	0.41	1.01	.14511E+02
5.38	0.00	0.00	1.2	0.576E-04	0.41	1.01	.14522E+02
5.39	0.00	0.00	1.2	0.576E-04	0.41	1.01	.14533E+02
5.39	0.00	0.00	1.2	0.575E-04	0.41	1.01	.14544E+02
5.40	0.00	0.00	1.2	0.575E-04	0.41	1.01	.14556E+02
5.40	0.00	0.00	1.2	0.575E-04	0.41	1.01	.14567E+02
5.40	0.00	0.00	1.2	0.575E-04	0.41	1.01	.14578E+02
5.41	0.00	0.00	1.2	0.574E-04	0.41	1.01	.14589E+02
5.41	0.00	0.00	1.2	0.574E-04	0.41	1.01	.14601E+02
5.42	0.00	0.00	1.2	0.574E-04	0.41	1.01	.14612E+02
5.42	0.00	0.00	1.2	0.574E-04	0.41	1.01	.14623E+02
5.43	0.00	0.00	1.2	0.574E-04	0.41	1.01	.14634E+02
5.43	0.00	0.00	1.2	0.573E-04	0.41	1.01	.14646E+02
5.43	0.00	0.00	1.2	0.573E-04	0.41	1.01	.14657E+02
5.44	0.00	0.00	1.2	0.573E-04	0.41	1.01	.14668E+02
5.44	0.00	0.00	1.2	0.573E-04	0.41	1.01	.14679E+02
5.45	0.00	0.00	1.2	0.572E-04	0.41	1.01	.14691E+02
5.45	0.00	0.00	1.2	0.572E-04	0.41	1.01	.14702E+02
5.46	0.00	0.00	1.2	0.572E-04	0.41	1.01	.14713E+02
5.46	0.00	0.00	1.2	0.572E-04	0.41	1.01	.14724E+02
5.46	0.00	0.00	1.2	0.572E-04	0.41	1.01	.14736E+02
5.47	0.00	0.00	1.2	0.571E-04	0.41	1.01	.14747E+02
5.47	0.00	0.00	1.2	0.571E-04	0.41	1.01	.14758E+02
5.48	0.00	0.00	1.2	0.571E-04	0.41	1.01	.14769E+02

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      5.48     0.00    0.00     1.2 0.571E-04   0.41     1.01 .14781E+02
      5.48     0.00    0.00     1.2 0.570E-04   0.41     1.01 .14792E+02
      5.49     0.00    0.00     1.2 0.570E-04   0.41     1.02 .14803E+02
      5.49     0.00    0.00     1.2 0.570E-04   0.41     1.02 .14814E+02
      5.50     0.00    0.00     1.2 0.570E-04   0.41     1.02 .14826E+02
      5.50     0.00    0.00     1.2 0.569E-04   0.41     1.02 .14837E+02
      5.51     0.00    0.00     1.2 0.569E-04   0.41     1.02 .14848E+02
      5.51     0.00    0.00     1.2 0.569E-04   0.41     1.02 .14859E+02
      5.51     0.00    0.00     1.2 0.569E-04   0.41     1.02 .14871E+02
      5.52     0.00    0.00     1.2 0.569E-04   0.41     1.02 .14882E+02
      5.52     0.00    0.00     1.2 0.568E-04   0.41     1.02 .14893E+02
      5.53     0.00    0.00     1.2 0.568E-04   0.41     1.02 .14904E+02
      5.53     0.00    0.00     1.2 0.568E-04   0.41     1.02 .14916E+02
      5.53     0.00    0.00     1.2 0.568E-04   0.41     1.02 .14927E+02
      5.54     0.00    0.00     1.2 0.567E-04   0.41     1.02 .14938E+02
      5.54     0.00    0.00     1.2 0.567E-04   0.41     1.02 .14949E+02
      5.55     0.00    0.00     1.2 0.567E-04   0.41     1.02 .14961E+02
      5.55     0.00    0.00     1.2 0.567E-04   0.41     1.02 .14972E+02
      5.56     0.00    0.00     1.2 0.567E-04   0.41     1.02 .14983E+02
      5.56     0.00    0.00     1.2 0.566E-04   0.41     1.02 .14994E+02
      5.56     0.00    0.00     1.2 0.566E-04   0.41     1.02 .15006E+02
      5.57     0.00    0.00     1.2 0.566E-04   0.41     1.02 .15017E+02
      5.57     0.00    0.00     1.2 0.566E-04   0.41     1.02 .15028E+02
      5.58     0.00    0.00     1.2 0.565E-04   0.41     1.02 .15039E+02
      5.58     0.00    0.00     1.2 0.565E-04   0.41     1.02 .15051E+02
      5.59     0.00    0.00     1.2 0.565E-04   0.41     1.02 .15062E+02
      5.59     0.00    0.00     1.2 0.565E-04   0.41     1.02 .15073E+02
      5.59     0.00    0.00     1.2 0.565E-04   0.41     1.02 .15084E+02
      5.60     0.00    0.00     1.2 0.564E-04   0.41     1.03 .15095E+02
      5.60     0.00    0.00     1.2 0.564E-04   0.41     1.03 .15107E+02
      5.61     0.00    0.00     1.2 0.564E-04   0.41     1.03 .15118E+02
      5.61     0.00    0.00     1.2 0.564E-04   0.41     1.03 .15129E+02
      5.61     0.00    0.00     1.2 0.563E-04   0.41     1.03 .15140E+02
      5.62     0.00    0.00     1.2 0.563E-04   0.41     1.03 .15152E+02
      5.62     0.00    0.00     1.2 0.563E-04   0.41     1.03 .15163E+02
      5.63     0.00    0.00     1.2 0.563E-04   0.41     1.03 .15174E+02
      5.63     0.00    0.00     1.2 0.563E-04   0.41     1.03 .15185E+02
      5.64     0.00    0.00     1.2 0.562E-04   0.41     1.03 .15197E+02
      5.64     0.00    0.00     1.2 0.562E-04   0.41     1.03 .15208E+02
      5.64     0.00    0.00     1.2 0.562E-04   0.41     1.03 .15219E+02
      5.65     0.00    0.00     1.2 0.562E-04   0.41     1.03 .15230E+02
      5.65     0.00    0.00     1.2 0.561E-04   0.41     1.03 .15242E+02
      5.66     0.00    0.00     1.2 0.561E-04   0.41     1.03 .15253E+02
      5.66     0.00    0.00     1.2 0.561E-04   0.41     1.03 .15264E+02
      5.66     0.00    0.00     1.2 0.561E-04   0.41     1.03 .15275E+02
      5.67     0.00    0.00     1.2 0.561E-04   0.41     1.03 .15287E+02
      5.67     0.00    0.00     1.2 0.560E-04   0.41     1.03 .15298E+02
      5.68     0.00    0.00     1.2 0.560E-04   0.41     1.03 .15309E+02
      5.68     0.00    0.00     1.2 0.560E-04   0.41     1.03 .15320E+02
      5.69     0.00    0.00     1.2 0.560E-04   0.41     1.03 .15332E+02
      5.69     0.00    0.00     1.2 0.559E-04   0.41     1.03 .15343E+02
      5.69     0.00    0.00     1.2 0.559E-04   0.41     1.03 .15354E+02
      5.70     0.00    0.00     1.2 0.559E-04   0.41     1.03 .15365E+02
      5.70     0.00    0.00     1.2 0.559E-04   0.41     1.04 .15377E+02
      5.71     0.00    0.00     1.2 0.559E-04   0.41     1.04 .15388E+02
      5.71     0.00    0.00     1.2 0.558E-04   0.41     1.04 .15399E+02
      5.71     0.00    0.00     1.2 0.558E-04   0.41     1.04 .15410E+02
      5.72     0.00    0.00     1.2 0.558E-04   0.41     1.04 .15422E+02
      5.72     0.00    0.00     1.2 0.558E-04   0.41     1.04 .15433E+02
      5.73     0.00    0.00     1.2 0.557E-04   0.41     1.04 .15444E+02
      5.73     0.00    0.00     1.2 0.557E-04   0.41     1.04 .15455E+02
      5.74     0.00    0.00     1.2 0.557E-04   0.41     1.04 .15467E+02
      5.74     0.00    0.00     1.2 0.557E-04   0.41     1.04 .15478E+02
      5.74     0.00    0.00     1.2 0.557E-04   0.41     1.04 .15489E+02
      5.75     0.00    0.00     1.2 0.556E-04   0.41     1.04 .15500E+02
      5.75     0.00    0.00     1.2 0.556E-04   0.41     1.04 .15512E+02
      5.76     0.00    0.00     1.2 0.556E-04   0.41     1.04 .15523E+02
      5.76     0.00    0.00     1.2 0.556E-04   0.41     1.04 .15534E+02
      5.77     0.00    0.00     1.2 0.555E-04   0.41     1.04 .15545E+02
      5.77     0.00    0.00     1.2 0.555E-04   0.41     1.04 .15557E+02
      5.77     0.00    0.00     1.2 0.555E-04   0.41     1.04 .15568E+02
      5.78     0.00    0.00     1.2 0.555E-04   0.41     1.04 .15579E+02
      5.78     0.00    0.00     1.2 0.555E-04   0.41     1.04 .15590E+02
      5.79     0.00    0.00     1.2 0.554E-04   0.41     1.04 .15602E+02
      5.79     0.00    0.00     1.2 0.554E-04   0.41     1.04 .15613E+02
      5.79     0.00    0.00     1.2 0.554E-04   0.41     1.04 .15624E+02
      5.80     0.00    0.00     1.2 0.554E-04   0.41     1.04 .15635E+02
      5.80     0.00    0.00     1.2 0.553E-04   0.41     1.04 .15647E+02
      5.81     0.00    0.00     1.2 0.553E-04   0.41     1.04 .15658E+02
      5.81     0.00    0.00     1.2 0.553E-04   0.41     1.05 .15669E+02
      5.82     0.00    0.00     1.2 0.553E-04   0.41     1.05 .15680E+02
      5.82     0.00    0.00     1.2 0.553E-04   0.41     1.05 .15692E+02
 Cumulative travel time =          15.6917 sec  (    0.00 hrs)

END OF MOD341: BUOYANT AMBIENT SPREADING
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BEGIN MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

  Vertical diffusivity (initial value)   = 0.730E-02 m^2/s
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 Horizontal diffusivity (initial value) = 0.182E-01 m^2/s

Profile definitions:
  BV = Gaussian s.d.*sqrt(pi/2) (46%) thickness, measured vertically
     = or equal to water depth, if fully mixed
  BH = Gaussian s.d.*sqrt(pi/2) (46%) half-width,
       measured horizontally in Y-direction
  S  = hydrodynamic centerline dilution
  C  = centerline concentration (includes reaction efects, if any)
  TT = Cumulative travel time

Plume Stage 2 (bank attached):
      X        Y        Z        S        C        BV        BH        TT
     5.82     0.00     0.00      1.2 0.553E-04   0.41      1.05 .15692E+02
     7.81     0.00     0.00      1.5 0.449E-04   0.45      1.18 .21030E+02
     9.80     0.00     0.00      1.8 0.372E-04   0.49      1.31 .26369E+02
    11.78     0.00     0.00      2.1 0.313E-04   0.53      1.42 .31708E+02
    13.77     0.00     0.00      2.5 0.267E-04   0.58      1.52 .37047E+02
    15.76     0.00     0.00      2.9 0.230E-04   0.64      1.62 .42385E+02
    17.75     0.00     0.00      3.3 0.200E-04   0.69      1.71 .47724E+02
    19.74     0.00     0.00      3.8 0.177E-04   0.75      1.80 .53063E+02
Plume interacts with BOTTOM.
The passive diffusion plume becomes VERTICALLY FULLY MIXED within this
  prediction interval.
    21.73     0.00     0.00      4.0 0.168E-04   0.75      1.88 .58402E+02
    23.71     0.00     0.00      4.2 0.161E-04   0.75      1.96 .63741E+02
    25.70     0.00     0.00      4.3 0.155E-04   0.75      2.04 .69079E+02
    27.69     0.00     0.00      4.5 0.150E-04   0.75      2.11 .74418E+02
    29.68     0.00     0.00      4.6 0.145E-04   0.75      2.18 .79757E+02
    31.67     0.00     0.00      4.8 0.140E-04   0.75      2.25 .85096E+02
    33.66     0.00     0.00      4.9 0.136E-04   0.75      2.32 .90434E+02
    35.65     0.00     0.00      5.0 0.133E-04   0.75      2.38 .95773E+02
    37.63     0.00     0.00      5.2 0.129E-04   0.75      2.45 .10111E+03
    39.62     0.00     0.00      5.3 0.126E-04   0.75      2.51 .10645E+03
    41.61     0.00     0.00      5.4 0.123E-04   0.75      2.57 .11179E+03
    43.60     0.00     0.00      5.6 0.120E-04   0.75      2.63 .11713E+03
    45.59     0.00     0.00      5.7 0.118E-04   0.75      2.69 .12247E+03
    47.58     0.00     0.00      5.8 0.115E-04   0.75      2.74 .12781E+03
    49.56     0.00     0.00      5.9 0.113E-04   0.75      2.80 .13314E+03
    51.55     0.00     0.00      6.0 0.111E-04   0.75      2.85 .13848E+03
    53.54     0.00     0.00      6.2 0.109E-04   0.75      2.90 .14382E+03
    55.53     0.00     0.00      6.3 0.107E-04   0.75      2.96 .14916E+03
    57.52     0.00     0.00      6.4 0.105E-04   0.75      3.01 .15450E+03
    59.51     0.00     0.00      6.5 0.103E-04   0.75      3.06 .15984E+03
    61.49     0.00     0.00      6.6 0.102E-04   0.75      3.11 .16518E+03
    63.48     0.00     0.00      6.7 0.100E-04   0.75      3.16 .17052E+03
    65.47     0.00     0.00      6.8 0.987E-05   0.75      3.20 .17585E+03
    67.46     0.00     0.00      6.9 0.973E-05   0.75      3.25 .18119E+03
    69.45     0.00     0.00      7.0 0.959E-05   0.75      3.30 .18653E+03
    71.44     0.00     0.00      7.1 0.946E-05   0.75      3.34 .19187E+03
    73.42     0.00     0.00      7.2 0.933E-05   0.75      3.39 .19721E+03
    75.41     0.00     0.00      7.3 0.921E-05   0.75      3.44 .20255E+03
    77.40     0.00     0.00      7.4 0.909E-05   0.75      3.48 .20789E+03
    79.39     0.00     0.00      7.5 0.898E-05   0.75      3.52 .21323E+03
    81.38     0.00     0.00      7.6 0.887E-05   0.75      3.57 .21856E+03
    83.37     0.00     0.00      7.6 0.876E-05   0.75      3.61 .22390E+03
    85.35     0.00     0.00      7.7 0.866E-05   0.75      3.65 .22924E+03
    87.34     0.00     0.00      7.8 0.857E-05   0.75      3.69 .23458E+03
    89.33     0.00     0.00      7.9 0.847E-05   0.75      3.73 .23992E+03
    91.32     0.00     0.00      8.0 0.838E-05   0.75      3.77 .24526E+03
** REGULATORY MIXING ZONE BOUNDARY **
In this prediction interval the plume DOWNSTREAM distance meets or exceeds
the regulatory value =    91.46 m.
This is the extent of the REGULATORY MIXING ZONE.
    93.31     0.00     0.00      8.1 0.829E-05   0.75      3.81 .25060E+03
    95.30     0.00     0.00      8.2 0.821E-05   0.75      3.85 .25594E+03
    97.28     0.00     0.00      8.2 0.812E-05   0.75      3.89 .26127E+03
    99.27     0.00     0.00      8.3 0.804E-05   0.75      3.93 .26661E+03
   101.26     0.00     0.00      8.4 0.796E-05   0.75      3.97 .27195E+03
   103.25     0.00     0.00      8.5 0.789E-05   0.75      4.01 .27729E+03
   105.24     0.00     0.00      8.6 0.781E-05   0.75      4.05 .28263E+03
   107.23     0.00     0.00      8.7 0.774E-05   0.75      4.09 .28797E+03
   109.21     0.00     0.00      8.7 0.767E-05   0.75      4.12 .29331E+03
   111.20     0.00     0.00      8.8 0.760E-05   0.75      4.16 .29865E+03
   113.19     0.00     0.00      8.9 0.754E-05   0.75      4.20 .30398E+03
   115.18     0.00     0.00      9.0 0.747E-05   0.75      4.23 .30932E+03
   117.17     0.00     0.00      9.0 0.741E-05   0.75      4.27 .31466E+03
   119.16     0.00     0.00      9.1 0.735E-05   0.75      4.30 .32000E+03
   121.14     0.00     0.00      9.2 0.729E-05   0.75      4.34 .32534E+03
   123.13     0.00     0.00      9.3 0.723E-05   0.75      4.38 .33068E+03
   125.12     0.00     0.00      9.3 0.717E-05   0.75      4.41 .33602E+03
   127.11     0.00     0.00      9.4 0.712E-05   0.75      4.44 .34136E+03
   129.10     0.00     0.00      9.5 0.706E-05   0.75      4.48 .34669E+03
   131.09     0.00     0.00      9.6 0.701E-05   0.75      4.51 .35203E+03
   133.07     0.00     0.00      9.6 0.696E-05   0.75      4.55 .35737E+03
   135.06     0.00     0.00      9.7 0.691E-05   0.75      4.58 .36271E+03
   137.05     0.00     0.00      9.8 0.686E-05   0.75      4.61 .36805E+03
   139.04     0.00     0.00      9.8 0.681E-05   0.75      4.65 .37339E+03
   141.03     0.00     0.00      9.9 0.676E-05   0.75      4.68 .37873E+03
   143.02     0.00     0.00     10.0 0.671E-05   0.75      4.71 .38407E+03
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145.00	0.00	0.00	10.0	0.667E-05	0.75	4.74	.38940E+03
146.99	0.00	0.00	10.1	0.662E-05	0.75	4.78	.39474E+03
148.98	0.00	0.00	10.2	0.658E-05	0.75	4.81	.40008E+03
150.97	0.00	0.00	10.3	0.654E-05	0.75	4.84	.40542E+03
152.96	0.00	0.00	10.3	0.649E-05	0.75	4.87	.41076E+03
154.95	0.00	0.00	10.4	0.645E-05	0.75	4.90	.41610E+03
156.93	0.00	0.00	10.5	0.641E-05	0.75	4.93	.42144E+03
158.92	0.00	0.00	10.5	0.637E-05	0.75	4.96	.42678E+03
160.91	0.00	0.00	10.6	0.633E-05	0.75	5.00	.43211E+03
162.90	0.00	0.00	10.6	0.629E-05	0.75	5.03	.43745E+03
164.89	0.00	0.00	10.7	0.626E-05	0.75	5.06	.44279E+03
166.88	0.00	0.00	10.8	0.622E-05	0.75	5.09	.44813E+03
168.87	0.00	0.00	10.8	0.618E-05	0.75	5.12	.45347E+03
170.85	0.00	0.00	10.9	0.615E-05	0.75	5.15	.45881E+03
172.84	0.00	0.00	11.0	0.611E-05	0.75	5.18	.46415E+03
174.83	0.00	0.00	11.0	0.608E-05	0.75	5.21	.46949E+03
176.82	0.00	0.00	11.1	0.604E-05	0.75	5.23	.47482E+03
178.81	0.00	0.00	11.2	0.601E-05	0.75	5.26	.48016E+03
180.80	0.00	0.00	11.2	0.598E-05	0.75	5.29	.48550E+03
182.78	0.00	0.00	11.3	0.594E-05	0.75	5.32	.49084E+03
184.77	0.00	0.00	11.3	0.591E-05	0.75	5.35	.49618E+03
186.76	0.00	0.00	11.4	0.588E-05	0.75	5.38	.50152E+03
188.75	0.00	0.00	11.5	0.585E-05	0.75	5.41	.50686E+03
190.74	0.00	0.00	11.5	0.582E-05	0.75	5.44	.51220E+03
192.73	0.00	0.00	11.6	0.579E-05	0.75	5.46	.51753E+03
194.71	0.00	0.00	11.6	0.576E-05	0.75	5.49	.52287E+03
196.70	0.00	0.00	11.7	0.573E-05	0.75	5.52	.52821E+03
198.69	0.00	0.00	11.7	0.570E-05	0.75	5.55	.53355E+03
200.68	0.00	0.00	11.8	0.567E-05	0.75	5.57	.53889E+03
202.67	0.00	0.00	11.9	0.565E-05	0.75	5.60	.54423E+03
204.66	0.00	0.00	11.9	0.562E-05	0.75	5.63	.54957E+03
206.64	0.00	0.00	12.0	0.559E-05	0.75	5.66	.55491E+03
208.63	0.00	0.00	12.0	0.557E-05	0.75	5.68	.56024E+03
210.62	0.00	0.00	12.1	0.554E-05	0.75	5.71	.56558E+03
212.61	0.00	0.00	12.2	0.551E-05	0.75	5.74	.57092E+03
214.60	0.00	0.00	12.2	0.549E-05	0.75	5.76	.57626E+03
216.59	0.00	0.00	12.3	0.546E-05	0.75	5.79	.58160E+03
218.57	0.00	0.00	12.3	0.544E-05	0.75	5.82	.58694E+03
220.56	0.00	0.00	12.4	0.541E-05	0.75	5.84	.59228E+03
222.55	0.00	0.00	12.4	0.539E-05	0.75	5.87	.59762E+03
224.54	0.00	0.00	12.5	0.537E-05	0.75	5.89	.60295E+03
226.53	0.00	0.00	12.5	0.534E-05	0.75	5.92	.60829E+03
228.52	0.00	0.00	12.6	0.532E-05	0.75	5.95	.61363E+03
230.50	0.00	0.00	12.6	0.530E-05	0.75	5.97	.61897E+03
232.49	0.00	0.00	12.7	0.527E-05	0.75	6.00	.62431E+03
234.48	0.00	0.00	12.8	0.525E-05	0.75	6.02	.62965E+03
236.47	0.00	0.00	12.8	0.523E-05	0.75	6.05	.63499E+03
238.46	0.00	0.00	12.9	0.521E-05	0.75	6.07	.64033E+03
240.45	0.00	0.00	12.9	0.519E-05	0.75	6.10	.64566E+03
242.43	0.00	0.00	13.0	0.517E-05	0.75	6.12	.65100E+03
244.42	0.00	0.00	13.0	0.514E-05	0.75	6.15	.65634E+03
246.41	0.00	0.00	13.1	0.512E-05	0.75	6.17	.66168E+03
248.40	0.00	0.00	13.1	0.510E-05	0.75	6.20	.66702E+03
250.39	0.00	0.00	13.2	0.508E-05	0.75	6.22	.67236E+03
252.38	0.00	0.00	13.2	0.506E-05	0.75	6.25	.67770E+03
254.36	0.00	0.00	13.3	0.504E-05	0.75	6.27	.68304E+03
256.35	0.00	0.00	13.3	0.502E-05	0.75	6.30	.68837E+03
258.34	0.00	0.00	13.4	0.500E-05	0.75	6.32	.69371E+03
260.33	0.00	0.00	13.4	0.499E-05	0.75	6.34	.69905E+03
262.32	0.00	0.00	13.5	0.497E-05	0.75	6.37	.70439E+03
264.31	0.00	0.00	13.5	0.495E-05	0.75	6.39	.70973E+03
266.29	0.00	0.00	13.6	0.493E-05	0.75	6.42	.71507E+03
268.28	0.00	0.00	13.6	0.491E-05	0.75	6.44	.72041E+03
270.27	0.00	0.00	13.7	0.489E-05	0.75	6.46	.72575E+03
272.26	0.00	0.00	13.7	0.488E-05	0.75	6.49	.73109E+03
274.25	0.00	0.00	13.8	0.486E-05	0.75	6.51	.73642E+03
276.24	0.00	0.00	13.8	0.484E-05	0.75	6.53	.74176E+03
278.22	0.00	0.00	13.9	0.482E-05	0.75	6.56	.74710E+03
280.21	0.00	0.00	13.9	0.481E-05	0.75	6.58	.75244E+03
282.20	0.00	0.00	14.0	0.479E-05	0.75	6.60	.75778E+03
284.19	0.00	0.00	14.0	0.477E-05	0.75	6.63	.76312E+03
286.18	0.00	0.00	14.1	0.476E-05	0.75	6.65	.76846E+03
288.17	0.00	0.00	14.1	0.474E-05	0.75	6.67	.77380E+03
290.16	0.00	0.00	14.2	0.472E-05	0.75	6.70	.77913E+03
292.14	0.00	0.00	14.2	0.471E-05	0.75	6.72	.78447E+03
294.13	0.00	0.00	14.3	0.469E-05	0.75	6.74	.78981E+03
296.12	0.00	0.00	14.3	0.468E-05	0.75	6.76	.79515E+03
298.11	0.00	0.00	14.4	0.466E-05	0.75	6.79	.80049E+03
300.10	0.00	0.00	14.4	0.464E-05	0.75	6.81	.80583E+03
302.09	0.00	0.00	14.5	0.463E-05	0.75	6.83	.81117E+03
304.07	0.00	0.00	14.5	0.461E-05	0.75	6.85	.81651E+03
306.06	0.00	0.00	14.6	0.460E-05	0.75	6.88	.82184E+03
308.05	0.00	0.00	14.6	0.458E-05	0.75	6.90	.82718E+03
310.04	0.00	0.00	14.7	0.457E-05	0.75	6.92	.83252E+03
312.03	0.00	0.00	14.7	0.456E-05	0.75	6.94	.83786E+03
314.02	0.00	0.00	14.8	0.454E-05	0.75	6.96	.84320E+03
316.00	0.00	0.00	14.8	0.453E-05	0.75	6.99	.84854E+03
317.99	0.00	0.00	14.8	0.451E-05	0.75	7.01	.85388E+03
319.98	0.00	0.00	14.9	0.450E-05	0.75	7.03	.85922E+03
321.97	0.00	0.00	14.9	0.449E-05	0.75	7.05	.86455E+03

323.96	0.00	0.00	15.0	0.447E-05	0.75	7.07	.86989E+03
325.95	0.00	0.00	15.0	0.446E-05	0.75	7.10	.87523E+03
327.93	0.00	0.00	15.1	0.444E-05	0.75	7.12	.88057E+03
329.92	0.00	0.00	15.1	0.443E-05	0.75	7.14	.88591E+03
331.91	0.00	0.00	15.2	0.442E-05	0.75	7.16	.89125E+03
333.90	0.00	0.00	15.2	0.440E-05	0.75	7.18	.89659E+03
335.89	0.00	0.00	15.3	0.439E-05	0.75	7.20	.90193E+03
337.88	0.00	0.00	15.3	0.438E-05	0.75	7.22	.90727E+03
339.86	0.00	0.00	15.3	0.437E-05	0.75	7.24	.91260E+03
341.85	0.00	0.00	15.4	0.435E-05	0.75	7.27	.91794E+03
343.84	0.00	0.00	15.4	0.434E-05	0.75	7.29	.92328E+03
345.83	0.00	0.00	15.5	0.433E-05	0.75	7.31	.92862E+03
347.82	0.00	0.00	15.5	0.432E-05	0.75	7.33	.93396E+03
349.81	0.00	0.00	15.6	0.430E-05	0.75	7.35	.93930E+03
351.79	0.00	0.00	15.6	0.429E-05	0.75	7.37	.94464E+03
353.78	0.00	0.00	15.7	0.428E-05	0.75	7.39	.94998E+03
355.77	0.00	0.00	15.7	0.427E-05	0.75	7.41	.95531E+03
357.76	0.00	0.00	15.7	0.426E-05	0.75	7.43	.96065E+03
359.75	0.00	0.00	15.8	0.424E-05	0.75	7.45	.96599E+03
361.74	0.00	0.00	15.8	0.423E-05	0.75	7.47	.97133E+03
363.72	0.00	0.00	15.9	0.422E-05	0.75	7.49	.97667E+03
365.71	0.00	0.00	15.9	0.421E-05	0.75	7.51	.98201E+03
367.70	0.00	0.00	16.0	0.420E-05	0.75	7.53	.98735E+03
369.69	0.00	0.00	16.0	0.419E-05	0.75	7.55	.99269E+03
371.68	0.00	0.00	16.0	0.418E-05	0.75	7.57	.99802E+03
373.67	0.00	0.00	16.1	0.416E-05	0.75	7.60	.10034E+04
375.66	0.00	0.00	16.1	0.415E-05	0.75	7.62	.10087E+04
377.64	0.00	0.00	16.2	0.414E-05	0.75	7.64	.10140E+04
379.63	0.00	0.00	16.2	0.413E-05	0.75	7.66	.10194E+04
381.62	0.00	0.00	16.3	0.412E-05	0.75	7.68	.10247E+04
383.61	0.00	0.00	16.3	0.411E-05	0.75	7.70	.10301E+04
385.60	0.00	0.00	16.3	0.410E-05	0.75	7.71	.10354E+04
387.59	0.00	0.00	16.4	0.409E-05	0.75	7.73	.10407E+04
389.57	0.00	0.00	16.4	0.408E-05	0.75	7.75	.10461E+04
391.56	0.00	0.00	16.5	0.407E-05	0.75	7.77	.10514E+04
393.55	0.00	0.00	16.5	0.406E-05	0.75	7.79	.10568E+04
395.54	0.00	0.00	16.6	0.405E-05	0.75	7.81	.10621E+04
397.53	0.00	0.00	16.6	0.404E-05	0.75	7.83	.10674E+04
399.52	0.00	0.00	16.6	0.403E-05	0.75	7.85	.10728E+04
401.50	0.00	0.00	16.7	0.402E-05	0.75	7.87	.10781E+04
403.49	0.00	0.00	16.7	0.401E-05	0.75	7.89	.10834E+04
405.48	0.00	0.00	16.8	0.400E-05	0.75	7.91	.10888E+04
407.47	0.00	0.00	16.8	0.399E-05	0.75	7.93	.10941E+04
409.46	0.00	0.00	16.8	0.398E-05	0.75	7.95	.10995E+04
411.45	0.00	0.00	16.9	0.397E-05	0.75	7.97	.11048E+04
413.43	0.00	0.00	16.9	0.396E-05	0.75	7.99	.11101E+04
415.42	0.00	0.00	17.0	0.395E-05	0.75	8.01	.11155E+04
417.41	0.00	0.00	17.0	0.394E-05	0.75	8.03	.11208E+04
419.40	0.00	0.00	17.0	0.393E-05	0.75	8.04	.11262E+04
421.39	0.00	0.00	17.1	0.392E-05	0.75	8.06	.11315E+04
423.38	0.00	0.00	17.1	0.391E-05	0.75	8.08	.11368E+04
425.36	0.00	0.00	17.2	0.390E-05	0.75	8.10	.11422E+04
427.35	0.00	0.00	17.2	0.389E-05	0.75	8.12	.11475E+04
429.34	0.00	0.00	17.2	0.389E-05	0.75	8.14	.11528E+04
431.33	0.00	0.00	17.3	0.388E-05	0.75	8.16	.11582E+04
433.32	0.00	0.00	17.3	0.387E-05	0.75	8.18	.11635E+04
435.31	0.00	0.00	17.4	0.386E-05	0.75	8.20	.11689E+04
437.29	0.00	0.00	17.4	0.385E-05	0.75	8.21	.11742E+04
439.28	0.00	0.00	17.4	0.384E-05	0.75	8.23	.11795E+04
441.27	0.00	0.00	17.5	0.383E-05	0.75	8.25	.11849E+04
443.26	0.00	0.00	17.5	0.382E-05	0.75	8.27	.11902E+04
445.25	0.00	0.00	17.6	0.382E-05	0.75	8.29	.11956E+04
447.24	0.00	0.00	17.6	0.381E-05	0.75	8.31	.12009E+04
449.22	0.00	0.00	17.6	0.380E-05	0.75	8.33	.12062E+04
451.21	0.00	0.00	17.7	0.379E-05	0.75	8.34	.12116E+04
453.20	0.00	0.00	17.7	0.378E-05	0.75	8.36	.12169E+04
455.19	0.00	0.00	17.8	0.377E-05	0.75	8.38	.12223E+04
457.18	0.00	0.00	17.8	0.377E-05	0.75	8.40	.12276E+04
459.17	0.00	0.00	17.8	0.376E-05	0.75	8.42	.12329E+04
461.16	0.00	0.00	17.9	0.375E-05	0.75	8.43	.12383E+04
463.14	0.00	0.00	17.9	0.374E-05	0.75	8.45	.12436E+04
465.13	0.00	0.00	17.9	0.373E-05	0.75	8.47	.12489E+04
467.12	0.00	0.00	18.0	0.373E-05	0.75	8.49	.12543E+04
469.11	0.00	0.00	18.0	0.372E-05	0.75	8.51	.12596E+04
471.10	0.00	0.00	18.1	0.371E-05	0.75	8.52	.12650E+04
473.09	0.00	0.00	18.1	0.370E-05	0.75	8.54	.12703E+04
475.07	0.00	0.00	18.1	0.369E-05	0.75	8.56	.12756E+04
477.06	0.00	0.00	18.2	0.369E-05	0.75	8.58	.12810E+04
479.05	0.00	0.00	18.2	0.368E-05	0.75	8.60	.12863E+04
481.04	0.00	0.00	18.2	0.367E-05	0.75	8.61	.12917E+04
483.03	0.00	0.00	18.3	0.366E-05	0.75	8.63	.12970E+04
485.02	0.00	0.00	18.3	0.366E-05	0.75	8.65	.13023E+04
487.00	0.00	0.00	18.4	0.365E-05	0.75	8.67	.13077E+04
488.99	0.00	0.00	18.4	0.364E-05	0.75	8.68	.13130E+04
490.98	0.00	0.00	18.4	0.363E-05	0.75	8.70	.13184E+04
492.97	0.00	0.00	18.5	0.363E-05	0.75	8.72	.13237E+04
494.96	0.00	0.00	18.5	0.362E-05	0.75	8.74	.13290E+04
496.95	0.00	0.00	18.5	0.361E-05	0.75	8.76	.13344E+04
498.93	0.00	0.00	18.6	0.361E-05	0.75	8.77	.13397E+04
500.92	0.00	0.00	18.6	0.360E-05	0.75	8.79	.13450E+04

502.91	0.00	0.00	18.7	0.359E-05	0.75	8.81	.13504E+04
504.90	0.00	0.00	18.7	0.358E-05	0.75	8.82	.13557E+04
506.89	0.00	0.00	18.7	0.358E-05	0.75	8.84	.13611E+04
508.88	0.00	0.00	18.8	0.357E-05	0.75	8.86	.13664E+04
510.86	0.00	0.00	18.8	0.356E-05	0.75	8.88	.13717E+04
512.85	0.00	0.00	18.8	0.356E-05	0.75	8.89	.13771E+04
514.84	0.00	0.00	18.9	0.355E-05	0.75	8.91	.13824E+04
516.83	0.00	0.00	18.9	0.354E-05	0.75	8.93	.13878E+04
518.82	0.00	0.00	18.9	0.354E-05	0.75	8.95	.13931E+04
520.81	0.00	0.00	19.0	0.353E-05	0.75	8.96	.13984E+04
522.79	0.00	0.00	19.0	0.352E-05	0.75	8.98	.14038E+04
524.78	0.00	0.00	19.1	0.352E-05	0.75	9.00	.14091E+04
526.77	0.00	0.00	19.1	0.351E-05	0.75	9.01	.14145E+04
528.76	0.00	0.00	19.1	0.350E-05	0.75	9.03	.14198E+04
530.75	0.00	0.00	19.2	0.350E-05	0.75	9.05	.14251E+04
532.74	0.00	0.00	19.2	0.349E-05	0.75	9.06	.14305E+04
534.72	0.00	0.00	19.2	0.348E-05	0.75	9.08	.14358E+04
536.71	0.00	0.00	19.3	0.348E-05	0.75	9.10	.14411E+04
538.70	0.00	0.00	19.3	0.347E-05	0.75	9.11	.14465E+04
540.69	0.00	0.00	19.3	0.346E-05	0.75	9.13	.14518E+04
542.68	0.00	0.00	19.4	0.346E-05	0.75	9.15	.14572E+04
544.67	0.00	0.00	19.4	0.345E-05	0.75	9.16	.14625E+04
546.65	0.00	0.00	19.4	0.344E-05	0.75	9.18	.14678E+04
548.64	0.00	0.00	19.5	0.344E-05	0.75	9.20	.14732E+04
550.63	0.00	0.00	19.5	0.343E-05	0.75	9.21	.14785E+04
552.62	0.00	0.00	19.6	0.343E-05	0.75	9.23	.14839E+04
554.61	0.00	0.00	19.6	0.342E-05	0.75	9.25	.14892E+04
556.60	0.00	0.00	19.6	0.341E-05	0.75	9.26	.14945E+04
558.58	0.00	0.00	19.7	0.341E-05	0.75	9.28	.14999E+04
560.57	0.00	0.00	19.7	0.340E-05	0.75	9.30	.15052E+04
562.56	0.00	0.00	19.7	0.340E-05	0.75	9.31	.15105E+04
564.55	0.00	0.00	19.8	0.339E-05	0.75	9.33	.15159E+04
566.54	0.00	0.00	19.8	0.338E-05	0.75	9.35	.15212E+04
568.53	0.00	0.00	19.8	0.338E-05	0.75	9.36	.15266E+04
570.51	0.00	0.00	19.9	0.337E-05	0.75	9.38	.15319E+04
572.50	0.00	0.00	19.9	0.337E-05	0.75	9.40	.15372E+04
574.49	0.00	0.00	19.9	0.336E-05	0.75	9.41	.15426E+04
576.48	0.00	0.00	20.0	0.335E-05	0.75	9.43	.15479E+04
578.47	0.00	0.00	20.0	0.335E-05	0.75	9.44	.15533E+04
580.46	0.00	0.00	20.0	0.334E-05	0.75	9.46	.15586E+04
582.44	0.00	0.00	20.1	0.334E-05	0.75	9.48	.15639E+04
584.43	0.00	0.00	20.1	0.333E-05	0.75	9.49	.15693E+04
586.42	0.00	0.00	20.1	0.333E-05	0.75	9.51	.15746E+04
588.41	0.00	0.00	20.2	0.332E-05	0.75	9.52	.15800E+04
590.40	0.00	0.00	20.2	0.332E-05	0.75	9.54	.15853E+04
592.39	0.00	0.00	20.2	0.331E-05	0.75	9.56	.15906E+04
594.37	0.00	0.00	20.3	0.330E-05	0.75	9.57	.15960E+04
596.36	0.00	0.00	20.3	0.330E-05	0.75	9.59	.16013E+04
598.35	0.00	0.00	20.3	0.329E-05	0.75	9.60	.16066E+04
600.34	0.00	0.00	20.4	0.329E-05	0.75	9.62	.16120E+04
602.33	0.00	0.00	20.4	0.328E-05	0.75	9.64	.16173E+04
604.32	0.00	0.00	20.4	0.328E-05	0.75	9.65	.16227E+04
606.30	0.00	0.00	20.5	0.327E-05	0.75	9.67	.16280E+04
608.29	0.00	0.00	20.5	0.327E-05	0.75	9.68	.16333E+04
610.28	0.00	0.00	20.5	0.326E-05	0.75	9.70	.16387E+04
612.27	0.00	0.00	20.6	0.326E-05	0.75	9.72	.16440E+04
614.26	0.00	0.00	20.6	0.325E-05	0.75	9.73	.16494E+04
616.25	0.00	0.00	20.6	0.325E-05	0.75	9.75	.16547E+04
618.23	0.00	0.00	20.7	0.324E-05	0.75	9.76	.16600E+04
620.22	0.00	0.00	20.7	0.323E-05	0.75	9.78	.16654E+04
622.21	0.00	0.00	20.7	0.323E-05	0.75	9.79	.16707E+04
624.20	0.00	0.00	20.8	0.322E-05	0.75	9.81	.16760E+04
626.19	0.00	0.00	20.8	0.322E-05	0.75	9.83	.16814E+04
628.18	0.00	0.00	20.8	0.321E-05	0.75	9.84	.16867E+04
630.17	0.00	0.00	20.9	0.321E-05	0.75	9.86	.16921E+04
632.15	0.00	0.00	20.9	0.320E-05	0.75	9.87	.16974E+04
634.14	0.00	0.00	20.9	0.320E-05	0.75	9.89	.17027E+04
636.13	0.00	0.00	21.0	0.319E-05	0.75	9.90	.17081E+04
638.12	0.00	0.00	21.0	0.319E-05	0.75	9.92	.17134E+04
640.11	0.00	0.00	21.0	0.318E-05	0.75	9.93	.17188E+04
642.10	0.00	0.00	21.1	0.318E-05	0.75	9.95	.17241E+04
644.08	0.00	0.00	21.1	0.317E-05	0.75	9.96	.17294E+04
646.07	0.00	0.00	21.1	0.317E-05	0.75	9.98	.17348E+04
648.06	0.00	0.00	21.2	0.316E-05	0.75	9.99	.17401E+04
650.05	0.00	0.00	21.2	0.316E-05	0.75	10.01	.17455E+04
652.04	0.00	0.00	21.2	0.315E-05	0.75	10.03	.17508E+04
654.03	0.00	0.00	21.3	0.315E-05	0.75	10.04	.17561E+04
656.01	0.00	0.00	21.3	0.315E-05	0.75	10.06	.17615E+04
658.00	0.00	0.00	21.3	0.314E-05	0.75	10.07	.17668E+04
659.99	0.00	0.00	21.4	0.314E-05	0.75	10.09	.17721E+04
661.98	0.00	0.00	21.4	0.313E-05	0.75	10.10	.17775E+04
663.97	0.00	0.00	21.4	0.313E-05	0.75	10.12	.17828E+04
665.96	0.00	0.00	21.5	0.312E-05	0.75	10.13	.17882E+04
667.94	0.00	0.00	21.5	0.312E-05	0.75	10.15	.17935E+04
669.93	0.00	0.00	21.5	0.311E-05	0.75	10.16	.17988E+04
671.92	0.00	0.00	21.6	0.311E-05	0.75	10.18	.18042E+04
673.91	0.00	0.00	21.6	0.310E-05	0.75	10.19	.18095E+04
675.90	0.00	0.00	21.6	0.310E-05	0.75	10.21	.18149E+04
677.89	0.00	0.00	21.7	0.309E-05	0.75	10.22	.18202E+04
679.87	0.00	0.00	21.7	0.309E-05	0.75	10.24	.18255E+04

681.86	0.00	0.00	21.7	0.309E-05	0.75	10.25	.18309E+04
683.85	0.00	0.00	21.7	0.308E-05	0.75	10.27	.18362E+04
685.84	0.00	0.00	21.8	0.308E-05	0.75	10.28	.18415E+04
687.83	0.00	0.00	21.8	0.307E-05	0.75	10.30	.18469E+04
689.82	0.00	0.00	21.8	0.307E-05	0.75	10.31	.18522E+04
691.80	0.00	0.00	21.9	0.306E-05	0.75	10.33	.18576E+04
693.79	0.00	0.00	21.9	0.306E-05	0.75	10.34	.18629E+04
695.78	0.00	0.00	21.9	0.305E-05	0.75	10.36	.18682E+04
697.77	0.00	0.00	22.0	0.305E-05	0.75	10.37	.18736E+04
699.76	0.00	0.00	22.0	0.305E-05	0.75	10.39	.18789E+04
701.75	0.00	0.00	22.0	0.304E-05	0.75	10.40	.18843E+04
703.73	0.00	0.00	22.1	0.304E-05	0.75	10.41	.18896E+04
705.72	0.00	0.00	22.1	0.303E-05	0.75	10.43	.18949E+04
707.71	0.00	0.00	22.1	0.303E-05	0.75	10.44	.19003E+04
709.70	0.00	0.00	22.2	0.302E-05	0.75	10.46	.19056E+04
711.69	0.00	0.00	22.2	0.302E-05	0.75	10.47	.19110E+04
713.68	0.00	0.00	22.2	0.302E-05	0.75	10.49	.19163E+04
715.66	0.00	0.00	22.2	0.301E-05	0.75	10.50	.19216E+04
717.65	0.00	0.00	22.3	0.301E-05	0.75	10.52	.19270E+04
719.64	0.00	0.00	22.3	0.300E-05	0.75	10.53	.19323E+04
721.63	0.00	0.00	22.3	0.300E-05	0.75	10.55	.19376E+04
723.62	0.00	0.00	22.4	0.300E-05	0.75	10.56	.19430E+04
725.61	0.00	0.00	22.4	0.299E-05	0.75	10.57	.19483E+04
727.59	0.00	0.00	22.4	0.299E-05	0.75	10.59	.19537E+04
729.58	0.00	0.00	22.5	0.298E-05	0.75	10.60	.19590E+04
731.57	0.00	0.00	22.5	0.298E-05	0.75	10.62	.19643E+04
733.56	0.00	0.00	22.5	0.297E-05	0.75	10.63	.19697E+04
735.55	0.00	0.00	22.6	0.297E-05	0.75	10.65	.19750E+04
737.54	0.00	0.00	22.6	0.297E-05	0.75	10.66	.19804E+04
739.52	0.00	0.00	22.6	0.296E-05	0.75	10.68	.19857E+04
741.51	0.00	0.00	22.6	0.296E-05	0.75	10.69	.19910E+04
743.50	0.00	0.00	22.7	0.295E-05	0.75	10.70	.19964E+04
745.49	0.00	0.00	22.7	0.295E-05	0.75	10.72	.20017E+04
747.48	0.00	0.00	22.7	0.295E-05	0.75	10.73	.20070E+04
749.47	0.00	0.00	22.8	0.294E-05	0.75	10.75	.20124E+04
751.45	0.00	0.00	22.8	0.294E-05	0.75	10.76	.20177E+04
753.44	0.00	0.00	22.8	0.294E-05	0.75	10.78	.20231E+04
755.43	0.00	0.00	22.9	0.293E-05	0.75	10.79	.20284E+04
757.42	0.00	0.00	22.9	0.293E-05	0.75	10.80	.20337E+04
759.41	0.00	0.00	22.9	0.292E-05	0.75	10.82	.20391E+04
761.40	0.00	0.00	22.9	0.292E-05	0.75	10.83	.20444E+04
763.38	0.00	0.00	23.0	0.292E-05	0.75	10.85	.20498E+04
765.37	0.00	0.00	23.0	0.291E-05	0.75	10.86	.20551E+04
767.36	0.00	0.00	23.0	0.291E-05	0.75	10.87	.20604E+04
769.35	0.00	0.00	23.1	0.290E-05	0.75	10.89	.20658E+04
771.34	0.00	0.00	23.1	0.290E-05	0.75	10.90	.20711E+04
773.33	0.00	0.00	23.1	0.290E-05	0.75	10.92	.20765E+04
775.31	0.00	0.00	23.2	0.289E-05	0.75	10.93	.20818E+04
777.30	0.00	0.00	23.2	0.289E-05	0.75	10.94	.20871E+04
779.29	0.00	0.00	23.2	0.289E-05	0.75	10.96	.20925E+04
781.28	0.00	0.00	23.2	0.288E-05	0.75	10.97	.20978E+04
783.27	0.00	0.00	23.3	0.288E-05	0.75	10.99	.21031E+04
785.26	0.00	0.00	23.3	0.288E-05	0.75	11.00	.21085E+04
787.24	0.00	0.00	23.3	0.287E-05	0.75	11.01	.21138E+04
789.23	0.00	0.00	23.4	0.287E-05	0.75	11.03	.21192E+04
791.22	0.00	0.00	23.4	0.286E-05	0.75	11.04	.21245E+04
793.21	0.00	0.00	23.4	0.286E-05	0.75	11.06	.21298E+04
795.20	0.00	0.00	23.4	0.286E-05	0.75	11.07	.21352E+04
797.19	0.00	0.00	23.5	0.285E-05	0.75	11.08	.21405E+04
799.17	0.00	0.00	23.5	0.285E-05	0.75	11.10	.21459E+04
801.16	0.00	0.00	23.5	0.285E-05	0.75	11.11	.21512E+04
803.15	0.00	0.00	23.6	0.284E-05	0.75	11.12	.21565E+04
805.14	0.00	0.00	23.6	0.284E-05	0.75	11.14	.21619E+04
807.13	0.00	0.00	23.6	0.284E-05	0.75	11.15	.21672E+04
809.12	0.00	0.00	23.7	0.283E-05	0.75	11.17	.21725E+04
811.10	0.00	0.00	23.7	0.283E-05	0.75	11.18	.21779E+04
813.09	0.00	0.00	23.7	0.283E-05	0.75	11.19	.21832E+04
815.08	0.00	0.00	23.7	0.282E-05	0.75	11.21	.21886E+04
817.07	0.00	0.00	23.8	0.282E-05	0.75	11.22	.21939E+04
819.06	0.00	0.00	23.8	0.282E-05	0.75	11.23	.21992E+04
821.05	0.00	0.00	23.8	0.281E-05	0.75	11.25	.22046E+04
823.03	0.00	0.00	23.9	0.281E-05	0.75	11.26	.22099E+04
825.02	0.00	0.00	23.9	0.281E-05	0.75	11.27	.22153E+04
827.01	0.00	0.00	23.9	0.280E-05	0.75	11.29	.22206E+04
829.00	0.00	0.00	23.9	0.280E-05	0.75	11.30	.22259E+04
830.99	0.00	0.00	24.0	0.280E-05	0.75	11.32	.22313E+04
832.98	0.00	0.00	24.0	0.279E-05	0.75	11.33	.22366E+04
834.96	0.00	0.00	24.0	0.279E-05	0.75	11.34	.22420E+04
836.95	0.00	0.00	24.1	0.279E-05	0.75	11.36	.22473E+04
838.94	0.00	0.00	24.1	0.278E-05	0.75	11.37	.22526E+04
840.93	0.00	0.00	24.1	0.278E-05	0.75	11.38	.22580E+04
842.92	0.00	0.00	24.1	0.278E-05	0.75	11.40	.22633E+04
844.91	0.00	0.00	24.2	0.277E-05	0.75	11.41	.22686E+04
846.89	0.00	0.00	24.2	0.277E-05	0.75	11.42	.22740E+04
848.88	0.00	0.00	24.2	0.277E-05	0.75	11.44	.22793E+04
850.87	0.00	0.00	24.3	0.276E-05	0.75	11.45	.22847E+04
852.86	0.00	0.00	24.3	0.276E-05	0.75	11.46	.22900E+04
854.85	0.00	0.00	24.3	0.276E-05	0.75	11.48	.22953E+04
856.84	0.00	0.00	24.3	0.275E-05	0.75	11.49	.23007E+04
858.82	0.00	0.00	24.4	0.275E-05	0.75	11.50	.23060E+04

```
    860.81     0.00    0.00    24.4 0.275E-05   0.75    11.52 .23114E+04
    862.80     0.00    0.00    24.4 0.274E-05   0.75    11.53 .23167E+04
    864.79     0.00    0.00    24.5 0.274E-05   0.75    11.54 .23220E+04
    866.78     0.00    0.00    24.5 0.274E-05   0.75    11.56 .23274E+04
    868.77     0.00    0.00    24.5 0.273E-05   0.75    11.57 .23327E+04
    870.75     0.00    0.00    24.5 0.273E-05   0.75    11.58 .23380E+04
    872.74     0.00    0.00    24.6 0.273E-05   0.75    11.60 .23434E+04
    874.73     0.00    0.00    24.6 0.272E-05   0.75    11.61 .23487E+04
    876.72     0.00    0.00    24.6 0.272E-05   0.75    11.62 .23541E+04
    878.71     0.00    0.00    24.6 0.272E-05   0.75    11.64 .23594E+04
    880.70     0.00    0.00    24.7 0.272E-05   0.75    11.65 .23647E+04
    882.68     0.00    0.00    24.7 0.271E-05   0.75    11.66 .23701E+04
    884.67     0.00    0.00    24.7 0.271E-05   0.75    11.67 .23754E+04
    886.66     0.00    0.00    24.8 0.271E-05   0.75    11.69 .23808E+04
    888.65     0.00    0.00    24.8 0.270E-05   0.75    11.70 .23861E+04
    890.64     0.00    0.00    24.8 0.270E-05   0.75    11.71 .23914E+04
    892.63     0.00    0.00    24.8 0.270E-05   0.75    11.73 .23968E+04
    894.61     0.00    0.00    24.9 0.269E-05   0.75    11.74 .24021E+04
    896.60     0.00    0.00    24.9 0.269E-05   0.75    11.75 .24075E+04
    898.59     0.00    0.00    24.9 0.269E-05   0.75    11.77 .24128E+04
    900.58     0.00    0.00    25.0 0.269E-05   0.75    11.78 .24181E+04
    902.57     0.00    0.00    25.0 0.268E-05   0.75    11.79 .24235E+04
    904.56     0.00    0.00    25.0 0.268E-05   0.75    11.81 .24288E+04
    906.54     0.00    0.00    25.0 0.268E-05   0.75    11.82 .24341E+04
    908.53     0.00    0.00    25.1 0.267E-05   0.75    11.83 .24395E+04
    910.52     0.00    0.00    25.1 0.267E-05   0.75    11.84 .24448E+04
    912.51     0.00    0.00    25.1 0.267E-05   0.75    11.86 .24502E+04
    914.50     0.00    0.00    25.1 0.266E-05   0.75    11.87 .24555E+04
    916.49     0.00    0.00    25.2 0.266E-05   0.75    11.88 .24608E+04
    918.47     0.00    0.00    25.2 0.266E-05   0.75    11.90 .24662E+04
    920.46     0.00    0.00    25.2 0.266E-05   0.75    11.91 .24715E+04
    922.45     0.00    0.00    25.3 0.265E-05   0.75    11.92 .24769E+04
    924.44     0.00    0.00    25.3 0.265E-05   0.75    11.93 .24822E+04
    926.43     0.00    0.00    25.3 0.265E-05   0.75    11.95 .24875E+04
    928.42     0.00    0.00    25.3 0.264E-05   0.75    11.96 .24929E+04
    930.40     0.00    0.00    25.4 0.264E-05   0.75    11.97 .24982E+04
    932.39     0.00    0.00    25.4 0.264E-05   0.75    11.99 .25035E+04
    934.38     0.00    0.00    25.4 0.264E-05   0.75    12.00 .25089E+04
    936.37     0.00    0.00    25.4 0.263E-05   0.75    12.01 .25142E+04
    938.36     0.00    0.00    25.5 0.263E-05   0.75    12.02 .25196E+04
    940.35     0.00    0.00    25.5 0.263E-05   0.75    12.04 .25249E+04
    942.33     0.00    0.00    25.5 0.263E-05   0.75    12.05 .25302E+04
    944.32     0.00    0.00    25.5 0.262E-05   0.75    12.06 .25356E+04
    946.31     0.00    0.00    25.6 0.262E-05   0.75    12.07 .25409E+04
    948.30     0.00    0.00    25.6 0.262E-05   0.75    12.09 .25463E+04
    950.29     0.00    0.00    25.6 0.261E-05   0.75    12.10 .25516E+04
    952.28     0.00    0.00    25.7 0.261E-05   0.75    12.11 .25569E+04
    954.26     0.00    0.00    25.7 0.261E-05   0.75    12.12 .25623E+04
    956.25     0.00    0.00    25.7 0.261E-05   0.75    12.14 .25676E+04
    958.24     0.00    0.00    25.7 0.260E-05   0.75    12.15 .25730E+04
    960.23     0.00    0.00    25.8 0.260E-05   0.75    12.16 .25783E+04
    962.22     0.00    0.00    25.8 0.260E-05   0.75    12.18 .25836E+04
    964.21     0.00    0.00    25.8 0.260E-05   0.75    12.19 .25890E+04
    966.19     0.00    0.00    25.8 0.259E-05   0.75    12.20 .25943E+04
    968.18     0.00    0.00    25.9 0.259E-05   0.75    12.21 .25996E+04
    970.17     0.00    0.00    25.9 0.259E-05   0.75    12.23 .26050E+04
    972.16     0.00    0.00    25.9 0.258E-05   0.75    12.24 .26103E+04
    974.15     0.00    0.00    25.9 0.258E-05   0.75    12.25 .26157E+04
    976.14     0.00    0.00    26.0 0.258E-05   0.75    12.26 .26210E+04
    978.12     0.00    0.00    26.0 0.258E-05   0.75    12.28 .26263E+04
    980.11     0.00    0.00    26.0 0.257E-05   0.75    12.29 .26317E+04
    982.10     0.00    0.00    26.1 0.257E-05   0.75    12.30 .26370E+04
    984.09     0.00    0.00    26.1 0.257E-05   0.75    12.31 .26424E+04
    986.08     0.00    0.00    26.1 0.257E-05   0.75    12.32 .26477E+04
    988.07     0.00    0.00    26.1 0.256E-05   0.75    12.34 .26530E+04
    990.05     0.00    0.00    26.2 0.256E-05   0.75    12.35 .26584E+04
    992.04     0.00    0.00    26.2 0.256E-05   0.75    12.36 .26637E+04
    994.03     0.00    0.00    26.2 0.256E-05   0.75    12.37 .26690E+04
    996.02     0.00    0.00    26.2 0.255E-05   0.75    12.39 .26744E+04
    998.01     0.00    0.00    26.3 0.255E-05   0.75    12.40 .26797E+04
   1000.00     0.00    0.00    26.3 0.255E-05   0.75    12.41 .26851E+04
 Cumulative travel time =        2685.0723 sec  (    0.75 hrs)

 Simulation limit based on maximum specified distance =   1000.00 m.
   This is the REGION OF INTEREST limitation.

END OF MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT
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CORMIX3: Buoyant Surface Discharges                    End of Prediction File
3333333333333333333333333333333333333333333333333333333333333333333333333333333333
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CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 10.0G
                       HYDRO3:Version-10.0.0.0  July,2016
SITE NAME/LABEL:                Richland
  DESIGN CASE:                  Summer Chronic  (3 MGD) 7Q10
  FILE NAME:                    C:\Program Files (x86)\CORMIX 10.0\Simulations\Mercury Chronic 3MGD.prd
  Using subsystem CORMIX3:     Buoyant Surface Discharges
  Start of session:             03/16/2017--07:48:25
*****************************************************************************
SUMMARY OF INPUT DATA:
-----------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                          BS      = 72.10 m
  Channel regularity             ICHREG = 2
  Ambient flowrate               QA      = 20.01 m^3/s
  Average depth                  HA      = 0.75 m
  Depth at discharge             HD      = 0.75 m
  Ambient velocity               UA      = 0.37 m/s
  Darcy-Weisbach friction factor  F      = 0.1381
    Calculated from Manning's n          = 0.04
  Wind velocity                  UW      = 1 m/s
  Stratification Type            STRCND = U
  Surface temperature                    = 27.90 degC
  Bottom temperature                     = 27.90 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density                RHOAS   = 996.2622 kg/m^3
  Bottom density                 RHOAB   = 996.2622 kg/m^3
-----------------------------------------------------------------------------
DISCHARGE PARAMETERS:            Surface Discharge
  Discharge located on                   = left bank/shoreline
  Discharge configuration                = flush discharge
  Distance from bank to outlet   DISTB   = 0 m
  Discharge angle                SIGMA   = 85 deg
  Depth near discharge outlet    HD0     = 0.5 m
  Bottom slope at discharge      SLOPE   = 4.46 deg
  Rectangular discharge:
    Discharge cross-section area  A0     = 3.725 m^2
    Discharge channel width       B0     = 7.45 m
    Discharge channel depth       H0     = 0.5 m
    Discharge aspect ratio        AR     = 0.067114
  Discharge flowrate             Q0      = 0.131865 m^3/s
  Discharge velocity             U0      = 0.04 m/s
  Discharge temperature (freshwater)     = 30.30 degC
  Corresponding density          RHO0    = 995.5560 kg/m^3
  Density difference             DRHO    = 0.7062 kg/m^3
  Buoyant acceleration           GP0     = 0.007 m/s^2
  Discharge concentration        C0      = 0.00074 ug/L
  Surface heat exchange coeff.   KS      = 0 m/s
  Coefficient of decay           KD      = 0 /s
-----------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 1.93 m         Lm  = 0.18 m         Lbb = 0.02 m
  LM  = 0.59 m
-----------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Densimetric Froude number      FR0     = 0.31 (based on LQ)
  Channel densimetric Froude no. FRCH    = 0.60 (based on H0)
  Velocity ratio                 R       = 0.10
-----------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = yes
  Water quality standard         CSTD    = 0.0002 ug/L
  Regulatory mixing zone                 = yes
  Regulatory mixing zone specification   = distance
  Regulatory mixing zone value           = 91.46 m (m^2 if area)
  Region of interest                     = 1000 m
*****************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *------------------------*
  | FLOW CLASS   = PL2 |
  *------------------------*

  Limiting Dilution S = (QA/Q0)+ 1.0 = 152.7

*****************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

-----------------------------------------------------------------------------
X-Y-Z Coordinate system:
Origin is located at WATER SURFACE and at centerline of discharge channel:
    0 m from the left bank/shore.
  Number of display steps NSTEP = 500 per module.
-----------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
  implication.  However, this information may be useful for the discharge
```

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  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 0.0007 ug/L
  Dilution at edge of NFR              s = 1
  NFR Location:                        x = 3.73 m
    (centerline coordinates)           y = -0.20 m
                                       z = 0 m
  NFR plume dimensions:  half-width (bh) = 0.85 m
                          thickness (bv) = 0.42 m
Cumulative travel time:       10.0676 sec.
-----------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is less than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards
  the surface.
-----------------------------------------------------------------------------
FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed at 21.73 m downstream.
-----------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts one bank only at 0 m downstream.
************************ TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
********************** REGULATORY MIXING ZONE SUMMARY ***********************
The plume conditions at the boundary of the specified RMZ are as follows:
  Pollutant concentration              c = 0.000092  ug/L
  Corresponding dilution               s = 8.0
  Plume location:                      x = 91.46 m
    (centerline coordinates)           y = 0 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 3.78 m
                          thickness (bv) = 0.75 m
Cumulative travel time:       245.6366 sec.

Note:
Plume concentration c and dilution s values are reported based on prediction
file values - assuming linear interpolation between predicted points just
before and just after the RMZ boundary has been detected.

Please ensure a small step size is used in the prediction file to account
for this linear interpolation. Step size can be controlled by increasing
(reduces the prediction step size) or decreasing (increases the prediction
step size) the - Output Steps per Module - in CORMIX input.

At this position, the plume is CONTACTING the LEFT bank.
Furthermore, the specified water quality standard has indeed been met
  within the RMZ. In particular:
The ambient water quality standard was encountered at the following
  plume position:
  Water quality standard                 = 0.0002  ug/L
  Corresponding dilution               s = 3.7
  Plume location:                      x = 19.38 m
    (centerline coordinates)           y = 0 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 1.78 m
                          thickness (bv) = 0.74 m
********************* FINAL DESIGN ADVICE AND COMMENTS **********************
REMINDER:  The user must take note that HYDRODYNAMIC MODELING by any known
  technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the
  CORMIX predictions on dilutions and concentrations (with associated
  plume geometries) are reliable for the majority of cases and are accurate
  to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges
  the design configuration as highly complex and uncertain for prediction.
```

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CORMIX3 PREDICTION FILE:
3333333333333333333333333333333333333333333333333333333333333333333333333333333333
                      CORMIX MIXING ZONE EXPERT SYSTEM
                Subsystem CORMIX3: Buoyant Surface Discharges
                             CORMIX Version 10.0G
                     HYDRO3 Version 10.0.0.0 July 2016
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
CASE DESCRIPTION
 Site name/label:   Richland
 Design case:       Summer Chronic  (3 MGD) 7Q10
 FILE NAME:         C:\...\CORMIX 10.0\Simulations\Mercury Chronic_3MGD.prd
 Time stamp:        03/16/2017--07:48:25

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     72.10  AS    =     54.07  QA    =     20.01  ICHREG= 2
 HA    =      0.75  HD    =      0.75
 UA    =      0.370 F     =      0.138 USTAR =0.4862E-01
 UW    =      1.000 UWSTAR=0.1071E-02
 Uniform density environment
 STRCND=  U         RHOAM =  996.2622

DISCHARGE PARAMETERS (metric units)
 BANK  =  LEFT      DISTB =      0.00  Configuration: flush_discharge
 SIGMA =     85.00  HDO   =      0.50  SLOPE =    4.46 deg.
 Rectangular channel geometry:
 B0    =      7.450 H0    =      0.500 A0    =0.3725E+01  AR    =      0.067
 U0    =      0.035 Q0    =      0.132       =0.1319E+00
 RHO0  =  995.5560  DRHO0 =0.7062E+00  GP0   =0.6952E-02
 C0    =0.7400E-03  CUNITS=  ug/L
 IPOLL =  1         KS    =0.0000E+00  KD    =0.0000E+00

FLUX VARIABLES (metric units)
 Q0    =0.1319E+00  M0    =0.4668E-02  J0    =0.9167E-03
 Associated length scales (meters)
 LQ    =      1.93  LM    =      0.59  Lm    =      0.18  Lb    =      0.02

NON-DIMENSIONAL PARAMETERS
 FR0   =      0.31  FRCH  =      0.60  R     =      0.10

FLOW CLASSIFICATION
 3333333333333333333333333333333333333333333
 3  Flow class (CORMIX3)      =    PL2    3
 3  Applicable layer depth HS =     0.75  3
 3  Limiting Dilution S =QA/Q0=   152.73  3
 3333333333333333333333333333333333333333333

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.7400E-03  CUNITS=  ug/L
 NTOX  =  0
 NSTD  =  1         CSTD  =0.2000E-03
 REGMZ =  1
 REGSPC=  1         XREG  =     91.46  WREG  =      0.00  AREG  =      0.00
 XINT  =   1000.00  XMAX  =   1000.00

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the WATER SURFACE and at center of discharge
      channel/outlet:      0.00 m  from the LEFT  bank/shore.
    X-axis points downstream
    Y-axis points to left as seen by an observer looking downstream
    Z-axis points vertically upward (in CORMIX3, all values Z = 0.00)
NSTEP = 500 display intervals per module
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
BEGIN MOD301: DISCHARGE MODULE

 Efflux conditions:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.740E-03   0.50     3.72 .00000E+00

END OF MOD301: DISCHARGE MODULE
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
BEGIN MOD302: ZONE OF FLOW ESTABLISHMENT

  Control volume inflow:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.740E-03   0.50     3.72 .00000E+00

 RAPID DEFLECTION by ambient current:
 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

  Control volume outflow:                                SIGMAE=    347.29
       X        Y       Z        S       C       BV       BH        TT
```

```
      3.72    -0.20    0.00     1.0 0.740E-03   0.42     0.85 .10068E+02
 Cumulative travel time =          10.0676 sec  (    0.00 hrs)

END OF MOD302: ZONE OF FLOW ESTABLISHMENT
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
** End of NEAR-FIELD REGION (NFR) **
-------------------------------------------------------------------------------

 WAKE FLOW CONDITIONS: The discharge velocity (U0) is less than or equal to the
 ambient velocity (Ua) and results in wake flow conditions. There is no discharge
 momentum induced mixing. The mixing characteristics are UNDESIRABLE.
-------------------------------------------------------------------------------
BEGIN MOD341: BUOYANT AMBIENT SPREADING

 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

 Plume Stage 2 (bank attached):
       X        Y        Z        S        C        BV        BH        TT
      3.72     0.00     0.00     1.0 0.740E-03   0.42     0.84 .10068E+02
      3.73     0.00     0.00     1.0 0.740E-03   0.42     0.84 .10079E+02
      3.73     0.00     0.00     1.0 0.739E-03   0.42     0.84 .10090E+02
      3.74     0.00     0.00     1.0 0.739E-03   0.42     0.84 .10101E+02
      3.74     0.00     0.00     1.0 0.739E-03   0.42     0.84 .10113E+02
      3.75     0.00     0.00     1.0 0.739E-03   0.42     0.85 .10124E+02
      3.75     0.00     0.00     1.0 0.738E-03   0.42     0.85 .10135E+02
      3.75     0.00     0.00     1.0 0.738E-03   0.42     0.85 .10146E+02
      3.76     0.00     0.00     1.0 0.738E-03   0.42     0.85 .10158E+02
      3.76     0.00     0.00     1.0 0.738E-03   0.42     0.85 .10169E+02
      3.77     0.00     0.00     1.0 0.737E-03   0.42     0.85 .10180E+02
      3.77     0.00     0.00     1.0 0.737E-03   0.42     0.85 .10191E+02
      3.78     0.00     0.00     1.0 0.737E-03   0.42     0.85 .10203E+02
      3.78     0.00     0.00     1.0 0.736E-03   0.42     0.85 .10214E+02
      3.78     0.00     0.00     1.0 0.736E-03   0.42     0.85 .10225E+02
      3.79     0.00     0.00     1.0 0.736E-03   0.42     0.85 .10236E+02
      3.79     0.00     0.00     1.0 0.736E-03   0.42     0.85 .10248E+02
      3.80     0.00     0.00     1.0 0.735E-03   0.42     0.85 .10259E+02
      3.80     0.00     0.00     1.0 0.735E-03   0.42     0.85 .10270E+02
      3.80     0.00     0.00     1.0 0.735E-03   0.42     0.85 .10281E+02
      3.81     0.00     0.00     1.0 0.735E-03   0.42     0.85 .10293E+02
      3.81     0.00     0.00     1.0 0.734E-03   0.42     0.85 .10304E+02
      3.82     0.00     0.00     1.0 0.734E-03   0.42     0.85 .10315E+02
      3.82     0.00     0.00     1.0 0.734E-03   0.42     0.85 .10326E+02
      3.83     0.00     0.00     1.0 0.733E-03   0.42     0.85 .10338E+02
      3.83     0.00     0.00     1.0 0.733E-03   0.42     0.85 .10349E+02
      3.83     0.00     0.00     1.0 0.733E-03   0.42     0.85 .10360E+02
      3.84     0.00     0.00     1.0 0.733E-03   0.42     0.85 .10371E+02
      3.84     0.00     0.00     1.0 0.732E-03   0.42     0.85 .10383E+02
      3.85     0.00     0.00     1.0 0.732E-03   0.42     0.86 .10394E+02
      3.85     0.00     0.00     1.0 0.732E-03   0.42     0.86 .10405E+02
      3.85     0.00     0.00     1.0 0.732E-03   0.42     0.86 .10416E+02
      3.86     0.00     0.00     1.0 0.731E-03   0.42     0.86 .10428E+02
      3.86     0.00     0.00     1.0 0.731E-03   0.42     0.86 .10439E+02
      3.87     0.00     0.00     1.0 0.731E-03   0.42     0.86 .10450E+02
      3.87     0.00     0.00     1.0 0.730E-03   0.42     0.86 .10461E+02
      3.88     0.00     0.00     1.0 0.730E-03   0.42     0.86 .10473E+02
      3.88     0.00     0.00     1.0 0.730E-03   0.42     0.86 .10484E+02
      3.88     0.00     0.00     1.0 0.730E-03   0.42     0.86 .10495E+02
      3.89     0.00     0.00     1.0 0.729E-03   0.42     0.86 .10506E+02
      3.89     0.00     0.00     1.0 0.729E-03   0.42     0.86 .10517E+02
      3.90     0.00     0.00     1.0 0.729E-03   0.42     0.86 .10529E+02
      3.90     0.00     0.00     1.0 0.729E-03   0.42     0.86 .10540E+02
      3.91     0.00     0.00     1.0 0.728E-03   0.42     0.86 .10551E+02
      3.91     0.00     0.00     1.0 0.728E-03   0.42     0.86 .10562E+02
      3.91     0.00     0.00     1.0 0.728E-03   0.42     0.86 .10574E+02
      3.92     0.00     0.00     1.0 0.727E-03   0.42     0.86 .10585E+02
      3.92     0.00     0.00     1.0 0.727E-03   0.42     0.86 .10596E+02
      3.93     0.00     0.00     1.0 0.727E-03   0.42     0.86 .10607E+02
      3.93     0.00     0.00     1.0 0.727E-03   0.42     0.86 .10619E+02
      3.93     0.00     0.00     1.0 0.726E-03   0.42     0.86 .10630E+02
      3.94     0.00     0.00     1.0 0.726E-03   0.42     0.86 .10641E+02
      3.94     0.00     0.00     1.0 0.726E-03   0.42     0.87 .10652E+02
      3.95     0.00     0.00     1.0 0.726E-03   0.42     0.87 .10664E+02
      3.95     0.00     0.00     1.0 0.725E-03   0.42     0.87 .10675E+02
      3.96     0.00     0.00     1.0 0.725E-03   0.42     0.87 .10686E+02
      3.96     0.00     0.00     1.0 0.725E-03   0.42     0.87 .10697E+02
      3.96     0.00     0.00     1.0 0.724E-03   0.42     0.87 .10709E+02
      3.97     0.00     0.00     1.0 0.724E-03   0.42     0.87 .10720E+02
      3.97     0.00     0.00     1.0 0.724E-03   0.42     0.87 .10731E+02
      3.98     0.00     0.00     1.0 0.724E-03   0.42     0.87 .10742E+02
      3.98     0.00     0.00     1.0 0.723E-03   0.42     0.87 .10754E+02
      3.98     0.00     0.00     1.0 0.723E-03   0.42     0.87 .10765E+02
      3.99     0.00     0.00     1.0 0.723E-03   0.42     0.87 .10776E+02
      3.99     0.00     0.00     1.0 0.723E-03   0.42     0.87 .10787E+02
      4.00     0.00     0.00     1.0 0.722E-03   0.42     0.87 .10799E+02
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4.00	0.00	0.00	1.0	0.722E-03	0.42	0.87	.10810E+02
4.01	0.00	0.00	1.0	0.722E-03	0.42	0.87	.10821E+02
4.01	0.00	0.00	1.0	0.722E-03	0.42	0.87	.10832E+02
4.01	0.00	0.00	1.0	0.721E-03	0.42	0.87	.10844E+02
4.02	0.00	0.00	1.0	0.721E-03	0.42	0.87	.10855E+02
4.02	0.00	0.00	1.0	0.721E-03	0.42	0.87	.10866E+02
4.03	0.00	0.00	1.0	0.720E-03	0.42	0.87	.10877E+02
4.03	0.00	0.00	1.0	0.720E-03	0.42	0.87	.10889E+02
4.04	0.00	0.00	1.0	0.720E-03	0.42	0.87	.10900E+02
4.04	0.00	0.00	1.0	0.720E-03	0.42	0.87	.10911E+02
4.04	0.00	0.00	1.0	0.719E-03	0.42	0.88	.10922E+02
4.05	0.00	0.00	1.0	0.719E-03	0.42	0.88	.10934E+02
4.05	0.00	0.00	1.0	0.719E-03	0.42	0.88	.10945E+02
4.06	0.00	0.00	1.0	0.719E-03	0.42	0.88	.10956E+02
4.06	0.00	0.00	1.0	0.718E-03	0.42	0.88	.10967E+02
4.06	0.00	0.00	1.0	0.718E-03	0.42	0.88	.10979E+02
4.07	0.00	0.00	1.0	0.718E-03	0.42	0.88	.10990E+02
4.07	0.00	0.00	1.0	0.717E-03	0.42	0.88	.11001E+02
4.08	0.00	0.00	1.0	0.717E-03	0.42	0.88	.11012E+02
4.08	0.00	0.00	1.0	0.717E-03	0.42	0.88	.11024E+02
4.09	0.00	0.00	1.0	0.717E-03	0.42	0.88	.11035E+02
4.09	0.00	0.00	1.0	0.716E-03	0.42	0.88	.11046E+02
4.09	0.00	0.00	1.0	0.716E-03	0.42	0.88	.11057E+02
4.10	0.00	0.00	1.0	0.716E-03	0.42	0.88	.11069E+02
4.10	0.00	0.00	1.0	0.716E-03	0.42	0.88	.11080E+02
4.11	0.00	0.00	1.0	0.715E-03	0.42	0.88	.11091E+02
4.11	0.00	0.00	1.0	0.715E-03	0.42	0.88	.11102E+02
4.11	0.00	0.00	1.0	0.715E-03	0.42	0.88	.11114E+02
4.12	0.00	0.00	1.0	0.715E-03	0.42	0.88	.11125E+02
4.12	0.00	0.00	1.0	0.714E-03	0.42	0.88	.11136E+02
4.13	0.00	0.00	1.0	0.714E-03	0.42	0.88	.11147E+02
4.13	0.00	0.00	1.0	0.714E-03	0.42	0.88	.11159E+02
4.14	0.00	0.00	1.0	0.713E-03	0.42	0.88	.11170E+02
4.14	0.00	0.00	1.0	0.713E-03	0.42	0.88	.11181E+02
4.14	0.00	0.00	1.0	0.713E-03	0.42	0.89	.11192E+02
4.15	0.00	0.00	1.0	0.713E-03	0.42	0.89	.11204E+02
4.15	0.00	0.00	1.0	0.712E-03	0.42	0.89	.11215E+02
4.16	0.00	0.00	1.0	0.712E-03	0.41	0.89	.11226E+02
4.16	0.00	0.00	1.0	0.712E-03	0.41	0.89	.11237E+02
4.16	0.00	0.00	1.0	0.712E-03	0.41	0.89	.11249E+02
4.17	0.00	0.00	1.0	0.711E-03	0.41	0.89	.11260E+02
4.17	0.00	0.00	1.0	0.711E-03	0.41	0.89	.11271E+02
4.18	0.00	0.00	1.0	0.711E-03	0.41	0.89	.11282E+02
4.18	0.00	0.00	1.0	0.710E-03	0.41	0.89	.11294E+02
4.19	0.00	0.00	1.0	0.710E-03	0.41	0.89	.11305E+02
4.19	0.00	0.00	1.0	0.710E-03	0.41	0.89	.11316E+02
4.19	0.00	0.00	1.0	0.710E-03	0.41	0.89	.11327E+02
4.20	0.00	0.00	1.0	0.709E-03	0.41	0.89	.11339E+02
4.20	0.00	0.00	1.0	0.709E-03	0.41	0.89	.11350E+02
4.21	0.00	0.00	1.0	0.709E-03	0.41	0.89	.11361E+02
4.21	0.00	0.00	1.0	0.709E-03	0.41	0.89	.11372E+02
4.22	0.00	0.00	1.0	0.708E-03	0.41	0.89	.11384E+02
4.22	0.00	0.00	1.0	0.708E-03	0.41	0.89	.11395E+02
4.22	0.00	0.00	1.0	0.708E-03	0.41	0.89	.11406E+02
4.23	0.00	0.00	1.0	0.708E-03	0.41	0.89	.11417E+02
4.23	0.00	0.00	1.0	0.707E-03	0.41	0.89	.11429E+02
4.24	0.00	0.00	1.0	0.707E-03	0.41	0.89	.11440E+02
4.24	0.00	0.00	1.0	0.707E-03	0.41	0.89	.11451E+02
4.24	0.00	0.00	1.0	0.706E-03	0.41	0.90	.11462E+02
4.25	0.00	0.00	1.0	0.706E-03	0.41	0.90	.11474E+02
4.25	0.00	0.00	1.0	0.706E-03	0.41	0.90	.11485E+02
4.26	0.00	0.00	1.0	0.706E-03	0.41	0.90	.11496E+02
4.26	0.00	0.00	1.0	0.705E-03	0.41	0.90	.11507E+02
4.27	0.00	0.00	1.0	0.705E-03	0.41	0.90	.11519E+02
4.27	0.00	0.00	1.0	0.705E-03	0.41	0.90	.11530E+02
4.27	0.00	0.00	1.1	0.705E-03	0.41	0.90	.11541E+02
4.28	0.00	0.00	1.1	0.704E-03	0.41	0.90	.11552E+02
4.28	0.00	0.00	1.1	0.704E-03	0.41	0.90	.11564E+02
4.29	0.00	0.00	1.1	0.704E-03	0.41	0.90	.11575E+02
4.29	0.00	0.00	1.1	0.704E-03	0.41	0.90	.11586E+02
4.29	0.00	0.00	1.1	0.703E-03	0.41	0.90	.11597E+02
4.30	0.00	0.00	1.1	0.703E-03	0.41	0.90	.11609E+02
4.30	0.00	0.00	1.1	0.703E-03	0.41	0.90	.11620E+02
4.31	0.00	0.00	1.1	0.702E-03	0.41	0.90	.11631E+02
4.31	0.00	0.00	1.1	0.702E-03	0.41	0.90	.11642E+02
4.32	0.00	0.00	1.1	0.702E-03	0.41	0.90	.11654E+02
4.32	0.00	0.00	1.1	0.702E-03	0.41	0.90	.11665E+02
4.32	0.00	0.00	1.1	0.701E-03	0.41	0.90	.11676E+02
4.33	0.00	0.00	1.1	0.701E-03	0.41	0.90	.11687E+02
4.33	0.00	0.00	1.1	0.701E-03	0.41	0.90	.11699E+02
4.34	0.00	0.00	1.1	0.701E-03	0.41	0.90	.11710E+02
4.34	0.00	0.00	1.1	0.700E-03	0.41	0.90	.11721E+02
4.35	0.00	0.00	1.1	0.700E-03	0.41	0.91	.11732E+02
4.35	0.00	0.00	1.1	0.700E-03	0.41	0.91	.11744E+02
4.35	0.00	0.00	1.1	0.700E-03	0.41	0.91	.11755E+02
4.36	0.00	0.00	1.1	0.699E-03	0.41	0.91	.11766E+02
4.36	0.00	0.00	1.1	0.699E-03	0.41	0.91	.11777E+02
4.37	0.00	0.00	1.1	0.699E-03	0.41	0.91	.11789E+02
4.37	0.00	0.00	1.1	0.698E-03	0.41	0.91	.11800E+02
4.37	0.00	0.00	1.1	0.698E-03	0.41	0.91	.11811E+02

4.38	0.00	0.00	1.1	0.698E-03	0.41	0.91	.11822E+02
4.38	0.00	0.00	1.1	0.698E-03	0.41	0.91	.11834E+02
4.39	0.00	0.00	1.1	0.697E-03	0.41	0.91	.11845E+02
4.39	0.00	0.00	1.1	0.697E-03	0.41	0.91	.11856E+02
4.40	0.00	0.00	1.1	0.697E-03	0.41	0.91	.11867E+02
4.40	0.00	0.00	1.1	0.697E-03	0.41	0.91	.11879E+02
4.40	0.00	0.00	1.1	0.696E-03	0.41	0.91	.11890E+02
4.41	0.00	0.00	1.1	0.696E-03	0.41	0.91	.11901E+02
4.41	0.00	0.00	1.1	0.696E-03	0.41	0.91	.11912E+02
4.42	0.00	0.00	1.1	0.696E-03	0.41	0.91	.11924E+02
4.42	0.00	0.00	1.1	0.695E-03	0.41	0.91	.11935E+02
4.42	0.00	0.00	1.1	0.695E-03	0.41	0.91	.11946E+02
4.43	0.00	0.00	1.1	0.695E-03	0.41	0.91	.11957E+02
4.43	0.00	0.00	1.1	0.695E-03	0.41	0.91	.11969E+02
4.44	0.00	0.00	1.1	0.694E-03	0.41	0.91	.11980E+02
4.44	0.00	0.00	1.1	0.694E-03	0.41	0.91	.11991E+02
4.45	0.00	0.00	1.1	0.694E-03	0.41	0.92	.12002E+02
4.45	0.00	0.00	1.1	0.693E-03	0.41	0.92	.12014E+02
4.45	0.00	0.00	1.1	0.693E-03	0.41	0.92	.12025E+02
4.46	0.00	0.00	1.1	0.693E-03	0.41	0.92	.12036E+02
4.46	0.00	0.00	1.1	0.693E-03	0.41	0.92	.12047E+02
4.47	0.00	0.00	1.1	0.692E-03	0.41	0.92	.12058E+02
4.47	0.00	0.00	1.1	0.692E-03	0.41	0.92	.12070E+02
4.47	0.00	0.00	1.1	0.692E-03	0.41	0.92	.12081E+02
4.48	0.00	0.00	1.1	0.692E-03	0.41	0.92	.12092E+02
4.48	0.00	0.00	1.1	0.691E-03	0.41	0.92	.12103E+02
4.49	0.00	0.00	1.1	0.691E-03	0.41	0.92	.12115E+02
4.49	0.00	0.00	1.1	0.691E-03	0.41	0.92	.12126E+02
4.50	0.00	0.00	1.1	0.691E-03	0.41	0.92	.12137E+02
4.50	0.00	0.00	1.1	0.690E-03	0.41	0.92	.12148E+02
4.50	0.00	0.00	1.1	0.690E-03	0.41	0.92	.12160E+02
4.51	0.00	0.00	1.1	0.690E-03	0.41	0.92	.12171E+02
4.51	0.00	0.00	1.1	0.690E-03	0.41	0.92	.12182E+02
4.52	0.00	0.00	1.1	0.689E-03	0.41	0.92	.12193E+02
4.52	0.00	0.00	1.1	0.689E-03	0.41	0.92	.12205E+02
4.53	0.00	0.00	1.1	0.689E-03	0.41	0.92	.12216E+02
4.53	0.00	0.00	1.1	0.688E-03	0.41	0.92	.12227E+02
4.53	0.00	0.00	1.1	0.688E-03	0.41	0.92	.12238E+02
4.54	0.00	0.00	1.1	0.688E-03	0.41	0.92	.12250E+02
4.54	0.00	0.00	1.1	0.688E-03	0.41	0.92	.12261E+02
4.55	0.00	0.00	1.1	0.687E-03	0.41	0.93	.12272E+02
4.55	0.00	0.00	1.1	0.687E-03	0.41	0.93	.12283E+02
4.55	0.00	0.00	1.1	0.687E-03	0.41	0.93	.12295E+02
4.56	0.00	0.00	1.1	0.687E-03	0.41	0.93	.12306E+02
4.56	0.00	0.00	1.1	0.686E-03	0.41	0.93	.12317E+02
4.57	0.00	0.00	1.1	0.686E-03	0.41	0.93	.12328E+02
4.57	0.00	0.00	1.1	0.686E-03	0.41	0.93	.12340E+02
4.58	0.00	0.00	1.1	0.686E-03	0.41	0.93	.12351E+02
4.58	0.00	0.00	1.1	0.685E-03	0.41	0.93	.12362E+02
4.58	0.00	0.00	1.1	0.685E-03	0.41	0.93	.12373E+02
4.59	0.00	0.00	1.1	0.685E-03	0.41	0.93	.12385E+02
4.59	0.00	0.00	1.1	0.685E-03	0.41	0.93	.12396E+02
4.60	0.00	0.00	1.1	0.684E-03	0.41	0.93	.12407E+02
4.60	0.00	0.00	1.1	0.684E-03	0.41	0.93	.12418E+02
4.60	0.00	0.00	1.1	0.684E-03	0.41	0.93	.12430E+02
4.61	0.00	0.00	1.1	0.683E-03	0.41	0.93	.12441E+02
4.61	0.00	0.00	1.1	0.683E-03	0.41	0.93	.12452E+02
4.62	0.00	0.00	1.1	0.683E-03	0.41	0.93	.12463E+02
4.62	0.00	0.00	1.1	0.683E-03	0.41	0.93	.12475E+02
4.63	0.00	0.00	1.1	0.682E-03	0.41	0.93	.12486E+02
4.63	0.00	0.00	1.1	0.682E-03	0.41	0.93	.12497E+02
4.63	0.00	0.00	1.1	0.682E-03	0.41	0.93	.12508E+02
4.64	0.00	0.00	1.1	0.682E-03	0.41	0.93	.12520E+02
4.64	0.00	0.00	1.1	0.681E-03	0.41	0.93	.12531E+02
4.65	0.00	0.00	1.1	0.681E-03	0.41	0.93	.12542E+02
4.65	0.00	0.00	1.1	0.681E-03	0.41	0.94	.12553E+02
4.66	0.00	0.00	1.1	0.681E-03	0.41	0.94	.12565E+02
4.66	0.00	0.00	1.1	0.680E-03	0.41	0.94	.12576E+02
4.66	0.00	0.00	1.1	0.680E-03	0.41	0.94	.12587E+02
4.67	0.00	0.00	1.1	0.680E-03	0.41	0.94	.12598E+02
4.67	0.00	0.00	1.1	0.680E-03	0.41	0.94	.12610E+02
4.68	0.00	0.00	1.1	0.679E-03	0.41	0.94	.12621E+02
4.68	0.00	0.00	1.1	0.679E-03	0.41	0.94	.12632E+02
4.68	0.00	0.00	1.1	0.679E-03	0.41	0.94	.12643E+02
4.69	0.00	0.00	1.1	0.678E-03	0.41	0.94	.12655E+02
4.69	0.00	0.00	1.1	0.678E-03	0.41	0.94	.12666E+02
4.70	0.00	0.00	1.1	0.678E-03	0.41	0.94	.12677E+02
4.70	0.00	0.00	1.1	0.678E-03	0.41	0.94	.12688E+02
4.71	0.00	0.00	1.1	0.677E-03	0.41	0.94	.12700E+02
4.71	0.00	0.00	1.1	0.677E-03	0.41	0.94	.12711E+02
4.71	0.00	0.00	1.1	0.677E-03	0.41	0.94	.12722E+02
4.72	0.00	0.00	1.1	0.677E-03	0.41	0.94	.12733E+02
4.72	0.00	0.00	1.1	0.676E-03	0.41	0.94	.12745E+02
4.73	0.00	0.00	1.1	0.676E-03	0.41	0.94	.12756E+02
4.73	0.00	0.00	1.1	0.676E-03	0.41	0.94	.12767E+02
4.73	0.00	0.00	1.1	0.676E-03	0.41	0.94	.12778E+02
4.74	0.00	0.00	1.1	0.675E-03	0.41	0.94	.12790E+02
4.74	0.00	0.00	1.1	0.675E-03	0.41	0.94	.12801E+02
4.75	0.00	0.00	1.1	0.675E-03	0.41	0.94	.12812E+02
4.75	0.00	0.00	1.1	0.675E-03	0.41	0.95	.12823E+02

4.76	0.00	0.00	1.1	0.674E-03	0.41	0.95	.12835E+02
4.76	0.00	0.00	1.1	0.674E-03	0.41	0.95	.12846E+02
4.76	0.00	0.00	1.1	0.674E-03	0.41	0.95	.12857E+02
4.77	0.00	0.00	1.1	0.674E-03	0.41	0.95	.12868E+02
4.77	0.00	0.00	1.1	0.673E-03	0.41	0.95	.12880E+02
4.78	0.00	0.00	1.1	0.673E-03	0.41	0.95	.12891E+02
4.78	0.00	0.00	1.1	0.673E-03	0.41	0.95	.12902E+02
4.78	0.00	0.00	1.1	0.673E-03	0.41	0.95	.12913E+02
4.79	0.00	0.00	1.1	0.672E-03	0.41	0.95	.12925E+02
4.79	0.00	0.00	1.1	0.672E-03	0.41	0.95	.12936E+02
4.80	0.00	0.00	1.1	0.672E-03	0.41	0.95	.12947E+02
4.80	0.00	0.00	1.1	0.671E-03	0.41	0.95	.12958E+02
4.81	0.00	0.00	1.1	0.671E-03	0.41	0.95	.12970E+02
4.81	0.00	0.00	1.1	0.671E-03	0.41	0.95	.12981E+02
4.81	0.00	0.00	1.1	0.671E-03	0.41	0.95	.12992E+02
4.82	0.00	0.00	1.1	0.670E-03	0.41	0.95	.13003E+02
4.82	0.00	0.00	1.1	0.670E-03	0.41	0.95	.13015E+02
4.83	0.00	0.00	1.1	0.670E-03	0.41	0.95	.13026E+02
4.83	0.00	0.00	1.1	0.670E-03	0.41	0.95	.13037E+02
4.84	0.00	0.00	1.1	0.669E-03	0.41	0.95	.13048E+02
4.84	0.00	0.00	1.1	0.669E-03	0.41	0.95	.13060E+02
4.84	0.00	0.00	1.1	0.669E-03	0.41	0.95	.13071E+02
4.85	0.00	0.00	1.1	0.669E-03	0.41	0.95	.13082E+02
4.85	0.00	0.00	1.1	0.668E-03	0.41	0.95	.13093E+02
4.86	0.00	0.00	1.1	0.668E-03	0.41	0.96	.13105E+02
4.86	0.00	0.00	1.1	0.668E-03	0.41	0.96	.13116E+02
4.86	0.00	0.00	1.1	0.668E-03	0.41	0.96	.13127E+02
4.87	0.00	0.00	1.1	0.667E-03	0.41	0.96	.13138E+02
4.87	0.00	0.00	1.1	0.667E-03	0.41	0.96	.13150E+02
4.88	0.00	0.00	1.1	0.667E-03	0.41	0.96	.13161E+02
4.88	0.00	0.00	1.1	0.667E-03	0.41	0.96	.13172E+02
4.89	0.00	0.00	1.1	0.666E-03	0.41	0.96	.13183E+02
4.89	0.00	0.00	1.1	0.666E-03	0.41	0.96	.13195E+02
4.89	0.00	0.00	1.1	0.666E-03	0.41	0.96	.13206E+02
4.90	0.00	0.00	1.1	0.666E-03	0.41	0.96	.13217E+02
4.90	0.00	0.00	1.1	0.665E-03	0.41	0.96	.13228E+02
4.91	0.00	0.00	1.1	0.665E-03	0.41	0.96	.13240E+02
4.91	0.00	0.00	1.1	0.665E-03	0.41	0.96	.13251E+02
4.91	0.00	0.00	1.1	0.664E-03	0.41	0.96	.13262E+02
4.92	0.00	0.00	1.1	0.664E-03	0.41	0.96	.13273E+02
4.92	0.00	0.00	1.1	0.664E-03	0.41	0.96	.13285E+02
4.93	0.00	0.00	1.1	0.664E-03	0.41	0.96	.13296E+02
4.93	0.00	0.00	1.1	0.663E-03	0.41	0.96	.13307E+02
4.94	0.00	0.00	1.1	0.663E-03	0.41	0.96	.13318E+02
4.94	0.00	0.00	1.1	0.663E-03	0.41	0.96	.13330E+02
4.94	0.00	0.00	1.1	0.663E-03	0.41	0.96	.13341E+02
4.95	0.00	0.00	1.1	0.662E-03	0.41	0.96	.13352E+02
4.95	0.00	0.00	1.1	0.662E-03	0.41	0.96	.13363E+02
4.96	0.00	0.00	1.1	0.662E-03	0.41	0.96	.13375E+02
4.96	0.00	0.00	1.1	0.662E-03	0.41	0.97	.13386E+02
4.97	0.00	0.00	1.1	0.661E-03	0.41	0.97	.13397E+02
4.97	0.00	0.00	1.1	0.661E-03	0.41	0.97	.13408E+02
4.97	0.00	0.00	1.1	0.661E-03	0.41	0.97	.13420E+02
4.98	0.00	0.00	1.1	0.661E-03	0.41	0.97	.13431E+02
4.98	0.00	0.00	1.1	0.660E-03	0.41	0.97	.13442E+02
4.99	0.00	0.00	1.1	0.660E-03	0.41	0.97	.13453E+02
4.99	0.00	0.00	1.1	0.660E-03	0.41	0.97	.13465E+02
4.99	0.00	0.00	1.1	0.660E-03	0.41	0.97	.13476E+02
5.00	0.00	0.00	1.1	0.659E-03	0.41	0.97	.13487E+02
5.00	0.00	0.00	1.1	0.659E-03	0.41	0.97	.13498E+02
5.01	0.00	0.00	1.1	0.659E-03	0.41	0.97	.13510E+02
5.01	0.00	0.00	1.1	0.659E-03	0.41	0.97	.13521E+02
5.02	0.00	0.00	1.1	0.658E-03	0.41	0.97	.13532E+02
5.02	0.00	0.00	1.1	0.658E-03	0.41	0.97	.13543E+02
5.02	0.00	0.00	1.1	0.658E-03	0.41	0.97	.13554E+02
5.03	0.00	0.00	1.1	0.658E-03	0.41	0.97	.13566E+02
5.03	0.00	0.00	1.1	0.657E-03	0.41	0.97	.13577E+02
5.04	0.00	0.00	1.1	0.657E-03	0.41	0.97	.13588E+02
5.04	0.00	0.00	1.1	0.657E-03	0.41	0.97	.13599E+02
5.04	0.00	0.00	1.1	0.657E-03	0.41	0.97	.13611E+02
5.05	0.00	0.00	1.1	0.656E-03	0.41	0.97	.13622E+02
5.05	0.00	0.00	1.1	0.656E-03	0.41	0.97	.13633E+02
5.06	0.00	0.00	1.1	0.656E-03	0.41	0.97	.13644E+02
5.06	0.00	0.00	1.1	0.656E-03	0.41	0.97	.13656E+02
5.07	0.00	0.00	1.1	0.655E-03	0.41	0.98	.13667E+02
5.07	0.00	0.00	1.1	0.655E-03	0.41	0.98	.13678E+02
5.07	0.00	0.00	1.1	0.655E-03	0.41	0.98	.13689E+02
5.08	0.00	0.00	1.1	0.654E-03	0.41	0.98	.13701E+02
5.08	0.00	0.00	1.1	0.654E-03	0.41	0.98	.13712E+02
5.09	0.00	0.00	1.1	0.654E-03	0.41	0.98	.13723E+02
5.09	0.00	0.00	1.1	0.654E-03	0.41	0.98	.13734E+02
5.09	0.00	0.00	1.1	0.653E-03	0.41	0.98	.13746E+02
5.10	0.00	0.00	1.1	0.653E-03	0.41	0.98	.13757E+02
5.10	0.00	0.00	1.1	0.653E-03	0.41	0.98	.13768E+02
5.11	0.00	0.00	1.1	0.653E-03	0.41	0.98	.13779E+02
5.11	0.00	0.00	1.1	0.652E-03	0.41	0.98	.13791E+02
5.12	0.00	0.00	1.1	0.652E-03	0.41	0.98	.13802E+02
5.12	0.00	0.00	1.1	0.652E-03	0.41	0.98	.13813E+02
5.12	0.00	0.00	1.1	0.652E-03	0.41	0.98	.13824E+02
5.13	0.00	0.00	1.1	0.651E-03	0.41	0.98	.13836E+02

5.13	0.00	0.00	1.1	0.651E-03	0.41	0.98	.13847E+02
5.14	0.00	0.00	1.1	0.651E-03	0.41	0.98	.13858E+02
5.14	0.00	0.00	1.1	0.651E-03	0.41	0.98	.13869E+02
5.15	0.00	0.00	1.1	0.650E-03	0.41	0.98	.13881E+02
5.15	0.00	0.00	1.1	0.650E-03	0.41	0.98	.13892E+02
5.15	0.00	0.00	1.1	0.650E-03	0.41	0.98	.13903E+02
5.16	0.00	0.00	1.1	0.650E-03	0.41	0.98	.13914E+02
5.16	0.00	0.00	1.1	0.649E-03	0.41	0.98	.13926E+02
5.17	0.00	0.00	1.1	0.649E-03	0.41	0.98	.13937E+02
5.17	0.00	0.00	1.1	0.649E-03	0.41	0.99	.13948E+02
5.17	0.00	0.00	1.1	0.649E-03	0.41	0.99	.13959E+02
5.18	0.00	0.00	1.1	0.648E-03	0.41	0.99	.13971E+02
5.18	0.00	0.00	1.1	0.648E-03	0.41	0.99	.13982E+02
5.19	0.00	0.00	1.1	0.648E-03	0.41	0.99	.13993E+02
5.19	0.00	0.00	1.1	0.648E-03	0.41	0.99	.14004E+02
5.20	0.00	0.00	1.1	0.647E-03	0.41	0.99	.14016E+02
5.20	0.00	0.00	1.1	0.647E-03	0.41	0.99	.14027E+02
5.20	0.00	0.00	1.1	0.647E-03	0.41	0.99	.14038E+02
5.21	0.00	0.00	1.1	0.647E-03	0.41	0.99	.14049E+02
5.21	0.00	0.00	1.1	0.646E-03	0.41	0.99	.14061E+02
5.22	0.00	0.00	1.1	0.646E-03	0.41	0.99	.14072E+02
5.22	0.00	0.00	1.1	0.646E-03	0.41	0.99	.14083E+02
5.22	0.00	0.00	1.1	0.646E-03	0.41	0.99	.14094E+02
5.23	0.00	0.00	1.1	0.645E-03	0.41	0.99	.14106E+02
5.23	0.00	0.00	1.1	0.645E-03	0.41	0.99	.14117E+02
5.24	0.00	0.00	1.1	0.645E-03	0.41	0.99	.14128E+02
5.24	0.00	0.00	1.1	0.645E-03	0.41	0.99	.14139E+02
5.25	0.00	0.00	1.1	0.644E-03	0.41	0.99	.14151E+02
5.25	0.00	0.00	1.1	0.644E-03	0.41	0.99	.14162E+02
5.25	0.00	0.00	1.1	0.644E-03	0.41	0.99	.14173E+02
5.26	0.00	0.00	1.1	0.644E-03	0.41	0.99	.14184E+02
5.26	0.00	0.00	1.2	0.643E-03	0.41	0.99	.14196E+02
5.27	0.00	0.00	1.2	0.643E-03	0.41	0.99	.14207E+02
5.27	0.00	0.00	1.2	0.643E-03	0.41	0.99	.14218E+02
5.28	0.00	0.00	1.2	0.643E-03	0.41	1.00	.14229E+02
5.28	0.00	0.00	1.2	0.642E-03	0.41	1.00	.14241E+02
5.28	0.00	0.00	1.2	0.642E-03	0.41	1.00	.14252E+02
5.29	0.00	0.00	1.2	0.642E-03	0.41	1.00	.14263E+02
5.29	0.00	0.00	1.2	0.642E-03	0.41	1.00	.14274E+02
5.30	0.00	0.00	1.2	0.641E-03	0.41	1.00	.14286E+02
5.30	0.00	0.00	1.2	0.641E-03	0.41	1.00	.14297E+02
5.30	0.00	0.00	1.2	0.641E-03	0.41	1.00	.14308E+02
5.31	0.00	0.00	1.2	0.641E-03	0.41	1.00	.14319E+02
5.31	0.00	0.00	1.2	0.640E-03	0.41	1.00	.14331E+02
5.32	0.00	0.00	1.2	0.640E-03	0.41	1.00	.14342E+02
5.32	0.00	0.00	1.2	0.640E-03	0.41	1.00	.14353E+02
5.33	0.00	0.00	1.2	0.640E-03	0.41	1.00	.14364E+02
5.33	0.00	0.00	1.2	0.639E-03	0.41	1.00	.14376E+02
5.33	0.00	0.00	1.2	0.639E-03	0.41	1.00	.14387E+02
5.34	0.00	0.00	1.2	0.639E-03	0.41	1.00	.14398E+02
5.34	0.00	0.00	1.2	0.639E-03	0.41	1.00	.14409E+02
5.35	0.00	0.00	1.2	0.638E-03	0.41	1.00	.14421E+02
5.35	0.00	0.00	1.2	0.638E-03	0.41	1.00	.14432E+02
5.35	0.00	0.00	1.2	0.638E-03	0.41	1.00	.14443E+02
5.36	0.00	0.00	1.2	0.638E-03	0.41	1.00	.14454E+02
5.36	0.00	0.00	1.2	0.637E-03	0.41	1.00	.14466E+02
5.37	0.00	0.00	1.2	0.637E-03	0.41	1.00	.14477E+02
5.37	0.00	0.00	1.2	0.637E-03	0.41	1.00	.14488E+02
5.38	0.00	0.00	1.2	0.637E-03	0.41	1.00	.14499E+02
5.38	0.00	0.00	1.2	0.636E-03	0.41	1.01	.14511E+02
5.38	0.00	0.00	1.2	0.636E-03	0.41	1.01	.14522E+02
5.39	0.00	0.00	1.2	0.636E-03	0.41	1.01	.14533E+02
5.39	0.00	0.00	1.2	0.635E-03	0.41	1.01	.14544E+02
5.40	0.00	0.00	1.2	0.635E-03	0.41	1.01	.14556E+02
5.40	0.00	0.00	1.2	0.635E-03	0.41	1.01	.14567E+02
5.40	0.00	0.00	1.2	0.635E-03	0.41	1.01	.14578E+02
5.41	0.00	0.00	1.2	0.634E-03	0.41	1.01	.14589E+02
5.41	0.00	0.00	1.2	0.634E-03	0.41	1.01	.14601E+02
5.42	0.00	0.00	1.2	0.634E-03	0.41	1.01	.14612E+02
5.42	0.00	0.00	1.2	0.634E-03	0.41	1.01	.14623E+02
5.43	0.00	0.00	1.2	0.633E-03	0.41	1.01	.14634E+02
5.43	0.00	0.00	1.2	0.633E-03	0.41	1.01	.14646E+02
5.43	0.00	0.00	1.2	0.633E-03	0.41	1.01	.14657E+02
5.44	0.00	0.00	1.2	0.633E-03	0.41	1.01	.14668E+02
5.44	0.00	0.00	1.2	0.632E-03	0.41	1.01	.14679E+02
5.45	0.00	0.00	1.2	0.632E-03	0.41	1.01	.14691E+02
5.45	0.00	0.00	1.2	0.632E-03	0.41	1.01	.14702E+02
5.46	0.00	0.00	1.2	0.632E-03	0.41	1.01	.14713E+02
5.46	0.00	0.00	1.2	0.631E-03	0.41	1.01	.14724E+02
5.46	0.00	0.00	1.2	0.631E-03	0.41	1.01	.14736E+02
5.47	0.00	0.00	1.2	0.631E-03	0.41	1.01	.14747E+02
5.47	0.00	0.00	1.2	0.631E-03	0.41	1.01	.14758E+02
5.48	0.00	0.00	1.2	0.630E-03	0.41	1.01	.14769E+02
5.48	0.00	0.00	1.2	0.630E-03	0.41	1.01	.14781E+02
5.48	0.00	0.00	1.2	0.630E-03	0.41	1.01	.14792E+02
5.49	0.00	0.00	1.2	0.630E-03	0.41	1.02	.14803E+02
5.49	0.00	0.00	1.2	0.629E-03	0.41	1.02	.14814E+02
5.50	0.00	0.00	1.2	0.629E-03	0.41	1.02	.14826E+02
5.50	0.00	0.00	1.2	0.629E-03	0.41	1.02	.14837E+02
5.51	0.00	0.00	1.2	0.629E-03	0.41	1.02	.14848E+02

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      5.51     0.00    0.00     1.2 0.628E-03   0.41     1.02 .14859E+02
      5.51     0.00    0.00     1.2 0.628E-03   0.41     1.02 .14871E+02
      5.52     0.00    0.00     1.2 0.628E-03   0.41     1.02 .14882E+02
      5.52     0.00    0.00     1.2 0.628E-03   0.41     1.02 .14893E+02
      5.53     0.00    0.00     1.2 0.628E-03   0.41     1.02 .14904E+02
      5.53     0.00    0.00     1.2 0.627E-03   0.41     1.02 .14916E+02
      5.53     0.00    0.00     1.2 0.627E-03   0.41     1.02 .14927E+02
      5.54     0.00    0.00     1.2 0.627E-03   0.41     1.02 .14938E+02
      5.54     0.00    0.00     1.2 0.627E-03   0.41     1.02 .14949E+02
      5.55     0.00    0.00     1.2 0.626E-03   0.41     1.02 .14961E+02
      5.55     0.00    0.00     1.2 0.626E-03   0.41     1.02 .14972E+02
      5.56     0.00    0.00     1.2 0.626E-03   0.41     1.02 .14983E+02
      5.56     0.00    0.00     1.2 0.626E-03   0.41     1.02 .14994E+02
      5.56     0.00    0.00     1.2 0.625E-03   0.41     1.02 .15006E+02
      5.57     0.00    0.00     1.2 0.625E-03   0.41     1.02 .15017E+02
      5.57     0.00    0.00     1.2 0.625E-03   0.41     1.02 .15028E+02
      5.58     0.00    0.00     1.2 0.625E-03   0.41     1.02 .15039E+02
      5.58     0.00    0.00     1.2 0.624E-03   0.41     1.02 .15051E+02
      5.59     0.00    0.00     1.2 0.624E-03   0.41     1.02 .15062E+02
      5.59     0.00    0.00     1.2 0.624E-03   0.41     1.02 .15073E+02
      5.59     0.00    0.00     1.2 0.624E-03   0.41     1.02 .15084E+02
      5.60     0.00    0.00     1.2 0.623E-03   0.41     1.03 .15095E+02
      5.60     0.00    0.00     1.2 0.623E-03   0.41     1.03 .15107E+02
      5.61     0.00    0.00     1.2 0.623E-03   0.41     1.03 .15118E+02
      5.61     0.00    0.00     1.2 0.623E-03   0.41     1.03 .15129E+02
      5.61     0.00    0.00     1.2 0.622E-03   0.41     1.03 .15140E+02
      5.62     0.00    0.00     1.2 0.622E-03   0.41     1.03 .15152E+02
      5.62     0.00    0.00     1.2 0.622E-03   0.41     1.03 .15163E+02
      5.63     0.00    0.00     1.2 0.622E-03   0.41     1.03 .15174E+02
      5.63     0.00    0.00     1.2 0.621E-03   0.41     1.03 .15185E+02
      5.64     0.00    0.00     1.2 0.621E-03   0.41     1.03 .15197E+02
      5.64     0.00    0.00     1.2 0.621E-03   0.41     1.03 .15208E+02
      5.64     0.00    0.00     1.2 0.621E-03   0.41     1.03 .15219E+02
      5.65     0.00    0.00     1.2 0.620E-03   0.41     1.03 .15230E+02
      5.65     0.00    0.00     1.2 0.620E-03   0.41     1.03 .15242E+02
      5.66     0.00    0.00     1.2 0.620E-03   0.41     1.03 .15253E+02
      5.66     0.00    0.00     1.2 0.620E-03   0.41     1.03 .15264E+02
      5.66     0.00    0.00     1.2 0.619E-03   0.41     1.03 .15275E+02
      5.67     0.00    0.00     1.2 0.619E-03   0.41     1.03 .15287E+02
      5.67     0.00    0.00     1.2 0.619E-03   0.41     1.03 .15298E+02
      5.68     0.00    0.00     1.2 0.619E-03   0.41     1.03 .15309E+02
      5.68     0.00    0.00     1.2 0.618E-03   0.41     1.03 .15320E+02
      5.69     0.00    0.00     1.2 0.618E-03   0.41     1.03 .15332E+02
      5.69     0.00    0.00     1.2 0.618E-03   0.41     1.03 .15343E+02
      5.69     0.00    0.00     1.2 0.618E-03   0.41     1.03 .15354E+02
      5.70     0.00    0.00     1.2 0.617E-03   0.41     1.03 .15365E+02
      5.70     0.00    0.00     1.2 0.617E-03   0.41     1.04 .15377E+02
      5.71     0.00    0.00     1.2 0.617E-03   0.41     1.04 .15388E+02
      5.71     0.00    0.00     1.2 0.617E-03   0.41     1.04 .15399E+02
      5.71     0.00    0.00     1.2 0.616E-03   0.41     1.04 .15410E+02
      5.72     0.00    0.00     1.2 0.616E-03   0.41     1.04 .15422E+02
      5.72     0.00    0.00     1.2 0.616E-03   0.41     1.04 .15433E+02
      5.73     0.00    0.00     1.2 0.616E-03   0.41     1.04 .15444E+02
      5.73     0.00    0.00     1.2 0.615E-03   0.41     1.04 .15455E+02
      5.74     0.00    0.00     1.2 0.615E-03   0.41     1.04 .15467E+02
      5.74     0.00    0.00     1.2 0.615E-03   0.41     1.04 .15478E+02
      5.74     0.00    0.00     1.2 0.615E-03   0.41     1.04 .15489E+02
      5.75     0.00    0.00     1.2 0.614E-03   0.41     1.04 .15500E+02
      5.75     0.00    0.00     1.2 0.614E-03   0.41     1.04 .15512E+02
      5.76     0.00    0.00     1.2 0.614E-03   0.41     1.04 .15523E+02
      5.76     0.00    0.00     1.2 0.614E-03   0.41     1.04 .15534E+02
      5.77     0.00    0.00     1.2 0.613E-03   0.41     1.04 .15545E+02
      5.77     0.00    0.00     1.2 0.613E-03   0.41     1.04 .15557E+02
      5.77     0.00    0.00     1.2 0.613E-03   0.41     1.04 .15568E+02
      5.78     0.00    0.00     1.2 0.613E-03   0.41     1.04 .15579E+02
      5.78     0.00    0.00     1.2 0.612E-03   0.41     1.04 .15590E+02
      5.79     0.00    0.00     1.2 0.612E-03   0.41     1.04 .15602E+02
      5.79     0.00    0.00     1.2 0.612E-03   0.41     1.04 .15613E+02
      5.79     0.00    0.00     1.2 0.612E-03   0.41     1.04 .15624E+02
      5.80     0.00    0.00     1.2 0.611E-03   0.41     1.04 .15635E+02
      5.80     0.00    0.00     1.2 0.611E-03   0.41     1.04 .15647E+02
      5.81     0.00    0.00     1.2 0.611E-03   0.41     1.04 .15658E+02
      5.81     0.00    0.00     1.2 0.611E-03   0.41     1.05 .15669E+02
      5.82     0.00    0.00     1.2 0.610E-03   0.41     1.05 .15680E+02
      5.82     0.00    0.00     1.2 0.610E-03   0.41     1.05 .15692E+02
 Cumulative travel time =          15.6917 sec  (    0.00 hrs)

END OF MOD341: BUOYANT AMBIENT SPREADING
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BEGIN MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

  Vertical diffusivity (initial value)   = 0.730E-02 m^2/s
  Horizontal diffusivity (initial value) = 0.182E-01 m^2/s

 Profile definitions:
   BV = Gaussian s.d.*sqrt(pi/2) (46%) thickness, measured vertically
      = or equal to water depth, if fully mixed
   BH = Gaussian s.d.*sqrt(pi/2) (46%) half-width,
        measured horizontally in Y-direction
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  S  = hydrodynamic centerline dilution
  C  = centerline concentration (includes reaction efects, if any)
  TT = Cumulative travel time

Plume Stage 2 (bank attached):
      X        Y        Z        S        C        BV        BH        TT
     5.82     0.00     0.00      1.2 0.610E-03   0.41      1.05 .15692E+02
     7.81     0.00     0.00      1.5 0.496E-03   0.45      1.18 .21030E+02
     9.80     0.00     0.00      1.8 0.411E-03   0.49      1.31 .26369E+02
    11.78     0.00     0.00      2.1 0.346E-03   0.53      1.42 .31708E+02
    13.77     0.00     0.00      2.5 0.294E-03   0.58      1.52 .37047E+02
    15.76     0.00     0.00      2.9 0.254E-03   0.64      1.62 .42385E+02
    17.75     0.00     0.00      3.3 0.221E-03   0.69      1.71 .47724E+02
** WATER QUALITY STANDARD OR CCC HAS BEEN FOUND **
The pollutant concentration in the plume falls below water quality standard
  or CCC value of 0.200E-03 in the current prediction interval.
This is the spatial extent of concentrations exceeding the water quality
  standard or CCC value.
    19.74     0.00     0.00      3.8 0.195E-03   0.75      1.80 .53063E+02
Plume interacts with BOTTOM.
The passive diffusion plume becomes VERTICALLY FULLY MIXED within this
  prediction interval.
    21.73     0.00     0.00      4.0 0.186E-03   0.75      1.88 .58402E+02
    23.71     0.00     0.00      4.2 0.178E-03   0.75      1.96 .63741E+02
    25.70     0.00     0.00      4.3 0.171E-03   0.75      2.04 .69079E+02
    27.69     0.00     0.00      4.5 0.165E-03   0.75      2.11 .74418E+02
    29.68     0.00     0.00      4.6 0.160E-03   0.75      2.18 .79757E+02
    31.67     0.00     0.00      4.8 0.155E-03   0.75      2.25 .85096E+02
    33.66     0.00     0.00      4.9 0.151E-03   0.75      2.32 .90434E+02
    35.65     0.00     0.00      5.0 0.147E-03   0.75      2.38 .95773E+02
    37.63     0.00     0.00      5.2 0.143E-03   0.75      2.45 .10111E+03
    39.62     0.00     0.00      5.3 0.139E-03   0.75      2.51 .10645E+03
    41.61     0.00     0.00      5.4 0.136E-03   0.75      2.57 .11179E+03
    43.60     0.00     0.00      5.6 0.133E-03   0.75      2.63 .11713E+03
    45.59     0.00     0.00      5.7 0.130E-03   0.75      2.69 .12247E+03
    47.58     0.00     0.00      5.8 0.127E-03   0.75      2.74 .12781E+03
    49.56     0.00     0.00      5.9 0.125E-03   0.75      2.80 .13314E+03
    51.55     0.00     0.00      6.0 0.123E-03   0.75      2.85 .13848E+03
    53.54     0.00     0.00      6.2 0.120E-03   0.75      2.90 .14382E+03
    55.53     0.00     0.00      6.3 0.118E-03   0.75      2.96 .14916E+03
    57.52     0.00     0.00      6.4 0.116E-03   0.75      3.01 .15450E+03
    59.51     0.00     0.00      6.5 0.114E-03   0.75      3.06 .15984E+03
    61.49     0.00     0.00      6.6 0.112E-03   0.75      3.11 .16518E+03
    63.48     0.00     0.00      6.7 0.111E-03   0.75      3.16 .17052E+03
    65.47     0.00     0.00      6.8 0.109E-03   0.75      3.20 .17585E+03
    67.46     0.00     0.00      6.9 0.107E-03   0.75      3.25 .18119E+03
    69.45     0.00     0.00      7.0 0.106E-03   0.75      3.30 .18653E+03
    71.44     0.00     0.00      7.1 0.104E-03   0.75      3.34 .19187E+03
    73.42     0.00     0.00      7.2 0.103E-03   0.75      3.39 .19721E+03
    75.41     0.00     0.00      7.3 0.102E-03   0.75      3.44 .20255E+03
    77.40     0.00     0.00      7.4 0.100E-03   0.75      3.48 .20789E+03
    79.39     0.00     0.00      7.5 0.992E-04   0.75      3.52 .21323E+03
    81.38     0.00     0.00      7.6 0.980E-04   0.75      3.57 .21856E+03
    83.37     0.00     0.00      7.6 0.968E-04   0.75      3.61 .22390E+03
    85.35     0.00     0.00      7.7 0.957E-04   0.75      3.65 .22924E+03
    87.34     0.00     0.00      7.8 0.946E-04   0.75      3.69 .23458E+03
    89.33     0.00     0.00      7.9 0.936E-04   0.75      3.73 .23992E+03
    91.32     0.00     0.00      8.0 0.925E-04   0.75      3.77 .24526E+03
** REGULATORY MIXING ZONE BOUNDARY **
In this prediction interval the plume DOWNSTREAM distance meets or exceeds
the regulatory value =    91.46 m.
This is the extent of the REGULATORY MIXING ZONE.
    93.31     0.00     0.00      8.1 0.916E-04   0.75      3.81 .25060E+03
    95.30     0.00     0.00      8.2 0.906E-04   0.75      3.85 .25594E+03
    97.28     0.00     0.00      8.2 0.897E-04   0.75      3.89 .26127E+03
    99.27     0.00     0.00      8.3 0.888E-04   0.75      3.93 .26661E+03
   101.26     0.00     0.00      8.4 0.879E-04   0.75      3.97 .27195E+03
   103.25     0.00     0.00      8.5 0.871E-04   0.75      4.01 .27729E+03
   105.24     0.00     0.00      8.6 0.863E-04   0.75      4.05 .28263E+03
   107.23     0.00     0.00      8.7 0.855E-04   0.75      4.09 .28797E+03
   109.21     0.00     0.00      8.7 0.847E-04   0.75      4.12 .29331E+03
   111.20     0.00     0.00      8.8 0.840E-04   0.75      4.16 .29865E+03
   113.19     0.00     0.00      8.9 0.832E-04   0.75      4.20 .30398E+03
   115.18     0.00     0.00      9.0 0.825E-04   0.75      4.23 .30932E+03
   117.17     0.00     0.00      9.0 0.818E-04   0.75      4.27 .31466E+03
   119.16     0.00     0.00      9.1 0.812E-04   0.75      4.30 .32000E+03
   121.14     0.00     0.00      9.2 0.805E-04   0.75      4.34 .32534E+03
   123.13     0.00     0.00      9.3 0.798E-04   0.75      4.38 .33068E+03
   125.12     0.00     0.00      9.3 0.792E-04   0.75      4.41 .33602E+03
   127.11     0.00     0.00      9.4 0.786E-04   0.75      4.44 .34136E+03
   129.10     0.00     0.00      9.5 0.780E-04   0.75      4.48 .34669E+03
   131.09     0.00     0.00      9.6 0.774E-04   0.75      4.51 .35203E+03
   133.07     0.00     0.00      9.6 0.768E-04   0.75      4.55 .35737E+03
   135.06     0.00     0.00      9.7 0.763E-04   0.75      4.58 .36271E+03
   137.05     0.00     0.00      9.8 0.757E-04   0.75      4.61 .36805E+03
   139.04     0.00     0.00      9.8 0.752E-04   0.75      4.65 .37339E+03
   141.03     0.00     0.00      9.9 0.747E-04   0.75      4.68 .37873E+03
   143.02     0.00     0.00     10.0 0.741E-04   0.75      4.71 .38407E+03
   145.00     0.00     0.00     10.0 0.736E-04   0.75      4.74 .38940E+03
   146.99     0.00     0.00     10.1 0.731E-04   0.75      4.78 .39474E+03
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148.98	0.00	0.00	10.2	0.727E-04	0.75	4.81	.40008E+03
150.97	0.00	0.00	10.3	0.722E-04	0.75	4.84	.40542E+03
152.96	0.00	0.00	10.3	0.717E-04	0.75	4.87	.41076E+03
154.95	0.00	0.00	10.4	0.713E-04	0.75	4.90	.41610E+03
156.93	0.00	0.00	10.5	0.708E-04	0.75	4.93	.42144E+03
158.92	0.00	0.00	10.5	0.704E-04	0.75	4.96	.42678E+03
160.91	0.00	0.00	10.6	0.699E-04	0.75	5.00	.43211E+03
162.90	0.00	0.00	10.6	0.695E-04	0.75	5.03	.43745E+03
164.89	0.00	0.00	10.7	0.691E-04	0.75	5.06	.44279E+03
166.88	0.00	0.00	10.8	0.687E-04	0.75	5.09	.44813E+03
168.87	0.00	0.00	10.8	0.683E-04	0.75	5.12	.45347E+03
170.85	0.00	0.00	10.9	0.679E-04	0.75	5.15	.45881E+03
172.84	0.00	0.00	11.0	0.675E-04	0.75	5.18	.46415E+03
174.83	0.00	0.00	11.0	0.671E-04	0.75	5.21	.46949E+03
176.82	0.00	0.00	11.1	0.667E-04	0.75	5.23	.47482E+03
178.81	0.00	0.00	11.2	0.664E-04	0.75	5.26	.48016E+03
180.80	0.00	0.00	11.2	0.660E-04	0.75	5.29	.48550E+03
182.78	0.00	0.00	11.3	0.656E-04	0.75	5.32	.49084E+03
184.77	0.00	0.00	11.3	0.653E-04	0.75	5.35	.49618E+03
186.76	0.00	0.00	11.4	0.649E-04	0.75	5.38	.50152E+03
188.75	0.00	0.00	11.5	0.646E-04	0.75	5.41	.50686E+03
190.74	0.00	0.00	11.5	0.643E-04	0.75	5.44	.51220E+03
192.73	0.00	0.00	11.6	0.639E-04	0.75	5.46	.51753E+03
194.71	0.00	0.00	11.6	0.636E-04	0.75	5.49	.52287E+03
196.70	0.00	0.00	11.7	0.633E-04	0.75	5.52	.52821E+03
198.69	0.00	0.00	11.7	0.630E-04	0.75	5.55	.53355E+03
200.68	0.00	0.00	11.8	0.627E-04	0.75	5.57	.53889E+03
202.67	0.00	0.00	11.9	0.624E-04	0.75	5.60	.54423E+03
204.66	0.00	0.00	11.9	0.621E-04	0.75	5.63	.54957E+03
206.64	0.00	0.00	12.0	0.618E-04	0.75	5.66	.55491E+03
208.63	0.00	0.00	12.0	0.615E-04	0.75	5.68	.56024E+03
210.62	0.00	0.00	12.1	0.612E-04	0.75	5.71	.56558E+03
212.61	0.00	0.00	12.2	0.609E-04	0.75	5.74	.57092E+03
214.60	0.00	0.00	12.2	0.606E-04	0.75	5.76	.57626E+03
216.59	0.00	0.00	12.3	0.603E-04	0.75	5.79	.58160E+03
218.57	0.00	0.00	12.3	0.601E-04	0.75	5.82	.58694E+03
220.56	0.00	0.00	12.4	0.598E-04	0.75	5.84	.59228E+03
222.55	0.00	0.00	12.4	0.595E-04	0.75	5.87	.59762E+03
224.54	0.00	0.00	12.5	0.593E-04	0.75	5.89	.60295E+03
226.53	0.00	0.00	12.5	0.590E-04	0.75	5.92	.60829E+03
228.52	0.00	0.00	12.6	0.588E-04	0.75	5.95	.61363E+03
230.50	0.00	0.00	12.6	0.585E-04	0.75	5.97	.61897E+03
232.49	0.00	0.00	12.7	0.583E-04	0.75	6.00	.62431E+03
234.48	0.00	0.00	12.8	0.580E-04	0.75	6.02	.62965E+03
236.47	0.00	0.00	12.8	0.578E-04	0.75	6.05	.63499E+03
238.46	0.00	0.00	12.9	0.575E-04	0.75	6.07	.64033E+03
240.45	0.00	0.00	12.9	0.573E-04	0.75	6.10	.64566E+03
242.43	0.00	0.00	13.0	0.570E-04	0.75	6.12	.65100E+03
244.42	0.00	0.00	13.0	0.568E-04	0.75	6.15	.65634E+03
246.41	0.00	0.00	13.1	0.566E-04	0.75	6.17	.66168E+03
248.40	0.00	0.00	13.1	0.564E-04	0.75	6.20	.66702E+03
250.39	0.00	0.00	13.2	0.561E-04	0.75	6.22	.67236E+03
252.38	0.00	0.00	13.2	0.559E-04	0.75	6.25	.67770E+03
254.36	0.00	0.00	13.3	0.557E-04	0.75	6.27	.68304E+03
256.35	0.00	0.00	13.3	0.555E-04	0.75	6.30	.68837E+03
258.34	0.00	0.00	13.4	0.553E-04	0.75	6.32	.69371E+03
260.33	0.00	0.00	13.4	0.551E-04	0.75	6.34	.69905E+03
262.32	0.00	0.00	13.5	0.549E-04	0.75	6.37	.70439E+03
264.31	0.00	0.00	13.5	0.547E-04	0.75	6.39	.70973E+03
266.29	0.00	0.00	13.6	0.544E-04	0.75	6.42	.71507E+03
268.28	0.00	0.00	13.6	0.542E-04	0.75	6.44	.72041E+03
270.27	0.00	0.00	13.7	0.540E-04	0.75	6.46	.72575E+03
272.26	0.00	0.00	13.7	0.538E-04	0.75	6.49	.73109E+03
274.25	0.00	0.00	13.8	0.537E-04	0.75	6.51	.73642E+03
276.24	0.00	0.00	13.8	0.535E-04	0.75	6.53	.74176E+03
278.22	0.00	0.00	13.9	0.533E-04	0.75	6.56	.74710E+03
280.21	0.00	0.00	13.9	0.531E-04	0.75	6.58	.75244E+03
282.20	0.00	0.00	14.0	0.529E-04	0.75	6.60	.75778E+03
284.19	0.00	0.00	14.0	0.527E-04	0.75	6.63	.76312E+03
286.18	0.00	0.00	14.1	0.525E-04	0.75	6.65	.76846E+03
288.17	0.00	0.00	14.1	0.523E-04	0.75	6.67	.77380E+03
290.16	0.00	0.00	14.2	0.522E-04	0.75	6.70	.77913E+03
292.14	0.00	0.00	14.2	0.520E-04	0.75	6.72	.78447E+03
294.13	0.00	0.00	14.3	0.518E-04	0.75	6.74	.78981E+03
296.12	0.00	0.00	14.3	0.516E-04	0.75	6.76	.79515E+03
298.11	0.00	0.00	14.4	0.515E-04	0.75	6.79	.80049E+03
300.10	0.00	0.00	14.4	0.513E-04	0.75	6.81	.80583E+03
302.09	0.00	0.00	14.5	0.511E-04	0.75	6.83	.81117E+03
304.07	0.00	0.00	14.5	0.510E-04	0.75	6.85	.81651E+03
306.06	0.00	0.00	14.6	0.508E-04	0.75	6.88	.82184E+03
308.05	0.00	0.00	14.6	0.506E-04	0.75	6.90	.82718E+03
310.04	0.00	0.00	14.7	0.505E-04	0.75	6.92	.83252E+03
312.03	0.00	0.00	14.7	0.503E-04	0.75	6.94	.83786E+03
314.02	0.00	0.00	14.8	0.502E-04	0.75	6.96	.84320E+03
316.00	0.00	0.00	14.8	0.500E-04	0.75	6.99	.84854E+03
317.99	0.00	0.00	14.8	0.498E-04	0.75	7.01	.85388E+03
319.98	0.00	0.00	14.9	0.497E-04	0.75	7.03	.85922E+03
321.97	0.00	0.00	14.9	0.495E-04	0.75	7.05	.86455E+03
323.96	0.00	0.00	15.0	0.494E-04	0.75	7.07	.86989E+03
325.95	0.00	0.00	15.0	0.492E-04	0.75	7.10	.87523E+03

327.93	0.00	0.00	15.1	0.491E-04	0.75	7.12	.88057E+03
329.92	0.00	0.00	15.1	0.489E-04	0.75	7.14	.88591E+03
331.91	0.00	0.00	15.2	0.488E-04	0.75	7.16	.89125E+03
333.90	0.00	0.00	15.2	0.486E-04	0.75	7.18	.89659E+03
335.89	0.00	0.00	15.3	0.485E-04	0.75	7.20	.90193E+03
337.88	0.00	0.00	15.3	0.484E-04	0.75	7.22	.90727E+03
339.86	0.00	0.00	15.3	0.482E-04	0.75	7.24	.91260E+03
341.85	0.00	0.00	15.4	0.481E-04	0.75	7.27	.91794E+03
343.84	0.00	0.00	15.4	0.479E-04	0.75	7.29	.92328E+03
345.83	0.00	0.00	15.5	0.478E-04	0.75	7.31	.92862E+03
347.82	0.00	0.00	15.5	0.477E-04	0.75	7.33	.93396E+03
349.81	0.00	0.00	15.6	0.475E-04	0.75	7.35	.93930E+03
351.79	0.00	0.00	15.6	0.474E-04	0.75	7.37	.94464E+03
353.78	0.00	0.00	15.7	0.473E-04	0.75	7.39	.94998E+03
355.77	0.00	0.00	15.7	0.471E-04	0.75	7.41	.95531E+03
357.76	0.00	0.00	15.7	0.470E-04	0.75	7.43	.96065E+03
359.75	0.00	0.00	15.8	0.469E-04	0.75	7.45	.96599E+03
361.74	0.00	0.00	15.8	0.467E-04	0.75	7.47	.97133E+03
363.72	0.00	0.00	15.9	0.466E-04	0.75	7.49	.97667E+03
365.71	0.00	0.00	15.9	0.465E-04	0.75	7.51	.98201E+03
367.70	0.00	0.00	16.0	0.464E-04	0.75	7.53	.98735E+03
369.69	0.00	0.00	16.0	0.462E-04	0.75	7.55	.99269E+03
371.68	0.00	0.00	16.0	0.461E-04	0.75	7.57	.99802E+03
373.67	0.00	0.00	16.1	0.460E-04	0.75	7.60	.10034E+04
375.66	0.00	0.00	16.1	0.459E-04	0.75	7.62	.10087E+04
377.64	0.00	0.00	16.2	0.458E-04	0.75	7.64	.10140E+04
379.63	0.00	0.00	16.2	0.456E-04	0.75	7.66	.10194E+04
381.62	0.00	0.00	16.3	0.455E-04	0.75	7.68	.10247E+04
383.61	0.00	0.00	16.3	0.454E-04	0.75	7.70	.10301E+04
385.60	0.00	0.00	16.3	0.453E-04	0.75	7.71	.10354E+04
387.59	0.00	0.00	16.4	0.452E-04	0.75	7.73	.10407E+04
389.57	0.00	0.00	16.4	0.450E-04	0.75	7.75	.10461E+04
391.56	0.00	0.00	16.5	0.449E-04	0.75	7.77	.10514E+04
393.55	0.00	0.00	16.5	0.448E-04	0.75	7.79	.10568E+04
395.54	0.00	0.00	16.6	0.447E-04	0.75	7.81	.10621E+04
397.53	0.00	0.00	16.6	0.446E-04	0.75	7.83	.10674E+04
399.52	0.00	0.00	16.6	0.445E-04	0.75	7.85	.10728E+04
401.50	0.00	0.00	16.7	0.444E-04	0.75	7.87	.10781E+04
403.49	0.00	0.00	16.7	0.443E-04	0.75	7.89	.10834E+04
405.48	0.00	0.00	16.8	0.442E-04	0.75	7.91	.10888E+04
407.47	0.00	0.00	16.8	0.441E-04	0.75	7.93	.10941E+04
409.46	0.00	0.00	16.8	0.439E-04	0.75	7.95	.10995E+04
411.45	0.00	0.00	16.9	0.438E-04	0.75	7.97	.11048E+04
413.43	0.00	0.00	16.9	0.437E-04	0.75	7.99	.11101E+04
415.42	0.00	0.00	17.0	0.436E-04	0.75	8.01	.11155E+04
417.41	0.00	0.00	17.0	0.435E-04	0.75	8.03	.11208E+04
419.40	0.00	0.00	17.0	0.434E-04	0.75	8.04	.11262E+04
421.39	0.00	0.00	17.1	0.433E-04	0.75	8.06	.11315E+04
423.38	0.00	0.00	17.1	0.432E-04	0.75	8.08	.11368E+04
425.36	0.00	0.00	17.2	0.431E-04	0.75	8.10	.11422E+04
427.35	0.00	0.00	17.2	0.430E-04	0.75	8.12	.11475E+04
429.34	0.00	0.00	17.2	0.429E-04	0.75	8.14	.11528E+04
431.33	0.00	0.00	17.3	0.428E-04	0.75	8.16	.11582E+04
433.32	0.00	0.00	17.3	0.427E-04	0.75	8.18	.11635E+04
435.31	0.00	0.00	17.4	0.426E-04	0.75	8.20	.11689E+04
437.29	0.00	0.00	17.4	0.425E-04	0.75	8.21	.11742E+04
439.28	0.00	0.00	17.4	0.424E-04	0.75	8.23	.11795E+04
441.27	0.00	0.00	17.5	0.423E-04	0.75	8.25	.11849E+04
443.26	0.00	0.00	17.5	0.422E-04	0.75	8.27	.11902E+04
445.25	0.00	0.00	17.6	0.421E-04	0.75	8.29	.11956E+04
447.24	0.00	0.00	17.6	0.421E-04	0.75	8.31	.12009E+04
449.22	0.00	0.00	17.6	0.420E-04	0.75	8.33	.12062E+04
451.21	0.00	0.00	17.7	0.419E-04	0.75	8.34	.12116E+04
453.20	0.00	0.00	17.7	0.418E-04	0.75	8.36	.12169E+04
455.19	0.00	0.00	17.8	0.417E-04	0.75	8.38	.12223E+04
457.18	0.00	0.00	17.8	0.416E-04	0.75	8.40	.12276E+04
459.17	0.00	0.00	17.8	0.415E-04	0.75	8.42	.12329E+04
461.16	0.00	0.00	17.9	0.414E-04	0.75	8.43	.12383E+04
463.14	0.00	0.00	17.9	0.413E-04	0.75	8.45	.12436E+04
465.13	0.00	0.00	17.9	0.412E-04	0.75	8.47	.12489E+04
467.12	0.00	0.00	18.0	0.412E-04	0.75	8.49	.12543E+04
469.11	0.00	0.00	18.0	0.411E-04	0.75	8.51	.12596E+04
471.10	0.00	0.00	18.1	0.410E-04	0.75	8.52	.12650E+04
473.09	0.00	0.00	18.1	0.409E-04	0.75	8.54	.12703E+04
475.07	0.00	0.00	18.1	0.408E-04	0.75	8.56	.12756E+04
477.06	0.00	0.00	18.2	0.407E-04	0.75	8.58	.12810E+04
479.05	0.00	0.00	18.2	0.406E-04	0.75	8.60	.12863E+04
481.04	0.00	0.00	18.2	0.406E-04	0.75	8.61	.12917E+04
483.03	0.00	0.00	18.3	0.405E-04	0.75	8.63	.12970E+04
485.02	0.00	0.00	18.3	0.404E-04	0.75	8.65	.13023E+04
487.00	0.00	0.00	18.4	0.403E-04	0.75	8.67	.13077E+04
488.99	0.00	0.00	18.4	0.402E-04	0.75	8.68	.13130E+04
490.98	0.00	0.00	18.4	0.401E-04	0.75	8.70	.13184E+04
492.97	0.00	0.00	18.5	0.401E-04	0.75	8.72	.13237E+04
494.96	0.00	0.00	18.5	0.400E-04	0.75	8.74	.13290E+04
496.95	0.00	0.00	18.5	0.399E-04	0.75	8.76	.13344E+04
498.93	0.00	0.00	18.6	0.398E-04	0.75	8.77	.13397E+04
500.92	0.00	0.00	18.6	0.397E-04	0.75	8.79	.13450E+04
502.91	0.00	0.00	18.7	0.397E-04	0.75	8.81	.13504E+04
504.90	0.00	0.00	18.7	0.396E-04	0.75	8.82	.13557E+04

506.89	0.00	0.00	18.7	0.395E-04	0.75	8.84	.13611E+04
508.88	0.00	0.00	18.8	0.394E-04	0.75	8.86	.13664E+04
510.86	0.00	0.00	18.8	0.394E-04	0.75	8.88	.13717E+04
512.85	0.00	0.00	18.8	0.393E-04	0.75	8.89	.13771E+04
514.84	0.00	0.00	18.9	0.392E-04	0.75	8.91	.13824E+04
516.83	0.00	0.00	18.9	0.391E-04	0.75	8.93	.13878E+04
518.82	0.00	0.00	18.9	0.391E-04	0.75	8.95	.13931E+04
520.81	0.00	0.00	19.0	0.390E-04	0.75	8.96	.13984E+04
522.79	0.00	0.00	19.0	0.389E-04	0.75	8.98	.14038E+04
524.78	0.00	0.00	19.1	0.388E-04	0.75	9.00	.14091E+04
526.77	0.00	0.00	19.1	0.388E-04	0.75	9.01	.14145E+04
528.76	0.00	0.00	19.1	0.387E-04	0.75	9.03	.14198E+04
530.75	0.00	0.00	19.2	0.386E-04	0.75	9.05	.14251E+04
532.74	0.00	0.00	19.2	0.385E-04	0.75	9.06	.14305E+04
534.72	0.00	0.00	19.2	0.385E-04	0.75	9.08	.14358E+04
536.71	0.00	0.00	19.3	0.384E-04	0.75	9.10	.14411E+04
538.70	0.00	0.00	19.3	0.383E-04	0.75	9.11	.14465E+04
540.69	0.00	0.00	19.3	0.383E-04	0.75	9.13	.14518E+04
542.68	0.00	0.00	19.4	0.382E-04	0.75	9.15	.14572E+04
544.67	0.00	0.00	19.4	0.381E-04	0.75	9.16	.14625E+04
546.65	0.00	0.00	19.4	0.380E-04	0.75	9.18	.14678E+04
548.64	0.00	0.00	19.5	0.380E-04	0.75	9.20	.14732E+04
550.63	0.00	0.00	19.5	0.379E-04	0.75	9.21	.14785E+04
552.62	0.00	0.00	19.6	0.378E-04	0.75	9.23	.14839E+04
554.61	0.00	0.00	19.6	0.378E-04	0.75	9.25	.14892E+04
556.60	0.00	0.00	19.6	0.377E-04	0.75	9.26	.14945E+04
558.58	0.00	0.00	19.7	0.376E-04	0.75	9.28	.14999E+04
560.57	0.00	0.00	19.7	0.376E-04	0.75	9.30	.15052E+04
562.56	0.00	0.00	19.7	0.375E-04	0.75	9.31	.15105E+04
564.55	0.00	0.00	19.8	0.374E-04	0.75	9.33	.15159E+04
566.54	0.00	0.00	19.8	0.374E-04	0.75	9.35	.15212E+04
568.53	0.00	0.00	19.8	0.373E-04	0.75	9.36	.15266E+04
570.51	0.00	0.00	19.9	0.372E-04	0.75	9.38	.15319E+04
572.50	0.00	0.00	19.9	0.372E-04	0.75	9.40	.15372E+04
574.49	0.00	0.00	19.9	0.371E-04	0.75	9.41	.15426E+04
576.48	0.00	0.00	20.0	0.371E-04	0.75	9.43	.15479E+04
578.47	0.00	0.00	20.0	0.370E-04	0.75	9.44	.15533E+04
580.46	0.00	0.00	20.0	0.369E-04	0.75	9.46	.15586E+04
582.44	0.00	0.00	20.1	0.369E-04	0.75	9.48	.15639E+04
584.43	0.00	0.00	20.1	0.368E-04	0.75	9.49	.15693E+04
586.42	0.00	0.00	20.1	0.367E-04	0.75	9.51	.15746E+04
588.41	0.00	0.00	20.2	0.367E-04	0.75	9.52	.15800E+04
590.40	0.00	0.00	20.2	0.366E-04	0.75	9.54	.15853E+04
592.39	0.00	0.00	20.2	0.366E-04	0.75	9.56	.15906E+04
594.37	0.00	0.00	20.3	0.365E-04	0.75	9.57	.15960E+04
596.36	0.00	0.00	20.3	0.364E-04	0.75	9.59	.16013E+04
598.35	0.00	0.00	20.3	0.364E-04	0.75	9.60	.16066E+04
600.34	0.00	0.00	20.4	0.363E-04	0.75	9.62	.16120E+04
602.33	0.00	0.00	20.4	0.363E-04	0.75	9.64	.16173E+04
604.32	0.00	0.00	20.4	0.362E-04	0.75	9.65	.16227E+04
606.30	0.00	0.00	20.5	0.361E-04	0.75	9.67	.16280E+04
608.29	0.00	0.00	20.5	0.361E-04	0.75	9.68	.16333E+04
610.28	0.00	0.00	20.5	0.360E-04	0.75	9.70	.16387E+04
612.27	0.00	0.00	20.6	0.360E-04	0.75	9.72	.16440E+04
614.26	0.00	0.00	20.6	0.359E-04	0.75	9.73	.16494E+04
616.25	0.00	0.00	20.6	0.358E-04	0.75	9.75	.16547E+04
618.23	0.00	0.00	20.7	0.358E-04	0.75	9.76	.16600E+04
620.22	0.00	0.00	20.7	0.357E-04	0.75	9.78	.16654E+04
622.21	0.00	0.00	20.7	0.357E-04	0.75	9.79	.16707E+04
624.20	0.00	0.00	20.8	0.356E-04	0.75	9.81	.16760E+04
626.19	0.00	0.00	20.8	0.356E-04	0.75	9.83	.16814E+04
628.18	0.00	0.00	20.8	0.355E-04	0.75	9.84	.16867E+04
630.17	0.00	0.00	20.9	0.354E-04	0.75	9.86	.16921E+04
632.15	0.00	0.00	20.9	0.354E-04	0.75	9.87	.16974E+04
634.14	0.00	0.00	20.9	0.353E-04	0.75	9.89	.17027E+04
636.13	0.00	0.00	21.0	0.353E-04	0.75	9.90	.17081E+04
638.12	0.00	0.00	21.0	0.352E-04	0.75	9.92	.17134E+04
640.11	0.00	0.00	21.0	0.352E-04	0.75	9.93	.17188E+04
642.10	0.00	0.00	21.1	0.351E-04	0.75	9.95	.17241E+04
644.08	0.00	0.00	21.1	0.351E-04	0.75	9.96	.17294E+04
646.07	0.00	0.00	21.1	0.350E-04	0.75	9.98	.17348E+04
648.06	0.00	0.00	21.2	0.350E-04	0.75	9.99	.17401E+04
650.05	0.00	0.00	21.2	0.349E-04	0.75	10.01	.17455E+04
652.04	0.00	0.00	21.2	0.348E-04	0.75	10.03	.17508E+04
654.03	0.00	0.00	21.3	0.348E-04	0.75	10.04	.17561E+04
656.01	0.00	0.00	21.3	0.347E-04	0.75	10.06	.17615E+04
658.00	0.00	0.00	21.3	0.347E-04	0.75	10.07	.17668E+04
659.99	0.00	0.00	21.4	0.346E-04	0.75	10.09	.17721E+04
661.98	0.00	0.00	21.4	0.346E-04	0.75	10.10	.17775E+04
663.97	0.00	0.00	21.4	0.345E-04	0.75	10.12	.17828E+04
665.96	0.00	0.00	21.5	0.345E-04	0.75	10.13	.17882E+04
667.94	0.00	0.00	21.5	0.344E-04	0.75	10.15	.17935E+04
669.93	0.00	0.00	21.5	0.344E-04	0.75	10.16	.17988E+04
671.92	0.00	0.00	21.6	0.343E-04	0.75	10.18	.18042E+04
673.91	0.00	0.00	21.6	0.343E-04	0.75	10.19	.18095E+04
675.90	0.00	0.00	21.6	0.342E-04	0.75	10.21	.18149E+04
677.89	0.00	0.00	21.7	0.342E-04	0.75	10.22	.18202E+04
679.87	0.00	0.00	21.7	0.341E-04	0.75	10.24	.18255E+04
681.86	0.00	0.00	21.7	0.341E-04	0.75	10.25	.18309E+04
683.85	0.00	0.00	21.7	0.340E-04	0.75	10.27	.18362E+04

685.84	0.00	0.00	21.8	0.340E-04	0.75	10.28	.18415E+04
687.83	0.00	0.00	21.8	0.339E-04	0.75	10.30	.18469E+04
689.82	0.00	0.00	21.8	0.339E-04	0.75	10.31	.18522E+04
691.80	0.00	0.00	21.9	0.338E-04	0.75	10.33	.18576E+04
693.79	0.00	0.00	21.9	0.338E-04	0.75	10.34	.18629E+04
695.78	0.00	0.00	21.9	0.337E-04	0.75	10.36	.18682E+04
697.77	0.00	0.00	22.0	0.337E-04	0.75	10.37	.18736E+04
699.76	0.00	0.00	22.0	0.336E-04	0.75	10.39	.18789E+04
701.75	0.00	0.00	22.0	0.336E-04	0.75	10.40	.18843E+04
703.73	0.00	0.00	22.1	0.335E-04	0.75	10.41	.18896E+04
705.72	0.00	0.00	22.1	0.335E-04	0.75	10.43	.18949E+04
707.71	0.00	0.00	22.1	0.334E-04	0.75	10.44	.19003E+04
709.70	0.00	0.00	22.2	0.334E-04	0.75	10.46	.19056E+04
711.69	0.00	0.00	22.2	0.334E-04	0.75	10.47	.19110E+04
713.68	0.00	0.00	22.2	0.333E-04	0.75	10.49	.19163E+04
715.66	0.00	0.00	22.2	0.333E-04	0.75	10.50	.19216E+04
717.65	0.00	0.00	22.3	0.332E-04	0.75	10.52	.19270E+04
719.64	0.00	0.00	22.3	0.332E-04	0.75	10.53	.19323E+04
721.63	0.00	0.00	22.3	0.331E-04	0.75	10.55	.19376E+04
723.62	0.00	0.00	22.4	0.331E-04	0.75	10.56	.19430E+04
725.61	0.00	0.00	22.4	0.330E-04	0.75	10.57	.19483E+04
727.59	0.00	0.00	22.4	0.330E-04	0.75	10.59	.19537E+04
729.58	0.00	0.00	22.5	0.329E-04	0.75	10.60	.19590E+04
731.57	0.00	0.00	22.5	0.329E-04	0.75	10.62	.19643E+04
733.56	0.00	0.00	22.5	0.329E-04	0.75	10.63	.19697E+04
735.55	0.00	0.00	22.6	0.328E-04	0.75	10.65	.19750E+04
737.54	0.00	0.00	22.6	0.328E-04	0.75	10.66	.19804E+04
739.52	0.00	0.00	22.6	0.327E-04	0.75	10.68	.19857E+04
741.51	0.00	0.00	22.6	0.327E-04	0.75	10.69	.19910E+04
743.50	0.00	0.00	22.7	0.326E-04	0.75	10.70	.19964E+04
745.49	0.00	0.00	22.7	0.326E-04	0.75	10.72	.20017E+04
747.48	0.00	0.00	22.7	0.325E-04	0.75	10.73	.20070E+04
749.47	0.00	0.00	22.8	0.325E-04	0.75	10.75	.20124E+04
751.45	0.00	0.00	22.8	0.325E-04	0.75	10.76	.20177E+04
753.44	0.00	0.00	22.8	0.324E-04	0.75	10.78	.20231E+04
755.43	0.00	0.00	22.9	0.324E-04	0.75	10.79	.20284E+04
757.42	0.00	0.00	22.9	0.323E-04	0.75	10.80	.20337E+04
759.41	0.00	0.00	22.9	0.323E-04	0.75	10.82	.20391E+04
761.40	0.00	0.00	22.9	0.323E-04	0.75	10.83	.20444E+04
763.38	0.00	0.00	23.0	0.322E-04	0.75	10.85	.20498E+04
765.37	0.00	0.00	23.0	0.322E-04	0.75	10.86	.20551E+04
767.36	0.00	0.00	23.0	0.321E-04	0.75	10.87	.20604E+04
769.35	0.00	0.00	23.1	0.321E-04	0.75	10.89	.20658E+04
771.34	0.00	0.00	23.1	0.320E-04	0.75	10.90	.20711E+04
773.33	0.00	0.00	23.1	0.320E-04	0.75	10.92	.20765E+04
775.31	0.00	0.00	23.2	0.320E-04	0.75	10.93	.20818E+04
777.30	0.00	0.00	23.2	0.319E-04	0.75	10.94	.20871E+04
779.29	0.00	0.00	23.2	0.319E-04	0.75	10.96	.20925E+04
781.28	0.00	0.00	23.2	0.318E-04	0.75	10.97	.20978E+04
783.27	0.00	0.00	23.3	0.318E-04	0.75	10.99	.21031E+04
785.26	0.00	0.00	23.3	0.318E-04	0.75	11.00	.21085E+04
787.24	0.00	0.00	23.3	0.317E-04	0.75	11.01	.21138E+04
789.23	0.00	0.00	23.4	0.317E-04	0.75	11.03	.21192E+04
791.22	0.00	0.00	23.4	0.316E-04	0.75	11.04	.21245E+04
793.21	0.00	0.00	23.4	0.316E-04	0.75	11.06	.21298E+04
795.20	0.00	0.00	23.4	0.316E-04	0.75	11.07	.21352E+04
797.19	0.00	0.00	23.5	0.315E-04	0.75	11.08	.21405E+04
799.17	0.00	0.00	23.5	0.315E-04	0.75	11.10	.21459E+04
801.16	0.00	0.00	23.5	0.314E-04	0.75	11.11	.21512E+04
803.15	0.00	0.00	23.6	0.314E-04	0.75	11.12	.21565E+04
805.14	0.00	0.00	23.6	0.314E-04	0.75	11.14	.21619E+04
807.13	0.00	0.00	23.6	0.313E-04	0.75	11.15	.21672E+04
809.12	0.00	0.00	23.7	0.313E-04	0.75	11.17	.21725E+04
811.10	0.00	0.00	23.7	0.312E-04	0.75	11.18	.21779E+04
813.09	0.00	0.00	23.7	0.312E-04	0.75	11.19	.21832E+04
815.08	0.00	0.00	23.7	0.312E-04	0.75	11.21	.21886E+04
817.07	0.00	0.00	23.8	0.311E-04	0.75	11.22	.21939E+04
819.06	0.00	0.00	23.8	0.311E-04	0.75	11.23	.21992E+04
821.05	0.00	0.00	23.8	0.311E-04	0.75	11.25	.22046E+04
823.03	0.00	0.00	23.9	0.310E-04	0.75	11.26	.22099E+04
825.02	0.00	0.00	23.9	0.310E-04	0.75	11.27	.22153E+04
827.01	0.00	0.00	23.9	0.309E-04	0.75	11.29	.22206E+04
829.00	0.00	0.00	23.9	0.309E-04	0.75	11.30	.22259E+04
830.99	0.00	0.00	24.0	0.309E-04	0.75	11.32	.22313E+04
832.98	0.00	0.00	24.0	0.308E-04	0.75	11.33	.22366E+04
834.96	0.00	0.00	24.0	0.308E-04	0.75	11.34	.22420E+04
836.95	0.00	0.00	24.1	0.308E-04	0.75	11.36	.22473E+04
838.94	0.00	0.00	24.1	0.307E-04	0.75	11.37	.22526E+04
840.93	0.00	0.00	24.1	0.307E-04	0.75	11.38	.22580E+04
842.92	0.00	0.00	24.1	0.307E-04	0.75	11.40	.22633E+04
844.91	0.00	0.00	24.2	0.306E-04	0.75	11.41	.22686E+04
846.89	0.00	0.00	24.2	0.306E-04	0.75	11.42	.22740E+04
848.88	0.00	0.00	24.2	0.305E-04	0.75	11.44	.22793E+04
850.87	0.00	0.00	24.3	0.305E-04	0.75	11.45	.22847E+04
852.86	0.00	0.00	24.3	0.305E-04	0.75	11.46	.22900E+04
854.85	0.00	0.00	24.3	0.304E-04	0.75	11.48	.22953E+04
856.84	0.00	0.00	24.3	0.304E-04	0.75	11.49	.23007E+04
858.82	0.00	0.00	24.4	0.304E-04	0.75	11.50	.23060E+04
860.81	0.00	0.00	24.4	0.303E-04	0.75	11.52	.23114E+04
862.80	0.00	0.00	24.4	0.303E-04	0.75	11.53	.23167E+04

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    864.79     0.00    0.00    24.5 0.303E-04   0.75    11.54 .23220E+04
    866.78     0.00    0.00    24.5 0.302E-04   0.75    11.56 .23274E+04
    868.77     0.00    0.00    24.5 0.302E-04   0.75    11.57 .23327E+04
    870.75     0.00    0.00    24.5 0.302E-04   0.75    11.58 .23380E+04
    872.74     0.00    0.00    24.6 0.301E-04   0.75    11.60 .23434E+04
    874.73     0.00    0.00    24.6 0.301E-04   0.75    11.61 .23487E+04
    876.72     0.00    0.00    24.6 0.301E-04   0.75    11.62 .23541E+04
    878.71     0.00    0.00    24.6 0.300E-04   0.75    11.64 .23594E+04
    880.70     0.00    0.00    24.7 0.300E-04   0.75    11.65 .23647E+04
    882.68     0.00    0.00    24.7 0.300E-04   0.75    11.66 .23701E+04
    884.67     0.00    0.00    24.7 0.299E-04   0.75    11.67 .23754E+04
    886.66     0.00    0.00    24.8 0.299E-04   0.75    11.69 .23808E+04
    888.65     0.00    0.00    24.8 0.299E-04   0.75    11.70 .23861E+04
    890.64     0.00    0.00    24.8 0.298E-04   0.75    11.71 .23914E+04
    892.63     0.00    0.00    24.8 0.298E-04   0.75    11.73 .23968E+04
    894.61     0.00    0.00    24.9 0.298E-04   0.75    11.74 .24021E+04
    896.60     0.00    0.00    24.9 0.297E-04   0.75    11.75 .24075E+04
    898.59     0.00    0.00    24.9 0.297E-04   0.75    11.77 .24128E+04
    900.58     0.00    0.00    25.0 0.297E-04   0.75    11.78 .24181E+04
    902.57     0.00    0.00    25.0 0.296E-04   0.75    11.79 .24235E+04
    904.56     0.00    0.00    25.0 0.296E-04   0.75    11.81 .24288E+04
    906.54     0.00    0.00    25.0 0.296E-04   0.75    11.82 .24341E+04
    908.53     0.00    0.00    25.1 0.295E-04   0.75    11.83 .24395E+04
    910.52     0.00    0.00    25.1 0.295E-04   0.75    11.84 .24448E+04
    912.51     0.00    0.00    25.1 0.295E-04   0.75    11.86 .24502E+04
    914.50     0.00    0.00    25.1 0.294E-04   0.75    11.87 .24555E+04
    916.49     0.00    0.00    25.2 0.294E-04   0.75    11.88 .24608E+04
    918.47     0.00    0.00    25.2 0.294E-04   0.75    11.90 .24662E+04
    920.46     0.00    0.00    25.2 0.293E-04   0.75    11.91 .24715E+04
    922.45     0.00    0.00    25.3 0.293E-04   0.75    11.92 .24769E+04
    924.44     0.00    0.00    25.3 0.293E-04   0.75    11.93 .24822E+04
    926.43     0.00    0.00    25.3 0.292E-04   0.75    11.95 .24875E+04
    928.42     0.00    0.00    25.3 0.292E-04   0.75    11.96 .24929E+04
    930.40     0.00    0.00    25.4 0.292E-04   0.75    11.97 .24982E+04
    932.39     0.00    0.00    25.4 0.291E-04   0.75    11.99 .25035E+04
    934.38     0.00    0.00    25.4 0.291E-04   0.75    12.00 .25089E+04
    936.37     0.00    0.00    25.4 0.291E-04   0.75    12.01 .25142E+04
    938.36     0.00    0.00    25.5 0.291E-04   0.75    12.02 .25196E+04
    940.35     0.00    0.00    25.5 0.290E-04   0.75    12.04 .25249E+04
    942.33     0.00    0.00    25.5 0.290E-04   0.75    12.05 .25302E+04
    944.32     0.00    0.00    25.5 0.290E-04   0.75    12.06 .25356E+04
    946.31     0.00    0.00    25.6 0.289E-04   0.75    12.07 .25409E+04
    948.30     0.00    0.00    25.6 0.289E-04   0.75    12.09 .25463E+04
    950.29     0.00    0.00    25.6 0.289E-04   0.75    12.10 .25516E+04
    952.28     0.00    0.00    25.7 0.288E-04   0.75    12.11 .25569E+04
    954.26     0.00    0.00    25.7 0.288E-04   0.75    12.12 .25623E+04
    956.25     0.00    0.00    25.7 0.288E-04   0.75    12.14 .25676E+04
    958.24     0.00    0.00    25.7 0.288E-04   0.75    12.15 .25730E+04
    960.23     0.00    0.00    25.8 0.287E-04   0.75    12.16 .25783E+04
    962.22     0.00    0.00    25.8 0.287E-04   0.75    12.18 .25836E+04
    964.21     0.00    0.00    25.8 0.287E-04   0.75    12.19 .25890E+04
    966.19     0.00    0.00    25.8 0.286E-04   0.75    12.20 .25943E+04
    968.18     0.00    0.00    25.9 0.286E-04   0.75    12.21 .25996E+04
    970.17     0.00    0.00    25.9 0.286E-04   0.75    12.23 .26050E+04
    972.16     0.00    0.00    25.9 0.285E-04   0.75    12.24 .26103E+04
    974.15     0.00    0.00    25.9 0.285E-04   0.75    12.25 .26157E+04
    976.14     0.00    0.00    26.0 0.285E-04   0.75    12.26 .26210E+04
    978.12     0.00    0.00    26.0 0.285E-04   0.75    12.28 .26263E+04
    980.11     0.00    0.00    26.0 0.284E-04   0.75    12.29 .26317E+04
    982.10     0.00    0.00    26.1 0.284E-04   0.75    12.30 .26370E+04
    984.09     0.00    0.00    26.1 0.284E-04   0.75    12.31 .26424E+04
    986.08     0.00    0.00    26.1 0.283E-04   0.75    12.32 .26477E+04
    988.07     0.00    0.00    26.1 0.283E-04   0.75    12.34 .26530E+04
    990.05     0.00    0.00    26.2 0.283E-04   0.75    12.35 .26584E+04
    992.04     0.00    0.00    26.2 0.283E-04   0.75    12.36 .26637E+04
    994.03     0.00    0.00    26.2 0.282E-04   0.75    12.37 .26690E+04
    996.02     0.00    0.00    26.2 0.282E-04   0.75    12.39 .26744E+04
    998.01     0.00    0.00    26.3 0.282E-04   0.75    12.40 .26797E+04
   1000.00     0.00    0.00    26.3 0.281E-04   0.75    12.41 .26851E+04
 Cumulative travel time =        2685.0723 sec  (    0.75 hrs)

 Simulation limit based on maximum specified distance =   1000.00 m.
   This is the REGION OF INTEREST limitation.

END OF MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
CORMIX3: Buoyant Surface Discharges                    End of Prediction File
3333333333333333333333333333333333333333333333333333333333333333333333333333333
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CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 10.0G
                       HYDRO3:Version-10.0.0.0  July,2016
SITE NAME/LABEL:                Richland
  DESIGN CASE:                  Summer Chronic  (3 MGD) 7Q10
  FILE NAME:                    C:\Program Files (x86)\CORMIX 10.0\Simulations\Nickel Chronic 3MGD.prd
  Using subsystem CORMIX3:     Buoyant Surface Discharges
  Start of session:             03/16/2017--08:11:52
*****************************************************************************
SUMMARY OF INPUT DATA:
-----------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                           BS     = 72.10 m
  Channel regularity              ICHREG = 2
  Ambient flowrate                QA     = 20.01 m^3/s
  Average depth                   HA     = 0.75 m
  Depth at discharge              HD     = 0.75 m
  Ambient velocity                UA     = 0.37 m/s
  Darcy-Weisbach friction factor  F      = 0.1381
    Calculated from Manning's n          = 0.04
  Wind velocity                   UW     = 1 m/s
  Stratification Type             STRCND = U
  Surface temperature                    = 27.90 degC
  Bottom temperature                     = 27.90 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density                 RHOAS  = 996.2622 kg/m^3
  Bottom density                  RHOAB  = 996.2622 kg/m^3
-----------------------------------------------------------------------------
DISCHARGE PARAMETERS:             Surface Discharge
  Discharge located on                   = left bank/shoreline
  Discharge configuration                = flush discharge
  Distance from bank to outlet    DISTB  = 0 m
  Discharge angle                 SIGMA  = 85 deg
  Depth near discharge outlet     HD0    = 0.5 m
  Bottom slope at discharge       SLOPE  = 4.46 deg
  Rectangular discharge:
    Discharge cross-section area  A0     = 3.725 m^2
    Discharge channel width       B0     = 7.45 m
    Discharge channel depth       H0     = 0.5 m
    Discharge aspect ratio        AR     = 0.067114
  Discharge flowrate              Q0     = 0.131865 m^3/s
  Discharge velocity              U0     = 0.04 m/s
  Discharge temperature (freshwater)     = 30.30 degC
  Corresponding density           RHO0   = 995.5560 kg/m^3
  Density difference              DRHO   = 0.7062 kg/m^3
  Buoyant acceleration            GP0    = 0.007 m/s^2
  Discharge concentration         C0     = 0.0005 mg/l
  Surface heat exchange coeff.    KS     = 0 m/s
  Coefficient of decay            KD     = 0 /s
-----------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 1.93 m         Lm  = 0.18 m         Lbb = 0.02 m
  LM  = 0.59 m
-----------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Densimetric Froude number       FR0    = 0.31 (based on LQ)
  Channel densimetric Froude no.  FRCH   = 0.60 (based on H0)
  Velocity ratio                  R      = 0.10
-----------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = yes
  Water quality standard          CSTD   = 0.0001 mg/l
  Regulatory mixing zone                 = yes
  Regulatory mixing zone specification   = distance
  Regulatory mixing zone value           = 91.46 m (m^2 if area)
  Region of interest                     = 1000 m
*****************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *------------------------*
  | FLOW CLASS   = PL2 |
  *------------------------*

  Limiting Dilution S = (QA/Q0)+ 1.0 = 152.7

*****************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

-----------------------------------------------------------------------------
X-Y-Z Coordinate system:
Origin is located at WATER SURFACE and at centerline of discharge channel:
    0 m from the left bank/shore.
  Number of display steps NSTEP = 500 per module.
-----------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
  implication.  However, this information may be useful for the discharge
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  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 0.0005 mg/l
  Dilution at edge of NFR              s = 1
  NFR Location:                        x = 3.73 m
    (centerline coordinates)           y = -0.20 m
                                       z = 0 m
  NFR plume dimensions:  half-width (bh) = 0.85 m
                          thickness (bv) = 0.42 m
Cumulative travel time:       10.0676 sec.
-----------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is less than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards
  the surface.
-----------------------------------------------------------------------------
FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed at 21.73 m downstream.
-----------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts one bank only at 0 m downstream.
************************ TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
********************** REGULATORY MIXING ZONE SUMMARY ***********************
The plume conditions at the boundary of the specified RMZ are as follows:
  Pollutant concentration              c = 0.000062  mg/l
  Corresponding dilution               s = 8.0
  Plume location:                      x = 91.46 m
    (centerline coordinates)           y = 0 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 3.78 m
                          thickness (bv) = 0.75 m
Cumulative travel time:       245.6366 sec.

Note:
Plume concentration c and dilution s values are reported based on prediction
file values - assuming linear interpolation between predicted points just
before and just after the RMZ boundary has been detected.

Please ensure a small step size is used in the prediction file to account
for this linear interpolation. Step size can be controlled by increasing
(reduces the prediction step size) or decreasing (increases the prediction
step size) the - Output Steps per Module - in CORMIX input.

At this position, the plume is CONTACTING the LEFT bank.
Furthermore, the specified water quality standard has indeed been met
  within the RMZ. In particular:
The ambient water quality standard was encountered at the following
  plume position:
  Water quality standard                 = 0.0001  mg/l
  Corresponding dilution               s = 5.0
  Plume location:                      x = 34.94 m
    (centerline coordinates)           y = 0 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 2.36 m
                          thickness (bv) = 0.75 m
********************* FINAL DESIGN ADVICE AND COMMENTS **********************
REMINDER:  The user must take note that HYDRODYNAMIC MODELING by any known
  technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the
  CORMIX predictions on dilutions and concentrations (with associated
  plume geometries) are reliable for the majority of cases and are accurate
  to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges
  the design configuration as highly complex and uncertain for prediction.
```

```
CORMIX3 PREDICTION FILE:
3333333333333333333333333333333333333333333333333333333333333333333333333333333333
                      CORMIX MIXING ZONE EXPERT SYSTEM
                Subsystem CORMIX3: Buoyant Surface Discharges
                             CORMIX Version 10.0G
                     HYDRO3 Version 10.0.0.0 July 2016
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
CASE DESCRIPTION
 Site name/label:   Richland
 Design case:       Summer Chronic  (3 MGD) 7Q10
 FILE NAME:         C:\...)\CORMIX 10.0\Simulations\Nickel Chronic_3MGD.prd
 Time stamp:        03/16/2017--08:11:52

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     72.10  AS    =     54.07  QA    =     20.01  ICHREG= 2
 HA    =      0.75  HD    =      0.75
 UA    =      0.370 F     =      0.138 USTAR =0.4862E-01
 UW    =      1.000 UWSTAR=0.1071E-02
 Uniform density environment
 STRCND=  U         RHOAM =  996.2622

DISCHARGE PARAMETERS (metric units)
 BANK  =  LEFT      DISTB =      0.00  Configuration: flush_discharge
 SIGMA =     85.00  HDO   =      0.50  SLOPE =    4.46 deg.
 Rectangular channel geometry:
 B0    =      7.450 H0    =      0.500 A0    =0.3725E+01  AR    =      0.067
 U0    =      0.035 Q0    =      0.132       =0.1319E+00
 RHO0  =  995.5560  DRHO0 =0.7062E+00  GP0   =0.6952E-02
 C0    =0.5000E-03  CUNITS=  mg/l
 IPOLL =  1         KS    =0.0000E+00  KD    =0.0000E+00

FLUX VARIABLES (metric units)
 Q0    =0.1319E+00  M0    =0.4668E-02  J0    =0.9167E-03
 Associated length scales (meters)
 LQ    =      1.93  LM    =      0.59  Lm    =      0.18  Lb    =      0.02

NON-DIMENSIONAL PARAMETERS
 FR0   =      0.31  FRCH  =      0.60  R     =      0.10

FLOW CLASSIFICATION
 3333333333333333333333333333333333333333333
 3  Flow class (CORMIX3)      =    PL2    3
 3  Applicable layer depth HS =     0.75  3
 3  Limiting Dilution S =QA/Q0=   152.73  3
 3333333333333333333333333333333333333333333

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.5000E-03  CUNITS=  mg/l
 NTOX  =  0
 NSTD  =  1         CSTD  =0.1000E-03
 REGMZ =  1
 REGSPC=  1         XREG  =     91.46  WREG  =      0.00  AREG  =      0.00
 XINT  =   1000.00  XMAX  =   1000.00

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the WATER SURFACE and at center of discharge
      channel/outlet:      0.00 m  from the LEFT  bank/shore.
    X-axis points downstream
    Y-axis points to left as seen by an observer looking downstream
    Z-axis points vertically upward (in CORMIX3, all values Z = 0.00)
NSTEP = 500 display intervals per module
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
BEGIN MOD301: DISCHARGE MODULE

 Efflux conditions:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.500E-03   0.50     3.72 .00000E+00

END OF MOD301: DISCHARGE MODULE
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
BEGIN MOD302: ZONE OF FLOW ESTABLISHMENT

  Control volume inflow:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.500E-03   0.50     3.72 .00000E+00

 RAPID DEFLECTION by ambient current:
 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

  Control volume outflow:                                SIGMAE=    347.29
       X        Y       Z        S       C       BV       BH        TT
```

```
      3.72    -0.20    0.00     1.0 0.500E-03   0.42     0.85 .10068E+02
 Cumulative travel time =          10.0676 sec  (    0.00 hrs)

END OF MOD302: ZONE OF FLOW ESTABLISHMENT
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
** End of NEAR-FIELD REGION (NFR) **
-------------------------------------------------------------------------------

 WAKE FLOW CONDITIONS: The discharge velocity (U0) is less than or equal to the
 ambient velocity (Ua) and results in wake flow conditions. There is no discharge
 momentum induced mixing. The mixing characteristics are UNDESIRABLE.
-------------------------------------------------------------------------------
BEGIN MOD341: BUOYANT AMBIENT SPREADING

 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

 Plume Stage 2 (bank attached):
       X        Y        Z        S        C        BV        BH        TT
      3.72     0.00     0.00     1.0 0.500E-03   0.42     0.84 .10068E+02
      3.73     0.00     0.00     1.0 0.500E-03   0.42     0.84 .10079E+02
      3.73     0.00     0.00     1.0 0.500E-03   0.42     0.84 .10090E+02
      3.74     0.00     0.00     1.0 0.499E-03   0.42     0.84 .10101E+02
      3.74     0.00     0.00     1.0 0.499E-03   0.42     0.84 .10113E+02
      3.75     0.00     0.00     1.0 0.499E-03   0.42     0.85 .10124E+02
      3.75     0.00     0.00     1.0 0.499E-03   0.42     0.85 .10135E+02
      3.75     0.00     0.00     1.0 0.499E-03   0.42     0.85 .10146E+02
      3.76     0.00     0.00     1.0 0.499E-03   0.42     0.85 .10158E+02
      3.76     0.00     0.00     1.0 0.498E-03   0.42     0.85 .10169E+02
      3.77     0.00     0.00     1.0 0.498E-03   0.42     0.85 .10180E+02
      3.77     0.00     0.00     1.0 0.498E-03   0.42     0.85 .10191E+02
      3.78     0.00     0.00     1.0 0.498E-03   0.42     0.85 .10203E+02
      3.78     0.00     0.00     1.0 0.498E-03   0.42     0.85 .10214E+02
      3.78     0.00     0.00     1.0 0.497E-03   0.42     0.85 .10225E+02
      3.79     0.00     0.00     1.0 0.497E-03   0.42     0.85 .10236E+02
      3.79     0.00     0.00     1.0 0.497E-03   0.42     0.85 .10248E+02
      3.80     0.00     0.00     1.0 0.497E-03   0.42     0.85 .10259E+02
      3.80     0.00     0.00     1.0 0.497E-03   0.42     0.85 .10270E+02
      3.80     0.00     0.00     1.0 0.496E-03   0.42     0.85 .10281E+02
      3.81     0.00     0.00     1.0 0.496E-03   0.42     0.85 .10293E+02
      3.81     0.00     0.00     1.0 0.496E-03   0.42     0.85 .10304E+02
      3.82     0.00     0.00     1.0 0.496E-03   0.42     0.85 .10315E+02
      3.82     0.00     0.00     1.0 0.496E-03   0.42     0.85 .10326E+02
      3.83     0.00     0.00     1.0 0.496E-03   0.42     0.85 .10338E+02
      3.83     0.00     0.00     1.0 0.495E-03   0.42     0.85 .10349E+02
      3.83     0.00     0.00     1.0 0.495E-03   0.42     0.85 .10360E+02
      3.84     0.00     0.00     1.0 0.495E-03   0.42     0.85 .10371E+02
      3.84     0.00     0.00     1.0 0.495E-03   0.42     0.85 .10383E+02
      3.85     0.00     0.00     1.0 0.495E-03   0.42     0.86 .10394E+02
      3.85     0.00     0.00     1.0 0.494E-03   0.42     0.86 .10405E+02
      3.85     0.00     0.00     1.0 0.494E-03   0.42     0.86 .10416E+02
      3.86     0.00     0.00     1.0 0.494E-03   0.42     0.86 .10428E+02
      3.86     0.00     0.00     1.0 0.494E-03   0.42     0.86 .10439E+02
      3.87     0.00     0.00     1.0 0.494E-03   0.42     0.86 .10450E+02
      3.87     0.00     0.00     1.0 0.494E-03   0.42     0.86 .10461E+02
      3.88     0.00     0.00     1.0 0.493E-03   0.42     0.86 .10473E+02
      3.88     0.00     0.00     1.0 0.493E-03   0.42     0.86 .10484E+02
      3.88     0.00     0.00     1.0 0.493E-03   0.42     0.86 .10495E+02
      3.89     0.00     0.00     1.0 0.493E-03   0.42     0.86 .10506E+02
      3.89     0.00     0.00     1.0 0.493E-03   0.42     0.86 .10517E+02
      3.90     0.00     0.00     1.0 0.492E-03   0.42     0.86 .10529E+02
      3.90     0.00     0.00     1.0 0.492E-03   0.42     0.86 .10540E+02
      3.91     0.00     0.00     1.0 0.492E-03   0.42     0.86 .10551E+02
      3.91     0.00     0.00     1.0 0.492E-03   0.42     0.86 .10562E+02
      3.91     0.00     0.00     1.0 0.492E-03   0.42     0.86 .10574E+02
      3.92     0.00     0.00     1.0 0.492E-03   0.42     0.86 .10585E+02
      3.92     0.00     0.00     1.0 0.491E-03   0.42     0.86 .10596E+02
      3.93     0.00     0.00     1.0 0.491E-03   0.42     0.86 .10607E+02
      3.93     0.00     0.00     1.0 0.491E-03   0.42     0.86 .10619E+02
      3.93     0.00     0.00     1.0 0.491E-03   0.42     0.86 .10630E+02
      3.94     0.00     0.00     1.0 0.491E-03   0.42     0.86 .10641E+02
      3.94     0.00     0.00     1.0 0.490E-03   0.42     0.87 .10652E+02
      3.95     0.00     0.00     1.0 0.490E-03   0.42     0.87 .10664E+02
      3.95     0.00     0.00     1.0 0.490E-03   0.42     0.87 .10675E+02
      3.96     0.00     0.00     1.0 0.490E-03   0.42     0.87 .10686E+02
      3.96     0.00     0.00     1.0 0.490E-03   0.42     0.87 .10697E+02
      3.96     0.00     0.00     1.0 0.490E-03   0.42     0.87 .10709E+02
      3.97     0.00     0.00     1.0 0.489E-03   0.42     0.87 .10720E+02
      3.97     0.00     0.00     1.0 0.489E-03   0.42     0.87 .10731E+02
      3.98     0.00     0.00     1.0 0.489E-03   0.42     0.87 .10742E+02
      3.98     0.00     0.00     1.0 0.489E-03   0.42     0.87 .10754E+02
      3.98     0.00     0.00     1.0 0.489E-03   0.42     0.87 .10765E+02
      3.99     0.00     0.00     1.0 0.488E-03   0.42     0.87 .10776E+02
      3.99     0.00     0.00     1.0 0.488E-03   0.42     0.87 .10787E+02
      4.00     0.00     0.00     1.0 0.488E-03   0.42     0.87 .10799E+02
```

4.00	0.00	0.00	1.0	0.488E-03	0.42	0.87	.10810E+02
4.01	0.00	0.00	1.0	0.488E-03	0.42	0.87	.10821E+02
4.01	0.00	0.00	1.0	0.488E-03	0.42	0.87	.10832E+02
4.01	0.00	0.00	1.0	0.487E-03	0.42	0.87	.10844E+02
4.02	0.00	0.00	1.0	0.487E-03	0.42	0.87	.10855E+02
4.02	0.00	0.00	1.0	0.487E-03	0.42	0.87	.10866E+02
4.03	0.00	0.00	1.0	0.487E-03	0.42	0.87	.10877E+02
4.03	0.00	0.00	1.0	0.487E-03	0.42	0.87	.10889E+02
4.04	0.00	0.00	1.0	0.486E-03	0.42	0.87	.10900E+02
4.04	0.00	0.00	1.0	0.486E-03	0.42	0.87	.10911E+02
4.04	0.00	0.00	1.0	0.486E-03	0.42	0.88	.10922E+02
4.05	0.00	0.00	1.0	0.486E-03	0.42	0.88	.10934E+02
4.05	0.00	0.00	1.0	0.486E-03	0.42	0.88	.10945E+02
4.06	0.00	0.00	1.0	0.485E-03	0.42	0.88	.10956E+02
4.06	0.00	0.00	1.0	0.485E-03	0.42	0.88	.10967E+02
4.06	0.00	0.00	1.0	0.485E-03	0.42	0.88	.10979E+02
4.07	0.00	0.00	1.0	0.485E-03	0.42	0.88	.10990E+02
4.07	0.00	0.00	1.0	0.485E-03	0.42	0.88	.11001E+02
4.08	0.00	0.00	1.0	0.485E-03	0.42	0.88	.11012E+02
4.08	0.00	0.00	1.0	0.484E-03	0.42	0.88	.11024E+02
4.09	0.00	0.00	1.0	0.484E-03	0.42	0.88	.11035E+02
4.09	0.00	0.00	1.0	0.484E-03	0.42	0.88	.11046E+02
4.09	0.00	0.00	1.0	0.484E-03	0.42	0.88	.11057E+02
4.10	0.00	0.00	1.0	0.484E-03	0.42	0.88	.11069E+02
4.10	0.00	0.00	1.0	0.483E-03	0.42	0.88	.11080E+02
4.11	0.00	0.00	1.0	0.483E-03	0.42	0.88	.11091E+02
4.11	0.00	0.00	1.0	0.483E-03	0.42	0.88	.11102E+02
4.11	0.00	0.00	1.0	0.483E-03	0.42	0.88	.11114E+02
4.12	0.00	0.00	1.0	0.483E-03	0.42	0.88	.11125E+02
4.12	0.00	0.00	1.0	0.483E-03	0.42	0.88	.11136E+02
4.13	0.00	0.00	1.0	0.482E-03	0.42	0.88	.11147E+02
4.13	0.00	0.00	1.0	0.482E-03	0.42	0.88	.11159E+02
4.14	0.00	0.00	1.0	0.482E-03	0.42	0.88	.11170E+02
4.14	0.00	0.00	1.0	0.482E-03	0.42	0.88	.11181E+02
4.14	0.00	0.00	1.0	0.482E-03	0.42	0.89	.11192E+02
4.15	0.00	0.00	1.0	0.482E-03	0.42	0.89	.11204E+02
4.15	0.00	0.00	1.0	0.481E-03	0.42	0.89	.11215E+02
4.16	0.00	0.00	1.0	0.481E-03	0.41	0.89	.11226E+02
4.16	0.00	0.00	1.0	0.481E-03	0.41	0.89	.11237E+02
4.16	0.00	0.00	1.0	0.481E-03	0.41	0.89	.11249E+02
4.17	0.00	0.00	1.0	0.481E-03	0.41	0.89	.11260E+02
4.17	0.00	0.00	1.0	0.480E-03	0.41	0.89	.11271E+02
4.18	0.00	0.00	1.0	0.480E-03	0.41	0.89	.11282E+02
4.18	0.00	0.00	1.0	0.480E-03	0.41	0.89	.11294E+02
4.19	0.00	0.00	1.0	0.480E-03	0.41	0.89	.11305E+02
4.19	0.00	0.00	1.0	0.480E-03	0.41	0.89	.11316E+02
4.19	0.00	0.00	1.0	0.480E-03	0.41	0.89	.11327E+02
4.20	0.00	0.00	1.0	0.479E-03	0.41	0.89	.11339E+02
4.20	0.00	0.00	1.0	0.479E-03	0.41	0.89	.11350E+02
4.21	0.00	0.00	1.0	0.479E-03	0.41	0.89	.11361E+02
4.21	0.00	0.00	1.0	0.479E-03	0.41	0.89	.11372E+02
4.22	0.00	0.00	1.0	0.479E-03	0.41	0.89	.11384E+02
4.22	0.00	0.00	1.0	0.478E-03	0.41	0.89	.11395E+02
4.22	0.00	0.00	1.0	0.478E-03	0.41	0.89	.11406E+02
4.23	0.00	0.00	1.0	0.478E-03	0.41	0.89	.11417E+02
4.23	0.00	0.00	1.0	0.478E-03	0.41	0.89	.11429E+02
4.24	0.00	0.00	1.0	0.478E-03	0.41	0.89	.11440E+02
4.24	0.00	0.00	1.0	0.478E-03	0.41	0.89	.11451E+02
4.24	0.00	0.00	1.0	0.477E-03	0.41	0.90	.11462E+02
4.25	0.00	0.00	1.0	0.477E-03	0.41	0.90	.11474E+02
4.25	0.00	0.00	1.0	0.477E-03	0.41	0.90	.11485E+02
4.26	0.00	0.00	1.0	0.477E-03	0.41	0.90	.11496E+02
4.26	0.00	0.00	1.0	0.477E-03	0.41	0.90	.11507E+02
4.27	0.00	0.00	1.0	0.476E-03	0.41	0.90	.11519E+02
4.27	0.00	0.00	1.0	0.476E-03	0.41	0.90	.11530E+02
4.27	0.00	0.00	1.1	0.476E-03	0.41	0.90	.11541E+02
4.28	0.00	0.00	1.1	0.476E-03	0.41	0.90	.11552E+02
4.28	0.00	0.00	1.1	0.476E-03	0.41	0.90	.11564E+02
4.29	0.00	0.00	1.1	0.476E-03	0.41	0.90	.11575E+02
4.29	0.00	0.00	1.1	0.475E-03	0.41	0.90	.11586E+02
4.29	0.00	0.00	1.1	0.475E-03	0.41	0.90	.11597E+02
4.30	0.00	0.00	1.1	0.475E-03	0.41	0.90	.11609E+02
4.30	0.00	0.00	1.1	0.475E-03	0.41	0.90	.11620E+02
4.31	0.00	0.00	1.1	0.475E-03	0.41	0.90	.11631E+02
4.31	0.00	0.00	1.1	0.474E-03	0.41	0.90	.11642E+02
4.32	0.00	0.00	1.1	0.474E-03	0.41	0.90	.11654E+02
4.32	0.00	0.00	1.1	0.474E-03	0.41	0.90	.11665E+02
4.32	0.00	0.00	1.1	0.474E-03	0.41	0.90	.11676E+02
4.33	0.00	0.00	1.1	0.474E-03	0.41	0.90	.11687E+02
4.33	0.00	0.00	1.1	0.474E-03	0.41	0.90	.11699E+02
4.34	0.00	0.00	1.1	0.473E-03	0.41	0.90	.11710E+02
4.34	0.00	0.00	1.1	0.473E-03	0.41	0.90	.11721E+02
4.35	0.00	0.00	1.1	0.473E-03	0.41	0.91	.11732E+02
4.35	0.00	0.00	1.1	0.473E-03	0.41	0.91	.11744E+02
4.35	0.00	0.00	1.1	0.473E-03	0.41	0.91	.11755E+02
4.36	0.00	0.00	1.1	0.472E-03	0.41	0.91	.11766E+02
4.36	0.00	0.00	1.1	0.472E-03	0.41	0.91	.11777E+02
4.37	0.00	0.00	1.1	0.472E-03	0.41	0.91	.11789E+02
4.37	0.00	0.00	1.1	0.472E-03	0.41	0.91	.11800E+02
4.37	0.00	0.00	1.1	0.472E-03	0.41	0.91	.11811E+02

4.38	0.00	0.00	1.1	0.472E-03	0.41	0.91	.11822E+02
4.38	0.00	0.00	1.1	0.471E-03	0.41	0.91	.11834E+02
4.39	0.00	0.00	1.1	0.471E-03	0.41	0.91	.11845E+02
4.39	0.00	0.00	1.1	0.471E-03	0.41	0.91	.11856E+02
4.40	0.00	0.00	1.1	0.471E-03	0.41	0.91	.11867E+02
4.40	0.00	0.00	1.1	0.471E-03	0.41	0.91	.11879E+02
4.40	0.00	0.00	1.1	0.471E-03	0.41	0.91	.11890E+02
4.41	0.00	0.00	1.1	0.470E-03	0.41	0.91	.11901E+02
4.41	0.00	0.00	1.1	0.470E-03	0.41	0.91	.11912E+02
4.42	0.00	0.00	1.1	0.470E-03	0.41	0.91	.11924E+02
4.42	0.00	0.00	1.1	0.470E-03	0.41	0.91	.11935E+02
4.42	0.00	0.00	1.1	0.470E-03	0.41	0.91	.11946E+02
4.43	0.00	0.00	1.1	0.469E-03	0.41	0.91	.11957E+02
4.43	0.00	0.00	1.1	0.469E-03	0.41	0.91	.11969E+02
4.44	0.00	0.00	1.1	0.469E-03	0.41	0.91	.11980E+02
4.44	0.00	0.00	1.1	0.469E-03	0.41	0.91	.11991E+02
4.45	0.00	0.00	1.1	0.469E-03	0.41	0.92	.12002E+02
4.45	0.00	0.00	1.1	0.469E-03	0.41	0.92	.12014E+02
4.45	0.00	0.00	1.1	0.468E-03	0.41	0.92	.12025E+02
4.46	0.00	0.00	1.1	0.468E-03	0.41	0.92	.12036E+02
4.46	0.00	0.00	1.1	0.468E-03	0.41	0.92	.12047E+02
4.47	0.00	0.00	1.1	0.468E-03	0.41	0.92	.12058E+02
4.47	0.00	0.00	1.1	0.468E-03	0.41	0.92	.12070E+02
4.47	0.00	0.00	1.1	0.467E-03	0.41	0.92	.12081E+02
4.48	0.00	0.00	1.1	0.467E-03	0.41	0.92	.12092E+02
4.48	0.00	0.00	1.1	0.467E-03	0.41	0.92	.12103E+02
4.49	0.00	0.00	1.1	0.467E-03	0.41	0.92	.12115E+02
4.49	0.00	0.00	1.1	0.467E-03	0.41	0.92	.12126E+02
4.50	0.00	0.00	1.1	0.467E-03	0.41	0.92	.12137E+02
4.50	0.00	0.00	1.1	0.466E-03	0.41	0.92	.12148E+02
4.50	0.00	0.00	1.1	0.466E-03	0.41	0.92	.12160E+02
4.51	0.00	0.00	1.1	0.466E-03	0.41	0.92	.12171E+02
4.51	0.00	0.00	1.1	0.466E-03	0.41	0.92	.12182E+02
4.52	0.00	0.00	1.1	0.466E-03	0.41	0.92	.12193E+02
4.52	0.00	0.00	1.1	0.466E-03	0.41	0.92	.12205E+02
4.53	0.00	0.00	1.1	0.465E-03	0.41	0.92	.12216E+02
4.53	0.00	0.00	1.1	0.465E-03	0.41	0.92	.12227E+02
4.53	0.00	0.00	1.1	0.465E-03	0.41	0.92	.12238E+02
4.54	0.00	0.00	1.1	0.465E-03	0.41	0.92	.12250E+02
4.54	0.00	0.00	1.1	0.465E-03	0.41	0.92	.12261E+02
4.55	0.00	0.00	1.1	0.464E-03	0.41	0.93	.12272E+02
4.55	0.00	0.00	1.1	0.464E-03	0.41	0.93	.12283E+02
4.55	0.00	0.00	1.1	0.464E-03	0.41	0.93	.12295E+02
4.56	0.00	0.00	1.1	0.464E-03	0.41	0.93	.12306E+02
4.56	0.00	0.00	1.1	0.464E-03	0.41	0.93	.12317E+02
4.57	0.00	0.00	1.1	0.464E-03	0.41	0.93	.12328E+02
4.57	0.00	0.00	1.1	0.463E-03	0.41	0.93	.12340E+02
4.58	0.00	0.00	1.1	0.463E-03	0.41	0.93	.12351E+02
4.58	0.00	0.00	1.1	0.463E-03	0.41	0.93	.12362E+02
4.58	0.00	0.00	1.1	0.463E-03	0.41	0.93	.12373E+02
4.59	0.00	0.00	1.1	0.463E-03	0.41	0.93	.12385E+02
4.59	0.00	0.00	1.1	0.463E-03	0.41	0.93	.12396E+02
4.60	0.00	0.00	1.1	0.462E-03	0.41	0.93	.12407E+02
4.60	0.00	0.00	1.1	0.462E-03	0.41	0.93	.12418E+02
4.60	0.00	0.00	1.1	0.462E-03	0.41	0.93	.12430E+02
4.61	0.00	0.00	1.1	0.462E-03	0.41	0.93	.12441E+02
4.61	0.00	0.00	1.1	0.462E-03	0.41	0.93	.12452E+02
4.62	0.00	0.00	1.1	0.461E-03	0.41	0.93	.12463E+02
4.62	0.00	0.00	1.1	0.461E-03	0.41	0.93	.12475E+02
4.63	0.00	0.00	1.1	0.461E-03	0.41	0.93	.12486E+02
4.63	0.00	0.00	1.1	0.461E-03	0.41	0.93	.12497E+02
4.63	0.00	0.00	1.1	0.461E-03	0.41	0.93	.12508E+02
4.64	0.00	0.00	1.1	0.461E-03	0.41	0.93	.12520E+02
4.64	0.00	0.00	1.1	0.460E-03	0.41	0.93	.12531E+02
4.65	0.00	0.00	1.1	0.460E-03	0.41	0.93	.12542E+02
4.65	0.00	0.00	1.1	0.460E-03	0.41	0.94	.12553E+02
4.66	0.00	0.00	1.1	0.460E-03	0.41	0.94	.12565E+02
4.66	0.00	0.00	1.1	0.460E-03	0.41	0.94	.12576E+02
4.66	0.00	0.00	1.1	0.459E-03	0.41	0.94	.12587E+02
4.67	0.00	0.00	1.1	0.459E-03	0.41	0.94	.12598E+02
4.67	0.00	0.00	1.1	0.459E-03	0.41	0.94	.12610E+02
4.68	0.00	0.00	1.1	0.459E-03	0.41	0.94	.12621E+02
4.68	0.00	0.00	1.1	0.459E-03	0.41	0.94	.12632E+02
4.68	0.00	0.00	1.1	0.459E-03	0.41	0.94	.12643E+02
4.69	0.00	0.00	1.1	0.458E-03	0.41	0.94	.12655E+02
4.69	0.00	0.00	1.1	0.458E-03	0.41	0.94	.12666E+02
4.70	0.00	0.00	1.1	0.458E-03	0.41	0.94	.12677E+02
4.70	0.00	0.00	1.1	0.458E-03	0.41	0.94	.12688E+02
4.71	0.00	0.00	1.1	0.458E-03	0.41	0.94	.12700E+02
4.71	0.00	0.00	1.1	0.458E-03	0.41	0.94	.12711E+02
4.71	0.00	0.00	1.1	0.457E-03	0.41	0.94	.12722E+02
4.72	0.00	0.00	1.1	0.457E-03	0.41	0.94	.12733E+02
4.72	0.00	0.00	1.1	0.457E-03	0.41	0.94	.12745E+02
4.73	0.00	0.00	1.1	0.457E-03	0.41	0.94	.12756E+02
4.73	0.00	0.00	1.1	0.457E-03	0.41	0.94	.12767E+02
4.73	0.00	0.00	1.1	0.457E-03	0.41	0.94	.12778E+02
4.74	0.00	0.00	1.1	0.456E-03	0.41	0.94	.12790E+02
4.74	0.00	0.00	1.1	0.456E-03	0.41	0.94	.12801E+02
4.75	0.00	0.00	1.1	0.456E-03	0.41	0.94	.12812E+02
4.75	0.00	0.00	1.1	0.456E-03	0.41	0.95	.12823E+02

4.76	0.00	0.00	1.1	0.456E-03	0.41	0.95	.12835E+02
4.76	0.00	0.00	1.1	0.455E-03	0.41	0.95	.12846E+02
4.76	0.00	0.00	1.1	0.455E-03	0.41	0.95	.12857E+02
4.77	0.00	0.00	1.1	0.455E-03	0.41	0.95	.12868E+02
4.77	0.00	0.00	1.1	0.455E-03	0.41	0.95	.12880E+02
4.78	0.00	0.00	1.1	0.455E-03	0.41	0.95	.12891E+02
4.78	0.00	0.00	1.1	0.455E-03	0.41	0.95	.12902E+02
4.78	0.00	0.00	1.1	0.454E-03	0.41	0.95	.12913E+02
4.79	0.00	0.00	1.1	0.454E-03	0.41	0.95	.12925E+02
4.79	0.00	0.00	1.1	0.454E-03	0.41	0.95	.12936E+02
4.80	0.00	0.00	1.1	0.454E-03	0.41	0.95	.12947E+02
4.80	0.00	0.00	1.1	0.454E-03	0.41	0.95	.12958E+02
4.81	0.00	0.00	1.1	0.454E-03	0.41	0.95	.12970E+02
4.81	0.00	0.00	1.1	0.453E-03	0.41	0.95	.12981E+02
4.81	0.00	0.00	1.1	0.453E-03	0.41	0.95	.12992E+02
4.82	0.00	0.00	1.1	0.453E-03	0.41	0.95	.13003E+02
4.82	0.00	0.00	1.1	0.453E-03	0.41	0.95	.13015E+02
4.83	0.00	0.00	1.1	0.453E-03	0.41	0.95	.13026E+02
4.83	0.00	0.00	1.1	0.452E-03	0.41	0.95	.13037E+02
4.84	0.00	0.00	1.1	0.452E-03	0.41	0.95	.13048E+02
4.84	0.00	0.00	1.1	0.452E-03	0.41	0.95	.13060E+02
4.84	0.00	0.00	1.1	0.452E-03	0.41	0.95	.13071E+02
4.85	0.00	0.00	1.1	0.452E-03	0.41	0.95	.13082E+02
4.85	0.00	0.00	1.1	0.452E-03	0.41	0.95	.13093E+02
4.86	0.00	0.00	1.1	0.451E-03	0.41	0.96	.13105E+02
4.86	0.00	0.00	1.1	0.451E-03	0.41	0.96	.13116E+02
4.86	0.00	0.00	1.1	0.451E-03	0.41	0.96	.13127E+02
4.87	0.00	0.00	1.1	0.451E-03	0.41	0.96	.13138E+02
4.87	0.00	0.00	1.1	0.451E-03	0.41	0.96	.13150E+02
4.88	0.00	0.00	1.1	0.451E-03	0.41	0.96	.13161E+02
4.88	0.00	0.00	1.1	0.450E-03	0.41	0.96	.13172E+02
4.89	0.00	0.00	1.1	0.450E-03	0.41	0.96	.13183E+02
4.89	0.00	0.00	1.1	0.450E-03	0.41	0.96	.13195E+02
4.89	0.00	0.00	1.1	0.450E-03	0.41	0.96	.13206E+02
4.90	0.00	0.00	1.1	0.450E-03	0.41	0.96	.13217E+02
4.90	0.00	0.00	1.1	0.450E-03	0.41	0.96	.13228E+02
4.91	0.00	0.00	1.1	0.449E-03	0.41	0.96	.13240E+02
4.91	0.00	0.00	1.1	0.449E-03	0.41	0.96	.13251E+02
4.91	0.00	0.00	1.1	0.449E-03	0.41	0.96	.13262E+02
4.92	0.00	0.00	1.1	0.449E-03	0.41	0.96	.13273E+02
4.92	0.00	0.00	1.1	0.449E-03	0.41	0.96	.13285E+02
4.93	0.00	0.00	1.1	0.448E-03	0.41	0.96	.13296E+02
4.93	0.00	0.00	1.1	0.448E-03	0.41	0.96	.13307E+02
4.94	0.00	0.00	1.1	0.448E-03	0.41	0.96	.13318E+02
4.94	0.00	0.00	1.1	0.448E-03	0.41	0.96	.13330E+02
4.94	0.00	0.00	1.1	0.448E-03	0.41	0.96	.13341E+02
4.95	0.00	0.00	1.1	0.448E-03	0.41	0.96	.13352E+02
4.95	0.00	0.00	1.1	0.447E-03	0.41	0.96	.13363E+02
4.96	0.00	0.00	1.1	0.447E-03	0.41	0.96	.13375E+02
4.96	0.00	0.00	1.1	0.447E-03	0.41	0.97	.13386E+02
4.97	0.00	0.00	1.1	0.447E-03	0.41	0.97	.13397E+02
4.97	0.00	0.00	1.1	0.447E-03	0.41	0.97	.13408E+02
4.97	0.00	0.00	1.1	0.447E-03	0.41	0.97	.13420E+02
4.98	0.00	0.00	1.1	0.446E-03	0.41	0.97	.13431E+02
4.98	0.00	0.00	1.1	0.446E-03	0.41	0.97	.13442E+02
4.99	0.00	0.00	1.1	0.446E-03	0.41	0.97	.13453E+02
4.99	0.00	0.00	1.1	0.446E-03	0.41	0.97	.13465E+02
4.99	0.00	0.00	1.1	0.446E-03	0.41	0.97	.13476E+02
5.00	0.00	0.00	1.1	0.446E-03	0.41	0.97	.13487E+02
5.00	0.00	0.00	1.1	0.445E-03	0.41	0.97	.13498E+02
5.01	0.00	0.00	1.1	0.445E-03	0.41	0.97	.13510E+02
5.01	0.00	0.00	1.1	0.445E-03	0.41	0.97	.13521E+02
5.02	0.00	0.00	1.1	0.445E-03	0.41	0.97	.13532E+02
5.02	0.00	0.00	1.1	0.445E-03	0.41	0.97	.13543E+02
5.02	0.00	0.00	1.1	0.444E-03	0.41	0.97	.13554E+02
5.03	0.00	0.00	1.1	0.444E-03	0.41	0.97	.13566E+02
5.03	0.00	0.00	1.1	0.444E-03	0.41	0.97	.13577E+02
5.04	0.00	0.00	1.1	0.444E-03	0.41	0.97	.13588E+02
5.04	0.00	0.00	1.1	0.444E-03	0.41	0.97	.13599E+02
5.04	0.00	0.00	1.1	0.444E-03	0.41	0.97	.13611E+02
5.05	0.00	0.00	1.1	0.443E-03	0.41	0.97	.13622E+02
5.05	0.00	0.00	1.1	0.443E-03	0.41	0.97	.13633E+02
5.06	0.00	0.00	1.1	0.443E-03	0.41	0.97	.13644E+02
5.06	0.00	0.00	1.1	0.443E-03	0.41	0.97	.13656E+02
5.07	0.00	0.00	1.1	0.443E-03	0.41	0.98	.13667E+02
5.07	0.00	0.00	1.1	0.443E-03	0.41	0.98	.13678E+02
5.07	0.00	0.00	1.1	0.442E-03	0.41	0.98	.13689E+02
5.08	0.00	0.00	1.1	0.442E-03	0.41	0.98	.13701E+02
5.08	0.00	0.00	1.1	0.442E-03	0.41	0.98	.13712E+02
5.09	0.00	0.00	1.1	0.442E-03	0.41	0.98	.13723E+02
5.09	0.00	0.00	1.1	0.442E-03	0.41	0.98	.13734E+02
5.09	0.00	0.00	1.1	0.442E-03	0.41	0.98	.13746E+02
5.10	0.00	0.00	1.1	0.441E-03	0.41	0.98	.13757E+02
5.10	0.00	0.00	1.1	0.441E-03	0.41	0.98	.13768E+02
5.11	0.00	0.00	1.1	0.441E-03	0.41	0.98	.13779E+02
5.11	0.00	0.00	1.1	0.441E-03	0.41	0.98	.13791E+02
5.12	0.00	0.00	1.1	0.441E-03	0.41	0.98	.13802E+02
5.12	0.00	0.00	1.1	0.440E-03	0.41	0.98	.13813E+02
5.12	0.00	0.00	1.1	0.440E-03	0.41	0.98	.13824E+02
5.13	0.00	0.00	1.1	0.440E-03	0.41	0.98	.13836E+02

5.13	0.00	0.00	1.1	0.440E-03	0.41	0.98	.13847E+02
5.14	0.00	0.00	1.1	0.440E-03	0.41	0.98	.13858E+02
5.14	0.00	0.00	1.1	0.440E-03	0.41	0.98	.13869E+02
5.15	0.00	0.00	1.1	0.439E-03	0.41	0.98	.13881E+02
5.15	0.00	0.00	1.1	0.439E-03	0.41	0.98	.13892E+02
5.15	0.00	0.00	1.1	0.439E-03	0.41	0.98	.13903E+02
5.16	0.00	0.00	1.1	0.439E-03	0.41	0.98	.13914E+02
5.16	0.00	0.00	1.1	0.439E-03	0.41	0.98	.13926E+02
5.17	0.00	0.00	1.1	0.439E-03	0.41	0.98	.13937E+02
5.17	0.00	0.00	1.1	0.438E-03	0.41	0.99	.13948E+02
5.17	0.00	0.00	1.1	0.438E-03	0.41	0.99	.13959E+02
5.18	0.00	0.00	1.1	0.438E-03	0.41	0.99	.13971E+02
5.18	0.00	0.00	1.1	0.438E-03	0.41	0.99	.13982E+02
5.19	0.00	0.00	1.1	0.438E-03	0.41	0.99	.13993E+02
5.19	0.00	0.00	1.1	0.438E-03	0.41	0.99	.14004E+02
5.20	0.00	0.00	1.1	0.437E-03	0.41	0.99	.14016E+02
5.20	0.00	0.00	1.1	0.437E-03	0.41	0.99	.14027E+02
5.20	0.00	0.00	1.1	0.437E-03	0.41	0.99	.14038E+02
5.21	0.00	0.00	1.1	0.437E-03	0.41	0.99	.14049E+02
5.21	0.00	0.00	1.1	0.437E-03	0.41	0.99	.14061E+02
5.22	0.00	0.00	1.1	0.437E-03	0.41	0.99	.14072E+02
5.22	0.00	0.00	1.1	0.436E-03	0.41	0.99	.14083E+02
5.22	0.00	0.00	1.1	0.436E-03	0.41	0.99	.14094E+02
5.23	0.00	0.00	1.1	0.436E-03	0.41	0.99	.14106E+02
5.23	0.00	0.00	1.1	0.436E-03	0.41	0.99	.14117E+02
5.24	0.00	0.00	1.1	0.436E-03	0.41	0.99	.14128E+02
5.24	0.00	0.00	1.1	0.436E-03	0.41	0.99	.14139E+02
5.25	0.00	0.00	1.1	0.435E-03	0.41	0.99	.14151E+02
5.25	0.00	0.00	1.1	0.435E-03	0.41	0.99	.14162E+02
5.25	0.00	0.00	1.1	0.435E-03	0.41	0.99	.14173E+02
5.26	0.00	0.00	1.1	0.435E-03	0.41	0.99	.14184E+02
5.26	0.00	0.00	1.2	0.435E-03	0.41	0.99	.14196E+02
5.27	0.00	0.00	1.2	0.434E-03	0.41	0.99	.14207E+02
5.27	0.00	0.00	1.2	0.434E-03	0.41	0.99	.14218E+02
5.28	0.00	0.00	1.2	0.434E-03	0.41	1.00	.14229E+02
5.28	0.00	0.00	1.2	0.434E-03	0.41	1.00	.14241E+02
5.28	0.00	0.00	1.2	0.434E-03	0.41	1.00	.14252E+02
5.29	0.00	0.00	1.2	0.434E-03	0.41	1.00	.14263E+02
5.29	0.00	0.00	1.2	0.433E-03	0.41	1.00	.14274E+02
5.30	0.00	0.00	1.2	0.433E-03	0.41	1.00	.14286E+02
5.30	0.00	0.00	1.2	0.433E-03	0.41	1.00	.14297E+02
5.30	0.00	0.00	1.2	0.433E-03	0.41	1.00	.14308E+02
5.31	0.00	0.00	1.2	0.433E-03	0.41	1.00	.14319E+02
5.31	0.00	0.00	1.2	0.433E-03	0.41	1.00	.14331E+02
5.32	0.00	0.00	1.2	0.432E-03	0.41	1.00	.14342E+02
5.32	0.00	0.00	1.2	0.432E-03	0.41	1.00	.14353E+02
5.33	0.00	0.00	1.2	0.432E-03	0.41	1.00	.14364E+02
5.33	0.00	0.00	1.2	0.432E-03	0.41	1.00	.14376E+02
5.33	0.00	0.00	1.2	0.432E-03	0.41	1.00	.14387E+02
5.34	0.00	0.00	1.2	0.432E-03	0.41	1.00	.14398E+02
5.34	0.00	0.00	1.2	0.431E-03	0.41	1.00	.14409E+02
5.35	0.00	0.00	1.2	0.431E-03	0.41	1.00	.14421E+02
5.35	0.00	0.00	1.2	0.431E-03	0.41	1.00	.14432E+02
5.35	0.00	0.00	1.2	0.431E-03	0.41	1.00	.14443E+02
5.36	0.00	0.00	1.2	0.431E-03	0.41	1.00	.14454E+02
5.36	0.00	0.00	1.2	0.431E-03	0.41	1.00	.14466E+02
5.37	0.00	0.00	1.2	0.430E-03	0.41	1.00	.14477E+02
5.37	0.00	0.00	1.2	0.430E-03	0.41	1.00	.14488E+02
5.38	0.00	0.00	1.2	0.430E-03	0.41	1.00	.14499E+02
5.38	0.00	0.00	1.2	0.430E-03	0.41	1.01	.14511E+02
5.38	0.00	0.00	1.2	0.430E-03	0.41	1.01	.14522E+02
5.39	0.00	0.00	1.2	0.430E-03	0.41	1.01	.14533E+02
5.39	0.00	0.00	1.2	0.429E-03	0.41	1.01	.14544E+02
5.40	0.00	0.00	1.2	0.429E-03	0.41	1.01	.14556E+02
5.40	0.00	0.00	1.2	0.429E-03	0.41	1.01	.14567E+02
5.40	0.00	0.00	1.2	0.429E-03	0.41	1.01	.14578E+02
5.41	0.00	0.00	1.2	0.429E-03	0.41	1.01	.14589E+02
5.41	0.00	0.00	1.2	0.429E-03	0.41	1.01	.14601E+02
5.42	0.00	0.00	1.2	0.428E-03	0.41	1.01	.14612E+02
5.42	0.00	0.00	1.2	0.428E-03	0.41	1.01	.14623E+02
5.43	0.00	0.00	1.2	0.428E-03	0.41	1.01	.14634E+02
5.43	0.00	0.00	1.2	0.428E-03	0.41	1.01	.14646E+02
5.43	0.00	0.00	1.2	0.428E-03	0.41	1.01	.14657E+02
5.44	0.00	0.00	1.2	0.428E-03	0.41	1.01	.14668E+02
5.44	0.00	0.00	1.2	0.427E-03	0.41	1.01	.14679E+02
5.45	0.00	0.00	1.2	0.427E-03	0.41	1.01	.14691E+02
5.45	0.00	0.00	1.2	0.427E-03	0.41	1.01	.14702E+02
5.46	0.00	0.00	1.2	0.427E-03	0.41	1.01	.14713E+02
5.46	0.00	0.00	1.2	0.427E-03	0.41	1.01	.14724E+02
5.46	0.00	0.00	1.2	0.427E-03	0.41	1.01	.14736E+02
5.47	0.00	0.00	1.2	0.426E-03	0.41	1.01	.14747E+02
5.47	0.00	0.00	1.2	0.426E-03	0.41	1.01	.14758E+02
5.48	0.00	0.00	1.2	0.426E-03	0.41	1.01	.14769E+02
5.48	0.00	0.00	1.2	0.426E-03	0.41	1.01	.14781E+02
5.48	0.00	0.00	1.2	0.426E-03	0.41	1.01	.14792E+02
5.49	0.00	0.00	1.2	0.426E-03	0.41	1.02	.14803E+02
5.49	0.00	0.00	1.2	0.425E-03	0.41	1.02	.14814E+02
5.50	0.00	0.00	1.2	0.425E-03	0.41	1.02	.14826E+02
5.50	0.00	0.00	1.2	0.425E-03	0.41	1.02	.14837E+02
5.51	0.00	0.00	1.2	0.425E-03	0.41	1.02	.14848E+02

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      5.51     0.00    0.00     1.2 0.425E-03   0.41     1.02 .14859E+02
      5.51     0.00    0.00     1.2 0.424E-03   0.41     1.02 .14871E+02
      5.52     0.00    0.00     1.2 0.424E-03   0.41     1.02 .14882E+02
      5.52     0.00    0.00     1.2 0.424E-03   0.41     1.02 .14893E+02
      5.53     0.00    0.00     1.2 0.424E-03   0.41     1.02 .14904E+02
      5.53     0.00    0.00     1.2 0.424E-03   0.41     1.02 .14916E+02
      5.53     0.00    0.00     1.2 0.424E-03   0.41     1.02 .14927E+02
      5.54     0.00    0.00     1.2 0.423E-03   0.41     1.02 .14938E+02
      5.54     0.00    0.00     1.2 0.423E-03   0.41     1.02 .14949E+02
      5.55     0.00    0.00     1.2 0.423E-03   0.41     1.02 .14961E+02
      5.55     0.00    0.00     1.2 0.423E-03   0.41     1.02 .14972E+02
      5.56     0.00    0.00     1.2 0.423E-03   0.41     1.02 .14983E+02
      5.56     0.00    0.00     1.2 0.423E-03   0.41     1.02 .14994E+02
      5.56     0.00    0.00     1.2 0.422E-03   0.41     1.02 .15006E+02
      5.57     0.00    0.00     1.2 0.422E-03   0.41     1.02 .15017E+02
      5.57     0.00    0.00     1.2 0.422E-03   0.41     1.02 .15028E+02
      5.58     0.00    0.00     1.2 0.422E-03   0.41     1.02 .15039E+02
      5.58     0.00    0.00     1.2 0.422E-03   0.41     1.02 .15051E+02
      5.59     0.00    0.00     1.2 0.422E-03   0.41     1.02 .15062E+02
      5.59     0.00    0.00     1.2 0.421E-03   0.41     1.02 .15073E+02
      5.59     0.00    0.00     1.2 0.421E-03   0.41     1.02 .15084E+02
      5.60     0.00    0.00     1.2 0.421E-03   0.41     1.03 .15095E+02
      5.60     0.00    0.00     1.2 0.421E-03   0.41     1.03 .15107E+02
      5.61     0.00    0.00     1.2 0.421E-03   0.41     1.03 .15118E+02
      5.61     0.00    0.00     1.2 0.421E-03   0.41     1.03 .15129E+02
      5.61     0.00    0.00     1.2 0.420E-03   0.41     1.03 .15140E+02
      5.62     0.00    0.00     1.2 0.420E-03   0.41     1.03 .15152E+02
      5.62     0.00    0.00     1.2 0.420E-03   0.41     1.03 .15163E+02
      5.63     0.00    0.00     1.2 0.420E-03   0.41     1.03 .15174E+02
      5.63     0.00    0.00     1.2 0.420E-03   0.41     1.03 .15185E+02
      5.64     0.00    0.00     1.2 0.420E-03   0.41     1.03 .15197E+02
      5.64     0.00    0.00     1.2 0.419E-03   0.41     1.03 .15208E+02
      5.64     0.00    0.00     1.2 0.419E-03   0.41     1.03 .15219E+02
      5.65     0.00    0.00     1.2 0.419E-03   0.41     1.03 .15230E+02
      5.65     0.00    0.00     1.2 0.419E-03   0.41     1.03 .15242E+02
      5.66     0.00    0.00     1.2 0.419E-03   0.41     1.03 .15253E+02
      5.66     0.00    0.00     1.2 0.419E-03   0.41     1.03 .15264E+02
      5.66     0.00    0.00     1.2 0.418E-03   0.41     1.03 .15275E+02
      5.67     0.00    0.00     1.2 0.418E-03   0.41     1.03 .15287E+02
      5.67     0.00    0.00     1.2 0.418E-03   0.41     1.03 .15298E+02
      5.68     0.00    0.00     1.2 0.418E-03   0.41     1.03 .15309E+02
      5.68     0.00    0.00     1.2 0.418E-03   0.41     1.03 .15320E+02
      5.69     0.00    0.00     1.2 0.418E-03   0.41     1.03 .15332E+02
      5.69     0.00    0.00     1.2 0.417E-03   0.41     1.03 .15343E+02
      5.69     0.00    0.00     1.2 0.417E-03   0.41     1.03 .15354E+02
      5.70     0.00    0.00     1.2 0.417E-03   0.41     1.03 .15365E+02
      5.70     0.00    0.00     1.2 0.417E-03   0.41     1.04 .15377E+02
      5.71     0.00    0.00     1.2 0.417E-03   0.41     1.04 .15388E+02
      5.71     0.00    0.00     1.2 0.417E-03   0.41     1.04 .15399E+02
      5.71     0.00    0.00     1.2 0.416E-03   0.41     1.04 .15410E+02
      5.72     0.00    0.00     1.2 0.416E-03   0.41     1.04 .15422E+02
      5.72     0.00    0.00     1.2 0.416E-03   0.41     1.04 .15433E+02
      5.73     0.00    0.00     1.2 0.416E-03   0.41     1.04 .15444E+02
      5.73     0.00    0.00     1.2 0.416E-03   0.41     1.04 .15455E+02
      5.74     0.00    0.00     1.2 0.416E-03   0.41     1.04 .15467E+02
      5.74     0.00    0.00     1.2 0.415E-03   0.41     1.04 .15478E+02
      5.74     0.00    0.00     1.2 0.415E-03   0.41     1.04 .15489E+02
      5.75     0.00    0.00     1.2 0.415E-03   0.41     1.04 .15500E+02
      5.75     0.00    0.00     1.2 0.415E-03   0.41     1.04 .15512E+02
      5.76     0.00    0.00     1.2 0.415E-03   0.41     1.04 .15523E+02
      5.76     0.00    0.00     1.2 0.415E-03   0.41     1.04 .15534E+02
      5.77     0.00    0.00     1.2 0.414E-03   0.41     1.04 .15545E+02
      5.77     0.00    0.00     1.2 0.414E-03   0.41     1.04 .15557E+02
      5.77     0.00    0.00     1.2 0.414E-03   0.41     1.04 .15568E+02
      5.78     0.00    0.00     1.2 0.414E-03   0.41     1.04 .15579E+02
      5.78     0.00    0.00     1.2 0.414E-03   0.41     1.04 .15590E+02
      5.79     0.00    0.00     1.2 0.414E-03   0.41     1.04 .15602E+02
      5.79     0.00    0.00     1.2 0.413E-03   0.41     1.04 .15613E+02
      5.79     0.00    0.00     1.2 0.413E-03   0.41     1.04 .15624E+02
      5.80     0.00    0.00     1.2 0.413E-03   0.41     1.04 .15635E+02
      5.80     0.00    0.00     1.2 0.413E-03   0.41     1.04 .15647E+02
      5.81     0.00    0.00     1.2 0.413E-03   0.41     1.04 .15658E+02
      5.81     0.00    0.00     1.2 0.413E-03   0.41     1.05 .15669E+02
      5.82     0.00    0.00     1.2 0.412E-03   0.41     1.05 .15680E+02
      5.82     0.00    0.00     1.2 0.412E-03   0.41     1.05 .15692E+02
 Cumulative travel time =          15.6917 sec  (    0.00 hrs)

END OF MOD341: BUOYANT AMBIENT SPREADING
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BEGIN MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

  Vertical diffusivity (initial value)   = 0.730E-02 m^2/s
  Horizontal diffusivity (initial value) = 0.182E-01 m^2/s

 Profile definitions:
   BV = Gaussian s.d.*sqrt(pi/2) (46%) thickness, measured vertically
      = or equal to water depth, if fully mixed
   BH = Gaussian s.d.*sqrt(pi/2) (46%) half-width,
        measured horizontally in Y-direction
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  S  = hydrodynamic centerline dilution
  C  = centerline concentration (includes reaction efects, if any)
  TT = Cumulative travel time

Plume Stage 2 (bank attached):
      X        Y       Z        S       C       BV       BH        TT
     5.82     0.00    0.00     1.2 0.412E-03   0.41     1.05 .15692E+02
     7.81     0.00    0.00     1.5 0.335E-03   0.45     1.18 .21030E+02
     9.80     0.00    0.00     1.8 0.278E-03   0.49     1.31 .26369E+02
    11.78     0.00    0.00     2.1 0.234E-03   0.53     1.42 .31708E+02
    13.77     0.00    0.00     2.5 0.199E-03   0.58     1.52 .37047E+02
    15.76     0.00    0.00     2.9 0.172E-03   0.64     1.62 .42385E+02
    17.75     0.00    0.00     3.3 0.150E-03   0.69     1.71 .47724E+02
    19.74     0.00    0.00     3.8 0.132E-03   0.75     1.80 .53063E+02
Plume interacts with BOTTOM.
The passive diffusion plume becomes VERTICALLY FULLY MIXED within this
  prediction interval.
    21.73     0.00    0.00     4.0 0.125E-03   0.75     1.88 .58402E+02
    23.71     0.00    0.00     4.2 0.120E-03   0.75     1.96 .63741E+02
    25.70     0.00    0.00     4.3 0.116E-03   0.75     2.04 .69079E+02
    27.69     0.00    0.00     4.5 0.112E-03   0.75     2.11 .74418E+02
    29.68     0.00    0.00     4.6 0.108E-03   0.75     2.18 .79757E+02
    31.67     0.00    0.00     4.8 0.105E-03   0.75     2.25 .85096E+02
    33.66     0.00    0.00     4.9 0.102E-03   0.75     2.32 .90434E+02
** WATER QUALITY STANDARD OR CCC HAS BEEN FOUND **
The pollutant concentration in the plume falls below water quality standard
  or CCC value of 0.100E-03 in the current prediction interval.
This is the spatial extent of concentrations exceeding the water quality
  standard or CCC value.
    35.65     0.00    0.00     5.0 0.990E-04   0.75     2.38 .95773E+02
    37.63     0.00    0.00     5.2 0.965E-04   0.75     2.45 .10111E+03
    39.62     0.00    0.00     5.3 0.941E-04   0.75     2.51 .10645E+03
    41.61     0.00    0.00     5.4 0.919E-04   0.75     2.57 .11179E+03
    43.60     0.00    0.00     5.6 0.898E-04   0.75     2.63 .11713E+03
    45.59     0.00    0.00     5.7 0.879E-04   0.75     2.69 .12247E+03
    47.58     0.00    0.00     5.8 0.861E-04   0.75     2.74 .12781E+03
    49.56     0.00    0.00     5.9 0.844E-04   0.75     2.80 .13314E+03
    51.55     0.00    0.00     6.0 0.828E-04   0.75     2.85 .13848E+03
    53.54     0.00    0.00     6.2 0.813E-04   0.75     2.90 .14382E+03
    55.53     0.00    0.00     6.3 0.798E-04   0.75     2.96 .14916E+03
    57.52     0.00    0.00     6.4 0.785E-04   0.75     3.01 .15450E+03
    59.51     0.00    0.00     6.5 0.772E-04   0.75     3.06 .15984E+03
    61.49     0.00    0.00     6.6 0.759E-04   0.75     3.11 .16518E+03
    63.48     0.00    0.00     6.7 0.748E-04   0.75     3.16 .17052E+03
    65.47     0.00    0.00     6.8 0.737E-04   0.75     3.20 .17585E+03
    67.46     0.00    0.00     6.9 0.726E-04   0.75     3.25 .18119E+03
    69.45     0.00    0.00     7.0 0.716E-04   0.75     3.30 .18653E+03
    71.44     0.00    0.00     7.1 0.706E-04   0.75     3.34 .19187E+03
    73.42     0.00    0.00     7.2 0.696E-04   0.75     3.39 .19721E+03
    75.41     0.00    0.00     7.3 0.687E-04   0.75     3.44 .20255E+03
    77.40     0.00    0.00     7.4 0.678E-04   0.75     3.48 .20789E+03
    79.39     0.00    0.00     7.5 0.670E-04   0.75     3.52 .21323E+03
    81.38     0.00    0.00     7.6 0.662E-04   0.75     3.57 .21856E+03
    83.37     0.00    0.00     7.6 0.654E-04   0.75     3.61 .22390E+03
    85.35     0.00    0.00     7.7 0.647E-04   0.75     3.65 .22924E+03
    87.34     0.00    0.00     7.8 0.639E-04   0.75     3.69 .23458E+03
    89.33     0.00    0.00     7.9 0.632E-04   0.75     3.73 .23992E+03
    91.32     0.00    0.00     8.0 0.625E-04   0.75     3.77 .24526E+03
** REGULATORY MIXING ZONE BOUNDARY **
In this prediction interval the plume DOWNSTREAM distance meets or exceeds
the regulatory value =    91.46 m.
This is the extent of the REGULATORY MIXING ZONE.
    93.31     0.00    0.00     8.1 0.619E-04   0.75     3.81 .25060E+03
    95.30     0.00    0.00     8.2 0.612E-04   0.75     3.85 .25594E+03
    97.28     0.00    0.00     8.2 0.606E-04   0.75     3.89 .26127E+03
    99.27     0.00    0.00     8.3 0.600E-04   0.75     3.93 .26661E+03
   101.26     0.00    0.00     8.4 0.594E-04   0.75     3.97 .27195E+03
   103.25     0.00    0.00     8.5 0.589E-04   0.75     4.01 .27729E+03
   105.24     0.00    0.00     8.6 0.583E-04   0.75     4.05 .28263E+03
   107.23     0.00    0.00     8.7 0.578E-04   0.75     4.09 .28797E+03
   109.21     0.00    0.00     8.7 0.572E-04   0.75     4.12 .29331E+03
   111.20     0.00    0.00     8.8 0.567E-04   0.75     4.16 .29865E+03
   113.19     0.00    0.00     8.9 0.562E-04   0.75     4.20 .30398E+03
   115.18     0.00    0.00     9.0 0.558E-04   0.75     4.23 .30932E+03
   117.17     0.00    0.00     9.0 0.553E-04   0.75     4.27 .31466E+03
   119.16     0.00    0.00     9.1 0.548E-04   0.75     4.30 .32000E+03
   121.14     0.00    0.00     9.2 0.544E-04   0.75     4.34 .32534E+03
   123.13     0.00    0.00     9.3 0.539E-04   0.75     4.38 .33068E+03
   125.12     0.00    0.00     9.3 0.535E-04   0.75     4.41 .33602E+03
   127.11     0.00    0.00     9.4 0.531E-04   0.75     4.44 .34136E+03
   129.10     0.00    0.00     9.5 0.527E-04   0.75     4.48 .34669E+03
   131.09     0.00    0.00     9.6 0.523E-04   0.75     4.51 .35203E+03
   133.07     0.00    0.00     9.6 0.519E-04   0.75     4.55 .35737E+03
   135.06     0.00    0.00     9.7 0.515E-04   0.75     4.58 .36271E+03
   137.05     0.00    0.00     9.8 0.512E-04   0.75     4.61 .36805E+03
   139.04     0.00    0.00     9.8 0.508E-04   0.75     4.65 .37339E+03
   141.03     0.00    0.00     9.9 0.504E-04   0.75     4.68 .37873E+03
   143.02     0.00    0.00    10.0 0.501E-04   0.75     4.71 .38407E+03
   145.00     0.00    0.00    10.0 0.498E-04   0.75     4.74 .38940E+03
   146.99     0.00    0.00    10.1 0.494E-04   0.75     4.78 .39474E+03
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148.98	0.00	0.00	10.2	0.491E-04	0.75	4.81	.40008E+03
150.97	0.00	0.00	10.3	0.488E-04	0.75	4.84	.40542E+03
152.96	0.00	0.00	10.3	0.485E-04	0.75	4.87	.41076E+03
154.95	0.00	0.00	10.4	0.481E-04	0.75	4.90	.41610E+03
156.93	0.00	0.00	10.5	0.478E-04	0.75	4.93	.42144E+03
158.92	0.00	0.00	10.5	0.475E-04	0.75	4.96	.42678E+03
160.91	0.00	0.00	10.6	0.473E-04	0.75	5.00	.43211E+03
162.90	0.00	0.00	10.6	0.470E-04	0.75	5.03	.43745E+03
164.89	0.00	0.00	10.7	0.467E-04	0.75	5.06	.44279E+03
166.88	0.00	0.00	10.8	0.464E-04	0.75	5.09	.44813E+03
168.87	0.00	0.00	10.8	0.461E-04	0.75	5.12	.45347E+03
170.85	0.00	0.00	10.9	0.459E-04	0.75	5.15	.45881E+03
172.84	0.00	0.00	11.0	0.456E-04	0.75	5.18	.46415E+03
174.83	0.00	0.00	11.0	0.453E-04	0.75	5.21	.46949E+03
176.82	0.00	0.00	11.1	0.451E-04	0.75	5.23	.47482E+03
178.81	0.00	0.00	11.2	0.448E-04	0.75	5.26	.48016E+03
180.80	0.00	0.00	11.2	0.446E-04	0.75	5.29	.48550E+03
182.78	0.00	0.00	11.3	0.444E-04	0.75	5.32	.49084E+03
184.77	0.00	0.00	11.3	0.441E-04	0.75	5.35	.49618E+03
186.76	0.00	0.00	11.4	0.439E-04	0.75	5.38	.50152E+03
188.75	0.00	0.00	11.5	0.437E-04	0.75	5.41	.50686E+03
190.74	0.00	0.00	11.5	0.434E-04	0.75	5.44	.51220E+03
192.73	0.00	0.00	11.6	0.432E-04	0.75	5.46	.51753E+03
194.71	0.00	0.00	11.6	0.430E-04	0.75	5.49	.52287E+03
196.70	0.00	0.00	11.7	0.428E-04	0.75	5.52	.52821E+03
198.69	0.00	0.00	11.7	0.426E-04	0.75	5.55	.53355E+03
200.68	0.00	0.00	11.8	0.423E-04	0.75	5.57	.53889E+03
202.67	0.00	0.00	11.9	0.421E-04	0.75	5.60	.54423E+03
204.66	0.00	0.00	11.9	0.419E-04	0.75	5.63	.54957E+03
206.64	0.00	0.00	12.0	0.417E-04	0.75	5.66	.55491E+03
208.63	0.00	0.00	12.0	0.415E-04	0.75	5.68	.56024E+03
210.62	0.00	0.00	12.1	0.413E-04	0.75	5.71	.56558E+03
212.61	0.00	0.00	12.2	0.411E-04	0.75	5.74	.57092E+03
214.60	0.00	0.00	12.2	0.410E-04	0.75	5.76	.57626E+03
216.59	0.00	0.00	12.3	0.408E-04	0.75	5.79	.58160E+03
218.57	0.00	0.00	12.3	0.406E-04	0.75	5.82	.58694E+03
220.56	0.00	0.00	12.4	0.404E-04	0.75	5.84	.59228E+03
222.55	0.00	0.00	12.4	0.402E-04	0.75	5.87	.59762E+03
224.54	0.00	0.00	12.5	0.400E-04	0.75	5.89	.60295E+03
226.53	0.00	0.00	12.5	0.399E-04	0.75	5.92	.60829E+03
228.52	0.00	0.00	12.6	0.397E-04	0.75	5.95	.61363E+03
230.50	0.00	0.00	12.6	0.395E-04	0.75	5.97	.61897E+03
232.49	0.00	0.00	12.7	0.394E-04	0.75	6.00	.62431E+03
234.48	0.00	0.00	12.8	0.392E-04	0.75	6.02	.62965E+03
236.47	0.00	0.00	12.8	0.390E-04	0.75	6.05	.63499E+03
238.46	0.00	0.00	12.9	0.389E-04	0.75	6.07	.64033E+03
240.45	0.00	0.00	12.9	0.387E-04	0.75	6.10	.64566E+03
242.43	0.00	0.00	13.0	0.385E-04	0.75	6.12	.65100E+03
244.42	0.00	0.00	13.0	0.384E-04	0.75	6.15	.65634E+03
246.41	0.00	0.00	13.1	0.382E-04	0.75	6.17	.66168E+03
248.40	0.00	0.00	13.1	0.381E-04	0.75	6.20	.66702E+03
250.39	0.00	0.00	13.2	0.379E-04	0.75	6.22	.67236E+03
252.38	0.00	0.00	13.2	0.378E-04	0.75	6.25	.67770E+03
254.36	0.00	0.00	13.3	0.376E-04	0.75	6.27	.68304E+03
256.35	0.00	0.00	13.3	0.375E-04	0.75	6.30	.68837E+03
258.34	0.00	0.00	13.4	0.373E-04	0.75	6.32	.69371E+03
260.33	0.00	0.00	13.4	0.372E-04	0.75	6.34	.69905E+03
262.32	0.00	0.00	13.5	0.371E-04	0.75	6.37	.70439E+03
264.31	0.00	0.00	13.5	0.369E-04	0.75	6.39	.70973E+03
266.29	0.00	0.00	13.6	0.368E-04	0.75	6.42	.71507E+03
268.28	0.00	0.00	13.6	0.367E-04	0.75	6.44	.72041E+03
270.27	0.00	0.00	13.7	0.365E-04	0.75	6.46	.72575E+03
272.26	0.00	0.00	13.7	0.364E-04	0.75	6.49	.73109E+03
274.25	0.00	0.00	13.8	0.363E-04	0.75	6.51	.73642E+03
276.24	0.00	0.00	13.8	0.361E-04	0.75	6.53	.74176E+03
278.22	0.00	0.00	13.9	0.360E-04	0.75	6.56	.74710E+03
280.21	0.00	0.00	13.9	0.359E-04	0.75	6.58	.75244E+03
282.20	0.00	0.00	14.0	0.357E-04	0.75	6.60	.75778E+03
284.19	0.00	0.00	14.0	0.356E-04	0.75	6.63	.76312E+03
286.18	0.00	0.00	14.1	0.355E-04	0.75	6.65	.76846E+03
288.17	0.00	0.00	14.1	0.354E-04	0.75	6.67	.77380E+03
290.16	0.00	0.00	14.2	0.353E-04	0.75	6.70	.77913E+03
292.14	0.00	0.00	14.2	0.351E-04	0.75	6.72	.78447E+03
294.13	0.00	0.00	14.3	0.350E-04	0.75	6.74	.78981E+03
296.12	0.00	0.00	14.3	0.349E-04	0.75	6.76	.79515E+03
298.11	0.00	0.00	14.4	0.348E-04	0.75	6.79	.80049E+03
300.10	0.00	0.00	14.4	0.347E-04	0.75	6.81	.80583E+03
302.09	0.00	0.00	14.5	0.346E-04	0.75	6.83	.81117E+03
304.07	0.00	0.00	14.5	0.344E-04	0.75	6.85	.81651E+03
306.06	0.00	0.00	14.6	0.343E-04	0.75	6.88	.82184E+03
308.05	0.00	0.00	14.6	0.342E-04	0.75	6.90	.82718E+03
310.04	0.00	0.00	14.7	0.341E-04	0.75	6.92	.83252E+03
312.03	0.00	0.00	14.7	0.340E-04	0.75	6.94	.83786E+03
314.02	0.00	0.00	14.8	0.339E-04	0.75	6.96	.84320E+03
316.00	0.00	0.00	14.8	0.338E-04	0.75	6.99	.84854E+03
317.99	0.00	0.00	14.8	0.337E-04	0.75	7.01	.85388E+03
319.98	0.00	0.00	14.9	0.336E-04	0.75	7.03	.85922E+03
321.97	0.00	0.00	14.9	0.335E-04	0.75	7.05	.86455E+03
323.96	0.00	0.00	15.0	0.334E-04	0.75	7.07	.86989E+03
325.95	0.00	0.00	15.0	0.333E-04	0.75	7.10	.87523E+03

327.93	0.00	0.00	15.1	0.332E-04	0.75	7.12	.88057E+03
329.92	0.00	0.00	15.1	0.331E-04	0.75	7.14	.88591E+03
331.91	0.00	0.00	15.2	0.330E-04	0.75	7.16	.89125E+03
333.90	0.00	0.00	15.2	0.329E-04	0.75	7.18	.89659E+03
335.89	0.00	0.00	15.3	0.328E-04	0.75	7.20	.90193E+03
337.88	0.00	0.00	15.3	0.327E-04	0.75	7.22	.90727E+03
339.86	0.00	0.00	15.3	0.326E-04	0.75	7.24	.91260E+03
341.85	0.00	0.00	15.4	0.325E-04	0.75	7.27	.91794E+03
343.84	0.00	0.00	15.4	0.324E-04	0.75	7.29	.92328E+03
345.83	0.00	0.00	15.5	0.323E-04	0.75	7.31	.92862E+03
347.82	0.00	0.00	15.5	0.322E-04	0.75	7.33	.93396E+03
349.81	0.00	0.00	15.6	0.321E-04	0.75	7.35	.93930E+03
351.79	0.00	0.00	15.6	0.320E-04	0.75	7.37	.94464E+03
353.78	0.00	0.00	15.7	0.319E-04	0.75	7.39	.94998E+03
355.77	0.00	0.00	15.7	0.318E-04	0.75	7.41	.95531E+03
357.76	0.00	0.00	15.7	0.318E-04	0.75	7.43	.96065E+03
359.75	0.00	0.00	15.8	0.317E-04	0.75	7.45	.96599E+03
361.74	0.00	0.00	15.8	0.316E-04	0.75	7.47	.97133E+03
363.72	0.00	0.00	15.9	0.315E-04	0.75	7.49	.97667E+03
365.71	0.00	0.00	15.9	0.314E-04	0.75	7.51	.98201E+03
367.70	0.00	0.00	16.0	0.313E-04	0.75	7.53	.98735E+03
369.69	0.00	0.00	16.0	0.312E-04	0.75	7.55	.99269E+03
371.68	0.00	0.00	16.0	0.312E-04	0.75	7.57	.99802E+03
373.67	0.00	0.00	16.1	0.311E-04	0.75	7.60	.10034E+04
375.66	0.00	0.00	16.1	0.310E-04	0.75	7.62	.10087E+04
377.64	0.00	0.00	16.2	0.309E-04	0.75	7.64	.10140E+04
379.63	0.00	0.00	16.2	0.308E-04	0.75	7.66	.10194E+04
381.62	0.00	0.00	16.3	0.308E-04	0.75	7.68	.10247E+04
383.61	0.00	0.00	16.3	0.307E-04	0.75	7.70	.10301E+04
385.60	0.00	0.00	16.3	0.306E-04	0.75	7.71	.10354E+04
387.59	0.00	0.00	16.4	0.305E-04	0.75	7.73	.10407E+04
389.57	0.00	0.00	16.4	0.304E-04	0.75	7.75	.10461E+04
391.56	0.00	0.00	16.5	0.304E-04	0.75	7.77	.10514E+04
393.55	0.00	0.00	16.5	0.303E-04	0.75	7.79	.10568E+04
395.54	0.00	0.00	16.6	0.302E-04	0.75	7.81	.10621E+04
397.53	0.00	0.00	16.6	0.301E-04	0.75	7.83	.10674E+04
399.52	0.00	0.00	16.6	0.301E-04	0.75	7.85	.10728E+04
401.50	0.00	0.00	16.7	0.300E-04	0.75	7.87	.10781E+04
403.49	0.00	0.00	16.7	0.299E-04	0.75	7.89	.10834E+04
405.48	0.00	0.00	16.8	0.298E-04	0.75	7.91	.10888E+04
407.47	0.00	0.00	16.8	0.298E-04	0.75	7.93	.10941E+04
409.46	0.00	0.00	16.8	0.297E-04	0.75	7.95	.10995E+04
411.45	0.00	0.00	16.9	0.296E-04	0.75	7.97	.11048E+04
413.43	0.00	0.00	16.9	0.296E-04	0.75	7.99	.11101E+04
415.42	0.00	0.00	17.0	0.295E-04	0.75	8.01	.11155E+04
417.41	0.00	0.00	17.0	0.294E-04	0.75	8.03	.11208E+04
419.40	0.00	0.00	17.0	0.293E-04	0.75	8.04	.11262E+04
421.39	0.00	0.00	17.1	0.293E-04	0.75	8.06	.11315E+04
423.38	0.00	0.00	17.1	0.292E-04	0.75	8.08	.11368E+04
425.36	0.00	0.00	17.2	0.291E-04	0.75	8.10	.11422E+04
427.35	0.00	0.00	17.2	0.291E-04	0.75	8.12	.11475E+04
429.34	0.00	0.00	17.2	0.290E-04	0.75	8.14	.11528E+04
431.33	0.00	0.00	17.3	0.289E-04	0.75	8.16	.11582E+04
433.32	0.00	0.00	17.3	0.289E-04	0.75	8.18	.11635E+04
435.31	0.00	0.00	17.4	0.288E-04	0.75	8.20	.11689E+04
437.29	0.00	0.00	17.4	0.287E-04	0.75	8.21	.11742E+04
439.28	0.00	0.00	17.4	0.287E-04	0.75	8.23	.11795E+04
441.27	0.00	0.00	17.5	0.286E-04	0.75	8.25	.11849E+04
443.26	0.00	0.00	17.5	0.285E-04	0.75	8.27	.11902E+04
445.25	0.00	0.00	17.6	0.285E-04	0.75	8.29	.11956E+04
447.24	0.00	0.00	17.6	0.284E-04	0.75	8.31	.12009E+04
449.22	0.00	0.00	17.6	0.284E-04	0.75	8.33	.12062E+04
451.21	0.00	0.00	17.7	0.283E-04	0.75	8.34	.12116E+04
453.20	0.00	0.00	17.7	0.282E-04	0.75	8.36	.12169E+04
455.19	0.00	0.00	17.8	0.282E-04	0.75	8.38	.12223E+04
457.18	0.00	0.00	17.8	0.281E-04	0.75	8.40	.12276E+04
459.17	0.00	0.00	17.8	0.280E-04	0.75	8.42	.12329E+04
461.16	0.00	0.00	17.9	0.280E-04	0.75	8.43	.12383E+04
463.14	0.00	0.00	17.9	0.279E-04	0.75	8.45	.12436E+04
465.13	0.00	0.00	17.9	0.279E-04	0.75	8.47	.12489E+04
467.12	0.00	0.00	18.0	0.278E-04	0.75	8.49	.12543E+04
469.11	0.00	0.00	18.0	0.277E-04	0.75	8.51	.12596E+04
471.10	0.00	0.00	18.1	0.277E-04	0.75	8.52	.12650E+04
473.09	0.00	0.00	18.1	0.276E-04	0.75	8.54	.12703E+04
475.07	0.00	0.00	18.1	0.276E-04	0.75	8.56	.12756E+04
477.06	0.00	0.00	18.2	0.275E-04	0.75	8.58	.12810E+04
479.05	0.00	0.00	18.2	0.275E-04	0.75	8.60	.12863E+04
481.04	0.00	0.00	18.2	0.274E-04	0.75	8.61	.12917E+04
483.03	0.00	0.00	18.3	0.273E-04	0.75	8.63	.12970E+04
485.02	0.00	0.00	18.3	0.273E-04	0.75	8.65	.13023E+04
487.00	0.00	0.00	18.4	0.272E-04	0.75	8.67	.13077E+04
488.99	0.00	0.00	18.4	0.272E-04	0.75	8.68	.13130E+04
490.98	0.00	0.00	18.4	0.271E-04	0.75	8.70	.13184E+04
492.97	0.00	0.00	18.5	0.271E-04	0.75	8.72	.13237E+04
494.96	0.00	0.00	18.5	0.270E-04	0.75	8.74	.13290E+04
496.95	0.00	0.00	18.5	0.270E-04	0.75	8.76	.13344E+04
498.93	0.00	0.00	18.6	0.269E-04	0.75	8.77	.13397E+04
500.92	0.00	0.00	18.6	0.269E-04	0.75	8.79	.13450E+04
502.91	0.00	0.00	18.7	0.268E-04	0.75	8.81	.13504E+04
504.90	0.00	0.00	18.7	0.267E-04	0.75	8.82	.13557E+04

506.89	0.00	0.00	18.7	0.267E-04	0.75	8.84	.13611E+04
508.88	0.00	0.00	18.8	0.266E-04	0.75	8.86	.13664E+04
510.86	0.00	0.00	18.8	0.266E-04	0.75	8.88	.13717E+04
512.85	0.00	0.00	18.8	0.265E-04	0.75	8.89	.13771E+04
514.84	0.00	0.00	18.9	0.265E-04	0.75	8.91	.13824E+04
516.83	0.00	0.00	18.9	0.264E-04	0.75	8.93	.13878E+04
518.82	0.00	0.00	18.9	0.264E-04	0.75	8.95	.13931E+04
520.81	0.00	0.00	19.0	0.263E-04	0.75	8.96	.13984E+04
522.79	0.00	0.00	19.0	0.263E-04	0.75	8.98	.14038E+04
524.78	0.00	0.00	19.1	0.262E-04	0.75	9.00	.14091E+04
526.77	0.00	0.00	19.1	0.262E-04	0.75	9.01	.14145E+04
528.76	0.00	0.00	19.1	0.261E-04	0.75	9.03	.14198E+04
530.75	0.00	0.00	19.2	0.261E-04	0.75	9.05	.14251E+04
532.74	0.00	0.00	19.2	0.260E-04	0.75	9.06	.14305E+04
534.72	0.00	0.00	19.2	0.260E-04	0.75	9.08	.14358E+04
536.71	0.00	0.00	19.3	0.259E-04	0.75	9.10	.14411E+04
538.70	0.00	0.00	19.3	0.259E-04	0.75	9.11	.14465E+04
540.69	0.00	0.00	19.3	0.258E-04	0.75	9.13	.14518E+04
542.68	0.00	0.00	19.4	0.258E-04	0.75	9.15	.14572E+04
544.67	0.00	0.00	19.4	0.258E-04	0.75	9.16	.14625E+04
546.65	0.00	0.00	19.4	0.257E-04	0.75	9.18	.14678E+04
548.64	0.00	0.00	19.5	0.257E-04	0.75	9.20	.14732E+04
550.63	0.00	0.00	19.5	0.256E-04	0.75	9.21	.14785E+04
552.62	0.00	0.00	19.6	0.256E-04	0.75	9.23	.14839E+04
554.61	0.00	0.00	19.6	0.255E-04	0.75	9.25	.14892E+04
556.60	0.00	0.00	19.6	0.255E-04	0.75	9.26	.14945E+04
558.58	0.00	0.00	19.7	0.254E-04	0.75	9.28	.14999E+04
560.57	0.00	0.00	19.7	0.254E-04	0.75	9.30	.15052E+04
562.56	0.00	0.00	19.7	0.253E-04	0.75	9.31	.15105E+04
564.55	0.00	0.00	19.8	0.253E-04	0.75	9.33	.15159E+04
566.54	0.00	0.00	19.8	0.253E-04	0.75	9.35	.15212E+04
568.53	0.00	0.00	19.8	0.252E-04	0.75	9.36	.15266E+04
570.51	0.00	0.00	19.9	0.252E-04	0.75	9.38	.15319E+04
572.50	0.00	0.00	19.9	0.251E-04	0.75	9.40	.15372E+04
574.49	0.00	0.00	19.9	0.251E-04	0.75	9.41	.15426E+04
576.48	0.00	0.00	20.0	0.250E-04	0.75	9.43	.15479E+04
578.47	0.00	0.00	20.0	0.250E-04	0.75	9.44	.15533E+04
580.46	0.00	0.00	20.0	0.250E-04	0.75	9.46	.15586E+04
582.44	0.00	0.00	20.1	0.249E-04	0.75	9.48	.15639E+04
584.43	0.00	0.00	20.1	0.249E-04	0.75	9.49	.15693E+04
586.42	0.00	0.00	20.1	0.248E-04	0.75	9.51	.15746E+04
588.41	0.00	0.00	20.2	0.248E-04	0.75	9.52	.15800E+04
590.40	0.00	0.00	20.2	0.247E-04	0.75	9.54	.15853E+04
592.39	0.00	0.00	20.2	0.247E-04	0.75	9.56	.15906E+04
594.37	0.00	0.00	20.3	0.247E-04	0.75	9.57	.15960E+04
596.36	0.00	0.00	20.3	0.246E-04	0.75	9.59	.16013E+04
598.35	0.00	0.00	20.3	0.246E-04	0.75	9.60	.16066E+04
600.34	0.00	0.00	20.4	0.245E-04	0.75	9.62	.16120E+04
602.33	0.00	0.00	20.4	0.245E-04	0.75	9.64	.16173E+04
604.32	0.00	0.00	20.4	0.245E-04	0.75	9.65	.16227E+04
606.30	0.00	0.00	20.5	0.244E-04	0.75	9.67	.16280E+04
608.29	0.00	0.00	20.5	0.244E-04	0.75	9.68	.16333E+04
610.28	0.00	0.00	20.5	0.243E-04	0.75	9.70	.16387E+04
612.27	0.00	0.00	20.6	0.243E-04	0.75	9.72	.16440E+04
614.26	0.00	0.00	20.6	0.243E-04	0.75	9.73	.16494E+04
616.25	0.00	0.00	20.6	0.242E-04	0.75	9.75	.16547E+04
618.23	0.00	0.00	20.7	0.242E-04	0.75	9.76	.16600E+04
620.22	0.00	0.00	20.7	0.241E-04	0.75	9.78	.16654E+04
622.21	0.00	0.00	20.7	0.241E-04	0.75	9.79	.16707E+04
624.20	0.00	0.00	20.8	0.241E-04	0.75	9.81	.16760E+04
626.19	0.00	0.00	20.8	0.240E-04	0.75	9.83	.16814E+04
628.18	0.00	0.00	20.8	0.240E-04	0.75	9.84	.16867E+04
630.17	0.00	0.00	20.9	0.239E-04	0.75	9.86	.16921E+04
632.15	0.00	0.00	20.9	0.239E-04	0.75	9.87	.16974E+04
634.14	0.00	0.00	20.9	0.239E-04	0.75	9.89	.17027E+04
636.13	0.00	0.00	21.0	0.238E-04	0.75	9.90	.17081E+04
638.12	0.00	0.00	21.0	0.238E-04	0.75	9.92	.17134E+04
640.11	0.00	0.00	21.0	0.238E-04	0.75	9.93	.17188E+04
642.10	0.00	0.00	21.1	0.237E-04	0.75	9.95	.17241E+04
644.08	0.00	0.00	21.1	0.237E-04	0.75	9.96	.17294E+04
646.07	0.00	0.00	21.1	0.237E-04	0.75	9.98	.17348E+04
648.06	0.00	0.00	21.2	0.236E-04	0.75	9.99	.17401E+04
650.05	0.00	0.00	21.2	0.236E-04	0.75	10.01	.17455E+04
652.04	0.00	0.00	21.2	0.235E-04	0.75	10.03	.17508E+04
654.03	0.00	0.00	21.3	0.235E-04	0.75	10.04	.17561E+04
656.01	0.00	0.00	21.3	0.235E-04	0.75	10.06	.17615E+04
658.00	0.00	0.00	21.3	0.234E-04	0.75	10.07	.17668E+04
659.99	0.00	0.00	21.4	0.234E-04	0.75	10.09	.17721E+04
661.98	0.00	0.00	21.4	0.234E-04	0.75	10.10	.17775E+04
663.97	0.00	0.00	21.4	0.233E-04	0.75	10.12	.17828E+04
665.96	0.00	0.00	21.5	0.233E-04	0.75	10.13	.17882E+04
667.94	0.00	0.00	21.5	0.233E-04	0.75	10.15	.17935E+04
669.93	0.00	0.00	21.5	0.232E-04	0.75	10.16	.17988E+04
671.92	0.00	0.00	21.6	0.232E-04	0.75	10.18	.18042E+04
673.91	0.00	0.00	21.6	0.232E-04	0.75	10.19	.18095E+04
675.90	0.00	0.00	21.6	0.231E-04	0.75	10.21	.18149E+04
677.89	0.00	0.00	21.7	0.231E-04	0.75	10.22	.18202E+04
679.87	0.00	0.00	21.7	0.231E-04	0.75	10.24	.18255E+04
681.86	0.00	0.00	21.7	0.230E-04	0.75	10.25	.18309E+04
683.85	0.00	0.00	21.7	0.230E-04	0.75	10.27	.18362E+04

685.84	0.00	0.00	21.8	0.230E-04	0.75	10.28	.18415E+04
687.83	0.00	0.00	21.8	0.229E-04	0.75	10.30	.18469E+04
689.82	0.00	0.00	21.8	0.229E-04	0.75	10.31	.18522E+04
691.80	0.00	0.00	21.9	0.229E-04	0.75	10.33	.18576E+04
693.79	0.00	0.00	21.9	0.228E-04	0.75	10.34	.18629E+04
695.78	0.00	0.00	21.9	0.228E-04	0.75	10.36	.18682E+04
697.77	0.00	0.00	22.0	0.228E-04	0.75	10.37	.18736E+04
699.76	0.00	0.00	22.0	0.227E-04	0.75	10.39	.18789E+04
701.75	0.00	0.00	22.0	0.227E-04	0.75	10.40	.18843E+04
703.73	0.00	0.00	22.1	0.227E-04	0.75	10.41	.18896E+04
705.72	0.00	0.00	22.1	0.226E-04	0.75	10.43	.18949E+04
707.71	0.00	0.00	22.1	0.226E-04	0.75	10.44	.19003E+04
709.70	0.00	0.00	22.2	0.226E-04	0.75	10.46	.19056E+04
711.69	0.00	0.00	22.2	0.225E-04	0.75	10.47	.19110E+04
713.68	0.00	0.00	22.2	0.225E-04	0.75	10.49	.19163E+04
715.66	0.00	0.00	22.2	0.225E-04	0.75	10.50	.19216E+04
717.65	0.00	0.00	22.3	0.224E-04	0.75	10.52	.19270E+04
719.64	0.00	0.00	22.3	0.224E-04	0.75	10.53	.19323E+04
721.63	0.00	0.00	22.3	0.224E-04	0.75	10.55	.19376E+04
723.62	0.00	0.00	22.4	0.224E-04	0.75	10.56	.19430E+04
725.61	0.00	0.00	22.4	0.223E-04	0.75	10.57	.19483E+04
727.59	0.00	0.00	22.4	0.223E-04	0.75	10.59	.19537E+04
729.58	0.00	0.00	22.5	0.223E-04	0.75	10.60	.19590E+04
731.57	0.00	0.00	22.5	0.222E-04	0.75	10.62	.19643E+04
733.56	0.00	0.00	22.5	0.222E-04	0.75	10.63	.19697E+04
735.55	0.00	0.00	22.6	0.222E-04	0.75	10.65	.19750E+04
737.54	0.00	0.00	22.6	0.221E-04	0.75	10.66	.19804E+04
739.52	0.00	0.00	22.6	0.221E-04	0.75	10.68	.19857E+04
741.51	0.00	0.00	22.6	0.221E-04	0.75	10.69	.19910E+04
743.50	0.00	0.00	22.7	0.221E-04	0.75	10.70	.19964E+04
745.49	0.00	0.00	22.7	0.220E-04	0.75	10.72	.20017E+04
747.48	0.00	0.00	22.7	0.220E-04	0.75	10.73	.20070E+04
749.47	0.00	0.00	22.8	0.220E-04	0.75	10.75	.20124E+04
751.45	0.00	0.00	22.8	0.219E-04	0.75	10.76	.20177E+04
753.44	0.00	0.00	22.8	0.219E-04	0.75	10.78	.20231E+04
755.43	0.00	0.00	22.9	0.219E-04	0.75	10.79	.20284E+04
757.42	0.00	0.00	22.9	0.218E-04	0.75	10.80	.20337E+04
759.41	0.00	0.00	22.9	0.218E-04	0.75	10.82	.20391E+04
761.40	0.00	0.00	22.9	0.218E-04	0.75	10.83	.20444E+04
763.38	0.00	0.00	23.0	0.218E-04	0.75	10.85	.20498E+04
765.37	0.00	0.00	23.0	0.217E-04	0.75	10.86	.20551E+04
767.36	0.00	0.00	23.0	0.217E-04	0.75	10.87	.20604E+04
769.35	0.00	0.00	23.1	0.217E-04	0.75	10.89	.20658E+04
771.34	0.00	0.00	23.1	0.216E-04	0.75	10.90	.20711E+04
773.33	0.00	0.00	23.1	0.216E-04	0.75	10.92	.20765E+04
775.31	0.00	0.00	23.2	0.216E-04	0.75	10.93	.20818E+04
777.30	0.00	0.00	23.2	0.216E-04	0.75	10.94	.20871E+04
779.29	0.00	0.00	23.2	0.215E-04	0.75	10.96	.20925E+04
781.28	0.00	0.00	23.2	0.215E-04	0.75	10.97	.20978E+04
783.27	0.00	0.00	23.3	0.215E-04	0.75	10.99	.21031E+04
785.26	0.00	0.00	23.3	0.215E-04	0.75	11.00	.21085E+04
787.24	0.00	0.00	23.3	0.214E-04	0.75	11.01	.21138E+04
789.23	0.00	0.00	23.4	0.214E-04	0.75	11.03	.21192E+04
791.22	0.00	0.00	23.4	0.214E-04	0.75	11.04	.21245E+04
793.21	0.00	0.00	23.4	0.213E-04	0.75	11.06	.21298E+04
795.20	0.00	0.00	23.4	0.213E-04	0.75	11.07	.21352E+04
797.19	0.00	0.00	23.5	0.213E-04	0.75	11.08	.21405E+04
799.17	0.00	0.00	23.5	0.213E-04	0.75	11.10	.21459E+04
801.16	0.00	0.00	23.5	0.212E-04	0.75	11.11	.21512E+04
803.15	0.00	0.00	23.6	0.212E-04	0.75	11.12	.21565E+04
805.14	0.00	0.00	23.6	0.212E-04	0.75	11.14	.21619E+04
807.13	0.00	0.00	23.6	0.212E-04	0.75	11.15	.21672E+04
809.12	0.00	0.00	23.7	0.211E-04	0.75	11.17	.21725E+04
811.10	0.00	0.00	23.7	0.211E-04	0.75	11.18	.21779E+04
813.09	0.00	0.00	23.7	0.211E-04	0.75	11.19	.21832E+04
815.08	0.00	0.00	23.7	0.211E-04	0.75	11.21	.21886E+04
817.07	0.00	0.00	23.8	0.210E-04	0.75	11.22	.21939E+04
819.06	0.00	0.00	23.8	0.210E-04	0.75	11.23	.21992E+04
821.05	0.00	0.00	23.8	0.210E-04	0.75	11.25	.22046E+04
823.03	0.00	0.00	23.9	0.210E-04	0.75	11.26	.22099E+04
825.02	0.00	0.00	23.9	0.209E-04	0.75	11.27	.22153E+04
827.01	0.00	0.00	23.9	0.209E-04	0.75	11.29	.22206E+04
829.00	0.00	0.00	23.9	0.209E-04	0.75	11.30	.22259E+04
830.99	0.00	0.00	24.0	0.209E-04	0.75	11.32	.22313E+04
832.98	0.00	0.00	24.0	0.208E-04	0.75	11.33	.22366E+04
834.96	0.00	0.00	24.0	0.208E-04	0.75	11.34	.22420E+04
836.95	0.00	0.00	24.1	0.208E-04	0.75	11.36	.22473E+04
838.94	0.00	0.00	24.1	0.208E-04	0.75	11.37	.22526E+04
840.93	0.00	0.00	24.1	0.207E-04	0.75	11.38	.22580E+04
842.92	0.00	0.00	24.1	0.207E-04	0.75	11.40	.22633E+04
844.91	0.00	0.00	24.2	0.207E-04	0.75	11.41	.22686E+04
846.89	0.00	0.00	24.2	0.207E-04	0.75	11.42	.22740E+04
848.88	0.00	0.00	24.2	0.206E-04	0.75	11.44	.22793E+04
850.87	0.00	0.00	24.3	0.206E-04	0.75	11.45	.22847E+04
852.86	0.00	0.00	24.3	0.206E-04	0.75	11.46	.22900E+04
854.85	0.00	0.00	24.3	0.206E-04	0.75	11.48	.22953E+04
856.84	0.00	0.00	24.3	0.205E-04	0.75	11.49	.23007E+04
858.82	0.00	0.00	24.4	0.205E-04	0.75	11.50	.23060E+04
860.81	0.00	0.00	24.4	0.205E-04	0.75	11.52	.23114E+04
862.80	0.00	0.00	24.4	0.205E-04	0.75	11.53	.23167E+04

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    864.79     0.00    0.00    24.5 0.204E-04   0.75    11.54 .23220E+04
    866.78     0.00    0.00    24.5 0.204E-04   0.75    11.56 .23274E+04
    868.77     0.00    0.00    24.5 0.204E-04   0.75    11.57 .23327E+04
    870.75     0.00    0.00    24.5 0.204E-04   0.75    11.58 .23380E+04
    872.74     0.00    0.00    24.6 0.204E-04   0.75    11.60 .23434E+04
    874.73     0.00    0.00    24.6 0.203E-04   0.75    11.61 .23487E+04
    876.72     0.00    0.00    24.6 0.203E-04   0.75    11.62 .23541E+04
    878.71     0.00    0.00    24.6 0.203E-04   0.75    11.64 .23594E+04
    880.70     0.00    0.00    24.7 0.203E-04   0.75    11.65 .23647E+04
    882.68     0.00    0.00    24.7 0.202E-04   0.75    11.66 .23701E+04
    884.67     0.00    0.00    24.7 0.202E-04   0.75    11.67 .23754E+04
    886.66     0.00    0.00    24.8 0.202E-04   0.75    11.69 .23808E+04
    888.65     0.00    0.00    24.8 0.202E-04   0.75    11.70 .23861E+04
    890.64     0.00    0.00    24.8 0.202E-04   0.75    11.71 .23914E+04
    892.63     0.00    0.00    24.8 0.201E-04   0.75    11.73 .23968E+04
    894.61     0.00    0.00    24.9 0.201E-04   0.75    11.74 .24021E+04
    896.60     0.00    0.00    24.9 0.201E-04   0.75    11.75 .24075E+04
    898.59     0.00    0.00    24.9 0.201E-04   0.75    11.77 .24128E+04
    900.58     0.00    0.00    25.0 0.200E-04   0.75    11.78 .24181E+04
    902.57     0.00    0.00    25.0 0.200E-04   0.75    11.79 .24235E+04
    904.56     0.00    0.00    25.0 0.200E-04   0.75    11.81 .24288E+04
    906.54     0.00    0.00    25.0 0.200E-04   0.75    11.82 .24341E+04
    908.53     0.00    0.00    25.1 0.200E-04   0.75    11.83 .24395E+04
    910.52     0.00    0.00    25.1 0.199E-04   0.75    11.84 .24448E+04
    912.51     0.00    0.00    25.1 0.199E-04   0.75    11.86 .24502E+04
    914.50     0.00    0.00    25.1 0.199E-04   0.75    11.87 .24555E+04
    916.49     0.00    0.00    25.2 0.199E-04   0.75    11.88 .24608E+04
    918.47     0.00    0.00    25.2 0.198E-04   0.75    11.90 .24662E+04
    920.46     0.00    0.00    25.2 0.198E-04   0.75    11.91 .24715E+04
    922.45     0.00    0.00    25.3 0.198E-04   0.75    11.92 .24769E+04
    924.44     0.00    0.00    25.3 0.198E-04   0.75    11.93 .24822E+04
    926.43     0.00    0.00    25.3 0.198E-04   0.75    11.95 .24875E+04
    928.42     0.00    0.00    25.3 0.197E-04   0.75    11.96 .24929E+04
    930.40     0.00    0.00    25.4 0.197E-04   0.75    11.97 .24982E+04
    932.39     0.00    0.00    25.4 0.197E-04   0.75    11.99 .25035E+04
    934.38     0.00    0.00    25.4 0.197E-04   0.75    12.00 .25089E+04
    936.37     0.00    0.00    25.4 0.197E-04   0.75    12.01 .25142E+04
    938.36     0.00    0.00    25.5 0.196E-04   0.75    12.02 .25196E+04
    940.35     0.00    0.00    25.5 0.196E-04   0.75    12.04 .25249E+04
    942.33     0.00    0.00    25.5 0.196E-04   0.75    12.05 .25302E+04
    944.32     0.00    0.00    25.5 0.196E-04   0.75    12.06 .25356E+04
    946.31     0.00    0.00    25.6 0.195E-04   0.75    12.07 .25409E+04
    948.30     0.00    0.00    25.6 0.195E-04   0.75    12.09 .25463E+04
    950.29     0.00    0.00    25.6 0.195E-04   0.75    12.10 .25516E+04
    952.28     0.00    0.00    25.7 0.195E-04   0.75    12.11 .25569E+04
    954.26     0.00    0.00    25.7 0.195E-04   0.75    12.12 .25623E+04
    956.25     0.00    0.00    25.7 0.194E-04   0.75    12.14 .25676E+04
    958.24     0.00    0.00    25.7 0.194E-04   0.75    12.15 .25730E+04
    960.23     0.00    0.00    25.8 0.194E-04   0.75    12.16 .25783E+04
    962.22     0.00    0.00    25.8 0.194E-04   0.75    12.18 .25836E+04
    964.21     0.00    0.00    25.8 0.194E-04   0.75    12.19 .25890E+04
    966.19     0.00    0.00    25.8 0.193E-04   0.75    12.20 .25943E+04
    968.18     0.00    0.00    25.9 0.193E-04   0.75    12.21 .25996E+04
    970.17     0.00    0.00    25.9 0.193E-04   0.75    12.23 .26050E+04
    972.16     0.00    0.00    25.9 0.193E-04   0.75    12.24 .26103E+04
    974.15     0.00    0.00    25.9 0.193E-04   0.75    12.25 .26157E+04
    976.14     0.00    0.00    26.0 0.192E-04   0.75    12.26 .26210E+04
    978.12     0.00    0.00    26.0 0.192E-04   0.75    12.28 .26263E+04
    980.11     0.00    0.00    26.0 0.192E-04   0.75    12.29 .26317E+04
    982.10     0.00    0.00    26.1 0.192E-04   0.75    12.30 .26370E+04
    984.09     0.00    0.00    26.1 0.192E-04   0.75    12.31 .26424E+04
    986.08     0.00    0.00    26.1 0.192E-04   0.75    12.32 .26477E+04
    988.07     0.00    0.00    26.1 0.191E-04   0.75    12.34 .26530E+04
    990.05     0.00    0.00    26.2 0.191E-04   0.75    12.35 .26584E+04
    992.04     0.00    0.00    26.2 0.191E-04   0.75    12.36 .26637E+04
    994.03     0.00    0.00    26.2 0.191E-04   0.75    12.37 .26690E+04
    996.02     0.00    0.00    26.2 0.191E-04   0.75    12.39 .26744E+04
    998.01     0.00    0.00    26.3 0.190E-04   0.75    12.40 .26797E+04
   1000.00     0.00    0.00    26.3 0.190E-04   0.75    12.41 .26851E+04
 Cumulative travel time =        2685.0723 sec  (    0.75 hrs)

 Simulation limit based on maximum specified distance =   1000.00 m.
   This is the REGION OF INTEREST limitation.

END OF MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
CORMIX3: Buoyant Surface Discharges                    End of Prediction File
3333333333333333333333333333333333333333333333333333333333333333333333333333333
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CORMIX SESSION REPORT:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                      CORMIX MIXING ZONE EXPERT SYSTEM
                          CORMIX Version 10.0G
                       HYDRO3:Version-10.0.0.0  July,2016
SITE NAME/LABEL:                Richland
  DESIGN CASE:                  Summer Chronic  (3 MGD) 7Q10
  FILE NAME:                    C:\Program Files (x86)\CORMIX 10.0\Simulations\Zinc Chronic 3MGD.prd
  Using subsystem CORMIX3:     Buoyant Surface Discharges
  Start of session:             03/16/2017--08:14:14
*****************************************************************************
SUMMARY OF INPUT DATA:
-----------------------------------------------------------------------------
AMBIENT PARAMETERS:
  Cross-section                          = bounded
  Width                          BS      = 72.10 m
  Channel regularity             ICHREG = 2
  Ambient flowrate               QA      = 20.01 m^3/s
  Average depth                  HA      = 0.75 m
  Depth at discharge             HD      = 0.75 m
  Ambient velocity               UA      = 0.37 m/s
  Darcy-Weisbach friction factor F       = 0.1381
    Calculated from Manning's n          = 0.04
  Wind velocity                  UW      = 1 m/s
  Stratification Type            STRCND = U
  Surface temperature                    = 27.90 degC
  Bottom temperature                     = 27.90 degC
  Calculated FRESH-WATER DENSITY values:
  Surface density                RHOAS   = 996.2622 kg/m^3
  Bottom density                 RHOAB   = 996.2622 kg/m^3
-----------------------------------------------------------------------------
DISCHARGE PARAMETERS:            Surface Discharge
  Discharge located on                   = left bank/shoreline
  Discharge configuration                = flush discharge
  Distance from bank to outlet   DISTB   = 0 m
  Discharge angle                SIGMA   = 85 deg
  Depth near discharge outlet    HD0     = 0.5 m
  Bottom slope at discharge      SLOPE   = 4.46 deg
  Rectangular discharge:
    Discharge cross-section area A0      = 3.725 m^2
    Discharge channel width      B0      = 7.45 m
    Discharge channel depth      H0      = 0.5 m
    Discharge aspect ratio       AR      = 0.067114
  Discharge flowrate             Q0      = 0.131865 m^3/s
  Discharge velocity             U0      = 0.04 m/s
  Discharge temperature (freshwater)     = 30.30 degC
  Corresponding density          RHO0    = 995.5560 kg/m^3
  Density difference             DRHO    = 0.7062 kg/m^3
  Buoyant acceleration           GP0     = 0.007 m/s^2
  Discharge concentration        C0      = 0.00134 mg/l
  Surface heat exchange coeff.   KS      = 0 m/s
  Coefficient of decay           KD      = 0 /s
-----------------------------------------------------------------------------
DISCHARGE/ENVIRONMENT LENGTH SCALES:
  LQ  = 1.93 m         Lm  = 0.18 m         Lbb = 0.02 m
  LM  = 0.59 m
-----------------------------------------------------------------------------
NON-DIMENSIONAL PARAMETERS:
  Densimetric Froude number      FR0     = 0.31 (based on LQ)
  Channel densimetric Froude no. FRCH    = 0.60 (based on H0)
  Velocity ratio                 R       = 0.10
-----------------------------------------------------------------------------
MIXING ZONE / TOXIC DILUTION ZONE / AREA OF INTEREST PARAMETERS:
  Toxic discharge                        = no
  Water quality standard specified       = yes
  Water quality standard         CSTD    = 0.0005 mg/l
  Regulatory mixing zone                 = yes
  Regulatory mixing zone specification   = distance
  Regulatory mixing zone value           = 91.46 m (m^2 if area)
  Region of interest                     = 1000 m
*****************************************************************************
HYDRODYNAMIC CLASSIFICATION:
  *------------------------*
  | FLOW CLASS   = PL2 |
  *------------------------*

  Limiting Dilution S = (QA/Q0)+ 1.0 = 152.7

*****************************************************************************
MIXING ZONE EVALUATION (hydrodynamic and regulatory summary):

-----------------------------------------------------------------------------
X-Y-Z Coordinate system:
Origin is located at WATER SURFACE and at centerline of discharge channel:
    0 m from the left bank/shore.
  Number of display steps NSTEP = 500 per module.
-----------------------------------------------------------------------------
NEAR-FIELD REGION (NFR) CONDITIONS :
Note: The NFR is the zone of strong initial mixing.  It has no regulatory
  implication.  However, this information may be useful for the discharge
```

```
  designer because the mixing in the NFR is usually sensitive to the
  discharge design conditions.
  Pollutant concentration at NFR edge  c = 0.0013 mg/l
  Dilution at edge of NFR              s = 1
  NFR Location:                        x = 3.73 m
    (centerline coordinates)           y = -0.20 m
                                       z = 0 m
  NFR plume dimensions:  half-width (bh) = 0.85 m
                          thickness (bv) = 0.42 m
Cumulative travel time:       10.0676 sec.
-----------------------------------------------------------------------------
Buoyancy assessment:
  The effluent density is less than the surrounding ambient water
  density at the discharge level.
  Therefore, the effluent is POSITIVELY BUOYANT and will tend to rise towards
  the surface.
-----------------------------------------------------------------------------
FAR-FIELD MIXING SUMMARY:
  Plume becomes vertically fully mixed at 21.73 m downstream.
-----------------------------------------------------------------------------
PLUME BANK CONTACT SUMMARY:
  Plume in bounded section contacts one bank only at 0 m downstream.
************************ TOXIC DILUTION ZONE SUMMARY ************************
No TDZ was specified for this simulation.
********************** REGULATORY MIXING ZONE SUMMARY ***********************
The plume conditions at the boundary of the specified RMZ are as follows:
  Pollutant concentration              c = 0.000167  mg/l
  Corresponding dilution               s = 8.0
  Plume location:                      x = 91.46 m
    (centerline coordinates)           y = 0 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 3.78 m
                          thickness (bv) = 0.75 m
Cumulative travel time:       245.6366 sec.

Note:
Plume concentration c and dilution s values are reported based on prediction
file values - assuming linear interpolation between predicted points just
before and just after the RMZ boundary has been detected.

Please ensure a small step size is used in the prediction file to account
for this linear interpolation. Step size can be controlled by increasing
(reduces the prediction step size) or decreasing (increases the prediction
step size) the - Output Steps per Module - in CORMIX input.

At this position, the plume is CONTACTING the LEFT bank.
Furthermore, the specified water quality standard has indeed been met
  within the RMZ. In particular:
The ambient water quality standard was encountered at the following
  plume position:
  Water quality standard                 = 0.0005  mg/l
  Corresponding dilution               s = 2.7
  Plume location:                      x = 14.67 m
    (centerline coordinates)           y = 0 m
                                       z = 0 m
  Plume dimensions:      half-width (bh) = 1.57 m
                          thickness (bv) = 0.61 m
********************* FINAL DESIGN ADVICE AND COMMENTS **********************
REMINDER:  The user must take note that HYDRODYNAMIC MODELING by any known
  technique is NOT AN EXACT SCIENCE.
Extensive comparison with field and laboratory data has shown that the
  CORMIX predictions on dilutions and concentrations (with associated
  plume geometries) are reliable for the majority of cases and are accurate
  to within about +-50% (standard deviation).
As a further safeguard, CORMIX will not give predictions whenever it judges
  the design configuration as highly complex and uncertain for prediction.
```

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CORMIX3 PREDICTION FILE:
333333333333333333333333333333333333333333333333333333333333333333333333333333333333
                      CORMIX MIXING ZONE EXPERT SYSTEM
                Subsystem CORMIX3: Buoyant Surface Discharges
                             CORMIX Version 10.0G
                     HYDRO3 Version 10.0.0.0 July 2016
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
CASE DESCRIPTION
 Site name/label:   Richland
 Design case:       Summer Chronic  (3 MGD) 7Q10
 FILE NAME:         C:\...86)\CORMIX 10.0\Simulations\Zinc Chronic_3MGD.prd
 Time stamp:        03/16/2017--08:14:14

ENVIRONMENT PARAMETERS (metric units)
 Bounded section
 BS    =     72.10  AS    =     54.07  QA    =     20.01  ICHREG= 2
 HA    =      0.75  HD    =      0.75
 UA    =      0.370 F     =      0.138 USTAR =0.4862E-01
 UW    =      1.000 UWSTAR=0.1071E-02
 Uniform density environment
 STRCND=  U         RHOAM =  996.2622

DISCHARGE PARAMETERS (metric units)
 BANK  =  LEFT      DISTB =      0.00  Configuration: flush_discharge
 SIGMA =     85.00  HDO   =      0.50  SLOPE =    4.46 deg.
 Rectangular channel geometry:
 B0    =      7.450 H0    =      0.500 A0    =0.3725E+01  AR    =      0.067
 U0    =      0.035 Q0    =      0.132       =0.1319E+00
 RHO0  =  995.5560  DRHO0 =0.7062E+00  GP0   =0.6952E-02
 C0    =0.1340E-02  CUNITS=  mg/l
 IPOLL =  1         KS    =0.0000E+00  KD    =0.0000E+00

FLUX VARIABLES (metric units)
 Q0    =0.1319E+00  M0    =0.4668E-02  J0    =0.9167E-03
 Associated length scales (meters)
 LQ    =      1.93  LM    =      0.59  Lm    =      0.18  Lb    =      0.02

NON-DIMENSIONAL PARAMETERS
 FR0   =      0.31  FRCH  =      0.60  R     =      0.10

FLOW CLASSIFICATION
 3333333333333333333333333333333333333333333
 3  Flow class (CORMIX3)      =    PL2    3
 3  Applicable layer depth HS =     0.75  3
 3  Limiting Dilution S =QA/Q0=   152.73  3
 3333333333333333333333333333333333333333333

MIXING ZONE / TOXIC DILUTION / REGION OF INTEREST PARAMETERS
 C0    =0.1340E-02  CUNITS=  mg/l
 NTOX  =  0
 NSTD  =  1         CSTD  =0.5000E-03
 REGMZ =  1
 REGSPC=  1         XREG  =     91.46  WREG  =      0.00  AREG  =      0.00
 XINT  =   1000.00  XMAX  =   1000.00

X-Y-Z COORDINATE SYSTEM:
    ORIGIN is located at the WATER SURFACE and at center of discharge
      channel/outlet:      0.00 m  from the LEFT  bank/shore.
    X-axis points downstream
    Y-axis points to left as seen by an observer looking downstream
    Z-axis points vertically upward (in CORMIX3, all values Z = 0.00)
NSTEP = 500 display intervals per module
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
BEGIN MOD301: DISCHARGE MODULE

 Efflux conditions:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.134E-02   0.50     3.72 .00000E+00

END OF MOD301: DISCHARGE MODULE
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
BEGIN MOD302: ZONE OF FLOW ESTABLISHMENT

  Control volume inflow:
       X        Y       Z        S       C       BV       BH        TT
      0.00     0.00    0.00     1.0 0.134E-02   0.50     3.72 .00000E+00

 RAPID DEFLECTION by ambient current:
 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

  Control volume outflow:                                SIGMAE=    347.29
       X        Y       Z        S       C       BV       BH        TT
```

```
      3.72    -0.20    0.00     1.0 0.134E-02   0.42     0.85 .10068E+02
 Cumulative travel time =          10.0676 sec  (    0.00 hrs)

END OF MOD302: ZONE OF FLOW ESTABLISHMENT
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
** End of NEAR-FIELD REGION (NFR) **
-------------------------------------------------------------------------------

 WAKE FLOW CONDITIONS: The discharge velocity (U0) is less than or equal to the
 ambient velocity (Ua) and results in wake flow conditions. There is no discharge
 momentum induced mixing. The mixing characteristics are UNDESIRABLE.
-------------------------------------------------------------------------------
BEGIN MOD341: BUOYANT AMBIENT SPREADING

 Profile definitions:
   BV = top-hat thickness,measured vertically
   BH = top-hat half-width, measured horizontally from bank/shoreline
   S  = hydrodynamic average (bulk) dilution
   C  = average (bulk) concentration (includes reaction effects, if any)
   TT = Cumulative travel time

 Plume Stage 2 (bank attached):
       X        Y        Z        S        C        BV        BH        TT
      3.72     0.00     0.00     1.0 0.134E-02   0.42     0.84 .10068E+02
      3.73     0.00     0.00     1.0 0.134E-02   0.42     0.84 .10079E+02
      3.73     0.00     0.00     1.0 0.134E-02   0.42     0.84 .10090E+02
      3.74     0.00     0.00     1.0 0.134E-02   0.42     0.84 .10101E+02
      3.74     0.00     0.00     1.0 0.134E-02   0.42     0.84 .10113E+02
      3.75     0.00     0.00     1.0 0.134E-02   0.42     0.85 .10124E+02
      3.75     0.00     0.00     1.0 0.134E-02   0.42     0.85 .10135E+02
      3.75     0.00     0.00     1.0 0.134E-02   0.42     0.85 .10146E+02
      3.76     0.00     0.00     1.0 0.134E-02   0.42     0.85 .10158E+02
      3.76     0.00     0.00     1.0 0.134E-02   0.42     0.85 .10169E+02
      3.77     0.00     0.00     1.0 0.134E-02   0.42     0.85 .10180E+02
      3.77     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10191E+02
      3.78     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10203E+02
      3.78     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10214E+02
      3.78     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10225E+02
      3.79     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10236E+02
      3.79     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10248E+02
      3.80     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10259E+02
      3.80     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10270E+02
      3.80     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10281E+02
      3.81     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10293E+02
      3.81     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10304E+02
      3.82     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10315E+02
      3.82     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10326E+02
      3.83     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10338E+02
      3.83     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10349E+02
      3.83     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10360E+02
      3.84     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10371E+02
      3.84     0.00     0.00     1.0 0.133E-02   0.42     0.85 .10383E+02
      3.85     0.00     0.00     1.0 0.133E-02   0.42     0.86 .10394E+02
      3.85     0.00     0.00     1.0 0.133E-02   0.42     0.86 .10405E+02
      3.85     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10416E+02
      3.86     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10428E+02
      3.86     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10439E+02
      3.87     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10450E+02
      3.87     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10461E+02
      3.88     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10473E+02
      3.88     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10484E+02
      3.88     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10495E+02
      3.89     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10506E+02
      3.89     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10517E+02
      3.90     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10529E+02
      3.90     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10540E+02
      3.91     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10551E+02
      3.91     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10562E+02
      3.91     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10574E+02
      3.92     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10585E+02
      3.92     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10596E+02
      3.93     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10607E+02
      3.93     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10619E+02
      3.93     0.00     0.00     1.0 0.132E-02   0.42     0.86 .10630E+02
      3.94     0.00     0.00     1.0 0.131E-02   0.42     0.86 .10641E+02
      3.94     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10652E+02
      3.95     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10664E+02
      3.95     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10675E+02
      3.96     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10686E+02
      3.96     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10697E+02
      3.96     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10709E+02
      3.97     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10720E+02
      3.97     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10731E+02
      3.98     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10742E+02
      3.98     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10754E+02
      3.98     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10765E+02
      3.99     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10776E+02
      3.99     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10787E+02
      4.00     0.00     0.00     1.0 0.131E-02   0.42     0.87 .10799E+02
```

4.00	0.00	0.00	1.0	0.131E-02	0.42	0.87	.10810E+02
4.01	0.00	0.00	1.0	0.131E-02	0.42	0.87	.10821E+02
4.01	0.00	0.00	1.0	0.131E-02	0.42	0.87	.10832E+02
4.01	0.00	0.00	1.0	0.131E-02	0.42	0.87	.10844E+02
4.02	0.00	0.00	1.0	0.131E-02	0.42	0.87	.10855E+02
4.02	0.00	0.00	1.0	0.131E-02	0.42	0.87	.10866E+02
4.03	0.00	0.00	1.0	0.130E-02	0.42	0.87	.10877E+02
4.03	0.00	0.00	1.0	0.130E-02	0.42	0.87	.10889E+02
4.04	0.00	0.00	1.0	0.130E-02	0.42	0.87	.10900E+02
4.04	0.00	0.00	1.0	0.130E-02	0.42	0.87	.10911E+02
4.04	0.00	0.00	1.0	0.130E-02	0.42	0.88	.10922E+02
4.05	0.00	0.00	1.0	0.130E-02	0.42	0.88	.10934E+02
4.05	0.00	0.00	1.0	0.130E-02	0.42	0.88	.10945E+02
4.06	0.00	0.00	1.0	0.130E-02	0.42	0.88	.10956E+02
4.06	0.00	0.00	1.0	0.130E-02	0.42	0.88	.10967E+02
4.06	0.00	0.00	1.0	0.130E-02	0.42	0.88	.10979E+02
4.07	0.00	0.00	1.0	0.130E-02	0.42	0.88	.10990E+02
4.07	0.00	0.00	1.0	0.130E-02	0.42	0.88	.11001E+02
4.08	0.00	0.00	1.0	0.130E-02	0.42	0.88	.11012E+02
4.08	0.00	0.00	1.0	0.130E-02	0.42	0.88	.11024E+02
4.09	0.00	0.00	1.0	0.130E-02	0.42	0.88	.11035E+02
4.09	0.00	0.00	1.0	0.130E-02	0.42	0.88	.11046E+02
4.09	0.00	0.00	1.0	0.130E-02	0.42	0.88	.11057E+02
4.10	0.00	0.00	1.0	0.130E-02	0.42	0.88	.11069E+02
4.10	0.00	0.00	1.0	0.130E-02	0.42	0.88	.11080E+02
4.11	0.00	0.00	1.0	0.130E-02	0.42	0.88	.11091E+02
4.11	0.00	0.00	1.0	0.129E-02	0.42	0.88	.11102E+02
4.11	0.00	0.00	1.0	0.129E-02	0.42	0.88	.11114E+02
4.12	0.00	0.00	1.0	0.129E-02	0.42	0.88	.11125E+02
4.12	0.00	0.00	1.0	0.129E-02	0.42	0.88	.11136E+02
4.13	0.00	0.00	1.0	0.129E-02	0.42	0.88	.11147E+02
4.13	0.00	0.00	1.0	0.129E-02	0.42	0.88	.11159E+02
4.14	0.00	0.00	1.0	0.129E-02	0.42	0.88	.11170E+02
4.14	0.00	0.00	1.0	0.129E-02	0.42	0.88	.11181E+02
4.14	0.00	0.00	1.0	0.129E-02	0.42	0.89	.11192E+02
4.15	0.00	0.00	1.0	0.129E-02	0.42	0.89	.11204E+02
4.15	0.00	0.00	1.0	0.129E-02	0.42	0.89	.11215E+02
4.16	0.00	0.00	1.0	0.129E-02	0.41	0.89	.11226E+02
4.16	0.00	0.00	1.0	0.129E-02	0.41	0.89	.11237E+02
4.16	0.00	0.00	1.0	0.129E-02	0.41	0.89	.11249E+02
4.17	0.00	0.00	1.0	0.129E-02	0.41	0.89	.11260E+02
4.17	0.00	0.00	1.0	0.129E-02	0.41	0.89	.11271E+02
4.18	0.00	0.00	1.0	0.129E-02	0.41	0.89	.11282E+02
4.18	0.00	0.00	1.0	0.129E-02	0.41	0.89	.11294E+02
4.19	0.00	0.00	1.0	0.129E-02	0.41	0.89	.11305E+02
4.19	0.00	0.00	1.0	0.129E-02	0.41	0.89	.11316E+02
4.19	0.00	0.00	1.0	0.129E-02	0.41	0.89	.11327E+02
4.20	0.00	0.00	1.0	0.128E-02	0.41	0.89	.11339E+02
4.20	0.00	0.00	1.0	0.128E-02	0.41	0.89	.11350E+02
4.21	0.00	0.00	1.0	0.128E-02	0.41	0.89	.11361E+02
4.21	0.00	0.00	1.0	0.128E-02	0.41	0.89	.11372E+02
4.22	0.00	0.00	1.0	0.128E-02	0.41	0.89	.11384E+02
4.22	0.00	0.00	1.0	0.128E-02	0.41	0.89	.11395E+02
4.22	0.00	0.00	1.0	0.128E-02	0.41	0.89	.11406E+02
4.23	0.00	0.00	1.0	0.128E-02	0.41	0.89	.11417E+02
4.23	0.00	0.00	1.0	0.128E-02	0.41	0.89	.11429E+02
4.24	0.00	0.00	1.0	0.128E-02	0.41	0.89	.11440E+02
4.24	0.00	0.00	1.0	0.128E-02	0.41	0.89	.11451E+02
4.24	0.00	0.00	1.0	0.128E-02	0.41	0.90	.11462E+02
4.25	0.00	0.00	1.0	0.128E-02	0.41	0.90	.11474E+02
4.25	0.00	0.00	1.0	0.128E-02	0.41	0.90	.11485E+02
4.26	0.00	0.00	1.0	0.128E-02	0.41	0.90	.11496E+02
4.26	0.00	0.00	1.0	0.128E-02	0.41	0.90	.11507E+02
4.27	0.00	0.00	1.0	0.128E-02	0.41	0.90	.11519E+02
4.27	0.00	0.00	1.0	0.128E-02	0.41	0.90	.11530E+02
4.27	0.00	0.00	1.1	0.128E-02	0.41	0.90	.11541E+02
4.28	0.00	0.00	1.1	0.128E-02	0.41	0.90	.11552E+02
4.28	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11564E+02
4.29	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11575E+02
4.29	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11586E+02
4.29	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11597E+02
4.30	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11609E+02
4.30	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11620E+02
4.31	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11631E+02
4.31	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11642E+02
4.32	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11654E+02
4.32	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11665E+02
4.32	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11676E+02
4.33	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11687E+02
4.33	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11699E+02
4.34	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11710E+02
4.34	0.00	0.00	1.1	0.127E-02	0.41	0.90	.11721E+02
4.35	0.00	0.00	1.1	0.127E-02	0.41	0.91	.11732E+02
4.35	0.00	0.00	1.1	0.127E-02	0.41	0.91	.11744E+02
4.35	0.00	0.00	1.1	0.127E-02	0.41	0.91	.11755E+02
4.36	0.00	0.00	1.1	0.127E-02	0.41	0.91	.11766E+02
4.36	0.00	0.00	1.1	0.127E-02	0.41	0.91	.11777E+02
4.37	0.00	0.00	1.1	0.127E-02	0.41	0.91	.11789E+02
4.37	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11800E+02
4.37	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11811E+02

4.38	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11822E+02
4.38	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11834E+02
4.39	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11845E+02
4.39	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11856E+02
4.40	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11867E+02
4.40	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11879E+02
4.40	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11890E+02
4.41	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11901E+02
4.41	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11912E+02
4.42	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11924E+02
4.42	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11935E+02
4.42	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11946E+02
4.43	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11957E+02
4.43	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11969E+02
4.44	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11980E+02
4.44	0.00	0.00	1.1	0.126E-02	0.41	0.91	.11991E+02
4.45	0.00	0.00	1.1	0.126E-02	0.41	0.92	.12002E+02
4.45	0.00	0.00	1.1	0.126E-02	0.41	0.92	.12014E+02
4.45	0.00	0.00	1.1	0.126E-02	0.41	0.92	.12025E+02
4.46	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12036E+02
4.46	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12047E+02
4.47	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12058E+02
4.47	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12070E+02
4.47	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12081E+02
4.48	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12092E+02
4.48	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12103E+02
4.49	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12115E+02
4.49	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12126E+02
4.50	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12137E+02
4.50	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12148E+02
4.50	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12160E+02
4.51	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12171E+02
4.51	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12182E+02
4.52	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12193E+02
4.52	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12205E+02
4.53	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12216E+02
4.53	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12227E+02
4.53	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12238E+02
4.54	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12250E+02
4.54	0.00	0.00	1.1	0.125E-02	0.41	0.92	.12261E+02
4.55	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12272E+02
4.55	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12283E+02
4.55	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12295E+02
4.56	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12306E+02
4.56	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12317E+02
4.57	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12328E+02
4.57	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12340E+02
4.58	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12351E+02
4.58	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12362E+02
4.58	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12373E+02
4.59	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12385E+02
4.59	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12396E+02
4.60	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12407E+02
4.60	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12418E+02
4.60	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12430E+02
4.61	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12441E+02
4.61	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12452E+02
4.62	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12463E+02
4.62	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12475E+02
4.63	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12486E+02
4.63	0.00	0.00	1.1	0.124E-02	0.41	0.93	.12497E+02
4.63	0.00	0.00	1.1	0.123E-02	0.41	0.93	.12508E+02
4.64	0.00	0.00	1.1	0.123E-02	0.41	0.93	.12520E+02
4.64	0.00	0.00	1.1	0.123E-02	0.41	0.93	.12531E+02
4.65	0.00	0.00	1.1	0.123E-02	0.41	0.93	.12542E+02
4.65	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12553E+02
4.66	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12565E+02
4.66	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12576E+02
4.66	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12587E+02
4.67	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12598E+02
4.67	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12610E+02
4.68	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12621E+02
4.68	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12632E+02
4.68	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12643E+02
4.69	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12655E+02
4.69	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12666E+02
4.70	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12677E+02
4.70	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12688E+02
4.71	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12700E+02
4.71	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12711E+02
4.71	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12722E+02
4.72	0.00	0.00	1.1	0.123E-02	0.41	0.94	.12733E+02
4.72	0.00	0.00	1.1	0.122E-02	0.41	0.94	.12745E+02
4.73	0.00	0.00	1.1	0.122E-02	0.41	0.94	.12756E+02
4.73	0.00	0.00	1.1	0.122E-02	0.41	0.94	.12767E+02
4.73	0.00	0.00	1.1	0.122E-02	0.41	0.94	.12778E+02
4.74	0.00	0.00	1.1	0.122E-02	0.41	0.94	.12790E+02
4.74	0.00	0.00	1.1	0.122E-02	0.41	0.94	.12801E+02
4.75	0.00	0.00	1.1	0.122E-02	0.41	0.94	.12812E+02
4.75	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12823E+02

4.76	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12835E+02
4.76	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12846E+02
4.76	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12857E+02
4.77	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12868E+02
4.77	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12880E+02
4.78	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12891E+02
4.78	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12902E+02
4.78	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12913E+02
4.79	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12925E+02
4.79	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12936E+02
4.80	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12947E+02
4.80	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12958E+02
4.81	0.00	0.00	1.1	0.122E-02	0.41	0.95	.12970E+02
4.81	0.00	0.00	1.1	0.121E-02	0.41	0.95	.12981E+02
4.81	0.00	0.00	1.1	0.121E-02	0.41	0.95	.12992E+02
4.82	0.00	0.00	1.1	0.121E-02	0.41	0.95	.13003E+02
4.82	0.00	0.00	1.1	0.121E-02	0.41	0.95	.13015E+02
4.83	0.00	0.00	1.1	0.121E-02	0.41	0.95	.13026E+02
4.83	0.00	0.00	1.1	0.121E-02	0.41	0.95	.13037E+02
4.84	0.00	0.00	1.1	0.121E-02	0.41	0.95	.13048E+02
4.84	0.00	0.00	1.1	0.121E-02	0.41	0.95	.13060E+02
4.84	0.00	0.00	1.1	0.121E-02	0.41	0.95	.13071E+02
4.85	0.00	0.00	1.1	0.121E-02	0.41	0.95	.13082E+02
4.85	0.00	0.00	1.1	0.121E-02	0.41	0.95	.13093E+02
4.86	0.00	0.00	1.1	0.121E-02	0.41	0.96	.13105E+02
4.86	0.00	0.00	1.1	0.121E-02	0.41	0.96	.13116E+02
4.86	0.00	0.00	1.1	0.121E-02	0.41	0.96	.13127E+02
4.87	0.00	0.00	1.1	0.121E-02	0.41	0.96	.13138E+02
4.87	0.00	0.00	1.1	0.121E-02	0.41	0.96	.13150E+02
4.88	0.00	0.00	1.1	0.121E-02	0.41	0.96	.13161E+02
4.88	0.00	0.00	1.1	0.121E-02	0.41	0.96	.13172E+02
4.89	0.00	0.00	1.1	0.121E-02	0.41	0.96	.13183E+02
4.89	0.00	0.00	1.1	0.121E-02	0.41	0.96	.13195E+02
4.89	0.00	0.00	1.1	0.121E-02	0.41	0.96	.13206E+02
4.90	0.00	0.00	1.1	0.121E-02	0.41	0.96	.13217E+02
4.90	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13228E+02
4.91	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13240E+02
4.91	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13251E+02
4.91	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13262E+02
4.92	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13273E+02
4.92	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13285E+02
4.93	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13296E+02
4.93	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13307E+02
4.94	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13318E+02
4.94	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13330E+02
4.94	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13341E+02
4.95	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13352E+02
4.95	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13363E+02
4.96	0.00	0.00	1.1	0.120E-02	0.41	0.96	.13375E+02
4.96	0.00	0.00	1.1	0.120E-02	0.41	0.97	.13386E+02
4.97	0.00	0.00	1.1	0.120E-02	0.41	0.97	.13397E+02
4.97	0.00	0.00	1.1	0.120E-02	0.41	0.97	.13408E+02
4.97	0.00	0.00	1.1	0.120E-02	0.41	0.97	.13420E+02
4.98	0.00	0.00	1.1	0.120E-02	0.41	0.97	.13431E+02
4.98	0.00	0.00	1.1	0.120E-02	0.41	0.97	.13442E+02
4.99	0.00	0.00	1.1	0.120E-02	0.41	0.97	.13453E+02
4.99	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13465E+02
4.99	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13476E+02
5.00	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13487E+02
5.00	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13498E+02
5.01	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13510E+02
5.01	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13521E+02
5.02	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13532E+02
5.02	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13543E+02
5.02	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13554E+02
5.03	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13566E+02
5.03	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13577E+02
5.04	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13588E+02
5.04	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13599E+02
5.04	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13611E+02
5.05	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13622E+02
5.05	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13633E+02
5.06	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13644E+02
5.06	0.00	0.00	1.1	0.119E-02	0.41	0.97	.13656E+02
5.07	0.00	0.00	1.1	0.119E-02	0.41	0.98	.13667E+02
5.07	0.00	0.00	1.1	0.119E-02	0.41	0.98	.13678E+02
5.07	0.00	0.00	1.1	0.119E-02	0.41	0.98	.13689E+02
5.08	0.00	0.00	1.1	0.119E-02	0.41	0.98	.13701E+02
5.08	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13712E+02
5.09	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13723E+02
5.09	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13734E+02
5.09	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13746E+02
5.10	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13757E+02
5.10	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13768E+02
5.11	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13779E+02
5.11	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13791E+02
5.12	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13802E+02
5.12	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13813E+02
5.12	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13824E+02
5.13	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13836E+02

5.13	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13847E+02
5.14	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13858E+02
5.14	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13869E+02
5.15	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13881E+02
5.15	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13892E+02
5.15	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13903E+02
5.16	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13914E+02
5.16	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13926E+02
5.17	0.00	0.00	1.1	0.118E-02	0.41	0.98	.13937E+02
5.17	0.00	0.00	1.1	0.117E-02	0.41	0.99	.13948E+02
5.17	0.00	0.00	1.1	0.117E-02	0.41	0.99	.13959E+02
5.18	0.00	0.00	1.1	0.117E-02	0.41	0.99	.13971E+02
5.18	0.00	0.00	1.1	0.117E-02	0.41	0.99	.13982E+02
5.19	0.00	0.00	1.1	0.117E-02	0.41	0.99	.13993E+02
5.19	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14004E+02
5.20	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14016E+02
5.20	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14027E+02
5.20	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14038E+02
5.21	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14049E+02
5.21	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14061E+02
5.22	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14072E+02
5.22	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14083E+02
5.22	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14094E+02
5.23	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14106E+02
5.23	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14117E+02
5.24	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14128E+02
5.24	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14139E+02
5.25	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14151E+02
5.25	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14162E+02
5.25	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14173E+02
5.26	0.00	0.00	1.1	0.117E-02	0.41	0.99	.14184E+02
5.26	0.00	0.00	1.2	0.116E-02	0.41	0.99	.14196E+02
5.27	0.00	0.00	1.2	0.116E-02	0.41	0.99	.14207E+02
5.27	0.00	0.00	1.2	0.116E-02	0.41	0.99	.14218E+02
5.28	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14229E+02
5.28	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14241E+02
5.28	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14252E+02
5.29	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14263E+02
5.29	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14274E+02
5.30	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14286E+02
5.30	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14297E+02
5.30	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14308E+02
5.31	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14319E+02
5.31	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14331E+02
5.32	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14342E+02
5.32	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14353E+02
5.33	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14364E+02
5.33	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14376E+02
5.33	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14387E+02
5.34	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14398E+02
5.34	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14409E+02
5.35	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14421E+02
5.35	0.00	0.00	1.2	0.116E-02	0.41	1.00	.14432E+02
5.35	0.00	0.00	1.2	0.115E-02	0.41	1.00	.14443E+02
5.36	0.00	0.00	1.2	0.115E-02	0.41	1.00	.14454E+02
5.36	0.00	0.00	1.2	0.115E-02	0.41	1.00	.14466E+02
5.37	0.00	0.00	1.2	0.115E-02	0.41	1.00	.14477E+02
5.37	0.00	0.00	1.2	0.115E-02	0.41	1.00	.14488E+02
5.38	0.00	0.00	1.2	0.115E-02	0.41	1.00	.14499E+02
5.38	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14511E+02
5.38	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14522E+02
5.39	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14533E+02
5.39	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14544E+02
5.40	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14556E+02
5.40	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14567E+02
5.40	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14578E+02
5.41	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14589E+02
5.41	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14601E+02
5.42	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14612E+02
5.42	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14623E+02
5.43	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14634E+02
5.43	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14646E+02
5.43	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14657E+02
5.44	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14668E+02
5.44	0.00	0.00	1.2	0.115E-02	0.41	1.01	.14679E+02
5.45	0.00	0.00	1.2	0.114E-02	0.41	1.01	.14691E+02
5.45	0.00	0.00	1.2	0.114E-02	0.41	1.01	.14702E+02
5.46	0.00	0.00	1.2	0.114E-02	0.41	1.01	.14713E+02
5.46	0.00	0.00	1.2	0.114E-02	0.41	1.01	.14724E+02
5.46	0.00	0.00	1.2	0.114E-02	0.41	1.01	.14736E+02
5.47	0.00	0.00	1.2	0.114E-02	0.41	1.01	.14747E+02
5.47	0.00	0.00	1.2	0.114E-02	0.41	1.01	.14758E+02
5.48	0.00	0.00	1.2	0.114E-02	0.41	1.01	.14769E+02
5.48	0.00	0.00	1.2	0.114E-02	0.41	1.01	.14781E+02
5.48	0.00	0.00	1.2	0.114E-02	0.41	1.01	.14792E+02
5.49	0.00	0.00	1.2	0.114E-02	0.41	1.02	.14803E+02
5.49	0.00	0.00	1.2	0.114E-02	0.41	1.02	.14814E+02
5.50	0.00	0.00	1.2	0.114E-02	0.41	1.02	.14826E+02
5.50	0.00	0.00	1.2	0.114E-02	0.41	1.02	.14837E+02
5.51	0.00	0.00	1.2	0.114E-02	0.41	1.02	.14848E+02

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      5.51     0.00    0.00     1.2 0.114E-02   0.41     1.02 .14859E+02
      5.51     0.00    0.00     1.2 0.114E-02   0.41     1.02 .14871E+02
      5.52     0.00    0.00     1.2 0.114E-02   0.41     1.02 .14882E+02
      5.52     0.00    0.00     1.2 0.114E-02   0.41     1.02 .14893E+02
      5.53     0.00    0.00     1.2 0.114E-02   0.41     1.02 .14904E+02
      5.53     0.00    0.00     1.2 0.114E-02   0.41     1.02 .14916E+02
      5.53     0.00    0.00     1.2 0.114E-02   0.41     1.02 .14927E+02
      5.54     0.00    0.00     1.2 0.113E-02   0.41     1.02 .14938E+02
      5.54     0.00    0.00     1.2 0.113E-02   0.41     1.02 .14949E+02
      5.55     0.00    0.00     1.2 0.113E-02   0.41     1.02 .14961E+02
      5.55     0.00    0.00     1.2 0.113E-02   0.41     1.02 .14972E+02
      5.56     0.00    0.00     1.2 0.113E-02   0.41     1.02 .14983E+02
      5.56     0.00    0.00     1.2 0.113E-02   0.41     1.02 .14994E+02
      5.56     0.00    0.00     1.2 0.113E-02   0.41     1.02 .15006E+02
      5.57     0.00    0.00     1.2 0.113E-02   0.41     1.02 .15017E+02
      5.57     0.00    0.00     1.2 0.113E-02   0.41     1.02 .15028E+02
      5.58     0.00    0.00     1.2 0.113E-02   0.41     1.02 .15039E+02
      5.58     0.00    0.00     1.2 0.113E-02   0.41     1.02 .15051E+02
      5.59     0.00    0.00     1.2 0.113E-02   0.41     1.02 .15062E+02
      5.59     0.00    0.00     1.2 0.113E-02   0.41     1.02 .15073E+02
      5.59     0.00    0.00     1.2 0.113E-02   0.41     1.02 .15084E+02
      5.60     0.00    0.00     1.2 0.113E-02   0.41     1.03 .15095E+02
      5.60     0.00    0.00     1.2 0.113E-02   0.41     1.03 .15107E+02
      5.61     0.00    0.00     1.2 0.113E-02   0.41     1.03 .15118E+02
      5.61     0.00    0.00     1.2 0.113E-02   0.41     1.03 .15129E+02
      5.61     0.00    0.00     1.2 0.113E-02   0.41     1.03 .15140E+02
      5.62     0.00    0.00     1.2 0.113E-02   0.41     1.03 .15152E+02
      5.62     0.00    0.00     1.2 0.113E-02   0.41     1.03 .15163E+02
      5.63     0.00    0.00     1.2 0.113E-02   0.41     1.03 .15174E+02
      5.63     0.00    0.00     1.2 0.113E-02   0.41     1.03 .15185E+02
      5.64     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15197E+02
      5.64     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15208E+02
      5.64     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15219E+02
      5.65     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15230E+02
      5.65     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15242E+02
      5.66     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15253E+02
      5.66     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15264E+02
      5.66     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15275E+02
      5.67     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15287E+02
      5.67     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15298E+02
      5.68     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15309E+02
      5.68     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15320E+02
      5.69     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15332E+02
      5.69     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15343E+02
      5.69     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15354E+02
      5.70     0.00    0.00     1.2 0.112E-02   0.41     1.03 .15365E+02
      5.70     0.00    0.00     1.2 0.112E-02   0.41     1.04 .15377E+02
      5.71     0.00    0.00     1.2 0.112E-02   0.41     1.04 .15388E+02
      5.71     0.00    0.00     1.2 0.112E-02   0.41     1.04 .15399E+02
      5.71     0.00    0.00     1.2 0.112E-02   0.41     1.04 .15410E+02
      5.72     0.00    0.00     1.2 0.112E-02   0.41     1.04 .15422E+02
      5.72     0.00    0.00     1.2 0.112E-02   0.41     1.04 .15433E+02
      5.73     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15444E+02
      5.73     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15455E+02
      5.74     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15467E+02
      5.74     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15478E+02
      5.74     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15489E+02
      5.75     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15500E+02
      5.75     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15512E+02
      5.76     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15523E+02
      5.76     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15534E+02
      5.77     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15545E+02
      5.77     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15557E+02
      5.77     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15568E+02
      5.78     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15579E+02
      5.78     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15590E+02
      5.79     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15602E+02
      5.79     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15613E+02
      5.79     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15624E+02
      5.80     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15635E+02
      5.80     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15647E+02
      5.81     0.00    0.00     1.2 0.111E-02   0.41     1.04 .15658E+02
      5.81     0.00    0.00     1.2 0.111E-02   0.41     1.05 .15669E+02
      5.82     0.00    0.00     1.2 0.111E-02   0.41     1.05 .15680E+02
      5.82     0.00    0.00     1.2 0.111E-02   0.41     1.05 .15692E+02
 Cumulative travel time =          15.6917 sec  (    0.00 hrs)

END OF MOD341: BUOYANT AMBIENT SPREADING
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-------------------------------------------------------------------------------
BEGIN MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

  Vertical diffusivity (initial value)   = 0.730E-02 m^2/s
  Horizontal diffusivity (initial value) = 0.182E-01 m^2/s

 Profile definitions:
   BV = Gaussian s.d.*sqrt(pi/2) (46%) thickness, measured vertically
      = or equal to water depth, if fully mixed
   BH = Gaussian s.d.*sqrt(pi/2) (46%) half-width,
        measured horizontally in Y-direction
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  S  = hydrodynamic centerline dilution
  C  = centerline concentration (includes reaction efects, if any)
  TT = Cumulative travel time

Plume Stage 2 (bank attached):
      X        Y        Z        S        C        BV        BH        TT
    5.82     0.00     0.00      1.2 0.111E-02   0.41      1.05 .15692E+02
    7.81     0.00     0.00      1.5 0.899E-03   0.45      1.18 .21030E+02
    9.80     0.00     0.00      1.8 0.745E-03   0.49      1.31 .26369E+02
   11.78     0.00     0.00      2.1 0.626E-03   0.53      1.42 .31708E+02
   13.77     0.00     0.00      2.5 0.533E-03   0.58      1.52 .37047E+02
** WATER QUALITY STANDARD OR CCC HAS BEEN FOUND **
The pollutant concentration in the plume falls below water quality standard
  or CCC value of 0.500E-03 in the current prediction interval.
This is the spatial extent of concentrations exceeding the water quality
  standard or CCC value.
   15.76     0.00     0.00      2.9 0.460E-03   0.64      1.62 .42385E+02
   17.75     0.00     0.00      3.3 0.401E-03   0.69      1.71 .47724E+02
   19.74     0.00     0.00      3.8 0.354E-03   0.75      1.80 .53063E+02
Plume interacts with BOTTOM.
The passive diffusion plume becomes VERTICALLY FULLY MIXED within this
  prediction interval.
   21.73     0.00     0.00      4.0 0.336E-03   0.75      1.88 .58402E+02
   23.71     0.00     0.00      4.2 0.323E-03   0.75      1.96 .63741E+02
   25.70     0.00     0.00      4.3 0.310E-03   0.75      2.04 .69079E+02
   27.69     0.00     0.00      4.5 0.300E-03   0.75      2.11 .74418E+02
   29.68     0.00     0.00      4.6 0.290E-03   0.75      2.18 .79757E+02
   31.67     0.00     0.00      4.8 0.281E-03   0.75      2.25 .85096E+02
   33.66     0.00     0.00      4.9 0.273E-03   0.75      2.32 .90434E+02
   35.65     0.00     0.00      5.0 0.265E-03   0.75      2.38 .95773E+02
   37.63     0.00     0.00      5.2 0.259E-03   0.75      2.45 .10111E+03
   39.62     0.00     0.00      5.3 0.252E-03   0.75      2.51 .10645E+03
   41.61     0.00     0.00      5.4 0.246E-03   0.75      2.57 .11179E+03
   43.60     0.00     0.00      5.6 0.241E-03   0.75      2.63 .11713E+03
   45.59     0.00     0.00      5.7 0.236E-03   0.75      2.69 .12247E+03
   47.58     0.00     0.00      5.8 0.231E-03   0.75      2.74 .12781E+03
   49.56     0.00     0.00      5.9 0.226E-03   0.75      2.80 .13314E+03
   51.55     0.00     0.00      6.0 0.222E-03   0.75      2.85 .13848E+03
   53.54     0.00     0.00      6.2 0.218E-03   0.75      2.90 .14382E+03
   55.53     0.00     0.00      6.3 0.214E-03   0.75      2.96 .14916E+03
   57.52     0.00     0.00      6.4 0.210E-03   0.75      3.01 .15450E+03
   59.51     0.00     0.00      6.5 0.207E-03   0.75      3.06 .15984E+03
   61.49     0.00     0.00      6.6 0.204E-03   0.75      3.11 .16518E+03
   63.48     0.00     0.00      6.7 0.200E-03   0.75      3.16 .17052E+03
   65.47     0.00     0.00      6.8 0.197E-03   0.75      3.20 .17585E+03
   67.46     0.00     0.00      6.9 0.195E-03   0.75      3.25 .18119E+03
   69.45     0.00     0.00      7.0 0.192E-03   0.75      3.30 .18653E+03
   71.44     0.00     0.00      7.1 0.189E-03   0.75      3.34 .19187E+03
   73.42     0.00     0.00      7.2 0.187E-03   0.75      3.39 .19721E+03
   75.41     0.00     0.00      7.3 0.184E-03   0.75      3.44 .20255E+03
   77.40     0.00     0.00      7.4 0.182E-03   0.75      3.48 .20789E+03
   79.39     0.00     0.00      7.5 0.180E-03   0.75      3.52 .21323E+03
   81.38     0.00     0.00      7.6 0.177E-03   0.75      3.57 .21856E+03
   83.37     0.00     0.00      7.6 0.175E-03   0.75      3.61 .22390E+03
   85.35     0.00     0.00      7.7 0.173E-03   0.75      3.65 .22924E+03
   87.34     0.00     0.00      7.8 0.171E-03   0.75      3.69 .23458E+03
   89.33     0.00     0.00      7.9 0.169E-03   0.75      3.73 .23992E+03
   91.32     0.00     0.00      8.0 0.168E-03   0.75      3.77 .24526E+03
** REGULATORY MIXING ZONE BOUNDARY **
In this prediction interval the plume DOWNSTREAM distance meets or exceeds
the regulatory value =    91.46 m.
This is the extent of the REGULATORY MIXING ZONE.
   93.31     0.00     0.00      8.1 0.166E-03   0.75      3.81 .25060E+03
   95.30     0.00     0.00      8.2 0.164E-03   0.75      3.85 .25594E+03
   97.28     0.00     0.00      8.2 0.162E-03   0.75      3.89 .26127E+03
   99.27     0.00     0.00      8.3 0.161E-03   0.75      3.93 .26661E+03
  101.26     0.00     0.00      8.4 0.159E-03   0.75      3.97 .27195E+03
  103.25     0.00     0.00      8.5 0.158E-03   0.75      4.01 .27729E+03
  105.24     0.00     0.00      8.6 0.156E-03   0.75      4.05 .28263E+03
  107.23     0.00     0.00      8.7 0.155E-03   0.75      4.09 .28797E+03
  109.21     0.00     0.00      8.7 0.153E-03   0.75      4.12 .29331E+03
  111.20     0.00     0.00      8.8 0.152E-03   0.75      4.16 .29865E+03
  113.19     0.00     0.00      8.9 0.151E-03   0.75      4.20 .30398E+03
  115.18     0.00     0.00      9.0 0.149E-03   0.75      4.23 .30932E+03
  117.17     0.00     0.00      9.0 0.148E-03   0.75      4.27 .31466E+03
  119.16     0.00     0.00      9.1 0.147E-03   0.75      4.30 .32000E+03
  121.14     0.00     0.00      9.2 0.146E-03   0.75      4.34 .32534E+03
  123.13     0.00     0.00      9.3 0.145E-03   0.75      4.38 .33068E+03
  125.12     0.00     0.00      9.3 0.143E-03   0.75      4.41 .33602E+03
  127.11     0.00     0.00      9.4 0.142E-03   0.75      4.44 .34136E+03
  129.10     0.00     0.00      9.5 0.141E-03   0.75      4.48 .34669E+03
  131.09     0.00     0.00      9.6 0.140E-03   0.75      4.51 .35203E+03
  133.07     0.00     0.00      9.6 0.139E-03   0.75      4.55 .35737E+03
  135.06     0.00     0.00      9.7 0.138E-03   0.75      4.58 .36271E+03
  137.05     0.00     0.00      9.8 0.137E-03   0.75      4.61 .36805E+03
  139.04     0.00     0.00      9.8 0.136E-03   0.75      4.65 .37339E+03
  141.03     0.00     0.00      9.9 0.135E-03   0.75      4.68 .37873E+03
  143.02     0.00     0.00     10.0 0.134E-03   0.75      4.71 .38407E+03
  145.00     0.00     0.00     10.0 0.133E-03   0.75      4.74 .38940E+03
  146.99     0.00     0.00     10.1 0.132E-03   0.75      4.78 .39474E+03
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148.98	0.00	0.00	10.2	0.132E-03	0.75	4.81	.40008E+03
150.97	0.00	0.00	10.3	0.131E-03	0.75	4.84	.40542E+03
152.96	0.00	0.00	10.3	0.130E-03	0.75	4.87	.41076E+03
154.95	0.00	0.00	10.4	0.129E-03	0.75	4.90	.41610E+03
156.93	0.00	0.00	10.5	0.128E-03	0.75	4.93	.42144E+03
158.92	0.00	0.00	10.5	0.127E-03	0.75	4.96	.42678E+03
160.91	0.00	0.00	10.6	0.127E-03	0.75	5.00	.43211E+03
162.90	0.00	0.00	10.6	0.126E-03	0.75	5.03	.43745E+03
164.89	0.00	0.00	10.7	0.125E-03	0.75	5.06	.44279E+03
166.88	0.00	0.00	10.8	0.124E-03	0.75	5.09	.44813E+03
168.87	0.00	0.00	10.8	0.124E-03	0.75	5.12	.45347E+03
170.85	0.00	0.00	10.9	0.123E-03	0.75	5.15	.45881E+03
172.84	0.00	0.00	11.0	0.122E-03	0.75	5.18	.46415E+03
174.83	0.00	0.00	11.0	0.122E-03	0.75	5.21	.46949E+03
176.82	0.00	0.00	11.1	0.121E-03	0.75	5.23	.47482E+03
178.81	0.00	0.00	11.2	0.120E-03	0.75	5.26	.48016E+03
180.80	0.00	0.00	11.2	0.120E-03	0.75	5.29	.48550E+03
182.78	0.00	0.00	11.3	0.119E-03	0.75	5.32	.49084E+03
184.77	0.00	0.00	11.3	0.118E-03	0.75	5.35	.49618E+03
186.76	0.00	0.00	11.4	0.118E-03	0.75	5.38	.50152E+03
188.75	0.00	0.00	11.5	0.117E-03	0.75	5.41	.50686E+03
190.74	0.00	0.00	11.5	0.116E-03	0.75	5.44	.51220E+03
192.73	0.00	0.00	11.6	0.116E-03	0.75	5.46	.51753E+03
194.71	0.00	0.00	11.6	0.115E-03	0.75	5.49	.52287E+03
196.70	0.00	0.00	11.7	0.115E-03	0.75	5.52	.52821E+03
198.69	0.00	0.00	11.7	0.114E-03	0.75	5.55	.53355E+03
200.68	0.00	0.00	11.8	0.113E-03	0.75	5.57	.53889E+03
202.67	0.00	0.00	11.9	0.113E-03	0.75	5.60	.54423E+03
204.66	0.00	0.00	11.9	0.112E-03	0.75	5.63	.54957E+03
206.64	0.00	0.00	12.0	0.112E-03	0.75	5.66	.55491E+03
208.63	0.00	0.00	12.0	0.111E-03	0.75	5.68	.56024E+03
210.62	0.00	0.00	12.1	0.111E-03	0.75	5.71	.56558E+03
212.61	0.00	0.00	12.2	0.110E-03	0.75	5.74	.57092E+03
214.60	0.00	0.00	12.2	0.110E-03	0.75	5.76	.57626E+03
216.59	0.00	0.00	12.3	0.109E-03	0.75	5.79	.58160E+03
218.57	0.00	0.00	12.3	0.109E-03	0.75	5.82	.58694E+03
220.56	0.00	0.00	12.4	0.108E-03	0.75	5.84	.59228E+03
222.55	0.00	0.00	12.4	0.108E-03	0.75	5.87	.59762E+03
224.54	0.00	0.00	12.5	0.107E-03	0.75	5.89	.60295E+03
226.53	0.00	0.00	12.5	0.107E-03	0.75	5.92	.60829E+03
228.52	0.00	0.00	12.6	0.106E-03	0.75	5.95	.61363E+03
230.50	0.00	0.00	12.6	0.106E-03	0.75	5.97	.61897E+03
232.49	0.00	0.00	12.7	0.105E-03	0.75	6.00	.62431E+03
234.48	0.00	0.00	12.8	0.105E-03	0.75	6.02	.62965E+03
236.47	0.00	0.00	12.8	0.105E-03	0.75	6.05	.63499E+03
238.46	0.00	0.00	12.9	0.104E-03	0.75	6.07	.64033E+03
240.45	0.00	0.00	12.9	0.104E-03	0.75	6.10	.64566E+03
242.43	0.00	0.00	13.0	0.103E-03	0.75	6.12	.65100E+03
244.42	0.00	0.00	13.0	0.103E-03	0.75	6.15	.65634E+03
246.41	0.00	0.00	13.1	0.102E-03	0.75	6.17	.66168E+03
248.40	0.00	0.00	13.1	0.102E-03	0.75	6.20	.66702E+03
250.39	0.00	0.00	13.2	0.102E-03	0.75	6.22	.67236E+03
252.38	0.00	0.00	13.2	0.101E-03	0.75	6.25	.67770E+03
254.36	0.00	0.00	13.3	0.101E-03	0.75	6.27	.68304E+03
256.35	0.00	0.00	13.3	0.100E-03	0.75	6.30	.68837E+03
258.34	0.00	0.00	13.4	0.100E-03	0.75	6.32	.69371E+03
260.33	0.00	0.00	13.4	0.997E-04	0.75	6.34	.69905E+03
262.32	0.00	0.00	13.5	0.993E-04	0.75	6.37	.70439E+03
264.31	0.00	0.00	13.5	0.990E-04	0.75	6.39	.70973E+03
266.29	0.00	0.00	13.6	0.986E-04	0.75	6.42	.71507E+03
268.28	0.00	0.00	13.6	0.982E-04	0.75	6.44	.72041E+03
270.27	0.00	0.00	13.7	0.979E-04	0.75	6.46	.72575E+03
272.26	0.00	0.00	13.7	0.975E-04	0.75	6.49	.73109E+03
274.25	0.00	0.00	13.8	0.972E-04	0.75	6.51	.73642E+03
276.24	0.00	0.00	13.8	0.968E-04	0.75	6.53	.74176E+03
278.22	0.00	0.00	13.9	0.965E-04	0.75	6.56	.74710E+03
280.21	0.00	0.00	13.9	0.961E-04	0.75	6.58	.75244E+03
282.20	0.00	0.00	14.0	0.958E-04	0.75	6.60	.75778E+03
284.19	0.00	0.00	14.0	0.955E-04	0.75	6.63	.76312E+03
286.18	0.00	0.00	14.1	0.951E-04	0.75	6.65	.76846E+03
288.17	0.00	0.00	14.1	0.948E-04	0.75	6.67	.77380E+03
290.16	0.00	0.00	14.2	0.945E-04	0.75	6.70	.77913E+03
292.14	0.00	0.00	14.2	0.942E-04	0.75	6.72	.78447E+03
294.13	0.00	0.00	14.3	0.938E-04	0.75	6.74	.78981E+03
296.12	0.00	0.00	14.3	0.935E-04	0.75	6.76	.79515E+03
298.11	0.00	0.00	14.4	0.932E-04	0.75	6.79	.80049E+03
300.10	0.00	0.00	14.4	0.929E-04	0.75	6.81	.80583E+03
302.09	0.00	0.00	14.5	0.926E-04	0.75	6.83	.81117E+03
304.07	0.00	0.00	14.5	0.923E-04	0.75	6.85	.81651E+03
306.06	0.00	0.00	14.6	0.920E-04	0.75	6.88	.82184E+03
308.05	0.00	0.00	14.6	0.917E-04	0.75	6.90	.82718E+03
310.04	0.00	0.00	14.7	0.914E-04	0.75	6.92	.83252E+03
312.03	0.00	0.00	14.7	0.911E-04	0.75	6.94	.83786E+03
314.02	0.00	0.00	14.8	0.908E-04	0.75	6.96	.84320E+03
316.00	0.00	0.00	14.8	0.905E-04	0.75	6.99	.84854E+03
317.99	0.00	0.00	14.8	0.903E-04	0.75	7.01	.85388E+03
319.98	0.00	0.00	14.9	0.900E-04	0.75	7.03	.85922E+03
321.97	0.00	0.00	14.9	0.897E-04	0.75	7.05	.86455E+03
323.96	0.00	0.00	15.0	0.894E-04	0.75	7.07	.86989E+03
325.95	0.00	0.00	15.0	0.892E-04	0.75	7.10	.87523E+03

327.93	0.00	0.00	15.1	0.889E-04	0.75	7.12	.88057E+03
329.92	0.00	0.00	15.1	0.886E-04	0.75	7.14	.88591E+03
331.91	0.00	0.00	15.2	0.884E-04	0.75	7.16	.89125E+03
333.90	0.00	0.00	15.2	0.881E-04	0.75	7.18	.89659E+03
335.89	0.00	0.00	15.3	0.878E-04	0.75	7.20	.90193E+03
337.88	0.00	0.00	15.3	0.876E-04	0.75	7.22	.90727E+03
339.86	0.00	0.00	15.3	0.873E-04	0.75	7.24	.91260E+03
341.85	0.00	0.00	15.4	0.871E-04	0.75	7.27	.91794E+03
343.84	0.00	0.00	15.4	0.868E-04	0.75	7.29	.92328E+03
345.83	0.00	0.00	15.5	0.866E-04	0.75	7.31	.92862E+03
347.82	0.00	0.00	15.5	0.863E-04	0.75	7.33	.93396E+03
349.81	0.00	0.00	15.6	0.861E-04	0.75	7.35	.93930E+03
351.79	0.00	0.00	15.6	0.858E-04	0.75	7.37	.94464E+03
353.78	0.00	0.00	15.7	0.856E-04	0.75	7.39	.94998E+03
355.77	0.00	0.00	15.7	0.854E-04	0.75	7.41	.95531E+03
357.76	0.00	0.00	15.7	0.851E-04	0.75	7.43	.96065E+03
359.75	0.00	0.00	15.8	0.849E-04	0.75	7.45	.96599E+03
361.74	0.00	0.00	15.8	0.846E-04	0.75	7.47	.97133E+03
363.72	0.00	0.00	15.9	0.844E-04	0.75	7.49	.97667E+03
365.71	0.00	0.00	15.9	0.842E-04	0.75	7.51	.98201E+03
367.70	0.00	0.00	16.0	0.840E-04	0.75	7.53	.98735E+03
369.69	0.00	0.00	16.0	0.837E-04	0.75	7.55	.99269E+03
371.68	0.00	0.00	16.0	0.835E-04	0.75	7.57	.99802E+03
373.67	0.00	0.00	16.1	0.833E-04	0.75	7.60	.10034E+04
375.66	0.00	0.00	16.1	0.831E-04	0.75	7.62	.10087E+04
377.64	0.00	0.00	16.2	0.829E-04	0.75	7.64	.10140E+04
379.63	0.00	0.00	16.2	0.826E-04	0.75	7.66	.10194E+04
381.62	0.00	0.00	16.3	0.824E-04	0.75	7.68	.10247E+04
383.61	0.00	0.00	16.3	0.822E-04	0.75	7.70	.10301E+04
385.60	0.00	0.00	16.3	0.820E-04	0.75	7.71	.10354E+04
387.59	0.00	0.00	16.4	0.818E-04	0.75	7.73	.10407E+04
389.57	0.00	0.00	16.4	0.816E-04	0.75	7.75	.10461E+04
391.56	0.00	0.00	16.5	0.814E-04	0.75	7.77	.10514E+04
393.55	0.00	0.00	16.5	0.812E-04	0.75	7.79	.10568E+04
395.54	0.00	0.00	16.6	0.810E-04	0.75	7.81	.10621E+04
397.53	0.00	0.00	16.6	0.808E-04	0.75	7.83	.10674E+04
399.52	0.00	0.00	16.6	0.806E-04	0.75	7.85	.10728E+04
401.50	0.00	0.00	16.7	0.804E-04	0.75	7.87	.10781E+04
403.49	0.00	0.00	16.7	0.802E-04	0.75	7.89	.10834E+04
405.48	0.00	0.00	16.8	0.800E-04	0.75	7.91	.10888E+04
407.47	0.00	0.00	16.8	0.798E-04	0.75	7.93	.10941E+04
409.46	0.00	0.00	16.8	0.796E-04	0.75	7.95	.10995E+04
411.45	0.00	0.00	16.9	0.794E-04	0.75	7.97	.11048E+04
413.43	0.00	0.00	16.9	0.792E-04	0.75	7.99	.11101E+04
415.42	0.00	0.00	17.0	0.790E-04	0.75	8.01	.11155E+04
417.41	0.00	0.00	17.0	0.788E-04	0.75	8.03	.11208E+04
419.40	0.00	0.00	17.0	0.786E-04	0.75	8.04	.11262E+04
421.39	0.00	0.00	17.1	0.784E-04	0.75	8.06	.11315E+04
423.38	0.00	0.00	17.1	0.783E-04	0.75	8.08	.11368E+04
425.36	0.00	0.00	17.2	0.781E-04	0.75	8.10	.11422E+04
427.35	0.00	0.00	17.2	0.779E-04	0.75	8.12	.11475E+04
429.34	0.00	0.00	17.2	0.777E-04	0.75	8.14	.11528E+04
431.33	0.00	0.00	17.3	0.775E-04	0.75	8.16	.11582E+04
433.32	0.00	0.00	17.3	0.774E-04	0.75	8.18	.11635E+04
435.31	0.00	0.00	17.4	0.772E-04	0.75	8.20	.11689E+04
437.29	0.00	0.00	17.4	0.770E-04	0.75	8.21	.11742E+04
439.28	0.00	0.00	17.4	0.768E-04	0.75	8.23	.11795E+04
441.27	0.00	0.00	17.5	0.767E-04	0.75	8.25	.11849E+04
443.26	0.00	0.00	17.5	0.765E-04	0.75	8.27	.11902E+04
445.25	0.00	0.00	17.6	0.763E-04	0.75	8.29	.11956E+04
447.24	0.00	0.00	17.6	0.762E-04	0.75	8.31	.12009E+04
449.22	0.00	0.00	17.6	0.760E-04	0.75	8.33	.12062E+04
451.21	0.00	0.00	17.7	0.758E-04	0.75	8.34	.12116E+04
453.20	0.00	0.00	17.7	0.757E-04	0.75	8.36	.12169E+04
455.19	0.00	0.00	17.8	0.755E-04	0.75	8.38	.12223E+04
457.18	0.00	0.00	17.8	0.753E-04	0.75	8.40	.12276E+04
459.17	0.00	0.00	17.8	0.752E-04	0.75	8.42	.12329E+04
461.16	0.00	0.00	17.9	0.750E-04	0.75	8.43	.12383E+04
463.14	0.00	0.00	17.9	0.748E-04	0.75	8.45	.12436E+04
465.13	0.00	0.00	17.9	0.747E-04	0.75	8.47	.12489E+04
467.12	0.00	0.00	18.0	0.745E-04	0.75	8.49	.12543E+04
469.11	0.00	0.00	18.0	0.744E-04	0.75	8.51	.12596E+04
471.10	0.00	0.00	18.1	0.742E-04	0.75	8.52	.12650E+04
473.09	0.00	0.00	18.1	0.740E-04	0.75	8.54	.12703E+04
475.07	0.00	0.00	18.1	0.739E-04	0.75	8.56	.12756E+04
477.06	0.00	0.00	18.2	0.737E-04	0.75	8.58	.12810E+04
479.05	0.00	0.00	18.2	0.736E-04	0.75	8.60	.12863E+04
481.04	0.00	0.00	18.2	0.734E-04	0.75	8.61	.12917E+04
483.03	0.00	0.00	18.3	0.733E-04	0.75	8.63	.12970E+04
485.02	0.00	0.00	18.3	0.731E-04	0.75	8.65	.13023E+04
487.00	0.00	0.00	18.4	0.730E-04	0.75	8.67	.13077E+04
488.99	0.00	0.00	18.4	0.728E-04	0.75	8.68	.13130E+04
490.98	0.00	0.00	18.4	0.727E-04	0.75	8.70	.13184E+04
492.97	0.00	0.00	18.5	0.725E-04	0.75	8.72	.13237E+04
494.96	0.00	0.00	18.5	0.724E-04	0.75	8.74	.13290E+04
496.95	0.00	0.00	18.5	0.723E-04	0.75	8.76	.13344E+04
498.93	0.00	0.00	18.6	0.721E-04	0.75	8.77	.13397E+04
500.92	0.00	0.00	18.6	0.720E-04	0.75	8.79	.13450E+04
502.91	0.00	0.00	18.7	0.718E-04	0.75	8.81	.13504E+04
504.90	0.00	0.00	18.7	0.717E-04	0.75	8.82	.13557E+04

506.89	0.00	0.00	18.7	0.715E-04	0.75	8.84	.13611E+04
508.88	0.00	0.00	18.8	0.714E-04	0.75	8.86	.13664E+04
510.86	0.00	0.00	18.8	0.713E-04	0.75	8.88	.13717E+04
512.85	0.00	0.00	18.8	0.711E-04	0.75	8.89	.13771E+04
514.84	0.00	0.00	18.9	0.710E-04	0.75	8.91	.13824E+04
516.83	0.00	0.00	18.9	0.709E-04	0.75	8.93	.13878E+04
518.82	0.00	0.00	18.9	0.707E-04	0.75	8.95	.13931E+04
520.81	0.00	0.00	19.0	0.706E-04	0.75	8.96	.13984E+04
522.79	0.00	0.00	19.0	0.704E-04	0.75	8.98	.14038E+04
524.78	0.00	0.00	19.1	0.703E-04	0.75	9.00	.14091E+04
526.77	0.00	0.00	19.1	0.702E-04	0.75	9.01	.14145E+04
528.76	0.00	0.00	19.1	0.701E-04	0.75	9.03	.14198E+04
530.75	0.00	0.00	19.2	0.699E-04	0.75	9.05	.14251E+04
532.74	0.00	0.00	19.2	0.698E-04	0.75	9.06	.14305E+04
534.72	0.00	0.00	19.2	0.697E-04	0.75	9.08	.14358E+04
536.71	0.00	0.00	19.3	0.695E-04	0.75	9.10	.14411E+04
538.70	0.00	0.00	19.3	0.694E-04	0.75	9.11	.14465E+04
540.69	0.00	0.00	19.3	0.693E-04	0.75	9.13	.14518E+04
542.68	0.00	0.00	19.4	0.691E-04	0.75	9.15	.14572E+04
544.67	0.00	0.00	19.4	0.690E-04	0.75	9.16	.14625E+04
546.65	0.00	0.00	19.4	0.689E-04	0.75	9.18	.14678E+04
548.64	0.00	0.00	19.5	0.688E-04	0.75	9.20	.14732E+04
550.63	0.00	0.00	19.5	0.686E-04	0.75	9.21	.14785E+04
552.62	0.00	0.00	19.6	0.685E-04	0.75	9.23	.14839E+04
554.61	0.00	0.00	19.6	0.684E-04	0.75	9.25	.14892E+04
556.60	0.00	0.00	19.6	0.683E-04	0.75	9.26	.14945E+04
558.58	0.00	0.00	19.7	0.682E-04	0.75	9.28	.14999E+04
560.57	0.00	0.00	19.7	0.680E-04	0.75	9.30	.15052E+04
562.56	0.00	0.00	19.7	0.679E-04	0.75	9.31	.15105E+04
564.55	0.00	0.00	19.8	0.678E-04	0.75	9.33	.15159E+04
566.54	0.00	0.00	19.8	0.677E-04	0.75	9.35	.15212E+04
568.53	0.00	0.00	19.8	0.676E-04	0.75	9.36	.15266E+04
570.51	0.00	0.00	19.9	0.674E-04	0.75	9.38	.15319E+04
572.50	0.00	0.00	19.9	0.673E-04	0.75	9.40	.15372E+04
574.49	0.00	0.00	19.9	0.672E-04	0.75	9.41	.15426E+04
576.48	0.00	0.00	20.0	0.671E-04	0.75	9.43	.15479E+04
578.47	0.00	0.00	20.0	0.670E-04	0.75	9.44	.15533E+04
580.46	0.00	0.00	20.0	0.669E-04	0.75	9.46	.15586E+04
582.44	0.00	0.00	20.1	0.668E-04	0.75	9.48	.15639E+04
584.43	0.00	0.00	20.1	0.666E-04	0.75	9.49	.15693E+04
586.42	0.00	0.00	20.1	0.665E-04	0.75	9.51	.15746E+04
588.41	0.00	0.00	20.2	0.664E-04	0.75	9.52	.15800E+04
590.40	0.00	0.00	20.2	0.663E-04	0.75	9.54	.15853E+04
592.39	0.00	0.00	20.2	0.662E-04	0.75	9.56	.15906E+04
594.37	0.00	0.00	20.3	0.661E-04	0.75	9.57	.15960E+04
596.36	0.00	0.00	20.3	0.660E-04	0.75	9.59	.16013E+04
598.35	0.00	0.00	20.3	0.659E-04	0.75	9.60	.16066E+04
600.34	0.00	0.00	20.4	0.658E-04	0.75	9.62	.16120E+04
602.33	0.00	0.00	20.4	0.656E-04	0.75	9.64	.16173E+04
604.32	0.00	0.00	20.4	0.655E-04	0.75	9.65	.16227E+04
606.30	0.00	0.00	20.5	0.654E-04	0.75	9.67	.16280E+04
608.29	0.00	0.00	20.5	0.653E-04	0.75	9.68	.16333E+04
610.28	0.00	0.00	20.5	0.652E-04	0.75	9.70	.16387E+04
612.27	0.00	0.00	20.6	0.651E-04	0.75	9.72	.16440E+04
614.26	0.00	0.00	20.6	0.650E-04	0.75	9.73	.16494E+04
616.25	0.00	0.00	20.6	0.649E-04	0.75	9.75	.16547E+04
618.23	0.00	0.00	20.7	0.648E-04	0.75	9.76	.16600E+04
620.22	0.00	0.00	20.7	0.647E-04	0.75	9.78	.16654E+04
622.21	0.00	0.00	20.7	0.646E-04	0.75	9.79	.16707E+04
624.20	0.00	0.00	20.8	0.645E-04	0.75	9.81	.16760E+04
626.19	0.00	0.00	20.8	0.644E-04	0.75	9.83	.16814E+04
628.18	0.00	0.00	20.8	0.643E-04	0.75	9.84	.16867E+04
630.17	0.00	0.00	20.9	0.642E-04	0.75	9.86	.16921E+04
632.15	0.00	0.00	20.9	0.641E-04	0.75	9.87	.16974E+04
634.14	0.00	0.00	20.9	0.640E-04	0.75	9.89	.17027E+04
636.13	0.00	0.00	21.0	0.639E-04	0.75	9.90	.17081E+04
638.12	0.00	0.00	21.0	0.638E-04	0.75	9.92	.17134E+04
640.11	0.00	0.00	21.0	0.637E-04	0.75	9.93	.17188E+04
642.10	0.00	0.00	21.1	0.636E-04	0.75	9.95	.17241E+04
644.08	0.00	0.00	21.1	0.635E-04	0.75	9.96	.17294E+04
646.07	0.00	0.00	21.1	0.634E-04	0.75	9.98	.17348E+04
648.06	0.00	0.00	21.2	0.633E-04	0.75	9.99	.17401E+04
650.05	0.00	0.00	21.2	0.632E-04	0.75	10.01	.17455E+04
652.04	0.00	0.00	21.2	0.631E-04	0.75	10.03	.17508E+04
654.03	0.00	0.00	21.3	0.630E-04	0.75	10.04	.17561E+04
656.01	0.00	0.00	21.3	0.629E-04	0.75	10.06	.17615E+04
658.00	0.00	0.00	21.3	0.628E-04	0.75	10.07	.17668E+04
659.99	0.00	0.00	21.4	0.627E-04	0.75	10.09	.17721E+04
661.98	0.00	0.00	21.4	0.626E-04	0.75	10.10	.17775E+04
663.97	0.00	0.00	21.4	0.625E-04	0.75	10.12	.17828E+04
665.96	0.00	0.00	21.5	0.624E-04	0.75	10.13	.17882E+04
667.94	0.00	0.00	21.5	0.623E-04	0.75	10.15	.17935E+04
669.93	0.00	0.00	21.5	0.623E-04	0.75	10.16	.17988E+04
671.92	0.00	0.00	21.6	0.622E-04	0.75	10.18	.18042E+04
673.91	0.00	0.00	21.6	0.621E-04	0.75	10.19	.18095E+04
675.90	0.00	0.00	21.6	0.620E-04	0.75	10.21	.18149E+04
677.89	0.00	0.00	21.7	0.619E-04	0.75	10.22	.18202E+04
679.87	0.00	0.00	21.7	0.618E-04	0.75	10.24	.18255E+04
681.86	0.00	0.00	21.7	0.617E-04	0.75	10.25	.18309E+04
683.85	0.00	0.00	21.7	0.616E-04	0.75	10.27	.18362E+04

685.84	0.00	0.00	21.8	0.615E-04	0.75	10.28	.18415E+04
687.83	0.00	0.00	21.8	0.614E-04	0.75	10.30	.18469E+04
689.82	0.00	0.00	21.8	0.613E-04	0.75	10.31	.18522E+04
691.80	0.00	0.00	21.9	0.613E-04	0.75	10.33	.18576E+04
693.79	0.00	0.00	21.9	0.612E-04	0.75	10.34	.18629E+04
695.78	0.00	0.00	21.9	0.611E-04	0.75	10.36	.18682E+04
697.77	0.00	0.00	22.0	0.610E-04	0.75	10.37	.18736E+04
699.76	0.00	0.00	22.0	0.609E-04	0.75	10.39	.18789E+04
701.75	0.00	0.00	22.0	0.608E-04	0.75	10.40	.18843E+04
703.73	0.00	0.00	22.1	0.607E-04	0.75	10.41	.18896E+04
705.72	0.00	0.00	22.1	0.607E-04	0.75	10.43	.18949E+04
707.71	0.00	0.00	22.1	0.606E-04	0.75	10.44	.19003E+04
709.70	0.00	0.00	22.2	0.605E-04	0.75	10.46	.19056E+04
711.69	0.00	0.00	22.2	0.604E-04	0.75	10.47	.19110E+04
713.68	0.00	0.00	22.2	0.603E-04	0.75	10.49	.19163E+04
715.66	0.00	0.00	22.2	0.602E-04	0.75	10.50	.19216E+04
717.65	0.00	0.00	22.3	0.601E-04	0.75	10.52	.19270E+04
719.64	0.00	0.00	22.3	0.601E-04	0.75	10.53	.19323E+04
721.63	0.00	0.00	22.3	0.600E-04	0.75	10.55	.19376E+04
723.62	0.00	0.00	22.4	0.599E-04	0.75	10.56	.19430E+04
725.61	0.00	0.00	22.4	0.598E-04	0.75	10.57	.19483E+04
727.59	0.00	0.00	22.4	0.597E-04	0.75	10.59	.19537E+04
729.58	0.00	0.00	22.5	0.597E-04	0.75	10.60	.19590E+04
731.57	0.00	0.00	22.5	0.596E-04	0.75	10.62	.19643E+04
733.56	0.00	0.00	22.5	0.595E-04	0.75	10.63	.19697E+04
735.55	0.00	0.00	22.6	0.594E-04	0.75	10.65	.19750E+04
737.54	0.00	0.00	22.6	0.593E-04	0.75	10.66	.19804E+04
739.52	0.00	0.00	22.6	0.593E-04	0.75	10.68	.19857E+04
741.51	0.00	0.00	22.6	0.592E-04	0.75	10.69	.19910E+04
743.50	0.00	0.00	22.7	0.591E-04	0.75	10.70	.19964E+04
745.49	0.00	0.00	22.7	0.590E-04	0.75	10.72	.20017E+04
747.48	0.00	0.00	22.7	0.589E-04	0.75	10.73	.20070E+04
749.47	0.00	0.00	22.8	0.589E-04	0.75	10.75	.20124E+04
751.45	0.00	0.00	22.8	0.588E-04	0.75	10.76	.20177E+04
753.44	0.00	0.00	22.8	0.587E-04	0.75	10.78	.20231E+04
755.43	0.00	0.00	22.9	0.586E-04	0.75	10.79	.20284E+04
757.42	0.00	0.00	22.9	0.586E-04	0.75	10.80	.20337E+04
759.41	0.00	0.00	22.9	0.585E-04	0.75	10.82	.20391E+04
761.40	0.00	0.00	22.9	0.584E-04	0.75	10.83	.20444E+04
763.38	0.00	0.00	23.0	0.583E-04	0.75	10.85	.20498E+04
765.37	0.00	0.00	23.0	0.582E-04	0.75	10.86	.20551E+04
767.36	0.00	0.00	23.0	0.582E-04	0.75	10.87	.20604E+04
769.35	0.00	0.00	23.1	0.581E-04	0.75	10.89	.20658E+04
771.34	0.00	0.00	23.1	0.580E-04	0.75	10.90	.20711E+04
773.33	0.00	0.00	23.1	0.579E-04	0.75	10.92	.20765E+04
775.31	0.00	0.00	23.2	0.579E-04	0.75	10.93	.20818E+04
777.30	0.00	0.00	23.2	0.578E-04	0.75	10.94	.20871E+04
779.29	0.00	0.00	23.2	0.577E-04	0.75	10.96	.20925E+04
781.28	0.00	0.00	23.2	0.577E-04	0.75	10.97	.20978E+04
783.27	0.00	0.00	23.3	0.576E-04	0.75	10.99	.21031E+04
785.26	0.00	0.00	23.3	0.575E-04	0.75	11.00	.21085E+04
787.24	0.00	0.00	23.3	0.574E-04	0.75	11.01	.21138E+04
789.23	0.00	0.00	23.4	0.574E-04	0.75	11.03	.21192E+04
791.22	0.00	0.00	23.4	0.573E-04	0.75	11.04	.21245E+04
793.21	0.00	0.00	23.4	0.572E-04	0.75	11.06	.21298E+04
795.20	0.00	0.00	23.4	0.571E-04	0.75	11.07	.21352E+04
797.19	0.00	0.00	23.5	0.571E-04	0.75	11.08	.21405E+04
799.17	0.00	0.00	23.5	0.570E-04	0.75	11.10	.21459E+04
801.16	0.00	0.00	23.5	0.569E-04	0.75	11.11	.21512E+04
803.15	0.00	0.00	23.6	0.569E-04	0.75	11.12	.21565E+04
805.14	0.00	0.00	23.6	0.568E-04	0.75	11.14	.21619E+04
807.13	0.00	0.00	23.6	0.567E-04	0.75	11.15	.21672E+04
809.12	0.00	0.00	23.7	0.567E-04	0.75	11.17	.21725E+04
811.10	0.00	0.00	23.7	0.566E-04	0.75	11.18	.21779E+04
813.09	0.00	0.00	23.7	0.565E-04	0.75	11.19	.21832E+04
815.08	0.00	0.00	23.7	0.564E-04	0.75	11.21	.21886E+04
817.07	0.00	0.00	23.8	0.564E-04	0.75	11.22	.21939E+04
819.06	0.00	0.00	23.8	0.563E-04	0.75	11.23	.21992E+04
821.05	0.00	0.00	23.8	0.562E-04	0.75	11.25	.22046E+04
823.03	0.00	0.00	23.9	0.562E-04	0.75	11.26	.22099E+04
825.02	0.00	0.00	23.9	0.561E-04	0.75	11.27	.22153E+04
827.01	0.00	0.00	23.9	0.560E-04	0.75	11.29	.22206E+04
829.00	0.00	0.00	23.9	0.560E-04	0.75	11.30	.22259E+04
830.99	0.00	0.00	24.0	0.559E-04	0.75	11.32	.22313E+04
832.98	0.00	0.00	24.0	0.558E-04	0.75	11.33	.22366E+04
834.96	0.00	0.00	24.0	0.558E-04	0.75	11.34	.22420E+04
836.95	0.00	0.00	24.1	0.557E-04	0.75	11.36	.22473E+04
838.94	0.00	0.00	24.1	0.556E-04	0.75	11.37	.22526E+04
840.93	0.00	0.00	24.1	0.556E-04	0.75	11.38	.22580E+04
842.92	0.00	0.00	24.1	0.555E-04	0.75	11.40	.22633E+04
844.91	0.00	0.00	24.2	0.554E-04	0.75	11.41	.22686E+04
846.89	0.00	0.00	24.2	0.554E-04	0.75	11.42	.22740E+04
848.88	0.00	0.00	24.2	0.553E-04	0.75	11.44	.22793E+04
850.87	0.00	0.00	24.3	0.552E-04	0.75	11.45	.22847E+04
852.86	0.00	0.00	24.3	0.552E-04	0.75	11.46	.22900E+04
854.85	0.00	0.00	24.3	0.551E-04	0.75	11.48	.22953E+04
856.84	0.00	0.00	24.3	0.551E-04	0.75	11.49	.23007E+04
858.82	0.00	0.00	24.4	0.550E-04	0.75	11.50	.23060E+04
860.81	0.00	0.00	24.4	0.549E-04	0.75	11.52	.23114E+04
862.80	0.00	0.00	24.4	0.549E-04	0.75	11.53	.23167E+04

```
    864.79     0.00    0.00    24.5 0.548E-04   0.75    11.54 .23220E+04
    866.78     0.00    0.00    24.5 0.547E-04   0.75    11.56 .23274E+04
    868.77     0.00    0.00    24.5 0.547E-04   0.75    11.57 .23327E+04
    870.75     0.00    0.00    24.5 0.546E-04   0.75    11.58 .23380E+04
    872.74     0.00    0.00    24.6 0.546E-04   0.75    11.60 .23434E+04
    874.73     0.00    0.00    24.6 0.545E-04   0.75    11.61 .23487E+04
    876.72     0.00    0.00    24.6 0.544E-04   0.75    11.62 .23541E+04
    878.71     0.00    0.00    24.6 0.544E-04   0.75    11.64 .23594E+04
    880.70     0.00    0.00    24.7 0.543E-04   0.75    11.65 .23647E+04
    882.68     0.00    0.00    24.7 0.542E-04   0.75    11.66 .23701E+04
    884.67     0.00    0.00    24.7 0.542E-04   0.75    11.67 .23754E+04
    886.66     0.00    0.00    24.8 0.541E-04   0.75    11.69 .23808E+04
    888.65     0.00    0.00    24.8 0.541E-04   0.75    11.70 .23861E+04
    890.64     0.00    0.00    24.8 0.540E-04   0.75    11.71 .23914E+04
    892.63     0.00    0.00    24.8 0.539E-04   0.75    11.73 .23968E+04
    894.61     0.00    0.00    24.9 0.539E-04   0.75    11.74 .24021E+04
    896.60     0.00    0.00    24.9 0.538E-04   0.75    11.75 .24075E+04
    898.59     0.00    0.00    24.9 0.538E-04   0.75    11.77 .24128E+04
    900.58     0.00    0.00    25.0 0.537E-04   0.75    11.78 .24181E+04
    902.57     0.00    0.00    25.0 0.536E-04   0.75    11.79 .24235E+04
    904.56     0.00    0.00    25.0 0.536E-04   0.75    11.81 .24288E+04
    906.54     0.00    0.00    25.0 0.535E-04   0.75    11.82 .24341E+04
    908.53     0.00    0.00    25.1 0.535E-04   0.75    11.83 .24395E+04
    910.52     0.00    0.00    25.1 0.534E-04   0.75    11.84 .24448E+04
    912.51     0.00    0.00    25.1 0.534E-04   0.75    11.86 .24502E+04
    914.50     0.00    0.00    25.1 0.533E-04   0.75    11.87 .24555E+04
    916.49     0.00    0.00    25.2 0.532E-04   0.75    11.88 .24608E+04
    918.47     0.00    0.00    25.2 0.532E-04   0.75    11.90 .24662E+04
    920.46     0.00    0.00    25.2 0.531E-04   0.75    11.91 .24715E+04
    922.45     0.00    0.00    25.3 0.531E-04   0.75    11.92 .24769E+04
    924.44     0.00    0.00    25.3 0.530E-04   0.75    11.93 .24822E+04
    926.43     0.00    0.00    25.3 0.530E-04   0.75    11.95 .24875E+04
    928.42     0.00    0.00    25.3 0.529E-04   0.75    11.96 .24929E+04
    930.40     0.00    0.00    25.4 0.528E-04   0.75    11.97 .24982E+04
    932.39     0.00    0.00    25.4 0.528E-04   0.75    11.99 .25035E+04
    934.38     0.00    0.00    25.4 0.527E-04   0.75    12.00 .25089E+04
    936.37     0.00    0.00    25.4 0.527E-04   0.75    12.01 .25142E+04
    938.36     0.00    0.00    25.5 0.526E-04   0.75    12.02 .25196E+04
    940.35     0.00    0.00    25.5 0.526E-04   0.75    12.04 .25249E+04
    942.33     0.00    0.00    25.5 0.525E-04   0.75    12.05 .25302E+04
    944.32     0.00    0.00    25.5 0.524E-04   0.75    12.06 .25356E+04
    946.31     0.00    0.00    25.6 0.524E-04   0.75    12.07 .25409E+04
    948.30     0.00    0.00    25.6 0.523E-04   0.75    12.09 .25463E+04
    950.29     0.00    0.00    25.6 0.523E-04   0.75    12.10 .25516E+04
    952.28     0.00    0.00    25.7 0.522E-04   0.75    12.11 .25569E+04
    954.26     0.00    0.00    25.7 0.522E-04   0.75    12.12 .25623E+04
    956.25     0.00    0.00    25.7 0.521E-04   0.75    12.14 .25676E+04
    958.24     0.00    0.00    25.7 0.521E-04   0.75    12.15 .25730E+04
    960.23     0.00    0.00    25.8 0.520E-04   0.75    12.16 .25783E+04
    962.22     0.00    0.00    25.8 0.520E-04   0.75    12.18 .25836E+04
    964.21     0.00    0.00    25.8 0.519E-04   0.75    12.19 .25890E+04
    966.19     0.00    0.00    25.8 0.519E-04   0.75    12.20 .25943E+04
    968.18     0.00    0.00    25.9 0.518E-04   0.75    12.21 .25996E+04
    970.17     0.00    0.00    25.9 0.517E-04   0.75    12.23 .26050E+04
    972.16     0.00    0.00    25.9 0.517E-04   0.75    12.24 .26103E+04
    974.15     0.00    0.00    25.9 0.516E-04   0.75    12.25 .26157E+04
    976.14     0.00    0.00    26.0 0.516E-04   0.75    12.26 .26210E+04
    978.12     0.00    0.00    26.0 0.515E-04   0.75    12.28 .26263E+04
    980.11     0.00    0.00    26.0 0.515E-04   0.75    12.29 .26317E+04
    982.10     0.00    0.00    26.1 0.514E-04   0.75    12.30 .26370E+04
    984.09     0.00    0.00    26.1 0.514E-04   0.75    12.31 .26424E+04
    986.08     0.00    0.00    26.1 0.513E-04   0.75    12.32 .26477E+04
    988.07     0.00    0.00    26.1 0.513E-04   0.75    12.34 .26530E+04
    990.05     0.00    0.00    26.2 0.512E-04   0.75    12.35 .26584E+04
    992.04     0.00    0.00    26.2 0.512E-04   0.75    12.36 .26637E+04
    994.03     0.00    0.00    26.2 0.511E-04   0.75    12.37 .26690E+04
    996.02     0.00    0.00    26.2 0.511E-04   0.75    12.39 .26744E+04
    998.01     0.00    0.00    26.3 0.510E-04   0.75    12.40 .26797E+04
   1000.00     0.00    0.00    26.3 0.510E-04   0.75    12.41 .26851E+04
 Cumulative travel time =        2685.0723 sec  (    0.75 hrs)

 Simulation limit based on maximum specified distance =   1000.00 m.
   This is the REGION OF INTEREST limitation.

END OF MOD361: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT
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CORMIX3: Buoyant Surface Discharges                    End of Prediction File
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Appendix C.

PermitCalc Workbook

Dilution Factor Calculations and Receiving Water Critical Conditions

Facility Name	ConAgra
Receiving Water	Yakima River

Step 1: Enter Waterbody Type

Water Body Type	Freshwater

Step 2: Enter Dilution Factors -OR- Calculate DFs by entering Facility/Receiving Water Flow Data

Do you want to enter dilution factors -or- flow data?	Dilution Factors

	Max Dilution Factor Allowed	
Aquatic Life - Acute	**1.5**	Values from CORMIX3
Aquatic Life - Chronic	**8.0**	
HH-Non-Carcinogen	**8.0**	
HH-Carcinogen	**8.0**	
Whole river at 7Q10	**8.0**	

Step 3: Enter Critical Data

	Effluent	**Receiving Water**	
Temp, °C	29	27.9	
pH, s.u. ***[95th percentile]***	8.15	8.95	*90 percentile, May- September, Ecology data*
Alkalinity, mg/L as CaCO3			
Hardness, mg/L CaCO3		49.9	*5th percentile, USGS summer data, 2001 - 2016*
Salinity, psu			
Receiving water TSS, mg/L (leave blank if unknown)			
If TSS is annual data, enter 'A'; if from critical period, enter 'S'; If no TSS, leave blank			

Step 4: Specifiy if using 'Mixed' values for hardness, temperature, and pH

	Use 'Mixed Hardness' (Y/N)	**Use 'Mixed Max Temp' (Y/N)**	**Use 'Mixed pH (Y/N)**
	N	N	N
Acute Zone Boundary	16.6	28.6	8.2
Chronic Zone Boundary	43.7	28.0	8.3
Whole river at 7Q10	43.7	28.0	8.3

Freshwater Temperature Reasonable Potential and Limit Calculation

Based on WAC 173-201A-200(1)(c)(i)--(ii) and the Water Quality Program Guidance. All data inputs must meet WQ guidelines. The Water Quality temperature guidance document may be found at: https://fortress.wa.gov/ecy/publications/summarypages/0610100.html

	Summer Months
INPUT	**May - September**
1. Chronic Dilution Factor at Mixing Zone Boundary	8.0
2. 7DADMax Ambient Temperature (T) ***[maximum observed]***	27.9 °C
3. 7DADMax Effluent Temperature (95th percentile)	29.0 °C
4. Aquatic Life Temperature WQ Criterion in Fresh Water	21.0 °C
OUTPUT	
5. Temperature at Chronic Mixing Zone Boundary:	28.0 °C
6. Incremental Temperature Increase or decrease:	0.1 °C
7. Maximum Allowable Incremental Temperature Increase:	0.3 °C
8. Maximum Allowable Temperature at Mixing Zone Boundary:	28.2 °C
A. If ambient temp is warmer than WQ criterion	
9. Does temp fall within this warmer temp range?	YES
10. Temperature Limit if Required:	NO LIMIT
B. If ambient temp is cooler than WQ criterion but within 28/(T_{amb}+7) and within 0.3 °C of the criterion	
11. Does temp fall within this incremental temp. range?	---
12. Temp increase allowed at mixing zone boundary, if required:	---
C. If ambient temp is cooler than (WQ criterion-0.3) but within 28/(T_{amb}+7) of the criterion	
13. Does temp fall within this Incremental temp. range?	---
14. Temp increase allowed at mixing zone boundary, if required:	---
D. If ambient temp is cooler than (WQ criterion - 28/(T_{amb}+7))	
15. Does temp fall within this Incremental temp. range?	---
16. Temp increase allowed at mixing zone boundary, if required:	---
RESULTS	
17. Do any of the above cells show a temp increase?	**NO**
18. Temperature Limit if Required?	**NO LIMIT**

Streeter-Phelps Analysis of Critical Dissolved Oxygen Sag

INPUT				
1. EFFLUENT CHARACTERISTICS				
Discharge (cfs): ***[3 MGD]***			**4.64**	
$CBOD_5$ (mg/L): ***[95th percentile BOD $_5$]***			10.64	Jan 2014 - Dec 2016, May - Sept
NBOD (mg/L): ***[EPA 1985 method, 95th percentile N concentrations]***			88.2	Jan 2014 - Dec 2016, May - Sept
Dissolved Oxygen (mg/L): ***[Saturation at 29°C]***			**7.69**	
Temperature (deg C): ***[CORMIX model]***			29	
2. RECEIVING WATER CHARACTERISTICS				
Upstream Discharge (cfs): ***[7Q10, 21 years data]***			703	
Upstream $CBOD_5$ (mg/L): ***[Ecology 2013 permit]***			5.0	
Upstream NBOD (mg/L): ***[EPA 1985 method , 95th percentile N conc]***			1.384	USGS data, May - Sept 2001 - 2016
Upstream Dissolved Oxygen (mg/L): ***[10th percentile]***			**9.47**	Ecology Data, May - September, 2006 - 2015
Upstream Temperature (deg C): ***[maximum]***			27.9	
Elevation (ft NGVD):			345	
Downstream Average Channel Slope (ft/ft):			0.001	
Downstream Average Channel Depth (ft):			2.45	
Downstream Average Channel Velocity (fps):			1.21	Avg width of 237 ft, flow rate of 703 cfs
3. REAERATION RATE (Base e) at 20 deg C (day^{-1}):			3.72	
Reference	Applic. Vel (fps)	Applic. Dep (ft)	Suggested Values	
Churchill	1.5 - 6	2 - 50	3.12	
O'Connor and Dobbins	0.1 - 1.5	2 - 50	3.72	
Owens	0.1 - 6	1 - 2	4.68	
Tsivoglou-Wallace	0.1 - 6	0.1 - 2	5.01	
4. BOD DECAY RATE (Base e) AT 20 deg C (day^{-1}):			0.41	Note: Decay rates in large rivers are approx. 0.23 day^{-1}, however they can be much larger in small shallow streams (3.33 day^{-1}). To estimate decay rates for small rivers (<800 cfs) you can use the equation from *Wright and McDonnel*: rate, day^{-1} = 10.3 / (upstream flow, cfs + effluent
(or use *Wright and McDonnell eqn, 1979, for small rivers.) Enter this value -->*			0.41	

OUTPUT		
1. INITIAL MIXED RIVER CONDITION		
$CBOD_5$ (mg/L):	5.0	
NBOD (mg/L):	2.0	
Dissolved Oxygen (mg/L):	**9.46**	
Temperature (deg C):	27.9	
2. TEMPERATURE ADJUSTED RATE CONSTANTS (Base e)		
Reaeration (day^-1):	4.49	Kr
BOD Decay (day^-1):	0.59	Kd
3. CALCULATED INITIAL ULTIMATE CBODU AND TOTAL BODU		
Initial Mixed CBODU (mg/L):	7.4	
Initial Mixed Total BODU (CBODU + NBOD, mg/L):	9.4	BOD
4. INITIAL DISSOLVED OXYGEN DEFICIT		
Saturation Dissolved Oxygen (mg/L):	7.745	
Initial Deficit (mg/L):	-1.71	Do
5. TRAVEL TIME TO CRITICAL DO CONCENTRATION (days):	0.72	t
6. DISTANCE TO CRITICAL DO CONCENTRATION (miles):	14.29	
7. CRITICAL DO DEFICIT (mg/L):	0.81	
8. CRITICAL DO CONCENTRATION (mg/L):	**6.94**	

Calculation of Dissolved Oxygen at Chronic Mixing Zone

INPUT	
Chronic Dilution Factor	8.0
Receiving Water DO Concentration, mg/L ***[Saturation at 28°C]***	7.83
Effluent DO Concentration, mg/L ***[Saturation 29°C]***	7.69
Effluent Immediate DO Demand (IDOD), mg/L	
Surface Water Criteria, mg/L ***[Salmonid Rearing/Spawning]***	*8*
OUTPUT	
DO at Mixing Zone Boundary, mg/L	**7.81**
DO decrease caused by effluent at chronic boundary, mg/L	**0.02**

Conclusion: At design flow, the discharge has a reasonable potential to violate water quality standards for dissolved oxygen.

References: EPA/600/6-85/002b and EPA/430/9-82-011

Streeter-Phelps Analysis of Critical Dissolved Oxygen Sag

INPUT			
1. EFFLUENT CHARACTERISTICS			
Discharge (cfs): ***[3 MGD]***			4.64
$CBOD_5$ (mg/L):			0
NBOD (mg/L):			0.0
Dissolved Oxygen (mg/L): ***[Saturation at 29°C]***			7.69
Temperature (deg C): ***[CORMIX model]***			29
2. RECEIVING WATER CHARACTERISTICS			
Upstream Discharge (cfs): ***[7Q10, 21 years data]***			703
Upstream $CBOD_5$ (mg/L): ***[Ecology 2013 permit]***			5.0
Upstream NBOD (mg/L): ***[EPA 1985 method , 95th percentile N conc]***			1.38352
Upstream Dissolved Oxygen (mg/L): ***[10th percentile]***			9.47
Upstream Temperature (deg C): ***[maximum]***			27.9
Elevation (ft NGVD):			345
Downstream Average Channel Slope (ft/ft):			0.001
Downstream Average Channel Depth (ft):			2.45
Downstream Average Channel Velocity (fps):			1.21
3. REAERATION RATE (Base e) at 20 deg C (day^{-1}):			3.72
Reference	Applic. Vel (fps)	Applic. Dep (ft)	Suggested Values
Churchill	1.5 - 6	2 - 50	3.12
O'Connor and Dobbins	0.1 - 1.5	2 - 50	3.72
Owens	0.1 - 6	1 - 2	4.68
Tsivoglou-Wallace	0.1 - 6	0.1 - 2	5.01
4. BOD DECAY RATE (Base e) AT 20 deg C (day^{-1}):			0.41
(or use *Wright and McDonnell eqn, 1979, for small rivers.) Enter this value -->*			0.41

OUTPUT	
1. INITIAL MIXED RIVER CONDITION	
$CBOD_5$ (mg/L):	5.0
NBOD (mg/L):	1.4
Dissolved Oxygen (mg/L):	9.46
Temperature (deg C):	27.9
2. TEMPERATURE ADJUSTED RATE CONSTANTS (Base e)	
Reaeration (day^-1):	4.49
BOD Decay (day^-1):	0.59
3. CALCULATED INITIAL ULTIMATE CBODU AND TOTAL BODU	
Initial Mixed CBODU (mg/L):	7.3
Initial Mixed Total BODU (CBODU + NBOD, mg/L):	8.7
4. INITIAL DISSOLVED OXYGEN DEFICIT	
Saturation Dissolved Oxygen (mg/L):	7.745
Initial Deficit (mg/L):	-1.71
5. TRAVEL TIME TO CRITICAL DO CONCENTRATION (days):	0.73
6. DISTANCE TO CRITICAL DO CONCENTRATION (miles):	14.50
7. CRITICAL DO DEFICIT (mg/L):	0.74
8. CRITICAL DO CONCENTRATION (mg/L):	**7.00**

Calculation of pH of a Mixture of Two Flows

Based on the procedure in EPA's DESCON program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington D.C.)

INPUT			
	@ Acute Boundary	**@ Chronic Boundary**	**@ Whole River**
1. Dilution Factor at Mixing Zone Boundary	1.5	8.0	8.0
2. Ambient/Upstream/Background Conditions			
Temperature (deg C): ***[maximum observed]***	27.90	27.90	27.90
pH: ***[90th percentile, May - Sept]***	8.95	8.95	8.95
Alkalinity (mg CaCO3/L): ***[from Ecology 2013 Fact Sheet]***	56.00	56.00	56.00
3. Effluent Characteristics			
Temperature (deg C): ***[permit limit]***	29.00	29.00	29.00
pH: ***[95th percentile]***	8.15	8.15	8.15
Alkalinity (mg CaCO3/L): ***[average]***	562.20	562.20	562.20
OUTPUT			
1. Ionization Constants			
Upstream/Background pKa:	6.33	6.33	6.33
Effluent pKa:	6.33	6.33	6.33
2. Ionization Fractions			
Upstream/Background Ionization Fraction:	1.00	1.00	1.00
Effluent Ionization Fraction:	0.99	0.99	0.99
3. Total Inorganic Carbon			
Upstream/Background Total Inorganic Carbon (mg CaCO3/L):	56	56	56
Effluent Total Inorganic Carbon (mg CaCO3/L):	571	571	571
4. Condtions at Mixing Zone Boundary			
Temperature (deg C):	28.63	28.04	28.04
Alkalinity (mg CaCO3/L):	393.47	119.28	119.28
Total Inorganic Carbon (mg CaCO3/L):	399.17	120.45	120.45
pKa:	6.33	6.33	6.33
RESULTS			
pH at Mixing Zone Boundary:	**8.17**	**8.34**	**8.34**

Reasonable Potential Calculation

Facility	ConAgra
Water Body Type	Freshwater
Rec. Water Hardness	49.9 mg/L

Dilution Factors:	Acute	Chronic
Aquatic Life	1.5	8.0
Human Health Carcinogenic		8.0
Human Health Non-Carcinogenic		8.0

Pollutant, CAS No. & NPDES Application Ref. No.			AMMONIA, Criteria as Total NH3	ARSENIC (inorganic)	ZINC- 7440666 13M hardness dependent	COPPER - 744058 6M Hardness dependent	NICKEL - 7440020 9M - Dependent on hardness	MERCURY 7439976 8M	BIS(2-ETHYLHEXYL) PHTHALATE 117817 13B	ENDOSULFAN SULFATE 1031078 13P	ENDRIN ALDEHYDE 7421934 15P	1,1-DICHLOROETHANE (75-27-3) 14V	
			May - Sept	May - Sept									
Effluent Data	# of Samples (n)		65	3	1	1	1	1	1	1	1	1	
	Coeff of Variation (Cv)		0.71	0.54	0	0	0	0	0	0	0	0	0.6
	Effluent Concentration, ug/L (95th Percentile)		126	0.973	1.34	6.7E-11	0.52	0.00074	2.36	0.013	0.002	0.1	
	Calculated 50th percentile Effluent Conc. (when n>10)												
Receiving Water Data	90th Percentile Conc., ug/L, USGS		20.00		0	0	0	0					
	Geo Mean, ug/L			1.35		0	0	0	0	0	0		
Water Quality Criteria	Aquatic Life Criteria, ug/L	Acute	958	-	63.5048	8.83923	786.09352	2.1	-	-	-	-	
		Chronic	91	-	57.9895	6.266957	87.30199	0.012	-	-	-	-	
	WQ Criteria for Protection of Human Health, ug/L		-	0.018	-	1300	610	0.14	1.8	0.93	0.76	-	
	Metal Criteria Translator, decimal	Acute	-	-	0.996	0.996	0.998	0.85	-	-	-	-	
		Chronic	-	-	0.996	0.996	0.997	-	-	-	-	-	
	Carcinogen?		N	Y	N	N	N	N	Y	N	N	-	

Aquatic Life Reasonable Potential

Effluent percentile value			0.950		0.950	0.950	0.950	0.950				
s	$s^2=\ln(CV^2+1)$		0.639		0.000	0.000	0.000	0.000				
Pn	$Pn=(1-\text{confidence level})^{1/n}$		0.955		0.050	0.050	0.050	0.050				
Multiplier			1.00		1.00	1.00	1.00	1.00				
Max concentration (ug/L) at edge of…		Acute	91		0.890	0.000	0.346	0.0004				
		Chronic	33	0.331	0.167	0.000	0.065	0.0001				
Reasonable Potential? Limit Required?			**NO**		**NO**	**NO**	**NO**	**NO**				
Difference at end of mixing zone			13	\	0.167	8.34E-12	0.065	0.0001	0.295	0.0016	0.0003	0.0125
Lower of MDL or PQL from Permit AppA		ug/L	20	0.1	0.5	0.4	0.1	0.0002	0.1	0.025	0.025	1
Effluent Conc-River Conc (Excess for CORMIX) ug/L			106.0		1.34	6.70E-11	0.5	0.00074				
CORMIX Conc difference at end of mixing zone			13.2		0.167	8.00E-12	0.062	0.000092				
Coefficient of Decay		/day	2.00									

Aquatic Life Limit Calculation

# of Compliance Samples Expected per month		
LTA Coeff. Var. (CV), decimal		
Permit Limit Coeff. Var. (CV), decimal		
Waste Load Allocations, ug/L	Acute	
	Chronic	
Long Term Averages, ug/L	Acute	
	Chronic	
Limiting LTA, ug/L		
Metal Translator or 1?		
Average Monthly Limit (AML), ug/L		
Maximum Daily Limit (MDL), ug/L		

Human Health Reasonable Potential

s	$s^2=\ln(CV^2+1)$	0.5058	0	0	0	0	0	0
Pn	Pn=(1-confidence level)1/n	0.368	0.050	0.050	0.050	0.050	0.050	0.050
Multiplier		1.1853	1	1	1	1	1	1
Dilution Factor		8	8	8	8	8	8	8
Max Conc. at edge of Chronic Zone, ug/L		1.3254	8.38E-12	0.065	9.3E-05	3.0E-01	0.0016	0.0003
Reasonable Potential? Limit Required?		**YES**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
Difference at end of mixing zone		-0.0246						
Lower of MDL or PQL from Permit AppA	ug/L	0.1						

Human Health Limit Calculation

# of Compliance Samples Expected per month	
Average Monthly Effluent Limit, ug/L	**-9.306**
Maximum Daily Effluent Limit, ug/L	**#DIV/0!**

Comments/Notes:

References: WAC 173-201A,

Technical Support Document for Water Quality-based Toxics Control, US EPA, March 1991, EPA/505/2-90-001, pages 56/99