# Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary


August 2, 2001

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. Dennis Wilson, VP/General Manager
Sea Ray Boats, Inc.
350 Sea Ray Drive
Merritt Island, Florida 32953

Re: DEP Permit No. 0090093-003-AC
Cape Canaveral Plant

Dear Mr. Wilson:

This is in response to Sea Ray's request for discontinuation of styrene monitoring by way of letters from Golder Associates received on July 3 and July 27. The request is for an amendment to the permit, therefore it will be processed on the 90-day permitting clock starting July 3. The following additional information is required to properly evaluate the request:

1. The data for the last part of June and first half of July are inconclusive. Please explain.
2. The request is for a "temporary stay until the plant becomes operational". Please explain the current status of plant construction and indicate Sea Ray's best estimate of when the plant will begin initial operation. Also explain Sea Ray's definition of "becomes operational."
3. The Department's letter dated February 23, 2001, specified criteria for routine weekly testing such that no tests would be required if wind speed toward the neighborhood is above 1-2 mph between 6 a.m. and 8 a.m. on the day scheduled for testing. This specification was based on initial data indicating higher styrene concentrations at very low wind speeds. Yet, the most of the data obtained since February has been obtained at speeds above 1-2 mph. Please explain.

If there are any questions concerning the above, please call J. M. Reynolds of our staff at 850-921-9530.

Sincerely,

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

CHF/JR

Enclosures

cc: Len Kozlov, DEP, Central District
Angela Morrison, HGSS
Pete Cantelou, P.E., CHP

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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Dennis Wilson
VP/General Manager
Sea Ray Boars, Inc.
350 Sea Ray Drive
Merritt Island, FL 32953

***COMPLETE THIS SECTION ON DELIVERY***

A. Received by *(Please Print Clearly)*: L. Price
B. Date of Delivery: 8/1/01

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X L. Price
☐ Agent
☐ Addressee

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PS Form 3811, July 1999 Domestic Return Receipt 102595-99-M-1789

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Mr. Dennis Wilson

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***Recipient's Name*** *(Please Print Clearly) (to be completed by mailer)*
Sea Ray Boats, Inc.
*Street, Apt. No.; or PO Box No.*
350 Sea Ray Dr.
*City, State, ZIP+4*
Merritt Island, FL 32953

PS Form 3800, February 2000 See Reverse for Instructions

Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603



AC
John 12

Golder Associates

July 26, 2001

9937586

Florida Department of Environmental Protection
Bureau of Air Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Fl 32399-2400

Attention: Mr. C. H. Fancy, P.E., Chief

RE: SEA RAY, INC., CAPE CANAVERAL PLANT
DEP PERMIT NO. 0090093-003-AC, PSD-FL-274
SPECIFIC CONDITION III. 15. – AMBIENT MONITORING/ODOR TESTING

Dear Clair:

This correspondence is a follow-up of my letter dated July 2, 2001 that requested a temporary stay in the styrene monitoring required by Condition III. 15. of the above reference permit. Please find attached a table summarizing the results of styrene monitoring performed from June 12, 2000 through June 14, 2001 that represent an annual period. Additionally, samples taken from June 21, 2001 to July 12, 2001 will also be available.

Over the annual period, the average concentration was 0.87 part per billion (ppb). This average assumes that the concentrations reported as non-detectable (ND) by the laboratory are equivalent to the laboratory reporting limits listed for that sample. Approximately 59 percent of the observations were non-detectable with reporting limits ranging from 0.23 to 0.47 ppb. The maximum value was 6.4 ppb for the sample taken on May 17, 2001. The second and third highest observed styrene concentrations were 6.3 and 6 ppb for the samples taken on August 3, 2000 and September 7, 2000, respectively. The wind directions for these samples were west (6.4 ppb) and southwest (6.3 ppb and 6 ppb). The fourth highest observed styrene concentration was 5.3 ppb for the sample taken on April 14, 2001. The wind was from the north when this sample was taken.

Table 2 summarizes the styrene monitoring results relative to the observed wind direction during sampling. About 61 percent of the samples were taken when the wind was in a northerly direction. This includes winds from the northeast (9.8 percent), north (25.49 percent), and northwest (25.49 percent). The average for these samples was 0.44 ppb. The highest average styrene concentration was observed from samples taken when the wind was from the southwest; the average was 1.91 ppb for 21.6 percent of the samples taken. The second highest average styrene concentration was observed for samples taken when the wind was from the west; the average was 1.28 ppb for 5.9 percent of the samples taken.

These data provide a good baseline of styrene concentrations prior to the operation of the Cape Canaveral Plant. Additional samples are not necessary and styrene sampling should be postponed until the Cape Canaveral Plant is operating. Based on the permit condition, a postponement of sampling would provide an additional 17 to 18 months of monitoring (about 75 individual samples) that could be compared to the baseline. We appreciate your consideration of the request to temporarily stay the weekly monitoring requirement and hope to hear from you soon. Please call if you have any questions.

Sincerely,

Kennard F. Kosky, P.E.
Principal
Professional Engineer Registration No. 14996

SEAL

KFK/jkw

Enclosure

cc: Dennis Wilson, Sea Ray Boats, Inc.
Dan Goddard, Sea Ray Boats, Inc.
Kevin Thompson, Sea Ray Boats, Inc.
Len Kozlov, FDEP Central District
Isam Yunis, Island Crossing/Riverwalk

P:\Projects\1999\9937586a Sea Ray\L072601.doc

Table 1. Summary of Results for Styrene Monitoring Conducted in Island Crossing/Riverwalk Communities June 15, 2000 through July 12, 2001

| Sample Date | Sample ID | Styrene Results (ppb) | Reporting Limits (ppb) | Wind Direction (degrees) | Wind Speed (mph) |
|---|---|---|---|---|---|
| 06/15/00 | CC0001 | ND | 0.24 | SW | 2 |
| 06/22/00 | CC0002 | ND | 0.24 | S | 3 |
| 06/29/00 | CC0003 | 0.49 | 0.47 | SSW | 2 |
| 07/06/00 | CC0004 | ND | 0.47 | SW | 2 |
| 07/11/00 | CC0005 | 0.62 | 0.24 | NW | 2 |
| 07/20/00 | CC0006 | 0.24 | 0.24 | SW | 3 |
| 07/27/00 | CC0007 | 1 | 0.23 | NW | 3 |
| 08/03/00 | CC0008 | 6.3 | 0.24 | SW | 1 |
| 08/10/00 | CC0009 | 0.87 | 0.23 | W | 3 |
| 08/17/00 | CC0010 | 0.59 | 0.23 | N | 1 |
| 08/24/00 | CC0011 | 0.46 | 0.24 | E | 3 |
| 08/31/00 | CC0012 | 0.25 | 0.24 | S | 3 |
| 09/07/00 | CC0013 | 6 | 0.24 | SW | 2 |
| 09/11/00 | CC0014 | 0.6 | 0.24 | NE | 11 |
| 09/21/00 | CC0015 | ND | 0.24 | SE | 2 |
| 09/27/00 | CC0016 | ND | 0.24 | NE | 7 |
| 10/02/00 | CC0017 | ND | 0.24 | NNW | 3 |
| 10/09/00 | CC0018 | ND | 0.23 | N | 10 |
| 10/18/00 | CC0019 | ND | 0.23 | NW | 4 |
| 10/25/00 | CC0020 | ND | 0.23 | N | 4 |
| 10/31/00 | CC0021 | ND | 0.23 | N | 3 |
| 11/06/00 | CC0022 | ND | 0.23 | N | 1 |
| 11/15/00 | CC0023 | ND | 0.23 | NW | 3 |
| 11/20/00 | CC0024 | ND | 0.23 | NE | 5 |
| 11/27/00 | CC0025 | 0.6 | 0.23 | NW | 3 |
| 12/04/00 | CC0026 | ND | 0.23 | NW | 6 |
| 12/14/00 | CC0027 | ND | 0.23 | S | 6 |
| 01/03/01 | CC0101 | ND | 0.23 | NW | 6 |
| 01/09/01 | CC0102 | ND | 0.23 | N | 7 |
| 01/16/01 | CC0103 | 0.23TR | 0.23 | NW | 2 |
| 01/22/01 | CC0104 | 0.17TR | 0.23 | N | 4 |
| 01/29/01 | CC0105 | 0.18TR | 0.23 | N | 2 |
| 02/05/01 | CC0106 | 0.33 | 0.23 | NW | 1 |
| 02/13/01 | CC0107 | ND | 0.23 | N | 1 |
| 02/22/01 | CC0108 | 2.8 | 0.23 | W | 1 |
| 03/01/01 | CC0109 | 0.18TR | 0.23 | W | 4 |
| 03/08/01 | CC0110 | ND | 0.23 | NW | 4 |
| 03/15/01 | CC0111 | ND | 0.23 | S | 6 |
| 03/19/01 | CC0112 | 0.66 | 0.23 | N | 6 |
| 03/26/01 | CC0113 | ND | 0.23 | NW | 3 |
| 04/02/01 | CC0114 | ND | 0.23 | N | 2 |
| 04/11/01 | CC0115 | ND | 0.23 | SW | 2 |
| 04/16/01 | CC0116 | 5.3 | 0.23 | N | 4 |
| 04/26/01 | CC0117 | ND | 0.23 | NW | 5 |
| 05/03/01 | CC0118 | ND | 0.23 | NE | 9 |
| 05/10/01 | CC0119 | ND | 0.23 | NE | 5 |
| 05/17/01 | CC0120 | 6.4 | 0.23 | W | 5 |
| 05/24/01 | CC0121 | ND | 0.23 | N | 3 |
| 05/31/01 | CC0122 | ND | 0.23 | SW | 5 |
| 06/07/01 | CC0123 | ND | 0.23 | SW | 1 |
| 06/14/01 | CC0124 | ND | 0.23 | SW | 4 |
| 06/21/01 | CC0125 | UA | UA | S | 2 |
| 06/28/01 | CC0126 | UA | UA | SE | 4 |
| 07/04/01 | CC0127 | UA | UA | SE | 4 |
| 07/12/01 | CC0128 | UA | UA | S | 3 |

Legend: ND = non-detectable; TR = trace level, detectable at or below the reporting thresholds
UA = under analysis
Note: Monitoring and analysis conducted according to EPA Method TO-14

Table 2. Styrene Monitoring Conducted in Island Crossing/Riverwalk Communities Relative to the Observed Wind Direction of the Sample

| Wind Direction | Average Styrene Concentration (ppb) | Maximum Styrene Concentration (ppb) | Frequency of Samples from Direction (%) |
|---|---|---|---|
| North | 0.67 | 5.3 | 25.49 |
| Northeast | 0.31 | 0.6 | 9.80 |
| East | 0.46 | 0.46 | 1.96 |
| Southeast | 0.24 | 0.24 | 1.96 |
| South | 0.24 | 0.25 | 7.84 |
| Southwest | 1.91 | 6.4 | 21.57 |
| West | 1.28 | 2.8 | 5.88 |
| Northwest | 0.36 | 1 | 25.49 |

Note: The samples taken in the south-southwest and north-north west were assigned to the southwest and northwest, respectively.

7/9 ~~AL~~ John R pls resp mm 5.9

**Golder Associates Inc.**

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603

July 2, 2001

9937586

RECEIVED
JUL 03 2001
BUREAU OF AIR REGULATION

Florida Department of Environmental Protection
Bureau of Air Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Fl 32399-2400

Attention: Mr. C.H. Fancy, P.E., Chief

RE: Sea Ray, Inc., Cape Canaveral Plant
DEP Permit No. 0090093-003-AC, PSD-FL-274
Specific Condition III. 15. – Ambient Monitoring/Odor Testing

0090093-005-AC

Dear Clair:

This correspondence is a follow-up of correspondence dated February 13, 2001, from Sea Ray to the Department, and our subsequent conversation regarding a temporary stay in styrene monitoring. Styrene monitoring is required by Specific Condition III. 15. of the above-referenced permit. As discussed during our conversation, the Department felt that monitoring should be continued for a period of time and that 12 months of background monitoring should be sufficient. As discussed, there would be considerable difficulty precisely obtaining samples with a 1- to 2-mile-per-hour wind speed and between 6:00 a.m. to 8:00 a.m. from the Cape Canaveral Plant to the monitoring location and the simultaneous coordination with Mr. Yunis, as suggested in the Department's letter dated February 23, 2001. As a result, styrene monitoring has continued to be performed pursuant to Specific Condition III. 15., which included obtaining samples during the periods suggested in the Department's February 23, 2001 letter. Over the ensuing months, a majority of the samples could not be obtained during the periods suggested.

Currently, there are 12 months of background styrene monitoring data available. The first sample was obtained June 15, 2000, and sampling has continued through this date. Since the plant is still not operational, it is requested that the Department amend the permit to grant a temporary stay in monitoring until the plant becomes operational. At such time Sea Ray will notify the Department and continue monitoring as well as comply with the other conditions of the permit.

We are awaiting several styrene analyses and will forward a summary of the 12-month monitoring as soon as they are available. Please call if you have any questions.

Sincerely,

GOLDER ASSOCIATES INC.

Kennard F. Kosky

Kennard F. Kosky, P.E.
Principal
Professional Engineer Registration No. 14996

SEAL

KFK/nav

cc: Isam Yunis, Island Crossings/Riverwalk
Len Kozlov, DEP Central District
Dennis Wilson, Sea Ray Boats, Inc.
Dan Goddard, Sea Ray Boats, Inc.
Kevin Thompson, Sea Ray Boats, Inc.

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Div. Air Res. Mgmt
V-E
cmB
SR
Clair
from: Howard
6/27

Sea Ray

RECEIVED

JUN 21 2001

DIVISION OF AIR RESOURCES MANAGEMENT

RECEIVED
JUN 25 2001
DEP SECRETARY

June 21, 2001

Representative Doug Wiles
PO Box 2161
Saint Augustine, FL 32085-2161

Dear Representative Wiles:

I am sorry that we have been unable to reach each other the past few weeks. After receiving a copy of your letter of April 30 to Mr. David Struhs, I wanted to speak with you about our ongoing efforts to address some of our neighbors' concerns about odors.

I will continue to try to contact you to arrange a mutually convenient time for us to meet. I would like you to be able to visit our facility and see some of the things we have done to address odors and discuss some of the plans we have for the future. If you are unable to visit us in Flagler, we can arrange a meeting at a location that is more convenient for you. In the mean time, I want to provide some information to you about the odor issue.

Sea Ray Boats has been a responsible corporate citizen located in an unincorporated portion of Flagler County for more than 16 years. We opened the Palm Coast facility in 1984, and have been operating a clean, safe facility since opening. We are proud to be a good neighbor and many of our 700 employees and their families live nearby. We have a $20 million annual payroll and an additional $6 million flows into the local community in associated benefits. We use more than 20 local vendors and suppliers. Since opening in 1984, we have contributed to many local charities and currently contribute $13,000 to 20 local charities. Sea Ray is committed to being a good neighbor to all Flagler County residents.

We have worked with the Florida Department of Environmental Protection since 1987 to improve our operations and address some of our neighbors' concerns about odors. Over the years, we have made many changes to equipment, our facility and the products we use to reduce emissions and the potential for odors. The most significant improvement was the complete replacement of our ventilation system in 1994 that reduced air emission impacts by over 80%. That project cost over $400,000. Most recently, in January 2001, we began operating our ventilation system more intensively. We are now running our fans continuously from noon Sunday to noon Friday, well beyond our Monday through Thursday workweek.

In February, we invited our neighbors on Lambert Ave. to come visit with us and tour our facility. We wanted to establish a dialogue with them, provide them with accurate knowledge and a clear understanding of the safety of our operations and provide them with some information about our commitment to maintain safe emission levels and controlling odors. We mailed invitations to 94 households on Lambert Ave and we received response from only 13 households.

We hosted 20 of our neighbors during three tours in March. I've enclosed examples of the correspondence with our neighbors and also the detailed health risk analysis that was prepared by Dr. Chris Teaf of Florida State University. The study covers the potential health effects of styrene exposure and a copy was provided to each visiting household. Dr. Teaf explained that odor detection concentrations are far lower than health effect concentrations, and that projected styrene emissions near our facility are well within health protective standards.

Sea Ray Boats, Inc., 100 Sea Ray Drive, P. O. Box 420010, Palm Coast, FL 32142-0010
904-439-3401/Fax 904-439-2060

In discussions with our visitors, we spoke about working in partnership with our neighbors and Florida's Department of Environmental Protection (FDEP) to ensure that objectionable odors are eliminated. We discussed an air monitoring protocol that we had proposed to, and received approval for implementation from, the FDEP. Enclosed is the correspondence with the FDEP regarding the protocol and a copy of the actual sampling plan.

When we met with the FDEP earlier in March, we discussed the multiple options available to further reduce odors, and the need for air sampling that would provide real-world monitoring data to validate our computer modeling and to evaluate each option to arrive at an optimal decision. The ambient air sampling program that we discussed with the FDEP and with our visitors during our meetings will provide that data. We realize that pursuing a poor option could very likely fail to adequately address our neighbors' concerns, wasting resources while losing valuable time and the goodwill of our neighbors.

In the discussions about the air monitoring protocol with our neighbors, we addressed in detail the role our neighbors could play in helping identify periods when odors are present on Lambert Avenue. All agreed to the value of the partnership, and were pleased that we are moving forward and actively addressing community concerns. As a result of those discussions, some of our neighbors had agreed to actively work with us in making the air concentration measurements and in selecting an independent laboratory that would analyze the samples that would be taken.

The air monitoring protocol requires that a meteorological monitoring station be installed at our facility. The detailed meteorological data accumulated by that station will be used to correlate ambient conditions to concerns of objectionable odor levels near our facility and in computer modeling efforts. The tower and station were installed on April 19 and accumulation of the meteorological data began immediately.

After completion of the tower installation, we began to try to contact our neighbors on Lambert Ave that had previously expressed an interest in partnering with us to take the actual air concentration measurements and to select the lab that would analyze the samples. We had originally planned to begin the sampling program on April 30. When we spoke to those residents, they indicated they were no longer interested in collaborating with us to accomplish the sampling program.

The process of contacting those residents and the subsequent change in their participation delayed our anticipated sampling start date of April 30. We selected an independent laboratory, ordered the sampling canisters and, on May 17, performed our first background sample. The sampling program requires some initial background samples on Lambert Ave. and in other areas near our facility. In addition to the background sampling, several samples will be taken when odors are observed on Lambert Ave. or when favorable meteorological conditions are present.

In the past few weeks, we contacted some Lambert Ave. residents that have agreed to call us when odors are present. The FDEP has also agreed to contact us immediately when they receive a call from our neighbors regarding odor complaints. We have invited and encouraged all of our neighbors on Lambert Ave. to call us when odors are observed in the neighborhood. Their participation would be a valuable contribution to the sampling process.

As agreed to by FDEP at a recent meeting on May 17, we plan to complete the sampling process by the end of July, 2001. Golder Associates, Inc., an engineering firm, will analyze the meteorological and air sampling data. Using that information, they will model the events when odors are present. Golder will then correlate that information to predicted concentrations. This will enable us to evaluate the potential ventilation and other measures that could further reduce odors below levels that some of our neighbors have reported as objectionable.

All of this information will be presented in a final report prepared by Golder, which will be completed by the end of August 2001. Meeting that goal is dependent on favorable meteorological conditions that will allow us to obtain the appropriate samples as indicated in the sampling protocol. We will share that final report with the FDEP, the community and you as soon as it is available.

As you can see, we have been working and will continue to work with the FDEP and our neighbors to try to address some of our neighbors' concern about odors. We would like to invite you to participate in that process to the extent that you are able to do so. We continue to look forward to working in partnership with the FDEP, our neighbors and you, and to arriving at an optimal decision to address our neighbors' concerns.

I will continue to provide you with updates in the future. I will also be contacting you to arrange a meeting with you at a mutually convenient location and time so we can discuss the above issues. I look forward to speaking and meeting with you.

Sincerely,
SEA RAY BOATS, INC.

Joseph M. Collins
Vice President, General Manager
Palm Coast Facility

Enclosures:

March 5, April 10 and May 23, 2001 letters to the FDEP, with attachments
April 4, 2001 letter from Golder Associates, Inc., with attachment
List of plant tour visitors on March 2, 9 and 11, 2001
January 31 and June 05, 2001 letters to the Lambert Avenue residents
Health Risk Evaluation Summary Report from HSWMR, Inc.

cc: David Struhs, Florida Department of Environmental Protection
Chris Kirts, DEP NE District (without enclosures)
Trina Vielhauer, Esquire, DEP OGC (without enclosures)

March 5, 2001

John J. Gay
Department of Environmental Protection
Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, FL 32256-7590

RE: Meeting of March 01,2001

Dear Mr. Gay:

I would like to first thank you for taking the time to come meet with us last week. We appreciate your assistance in helping us move forward on our project.

Attached is a copy of the sampling protocol we discussed. I want to confirm with you our understanding of the results of our meeting on March 01, 2001. Based on our agreement reached at that meeting on Thursday, we will be proceeding with the air sampling protocol for Lambert Ave. as outlined. As mentioned during the meeting, it will take us approximately 30 days to get the equipment ordered and set up and be ready to begin sampling.

Enclosed is a copy of a health risk evaluation for potential exposure to styrene in the vicinity of our plant. We are providing a copy to all of the Lambert Ave. residents that are touring our facility. It should help to alleviate their health concerns. I thought you might want one for your reference.

I request that you continue to notify us as soon as possible if you receive any odor complaints. We will update you on our progress once we are ready to actually begin the sampling program. Please give me a call if you have any questions.

Sincerely,

Donald S. Boney
Operations Manager
Sea Ray Boats, Inc. - Palm Coast

cc: Kevin Thompson, Sea Ray – Knoxville
Angela Morrison, Hopping Green Sams & Smith

## Sea Ray Boats, Inc. Palm Coast Plant
## Air Sampling Protocol

This protocol provides an ambient air sampling and analysis program to determine the extent, duration and concentration of ambient styrene in and around the vicinity of Sea Ray Boats' Palm Coast production facility. The monitoring program will include (1) the installation of a 10-meter meteorological monitoring station that would meet FDEP and USEPA guidelines and (2) discrete sampling of ambient air containing styrene in the parts per billion range. The data collected by the meteorological system will provide sample-specific information during the time of air sampling. This information will be used to correlate styrene concentrations with site readings of wind speed, wind direction, barometric pressure, humidity, and temperature.

The sampling and analysis method for the proposed program will conform to USEPA's Method TO-14A *Determination of Volatile Organic Compounds (VOCs) in Ambient Air Using Specially Prepared Canisters With Subsequent Analysis By Gas Chromatography, 1999.* This method is based on collecting whole air samples in a SUMMA® passivated stainless steel canister. The compounds of interest are separated by gas chromatography and measured by either a mass spectrometer or a multi-detector. This method presents procedures for sampling either above or below atmospheric final pressures (respectively referred to as pressurized and sub-atmospheric pressure sampling) once the sampling is complete. The target list of TO-14A includes some forty volatile organic compounds, including styrene. These compounds have been successfully stored in canisters and measured at the parts per billion by volume (ppbv) level. Under normal conditions for sampling ambient air, most of the target VOCs can be recovered near their original concentrations after storage times of up to thirty days.

**Locations** The samples will be collected at multiple locations: One discrete location upwind of the facility, the exact location to be determined at a later date, for background concentration; one discrete location along Lambert Avenue (to the east of the Sea Ray facility, the exact location to be determined at a later date); and other locations based on styrene odor observations by residents along Lambert Avenue.

**Timing** Samples will be collected when: (1) an odor described as "styrene" or "chemical" is observed by a Lambert Avenue resident (from 6 a.m. to 6 p.m.), and (2) there is a strong direct wind direct from the Lamination Building to the residential area and the Palm Coast facility is operating. The procedures for residents contacting Sea Ray when such odors are observed will be developed within 30 days following approval of this protocol. The concerned residents may appoint a representative to help establish these procedures and act as a liaison for this project.

**Background** Background sampling will be taken upwind of the facility at a discrete location, and at the Lambert Avenue location when the Sea Ray Palm Coast facility is not operating.

**Number of Samples** The sampling program will collect a minimum of 24 samples: (1) 9 samples related to odor observed by Lambert Avenue residents, (2) 9 downwind samples when the Palm Coast facility is operating, and (3) 6 background samples [3 upwind from the Palm Coast Facility simultaneous with downwind sampling, and 3 from the Lambert Avenue location when the Palm Coast facility is ***not*** operating].

**Meteorological Conditions** The downwind samples will be taken when the wind is above 3 miles/hour in the direction of the residential area. The samples taken during odor observed by local residents will be independent of meteorological conditions. The background samples will be taken randomly during the downwind sampling. Given the observations from the local residents, the samples would be collected during the early morning hours (typically between 5 and 9 a.m.).

**Analysis** The samples will be analyzed for styrene as well as BETX (benzene, ethylene, toluene and xylene) concentrations. The results of the laboratory analysis will be sent to Golder Associates Inc.

**Methodology** The proposed sampling methodology will employ the sub-atmospheric pressure technique and will include the following steps:

1. A sample is collected in a pre-evacuated 6-liter canister. A sample of ambient air is drawn though a sampling train comprised of a critical flow device to regulate the flow and duration of the sample. The proposed sampling program will limit the sample collection period to a thirty-minute grab sample, with the starting and ending times noted.
2. The canister's sample valve is opened and the date, time, sample location, and other appropriate information (including but not limited to plant operational conditions and any relevant information if the sample is taken as a result of a resident's styrene odor observation) for that particular sample are noted on the Field Data Sheet (FDS).
3. After the sample is collected, the canister valve is closed, the identification tag is attached to the canister, the Chain-of-Custody (COC) form completed, and the sample shipping container sealed with anti-tamper tape.
4. The canister is transported to the laboratory, via courier service, for analysis.

5. Upon receipt at the laboratory, the canister information is recorded, the COC is completed by laboratory personnel, and the canister is attached to the analytical apparatus.

The monitoring would be conducted by Sea Ray personnel trained in the sampling technique and in the operation of the meteorological station. Lambert Avenue residents and FDEP personnel are welcome to observe and be present during sample collection.

The meteorological monitoring station will be configured to measure and archive wind speed, wind direction, temperature, humidity, and barometric pressure values every fifteen minutes. The system's configuration would enable readout of the meteorological values by using a 900 MHz transmitter/receiver at the tower.

The estimated time to begin sampling is 30 days after startup of the program, because of the time needed to install and calibrate the meteorological monitoring system. The program would be completed as soon as possible, depending on meteorological conditions and the number of occurrences that odor is observed on Lambert Avenue.

After all of the analytical data regarding monitored styrene concentrations have been sent to Golder Associates Inc., Golder will prepare a report explaining the results of the data gathering program for Sea Ray, the Florida Department of Environmental Protection, and the local residents within 45 days.

April 10, 2001

Mr. John J. Gay
Department of Environmental Protection – Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, Florida 32256-7590

Re: Flagler County – Air Compliance – AIRS ID# 0350003

Dear Mr. Gay:

Thank you for your letter of March 8, summarizing our meeting of March 1 and requesting additional information. I received your letter March 19, and appreciate this opportunity to reply and update you on recent developments.

As you may recall, when we met we discussed the multiple options available to further reduce odors, and the need for air sampling that will provide real-world monitoring data to validate our computer modeling and to evaluate each option to arrive at an optimal decision. The ambient air sampling program that we discussed during our meeting will provide that data.

Please note that pursuing a poor option could very likely fail to adequately address our neighbors' concerns, wasting resources while losing valuable time and the goodwill of our neighbors.

In partnership with your office and our Lambert Avenue neighbors, we have developed an air sampling protocol. As described below, the protocol incorporates direct community participation. Also, we are committed to promptly analyzing the air samples as each is taken, and sharing the data with our neighbors and the FDEP throughout the duration of the program. We intend to begin recording meteorological data and air sampling by April 30. A copy of the draft protocol was provided to you during our March 1 meeting and is detailed further in the enclosed letter from Mr. Kosky

To update you on recent events, you may recall that in February we mailed invitations to 94 households on Lambert Avenue, inviting our neighbors to tour our facility and to initiate a dialogue about community concerns over odors that may be associated with our facility. We received responses from 13 households, and were hosts to our neighbors during tours on March 2nd, 9th and 11th, 2001. In total, 20 neighbors visited our facility during those three days; enclosed is a visitor list.

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Each tour and follow-up discussion lasted approximately 2 hours. During that time, we discussed the changes and improvements made over the past several years to modify operations and reduce potential odors. Included in our discussion was the most recent change in January 2001, when we began operating the ventilation system more intensively. We now are running all fans continuously, regardless of the number of bays in use, from noon Sunday through noon Friday, extending well beyond our Monday through Thursday workweek.

Throughout each two-hour tour, Dr. Chris Teaf and Mr. Ken Kosky were available to answer questions from our visitors. Dr. Teaf addressed the health effects of styrene, and participated in resolving the health concerns of our visitors. He had prepared a detailed study of the potential health effects of styrene exposure, and a copy was provided to each visiting household. Dr. Teaf explained that odor detection concentrations are far lower than health effects concentrations, and that projected styrene emissions near the Palm Coast facility are well within health protective standards.

Mr. Kosky discussed the exhaust fan operations in the lamination building and the air modeling that is being used to determine the styrene concentrations at the plant and in the surrounding community.

In discussions with our visitors, we spoke about working in partnership with our neighbors and Florida's Department of Environmental Protection to ensure that objectionable odors are eliminated. We discussed the air monitoring protocol, and addressed in detail the role our neighbors would play in helping identify periods when odors are present on Lambert Avenue. All agreed to the value of the partnership, and were pleased that we are moving forward and actively addressing community concerns.

As a result of our discussions, Mr. and Mrs. Thomas Stocker and Mr. and Mrs. Joseph Zaia have agreed to actively work with us in making the air concentration measurements. During the past few weeks, conversations with the Stockers and the Zaias have better defined the air sampling protocol, and their participation in the air sampling.

As part of the protocol, both households will be provided with cellular phones. Mr. or Mrs. Stocker or Mr. or Mrs. Zaia will use the phones to call us if they believe they smell styrene at any time between 6:00 AM and 6:00 PM, including the time they may be walking along Lambert Avenue in the morning. When they call us, they will tell us where they are presently located and we will immediately go to that location (typically within 10-15 minutes) and take an air sample. They will be present for the entire sampling period, estimated to be 30 minutes. The air sample will then be sealed in a box and the caller (Mr. or Mrs. Stocker or Mr. or Mrs. Zaia) will be responsible for arranging overnight courier pick-up to have the sample delivered to the lab for analysis. We will provide both households with the phones and we will cover all expenses, including courier charges and laboratory analysis.

The Stockers and the Zaias have agreed to participate in the manner described above. They have also agreed to come to the plant and be instructed on the detailed sampling procedures just prior to the beginning of the sampling process. This will familiarize them with the process and facilitate their active participation. At that time, we will also review with them the telephone procedures for contacting us.

Throughout this process we will continue to keep FDEP involved in the on-going evaluation and analysis. We will be analyzing the data as it becomes available, and will provide the data to the FDEP and the community throughout the air sampling program.

As indicated in Mr. Kosky's letter that is attached, Golder Associates will be analyzing the meteorological and ambient concentration data and using that information will model the events when odors are observed. Golder will then correlate that information to predicted concentrations. This will enable us to evaluate the potential ventilation and other measures that could be used to reduce odors below objectionable levels. All of this information will be presented in the final report, which will be shared with the FDEP and the community. We look forward to working in partnership with the FDEP and the community, and to arriving at an optimal decision to address our neighbors' concerns.

Sincerely,

SEA RAY BOATS, INC.

Joseph M. Collins
Vice President, General Manager
Palm Coast Division

cc: Angela Morrison, Hopping Green Sams & Smith
Kevin Thompson, Sea Ray Boats

Enclosures (2)

**Golder Associates Inc.**

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603

April 4, 2001

9937586

Sea Ray Boats, Inc.
100 Sea Ray Drive
Palm Coast, Fl 32142

Attention: Mr. Mike Collins, Vice President and General Manager

RE: MONITORING PROTOCOL
DEP LETTER OF MARCH 8, 2001

Dear Mike:

This correspondence provides additional information regarding the monitoring protocol developed to determine nature and extent of styrene odors being observed along Lambert Avenue. The information is being provided to address the concerns expressed in the March 8, 2001 letter from the Department of Environmental Protection (DEP).

As discussed with Sea Ray and DEP, the modeling analyses performed for the Palm Coast lamination building by Golder Associates Inc. (Golder) determined that a significant improvement was made in the mid-1990s with the installation of the 11 Strobic Ventilation Fans on the lamination building. Indeed, the model predicts that receptors on Lambert Avenue are within recognized odor thresholds for styrene. It was also the conclusion of Golder that, while additional ventilation improvements could be made, the results of such improvements are complicated by several factors. These factors include the precise meteorological conditions when odors are observed in the Lambert Avenue area, the actual styrene concentrations that are present in the Lambert Avenue area, and the specific operating conditions when odors are observed in the Lambert Avenue area. Together, these factors produce considerable uncertainty in recommending specific additional measures that would reduce observed odors beyond that already achieved (i.e., with Strobic Ventilation Fans).

The monitoring protocol (see attached) was developed to specifically address the lack of site-specific information regarding observed odors, their concentration, and corresponding meteorology. The objectives of the monitoring protocol and evaluation of the information are to:

1. Determine the site-specific meteorological conditions at the Palm Coast Plant site;
2. Determine the ambient styrene concentrations on Lambert Avenue when odors are observed;
3. Determine the ambient styrene background concentrations in the area;
4. Analyze, through the use of modeling, the specific meteorological conditions, the observed ambient styrene concentrations, and the plant operational activities, and
5. Assess potential measures that would reduce observed odors based on the modeling relationships developed.

As discussed in detail in the monitoring protocol, Objective 1 is being met through the installation of a meteorological tower on the Sea Ray property near Lambert Avenue that meets DEP and EPA criteria. This system will continuously record wind speed and direction as well as dispersion parameters. The nearest National Weather Service station that continuously records wind speed and direction is in Daytona Beach, about 35 miles south of the plant. This distance is too far for use in evaluating specific short-term observations of odor. The data from the newly installed instrument will be used to

correlate ambient conditions to concerns of objectionable odor levels near the plant and in computer modeling efforts.

Objectives 2 and 3 will be met by obtaining actual ambient measurements of styrene concentrations. These will be obtained using DEP and EPA approved ambient sampling methodology that can determine styrene concentrations lower than 1 part per billion. The sampling will be conducted under several conditions but primarily during periods when the area's residents observe odors. Indeed, participation of residents in the sampling will be essential in addressing the character and relative strength of the odor being observed. Without specific information on styrene concentrations being observed in the Lambert Avenue area, it is not possible to draw definitive conclusions regarding specific measures and their potential effect on odor reductions. As data from the measurements are received, they will be forwarded to both DEP and the liaisons for the concerned neighbors (Mr. Don Deal, Mr. and Mrs. Thomas Stocker, and Mr. and Mrs. Joseph Zaia).

Objective 4 will be met by modeling the specific events when odors are observed and correlating the observed and predicted concentrations to validate the computer modeling and develop a better understanding of the factors complicating the analysis. Plant operational information will be included in the evaluation to determine the activities being conducted (e.g., gel coating and lamination) and representative emission level. This correlation is important in determining the relationship between the emission levels, meteorological conditions, and observed concentrations. Without such relationships, the effectiveness of further actions, for example additional ventilation equipment or operational measures, would be uncertain at best. Without empirical data, significant time and money could be committed by Sea Ray without any meaningful effect on observed odor.

Information developed from Objective 4 will be used to achieve Objective 5 by evaluating ventilation and other factors that can effectively reduce any objectionable odors. The modeling and evaluations regarding odor reduction measures will be presented to FDEP and the concerned neighbors in a final report that will be prepared and made available within 45 days after the data from the last sample is received.

In summary, the monitoring program will generate empirical data that will be used to validate and improve the computer modeling, and to evaluate potential steps that could reduce objectionable odors effectively and efficiently.

Please call if there are any questions.

Sincerely,

Kennard F. Kosky, P.E.
Principal

Enclosure

KFK/jkw

cc: David Bare, Golder Associates

**Sea Ray Boats, Inc. Palm Coast Plant**

**Air Sampling Protocol**

This protocol provides an ambient air sampling and analysis program to determine the extent, duration and concentration of ambient styrene in and around the vicinity of Sea Ray Boats' Palm Coast production facility. The monitoring program will include (1) the installation of a 10-meter meteorological monitoring station that would meet FDEP and USEPA guidelines and (2) discrete sampling of ambient air containing styrene in the parts per billion range. The data collected by the meteorological system will provide sample-specific information during the time of air sampling. This information will be used to correlate styrene concentrations with site readings of wind speed, wind direction, barometric pressure, humidity, and temperature.

The sampling and analysis method for the proposed program will conform to USEPA's Method TO-14A *Determination of Volatile Organic Compounds (VOCs) in Ambient Air Using Specially Prepared Canisters With Subsequent Analysis By Gas Chromatography, 1999.* This method is based on collecting whole air samples in a SUMMA® passivated stainless steel canister. The compounds of interest are separated by gas chromatography and measured by either a mass spectrometer or a multi-detector. This method presents procedures for sampling either above or below atmospheric final pressures (respectively referred to as pressurized and sub-atmospheric pressure sampling) once the sampling is complete. The target list of TO-14A includes some forty volatile organic compounds, including styrene. These compounds have been successfully stored in canisters and measured at the parts per billion by volume (ppbv) level. Under normal conditions for sampling ambient air, most of the target VOCs can be recovered near their original concentrations after storage times of up to thirty days.

**Locations**

The samples will be collected at multiple locations: One discrete location upwind of the facility, the exact location to be determined at a later date, for background concentration; one discrete location along Lambert Avenue (to the east of the Sea Ray facility, the exact location

to be determined at a later date); and other locations based on styrene odor observations by residents along Lambert Avenue.

## Timing

Samples will be collected when: (1) an odor described as "styrene" or "chemical" is observed by a Lambert Avenue resident (from 6 a.m. to 6 p.m.), and (2) there is a strong direct wind direct from the Lamination Building to the residential area and the Palm Coast facility is operating. The procedures for residents contacting Sea Ray when such odors are observed will be developed within 30 days following approval of this protocol. The concerned residents may appoint a representative to help establish these procedures and act as a liaison for this project.

## Background

Background sampling will be taken upwind of the facility at a discrete location, and at the Lambert Avenue location when the Sea Ray Palm Coast facility is not operating.

## Number of Samples

The sampling program will collect a minimum of 24 samples: (1) 9 samples related to odor observed by Lambert Avenue residents, (2) 9 downwind samples when the Palm Coast facility is operating, and (3) 6 background samples [3 upwind from the Palm Coast Facility simultaneous with downwind sampling, and 3 from the Lambert Avenue location when the Palm Coast facility is ***not*** operating].

## Meteorological Conditions

The downwind samples will be taken when the wind is above 3 miles/hour in the direction of the residential area. The samples taken during odor observed by local residents will be independent of meteorological conditions. The background samples will be taken randomly during the downwind sampling. Given the observations from the local residents, the samples would be collected during the early morning hours (typically between 5 and 9 a.m.).

## Analysis

The samples will be analyzed for styrene as well as BETX (benzene, ethylene, toluene and xylene) concentrations. The results of the laboratory analysis will be sent to Golder Associates Inc.

## Methodology

The proposed sampling methodology will employ the sub-atmospheric pressure technique and will include the following steps:

1. A sample is collected in a pre-evacuated 6-liter canister. A sample of ambient air is drawn though a sampling train comprised of a critical flow device to regulate the flow and duration of the sample. The proposed sampling program will limit the sample collection period to a thirty-minute grab sample, with the starting and ending times noted.
2. The canister's sample valve is opened and the date, time, sample location, and other appropriate information (including but not limited to plant operational conditions and any relevant information if the sample is taken as a result of a resident's styrene odor observation) for that particular sample are noted on the Field Data Sheet (FDS).
3. After the sample is collected, the canister valve is closed, the identification tag is attached to the canister, the Chain-of-Custody (COC) form completed; and the sample shipping container sealed with anti-tamper tape.
4. The canister is transported to the laboratory, via courier service, for analysis.
5. Upon receipt at the laboratory, the canister information is recorded, the COC is completed by laboratory personnel, and the canister is attached to the analytical apparatus.

The monitoring would be conducted by Sea Ray personnel trained in the sampling technique and in the operation of the meteorological station. Lambert Avenue residents and FDEP personnel are welcome to observe and be present during sample collection.

The meteorological monitoring station will be configured to measure and archive wind speed, wind direction, temperature, humidity, and barometric pressure values every fifteen

minutes. The system's configuration would enable readout of the meteorological values by using a 900 MHz transmitter/receiver at the tower.

The estimated time to begin sampling is 30 days after startup of the program, because of the time needed to install and calibrate the meteorological monitoring system. The program would be completed as soon as possible, depending on meteorological conditions and the number of occurrences that odor is observed on Lambert Avenue.

After all of the analytical data regarding monitored styrene concentrations have been sent to Golder Associates Inc., Golder will prepare a report explaining the results of the data gathering program for Sea Ray, the Florida Department of Environmental Protection, and the local residents within 45 days.

May 23, 2001

Certified Mail: 7099 3400 0003 4868 1411

Mr. John J. Gay
Department of Environmental Protection
Northeast District
7825 Baymeadows Way, Suite B200
Jacksonville, FL 32256-7590

RE: Meeting of May 17,2001, AIRS ID# 0350003

Dear Mr. Gay:

I would like to take this opportunity to update you on recent developments concerning our air sampling protocol and to summarize the various topics discussed and agreed upon during our meeting on May 17, 2001. We appreciate the assistance you, Chris Kirts, and the other members of the Department have provided in helping us move forward on this project.

On April 19, the installation of the meteorological tower on Sea Ray property, as outlined in the protocol, was completed. Detailed meteorological data is being accumulated and that data will be used to correlate ambient conditions to concerns of objectionable odor levels near the plant and in computer modeling efforts.

After completion of the tower installation, we began to try to contact the residents on Lambert Ave that had previously expressed an interest in partnering with us to take the actual air concentration measurements as outlined in our letter to you dated April 10, 2001. We had originally planned to begin the sampling program on April 30. At the same time, we also contacted Mr. Don Deal Jr., to discuss with him the sampling program and, more specifically, his involvement in selecting a laboratory that would analyze the samples that would be taken. He had previously indicated that he was interested in working with us to select that lab.

When I spoke to Mr. Deal, he indicated that he and some of the other Lambert Ave. residents were no longer interested in collaborating with us to accomplish the sampling program. He also indicated that some of the residents had retained an attorney and the attorney had advised them not to participate in the program with us. We also spoke with Mr. Joseph Zaia, as he had earlier indicated that he would assist us in our sampling process. He was also no longer willing to participate with us. We attempted to contact Mrs. Roseanne Stocker, as she had also previously indicated that she would work with us during the sampling. She did not return our calls.

The process of contacting the residents and the subsequent change in their participation delayed our anticipated sampling start date of April 30. Since it appeared that several of the residents did not want to participate as originally anticipated (i.e., selection of the laboratory and sampling), an independent laboratory was selected so we could follow through on our plan of action. We received the sampling canisters from the laboratory and, on May 17, performed our first background sample, as outlined in the protocol. We will continue to obtain the required background samples and will then proceed with the additional sampling as previously outlined. One of the residents, Ms. Margaret Kalush, has indicated her willingness to contact us if she observes styrene odors along Lambert Avenue. We will attempt to contact other Lambert Ave residents to assist us in the

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sampling when odors are observed on Lambert Ave. We also understand that, to assist us with the sampling program, the Department will contact us immediately when they receive a call from the Lambert Ave residents regarding odor complaints.

As agreed upon during our meeting of May 17, 2001, we plan to complete the sampling process by the end of July, 2001 even if we have fewer than nine samples related to observed styrene odors along Lambert Avenue. The analysis of the sampling results and the report that will be prepared by Golder Associates, as outlined in our letter to you on April 10, will be prepared by the end of August, 2001. Our ability to meet the above timetable is dependent on favorable meteorological conditions that will allow us to obtain the appropriate samples as indicated in the sampling protocol. The final report provided by Golder will include an analysis and evaluation of the potential ventilation and other measures that could be used to further reduce odors below levels which our neighbors have reported as objectionable. We will share that final report with the FDEP and the community as soon as it is available.

We continue to look forward to working in partnership with the FDEP and the community, and to arriving at an optimal decision to address our neighbors' concerns. Please contact me if you have any questions.

Sincerely,
SEA RAY BOATS, INC.

Joseph M. Collins
Vice President, General Manager
Palm Coast Facility

cc: Christopher Kirts, FDEP
Richard Banks, FDEP
Ken Kosky, Golder Associates
Angela Morrison, Hopping Green Sams & Smith
Kevin Thompson, Sea Ray Boats, Inc. - Knoxville
Representative Doug Wiles

# Plant Tours
# Sea Ray Boats, Inc. - Palm Coast Facility

## Friday, March 2, 2001

Walter and Ellen Florkowski
1401 Lambert Ave
Flagler Beach, FL 32136

Arthur and Erika Karpathy
578 Lambert Ave
Flagler Beach, FL 32136

Thomas and Roseanne Stocker
1481 Lambert Ave
Flagler Beach, FL 32136

Sharon Atack
1356 Lambert Ave
Flagler Beach, FL 32136

Barbara Revels
354 S. 22nd Street
Flagler Beach, FL 32136

## Friday, March 9, 2001

Herbert and Sylvia Heck
1 Lambert Cove
Flagler Beach, FL 32136

William and Bonnie Barr
1220 Lambert Ave
Flagler Beach, FL 32136

## Sunday, March 11, 2001

Joseph and Elizabeth Zela
915 Lambert Ave
Flagler Beach, FL 32136

Jack Plimpton
405 Lambert Ave
Flagler Beach, FL 32136

James and Joyce Shaw
370 Lambert Ave
Flagler Beach, FL 32136

Peg Kalush
450 Lambert Ave
Flagler Beach, FL 32136

Don and Chris Deal
1120 Lambert Ave
Flagler Beach, FL 32136

January 31, 2001

Donald L. Deal, Jr.
1580 Lambert Avenue
Flagler Beach, FL 32136

Dear Neighbor:

I am writing out of concern over misunderstandings of some Sea Ray neighbors of the health effects of styrene and our Palm Coast facility. I believe it is very important for all our neighbors to have accurate knowledge and a clear understanding of the safety of our operations. To do this, it is important that we establish an open dialogue with each other, and I invite you to meet with us and tour our facility.

In addition, I want to provide you some information about our commitment to maintaining safe emission levels and controlling odors – especially related to styrene at our facility.

As you know, in our manufacture of boats we use styrene. The styrene is used to form the fiberglass hulls, decks, and various components. Other commercial uses of styrene include styrofoam drinking cups, packing material, insulation, toys, and many types of food packaging. Most of the styrene we use is incorporated into the boat hulls; a small portion of it evaporates. Emissions from our facility are very low, and the very low levels safely protect human health and the environment.

Dr. Christopher Teaf, of Florida State University, has conducted a thorough review of the scientific literature of the health effects of styrene. He concurred with the US Environmental Protection Agency (USEPA)'s findings of the safety of low levels of styrene. As with many other common compounds, including most cleaning fluids, the USEPA has found that high air concentrations of styrene can cause temporary reversible effects, such as irritation to the eyes, nose and throat, and that low concentrations are safe for human health and the environment.

Dr. Teaf also reviewed a recent scientific health study of more than 55,000 workers which concluded that even high levels of exposure fail to cause cancer or other chronic diseases. The USEPA has been in the process of reviewing the human health data for some time and holds the same position, as does the National Institute for Environmental Health Sciences (NIEHS), the National Institute for Occupational Health and Safety (NIOSH), the Occupational Safety and Health Administration (OSHA) and the American Conference of Governmental Industrial Hygienists (ACGIH).

In response to our neighbors' concerns over odors that may be associated with our facility and in agreement with the Florida Department of Environmental Protection, we have initiated an operational improvement program at our plant. Studies show that with the improvements, outdoor air concentrations will be significantly reduced from the already safe levels.

Sea Ray Boats, Inc., 100 Sea Ray Drive, P. O. Box 420010, Palm Coast, FL 32142-0010
904-439-3401 Fax 904-439-2060

March 16, 2001

Dear Ms. Peg Kalush,

Thank you for visiting with us last week. It was a pleasure meeting you, and discussing issues of mutual concern.

Please recall from our discussions that air concentrations of styrene are low, and safely protect people's health. Additionally, odor detection levels are well within thresholds that protect human health. Importantly, we have been responding to community concerns about odors.

In addition to improvements made in previous years to reduce odors, in mid-January of this year we modified our operating procedures to reduce odors even further. The ventilation system is now operated more intensively. The number of fans operating has been increased and their hours of operation have been extended. We are now running all fans continuously from noon Sunday through noon Friday, extending well beyond our Monday through Thursday workweek.

Recently, we initiated a working partnership with our neighbors and Florida's Department of Environmental Protection to achieve further reductions. Together, we are developing a scientific protocol to accurately measure air concentrations on Lambert Avenue in the community. Our goal is to obtain accurate data to support constructive analysis and decision-making.

Again, thank you for taking the time to visit with us. It is through ongoing meetings and dialogue that we will have opportunities to discuss important issues and our efforts to address them. We are looking forward to working with our neighbors, and I will continue to provide you with updates in the future.

Sincerely,

SEA RAY BOATS, INC.

Donald Boney
Operations Manager
Palm Coast Facility

June 5, 2001

Donald and Terry Deal
1580 Lambert Avenue
Flagler Beach, FL 32136

Dear Neighbor:

I would like to take this opportunity to update you on our efforts to address some of our neighbors' concerns about odors. Several events have occurred that may be of interest to you.

In February, we mailed invitations to 94 households on Lambert Ave, inviting our neighbors to tour our facility and to initiate a dialogue about community concerns over odors that may be associated with our facility. We received responses from 13 households, and were hosts to our neighbors during tours on March 2nd, 9th and 11th, 2001. In total, 20 people visited our facility during those three days.

Each tour and follow-up discussion lasted approximately 2 hours. During that time, we discussed the changes and improvements made over the past several years to modify operations and reduce potential odors. Included in our discussion was the most recent change in January 2001, when we began operating the ventilation system more intensively. We now are running all fans continuously, regardless of the number of bays in use, from noon Sunday through noon Friday, extending well beyond our Monday through Thursday workweek.

Throughout each two-hour tour, Dr. Chris Teaf and Mr. Ken Kosky were available to answer questions from our visitors. Dr. Teaf, of Florida State University, addressed the health effects of styrene, and participated in resolving the health concerns of our visitors. He had prepared a detailed study of the potential health effects of styrene exposure, and a copy was provided to each visiting household. Dr. Teaf explained that odor detection concentrations are far lower than health effects concentrations, and that projected styrene emissions near our facility are well within health protective standards.

Mr. Kosky, of Golder Associates, Inc., an engineering firm, discussed the exhaust fan operations in the boat hull manufacturing (lamination) building and the air modeling that is being used to determine the styrene concentrations at the plant and in the surrounding community.

In discussions with our visitors, we spoke about working in partnership with our neighbors and Florida's Department of Environmental Protection (FDEP) to ensure that objectionable odors are eliminated. We discussed an air monitoring protocol that we had proposed to, and received acceptance by, the FDEP.

When we met with the FDEP earlier in March, we discussed the multiple options available to further reduce odors, and the need for air sampling that would provide real-world monitoring data to validate our computer modeling and to evaluate each option to arrive at an optimal decision. The ambient air sampling program that we discussed with the FDEP and with our visitors during our meeting will provide that data. We realize that pursuing a poor option could very likely fail to adequately address our neighbors' concerns, wasting resources while losing valuable time and the goodwill of our neighbors.

In the discussions about the air monitoring protocol with our neighbors, we addressed in detail the role our neighbors could play in helping identify periods when odors are present on Lambert Avenue. All agreed to the value of the partnership, and were pleased that we are moving forward and actively addressing community concerns. As a result of those discussions, some of our neighbors had agreed to actively work with us in making the air concentration measurements and in selecting an independent laboratory that would analyze the samples that would be taken.

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904-439-3401/Fax 904-439-2060

The air monitoring protocol requires that a meteorological monitoring station be installed at our facility. The detailed meteorological data accumulated by that station will be used to correlate ambient conditions to concerns of objectionable odor levels near our facility and in computer modeling efforts. The tower and station were installed on April 19 and accumulation of the meteorological data began immediately.

After completion of the tower installation, we began to try to contact our neighbors on Lambert Ave that had previously expressed an interest in partnering with us to take the actual air concentration measurements and to select the lab that would analyze the samples. We had originally planned to begin the sampling program on April 30. When we spoke to those residents, they indicated that they were no longer interested in collaborating with us to accomplish the sampling program.

The process of contacting those residents and the subsequent change in their participation delayed our anticipated sampling start date of April 30. We selected an independent laboratory, ordered the sampling canisters and, on May 17, performed our first background sample. The sampling program requires some initial background samples on Lambert Ave. and in other areas near our facility. Following the background sampling, several samples will be taken when odors are observed on Lambert Ave. or when favorable meteorological conditions are present.

In the past few weeks, we contacted some Lambert Ave. residents that have agreed to call us when odors are present. The FDEP has also agreed to contact us immediately when they receive a call from our neighbors regarding odor complaints. We invite and encourage any of our neighbors on Lambert Ave. to call us when odors are observed in your neighborhood. Your participation will be a valuable contribution to the sampling process.

We plan to complete the sampling process by the end of July, 2001. Golder Associates will analyze the meteorological and air sampling data. Using that information, they will model the events when odors are present. Golder will then correlate that information to predicted concentrations. This will enable us to evaluate the potential ventilation and other measures that could further reduce odors below levels that some of our neighbors have reported as objectionable. All of this information will be presented in a final report prepared by Golder, which will be completed by the end of August 2001. Meeting that goal is dependent on favorable meteorological conditions that will allow us to obtain the appropriate samples as indicated in the sampling protocol. We will share that final report with the FDEP and the community as soon as it is available.

We continue to look forward to working in partnership with the FDEP and our neighbors, and to arriving at an optimal decision to address our neighbors' concerns. I will continue to provide you with updates in the future. Please contact me or Don Boney at 439-3401 at any time to discuss objectionable odors or other concerns you may have.

Sincerely,
SEA RAY BOATS, INC.

Joseph M. Collins
Vice President, General Manager

# SUMMARY REPORT

## HEALTH RISK EVALUATION FOR POTENTIAL EXPOSURE TO STYRENE IN THE VICINITY OF THE PALM COAST FACILITY

**Prepared for:**

*Sea Ray Boats, Inc.*
*Palm Coast, Florida*

**Prepared by:**

*Hazardous Substance & Waste Management Research, Inc.*
*Tallahassee, Florida*

**February, 2001**

## TABLE OF CONTENTS


| | | | |
|---|---|---|---|
| I. | INTRODUCTION AND HISTORICAL PERSPECTIVE | | 1 |
| II. | TOXICOLOGY AND REGULATORY STATUS OF STYRENE | | 3 |
| | A. | Toxicological Characteristics of Styrene | 3 |
| | B. | Regulatory Status and Health Guidance Regarding Styrene | 6 |
| III. | AIR QUALITY ESTIMATES AND HEALTH RISK ISSUES | | 9 |
| | A. | Results of Emissions Evaluation and Air Modeling | 9 |
| | B. | Health Risk Evaluation of Estimated Off-Property Air Concentrations | 10 |
| IV. | ODOR DETECTION AND IDENTIFICATION OF STYRENE | | 13 |
| V. | SUMMARY AND CONCLUSIONS | | 14 |
| VI. | REFERENCES CITED | | 15 |
| VII. | APPENDIX | | 18 |
| | Appendix A. | Calculations and Conversion Factors | 19 |
| | Appendix B. | Tables | 23 |
| | Appendix C. | Figures | 25 |

# I. INTRODUCTION AND HISTORICAL PERSPECTIVE

Sea Ray Boats, Inc. operates a fiberglass boat manufacturing facility in Palm Coast, Florida. The company has been conducting operations in that area of the Palm Coast community for nearly 17 years. Recently, neighboring property owners have expressed concerns over odor and potential health-related issues. The emissions of interest from the Palm Coast Plant operations (referred to in this report as the "Palm Coast facility") are styrene vapors, which are generated during boat manufacturing processes. While odor complaints occasionally have been received by the Florida Department of Environmental Protection (FDEP), they have historically been irregular short-term events generally related to specific weather conditions. The low level at which styrene can be detected by odor is much less than the level associated with any health effects (HSWMR, 2000).

The health of employees at the Sea Ray facility in Palm Coast is protected by operational controls and is assured by a program in which the company regularly measures and records styrene concentrations in plant work areas by taking air samples to verify that levels are within acceptable limits for workplace safety. For specialty jobs or activities, where conditions may at times result in higher air levels, other protective practices are used, such as additional ventilation or respiratory protection. Any time that workers are exposed to styrene in air without respiratory protection, the average air levels are less than 50,000 parts per billion (ppb; equivalent to 50 parts per million or ppm), which is one-half the allowable OSHA level. A written Respiratory Protection Program is in place at Sea Ray to guide the use of respirators in cases where air levels of styrene may be higher on an intermittent basis. In addition, Sea Ray utilizes materials with low styrene content and low-emitting processes wherever possible, which reduce potential worker exposure by decreasing releases of styrene to the air.

One issue that has been raised is the potential significance of airborne styrene concentrations that may be released from the facility and dispersed to air in the vicinity. This Summary Report addresses the extent

and significance of releases of styrene to the air near the plant. In addition, information is provided to explain what styrene is, what chemical characteristics it has, and what health significance may be associated with the estimated emissions from the Palm Coast facility.

## II. TOXICOLOGY AND REGULATORY STATUS OF STYRENE

### A. Toxicological Characteristics of Styrene

Styrene is a colorless to yellowish liquid with a sweetish odor at room temperature. It can easily be linked together in long chains to form a clear to whitish solid ("polystyrene"). Several billion pounds of the chemical are used each year in the U.S. in the making of synthetic rubber and plastic products including polystyrene packing material, insulation, piping, marine products, medical devices, carpet backing, drinking cups, toys and many types of food packaging. Styrene is present in a variety of applications in the manufacture of fiberglass boats, where it is released into the air principally during the lamination process of building the hull and component parts.

The substance also is present environmentally in indoor and outdoor air as a result of exhaust from cars and as a natural component of cigarette smoke. It also is released from building materials and consumer products (polystyrene products such as packaging materials, toys, housewares and appliances that may contain residual amounts of unlinked styrene). Indoor air is the principal route of styrene exposure for the general population. Average indoor air levels of styrene in homes and buildings typically range from 0.2 to 1.8 ppb, and are generally attributable to releases from sealants and other components of building materials, as well as from consumer products and tobacco smoke (U.S. EPA, 1999a).

Styrene air concentrations are typically expressed in one of two ways. The data may be presented in parts per million [ppm; one ppm equivalent to 1,000 parts per billion, (ppb)] or in milligrams per cubic meter of air ($mg/m^3$). One $mg/m^3$ is equal to 1,000 micrograms per cubic meter ($ug/m^3$). The formula that is used to convert air data that are presented in ppb to a concentration in $ug/m^3$ is presented in Appendix A to this Summary Report.

Styrene is found in some food products prior to packaging, such as coffee beans, peanuts and other nuts, beef and strawberries, but can also occur in foods after they have come in contact with polystyrene packaging

(ATSDR, 1992). It is approved by the U.S. Food and Drug Administration for use as a flavoring agent in some foods, such as ice cream and candy (Mannsville, 1993; U.S. EPA, 1994).

Most of the information on the potential effects following inhalation exposure to styrene in humans comes from studies of workers who were exposed to high concentrations of styrene vapors in the production and use of plastics and resins, especially polystyrene resins. There have been no reports of deaths in humans directly associated with exposure to styrene in the workplace. Inhalation studies in animals confirm that styrene exhibits low to moderate acute toxicity, and that very high exposures are required to cause such effects (ATSDR, 1992; U.S. EPA, 1994). Styrene has been extensively studied and air concentrations which may cause various health effects have been identified. The air concentrations which cause these effects are very high, indicating that styrene has limited toxic properties, especially at low concentrations.

Several human studies have examined the respiratory effects caused by inhalation exposure to styrene. The most commonly reported general symptom is mucous membrane irritation, eye and throat irritation and gastrointestinal effects (U.S. EPA, 1994; U.S. EPA, 1999a), again caused by high levels in air. Several epidemiological (e.g., studies on human workplace populations) and clinical studies have shown that styrene exposure at high levels causes reversible alterations of central nervous system functions in humans, principally mood changes, tiredness and slowed reaction times. Men exposed to levels of 52-117 ppm (52,000-117,000 ppb) on a long-term basis in a boat-building factory reported that they had more "mood changes", similar to alcohol intoxication, were more likely to report feeling tired and had slower reaction times than unexposed workers. The levels reported to cause any neurological symptoms, such as headache or dizziness, were in the 50 to 100 ppm (50,000 to 100,000 ppb) range in air (ATSDR, 1992). Similar reports summarized in the Hazardous Substances Data Bank (HSDB, 1999) and reports summarized by the American Conference of Governmental Industrial Hygienists (ACGIH, 1991) describe mild and transient eye and throat irritation at concentrations greater than 100 ppm (100,000 ppb), but

also note that some people experience no irritation at concentrations as high as 375 ppm in air (375,000 ppb).

Chronic (long-term) exposure to styrene at high levels in humans has been reported to result in similar, generally reversible, effects on the central nervous system, including headache, fatigue, weakness and depression, as well as minor effects on some kidney enzyme functions and on the blood (U.S. EPA, 1999a). These effects have only been reproducibly reported when long-term concentrations exceed 50 to 100 ppm (50,000 to 100,000 ppb). Any other effects that may be attributable to styrene in other organs occur only at even greater air levels.

A recent comprehensive summary study combining several data sets which included more than 55,000 workers in styrene-related industries, both in the United States and Europe, has shown that exposure to styrene does not cause cancer nor does it cause any other chronic disease in typical occupational circumstances. The levels of exposure to styrene encountered by occupational workers in the past were much higher than those to which workers currently are exposed. Since workplace exposures to styrene may be 10,000 to 100,000-fold higher than expected environmental levels, the lack of adverse effects in workers even at high concentrations is an indicator that exposure to current environmental levels of styrene in the ppb range will not cause adverse health effects to the general public (SIRC, 1999).

Isolated epidemiologic studies by some authors have suggested there may be an association between styrene exposure and an increased risk of leukemia and lymphoma from workplace exposure. However, those reports have been generally considered to be invalid due to the fact that multiple chemical exposures to known carcinogens (e.g., other chemicals or substances known to cause cancer), in addition to styrene, were reported (e.g., butadiene, benzene). In those studies there also was inadequate documentation of the levels and durations of exposure to styrene. The studies were judged inadequate because the multiple chemical exposures were not addressed (U.S. EPA, 1994) and because the worker population sizes were too small to be of statistical value (Calabrese and Kenyon, 1991; ATSDR, 1992). For workers exposed predominantly or

exclusively to styrene, the data are either negative (do not show any potential carcinogenic effects) or inconclusive regarding the potential for causing cancer (Rom, 1998) due to small population size or short duration. In those instances, there also was inadequate information on the exposure levels of styrene and limited knowledge regarding the duration of exposure (U.S. EPA, 1999a). The International Agency for Research on Cancer (IARC; an international body which makes recommendations regarding potential health effects of various chemicals) concluded that the evidence for carcinogenicity in humans from epidemiological studies is inadequate, and the evidence from animal studies was limited, yet classifies styrene in Group 2B, defined as possibly carcinogenic to humans, solely on the basis of suggestive animal data (IARC, 1987). The U.S. EPA, NIOSH, OSHA and ACGIH disagree with this conclusion and do not classify styrene as a carcinogen. For additional reference, coffee, pickled vegetables, the drug phenobarbital and the artificial sweetener saccharin also are classified in Group 2B by IARC (IARC, 1998).

Regarding carcinogenicity, the federal National Institute for Occupational Safety and Health (NIOSH) states that "from the experimental animal investigations and from the epidemiological studies, there seems to be little basis to conclude that styrene is carcinogenic" (Calabrese and Kenyon, 1991). Similar statements have been made by other authors as well (e.g., Coggon, 1994).

## B. Regulatory Status and Health Guidance Regarding Styrene

The Clean Air Act Amendments of 1990 list styrene as a hazardous air pollutant, a regulatory classification it shares with many common substances including ethylene glycol (an antifreeze component) and naphthalene (a petroleum constituent commonly used in moth balls).

Workplace exposure to styrene is regulated by the federal Occupational Safety and Health Administration (OSHA). To date, however, U.S. EPA has not established a health-based ambient air quality standard for styrene, nor has FDEP. As described previously, Sea Ray has an extensive program in place to ensure worker safety and compliance with OSHA requirements. Many studies have been conducted concerning

occupational exposure to styrene and possible adverse effects in humans. Styrene is not presently regulated or classified as a human cancer-causing agent by any U.S. government agency, including the U.S. Environmental Protection Agency (U.S. EPA) and OSHA, or by the ACGIH and NIOSH (national advisory organizations). U.S. EPA presently lists the carcinogenicity classification of styrene as "not available" (U.S. EPA, 2001). The agency has been in the process of reviewing the data for styrene for some time (U.S. EPA, 1999a; U.S. EPA, 1994); however, it does not regulate the substance as a carcinogen, nor has it done so in the past. The Florida Department of Environmental Protection (FDEP) classifies the substance as a noncarcinogen (FDEP, 1999). As noted earlier, the few human studies that have raised a suggestion regarding carcinogenicity for styrene have been judged deficient due to the possible co-exposure to other potential cancer-causing agents (e.g., butadiene, benzene), neither of which is used at the Sea Ray facility. All studies describing low level (e.g., ppb), long-term exposure to styrene in air have failed to demonstrate carcinogenic potential for the substance at levels associated with environmental exposures.

OSHA regulates exposure to styrene in the U.S. workplace and requires that average levels in air over the course of a working day of 8 hours during a 40 hour workweek must be less than 100 ppm (100,000 ppb), and that they can not exceed 200 ppm (200,000 ppb) for more than 15 minutes as a Short Term Exposure Limit (STEL) without other protective measures in place. NIOSH, another federal organization, recommends that average air levels for a workday of up to 10 hours should be less than 50 ppm (50,000 ppb), with a short term "Ceiling" value set at 100 ppm (100,000 ppb), similar in concept to the OSHA STEL value. The established workplace air levels for styrene are based on protecting employees against irritation of the eyes, nose, throat and lungs, as well as effects on the nervous system, which are agreed to be the most sensitive, or "earliest occurring", measures of styrene exposure.

Although FDEP has yet to develop an air standard for styrene, the agency has developed guidelines that often are used to judge the significance of airborne exposures to styrene and other chemicals. These guidelines

(termed "Ambient Reference Concentrations" or ARCs) are available for short-term averaging periods (e.g., 8-hour and 24-hour averages) as well as for a long-term averaging period (e.g., annual average concentration). For styrene, the 8-hour average ARC value is 500.6 ppb (2,130 ug/$m^3$), the 24-hour average value is 119.2 ppb (507 ug/$m^3$) and the annual average ARC is 235 ppb (1,000 ug/$m^3$). The 8-hour and 24-hour average concentrations are based upon a 100-fold reduction and a 420-fold reduction, respectively, from the 50 ppm (50,000 ppb) occupational guideline value (FDEP, 1995). The annual average ARC is based upon the U.S. EPA inhalation Reference Air Concentration (RfC), also known as the inhalation Reference Dose ($RfD_i$) of 1 mg/$m^3$ (1,000 ug/$m^3$), or 235 ppb. The RfC or $RfD_i$ value is defined by U.S. EPA as "a daily inhalation exposure of the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime, generally considered to be over 70 years of exposure (U.S. EPA, 2001). The RfC, therefore, is an appropriate value that U.S. EPA, FDEP and other states use to evaluate the noncarcinogenic effects of long-term airborne environmental exposure to chemicals, and is a concentration that protects human health, including the health of sensitive individuals.

# III. AIR QUALITY ESTIMATES AND HEALTH RISK ISSUES

## A. Results of Emissions Evaluation and Air Modeling

In order to determine the magnitude and significance of styrene air concentrations in the vicinity of the existing Palm Coast facility operations, standard approaches were employed to provide dispersion modeling of styrene following permitted releases to the atmosphere. The results of the emissions evaluation and air modeling (Golder Associates, 2001) are shown in Table 1 (Appendix B). The concentrations shown on Table 1 represent the cumulative impacts for the existing facility as currently operated. The average estimated annual air concentration for styrene at the facility property boundary, as shown on Table 1, is 7.4 ppb. Figure 1 (Appendix C) presents computer-generated isopleths (lines of approximately equal concentration) for the estimated annual air concentrations at and near the existing Palm Coast facility. All average values are less than one-third of the 235 ppb U.S. EPA Reference Concentration (RfC) and FDEP ARC and protect human health.

The average estimated annual average air concentrations for the nearest residential boundary also are shown in Table 1 (Appendix B). That average estimated annual concentration at the nearest residential boundary is 0.85 ppb, as is shown graphically in Figure 2 (Appendix C). The nearest residential boundary annual concentrations in that case would be approximately 275 times lower than the regulatory guidance concentration of 235 ppb, the U.S. EPA RfC and the FDEP ARC, and protects human health.

The average estimated 8-hour and 24-hour styrene concentrations based on the existing facility operations also are shown in Table 1, Appendix B. These are considered to be better measures of the potential for short term air concentrations, and are protective of human health under those conditions. The average estimated 8-hour and the average estimated 24-hour concentration for the nearest residential boundary (15.2 ppb and 8.5 ppb, respectively) are well below the Florida ARC guideline based on an 8-hour or 24-hour averaging time (500.6 ppb and 119.2 ppb, respectively; Figure 3 and Figure 4, Appendix C). The highest 8-hour and 24-hour

averaging time values for the five (5) year period are 18.8 ppb and 10.4 ppb, respectively. These values support the conclusion that styrene concentrations in the vicinity of the existing Palm Coast Facility, when present, are at levels protective of human health. That conclusion is particularly true given the conservative, or health protective assumptions that were employed in the modeling (Golder Associates, 2001). As an additional conservative feature, the model disregards the relatively rapid one to two day degradation time of styrene in outdoor air, which should further limit health concerns. A wide variety of researchers have reported the half-life of styrene to be on the order of a few hours, meaning that complete degradation of the styrene typically will occur in less than one day (U.S. EPA, 1994; ATSDR, 1992).

## B. Health Risk Evaluation of Estimated Off-Property Air Concentrations

As briefly discussed in the previous section, the U.S. EPA has developed an inhalation-based health-protective Reference Concentration (RfC) which can be used to evaluate the safety of environmental exposure to airborne styrene. The inhalation RfC is based on the assumption that a threshold exists for health effects, and that the threshold (also known as the No Observed Adverse Effect Level or NOAEL) can be used with appropriate safety factors to set protective air levels for the human population, even assuming a continuous exposure to a chemical.

The inhalation RfC for styrene, defined previously in Section II-B, considers the potential for effects to both the respiratory system, which is the portal-of-entry, as well as for systemic effects. The Reference Concentration for styrene is 1.0E+00 $mg/m^3$ (U.S. EPA, 2001), which is 1.0 $mg/m^3$ (1,000 $ug/m^3$), or approximately 235 parts per billion (ppb in air).

The basis (i.e., the effect which occurs at the lowest long term air concentrations) which was used by U.S. EPA in developing the RfC for styrene is prevention of central nervous system effects, including decreased neurological function of occupational workers (e.g., limited, transient effects on memory and visual perception at unspecified concentrations greater than 22,000 ppb). The data used by U.S. EPA were drawn from an epidemiological study where airborne exposure

concentrations were much higher than would be encountered in air outside the Palm Coast facility. The No Observed Adverse Effect Level identified in that study was approximately 22,000 ppb, and that value was adjusted by lowering the NOAEL to approximately 8,000 ppb to account for differences between occupational vs continuous exposures. The epidemiological study analyzed exposures occurring over a period averaging nearly nine (9) years, ranging to well over 13 years. Thus, effects would very likely have been observed, had they occurred.

Even though no effects were observed in that study at a concentration of approximately 8,010 ppb styrene, U.S. EPA nevertheless added a Safety Factor of 30 to address the possibility of exposure by more sensitive individuals, as well as to address concerns regarding the duration of the study. This Safety Factor resulted in a further lowering of the RfC from 8,010 to 266 ppb, or 1.1 $mg/m^3$, which was then rounded downward again by the agency to the present RfC, which is 1.0 $mg/m^3$ and equivalent to approximately 235 ppb (U.S. EPA, 2001).

The Florida Air Toxics Working Group within FDEP established environmental exposure guidelines including an 8-hour ambient reference concentration (ARC) of 500.6 ppb, a 24-hour ARC of 119.2 ppb, and an annual ARC of 235 ppb (FDEP, 1995). The derivation of these numbers is shown in Appendix A. The annual ARCs are derived from U.S. EPA sources that have been specifically developed to protect public health. If the chemical is not carcinogenic and an inhalation reference concentration (RfC) has been developed by U.S. EPA, then the RfC is used as the annual ARC. Since styrene is not classified as a carcinogen by U.S. EPA, its reference concentration is used as the annual ARC. In most situations, if a particular emission is treated as a 365-day continuous source in the dispersion model (when in reality it is not a continuous source) and the model input represents the maximum one-hour average emission rate, a comparison with the annual ARC is sufficient to determine whether the facilities represents an air toxics concern (FDEP, 1995; Golder Associates, 2001).

Additionally, it is worth noting that U.S. EPA Region 9 has calculated an ambient air concentration of 258 ppb (1.1 $mg/m^3$) as a preliminary

remediation goal on the basis of potential long-term exposure to styrene (U.S. EPA, 1999b). The Region 9 values typically are used by U.S. EPA Region 4 (which includes Florida). The agency's Region III office recommends the same concentration as being protective of human health on a potential chronic exposure basis (U.S. EPA, 2000). Within normal rounding conventions, the 235 ppb (1.0 $mg/m^3$) and the 258 ppb (1.1 $mg/m^3$) are equivalent values.

## IV. ODOR DETECTION AND IDENTIFICATION OF STYRENE

A wide range of odor values for styrene exist in the published literature. The styrene odor threshold range has been reported as 17 to 25,000 ppb (Environment Canada, 1981; Verschueren, 1983; U.S. EPA, 1992) and the Agency for Toxic Substances and Disease Registry (ATSDR) reports a value of 320 ppb (ATSDR, 1992). The lowest reported odor threshold for styrene is 4.7 parts per billion (ppb; U.S. EPA, 1992). However, that reference refers to a Russian study (Li-Shen, 1961) which has been rejected as inadequate by U.S. EPA and other technical reviewers. A mean of 150 ppb for styrene odor detection was reported by the U.S. EPA (U.S. EPA, 1992).

The ability to detect and to identify styrene also is related to one's familiarity with the substance. Individuals differ in their ability to detect styrene in air, but based on various studies, the odor of styrene is detectable in air by some people at average levels in the range of 17-150 ppb (U.S. EPA, 1992), well below those concentrations that pose a potential danger to human health on a chronic basis (e.g., 235 ppb).

In one study, during an acute (e.g., short-term and high concentration) inhalation exposure of humans to styrene, odor was only detectable at a concentration more than 10,000 ppb. At a concentration of 60,000 ppb, odor was detectable but nonirritant. Even at a concentration of 100,000 ppb, the respondents reported a strong odor but without excessive discomfort. A concentration of 376,000 ppb for one hour was associated with reversible neurological impairment (headache, dizziness). A very strong odor, strong eye and nasal irritation was reported when respondents were exposed to 600,000 ppb, which is far in excess of any estimated air concentrations in the vicinity of the Palm Coast facility.

## V. SUMMARY AND CONCLUSIONS

In response to concerns that have been expressed regarding odor and human health impacts that may be associated with air emissions of styrene from the existing Palm Coast facility operations of Sea Ray Boats, Inc., modeling and risk evaluation activities have been conducted. The current styrene air concentrations are well below those which would cause any health effects to local residents, including potentially more sensitive individuals, and the public's health is safely protected (U.S. EPA, 1994).

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## VII. APPENDICES

**Appendix A** Calculations and Conversion Factors

**Appendix B** Tables

**Appendix C** Figures

## APPENDIX A

## Calculations and Conversion Factors

## CONVERSION OF MEASUREMENT UNITS FOR STYRENE

It is important to note that the conversion of units of measure for styrene in air must be carefully reviewed to avoid confusion. Although for some airborne chemicals the units of parts per million and milligrams per cubic meter of air are equivalent or nearly so, that is not true for styrene. The conversion factors for styrene are such that 1 ppm is equivalent to 4.25 $mg/m^3$, and 1 $mg/m^3$ is equivalent to 0.235 ppm (or 235 ppb), based on the chemically based formula for converting units (Williams and Burson, 1985). This conversion of units is based on the following relationship:

$$ppm = \frac{(\#\, mg/m^3) \times 24.5}{MW}$$

where:

| | | |
|---|---|---|
| ppm | = | parts per million in air; |
| $mg/m^3$ | = | milligrams per cubic meter; |
| 24.5 | = | amount (liters) of vapor per mole of contaminant at 25°Centigrade and atmospheric pressure (760 mm Hg); and, |
| MW | = | molecular weight of the compound (104 g/mol). |

## CALCULATIONS USED IN ADJUSTING DOWNWARD THE U.S. EPA REFERENCE CONCENTRATION

The No Observed Adverse Effect Level identified in the U.S. EPA study was 94 $mg/m^3$, or approximately 22,100 ppb, and that value was adjusted downward to account for potential differences between occupational vs continuous exposures by conservatively correcting the NOAEL to 34 $mg/m^3$, or approximately 8,010 ppb.

The adjustment from 94 $mg/m^3$ to 34 $mg/m^3$ is based on comparison between a 5 day workweek and a full 7 day week (5/7 = 0.71) and a comparison between the occupational inhalation rate (10 $m^3$/day) vs a daily estimated inhalation rate for the general population (20 $m^3$/day).

The adjustment is expressed as (5/7) x (10/20) x 94 $mg/m^3$ = 34 $mg/m^3$.

34 $mg/m^3$ is equal to 8010 ppb according to the following calculation:

$$ppb = \frac{34,000 \times 24.5}{104}$$

$$ppb = 8,010$$

## SOURCE FOR THE FDEP ARCs

The source for the 8-hour and 24-hour ARCs is the occupational exposure level (OEL) set by either the ACGIH or OSHA.

The 8-hour value is the OEL [in this case, 50 ppm (50,000 ppb) for styrene] divided by a safety factor of 100.

The 24-hour value is the OEL [in this case, 50 ppm (50,000 ppb) for styrene] divided by a safety factor of 420.

These safety factors have been applied to the OELs to protect the public, who may be more sensitive than workers to these chemicals and who could be exposed for a longer period of time (FDEP, 1995).

## APPENDIX B

## Tables

TABLE 1

**Maximum Predicted Concentrations of Styrene Emissions, Sea Ray Boats, Inc. Palm Coast Plant Compared to Florida Ambient Reference Concentration (ARC) - Current Operations at Average Emission Rates**

| Averaging Time | Year | Site Boundary ($ug/m^3$) | Residential Boundary ($ug/m^3$) | FARC ($ug/m^3$) | Site Boundary (ppb) | Residential Boundary (ppb) | FARC (ppb) |
|---|---|---|---|---|---|---|---|
| Annual | 1987 | 33.2 | 5.1 | 1,000.0 | 7.8 | 1.2 | 235.0 |
| | 1988 | 31.9 | 3.5 | 1,000.0 | 7.5 | 0.8 | 235.0 |
| | 1989 | 27.8 | 4.1 | 1,000.0 | 6.5 | 1.0 | 235.0 |
| | 1990 | 31.0 | 3.5 | 1,000.0 | 7.3 | 0.8 | 235.0 |
| | 1991 | 33.8 | 3.5 | 1,000.0 | 7.9 | 0.8 | 235.0 |
| Highest 24-hour | 1987 | 264.4 | 36.3 | 507.0 | 62.1 | 8.5 | 119.2 |
| | 1988 | 247.4 | 36.5 | 507.0 | 58.1 | 8.6 | 119.2 |
| | 1989 | 231.0 | 31.8 | 507.0 | 54.3 | 7.5 | 119.2 |
| | 1990 | 276.9 | 44.3 | 507.0 | 65.1 | 10.4 | 119.2 |
| | 1991 | 250.7 | 31.9 | 507.0 | 58.9 | 7.5 | 119.2 |
| Highest 8-hour | 1987 | 418.4 | 67.0 | 2,130.0 | 98.3 | 15.7 | 500.6 |
| | 1988 | 528.3 | 79.9 | 2,130.0 | 124.2 | 18.8 | 500.6 |
| | 1989 | 445.2 | 65.3 | 2,130.0 | 104.6 | 15.3 | 500.6 |
| | 1990 | 470.6 | 53.9 | 2,130.0 | 110.6 | 12.7 | 500.6 |
| | 1991 | 405.1 | 58.2 | 2,130.0 | 95.2 | 13.7 | 500.6 |

Notes:

$ug/m^3$ = micrograms per cubic meter
ppb = parts per billion
$ug/m^3$ per ppb = 4.254567

## APPENDIX C

## Figures

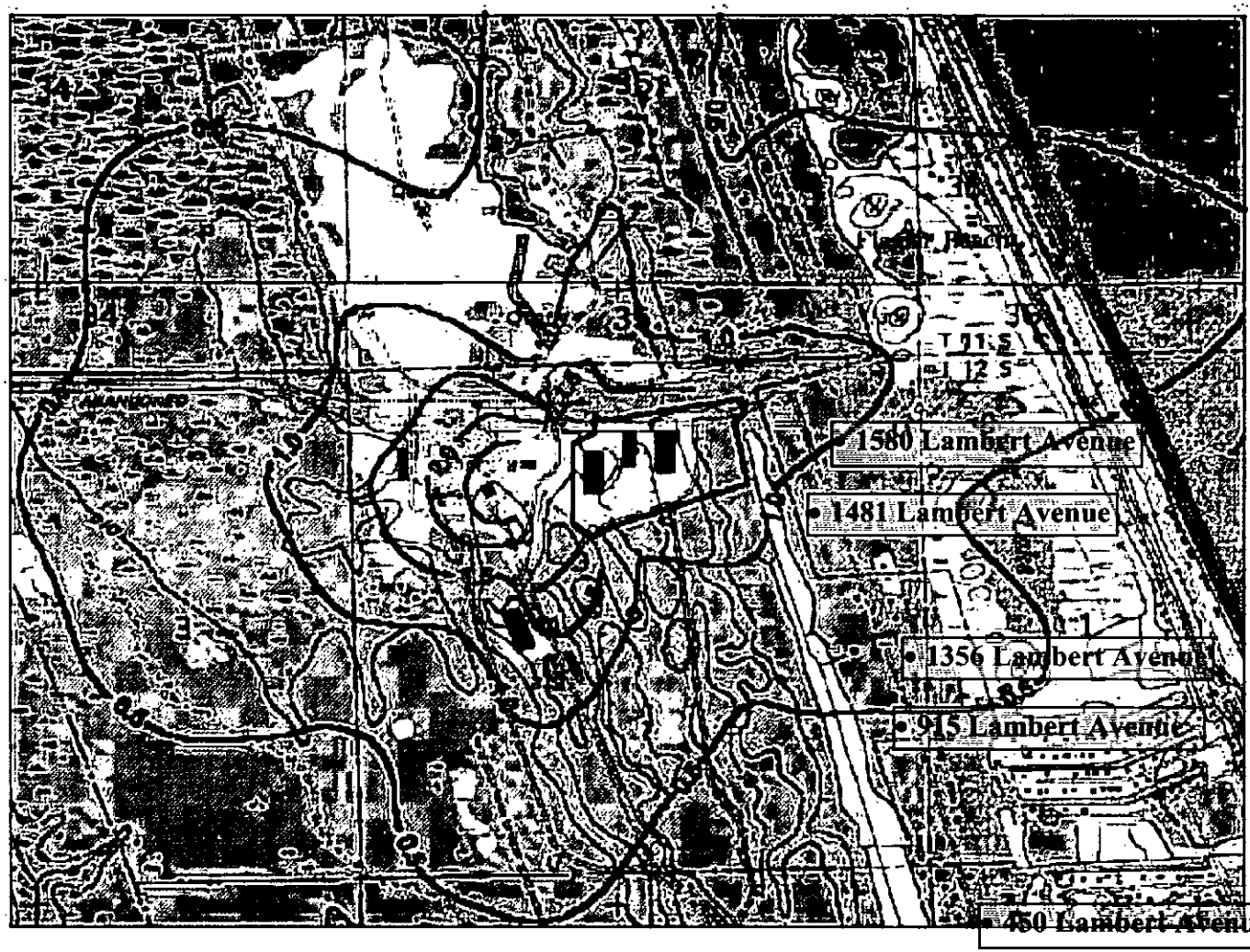
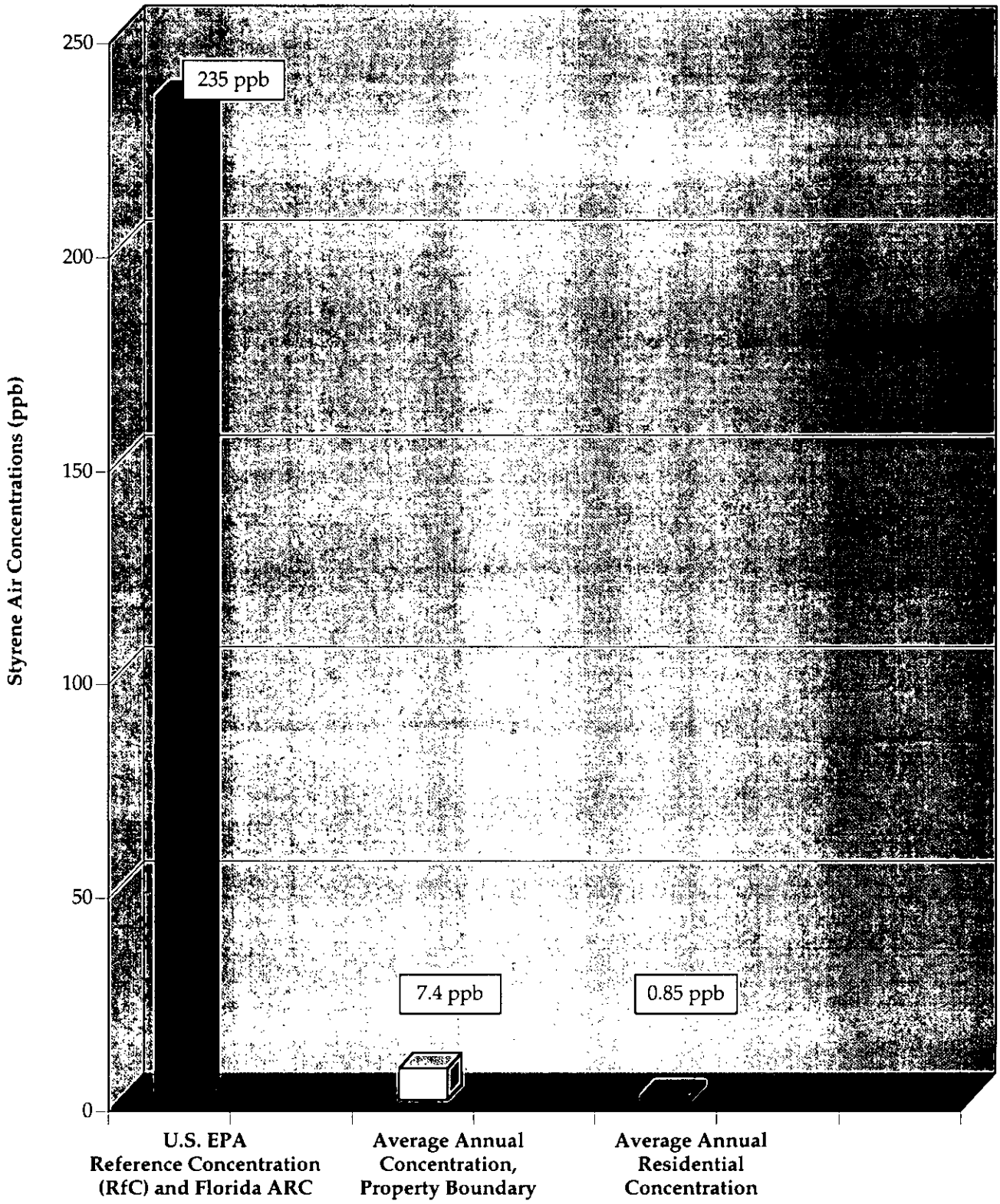



**Figure 1. Predicted Annual Average Styrene Concentrations (ppb), for the Existing Sea Ray Palm Coast Facility**

Note: • Indicates location address.

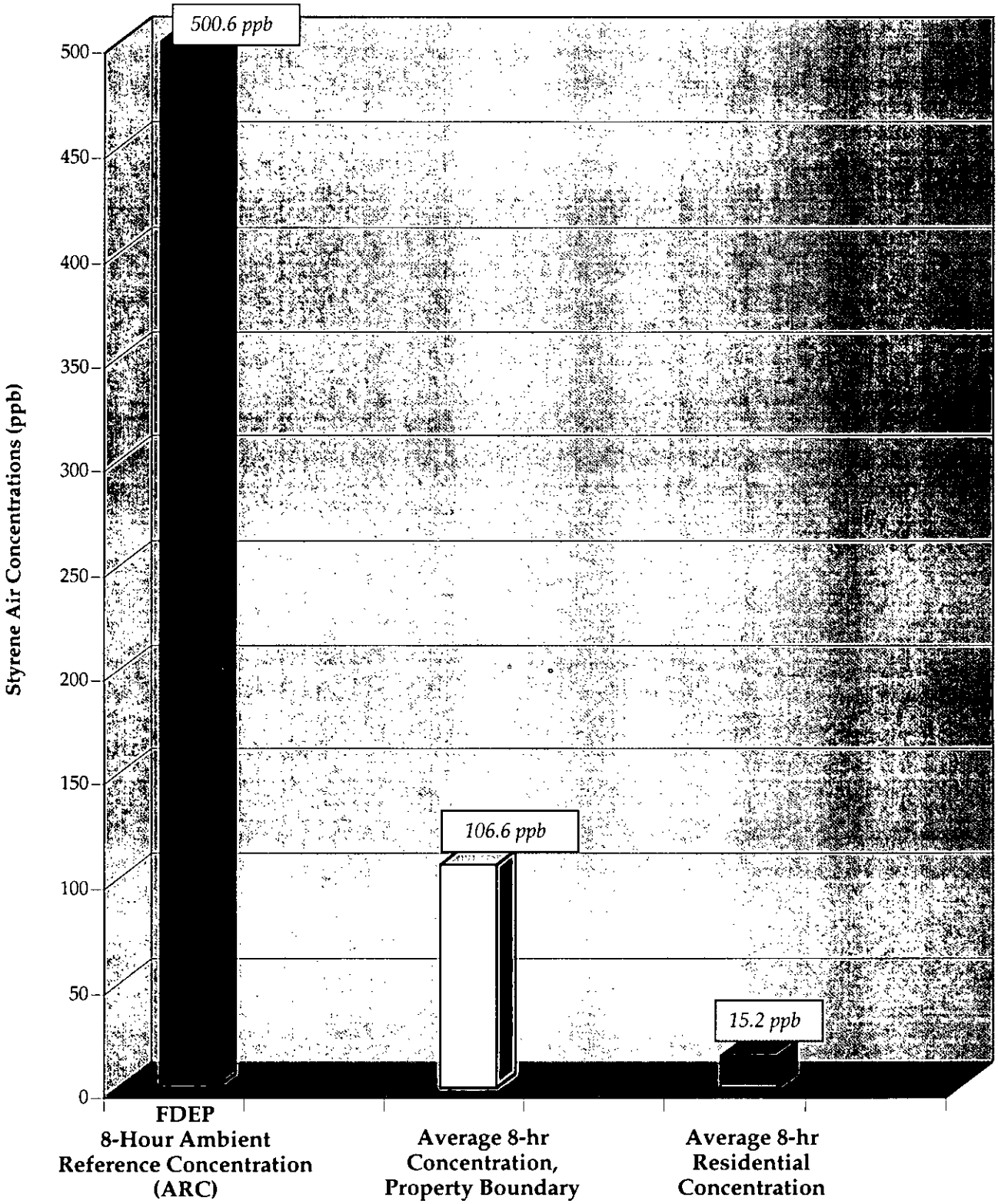
## Figure 2

### Comparison of Annual Average Styrene Concentrations with Health-Based Guidelines, Palm Coast Facility



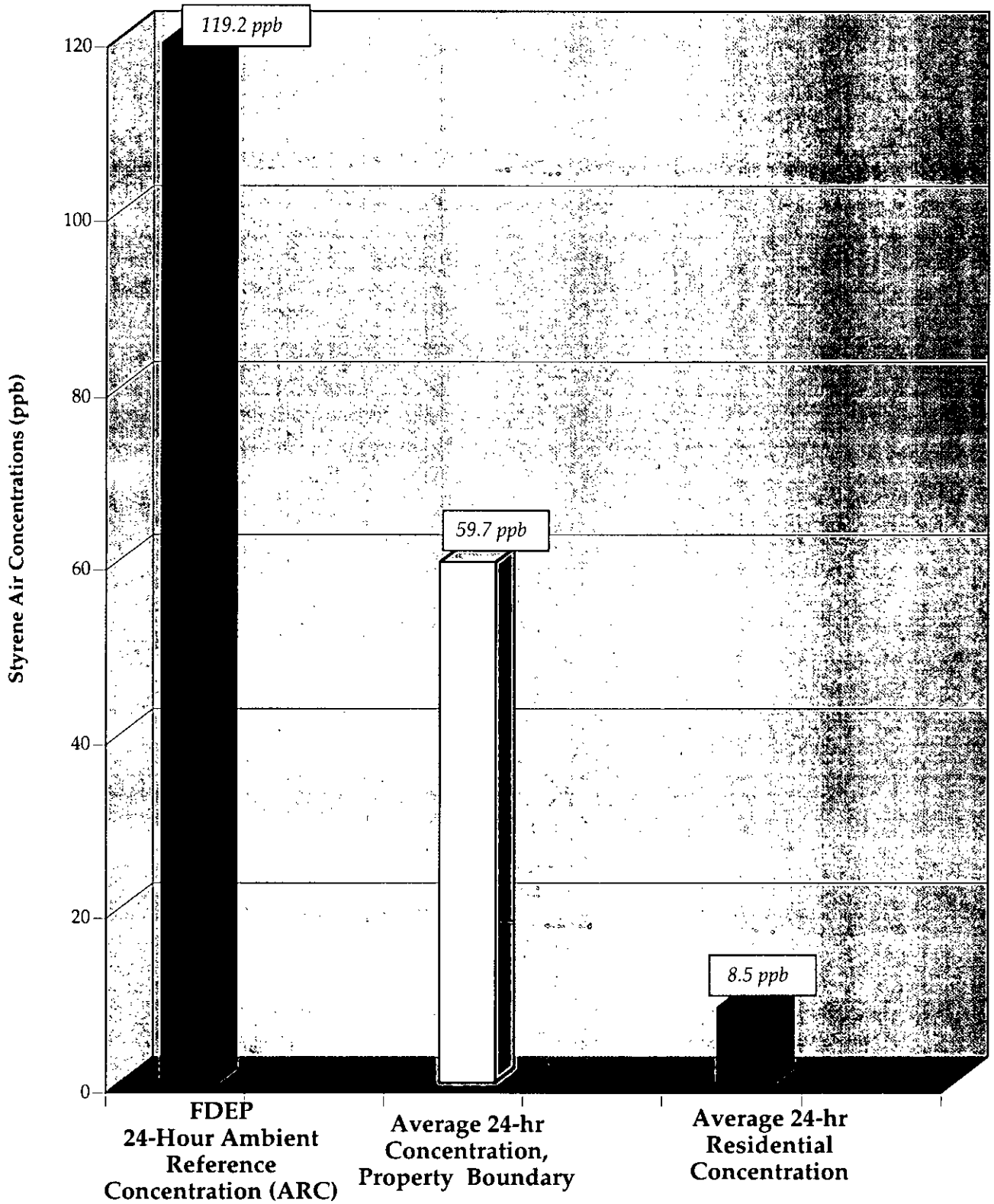
## Figure 3

## Comparison of 8-Hour Average Styrene Concentrations with Health-Based Guidelines, Palm Coast Facility



## Figure 4

## Comparison of 24-Hour Average Styrene Concentrations with Health-Based Guidelines, Palm Coast Facility



# Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary


February 27, 2001

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. Clarence Rowe
418 Pennsylvania Avenue
Rockledge, Florida 32955

Re: Request for Information Regarding Sea Ray File

Dear Mr. Rowe:

This is in response to your February 25 request for information regarding the Sea Ray project at Cape Canaveral. You requested a description and timeline for add-on control equipment to be installed and the percentage of VOCs to be removed. Also requested is a diagram characterizing the concentration and dispersion of VOCs from the facility. You further asked to be copied on all Central District Office correspondence regarding the Sea Ray project, retroactive to January 1, 2000.

Specific Condition 18 of the construction permit (a copy was mailed to you previously) requires that within 120 days following commencement of lamination processing, Sea Ray shall submit a proposed design for a pilot-scale VOC capture and control system to the Department for approval. The proposed pilot-scale control system must be designed for a net overall VOC capture and destruction efficiency of 76 percent from a sample air stream exhausted from a single boat hull of at least 65 feet in length. Within 180 days after approval of the proposed pilot system design, Sea Ray must install and begin operation of the approved system. Within 180 days following commencement of operation of the pilot system, testing must be completed and a cost effectiveness determination submitted to the Department.

If the feasibility of the pilot-scale control system is demonstrated, the Department will propose that Sea Ray install a full-scale control system for the entire Lamination/Assembly Building, capturing at least 90 percent of VOCs from the lamination process while destroying at least 95 percent. However, in accordance with conditions II.5 and 22 of the permit, the Department's proposal to require a full-scale control system will be subject to public notice and an administrative challenge by Sea Ray and/or other parties. If the Department successfully defends its revised BACT determination through the administrative hearing process, Sea Ray will have one year from the date of submission of the pilot system test results to install and begin operation of the full-scale system.

Enclosed is a diagram prepared for Sea Ray by Golder Associates showing predicted styrene air impacts in the vicinity of the Cape Canaveral site.

Your request for copies of correspondence with Sea Ray, retroactive to January 1, 2000 has been forwarded to the Central District Office. As requested, you will be copied on all future correspondence between the Department and Sea Ray related to this project.

We hope this response fully addresses your concerns. If there are any questions regarding the above, please contact John Reynolds of our staff at 850/921-9530.

Sincerely,

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

CHF/JR

Enclosure

cc: Len Kozlov, DEP Central District

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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Clarence Rowe
418 Pennsylvania Ave.
Rockledge, FL 32955

***COMPLETE THIS SECTION ON DELIVERY***

A. Received by *(Please Print Clearly)*: Clarence Rowe
B. Date of Delivery: 3/5/01

C. Signature
X Clarence Rowe
☐ Agent
☑ Addressee

D. Is delivery address different from item 1?
If YES, enter delivery address below:
☐ Yes
☐ No

3. Service Type
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☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

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2. Article Number *(Copy from service label)*
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***(Domestic Mail Only; No Insurance Coverage Provided)***

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Mr. Clarence Rowe

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*Name (Please Print Clearly) (to be completed by mailer)*
Mr. Clarence Rowe
*Street, Apt. No.; or PO Box No.*
418 Pennsylvania Ave.
*City, State, ZIP+4*
Rockledge, FL 32955

PS Form 3800, July 1999 See Reverse for Instructions

Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603

Golder Associates

November 2, 1999

9937586A/1

Sea Ray Boats, Inc.
Merritt Island Facility
350 Sea Ray Drive
Merritt Island, Florida 32953

Attention: Mr. Dennis Wilson V.P./General Manager

RE: CAPE CANAVERAL PLANT- STYRENE AIR IMPACTS

Dear Mr. Wilson:

Golder Associates (Golder) has performed air dispersion modeling of the styrene emissions from Sea Ray's proposed Cape Canaveral plant site. Styrene is a Hazardous Air Pollutant (HAP) under the regulations of the Florida Department of Environmental Protection (FDEP) and the U.S. Environmental Protection Agency (EPA). The air modeling was performed using the FDEP and EPA-approved Industrial Source Short-Term Model (ISCST3, Version 99155). The modeling analysis was performed using FDEP-approved regulatory options.

The emissions and stack parameters used in the air modeling analysis were obtained from Sea Ray Boats. The influence of building downwash effects on the emission stacks was considered in the modeling analysis by evaluating building dimensions from a provided plot plan of the site.

Meteorological data used in the ISCST3 modeling analysis included 5 years of surface and upper air data collected from National Weather Service (NWS) offices at Daytona Beach and West Palm Beach, respectively, for the years 1987 through 1991. The Daytona Beach/West Palm Beach meteorological data are considered appropriate for modeling analyses performed in the vicinity of the proposed site location.

Maximum concentrations were predicted at a network of 345 receptors in polar coordinates located at the plant property boundary and beyond the property boundary out to 5 km from the plant. Receptors were located on radials extending from the plant, spaced at 10-degree intervals at the property boundary and at all off property locations. Beyond the property boundary, receptors were located at distances of 200, 300, 500, 1000, 1500, 2000, 3000, 4000, and 5000 meters from the plant.

There are no ambient air quality standards for HAPs, and the FDEP has developed ambient reference concentrations (ARC) that have been used as conservative guidelines

in assessing the potential for public health risk. If the maximum predicted concentration approaches the ARC, the margin of safety incorporated into the guideline assures that the public health will be maintained.

Exhibit A portrays the spatial distribution of the maximum predicted annual average styrene concentrations in the vicinity of the proposed plant. Each contour line represents areas of equal concentration in parts per billion (ppb) in the vicinity of the plant. It should be noted that the maximum concentrations presented are well below the ARC of 235 ppb (i.e., equivalent to 1,000 micrograms per cubic meter). Therefore, all concentrations are well below the level considered to pose a health risk.

The second figure, Exhibit B, portrays a magnified view of the area near the plant site from Exhibit A.

Please call me if I can be of further assistance.

Sincerely,

GOLDER ASSOCIATES INC.

Steven R. Marks
Certified Consulting Meteorologist

SRM/arz

cc: Pete Contelou, CHP
Kevin Thompson, Sea Ray
Steve Fielder, Sea Ray
Ken Kosky, Golder

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9937586A/2

11/03/99

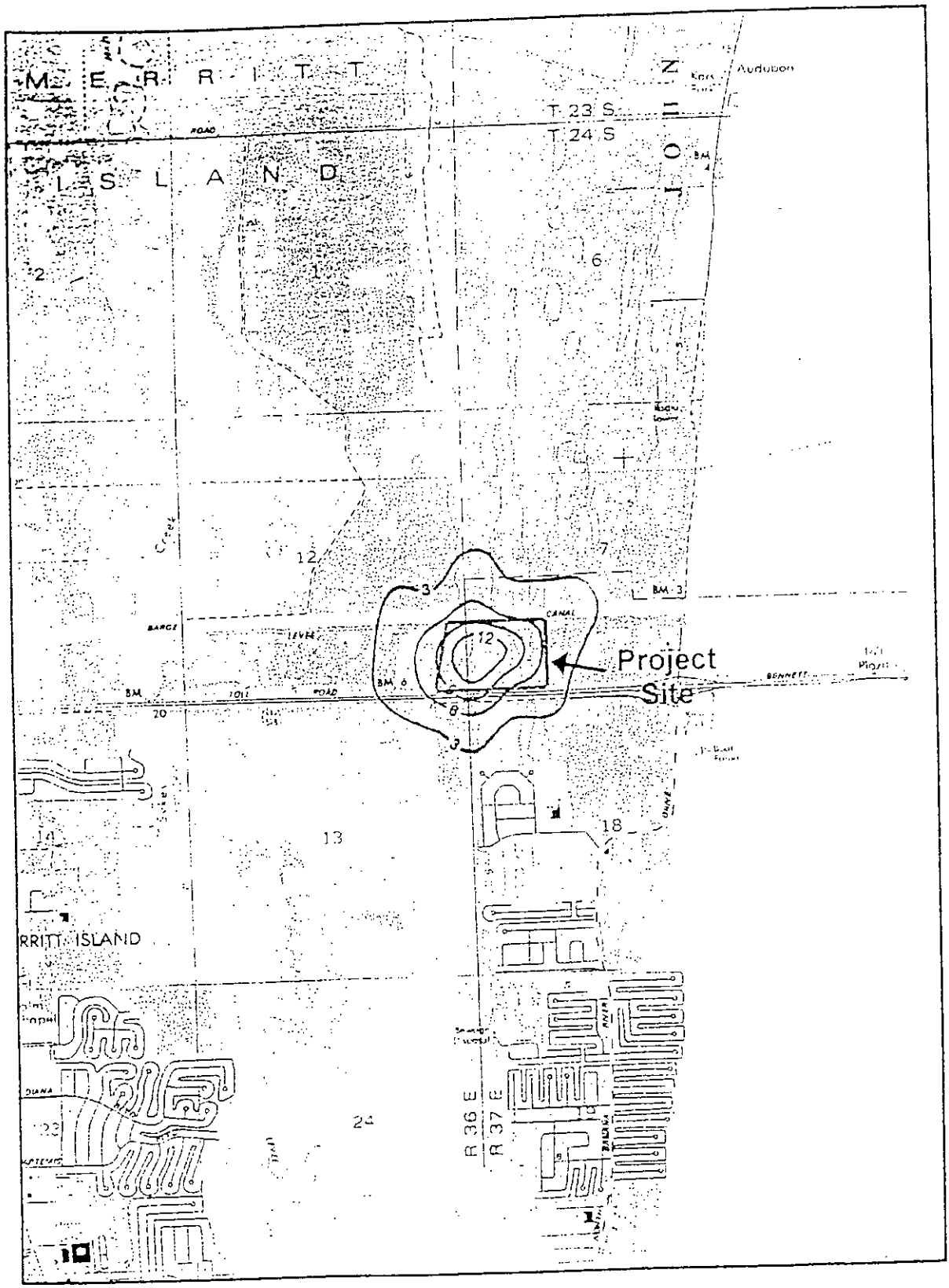



Exhibit A. Contours of Maximum Predicted Annual Average Styrene Concentration (ppb)
Styrene ARC: 235 ppb

Golder Associates

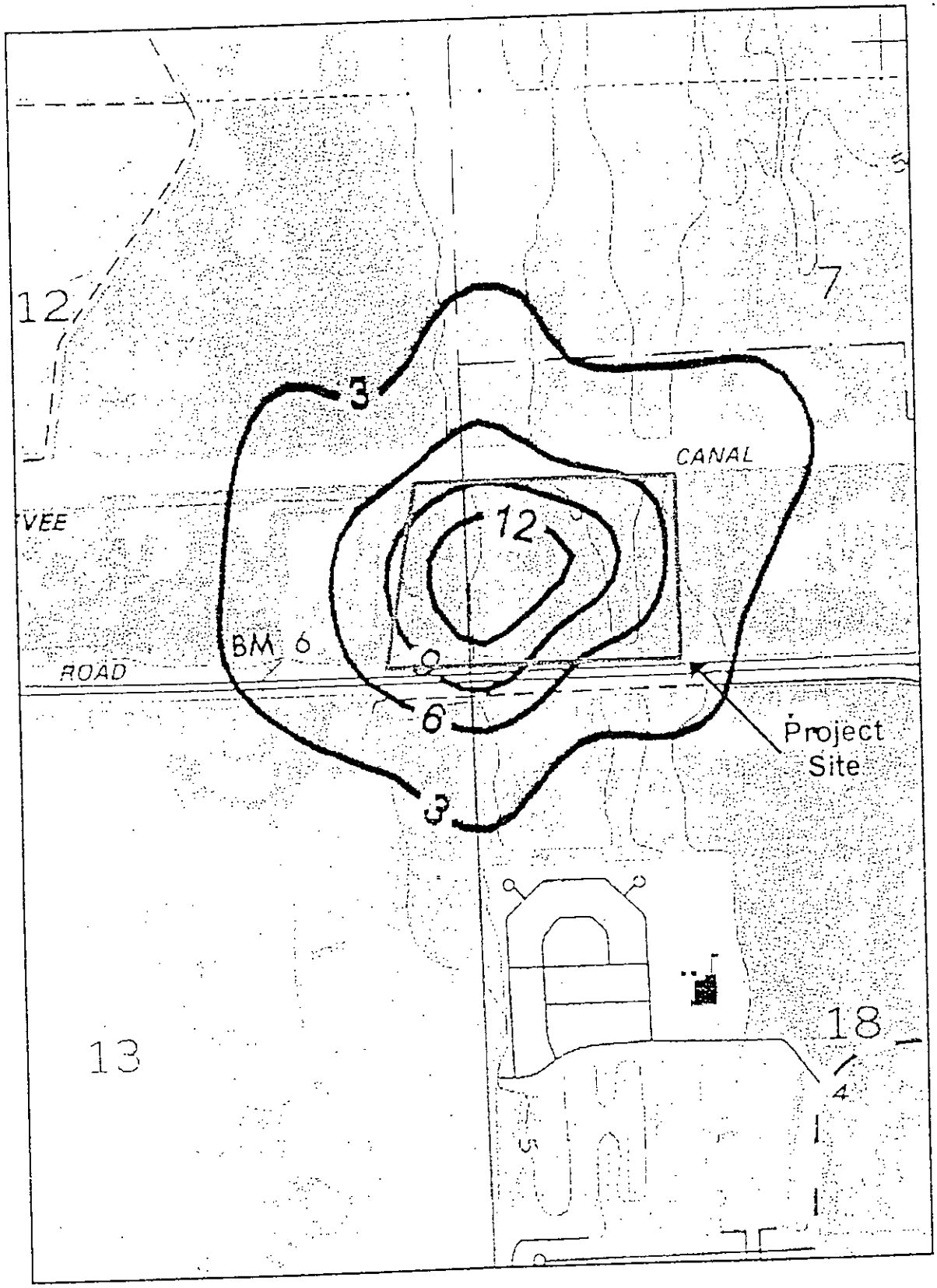



Exhibit B. Magnification of Site Area Shown in Exhibit A
Styrene ARC: 235 ppb

Golder Associates

SOURCE TEST REPORT
FOR
VOLATILE ORGANIC COMPOUNDS (as STYRENE) AND
FORMALDEHYDE EMISSIONS

INLET AND OUTLET TO THE PHAN BIOREACTION ZONE
ON THE #2 VENT OF THE LAMINATOR BUILDING

SEA RAY BOATS, INC.
MERRITT ISLAND, FLORIDA

FDEP PERMIT NUMBBER 0090093-003-AC

AUGUST 31, 2000

PREPARED FOR:

GOLDER ASSOCIATES, INC.
6241 NW 23 RD ST., SUITE 500
GAINESVILLE, FLORIDA 32653

PREPARED BY:

AIR CONSULTING AND ENGINEERING, INC.
2106 NW 67TH PLACE, SUITE 4
GAINESVILLE, FLORIDA 32653
(352) 335-1889

163-00-02

TABLE OF CONTENTS


| SECTION | | PAGE |
|---|---|---|
| 1.0 | INTRODUCTION | 1 |
| 2.0 | SUMMARY AND DISCUSSION OF RESULTS | 2 |
| 3.0 | PROCESS DESCRIPTION AND OPERATION | 4 |
| 4.0 | SAMPLING POINT LOCATION | 5 |
| 5.0 | FIELD AND ANALYTICAL PROCEDURES | 7 |
| 5.1 | DETERMINATION OF TOTAL GASEOUS ORGANIC CONCENTRATION USING A FLAME IONIZATION ANALYZER--EPA METHOD 25 | 7 |
| 5.2 | SAMPLE POINT LOCATION AND VOLUMETRIC FLOW RATE DETERMINATION--EPA METHODS 1-4 | 9 |
| 5.3 | FORMALDEHYDE DETERMINATION – NCASI CHILLED IMPINGER METHOD | 9 |

APPENDICES

APPENDIX A--FDEP PERMIT NUMBER 0090093-003-AC

APPENDIX B-- VOLUMETRIC FLOW DATA

APPENDIX C--EPA METHOD 25 FIELD AND LABORATORY DATA

APPENDIX D--FORMALDEHYDE FIELD AND LABORATORY DATA

APPENDIX E--QUALITY ASSURANCE

APPENDIX F--PRODUCTION DATA

APPENDIX G--NCASI CHILLED IMPINGER METHOD

APPENDIX H--PROJECT PARTICIPANTS

## 1.0 INTRODUCTION

On August 31, 2000, Air Consulting and Engineering, Inc. (ACE) conducted Volatile Organic Compound (VOC) emission testing on the inlet and outlet locations of the PIIAN Bioreaction Zone on the Number 2 vent of the Laminator Building at Sea Ray Boats, Inc. on Merritt Island, Florida. Formaldehyde testing using the NCASI Chilled Impinger Method was performed on the outlet only.

The inlet duct and outlet stack were sampled simultaneously using United States Environmental Protection Agency (EPA) Method 25 for Non-Methane VOC's. As required by FDEP for this test, the M-25 sample trains were preceded by clean 12.2 meter long by 0.794 cm ID Teflon sample probes that allowed 6.0 minutes of sample residence time prior to collection by the M-25 sample train at 100 ml/min. The NCASI Chilled Impinger sample train was preceded by a clean 36.6 meter long by 0.635 cm ID polypropylene sample probe that allowed 4.6 minutes of sample residence time prior to collection by the Chilled Impinger sample train at 250 ml/min. All probes were conditioned for 40 minutes at 100 ml/min sample flow prior to the first test run.

EPA Methods 1 and 2 were utilized to measure flow rate after the PIIAN Bioreaction Zone at the stack outlet. The ambient temperature stack was assumed to be saturated with moisture at this point. The PIIAN system was adding 18 gallons of solution per hour to the air stream just downstream from the inlet port location and prior to the fan. PIIAN representatives placed an 8-inch square piece of demister pad in the outlet duct just ahead of the M-25 and NCASI chilled impinger train sample probes.

Mr. Ken Kosky of Golder Associates, Inc. coordinated the testing effort. Mr. Steve Fielder of Sea Ray Boats, Inc. provided the production data. Mr. Gregory McGrath of PIIAN systems operated the Bioreaction Zone.

## 2.0 SUMMARY AND DISCUSSION OF RESULTS

Table 1 summarizes test results and flue gas parameters. No moisture condensation was observed in the clear plastic sample probes during conditioning or testing. No detectable moisture was collected by any of the impingers or M-25 condensate traps.

Inlet emissions averaged 10.45 pounds per hour (lbs/Hr) of non-methane VOC as carbon and 12.89 lbs/hr VOC as Styrene, MMA and formaldehyde, while outlet emissions averaged 20.35 lbs/hr of non-methane VOC as carbon and 25.09 lbs/hr VOC as Styrene, MMA and formaldehyde.

The VOC samples were taken at the designated inlet and outlet locations (see Figure 1) and then analyzed according to specifications as stated in EPA Method 25. Results yielded non-methane VOC concentrations as carbon. For the calculation of the mass emission rate the inlet flow rate was assumed to equal the measured outlet flow rate. Run-1 results were excluded from the average, because of initial sample probe connection problems.

The monitored production VOC material usage during the seven-hour test period (1700 to 2400) averaged 59.3 lbs/hr as Styrene and MMA. Using FDEP's recommended emission factors for resin (11% of styrene emitted to the air) and for gel coat (48% of styrene and 48% of MMA emitted to the air), there was an average calculated styrene and MMA air emission rate of 18.62 lbs/hr.

Low amounts of carbon monoxide were detected in the outlet samples only (an average of 0.69 lbs/hr).

Formaldehyde emissions in the outlet sample averaged 0.0090 lbs/hr for all three runs, and averaged 0.0051 lbs/hr for runs 2 and 3.

Flow measurements performed on the outlet stack averaged 31,096 actual cubic feet per minute (ACFM), which is within 4% of the manufacture's fan rating of 30,000 ACFM.

Flow rate calculations, EPA Method 25 analysis and Formaldehyde analysis are presented in Appendices B, C and D, respectively.

Table 1. Emission Summary — Test Dates: August 31-September 1, 2000
PIIAN Bioreaction Zone Inlet and Outlet
Sea Ray Boats, Inc. Merritt Island, Florida

| | | VOC Inlet Emissions | | | | VOC Outlet Emissions | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Run Number | Time | Flow Rate dscfm | ppm as Carbon | lbs./hr as Carbon | lbs./hr as Styrene, MMA + Formaldehyde | Flow Rate dscfm | ppm as Carbon | lbs./hr as Carbon | lbs./hr Formaldehyde | as Styrene, MMA + Formaldehyde |
| *1 | 1833-1933 | 28,715 | 20 | 1.07 | 1.33 | 28,715 | 156.0 | 8.38 | 0.0167 | 10.34 |
| 2 | 2038-2136 | 29,235 | 201 | 10.99 | 13.56 | 29,235 | 383.0 | 20.94 | 0.0073 | 25.83 |
| 3 | 2259-2400 | 29,920 | 177 | 9.90 | 12.21 | 29,920 | 353.0 | 19.75 | 0.0031 | 24.36 |
| Avg. of Runs 2 & 3 | | 29,578 | 189 | 10.45 | 12.89 | 29,578 | 368.0 | 20.35 | 0.0052 | 25.09 |

CALCULATIONS *Run 1 was excluded from average because of sample probe problems*

lbs./hr VOC as C = ppm(2.595 x 10E-9 lb/dscf/ppm)(12.011 lb/lb-mole)(Flow Rate in dscfm)(60 min/hr)

lbs./hr VOC as styrene, MMA and formaldehyde = (lbs./hr as C - lb/hr formaldehyde/2.50)(1.3026) + lb/hr formaldehyde.

***Average VOC Material Usage During the Test.***

Resin = 34.25% Styrene by weight

Gel Coat = 20.14% Styrene by weight, and 14.0% Methyl methacrylate (MMA) by weight

[(542.5 lb resin x 0.3425)+(670.8 lbs. gel coat x 0.3414)]/(7 hr) = 59.3 lbs./hr styrene and MMA

***Styrene and Methyl-methacrylate (MMA) Emissions using FDEP Emission Factors***

Resin EF = 11% Gel Coat EF = 48% for both styrene and MMA

[(542.5 lbs. resin)( 0.3425 styrene)(0.11)+(670.8 lbs. Gel Coat)(0.140 MMA + 0.2014 styrene)(0.48)]/(7 hr)

= 18.62 lbs./hr VOC as styrene and MMA

12.18 lbs. of styrene — molecular wt of styrene/carbon wt = 104.15/96.088 = 1.0839

11.24 lbs. styrene as C — 74.4% styrene as C

6.44 lbs. of MMA — molecular wt of MMA/carbon wt = 100.12/60.0558 = 1.6671

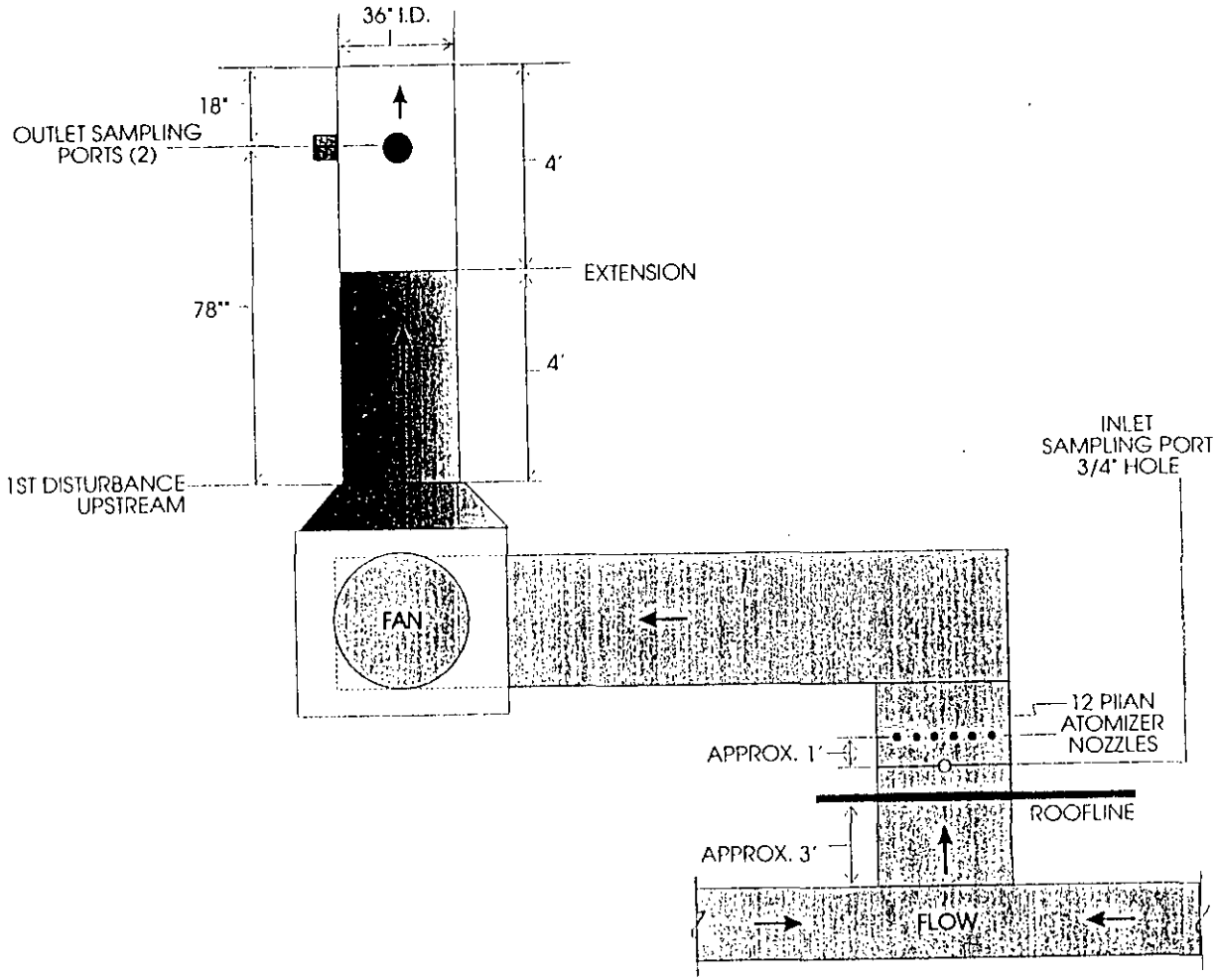
3.86 lbs. MMA as C — 25.6% MMA as C

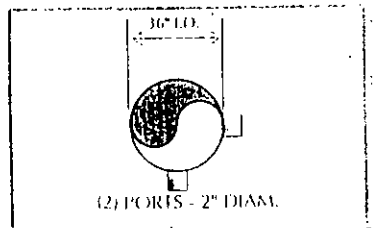
avg. molecular wt/carbon wt = (0.625)(1.084) +(0.375)(1.667) = 1.2332

## 3.0 PROCESS DESCRIPTION AND OPERATION

The laminator building houses the large boat resin/fiberglass layup and gelcoat operations. Assemblies are situated in front of the vent pick-ups and resin or gelcoat applied with chop or spray guns.

Production data for the area served by the #2 laminator building vent are provided in Appendix F along with relevant calculations.




| TRAVERSE POINT NUMBER | INCHES INSIDE STACK WALL |
|---|---|
| 1 | 1.2 |
| 2 | 3.8 |
| 3 | 7.0 |
| 4 | 11.6 |
| 5 | 24.4 |
| 6 | 29.0 |
| 7 | 32.2 |
| 8 | 34.8 |

*NOTE: NOT TO SCALE*

*SOURCE: AIR CONSULTING & ENGINEERING, INC. (SEARAY) 9/12/00*

FIGURE 1.
SAMPLING POINT LOCATIONS
PIIAN BIOREACTION ZONE INLET AND OUTLET
SEA RAY BOATS, INC.
MERRIT ISLAND, FLORIDA

**Clarence Rowe**
**418 Pennsylvania Avenue**
**Rockledge, FL 32955**



February 25, 2001

claire - this is response to your call? when you respond pls advise him that we have forwarded his Central District Request to C.D. -
Howard 2/26

VIA CERTIFIED MAIL DATED_____

Mr. Howard L. Rhodes, Director
Division of Air Resources Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Sea Ray Boats, Inc., DEP File No. 0090093-003-AC and other File Nos.

Dear Mr. Rhodes:

I am writing to request a description of add-on control equipment, filters, or other techniques that will be used to reduce VOC emissions from the Sea Ray facility on Merritt Island in Brevard County. Please describe the percentage of VOC to be removed and also, please provide a timeline for the implementation of these emission controls. In addition, please provide maps or diagrams that characterize the concentration and dispersion of VOC's that are emitted from the facility.

I also request to be placed on the distribution list for all Central District official correspondence, both incoming and outgoing, that pertains to Sea Ray boats, Inc., 350 Sea Ray Drive, Merritt Island Florida. This request includes correspondence concerning air construction permits, modifications or amendments to air construction permits, air operating permits, modifications or amendments to air operating permits, site inspection findings, air monitoring reports, emissions violation reports, etc. Please make this request retroactive to January 1, 2000.

Yours truly,

Clarence Rowe

Clarence Rowe

Clarence Rowe
418 Pennsylvania Ave
Rockledge, Fl. 32955

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Mr. Howard L. Rhodes, Director
Division of Air Resources Management
2600 Blair Stone Road
Tallahassee, Fl. 32399-2400

32399+2400

# Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

February 23, 2001

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. Dennis Wilson, VP/Regional Facility Manager
Sea Ray Boats, Inc.
100 Sea Ray Drive
Merritt Island, Florida 32953

Re: DEP File No. 0090093-003-AC - Ambient Monitoring for Styrene

Dear Mr. Wilson:

This is in reply to your February 13 letter requesting a temporary interruption in the styrene ambient monitoring tests being conducted in the Island Crossings/Riverwalk neighborhood pursuant to the conditions of the above construction permit for the Cape Canaveral facility.

The test results suggest that there may be a correlation between wind speed and direction and ambient concentration such that when the southwest wind speed is below 1-2 miles per hour, residents can be exposed to ambient concentrations in the higher range (6 ppb or greater). When the Cape Canaveral plant begins operation, these concentrations may be considerably higher. In view of the Merritt Island results, the Department believes that further tests should be conducted when the wind speed is 1-2 miles per hour or less. We agree that routine weekly testing at regular 7-day intervals can be temporarily suspended. However, in place of routine weekly testing, we believe that a test should be conducted during any week when the wind speed toward the neighborhood is 1-2 miles per hour or less. So, continue to check each morning between 6:00 a.m. and 8:00 a.m. If the wind speed is 1-2 miles per hour or less and is blowing toward the neighborhood, then test that day. If this situation does not exist by each Thursday, Sea Ray does not need to do the weekly test. The decision whether to test or not during any week should be coordinated with Mr. Yunis or his designated representative. Lamination rates during the 24-hour period prior to the tests should also be reported to establish a correlation there as well.

Please indicate Sea Ray's response to these issues so that a proper permit amendment can be completed. If there are any questions regarding this letter, please call John Reynolds at 850-921-9530.

Sincerely,

C. H. Fancy, P.E., Chief
Bureau of Air Regulation

CHF/jr

Cc: Len Kozlov, DEP CD
Ken Kosky, Golder & Assoc.
Kevin Thompson, Sea Ray
Isam Yunis, Neighborhood Representative

BCC : Clarence Rowe

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Dennis Wilson
Vice President/Regional Facility Manager
Sea Ray Boats, Inc.
100 Sea Ray Drive
Merritt Island, FL 32953

**COMPLETE THIS SECTION ON DELIVERY**

A. Received by *(Please Print Clearly)*: Heather Cummings — B. Date of Delivery: 2/1/01

C. Signature: X Heather Cummings ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

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Article Sent To:
Mr. Dennis Wilson

| | |
|---|---|
| Postage | $ |
| Certified Fee | |
| Return Receipt Fee (Endorsement Required) | |
| Restricted Delivery Fee (Endorsement Required) | |
| **Total Postage & Fees** | $ |

Sea Ray Boats
Postmark Here

7099 3400 0000 1449 3645

*Name (Please Print Clearly) (to be completed by mailer)*
Mr. Dennis Wilson
*Street, Apt. No., or PO Box No.*
100 Sea Ray Dr
*City, State, ZIP+4*
Merritt Island, FL 32953

PS Form 3800, July 1999 — See Reverse for Instructions

February 13, 2001



Clair H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399

RE: Cape Canaveral Plant, Brevard County
DEP File No. 0090093-003-AC
PSD Permit No. PSD-FL-274

Dear Mr. Fancy:

Sea Ray Boats, Inc., requests a temporary stay in the permit requirement to conduct weekly ambient styrene monitoring. The requested stay would be in effect only until the Lamination/Assembly Building commences operation and would not affect the requirement to monitor for a minimum of 30 months. As required under Specific Condition 15 of the above-referenced air construction permit, Sea Ray has been conducting ambient styrene monitoring in the Island Crossings/Riverwalk neighborhood on a weekly basis from June 15, 2000, to present, and we have now accumulated approximately eight months' worth of data. That data, along with an analysis by our consultant Ken Kosky, is included with this request. As you will see from the data, most of the ambient levels of styrene are below detectable amounts while, on occasion, the concentrations are as high as 6 parts per billion. Based on Mr. Kosky's evaluation, this data is sufficient to adequately demonstrate background concentrations of styrene that may exist in the Island Crossings/Riverwalk neighborhood without contribution from Sea Ray's new Cape Canaveral Plant.

Because we currently anticipate a temporary delay between the conclusion of construction and commencement of operation of the Lamination/Assembly Building at the Cape Canaveral Plant, we request a temporary stay in the monitoring requirement until such time as operations commence. This will allow the required 30-month monitoring period to include more operational months than background months, which should provide better information as to potential contributions from the Cape Canaveral Plant. At the time the permit was issued, Sea Ray was contemplating a construction period of only six months, and that has extended to at least eight months. With the planned temporary delay between the end of construction and the startup of operations, we believe that the original intent of the permit would be met by delaying further monitoring until startup of the lamination operations. We therefore request your concurrence and issuance of a stay by the Department.

Because of the interest in the construction and operation of the Cape Canaveral Plant by the Island Crossings/Riverwalk neighborhood, and the residents' involvement in the selection of the ambient monitoring location within the neighborhoods, we have contacted their representative regarding our request for a temporary stay. The neighborhood representative, Isam Yunis, was

provided the monitoring data that has been compiled to date along with Mr. Kosky's analysis. With the understanding that the monitoring will recommence immediately upon startup of lamination operations, he did not object to the requested temporary stay.

Sea Ray sincerely appreciates your continued cooperation and assistance. Please call Kevin Thompson, Sea Ray's Director of Environmental Management (865-522-4181), if you have any questions or would like additional information before responding to our request. We look forward to hearing from you soon.

Sincerely,

SEA RAY BOATS, INC.

Dennis Wilson
Vice President/Regional Facility Manager
Florida Plants

Enclosures

cc: Howard Rhodes, DEP, DARM
John Reynolds, DEP, DARM BAR
Len Kozlov, DEP, Central District
Caroline Shine, DEP, Central District
Isam Yunis, Island Crossings/Riverwalk
Pete Cantelou, CHP
Ken Kosky, Golder

**Golder Associates Inc.**

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603

February 13, 2001

9937586-0100

Sea Ray Boats, Inc.
350 Sea Ray Drive
Merritt Island, Florida 32953

Attention: Mr. Dennis Wilson, Vice President and General Manager

RE: Sea Ray, Inc., Cape Canaveral Plant
DEP Permit No. 0090093-003-AC, PSD-FL-274
Specific Condition III. 15. – Ambient Monitoring/Odor Testing

Dear Mr. Wilson:

At the request of Sea Ray Boats, Inc., Golder Associates has reviewed and evaluated the monitoring information that has been taken to fulfill the requirements of Specific Condition III. 15. of the air construction and Prevention of Significant Deterioration (PSD) Permit for the Cape Canaveral Plant. The purpose of the evaluation was to determine if the data taken to date was representative of background conditions in the communities of Island Crossing and Riverwalk and if monitoring could be postponed till lamination operations begin at the Cape Canaveral Plant.

The ambient monitoring results are summarized in Table 1. Ambient monitoring has been performed weekly since June 15, 2000 according to the requirements in Specific Condition III. 15. A total of 32 ambient samples have been taken over eight months. The only weeks not sampled were during the Christmas Holiday when Sea Ray personnel were not working. The most recent sample taken on January 29, 2001 is under analysis. Meteorological instruments were used to assess the wind conditions between 6:00 a.m. and 8:00 a.m. from Monday through Thursday in an attempt to perform monitoring when the wind was blowing toward the Island Crossing and Riverwalk communities. In the event this criteria could not be achieved, ambient monitoring was conducted on Thursday. The wind direction and wind speed for each sample event is shown in Table 1. The ambient monitoring location was selected in a location south of the Cape Canaveral Plant, which was agreed upon by the authorized representatives of the local residential community. For each week that sampling was conducted, an attempt was made to sample when the wind was blowing from the direction of Cape Canaveral Plant toward the monitoring site. Monitoring has been conducted using the Environmental Protection Agency Method TO14, which has a reporting threshold of less than 1 parts per billion (ppb) by volume. During all the samples taken, the Cape Canaveral Plant has been under construction and no styrene emissions have occurred from this facility. As a result, the ambient monitoring data represent styrene concentrations in the communities when there is no styrene emissions from the Cape Canaveral Plant, since lamination is not occurring.

Of the 31 samples analyzed, 11 samples were above the styrene reporting threshold, 3 samples were reported at or below the styrene reporting threshold and 15 samples were non-detectable for styrene. The reporting threshold is about 2 times higher than the detection threshold and allows confirmation of observed results. The observed styrene concentrations ranged from a maximum of 6.3 ppb to non-detectable. Using the reporting threshold as an observed value, the average styrene concentration observed at the monitoring location was 0.72 ppb. The geometric mean concentration was 0.37 ppb. (Note: The values used to calculate the average and geometric mean are higher of the values listed in the columns marked Styrene Results and Reporting Limits.) The geometric mean represents the 50th percentile value in skewed distributions, typical of that found in ambient air monitoring. Approximately 55 percent of the sampling occurred during wind conditions that had northerly components. In addition, the sampling period covers a period that is generally representative of wind conditions that would likely occur over an annual period. This includes summer, fall and winter conditions. Fall and spring meteorological conditions are typically similar.

The ambient air monitoring for styrene is sufficient to characterize background styrene emissions prior to commencement of lamination activities at the Cape Canaveral Plant. The data represent 8 months of weekly sampling under a range of meteorological conditions. These data are sufficient to characterize baseline styrene emissions in the Island Crossing and Riverwalk communities. Additional ambient monitoring of styrene is not necessary to characterize background styrene concentrations. As required by Specific Condition III. 15., the ambient monitoring program must be conducted for at least 30 months. This will allow at least 22 months of ambient monitoring to occur when lamination is conducted at the Cape Canaveral Plant.

Please call if you have any questions.

Sincerely,

GOLDER ASSOCIATES INC.

Kennard F. Kosky, P.E.
Principal

KFK/nav/nav

cc: Steve Fielder, Sea Ray Boats, Inc.
Dan Goddard, Sea Ray Boats, Inc.
Pete Cantelou, Cantelou, Herrera and Powell, Inc.

P:/1999/9937586a/L021301.doc

Table 1. Summary of Results for Styrene Monitoring Conducted in Island Crossing/Riverwalk Communities

| Sample Date | Sample ID | Styrene Results (ppb) | Reporting Limits (ppb) | Wind Direction (degrees) | Wind Speed (mph) |
|---|---|---|---|---|---|
| 6/15/00 | CC0001 | ND | 0.24 | SW | 2 |
| 6/22/00 | CC0002 | ND | 0.24 | S | 3 |
| 6/29/00 | CC0003 | 0.49 | 0.47 | SSW | 2 |
| 7/6/00 | CC0004 | ND | 0.47 | SW | 2 |
| 7/11/00 | CC0005 | 0.62 | 0.24 | NW | 2 |
| 7/20/00 | CC0006 | 0.24TR | 0.24 | SW | 3 |
| 7/27/00 | CC0007 | 1 | 0.23 | NW | 3 |
| 8/3/00 | CC0008 | 6.3 | 0.24 | SW | 1 |
| 8/10/00 | CC0009 | 0.87 | 0.23 | W | 3 |
| 8/17/00 | CC0010 | 0.59 | 0.23 | N | 1 |
| 8/24/00 | CC0011 | 0.46 | 0.24 | E | 3 |
| 8/31/00 | CC0012 | 0.25 | 0.24 | S | 3 |
| 9/7/00 | CC0013 | 6 | 0.24 | SW | 2 |
| 9/11/00 | CC0014 | 0.6 | 0.24 | NE | 11 |
| 9/21/00 | CC0015 | ND | 0.24 | SE | 2 |
| 9/27/00 | CC0016 | ND | 0.24 | NE | 7 |
| 10/2/00 | CC0017 | ND | 0.24 | NNW | 3 |
| 10/9/00 | CC0018 | ND | 0.23 | N | 10 |
| 10/18/00 | CC0019 | ND | 0.23 | NW | 4 |
| 10/25/00 | CC0020 | ND | 0.23 | N | 4 |
| 10/31/00 | CC0021 | ND | 0.23 | N | 3 |
| 11/6/00 | CC0022 | ND | 0.23 | N | 1 |
| 11/15/00 | CC0023 | ND | 0.23 | NW | 3 |
| 11/20/00 | CC0024 | ND | 0.23 | NE | 5 |
| 11/27/00 | CC0025 | 0.6 | 0.23 | NW | 3 |
| 12/4/00 | CC0026 | ND | 0.23 | NW | 6 |
| 12/14/00 | CC0027 | ND | 0.23 | S | 6 |
| 1/3/01 | CC0101 | ND | 0.23 | NW | 6 |
| 1/9/01 | CC0102 | ND | 0.23 | N | 7 |
| 1/16/01 | CC0103 | 0.23TR | 0.23 | NW | 2 |
| 1/22/01 | CC0104 | 0.17TR | 0.23 | N | 4 |
| 1/29/01 | CC0105 | UA | UA | N | 2 |

Note: ND = non-detectable.
TR = trace level, detectable at or below the reporting thresholds.
UA = under analysis.
Monitoring and analysis conducted according to EPA Method TO-14.

Department of
Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

August 9, 2000

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Dennis Wilson
Vice President and General Manager
Sea Ray Boats, Inc.
100 Sea Ray Drive
Merritt Island, Florida 32953

Re: DEP File No. 0090093-003-AC (PSD-FL-274) –Second Extension of Time for Testing Requirement

Dear Mr. Wilson:

The following permit modification provides for an extension of time to accomplish the testing requirements of the permit. This approval is based upon the professional engineer's certification that the Pilon 5000EE system is a state of the art enzyme bioaerosol odor destruction technology.

17. Evaluation of Odor Control (Destruction) Technology Required Initially: An initial requirement shall be the immediate evaluation of state-of-the-art enzyme bioaerosol odor destruction technology for the Cape Canaveral plant. This technology shall be evaluated with the objective of removing approximately 70 to 80 percent of the styrene from the Lamination/Assembly Building exhaust air. To determine the technical and economic feasibility of the technology, the permittee shall by October 6, 2000, conduct special feasibility tests consisting of injecting test solutions into the ventilation system at its existing Merritt Island boat manufacturing plant and measuring the destruction of styrene. The tests shall be run at both the inlet and the outlet of the fogging and tests shall be run to quantify the destruction of styrene after 6-10 minutes of contact time. The styrene destruction results shall be provided to the Department's Bureau of Air Regulation within 14 days after completion of the tests. If the feasibility tests at the existing Merritt Island plant demonstrate to the Department's satisfaction that styrene control technology would be technically feasible and cost effective at the Cape Canaveral site, the Department may propose to revise this permit, as provided under Condition II.5, to require that the permittee install a full-scale system based on this technology and have it operating properly prior to the initial commencement of lamination processing. The Department shall modify this permit as provided under Condition II.5 to include operating, testing and compliance parameters for this system and no other air pollution control equipment shall be required. [Rules 62-296.320(1)(a)&(2), 62-210.200(203), and 62-4.070(3), F.A.C.]

A copy of this letter shall be filed with the referenced permit and shall become part of the permit. This permitting decision is issued pursuant to Chapter 403, Florida Statutes.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the

Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation is not available in this proceeding.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of

those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

This permitting decision is final and effective on the date filed with the clerk of the Department unless a petition is filed in accordance with the above paragraphs or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition pursuant to Rule 62-110.106, F.A.C., and the petition conforms to the content requirements of Rules 28-106.201 and 28-106.301, F.A.C. Upon timely filing of a petition or a request for extension of time, this order will not be effective until further order of the Department.

Any party to this permitting decision (order) has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Howard L. Rhodes

Howard L. Rhodes, Director
Division of Air Resources Management

## CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this PERMIT MODIFICATION was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 8/10/00 to the person(s) listed:

Mr. Dennis Wilson, SRBI*
Chairman, Brevard County Commission
Mr. Bobby Bowen, Brevard County
Mr. Gregg Worley, EPA
Mr. Len Kozlov, CD
Ms. Leesa Souto, Brevard County
Mr. Isam Yunis, Resident Representative
Mr. John Bunyak, NPS

Clerk Stamp

**FILING AND ACKNOWLEDGMENT FILED**, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Charlotte J. Hayes 8/10/00
(clerk) (Date)

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Dennis Wilson
Vice President & Gen. Mgr.
Sea Ray Boats, Inc.
100 Sea Ray Dr
Merritt Island, FL 32953

**COMPLETE THIS SECTION ON DELIVERY**

A. Received by *(Please Print Clearly)*: Heather Cummings
B. Date of Delivery: 8/14/0

C. Signature
X Heather Cummings
☐ Agent
☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Copy from service label)*
7099 3400 0000 1453 2818

PS Form 3811, July 1999 Domestic Return Receipt 102595-99-M-1789

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**U.S. Postal Service**
**CERTIFIED MAIL RECEIPT**
*(Domestic Mail Only; No Insurance Coverage Provided)*

Article Sent To: Mr. Dennis Wilson - Sea Ray Boats

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|---|---|
| Postage | $ |
| Certified Fee | |
| Return Receipt Fee (Endorsement Required) | |
| Restricted Delivery Fee (Endorsement Required) | |
| Total Postage & Fees | $ |

8/10/00
Postmark Here

Name (Please Print Clearly) (to be completed by mailer)
Dennis Wilson
Street, Apt. No., or PO Box No.
100 Sea Ray Drive
City, State, ZIP+4
Merritt Island, FL 32953

PS Form 3800, July 1999 See Reverse for Instructions

7099 3400 0000 1453 2818

# Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary


June 22, 2000

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Dennis Wilson
Vice President and General Manager
Sea Ray Boats, Inc.
100 Sea Ray Drive
Merritt Island, Florida 32953

Re: DEP File No. 0090093-003-AC (PSD-FL-274) – Extension of Time for Testing Requirement

Dear Mr. Wilson:

The following permit modification provides for an extension of time to accomplish the testing requirements of the permit. The changes to Specific Condition No. 17 are underlined below:

17. Evaluation of Odor Control (Destruction) Technology Required Initially: An initial requirement shall be the immediate evaluation of state-of-the-art enzyme bioaerosol odor destruction technology for the Cape Canaveral plant. This technology shall be evaluated with the objective of removing approximately 70 to 80 percent of the styrene from the Lamination/Assembly Building exhaust air. To determine the technical and economic feasibility of the technology, the permittee shall, within ~~60~~ 90 days after issuance of this permit, conduct special feasibility tests consisting of injecting test solutions into the ventilation system at its existing Merritt Island boat manufacturing plant and measuring the destruction of styrene. The styrene destruction results shall be provided to the Department's Bureau of Air Regulation within 14 days after completion of the tests. If the feasibility tests at the existing Merritt Island plant demonstrate to the Department's satisfaction that styrene control technology would be technically feasible and cost effective at the Cape Canaveral site, the Department may propose to revise this permit, as provided under Condition II.5, to require that the permittee install a full-scale system based on this technology and have it operating properly prior to the initial commencement of lamination processing. The Department shall modify this permit as provided under Condition II.5 to include operating, testing and compliance parameters for this system and no other air pollution control equipment shall be required. [Rules 62-296.320(1)(a)&(2), 62-210.200(203), and 62-4.070(3), F.A.C.]

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The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

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Executed in Tallahassee, Florida.

Howard L. Rhodes, Director
Division of Air Resources Management

## CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this PERMIT MODIFICATION was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 6/22/00 to the person(s) listed:

Mr. Dennis Wilson, SRBI*
Chairman, Brevard County Commission
Mr. Bobby Bowen, Brevard County
Mr. Gregg Worley, EPA
Mr. Len Kozlov, CD
Ms. Leesa Souto, Brevard County
Mr. Isam Yunis, Resident Representative
Mr. John Bunyak, NPS

Clerk Stamp

**FILING AND ACKNOWLEDGMENT FILED,** on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Charlotte J. Hanger (clerk) 6/22/00 (Date)

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
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1. Article Addressed to:

Mr. Dennis Wilson
V.P. + General Mgr.
Sea Ray Boats
100 Sea Ray Dr
Merritt Island, FL 32953

**COMPLETE THIS SECTION ON DELIVERY**

A. Received by (Please Print Clearly) Heather Cummings B. Date of Delivery 6/28/01

C. Signature X Heather Cummings ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Copy from service label)
Z 341 355 316

PS Form 3811, July 1999 Domestic Return Receipt 102595-99-M-1789

Z 341 355 316

US Postal Service
**Receipt for Certified Mail**
No Insurance Coverage Provided.
Do not use for International Mail (See reverse)

Sent to Mr. Dennis Wilson
Street & Number Sea Ray Boats
Post Office, State, & ZIP Code Merritt Island, FL 32953

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|---|---|
| Postage | $ |
| Certified Fee | |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | |
| Return Receipt Showing to Whom, Date, & Addressee's Address | |
| TOTAL Postage & Fees | $ |
| Postmark or Date | 6/22/01 |

PS Form 3800, April 1995

June 14, 2000

*Via Fax*

Clair H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399

RE: Cape Canaveral Plant, Brevard County
DEP File No. 0090093-003-AC
PSD Permit No. PSD-FL-274

Dear Mr. Fancy:

Sea Ray Boats, Inc., requests an additional 90 days within which to conduct "special feasibility testing consisting of injecting test solutions [of bioenzyme aerosols] into the ventilation system at its existing Merritt Island boat manufacturing plant and measuring the destruction of styrene" required under Specific Condition III.17 of the above-referenced permit.

As you know, this condition of the permit currently requires that the bioenzyme aerosol testing be conducted within 60 days after issuance of the permit, which would be by July 10. In attempting to meet this deadline, Sea Ray representatives have met and corresponded with Dr. Barry Liss from Clean Air Systems, Inc. (at this time the only known source of the "bioenzyme aerosol" technology and referred to Sea Ray by the Department). Based on the information provided, Sea Ray evaluated and analyzed the feasibility of bioenzyme aerosols (as set forth in the letter from Golder Associates dated May 31), and we understand that the Department nevertheless wants a physical test to be performed. Clean Air Systems has proposed that this physical testing could occur by the July 10 deadline. To allow sufficient time for the engineering design and scientific peer review of the testing plan, however, Sea Ray requests additional time within which to conduct the required testing.

Sea Ray is anxious to complete the bioenzyme aerosol testing as soon as possible, yet recognizes the importance of having a test that is designed to meet engineering requirements and to ensure scientifically valid results that can appropriately be relied upon in determining the by-products and making the needed feasibility determinations. Without a professionally engineered design of a testing plan, along with scientific peer review, Sea Ray is concerned about the accuracy and validity of the test results in determining styrene reduction, by-product formation, and full-scale feasibility. Because bioenzyme aerosol technology has not been used for styrene destruction at any large boat manufacturing plant, the results from this test will be the primary data available for these evaluations, and their accuracy and validity therefore critical. The preliminary information indicates that formaldehyde, benzaldehyde and potentially other

hazardous air pollutants would be formed through the use of the bioenzyme technology, and it is very important that this be accurately determined because of the health risks associated with these pollutants.

As you may know, Dr. Barry Liss has designed the proposed test plan and while he plans to associate with a professional engineer on this project, Sea Ray understands that this has not yet occurred. The additional 90 days requested for the test should be sufficient to allow a professional engineer to design and assist in implementing the testing plan.

Also, because this is an emerging, undemonstrated area of technology and the proposed test is to be conducted only a very small portion of the Merritt Island plant's emissions (at a reduced air flow rate), Sea Ray wants to ensure the scientific validity of the proposed approach. Sea Ray would like to associate with a scientist in the field of bio-chemical pollution control technology to evaluate the testing plan proposed by Clean Air Systems, Inc., which could be accomplished within the 90 day period requested.

Sea Ray is committed to conducting a bioenzyme aerosol test and, again, would like for this testing to be completed as soon as possible. Sea Ray does not want to rush into this testing prematurely, however, without ensuring that the data developed will be valid, accurate, and appropriate for use in determining the feasibility and appropriateness of this approach for reduction of styrene on a full-scale level. To ensure sufficient time for additional engineering and scientific input, Sea Ray respectfully requests that the Department provide an additional 90 days within which to conduct this testing. The schedule for this testing should not affect any other time frames or schedules established within the permit and should therefore not result in the delay of implementation of the pilot-scale project referenced in Specific Condition III.18.

Based on the Department's Rule 62-4.050(4)(r)2, F.A.C., no fee has been included with this request. Thank you for considering our request and for your continued cooperation during this process. Please let us know if you have any questions or would like additional information. Sea Ray representatives would be happy to meet with you at your convenience to discuss this request in more detail.

Sincerely,

Dennis Wilson
Vice President and General Manager

Cc: Howard Rhodes, DEP, DARM
John Reynolds, DEP, DARM BAR
Len Kozlov, DEP Central District
Caroline Shine, DEP Central District

Pete Cantelou, CHP
Ken Kosky, Golder

**CHP**

Cantelou, Herrera & Powell, Inc.
Architecture, Engineering, Surveying, Planning
AA 0002614 • EB 0007086 • LB 0006609



June 5,2000

Mr. Clair Fancy, Bureau Chief
Florida Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, FL 32399

Re: Notice of Commencement
Sea Ray Boats, Inc.
Cape Canaveral Plant
Merritt Island, Florida
PSD-FL-274

Mr. Clair Fancy:

This letter is written on behalf of Sea Ray Boats, Inc. to advise you that construction has commenced at the referenced site.

This notification is provided in accordance with 40CFR63 and the terms and conditions of air construction permit # PSD-FL-274 issued on May 11, 2000.

If additional information is required, please advise.

Yours truly,

G.E. Cantelou, Jr., P.E.
Project Administrator
for Sea Ray Boats, Inc.

1400 Sarno Road • Melbourne, FL 32935
(321) 259-1525 • (321) 259-4165 Fax

June 5, 2000

Caroline Shine, Program Manager
Florida Dept. of Environmental Protection
D.E.P. Central District
3319 Maguire Boulevard, Suite 232
Orlando, FL 32803-3767



RE: DEP File No. 0090093-003-AC
Permit No. PSD-FL-274
Cape Canaveral Plant
Brevard County

Dear Caroline:

It was a pleasure meeting with you and Pat Washington today. The purpose of this writing is to memorialize the highlights of our meeting of June 5, 2000, at 2:30 p.m. The attendees of the meeting were:

Bill Young, Riverwalk
Sam Yunis, Island Crossings
James Zucchelli, Riverwalk
Damian Ludwiczak, Riverwalk
David Bare, Golder Associates
Caroline Shine, FDEP
Patrick Washington, FDEP
Dan Goddard. Sea Ray Boats
Mike Ward, Sea Ray Boats

The purpose of the meeting was to select/determine a suitable site for ambient monitoring pursuant to our Air Construction Permit. After much discussion regarding predominant wind direction, all parties agreed that the location for monitoring ambient concentration of styrene would be performed curbside between 1240 and 1242 Potomac Avenue in the Riverwalk Subdivision. In accordance with the requirements prescribed in the permit, sampling will be performed when the wind is blowing between the parameters of 22 ½ degrees either side of north. All parties present were in agreement on the location of the monitoring criteria and the monitoring would commence on Monday, June 12th, 2000. Sea Ray invited any homeowner to be present during monitoring periods. A point of contact has been established and agreed upon for Sea Ray, Dan Goddard, and the Homeowners Associations, Isam Yunis.

Sincerely,

SEA RAY BOATS, INC.

Dan Goddard
Vice President/General Manager

Cc: Leonard Koslov, Administrator of Air Resources Mgmt.
Clair Fancy, Chief