

## **Appendix C**

### **2005 Oceangoing Ship Survey Summary Of Results**

# 2005 OCEANGOING SHIP SURVEY SUMMARY OF RESULTS



**September 2005**

**Stationary Source Division  
Emissions Assessment Branch**

California Environmental Protection Agency  
 **Air Resources Board**

# 2005 Oceangoing Ship Survey Summary of Results

## TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
I. INTRODUCTION AND BACKGROUND.....	1-2
II. SHIP INFORMATION SURVEY RESULTS.....	3
A. VESSEL TYPE.....	3
B. COUNTRY FLAG.....	3
C. VESSEL AGE.....	4
D. ELECTRICAL POWER.....	4
III. SURVEY RESULTS FOR PROPULSION ENGINES.....	5
A. ENGINE TYPE.....	5
B. ENGINE MANUFACUTRE.....	5-6
C. PROPULSION ENGINE FUEL TYPE.....	6
D. NORMAL CRUISE POWER FOR PROPULSION ENGINE AT SEA.....	6
IV. AUXILIARY ENGINE SURVEY RESULTS.....	7
A. AUXILIARY ENGINES BY VESSEL TYPE.....	7
B. MANUFACTUREER AND TYPE OF AUXILIARY ENGINES.....	7
C. AUXILIARY ENGINE AGE.....	8
D. TYPE OF FUEL AND SULFUR CONTENT.....	8
E. POWER GENERATED.....	9
F. MAXIMUM CONTINUOUS RATING.....	9
V. PORT VISITS.....	9
A. NUMBER OF PORT VISITS.....	9
Appendix    Ocean-going Ship Survey	

## List of Tables

Table 1	Vessel Types.....	3
Table 2	Registered Country Flag of Vessel.....	3
Table 3	Available Ship Power.....	4
Table 4	Propulsion Engine Types.....	5
Table 5	Diesel Engine Types.....	5
Table 6	Propulsion Engine Manufactureer.....	6
Table 7	Propulsion Engine Fuel Type.....	6
Table 8	Average Cruise Power.....	6
Table 9	Number of Auxiliary Engines.....	7
Table 10	Auxiliary Engine Manufacturer .....	7
Table 11	Auxiliary Engine Fuel Types.....	8
Table 12	Average Sulfur Content of Auxiliary Engine Fuels.....	8
Table 13:	Average Power Generated.....	9

## List of Figures

Figure 1:	Vessel Age.....	4
Figure 2:	Auxiliary Engine Age.....	8
Figure 3:	Number of Port Visits.....	9

## I. INTRODUCTION AND BACKGROUND

In January 2005, the Air Resources Board conducted the Oceangoing Ship Survey (survey). The survey was intended for ship owners or operators (shipping lines, tanker operators, cruise lines, etc.) that operate in California. The information gathered through this survey is being used to update the statewide emissions inventory for oceangoing ships, support the development of a proposed regulation to reduce emissions from ship auxiliary engines, and provide information that will assist in the development of a feasibility study of providing dockside power for ships. The survey requested information only for oceangoing ships (both domestic and foreign-flagged) that visited California ports in 2004. This report provides an overview of the results from the survey. A copy of the survey is provided in the appendix.

An oceangoing ship is defined as a marine vessel that meets any one of the following criteria:

- (1) the vessel carries a “registry” (foreign trade) endorsement on its United States Coast Guard certificate of documentation, or is registered under the flag of another country;
- (2) the vessel is 400 feet or greater in length overall (LOA) as defined in 50 CFR § 679.2, as adopted June 19, 1996;
- (3) the vessel is 10,000 gross tons (GT ITC) or more per the convention measurement (international) system as defined in 46 CFR 69.51-.61, as adopted September 12, 1989; or
- (4) the vessel is propelled by a marine diesel engine with a per-cylinder displacement of 30 liters or greater.

Generally, vessels such as container ships, bulk carriers, tankers, and cruise ships meet the definition of an oceangoing ship, while harbor craft such as ferries, fishing vessels, and tug/tow boats do not.

The Oceangoing Ship Survey contained two parts. Part II-A requested information on individual ships and engines, while Part II-B requested information on California port visits. Specifically, Part II-A requested ship owners and operators to submit the following information for each ship:

- Vessel Name
- Lloyds/IMO Number
- Country Flag
- Vessel Age
- Vessel Type
- Ship Electrical Power
- Number of Main Engines
- Number of Auxiliary Engines
- Type of Engines
- Make of Engines
- Age of Engines
- Model of Engines
- Rated Power of Engines

- Type of Fuel Used
- Sulfur content of fuel
- Average Total Ship Power From Auxiliary Engines
- Whether Use of MGO Would Require Modification
- Cruise Power and Speed
- Completed Engine Modifications

Part II-B requested ship owners and operators to submit the following information for ships that visited the same California port five or more times in 2004:

- Vessel name
- Total number of port visits
- Typical number of port calls
- Month of visit
- Port of last call outside of California
- Identification of ports and berths
- Hours at port
- Next port call outside of California

The survey was distributed to approximately 150 potential owners, operators, and shipping agents. A total of 36 companies responded to the survey providing data on approximately 327 ships and over 1,400 engines. Approximately three fourths of these ships are used for transport of cargo or oil, while one fourth are cruise or passenger ships. Based on data from the California Lands Commission, we believe that this represents about 17 percent of the total oceangoing ships that visit California annually.

In the following sections, the results for the survey are presented including information regarding the vessels, main engine specifications, auxiliary engine specifications, and port activity of the vessel. Not all surveys had data entered for every data field. Blank data fields were not included in average or population numbers in the survey summaries.

## II. SHIP INFORMATION SURVEY RESULTS

The respondents to the survey were requested to provide general information on the vessels that they owned or operated including the vessel type, country flag of each vessel, age of the vessel, and electrical power. Information for 327 vessels was collected in the survey.

### A. Vessel Type

Shown below are the types of vessels reported. Almost 85 percent of the vessel types reported are used in some form of transportation of freight, cargo, or oil.

**Table 1: Vessel Types**

Type of Vessel	Number of Vessels	Percent of Total
Container	205	57%
Auto Carrier	69	19%
Passenger	41	11%
Tanker	27	8%
Other	16	5%
<b>Total</b>	<b>358</b>	<b>100%</b>

### B. Country Flag

The survey requested vessel owners/operators to report the country under which the flag of the vessel is registered. Over 25 countries were reported, while five countries represented about two thirds of the vessels. Shown below is a list of the top five countries and the percentage of vessels registered.

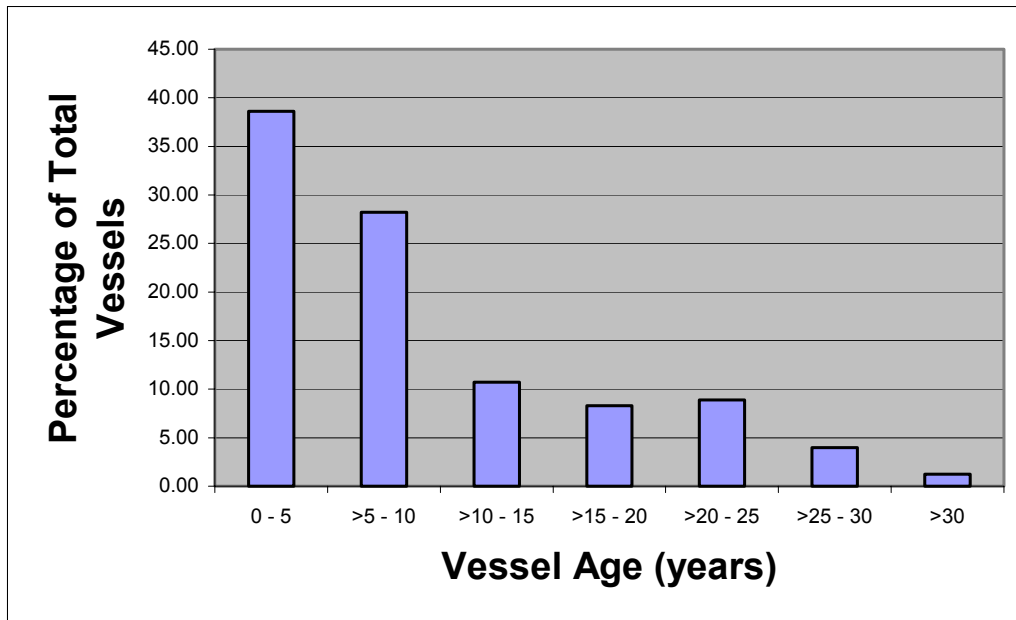
**Table 2: Registered Country Flag of Vessel**

Country	Percent of Vessels Responding to Survey
Panama	29%
United States	14%
United Kingdom	9%
Liberia	8%
Bahamas	8%
Other (approx. 25 countries represented)	32%

### C. Vessel Age

The age of the vessels reported in the survey ranged from 36 years old to new, with the average vessel age 9.7 years. Over two thirds of the vessels were less than 10 years old. Shown below is the distribution of vessel age.

**Figure 1: Vessel Age**



### D. Electrical Power

The survey requested information regarding the electrical system of each ship. Specifically the survey asked what the voltage, frequency in hertz, and phase of power generated by the ships generators for ship board power such as lighting and navigation. This information will assist in the development of a feasibility study of providing dockside power for ships. Shown below are the survey results. As is shown, the majority use 440 voltage.

**Table 3: Available Ship Power**

Power (voltage)	Number of Vessels	Percent of Vessels
440	229	71%
6600	34	11%
11000	18	6%
other	41	13%



### III. SURVEY RESULTS FOR PROPULSION ENGINES

The respondents to the survey were requested to provide information on the main or propulsion engines. For most vessels there is a single main engine used for propulsion. However, diesel-electric vessels, such as cruise ships, also use gen-sets for both shipboard electricity and propulsion. These gen-sets were reported as auxiliary engines in the next section of this report.

#### A. Engine Type

The engine type was dominated by diesel piston engines with only a small fraction being either gas or steam turbine. These results are provided in Table 4.

**Table 4: Propulsion Engine Types**

<b>Engine Type</b>	<b>Number of Engines</b>	<b>Percent of Total Main Engines</b>
Diesel piston	289	96%
Steam turbine	9	3%
Gas turbine	2	1%

As shown in Table 5, the majority of propulsion engines are 2 stroke.

**Table 5: Diesel Engine Types**

<b>Diesel Engine Type</b>	<b>Number of Engines</b>	<b>Percent of Total Diesel Engines</b>
2 stroke	271	95%
4 stroke	15	5%

#### B. Engine Manufacturer

The survey respondents reported several different engine manufacturers, however two companies, Man B&W and Sulzer, are known to make the majority of the engines. The Man B&W and Sulzer engines that could clearly be identified are shown below. Most of the other engines are likely Man B&W or Sulzer designs produced by the shipyards under licensing agreements.

**Table 6: Propulsion Engine Manufacturer**

<b>Engine Maker</b>	<b>Number of Engines</b>	<b>Percent of Total Engines</b>
Man B&W	118	41%
Sulzer	63	22%
Other	104	37%

**C. Propulsion Engine Fuel Type**

Marine engines typically use either residual or distillate fuel. Oceangoing ships, due to the large size of their engines, use residual almost exclusively for the main propulsion engines. Shown below are the results of the survey regarding fuel use in the main engines.

**Table 7: Propulsion Engine Fuel Type**

<b>Fuel Used in Main Engine</b>	<b>Number of Engines</b>	<b>Percent of Total Engines</b>
Residual	299	99%
Distillate	3	1%

**D. Normal Cruise Power for Propulsion Engines at Sea**

The survey also requested information regarding the normal cruise power of each ship while at sea. The average cruise power for each vessel type is shown in the table below.

**Table 8: Average Cruise Power**

<b>Type of Vessel</b>	<b>Average Cruise Power (kw)</b>
Passenger/Cruise	34,600
Container	29,125
Reefer	14,850
Tanker	12,562
Auto Carrier	9,796
Other	9,735

#### IV. AUXILIARY ENGINE SURVEY RESULTS

For each vessel, the survey requested information on the number, type, and annual activity of auxiliary engines. Data for over 1000 auxiliary engines was submitted. In this section, summaries are provided of the information received on the auxiliary engines. Auxiliary engines are used to power various on-board equipment such as electrical lights, refrigeration units, and radios. Of the vessels reported in the survey, all ships reported having at least one auxiliary engine. Six auxiliary engines were the maximum number reported, with an average of 3.5 engines per ship. All engines were 4-stroke.

##### A. Auxiliary Engines by Vessel Type

The number of auxiliary engines differ by vessel type. As shown below, cruise ships have the highest average number of auxiliary engines.

**Table 9: Number of Auxiliary Engines**

<b>Vessel Type</b>	<b>Minimum Number of Auxiliary Engines</b>	<b>Maximum Number of Auxiliary Engines</b>	<b>Average Number of Auxiliary Engines</b>
Passenger/Cruise	3	6	4.7
Reefer	4	4	4
Auto Carrier	2	4	2.9
Container	2	6	3.6
Tanker	1	6	2.7
Other	2	4	2.9

##### B. Manufacturer and Type of Auxiliary Engines

All reported auxiliary engines were 4-stroke diesel. The manufacturers of the engines were numerous, but five manufacturers made up for almost 90 percent of the engines reported. These manufacturers are shown below.

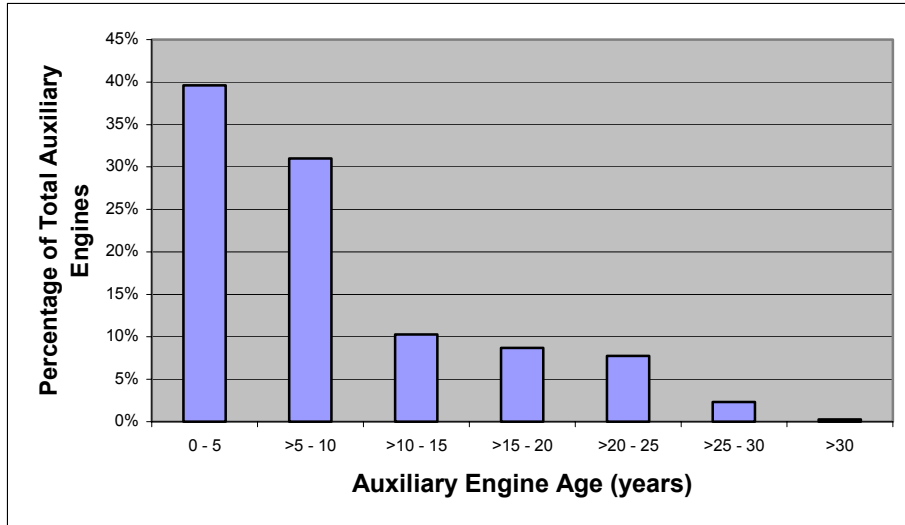
**Table 10: Auxiliary Engine Manufacturer**

<b>Engine Maker</b>	<b>Number of Engines</b>	<b>Percent of Total Engines</b>
Man B&W	324	29%
Daihatsu	251	22%
Wartsila/Sulzer	249	22%
Yanmar	118	10%
MAK	44	4%
Other (indicate how many are group together)	151	13%

### C. Auxiliary Engine Age

Figure 2 shows the distribution in age of the auxiliary engines.

**Figure 2  
Auxiliary Engine Age**



### D. Type of Fuel and Sulfur Content

Tables 11 and 12 provide information on the type of fuel used to power the auxiliary engines and the average sulfur content of that fuel. Whereas residual oil was used almost exclusively for the main engines, about 25 percent of the auxiliary engines used distillate.

**Table 11: Auxiliary Engine Fuel Types**

Fuel Used in Auxiliary Engine	Number of Engines	Percent of Total Engines
Residual	877	75%
Distillate	294	25%

**Table 12: Average Sulfur Content of Auxiliary Engine Fuels**

Fuel	Minimum Sulfur Content (%)	Maximum Sulfur Content (%)	Average Sulfur Content (%)
Residual	0.15%	4.0%	2.5%
Distillate	0.03%	1.5%	0.5%*

\* 0.5 for piston engines only (excludes turbines which use low sulfur fuel)

## E. Power Generated

Table 13 provides information on the average power generated by the auxiliary engines when maneuvering, hotelling, and at sea.

**Table 13: Average Power Generated**

Type of Vessel	Power Generated While Hotelling (kw)	Power Generated While Maneuvering (kw)	Power Generated While At Sea (kw)
Passenger/Cruise	7514	13750	33955
Container	1590	3311	3815
Other	1452	1712	4188
Auto carrier	602	1298	576
Tanker	521	656	483
Reefer	1200	1200	2000
Average All Vessels	2001	3420	6586

## F. Maximum Continuous Rating

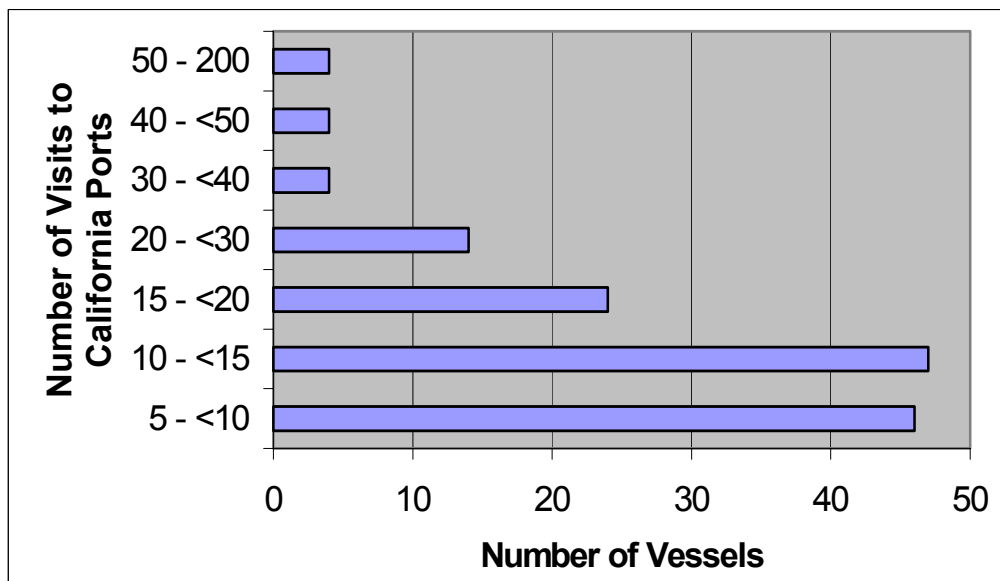
The maximum continuous rating (MCR) for auxiliary engines (including diesel electric engines on cruise ships) ranged from 10 kilowatts (kw) to 25,000 kw, with an average of 3167 kw.

## V. Port Visits

### A. Number of Port Visits

Figure 3 provides information on the number of port visits by vessel for the year 2004. The average number of port visits per vessel was 17.

**Figure 3  
Number of Port Visits**





# **Appendix**

## **Oceangoing Ship Survey**



**RETURN DATE: February 28, 2005**

**California Environmental Protection Agency**



**Air Resources Board**



**THIS PACKET CONTAINS:**

	<u>Page</u>
<b>I. Survey Forms</b>	I - 1
<b>II. Survey Overview and Instructions</b>	II - 1
<b>III. Supporting Attachments</b>	
A) Sample Forms	III - 1
B) Confidential Information Submittal Form	III - 6
C) Electronic Data Submittal Form	III - 7
D) Excerpts from the California Code of Regulations pertaining to the handling of confidential information: Title 17, California Code of Regulations, Sections 91000 to 91022	III - 8

---

IF YOUR PACKET IS MISSING ANY ITEMS LISTED ABOVE, PLEASE CONTACT:

Mr. Paul Milkey at (916) 327-2957 or [pmilkey@arb.ca.gov](mailto:pmilkey@arb.ca.gov)

Facsimile number (916) 327-6251

## Survey Forms

(These are the forms you will return to  
the California Air Resources Board)

**CALIFORNIA AIR RESOURCES BOARD SHIP SURVEY  
PART I: COMPANY AND CONTACT INFORMATION**

Confidential

Company Name: \_\_\_\_\_

Division Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_

State / Province: \_\_\_\_\_

Zip Code: \_\_\_\_\_

Country: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Title: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email Address: \_\_\_\_\_

Do you consider any part of this survey to be confidential?      **Yes**

Type of Business :    Deep Sea Transportation of Freight     Deep Sea Transportation of Passengers     Other , Specify: \_\_\_\_\_

Certification: I am an officer of the company listed above and hereby certify that all information entered by my company on this "Air Resources Board Ship Survey" is complete and accurate to the best of my knowledge and belief.	
Print Name:	Title:
Signature:	Date:

**CALIFORNIA AIR RESOURCES BOARD SHIP SURVEY**  
**Part II. A. SHIP AND ENGINE INFORMATION**  
(Please complete one form per vessel)

SHIP INFORMATION

Confidential

Vessel Name: \_\_\_\_\_ Lloyds/IMO #: \_\_\_\_\_ Country Flag: \_\_\_\_\_ Vessel Age: \_\_\_\_\_ Years  
Vessel Type: \_\_\_\_\_ Ship Electrical Power: \_\_\_\_\_ Volts \_\_\_\_\_ Hertz (Hz) \_\_\_\_\_ Phase

**Direct Drive Main Engine/s (Note: For diesel-electric/generator-set engines on cruise ships, etc. please list under "auxiliary engines" below)**

Number of main engines: \_\_\_\_\_ Engine Type: Diesel Piston If diesel engine, type? 4 Stroke  
Make: \_\_\_\_\_ Engine Age: \_\_\_\_\_ Years  
Model: \_\_\_\_\_ Rated Power at MCR: \_\_\_\_\_ kW RPM at MCR: \_\_\_\_\_  
Fuel Used #1: Residual \_\_\_\_\_ S% Fuel Used #2: Residual \_\_\_\_\_ S%

Would requiring MGO use in auxiliary engines while in California waters require modification of the vessels fuel system? Nolf Yes, comment below.

Normal cruise power at sea: \_\_\_\_\_ kW Normal cruise speed at sea: \_\_\_\_\_ Knots

Please describe any engine modifications completed to either improve fuel efficiency or reduce emissions (e.g., slide valves):

**Auxiliary Engines ( and all diesel-electric engines, whether for ship propulsion or on-board power). Exclude emergency/standby engines.**

	Engine #1	Engine #2	Engine #3	Engine #4	Engine #5	Engine #6
Make:						
Model:						
Engine Age:	Years	Years	Years	Years	Years	Years
Rated Power at MCR:	Kw	Kw	Kw	Kw	Kw	Kw
Engine Type:	Diesel Piston 4 Stroke	Diesel Piston 4 Stroke	Diesel Piston 4 Stroke	Diesel Piston 4 Stroke	Diesel Piston 4 Stroke	Diesel Piston 4 Stroke
Fuel Type:	Residual S%	Residual S%	Residual S%	Residual S%	Residual S%	Residual S%
Average total ship power generated from engines #1-6 above	At Sea:	kW	Maneuvering:	kW	Hotelling:	kW

Comments: \_\_\_\_\_



# Survey Overview and Instructions

## **SURVEY OVERVIEW**

The California Air Resources Board's (ARB) oceangoing vessel survey (Survey) is intended to collect information about the various oceangoing vessels operating in California's coastal waters. This information is being collected to help update the emissions inventory for oceangoing vessels operating in the State and to support emission reduction activities. Below, we have provided information about the Survey in a question and answer format.

### **What is the ARB's authority to conduct this Survey?**

This request for information is made pursuant to sections 39600, 39607, 39665, 39701, 41511 and 43013 of the California Health and Safety Code, title 17, California Code of Regulations sections 91100 to 91102 (CCCR). These sections authorize the ARB to require the submission of information needed by the ARB to estimate atmospheric emissions and carry out its other statutory responsibilities.

### **Why is the Survey necessary?**

The ARB maintains a statewide emissions inventory for all sources of air emissions such as cars, trucks, marine vessels, construction equipment, industrial facilities, and architectural coatings. The ARB's emissions inventory is regularly updated to reflect the most up-to-date emission information, including results of surveys such as this one.

The oceangoing vessel (OGV) component in the emissions inventory has not been updated on a statewide basis for more than 10 years. It is necessary for us to gather information about the current in-use fleets entering California coastal waters. That way, we can reflect current fleet populations and provide a more accurate estimate of emissions from oceangoing vessels.

The Survey is also designed to provide technical information that will help us develop more effective programs to reduce emissions from oceangoing ships and evaluate the feasibility to implement shore-side power connections from the vessel.

### **Who should complete the Survey form?**

All owners/operators of oceangoing vessels that operate in California coastal waters are being asked to complete the Survey. OGV's means any marine vessels that meet any of the following criteria:

- (1) a foreign trade vessel with a "registry" endorsement on their United States Coast Guard certificate of documentation, or registration under the flag of another country.
- (2) a vessel greater than or equal to 400 feet in length overall (LOA) as defined in 50 CFR § 679.2, as adopted June 19, 1996.
- (3) a vessel of 10,000 gross tons (GT ITC) or greater per the convention measurement (international system) as defined in 46 CFR 69.51-.61, as adopted September 12, 1989.
- (4) a vessel propelled by a marine diesel engine with a per-cylinder displacement of 30 liters or more (United States Environmental Protection Agency "category 3" engine).

This Survey is not intended to apply to commercial harbor craft such as commercial fishing vessels, tugs, or ferry vessels that do not otherwise meet any of the above criteria.

### **Do I have to complete the Survey?**

Yes. State law requires that you provide the requested information by completing and returning the Survey. If the Survey does not apply to you, please state in the Survey why it does not apply to you and return it to the address indicated.

### **What information needs to be provided in the Survey?**

The Survey requests specific information about each vessel. This includes information related to vessel operation, ownership, and the frequency the vessel visits California ports. The Survey also requests information on the propulsion and auxiliary engines, including the make and model, the horsepower, and the engine's age on the vessel. Information on the typical operating parameters is also requested, including normal cruise speed at sea, average total ship in-use power generated, and California port/berth visits in 2004.

### **If the Survey information is claimed as confidential, how will it be treated?**

The ARB has adopted regulations to protect the confidentiality of trade secrets (Title 17, CCR, sections 91000 to 91022). A summary of ARB's confidentiality regulations can be found in Part II of the Survey on the "Confidential Information Submittal Form." You should fill out this form if you wish to designate any Survey information as confidential.

## **When do I need to return the Survey, and where do I send it?**

Please return the Survey by February 28, 2005 to:

California Air Resources Board  
Stationary Source Division  
Attn: Mr. Paul Milkey  
P.O. Box 2815  
Sacramento, CA 95812-2815  
**CONFIDENTIAL MATERIALS ENCLOSED** (if applicable)

In an effort to simplify and streamline the data gathering process, we have made the Survey forms available electronically. If you prefer to submit the Survey forms electronically, please see the Electronic Submittal Form in Part II for the information about how to obtain a diskette (or download the Survey from the Internet). To access the Survey on our website, go to:

<http://www.arb.ca.gov/msprog/offroad/marinevess/marinevess.htm>

## **Who can I call if I have questions about the Survey?**

If you have any questions, please contact the following staff person:

Paul Milkey (916) 327-2957 [pmilkey@arb.ca.gov](mailto:pmilkey@arb.ca.gov)



## **SURVEY INSTRUCTIONS**

Before you begin filling out the Survey form, please read the instructions carefully. Included for your assistance are sample forms.

### **THE SURVEY FORM**

Explanations for each Survey data field are provided below. If you own and/or operate more than one vessel, please complete the engine information (Part II A) and port/berth information (Part II B) for each vessel you own/operate. If you need additional forms, those can be downloaded from the website listed on the previous page. If that method is unavailable to you, please contact Paul Milkey at (916) 327-2957, and he will work with you to make arrangements to get you additional forms.

### **Part I: Survey Data Fields**

#### **Company and Contact Information**

**Company Name/Division Name:** Please enter the name of the company that owns/operates the vessel in the Survey.

**Contact Name (and title):** Enter the name and title of the person to be contacted by the ARB if we have questions about the information provided.

**Address/City/State/ZIP Code:** Mailing address, city, state, ZIP code, and country of the company.

**Phone/Fax Number:** Enter the phone and fax number of the contact person.

**E-mail Address:** Enter the e-mail address of the contact person.

**Confidential:** Please indicate as to whether or not you would like the ARB to treat your information as confidential information. If you designate information as confidential, you also need to fill out the confidential information submittal form (**see page III-6 of this package**) and return that to the ARB with your Survey.

**Type of Business:** Please place a mark (an "x" or a check mark) in the appropriate box indicating whether the business is instead in the deep sea transportation of freight, deep sea transportation of passengers, or another type of oceangoing vessel business.

**Sign and Date:** Please print name, title and date. Sign name in the designated area.

## **Part II.A: Ship and Engine Information**

### **Ship Information**

**Confidential:** Please indicate as to whether or not you would like the ARB to treat your information as confidential information. If you designate information as confidential, you also need to fill out the confidential information submittal form (**see page III-6 of this package**) and return that to the ARB with your Survey.

**Vessel Name:** Enter the vessel name for which the data is being provided.

**Lloyds/IMO Number:** Enter the vessel Lloyds Registration # or International Maritime Organization (IMO) documentation number assigned to your vessel.

**Country Flag:** Enter the name of the country the vessel is registered under.

**Vessel Age:** Enter the vessel age. (in years).

**Vessel Type:** Enter the most appropriate vessel type. (e.g. container, tanker, bulk carrier, passenger cruise, auto carrier, general cargo, reefer, RoRo, or other)

**Ship Electric Power:** Enter the voltage, frequency in hertz , and phase of the power generated for ship board power (such as lighting and navigation) by ships generator(s).

### **Main Engine Information**

**Number of Main Engines:** Enter number of main engines. For most cargo vessels there will be a single main engine (used primarily for propulsion). For diesel-electric vessels (such as cruise ships) where propulsion is provided by gen-sets that also provide power for shipboard electricity, skip this section and enter gen-sets as an "auxiliary engines".

**Engine Type:** Please place a mark (an "x" or a check mark) in the appropriate box whether the engine is a diesel piston engine, gas turbine, steam turbine. Only for diesel main engines mark if the engine is a two- or a four-stroke engine.

**Engine Make and Model:** Please provide the name of the manufacturer and the model of each main engine on the vessel. If there is more than one main engine of the same:

make, model, horsepower, and age, you would write "X2" next to the make and model information.

or,

if there are more than two main engines and they are different types, explain under "comments".

**Engine Age in Years:** Enter the engine age. (in years)

**Rated Power at Maximum Continuous Rating (MCR):** Enter the vessels main engine MCR. Please mark the appropriate box, kilowatts or horsepower.

**RPM at MCR:** Enter the revolutions per minute at the maximum continuous rating.

**Fuel Used:** Enter the type(s) of fuel(s) used (residual = IFO 180 or 380, distillate = MDO or MGO) and your best estimate of the average percent sulfur content(s). If residual and distillate fuel is stored on the vessel, please list main fuel in #1 and other in #2.

**Multiple fuel type storage:** If vessels entering California waters were required to use MGO fuel in their auxiliary engines, would modifications to the fuel system or fuel tanks be necessary? If yes, please briefly mention modifications necessary under "Comments" (e.g. Add new tank and piping)

**Normal Cruise Power at Sea:** Enter your best estimate of average (normal) cruise power at sea. (Kilowatts or horsepower)

**Normal Cruise Speed as Sea:** Enter your best estimate of average (normal) cruise speed at sea. (in knots)

### **Auxiliary Engine Information**

**Engine Make and Model:** Please provide the name of the manufacturer and the model of each auxiliary engine on the vessel. Please do not list emergency generators that would not normally operate in routine service.

**Engine Age in Years:** Please enter the auxiliary engine age. (in years)

**Rated Power at MCR:** Please place a mark (an "x" or a check mark) in the appropriate box whether kilowatts or horsepower of each auxiliary engines Maximum Continuous Rating.

**Engine Type:** Please place a mark (an "x" or a check mark) in the appropriate box whether the engine is a diesel piston, or turbine. Only for diesel engines mark if the engine is a four or a two stroke engine.

**Fuel Type:** Please place a mark (an "x" or a check mark) in the appropriate box whether the fuel type is residual or distillate and your best estimate of the average percent sulfur level in the fuel.

**Average Total Ship In-Use Power Generated:** Enter your best estimate for the total power generated from the auxiliary engines, at sea, maneuvering, and hotelling. If you cannot estimate an average put the range in the comment section. Please place a mark (an "x" or a check mark) specifying Kilowatts or horsepower.

## **Part II.B: California Port Visits**

### **Port of Call Information**

**Note:** Only for ships that visited the same CA port 5 or more times.  
(e.g. a vessel that visited the Port of Los Angeles 5 or more times in 2004)  
Also, see example form on Page III-4.

**Confidential:** Please indicate as to whether or not you would like the ARB to treat your information as confidential information. If you designate information as confidential, you also need to fill out the confidential information submittal form (**see page III-6 of this package**) and return that to the ARB with your Survey.

**Vessel Name:** Enter the vessel name for which the data is being provided.

**Total # of California Port Visits:** Enter the number of 2004 California visits.

**Typical # of California Port Visits:** Enter the typical number of California port visits per year.

**Month of Visit:** Enter the month or number corresponding to the month (e. 7 = July)

**Port of Last Call Outside CA:** Enter the port name/city of the last port of call.

**California Port with Pier/Berth:** Enter the California port and the pier/berth #.

**Hours at Port:** Enter the number of hours the ship was docked at the port.

**California Port with Pier/Berth #2 and #3 with hours at Port:** If the vessel travels along the California coast to another port, please continue to enter the information requested.

**Next Port of Call Outside of CA:** Enter the port name/city of the next port of call outside California.

## **Part III**

### **Supporting Attachments**

- A) Survey "Example Only" Forms
- B) Confidential Information Submittal Form
- C) Electronic Data Submittal Form
- D) Excerpts from the California Code of Regulations pertaining to the handling of confidential information:  
Title 17, California Code of Regulations, Sections 91000 to 9110

**DRAFT 2004 Oceangoing Vessel Survey  
PART III: SUPPORTING ATTACHMENTS**

**CALIFORNIA AIR RESOURCES BOARD SHIP SURVEY  
PART I: COMPANY AND CONTACT INFORMATION**

Confidential

Company Name: Beyer Shipping Company

Division Name: Marine Container Division

Mailing Address: 1234 Terminal Way City: Los Angeles

State / Province: CA Zip Code: 99901 Country: USA

Contact Person: Mr. Peter Beyer Title: Vice President

Phone: (555) 767-2676 Fax: (555) 767-2676 Email Address: pbeyer@address.net

Do you consider any part of this survey to be confidential?  
 No  
 Yes

Type of Business :  Deep Sea Transportation of Freight  Deep Sea Transportation of Passengers  Other , Specify: \_\_\_\_\_

Certification: I am an officer of the company listed above and hereby certify that all information entered by my company on the "Air Resources Board Ship Survey" is complete and accurate to the best of my knowledge and belief.

Print Name: Peter Bayer

Title: Vice President

Signature:

Date: 9/10/04

**DRAFT 2004 Oceangoing Vessel Survey  
PART III: SUPPORTING ATTACHMENTS**

**CALIFORNIA AIR RESOURCES BOARD SHIP SURVEY  
Part II.A. SHIP AND ENGINE INFORMATION  
(Please complete one form per vessel)**

SHIP INFORMATION

Confidential

Vessel Name: Allison Lloyds/IMO #: 123456789 Country Flag: USA Vessel Age: 10 Years  
 Vessel Type: Container Ship Ship Electrical Power: 440 Volts 60 Hertz (Hz) Three Phase

**Direct Drive Main Engine/s (Note: For diesel-electric/generator-set engines on cruise ships, etc. please list under "auxiliary engines" below)**

Number of main engines: 1 Engine Type:  diesel piston  gas turbine  steam turbine If diesel engine, type?  two stroke  four stroke  
 Make: MAN B & W Engine Age: 10 Years  
 Model: ABC-XYZ 123 Rated Power at MCR: 50,000  kW  hp RPM at MCR: 95  
 Fuel Used:  Residual  Distillate %S 2.5% Fuel Used:  Residual  Distillate %S 0.5 %  
 Would requiring MGO use in auxiliary engines while in California waters require modification of the vessels fuel system?  Yes  No If Yes, comment below.  
 Normal cruise power at sea: 40,000  kW  hp Normal cruise speed at sea: 22 Knots

Please describe any engine modifications completed to either improve fuel efficiency or reduce emissions (e.g., slide valves): Installed slide valves in 2001

**Auxiliary Engines ( and all diesel-electric engines, whether for ship propulsion or on-board power). Exclude emergency/standby engines.**

	Engine #1		Engine #2		Engine #3		Engine #4		Engine #5		Engine #6	
Make:	MAN B & W		MAN B & W		MAN B & W		Wartsila					
Model:	DEF - 456		DEF - 456		DEF - 456		GHI - 789					
Engine Age:	10	Years	10	Years	10	Years	10	Years		Years		Years
Rated Power at MCR:	2,000	<input checked="" type="checkbox"/> kW <input type="checkbox"/> hp	2,000	<input checked="" type="checkbox"/> kW <input type="checkbox"/> hp	2,000	<input checked="" type="checkbox"/> kW <input type="checkbox"/> hp	1,500	<input checked="" type="checkbox"/> kW <input type="checkbox"/> hp		<input type="checkbox"/> kW <input type="checkbox"/> hp		<input type="checkbox"/> kW <input type="checkbox"/> hp
Engine Type:	<input type="checkbox"/> Turbine <input checked="" type="checkbox"/> Diesel Piston <input checked="" type="checkbox"/> 4 stroke <input type="checkbox"/> 2 stroke		<input type="checkbox"/> Turbine <input checked="" type="checkbox"/> Diesel Piston <input checked="" type="checkbox"/> 4 stroke <input type="checkbox"/> 2 stroke		<input type="checkbox"/> Turbine <input checked="" type="checkbox"/> Diesel Piston <input checked="" type="checkbox"/> 4 stroke <input type="checkbox"/> 2 stroke		<input type="checkbox"/> Turbine <input checked="" type="checkbox"/> Diesel Piston <input checked="" type="checkbox"/> 4 stroke <input type="checkbox"/> 2 stroke		<input type="checkbox"/> Turbine <input type="checkbox"/> Diesel Piston <input type="checkbox"/> 4 stroke <input type="checkbox"/> 2 stroke		<input type="checkbox"/> Turbine <input type="checkbox"/> Diesel Piston <input type="checkbox"/> 4 stroke <input type="checkbox"/> 2 stroke	
Fuel Type:	<input checked="" type="checkbox"/> Residual <input type="checkbox"/> Distillate	%S 2.5 %S__	<input checked="" type="checkbox"/> Residual <input type="checkbox"/> Distillate	%S 2.5 %S__	<input checked="" type="checkbox"/> Residual <input type="checkbox"/> Distillate	%S 2.5 %S__	<input type="checkbox"/> Residual <input checked="" type="checkbox"/> Distillate	%S__ %S 0.5	<input type="checkbox"/> Residual <input type="checkbox"/> Distillate	%S__ %S__	<input type="checkbox"/> Residual <input type="checkbox"/> Distillate	%S__ %S__
Average total ship power generated from engines #1-6 above	At Sea:		750	<input checked="" type="checkbox"/> kW <input type="checkbox"/> hp	Maneuvering:	1,000	<input checked="" type="checkbox"/> kW <input type="checkbox"/> hp	Hotelling:	1,500	<input checked="" type="checkbox"/> kW <input type="checkbox"/> hp		





**DRAFT 2004 Oceangoing Vessel Survey**  
**PART III: SUPPORTING ATTACHMENTS**  
**CONFIDENTIAL INFORMATION SUBMITTAL FORM**

If you wish to designate any information contained in your survey data as **CONFIDENTIAL INFORMATION**, please provide the information requested below and return it with your completed Survey form.

*In accordance with Title 17, California Code of Regulations (CCR), Sections 91000 to 91022, and the California Public Records Act (Government Code Section 6250 et seq.), the information that a company provides to the Air Resources Board (ARB) may be released (1) to the public upon request, except trade secrets which are not emissions data or other information which is exempt from disclosure or the disclosure of which is prohibited by law, and 2) to the Federal Environmental Protection Agency, which protects trade secrets as provided in Section 114(c) of the Clean Air Act and amendments thereto (42 USC 7401 et seq.) and in federal regulation, and 3) to other public agencies provided that those agencies preserve the protections afforded information which is identified as a trade secret, or otherwise exempt from disclosure by law (Section 39660(e)).*

Trade secrets, as defined in Government Code 6254.7, are not public records and therefore will not be released to the public. However, the California Public Records Act states that air pollution emission data are always public records, even if the data comes within the definition of trade secrets. Even so, the information used to calculate air pollution data is not "emission data," and will not be released to the public if it is a trade secret.

If any company believes that any of the information it may provide is a trade secret or otherwise exempt from disclosure under any provision of law, it **must identify the confidential information as such at the time of submission to the ARB and must provide the name, address, and telephone number of the individual to be consulted.** If the ARB receives a request for disclosure or seeks to disclose the data claimed to be confidential, the ARB may ask the company to provide documentation of its claim of trade secret or exemption at a later date. Data identified as confidential will not be disclosed unless the ARB determines, in accordance with the above referenced regulations, that the data do not qualify for a legal exemption from disclosure. The regulations establish substantial safeguards before any such disclosure.

-----  
In accordance with the provisions of Title 17, California Code of Regulations, Sections 91000 to 91022, and the California Public Records Act (Government Code Sections 6250 et seq.)

Enter Company Name: \_\_\_\_\_  
declares that only those portions specifically identified (by checking the upper right-hand corner confidentiality box on each form) and submitted in response to the California Air Resources Board's information request on the Survey are confidential "trade secret" information, and requests that it be protected as such from public disclosure.  
We have designated confidential information by page for each survey data form submitted by checking (x) the upper right-hand corner confidentiality box.

Printed Name: _____	Title: _____
Signature: _____	Date: _____
Mailing Address: _____	
City/State: _____	Zip/Country: _____
Telephone Number: _____	E-mail Address: _____

**DRAFT 2004 Oceangoing Vessel Survey  
PART III: SUPPORTING ATTACHMENTS**

**ELECTRONIC DATA SUBMITTAL FORM**

To simplify and streamline the data gathering process, we have made the "Oceangoing Vessel Survey" available electronically. You can download the Survey from our website or we can send you a diskette if you complete this form and return it to us by fax. Microsoft Word97 or 2000 is required to complete the Survey electronically.

Internet Access: <http://www.arb.ca.gov/msprog/offroad/marinevess/marinevess.htm>

---

If you would like us to send you a diskette containing the Survey, please complete the form below.

**Stationary Source Division  
P.O. Box 2815  
Sacramento, CA 95812-2815**

Attention: Paul Milkey  
Phone Number: (916) 327-2957  
Fax Number: (916) 327-6251

**Date:** \_\_\_\_\_

**Name:** \_\_\_\_\_

**Company:** \_\_\_\_\_

**Phone Number:** \_\_\_\_\_

**Fax Number:** \_\_\_\_\_

**Mailing Address:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Division 3, Air Resources Board**  
**Chapter 1, Air Resources Board**  
Subchapter 4. Disclosure of Public Records  
Article 1. General

§91000. Scope and Purpose.

This subchapter shall apply to all requests to the state board under the California Public Records Act (Government Code Sections 6250 et seq.) for the disclosure of public records or for maintaining the confidentiality of data received by the state board. Written guidelines shall govern the internal review of such requests.

NOTE: Authority cited: Sections 39600 and 39601(a), Health and Safety Code.  
Reference: California Public Records Act, Chapter 3.5 (commencing with Section 6250), Division 7, Government Code.

§91001. Disclosure Policy.

It is the policy of the state board that all records not exempted from disclosure by state law shall be open for public inspection with the least possible delay and expense to the requesting party.

NOTE: Authority cited: Sections 39600 and 39601(a), Health and Safety Code.  
Reference: Section 6253, Government Code; Black Panther Party v. Kehoe (1974) 42 Cal.App.3d 645.

**Article 2. Board's Requests for Information**

§91010. Request Procedure.

The state board shall give notice to any person from whom it requests information that the information provided may be released (1) to the public upon request, except trade secrets which are not emission data or other information which is exempt from disclosure or the disclosure of which is prohibited by law, and (2) to the federal Environmental Protection Agency, which protects trade secrets as provided in Section 114(c) of the Clean Air Act and amendments thereto (42 USC 7401 et seq.) and in federal regulations.

NOTE: Authority cited: Sections 39600, 39601 and 39602, Health and Safety Code.  
Reference: Sections 39701, 41510, 41511, 41512 and 42705, Health and Safety Code; and Section 6253, Government Code.

§91011. Submissions of Confidential Data.

Any person submitting to the state board any records containing data claimed to be “trade secret” or otherwise exempt from disclosure under Government Code Section 6254 or 6254.7 or under other applicable provisions of law shall, at the time of submission, identify in writing the portions of the records containing such data as “confidential” and shall provide the name, address and telephone number of the individual to be contacted if the state board receives a request for disclosure of or seeks to disclose the data claimed to be confidential. Emission data shall not be identified as confidential. The state board shall not disclose data identified as confidential, except in accordance with the requirements of this subchapter or Section 39660(e) of the Health and Safety Code.

NOTE: Authority cited: Sections 39600 and 39601, Health and Safety Code.  
Reference: Sections 39660, 39701, 41500, 41511, 41512 and 42705, Health and Safety Code; Sections 6253, 6254 and 6254.7, Government Code; Natural Resources Defense Council v. EPA, 489 F.2d 390 (5th Cir. 1974) (6 ERC 1248); Northern California Police Practices Project v. Craig (1979) 90 Cal.App.3d 116; Uribe v. Howie (1971) 19 Cal.App.3d 194.

### Article 3. Inspection of Public Records

§91020. Disclosure Policy.

§91021. Disclosure Procedure.

NOTE: Authority cited: Section 39601, Health and Safety Code.  
Reference: Sections 6253-6257, Government Code.

§91022. Disclosure of Confidential Data.

- (a) This section shall apply to all data in the custody of the state board
  - (1) designated “trade secret” prior to the adoption of this subchapter,
  - (2) considered by the state board or identified by the person who submitted the data as confidential pursuant to this subchapter, or
  - (3) received from a federal, state or local agency, including an air pollution control district, with a confidential designation, subject to the following exceptions:
    - (A) Except for the time limits specifically provided in subsection (b), only subsections (c) and (d) of this section shall apply to information submitted pursuant to Health and Safety Code section 39660(e).
    - (B) Appropriate portions of an application for approval, accreditation, or certification of a motor vehicle emission control device or system shall

be kept confidential until such time as the approval, accreditation, or certification is granted, at which time the application (except for trade secret data) shall become a public record, except that estimates of sales volume of new model vehicles contained in an application shall be kept confidential for the model year, and then shall become public records. If an application is denied, it shall continue to be confidential but shall be subject to the provisions of this section.

- (C) If disclosure of data obtained after August 9, 1984 from a state or local agency subject to the provisions of the Public Records Act is sought, the state board shall request that the agency which provided the data determine whether it is confidential. The state board shall request that it be notified of the agency's determination within ten days. The state board shall not release the data if the agency determines that it is confidential and so notifies the state board; provided, however, that the data may be released with the consent of the person who submitted it to the agency from which it was obtained by the state board.
- (b) Upon receipt of a request from a member of the public that the state board disclose data claimed to be confidential or if the state board itself seeks to disclose such data, the state board shall inform the individual designated pursuant to Section 91011 by telephone and by mail that disclosure of the data is sought. The person claiming confidentiality shall file with the state board documentation in support of the claim of confidentiality. The documentation must be received within five (5) days from the date of the telephone contact or of receipt of the mailed notice, whichever first occurs. In the case of information submitted pursuant to Health and Safety Code section 39660(e), the documentation must be received within 30 days of the date notice was mailed pursuant to that section. The deadlines for filing the documentation may be extended by the state board upon a showing of good cause made within the deadline specified for receipt of the documentation.
- (c) The documentation submitted in support of the claim of confidentiality shall include the following information:
  - (1) the statutory provision(s) under which the claim of confidentiality is asserted;
  - (2) a specific description of the data claimed to be entitled to confidential treatment;
  - (3) the period of time for which confidential treatment is requested;
  - (4) the extent to which the data has been disclosed to others and whether its confidentiality has been maintained or its release restricted;

- (5) confidentiality determinations, if any, made by other public agencies as to all or part of the data and a copy of any such determinations, if available; and
- (6) whether it is asserted that the data is used to fabricate, produce, or compound an article of trade or to provide a service and that the disclosure of the data would result in harmful effects on the person's competitive position, and, if so, the nature and extent of such anticipated harmful effects.
- (d) Documentation, as specified in subsection (c), in support of a claim of confidentiality may be submitted to the state board prior to the time disclosure is sought.
- (e) The state board shall, within ten (10) days of the date it sought to disclose the data or received the request for disclosure, or within 20 days of that date if the state board determines that there are unusual circumstances as defined in Government Code Section 6256.1, review the request, if any, and supporting documentation, if received within the time limits specified in subsection (b) above, including any extension granted, and determine whether the data is entitled to confidential treatment pursuant to Government Code Section 6254, 6255 or 6254.7 or other applicable provisions of law and shall either:
  - (1) decline to disclose the data and, if a request was received, provide to the person making the request and to the person claiming the data is confidential a justification for the determination pursuant to Government Code Section 6255; or
  - (2) provide written notice to the person claiming the data is confidential and, if a request was received, to the person requesting the data that it has determined that the data is subject to disclosure, that it proposes to disclose the data, and that the data shall be released 21 days after receipt of the notice by the person claiming confidentiality, unless the state board is restrained from so doing by a court of competent jurisdiction. The state board shall release the data in accordance with the terms of the notice unless so restrained.
- (f) Should judicial review be sought of a determination issued in accordance with subsection (e), either the person requesting data or the person claiming confidentiality, as appropriate, may be made a party to the litigation to justify the determination.

NOTE: Authority cited: Section 39601, Health and Safety Code.  
Reference: Sections 6253, 6254, 6254.7, 6255, 6256, 6256.1, 6258 and 6259, Government Code.



