

California Fuel Temperature Survey



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*Prepared by the
California Division of Measurement Standards*



Method of Sale of Petroleum Products

**Major Refiner/Supplier
Manufacture
Compensated**



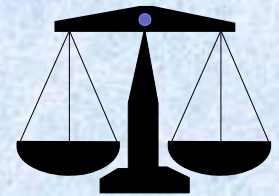
**Wholesale locations
Typically Compensated**



**Retail
uncompensated**

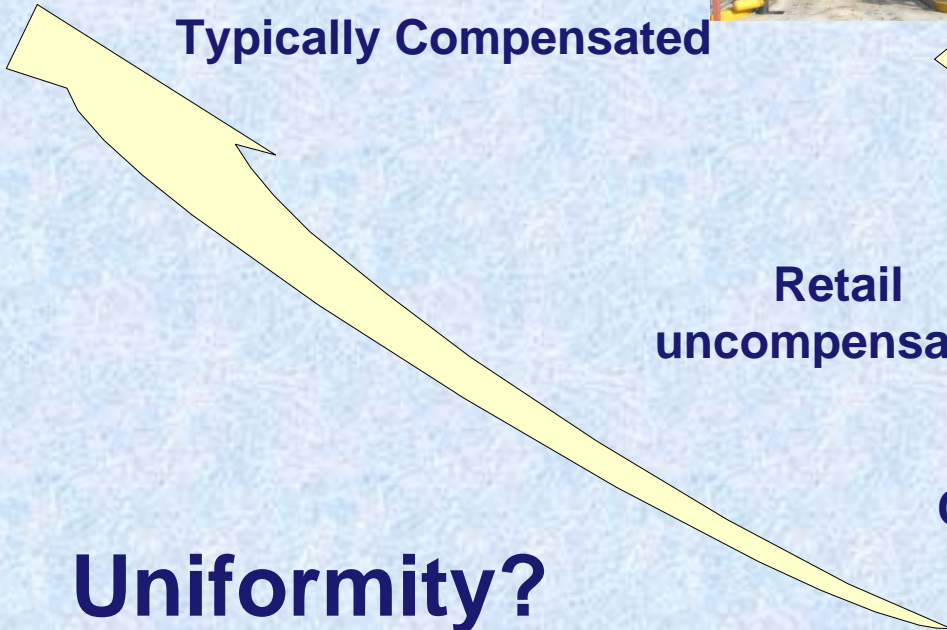


Customers



Equity?

Uniformity?





Handling and Storage of Petroleum Products

- ❖ **Tank Temperature Monitoring System**
 - **Automatic Tank Gauging: automated processes to monitor product level and inventory control. Overfill alarms are often a part of automatic tank gauging systems (ATGS)**



Handling and Storage of Petroleum Products

- **ATGs use monitors permanently installed in the tank. These monitors are linked electronically to a nearby control device to provide information on product level and temperature.**
 - **Method for leak detection**
 - **Product level and temperature in a tank are measured continuously**
 - **Temperature is needed to accurately determine the inventory of the product**
 - **Unaccounted inventory changes may suggest a leak.**



California Fuel Temperature Survey

Survey Dates: April 1, 2007 – March 31, 2008

Procedure:

- ▶ Once per location
- ▶ Determine delivery accuracy
- ▶ Record:
 - temperature of 87 and 91 octane gasoline and diesel
 - date, time, and air temperature
 - storage tank temperature, if available



California Fuel Temperature Survey

- ❖ **Sample 20% of total locations**
- ❖ **Testing spread throughout the year**
- ❖ **Lag time from field to data entry (2 mo.)**
- ❖ **Online data entry available**

To View Results

<http://www.cdfa.ca.gov/dms/>



California Fuel Temperature Survey

April 1, 2007 – March 31, 2008

This survey will collect the temperatures of gasoline and diesel at various locations throughout California for one year.

County officials will sample fuel temperatures of 87 and 91 octane gasoline, and diesel, where available, at approximately 20% of the service stations in their respective counties. They will select one dispenser for each available product at these locations, take the temperature as it is delivered into the test measure, and also record any available information concerning the temperature of the fuel in the product storage tanks.

As data is entered throughout the year, the current monthly statewide average temperature for each fuel will be added to the information displayed. Please be aware that until all of the seasonal data is entered no final determination of the results can be made.


Select a product below to view results

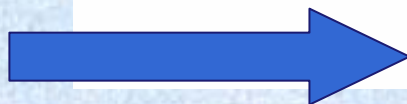




Detail

California Fuel Temperature Survey Diesel

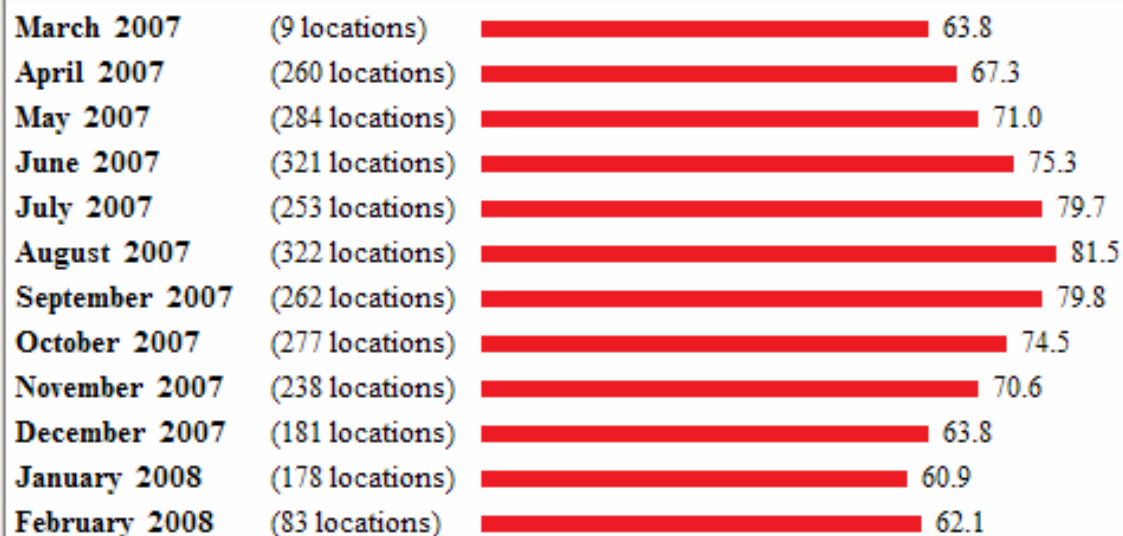
6/4/2007 8:00 am	- Los Angeles	Diesel = 70.3
6/4/2007 9:45 am	- Alameda	Diesel = 68
6/5/2007 8:00 am	- Los Angeles	Diesel = 81.1
6/5/2007 9:45 am	- Alameda	Diesel = 69
6/5/2007 10:00 am	- Los Angeles	Diesel = 69.2
6/6/2007 10:00 am	- San Francisco	Diesel = 67
6/6/2007 11:45 am	- Alameda	Diesel = 68
6/6/2007 12:00 pm	- Yolo	Diesel = 77.3
6/7/2007 9:00 am	- Los Angeles	Diesel = 75.1
6/7/2007 2:00 pm	- San Luis Obispo	Diesel = 73.6
6/8/2007 8:00 am	- Los Angeles	Diesel = 72.6
6/8/2007 8:00 am	- Los Angeles	Diesel = 74.3
6/9/2007 8:00 am	- Los Angeles	Diesel = 75.6
6/9/2007 9:00 am	- Los Angeles	Diesel = 71.3
6/11/2007 8:00 am	- Los Angeles	Diesel = 73.5
6/11/2007 11:00 am	- Los Angeles	Diesel = 88.3
6/13/2007 10:00 am	- Tulare	Diesel = 89
6/13/2007 11:00 am	- Los Angeles	Diesel = 83.2
6/14/2007 10:00 am	- Los Angeles	Diesel = 75.8
6/20/2007 10:00 am	- Monterey	Diesel = 75.4
June 2007	(20 locations)	 74.9



[view histogram](#)

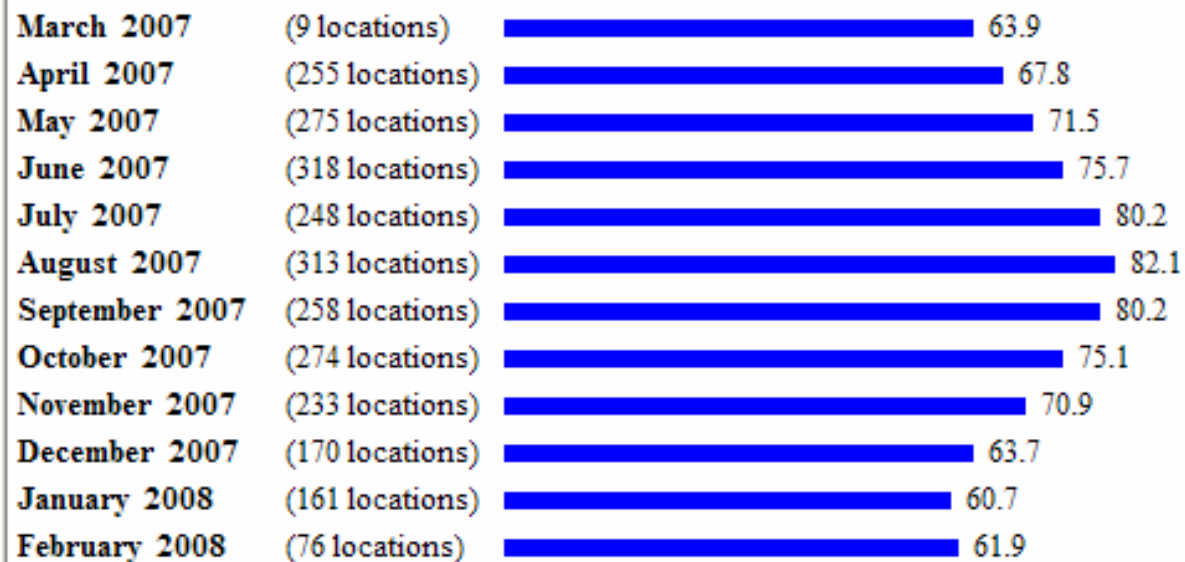
Histogram

California Fuel Temperature Survey 87 Octane Gasoline Average Temperature by Month



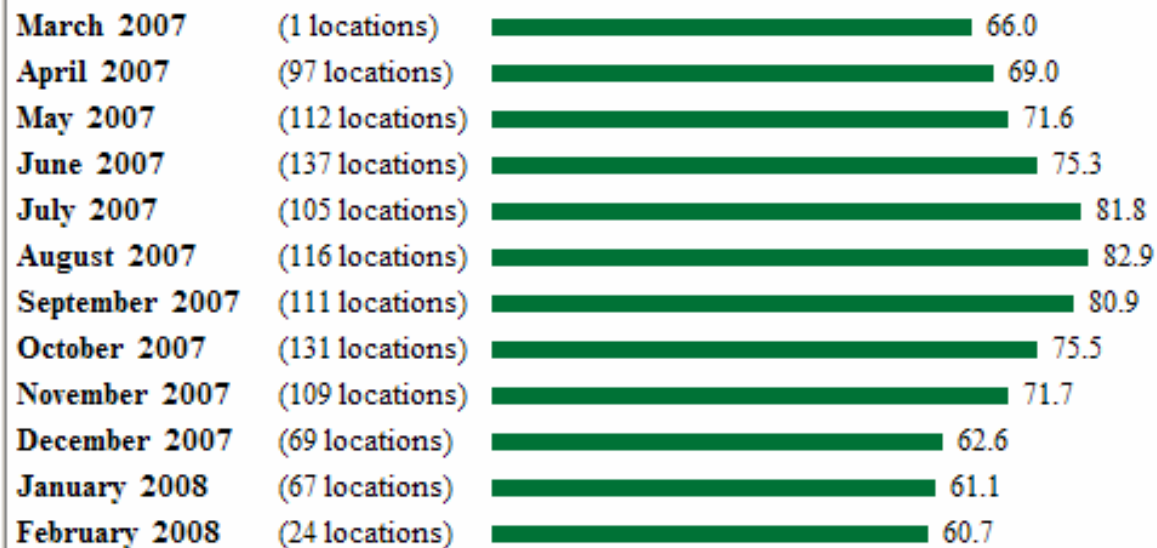
Histogram

California Fuel Temperature Survey 91 Octane Gasoline Average Temperature by Month



Histogram

California Fuel Temperature Survey Diesel Average Temperature by Month





Prover vs Storage Temperature

California Fuel Temperature Survey As Of February 29, 2008

		87 Octane Prover		87 Octane Storage	
		Number of Locations	Average Temperature	Number of Locations	Average Temperature
2007	March	9	63.8	9	59.1
	April	260	67.3	237	66.6
	May	284	71.0	264	70.3
	June	321	75.3	306	74.0
	July	253	79.7	234	78.4
	August	322	81.5	295	79.8
	September	262	79.8	257	79.5
	October	277	74.5	269	74.6
	November	238	70.6	221	71.0
	December	181	63.8	177	64.5
2008	January	178	60.9	173	61.6
	February	83	62.1	73	61.4



Prover vs Storage Temperature Trends

Month	87 Octane Storage	87 Octane Prover	(Prover) - (Storage)	91 Octane Storage	91 Octane Prover	(Prover) - (Storage)	Diesel Storage	Diesel Prover	(Prover) - (Storage)
April	66.6	67.3	0.7	67.0	67.8	0.8	67.9	69.0	1.1
May	70.3	71.0	0.7	70.3	71.5	1.2	70.7	71.6	0.9
June	74.0	75.3	1.3	73.8	75.7	1.9	73.8	75.3	1.5
July	78.4	79.7	1.3	78.1	80.2	2.1	79.4	81.8	2.4
Aug	79.8	81.5	1.7	79.9	82.1	2.2	81.1	82.9	1.8
Sept	79.5	79.8	0.3	80.1	80.2	0.1	81.8	80.9	-0.9
Oct	74.6	74.5	-0.1	76.1	75.1	-1.0	77.2	75.5	-1.7
Nov	71.0	70.6	-0.4	72.3	70.9	-1.4	73.9	71.7	-2.2
Dec	64.5	63.8	-0.7	67.1	63.7	-3.4	66.9	62.6	-4.3
Jan	61.6	60.9	-0.7	63.9	60.7	-3.2	65.2	61.1	-4.1
Feb									
Mar									
	72.0	72.4		72.9	72.8		73.8	73.2	

California Fuel Temperature Survey



Questions?