Louisiana Department of Health and Hospitals
Office of Public Health

MS Canyon 252 Oil Spill Surveillance Report

Week 34 From 08/22/2010 to 08/28/2010

The Oil Spill Surveillance Summary Report describes the results of the tracking done by the Louisiana Department of Health and Hospitals Office of Public Health (OPH) Section of Environmental Epidemiology & Toxicology (SEET). This report relies on data supplied by sentinel surveillance sites, including hospital emergency departments, outpatient clinics, physicians' offices and the Louisiana Poison Center.

SEET is tracking and evaluating reported acute health effects related to the BP Oil Spill. Reports include exposure to odors/fumes, skin contact with contaminated water or objects, heat stress, in addition to injuries such as lacerations/fractures resulting from clean-up or containment activities. This report is limited to exposures to odors/fumes, skin contact with contaminated water or objects and heat stress.

Data presented in this report are in aggregate form. There are no personal identifiers and no individual line listing that could be used to identify individuals. This is a public document.

What to report
Patient name and contact information, name of reporting facility, name and telephone number of person reporting event, and brief description of health complaint and treatment. OPH/SEET will follow-up if more information is needed.

How to report

Telephone 888-293-7020 (24/7) **Fax** 225-342-8117

Database
All human surveillance data are entered in a database maintained by SEET. The data include demographic characteristics about persons exposed, workers from the rigs, workers involved in clean up, other workers (EMS for example) and residents. Data are also collected on the nature of exposure, type of work, route of exposure and location of exposure. Clinical and health care utilization data are also collected.

Summary
In Louisiana, there have been 397 reports of health complaints believed to be related to exposure to pollutants from the oil spill, including cases of heat stress. Three hundred and eleven (311) reports came from workers and 86 from the general population (see limitations of these data explained on page 2). Most frequently reported symptoms include headache, dizziness, nausea, vomiting, weakness/fatigue and upper respiratory irritation. One hundred fifty-six (156) workers had heat-related complaints. Eighteen (18) workers had short hospitalizations. The general population complaints were primarily related to odors with mostly mild symptoms being reported.

The syndromic surveillance system is monitoring emergency department visits in 7 hospitals in Regions 1, 3 and 9 to determine if there are increases in upper respiratory illnesses (URI) and asthma in the region. This year's weekly data (percentage of asthma and URI among emergency department visits) are compared with the past 3 years. There is no increase to report (see page 6).

Treatment information Call the Louisiana Poison Center: 1-800-222-1222. The Poison Center is staffed 24-hours a day and can provide medical management advice.

Information on potential health risks related to the oil spill see http://emergency.cdc.gov/chemical/oil_spill_gm_2010.asp

Comments

On April 20, 2010, the Deep Water Horizon exploded and collapsed into the Gulf of Mexico on April 22 (CDC week 16). Four weeks later, the health surveillance system in place started to receive reports of human exposures.

Goal of the targeted surveillance
The goal of this surveillance is to monitor possible human health effects due to exposure to pollutants and heat stress resulting from the spill and clean up efforts. This report does not include injuries. It also does not include chronic disease (for example, it would not include hypoglycemia in a diabetic worker) or acute conditions that are not directly resulting from pollutants (for example, a foodborne outbreak), but it includes any exacerbations of a chronic condition that could be resulting from exposure to pollutants (mainly for pulmonary and dermatologic conditions resulting from inhalation or skin exposure).

A surveillance is a dynamic system
As reports are received, they are entered in a database. From this database, interviewers will collect additional information from the reporter and from the patient. This process may take several days. This report summarizes the status of the database at the time the report is compiled. Week to week comparisons are discouraged as data may change when new information becomes available.

Limitations of exposure histories and health complaints
Because of the nature of environmental exposures, the exact cause of symptoms or exposures cannot be confirmed. Health complaints are the symptoms and signs reported by the person affected. Some of these are objective (vomiting, for example), others are subjective (nausea, for example). There are large variations in how subjective symptoms are perceived and reported.

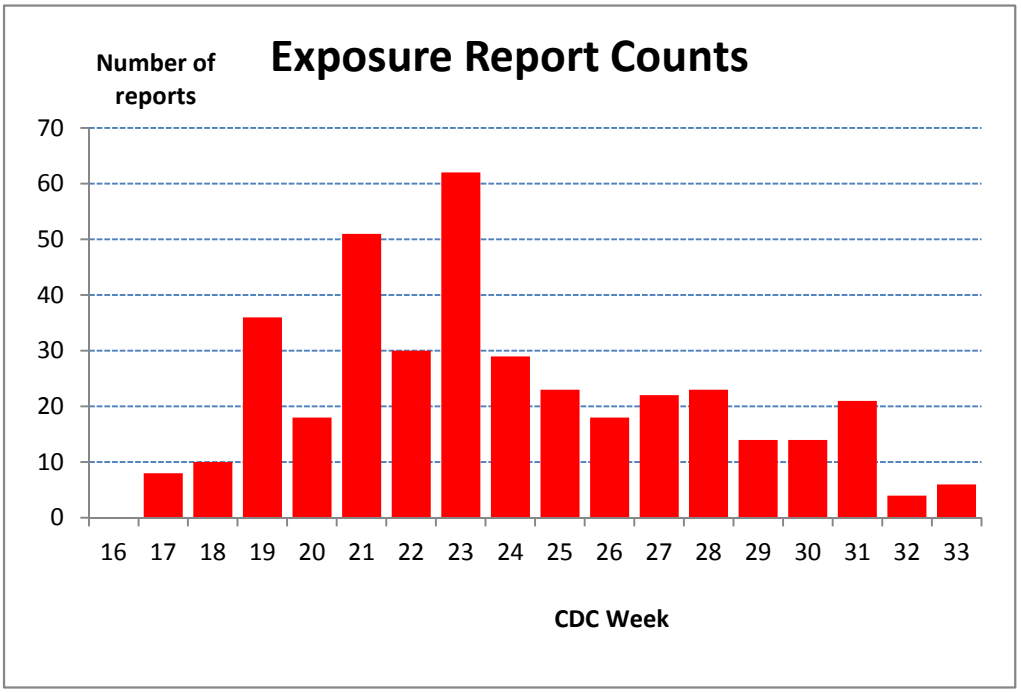
Syndromic surveillance
Syndromic Surveillance utilizes the detection of well-defined symptoms as an indicator of the possible presence of a public health problem. The Metro New Orleans Hospital Emergency Department Syndromic Surveillance Report is compiled from Emergency Department (ED) Chief Complaint data reported to LAOPH Infectious Diseases Epidemiology Section by Metro New Orleans hospitals (7 hospitals from Regions 1, 3 and 9). Text contained in the Chief Complaint data is analyzed by CDC-supplied software, and ED records are flagged when Chief Complaint data contain text indicative of a specific syndrome. Infectious Disease Epidemiology currently flags ED records when Chief Complaint data indicate specific syndromes. For the purpose of this surveillance, "Asthma" and "Upper Respiratory" symptoms are of interest.

CDC Week
To facilitate the coordination of reporting, the Centers for Disease Control assigns a number to each week of the year. The dates corresponding to each week in the report are explained on Page 3.

Oil Spill Exposure Demographic Information

This graph shows the number of reports for conditions perceived to be related to exposure to the oil spill. This type of data is based on a patient's report and does not necessarily reflect a confirmed health effect from the oil spill.

Total numbers	Reports	397	Workers	311	Home	86



First day of the week	CDC Week	Report
04/18/10	16	0
04/25/10	17	8
05/02/10	18	10
05/09/10	19	36
05/16/10	20	18
05/23/10	21	51
05/30/10	22	30
06/06/10	23	62
06/13/10	24	29
06/20/10	25	23
06/27/10	26	18
07/04/10	27	22
07/11/10	28	23
07/18/10	29	14
07/25/10	30	14
08/01/10	31	21
08/08/10	32	4
08/15/10	33	6
08/22/10	34	8
08/29/10	35	

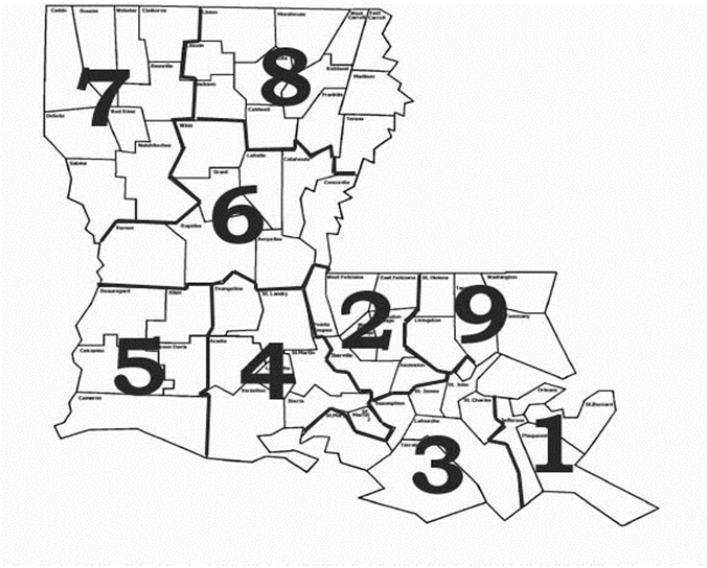
Age and Gender distribution

	Gender		Age					
	M	F	0-17	18-44	45-64	65+	Unk	Total
Worker	276	35	2	220	82	3	4	311
General population	32	54	11	29	30	7	9	86
Total	308	89	13	249	112	10	13	397

Parish of residence

Region		Total
1: Greater NO	Orleans	30
	Jefferson	38
	Plaquemines	26
	St. Bernard	11
2:BatonRouge		9
3: Houma/Thibodaux	Lafourche	37
	Terrebonne	32
	Other	12
4: Lafayette		21
5:Lake Charles		7
9:NorthShore	St. Tammany	14
	Other	6
Other Louisiana		4
Out of State		47
Unknown		103
Total		397

Louisiana Department of Health and Hospitals' Regional Map



Source of report

	Total
Poison Control Center	96
Emergency Room/Hospital	138
Urgent care/Physician/Clinic	118
EMS	41
Hotline	4
Total	397

Activity of person when potentially exposed

	Work	Pop
Worker		
Beach Clean Up	42	
Animal Clean Up	2	
Onshore work, unspec	65	
Cleanup unspecified	29	
Sheen busting	8	
Boom deployment	54	
Burning	2	
Skimming	21	
Offshore work, unspec	54	
Oil rig	26	
Other worker (not oil)	8	
Residents		
Home		78
Beach walking		1
Swimming		2
Seafood Consumption		5
Total	311	86

Source of possible exposure (note: these exposures could not be validated)

	Work	Pop
Polluted water	20	4
Tar ball	1	0
Liquid oil	51	4
Odor and fumes	71	75
Emulsified oil/Dispersant	56	1
Heat	156	0
Fish/Shellfish	0	5
Other**	12	0
Total*	367	89

*Cases may report more than 1 exposure

**E.g., smoke, dust, cleaning chemicals

Primary Route of exposure

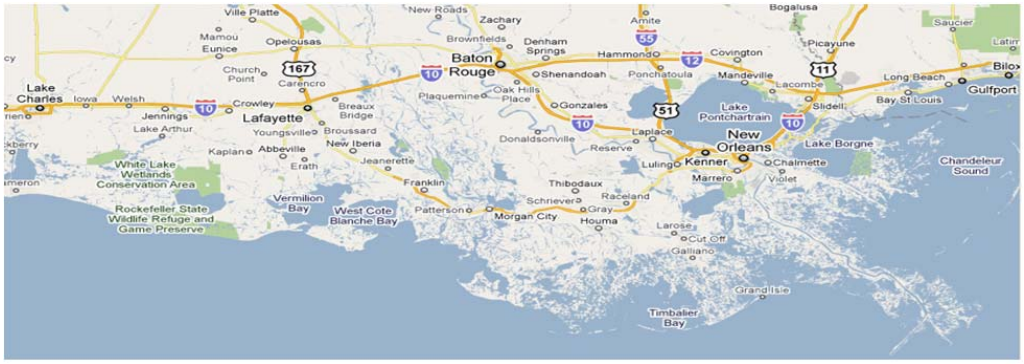
	Work	Pop
Inhalation	115	74
Eye contact	8	1
Skin contact	38	5
Ingestion	1	6
Other*	149	0
Total	311	86

*Includes heat-related cases

Location of exposure

	Work	Pop
Shore of ...or Parish		
Plaquemines	83	17
St Bernard	11	6
Orleans	2	21
Jefferson	23	20
St. Tammany	0	10
Tangipahoa	0	2
Lafourche	30	1
Terrebonne	32	1
Assumption	0	1
St. Mary	1	1
Lafayette	0	1
Offshore	98	1
Unknown	31	4
Total	311	86

Map of Southern Louisiana



Illness
Health Care Utilization

Illness Information			
		Work	Pop
Respiratory:	Nose irritation	14	9
	Nose bleed	2	2
	Throat irritation	36	23
	Shortness of breath/difficulty breathing	24	15
	Aggravation of existing asthma	4	11
	Aggravation of existing respiratory illness (COPD)/other	1	4
	Cough	30	14
	Wheezing	4	4
Eye	Eye irritation	17	22
	Blurry vision	9	1
GI	Nausea	88	30
	Vomiting	62	12
	Diarrhea	21	4
Cvasc	Chest pain	22	0
	Irregular beat/rapid beat	8	0
Skin	Rashes	32	2
	Other	16	4
Neuro	Headache	116	37
	Dizziness	74	5
	Tremors	4	0
	Altered Taste	7	1
	Syncope	15	0
General	Weakness/Fatigue	64	2
	Diaphoresis	9	0
	Fever	10	1
Total Reported Symptoms*		689	203
***Cases may report more than one symptom			
Total Cases		311	86

Health care utilization

		Work	Pop
Type of health care obtained			
	Call, no care delivered	11	58
	Emergency department/Hospital	162	10
	Clinic /Physician office/Urgent Care	138	18
Total		311	86
Hospitalization: All were short, generally 1 day		18	0

Clusters

01-05/13/10: Sixteen oil rig workers were exposed to fumes reported to be dispersant. They experienced nausea, vomiting and flu-like symptoms. They were sent to a medical clinic for evaluation. By the time they arrived, most symptoms had been alleviated. They were examined, treated symptomatically and released immediately.

02-05/13/2010: Five offshore oil rig workers complained of irritative symptoms after being exposed to fumes thought to be dispersant. They were sent to medical clinic, examined, treated symptomatically and released immediately.

03-05/26/10 Seven clean-up workers from 5 different vessels busting oil-sheen for several weeks were hospitalized with complaints of nausea, headache, burning throat and chest pain. Six patients were discharged within 1 day of admission; one was discharged after an additional day of testing. An investigation by CDC/NIOSH indicated that the symptoms were likely due to several contributing factors, including unpleasant odors, heat, and fatigue (www.cdc.gov/niosh/topics/oilspillresponse/gulfspillhhe.html).

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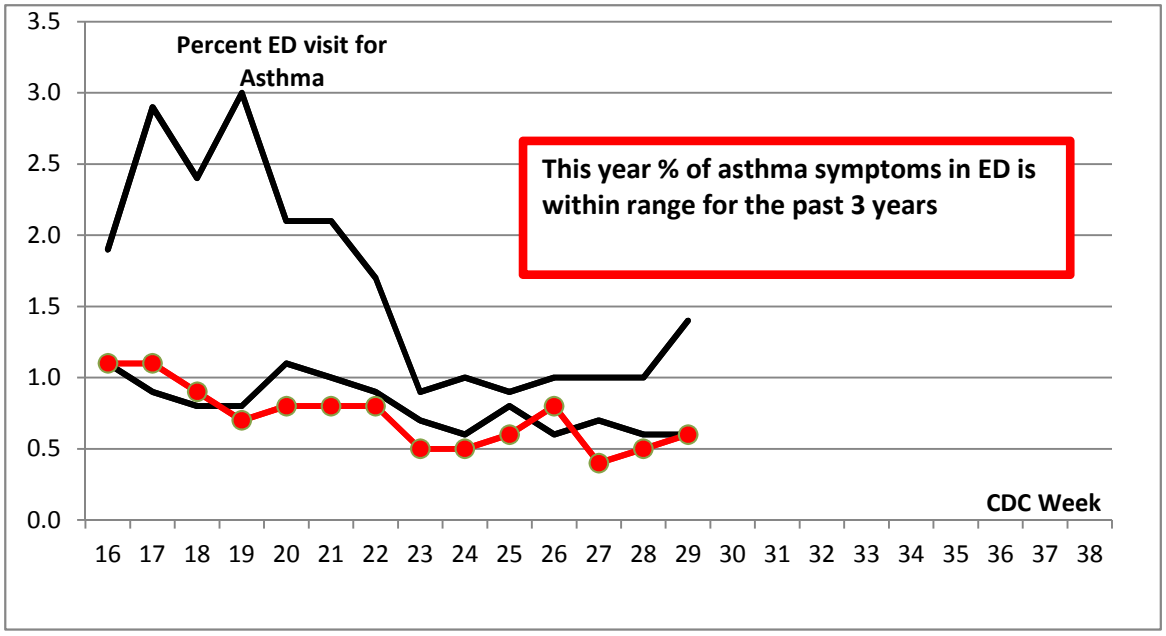
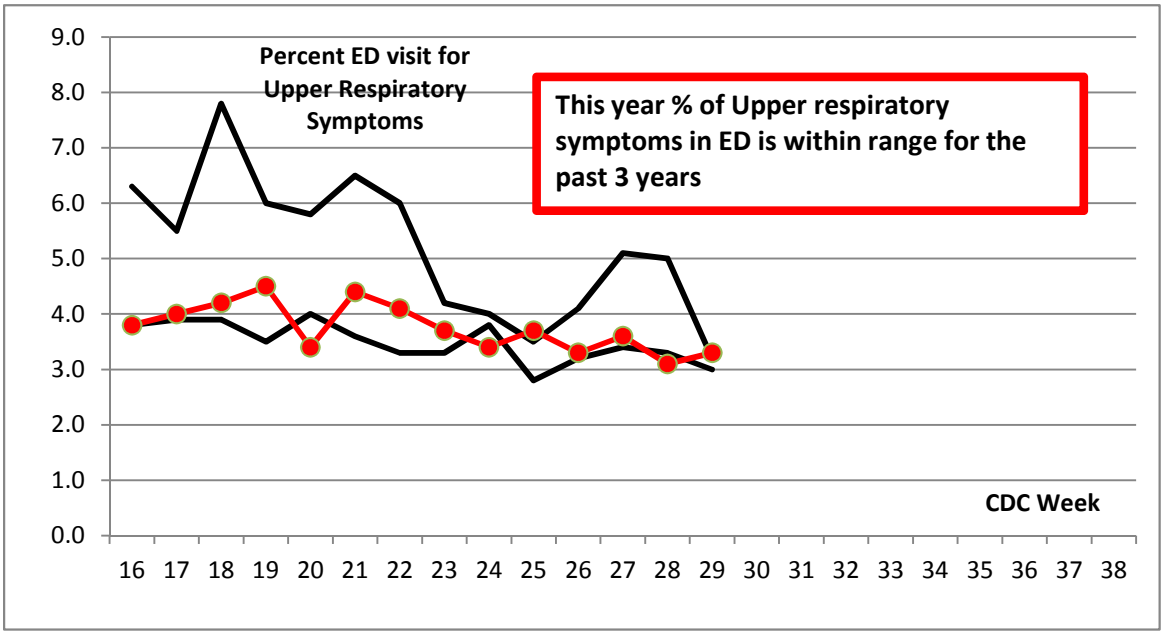
Infectious Diseases Epidemiology currently flags ED records when Chief Complaint data indicate specific syndromes. For the purpose of this surveillance, "Asthma" and "Upper Respiratory" symptoms are of interest.

The black lines (smooth, no dots) represent the lowest and the highest percentages observed in the past 3 years. The red lines (with dots) represent the percentages observed this year. The syndromic surveillance does not show any higher rates in the GNO area.

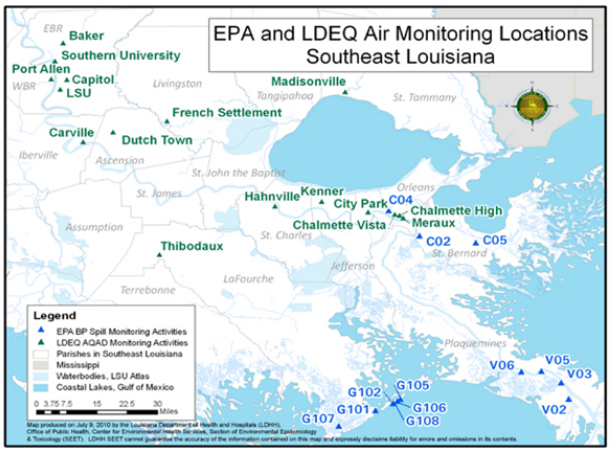




Air surveillance

1. **EPA**

EPA performs 24-hour air sampling for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and particulate matter (PM2.5) using stationary air monitors at 9 sites across Southeastern Louisiana (see map). These monitors are also used for continuous hourly monitoring of hydrogen sulfide (H2S), sulfur dioxide (SO2), and PM10. EPA's mobile TAGA (Trace Atmospheric Gas Analyzer) unit performs real-time episodic monitoring of H2S, SO2, benzene, toluene, xylene, and components of the dispersant being used on the oil spill.



2. **Louisiana Department of Environmental Quality's (LDEQ) Air Quality Assessment Division (AQAD)**

LDEQ monitors levels of H2S, SO2, total non-methane organic carbon (TNMOC), and PM2.5 using ambient air monitors located in a number of cities across Southeastern Louisiana (see map).

3. **Center for Toxicology and Environmental Health, LLC (CTEH)**

CTEH is a private company working with BP to monitor the effects of the oil spill. CTEH monitors VOCs, H_2S, SO_2, and particulate matter (PM2.5 and PM10) along the Gulf shores from Galveston, TX to Appalachee Bay, FL.

SUMMARY of EPA AIR DATA, August 18, 2010 – August 25, 2010

– None of the volatile organic carbons (VOCs) related to the oil spill were detected at concentrations above the screening values in 24-hour air sampling averages.

– Hydrogen sulfide (H2S) levels (1-hour averages) remained below concentrations observed to cause health problems. The lowest observable adverse effects level for H2S is 2 ppm (or 2780 ug/m3) (from ATSDR Toxicological Profile for H2S).

– PM10 readings exceeded the screening value at a monitor in Chalmette on August 18 and at monitors in Grand Isle on August 19 and August 20, but these readings did not stay elevated long enough to be of concern. [NOTE: Particulate matter measurements are affected by humidity. Readings trend higher with higher humidity levels.]

– 1-hour averages of PM2.5 levels were above the screening values at monitors in Venice, Grand Isle, and Chalmette on August 22; at a monitor in Venice on August 23; and at monitors in Venice and Grand Isle on August 24. However, at these times PM2.5 levels did not stay elevated long enough to be of concern.

– No volatile organic carbons (VOCs) related to the oil spill were detected by EPA's TAGA bus on any of its Louisiana routes.

AQAD reports and CTECH reports are no longer being released on a daily basis.

Screening Values for MS Canyon 252 Oil Spill-Related Contaminants

Contaminants	Scr Value	Source
Volatile Organic Compounds (VOCs) (Louisiana)		
Benzene	29 ug/m3	Acute MRL
Ethylbenzene	43000 ug/m^3	Acute MRL
Isopropylbenzene (Cumene)	4000 ug/m3	HQ=10
Naphthalene	30 ug/m^3	HQ=10
Toluene	3800 ug/m^3	Acute MRL
m-, p-, or o-Xylene	8700 ug/m^3	Acute MRL
PAHs (Gulf coastline, not measured in Louisiana)		
Benzo (a) anthracene	8.7 ng/m^3	RBC
Benzo (a) pyrene	0.87 ng/m^3	RBC
Benzo (b) fluoranthene	8.7 ng/m^3	RBC
Benzo (k) fluoranthene	8.7 ng/m^3	RBC
Chrysene	87 ng/m^3	RBC
Dibenz (a,h) anthracene	0.8 ng/m^3	RBC
Indeno(1,2,3-cd)pyrene	8.7 ng/m^3	RBC

Particulate Matter (Louisiana)		
PM10	150 ug/m^3	24-hour Level of Concern
PM2.5	35 ug/m^3	
H2S	0.07 ppm	Acute EMEG
SO2	0.01 ppm	Acute EMEG
Dispersant Components (Louisiana)		
2-butoxyethanol	330 ppb	RfC
1-(2-butoxy-1-methlyethoxy)-2-propanol	7 ppb (also known as Dipropylene Glycol Mono Butyl Ether)	RfC

The Acute Minimal Risk Level (MRL), Hazard Quotient (HQ = 10), and 24-hour Level of Concern are EPA's primary Deep Water Horizon screening values for air. Risk-based Concentrations (RBC) are calculated by EPA Mid-Atlantic Risk Assessment. Acute Environmental Media Evaluation Guides (EMEGs) are calculated by the ATSDR and apply to acute (14 days or less) exposures. The screening value chosen by the EPA for 1-(2-butoxy-1-methlyethoxy)-2-propanol is the reference concentration (RfC) for the most toxic glycol ether.

These screening values are not indicators of potential health risks. They function as triggers for further evaluation when contaminant concentrations exceed the screening values.