



Issue Date: 06-18-08

Page: 1 of 7

Approver: Joe Berry

**Berry Bros. General Contractors, Inc.
Corporate Policy Procedure**

**(HSE) Health, Safety & Environmental
Policies and Procedures Manual**

Section # 09

Doc # SWP 09

Revision: 2


BENZENE PROGRAM

CONTENTS	SUBPART
PRUPOSE	A
SCOPE	B
RESPONSIBILITIES	C
BENZENE IN THE ENVIRONMENT	D
SOURCES OF BENZENE	E
PERMISSABLE EXPOSURE LIMITS	F
WHEN IS RESPIRATOR PROTECTION REQUIRED	G
RESPIRATORY SELECTION	H
PROTECTIVE CLOTHING	I
MEDICAL SURVEILLANCE	J
EMPLOYEE INFORMATION AND TRAINING	K
HAZARD DATA CHARACTERISTICS	L
ACUTE HEALTH EFFECTS	M
CHRONIC HEALTH EFFECTS	N
PHYSICAL HAZARDS	O
EXPOSURE LIMITS	P

SUBPART A - PURPOSE

The purpose of this plan is to:

- Create awareness among our workforce of the potential hazards of benzene.
- Provide a consistent format for training employees on the proper procedures to be used when working with benzene.
- Minimize the possibility of injury or harm to our employees who engage in operations that use benzene.
- Demonstrate our company's compliance with all requirements regarding operations that use benzene.

	Berry Bros. General Contractors, Inc. Corporate Policy Procedure (HSE) Health, Safety & Environmental Policies and Procedures Manual	
Issue Date: 06-18-08		Section # 09
Page: 2 of 7		Doc # SWP 09
Approver: Joe Berry		Revision: 2
BENZENE PROGRAM		

SUBPART B - SCOPE

This program applies to all BBGCI employees who may use benzene or benzene containing solutions. It does not apply to the storage, dispensing, sale or use of gasoline, motor fuels or other fuels containing benzene. Products containing benzene is not intended for use at this facility.

If benzene were scheduled to be used, a written program would be developed and implemented that would take into account engineering and work practice controls and include a list of possible locations where employees may be exposed. This is per the terms and conditions set forth in the OSHA standard 29 CFR 1910.1028(f)(2)(ii). The plan would have to be reviewed and revised to reflect the most recent exposure monitoring data to maintain compliance.


SUBPART C - RESPONSIBILITIES

Berry Bros.' environmental, safety, and health department is responsible for:

- Developing and implementing the Benzene Program.
- Monitoring compliance with the OSHA Standard-29 CFR 1910.1028.
- Providing general Benzene Safety training.
- Conducting exposure assessments and evaluating exposure control measures as necessary.
- Investigating accidents; and maintaining employee exposure records.

SUBPART D - BENZENE IN THE ENVIRONMENT

- Industrial processes are the main source of benzene in the environment.
- Benzene can pass into the air from water and soil.
- It reacts with other chemicals in the air and breaks down within a few days.
- Benzene in the air can attach to rain or snow and be carried back down to the ground.
- It breaks down more slowly in water and soil, and can pass through the soil into underground water.
- Benzene does not build up in plants or animals.

	Berry Bros. General Contractors, Inc. Corporate Policy Procedure (HSE) Health, Safety & Environmental Policies and Procedures Manual	
Issue Date: 06-18-08		Section # 09
Page: 3 of 7		Doc # SWP 09
Approver: Joe Berry		Revision: 2
BENZENE PROGRAM		

SUBPART E - SOURCES OF BENZENE

- Outdoor air contains low levels of benzene from tobacco smoke, automobile service stations, exhaust from motor vehicles, and industrial emissions.
- Indoor air generally contains higher levels of benzene from products that contain it such as glues, paints, furniture wax, and detergents.
- Air around hazardous waste sites or gas stations will contain higher levels of benzene.
- Leakage from underground storage tanks or from hazardous waste sites containing benzene can result in benzene contamination of well water.
- People working in industries that make or use benzene may be exposed to the highest levels of it.
- A major source of benzene exposure is tobacco smoke.

SUBPART F - PERMISSIBLE EXPOSURE LEVELS

- Berry Bros. shall institute engineering controls and work practices to reduce and maintain employee exposure at or below the Benzene PEL. The PEL Level of Benzene is 10ppm as an 8-hour TWA.
- If the engineering controls and work practices cannot be implemented to bring the benzene exposure level to the acceptable PEL, which is 10ppm as an 8-hour TWA. Then a respirator shall be used. The Respirator shall be in compliance with paragraph (g) for 1910.1028.
- The benzene program is available to all employees upon request, and affected employee representatives.

SUBPART G - WHEN IS RESPIRATOR PROTECTION REQUIRED

- Time period necessary to implement engineering controls or work practices.
- When engineering and work practices are not feasible.
- In emergencies.

SUBPART H - RESPIRATORY SELECTION

- Respiratory selection shall be selected according to airborne concentrations of benzene or condition of use. These shall be approved by NIOSH.



**Berry Bros. General Contractors, Inc.
Corporate Policy Procedure**

Issue Date: 06-18-08

Section # 09

Page: 4 of 7

**(HSE) Health, Safety & Environmental
Policies and Procedures Manual**

Doc # SWP 09

Approver: Joe Berry

Revision: 2

BENZENE PROGRAM

Respiratory Protection for Benzene

Airborne concentrations of benzene or condition of use	Respirator type
Less than or equal to 10ppm	Half-masked respirator with organic vapor cartridge
Less than or equal to 50ppm	-Full-face piece respirator with organic vapor cartridge. - Full gas mask with chin style canister
Less than or equal to 100ppm	Full-face piece powered air-purifying respirator with organic vapor canister.
Less than or equal to 1,000ppm	Supplied air respirator with full-face piece in positive pressure mode.
Greater than 1,000ppm or unknown concentration	-Self-contained breathing apparatus with full-face piece in positive pressure mode. - Full-face piece positive-pressure supplied-air respirator with auxiliary self-contained air supply.
Escape	-Any organic vapor mask -Any self-contained breathing apparatus with full face piece
Firefighting	Full-face piece self-contained breathing apparatus in positive-pressure mode.


- Berry Bros. will supply the appropriate respirator from the table for all possibly affected employees.

SUBPART I - PROTECTIVE CLOTHING

Personal protective clothing as equipment shall be worn where appropriate to prevent eye contact and limit dermal exposure to liquid benzene. Protective clothing and equipment shall be provided at no cost to the employee and Berry Bros. will assure its use where appropriate. Eye and face protection shall meet the requirements of 29CFR 1910.133.

SUBPART J - MEDICAL SURVEILLANCE

Berry Bros. will make available a medical surveillance program for employees who are or may be exposed to benzene at or above the action level 30 or more days per year above the PEL 20 or more days-for employees who have been exposed to more than 10ppm of benzene for 30 or more days in a year prior to the effective date.

	Berry Bros. General Contractors, Inc. Corporate Policy Procedure (HSE) Health, Safety & Environmental Policies and Procedures Manual	
Issue Date: 06-18-08		Section # 09
Page: 5 of 7		Doc # SWP 09
Approver: Joe Berry		Revision: 2
BENZENE PROGRAM		

SUBPART K - EMPLOYEE INFORMATION AND TRAINING

All employees are trained in benzene awareness on an annual basis to the **awareness level.**

1. Requirements of the OSHA Standard-29 CFR 1910.1028.
2. Explanation of Berry Bros.' Benzene Safety program.
3. Contents of the Material Safety Data Sheet.
4. Description of the medical surveillance program.
5. Description of the health hazards associated with exposure.
6. Signs and symptoms of exposure.
7. Instructions to report any signs or symptoms that may be attributable to benzene exposure.
8. Description of the operations in the work area where benzene is present.
9. Work practices to reduce exposure, including engineering and administrative controls and Personal Protective Equipment required.
10. Instructions for handling spills and emergency procedures (contingency plans/emergency response plans).
11. Host employer/client plans will be reviewed and made available to employees.


This training must be conducted whenever a new hazard is introduced into the work area, when the employee transfers to another job, and whenever the employee demonstrates behavior that indicates a lack of understanding of the safe handling of chemicals.

Supervisors are responsible for ensuring that employees with potential exposure to benzene receive the appropriate training **prior** to working with the substance.

The individual presenting the training session must document all training and Berry Bros.' safety department will keep a copy of the training records.

SUBPART L - HAZARD DATA CHARACTERISTICS

Benzene can affect your body through inhalation, skin/eye contact, or accidental ingestion. Benzene is a clear, toxic, colorless liquid with a distinctive sweet odor. However the odor does not provide adequate warning of its hazard. In addition, it is not soluble in water and is flammable.

	Berry Bros. General Contractors, Inc. Corporate Policy Procedure (HSE) Health, Safety & Environmental Policies and Procedures Manual	
Issue Date: 06-18-08		Section # 09
Page: 6 of 7		Doc # SWP 09
Approver: Joe Berry		Revision: 2
BENZENE PROGRAM		

SUBPART M - ACUTE HEALTH EFFECTS

INHALATION

Exposure to high concentrations of benzene may cause breathlessness, irritability, euphoria or giddiness. It may cause irritation of the eyes, nose and respiratory tract. It may also cause headache, dizziness, nausea or intoxication. Severe exposures can lead to convulsions and loss of consciousness.

SKIN ABSORPTION/EYE CONTACT

Contact with benzene may cause irritation of the skin and eyes. Benzene can be absorbed into the skin and cause dermatitis. Eye contact may result in temporary corneal damage.

INGESTION

Benzene ingestion may cause nausea, vomiting, headache, dizziness and gastrointestinal irritation.

SUBPART N - CHRONIC HEALTH EFFECTS

Repeated or prolonged exposure to benzene, even at relatively low concentrations, may result in various blood disorders, ranging from anemia to leukemia. Benzene has been shown to cause cancer in humans. Benzene exposure has been associated with cancers such as myeloid leukemia, Hodgkin's disease and lymphomas. Many blood disorders associated with benzene exposure may occur without symptoms.

SUBPART O - PHYSICAL HAZARDS

Benzene poses a serious fire and explosion hazard when exposed to heat or flame. Benzene vapor is heavier than air and may collect in low areas. Vapors can also travel for some distance and may come into contact with ignition sources. For that reason smoking will be prohibited in areas where Benzene is present. No smoking signs will be posted and fire extinguishers will be readily available onsite.



**Berry Bros. General Contractors, Inc.
Corporate Policy Procedure**

Issue Date: 06-18-08

Section # 09

Page: 7 of 7

**(HSE) Health, Safety & Environmental
Policies and Procedures Manual**

Doc # SWP 09

Approver: Joe Berry

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BENZENE PROGRAM

SUBPART P - EXPOSURE LIMITS

OSHA has issued the following guidelines for employee exposures to reduce the potential for adverse health effects:

Action Level

The concentration of a chemical in air, calculated as an 8-hour time-weighted average, which initiates certain required activities such as exposure monitoring and medical surveillance. **The action level for benzene is 0.5 parts per million (0.5 ppm).**

Permissible Exposure Limit (PEL)

The greatest concentration, calculated as an 8-hour time-weighted average, to which nearly all workers may be repeatedly exposed during their 8-hour work schedule without experiencing adverse health effects. **The PEL for benzene is 1 part per million (1 ppm).**

Short Term Exposure Limit (STEL)

The greatest concentration which nearly all workers may be exposed during any one 15-minute period without experiencing adverse health effects. **The STEL for benzene is 5 parts per million (5 ppm)**

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