



## Radiation Protection

You are here: [EPA Home](#) [Radiation Protection](#) [References](#) [Reference Information](#) Radiation Glossary J-M

[Students/Teachers](#) [Librarians](#) [Reporters](#) [General Public](#) [Technical Users](#)

[PROGRAMS](#) [TOPICS](#) [REFERENCES](#)

# Radiation Glossary J-M

---

[a](#) | [b](#) | [c](#) | [d](#) | [e](#) | [f](#) | [g](#) | [h](#) | [i](#) | [j](#) | [k](#) | [l](#) | [m](#) | [n](#) | [o](#) | [p](#) | [q](#) | [r](#) | [s](#) | [t](#) | [u](#) | [v](#) | [w](#) | [xyz](#)

**JK**

### Karst

a type of topography in which there are numerous sinkholes and large voids, such as caves. Karst is caused when soluble rocks dissolve. Karst may form when rainwater, reacting with carbon dioxide from the air and forming carbonic acid, seeps through the soil into the rock. Soluble rock includes limestone and evaporite rocks, such as halite (salt) and gypsum.

If substantial and abundant karst features were present at the Waste Isolation Pilot Project, this could increase the speed at which releases of radionuclides travel away from the repository through the subsurface.

Evaluation of KARST at the WIPP Site (PDF) (127 pp, 7.29MB)  
Assessment of the Potential for Karst in the Rustler Formation at the WIPP Site

**L**

**M**

### Reference Information

People and Discoveries  
Commonly Encountered  
Radionuclides

Americium-241  
Cesium-137  
Cobalt-60  
Iodine-129 &-131  
Plutonium  
Radium  
Radon  
Strontium-90  
Technetium-99  
Tritium  
Thorium  
Uranium

Glossary  
Acronyms  
A-Z Subject Index  
Site Map

### Land Application

application of sewage sludge or other waste product to land to condition the soil or fertilize crops or other vegetation.

### Land Disposal Restrictions

restrictions mandated by the 1984 HSWA amendments to RCRA, which prohibit the disposal of hazardous wastes into or on the land unless the waste meets treat ability standards of lower toxicity.

**Lead-210**

An unstable form of lead in the uranium-238 decay chain, lead-210 is a significant source of beta radiation.

**Linear Energy Transfer (LET)**

measures the rate of energy deposited per unit of distance a particle penetrates matter (for example, tissue). The higher the LET, the more ionizing the radiation. As a result, interactions with tissue (ionizations that damage the tissue) are more densely clustered.

**Linear No Threshold Hypothesis**

The theory that the number of cancers and some other effects of exposure to low levels of radiation are proportionate to the number of cancers from exposure to higher levels of radiation. By extension, there is no level of exposure that carries no risk of health effect, no matter how small the risk or exposure (no "threshold" exposure). The precise effects are uncertain because it is very difficult to measure the effects of low levels of radiation.

**Liquid Scintillation Cocktail (LSC)**

a common fluid used in medical laboratories to analyze DNA and proteins. It often uses radioactive tracers and RCRA listed hazardous materials such as toluene and xylene. The combination of the two make it a mixed waste. By volume it is the most common form of commercially generated (non-DOE) mixed waste (71% in a 1990 national study).

**Low-Activity Radioactive Waste**

waste containing very low concentrations of radioactive material

**Low-Level Mixed Waste (LLMW)**

LLMW is waste that contains LLRW and hazardous waste.

**Low-Level Radioactive Waste**

radioactively contaminated industrial or research waste such as paper, rags, plastic bags, water-treatment residues. It is waste that does not meet the criteria for any of three other categories of radioactive waste: spent nuclear fuel and high-level radioactive waste; transuranic radioactive waste; or uranium mill tailings. Its categorization does not depend the level of radioactivity it contains.

**Manhattan Project**

the national program to develop the first atomic weapons during World War II

**Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)**

a cooperative effort among EPA, the Nuclear Regulatory Commission, Department of Energy, and Department of Defense; MARSSIM describes appropriate methods to design surveys to assess radioactive contamination at sites.

**MARSSIM**

This Web site provides information on training, obtaining a copy of MARSSIM, tools for implementing MARSSIM and upcoming meeting information.

**Maximum Contaminant Level (MCL)**

the amount of a contaminant that may be present in drinking water under the Safe Drinking Water Act. MCLs are the standards that drinking water treatment systems must meet.

**Maximum Contaminant Level Goal (MCLG)**

the risk-based level of a contaminant that may be present drinking water. under the Safe Drinking Water Act. The MCLG for carcinogens is zero. The MCL may be higher than the MCLG because of the technical or economic feasibility of meeting the MCLG.

**Micro**

symbol:  $\mu$ , one millionth of a unit. For example a microgram (  $\mu\text{g}$  ) is one millionth of a gram.

**Micron**

one millionth of a meter

**Mills**

industrial operations that process ores to extract desired minerals.

**Mixed Waste**

waste which contains both hazardous waste (as defined by RCRA and its amendments) and radioactive waste (as defined by AEA and its amendments). It is jointly regulated by NRC or NRC's Agreement States and EPA or EPA's RCRA Authorized States. The fundamental and most comprehensive statutory definition is found in the Federal Facilities Compliance Act (FFCA) where Section 1004(41) was added to RCRA: "The term 'mixed waste' means waste that contains both hazardous waste and source, special nuclear, or by-product material subject to the Atomic Energy Act of 1954."

**Mixed Transuranic Waste**

waste which contains both hazardous waste (as defined by RCRA and its amendments) and transuranic waste

**Model (mathematical model)**

a physical or mathematical representation of a natural system (reality) intended to mimic the behavior of the real system, allowing description of data and predictions about the system.

**Molecule**

a combination of two or more atoms that are chemically bonded. A molecule is the smallest unit of a compound that can exist by itself and retain all of its chemical properties.

**Monitoring**

the use of sampling and detection equipment to determine the levels of radiation or other toxic materials in land, air, or water.

National Environmental Monitoring  
This page provides information about different RadNet  
sampling programs.

**Monofill**<http://www.epa.gov/radiation/glossary/termjklm.html#j>

Last updated on Thursday, March 24, 2011

landfills where only sewage sludge is disposed. Monofills include trenches and area fills.

**Memorandum of Understanding (MOU)**

an agreement between two (or more) parties, such as two Federal agencies, that describes how responsibilities will be shared for a particular situation. For example, EPA has an MOU with DOE to share information related to treatment of mixed waste.

**mrem**

millirem, one thousandth of a rem

**Municipal Landfill**

landfill that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile. Such a landfill may be publicly or privately owned.

[Understanding Radiation in Your Life, Your World](#)

[Programs](#) · [Topics](#) · [References](#)