



**Diamond Shamrock**  
Coal Company

November 28, 1984

RECEIVED  
DEC 13 1984

DIVISION OF  
OIL, GAS & MINING

Wayne Hedberg  
State of Utah  
Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center  
Suite 350  
Salt Lake City, Utah 84180

Dear Wayne,

I am writing to request of you and the Division that Trail Mountain Coal Company be granted an exemption from UMC 817.42 for discharge of underground water to Cottonwood Creek without mixing of drainage from surface areas and without passing through our sediment pond.

The water we would discharge from our underground mine would come from our mine sump and would meet all state and federal effluent limitations and would not degrade the quality of the receiving waters. (see attachment I)

If granted an exemption, Trail Mountain Coal Company would incorporate our mine sump and discharge of mine sump into our hydrological monitoring. Also, we would install a flow meter and keep a log as to dates of discharge and flow for the Divisions inspection.

Your response to this matter is greatly appreciated. Should you have any questions or need additional information please call me at 748-2140.

Sincerely,

Allen P. Childs  
Engineer

APC/bka

cc: Calvin Sudweeks / Dept. of Health

Discharge would be from Trail Mountain Coal Companys underground main mine sump (see fig. 7-14).

Receiving waters would be Cottonwood Creek (see fig. 7-4 & 7-9).

COMPARISON OF ANALYSIS:

Cottonwood Creek surface water - I (SW-1) (see fig. 7-9).

Main mine sump (see fig. 7-9).

<u>PARAMETER</u>	<u>SW-1</u>	<u>MINE</u>	<u>STATE OF</u>	<u>UMC</u>	<u>NPDES</u>
		<u>SUMP</u>	<u>UTAH (MCL'S)</u>		
ACIDITY (mg/l CaCo )	1.0	1.0			
ALKALINITY, TOTAL (mg/l CaCo )	252	275			
ALKALINITY, BICARB (mg/l HCO )	307	335			
ALKALINITY, CARB. (mg/l CaCo )	1.0	1.0			
CHLORIDE (mg/l)	15	16	250		
CONDUCTIVITY (umhos/cm)	625	900			
FLUORIDE (mg/l)	0.33	0.81			
NITROGEN, NITRATE (mg/l)	0.09	0.01	10.		
OIL & GREASE (mg/l)	0.5	2.6			10.0
PH (units)	7.6	7.55	6.5-8.5	6.5-9.0	6.5-9.0
PHOSPHORUS, ORTHO (mg/l)	0.01	0.01			
PHOSPHORUS, TOTAL (mg/l)	0.02	0.01			
SOLIDS, TOTAL DISSOLVED (mg/l)	337	512	2000		650
SOLIDS, TOTAL SUSPENDED (mg/l)	4.0	1.0		45	70
SULFATE (mg/l)	47	145	500		
TURBIDITY (NTU)	3.5	0.4			
CATION, TOTAL (mg/l)	6.45	10.04			
ANION, TOTAL (mg/l)	6.45	10.05			
FLOW (cfs)	9.7				

<u>PARAMETER</u>	<u>SW-1</u>	<u>MS</u>	<u>STATE OF</u> <u>UTAH MCL'S</u>	<u>UMC</u>	<u>NPDES</u>
ALUMINUM (mg/l)	0.05	0.05			
ARSENIC (mg/l)	0.001	0.001	0.05		
BARIUM (mg/l)	0.1	0.1	1.		
BORON (mg/l)	0.40	0.60			
CADMIUM (mg/l)	0.005	0.005	0.010		
CALCIUM (mg/l)	54	38			
CHROMIUM (mg/l)	0.05	0.05	0.05		
COPPER (mg/l)	0.02	0.02	1.		
IRON (mg/l)	0.10	0.07	0.3	7.0	2.0
LEAD (mg/l)	0.005	0.05	0.05		
MAGNESIUM (mg/l)	38	29			
MANGANESE (mg/l)	0.02	0.01	0.05	4.0	
MERCURY (mg/l)	0.2	0.2	0.002		
NICKEL (mg/l)	0.04	0.04			
POTASSIUM (mg/l)	2	7			
SELENIUM (mg/l)	0.005	0.005	0.01		
SODIUM (mg/l)	15	128			
VANADIUM (mg/l)	0.2	0.2			
ZINC (mg/l)	0.005	0.012	5		

REGULATIONS PERTAINING TO:  
SURFACE EFFECTS OF UNDERGROUND COAL MINING ACTIVITIES

UTAH BOARD & DIVISION OF OIL, GAS & MINING

EFFLUENT LIMITATIONS

U M C

(5) Sedimentation ponds required by this Section shall be constructed in accordance with Section UMC 817.46, in appropriate locations before beginning any underground coal mining activities in the affected drainage area.

(6) Where the sedimentation pond or series of sedimentation ponds is used so as to result in the mixing of drainage from the disturbed areas with drainage from other areas not disturbed by current surface coal mining and reclamation activities or underground coal mining activities, the permittee shall achieve the effluent limitations below for all of the mixed drainage when it leaves the permit area.

(7) Discharges of water from areas disturbed by underground coal mining activities shall be made in compliance with all State and Federal water quality laws and regulations and, at a minimum, the following numerical effluent limitations:

Effluent limitations, in milligrams per liter (mg/l),  
except for pH

Effluent Characteristics <sup>1</sup>	Maximum Allowable <sup>2</sup>	Average of daily values for 30 consecutive discharge days <sup>6</sup>
Iron, total.....	7.0	3.5
Manganese, total <sup>3</sup> .....	4.0	2.0
Total suspended solids <sup>4</sup> ...	45.0	25.0
pH <sup>5</sup> .....	Within the range 6.5 to 9.0	

<sup>1</sup> To be determined according to collection and analytical procedures adopted by the United States Environmental Protection Agency's regulations for waste water analyses (40 CFR 136).

<sup>2</sup> Based on representative sampling.

<sup>3</sup> The manganese limitation shall not apply to untreated discharges which are alkaline as defined by the Environmental Protection Agency (40 CFR 434).

NPDES  
TRAIL MOUNTAIN COAL COMPANY  
Permit UT - 0023728

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Active Mining Operations)

1. During the period beginning immediately and lasting through December 31, 1986 the permittee is authorized to discharge from all point sources associated with active mining operations indicated on the area maps submitted and approved pursuant to Part III, A.1. Such discharges shall be limited and monitored by the permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATION a/</u>			<u>MONITORING REQUIREMENTS</u>	
	<u>Daily Average</u>	<u>7-Day Average</u>	<u>Daily Maximum</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow - M <sup>3</sup> /Day, gpd	N/A	N/A	N/A	Monthly	Measured a/ c/
Total Suspended Solids	25 mg/l	35 mg/l	70 mg/l	Monthly	Grab
Total Iron	N/A	N/A	2.0 mg/l b/	Monthly	Grab
Total Dissolved Solids	N/A	N/A	650 mg/l	Monthly	Grab

Oil and Grease shall not exceed 10 mg/l and shall be monitored monthly by a grab sample.

The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units and shall be monitored twice per month by grab sample.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

There shall be no discharge of sanitary wastes.

2. See Schedule of Compliance. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): At any point which is representative of each discharge prior to its mixing with the receiving stream and as indicated by the solid triangles on the current area maps submitted pursuant to Part III, A.1.

a/ See Part I, C.3.

b/ If any Iron analysis exceeds this limitation, the State of Utah and the permittee shall review the actions necessary to achieve compliance with the limitation and the continued appropriateness of the limitation. In no event shall the discharge exceed a daily maximum limitation for Total Iron of seven (7) milligrams per liter.

c/ For the intermittent discharges, the duration of the discharge shall be reported.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Active Mining Operations)  
(Continued)

3. Any overflow, increase in volume of a discharge or discharge from a bypass system caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour, precipitation event (or snowmelt of equivalent volume) shall comply with the following limitation instead of the Total Suspended Solids limitations contained in Part I.A.1.:

<u>Effluent Characteristic</u>	<u>Daily Maximum</u>
Settleable Solids	0.5 ml/l

Settleable Solids shall be monitored weekly during periods of precipitation.

4. Any overflow, increase in volume of a discharge or discharge from a bypass system caused by precipitation within any 24-hour period greater than the 10-year, 24-hour, precipitation event (or snowmelt of equivalent volume) shall comply with the following limitations instead of the otherwise applicable limitations:

~~The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units.~~

- The alternate limitations provided in Parts I.A.3. and I.A.4., shall apply only if:
- The treatment facility is designed, constructed, operated and maintained to contain at a minimum the volume of water which would drain into the treatment facility during the 10-year, 24-hour, precipitation event (or snowmelt of equivalent volume);
  - The treatment facility is designed, constructed, operated and maintained to consistently achieve the effluent limitations set forth in Part I.A.1., during periods of no precipitation (or snowmelt).
6. The operator shall have the burden of proof that the preceding conditions have been met in order to qualify for the alternate limitations in Parts I.A.3. and I.A.4. The alternate limitations in Parts I.A.3. and I.A.4. shall not apply to treatment systems that treat underground mine water only.

## A. MANAGEMENT REQUIREMENTS (Continued)

## 4. Facilities Operation

- a. The permittee shall at all times maintain in good working order and operate as efficiently as possible, all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.
- b. Dilution water shall not be added to comply with effluent requirements.

~~B. Bypass of Treatment Facilities~~

## a. Definitions

- (1) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
- (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

## b. Bypass Not Exceeding Limitations

~~The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs c and d of this Section.~~

## c. Notice

## (1) Anticipated Bypass

If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible, at least ten (10) days before the date of the bypass.

## (2) Unanticipated Bypass

The permittee shall submit notice of an unanticipated bypass as required in Part II, A.2.

## A. MANGEMENT REQUIREMENTS

## 1. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the environment resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

## 2. Noncompliance Notification

If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Regional Administrator and the State of Utah with the following information, in writing, within five (5) days of learning or being advised of such condition:

- a. A description of the discharge and cause of noncompliance; and,
- b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge. This written submission shall not be considered as excusing or justifying the failure to comply with the effluent limitations.

## 3. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new NPDES application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

WATER ANALYSIS

**CERTIFICATE OF ANALYSIS**



O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6369

Client: Trail Mountain Coal Co.  
P. O. Box 370  
Orangeville, Utah 84537

Sample ID: Main Sump  
pH ?  
Cond ?  
? °C  
Flow ? cfs

Date Rec'd 11-12-84

Date Sampled 11-9-84

Time Sampled \_\_\_\_\_

Acidity	<u>&lt; 1.0</u>	mg/l CaCO <sub>3</sub>
Alkalinity, Total	<u>275</u>	mg/l CaCO <sub>3</sub>
Alkalinity, Bicarbonate	<u>335</u>	mg/l CaCO <sub>3</sub>
Alkalinity, Carbonate	<u>&lt; 1.0</u>	mg/l CaCO <sub>3</sub>
Chloride	<u>16</u>	mg/l
Coliform, Fecal	_____	MPN/100 ml
Coliform, Total	_____	MPN/100 ml
Conductivity	<u>900</u>	µmhos/cm
Fluoride	<u>0.31</u>	mg/l
Hardness, Total	_____	mg/l CaCO <sub>3</sub>
Nitrogen, Ammonia	_____	mg/l
Nitrogen, Nitrate	<u>&lt; 0.01</u>	mg/l
Nitrogen, Nitrite	_____	mg/l
Oil & Grease	<u>2.5</u>	mg/l
pH	<u>7.55</u>	Units
Phosphorus, Ortho	<u>&lt; 0.01</u>	mg/l
Phosphorus, Total	<u>0.01</u>	mg/l
Solids, Total Dissolved	<u>512</u>	mg/l
Solids, Total Suspended	<u>1.0</u>	mg/l
Sulfate	<u>145</u>	mg/l
Sulfide	_____	mg/l
Turbidity	<u>0.4</u>	NTU
Cation, Total	<u>10.04</u>	mg/l
Anion, Total	<u>10.05</u>	mg/l

Aluminum	<u>&lt; 0.05</u>	mg/l
Arsenic	<u>&lt; 0.001</u>	mg/l
Barium	<u>&lt; 0.1</u>	mg/l
Beryllium	_____	mg/l
Boron	<u>0.60</u>	mg/l
Cadmium	<u>&lt; 0.005</u>	mg/l
Calcium	<u>38</u>	mg/l
Chromium	<u>&lt; 0.05</u>	mg/l
Copper	<u>&lt; 0.02</u>	mg/l
Iron	<u>0.07</u>	mg/l
Lead	<u>&lt; 0.05</u>	mg/l
Magnesium	<u>29</u>	mg/l
Manganese	<u>0.01</u>	mg/l
Mercury	<u>&lt; 0.2</u>	µg/l
Nickel	<u>&lt; 0.04</u>	mg/l
Potassium	<u>7</u>	mg/l
Selenium	<u>&lt; 0.005</u>	mg/l
Silica	_____	mg/l
Sodium	<u>128</u>	mg/l
Vanadium	<u>&lt; 0.2</u>	mg/l
Zinc	<u>0.012</u>	mg/l

Analyst: \_\_\_\_\_

Respectfully submitted *[Signature]*



CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.

O. Box 1140, Huntington, Utah 84528 801-653-2314

Client: Trail Mountain Coal Co.
P. O. Box 370
Orangeville, Utah 84537

Sample ID: SW-1
pH 7.0
Cond 370
7 °C
Flow 9.7 cfs

Lab. No. 6370
Date Rec'd 11-12-84
Date Sampled 11-9-84
Time Sampled 1552

Table with 2 columns: Parameter and Value. Parameters include Acidity, Alkalinity, Chloride, Coliform, Conductivity, Fluoride, Hardness, Nitrogen, pH, Phosphorus, Solids, Sulfate, Turbidity, and Cation/Anion.

Table with 2 columns: Parameter and Value. Parameters include Aluminum, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silica, Sodium, Vanadium, and Zinc.

Analyst:

Respectfully submitted [Signature]

STATE OF UTAH  
PUBLIC DRINKING WATER  
REGULATIONS

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*State of Utah  
Public Drinking Water Regulation*

## WATER QUALITY (MCL'S)

### 3.0 GENERAL

Maximum contaminant levels (MCL'S) are herein established for various substances which may be found in water supplies. "Primary" regulations are established for the protection of human health. "Secondary" regulations are established to deal with the esthetic qualities of drinking water.

The applicable "Primary" standards which follow must be met by all public drinking water systems. The "Secondary" standards are recommended levels which should be met in order to avoid consumer complaint.

The methods used to determine compliance with these maximum contaminant levels are given in Section 4. Analytical techniques which must be followed in making the required determinations shall be given in 40 CFR, Sections 141.21a, 141.22f, 141.24e, f and 41 CFR, Section 141.25.

### 3.1 PRIMARY DRINKING WATER STANDARDS

#### 3.1.1 INORGANIC CHEMICALS

- a. The following are the maximum contaminant levels for inorganic chemicals other than fluoride. These contaminant levels apply to community water systems.

<u>Contaminant</u>	<u>Level mg/l</u>
Arsenic . . . . .	0.05
Barium . . . . .	1.
Cadmium . . . . .	0.010
Chromium . . . . .	0.05
Lead . . . . .	0.05
Mercury . . . . .	0.002
Nitrate (as N) . . . . .	10.
Selenium . . . . .	0.01
Silver . . . . .	0.05
Sodium . . . . .	---- (see Note 1 below)
Sulfate . . . . .	500
Total Dissolved Solids . . . . .	2000 (see Note 2 below)

NOTE:

1. No maximum contaminant level has been established for sodium. However, this contaminant must be monitored and reported in accordance with the requirements of Sections 4.3.1.1.
  2. If TDS is greater than 1000 mg/l, the supplier shall show to the Committee that no better water is available. The Committee shall not allow the use of an inferior source of water if a better source of water (i.e. lower in TDS) is available.
- b. When the annual average of the maximum daily air temperatures for the location in which the community water system is situated is the following, the maximum contaminant level for fluoride in community water system shall be:

<u>Temperature Degree Fahrenheit</u>	<u>Temperature Degree Celsius</u>	<u>Level mg/l</u>
58.4 to 63.8	14.5 to 17.6	2.0
63.9 to 70.6	17.7 to 21.4	1.8
70.7 to 79.2	21.5 to 20.2	1.6

- c. Water serving non-community systems should meet all the requirements of the above Items a and b. As a minimum, however, the MCL for nitrate and sulfate must not be exceeded in any non-community water supply.

### 3.1.2 ORGANIC CHEMICALS

The following are the maximum contaminant levels for organic chemicals. They apply only to community water systems.

	<u>Level mg/l</u>
a. Chlorinated hydrocarbons:	
<u>Endrin</u> 1,2,3,4,10, 10-hexachloro-6, 7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo, endo-5, 8-dimethano naphthalene).	<u>0.0002</u>
<u>Lindane</u> 1,2,3,4,5,6-hexachloro-cyclohexane, gamma isomer).	<u>0.004</u>
<u>Methoxychlor</u> (1,1,1-Trichloro-2,2 bis (p-methoxyphenyl)ethane).	<u>0.1</u>
<u>Toxaphene</u> (C <sub>10</sub> H <sub>10</sub> Cl <sub>8</sub> -Technical chlorinated camphene, 67-69 percent chlorine).	<u>0.005</u>
b. Chlorphenoxys:	
<u>2,4-D</u> , (2,4-Dichlorophenoxyacetic acid).	<u>0.1</u>
<u>2,4,5-TP Silvex</u> (2,4,5-Trichlorophenoxypropionic acid).	<u>0.01</u>

### 3.1.3 TURBIDITY

The maximum contaminant levels for turbidity are applicable to both community water systems and non-community water systems.

The maximum contaminant levels for turbidity in drinking water from surface sources are:

- a. One turbidity unit (TU) as determined by a monthly average pursuant to Section 4.3.3.1 except that five or fewer turbidity units may be allowed if the supplier of water can demonstrate to the Committee that the higher turbidity does not do any of the following:
  1. interfere with disinfection,
  2. prevent maintenance of an effective disinfectant agent throughout the distribution system, or
  3. interfere with microbiological determinations.
- b. Five turbidity units based on an average for two consecutive days pursuant to Section 4.3.3.2c.

The maximum contaminant level for turbidity in drinking water from groundwater sources not subjected to "complete treatment" is 5.0.TU.

### 3.1.4 MICROBIOLOGICAL QUALITY

The maximum contaminant level for coliform bacteria, applicable to community water systems and non-community water systems, are as follows:

- a. When the membrane filter technique is used, the number of coliform bacteria shall not exceed any of the following:
  1. One per 100 milliliters as the arithmetic mean of all samples examined per month pursuant Section 4.3.4.1.
  2. Four per 100 milliliters in more than one sample when less than 20 are examined per month; or
  3. Four per 100 milliliters in more than five percent of the samples when 20 or more are examined per month.
- b. When five tube fermentation method and ten milliliter standard portions are used, coliform bacteria shall not be present in any of the following:
  1. more than ten percent of the portions examined in any month pursuant to Section 4.3.4.1
  2. three or more portions in more than one sample when less than 20 samples are examined per month; or

3. three or more portions in more than five percent of the samples when 20 or more samples are examined per month.
- c. For community or non-community systems that are required to sample at a rate of less than four per month, compliance with paragraphs (a) or (b) of this section shall be based upon sampling during a three month period.

### 3.1.5 RADIONUCLIDES

- a. Radium-226, Radium-228. and gross alpha particle radioactivity in community water systems:

The following are the maximum contaminant levels for Radium-226, and Radium-228, and gross alpha particle radioactivity:

1. Combined Radium-226 and Radium-228--5 pCi/l.
2. Gross alpha particle activity (including Radium-226 but excluding Radon and Uranium)--15 pCi/l.

- b. Beta particle and photon radioactivity from man-made radionuclides in community water systems:

1. The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than four millirem/year.
2. Except for the radionuclides listed in Table 3-1, the concentration of man-made radionuclides causing four mrem total body or organ dose equivalents shall be calculated on the basis of a two liter per day drinking water intake using the 168 hour data listed in "Maximum Permissible Body Burden and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure", NBS Handbook 69 as amended August 1963, U.S. Department of Commerce. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed four millirem/year.

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Table 3-1 Average annual concentrations assumed to produce a total body or organ dose of four mrem/year.

<u>Radionuclide</u>	<u>Critical Organ</u>	<u>pCi per liter</u>
Tritium	Total Body	20,000
Strontium-90	Bone Marrow	8

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### 3.2 SECONDARY DRINKING WATER STANDARDS

The Secondary Maximum Contaminant Levels for public water systems deal with substances which affect the esthetic quality of drinking water. They are presented here as recommended limits or ranges and are not grounds for rejection. The taste of water may be unpleasant and the usefulness of the water may be impaired if these standards are significantly exceeded.

<u>Contaminant</u>	<u>Level</u>
Chloride . . . . .	250 mg/l
Color . . . . .	15 Color Units
Copper . . . . .	1 mg/l
Corrosivity . . . . .	Non-corrosive
Foaming Agents . . . . .	0.5 mg/l
Iron . . . . .	0.3 mg/l
Manganese . . . . .	0.05 mg/l
Odor . . . . .	3 Threshold Odor Number
pH . . . . .	6.5-8.5
Zinc . . . . .	5 mg/l

### 3.3 DEFINITIONS

The following definitions are applicable to Section 3:

Committee - means the Utah Safe Drinking Water Committee.

Community Water System - means a public water system which serves at least fifteen service connections used by year-round residents or regularly serves at least twenty-five year-round residents.

Contaminant - means any physical, chemical, biological, or radiological substance or matter in water.

Dose Equivalent - means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements (ICRU).

Executive Secretary - means the Executive Secretary of the Utah Safe Drinking Water Committee.

Gross Alpha Particle Activity - means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.

Gross Beta Particle Activity - means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.

Ground Water Sources - means a source of culinary water captured underground. This term includes wells and springs. However, springs shall be considered to be surface sources if they meet the requirements of Section 6.3.2.

Man-Made Beta Particle And Photon Emitters - means all radionuclides emitting beta particles and/or photons listed in Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure, NBS Handbook 69, except the daughter products of thorium-232, uranium-235 and uranium-238.

Maximum Contaminant Level - means the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

Must - means that particular action is obliged and has to be accomplished.

Non-Community Water System - means a public water system that is not a community water system.

Picocurie (pCi) - means that quantity of radioactive material producing 2.22 nuclear transformations per minute.

Public Water System - means a system, either publicly or privately owned, providing water for human consumption and other domestic uses which has at least fifteen service connections, or regularly serves an average of at least twenty-five individuals for at least sixty days out of the year. Such term includes collection, treatment, storage and distribution facilities under control of the operator and used primarily in connection with the system. Additionally, the term includes collection, pretreatment or storage facilities used primarily in connection with system but not under such control.

Rem - means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A "millirem" (mrem)" is 1/1000 or a rem.

Shall - means that a particular action is obliged and has to be accomplished.

Should - means that a particular action is recommended but does not have to be accomplished.

Secondary Maximum Contaminant Level - means the advisable maximum level of contaminant in water which is delivered to the free-flowing outlet of the ultimate user of a public water system.

Surface Water Sources - means a source of culinary water which lies or travels on the surface prior to its capture for use in a culinary water system. Such term includes lakes, ponds, impoundments, streams, and those springs which do not meet the requirements necessary to be considered a ground water source.

Turbidity Unit - means that unit of measurement used in the nephelometric method of water analysis. This method is as set forth in a "Standard Methods for the Examination of Water and Wastewater" American Public Health Association, 13th Edition, pp 350-353.