UMT 72140

SURF015695

DOE/AL/62350-43S
REV. 2

UMTRA GROUND WATER PROJECT

SUPPLEMENT TO THE BASELINE RISK ASSESSMENT OF GROUND WATER CONTAMINATION AT THE MONUMENT VALLEY URANIUM MILL TAILINGS SITE NEAR CANE VALLEY, ARIZONA MARCH 1996

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March 1996

Prepared by the
U.S. Department of Energy
Albuquerque, New Mexico

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March 1996

Prepared for
U.S. Department of Energy
Environmental Restoration Division
UMTRA Project Team
Albuquerque, New Mexico

Prepared by
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SUPPLEMENT 1

HUMAN HEALTH RISK ASSESSMENT METHODOLOGY FOR THE UMTRA GROUND WATER PROJECT

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DOE/AL/62350-170
REV. 0

HUMAN HEALTH RISK ASSESSMENT METHODOLOGY FOR THE UMTRA GROUND WATER PROJECT

November 1994

Prepared for
U.S. Department of Energy
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Albuquerque, New Mexico

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ABSTRACT

This document presents the method used to evaluate human health risks associated with ground water contamination at inactive uranium processing sites. The intent of these evaluations is to provide the public and remedial action decision-makers with information about the health risks that might be expected at each site in a manner that is easily understood. The method 1) develops probabilistic distributions for exposure variables where sufficient data exist, 2) simulates predicted exposure distributions using Monte Carlo techniques, and 3) develops toxicity ranges that reflect human data when available, animal data if human data are insufficient, regulatory levels, and uncertainties. Risk interpretation is based on comparison of the potential exposure distributions with the derived toxicity ranges. Graphic presentations are an essential element of the semiquantitative interpretation and are expected to increase understanding by the public and decision-makers.

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LIST OF ACRONYMS

Acronym	Definition
ACL	alternate concentration limit
ANOVA	analysis of variance
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ESADDI	estimated safe and adequate daily dietary intake
IRIS	Integrated Risk Information System
MCL	maximum concentration limit
NEPA	National Environmental Policy Act
PEIS	programmatic environmental impact statement
QA	quality assurance
QC	quality control
RDA	recommended dietary allowance
RMSE	root mean squared error
SOWP	site observational work plan
UMTRA	Uranium Mill Tailings Remedial Action
UMTRCA	Uranium Mill Tailings Radiation Control Act

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1.0 BACKGROUND

RISK ASSESSMENT APPLICATIONS ON THE UMTRA GROUND WATER PROJECT

Risk assessment is a tool that aids remedial action decision-making on the Uranium Mill Tailings Remedial Action (UMTRA) Ground Water Project. Although the Uranium Mill Tailings Radiation Control Act (UMTRCA) specifies maximum concentration limits (MCL) for some contaminants and background concentrations for others, risk-based decision making will nonetheless be implemented on the Project for the following reasons:

- Compliance with the National Environmental Policy Act (NEPA) requires any potential public health or environmental impacts of contaminants to be addressed.
- Background concentrations may be needlessly restrictive for contaminants for which MCLs have not been derived.
- Multiple contaminants may be additive, synergistic, potentiating, or antagonistic with respect to toxicity.
- For sites where poor background water quality precludes the use of ground water for drinking, less stringent risk-based standards may be applicable for ground water uses other than drinking.
- Risk-based alternate concentration limits (ACL) may be sought at sites where there is no potential point of exposure for a distance from the site.

The methodology presented here will be used to prepare multiple site-specific documents. The Ground Water Project's programmatic environmental impact statement (PEIS) (DOE, 1994) presents the framework for determining remedial action strategies. The PEIS also describes the manner in which risk assessment will be applied to various steps of the remedial action decision-making process. Because risk assessment plays a part in the decision-making strategy, this risk assessment methodology is documented in the PEIS.

The first risk assessments to be done on the UMTRA Project are the baseline risk assessments. These risk assessments are baseline in that they describe preremedial ground water conditions at the site and are usually based on preliminary or limited data. The baseline risk assessments are conducted concurrently with the completion of the PEIS. Data gaps identified in the baseline risk assessments will be addressed in site observational work plans (SOWP). Upon completion of site characterization as identified in the SOWP, a remedial action strategy will be proposed in a site-specific NEPA document (for example, an environmental assessment or environmental impact statement). For these NEPA documents, risks will be further evaluated using this risk assessment methodology but incorporating additional data. Additionally, risks posed by any proposed remedial action will be evaluated. Finally, applicable site standards will be proposed in the NEPA documents, which may

include UMTRCA MCLs, background levels, and/or risk-based ACLs or supplemental standards.

Although the format of this methodology is oriented toward the preparation of stand-alone baseline risk assessments, it is also intended for use in subsequent risk assessment applications. Additionally, results derived using this method are designed for easy incorporation into public presentations.

DEVELOPMENT OF THE RISK ASSESSMENT METHODOLOGY

The assessment of risk to public health by potential exposure to environmental contaminants is typically conducted according to the method developed by the U.S. Environmental Protection Agency (EPA) for the Superfund program (EPA, 1989). The EPA method involves determining a point estimate for excess cancer risk from current or potential carcinogenic exposures and a hazard quotient (ratio of the exposure intake to an acceptable intake) for noncarcinogenic exposures. This method is a useful screening tool for comparing diverse sites on a relatively equivalent basis. The UMTRA Project, however, comprises 24 sites with contaminants of concern and pathways that are largely the same. By implementing a more detailed and comprehensive methodology, potential health effects from ground water contamination can be evaluated more accurately.

In general, a risk assessment consists of four components:

- Data evaluation.
- Exposure assessment.
- Toxicity assessment.
- Risk characterization.

This framework was used as the basis for the UMTRA Ground Water Project risk assessment methodology. Within this framework, the application of probabilistic methods to exposure assessment and methods to improve the characterization of uncertainties and toxicity were explored. Based on extensive review of current literature on risk assessment methodologies and discussions with regulatory agencies, scientists, and professionals in the field, it was determined that, while probabilistic methods offered a means of incorporating variability into assessments, data often are too limited to allow the development of valid distributions. The increased variability and potential sources of confusion that can be introduced by distributions based on inadequate data can outweigh the possible benefits.

This report summarizes the probabilistic and toxicity range approach. The format follows the section structure used in the baseline risk assessments for the UMTRA Project. That structure is shown by the bold-face headings contained in each section of this document. The

data used in each section are described along with the methodology used to evaluate and interpret those data. Note that the methodology described in this document may not be appropriate at all sites; for example, site-specific contaminant characterization may not be sufficient. In these cases, standard Superfund point estimates of exposure may be used.

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2.0 METHODOLOGY

Citizens' Summary

Although the citizens' summary is at the front of the risk assessment, it often is the last section to be written. It summarizes, in terms understandable to the general public, the document's basic purpose and the methodology used to produce it. Also summarized are the exposure pathways evaluated and the results in terms of the primary contaminants of concern for human health and environmental risk and their potential adverse effects. The citizens' summary concludes with a brief description of planned site activities and the impact of the baseline risk assessment on those activities.

Section 1.0 INTRODUCTION

This section describes the purpose of the risk assessment, the status of the site with respect to surface and ground water activities, and the overall approach to risk assessment. The concept of probabilistic risk assessment, if appropriate for a given site, is introduced here. The EPA's basic framework for evaluating risk at Superfund sites is followed. At sites with sufficient available data, probabilistic distributions are used to evaluate exposure and to incorporate known, properly characterized sources of variability. The toxicity of specific contaminants is graphically summarized in ranges. Risk is evaluated by combining these two aspects in a semiquantitative graphical presentation.

Section 2.0 SITE DESCRIPTION

The history of uranium milling operations and subsequent land use at the site is presented in this section. This history includes relevant background information such as geographical location and climate. A hydrogeological summary of ground water occurrence and movement in the site region is presented that defines all relevant aquifers and gives the locations of monitor wells. Surface water occurrence and movement is described, land use in the region is summarized, and ground water use by area residents is specified. A recent survey of ground water use is included with any regional drinking water supply information that may alter either the use of ground water or the source of residents' drinking water (for example, plans for new municipal wells or the alteration of central distribution systems to service additional regions).

Section 3.0 EXTENT OF CONTAMINATION

In this section, chemical analysis data from ground water wells are used to develop a geochemical characterization of background and site ground water quality. The horizontal and vertical extent of contamination is estimated to the extent possible. The selection of wells and water sampling dates for use in the characterization is defended for each water-bearing unit discussed. This section typically contains tables summarizing recent ground water quality data from background, on-site, and/or downgradient wells. Using defensible

statistical inferential methods and knowledge of the site, contaminants are identified by comparing on-site water quality to background levels. A subset of these contaminants will represent the contaminants of potential concern to human health. The methodologies used for evaluating data and determining contaminants of potential concern are discussed more fully below. For each contaminant of potential concern, Section 3.0 discusses probable speciation, mechanisms controlling transport, and mechanisms controlling attenuation in the aquifer matrices.

Depending on the site, Section 3.0 may include anything from a brief to an extensive discussion of surface water quality.

Methodology for data evaluation

To evaluate the level of risk associated with a particular site, site-related ground water contaminants and their concentrations must be identified. The goal, as defined by the EPA, is to calculate a reasonable maximum exposure. When feasible (for example, when there are no geographic restrictions) monitor wells from the most contaminated part of the plume should be evaluated.

UMTRA Project risk assessments use the entire history of water quality measurements collected by the U.S. Department of Energy (DOE) to find the probable location of the worst current ground water contamination. This determination comes from a technical review by site hydrologists and geochemists of data from wells on and near the site. Occasionally, data from other sources such as the Bureau of Reclamation are considered for use in this evaluation if the quality of sample collection and analysis activities can be assessed and the results are compatible with UMTRA Project quality assurance (QA) requirements. These data are used to assess the presence of contamination in a well.

Because of differences in geochemistry across the site, and because more than one source of contamination may have existed, there is often no single well or group of wells with the highest average concentration of every site-related constituent. In such cases, plume water quality for a constituent is quantified from the well or wells consistently exhibiting the highest levels of that contaminant. In essence, this creates a hypothetical reasonable-maximum-case well that typifies the worst water quality near the center of the plume. Although this may seem excessively conservative, well coverage at a site is often not sufficient to rule out the possibility that water quality somewhere under the site could be worse than that represented by the hypothetically worst-case wells.

Background water quality levels are sought from among the wells upgradient or crossgradient from the site. It is important that the selected wells are not suspected of having been affected by site activities. Location, well completion logs, hydrologic properties such as water levels, and several sampling rounds showing stable concentrations of major constituents are used to justify the choice of background wells. Since background water quality is likely

to vary geographically and temporally, more than one well and more than one sampling round are used to quantify background levels whenever possible.

Water quality data from several sampling rounds of the hypothetically worst case wells are compared to measurements from background wells to determine whether the average concentrations measured in plume waters are higher than background levels. A list of site-related contaminants can then be developed for further evaluation.

The selected statistical comparison method should have adequate power to detect important differences in background and plume water quality while controlling the probability of a false positive result at a reasonably low specified level. Selecting a statistical method requires the consideration of many site-specific factors. For example, the amount of data, its analytical quality, and the frequency of nondetects in the water quality database may impact the choice of statistical method. Rank-based procedures, such as the Mann-Whitney test, are selected for use on small data sets, data sets of suspect analytical quality, or data sets with a high percentage of nondetects.

Some sites also have additional significant sources of variability (for example, a pronounced sampling-date effect, time trends in concentration levels, or heterogeneous background water quality) that, if improperly accounted for, may invalidate the statistical results. These cases require a more complicated linear model. The normal-based analysis of variance (ANOVA) procedure is used when the assumptions of normality and equality of variance can be justified. A logarithmic transformation of the concentration data often improves the quality of the statistical analysis. The risk assessment text describes the statistical tools used to distinguish site-related contaminants from background levels.

Determination of contaminants of potential concern

Constituents identified statistically as exceeding background levels are subsequently screened for their potential to cause adverse health effects. A constituent may be eliminated from further consideration if levels found in plume waters are in the nutritional range when added to expected dietary intakes or if the constituent is known to have very low toxicity as described below. Constituents that are not eliminated in the screening process are considered throughout the risk assessment.

Many inorganic contaminants associated with the UMTRA Project sites are essential nutrients. Table 2.1 lists those contaminants with the applicable nutritional guidelines. Depending on the constituent, nutritional guidelines include the recommended dietary allowance (RDA), the estimated safe and adequate daily dietary intake (ESADDI), and the minimum daily requirement. RDAs are federal standards that reflect the best estimate of the intake level required to meet the nutritional needs of nearly all healthy people. RDAs are recommendations, not requirements, and they include generous safety margins both above and below the range of intake that is considered safe. RDAs have been established for calcium, iodine, iron, magnesium, phosphorous, selenium, and zinc. Minimum daily intake

Table 2.1 Nutritional criteria for frequently detected contaminants at UMTRA Project sites

	Age (yr)	Weight (kg)	Ca[a] (mg)	Mg[a] (mg)	Fe[a] (mg)	Zn[a] (mg)	Se[a] (μg)
Infants	0-0.5	6	400	40	6	5	10
	0.5-1	9	600	60	10	5	15
Children	1-3	13	800	80	10	10	20
	4-6	20	800	120	10	10	20
	7-10	28	800	170	10	10	30
Males	11-14	45	1200	270	12	15	40
	15-18	66	1200	400	12	15	50
	19-24	72	1200	350	10	15	70
	25-50	79	800	350	10	15	70
	51+	77	800	350	10	15	70
Females	11-14	46	1200	280	15	12	45
	15-18	55	1200	300	15	12	50
	19-24	58	1200	280	15	12	55
	25-50	63	800	280	15	12	55
	51+	65	800	280	10	12	55
Pregnant			1200	300	30	15	65
Lactating			1200	340-355	15	16-19	75
Dietary range			700-1300 (male mean) 750-1000 (female mean) mg/day	349 mg/day	9-35 mg/day	5.5-15 mg/day	83-129 μg/day

[a]From National Research Council (1989), expressed as average daily intakes over time.

Table 2.1 Nutritional criteria for frequently detected contaminants at UMTRA Project sites (Concluded)

	Age (yr)	Weight (kg)	Cu[b] (mg)	Mn[b] (mg)	F[b] (mg)	Cr[b] (μg)	Mo[b] (μg)
Infants	0-0.5	6	0.4-0.6	0.3-0.6	0.1-0.5	10-40	15-30
	0.5-1	9	0.6-0.7	0.6-1.0	0.2-1.0	20-60	20-40
Children and adolescents	1-3	13	0.7-1.0	1.0-1.5	0.5-1.5	20-80	25-50
	4-6	20	1.0-1.5	1.5-2.0	1.0-2.5	30-120	30-75
	7-10	28	1.0-2.0	2.0-3.0	1.0-2.5	50-200	50-150
	11+	45	1.5-2.5	2.0-5.0	1.5-2.5	50-200	75-250
Adults			1.5-3.0	2.0-5.0	1.5-2.5	50-200	
					1.5-4.0		
Dietary range			0.45-1.2 mg/day	1.1-2.8 mg/day	0.23-1.8 mg/day	25-33 μg/day	120-240 μg/day

[b]From National Research Council (1989), expressed as ranges of recommended intake, because limited information is available on which to base allowances.

	Age (yr)	Weight (kg)	Na[c] (mg/day)	Cl[c] (mg/day)	K[c] (mg/day)
Months	0-5	4.5	120	180	500
	6-11	8.9	200	300	700
Years	1	11.0	225	350	1000
	2-5	16.0	300	500	1400
	6-9	25.0	400	600	1600
	10-18	50.0	500	750	2000
	>18	70.0	500	750	2000
Pregnant			569		
Lactating			635		
Dietary range			1800-5000 mg/day	6000 mg/day	2500 mg/day

[c]From National Research Council (1989), minimum requirements of healthy persons.

kg - kilogram
mg - milligram
μg - microgram
yr - year

Ca - calcium.
Mg - magnesium.
Na - sodium.
Cl - chloride.
K - potassium.
Fe - iron.

Zn - zinc.
Se - selenium.
Cu - copper.
Mn - manganese.
F - fluoride.
Cr - chromium.
Mo - molybdenum.

requirements have been established for sodium, chloride, and potassium. ESADDIs have been established for minerals for which there are data sufficient to estimate a range of requirements but insufficient to establish RDAs. These minerals include chromium, copper, fluoride, manganese, and molybdenum. The upper limit of the ESADDIs should not be habitually exceeded since the toxic level for many of the trace elements may be only slightly greater than the usual intake levels.

Several additional factors must be considered when contaminants of potential concern are screened on a nutritional basis. First, what level of a nutrient does the diet typically provide and what increment to this amount can be tolerated without adverse effects? Some nutrients, such as calcium, can be tolerated at levels several times their nutritional criteria. For others, such as molybdenum, the margin between nutritional allowance and toxicity is relatively small. When evaluating toxicity in comparison to dietary values, it is also important to consider whether the nutrient has a greater bioavailability (and potentially greater toxicity) in water than in food. Additional considerations in screening nutrient metal contaminants include 1) whether the contaminant is likely to interact additively or synergistically with, or to enhance the effects of, other contaminants, and 2) whether the contaminant could biomagnify in the food chain to the extent that food pathways contribute more than the levels estimated for drinking water intakes. With all of these factors, the confidence level of the toxicity data must also be considered.

Contaminants other than nutrients may be eliminated from the list of contaminants of potential concern because of their low toxicity and because levels detected at the site would not be associated with adverse effects. Some of these contaminants may have EPA-derived acceptable intake levels (reference doses). To account for the potential additive effects of contaminants, a contaminant with a reference dose can generally be screened out if drinking water ingestion would result in intakes of less than one-tenth the reference dose. As in screening nutrient contaminants of potential concern, the following factors must be considered in the low toxicity screening: additional dietary intake; margin of safety below toxicity and the severity of the potential toxicity; bioavailability; biomagnification; additive, synergistic, or potentiating interactions with other contaminants; and uncertainty in the toxicity data.

Section 4.0 EXPOSURE ASSESSMENT

Pathways

Pathways of concern for contaminated ground water at UMTRA Project sites are summarized in the generic conceptual model shown in Figure 2.1. Exposure through inhalation pathways is not evaluated because UMTRA Project ground water contaminants are primarily nonvolatile contaminants (i.e., metals, nitrate, and sulfate). Although inhalation of mists could result from showers or irrigation, it is considered negligible compared to water ingestion. However, further evaluation of this exposure route may be warranted under some conditions. Similarly, irrigation could cause contaminant buildup in soil that may be of concern in some scenarios.

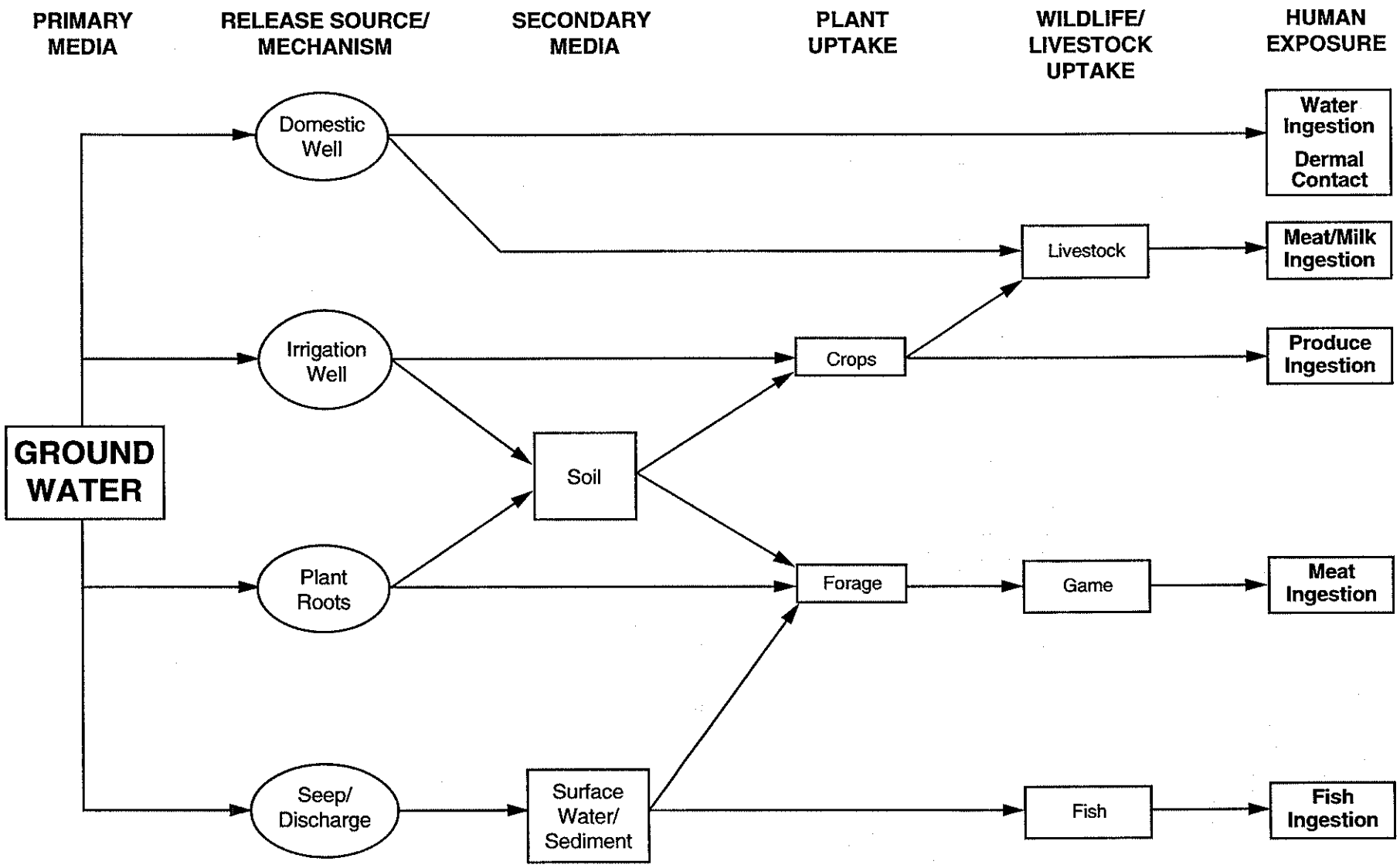


FIGURE 2.1
GENERIC CONCEPTUAL MODEL

MAC: NONSITE/RISKASSESS/CONCEPTMOD

Typically, drinking water ingestion is the ground water exposure route that leads to the greatest contaminant intake. That route includes direct consumption as well as ingestion of water used in food preparation and cooking. Other potential ground water exposure routes include dermal absorption while bathing or swimming, ingestion of produce irrigated with ground water, and ingestion of meat and milk from livestock that have consumed ground water. Dermal absorption is estimated in the following equation:

$$\text{Exposure dose (mg/kg-day)} = \frac{Cw \times SA \times Pc \times Cf \times ET \times EF \times ED}{BW \times AT}$$

Where:

- Cw = Concentration in water (milligrams per liter [mg/L]).
- SA = Skin surface area (19,400 square centimeters [cm^2]).
- Pc = Dermal permeability constant (0.001 cm per hour).
- Cf = Conversion factor (0.001 liters per cubic centimeter [L/cm^3]).
- ET = Exposure time (0.2 hour per day).
- EF = Exposure frequency (days per year).
- ED = Exposure duration (year).
- BW = Body weight (70 kilograms [kg]).
- AT = Averaging time (exposure duration x 365 days per year for noncarcinogens, and 70 years x 365 days per year for chemical carcinogens).

Since there are no chemical-specific dermal absorption factors (dermal permeability constants), it is assumed that contaminants are absorbed across intact skin at the same rate as water. Because metals generally are poorly absorbed across intact skin, this assumption is likely to overestimate the potential contribution from the dermal exposure route. When this estimate is compared to the standard intake of drinking water (2 liters [L] per day for a person of 70-kg body weight) for the same exposure duration assumptions, this exposure route is estimated to contribute 0.2 percent of the dose associated with drinking water. Since the assumptions for this dermal calculation are believed to overestimate exposure, and since this route provides less than a 1 percent incremental contribution to dose, this pathway is not evaluated further in the baseline risk assessments unless site-specific factors indicate the evaluation to be appropriate.

Since some metals biomagnify in plants, the irrigated-produce ingestion exposure route may contribute significantly to exposure. This exposure route, however, cannot be meaningfully evaluated based on current data, and plant uptake studies are therefore being conducted for the UMTRA Ground Water Project. This exposure route analysis is deferred until results of these studies are available. For most sites, the baseline risk assessment is conducted without these results, which are presented in the site-specific NEPA document. Since meat/milk ingestion is also dependent on these results, these exposure route analyses (where applicable) are also deferred.

Exposure algorithms

The dominant human pathway for ground water toxicity is likely to be drinking contaminated ground water. Exposures are evaluated separately for noncarcinogenic and carcinogenic effects of contaminants. A contaminant may have only noncarcinogenic effects (for example, molybdenum) or noncarcinogenic and carcinogenic effects (for example, arsenic). Additionally, carcinogenic effects for chemical carcinogens and radionuclide carcinogens are calculated separately.

$$\text{Exposure dose (mg/kg-day)} = \frac{Cw \times IR \times EF \times ED}{BW \times AT}$$

Where:

- Cw = Concentration in water (mg/L).
- IR = Ingestion rate (liters per day).
- EF = Exposure frequency (days per year).
- ED = Exposure duration (years).
- BW = Body weight (kg).
- AT = Averaging time (exposure duration x 365 days per year for noncarcinogens, and 70 years x 365 days per year for chemical carcinogens).

Toxicity of noncarcinogenic contaminants in drinking water depends primarily on the average intake of a contaminant per kilogram of body weight per day. These intakes can be calculated for short-term or long-term exposures. The same algorithm is used to calculate carcinogenic risk from chemical (nonradionuclide) carcinogens. Although carcinogenicity is considered cumulative over a lifetime, the exposure for chemical carcinogens is calculated in milligrams per kilogram per day (mg/kg-day). This is because EPA-derived cancer slope factors (risk per mg/kg-day) for chemical carcinogens correlate estimated daily intakes averaged over a lifetime (measure in mg/kg-day) to incremental cancer risk.

Risk from radioactive contaminants present in the ground water depends on total exposure over time rather than on average daily exposure. In addition, the body weight factor is relatively insignificant in determining carcinogenic risk. Exposure to a carcinogenic radionuclide is therefore quantified as total exposure to radioactivity throughout an individual's exposure duration:

$$\text{Exposure (pCi/lifetime)} = Cw \times IR \times ED \times EF$$

Where:

- Cw = Concentration in water (picocuries per liter [pCi/L]).
- IR = Ingestion rate (liters per day).
- ED = Exposure duration (years).
- EF = Exposure frequency (days per year).

The variables specified above can encompass a wide range of possible values. Ground water conditions are dynamic, and people naturally vary in body weight, consumption habits, and their length of residency within an affected area. Consequently, health risks associated with ground water consumption will also vary among members of the population. To adequately describe a population's range of potential exposures, probability distributions are developed for the exposure variables when sufficient data exist.

Development of concentration distributions

Where sufficient site data exist, probability distributions are used to describe ground water concentrations in the contaminated (plume) area. A probability distribution provides a range of concentrations over the exposure period that may reasonably occur in ground water taken from the area of a site that is presumably most contaminated. The distribution also provides a measure of the relative likelihood of the various values in that range. Probability distributions include the minimum, maximum, and average observed concentrations. They also measure the likelihood of encountering water at various levels of contamination throughout the range of ground water contamination concentrations for that area of the plume. Development of a contaminant concentration distribution involves the following steps:

1. One or more wells are identified that show comparable levels of contamination consistently higher than all other monitor wells screening the same aquifer.

2. Extending back from the present, a time interval is determined for which it is appropriate to include data (for example, the interval during which contaminant levels in these wells have remained relatively stable, quality assurance/quality control (QA/QC) of data was conducted, and detection limits are acceptable).

3. All independent measurements taken from the wells during this time interval are pooled into a single data set. Data are graphically displayed using histograms and/or box plots.

4. A theoretical probability distribution is selected that mimics the basic shape of the sample data. The mean and standard deviation of the theoretical distribution are set equal to the mean and standard deviation of the sample data.

5. The theoretical distribution is truncated in the right tail at the 99th percentile to set an upper limit on the level of realistic potential contamination. This level of truncation is somewhat arbitrary, but in practice it has resulted in an upper limit approximately 5 to 10 percent above the highest observed level of a contaminant in the sample data.

This procedure assumes that variation in historical data can be used to predict near-future variation in concentrations at the sites. This assumption is questionable when historical data show an obvious upward or downward trend over time. In these cases, linear regression methods are used to predict the current level of the contaminant and to estimate the amount

of random variation around the trend line (the root mean squared error [RMSE]). The probability distribution is then centered on the predicted current concentration of the contaminant, with standard deviation set equal to the RMSE. Figure 2.2 shows an example of a concentration distribution for molybdenum.

The probability distributions used for UMTRA Project risk assessments describe random variation in water quality within a relatively small geographical area and during relatively short time intervals; typically, the time interval between sampling events is 1 year or less. The distributions are therefore optimized for assessment of acute to subchronic exposure. This is generally appropriate since the concentrations of several contaminants at some UMTRA Project sites are at levels associated with acute toxicity.

Development of other exposure factors

Body weight and average daily water intake distributions, by age group, are based on data from large national surveys. Extensive national data on weights and ages of men and women were collected by the National Health and Nutrition Survey between 1976 and 1980. These data were used to develop lognormal probability distributions for body weight by age and separately by gender. The distributions for each gender were then combined using census data on the national ratio of men to women within each age group. Body weight distributions for the three age groups are shown in Figure 2.3.

Lognormal probability distributions, by age, were also used to describe variation in area residents' average daily intake of tap water. These distributions were developed from data the U.S. Department of Agriculture collected during a 1977-1978 nationwide food consumption survey (Roseberry and Burmaster, 1992). The survey recorded total tap water consumption during a 3-day period for 26,081 survey participants. Distributions for body weight and ingestion rates for 0- to 1-year-olds, 1- to 10-year-olds, and 11- to 65-year-olds were developed. This age grouping was selected because intake-to-body-weight ratios are similar and toxicokinetics are typically comparable within these groups. These ingestion rate distributions are shown in Figure 2.4. Although these two variables are treated as independent variables in the exposure distributions, there likely is a correlation between weight and water ingestion rates.

Use of distributions based on national data requires an assumption that the distributions of body weight and water ingestion as well as the ratio of men to women among residents in the vicinity of an UMTRA Project site are comparable to those for the nation as a whole. The assumption is probably reasonable for body weight and gender ratios. Since many sites are in the arid west, however, site-specific ingestion rates might vary considerably from the national average.

The exposure frequency (days per year) and the exposure duration (years) are also likely to vary from individual to individual within a community. Part-time residency and vacation patterns among full-time residents affect the exposure frequency. Variance in exposure

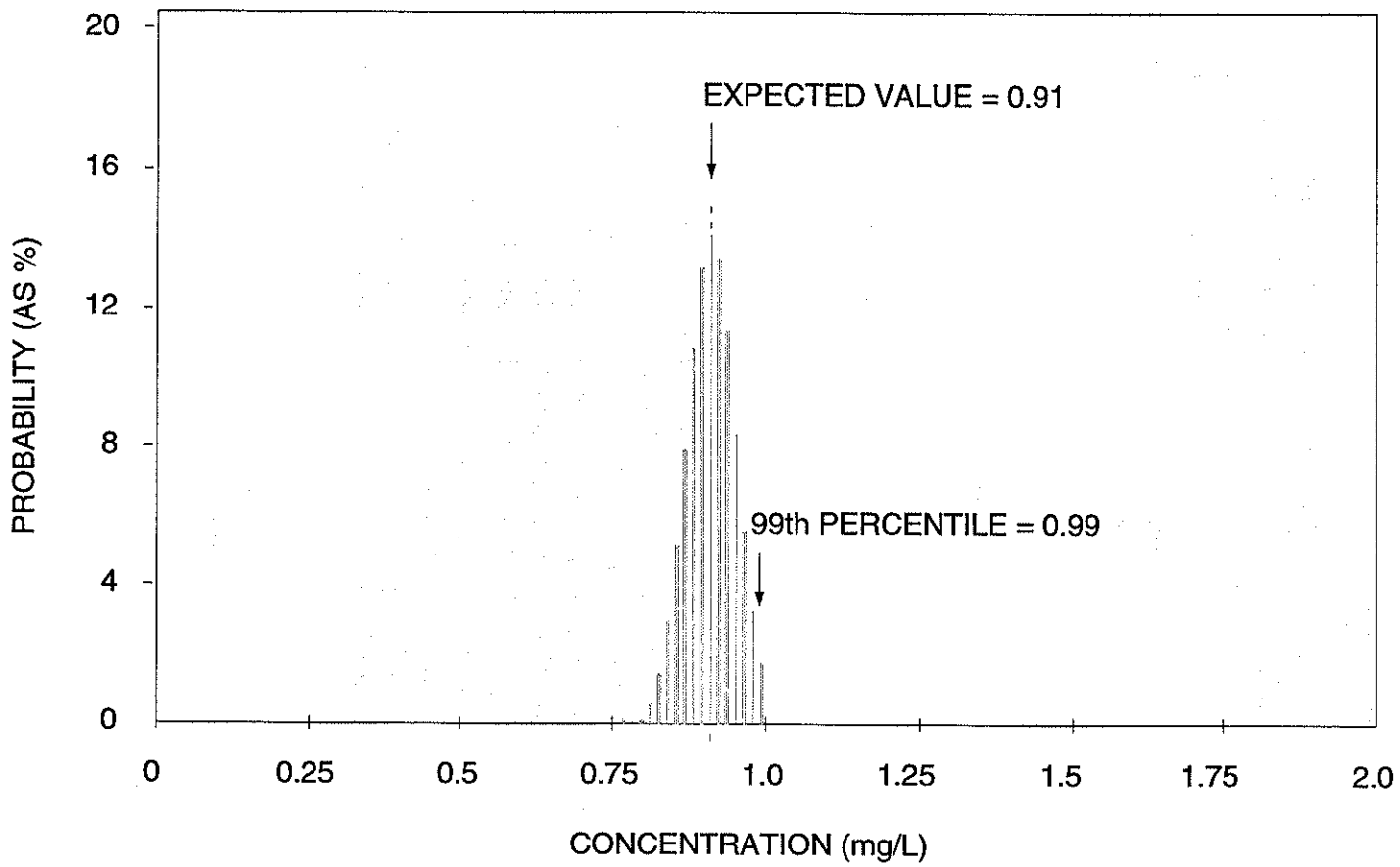
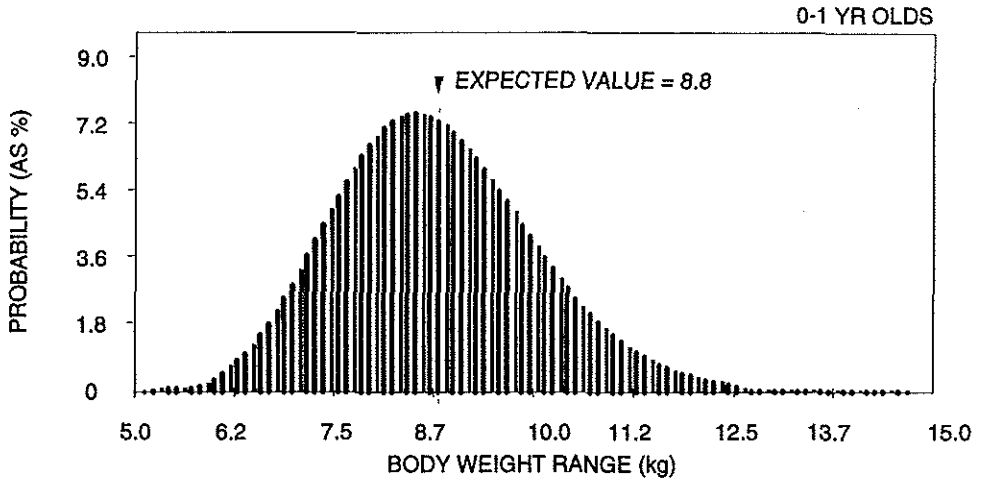
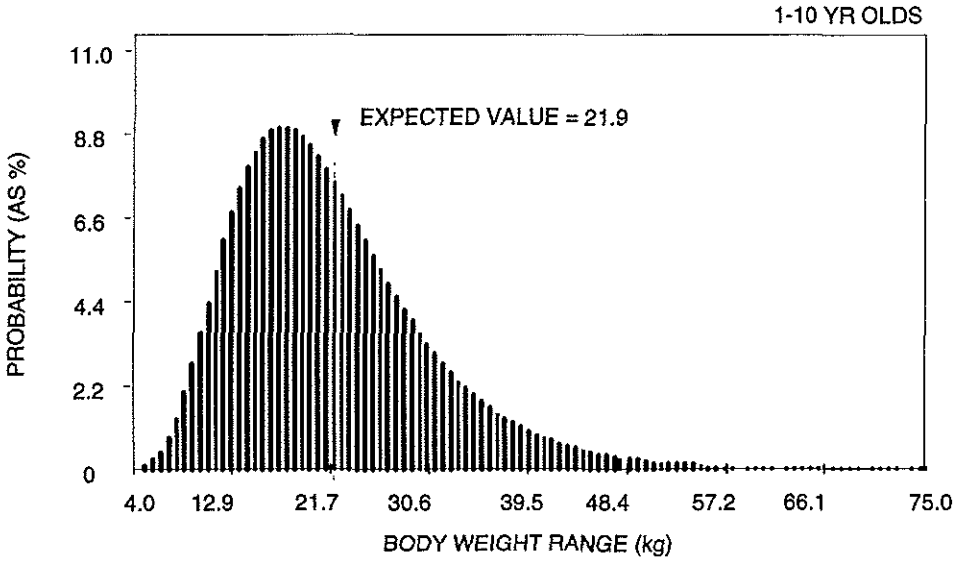


FIGURE 2.2
PROBABILITY DISTRIBUTION OF MOLYBDENUM CONCENTRATIONS





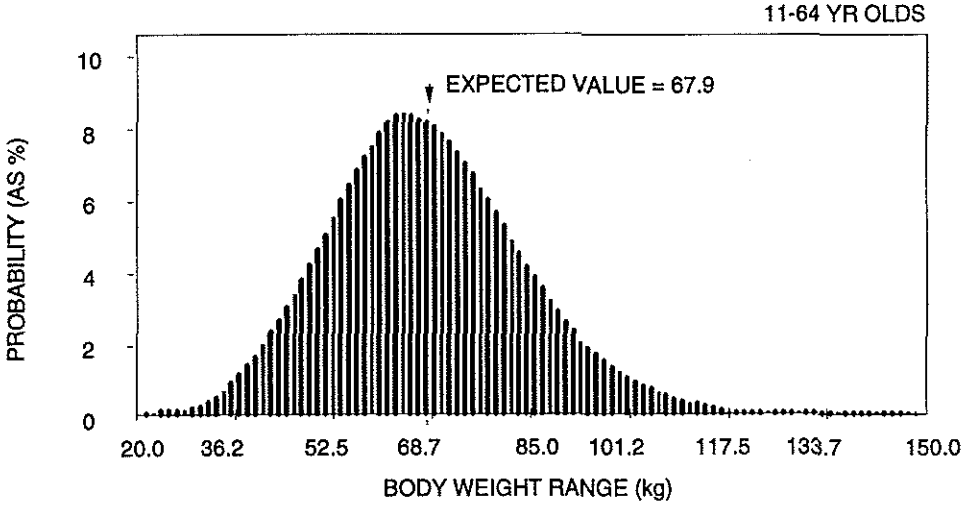


FIGURE 2.3
PROBABILITY DISTRIBUTIONS FOR BODY WEIGHT

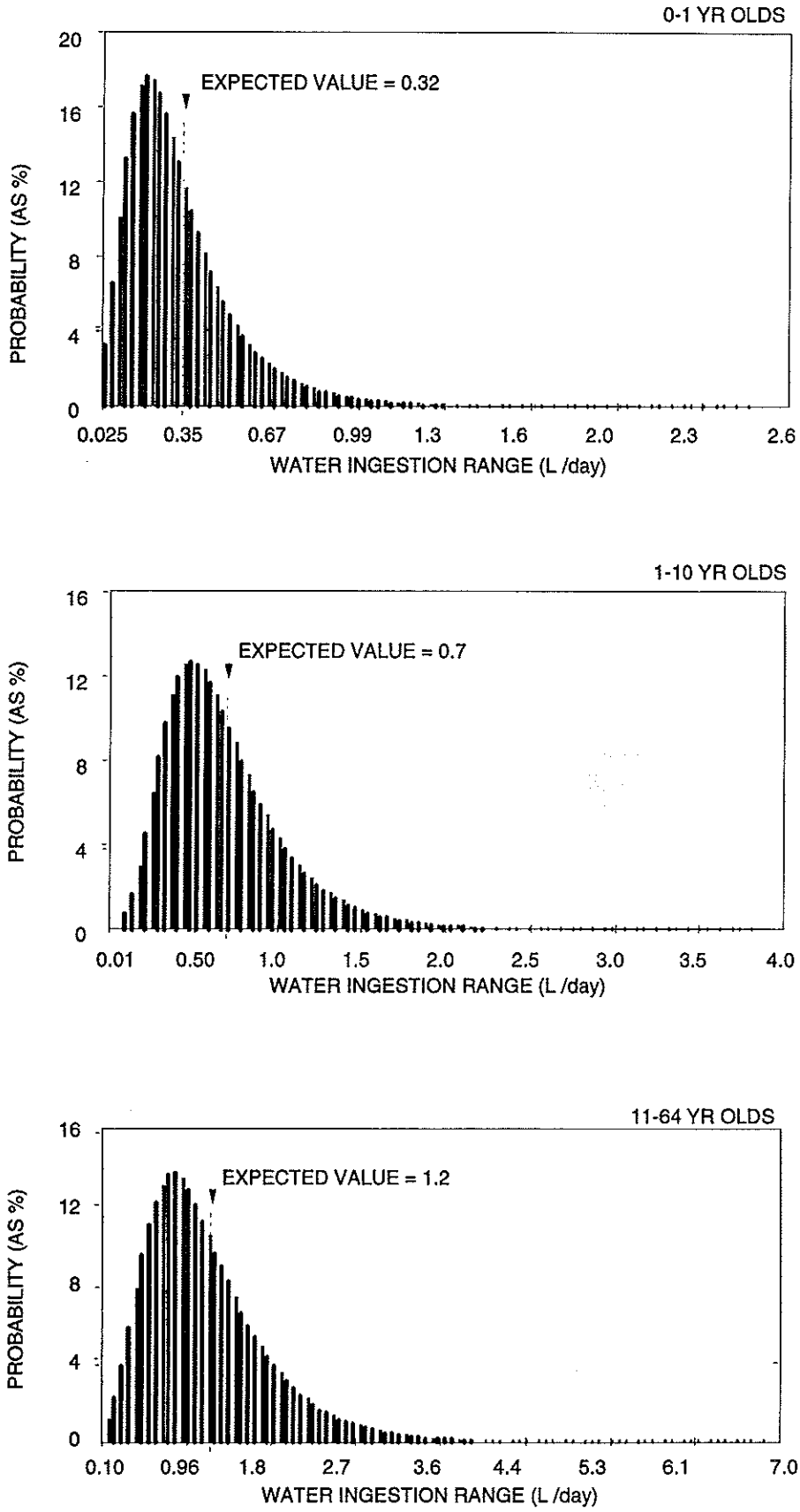


FIGURE 2.4
PROBABILITY DISTRIBUTIONS FOR TAP WATER INGESTION RATES

duration results principally from the movement of residents in and out of the community. These variables are clearly site-specific, and national averages may be inappropriate for the specific communities in the vicinity of UMTRA Project processing sites. Many of the sites are rural or near small towns where residency is stable. The population of such sites may reasonably be considered lifetime residents. The Native American populations in the vicinity of five UMTRA Project sites (Mexican Hat, Utah; Monument Valley, Arizona; Shiprock, New Mexico; Riverton, Wyoming; and Tuba City, Arizona), the farming region in the vicinity of the Belfield/Bowman, North Dakota, and Falls City, Texas, sites, and some of the rural/ranching communities probably follow this general pattern.

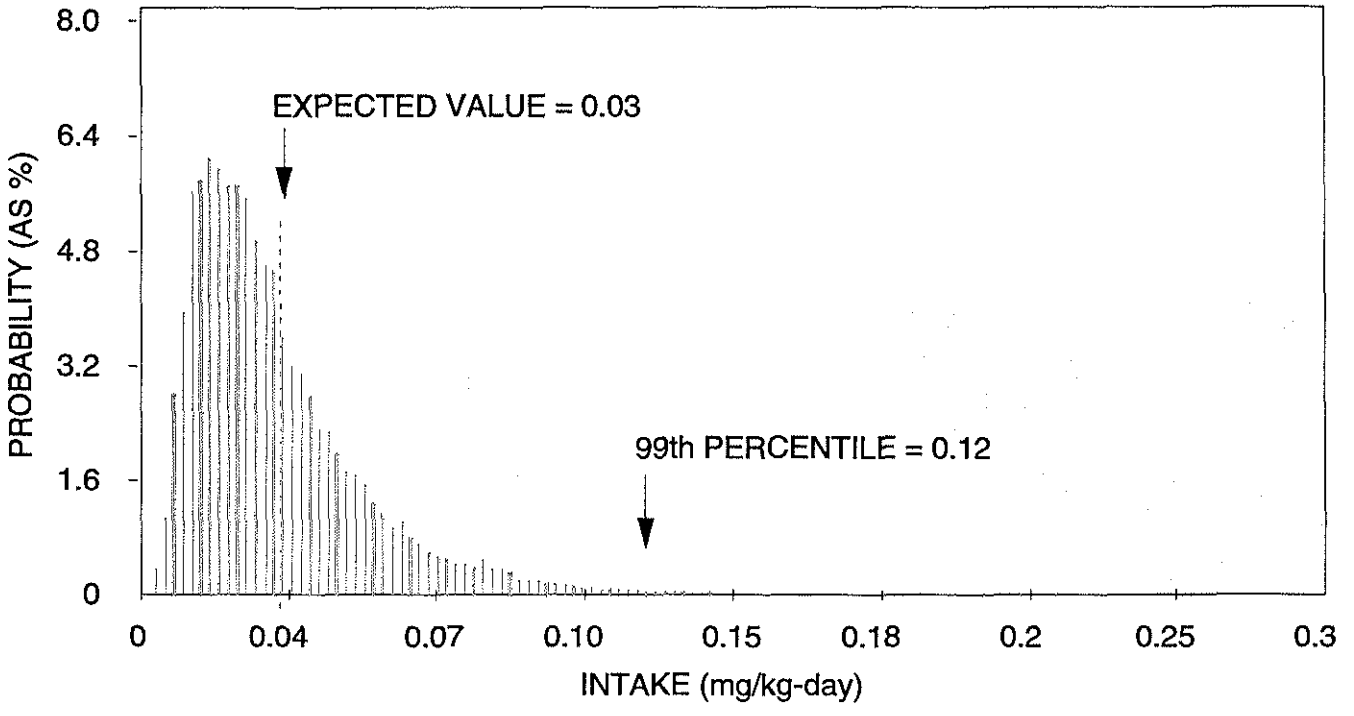
Because exposure frequency and exposure duration data are not available in sufficient detail to allow construction of site-specific distributions, assumed default values are used for these two variables. Since exposure frequency and exposure duration essentially cancel out with averaging time in calculations for noncarcinogens, these factors are primarily of concern for estimating lifetime cancer risks and do not affect acute or chronic toxicity interpretations. However, for radionuclide carcinogens, the exposure frequency default value used is 350 days per year, which allows for a two-week vacation or absence from the residence. For estimating lifetime cancer risks, exposure duration defaults are 30 years for towns with a strong economic base; 50 years for farm, ranch, or rural communities; and 70 years for Native American populations or other sites where the population has a history of permanent residency.

Simulated exposure distributions

Distributions of potential exposures are calculated using Monte Carlo simulations. These simulations repeatedly select numerical values for each of the input variables (contaminant concentrations, body weight, and ingestion rates), insert the selected values into the equations described above, and calculate the resulting exposure. For each iteration of this process, numerical values are selected according to the probability distributions for the input variable; numbers with a higher probability of occurrence in the distribution are therefore chosen more frequently. This process is repeated 10,000 times, and the exposure values resulting from these iterations are displayed in a histogram representing the range of calculated exposures. Ten thousand iterations produce a smooth distribution in a short amount of computer time and provide reliable estimates of the mean and extreme percentiles. These simulations indicate the relative likelihood of various exposure levels occurring at a site. From this distribution, percentile values can be determined that indicate the percentage of exposures expected to fall above or below a given reference point. Figure 2.5 shows an example of this intake distribution.

Section 5.0 TOXICITY ASSESSMENT

The toxicity assessment is one of the weakest aspects of the widely used standard risk assessment methodology. The UMTRA Project methodology is designed to strengthen this part of the assessment. In the standard method, the noncarcinogenic evaluation results in the calculation of a hazard quotient, which is the ratio of estimated intake to the reference dose



NUTRITIONAL INTAKE LEVELS

DIETARY INTAKE LEVELS

▲ ORAL REFERENCE DOSE (0.005 mg/kg-day)

NO OBSERVED EFFECT LEVEL

MILD TOXICITY (INCREASED COPPER EXCRETION AND URIC ACID SYNTHESIS - - - - - ► GOUT)

NOTE: 30% OF THE PREDICTED EXPOSURES IN CHILDREN WOULD BE ASSOCIATED WITH MILD TOXICITY.

FIGURE 2.5
HEALTH EFFECTS OF POTENTIAL MOLYBDENUM EXPOSURE RANGES FOR CHILDREN

or acceptable intake. This quotient is of limited use because, when the ratio exceeds 1, the quotient conveys no information regarding the type or severity of potential adverse effects. An additional limitation of the use of this ratio is that the reference dose often includes a substantial factor to account for uncertainty in the toxicity data. These factors can range from 1 to 1000, which can make hazard quotients for various contaminants difficult to compare. Perhaps the most significant drawback to the hazard quotient/index approach is that these numbers have little meaning to the public and to decision-makers. The presentation of toxicity information using the UMTRA Project risk assessment method attempts to avoid those shortcomings.

The Integrated Risk Information System (IRIS) database (EPA, 1993) forms the basis of the toxicity profiles for the contaminants of concern. This source is supplemented by 1) the Agency for Toxic Substances and Disease Registry toxicological profiles; 2) the *Handbook on the Toxicology of Metals* (Friberg et al., 1986); and 3) current literature searches to supplement evaluations with additional recent data when only limited data are available from the primary source material. Human data are preferred, but animal toxicity data are included if human data are insufficient to determine a given contaminant toxic effect or particular exposure range. In addition, toxicity data obtained from drinking water exposures are weighted more heavily than data from other routes of exposure because for many of the contaminants of concern in ground water, bioavailability of the contaminant in water versus food can play an important role in the toxicity. Additionally, chemical speciation of the contaminants under the site-specific ground water conditions is considered with respect to the ability of chemical form to alter potential toxicity.

To allow comparison across studies and with other databases, toxicity data reported in the literature surveyed are converted to milligrams intake per kilogram body weight per day based on the following conversion factors as appropriate:

Adults:	2 L of water ingestion per day; 70 kg body weight.
Children:	0.7 L of water ingestion per day; 22 kg body weight.
Infants:	0.64 L of water ingestion per day; 4 kg body weight.

The conversion factors for adults are the EPA default values (EPA, 1989) and are very similar to the expected values from the UMTRA probability distributions (ingestion =1.8 L per day; weight= 68 kg). For children, EPA does not specify default values for the 1- to 10-year range; therefore, the expected values from the modeled distributions are used.

The expected values from the probability distributions for infants vary significantly from the EPA default values used in IRIS. The amount of domestic drinking water consumption can vary dramatically in this group because some infants are fed exclusively on canned liquid formula or breast milk while others consume more water from reconstituted liquid concentrate or powdered formula. The simulated distribution takes all infants into account and therefore results in a much lower average ingestion rate (0.32 L per day) than the default value. In addition, the EPA value defines infants as less than 4 months old, while the

simulated distributions define infants as less than 1 year old. Because the data used on infants in IRIS came primarily from the younger age group, the EPA default values were used for conversion. However, the distribution reflects the entire infant population likely to occur at UMTRA Project sites. Infants drinking only formula reconstituted with tap water would therefore belong at the upper end of the exposure distribution. These ingestion values could exceed the expected value by as much as 300 percent, but would still fall within the exposure distribution.

The toxicity values obtained in the above manner are graphed as ranges. For each contaminant, dietary and/or nutritional information is incorporated into these figures with any available regulatory values, such as EPA oral reference doses. An attempt is made to focus on the range of exposures at UMTRA Project sites by incorporating mild, severe, acute, and chronic toxic effects. Since toxicity data for most contaminants are incomplete, uncertainties are characterized on the figures by dotted lines. Animal data are represented on the toxicity range graphs by widely spaced dotted lines. Uncertainty about the beginning or ending points of toxic effects associated with particular exposure ranges is represented by closely spaced dots. Any potential interactions of the various contaminants present at a site are discussed qualitatively at the end of the toxicity section of the document.

Section 6.0 HUMAN HEALTH RISK EVALUATION

The toxicity ranges developed in the previous section are graphically superimposed on the simulated exposure distributions and presented with semiquantitative interpretations of adverse health effects that might be anticipated for the potential range of exposures. Combining the distributions presented in Figures 2.2, 2.3, and 2.4, Figure 2.5 presents the potential exposure of children to molybdenum that results from the Monte Carlo simulation. Children are used in this example because they represent the group with the greatest exposure per body weight.

The ranges of exposure resulting in specific nutritional or toxic effects are shown below the respective intake distribution graphs. Dashed lines or dots show where a toxic effect is suggested but not well established.

Potential exposures to molybdenum at the site presented in Figure 2.5 indicate that nearly all potential exposures exceed the EPA reference dose of 0.005 mg/kg-day. Approximately 30 percent of the potential exposure distribution falls above the level where mild toxicity would be expected. The additional contribution expected from background dietary intake, plus the small contribution (1 to 5 percent) anticipated from other sources, would result in a greater percentage of the distribution falling within the range of toxicity. That toxicity is largely manifested as increased copper excretion leading to copper deficiency. Intakes in the uppermost tail of the distribution might be expected to result in gout-like symptoms.

Because the simulations cover only the drinking water exposure route, additional intakes from previously screened alternate exposure pathways can be compared to toxicity ranges.

That comparison helps determine whether these intake levels would be associated with adverse health effects either when combined with the drinking water intake or when the sole exposure source is from the alternate pathway. This information is revisited to determine the expected toxicity when any of these pathways occur independently of the drinking water ingestion route or when there is a significant incremental increase to the simulated exposures.

Because cancer is a single-effect endpoint estimated for a cumulative lifetime exposure, and because cancer risks are regulated separately under the National Contingency Plan, a somewhat different approach to probability distribution is required for carcinogens. Carcinogenic risks associated with radiological exposure from ground water ingestion can be simulated if site data exist to create a meaningful distribution for concentration over time and for exposure duration. Because exposure to these contaminants is estimated over a lifetime, this simulation is performed for the adult population. This exposure is measured in picocuries per lifetime because the carcinogenic risk of radionuclides is related to its radiological properties. The carcinogenic potential of exposures in this range are calculated using oral slope factors from the Health Effects Assessment Summary Tables (EPA, 1992).

Section 7.0 ECOLOGICAL AND LIVESTOCK RISK EVALUATION

Although this section is included in the baseline risk assessments, the methodology used in this evaluation is not covered here. A brief summary of the method is included in Appendix B of the draft PEIS (DOE, 1994).

Section 8.0 INTERPRETATION AND RECOMMENDATIONS

This section includes a summary of the risk assessment results, which includes a thorough explanation of the assessment's limitations. Typical uncertainties and limitations are summarized as follows:

- Fluctuations and trends in contaminant concentrations.
- Use of ground water data from filtered samples.
- Completeness of ground water data (for example, has the most contaminated part of the plume been located? Were analyses performed for all relevant contaminants?).
- Use of data not specific to sites to derive exposure parameters.
- Eliminating exposure pathways at the screening stage based on poorly defined uptake parameters.
- Limitations in available toxicity data.
- Limitations in the data available to evaluate contaminant interactions.

This section also summarizes the UMTRCA ground water criteria and any other relevant health advisories or standards. If the site presents an imminent risk to public health, risk mitigation measures are described. This generally involves characterization of potential interim institutional controls that may be pursued to prevent access to contaminated ground water while the site undergoes further study and/or remediation.

Recommendations comprise the last component of this section. Recommendations include interim institutional controls, if appropriate, as well as any further site characterization necessary to better evaluate risks for remedial action decisions.

3.0 RISK ASSESSMENT SUPPLEMENT

Supplemental information, bound under separate cover, should be available with the risk assessment document to allow presentation of 1) the detailed methodology used in document preparation; 2) the complete database used to evaluate site-specific contamination; and 3) any remaining uncertainties not covered in sufficient depth in the general document. The supplement should include the following:

- A copy of this document describing the human health risk assessment methodology for the UMTRA Ground Water Project.
- A printout of data tables showing all data, filtered and unfiltered, and well completion information used to determine ground water contamination at the site. Results of any statistical tests used in the evaluation should also be included in tabular form.
- Statistical summary report, including the results of statistical tests, spreadsheets, and assumptions used.
- Geochemical and hydrologic modeling reports, including printouts, assumptions, and spreadsheets.
- Spreadsheets documenting the screening of exposure pathways.
- Supporting documentation for the evaluation of ecological risks.
- A discussion of any uncertainties specific to the site. Generic uncertainties common to all UMTRA Project risk assessments are discussed in the risk assessment itself. Possible topics include incomplete characterization of domestic water use, background water quality, and potential wetland areas. This part of the supplement allows the authors to discuss areas of concern and any mechanisms by which uncertainties in the document could be reduced.

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4.0 FILES TO DOCUMENT CONTROL

All calculations and spread sheets, memos, or meeting minutes that summarize discussions affecting the content/direction of the risk assessment, and any other relevant documentation should be filed in document control. This should enable external parties to trace the evolution of decisions affecting the evaluation of site-related risks. Calculations should be signed by the individuals who performed and who checked the numerical values prior to document submission. The calculation sets should include @RISK spreadsheets. Spreadsheets should be included both in the formula and site-specific numeric forms. All site-specific correspondence from the public, regulators, or other consultants should also be included in the document control file.

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5.0 RISK ASSESSMENT LIMITATIONS

The procedures described here represent a methodology that incorporates probability distributions for exposure with superimposed toxicity range information and criteria. Additional work can be directed toward a better characterization and reduction of uncertainties and extension of the potential applications of this method.

For many UMTRA Project sites, an extensive evaluation of just the drinking water pathway may be sufficient. However, the analysis of other pathways may become increasingly important for remedial action decision-making at other UMTRA Project sites because at some sites drinking is not a potential use of the ground water. At these sites, in particular, meaningful risk assessment is necessary because risk-based levels other than MCLs may need to be developed from other pathways (for example, naturally poor water quality or yield may mean that while people do not drink the water, it may still be used for livestock or for bathing).

The following areas are identified for further development, with the eventual goal of providing risk analyses that support site-specific remedial action decisions more firmly.

DATA EVALUATION

- Because most of the historical data are for filtered samples, concentration probability distributions for contaminants are almost always based on filtered water quality data. However, exposures are likely to be to unfiltered ground water. More work is needed to assess the impact of filtering for the constituents most often associated with uranium milling processes.

- Risk assessment could use fate and transport theory and presence of existing time trends in concentration to improve projections of future concentration in the ground water. This may be important for carcinogens because they are calculated for long-term chronic exposure.

- More thought should be given to relevant sources of variability in data when developing and interpreting contaminant concentration probability distributions. For example, random ups and downs in contaminant concentrations tend to average out in the long run. As a result, the concentration distributions used to evaluate chronic exposure may be different from those used for assessing single dose or acute toxicity.

EXPOSURE ASSESSMENT

- Joint probability distributions are needed to reflect the positive correlation between ingestion rate and body weight, especially for infants and children. The use of joint probability distributions would reduce the variability in average daily intake distributions.

- A separate distribution should be included to quantify water ingestion rates of infants fed exclusively on reconstituted formula.

- Probabilistic assessment of exposure could be extended to other pathways if realistic distributions were available for such variables as meat and milk transfer coefficients, site-specific plant uptake values, and produce, meat, and milk ingestion rates.

- Additional information is needed to develop site-specific exposure frequency and exposure duration distributions.

- A more detailed evaluation of ground water contaminant concentration trends with time is needed to determine the significance of carcinogenic exposures.

TOXICITY ASSESSMENT

- Additional toxicity data available from other sources should be incorporated for completeness.

- Combined toxicity and contaminant interactions could be presented graphically if quantitative interpretation of a net result of interaction were possible with available toxicity data.

- Site contaminants may pose special risks to certain sensitive subpopulations such as diabetics, the elderly, pregnant women, alcoholics, or individuals with prior exposures to site contaminants (for example, occupational exposures). Identification and discussion of these problems should receive additional attention.

- Further improvement in representation of toxicity data and uncertainties could be explored.

- When available, plant uptake data should be incorporated.

Many of these limitations will be addressed by the SOWP and other ongoing studies that will be completed prior to remedial action decision making.

6.0 METHODOLOGY CONCLUSIONS

Risk assessment methodologies were reviewed from the literature and in discussions with regulatory agencies, scientists, and professionals in the field. Based on the UMTRA Project experience and this research, there is consensus that current risk assessment methodologies are imperfect in many respects. Many risk assessors believe that incorporation of probabilistic analysis would resolve some of the problems. Work with UMTRA data indicates that while probabilistic methods offer a means of incorporating variability into assessments, in many cases data are insufficient to allow valid distributions to be developed. Distributions based on inadequate data can introduce additional uncertainty and potential sources of confusion into the process rather than increasing the value of the assessment.

The major areas where data are insufficient for constructing probability distributions are those involving toxicity assessment: human data are often unavailable, accurate dose reconstructions are not always possible, and extrapolations from animal data to humans are often questionable. However, databases needed to assess many aspects of *exposure* are often adequate to allow probability distributions to be constructed with a high degree of confidence. As such, this approach incorporates probability distributions for all variables where adequate databases are available for the exposure assessment.

To convey as much information as possible to the public and to decision-makers, the baseline risk assessments present a semiquantitative interpretation of toxicity and potential health risk. Available toxicity data from the literature are translated into a graphic form that is superimposed on the exposure ranges. Toxicity ranges can be defined from existing human data on nutritional and/or dietary intakes, through a full range of toxic effects from minor to severe. These can be supplemented with animal data if human data do not exist and if the animal data are notated accordingly. As such, the reader can see how much overlap exists between ranges of exposure where adverse health effects had been reported and the potential exposures that might result from use of ground water at the UMTRA Project sites. The reader can also gain a better understanding of the severity of the potential effect.

Although all human health risk assessments are limited by the database available, managing risk will be facilitated by providing the public and decision-makers with a graphic representation that improves their ability to make informed decisions based on relative toxicity, likelihood of effect, and severity of effect. Although no safety factors are directly incorporated in the present baseline risk assessment methodology, decision-makers and the public are given information that should allow such concerns to be addressed based on realistic site-specific assumptions. This will enable the UMTRA Project to make better decisions that adequately protect public health and to effectively communicate those decisions to the public.

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7.0 LIST OF CONTRIBUTORS

The following individuals contributed to the preparation of this document.

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L. Keith (HTI)	Text processing
J. Gates	Graphic design
J. Torline, V. Beck	Technical editing

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SUPPLEMENT 2

DERIVATION OF INGESTION RATE AND BODY WEIGHT DISTRIBUTIONS

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DERIVATION OF INGESTION RATE AND BODY WEIGHT DISTRIBUTIONS FOR USE IN BASELINE RISK ASSESSMENTS OF UMTRA PROJECT SITES

1.0 Introduction

Individual residents within a potentially exposed population can be expected to vary with respect to tap water consumption habits and body weight. Consequently health risks associated with consumption of contaminated groundwater at UMTRA Project sites will vary among members of this population. To adequately describe the range of potential risks to the population, naturally occurring variability in daily tap water intake and body weight were incorporated into risk assessments through probability distributions. Probability distributions provide a range of reasonable values for a variable and a measure of the relative likelihood of all the values within the range. The probability distributions used for the UMTRA risk assessments were derived from survey data on tap water consumption and body weights within the United States population.

The original source of the tap water information was the 1977-1978 Nationwide Food Consumption Survey of the U.S. Department of Agriculture. The 26,081 participants in the survey recorded all foods and beverages consumed during a three day period. Ershow and Cantor (1989) converted the tap water intake data from this survey into units of grams per day (equivalent to milliliters per day) and published histograms summarizing daily tap water consumption by infants (0-1 years), children (1-10 years), teenagers (11-20 years), adults (21-64) and seniors (65 years and older). Roseberry and Burmaster (1992) fit lognormal distributions to the histograms provided by Ershow and Cantor and published estimates of the mean and standard deviation of the natural logarithm of daily tap water intake [ln(intake)] for each age group.

The original source of the body weight data is not known. The Environmental Protection Agency (EPA) Exposure Factors Handbook (1989) presents several percentiles of the distribution of body weight in kilograms (kg) for each year of age up to 17 years, and for the adult age categories 18-24, 25-34, 35-44, 45-54, 55-64 and 65-74 years. Male and female body weight percentiles were tabled separately.

Risk assessments of UMTRA Project sites evaluate potential risks for three age categories: infants (0-1 years), children (1-10 years), and adults (11-64 years), males and females combined. Teens were combined with adults for assessment of risk because the two age groups are expected to exhibit similar toxicological responsiveness to contaminants and because the ratio of their ingestion rate and body weight distributions are fairly comparable. Therefore, the information contained in the sources described above required additional processing to render probability distributions relevant to a mixed population of males and females within these broad age categories. The procedures followed to produce the final probability distributions used for risk assessment are described in the following sections of this report.

2.0 Tap water ingestion rate distributions

The lognormal probability distributions developed by Roseberry and Burmaster (1992) for daily tap water consumption among infants (0-1 years), children (1-10 years), teens (11-19 years), and adults (20-64 years) were modified for use in UMTRA Project risk assessments as follows:

- Units of measurement were converted from the natural logarithm of milliters per day to liters per day (L/day), since the liter is the volumetric unit used to quantify contaminant concentrations in groundwater.
- Distributions were truncated at the lower 0.01th and at the upper 99.99th percentiles.
- A combined age group of 11-64 was created from information provided on tap water intake distributions for teens and adults, plus the relative percentages of teens and adults in the U.S. population.

These modifications are presented in detail in sections 2.1-2.3. Final distributions of water ingestion rates (L/day) are lognormal with the characteristics below.

Age group (yrs)	Mean	Standard deviation	Lower limit	Upper limit
	(L/day)			
less than 1	0.32	0.22	0.027	2.6
1 - 10	0.70	0.37	0.10	3.9
11 - 19	0.91	0.52	0.11	5.7
20 - 64	1.26	0.66	0.18	6.9

Note: The probability distribution of the water ingestion rate by individuals between 11 and 64 years of age is a mixture of the teen distribution (with probability 0.179) and the adult 20-64 distribution (with probability 0.821). These probabilities reflect the relative population sizes of these two age groups.

2.1 Units of measurement were converted from ln(mL/day) to L/day

Roseberry and Burmaster (1992) used lognormal distributions to describe variation in daily tap water intake among the U.S. population. Table I of their article presents the mean μ and standard deviation σ of the *normal* distribution produced by taking the natural logarithm of the intake values. The unit of measurement for these parameter

estimates are ln(mL/day). The mean and standard deviation of the *lognormal* distributions are not simply the antilogs of μ and σ, but are computed as follows:

mean (mL/day) = $\exp(\mu + \sigma^2/2)$

standard deviation (mL/day) = $\text{sqrt}[\ \exp(2\mu + 2\sigma^2) - \text{mean}^2\ ]$

Conversion from units of mL/day to L/day is accomplished by division by 1000.

Example:

For the age group 0-1 yrs, tap water intake parameters provided by Roseberry and Burmaster are $\mu = 5.587$ and $\sigma = 0.615$. Therefore,

mean (mL/day)
$$= \exp(5.587 + 0.615^2/2)$$
$$= \exp(5.587 + 0.189)$$
$$= \exp(5.776)$$
$$= 322 \text{ mL/day or } 0.322 \text{ L/day}$$

standard deviation (mL/day)
$$= \text{sqrt}[\ \exp(2*5.587 + 2*0.615^2) - \text{mean}^2\ ]$$
$$= \text{sqrt}[\ \exp(11.930) - 322^2\ ]$$
$$= \text{sqrt}[\ 151820 - 103684\ ]$$
$$= \text{sqrt}[\ 48136\ ]$$
$$= 219 \text{ mL/day or } 0.219 \text{ L/day}$$

2.2 Distributions were truncated at the lower 0.01th and the upper 99.99th percentiles

The distributions of ingestion rate were truncated in order to place a reasonable lower and upper limit on the average daily tap water consumption by individuals within a potentially exposed population. For example, it is physically impossible for an individual to consume an average of 1000 liters of water per day, yet 1000 liters lies within the mathematical range of a lognormal distribution. The lowest 0.01th percent and uppermost 99.99th percent of the theoretical distributions were removed from consideration. The truncation is approximately equivalent to removing the largest and the smallest ingestion rate value produced by 10,000 Monte Carlo simulations. The small fraction of unrealistic values removed by truncation might otherwise impact the average value as well as the extreme tails of the simulated ingestion rate distribution.

For normal distributions, the 0.01th and 99.99th percentiles are, respectively, 3.719 standard deviations smaller or larger than the mean. Thus, the lower and upper limits

were determined for normally distributed ln(intake), exponentiated, and converted from mL/day to L/day by division of the limits by 1000.

lower limit (mL/day) = $\exp(\mu - 3.719\sigma)$

upper limit (mL/day) = $\exp(\mu + 3.719\sigma)$

Example:

For the age group 0-1 yrs, tap water intake parameters provided by Roseberry and Burmaster are $\mu = 5.587$ and $\sigma = 0.615$. Therefore,

lower limit
= exp(5.587 - 3.719*0.615)
= exp(5.587 - 2.287)
= exp(3.300)
= 27 mL/day or 0.027 L/day

upper limit
= exp(5.587 + 3.719*0.615)
= exp(5.587 + 2.287)
= exp(7.874)
= 2630 mL/day or 2.63 L/day

2.3 Ingestion rate distribution created for the combined age group 11-64 years

Roseberry and Burmaster (1992) published separate lognormal distributions for the water ingestion rate by teens (11-19) and adults (20-64). A single distribution representing the combined age group 11-64 years was simulated as a random mixture of these two distributions.

Based on results of a 1988 national census, as summarized by Roseberry and Burmaster, teens 11-19 year olds make up 12.8 percent of the national population, whereas adults between 20 and 64 years old comprise 58.7 percent of the total. Combined, the two age groups represent 12.8 + 58.7 = 71.5 percent of the total national population. Therefore, teenagers make up (0.128/0.715)*100 or 17.9 percent of the combined subpopulation of individuals 11-64 years of age. The remaining 82.1 percent of the subpopulation are adults.

To simulate the ingestion rate of a randomly selected individual from the combined subpopulation, one first generates an observation from a binary random variable X, that is, a random variable that can assume only two possible values, zero and one. The probability that X assumes the value of zero is 0.179, (representing selection of a teenager from the combined subpopulation). The other possible outcome for X is one, which occurs with probability 0.821 and represents selection of an adult 20-64 years of age from the combined subpopulation. The outcome of the binary random variable

X then directs the simulation program to generate a random ingestion rate according to the appropriate distribution.

Let	X =	0	with probability 0.179
		1	with probability 0.821

Then if	X =	0	generate a random ingestion rate from the lognormal distribution for age group 11-19.
		1	generate a random ingestion rate from the lognormal distribution for age group 20-64.

3.0 Body weight distributions

Probability distributions for body weight in kilograms (kg) were developed from the percentile information provided in the EPA Exposure Factors Handbook (1989). This handbook reports percentiles separately for males and females for every year of life up to age 17, then for adult age groups 18-24, 25-34, 35-44, 45-54 and 55-64. Several steps were required to convert the EPA data into theoretical probability distributions for age groups 0-1 years, 1-10 years, and 11-64 years, males and females combined.

- Graphical tools were used to confirm the adequacy of lognormal distributions to fit the EPA percentile data on body weights. The mean and standard deviation of the natural logarithm of body weight [ln(body weight)] were estimated for each gender and age.

- The mean and standard deviation of ln(body weight) for a population composed of both males and females of several ages was estimated from the individual means and standard deviations of the EPA subgroups included within the population using standard formulae from probability theory and general assumptions concerning the size of each EPA subgroup within the U.S. population.

- The probability distributions for ln(body weight) of infants, children, teens and adults, males and females combined, were assumed to be normal. The adequacy of a normal distribution to approximate a mixture of several normal distributions was evaluated through simulation.

- The assumed normal distributions for ln(body weight) were converted to lognormal distributions for body weight (kg) and the distributions were truncated at the lower 0.01th and upper 99.99th percentiles.

- A combined age group of 11-64 was created from information provided on body weight distributions for teens and adults, plus the relative percentages of teens and adults in the U.S. population.

These steps are discussed in sections 3.1-3.4. The final distributions for body weight (kg) are lognormal with the characteristics below.

Age group (yrs)	Mean	Standard deviation	Lower limit	Upper limit
	(kg)			
Less than 1	8.8	1.3	5.1	15
1 - 10	22	91	4.6	90
11 - 17	54	14	20	130
18 - 64	68	14	31	150

Note: The probability distribution of the body weight among individuals 11 and 64 years of age is a mixture of the teen distribution (with probability 0.179) and the adults (with probability 0.821). These probabilities approximately reflect the relative population sizes of the two age groups.

3.1 Adequacy of normal distribution as a fit to EPA percentile data on log body weight

The EPA Exposure Factors Handbook (1989) provided estimates of the 5th, 10th, 15th, 25th, 50th, 75th, 85th, 90th and 95th percentiles of body weight. For this discussion, the letter X will represent the random variable Body Weight (kg) within an age and sex subpopulation and x_p represents the EPA estimate of the p*100th percentile of X. If the natural logarithm of X (ln X) is normally distributed within the subpopulation, with mean μ and standard deviation σ, then the following logic is true.

If: $\text{Prob}(X \leq x_p) \approx p$

Then: $\text{Prob}(\ln X \leq \ln x_p) \approx p$

$$\Phi((\ln x_p - \mu)/\sigma) \approx p$$

$$(\ln x_p - \mu)/\sigma \approx \Phi^{-1}(p)$$

$$\ln x_p \approx \mu + \sigma * \Phi^{-1}(p)$$

where $\Phi(\cdot)$ and $\Phi^{-1}(\cdot)$ are the normal cumulative distribution function and its inverse function, respectively.

This implies that an x-y plot of all the data pairs $[\Phi^{-1}(p), \ln x_p]$ provided by EPA should fall approximately on a straight line. Furthermore, the y-intercept is an estimate of μ and the slope is an estimate of σ.

These x-y plots were made using the EPA percentiles for body weight in each different age groups and for both males and females. The linearity of the plots was striking in all cases and the assumption of normality of ln(log body weight) was deemed reasonable. The equation of the line through the data was estimated using ordinary least squares. The coefficient of determination (R^2) for these regression lines ranged from 96 to 99 percent, indicating that the least squares line fit the data well. Table 3.1 summarizes the resulting estimates of the mean and standard deviation of the distribution of ln(body weight) for each age and gender. Also included in Table 3.1 is the estimated size of each individual age/gender class within the U.S. population (National Center for Health Statistics 1987). The relative proportion column in Table 3.1 is explained in section 3.2.

3.2 Estimation of the mean and standard deviation of the distribution of the natural logarithm of body weight for infants, children, teenagers, and adults.

Males and females were combined, as were several of the EPA age categories, for risk assessment purposes. The mean and standard deviation of these larger groupings can be estimated from the subgroup means and standard deviations if the relative proportion of each of the subgroups is known (or assumed).

Table 3.1

Estimates of the mean (μ) and standard deviation (σ) of the natural logarithm of body weight (in units of ln kg) by age and gender, approximate size and relative proportion of the individual age/gender groups within the larger categories of infants, children, teenagers and adults in the United States

Class	Age	Sex	. . . Estimated			
			μ	σ	Population size (millions)	Relative proportion
Infants	<1	M	2.21	0.133	0.8	0.50
		F	2.12	0.138	0.8	0.50
					Total:	1.00
Children	1	M	2.44	0.124	1.6	0.05
		F	2.36	0.129	1.5	0.05
	2	M	2.58	0.120	1.5	0.05
		F	2.54	0.117	1.5	0.05
	3	M	2.73	0.114	1.5	0.05
		F	2.68	0.139	1.5	0.05
	4	M	2.85	0.126	1.6	0.05
		F	2.82	0.134	1.5	0.05
	5	M	2.97	0.131	1.6	0.05
		F	2.96	0.160	1.5	0.05
	6	M	3.12	0.151	1.7	0.05
		F	3.08	0.171	1.7	0.05
	7	M	3.20	0.154	1.8	0.05
		F	3.18	0.174	1.7	0.05
	8	M	3.32	0.177	1.8	0.05
		F	3.30	0.153	1.5	0.05
	9	M	3.41	0.164	1.7	0.05
		F	3.45	0.208	1.9	0.05
	10	M	3.58	0.195	1.8	0.05
		F	3.56	0.198	1.7	0.05
					Total:	1.00
Teenagers	11	M	3.67	0.240	1.8	0.07
		F	3.69	0.220	1.8	0.07
	12	M	3.77	0.222	1.6	0.07
		F	3.81	0.218	1.7	0.07
	13	M	3.87	0.225	2.1	0.07
		F	3.91	0.218	1.9	0.07
	14	M	4.00	0.177	2.2	0.07
		F	3.98	0.187	2.1	0.07
	15	M	4.09	0.158	2.1	0.07
		F	3.99	0.148	2.1	0.07

Table 3.1 continued

Class	Age	Sex	. . . Estimated . . .			
			μ	σ	Population size (millions)	Relative proportion
Teenagers (cont'd)	16	M	4.19	0.165	2.1	0.07
		F	4.05	0.166	2.2	0.07
	17	M	4.18	0.167	2.1	0.07
		F	4.07	0.160	1.8	0.07
					Total:	1.00
Adults	18-24	M	4.28	0.165	13.3	0.10
		F	4.08	0.171	14.2	0.11
	25-34	M	4.34	0.165	15.9	0.12
		F	4.14	0.208	16.9	0.14
	35-44	M	4.37	0.167	11.4	0.09
		F	4.18	0.210	12.3	0.10
	45-54	M	4.37	0.168	11.1	0.08
		F	4.18	0.212	11.9	0.09
	55-64	M	4.34	0.159	9.6	0.08
		F	4.19	0.208	10.7	0.08
					Total:	1.00

Assume a combined group consists of K subgroups. Designate the mean and standard deviation of the kth subgroup as μ_k and σ_k, and assume that the relative proportion of the kth subgroup is π_k, such that the sum of the π_k over all K of the subgroups equals one.

The mean of the combined group is

$$\mu_{comb} = \Sigma\, \mu_k * \pi_k.$$

The standard deviation of the combined group is

$$\sigma_{comb} = \text{sqrt}\ [\ \Sigma\, \sigma^2_k * \pi_k \quad + \quad \Sigma\, (\mu_k - \mu_{comb})^2 * \pi_k\ ]$$

If the means, standard deviations, and relative proportions of the subgroups are replaced by estimates, the results are estimates of the mean and standard deviation of the combined groups.

Table 3.1 provides estimates of the individual means and standard deviations of the subgroups that need to be combined for risk assessment purposes into the broad categories of infants, children, teenagers, and adults. In addition, Table 1 shows the 1976-1980 census estimates of the size of the individual subgroups within the U.S. population as reported in National Center for Health Statistics (1987). The relative proportions of males and females are roughly comparable from infancy through age 17. Therefore, a 50:50 ratio of males to females was assumed for infants, children, and teenagers. There were apparently slightly more older children than younger children in the late 1970s. However, the differences are subtle and may not hold true in the late 1990s. Therefore, the relative proportions of children of any age or sex between 1 and 10 were assumed to be equal, and since there are 20 subgroups (2 sexes * 10 ages) the common value is 1/20 or 0.05. Similarly, the relative proportions of teenagers of any sex or age between 11 and 17 were all set equal to 1/14 = .07.

Starting with the adult 18-24 age groups, there are estimated to be fewer males than females in the U.S. population. The age distribution of adults also show a predictable decline in numbers with increasing age. Since these age-related trends have a scientific basis and are unlikely to change dramatically in the next few years, the relative proportions π_k were selected to incorporate these gender and age differences. Between ages 18 and 64, the male to female ratio was assumed to be 48:52. The relative proportions of adults in the age categories 18-24, 25-34,..., 55-64 were equated with the observed relative frequencies of these age groups in the 1976-80 census. For example, the estimated total population size of the 18-64 age group is 127.3 million, of which 13.3 + 14.2 = 27.5 million were 18-24 years old. Thus, the observed relative frequency of the 18-24 year age group was 27.5/127.3 = 0.216. Adjustments for the sex differential produced estimated relative proportions of 0.48*0.216 = 0.10 for men and 0.52*0.216 = 0.11 for women in the 18-24 age group. Calculations of the estimated relative proportions of the remaining adult age groups were similar.

The estimated means, standard deviations, and relative proportions were used in the formulae above to estimate the mean and standard deviation of ln(body weight) in the

broad age categories of infants, children, teenagers, and adults. Figure 3.1 provides an example of the computations for the adult 18-64 age category and summarizes the results for the broad age categories.

3.3 Mixtures of distributions replaced by single distributions for infants, children, teenagers, and adults.

The distributions of the natural logarithm of body weights among infants, children, teenagers, and adults are random mixtures of the separate normal distributions describing the body weights of males and females at each distinctive age. Theoretically such a mixture will not be normally distributed. Therefore, monte carlo simulations were done to evaluate the severity of the departures from normality of the mixture distributions.

One iteration of the simulation for children, for example, would randomly "select" a child at random and determine its age and gender according to the relative proportions listed in Table 1. One random measurement of ln(body weight) would then be generated according to the appropriate probability distribution. This two step process was repeated 1200 times, resulting in a mixture of simulated ln(weights) for boys and girls of various ages. A histogram of the simulated data is shown in Figure 3.2. The simulated mixture distribution is symmetrical, bell-shaped, and well described by a normal distribution except for the extreme tails (below the 1st percent and above the 99th percentile). The simulated percentiles for the distribution of ln(body weight) among children are compared to a theoretical normal percentile at the bottom of Figure 3.2.

From the simulation excercise, it was determined that a single normal distribution could replace the mixture of twenty distributions in describing variation in ln(body weight) among children. The same results were obtained for infants, teenagers, and adults. For this reason, normal distributions were selected to describe the distribution of ln(body weight) for risk assessment purposes. The means and standard deviations of these distributions are those presented at the bottom of Figure 3.1.

3.4 Last steps

The final three steps to prepare the distributions for use in monte carlo simulations are identical to those followed for preparation of the water ingestion rate distributions. These steps are described in detail in sections 2.1-2.3.

It should be noted that the EPA body weight tables included 18 and 19 year olds among other young adults up to age 24, whereas the drinking water ingestion age categories categorized 18 and 19 years along with younger teenagers. It was assumed that the difference in definition of a small subset of the population would not impact the distributions in a major way.

Figure 3.1

Calculation of the estimated mean and standard deviation of the natural logarithm of body weight for adults ages 18-64 (units are ln kg)

Age	Sex	. . . Estimates of . . .			$\mu_k * \pi_k$	$\sigma^2_k * \pi_k$	$(\mu_k - \mu_{comb})^2 * \pi_k$
		μ_k	σ_k	π_k			
		(from Table 3.1)					
18-24	M	4.28	0.165	0.10	0.428	0.0027	0.0006
	F	4.08	0.171	0.11	0.449	0.0032	0.0016
25-34	M	4.34	0.165	0.12	0.521	0.0033	0.0024
	F	4.14	0.208	0.14	0.580	0.0061	0.0005
35-44	M	4.37	0.167	0.09	0.393	0.0025	0.0026
	F	4.18	0.210	0.10	0.418	0.0044	0.0000
45-54	M	4.37	0.168	0.08	0.350	0.0023	0.0023
	F	4.18	0.212	0.09	0.376	0.0040	0.0000
55-64	M	4.34	0.159	0.08	0.347	0.0020	0.0016
	F	4.19	0.208	0.08	0.335	0.0035	0.0000
SUM:					4.20	0.0340	0.0116

Estimated mean of ln(body weight) for adults 18-64 = μ_{comb} = 4.20

Estimated standard deviation of ln(body weight) for adults 18-64 = σ_{comb} = sqrt(0.0340+0.0116)
= 0.21

Estimated mean and standard deviation of the natural logarithm of body weight for the broad age categories used for risk assessment at UMTRA Project sites, calculations as illustrated above (units are ln kg)

Age group	Mean	Standard deviation
less than 1	2.17	0.14
1 - 10	3.01	0.40
11 - 17	3.95	0.25
18 - 64	4.20	0.21

Figure 3.2

Results of 1200 iterations of the mixture distribution for the natural logarithm of body weight of children ages 1 - 10 (units are ln kg)

Histogram of simulated data of ln(body weight) for children N = 1200 replications

Note: Each * represents 5 observations

ln(body wt)	Count	
2.0-2.2	15	***
2.2-2.4	54	**********
2.4-2.6	166	**********
2.6-2.8	187	**********
2.8-3.0	166	**********
3.0-3.2	208	**********
3.2-3.4	186	**********
3.4-3.6	145	**********
3.6-3.8	54	**********
3.8-4.0	18	****
4.0-4.2	1	*

Comparison of the simulated distribution to a normal distribution with the same mean and standard deviation

	Percentiles										
	0.5	1	5	10	25	50	75	90	95	99	99.5
Simulated	2.1	2.2	2.4	2.5	2.7	3.0	3.3	3.5	3.6	3.8	3.9
Normal	2.0	2.1	2.3	2.5	2.7	3.0	3.3	3.5	3.7	3.9	4.0

REFERENCES

Environmental Protection Agency, 1989. *Exposure Factors Handbook*, EPA/600/8-89/043, Office of Health and Environmental Assessment, Washington, D.C.

Ershow, A. G. and K. P. Cantor, 1989. *Total Water and Tapwater Intake in the United States: Population: Population-Based Estimates of Quantities and Sources*, Life Sciences Research Office, Federation of American Societies for Experimental Biology, Bethesda, MD.

National Center for Health Statistics, 1987, *Anthropometric Reference Data and Prevalence of Overweight, United States, 1976-80*, Vital and Health Statistics, Series 11, No. 238, DHHS Pub NO. (PHS) 87-1688, Public Health Service, Washington, D.C.

Roseberry, A. M., and D. E. Burmaster (1992). "Lognormal Distributions for Water Intake by Children and Adults, *Risk Analysis*, Vol. 12, No. 1, pp. 99-104.

SUPPLEMENT 3

GROUND WATER QUALITY DATA BY LOCATION

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GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0640
NORTH COORDINATE: 55815 FT
EAST COORDINATE: 89010 FT
12/12/93 TO 12/12/93
REPORT DATE: 03/27/96

FORMATION OF COMPLETION: NO RECOVERY OF DATA FOR CLASSIFYING (NR)
HYDRAULIC FLOW RELATIONSHIP: UPGRADIENT (U)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	12/12/93	N001	MG/L CACO3		372		-	-
AMMONIUM	12/12/93	0001	MG/L	<	0.1		0.1	-
CALCIUM	12/12/93	0001	MG/L		56.2		0.5	-
CALCIUM (TOTAL)	12/12/93	N001	MG/L		57.1		0.5	-
CHLORIDE	12/12/93	0001	MG/L		113		0.5	-
MAGNESIUM	12/12/93	0001	MG/L		107		0.1	-
MAGNESIUM (TOTAL)	12/12/93	N001	MG/L		105		0.1	-
MANGANESE	12/12/93	0001	MG/L	<	0.01		0.01	-
MANGANESE (TOTAL)	12/12/93	N001	MG/L	<	0.01		0.01	-
NITRATE	12/12/93	0001	MG/L		11		1	-
PH	12/12/93	N001	SU		7.87		-	-
POTASSIUM	12/12/93	0001	MG/L		0.8		0.1	-
POTASSIUM (TOTAL)	12/12/93	N001	MG/L		0.9		0.1	-
SILICA - SIO2	12/12/93	0001	MG/L		54.0		0.1	-
SILICA - SIO2 (TOTAL)	12/12/93	N001	MG/L		52.9		0.1	-
SODIUM	12/12/93	0001	MG/L		299		1	-
SODIUM (TOTAL)	12/12/93	N001	MG/L		298		1	-
SPECIFIC CONDUCTANCE	12/12/93	N001	UMHO/CM		1667		-	-
STRONTIUM	12/12/93	0001	MG/L		1.65		0.01	-
STRONTIUM (TOTAL)	12/12/93	N001	MG/L		1.59		0.01	-
SULFATE	12/12/93	0001	MG/L		668		1	-
TEMPERATURE	12/12/93	N001	C - DEGREE		11.6		-	-
TOTAL DISSOLVED SOLIDS	12/12/93	0001	MG/L		1590		10	-
URANIUM	12/12/93	0001	MG/L		0.021		0.001	-
URANIUM (TOTAL)	12/12/93	N001	MG/L		0.019		0.001	
VANADIUM	12/12/93	0001	MG/L		0.01		0.01	
VANADIUM (TOTAL)	12/12/93	N001	MG/L		0.02		0.01	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

DATA FILE NAME: \DART\MON01\GWQ10015.DAT

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0601
NORTH COORDINATE: 54980.4 FT
EAST COORDINATE: 88017.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: UPGRADIENT (U)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	05/31/91	0001	MG/L CACO3		280.	L	-	-
	08/11/92	0001			302		-	-
	11/22/92	0001			253		-	-
	06/29/93	N001			281		-	-
ALUMINUM	05/31/91	0001	MG/L	<	0.05	L	0.05	-
	02/23/92	0001			0.07		0.05	-
	08/11/92	0001		<	0.2	*	0.2	-
AMMONIUM	05/31/91	0001	MG/L		0.2	L	0.1	-
	02/23/92	0001		<	0.1		0.1	-
AMMONIUM (TOTAL)	06/29/93	N001	MG/L	<	0.1		0.1	-
ANTIMONY	05/31/91	0001	MG/L		0.003	L	0.003	-
	02/23/92	0001			0.004		0.003	-
	08/11/92	0001		<	0.06	W	0.06	-
ARSENIC	05/31/91	0001	MG/L	<	0.01	L	0.01	-
	02/23/92	0001		<	0.01		0.01	-
	08/11/92	0001		<	0.01	W	0.01	-
	11/22/92	0001		<	0.0015		0.0015	-
	06/29/93	0001		<	0.005		0.005	-
ARSENIC (TOTAL)	11/22/92	N001	MG/L	<	0.0015		0.0015	-
	06/29/93	N001			0.017	+	0.005	-
BARIUM	05/31/91	0001	MG/L		0.04	L	0.01	-
	02/23/92	0001			0.04		0.01	-
	08/11/92	0001		<	0.2		0.2	-
	11/22/92	0001			0.052		0.0015	-
	06/29/93	0001		<	0.1		0.1	-
BARIUM (TOTAL)	11/22/92	N001	MG/L		0.19		0.0015	-
	06/29/93	N001			2.0		0.1	-
BERYLLIUM	05/31/91	0001	MG/L	<	0.005	L	0.005	-
	08/11/92	0001		<	0.005		0.005	-
BORON	05/31/91	0001	MG/L		0.05	L	0.05	-
BROMIDE	05/31/91	0001	MG/L	<	0.1	L	0.1	-
CADMIUM	05/31/91	0001	MG/L	<	0.001	L	0.001	-
	02/23/92	0001		<	0.0005		0.0005	-
	08/11/92	0001		<	0.005	E	0.005	-
	11/22/92	0001		<	0.00013		0.00013	-
CADMIUM (TOTAL)	11/22/92	N001	MG/L		0.00030	N	0.00013	-
CALCIUM	05/31/91	0001	MG/L		29.9	L	0.5	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
+ - CORRELATION COEFFICIENT FOR MSA < 0.995
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0601
NORTH COORDINATE: 54980.4 FT
EAST COORDINATE: 88017.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: UPGRADIENT (U)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CALCIUM	02/23/92	0001	MG/L		27.4		0.5	-
	08/11/92	0001			29		5	-
	06/29/93	0001			27.8		0.5	-
CALCIUM (TOTAL)	06/29/93	N001	MG/L		318		0.5	-
CHLORIDE	05/31/91	0001	MG/L		15.2	L	0.5	-
	02/23/92	0001			15.1		0.5	-
	08/11/92	0001			14		0.016	-
CHLORIDE (TOTAL)	06/29/93	N001	MG/L		14.8		0.5	-
CHROMIUM	05/31/91	0001	MG/L	<	0.01	L	0.01	-
	02/23/92	0001		<	0.01		0.01	-
	08/11/92	0001		<	0.01		0.01	-
	11/22/92	0001		<	0.0053		0.0053	-
CHROMIUM (TOTAL)	11/22/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	05/31/91	0001	MG/L	<	0.03	L	0.03	-
COPPER	05/31/91	0001	MG/L	<	0.01	L	0.01	-
DISSOLVED OXYGEN	11/22/92	0001	MG/L		0.7		-	-
FLUORIDE	05/31/91	0001	MG/L		0.2	L	0.1	-
GROSS ALPHA	05/31/91	0001	PCI/L		0.0	L	1.	5.3
	02/23/92	0001			0.6		1.0	4.3
	08/11/92	0001			7.1		5.7	4.7
	11/22/92	0001			3.7	N	3.2	2.7
	06/29/93	0001			11		3	6
GROSS ALPHA (TOTAL)	11/22/92	N001	PCI/L		0.0	N	9.2	5.4
	06/29/93	N001			415		44	118
GROSS BETA	05/31/91	0001	PCI/L		2.2	L	0.5	3.2
	02/23/92	0001			1.6		0.5	2.5
	08/11/92	0001			10		5	4
	11/22/92	0001			0.0	N	5.7	3.3
	06/29/93	0001			2		4	4
GROSS BETA (TOTAL)	11/22/92	N001	PCI/L		0.7	N	6.6	4.0
	06/29/93	N001			182		46	50
IRON	05/31/91	0001	MG/L	<	0.03	L	0.03	-
	02/23/92	0001		<	0.03		0.03	-
	08/11/92	0001		<	0.1		0.1	-
	06/29/93	0001		<	0.03	J	0.03	-
IRON (TOTAL)	06/29/93	N001	MG/L		107		0.03	-
LEAD	05/31/91	0001	MG/L	<	0.005	L	0.005	-
	11/22/92	0001		<	0.0015		0.0015	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0601
NORTH COORDINATE: 54980.4 FT
EAST COORDINATE: 88017.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: UPGRADIENT (U)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
LEAD (TOTAL)	11/22/92	N001	MG/L		0.0041		0.0015	
LEAD-210	11/22/92	0001	PCI/L		0.4		2.0	1.2
LEAD-210 (TOTAL)	11/22/92	N001	PCI/L		1.1		2.0	1.2
MAGNESIUM	05/31/91	0001	MG/L		18.4	L	0.1	-
	02/23/92	0001			18.1		0.1	-
	08/11/92	0001			18		5	-
	06/29/93	0001			17.8		0.1	-
MAGNESIUM (TOTAL)	06/29/93	N001	MG/L		47.1		0.1	
MANGANESE	05/31/91	0001	MG/L	<	0.01	L	0.01	
	02/23/92	0001		<	0.01		0.01	
	08/11/92	0001		<	0.01		0.01	
	11/22/92	0001			0.0037		0.0015	
	06/29/93	0001			0.27		0.01	
MANGANESE (TOTAL)	11/22/92	N001	MG/L		0.16		0.0015	
	06/29/93	N001			2.76		0.01	
MOLYBDENUM	05/31/91	0001	MG/L		0.01	L	0.01	
	02/23/92	0001		<	0.01		0.01	
	08/11/92	0001		<	0.007		0.007	
	11/22/92	0001		<	0.0049	N	0.0049	
	06/29/93	0001		<	0.01		0.01	
MOLYBDENUM (TOTAL)	11/22/92	N001	MG/L	<	0.0049	N	0.0049	
	06/29/93	N001		<	0.01		0.01	
NICKEL	05/31/91	0001	MG/L	<	0.04	L	0.04	
NITRATE	05/31/91	0001	MG/L		5.4	L	1.	
	02/23/92	0001			2.7		1.0	
	08/11/92	0001			4.2		0.075	
	11/22/92	0001			4.3		0.044	
NITRATE (TOTAL)	06/29/93	N001	MG/L		3		1	
NITRITE AND NITRATE	05/31/91	0001	MG/L		1.22	L	0.05	
PH	05/31/91	0001	SU		7.85	L		
	02/23/92	0001			7.79			
	08/11/92	0001			7.77			
	11/22/92	0001			7.94			
	06/29/93	N001			7.46			
PHOSPHATE (TOTAL)	06/29/93	N001	MG/L		2.6		0.1	
POTASSIUM	05/31/91	0001	MG/L		1.89	L	0.01	
	02/23/92	0001			1.98		0.01	
	08/11/92	0001			1.6	*	0.575	
	06/29/93	0001			2.0		0.1	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0601
NORTH COORDINATE: 54980.4 FT
EAST COORDINATE: 88017.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: UPGRADIENT (U)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
POTASSIUM (TOTAL)	06/29/93	N001	MG/L		18.8		0.1	-
RADIUM-226	05/31/91	0001	PCI/L		0.1	L	1.	0.2
	02/23/92	0001			0.0		1.0	0.2
	08/11/92	0001			0.6		0.3	0.1
	11/22/92	0001			0.3		0.3	0.2
RADIUM-226 (TOTAL)	11/22/92	N001	PCI/L		0.8		0.3	0.3
RADIUM-228	05/31/91	0001	PCI/L		0.0	JL	1.	2.0
	02/23/92	0001			1.3		1.0	1.6
	08/11/92	0001			1.9		2.6	1.4
	11/22/92	0001			1.4		2.7	1.7
RADIUM-228 (TOTAL)	11/22/92	N001	PCI/L		2.3		2.4	1.7
REDOX POTENTIAL	11/22/92	0001	mVOLTS		434.5		-	-
	06/29/93	N001			450		-	-
SELENIUM	05/31/91	0001	MG/L		0.014	JL	0.005	-
	02/23/92	0001			0.007		0.005	-
	08/11/92	0001		<	0.005		0.005	-
	11/22/92	0001		<	0.0015	N	0.0015	-
SELENIUM (TOTAL)	11/22/92	N001	MG/L	<	0.0015		0.0015	-
SILICA - SIO2	05/31/91	0001	MG/L		14.0	L	0.1	-
SILICA - SIO2 (TOTAL)	06/29/93	N001	MG/L		33.5	H	0.5	-
SILVER	05/31/91	0001	MG/L	<	0.01	L	0.01	-
SODIUM	05/31/91	0001	MG/L		99.	L	1.	-
	02/23/92	0001			99.		1.	-
	08/11/92	0001			97		5	-
	06/29/93	0001			98		1	-
SODIUM (TOTAL)	06/29/93	N001	MG/L		102		1	-
SPECIFIC CONDUCTANCE	05/31/91	0001	UMHO/CM		750.	L	-	-
	02/23/92	0001			515		-	-
	08/11/92	0001			553		-	-
	11/22/92	0001			581		-	-
	06/29/93	N001			532		-	-
STRONTIUM	05/31/91	0001	MG/L		0.28	L	0.01	-
	02/23/92	0001			0.28		0.01	-
	08/11/92	0001			0.30		0.2	-
	11/22/92	0001			0.32		0.00035	-
	06/29/93	0001			0.29		0.01	-
STRONTIUM (TOTAL)	11/22/92	N001	MG/L		0.36		0.00035	-
	06/29/93	N001			0.84		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0601
NORTH COORDINATE: 54980.4 FT
EAST COORDINATE: 88017.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: UPGRADIENT (U)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SULFATE	05/31/91	0001	MG/L		60.	L	0.1	-
	02/23/92	0001			131.		10.	-
	08/11/92	0001			120		0.059	-
	11/22/92	0001			130		1.0	-
SULFATE (TOTAL)	11/22/92	N001	MG/L		130		1.0	-
	06/29/93	N001			124		1	-
SULFIDE	05/31/91	0001	MG/L	<	1.	IJL	1.	-
TEMPERATURE	05/31/91	0001	C - DEGREE		15.0	L	-	-
	02/23/92	0001			15.0		-	-
	08/11/92	0001			17.7		-	-
	11/22/92	0001			16.8		-	-
	06/29/93	N001			16.4		-	-
THALLIUM	05/31/91	0001	MG/L	<	0.01	L	0.01	-
THORIUM-230	05/31/91	0001	PCI/L		0.5	L	1.	0.4
TIN	05/31/91	0001	MG/L	<	0.01	IL	0.01	-
TOTAL DISSOLVED SOLIDS	05/31/91	0001	MG/L		436.	L	10.	-
	02/23/92	0001			429.		10.	-
	08/11/92	0001			380		42	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/29/93	N001	MG/L		440	H	10	-
TOTAL ORGANIC CARBON	05/31/91	0001	MG/L	<	1.	L	1.	-
	02/23/92	0001			1.		1.	-
	08/11/92	0001		<	1.0		1.0	-
URANIUM	05/31/91	0001	MG/L	<	0.001	L	0.001	-
	02/23/92	0001			0.006		0.001	-
	11/22/92	0001			0.006		0.001	-
	06/29/93	0001			0.004		0.001	-
URANIUM (TOTAL)	11/22/92	N001	MG/L		0.004		0.001	-
	06/29/93	N001			0.017		0.001	-
VANADIUM	05/31/91	0001	MG/L	<	0.01	L	0.01	-
	02/23/92	0001		<	0.01		0.01	-
	08/11/92	0001		<	0.05		0.05	-
	11/22/92	0001		<	0.0019		0.0019	-
	06/29/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	11/22/92	N001	MG/L		0.011		0.0019	-
	06/29/93	N001			0.14		0.01	-
ZINC	05/31/91	0001	MG/L	<	0.005	L	0.005	-
	02/23/92	0001		<	0.005		0.005	-
	08/11/92	0001		<	0.02		0.02	-
	11/22/92	0001		<	0.0010		0.0010	-
	06/29/93	0001			0.011	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0601
NORTH COORDINATE: 54980.4 FT
EAST COORDINATE: 88017.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: UPGRADIENT (U)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ZINC (TOTAL)	11/22/92	N001	MG/L		0.014		0.0010	-
	06/29/93	N001			0.271	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0602
NORTH COORDINATE: 56377.4 FT
EAST COORDINATE: 88661.2 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
	04/22/88	0001	MG/L CACO3		218.			
	06/05/89	0001			219.			
	05/30/91	0001			211.	L		
	02/25/92	0001			218			
	08/10/92	0001			213	L		
	11/22/92	0001			216			
	02/02/93	0001			231			
	06/30/93	N001			199			
ALUMINUM	06/05/89	0001	MG/L	<	0.1		0.1	
	05/30/91	0001		<	0.05	L	0.05	
	02/25/92	0001		<	0.05		0.05	
	08/10/92	0001		<	0.2	*L	0.2	
AMMONIUM	04/22/88	0001	MG/L	<	0.1		0.1	
	06/05/89	0001		<	0.1		0.1	
	05/30/91	0001		<	0.1	L	0.1	
	02/25/92	0001		<	0.1		0.1	
	02/02/93	0001		<	0.1		0.1	
AMMONIUM (TOTAL)	06/30/93	N001	MG/L	<	0.1		0.1	
ANTIMONY	06/05/89	0001	MG/L	<	0.003		0.003	
	05/30/91	0001		<	0.003	L	0.003	
	02/25/92	0001		<	0.003		0.003	
	08/10/92	0001		<	0.06	WL	0.06	
ARSENIC	04/22/88	0001	MG/L	<	0.001	J	0.01	-
	06/05/89	0001		<	0.01		0.01	-
	05/30/91	0001		<	0.01	L	0.01	-
	02/25/92	0001		<	0.01		0.01	-
	08/10/92	0001		<	0.01	WL	0.01	-
	11/22/92	0001		<	0.0015		0.0015	-
	06/30/93	0001		<	0.005		0.005	-
ARSENIC (TOTAL)	11/22/92	N001	MG/L		0.0026		0.0015	-
	06/30/93	N001		<	0.005		0.005	-
BARIUM	06/05/89	0001	MG/L	<	0.1		0.1	-
	05/30/91	0001			0.05	L	0.01	-
	02/25/92	0001			0.05		0.01	-
	08/10/92	0001		<	0.2	L	0.2	-
	11/22/92	0001			0.049		0.0015	-
	06/30/93	0001		<	0.1		0.1	-
BARIUM (TOTAL)	11/22/92	N001	MG/L		0.055		0.0015	-
	06/30/93	N001		<	0.1		0.1	-
BERYLLIUM	06/05/89	0001	MG/L	<	0.01		0.01	-
	05/30/91	0001		<	0.005	L	0.005	-
	08/10/92	0001		<	0.005	L	0.005	-
BORON	06/05/89	0001	MG/L	<	0.1		0.1	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0602
NORTH COORDINATE: 56377.4 FT
EAST COORDINATE: 88661.2 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BORON	05/30/91	0001	MG/L	<	0.05	L	0.05	-
BROMIDE	05/30/91	0001	MG/L		0.2	L	0.1	-
CADMIUM	04/22/88	0001	MG/L		0.005		0.001	-
	06/05/89	0001		<	0.001		0.001	-
	05/30/91	0001		<	0.001	L	0.001	-
	02/25/92	0001		<	0.0005		0.0005	-
	08/10/92	0001		<	0.005	EL	0.005	-
	11/22/92	0001		<	0.00013		0.00013	-
CADMIUM (TOTAL)	11/22/92	N001	MG/L	<	0.00013	NW	0.00013	-
CALCIUM	04/22/88	0001	MG/L		28.2		0.01	-
	06/05/89	0001			28.7		0.01	-
	05/30/91	0001			29.4	L	0.5	-
	02/25/92	0001			27.4		0.5	-
	08/10/92	0001			27	L	5	-
	02/02/93	0001			26.5		0.5	-
	06/30/93	0001			27.9		0.5	-
CALCIUM (TOTAL)	06/30/93	N001	MG/L		27.5		0.5	-
CHLORIDE	04/22/88	0001	MG/L		17.		1.	-
	06/05/89	0001			15.		1.	-
	05/30/91	0001			15.5	L	0.5	-
	02/25/92	0001			15.9		0.5	-
	08/10/92	0001			14	L	0.016	-
	02/02/93	0001			15.3		0.5	-
CHLORIDE (TOTAL)	06/30/93	N001	MG/L		14.9		0.5	-
CHROMIUM	06/05/89	0001	MG/L	<	0.01		0.01	-
	05/30/91	0001		<	0.01	L	0.01	-
	02/25/92	0001		<	0.01		0.01	-
	08/10/92	0001		<	0.01	L	0.01	-
	11/22/92	0001		<	0.0053		0.0053	-
CHROMIUM (TOTAL)	11/22/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	06/05/89	0001	MG/L	<	0.05		0.05	-
	05/30/91	0001		<	0.03	L	0.03	-
COPPER	06/05/89	0001	MG/L	<	0.02		0.02	-
	05/30/91	0001		<	0.01	L	0.01	-
CYANIDE	06/05/89	0001	MG/L	<	0.01		0.01	-
DISSOLVED OXYGEN	11/22/92	0001	MG/L		2.2		-	-
	06/30/93	N001			3.6		-	-
FLUORIDE	06/05/89	0001	MG/L		0.3		0.1	-
	05/30/91	0001			0.1	L	0.1	-
GROSS ALPHA	04/22/88	0001	PCI/L		8.3		0.2	4.1

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0602
NORTH COORDINATE: 56377.4 FT
EAST COORDINATE: 88661.2 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS ALPHA	05/30/91	0001	PCI/L		0.4	L	1.	5.4
	02/25/92	0001			11.2		1.0	5.9
	08/10/92	0001			3.7	L	5.7	3.8
	11/22/92	0001			3.0	N	3.3	2.6
	02/02/93	0001			0		6	7
	06/30/93	0001			2		3	5
GROSS ALPHA (TOTAL)	11/22/92	N001	PCI/L		1.0	N	7.1	4.3
	06/30/93	N001			3		3	5
GROSS BETA	04/22/88	0001	PCI/L		3.1		1.	1.9
	05/30/91	0001			0.0	L	0.5	2.8
	02/25/92	0001			9.4		0.5	3.2
	08/10/92	0001			0.6	L	4.6	2.6
	11/22/92	0001			0.0	N	6.0	3.4
	02/02/93	0001			0		11	5
	06/30/93	0001			0		4	4
GROSS BETA (TOTAL)	11/22/92	N001	PCI/L		7.2	N	5.2	3.4
	06/30/93	N001			0		4	4
IRON	06/05/89	0001	MG/L	<	0.03		0.03	-
	05/30/91	0001		<	0.03	L	0.03	-
	02/25/92	0001		<	0.03		0.03	-
	08/10/92	0001		<	0.1	L	0.1	-
	02/02/93	0001		<	0.03		0.03	-
	06/30/93	0001		<	0.03	J	0.03	-
IRON (TOTAL)	06/30/93	N001	MG/L		0.15	J	0.03	-
LEAD	06/05/89	0001	MG/L	<	0.01		0.01	-
	05/30/91	0001		<	0.005	L	0.005	-
	11/22/92	0001		<	0.0015		0.0015	-
LEAD (TOTAL)	11/22/92	N001	MG/L	<	0.0015		0.0015	-
LEAD-210	11/22/92	0001	PCI/L		1.7		2.0	1.3
LEAD-210 (TOTAL)	11/22/92	N001	PCI/L		1.2		2.0	1.2
MAGNESIUM	04/22/88	0001	MG/L		18.0		0.001	-
	06/05/89	0001			19.5		0.001	-
	05/30/91	0001			19.4	L	0.1	-
	02/25/92	0001			18.5		0.1	-
	08/10/92	0001			18	L	5	-
	02/02/93	0001			18.2		0.1	-
	06/30/93	0001			18.5		0.1	-
MAGNESIUM (TOTAL)	06/30/93	N001	MG/L		19.5		0.1	-
MANGANESE	06/05/89	0001	MG/L	<	0.01		0.01	-
	05/30/91	0001		<	0.01	L	0.01	-
	02/25/92	0001		<	0.01		0.01	-
	08/10/92	0001		<	0.01	L	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0602
NORTH COORDINATE: 56377.4 FT
EAST COORDINATE: 88661.2 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MANGANESE	11/22/92	0001	MG/L	<	0.0015		0.0015	-
	02/02/93	0001		<	0.01		0.01	-
	06/30/93	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	11/22/92	N001	MG/L	<	0.0015		0.0015	-
	06/30/93	N001		<	0.01		0.01	-
MERCURY	06/05/89	0001	MG/L	<	0.0002		0.0002	-
MOLYBDENUM	04/22/88	0001	MG/L		0.02		0.01	-
	06/05/89	0001		<	0.01		0.01	-
	05/30/91	0001		<	0.01	L	0.01	-
	02/25/92	0001		<	0.01		0.01	-
	08/10/92	0001		<	0.007	L	0.007	-
	11/22/92	0001		<	0.0049	N	0.0049	-
	06/30/93	0001		<	0.01		0.01	-
MOLYBDENUM (TOTAL)	11/22/92	N001	MG/L	<	0.0049	N	0.0049	-
	06/30/93	N001		<	0.01		0.01	-
NICKEL	06/05/89	0001	MG/L	<	0.04		0.04	-
	05/30/91	0001		<	0.04	L	0.04	-
NITRATE	04/22/88	0001	MG/L		4.1		1.	-
	06/05/89	0001			8.4		1.	-
	05/30/91	0001			7.4	L	1.	-
	02/25/92	0001			2.7		1.0	-
	08/10/92	0001			5.8	L	0.075	-
	11/22/92	0001			3.8		0.044	-
	02/02/93	0001			4		1	-
NITRATE (TOTAL)	06/30/93	N001	MG/L		2		1	-
NITRITE AND NITRATE	05/30/91	0001	MG/L		1.68	L	0.05	-
PH	04/22/88	0001	SU		7.83		-	-
	06/05/89	0001			7.83		-	-
	05/30/91	0001			7.91	L	-	-
	02/25/92	0001			7.78		-	-
	08/10/92	0001			7.88	L	-	-
	11/22/92	0001			8.01		-	-
	02/02/93	0001			7.80		-	-
	06/30/93	N001			7.39		-	-
PHOSPHATE	06/05/89	0001	MG/L		0.6		0.1	-
PHOSPHATE (TOTAL)	06/30/93	N001	MG/L		0.2		0.1	-
POTASSIUM	04/22/88	0001	MG/L		1.80		0.01	-
	06/05/89	0001			2.1		0.01	-
	05/30/91	0001			1.89	L	0.01	-
	02/25/92	0001			1.93		0.01	-
	08/10/92	0001			0.99	*L	0.575	-
	02/02/93	0001			1.9		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0602
NORTH COORDINATE: 56377.4 FT
EAST COORDINATE: 88661.2 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
POTASSIUM	06/30/93	0001	MG/L		1.9		0.1	-
POTASSIUM (TOTAL)	06/30/93	N001	MG/L		1.8		0.1	-
RADIUM-226	06/05/89	0001	PCI/L		0.5		1.	0.3
	05/30/91	0001			0.7	L	1.	0.2
	02/25/92	0001			1.0		1.0	0.5
	08/10/92	0001			0.6	L	0.3	0.1
	11/22/92	0001			0.8		0.3	0.3
RADIUM-226 (TOTAL)	11/22/92	N001	PCI/L		0.8		0.3	0.3
RADIUM-228	06/05/89	0001	PCI/L		0.0		1.	0.9
	05/30/91	0001			0.0	JL	1.	1.9
	02/25/92	0001			1.2		1.0	1.7
	08/10/92	0001			2.4	L	5.0	2.7
	11/22/92	0001			0.4		2.7	1.6
RADIUM-228 (TOTAL)	11/22/92	N001	PCI/L		3.2		2.4	1.7
REDOX POTENTIAL	11/22/92	0001	mVOLTS		458.0		-	-
	06/30/93	N001			424		-	-
SELENIUM	04/22/88	0001	MG/L		0.006		0.005	-
	06/05/89	0001		<	0.005		0.005	-
	05/30/91	0001			0.009	JL	0.005	-
	02/25/92	0001			0.006		0.005	-
	08/10/92	0001		<	0.005	L	0.005	-
	11/22/92	0001		<	0.0015	N	0.0015	-
SELENIUM (TOTAL)	11/22/92	N001	MG/L		0.0024		0.0015	-
SILICA - SIO2	06/05/89	0001	MG/L		14.		2.	-
	05/30/91	0001			13.6	L	0.1	-
SILICA - SIO2 (TOTAL)	06/30/93	N001	MG/L		13.7	H	0.5	-
SILVER	06/05/89	0001	MG/L	<	0.01		0.01	-
	05/30/91	0001		<	0.01	L	0.01	-
SODIUM	04/22/88	0001	MG/L		97.4		0.002	-
	06/05/89	0001			100.		0.002	-
	05/30/91	0001			112.	L	5.	-
	02/25/92	0001			109.		5.	-
	08/10/92	0001			99	L	5	-
	02/02/93	0001			101		0.1	-
	06/30/93	0001			99		1	-
SODIUM (TOTAL)	06/30/93	N001	MG/L		101		1	-
SPECIFIC CONDUCTANCE	04/22/88	0001	UMHO/CM		525.		-	-
	06/05/89	0001			470.		-	-
	05/30/91	0001			722.	L	-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0602
NORTH COORDINATE: 56377.4 FT
EAST COORDINATE: 88661.2 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SPECIFIC CONDUCTANCE	02/25/92	0001	UMHO/CM		568		-	-
	08/10/92	0001			603	L	-	-
	11/22/92	0001			580		-	-
	02/02/93	0001			575		-	-
	06/30/93	N001			382		-	-
STRONTIUM	05/30/91	0001	MG/L		0.28	L	0.01	-
	02/25/92	0001			0.27		0.01	-
	08/10/92	0001			0.29	L	0.2	-
	11/22/92	0001			0.36		0.00035	-
	06/30/93	0001			0.28		0.01	-
STRONTIUM (TOTAL)	11/22/92	N001	MG/L		0.34		0.00035	-
	06/30/93	N001			0.29		0.01	-
SULFATE	04/22/88	0001	MG/L		136.		0.1	-
	06/05/89	0001			139.		0.1	-
	05/30/91	0001			164.	L	0.1	-
	02/25/92	0001			127.		20.	-
	08/10/92	0001			120	L	0.059	-
	11/22/92	0001			130		1.0	-
	02/02/93	0001			126		1	-
SULFATE (TOTAL)	11/22/92	N001	MG/L		130		1.0	-
	06/30/93	N001			125		1	-
SULFIDE	06/05/89	0001	MG/L	<	0.1		0.1	-
	05/30/91	0001		<	1.	IJL	1.	-
TEMPERATURE	04/22/88	0001	C - DEGREE		13.5		-	-
	06/05/89	0001			14.8		-	-
	05/30/91	0001			16.3	L	-	-
	02/25/92	0001			14.2		-	-
	08/10/92	0001			16.8	L	-	-
	11/22/92	0001			16.0		-	-
	02/02/93	0001			14.8		-	-
	06/30/93	N001			15.9		-	-
THALLIUM	06/05/89	0001	MG/L	<	0.01		0.01	-
	05/30/91	0001		<	0.01	L	0.01	-
THORIUM-230	05/30/91	0001	PCI/L		1.0	L	1.	0.5
TIN	06/05/89	0001	MG/L	<	0.005		0.005	-
	05/30/91	0001		<	0.01	IL	0.01	-
TOTAL DISSOLVED SOLIDS	04/22/88	0001	MG/L		444.		10.	-
	06/05/89	0001			433.		10.	-
	05/30/91	0001			439.	L	10.	-
	02/25/92	0001			449.		10.	-
	08/10/92	0001			530	L	42	-
	02/02/93	0001			400		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/30/93	N001	MG/L		420	H	10	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0602
NORTH COORDINATE: 56377.4 FT
EAST COORDINATE: 88661.2 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TOTAL ORGANIC CARBON	04/22/88	0001	MG/L		61.2		1.	-
	05/30/91	0001		<	1.	L	1.	-
	02/25/92	0001		<	1.		1.	-
	08/10/92	0001		<	1.0	L	1.0	-
URANIUM	04/22/88	0001	MG/L		0.0044		0.003	-
	06/05/89	0001			0.0035		0.003	-
	05/30/91	0001		<	0.001	L	0.001	-
	02/25/92	0001			0.005		0.001	-
	11/22/92	0001			0.005		0.001	-
	02/02/93	0001			0.004		0.001	-
	06/30/93	0001			0.004		0.001	-
URANIUM (TOTAL)	11/22/92	N001	MG/L		0.003		0.001	-
	06/30/93	N001			0.004		0.001	-
VANADIUM	06/05/89	0001	MG/L	<	0.01		0.01	-
	05/30/91	0001		<	0.01	L	0.01	-
	02/25/92	0001		<	0.01		0.01	-
	08/10/92	0001		<	0.05	L	0.05	-
	11/22/92	0001		<	0.0019		0.0019	-
	06/30/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	11/22/92	N001	MG/L		0.0020		0.0019	-
	06/30/93	N001		<	0.01		0.01	-
ZINC	06/05/89	0001	MG/L	<	0.005		0.005	-
	05/30/91	0001		<	0.005	L	0.005	-
	02/25/92	0001		<	0.005		0.005	-
	08/10/92	0001		<	0.02	L	0.02	-
	11/22/92	0001			0.0012		0.0010	-
	06/30/93	0001			0.019	J	0.005	-
ZINC (TOTAL)	11/22/92	N001	MG/L		0.0050		0.0010	-
	06/30/93	N001			0.024	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0603
NORTH COORDINATE: 57812.7 FT
EAST COORDINATE: 89036.9 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/26/88	0001	MG/L CACO3		200.	L	-	-
	06/05/89	0001			200.		-	-
	05/31/91	0001			205.		-	-
	02/22/92	0001			202		-	-
	08/10/92	0001			192		-	-
	11/21/92	0001			201		-	-
	06/29/93	N001			192		-	-
ALUMINUM	06/05/89	0001	MG/L	<	0.1		0.1	-
	05/31/91	0001		<	0.05		0.05	-
	02/22/92	0001		<	0.05		0.05	-
	08/10/92	0001		<	0.2	*	0.2	-
AMMONIUM	04/26/88	0001	MG/L	<	0.1	L	0.1	-
	06/05/89	0001		<	0.1		0.1	-
	05/31/91	0001			0.6		0.1	-
	02/22/92	0001			0.5		0.1	-
AMMONIUM (TOTAL)	06/29/93	N001	MG/L		0.3		0.1	-
ANTIMONY	06/05/89	0001	MG/L	<	0.003		0.003	-
	05/31/91	0001		<	0.003		0.003	-
	02/22/92	0001		<	0.003		0.003	-
	08/10/92	0001		<	0.06	W	0.06	-
ARSENIC	04/26/88	0001	MG/L		0.001	JL	0.01	-
	06/05/89	0001		<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
	02/22/92	0001		<	0.01		0.01	-
	08/10/92	0001		<	0.01	W	0.01	-
	11/21/92	0001			0.0029		0.0015	-
	06/29/93	0001		<	0.005		0.005	-
ARSENIC (TOTAL)	11/21/92	N001	MG/L		0.0032		0.0015	-
	06/29/93	N001		<	0.005		0.005	-
BARIUM	06/05/89	0001	MG/L	<	0.1		0.1	-
	05/31/91	0001			0.04		0.01	-
	02/22/92	0001			0.04		0.01	-
	08/10/92	0001		<	0.2		0.2	-
	11/21/92	0001			0.038		0.0015	-
	06/29/93	0001		<	0.1		0.1	-
BARIUM (TOTAL)	11/21/92	N001	MG/L		0.041		0.0015	-
	06/29/93	N001		<	0.1		0.1	-
BERYLLIUM	06/05/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.005		0.005	-
	08/10/92	0001		<	0.005		0.005	-
BORON	06/05/89	0001	MG/L	<	0.1		0.1	-
	05/31/91	0001		<	0.05		0.05	-
BROMIDE	05/31/91	0001	MG/L		0.1		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0603
NORTH COORDINATE: 57812.7 FT
EAST COORDINATE: 89036.9 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CADMIUM	04/26/88	0001	MG/L		0.005	L	0.001	-
	06/05/89	0001		<	0.001		0.001	-
	05/31/91	0001		<	0.001		0.001	-
	02/22/92	0001		<	0.0005		0.0005	-
	08/10/92	0001		<	0.005	E	0.005	-
	11/21/92	0001		<	0.00013		0.00013	-
CADMIUM (TOTAL)	11/21/92	N001	MG/L	<	0.00013	NW	0.00013	-
CALCIUM	04/26/88	0001	MG/L		19.3	L	0.01	-
	06/05/89	0001			19.5		0.01	-
	05/31/91	0001			19.0		0.1	-
	02/22/92	0001			17.9		0.1	-
	08/10/92	0001			20		5	-
	06/29/93	0001			19.4		0.5	-
CALCIUM (TOTAL)	06/29/93	N001	MG/L		17.9		0.5	-
CHLORIDE	04/26/88	0001	MG/L		13.	L	1.	-
	06/05/89	0001			11.		1.	-
	05/31/91	0001			12.6		0.5	-
	02/22/92	0001			11.9		0.5	-
	08/10/92	0001			11		0.016	-
CHLORIDE (TOTAL)	06/29/93	N001	MG/L		12.9		0.5	-
CHROMIUM	06/05/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
	02/22/92	0001		<	0.01		0.01	-
	08/10/92	0001		<	0.01		0.01	-
	11/21/92	0001		<	0.0053		0.0053	-
CHROMIUM (TOTAL)	11/21/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	06/05/89	0001	MG/L	<	0.05		0.05	-
	05/31/91	0001		<	0.03		0.03	-
COPPER	06/05/89	0001	MG/L	<	0.02		0.02	-
	05/31/91	0001		<	0.01		0.01	-
CYANIDE	06/05/89	0001	MG/L	<	0.01		0.01	-
DISSOLVED OXYGEN	11/21/92	0001	MG/L		0.0		-	-
	06/29/93	N001			0.6		-	-
FLUORIDE	06/05/89	0001	MG/L		0.2		0.1	-
	05/31/91	0001			0.1		0.1	-
GROSS ALPHA	04/26/88	0001	PCI/L		5.9	L	0.2	3.3
	05/31/91	0001			0.0		1.	4.8
	02/22/92	0001			1.3		1.0	4.1
	08/10/92	0001			1.1	I	4.2	2.2
	11/21/92	0001			6.6	N	3.1	3.1

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0603
NORTH COORDINATE: 57812.7 FT
EAST COORDINATE: 89036.9 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS ALPHA	06/29/93	0001	PCI/L		9		3	6
GROSS ALPHA (TOTAL)	11/21/92	N001	PCI/L		0.7	N	6.7	4.1
	06/29/93	N001			5		3	5
GROSS BETA	04/26/88	0001	PCI/L		4.5	L	1.	1.7
	05/31/91	0001			3.1		0.5	2.9
	02/22/92	0001			2.2		0.5	2.3
	08/10/92	0001			5.6	I	4.4	2.9
	11/21/92	0001			0.0	N	5.6	3.2
	06/29/93	0001			4		4	4
GROSS BETA (TOTAL)	11/21/92	N001	PCI/L		4.0	N	4.9	3.1
	06/29/93	N001			5		4	4
IRON	06/05/89	0001	MG/L	<	0.03		0.03	-
	05/31/91	0001		<	0.03		0.03	-
	02/22/92	0001		<	0.03		0.03	-
	08/10/92	0001		<	0.01	J	0.1	-
	06/29/93	0001		<	0.03	J	0.03	-
IRON (TOTAL)	06/29/93	N001	MG/L		0.12	J	0.03	-
LEAD	06/05/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.005		0.005	-
	11/21/92	0001		<	0.0015		0.0015	-
LEAD (TOTAL)	11/21/92	N001	MG/L	<	0.0015		0.0015	-
LEAD-210	11/21/92	0001	PCI/L		0.0		2.0	1.2
LEAD-210 (TOTAL)	11/21/92	N001	PCI/L		1.2		2.0	1.2
MAGNESIUM	04/26/88	0001	MG/L		13.2	L	0.001	-
	06/05/89	0001			14.1		0.001	-
	05/31/91	0001			14.4		0.1	-
	02/22/92	0001			13.8		0.1	-
	08/10/92	0001			14		5	-
	06/29/93	0001			14.1		0.1	-
MAGNESIUM (TOTAL)	06/29/93	N001	MG/L		13.3		0.1	-
MANGANESE	06/05/89	0001	MG/L		0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
	02/22/92	0001		<	0.01		0.01	-
	08/10/92	0001		<	0.01		0.01	-
	11/21/92	0001			0.0038		0.0015	-
	06/29/93	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	11/21/92	N001	MG/L		0.0040		0.0015	-
	06/29/93	N001		<	0.01		0.01	-
MERCURY	06/05/89	0001	MG/L		0.0002		0.0002	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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OTHER PARAMETER VALUE FLAGS:
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
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L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0603
NORTH COORDINATE: 57812.7 FT
EAST COORDINATE: 89036.9 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MOLYBDENUM	04/26/88	0001	MG/L		0.02	L	0.01	
	06/05/89	0001		<	0.01		0.01	
	05/31/91	0001		<	0.01		0.01	
	02/22/92	0001		<	0.01		0.01	
	08/10/92	0001		<	0.007		0.007	
	11/21/92	0001		<	0.0049	N	0.0049	
	06/29/93	0001			0.01		0.01	
MOLYBDENUM (TOTAL)	11/21/92	N001	MG/L	<	0.0049	N	0.0049	
	06/29/93	N001		<	0.01		0.01	
NICKEL	06/05/89	0001	MG/L	<	0.04		0.04	
	05/31/91	0001		<	0.04		0.04	
NITRATE	04/26/88	0001	MG/L		2.0	L	1.	-
	06/05/89	0001			10.6		1.	-
	05/31/91	0001			4.0		1.	-
	02/22/92	0001			1.0		1.0	-
	08/10/92	0001			4.9		0.075	-
	11/21/92	0001			44		0.044	-
NITRATE (TOTAL)	06/29/93	N001	MG/L		1		1	
NITRITE AND NITRATE	05/31/91	0001	MG/L		0.90		0.05	
PH	04/26/88	0001	SU		7.95	L		
	06/05/89	0001			7.79			
	05/31/91	0001			7.96			
	02/22/92	0001			7.83			
	08/10/92	0001			7.73			
	11/21/92	0001			8.12			
	06/29/93	N001			7.60			
PHOSPHATE	06/05/89	0001	MG/L		0.6		0.1	
PHOSPHATE (TOTAL)	06/29/93	N001	MG/L		0.3		0.1	
POTASSIUM	04/26/88	0001	MG/L		2.40	L	0.01	
	06/05/89	0001			2.3		0.01	
	05/31/91	0001			2.6		0.01	
	02/22/92	0001			2.57		0.01	
	08/10/92	0001			1.9	*	0.575	
	06/29/93	0001			2.5		0.1	
POTASSIUM (TOTAL)	06/29/93	N001	MG/L		2.3		0.1	
RADIUM-226	06/05/89	0001	PCI/L		0.3		1.	0.2
	05/31/91	0001			0.3		1.	0.2
	02/22/92	0001			0.6		1.0	0.4
	08/10/92	0001			0.43		0.48	0.07
	11/21/92	0001			0.9		0.3	0.3
RADIUM-226 (TOTAL)	11/21/92	N001	PCI/L		1.2		0.3	0.4
RADIUM-228	06/05/89	0001	PCI/L		0.0		1.	0.9

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OTHER PARAMETER VALUE FLAGS:
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GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0603
NORTH COORDINATE: 57812.7 FT
EAST COORDINATE: 89036.9 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
RADIUM-228	05/31/91	0001	PCI/L		0.0	J	1.	1.9
	02/22/92	0001			2.0		1.0	1.6
	08/10/92	0001			0.3		2.3	1.2
	11/21/92	0001			0.3		2.7	1.6
RADIUM-228 (TOTAL)	11/21/92	N001	PCI/L		4.8		2.4	1.9
REDOX POTENTIAL	11/21/92	0001	mVOLTS		437.4		-	-
	06/29/93	N001			462		-	-
SELENIUM	04/26/88	0001	MG/L	<	0.005	L	0.005	-
	06/05/89	0001		<	0.005		0.005	-
	05/31/91	0001			0.007	J	0.005	-
	02/22/92	0001		<	0.005		0.005	-
	08/10/92	0001		<	0.005	W	0.005	-
	11/21/92	0001		<	0.0015	N	0.0015	-
SELENIUM (TOTAL)	11/21/92	N001	MG/L	<	0.0015		0.0015	-
SILICA - SIO2	06/05/89	0001	MG/L		12.		2.	-
	05/31/91	0001			12.5		0.1	-
SILICA - SIO2 (TOTAL)	06/29/93	N001	MG/L		13.1	H	0.5	-
SILVER	06/05/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
SODIUM	04/26/88	0001	MG/L		94.0	L	0.002	-
	06/05/89	0001			99.5		0.002	-
	05/31/91	0001			112.		5.	-
	02/22/92	0001			99.		1.	-
	08/10/92	0001			100.7		5	-
	06/29/93	0001			103		1	-
SODIUM (TOTAL)	06/29/93	N001	MG/L		99		1	-
SPECIFIC CONDUCTANCE	04/26/88	0001	UMHO/CM		500.	L	-	-
	06/05/89	0001			415.		-	-
	05/31/91	0001			650.		-	-
	02/22/92	0001			528		-	-
	08/10/92	0001			534		-	-
	11/21/92	0001			528		-	-
	06/29/93	N001			528		-	-
STRONTIUM	05/31/91	0001	MG/L		0.23		0.01	-
	02/22/92	0001			0.22		0.01	-
	08/10/92	0001			0.24		0.2	-
	11/21/92	0001			0.28		0.00035	-
	06/29/93	0001			0.24		0.01	-
STRONTIUM (TOTAL)	11/21/92	N001	MG/L		0.26		0.00035	-
	06/29/93	N001			0.22		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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OTHER PARAMETER VALUE FLAGS:
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GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0603
NORTH COORDINATE: 57812.7 FT
EAST COORDINATE: 89036.9 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SULFATE	04/26/88	0001	MG/L		112.	L	0.1	-
	06/05/89	0001			117.		0.1	-
	05/31/91	0001			151.		0.1	-
	02/22/92	0001			101.		10.	-
	08/10/92	0001			100		0.059	-
	11/21/92	0001			120		1.0	-
SULFATE (TOTAL)	11/21/92	N001	MG/L		120		1.0	-
	06/29/93	N001			111		1	-
SULFIDE	06/05/89	0001	MG/L	<	0.1		0.1	-
	05/31/91	0001		<	1.	IJ	1.	-
TEMPERATURE	04/26/88	0001	C - DEGREE		15.0	L	-	-
	06/05/89	0001			15.2		-	-
	05/31/91	0001			15.4		-	-
	02/22/92	0001			15.4		-	-
	08/10/92	0001			16.0		-	-
	11/21/92	0001			15.4		-	-
	06/29/93	N001			16.6		-	-
THALLIUM	06/05/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
THORIUM-230	05/31/91	0001	PCI/L		0.4		1.	0.4
TIN	06/05/89	0001	MG/L	<	0.005		0.005	-
	05/31/91	0001		<	0.01	I	0.01	-
TOTAL DISSOLVED SOLIDS	04/26/88	0001	MG/L		418.	L	10.	-
	06/05/89	0001			386.		10.	-
	05/31/91	0001			396.		10.	-
	02/22/92	0001			390.		10.	-
	08/10/92	0001			470		42	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/29/93	N001	MG/L		380	H	10	-
TOTAL ORGANIC CARBON	04/26/88	0001	MG/L		56.1	L	1.	-
	05/31/91	0001		<	1.		1.	-
	02/22/92	0001		<	1.		1.	-
	08/10/92	0001		<	1.0		1.0	-
URANIUM	04/26/88	0001	MG/L		0.0030	L	0.003	-
	06/05/89	0001			0.0023	J	0.003	-
	05/31/91	0001		<	0.001		0.001	-
	02/22/92	0001			0.003		0.001	-
	11/21/92	0001			0.005		0.001	-
	06/29/93	0001			0.003		0.001	-
URANIUM (TOTAL)	11/21/92	N001	MG/L		0.003		0.001	-
	06/29/93	N001			0.002		0.001	-
VANADIUM	06/05/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0603
NORTH COORDINATE: 57812.7 FT
EAST COORDINATE: 89036.9 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
VANADIUM	02/22/92	0001	MG/L	<	0.01		0.01	-
	08/10/92	0001		<	0.05		0.05	-
	11/21/92	0001		<	0.0019		0.0019	-
	06/29/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	11/21/92	N001	MG/L		0.0030		0.0019	-
	06/29/93	N001		<	0.01		0.01	-
ZINC	06/05/89	0001	MG/L	<	0.005		0.005	-
	05/31/91	0001			0.014		0.005	-
	02/22/92	0001		<	0.005		0.005	-
	08/10/92	0001		<	0.02		0.02	-
	11/21/92	0001		<	0.0010		0.0010	-
	06/29/93	0001			0.011	J	0.005	-
ZINC (TOTAL)	11/21/92	N001	MG/L		0.0040		0.0010	-
	06/29/93	N001			0.009	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
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SAMPLE ID CODES:
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N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0604
NORTH COORDINATE: 58397.0 FT
EAST COORDINATE: 89424.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	06/09/89	0001	MG/L CACO3		202.		-	-
	05/31/91	0001			204.		-	-
	02/22/92	0001			196		-	-
	08/11/92	0001			189	L	-	-
	11/19/92	0001			191		-	-
	02/02/93	0001			207		-	-
	06/26/93	N001			200		-	-
ALUMINUM	06/09/89	0001	MG/L	<	0.1		0.1	-
	05/31/91	0001		<	0.05		0.05	-
	02/22/92	0001		<	0.05		0.05	-
	08/11/92	0001		<	0.2	*L	0.2	-
AMMONIUM	06/09/89	0001	MG/L	<	0.1		0.1	-
	05/31/91	0001			0.3		0.1	-
	02/22/92	0001			0.2		0.1	-
AMMONIUM (TOTAL)	06/26/93	N001	MG/L	<	0.1		0.1	-
ANTIMONY	06/09/89	0001	MG/L	<	0.003		0.003	-
	05/31/91	0001			0.005		0.003	-
	02/22/92	0001		<	0.003		0.003	-
	08/11/92	0001		<	0.06	WL	0.06	-
ARSENIC	06/09/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
	02/22/92	0001		<	0.01		0.01	-
	08/11/92	0001		<	0.01	WL	0.01	-
	11/19/92	0001			0.0027		0.0015	-
	06/26/93	0001		<	0.005	W	0.005	-
ARSENIC (TOTAL)	11/19/92	N001	MG/L		0.0030		0.0015	-
	06/26/93	N001		<	0.005		0.005	-
BARIUM	06/09/89	0001	MG/L	<	0.1		0.1	-
	05/31/91	0001			0.04		0.01	-
	02/22/92	0001			0.04		0.01	-
	08/11/92	0001		<	0.2	L	0.2	-
	11/19/92	0001			0.038		0.0015	-
	06/26/93	0001		<	0.1		0.1	-
BARIUM (TOTAL)	11/19/92	N001	MG/L		0.075		0.0015	-
	06/26/93	N001			0.1		0.1	-
BERYLLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.005		0.005	-
	08/11/92	0001		<	0.005	L	0.005	-
BORON	06/09/89	0001	MG/L	<	0.1		0.1	-
	05/31/91	0001		<	0.05		0.05	-
BROMIDE	05/31/91	0001	MG/L	<	0.1		0.1	-
CADMIUM	06/09/89	0001	MG/L	<	0.001		0.001	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0604
NORTH COORDINATE: 58397.0 FT
EAST COORDINATE: 89424.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CADMIUM	05/31/91	0001	MG/L	<	0.001		0.001	-
	02/22/92	0001		<	0.0005		0.0005	-
	08/11/92	0001		<	0.005	EL	0.005	-
	11/19/92	0001		<	0.00013		0.00013	-
CADMIUM (TOTAL)	11/19/92	N001	MG/L		0.00014	N	0.00013	-
CALCIUM	06/09/89	0001	MG/L		20.1		0.01	-
	05/31/91	0001			18.8		0.1	-
	02/22/92	0001			17.3		0.1	-
	08/11/92	0001			20	L	5	-
	02/02/93	0001			19.2		0.5	-
	06/26/93	0001			19.1		0.5	-
CALCIUM (TOTAL)	06/26/93	N001	MG/L		22.8		0.5	-
CHLORIDE	06/09/89	0001	MG/L		11.		1.	-
	05/31/91	0001			11.6		0.5	-
	02/22/92	0001			12.1		0.5	-
	08/11/92	0001			11	L	0.016	-
	02/02/93	0001			11.5		0.5	-
CHLORIDE (TOTAL)	06/26/93	N001	MG/L		10.8		0.5	-
CHROMIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
	02/22/92	0001		<	0.01		0.01	-
	08/11/92	0001		<	0.01	L	0.01	-
	11/19/92	0001		<	0.0053		0.0053	-
CHROMIUM (TOTAL)	11/19/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	06/09/89	0001	MG/L	<	0.05		0.05	-
	05/31/91	0001		<	0.03		0.03	-
COPPER	06/09/89	0001	MG/L	<	0.02		0.02	-
	05/31/91	0001		<	0.01		0.01	-
CYANIDE	06/09/89	0001	MG/L	<	0.01		0.01	-
DISSOLVED OXYGEN	11/19/92	0001	MG/L		0.4		-	-
	06/26/93	N001			0.0		-	-
FLUORIDE	06/09/89	0001	MG/L		0.2		0.1	-
	05/31/91	0001			0.1		0.1	-
GROSS ALPHA	05/31/91	0001	PCI/L		5.0		1.	5.4
	02/22/92	0001			0.5		1.0	3.9
	08/11/92	0001			1.2	L	4.1	2.2
	11/19/92	0001			3.9	N	3.2	2.7
	02/02/93	0001			0		6	6
	06/26/93	0001			6		3	5
GROSS ALPHA (TOTAL)	11/19/92	N001	PCI/L		0.9	N	6.6	4.0
	06/26/93	N001			4		3	6

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0604
NORTH COORDINATE: 58397.0 FT
EAST COORDINATE: 89424.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS BETA	05/31/91	0001	PCI/L		1.7		0.5	2.9
	02/22/92	0001			1.8		0.5	2.2
	08/11/92	0001			2.3	L	4.0	2.4
	11/19/92	0001			0.0	N	5.6	3.1
	02/02/93	0001			0		11	5
	06/26/93	0001			3		4	4
GROSS BETA (TOTAL)	11/19/92	N001	PCI/L		8.9	N	5.1	3.4
	06/26/93	N001			1		4	4
IRON	06/09/89	0001	MG/L	<	0.03		0.03	-
	05/31/91	0001		<	0.03		0.03	-
	02/22/92	0001		<	0.03		0.03	-
	08/11/92	0001		<	0.1	L	0.1	-
	02/02/93	0001		<	0.03		0.03	-
	06/26/93	0001		<	0.03	J	0.03	-
IRON (TOTAL)	06/26/93	N001	MG/L		1.88		0.03	-
LEAD	06/09/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.005		0.005	-
	11/19/92	0001		<	0.0015		0.0015	-
LEAD (TOTAL)	11/19/92	N001	MG/L	<	0.0015		0.0015	-
LEAD-210	11/19/92	0001	PCI/L		0.1		2.0	1.2
LEAD-210 (TOTAL)	11/19/92	N001	PCI/L		1.1		2.0	1.2
MAGNESIUM	06/09/89	0001	MG/L		11.9		0.001	-
	05/31/91	0001			11.8		0.1	-
	02/22/92	0001			11.1		0.1	-
	08/11/92	0001			12	L	5	-
	02/02/93	0001			11.4		0.1	-
	06/26/93	0001			11.4		0.1	-
MAGNESIUM (TOTAL)	06/26/93	N001	MG/L		12.4		0.1	-
MANGANESE	06/09/89	0001	MG/L		0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
	02/22/92	0001		<	0.01		0.01	-
	08/11/92	0001			0.011	L	0.01	-
	11/19/92	0001			0.012		0.0015	-
	02/02/93	0001		<	0.01		0.01	-
	06/26/93	0001			0.01		0.01	-
MANGANESE (TOTAL)	11/19/92	N001	MG/L		0.025		0.0015	-
	06/26/93	N001			0.05		0.01	-
MERCURY	06/09/89	0001	MG/L	<	0.0002		0.0002	-
MOLYBDENUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
	02/22/92	0001		<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0604
NORTH COORDINATE: 58397.0 FT
EAST COORDINATE: 89424.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MOLYBDENUM	08/11/92	0001	MG/L	<	0.007	L	0.007	-
	11/19/92	0001		<	0.0049	N	0.0049	-
	06/26/93	0001		<	0.01		0.01	-
MOLYBDENUM (TOTAL)	11/19/92	N001	MG/L	<	0.0049	N	0.0049	-
	06/26/93	N001		<	0.01		0.01	-
NICKEL	06/09/89	0001	MG/L	<	0.04		0.04	-
	05/31/91	0001		<	0.04		0.04	-
NITRATE	06/09/89	0001	MG/L		5.3		1.	-
	05/31/91	0001			2.3		1.	-
	02/22/92	0001		<	1.0		1.0	-
	08/11/92	0001			2.6	L	0.075	-
	11/19/92	0001			1.06		0.044	-
	02/02/93	0001		<	1		1	-
NITRATE (TOTAL)	06/26/93	N001	MG/L	<	1		1	-
NITRITE AND NITRATE	05/31/91	0001	MG/L		0.53		0.05	-
PH	06/09/89	0001	SU		8.12		-	-
	05/31/91	0001			8.31		-	-
	02/22/92	0001			8.18		-	-
	08/11/92	0001			8.17	L	-	-
	11/19/92	0001			8.26		-	-
	02/02/93	0001			8.13		-	-
	06/26/93	N001			8.03		-	-
PHOSPHATE	06/09/89	0001	MG/L		0.6		0.1	-
PHOSPHATE (TOTAL)	06/26/93	N001	MG/L		0.4		0.1	-
POTASSIUM	06/09/89	0001	MG/L		1.4		0.01	-
	05/31/91	0001			1.78		0.01	-
	02/22/92	0001			1.90		0.01	-
	08/11/92	0001			1.2	*L	0.575	-
	02/02/93	0001			1.7		0.1	-
	06/26/93	0001			1.8		0.1	-
POTASSIUM (TOTAL)	06/26/93	N001	MG/L		2.3		0.1	-
RADIUM-226	06/09/89	0001	PCI/L		0.1		1.	0.2
	05/31/91	0001			0.2		1.	0.2
	02/22/92	0001			0.0		1.0	0.3
	08/11/92	0001			0.1	L	0.3	0.1
	11/19/92	0001			0.1		0.3	0.2
RADIUM-226 (TOTAL)	11/19/92	N001	PCI/L		0.6		0.3	0.3
RADIUM-228	06/09/89	0001	PCI/L		0.0		1.	0.9
	05/31/91	0001			0.0	J	1.	1.9
	02/22/92	0001			0.2		1.0	1.6

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0604
NORTH COORDINATE: 58397.0 FT
EAST COORDINATE: 89424.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
RADIUM-228	08/11/92	0001	PCI/L		1.8	L	2.0	1.1
	11/19/92	0001			1.9		2.7	1.7
RADIUM-228 (TOTAL)	11/19/92	N001	PCI/L		0.7		2.4	1.5
REDOX POTENTIAL	11/19/92	0001	mVOLTS		453.1		-	-
	06/26/93	N001			395		-	-
SELENIUM	06/09/89	0001	MG/L	<	0.005		0.005	-
	05/31/91	0001			0.006	J	0.005	-
	02/22/92	0001			0.007		0.005	-
	08/11/92	0001		<	0.005	WL	0.005	-
	11/19/92	0001		<	0.0015	NW	0.0015	-
SELENIUM (TOTAL)	11/19/92	N001	MG/L		0.0015	W	0.0015	-
SILICA - SIO2	06/09/89	0001	MG/L		13.		2.	-
	05/31/91	0001			13.2		0.1	-
SILICA - SIO2 (TOTAL)	06/26/93	N001	MG/L		24.5	H	0.5	-
SILVER	06/09/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
SODIUM	06/09/89	0001	MG/L		97.9		0.002	-
	05/31/91	0001			112.		5.	-
	02/22/92	0001			110.		5.	-
	08/11/92	0001			98	L	5	-
	02/02/93	0001			103		0.1	-
	06/26/93	0001			101		1	-
SODIUM (TOTAL)	06/26/93	N001	MG/L		97		1	-
SPECIFIC CONDUCTANCE	06/09/89	0001	UMHO/CM		385.		-	-
	05/31/91	0001			632.		-	-
	02/22/92	0001			507		-	-
	08/11/92	0001			438	L	-	-
	11/19/92	0001			517		-	-
	02/02/93	0001			510		-	-
	06/26/93	N001			520		-	-
STRONTIUM	05/31/91	0001	MG/L		0.18		0.01	-
	02/22/92	0001			0.17		0.01	-
	08/11/92	0001		<	0.2	L	0.2	-
	11/19/92	0001			0.24	S	0.00035	-
	06/26/93	0001			0.19		0.01	-
STRONTIUM (TOTAL)	11/19/92	N001	MG/L		0.25		0.00035	-
	06/26/93	N001			0.20		0.01	-
SULFATE	06/09/89	0001	MG/L		119.		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
S - REPORTED VALUE DETERMINED USING METHOD OF STD ADDITION (MSA)
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0604
NORTH COORDINATE: 58397.0 FT
EAST COORDINATE: 89424.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SULFATE	05/31/91	0001	MG/L		158.		0.1	-
	02/22/92	0001			95.		10.	-
	08/11/92	0001			100	L	0.059	-
	11/19/92	0001			110		1.0	-
	02/02/93	0001			112		1	-
SULFATE (TOTAL)	11/19/92	N001	MG/L		120		1.0	-
	06/26/93	N001			108		1	-
SULFIDE	06/09/89	0001	MG/L	<	0.1		0.1	-
	05/31/91	0001			5.14	J	1.	-
TEMPERATURE	06/09/89	0001	C - DEGREE		15.3		-	-
	05/31/91	0001			14.3		-	-
	02/22/92	0001			14.8		-	-
	08/11/92	0001			15.4	L	-	-
	11/19/92	0001			15.8		-	-
	02/02/93	0001			15.2		-	-
	06/26/93	N001			17.4		-	-
THALLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
THORIUM-230	05/31/91	0001	PCI/L		0.4		1.	0.3
TIN	06/09/89	0001	MG/L	<	0.005		0.005	-
	05/31/91	0001		<	0.01	I	0.01	-
TOTAL DISSOLVED SOLIDS	06/09/89	0001	MG/L		389.		10.	-
	05/31/91	0001			383.		10.	-
	02/22/92	0001			385.		10.	-
	08/11/92	0001			390	L	42	-
	02/02/93	0001			370		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/26/93	N001	MG/L		390		10	-
TOTAL ORGANIC CARBON	05/31/91	0001	MG/L		2.		1.	-
	02/22/92	0001		<	1.		1.	-
	08/11/92	0001		<	1.0	L	1.0	-
URANIUM	06/09/89	0001	MG/L		0.0051		0.003	-
	05/31/91	0001		<	0.001		0.001	-
	02/22/92	0001			0.002		0.001	-
	11/19/92	0001			0.003		0.001	-
	02/02/93	0001			0.003		0.001	-
	06/26/93	0001			0.002		0.001	-
URANIUM (TOTAL)	11/19/92	N001	MG/L		0.003		0.001	-
	06/26/93	N001			0.002		0.001	-
VANADIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
	02/22/92	0001		<	0.01		0.01	-
	08/11/92	0001		<	0.05	L	0.05	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0604
NORTH COORDINATE: 58397.0 FT
EAST COORDINATE: 89424.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
VANADIUM	11/19/92	0001	MG/L	<	0.0019		0.0019	-
	06/26/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	11/19/92	N001	MG/L		0.0020		0.0019	-
	06/26/93	N001		<	0.01		0.01	-
ZINC	06/09/89	0001	MG/L	<	0.005		0.005	-
	05/31/91	0001		<	0.005		0.005	-
	02/22/92	0001		<	0.005		0.005	-
	08/11/92	0001		<	0.02	L	0.02	-
	11/19/92	0001			0.012		0.0010	-
	06/26/93	0001		<	0.005	J	0.005	-
ZINC (TOTAL)	11/19/92	N001	MG/L		0.0060		0.0010	-
	06/26/93	N001			0.008	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0605
NORTH COORDINATE: 58707.6 FT
EAST COORDINATE: 90066.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/22/88	0001	MG/L CACO3		204.		-	-
	06/09/89	0001			219.		-	-
	12/04/89	0001			331.		-	-
	06/21/90	0001			240.		-	-
	01/29/91	0001			312.		-	-
	05/31/91	0001			301.		-	-
	11/22/92	0001			349	L	-	-
	02/02/93	0001			393		-	-
	06/26/93	N001			372		-	-
ALUMINUM	06/09/89	0001	MG/L	<	0.1		0.1	-
	12/04/89	0001		<	0.1		0.1	-
	06/21/90	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1		0.1	-
	05/31/91	0001		<	0.05		0.05	-
AMMONIUM	04/22/88	0001	MG/L	<	0.1		0.1	-
	06/09/89	0001			0.5		0.1	-
	12/04/89	0001			0.5		0.1	-
	06/21/90	0001			0.6	H	0.1	-
	01/29/91	0001			2.2		0.1	-
	05/31/91	0001			0.5		0.1	-
AMMONIUM (TOTAL)	06/26/93	N001	MG/L		0.1		0.1	-
ANTIMONY	06/09/89	0001	MG/L	<	0.003	J	0.003	-
	12/04/89	0001		<	0.003		0.003	-
	06/21/90	0001			0.006		0.003	-
	01/29/91	0001		<	0.003		0.003	-
	05/31/91	0001		<	0.003		0.003	-
ARSENIC	04/22/88	0001	MG/L		0.011		0.01	-
	06/09/89	0001		<	0.01		0.01	-
	12/04/89	0001		<	0.01		0.01	-
	06/21/90	0001		<	0.01		0.01	-
	01/29/91	0001			0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
	11/22/92	0001		<	0.0015	L	0.0015	-
	06/26/93	0001		<	0.005		0.005	-
ARSENIC (TOTAL)	11/22/92	N001	MG/L	<	0.0015	L	0.0015	-
	06/26/93	N001		<	0.005		0.005	-
BARIUM	06/09/89	0001	MG/L		0.1		0.1	-
	12/04/89	0001		<	0.1		0.1	-
	06/21/90	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1		0.1	-
	05/31/91	0001			0.03		0.01	-
	11/22/92	0001			0.023	L	0.0015	-
	06/26/93	0001		<	0.1		0.1	-
BARIUM (TOTAL)	11/22/92	N001	MG/L		0.022	L	0.0015	-
	06/26/93	N001		<	0.1		0.1	-
BERYLLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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OTHER PARAMETER VALUE FLAGS:
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GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0605
NORTH COORDINATE: 58707.6 FT
EAST COORDINATE: 90066.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BERYLLIUM	12/04/89	0001	MG/L	<	0.005		0.005	-
	06/21/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	05/31/91	0001		<	0.005		0.005	-
BORON	06/09/89	0001	MG/L	<	0.1		0.1	-
	12/04/89	0001			0.2		0.1	-
	06/21/90	0001		<	0.1		0.1	-
	01/29/91	0001			0.2		0.1	-
	05/31/91	0001			0.21		0.05	-
BROMIDE	01/29/91	0001	MG/L	<	0.1		0.1	-
	05/31/91	0001			1.1		0.1	-
CADMIUM	04/22/88	0001	MG/L		0.017		0.001	-
	06/09/89	0001			0.002		0.001	-
	12/04/89	0001		<	0.001		0.001	-
	06/21/90	0001		<	0.001		0.001	-
	01/29/91	0001		<	0.001		0.001	-
	05/31/91	0001		<	0.001		0.001	-
	11/22/92	0001		<	0.00013	L	0.00013	-
CADMIUM (TOTAL)	11/22/92	N001	MG/L		0.00014	NL	0.00013	-
CALCIUM	04/22/88	0001	MG/L		106.		0.01	-
	06/09/89	0001			116.		0.01	-
	12/04/89	0001			162.		0.01	-
	06/21/90	0001			130.		0.01	-
	01/29/91	0001			146.		0.01	-
	05/31/91	0001			130.		0.5	-
	02/02/93	0001			112		0.5	-
	06/26/93	0001			118		0.5	-
CALCIUM (TOTAL)	06/26/93	N001	MG/L		121		0.5	
CHLORIDE	04/22/88	0001	MG/L		110.		1.	
	06/09/89	0001			120.		1.	
	12/04/89	0001			212.		1.	
	06/21/90	0001			124.		1.	
	01/29/91	0001			259.	J	1.	
	05/31/91	0001			195.		0.5	
	02/02/93	0001			232		0.5	
CHLORIDE (TOTAL)	06/26/93	N001	MG/L		248		0.5	
CHROMIUM	06/09/89	0001	MG/L	<	0.01		0.01	
	12/04/89	0001		<	0.01		0.01	
	06/21/90	0001		<	0.01		0.01	
	01/29/91	0001		<	0.01		0.01	
	05/31/91	0001		<	0.01		0.01	
	11/22/92	0001		<	0.0053	L	0.0053	
CHROMIUM (TOTAL)	11/22/92	N001	MG/L	<	0.0053	L	0.0053	
COBALT	06/09/89	0001	MG/L	<	0.05		0.05	

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EAST COORDINATE: 90066.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
COBALT	12/04/89	0001	MG/L	<	0.05		0.05	-
	06/21/90	0001		<	0.05		0.05	-
	01/29/91	0001		<	0.05		0.05	-
	05/31/91	0001		<	0.03		0.03	-
COPPER	06/09/89	0001	MG/L	<	0.02		0.02	-
	12/04/89	0001		<	0.02		0.02	-
	06/21/90	0001		<	0.02		0.02	-
	01/29/91	0001		<	0.02		0.02	-
	05/31/91	0001		<	0.01		0.01	-
CYANIDE	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/04/89	0001		<	0.01		0.01	-
DISSOLVED OXYGEN	11/22/92	0001	MG/L		0.0	L	-	-
	06/26/93	N001			0.0		-	-
FLUORIDE	06/09/89	0001	MG/L		0.3		0.1	-
	12/04/89	0001			0.3		0.1	-
	06/21/90	0001			0.3		0.1	-
	01/29/91	0001			0.3		0.1	-
	05/31/91	0001			0.2		0.1	-
GROSS ALPHA	04/22/88	0001	PCI/L		38.		0.2	13.
	01/29/91	0001			14.		1.	26.
	05/31/91	0001			0.0		1.	26.3
	11/22/92	0001			60.0	NL	24.0	24.9
	02/02/93	0001			12		40	45
	06/26/93	0001			39		41	70
GROSS ALPHA (TOTAL)	11/22/92	N001	PCI/L		0.0	NL	52.8	27.8
	06/26/93	N001			0		41	61
GROSS BETA	04/22/88	0001	PCI/L		9.0		1.	5.5
	01/29/91	0001			22.		0.5	19.
	05/31/91	0001			0.0		0.5	15.8
	11/22/92	0001			9.7	NL	41.1	24.8
	02/02/93	0001			0		58	25
	06/26/93	0001			0		45	40
GROSS BETA (TOTAL)	11/22/92	N001	PCI/L		0.0	NL	39.0	23.1
	06/26/93	N001			0		45	41
IRON	06/09/89	0001	MG/L		0.14		0.03	-
	12/04/89	0001			0.14		0.03	-
	06/21/90	0001			0.11		0.03	-
	01/29/91	0001			0.12		0.03	-
	05/31/91	0001			0.06		0.03	-
	02/02/93	0001		<	0.03		0.03	-
	06/26/93	0001			0.03	J	0.03	-
IRON (TOTAL)	06/26/93	N001	MG/L		0.08	J	0.03	-
LEAD	06/09/89	0001	MG/L	<	0.01		0.01	-

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FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
LEAD	12/04/89	0001	MG/L	<	0.01		0.01	-
	06/21/90	0001		<	0.01	J	0.01	-
	01/29/91	0001		<	0.01		0.01	-
	05/31/91	0001		<	0.005		0.005	-
	11/22/92	0001		<	0.0015	L	0.0015	-
LEAD (TOTAL)	11/22/92	N001	MG/L	<	0.0015	WL	0.0015	-
LEAD-210	11/22/92	0001	PCI/L		0.6	L	2.0	1.2
LEAD-210 (TOTAL)	11/22/92	N001	PCI/L		5.4	L	0.3	0.9
MAGNESIUM	04/22/88	0001	MG/L		87.5		0.001	-
	06/09/89	0001			108.		0.001	-
	12/04/89	0001			175.		0.001	-
	06/21/90	0001			112.		0.001	-
	01/29/91	0001			154.		0.001	-
	05/31/91	0001			145.		0.5	-
	02/02/93	0001			145		0.1	-
	06/26/93	0001			148		0.1	-
MAGNESIUM (TOTAL)	06/26/93	N001	MG/L		153		0.1	-
MANGANESE	06/09/89	0001	MG/L		0.06		0.01	-
	12/04/89	0001			0.03		0.01	-
	06/21/90	0001			0.04		0.01	-
	01/29/91	0001			0.05		0.01	-
	05/31/91	0001			0.02		0.01	-
	11/22/92	0001			0.022	L	0.0015	-
	02/02/93	0001			0.02		0.01	-
	06/26/93	0001			0.02		0.01	-
MANGANESE (TOTAL)	11/22/92	N001	MG/L		0.019	L	0.0015	-
	06/26/93	N001			0.02		0.01	-
MERCURY	06/09/89	0001	MG/L	<	0.0002		0.0002	-
	12/04/89	0001		<	0.0002		0.0002	-
	06/21/90	0001		<	0.0002		0.0002	-
MOLYBDENUM	04/22/88	0001	MG/L		0.04		0.01	-
	06/09/89	0001		<	0.01		0.01	-
	12/04/89	0001			0.02		0.01	-
	06/21/90	0001			0.01		0.01	-
	01/29/91	0001			0.07		0.01	-
	05/31/91	0001			0.03		0.01	-
	11/22/92	0001			0.043	NL	0.0049	-
	06/26/93	0001			0.06		0.01	-
MOLYBDENUM (TOTAL)	11/22/92	N001	MG/L		0.044	NL	0.0049	-
	06/26/93	N001			0.06		0.01	-
NICKEL	06/09/89	0001	MG/L	<	0.04		0.04	-
	12/04/89	0001		<	0.04		0.04	-

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GROUNDWATER QUALITY DATA BY LOCATION
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REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

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NICKEL	06/21/90	0001	MG/L	<	0.04		0.04	-
	01/29/91	0001		<	0.04		0.04	-
	05/31/91	0001		<	0.04		0.04	-
NITRATE	04/22/88	0001	MG/L		0.2	J	1.	-
	06/09/89	0001			4.2		1.	-
	12/04/89	0001			1.8		1.	-
	06/21/90	0001		<	0.1		0.1	-
	01/29/91	0001			1.		1.	-
	05/31/91	0001			2.7		1.	-
	11/22/92	0001			0.93	L	0.044	-
	02/02/93	0001		<	1		1	-
NITRATE (TOTAL)	06/26/93	N001	MG/L	<	1		1	-
NITRITE AND NITRATE	01/29/91	0001	MG/L		1.		1.	-
	05/31/91	0001			0.61		0.05	-
PH	04/22/88	0001	SU		7.88		-	-
	06/09/89	0001			7.90		-	-
	12/04/89	0001			7.62		-	-
	06/21/90	0001			7.78		-	-
	01/29/91	0001			7.68		-	-
	05/31/91	0001			7.68		-	-
	11/22/92	0001			7.73	L	-	-
	02/02/93	0001			7.51		-	-
	06/26/93	N001			7.56		-	-
PHOSPHATE	06/09/89	0001	MG/L		0.6		0.1	-
	12/04/89	0001			0.4		0.1	-
	06/21/90	0001			0.4		0.1	-
PHOSPHATE (TOTAL)	06/26/93	N001	MG/L		0.4		0.1	-
POTASSIUM	04/22/88	0001	MG/L		2.75		0.01	-
	06/09/89	0001			3.3		0.01	-
	12/04/89	0001			3.3		0.01	-
	06/21/90	0001			3.6		0.01	-
	01/29/91	0001			3.8		0.01	-
	05/31/91	0001			3.0		0.01	-
	02/02/93	0001			2.8		0.1	-
	06/26/93	0001			3.2		0.1	-
POTASSIUM (TOTAL)	06/26/93	N001	MG/L		3.1		0.1	-
RADIUM-226	06/09/89	0001	PCI/L		0.1		1.	0.2
	12/04/89	0001			0.1		1.	0.2
	06/21/90	0001			0.1		1.	0.2
	01/29/91	0001			0.1		1.	0.5
	05/31/91	0001			0.0		1.	0.1
	11/22/92	0001			0.0	L	0.3	0.2
RADIUM-226 (TOTAL)	11/22/92	N001	PCI/L		0.2	L	0.3	0.2
RADIUM-228	06/09/89	0001	PCI/L		0.0		1.	0.8

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PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
RADIUM-228	12/04/89	0001	PCI/L		0.0		1.	1.7
	06/21/90	0001			0.4		1.	1.2
	01/29/91	0001			1.4		1.	1.1
	05/31/91	0001			0.0	J	1.	2.0
	11/22/92	0001			1.9	L	2.7	1.7
RADIUM-228 (TOTAL)	11/22/92	N001	PCI/L		3.5	L	1.9	1.4
REDOX POTENTIAL	11/22/92	0001	mVOLTS		441.5	L	-	-
	06/26/93	N001			213		-	-
SELENIUM	04/22/88	0001	MG/L		0.016		0.005	-
	06/09/89	0001			0.014		0.005	-
	12/04/89	0001		<	0.005		0.005	-
	06/21/90	0001		<	0.005		0.005	-
	01/29/91	0001		<	0.005		0.005	-
	05/31/91	0001			0.007	J	0.005	-
	11/22/92	0001		<	0.015	INWL	0.015	-
SELENIUM (TOTAL)	11/22/92	N001	MG/L	<	0.0015	WL	0.0015	-
SILICA - SIO2	06/09/89	0001	MG/L		26.		2.	-
	12/04/89	0001			33.		2.	-
	06/21/90	0001			0.28	J	2.	-
	01/29/91	0001			30.		2.	-
	05/31/91	0001			29.5		0.1	-
SILICA - SIO2 (TOTAL)	06/26/93	N001	MG/L		33.0	H	0.5	-
SILVER	06/09/89	0001	MG/L	<	0.01	L	0.01	-
	12/04/89	0001		<	0.01		0.01	-
	06/21/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
SODIUM	04/22/88	0001	MG/L		257.		0.002	-
	06/09/89	0001			279.		0.002	-
	12/04/89	0001			617.		0.002	-
	06/21/90	0001			302.		0.002	-
	01/29/91	0001			592.		0.002	-
	05/31/91	0001			625.		5.	-
	02/02/93	0001			701		0.1	-
	06/26/93	0001			828		1	-
SODIUM (TOTAL)	06/26/93	N001	MG/L		860		1	-
SPECIFIC CONDUCTANCE	04/22/88	0001	UMHO/CM		1550.		-	-
	06/09/89	0001			1490.		-	-
	12/04/89	0001			3050.		-	-
	06/21/90	0001			1950.		-	-
	01/29/91	0001			3890.		-	-
	05/31/91	0001			3950.		-	-
	11/22/92	0001			3630	L	-	-

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SPECIFIC CONDUCTANCE	02/02/93	0001	UMHO/CM		3560		-	-
	06/26/93	N001			2890		-	-
STRONTIUM	06/21/90	0001	MG/L		1.54	*	0.1	-
	01/29/91	0001			2.3		0.1	-
	05/31/91	0001			1.86		0.01	-
	11/22/92	0001			2.9	L	0.00035	-
	06/26/93	0001			2.23		0.01	-
STRONTIUM (TOTAL)	11/22/92	N001	MG/L		2.7	L	0.00035	-
	06/26/93	N001			2.27		0.01	-
SULFATE	04/22/88	0001	MG/L		906.		0.1	-
	06/09/89	0001			1030.		0.1	-
	12/04/89	0001			1720.		0.1	-
	06/21/90	0001			1080.		0.1	-
	01/29/91	0001			1770.		0.1	-
	05/31/91	0001			1690.		10.	-
	11/22/92	0001			1900	L	1.0	-
	02/02/93	0001			1950		1	-
SULFATE (TOTAL)	11/22/92	N001	MG/L		1900	L	1.0	-
	06/26/93	N001			2130		1	-
SULFIDE	06/09/89	0001	MG/L	<	0.1		0.1	-
	12/04/89	0001			0.4		0.1	-
	01/29/91	0001		<	0.1		0.1	-
	05/31/91	0001			13.2	J	1.	-
TEMPERATURE	04/22/88	0001	C - DEGREE		12.5		-	-
	06/09/89	0001			16.0		-	-
	12/04/89	0001			16.5		-	-
	06/21/90	0001			16.0		-	-
	01/29/91	0001			13.4		-	-
	05/31/91	0001			13.5		-	-
	11/22/92	0001			16.9	L	-	-
	02/02/93	0001			14.4		-	-
	06/26/93	N001			16.1		-	-
THALLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/04/89	0001		<	0.1		0.1	-
	06/21/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
THORIUM-230	01/29/91	0001	PCI/L		0.0		1.	0.3
	05/31/91	0001			0.8		1.	0.3
TIN	06/09/89	0001	MG/L	<	0.005		0.005	-
	12/04/89	0001		<	0.01		0.01	-
	06/21/90	0001			0.006		0.005	-
	01/29/91	0001		<	0.005		0.005	-
	05/31/91	0001		<	0.01	I	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0605
NORTH COORDINATE: 58707.6 FT
EAST COORDINATE: 90066.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TOTAL DISSOLVED SOLIDS	04/22/88	0001	MG/L		1660.		10.	-
	06/09/89	0001			1860.		10.	-
	12/04/89	0001			3280.		10.	-
	06/21/90	0001			1780.		10.	-
	01/29/91	0001			2250.		10.	-
	05/31/91	0001			3080.		10.	-
	02/02/93	0001			3390		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/26/93	N001	MG/L		3870		10	-
TOTAL ORGANIC CARBON	04/22/88	0001	MG/L		62.6		1.	-
	01/29/91	0001			1.8		1.	-
	05/31/91	0001			2.		1.	-
URANIUM	04/22/88	0001	MG/L		0.0036		0.003	-
	06/09/89	0001			0.0044		0.003	-
	12/04/89	0001			0.017		0.003	-
	06/21/90	0001			0.0042		0.003	-
	01/29/91	0001			0.0151		0.0003	-
	05/31/91	0001			0.013		0.001	-
	11/22/92	0001			0.023	L	0.001	-
	02/02/93	0001			0.024		0.001	-
	06/26/93	0001			0.032		0.001	-
URANIUM (TOTAL)	11/22/92	N001	MG/L		0.022	L	0.001	-
	06/26/93	N001			0.022		0.001	-
VANADIUM	06/09/89	0001	MG/L		0.03		0.01	-
	12/04/89	0001		<	0.01		0.01	-
	06/21/90	0001			0.02		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	05/31/91	0001		<	0.01		0.01	-
	11/22/92	0001		<	0.0019	L	0.0019	-
	06/26/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	11/22/92	N001	MG/L		0.0040	L	0.0019	-
	06/26/93	N001		<	0.01		0.01	-
ZINC	06/09/89	0001	MG/L		0.023		0.005	-
	12/04/89	0001		<	0.005		0.005	-
	06/21/90	0001		<	0.005		0.005	-
	01/29/91	0001		<	0.005		0.005	-
	05/31/91	0001		<	0.005		0.005	-
	11/22/92	0001		<	0.0010	L	0.0010	-
	06/26/93	0001			0.013	J	0.005	-
ZINC (TOTAL)	11/22/92	N001	MG/L		0.0030	L	0.0010	-
	06/26/93	N001		<	0.005	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0606
NORTH COORDINATE: 59034.2 FT
EAST COORDINATE: 88634.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/26/88	0001	MG/L CACO3		700.	JL	-	-
	06/09/89	0001			329.		-	-
	12/01/89	0001			292.		-	-
	06/25/90	0001			382.		-	-
	01/29/91	0001			309.	L	-	-
	06/01/91	0001			367.		-	-
	02/21/92	0001			295		-	-
	08/11/92	0001			353		-	-
	11/24/92	0001			289		-	-
	01/31/93	0001			304		-	-
	06/30/93	N001			333		-	-
	12/12/93	N001			305		-	-
ALUMINUM	06/09/89	0001	MG/L	<	0.1		0.1	-
	12/01/89	0001		<	0.1		0.1	-
	06/25/90	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/01/91	0001		<	0.05		0.05	-
	02/21/92	0001		<	0.05		0.05	-
	08/11/92	0001		<	0.2	*	0.2	-
AMMONIUM	04/26/88	0001	MG/L		200.	JL	0.1	-
	06/09/89	0001			360.		0.1	-
	12/01/89	0001			370.		0.1	-
	06/25/90	0001			356.	H	0.1	-
	01/29/91	0001			346.	L	0.1	-
	06/01/91	0001			278.		0.1	-
	02/21/92	0001			272.		10.	-
	01/31/93	0001			361		0.1	-
	12/12/93	0001			340		0.1	-
AMMONIUM (TOTAL)	06/30/93	N001	MG/L		2.2	R	0.1	-
ANTIMONY	06/09/89	0001	MG/L	<	0.003	J	0.003	-
	12/01/89	0001		<	0.003		0.003	-
	06/25/90	0001			0.003		0.003	-
	01/29/91	0001			0.010	L	0.003	-
	06/01/91	0001		<	0.003		0.003	-
	02/21/92	0001		<	0.003		0.003	-
	08/11/92	0001		<	0.06	W	0.06	-
ARSENIC	04/26/88	0001	MG/L		0.015	JL	0.01	-
	06/09/89	0001		<	0.01		0.01	-
	12/01/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001			0.01	L	0.01	-
	06/01/91	0001		<	0.01		0.01	-
	02/21/92	0001		<	0.01		0.01	-
	08/11/92	0001		<	0.01	W	0.01	-
	11/24/92	0001		<	0.0015		0.0015	-
	06/30/93	0001		<	0.005		0.005	-
ARSENIC (TOTAL)	11/24/92	N001	MG/L		0.0015		0.0015	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
R - UNUSABLE DATA POINT
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0606
NORTH COORDINATE: 59034.2 FT
EAST COORDINATE: 88634.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ARSENIC (TOTAL)	06/30/93	N001	MG/L		0.007		0.005	-
BARIUM	06/09/89	0001	MG/L	<	0.1		0.1	-
	12/01/89	0001		<	0.1		0.1	-
	06/25/90	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/01/91	0001			0.04		0.01	-
	02/21/92	0001			0.03		0.01	-
	08/11/92	0001		<	0.2		0.2	-
	11/24/92	0001			0.034		0.0015	-
	06/30/93	0001		<	0.1		0.1	-
BARIUM (TOTAL)	11/24/92	N001	MG/L		0.039		0.0015	-
	06/30/93	N001			0.3		0.1	-
BERYLLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/01/89	0001		<	0.005		0.005	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/01/91	0001		<	0.005		0.005	-
	08/11/92	0001		<	0.005		0.005	-
BORON	06/09/89	0001	MG/L		0.2		0.1	-
	12/01/89	0001			0.2		0.1	-
	06/25/90	0001			0.2		0.1	-
	01/29/91	0001			0.2	L	0.1	-
	06/01/91	0001			0.15		0.05	-
BROMIDE	01/29/91	0001	MG/L	<	0.1	L	0.1	-
	06/01/91	0001		<	1.0	I	1.	-
CADMIUM	04/26/88	0001	MG/L		0.020	JL	0.001	-
	06/09/89	0001			0.002		0.001	-
	12/01/89	0001		<	0.001		0.001	-
	06/25/90	0001		<	0.001		0.001	-
	01/29/91	0001		<	0.001	L	0.001	-
	06/01/91	0001		<	0.001		0.001	-
	02/21/92	0001		<	0.0005		0.0005	-
	08/11/92	0001		<	0.005	E	0.005	-
	11/24/92	0001		<	0.00013		0.00013	-
CADMIUM (TOTAL)	11/24/92	N001	MG/L		0.00022	NS	0.00013	-
CALCIUM	04/26/88	0001	MG/L		660.	JL	0.01	-
	06/09/89	0001			226.		0.01	-
	12/01/89	0001			266.		0.01	-
	06/25/90	0001			254.		0.01	-
	01/29/91	0001			220.	L	0.01	-
	06/01/91	0001			283.		0.5	-
	02/21/92	0001			211.		0.5	-
	08/11/92	0001			200		5	-
	01/31/93	0001			199		0.5	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
S - REPORTED VALUE DETERMINED USING METHOD OF STD ADDITION (MSA)

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0606
NORTH COORDINATE: 59034.2 FT
EAST COORDINATE: 88634.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CALCIUM	06/30/93	0001	MG/L		237		0.5	-
	12/12/93	0001			203		0.5	-
CALCIUM (TOTAL)	06/30/93	N001	MG/L		271		0.5	-
	12/12/93	N001			230		0.5	-
CHLORIDE	04/26/88	0001	MG/L		21.	JL	1.	-
	06/09/89	0001			20.		1.	-
	12/01/89	0001			17.5		1.	-
	06/25/90	0001			18.		1.	-
	01/29/91	0001			16.	JL	1.	-
	06/01/91	0001			17.0		0.5	-
	02/21/92	0001			15.9		0.5	-
	08/11/92	0001			18		0.016	-
	01/31/93	0001			16.2		0.5	-
	12/12/93	0001			14.2		0.5	-
CHLORIDE (TOTAL)	06/30/93	N001	MG/L		16.4		0.5	-
CHROMIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/01/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/01/91	0001		<	0.01		0.01	-
	02/21/92	0001		<	0.01		0.01	-
	08/11/92	0001		<	0.01		0.01	-
	11/24/92	0001		<	0.0053		0.0053	-
CHROMIUM (TOTAL)	11/24/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	06/09/89	0001	MG/L	<	0.05		0.05	-
	12/01/89	0001		<	0.05		0.05	-
	06/25/90	0001		<	0.05		0.05	-
	01/29/91	0001		<	0.05	L	0.05	-
	06/01/91	0001		<	0.03		0.03	-
COPPER	06/09/89	0001	MG/L		0.02		0.02	-
	12/01/89	0001		<	0.02		0.02	-
	06/25/90	0001		<	0.02		0.02	-
	01/29/91	0001		<	0.02	L	0.02	-
	06/01/91	0001		<	0.01		0.01	-
CYANIDE	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/01/89	0001		<	0.01		0.01	-
DISSOLVED OXYGEN	11/24/92	0001	MG/L		0.7		-	-
FLUORIDE	06/09/89	0001	MG/L		0.5		0.1	-
	12/01/89	0001			0.6		0.1	-
	06/25/90	0001			0.6		0.1	-
	01/29/91	0001			0.5	L	0.1	-
	06/01/91	0001			0.4		0.1	-
GROSS ALPHA	04/26/88	0001	PCI/L		38.	JL	0.2	24.
	01/29/91	0001			7.	L	1.	11.
	06/01/91	0001			0.0		1.	22.4

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0606
NORTH COORDINATE: 59034.2 FT
EAST COORDINATE: 88634.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS ALPHA	02/21/92	0001	PCI/L		14.7		1.0	25.5
	08/11/92	0001			16		26	17
	11/24/92	0001			11.5	N	10.8	8.8
	01/31/93	0001			18		33	38
	06/30/93	0001			51		16	32
GROSS ALPHA (TOTAL)	11/24/92	N001	PCI/L		0.0	N	25.4	12.8
	06/30/93	N001			0		20	28
GROSS BETA	04/26/88	0001	PCI/L		23.	JL	1.	11.
	01/29/91	0001			17.	L	0.5	7.
	06/01/91	0001			16.1		0.5	14.2
	02/21/92	0001			26.0		0.5	17.3
	08/11/92	0001			12		22	13
	11/24/92	0001			0.0	N	19.6	11.6
	01/31/93	0001			10		40	18
	06/30/93	0001			5		22	21
GROSS BETA (TOTAL)	11/24/92	N001	PCI/L		4.0	N	18.6	11.2
	06/30/93	N001			0		23	20
IRON	06/09/89	0001	MG/L		0.06		0.03	-
	12/01/89	0001		<	0.03		0.03	-
	06/25/90	0001			0.07		0.03	-
	01/29/91	0001			0.06	L	0.03	-
	06/01/91	0001		<	0.03		0.03	-
	02/21/92	0001		<	0.03		0.03	-
	08/11/92	0001		<	0.1		0.1	-
	01/31/93	0001		<	0.03		0.03	-
	06/30/93	0001		<	0.03	J	0.03	-
IRON (TOTAL)	06/30/93	N001	MG/L		10.2		0.03	-
LEAD	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/01/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01	J	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/01/91	0001		<	0.005		0.005	-
	11/24/92	0001		<	0.0015		0.0015	-
LEAD (TOTAL)	11/24/92	N001	MG/L	<	0.0015	W	0.0015	-
LEAD-210	11/24/92	0001	PCI/L		1.9		3.6	2.2
LEAD-210 (TOTAL)	11/24/92	N001	PCI/L		5.6		0.3	0.9
MAGNESIUM	04/26/88	0001	MG/L		144.	JL	0.001	-
	06/09/89	0001			137.		0.001	-
	12/01/89	0001			155.		0.001	-
	06/25/90	0001			132.		0.001	-
	01/29/91	0001			114.	L	0.001	-
	06/01/91	0001			121.		0.5	-
	02/21/92	0001			122.		0.5	-
	08/11/92	0001			120		5	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0606
NORTH COORDINATE: 59034.2 FT
EAST COORDINATE: 88634.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MAGNESIUM	01/31/93	0001	MG/L		119		0.1	-
	06/30/93	0001			130		0.1	-
	12/12/93	0001			118		0.1	-
MAGNESIUM (TOTAL)	06/30/93	N001	MG/L		144		0.1	-
	12/12/93	N001			121		0.1	-
MANGANESE	06/09/89	0001	MG/L		0.17		0.01	-
	12/01/89	0001			0.14		0.01	-
	06/25/90	0001			0.15		0.01	-
	01/29/91	0001			0.13	L	0.01	-
	06/01/91	0001			0.14		0.01	-
	02/21/92	0001			0.09		0.01	-
	08/11/92	0001			0.11		0.01	-
	11/24/92	0001			0.12		0.0015	-
	01/31/93	0001			0.13		0.01	-
	06/30/93	0001			0.16		0.01	-
	12/12/93	0001			0.12		0.01	-
MANGANESE (TOTAL)	11/24/92	N001	MG/L		0.11		0.0015	-
	06/30/93	N001			0.31		0.01	-
	12/12/93	N001			0.19		0.01	-
MERCURY	06/09/89	0001	MG/L	<	0.0002		0.0002	-
	12/01/89	0001		<	0.0002		0.0002	-
	06/25/90	0001		<	0.0002		0.0002	-
MOLYBDENUM	04/26/88	0001	MG/L		0.06	JL	0.01	-
	06/09/89	0001		<	0.01		0.01	-
	12/01/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001			0.04	L	0.01	-
	06/01/91	0001		<	0.01		0.01	-
	02/21/92	0001		<	0.01		0.01	-
	08/11/92	0001			0.013		0.007	-
	11/24/92	0001		<	0.0049	N	0.0049	-
	06/30/93	0001		<	0.01		0.01	-
MOLYBDENUM (TOTAL)	11/24/92	N001	MG/L		0.0080	N	0.0049	-
	06/30/93	N001		<	0.01		0.01	-
NICKEL	06/09/89	0001	MG/L	<	0.04		0.04	-
	12/01/89	0001		<	0.04		0.04	-
	06/25/90	0001		<	0.04		0.04	-
	01/29/91	0001		<	0.04	L	0.04	-
	06/01/91	0001		<	0.04		0.04	-
NITRATE	04/26/88	0001	MG/L		1600.	JL	1.	-
	06/09/89	0001			1200.		1.	-
	12/01/89	0001			1200.		1.	-
	06/25/90	0001			1120.		1.	-
	01/29/91	0001			1080.	L	1.	-
	06/01/91	0001			974.		1.	-
	02/21/92	0001			1060.		150.	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0606
NORTH COORDINATE: 59034.2 FT
EAST COORDINATE: 88634.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
NITRATE	08/11/92	0001	MG/L		1100	I	0.75	-
	11/24/92	0001			1600		0.044	-
	01/31/93	0001			1160		1	-
	12/12/93	0001			1120		1	-
NITRATE (TOTAL)	06/30/93	N001	MG/L		1170		1	-
NITRITE AND NITRATE	01/29/91	0001	MG/L		1080.	L	1.	
	06/01/91	0001			215.		0.05	
PH	04/26/88	0001	SU		7.20	L	-	-
	06/09/89	0001			7.33		-	-
	12/01/89	0001			7.15		-	-
	06/25/90	0001			7.26		-	-
	01/29/91	0001			7.02	L	-	-
	06/01/91	0001			7.20		-	-
	02/21/92	0001			7.06		-	-
	08/11/92	0001			7.20		-	-
	11/24/92	0001			7.32		-	-
	01/31/93	0001			6.98		-	-
	06/30/93	N001			6.98		-	-
	12/12/93	N001			7.26		-	-
PHOSPHATE	06/09/89	0001	MG/L		0.6		0.1	-
	12/01/89	0001			0.3		0.1	-
	06/25/90	0001			0.4		0.1	-
PHOSPHATE (TOTAL)	06/30/93	N001	MG/L		1.0		0.1	-
POTASSIUM	04/26/88	0001	MG/L		10.5	JL	0.01	-
	06/09/89	0001			13.8		0.01	-
	12/01/89	0001			12.2		0.01	-
	06/25/90	0001			12.7		0.01	-
	01/29/91	0001			12.3	L	0.01	-
	06/01/91	0001			13.		5.	-
	02/21/92	0001			11.		5.	-
	08/11/92	0001			12	*	0.575	-
	01/31/93	0001			12.1		0.1	-
	06/30/93	0001			14.1		0.1	-
	12/12/93	0001			9.4		0.1	-
POTASSIUM (TOTAL)	06/30/93	N001	MG/L		16.7		0.1	-
	12/12/93	N001			10.3		0.1	-
RADIUM-226	06/09/89	0001	PCI/L		0.4		1.	0.2
	12/01/89	0001			0.2		1.	0.2
	06/25/90	0001			0.1		1.	0.2
	01/29/91	0001			1.0	L	1.	0.9
	06/01/91	0001			0.3		1.	0.3
	02/21/92	0001			0.2		1.0	0.3
	08/11/92	0001			0.4		0.5	0.1
	11/24/92	0001			0.7		0.3	0.3
RADIUM-226 (TOTAL)	11/24/92	N001	PCI/L		1.0		0.3	0.4

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0606
NORTH COORDINATE: 59034.2 FT
EAST COORDINATE: 88634.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
RADIUM-228	06/09/89	0001	PCI/L		0.0		1.	0.9
	12/01/89	0001			0.8		1.	1.8
	06/25/90	0001			1.4		1.	0.9
	01/29/91	0001			1.5	L	1.	0.8
	06/01/91	0001			15.2	J	1.	2.2
	02/21/92	0001			1.9		1.0	1.6
	08/11/92	0001			0.0		1.9	1.0
	11/24/92	0001			2.3		2.0	1.4
RADIUM-228 (TOTAL)	11/24/92	N001	PCI/L		2.2		2.0	1.4
REDOX POTENTIAL	11/24/92	0001	mVOLTS		481.7		-	-
SELENIUM	04/26/88	0001	MG/L		0.009	JL	0.005	-
	06/09/89	0001			0.015		0.005	-
	12/01/89	0001		<	0.005		0.005	-
	06/25/90	0001		<	0.005		0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/01/91	0001			0.007	J	0.005	-
	02/21/92	0001		<	0.03	I	0.03	-
	08/11/92	0001		<	0.005		0.005	-
	11/24/92	0001		<	0.0015	NW	0.0015	-
SELENIUM (TOTAL)	11/24/92	N001	MG/L	<	0.0015		0.0015	-
SILICA - SIO2	06/09/89	0001	MG/L		21.		2.	-
	12/01/89	0001			21.		2.	-
	06/25/90	0001			23.		2.	-
	01/29/91	0001			21.	L	2.	-
	06/01/91	0001			22.5		0.1	-
	12/12/93	0001			21.8		0.1	-
SILICA - SIO2 (TOTAL)	06/30/93	N001	MG/L		26.7	H	0.5	-
	12/12/93	N001			41.7		0.1	-
SILVER	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/01/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/01/91	0001		<	0.01		0.01	-
SODIUM	04/26/88	0001	MG/L		98.7	JL	0.002	-
	06/09/89	0001			98.8		0.002	-
	12/01/89	0001			106.		0.002	-
	06/25/90	0001			102.		0.002	-
	01/29/91	0001			97.3	L	0.002	-
	06/01/91	0001			96.		1.	-
	02/21/92	0001			95.		1.	-
	08/11/92	0001			95		5	-
	01/31/93	0001			95		0.1	-
	06/30/93	0001			94		1	-
	12/12/93	0001			92		1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0606
NORTH COORDINATE: 59034.2 FT
EAST COORDINATE: 88634.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SODIUM (TOTAL)	06/30/93	N001	MG/L		96		1	-
	12/12/93	N001			94		1	-
SPECIFIC CONDUCTANCE	04/26/88	0001	UMHO/CM		3750.	L	-	-
	06/09/89	0001			3400.		-	-
	12/01/89	0001			3590.		-	-
	06/25/90	0001			4000.		-	-
	01/29/91	0001			4360.	L	-	-
	06/01/91	0001			4390.		-	-
	02/21/92	0001			3460		-	-
	08/11/92	0001			3670		-	-
	11/24/92	0001			2970		-	-
	01/31/93	0001			3220		-	-
	06/30/93	N001			3610		-	-
	12/12/93	N001			3190		-	-
STRONTIUM	06/25/90	0001	MG/L		1.76	*	0.1	-
	01/29/91	0001			1.7	L	0.1	-
	06/01/91	0001			1.79		0.01	-
	02/21/92	0001			1.64		0.01	-
	08/11/92	0001			1.7		0.2	-
	11/24/92	0001			1.9		0.00035	-
	06/30/93	0001			1.82		0.01	-
	12/12/93	0001			1.71		0.01	-
STRONTIUM (TOTAL)	11/24/92	N001	MG/L		2.0		0.00035	-
	06/30/93	N001			2.03		0.01	-
	12/12/93	N001			1.75		0.01	-
SULFATE	04/26/88	0001	MG/L		1380.	JL	0.1	-
	06/09/89	0001			1230.		0.1	-
	12/01/89	0001			1170.		0.1	-
	06/25/90	0001			1241.9		0.1	-
	01/29/91	0001			1070.	L	0.1	-
	06/01/91	0001			1010.		10.	-
	02/21/92	0001			961.		10.	-
	08/11/92	0001			860	I	0.59	-
	11/24/92	0001			930		1.0	-
	01/31/93	0001			988		1	-
	12/12/93	0001			805		1	-
SULFATE (TOTAL)	11/24/92	N001	MG/L		920		1.0	-
	06/30/93	N001			884		1	-
SULFIDE	06/09/89	0001	MG/L	<	0.1		0.1	-
	12/01/89	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/01/91	0001			11.5	J	1.	-
TEMPERATURE	04/26/88	0001	C - DEGREE		15.0	L	-	-
	06/09/89	0001			17.0		-	-
	12/01/89	0001			16.0		-	-
	06/25/90	0001			22.		-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
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OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0606
NORTH COORDINATE: 59034.2 FT
EAST COORDINATE: 88634.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TEMPERATURE	01/29/91	0001	C - DEGREE		11.1	L	-	-
	06/01/91	0001			15.4		-	-
	02/21/92	0001			14.2		-	-
	08/11/92	0001			17.7		-	-
	11/24/92	0001			8.3		-	-
	01/31/93	0001			12.2		-	-
	06/30/93	N001			16.4		-	-
	12/12/93	N001			15.0		-	-
THALLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/01/89	0001			0.1		0.1	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/01/91	0001		<	0.01		0.01	-
	02/21/92	0001		<	0.01		0.01	-
THORIUM-230	01/29/91	0001	PCI/L		0.0	L	1.	0.3
	06/01/91	0001			0.5		1.	0.3
TIN	06/09/89	0001	MG/L	<	0.005		0.005	-
	12/01/89	0001		<	0.005		0.005	-
	06/25/90	0001			0.013		0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/01/91	0001		<	0.01	I	0.01	-
	02/21/92	0001		<	0.005		0.005	-
TOTAL DISSOLVED SOLIDS	04/26/88	0001	MG/L		3410.	JL	10.	-
	06/09/89	0001			2410.		10.	-
	12/01/89	0001			2520.		10.	-
	06/25/90	0001			2068.		10.	-
	01/29/91	0001			1980.	L	10.	-
	06/01/91	0001			2040.		10.	-
	02/21/92	0001			1760.		10.	-
	08/11/92	0001			2100		42	-
	01/31/93	0001			2330		10	-
	12/12/93	0001			1930		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/30/93	N001	MG/L		2010	H	10	-
TOTAL ORGANIC CARBON	04/26/88	0001	MG/L		70.9	JL	1.	-
	01/29/91	0001			1.8	L	1.	-
	06/01/91	0001			4.		1.	-
	02/21/92	0001			1.		1.	-
	08/11/92	0001			4.6		1.0	-
URANIUM	04/26/88	0001	MG/L		0.0178	JL	0.003	-
	06/09/89	0001			0.014		0.003	-
	12/01/89	0001			0.015		0.003	-
	06/25/90	0001			0.013		0.003	-
	01/29/91	0001			0.0137	L	0.0003	-
	06/01/91	0001			0.008		0.001	-
	02/21/92	0001			0.013		0.001	-
	11/24/92	0001			0.014		0.001	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0606
NORTH COORDINATE: 59034.2 FT
EAST COORDINATE: 88634.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
URANIUM	01/31/93	0001	MG/L		0.013		0.001	-
	06/30/93	0001			0.012		0.001	-
	12/12/93	0001			0.012		0.001	-
URANIUM (TOTAL)	11/24/92	N001	MG/L		0.012		0.001	-
	06/27/93	N001			0.022		0.001	-
	06/30/93	N001			0.013		0.001	-
	12/12/93	N001			0.013		0.001	-
VANADIUM	06/09/89	0001	MG/L		0.05		0.01	-
	12/01/89	0001		<	0.01		0.01	-
	06/25/90	0001			0.02		0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/01/91	0001		<	0.01		0.01	-
	02/21/92	0001		<	0.01		0.01	-
	08/11/92	0001		<	0.05		0.05	-
	11/24/92	0001			0.0027		0.0019	-
	06/30/93	0001		<	0.01		0.01	-
	12/12/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	11/24/92	N001	MG/L		0.0030		0.0019	-
	06/30/93	N001			0.01		0.01	-
	12/12/93	N001		<	0.01		0.01	-
ZINC	06/09/89	0001	MG/L		0.017		0.005	-
	12/01/89	0001		<	0.005		0.005	-
	06/25/90	0001		<	0.005		0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/01/91	0001			0.024		0.005	-
	02/21/92	0001			0.031		0.005	-
	08/11/92	0001		<	0.02		0.02	-
	11/24/92	0001			0.0021		0.0010	-
	06/30/93	0001			0.012	J	0.005	-
ZINC (TOTAL)	11/24/92	N001	MG/L		0.0060		0.0010	-
	06/30/93	N001			0.051	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0611
NORTH COORDINATE: 57811.0 FT
EAST COORDINATE: 89017.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	06/09/89 06/29/93	0001 N001	MG/L CACO3		207. 195		- -	- -
ALUMINUM	06/09/89	0001	MG/L	<	0.1		0.1	-
AMMONIUM	06/09/89	0001	MG/L	<	0.1		0.1	-
AMMONIUM (TOTAL)	06/29/93	N001	MG/L	<	0.1		0.1	-
ANTIMONY	06/09/89	0001	MG/L	<	0.003		0.003	-
ARSENIC	06/09/89 06/29/93	0001 0001	MG/L	<	0.01 0.005		0.01 0.005	- -
ARSENIC (TOTAL)	06/29/93	N001	MG/L	<	0.005	W	0.005	-
BARIUM	06/09/89 06/29/93	0001 0001	MG/L	< <	0.1 0.1		0.1 0.1	- -
BARIUM (TOTAL)	06/29/93	N001	MG/L	<	0.1		0.1	-
BERYLLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
BORON	06/09/89	0001	MG/L	<	0.1		0.1	-
CADMIUM	06/09/89	0001	MG/L	<	0.001		0.001	-
CALCIUM	06/09/89 06/29/93	0001 0001	MG/L		16.8 15.9		0.01 0.5	- -
CALCIUM (TOTAL)	06/29/93	N001	MG/L		14.5		0.5	-
CHLORIDE	06/09/89	0001	MG/L		7.4		1.	-
CHLORIDE (TOTAL)	06/29/93	N001	MG/L		10.8		0.5	-
CHROMIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
COBALT	06/09/89	0001	MG/L	<	0.05		0.05	-
COPPER	06/09/89	0001	MG/L	<	0.02		0.02	-
CYANIDE	06/09/89	0001	MG/L	<	0.01		0.01	-
DISSOLVED OXYGEN	06/29/93	N001	MG/L		0.3		-	-
FLUORIDE	06/09/89	0001	MG/L		0.3		0.1	-
GROSS ALPHA	06/29/93	0001	PCI/L		6		3	5
GROSS ALPHA (TOTAL)	06/29/93	N001	PCI/L		13		3	6
GROSS BETA	06/29/93	0001	PCI/L		7		4	4
GROSS BETA (TOTAL)	06/29/93	N001	PCI/L		4		4	4
IRON	06/09/89	0001	MG/L		0.04		0.03	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0611
NORTH COORDINATE: 57811.0 FT
EAST COORDINATE: 89017.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
IRON	06/29/93	0001	MG/L	<	0.03	J	0.03	-
IRON (TOTAL)	06/29/93	N001	MG/L		0.08	J	0.03	-
LEAD	06/09/89	0001	MG/L	<	0.01		0.01	-
MAGNESIUM	06/09/89 06/29/93	0001 0001	MG/L		22.8 21.5		0.001 0.1	- -
MAGNESIUM (TOTAL)	06/29/93	N001	MG/L		20.1		0.1	-
MANGANESE	06/09/89 06/29/93	0001 0001	MG/L	< <	0.01 0.01		0.01 0.01	- -
MANGANESE (TOTAL)	06/29/93	N001	MG/L	<	0.01		0.01	-
MERCURY	06/09/89	0001	MG/L	<	0.0002		0.0002	-
MOLYBDENUM	06/09/89 06/29/93	0001 0001	MG/L	< <	0.01 0.01		0.01 0.01	- -
MOLYBDENUM (TOTAL)	06/29/93	N001	MG/L	<	0.01		0.01	-
NICKEL	06/09/89	0001	MG/L	<	0.04		0.04	-
NITRATE	06/09/89	0001	MG/L		5.0		1.	-
NITRATE (TOTAL)	06/29/93	N001	MG/L		1		1	-
PH	06/09/89 06/29/93	0001 N001	SU		7.76 7.93		- -	- -
PHOSPHATE	06/09/89	0001	MG/L		1.0		0.1	-
PHOSPHATE (TOTAL)	06/29/93	N001	MG/L		0.6		0.1	-
POTASSIUM	06/09/89 06/29/93	0001 0001	MG/L		2.8 2.8		0.01 0.1	- -
POTASSIUM (TOTAL)	06/29/93	N001	MG/L		2.1		0.1	-
RADIUM-226	06/09/89	0001	PCI/L		2.0		1.	0.5
RADIUM-228	06/09/89	0001	PCI/L		0.3		1.	1.0
REDOX POTENTIAL	06/29/93	N001	mVOLTS		446		-	-
SELENIUM	06/09/89	0001	MG/L	<	0.005		0.005	-
SILICA - SIO2	06/09/89	0001	MG/L		12.		2.	-
SILICA - SIO2 (TOTAL)	06/29/93	N001	MG/L		11.2	H	0.5	-
SILVER	06/09/89	0001	MG/L	<	0.01		0.01	-
SODIUM	06/09/89	0001	MG/L		76.3		0.002	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0611
NORTH COORDINATE: 57811.0 FT
EAST COORDINATE: 89017.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SODIUM	06/29/93	0001	MG/L		74		1	-
SODIUM (TOTAL)	06/29/93	N001	MG/L		72		1	-
SPECIFIC CONDUCTANCE	06/09/89	0001	UMHO/CM		379.		-	-
	06/29/93	N001			470		-	-
STRONTIUM	06/29/93	0001	MG/L		0.35		0.01	-
STRONTIUM (TOTAL)	06/29/93	N001	MG/L		0.32		0.01	-
SULFATE	06/09/89	0001	MG/L		77.		0.1	-
SULFATE (TOTAL)	06/29/93	N001	MG/L		73		1	-
SULFIDE	06/09/89	0001	MG/L	<	0.1		0.1	-
TEMPERATURE	06/09/89	0001	C - DEGREE		17.0		-	-
	06/29/93	N001			18.0		-	-
THALLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
TIN	06/09/89	0001	MG/L	<	0.005		0.005	-
TOTAL DISSOLVED SOLIDS	06/09/89	0001	MG/L		313.		10.	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/29/93	N001	MG/L		310	H	10	-
URANIUM	06/09/89	0001	MG/L		0.0099		0.003	-
	06/29/93	0001			0.008		0.001	-
URANIUM (TOTAL)	06/29/93	N001	MG/L		0.007		0.001	-
VANADIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	06/29/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	06/29/93	N001	MG/L	<	0.01		0.01	-
ZINC	06/09/89	0001	MG/L	<	0.005		0.005	-
	06/29/93	0001			0.085	J	0.005	-
ZINC (TOTAL)	06/29/93	N001	MG/L		0.101	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0612
NORTH COORDINATE: 58437.2 FT
EAST COORDINATE: 85614.8 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/26/88	0001	MG/L CACO3		121.	L	-	-
AMMONIUM	04/26/88	0001	MG/L	<	0.1	L	0.1	-
ARSENIC	04/26/88	0001	MG/L		0.006	JL	0.01	-
CADMIUM	04/26/88	0001	MG/L		0.004	L	0.001	-
CALCIUM	04/26/88	0001	MG/L		28.0	L	0.01	-
CHLORIDE	04/26/88	0001	MG/L		6.3	L	1.	-
GROSS ALPHA	04/26/88	0001	PCI/L		10.	L	0.2	3.
GROSS BETA	04/26/88	0001	PCI/L		9.0	L	1.	1.6
MAGNESIUM	04/26/88	0001	MG/L		18.2	L	0.001	-
MOLYBDENUM	04/26/88	0001	MG/L		0.01	L	0.01	-
NITRATE	04/26/88	0001	MG/L		8.0	L	1.	-
PH	04/26/88	0001	SU		7.64	L	-	-
POTASSIUM	04/26/88	0001	MG/L		5.29	L	0.01	-
SELENIUM	04/26/88	0001	MG/L	<	0.005	L	0.005	-
SODIUM	04/26/88	0001	MG/L		12.6	L	0.002	-
SPECIFIC CONDUCTANCE	04/26/88	0001	UMHO/CM		240.	L	-	-
SULFATE	04/26/88	0001	MG/L		20.	L	0.1	-
TEMPERATURE	04/26/88	0001	C - DEGREE		17.5	L	-	-
TOTAL DISSOLVED SOLIDS	04/26/88	0001	MG/L		195.	L	10.	-
TOTAL ORGANIC CARBON	04/26/88	0001	MG/L		41.2	L	1.	-
URANIUM	04/26/88	0001	MG/L		0.0096	L	0.003	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0613
NORTH COORDINATE: 56377.8 FT
EAST COORDINATE: 88643.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	06/05/89	0001	MG/L CACO3		189.		-	-
	12/04/89	0001			179.	L	-	-
	06/25/90	0001			183.		-	-
	01/29/91	0001			195.		-	-
	05/30/91	0001			196.	L	-	-
	02/26/92	0001			190	L	-	-
	08/10/92	0001			235	L	-	-
	11/21/92	0001			186	L	-	-
	06/27/93	N001			180		-	-
	12/10/93	N001			184		-	-
ALUMINUM	06/05/89	0001	MG/L	<	0.1		0.1	-
	12/04/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1		0.1	-
	05/30/91	0001		<	0.05	L	0.05	-
	02/26/92	0001		<	0.05	L	0.05	-
	08/10/92	0001		<	0.2	*L	0.2	-
AMMONIUM	06/05/89	0001	MG/L	<	0.1		0.1	-
	12/04/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1	H	0.1	-
	01/29/91	0001		<	0.1		0.1	-
	05/30/91	0001			0.1	L	0.1	-
	02/26/92	0001		<	0.1	L	0.1	-
	12/10/93	0001		<	0.1		0.1	-
AMMONIUM (TOTAL)	06/27/93	N001	MG/L	<	0.1		0.1	-
ANTIMONY	06/05/89	0001	MG/L	<	0.003		0.003	-
	12/04/89	0001		<	0.003	L	0.003	-
	06/25/90	0001			0.007		0.003	-
	01/29/91	0001		<	0.003		0.003	-
	05/30/91	0001		<	0.003	L	0.003	-
	02/26/92	0001		<	0.003	L	0.003	-
	08/10/92	0001		<	0.06	WL	0.06	-
ARSENIC	06/05/89	0001	MG/L	<	0.01		0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	05/30/91	0001		<	0.01	L	0.01	-
	02/26/92	0001		<	0.01	L	0.01	-
	08/10/92	0001		<	0.01	WL	0.01	-
	11/21/92	0001		<	0.0015	L	0.0015	-
	06/27/93	0001		<	0.005		0.005	-
ARSENIC (TOTAL)	11/21/92	N001	MG/L	<	0.0015	L	0.0015	-
	06/27/93	N001		<	0.005		0.005	-
BARIUM	06/05/89	0001	MG/L	<	0.1		0.1	-
	12/04/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
H - HOLD TIME EXPIRED, VALUE SUSPECT
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0613
NORTH COORDINATE: 56377.8 FT
EAST COORDINATE: 88643.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BARIUM	01/29/91	0001	MG/L	<	0.1		0.1	-
	05/30/91	0001			0.04	L	0.01	-
	02/26/92	0001			0.04	L	0.01	-
	08/10/92	0001		<	0.2	L	0.2	-
	11/21/92	0001			0.036	L	0.0015	-
	06/27/93	0001		<	0.1		0.1	-
BARIUM (TOTAL)	11/21/92	N001	MG/L		0.038	L	0.0015	-
	06/27/93	N001		<	0.1		0.1	-
BERYLLIUM	06/05/89	0001	MG/L	<	0.01		0.01	-
	12/04/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	05/30/91	0001		<	0.005	L	0.005	-
	08/10/92	0001		<	0.005	L	0.005	-
BORON	06/05/89	0001	MG/L	<	0.1		0.1	-
	12/04/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1		0.1	-
	05/30/91	0001		<	0.05	L	0.05	-
BROMIDE	01/29/91	0001	MG/L	<	0.1		0.1	-
	05/30/91	0001		<	0.1	L	0.1	-
CADMIUM	06/05/89	0001	MG/L	<	0.001		0.001	-
	12/04/89	0001		<	0.001	L	0.001	-
	06/25/90	0001		<	0.001		0.001	-
	01/29/91	0001		<	0.001		0.001	-
	05/30/91	0001		<	0.001	L	0.001	-
	02/26/92	0001		<	0.001	L	0.001	-
	08/10/92	0001		<	0.005	EL	0.005	-
	11/21/92	0001		<	0.00013	L	0.00013	-
CADMIUM (TOTAL)	11/21/92	N001	MG/L	<	0.00013	NL	0.00013	-
CALCIUM	06/05/89	0001	MG/L		17.3		0.01	-
	12/04/89	0001			16.9	L	0.01	-
	06/25/90	0001			16.3		0.01	-
	01/29/91	0001			16.1		0.01	-
	05/30/91	0001			15.9	L	0.1	-
	02/26/92	0001			15.7	L	0.1	-
	08/10/92	0001			16	L	5	-
	06/27/93	0001			15.7		0.5	-
	12/10/93	0001			14.6		0.5	-
CALCIUM (TOTAL)	06/27/93	N001	MG/L		15.2		0.5	-
	12/10/93	N001			15.3		0.5	-
CHLORIDE	06/05/89	0001	MG/L		7.4		1.	-
	12/04/89	0001			8.7	L	1.	-
	06/25/90	0001			8.		1.	-
	01/29/91	0001			4.	J	1.	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0613
NORTH COORDINATE: 56377.8 FT
EAST COORDINATE: 88643.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CHLORIDE	05/30/91	0001	MG/L		8.2	L	0.5	-
	02/26/92	0001			9.3	L	0.5	-
	08/10/92	0001			8.0	L	0.016	-
	12/10/93	0001			34.7		0.5	-
CHLORIDE (TOTAL)	06/27/93	N001	MG/L		8.0		0.5	-
CHROMIUM	06/05/89	0001	MG/L	<	0.01		0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	05/30/91	0001		<	0.01	L	0.01	-
	02/26/92	0001		<	0.01	L	0.01	-
	08/10/92	0001		<	0.1	L	0.01	-
	11/21/92	0001		<	0.0053	L	0.0053	-
CHROMIUM (TOTAL)	11/21/92	N001	MG/L	<	0.0053	L	0.0053	-
COBALT	06/05/89	0001	MG/L	<	0.05		0.05	-
	12/04/89	0001		<	0.05	L	0.05	-
	06/25/90	0001		<	0.05		0.05	-
	01/29/91	0001		<	0.05		0.05	-
	05/30/91	0001		<	0.03	L	0.03	-
COPPER	06/05/89	0001	MG/L	<	0.02		0.02	-
	12/04/89	0001		<	0.02	L	0.02	-
	06/25/90	0001		<	0.02		0.02	-
	01/29/91	0001		<	0.02		0.02	-
	05/30/91	0001		<	0.01	L	0.01	-
CYANIDE	06/05/89	0001	MG/L	<	0.01		0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
DISSOLVED OXYGEN	06/27/93	N001	MG/L		3.2		-	-
	12/10/93	N001			3.2		-	-
FLUORIDE	06/05/89	0001	MG/L		0.3		0.1	-
	12/04/89	0001			0.4	L	0.1	-
	06/25/90	0001			0.4		0.1	-
	01/29/91	0001			0.3		0.1	-
	05/30/91	0001			0.2	L	0.1	-
GROSS ALPHA	01/29/91	0001	PCI/L		1.9		1.	2.3
	05/30/91	0001			0.0	L	1.	4.1
	02/26/92	0001			5.2	L	1.0	4.3
	08/10/92	0001			2.6	IL	3.9	2.7
	11/21/92	0001			7.4	NL	3.0	3.1
	06/27/93	0001			7		3	5
GROSS ALPHA (TOTAL)	11/21/92	N001	PCI/L		0.0	NL	6.6	3.6
	06/27/93	N001			4		3	5
GROSS BETA	01/29/91	0001	PCI/L		2.9		0.5	1.8
	05/30/91	0001			1.5	L	0.5	2.7

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0613
NORTH COORDINATE: 56377.8 FT
EAST COORDINATE: 88643.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS BETA	02/26/92	0001	PCI/L		6.9	L	0.5	2.4
	08/10/92	0001			5.7	IL	4.2	2.8
	11/21/92	0001			5.6	NL	5.4	3.4
	06/27/93	0001			5		4	4
GROSS BETA (TOTAL)	11/21/92	N001	PCI/L		0.0	NL	4.8	2.8
	06/27/93	N001			0		4	4
IRON	06/05/89	0001	MG/L	<	0.03		0.03	-
	12/04/89	0001		<	0.03	L	0.03	-
	06/25/90	0001		<	0.03		0.03	-
	01/29/91	0001		<	0.03		0.03	-
	05/30/91	0001		<	0.03	L	0.03	-
	02/26/92	0001		<	0.03	L	0.03	-
	08/10/92	0001		<	0.1	L	0.1	-
	06/27/93	0001		<	0.03	J	0.03	-
IRON (TOTAL)	06/27/93	N001	MG/L		0.04	J	0.03	-
LEAD	06/05/89	0001	MG/L	<	0.01		0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	05/30/91	0001		<	0.005	L	0.005	-
	11/21/92	0001		<	0.0015	L	0.0015	-
LEAD (TOTAL)	11/21/92	N001	MG/L	<	0.0015	L	0.0015	-
LEAD-210	11/21/92	0001	PCI/L		0.3	L	2.0	1.2
LEAD-210 (TOTAL)	11/21/92	N001	PCI/L		5.8	L	0.3	0.9
MAGNESIUM	06/05/89	0001	MG/L		29.9		0.001	-
	12/04/89	0001			30.	L	0.001	-
	06/25/90	0001			29.5		0.001	-
	01/29/91	0001			31.9		0.001	-
	05/30/91	0001			28.8	L	0.1	-
	02/26/92	0001			28.7	L	0.1	-
	08/10/92	0001			28	L	5	-
	06/27/93	0001			27.3		0.1	-
	12/10/93	0001			26.5		0.1	-
MAGNESIUM (TOTAL)	06/27/93	N001	MG/L		26.9		0.1	-
	12/10/93	N001			26.4		0.1	-
MANGANESE	06/05/89	0001	MG/L	<	0.01		0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	05/30/91	0001		<	0.01	L	0.01	-
	02/26/92	0001		<	0.01	L	0.01	-
	08/10/92	0001		<	0.01	L	0.01	-
	11/21/92	0001		<	0.0015	NL	0.0015	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
I - *INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION*
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0613
NORTH COORDINATE: 56377.8 FT
EAST COORDINATE: 88643.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MANGANESE	06/27/93	0001	MG/L	<	0.01		0.01	-
	12/10/93	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	11/21/92	N001	MG/L	<	0.0015	L	0.0015	-
	06/27/93	N001		<	0.01		0.01	-
	12/10/93	N001		<	0.01		0.01	-
MERCURY	06/05/89	0001	MG/L	<	0.0002		0.0002	-
	12/04/89	0001		<	0.0002	L	0.0002	-
	06/25/90	0001		<	0.0002		0.0002	-
MOLYBDENUM	06/05/89	0001	MG/L	<	0.01		0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
	06/25/90	0001			0.01		0.01	-
	01/29/91	0001			0.01		0.01	-
	05/30/91	0001		<	0.01	L	0.01	-
	02/26/92	0001		<	0.01	L	0.01	-
	08/10/92	0001		<	0.007	L	0.007	-
	11/21/92	0001			0.0086	NL	0.0049	-
	06/27/93	0001		<	0.01		0.01	-
MOLYBDENUM (TOTAL)	11/21/92	N001	MG/L		0.0070	NL	0.0049	-
	06/27/93	N001		<	0.01		0.01	-
NICKEL	06/05/89	0001	MG/L	<	0.04		0.04	-
	12/04/89	0001		<	0.04	L	0.04	-
	06/25/90	0001		<	0.04		0.04	-
	01/29/91	0001		<	0.04		0.04	-
	05/30/91	0001		<	0.04	L	0.04	-
NITRATE	06/05/89	0001	MG/L		7.8		1.	-
	12/04/89	0001			5.3	L	1.	-
	06/25/90	0001			2.6		1.	-
	01/29/91	0001			4.		1.	-
	05/30/91	0001			4.6	L	1.	-
	02/26/92	0001			3.2	L	1.0	-
	08/10/92	0001			4.3	L	0.075	-
	11/21/92	0001			2.9	L	0.044	-
	12/10/93	0001			6		1	-
NITRATE (TOTAL)	06/27/93	N001	MG/L		3		1	-
NITRITE AND NITRATE	01/29/91	0001	MG/L		4.	J	1.	-
	05/30/91	0001			1.06	L	0.05	-
PH	06/05/89	0001	SU		7.85		-	-
	12/04/89	0001			8.02	L	-	-
	06/25/90	0001			7.98		-	-
	01/29/91	0001			8.46		-	-
	05/30/91	0001			8.03	L	-	-
	02/26/92	0001			8.01	L	-	-
	08/10/92	0001			8.01	L	-	-
	11/21/92	0001			8.13	L	-	-
	06/27/93	N001			8.04		-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0613
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EAST COORDINATE: 88643.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
PH	12/10/93	N001	SU		7.96		-	-
PHOSPHATE	06/05/89	0001	MG/L	<	0.1		0.1	-
	12/04/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1		0.1	-
PHOSPHATE (TOTAL)	06/27/93	N001	MG/L	<	0.1		0.1	-
POTASSIUM	06/05/89	0001	MG/L		3.0		0.01	-
	12/04/89	0001			2.5	L	0.01	-
	06/25/90	0001			2.9		0.01	-
	01/29/91	0001			2.7		0.01	-
	05/30/91	0001			3.0	L	0.01	-
	02/26/92	0001			2.67	L	0.01	-
	08/10/92	0001			2.2	*L	0.575	-
	06/27/93	0001			2.8		0.1	-
	12/10/93	0001			2.3		0.1	-
POTASSIUM (TOTAL)	06/27/93	N001	MG/L		2.7		0.1	-
	12/10/93	N001			2.3		0.1	-
RADIUM-226	06/05/89	0001	PCI/L		0.0		1.	0.1
	12/04/89	0001			0.1	L	1.	0.2
	06/25/90	0001			0.0		1.	0.1
	01/29/91	0001			0.0		1.	0.1
	05/30/91	0001			0.0	L	1.	0.1
	02/26/92	0001			0.0	L	1.0	0.2
	08/10/92	0001			0.1	L	0.3	0.1
	11/21/92	0001			0.2	L	0.3	0.2
RADIUM-226 (TOTAL)	11/21/92	N001	PCI/L		0.3	L	0.3	0.2
RADIUM-228	06/05/89	0001	PCI/L		0.0		1.	0.9
	12/04/89	0001			0.8	L	1.	1.8
	06/25/90	0001			0.2		1.	0.7
	01/29/91	0001			0.7		1.	0.8
	05/30/91	0001			0.0	JL	1.	1.2
	02/26/92	0001			1.7	L	1.0	1.7
	08/10/92	0001			0.3	L	2.2	1.1
	11/21/92	0001			2.8	L	2.5	1.7
RADIUM-228 (TOTAL)	11/21/92	N001	PCI/L		2.7	L	1.9	1.4
REDOX POTENTIAL	06/27/93	N001	mVOLTS		466		-	-
	12/10/93	N001			407		-	-
SELENIUM	06/05/89	0001	MG/L	<	0.005		0.005	-
	12/04/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.005		0.005	-
	01/29/91	0001		<	0.005		0.005	-
	05/30/91	0001			0.005	JL	0.005	-
	02/26/92	0001			0.005	L	0.005	-
	08/10/92	0001		<	0.005	WL	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0613
NORTH COORDINATE: 56377.8 FT
EAST COORDINATE: 88643.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SELENIUM	11/21/92	0001	MG/L	<	0.0015	NL	0.0015	-
SELENIUM (TOTAL)	11/21/92	N001	MG/L		0.0016	L	0.0015	-
SILICA - SIO2	06/05/89	0001	MG/L		11.		2.	-
	12/04/89	0001			10.6	L	2.	-
	06/25/90	0001			11.		2.	-
	01/29/91	0001			10.		2.	-
	05/30/91	0001			10.8	L	0.1	-
	12/10/93	0001			10.7		0.1	-
SILICA - SIO2 (TOTAL)	06/27/93	N001	MG/L		10.4	H	0.5	-
	12/10/93	N001			10.3		0.1	-
SILVER	06/05/89	0001	MG/L	<	0.01		0.01	
	12/04/89	0001		<	0.01	L	0.01	
	06/25/90	0001		<	0.01		0.01	
	01/29/91	0001		<	0.01		0.01	
	05/30/91	0001		<	0.01	L	0.01	
SODIUM	06/05/89	0001	MG/L		51.7		0.002	
	12/04/89	0001			49.	L	0.002	
	06/25/90	0001			51.2		0.002	
	01/29/91	0001			51.6		0.002	
	05/30/91	0001			50.	L	1.	
	02/26/92	0001			51.	L	1.	
	08/10/92	0001			49	L	5	
	06/27/93	0001			49		1	
	12/10/93	0001			48		1	
SODIUM (TOTAL)	06/27/93	N001	MG/L		50		1	
	12/10/93	N001			49		1	
SPECIFIC CONDUCTANCE	06/05/89	0001	UMHO/CM		332.			
	12/04/89	0001			390.	L		
	06/25/90	0001			400.			
	01/29/91	0001			490.			
	05/30/91	0001			508.	L		
	02/26/92	0001			412	L		
	08/10/92	0001			421	L		
	11/21/92	0001			411	L		
	06/27/93	N001			422			
	12/10/93	N001			292			
STRONTIUM	06/25/90	0001	MG/L		0.36	*	0.1	
	01/29/91	0001			0.3		0.1	
	05/30/91	0001			0.35	L	0.01	
	02/26/92	0001			0.36	L	0.01	
	08/10/92	0001			0.3	L	0.2	
	11/21/92	0001			0.40	L	0.00035	
	06/27/93	0001			0.35		0.01	
	12/10/93	0001			0.34		0.01	
STRONTIUM (TOTAL)	11/21/92	N001	MG/L		0.39	L	0.00035	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
H - HOLD TIME EXPIRED, VALUE SUSPECT
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
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LOCATION: 0613
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04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
STRONTIUM (TOTAL)	06/27/93	N001	MG/L		0.34		0.01	-
	12/10/93	N001			0.34		0.01	-
SULFATE	06/05/89	0001	MG/L		64.		0.1	-
	12/04/89	0001			64.	L	0.1	-
	06/25/90	0001			52.3		0.1	-
	01/29/91	0001			61.7		0.1	-
	05/30/91	0001			56.	L	0.1	-
	02/26/92	0001			60.	L	10.	-
	08/10/92	0001			60	L	0.059	-
	11/21/92	0001			65	L	1.0	-
	12/10/93	0001			59		1	-
SULFATE (TOTAL)	11/21/92	N001	MG/L		64	L	1.0	-
	06/27/93	N001			61		1	-
SULFIDE	06/05/89	0001	MG/L	<	0.1		0.1	-
	12/04/89	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	J	0.1	-
	05/30/91	0001			4.9	JL	1.	-
TEMPERATURE	06/05/89	0001	C - DEGREE		17.0		-	-
	12/04/89	0001			15.0	L	-	-
	06/25/90	0001			17.0		-	-
	01/29/91	0001			13.7		-	-
	05/30/91	0001			16.4	L	-	-
	02/26/92	0001			15.4	L	-	-
	08/10/92	0001			16.5	L	-	-
	11/21/92	0001			15.4	L	-	-
	06/27/93	N001			17.8		-	-
	12/10/93	N001			15.2		-	-
THALLIUM	06/05/89	0001	MG/L	<	0.01		0.01	-
	12/04/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	05/30/91	0001		<	0.01	L	0.01	-
THORIUM-230	01/29/91	0001	PCI/L		0.0		1.	0.3
	05/30/91	0001			1.1	L	1.	0.5
TIN	06/05/89	0001	MG/L	<	0.005		0.005	-
	12/04/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.005		0.005	-
	01/29/91	0001		<	0.005		0.005	-
	05/30/91	0001		<	0.01	IL	0.01	-
TOTAL DISSOLVED SOLIDS	06/05/89	0001	MG/L		281.		10.	-
	12/04/89	0001			298.	L	10.	-
	06/25/90	0001			284.		10.	-
	01/29/91	0001			228.		10.	-
	05/30/91	0001			288.	L	10.	-
	02/26/92	0001			277.	L	10.	-
	08/10/92	0001			360	L	42	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TOTAL DISSOLVED SOLIDS	12/10/93	0001	MG/L		300		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/27/93	N001	MG/L		270		10	-
TOTAL ORGANIC CARBON	01/29/91	0001	MG/L	<	1.	J	1.	-
	05/30/91	0001			2.	L	1.	-
	02/26/92	0001		<	1.	L	1.	-
	08/10/92	0001		<	1.0	L	1.0	-
URANIUM	06/05/89	0001	MG/L		0.0044		0.003	-
	12/04/89	0001			0.005	L	0.003	-
	06/25/90	0001			0.0042		0.003	-
	01/29/91	0001			0.0037		0.0003	-
	05/30/91	0001			0.004	L	0.001	-
	02/26/92	0001			0.003	L	0.001	-
	11/21/92	0001			0.004	L	0.001	-
	06/27/93	0001			0.004		0.001	-
	12/10/93	0001			0.005		0.001	-
URANIUM (TOTAL)	11/21/92	N001	MG/L		0.003	L	0.001	-
	06/27/93	N001			0.003		0.001	-
	12/10/93	N001			0.004		0.001	-
VANADIUM	06/05/89	0001	MG/L		0.01		0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	05/30/91	0001		<	0.01	L	0.01	-
	02/26/92	0001		<	0.01	L	0.01	-
	08/10/92	0001		<	0.005	JL	0.05	-
	11/21/92	0001		<	0.0019	L	0.0019	-
	06/27/93	0001		<	0.01		0.01	-
	12/10/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	11/21/92	N001	MG/L		0.0030	L	0.0019	-
	06/27/93	N001		<	0.01		0.01	-
	12/10/93	N001		<	0.01		0.01	-
ZINC	06/05/89	0001	MG/L		0.006		0.005	-
	12/04/89	0001		<	0.005	L	0.005	-
	06/25/90	0001			0.010		0.005	-
	01/29/91	0001		<	0.005		0.005	-
	05/30/91	0001			0.006	L	0.005	-
	02/26/92	0001		<	0.005	L	0.005	-
	08/10/92	0001		<	0.02	L	0.02	-
	11/21/92	0001		<	0.0010	L	0.0010	-
	06/27/93	0001		<	0.005	J	0.005	-
ZINC (TOTAL)	11/21/92	N001	MG/L		0.0040	L	0.0010	-
	06/27/93	N001			0.006	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0614
NORTH COORDINATE: 60940.5 FT
EAST COORDINATE: 87832.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/21/88	0001	MG/L CACO3		189.		-	-
	06/09/89	0001			194.		-	-
	12/02/89	0001			188.	L	-	-
	06/25/90	0001			193.		-	-
	01/29/91	0001			209.		-	-
	06/01/91	0001			203.		-	-
	08/10/92	0001			180		-	-
	02/19/93	0001			184		-	-
	06/30/93	0001			185		-	-
	06/30/93	N001			185		-	-
	12/12/93	N001			180		-	-
ALUMINUM	06/09/89	0001	MG/L	<	0.1		0.1	-
	12/02/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1		0.1	-
	08/10/92	0001		<	0.2	*	0.2	-
ALUMINUM (TOTAL)	06/01/91	N001	MG/L		1.54		0.05	-
AMMONIUM	04/21/88	0001	MG/L	<	0.1		0.1	-
	06/09/89	0001		<	0.1		0.1	-
	12/02/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1	H	0.1	-
	01/29/91	0001		<	0.1		0.1	-
	12/12/93	0001			0.2		0.1	-
AMMONIUM (TOTAL)	06/01/91	N001	MG/L		0.3		0.1	-
	06/30/93	N001		<	0.1		0.1	-
ANTIMONY	06/09/89	0001	MG/L	<	0.003		0.003	-
	12/02/89	0001		<	0.003	L	0.003	-
	06/25/90	0001		<	0.003		0.003	-
	01/29/91	0001		<	0.003		0.003	-
	08/10/92	0001		<	0.06	W	0.06	-
ANTIMONY (TOTAL)	06/01/91	N001	MG/L		0.005		0.003	-
ARSENIC	04/21/88	0001	MG/L		0.002	J	0.01	-
	06/09/89	0001		<	0.01		0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	08/10/92	0001		<	0.01	W	0.01	-
	06/30/93	0001			0.010		0.005	-
ARSENIC (TOTAL)	06/01/91	N001	MG/L	<	0.01		0.01	-
	06/30/93	N001			0.012		0.005	-
BARIUM	06/09/89	0001	MG/L		0.1		0.1	-
	12/02/89	0001			0.1	L	0.1	-
	06/25/90	0001			0.1		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0614
NORTH COORDINATE: 60940.5 FT
EAST COORDINATE: 87832.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BARIUM	01/29/91	0001	MG/L	<	0.1		0.1	-
	08/10/92	0001		<	0.2		0.2	-
	06/30/93	0001		<	0.1		0.1	-
BARIUM (TOTAL)	06/01/91	N001	MG/L		0.14		0.01	-
	06/30/93	N001			0.4		0.1	-
BERYLLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/02/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	08/10/92	0001		<	0.005		0.005	-
BERYLLIUM (TOTAL)	06/01/91	N001	MG/L	<	0.005		0.005	-
BORON	06/09/89	0001	MG/L	<	0.1		0.1	-
	12/02/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1		0.1	-
BORON (TOTAL)	06/01/91	N001	MG/L	<	0.05		0.05	-
BROMIDE	01/29/91	0001	MG/L	<	0.1		0.1	-
BROMIDE (TOTAL)	06/01/91	N001	MG/L		0.2		0.1	-
CADMIUM	04/21/88	0001	MG/L		0.004		0.001	-
	06/09/89	0001		<	0.001		0.001	-
	12/02/89	0001		<	0.001	L	0.001	-
	06/25/90	0001		<	0.001		0.001	-
	01/29/91	0001		<	0.001		0.001	-
	08/10/92	0001		<	0.005	E	0.005	-
CADMIUM (TOTAL)	06/01/91	N001	MG/L	<	0.0005		0.0005	-
CALCIUM	04/21/88	0001	MG/L		82.7		0.01	-
	06/09/89	0001			89.9		0.01	-
	12/02/89	0001			89.	L	0.01	-
	06/25/90	0001			86.0		0.01	-
	01/29/91	0001			87.0		0.01	-
	08/10/92	0001			85		5	-
	02/19/93	0001			79.7		0.5	-
	06/30/93	0001			91.9		0.5	-
	12/12/93	0001			89.1		0.5	-
CALCIUM (TOTAL)	06/01/91	N001	MG/L		91.5		0.5	-
	06/30/93	N001			95.7		0.5	-
	12/12/93	N001			104		0.5	-
CHLORIDE	04/21/88	0001	MG/L		19.		1.	-
	06/09/89	0001			16.		1.	-
	12/02/89	0001			17.8	L	1.	-
	06/25/90	0001			21.		1.	-
	01/29/91	0001			20.	J	1.	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0614
NORTH COORDINATE: 60940.5 FT
EAST COORDINATE: 87832.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CHLORIDE	08/10/92	0001	MG/L		17		0.016	-
	02/19/93	0001			21.8		0.5	-
	12/12/93	0001			56.7		0.5	-
CHLORIDE (TOTAL)	06/01/91	N001	MG/L		27.		1.	-
	06/30/93	N001			39.7		0.5	-
CHROMIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	08/10/92	0001		<	0.01		0.01	-
CHROMIUM (TOTAL)	06/01/91	N001	MG/L	<	0.01		0.01	-
COBALT	06/09/89	0001	MG/L	<	0.05		0.05	-
	12/02/89	0001		<	0.05	L	0.05	-
	06/25/90	0001		<	0.05		0.05	-
	01/29/91	0001		<	0.05		0.05	-
COBALT (TOTAL)	06/01/91	N001	MG/L	<	0.03		0.03	-
COPPER	06/09/89	0001	MG/L	<	0.02		0.02	-
	12/02/89	0001		<	0.02	L	0.02	-
	06/25/90	0001		<	0.02		0.02	-
	01/29/91	0001		<	0.02		0.02	-
COPPER (TOTAL)	06/01/91	N001	MG/L		0.01		0.01	-
CYANIDE	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
FLUORIDE	06/09/89	0001	MG/L		0.2		0.1	-
	12/02/89	0001			0.2	L	0.1	-
	06/25/90	0001			0.2		0.1	-
	01/29/91	0001			0.2		0.1	-
FLUORIDE (TOTAL)	06/01/91	N001	MG/L		0.1		0.1	-
GROSS ALPHA	04/21/88	0001	PCI/L		24.		0.2	8.
	01/29/91	0001			28.		1.	6.
	06/01/91	0001			35.9	L	1.	12.4
	08/10/92	0001			18	I	8	8
	02/19/93	0001			22		9	12
	06/30/93	0001			29		5	11
GROSS ALPHA (TOTAL)	07/01/93	N001	PCI/L		54		7	18
GROSS BETA	04/21/88	0001	PCI/L		16.		1.	2.
	01/29/91	0001			7.0		0.5	2.8
	06/01/91	0001			13.3		0.5	5.9
	08/10/92	0001			7.5	I	7.5	4.9
	02/19/93	0001			7		12	6
	06/30/93	0001			20		5	5
GROSS BETA (TOTAL)	07/01/93	N001	PCI/L		32		7	8

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0614
NORTH COORDINATE: 60940.5 FT
EAST COORDINATE: 87832.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
IRON	06/09/89	0001	MG/L		0.03		0.03	-
	12/02/89	0001		<	0.03	L	0.03	-
	06/25/90	0001		<	0.03		0.03	-
	01/29/91	0001			0.03		0.03	-
	08/10/92	0001		<	0.1		0.1	-
	02/19/93	0001		<	0.03		0.03	-
	06/30/93	0001		<	0.03	J	0.03	-
IRON (TOTAL)	06/01/91	N001	MG/L		0.88		0.03	-
	06/30/93	N001			5.25		0.03	-
LEAD	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/25/90	0001			0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
LEAD (TOTAL)	06/01/91	N001	MG/L	<	0.01		0.01	-
MAGNESIUM	04/21/88	0001	MG/L		50.5		0.001	-
	06/09/89	0001			57.1		0.001	-
	12/02/89	0001			60.	L	0.001	-
	06/25/90	0001			57.2		0.001	-
	01/29/91	0001			63.3		0.001	-
	08/10/92	0001			55		5	-
	02/19/93	0001			52.9		0.1	-
	06/30/93	0001			57.3		0.1	-
	12/12/93	0001			59.1		0.1	-
MAGNESIUM (TOTAL)	06/01/91	N001	MG/L		58.0		0.5	-
	06/30/93	N001			64.0		0.1	-
	12/12/93	N001			67.7		0.1	-
MANGANESE	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	08/10/92	0001		<	0.01		0.01	-
	02/19/93	0001		<	0.01		0.01	-
	06/30/93	0001		<	0.01		0.01	-
	12/12/93	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	06/01/91	N001	MG/L		0.02		0.01	-
	06/30/93	N001			0.11		0.01	-
	12/12/93	N001			0.15		0.01	-
MERCURY	06/09/89	0001	MG/L	<	0.0002		0.0002	-
	12/02/89	0001		<	0.0002	L	0.0002	-
	06/25/90	0001		<	0.0002		0.0002	-
MOLYBDENUM	04/21/88	0001	MG/L		0.03		0.01	-
	06/09/89	0001		<	0.01		0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/25/90	0001			0.01		0.01	-
	01/29/91	0001			0.01		0.01	-
	08/10/92	0001		<	0.007		0.007	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0614
NORTH COORDINATE: 60940.5 FT
EAST COORDINATE: 87832.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MOLYBDENUM	06/30/93	0001	MG/L	<	0.01		0.01	-
MOLYBDENUM (TOTAL)	06/01/91	N001	MG/L	<	0.01		0.01	-
	06/30/93	N001		<	0.01		0.01	-
NICKEL	06/09/89	0001	MG/L	<	0.04		0.04	-
	12/02/89	0001		<	0.04	L	0.04	-
	06/25/90	0001		<	0.04		0.04	-
	01/29/91	0001		<	0.04		0.04	-
NICKEL (TOTAL)	06/01/91	N001	MG/L	<	0.04		0.04	-
NITRATE	04/21/88	0001	MG/L		30.		1.	-
	06/09/89	0001			34.		1.	-
	12/02/89	0001			31.9	L	1.	-
	06/25/90	0001			25.4		1.	-
	01/29/91	0001			25.		1.	-
	08/10/92	0001			22		0.075	-
	02/19/93	0001			23		1	-
	12/12/93	0001			19		1	-
NITRATE (TOTAL)	06/01/91	N001	MG/L		8.8		1.	-
	06/30/93	N001			346		1	-
NITRITE AND NITRATE	01/29/91	0001	MG/L		25.	J	1.	-
NITRITE AND NITRATE (TOTAL)	06/01/91	N001	MG/L		5.94		0.05	-
PH	04/21/88	0001	SU		7.66		-	-
	06/09/89	0001			7.47		-	-
	12/02/89	0001			7.77	L	-	-
	06/25/90	0001			7.54		-	-
	01/29/91	0001			7.69		-	-
	06/01/91	0001			7.68		-	-
	08/10/92	0001			7.42		-	-
	02/19/93	0001			7.59		-	-
	06/30/93	0001			7.41		-	-
	06/30/93	N001			7.41		-	-
	12/12/93	N001			7.73		-	-
PHOSPHATE	06/09/89	0001	MG/L		0.8		0.1	-
	12/02/89	0001			0.4	L	0.1	-
	06/25/90	0001			0.5		0.1	-
PHOSPHATE (TOTAL)	06/30/93	N001	MG/L		1.3		0.1	-
POTASSIUM	04/21/88	0001	MG/L		1.69		0.01	-
	06/09/89	0001			2.1		0.01	-
	12/02/89	0001			1.55	L	0.01	-
	06/25/90	0001			1.6		0.01	-
	01/29/91	0001			1.5		0.01	-
	08/10/92	0001			1.4	*	0.575	-
	02/19/93	0001			2		0.1	-
	06/30/93	0001			6.1		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0614
NORTH COORDINATE: 60940.5 FT
EAST COORDINATE: 87832.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
POTASSIUM	12/12/93	0001	MG/L		1.8		0.1	-
POTASSIUM (TOTAL)	06/01/91	N001	MG/L		2.7		0.01	-
	06/30/93	N001			7.2		0.1	-
	12/12/93	N001			3.7		0.1	-
RADIUM-226	06/09/89	0001	PCI/L		0.9		1.	0.3
	12/02/89	0001			0.5	L	1.	0.3
	06/25/90	0001			3.5		1.	0.6
	01/29/91	0001			0.5		1.	0.3
	08/10/92	0001			0.5		0.4	0.1
RADIUM-226 (TOTAL)	06/01/91	N001	PCI/L		8.5		1.	1.6
RADIUM-228	06/09/89	0001	PCI/L		0.0		1.	0.9
	12/02/89	0001			0.0	L	1.	1.8
	06/25/90	0001			0.6		1.	0.8
	01/29/91	0001			0.9		1.	0.8
	08/10/92	0001			0.8		2.2	1.2
RADIUM-228 (TOTAL)	06/01/91	N001	PCI/L		3.9		1.	2.8
SELENIUM	04/21/88	0001	MG/L	<	0.005		0.005	-
	06/09/89	0001			0.008		0.005	-
	12/02/89	0001		<	0.005	L	0.005	-
	06/25/90	0001			0.007		0.005	-
	01/29/91	0001		<	0.005		0.005	-
	08/10/92	0001		<	0.005	W	0.005	-
SELENIUM (TOTAL)	06/01/91	N001	MG/L		0.010		0.005	-
SILICA - SIO2	06/09/89	0001	MG/L		14.		2.	-
	12/02/89	0001			13.9	L	2.	-
	06/25/90	0001			14.		2.	-
	01/29/91	0001			13.		2.	-
	12/12/93	0001			14.3		0.1	-
SILICA - SIO2 (TOTAL)	06/01/91	N001	MG/L		19.9		0.1	-
	06/30/93	N001			26.0	H	0.5	-
	12/12/93	N001			51.0		0.1	-
SILVER	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
SILVER (TOTAL)	06/01/91	N001	MG/L	<	0.01		0.01	-
SODIUM	04/21/88	0001	MG/L		27.2		0.002	-
	06/09/89	0001			29.8		0.002	-
	12/02/89	0001			29.	L	0.002	-
	06/25/90	0001			31.5		0.002	-
	01/29/91	0001			31.4		0.002	-
	08/10/92	0001			30		5	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0614
NORTH COORDINATE: 60940.5 FT
EAST COORDINATE: 87832.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SODIUM	02/19/93	0001	MG/L		29.3		0.1	
	06/30/93	0001			34		1	
	12/12/93	0001			40		1	
SODIUM (TOTAL)	06/01/91	N001	MG/L		33.		1.	
	06/30/93	N001			34		1	
	12/12/93	N001			43		1	
SPECIFIC CONDUCTANCE	04/21/88	0001	UMHO/CM		700.			
	06/09/89	0001			510.			
	12/02/89	0001			700.	L		
	06/25/90	0001			780			
	01/29/91	0001			925.			
	06/01/91	0001			950.			
	08/10/92	0001			853			
	02/19/93	0001			719			
	06/30/93	0001			850			
	06/30/93	N001			850		-	-
	12/12/93	N001			878		-	-
STRONTIUM	06/25/90	0001	MG/L		0.67	*	0.1	-
	01/29/91	0001			0.6		0.1	-
	08/10/92	0001			0.68		0.2	-
	06/30/93	0001			0.69		0.01	-
	12/12/93	0001			0.72		0.01	-
STRONTIUM (TOTAL)	06/01/91	N001	MG/L		0.66		0.01	-
	06/30/93	N001			0.81		0.01	-
	12/12/93	N001			0.89		0.01	-
SULFATE	04/21/88	0001	MG/L		255.		0.1	-
	06/09/89	0001			267.		0.1	-
	12/02/89	0001			244.	L	0.1	-
	06/25/90	0001			312.3		0.1	-
	01/29/91	0001			270.		0.1	-
	08/10/92	0001			240		0.12	-
	02/19/93	0001			244		1	-
	12/12/93	0001			281		1	-
SULFATE (TOTAL)	06/01/91	N001	MG/L		278.		10.	-
	06/30/93	N001			273		1	-
SULFIDE	06/09/89	0001	MG/L	<	0.1		0.1	-
	12/02/89	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	J	0.1	-
SULFIDE (TOTAL)	06/01/91	N001	MG/L	<	1.	I	1.	-
TEMPERATURE	04/21/88	0001	C - DEGREE		16.5		-	-
	06/09/89	0001			17.2		-	-
	12/02/89	0001			16.5	L	-	-
	06/25/90	0001			18.0		-	-
	01/29/91	0001			12.9		-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
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04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TEMPERATURE	06/01/91	0001	C - DEGREE		16.5		-	-
	08/10/92	0001			21.5		-	-
	02/19/93	0001			15.4		-	-
	06/30/93	0001			17.0		-	-
	06/30/93	N001			17.0		-	-
	12/12/93	N001			15.1		-	-
THALLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	12/02/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
THALLIUM (TOTAL)	06/01/91	N001	MG/L	<	0.01		0.01	-
THORIUM-230	01/29/91	0001	PCI/L		0.0		1.	0.3
	06/01/91	0001			0.6		1.	0.5
TIN	06/09/89	0001	MG/L	<	0.005		0.005	-
	12/02/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.005		0.005	-
	01/29/91	0001		<	0.005	*	0.005	-
TIN (TOTAL)	06/01/91	N001	MG/L	<	0.01	I	0.01	-
TOTAL DISSOLVED SOLIDS	04/21/88	0001	MG/L		619.		10.	-
	06/09/89	0001			623.		10.	-
	12/02/89	0001			633.	L	10.	-
	06/25/90	0001			644.	*J	10.	-
	01/29/91	0001			584.		10.	-
	08/10/92	0001			710		42	-
	02/19/93	0001			570		10	-
	12/12/93	0001			750		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/30/93	N001	MG/L		690	H	10	-
TOTAL ORGANIC CARBON	04/21/88	0001	MG/L		32.5		1.	-
	01/29/91	0001		<	1.	J	1.	-
	06/01/91	0001			5.		1.	-
	08/10/92	0001		<	1.0		1.0	-
URANIUM	04/21/88	0001	MG/L		0.0315		0.003	-
	06/09/89	0001			0.033		0.003	-
	12/02/89	0001			0.031	L	0.003	-
	06/25/90	0001			0.036		0.003	-
	01/29/91	0001			0.0313		0.0003	-
	02/19/93	0001			0.027		0.001	-
	06/30/93	0001			0.033		0.001	-
	12/12/93	0001			0.038		0.001	-
URANIUM (TOTAL)	06/01/91	N001	MG/L		0.025		0.001	-
	07/01/93	N001			0.035		0.001	-
	12/12/93	N001			0.044		0.001	-

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GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0614
NORTH COORDINATE: 60940.5 FT
EAST COORDINATE: 87832.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
VANADIUM	06/09/89	0001	MG/L		0.02		0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	08/10/92	0001		<	0.05		0.05	-
	06/30/93	0001		<	0.01		0.01	-
	12/12/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	06/01/91	N001	MG/L	<	0.01		0.01	-
	06/30/93	N001		<	0.01		0.01	-
	12/12/93	N001			0.01		0.01	-
ZINC	06/09/89	0001	MG/L	<	0.005		0.005	-
	12/02/89	0001		<	0.005	L	0.005	-
	06/25/90	0001			0.005		0.005	-
	01/29/91	0001		<	0.005		0.005	-
	08/10/92	0001		<	0.02		0.02	-
	06/30/93	0001			0.016	J	0.005	-
ZINC (TOTAL)	06/01/91	N001	MG/L		0.030		0.005	-
	06/30/93	N001			0.069	J	0.005	-

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SAMPLE ID CODES:
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GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0615
NORTH COORDINATE: 57794.4 FT
EAST COORDINATE: 88980.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	06/09/89	0001	MG/L CACO3		230.		-	-
	11/23/92	0001			226	L	-	-
	06/29/93	N001			212	L	-	-
ALUMINUM	06/09/89	0001	MG/L	<	0.1		0.1	-
AMMONIUM	06/09/89	0001	MG/L	<	0.1		0.1	-
AMMONIUM (TOTAL)	06/29/93	N001	MG/L	<	0.1	L	0.1	-
ANTIMONY	06/09/89	0001	MG/L	<	0.003		0.003	-
ARSENIC	06/09/89	0001	MG/L	<	0.01		0.01	-
	11/23/92	0001			0.0015	L	0.0015	-
	06/29/93	0001		<	0.005	L	0.005	-
ARSENIC (TOTAL)	11/23/92	N001	MG/L		0.022	L	0.0015	-
	06/29/93	N001			0.011	L	0.005	-
BARIUM	06/09/89	0001	MG/L	<	0.1		0.1	-
	11/23/92	0001			0.038	L	0.0015	-
	06/29/93	0001		<	0.1	L	0.1	-
BARIUM (TOTAL)	11/23/92	N001	MG/L		0.070	L	0.0015	-
	06/29/93	N001		<	0.1	L	0.1	-
BERYLLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
BORON	06/09/89	0001	MG/L	<	0.1		0.1	-
CADMIUM	06/09/89	0001	MG/L	<	0.001		0.001	-
	11/23/92	0001		<	0.00013	L	0.00013	-
CADMIUM (TOTAL)	11/23/92	N001	MG/L		0.00032	NSL	0.00013	-
CALCIUM	06/09/89	0001	MG/L		18.1		0.01	-
	06/29/93	0001			16.9	L	0.5	-
CALCIUM (TOTAL)	06/29/93	N001	MG/L		16.1	L	0.5	-
CHLORIDE	06/09/89	0001	MG/L		9.9		1.	-
CHLORIDE (TOTAL)	06/29/93	N001	MG/L		9.6	L	0.5	-
CHROMIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	11/23/92	0001		<	0.0053	L	0.0053	-
CHROMIUM (TOTAL)	11/23/92	N001	MG/L	<	0.0053	L	0.0053	-
COBALT	06/09/89	0001	MG/L	<	0.05		0.05	-
COPPER	06/09/89	0001	MG/L	<	0.02		0.02	-
CYANIDE	06/09/89	0001	MG/L	<	0.01		0.01	-
DISSOLVED OXYGEN	06/29/93	N001	MG/L		1.1	L	-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
S - REPORTED VALUE DETERMINED USING METHOD OF STD ADDITION (MSA)

SAMPLE ID CODES:
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GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0615
NORTH COORDINATE: 57794.4 FT
EAST COORDINATE: 88980.7 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
FLUORIDE	06/09/89	0001	MG/L		0.4		0.1	-
GROSS ALPHA	11/23/92	0001	PCI/L		3.5	NL	3.0	2.5
	06/29/93	0001			0	L	3	4
GROSS ALPHA (TOTAL)	11/23/92	N001	PCI/L		0.0	NL	6.7	3.6
	06/29/93	N001			6	L	3	5
GROSS BETA	11/23/92	0001	PCI/L		1.0	L	3.6	2.2
	06/29/93	0001			0	L	4	4
GROSS BETA (TOTAL)	11/23/92	N001	PCI/L		1.5	NL	5.0	3.1
	06/29/93	N001			7	L	4	4
IRON	06/09/89	0001	MG/L		0.25		0.03	-
	06/29/93	0001		<	0.03	JL	0.03	-
IRON (TOTAL)	06/29/93	N001	MG/L		2.95	L	0.03	-
LEAD	06/09/89	0001	MG/L	<	0.01		0.01	-
	11/23/92	0001		<	0.0015	L	0.0015	-
LEAD (TOTAL)	11/23/92	N001	MG/L		0.0022	L	0.0015	-
LEAD-210	11/23/92	0001	PCI/L		1.0	L	7.3	4.4
LEAD-210 (TOTAL)	11/23/92	N001	PCI/L		7.2	L	0.3	1.0
MAGNESIUM	06/09/89	0001	MG/L		16.2		0.001	-
	06/29/93	0001			16.0	L	0.1	-
MAGNESIUM (TOTAL)	06/29/93	N001	MG/L		15.4	L	0.1	-
MANGANESE	06/09/89	0001	MG/L	<	0.01		0.01	-
	11/23/92	0001			0.0017	L	0.0015	-
	06/29/93	0001		<	0.01	L	0.01	-
MANGANESE (TOTAL)	11/23/92	N001	MG/L		0.27	L	0.0015	-
	06/29/93	N001			0.42	L	0.01	-
MERCURY	06/09/89	0001	MG/L	<	0.0002		0.0002	-
MOLYBDENUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	11/23/92	0001		<	0.0049	NL	0.0049	-
	06/29/93	0001		<	0.01	L	0.01	-
MOLYBDENUM (TOTAL)	11/23/92	N001	MG/L		0.0060	NL	0.0049	-
	06/29/93	N001		<	0.01	L	0.01	-
NICKEL	06/09/89	0001	MG/L	<	0.04		0.04	-
NITRATE	06/09/89	0001	MG/L		5.0		1.	-
	11/23/92	0001			3.6	L	0.044	-
NITRATE (TOTAL)	06/29/93	N001	MG/L	<	1	L	1	-

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04/21/88 TO 12/15/93
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FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
	06/09/89	0001	SU		7.84		-	-
	11/23/92	0001			8.10	L	-	-
	06/29/93	N001			7.72	L	-	-
PHOSPHATE	06/09/89	0001	MG/L	<	0.1		0.1	
PHOSPHATE (TOTAL)	06/29/93	N001	MG/L	<	0.1	L	0.1	
POTASSIUM	06/09/89	0001	MG/L		3.3		0.01	-
	06/29/93	0001			2.9	L	0.1	-
POTASSIUM (TOTAL)	06/29/93	N001	MG/L		2.8	L	0.1	-
RADIUM-226	06/09/89	0001	PCI/L		0.0		1.	0.1
	11/23/92	0001			2.4	L	0.3	0.5
RADIUM-226 (TOTAL)	11/23/92	N001	PCI/L		0.9	L	0.3	0.4
RADIUM-228	06/09/89	0001	PCI/L		0.5		1.	1.0
	11/23/92	0001			4.9	L	2.1	1.7
RADIUM-228 (TOTAL)	11/23/92	N001	PCI/L		2.9	L	2.0	1.5
REDOX POTENTIAL	06/29/93	N001	mVOLTS		248	L	-	-
SELENIUM	06/09/89	0001	MG/L	<	0.005		0.005	
	11/23/92	0001		<	0.0015	NL	0.0015	
SELENIUM (TOTAL)	11/23/92	N001	MG/L	<	0.0015	L	0.0015	
SILICA - SIO2	06/09/89	0001	MG/L		9.0		2.	
SILICA - SIO2 (TOTAL)	06/29/93	N001	MG/L		10.9	HL	0.5	-
SILVER	06/09/89	0001	MG/L	<	0.01		0.01	-
SODIUM	06/09/89	0001	MG/L		92.1		0.002	-
	06/29/93	0001			83	L	1	-
SODIUM (TOTAL)	06/29/93	N001	MG/L		82	L	1	-
SPECIFIC CONDUCTANCE	06/09/89	0001	UMHO/CM		389.		-	-
	11/23/92	0001			360	L	-	-
	06/29/93	N001			519	L	-	-
STRONTIUM	11/23/92	0001	MG/L		0.64	SL	0.00035	-
	06/29/93	0001			0.62	L	0.01	-
STRONTIUM (TOTAL)	11/23/92	N001	MG/L		0.68	L	0.00035	-
	06/29/93	N001			0.60	L	0.01	-
SULFATE	06/09/89	0001	MG/L		62.		0.1	-
	11/23/92	0001			63	L	1.0	-

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FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SULFATE (TOTAL)	11/23/92	N001	MG/L		62	L	1.0	-
	06/29/93	N001			61	L	1	-
SULFIDE	06/09/89	0001	MG/L	<	0.1		0.1	-
TEMPERATURE	06/09/89	0001	C - DEGREE		16.5		-	-
	11/23/92	0001			15.7	L	-	-
	06/29/93	N001			20.3	L	-	-
THALLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
TIN	06/09/89	0001	MG/L	<	0.005		0.005	-
TOTAL DISSOLVED SOLIDS	06/09/89	0001	MG/L		327.		10.	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/29/93	N001	MG/L		320	HL	10	-
URANIUM	06/09/89	0001	MG/L		0.0007	J	0.003	-
	11/23/92	0001			0.001	L	0.001	-
	06/29/93	0001			0.002	L	0.001	-
URANIUM (TOTAL)	11/23/92	N001	MG/L		0.001	L	0.001	-
	06/29/93	N001			0.001	L	0.001	-
VANADIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	11/23/92	0001		<	0.0019	L	0.0019	-
	06/29/93	0001		<	0.01	L	0.01	-
VANADIUM (TOTAL)	11/23/92	N001	MG/L		0.0050	L	0.0019	-
	06/29/93	N001		<	0.01	L	0.01	-
ZINC	06/09/89	0001	MG/L		0.055		0.005	-
	11/23/92	0001			0.0027	L	0.0010	-
	06/29/93	0001			0.013	JL	0.005	-
ZINC (TOTAL)	11/23/92	N001	MG/L		0.036	L	0.0010	-
	06/29/93	N001			0.040	JL	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0616
NORTH COORDINATE: 56747.3 FT
EAST COORDINATE: 87987.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	06/03/91	0001	MG/L CACO3		214.		-	-
	06/03/91	N001			214.		-	-
	02/27/92	0001			228		-	-
	02/27/92	N001			228		-	-
	08/14/92	0001			233		-	-
	11/24/92	0001			231		-	-
	02/19/93	N001			264		-	-
	06/25/93	N001			273		-	-
	12/15/93	N001			252		-	-
ALUMINUM	06/03/91	0001	MG/L	<	0.05		0.05	-
	02/27/92	0001		<	0.05		0.05	-
	08/14/92	0001		<	0.2		0.2	-
ALUMINUM (TOTAL)	06/03/91	N001	MG/L	<	0.05		0.05	-
	02/27/92	N001		<	0.05		0.05	-
	08/14/92	N001		<	0.2		0.2	-
AMMONIUM	06/03/91	0001	MG/L		0.1		0.1	-
	02/27/92	0001		<	0.1		0.1	-
	12/15/93	0001		<	0.1		0.1	-
AMMONIUM (TOTAL)	06/03/91	N001	MG/L		0.1		0.1	-
	02/27/92	N001		<	0.1		0.1	-
	06/25/93	N001		<	0.1		0.1	-
ANTIMONY	06/03/91	0001	MG/L	<	0.003		0.003	-
	02/27/92	0001		<	0.003		0.003	-
	08/14/92	0001		<	0.06	W	0.06	-
ANTIMONY (TOTAL)	06/03/91	N001	MG/L	<	0.003		0.003	-
	02/27/92	N001		<	0.003		0.003	-
	08/14/92	N001		<	0.06	W	0.06	-
ARSENIC	06/03/91	0001	MG/L	<	0.01		0.01	-
	02/27/92	0001		<	0.01		0.01	-
	08/14/92	0001		<	0.01	W	0.01	-
ARSENIC (TOTAL)	06/03/91	N001	MG/L	<	0.01		0.01	-
	02/27/92	N001		<	0.01		0.01	-
	08/14/92	N001		<	0.01		0.01	-
	11/24/92	N001			0.0032		0.0015	-
	06/25/93	N001		<	0.005		0.005	-
BARIUM	06/03/91	0001	MG/L		0.11		0.01	-
	02/27/92	0001			0.12		0.01	-
	08/14/92	0001		<	0.2		0.2	-
BARIUM (TOTAL)	06/03/91	N001	MG/L		0.01		0.01	-
	02/27/92	N001			0.13		0.01	-
	08/14/92	N001		<	0.2		0.2	-
	11/24/92	N001			0.12		0.0015	-
	06/25/93	N001			0.1		0.1	-
BERYLLIUM	06/03/91	0001	MG/L	<	0.005		0.005	-
	08/14/92	0001		<	0.005		0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0616
NORTH COORDINATE: 56747.3 FT
EAST COORDINATE: 87987.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BERYLLIUM (TOTAL)	06/03/91	N001	MG/L	<	0.005		0.005	
	08/14/92	N001		<	0.005		0.005	
BORON	06/03/91	0001	MG/L	<	0.05		0.05	-
BORON (TOTAL)	06/03/91	N001	MG/L		0.19		0.05	
BROMIDE	06/03/91	0001	MG/L	<	0.1		0.1	
BROMIDE (TOTAL)	06/03/91	N001	MG/L	<	0.1		0.1	-
CADMIUM	06/03/91	0001	MG/L	<	0.001		0.001	
	02/27/92	0001		<	0.001		0.001	
	08/14/92	0001		<	0.005	E	0.005	
CADMIUM (TOTAL)	06/03/91	N001	MG/L	<	0.001		0.001	
	02/27/92	N001		<	0.001		0.001	
	08/14/92	N001		<	0.005	E	0.005	
	11/24/92	N001		<	0.00013	N	0.00013	
CALCIUM	06/03/91	0001	MG/L		35.6		0.5	-
	02/27/92	0001			30.3		0.5	-
	08/14/92	0001			37		5	-
	12/15/93	0001			33.4		0.5	-
CALCIUM (TOTAL)	06/03/91	N001	MG/L		4.5		0.1	-
	02/27/92	N001			31.5		0.5	-
	08/14/92	N001			35		5	-
	02/19/93	N001			16		0.5	-
	06/25/93	N001			66.9		0.5	-
	12/15/93	N001			35.2		0.5	-
CHLORIDE	06/03/91	0001	MG/L		11.4		0.5	-
	02/27/92	0001			9.7		0.5	-
	08/14/92	0001			12		0.016	-
	12/15/93	0001			22.2		0.5	-
CHLORIDE (TOTAL)	06/03/91	N001	MG/L		11.3		0.5	-
	02/27/92	N001			9.8		0.5	-
	08/14/92	N001			11		0.016	-
	02/19/93	N001			14.4		0.5	-
	06/25/93	N001			68.3		0.5	-
CHROMIUM	06/03/91	0001	MG/L	<	0.01		0.01	-
	02/27/92	0001		<	0.01		0.01	-
	08/14/92	0001		<	0.01		0.01	-
CHROMIUM (TOTAL)	06/03/91	N001	MG/L	<	0.01		0.01	
	02/27/92	N001		<	0.01		0.01	
	08/14/92	N001		<	0.01		0.01	
	11/24/92	N001		<	0.0053		0.0053	
COBALT	06/03/91	0001	MG/L	<	0.03		0.03	
COBALT (TOTAL)	06/03/91	N001	MG/L	<	0.03		0.03	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
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N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0616
NORTH COORDINATE: 56747.3 FT
EAST COORDINATE: 87987.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
COPPER	06/03/91	0001	MG/L	<	0.01		0.01	-
COPPER (TOTAL)	06/03/91	N001	MG/L	<	0.01		0.01	-
FLUORIDE	06/03/91	0001	MG/L		0.3		0.1	-
FLUORIDE (TOTAL)	06/03/91	N001	MG/L		0.3		0.1	-
GROSS ALPHA	06/03/91	0001	PCI/L		10.7		1.	6.2
	02/27/92	0001			1.2		1.0	3.9
	08/14/92	0001			3.1		6.1	3.8
GROSS ALPHA (TOTAL)	06/03/91	N001	PCI/L		6.5		1.	7.1
	02/27/92	N001			3.7		1.0	4.2
	08/14/92	N001			5.3		5.8	4.2
	11/24/92	N001			0.0	N	6.8	3.8
	02/19/93	N001			0		7	7
	06/25/93	N001			8		5	9
GROSS BETA	06/03/91	0001	PCI/L		3.5		0.5	3.2
	02/27/92	0001			1.8		0.5	2.6
	08/14/92	0001			4.6		6.2	3.8
GROSS BETA (TOTAL)	06/03/91	N001	PCI/L		4.4		0.5	3.5
	02/27/92	N001			2.2		0.5	2.6
	08/14/92	N001			1.9		5.0	3.0
	11/24/92	N001			7.0	N	5.3	3.5
	02/19/93	N001			0		12	5
	06/25/93	N001			2		5	5
IRON	06/03/91	0001	MG/L	<	0.03		0.03	-
	02/27/92	0001		<	0.03		0.03	-
	08/14/92	0001		<	0.1		0.1	-
IRON (TOTAL)	06/03/91	N001	MG/L		0.16		0.03	-
	02/27/92	N001			0.14		0.03	-
	08/14/92	N001		<	0.01	J	0.1	-
	02/19/93	N001			0.17		0.03	-
	06/25/93	N001			0.08	J	0.03	-
LEAD	06/03/91	0001	MG/L	<	0.005		0.005	-
LEAD (TOTAL)	06/03/91	N001	MG/L	<	0.01		0.01	-
	11/24/92	N001		<	0.0015		0.0015	-
LEAD-210 (TOTAL)	11/24/92	N001	PCI/L		5.3		0.3	0.8
MAGNESIUM	06/03/91	0001	MG/L		28.4		0.1	-
	02/27/92	0001			25.6		0.1	-
	08/14/92	0001			30		5	-
	12/15/93	0001			33.4		0.1	-
MAGNESIUM (TOTAL)	06/03/91	N001	MG/L		26.1		0.1	-
	02/27/92	N001			28.2		0.1	-
	08/14/92	N001			29		5	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0616
NORTH COORDINATE: 56747.3 FT
EAST COORDINATE: 87987.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MAGNESIUM (TOTAL)	02/19/93	N001	MG/L		33.1		0.1	-
	06/25/93	N001			60.1		0.1	-
	12/15/93	N001			34.1		0.1	-
MANGANESE	06/03/91	0001	MG/L	<	0.01		0.01	-
	02/27/92	0001		<	0.01		0.01	-
	08/14/92	0001		<	0.01		0.01	-
	12/15/93	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	06/03/91	N001	MG/L	<	0.01		0.01	-
	02/27/92	N001		<	0.01		0.01	-
	08/14/92	N001		<	0.01		0.01	-
	11/24/92	N001		<	0.0015		0.0015	-
	02/19/93	N001		<	0.01		0.01	-
	06/25/93	N001		<	0.01		0.01	-
	12/15/93	N001		<	0.01		0.01	-
MOLYBDENUM	06/03/91	0001	MG/L		0.01		0.01	-
	02/27/92	0001		<	0.01		0.01	-
	08/14/92	0001		<	0.007		0.007	-
MOLYBDENUM (TOTAL)	06/03/91	N001	MG/L	<	0.01		0.01	-
	02/27/92	N001		<	0.01		0.01	-
	08/14/92	N001		<	0.007		0.007	-
	11/24/92	N001		<	0.0049	N	0.0049	-
	06/25/93	N001		<	0.01		0.01	-
NICKEL	06/03/91	0001	MG/L	<	0.04		0.04	-
NICKEL (TOTAL)	06/03/91	N001	MG/L	<	0.04		0.04	-
NITRATE	06/03/91	0001	MG/L		6.2		1.	-
	02/27/92	0001			2.4		1.0	-
	08/14/92	0001			5.8		0.075	-
	11/24/92	N001			3.9		0.044	-
	12/15/93	0001			6		1	-
NITRATE (TOTAL)	06/03/91	N001	MG/L		5.7		1.	-
	02/27/92	N001			4.9		1.0	-
	02/19/93	N001			4		1	-
	06/25/93	N001			6		1	-
NITRITE AND NITRATE	06/03/91	0001	MG/L		1.40		0.05	-
NITRITE AND NITRATE (TOTAL)	06/03/91	N001	MG/L		1.29		0.05	-
PH	06/03/91	0001	SU		7.89		-	-
	06/03/91	N001			7.89		-	-
	02/27/92	0001			8.25		-	-
	02/27/92	N001			8.25		-	-
	08/14/92	0001			7.95		-	-
	11/24/92	0001			8.90		-	-
	02/19/93	N001			8.23		-	-
	06/25/93	N001			8.38		-	-
	12/15/93	N001			8.12		-	-
PHOSPHATE (TOTAL)	06/25/93	N001	MG/L	<	0.1		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0616
NORTH COORDINATE: 56747.3 FT
EAST COORDINATE: 87987.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
POTASSIUM	06/03/91	0001	MG/L		1.06		0.01	-
	02/27/92	0001			0.87		0.01	-
	08/14/92	0001			2.2		0.575	-
	12/15/93	0001			0.9		0.1	-
POTASSIUM (TOTAL)	06/03/91	N001	MG/L		1.28		0.01	-
	02/27/92	N001			0.84		0.01	-
	08/14/92	N001			2.2		0.575	-
	02/19/93	N001			1.3		0.1	-
	06/25/93	N001			1.4		0.1	-
	12/15/93	N001			0.9		0.1	-
RADIUM-226	06/03/91	0001	PCI/L		0.0		1.	0.2
	02/27/92	0001			0.0		1.0	0.2
	08/14/92	0001			0.3		0.5	0.1
RADIUM-226 (TOTAL)	06/03/91	N001	PCI/L		0.1		1.	0.3
	02/27/92	N001			0.0		1.0	0.1
	08/14/92	N001			0.3		0.4	0.1
	11/24/92	N001			1.2		0.3	0.4
RADIUM-228	06/03/91	0001	PCI/L		0.4	J	1.	1.6
	02/27/92	0001			2.3		1.0	1.1
	08/14/92	0001			0.0		2.0	1.1
RADIUM-228 (TOTAL)	06/03/91	N001	PCI/L		7.7		1.	2.3
	02/27/92	N001			0.0		1.0	1.8
	08/14/92	N001			0.0		1.8	0.9
	11/24/92	N001			3.2		2.0	1.5
SELENIUM	06/03/91	0001	MG/L	<	0.005	J	0.005	-
	02/27/92	0001			0.005		0.005	-
	08/14/92	0001		<	0.005		0.005	-
SELENIUM (TOTAL)	06/03/91	N001	MG/L		0.006		0.005	-
	02/27/92	N001		<	0.005		0.005	-
	08/14/92	N001		<	0.005		0.005	-
	11/24/92	N001		<	0.0015		0.0015	-
SILICA - SIO2	06/03/91	0001	MG/L		26.1		0.1	
	12/15/93	0001			26.4		0.1	
SILICA - SIO2 (TOTAL)	06/03/91	N001	MG/L		8.7		0.1	
	06/25/93	N001			24.2	H	0.5	
	12/15/93	N001			26.6		0.1	
SILVER	06/03/91	0001	MG/L	<	0.01		0.01	
SILVER (TOTAL)	06/03/91	N001	MG/L	<	0.01		0.01	-
SODIUM	06/03/91	0001	MG/L		66.		1.	-
	02/27/92	0001			57.		1.	-
	08/14/92	0001			72		5	-
	12/15/93	0001			95		1	-
SODIUM (TOTAL)	06/03/91	N001	MG/L		63.		1.	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
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NORTH COORDINATE: 56747.3 FT
EAST COORDINATE: 87987.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SODIUM (TOTAL)	02/27/92	N001	MG/L		61.		1.	-
	08/14/92	N001			73		5	-
	02/19/93	N001			108		0.1	-
	06/25/93	N001			113		1	-
	12/15/93	N001			100		1	-
SPECIFIC CONDUCTANCE	06/03/91	0001	UMHO/CM		602.		-	-
	06/03/91	N001			602.		-	-
	02/27/92	0001			397		-	-
	02/27/92	N001			397		-	-
	08/14/92	0001			605		-	-
	11/24/92	0001			400		-	-
	02/19/93	N001			516		-	-
	06/25/93	N001			821		-	-
	12/15/93	N001			582		-	-
STRONTIUM	06/03/91	0001	MG/L		0.43		0.01	-
	02/27/92	0001			0.40		0.01	-
	08/14/92	0001			0.5		0.2	-
	12/15/93	0001			0.47		0.01	-
STRONTIUM (TOTAL)	06/03/91	N001	MG/L		0.05		0.01	-
	02/27/92	N001			0.44		0.01	-
	08/14/92	N001			0.48		0.2	-
	11/24/92	N001			0.51		0.00035	-
	06/25/93	N001			0.82		0.01	-
	12/15/93	N001			0.48		0.01	-
SULFATE	06/03/91	0001	MG/L		134.		10.	-
	02/27/92	0001			69.		10.	-
	08/14/92	0001			86		0.059	-
	12/15/93	0001			136		1	-
SULFATE (TOTAL)	06/03/91	N001	MG/L		82.		0.1	-
	02/27/92	N001			77.		10.	-
	08/14/92	N001			85		0.059	-
	11/24/92	N001			79		1.0	-
	02/19/93	N001			102		1	-
	06/25/93	N001			346		1	-
SULFIDE	06/03/91	0001	MG/L	<	1.	IJ	1.	-
SULFIDE (TOTAL)	06/03/91	N001	MG/L	<	1.	I	1.	-
TEMPERATURE	06/03/91	0001	C - DEGREE		15.7		-	-
	06/03/91	N001			15.7		-	-
	02/27/92	0001			8.6		-	-
	02/27/92	N001			8.6	*	-	-
	08/14/92	0001			19.3		-	-
	11/24/92	0001			9.0		-	-
	02/19/93	N001			11.6		-	-
	06/25/93	N001			15.7		-	-
	12/15/93	N001			9.1		-	-
THALLIUM	06/03/91	0001	MG/L	<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0616
NORTH COORDINATE: 56747.3 FT
EAST COORDINATE: 87987.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
THALLIUM (TOTAL)	06/03/91	N001	MG/L	<	0.01		0.01	-
THORIUM-230	06/03/91	0001	PCI/L		0.8		1.	0.3
THORIUM-230 (TOTAL)	06/03/91	N001	PCI/L		1.4		1.	0.5
TIN	06/03/91	0001	MG/L	<	0.01	I	0.01	-
TIN (TOTAL)	06/03/91	N001	MG/L	<	0.01	I	0.01	-
TOTAL DISSOLVED SOLIDS	06/03/91	0001	MG/L		378.		10.	-
	02/27/92	0001			349.		10.	-
	08/14/92	0001			420		42	-
	12/15/93	0001			530		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	08/14/92	N001	MG/L		400		42	-
	02/19/93	N001			420		10	-
	06/25/93	N001			880		10	-
TOTAL ORGANIC CARBON	06/03/91	0001	MG/L		1.		1.	-
	06/03/91	N001		<	1.		1.	-
	02/27/92	0001		<	1.		1.	-
	02/27/92	N001		<	1.		1.	-
	08/14/92	0001		<	1.0		1.0	-
	08/14/92	N001		<	1.0		1.0	-
URANIUM	06/03/91	0001	MG/L		0.001		0.001	-
	02/27/92	0001			0.004		0.001	-
	08/14/92	0001			0.004		0.001	-
	12/15/93	0001			0.006		0.001	-
URANIUM (TOTAL)	06/03/91	N001	MG/L	<	0.001		0.001	-
	02/27/92	N001			0.004		0.001	-
	08/14/92	N001			0.004		0.001	-
	11/24/92	N001			0.006		0.001	-
	02/19/93	N001			0.005		0.001	-
	06/25/93	N001			0.006		0.001	-
	12/15/93	N001			0.006		0.001	-
VANADIUM	06/03/91	0001	MG/L	<	0.01		0.01	-
	02/27/92	0001		<	0.01		0.01	-
	08/14/92	0001		<	0.05	*	0.05	-
	12/15/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	06/03/91	N001	MG/L	<	0.01		0.01	-
	02/27/92	N001		<	0.01		0.01	-
	08/14/92	N001		<	0.05	*	0.05	-
	11/24/92	N001			0.010		0.0019	-
	06/25/93	N001		<	0.01		0.01	-
	12/15/93	N001		<	0.01		0.01	-
ZINC	06/03/91	0001	MG/L	<	0.005		0.005	-
	02/27/92	0001		<	0.005		0.005	-
	08/14/92	0001		<	0.02		0.02	-
ZINC (TOTAL)	06/03/91	N001	MG/L	<	0.005		0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION

SAMPLE ID CODES:
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N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0616
NORTH COORDINATE: 56747.3 FT
EAST COORDINATE: 87987.6 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ZINC (TOTAL)	02/27/92	N001	MG/L		0.039		0.005	-
	08/14/92	N001			0.021		0.02	-
	11/24/92	N001			0.069		0.0010	-
	06/25/93	N001			0.099	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0617
NORTH COORDINATE: 52090.6 FT
EAST COORDINATE: 87094.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	02/27/92	0001	MG/L CACO3		268		-	-
	02/27/92	N001			268		-	-
	08/14/92	0001			239		-	-
	11/24/92	0001			271		-	-
	02/19/93	N001			289		-	-
	06/25/93	N001			277		-	-
	12/12/93	N001			252		-	-
ALUMINUM	02/27/92	0001	MG/L	<	0.05	J	0.05	-
	08/14/92	0001		<	0.2		0.2	-
ALUMINUM (TOTAL)	02/27/92	N001	MG/L	<	0.05		0.05	-
	08/14/92	N001		<	0.2		0.2	-
AMMONIUM	02/27/92	0001	MG/L	<	0.1		0.1	-
	12/12/93	0001		<	0.1		0.1	-
AMMONIUM (TOTAL)	02/27/92	N001	MG/L	<	0.1		0.1	-
	06/25/93	N001		<	0.1		0.1	-
ANTIMONY	02/27/92	0001	MG/L	<	0.003		0.003	-
	08/14/92	0001		<	0.06		0.06	-
ANTIMONY (TOTAL)	02/27/92	N001	MG/L	<	0.003		0.003	-
	08/14/92	N001		<	0.06	W	0.06	-
ARSENIC	02/27/92	0001	MG/L	<	0.01		0.01	-
	08/14/92	0001		<	0.01	W	0.01	-
ARSENIC (TOTAL)	02/27/92	N001	MG/L	<	0.01		0.01	-
	08/14/92	N001		<	0.01	W	0.01	-
	11/24/92	N001			0.0054		0.0015	-
	06/25/93	N001			0.006		0.005	-
BARIUM	02/27/92	0001	MG/L		0.05		0.01	-
	08/14/92	0001		<	0.2		0.2	-
BARIUM (TOTAL)	02/27/92	N001	MG/L		0.05		0.01	-
	08/14/92	N001		<	0.2		0.2	-
	11/24/92	N001			0.056		0.0015	-
	06/25/93	N001		<	0.1		0.1	-
BERYLLIUM	08/14/92	0001	MG/L	<	0.005		0.005	-
BERYLLIUM (TOTAL)	08/14/92	N001	MG/L	<	0.005		0.005	-
CADMIUM	02/27/92	0001	MG/L	<	0.001		0.001	-
	08/14/92	0001		<	0.005	E	0.005	-
CADMIUM (TOTAL)	02/27/92	N001	MG/L	<	0.001		0.001	-
	08/14/92	N001		<	0.005	E	0.005	-
	11/24/92	N001			0.00019	NS	0.00013	-
CALCIUM	02/27/92	0001	MG/L		18.1		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
S - REPORTED VALUE DETERMINED USING METHOD OF STD ADDITION (MSA)
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0617
NORTH COORDINATE: 52090.6 FT
EAST COORDINATE: 87094.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CALCIUM	08/14/92	0001	MG/L		23		5	-
	12/12/93	0001			22.8		0.5	-
CALCIUM (TOTAL)	02/27/92	N001	MG/L		18.3		0.1	-
	08/14/92	N001			22		5	-
	02/19/93	N001			16.2		0.5	-
	06/25/93	N001			19.4		0.5	-
	12/12/93	N001			23.4		0.5	-
CHLORIDE	02/27/92	0001	MG/L		15.5		0.5	-
	08/14/92	0001			14		0.016	-
	12/12/93	0001			32.3		0.5	-
CHLORIDE (TOTAL)	02/27/92	N001	MG/L		15.8		0.5	-
	08/14/92	N001			14		0.016	-
	02/19/93	N001			23.5		0.5	-
	06/25/93	N001			35.1		0.5	-
CHROMIUM	02/27/92	0001	MG/L	<	0.01		0.01	-
	08/14/92	0001		<	0.01		0.01	-
CHROMIUM (TOTAL)	02/27/92	N001	MG/L	<	0.01		0.01	-
	08/14/92	N001		<	0.01		0.01	-
	11/24/92	N001		<	0.0053		0.0053	-
GROSS ALPHA	02/27/92	0001	PCI/L		3.3		1.0	5.4
	08/14/92	0001			3.6		6.6	4.2
GROSS ALPHA (TOTAL)	02/27/92	N001	PCI/L		0.0		1.0	5.2
	08/14/92	N001			4.2		6.0	4.1
	11/24/92	N001			0.0	N	7.2	3.9
	02/19/93	N001			0		8	9
	06/25/93	N001			14		5	10
GROSS BETA	02/27/92	0001	PCI/L		0.0		0.5	2.8
	08/14/92	0001			3.8		6.0	3.7
GROSS BETA (TOTAL)	02/27/92	N001	PCI/L		2.5		0.5	3.1
	08/14/92	N001			3.8		6.5	3.9
	11/24/92	N001			0.0	N	5.4	3.1
	02/19/93	N001			0		12	5
	06/25/93	N001			1		5	4
IRON	02/27/92	0001	MG/L	<	0.03		0.03	-
	08/14/92	0001		<	0.1		0.1	-
IRON (TOTAL)	02/27/92	N001	MG/L	<	0.03		0.03	-
	08/14/92	N001			0.26		0.1	-
	02/19/93	N001			0.19		0.03	-
	06/25/93	N001			0.51		0.03	-
LEAD (TOTAL)	11/24/92	N001	MG/L	<	0.0015		0.0015	-
LEAD-210 (TOTAL)	11/24/92	N001	PCI/L		5.7		0.3	0.9
MAGNESIUM	02/27/92	0001	MG/L		33.0		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
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SAMPLE ID CODES:
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GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0617
NORTH COORDINATE: 52090.6 FT
EAST COORDINATE: 87094.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MAGNESIUM	08/14/92	0001	MG/L		34		5	-
	12/12/93	0001			42.6		0.1	-
MAGNESIUM (TOTAL)	02/27/92	N001	MG/L		35.3		0.1	-
	08/14/92	N001			33		5	-
	02/19/93	N001			33.3		0.1	-
	06/25/93	N001			41.8		0.1	-
	12/12/93	N001			42.2		0.1	-
MANGANESE	02/27/92	0001	MG/L	<	0.01		0.01	-
	08/14/92	0001		<	0.01		0.01	-
	12/12/93	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	02/27/92	N001	MG/L	<	0.01		0.01	-
	08/14/92	N001		<	0.01		0.01	-
	11/24/92	N001		<	0.0015		0.0015	-
	02/19/93	N001		<	0.01		0.01	-
	06/25/93	N001		<	0.01		0.01	-
	12/12/93	N001		<	0.01		0.01	-
MOLYBDENUM	02/27/92	0001	MG/L		0.01		0.01	-
	08/14/92	0001			0.018		0.007	-
MOLYBDENUM (TOTAL)	02/27/92	N001	MG/L		0.02		0.01	-
	08/14/92	N001			0.012		0.007	-
	11/24/92	N001			0.0080	N	0.0049	-
	06/25/93	N001			0.01		0.01	-
NITRATE	02/27/92	0001	MG/L		12.6		1.0	-
	08/14/92	0001			15		0.075	-
	11/24/92	N001		<	0.044		0.044	-
	12/12/93	0001			35		1	-
NITRATE (TOTAL)	02/27/92	N001	MG/L		13.0		1.0	-
	02/19/93	N001			25		1	-
	06/25/93	N001			47		1	-
PH	02/27/92	0001	SU		8.39		-	-
	02/27/92	N001			8.39		-	-
	08/14/92	0001			8.17		-	-
	11/24/92	0001			8.57		-	-
	02/19/93	N001			8.41		-	-
	06/25/93	N001			7.91		-	-
	12/12/93	N001			8.17		-	-
PHOSPHATE (TOTAL)	06/25/93	N001	MG/L		0.1		0.1	-
POTASSIUM	02/27/92	0001	MG/L		0.55		0.01	-
	08/14/92	0001			0.78		0.575	-
	12/12/93	0001			0.5		0.1	-
POTASSIUM (TOTAL)	02/27/92	N001	MG/L		0.63		0.01	-
	08/14/92	N001			1.1		0.575	-
	02/19/93	N001			1.4		0.1	-
	06/25/93	N001			0.6		0.1	-
	12/12/93	N001			0.5		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
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GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
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NORTH COORDINATE: 52090.6 FT
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04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
RADIUM-226	02/27/92	0001	PCI/L		0.1		1.0	0.2
	08/14/92	0001			5.7		0.7	0.3
RADIUM-226 (TOTAL)	02/27/92	N001	PCI/L		0.0		1.0	0.2
	08/14/92	N001			0.1		0.7	0.1
	11/24/92	N001			0.3		0.3	0.2
RADIUM-228	02/27/92	0001	PCI/L		1.6		1.0	1.0
	08/14/92	0001			0.2		1.8	1.0
RADIUM-228 (TOTAL)	02/27/92	N001	PCI/L		0.0		1.0	3.0
	08/14/92	N001			0.5		2.2	1.2
	11/24/92	N001			3.1		2.0	1.5
SELENIUM	02/27/92	0001	MG/L		0.007		0.005	-
	08/14/92	0001		<	0.005	W	0.005	-
SELENIUM (TOTAL)	02/27/92	N001	MG/L		0.005		0.005	-
	08/14/92	N001		<	0.005		0.005	-
	11/24/92	N001			0.0041	W	0.0015	-
SILICA - SIO2	12/12/93	0001	MG/L		35.0		0.1	-
SILICA - SIO2 (TOTAL)	06/25/93	N001	MG/L		34.0	H	0.5	-
	12/12/93	N001			35.1		0.1	-
SODIUM	02/27/92	0001	MG/L		91.		1.	-
	08/14/92	0001			97		5	-
	12/12/93	0001			120		1	-
SODIUM (TOTAL)	02/27/92	N001	MG/L		93.		1.	-
	08/14/92	N001			94		5	-
	02/19/93	N001			109		0.1	-
	06/25/93	N001			123		1	-
	12/12/93	N001			123		1	-
SPECIFIC CONDUCTANCE	02/27/92	0001	UMHO/CM		525		-	-
	02/27/92	N001			525		-	-
	08/14/92	0001			653		-	-
	11/24/92	0001			500		-	-
	02/19/93	N001			620		-	-
	06/25/93	N001			888		-	-
	12/12/93	N001			687		-	-
STRONTIUM	02/27/92	0001	MG/L		0.37		0.01	-
	08/14/92	0001			0.41		0.2	-
	12/12/93	0001			0.52		0.01	-
STRONTIUM (TOTAL)	02/27/92	N001	MG/L		0.39		0.01	-
	08/14/92	N001			0.40		0.2	-
	11/24/92	N001			0.48		0.00035	-
	06/25/93	N001			0.52		0.01	-
	12/12/93	N001			0.51		0.01	-
SULFATE	02/27/92	0001	MG/L		85.		10.	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0617
NORTH COORDINATE: 52090.6 FT
EAST COORDINATE: 87094.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SULFATE	08/14/92	0001	MG/L		80		0.059	-
	12/12/93	0001			162		1	-
SULFATE (TOTAL)	02/27/92	N001	MG/L		91.		10.	-
	08/14/92	N001			84		0.059	-
	11/24/92	N001			91		1.0	-
	02/19/93	N001			116		1	-
	06/25/93	N001			159		1	-
TEMPERATURE	02/27/92	0001	C - DEGREE		9.7		-	-
	02/27/92	N001			9.7		-	-
	08/14/92	0001			19.3		-	-
	11/24/92	0001			10.1		-	-
	02/19/93	N001			11.6		-	-
	06/25/93	N001			7.8		-	-
	12/12/93	N001			10.3		-	-
TOTAL DISSOLVED SOLIDS	02/27/92	0001	MG/L		442.		10.	-
	08/14/92	0001			450		42	-
	12/12/93	0001			640		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	08/14/92	N001	MG/L		470		42	-
	02/19/93	N001			490		10	-
	06/25/93	N001			630		10	-
TOTAL ORGANIC CARBON	02/27/92	0001	MG/L	<	1.		1.	-
	02/27/92	N001		<	1.		1.	-
	08/14/92	0001		<	1.0		1.0	-
	08/14/92	N001		<	1.0		1.0	-
URANIUM	02/27/92	0001	MG/L		0.005		0.001	-
	08/14/92	0001			0.005		0.001	-
	12/12/93	0001			0.008		0.001	-
URANIUM (TOTAL)	02/27/92	N001	MG/L		0.003		0.001	-
	08/14/92	N001			0.005		0.001	-
	11/24/92	N001			0.006		0.001	-
	02/19/93	N001			0.007		0.001	-
	06/25/93	N001			0.006		0.001	-
	12/12/93	N001			0.007		0.001	-
VANADIUM	02/27/92	0001	MG/L		0.02		0.01	-
	08/14/92	0001		<	0.05	*	0.05	-
	12/12/93	0001			0.01		0.01	-
VANADIUM (TOTAL)	02/27/92	N001	MG/L		0.01		0.01	-
	08/14/92	N001		<	0.05	*	0.05	-
	11/24/92	N001			0.018		0.0019	-
	06/25/93	N001			0.02		0.01	-
	12/12/93	N001			0.02		0.01	-
ZINC	02/27/92	0001	MG/L	<	0.005		0.005	-
	08/14/92	0001		<	0.02		0.02	-
ZINC (TOTAL)	02/27/92	N001	MG/L	<	0.005		0.005	-
	08/14/92	N001			0.057		0.02	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
* - *DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS*

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0617
NORTH COORDINATE: 52090.6 FT
EAST COORDINATE: 87094.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ZINC (TOTAL)	11/24/92	N001	MG/L		0.029		0.0010	-
	06/25/93	N001			0.079	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0619
NORTH COORDINATE: 58876.5 FT
EAST COORDINATE: 87587.9 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: ON-SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	06/29/93	N001	MG/L CACO3		189		-	-
AMMONIUM	12/13/93	0001	MG/L	<	0.1		0.1	-
AMMONIUM (TOTAL)	06/29/93	N001	MG/L	<	0.1		0.1	-
ARSENIC	06/29/93	0001	MG/L	<	0.005		0.005	-
ARSENIC (TOTAL)	06/29/93	N001	MG/L	<	0.005		0.005	-
BARIUM	06/29/93	0001	MG/L	<	0.1		0.1	-
BARIUM (TOTAL)	06/29/93	N001	MG/L	<	0.1		0.1	-
CALCIUM	06/29/93 12/13/93	0001 0001	MG/L		66.0 46.3		0.5 0.5	- -
CALCIUM (TOTAL)	06/29/93 12/13/93	N001 N001	MG/L		62.8 49.4		0.5 0.5	- -
CHLORIDE	12/13/93	0001	MG/L		7.1		0.5	-
CHLORIDE (TOTAL)	06/29/93	N001	MG/L		7.5		0.5	-
DISSOLVED OXYGEN	06/29/93	N001	MG/L		6.6		-	-
GROSS ALPHA	06/29/93	0001	PCI/L		90		4	14
GROSS ALPHA (TOTAL)	06/29/93	N001	PCI/L		91		4	14
GROSS BETA	06/29/93	0001	PCI/L		45		5	6
GROSS BETA (TOTAL)	06/29/93	N001	PCI/L		43		5	6
IRON	06/29/93	0001	MG/L	<	0.03	J	0.03	-
IRON (TOTAL)	06/29/93	N001	MG/L	<	0.03	J	0.03	-
MAGNESIUM	06/29/93 12/13/93	0001 0001	MG/L		36.4 27.0		0.1 0.1	- -
MAGNESIUM (TOTAL)	06/29/93 12/13/93	N001 N001	MG/L		35.9 28.8		0.1 0.1	- -
MANGANESE	06/29/93 12/13/93	0001 0001	MG/L	< <	0.01 0.01		0.01 0.01	- -
MANGANESE (TOTAL)	06/29/93 12/13/93	N001 N001	MG/L	< <	0.01 0.01		0.01 0.01	- -
MOLYBDENUM	06/29/93	0001	MG/L		0.03		0.01	-
MOLYBDENUM (TOTAL)	06/29/93	N001	MG/L	<	0.01		0.01	-
NITRATE	12/13/93	0001	MG/L		20		1	-
NITRATE (TOTAL)	06/29/93	N001	MG/L		32		1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0619
NORTH COORDINATE: 58876.5 FT
EAST COORDINATE: 87587.9 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: ON-SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
PH	06/29/93	N001	SU		7.20		-	-
PHOSPHATE (TOTAL)	06/29/93	N001	MG/L	<	0.1		0.1	-
POTASSIUM	06/29/93	0001	MG/L		2.2		0.1	-
	12/13/93	0001			1.7		0.1	-
POTASSIUM (TOTAL)	06/29/93	N001	MG/L		2.1		0.1	-
	12/13/93	N001			1.7		0.1	-
REDOX POTENTIAL	06/29/93	N001	mVOLTS		447		-	-
SILICA - SIO2	12/13/93	0001	MG/L		13.0		0.1	-
SILICA - SIO2 (TOTAL)	06/29/93	N001	MG/L		13.5	H	0.5	-
	12/13/93	N001			13.3		0.1	-
SODIUM	06/29/93	0001	MG/L		22		1	-
	12/13/93	0001			21		1	-
SODIUM (TOTAL)	06/29/93	N001	MG/L		22		1	-
	12/13/93	N001			23		1	-
SPECIFIC CONDUCTANCE	06/29/93	N001	UMHO/CM		603		-	-
STRONTIUM	06/29/93	0001	MG/L		0.51		0.01	-
	12/13/93	0001			0.39		0.01	-
STRONTIUM (TOTAL)	06/29/93	N001	MG/L		0.50		0.01	-
	12/13/93	N001			0.41		0.01	-
SULFATE	12/13/93	0001	MG/L		73		1	-
SULFATE (TOTAL)	06/29/93	N001	MG/L		129		1	-
TEMPERATURE	06/29/93	N001	C - DEGREE		17.6		-	-
TOTAL DISSOLVED SOLIDS	12/13/93	0001	MG/L		320		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/29/93	N001	MG/L		430	H	10	-
URANIUM	06/29/93	0001	MG/L		0.133		0.001	-
	12/13/93	0001			0.135		0.001	-
URANIUM (TOTAL)	06/29/93	N001	MG/L		0.125		0.001	-
	12/13/93	N001			0.124		0.001	-
VANADIUM	06/29/93	0001	MG/L		0.02		0.01	-
	12/13/93	0001			0.02		0.01	-
VANADIUM (TOTAL)	06/29/93	N001	MG/L		0.02		0.01	-
	12/13/93	N001			0.02		0.01	-
ZINC	06/29/93	0001	MG/L		0.105	J	0.005	-
ZINC (TOTAL)	06/29/93	N001	MG/L		0.035	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0619
NORTH COORDINATE: 58876.5 FT
EAST COORDINATE: 87587.9 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: ON-SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT SAMPLE ID CODES:

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0625
NORTH COORDINATE: 58272.5 FT
EAST COORDINATE: 89803.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	02/26/92	0001	MG/L CACO3		219		-	-
	11/21/92	0001			219		-	-
	02/02/93	N001			245		-	-
	06/25/93	N001			212		-	-
	12/13/93	N001			199		-	-
ALUMINUM	02/26/92	0001	MG/L	<	0.05		0.05	-
AMMONIUM	02/26/92	0001	MG/L	<	0.1		0.1	-
	12/13/93	0001		<	0.1		0.1	-
AMMONIUM (TOTAL)	06/25/93	N001	MG/L	<	0.1		0.1	-
ANTIMONY	02/26/92	0001	MG/L	<	0.003		0.003	-
ARSENIC	02/26/92	0001	MG/L	<	0.01		0.01	-
	11/21/92	0001			0.0048		0.0015	-
ARSENIC (TOTAL)	11/21/92	N001	MG/L		0.0047		0.0015	-
	06/25/93	N001			0.006		0.005	-
BARIUM	02/26/92	0001	MG/L		0.06		0.01	-
	11/21/92	0001			0.065		0.0015	-
BARIUM (TOTAL)	11/21/92	N001	MG/L		0.071		0.0015	-
	06/25/93	N001		<	0.1		0.1	-
CADMIUM	02/26/92	0001	MG/L	<	0.001		0.001	-
	11/21/92	0001		<	0.00013		0.00013	-
CADMIUM (TOTAL)	11/21/92	N001	MG/L	<	0.00013	N	0.00013	-
CALCIUM	02/26/92	0001	MG/L		3.0		0.1	-
	12/13/93	0001			2.6		0.5	-
CALCIUM (TOTAL)	02/02/93	N001	MG/L		2.6		0.5	-
	06/25/93	N001			2.5		0.5	-
	12/13/93	N001			2.8		0.5	-
CHLORIDE	02/26/92	0001	MG/L		9.5		0.5	-
	12/13/93	0001			10.0		0.5	-
CHLORIDE (TOTAL)	02/02/93	N001	MG/L		9.2		0.5	-
	06/25/93	N001			8.6		0.5	-
CHROMIUM	02/26/92	0001	MG/L	<	0.01		0.01	-
	11/21/92	0001		<	0.0053		0.0053	-
CHROMIUM (TOTAL)	11/21/92	N001	MG/L	<	0.0053		0.0053	-
GROSS ALPHA	02/26/92	0001	PCI/L		9.5		1.0	4.7
	11/21/92	0001			6.7	N	3.0	3.0
GROSS ALPHA (TOTAL)	11/21/92	N001	PCI/L		0.2	N	6.8	4.1
	02/02/93	N001			0		5	6
	06/25/93	N001			5		2	5

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0625
NORTH COORDINATE: 58272.5 FT
EAST COORDINATE: 89803.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS BETA	02/26/92	0001	PCI/L		5.6		0.5	2.7
	11/21/92	0001			1.5	N	5.3	3.2
GROSS BETA (TOTAL)	11/21/92	N001	PCI/L		3.1	N	5.0	3.1
	02/02/93	N001			0		11	5
	06/25/93	N001			5		4	4
IRON	02/26/92	0001	MG/L	<	0.03		0.03	-
IRON (TOTAL)	02/02/93	N001	MG/L	<	0.03		0.03	-
	06/25/93	N001		<	0.03	J	0.03	-
LEAD	11/21/92	0001	MG/L	<	0.0015		0.0015	-
LEAD (TOTAL)	11/21/92	N001	MG/L	<	0.0015		0.0015	-
LEAD-210	11/21/92	0001	PCI/L		1.3		2.0	1.2
LEAD-210 (TOTAL)	11/21/92	N001	PCI/L		6.3		0.3	0.9
MAGNESIUM	02/26/92	0001	MG/L		3.2		0.1	-
	12/13/93	0001			2.5		0.1	-
MAGNESIUM (TOTAL)	02/02/93	N001	MG/L		2.8		0.1	-
	06/25/93	N001			2.4		0.1	-
	12/13/93	N001			2.5		0.1	-
MANGANESE	02/26/92	0001	MG/L	<	0.01		0.01	-
	11/21/92	0001			0.0044		0.0015	-
	12/13/93	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	11/21/92	N001	MG/L	<	0.0015		0.0015	-
	02/02/93	N001			0.01		0.01	-
	06/25/93	N001		<	0.01		0.01	-
	12/13/93	N001		<	0.01		0.01	-
MOLYBDENUM	02/26/92	0001	MG/L	<	0.01		0.01	-
	11/21/92	0001		<	0.0049	N	0.0049	-
MOLYBDENUM (TOTAL)	11/21/92	N001	MG/L	<	0.0049	N	0.0049	-
	06/25/93	N001		<	0.01		0.01	-
NITRATE	02/26/92	0001	MG/L	<	1.0		1.0	-
	11/21/92	0001			0.93		0.044	-
	12/13/93	0001		<	1		1	-
NITRATE (TOTAL)	02/02/93	N001	MG/L	<	1		1	-
	06/25/93	N001		<	1		1	-
PH	02/26/92	0001	SU		8.59		-	-
	11/21/92	0001			8.77		-	-
	02/02/93	N001			8.54		-	-
	06/25/93	N001			8.86		-	-
	12/13/93	N001			8.57		-	-
PHOSPHATE (TOTAL)	06/25/93	N001	MG/L	<	0.1		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0625
NORTH COORDINATE: 58272.5 FT
EAST COORDINATE: 89803.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
POTASSIUM	02/26/92	0001	MG/L		0.93		0.01	-
	12/13/93	0001			0.8		0.1	-
POTASSIUM (TOTAL)	02/02/93	N001	MG/L		1.1		0.1	-
	06/25/93	N001			0.9		0.1	-
	12/13/93	N001			0.8		0.1	-
RADIUM-226	02/26/92	0001	PCI/L		2.1		1.0	0.7
	11/21/92	0001			2.3		0.3	0.5
RADIUM-226 (TOTAL)	11/21/92	N001	PCI/L		2.4		0.3	0.5
RADIUM-228	02/26/92	0001	PCI/L		1.6		1.0	1.7
	11/21/92	0001			0.8		2.5	1.6
RADIUM-228 (TOTAL)	11/21/92	N001	PCI/L		3.5		1.9	1.4
SELENIUM	02/26/92	0001	MG/L	<	0.005		0.005	-
	11/21/92	0001		<	0.0015	N	0.0015	-
SELENIUM (TOTAL)	11/21/92	N001	MG/L	<	0.0015		0.0015	-
SILICA - SIO2	12/13/93	0001	MG/L		13.3		0.1	-
SILICA - SIO2 (TOTAL)	06/25/93	N001	MG/L		12.7	H	0.5	-
	12/13/93	N001			13.2		0.1	-
SODIUM	02/26/92	0001	MG/L		124.		5.	-
	12/13/93	0001			118		1	-
SODIUM (TOTAL)	02/02/93	N001	MG/L		110		0.1	-
	06/25/93	N001			117		1	-
	12/13/93	N001			120		1	-
SPECIFIC CONDUCTANCE	02/26/92	0001	UMHO/CM		456		-	-
	11/21/92	0001			455		-	-
	02/02/93	N001			454		-	-
	06/25/93	N001			460		-	-
	12/13/93	N001			420		-	-
STRONTIUM	02/26/92	0001	MG/L		0.08		0.01	-
	11/21/92	0001			0.10		0.00035	-
	12/13/93	0001			0.07		0.01	-
STRONTIUM (TOTAL)	11/21/92	N001	MG/L		0.096		0.00035	-
	06/25/93	N001			0.06		0.01	-
	12/13/93	N001			0.07		0.01	-
SULFATE	02/26/92	0001	MG/L		54.		10.	-
	11/21/92	0001			58		1.0	-
	12/13/93	0001			55		1	-
SULFATE (TOTAL)	11/21/92	N001	MG/L		57		1.0	-
	02/02/93	N001			46		1	-
	06/25/93	N001			51		1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0625
NORTH COORDINATE: 58272.5 FT
EAST COORDINATE: 89803.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TEMPERATURE	02/26/92	0001	C - DEGREE		15.6		-	-
	11/21/92	0001			15.7		-	-
	02/02/93	N001			15.7		-	-
	06/25/93	N001			16.9		-	-
	12/13/93	N001			13.0		-	-
TOTAL DISSOLVED SOLIDS	02/26/92	0001	MG/L		339.		10.	-
	12/13/93	0001			330		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	02/02/93	N001	MG/L		340		10	-
	06/25/93	N001			310		10	-
TOTAL ORGANIC CARBON	02/26/92	0001	MG/L	<	1.		1.	-
URANIUM	02/26/92	0001	MG/L		0.001		0.001	-
	11/21/92	0001		<	0.001		0.001	-
	12/13/93	0001		<	0.001		0.001	-
URANIUM (TOTAL)	11/21/92	N001	MG/L		0.001		0.001	-
	02/02/93	N001		<	0.001		0.001	-
	06/25/93	N001		<	0.001		0.001	-
	12/13/93	N001		<	0.001		0.001	-
VANADIUM	02/26/92	0001	MG/L	<	0.01		0.01	-
	11/21/92	0001		<	0.0019		0.0019	-
	12/13/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	11/21/92	N001	MG/L	<	0.0019		0.0019	-
	06/25/93	N001		<	0.01		0.01	-
	12/13/93	N001		<	0.01		0.01	-
ZINC	02/26/92	0001	MG/L	<	0.005		0.005	-
	11/21/92	0001		<	0.0010		0.0010	-
ZINC (TOTAL)	11/21/92	N001	MG/L		0.0030		0.0010	-
	06/25/93	N001		<	0.005	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0650
NORTH COORDINATE: 64970.2 FT
EAST COORDINATE: 89923.8 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/26/88	0001	MG/L CACO3		205.		-	-
	06/09/89	0001			219.	L	-	-
	12/14/93	N001			204		-	-
ALUMINUM	06/09/89	0001	MG/L	<	0.1	L	0.1	-
AMMONIUM	04/26/88	0001	MG/L	<	0.1		0.1	-
	06/09/89	0001		<	0.1	L	0.1	-
	12/14/93	0001		<	0.1		0.1	-
ANTIMONY	06/09/89	0001	MG/L	<	0.003	L	0.003	-
ARSENIC	04/26/88	0001	MG/L		0.003	J	0.01	-
	06/09/89	0001		<	0.01	L	0.01	-
BARIUM	06/09/89	0001	MG/L	<	0.1	L	0.1	-
BERYLLIUM	06/09/89	0001	MG/L	<	0.01	L	0.01	-
BORON	06/09/89	0001	MG/L	<	0.1	L	0.1	-
CADMIUM	04/26/88	0001	MG/L		0.004		0.001	-
	06/09/89	0001		<	0.001	L	0.001	-
CALCIUM	04/26/88	0001	MG/L		9.00		0.01	-
	06/09/89	0001			9.48	L	0.01	-
	12/14/93	0001			8.3		0.5	-
CALCIUM (TOTAL)	12/14/93	N001	MG/L		9.2		0.5	-
CHLORIDE	04/26/88	0001	MG/L		8.2		1.	-
	06/09/89	0001			6.1	L	1.	-
	12/14/93	0001			11.6		0.5	-
CHROMIUM	06/09/89	0001	MG/L	<	0.01	L	0.01	-
COBALT	06/09/89	0001	MG/L	<	0.05	L	0.05	-
COPPER	06/09/89	0001	MG/L	<	0.02	L	0.02	-
CYANIDE	06/09/89	0001	MG/L	<	0.01	L	0.01	-
DISSOLVED OXYGEN	12/14/93	N001	MG/L	<	0.6		-	-
FLUORIDE	06/09/89	0001	MG/L		0.4	L	0.1	-
GROSS ALPHA	04/26/88	0001	PCI/L		3.0		0.2	2.6
GROSS BETA	04/26/88	0001	PCI/L		2.9		1.	1.3
IRON	06/09/89	0001	MG/L	<	0.03	L	0.03	-
LEAD	06/09/89	0001	MG/L	<	0.01	L	0.01	-
MAGNESIUM	04/26/88	0001	MG/L		6.23		0.001	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0650
NORTH COORDINATE: 64970.2 FT
EAST COORDINATE: 89923.8 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MAGNESIUM	06/09/89	0001	MG/L		6.51	L	0.001	
	12/14/93	0001			6.1		0.1	
MAGNESIUM (TOTAL)	12/14/93	N001	MG/L		7.0		0.1	
MANGANESE	06/09/89	0001	MG/L	<	0.01	L	0.01	
	12/14/93	0001		<	0.01		0.01	
MANGANESE (TOTAL)	12/14/93	N001	MG/L	<	0.01		0.01	-
MERCURY	06/09/89	0001	MG/L	<	0.0002	L	0.0002	-
MOLYBDENUM	04/26/88	0001	MG/L		0.01		0.01	-
	06/09/89	0001		<	0.01	L	0.01	-
NICKEL	06/09/89	0001	MG/L	<	0.04	L	0.04	-
NITRATE	04/26/88	0001	MG/L		0.5	J	1.	-
	06/09/89	0001			5.3	L	1.	-
	12/14/93	0001			1		1	-
PH	04/26/88	0001	SU		8.52		-	-
	06/09/89	0001			8.16	L	-	-
	12/14/93	N001			8.32		-	-
PHOSPHATE	06/09/89	0001	MG/L		0.6	L	0.1	-
POTASSIUM	04/26/88	0001	MG/L		1.02		0.01	-
	06/09/89	0001			1.0	L	0.01	-
	12/14/93	0001			0.9		0.1	-
POTASSIUM (TOTAL)	12/14/93	N001	MG/L		14.6		0.1	-
RADIUM-226	06/09/89	0001	PCI/L		0.1	L	1.	0.2
RADIUM-228	06/09/89	0001	PCI/L		0.0	L	1.	0.7
REDOX POTENTIAL	12/14/93	N001	mVOLTS		376		-	-
SELENIUM	04/26/88	0001	MG/L	<	0.005		0.005	-
	06/09/89	0001		<	0.005	L	0.005	-
SILICA - SIO2	06/09/89	0001	MG/L		12.	L	2.	
	12/14/93	0001			12.6		0.1	
SILICA - SIO2 (TOTAL)	12/14/93	N001	MG/L		12.3		0.1	
SILVER	06/09/89	0001	MG/L	<	0.01	L	0.01	
SODIUM	04/26/88	0001	MG/L		93.6		0.002	-
	06/09/89	0001			91.2	L	0.002	-
	12/14/93	0001			90		1	-
SODIUM (TOTAL)	12/14/93	N001	MG/L		157		1	-
SPECIFIC CONDUCTANCE	04/26/88	0001	UMHO/CM		360.			-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0650
NORTH COORDINATE: 64970.2 FT
EAST COORDINATE: 89923.8 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SPECIFIC CONDUCTANCE	06/09/89	0001	UMHO/CM		340.	L	-	-
	12/14/93	N001			393		-	-
STRONTIUM	12/14/93	0001	MG/L		0.10		0.01	-
STRONTIUM (TOTAL)	12/14/93	N001	MG/L		0.11		0.01	-
SULFATE	04/26/88	0001	MG/L		28.		0.1	-
	06/09/89	0001			31.	L	0.1	-
	12/14/93	0001			31		1	-
SULFIDE	06/09/89	0001	MG/L	<	0.1	L	0.1	-
TEMPERATURE	04/26/88	0001	C - DEGREE		16.5		-	-
	06/09/89	0001			17.0	L	-	-
	12/14/93	N001			15.2		-	-
THALLIUM	06/09/89	0001	MG/L	<	0.01	L	0.01	-
TIN	06/09/89	0001	MG/L	<	0.005	L	0.005	-
TOTAL DISSOLVED SOLIDS	04/26/88	0001	MG/L		319.		10.	-
	06/09/89	0001			262.	L	10.	-
	12/14/93	0001			300		10	-
TOTAL ORGANIC CARBON	04/26/88	0001	MG/L		58.5		1.	-
URANIUM	04/26/88	0001	MG/L		0.0023	J	0.003	-
	06/09/89	0001			0.0041	L	0.003	-
	12/14/93	0001			0.002		0.001	-
URANIUM (TOTAL)	12/14/93	N001	MG/L		0.003		0.001	-
VANADIUM	06/09/89	0001	MG/L	<	0.01	L	0.01	-
	12/14/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	12/14/93	N001	MG/L	<	0.01		0.01	-
ZINC	06/09/89	0001	MG/L		0.617	L	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0651
NORTH COORDINATE: 63788.9 FT
EAST COORDINATE: 92734.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/21/88	0001	MG/L CACO3		192.	L	-	-
	06/05/89	0001			198.	L	-	-
	12/03/89	0001			194.		-	-
	06/25/90	0001			175.	L	-	-
	01/29/91	0001			206.	L	-	-
	06/02/91	0001			199.		-	-
	02/25/92	0001			199	L	-	-
	08/13/92	0001			172	L	-	-
	11/21/92	0001			195		-	-
	07/01/93	N001			188		-	-
ALUMINUM	06/05/89	0001	MG/L	<	0.1	L	0.1	-
	12/03/89	0001		<	0.1		0.1	-
	06/25/90	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/02/91	0001		<	0.05		0.05	-
	02/25/92	0001		<	0.05	L	0.05	-
	08/13/92	0001		<	0.2	*L	0.2	-
AMMONIUM	04/21/88	0001	MG/L	<	0.1	L	0.1	-
	06/05/89	0001		<	0.1	L	0.1	-
	12/03/89	0001			0.1		0.1	-
	06/25/90	0001		<	0.1	HL	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/02/91	0001			0.1	*	0.1	-
	02/25/92	0001		<	0.1	L	0.1	-
AMMONIUM (TOTAL)	07/01/93	N001	MG/L	<	0.1		0.1	
ANTIMONY	06/05/89	0001	MG/L	<	0.003	L	0.003	
	12/03/89	0001		<	0.003		0.003	
	06/25/90	0001		<	0.003	L	0.003	
	01/29/91	0001		<	0.003	L	0.003	
	06/02/91	0001		<	0.003		0.003	
	02/25/92	0001		<	0.003	L	0.003	
	08/13/92	0001		<	0.06	WL	0.06	
ARSENIC	04/21/88	0001	MG/L		0.002	JL	0.01	
	06/05/89	0001		<	0.01	L	0.01	
	12/03/89	0001		<	0.01		0.01	
	06/25/90	0001		<	0.01	L	0.01	
	01/29/91	0001		<	0.01	L	0.01	
	06/02/91	0001		<	0.01		0.01	
	02/25/92	0001		<	0.01	L	0.01	
	08/13/92	0001		<	0.01	WL	0.01	
	07/01/93	0001		<	0.005	W	0.005	
ARSENIC (TOTAL)	11/21/92	N001	MG/L		0.0045		0.0015	
	07/01/93	N001		<	0.005		0.005	
BARIUM	06/05/89	0001	MG/L	<	0.1	L	0.1	
	12/03/89	0001		<	0.1		0.1	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0651
NORTH COORDINATE: 63788.9 FT
EAST COORDINATE: 92734.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BARIUM	06/25/90	0001	MG/L	<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/02/91	0001			0.04		0.01	-
	02/25/92	0001			0.03	L	0.01	-
	08/13/92	0001		<	0.2	L	0.2	-
	07/01/93	0001		<	0.1		0.1	-
BARIUM (TOTAL)	11/21/92	N001	MG/L		0.037		0.0015	-
	07/01/93	N001		<	0.1		0.1	-
BERYLLIUM	06/05/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.005		0.005	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.005		0.005	-
	08/13/92	0001		<	0.005	L	0.005	-
BORON	06/05/89	0001	MG/L	<	0.1	L	0.1	-
	12/03/89	0001		<	0.1		0.1	-
	06/25/90	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/02/91	0001			0.06		0.05	-
BROMIDE	01/29/91	0001	MG/L	<	0.1	L	0.1	-
	06/02/91	0001		<	0.1		0.1	-
CADMIUM	04/21/88	0001	MG/L		0.005	L	0.001	-
	06/05/89	0001		<	0.001	L	0.001	-
	12/03/89	0001		<	0.001		0.001	-
	06/25/90	0001		<	0.001	L	0.001	-
	01/29/91	0001		<	0.001	L	0.001	-
	06/02/91	0001		<	0.001		0.001	-
	02/25/92	0001		<	0.001	L	0.001	-
	08/13/92	0001		<	0.005	EL	0.005	-
CADMIUM (TOTAL)	11/21/92	N001	MG/L		0.00013	N	0.00013	-
CALCIUM	04/21/88	0001	MG/L		10.3	L	0.01	-
	06/05/89	0001			11.2	L	0.01	-
	12/03/89	0001			11.1		0.01	-
	06/25/90	0001			11.1	L	0.01	-
	01/29/91	0001			9.61	L	0.01	-
	06/02/91	0001			11.0		0.1	-
	02/25/92	0001			9.8	L	0.1	-
	08/13/92	0001			11	L	5	-
	07/01/93	0001			9.9		0.5	-
CALCIUM (TOTAL)	07/01/93	N001	MG/L		10.5		0.5	-
CHLORIDE	04/21/88	0001	MG/L		13.	L	1.	-
	06/05/89	0001			9.9	L	1.	-
	12/03/89	0001			13.1		1.	-
	06/25/90	0001			13.	L	1.	-
	01/29/91	0001			4.	JL	1.	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0651
NORTH COORDINATE: 63788.9 FT
EAST COORDINATE: 92734.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CHLORIDE	06/02/91	0001	MG/L		12.8		0.5	-
	02/25/92	0001			12.5	L	0.5	-
	08/13/92	0001			12	L	0.016	-
CHLORIDE (TOTAL)	07/01/93	N001	MG/L		13.9		0.5	-
CHROMIUM	06/05/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.01		0.01	-
	02/25/92	0001		<	0.01	L	0.01	-
	08/13/92	0001		<	0.01	L	0.01	-
CHROMIUM (TOTAL)	11/21/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	06/05/89	0001	MG/L	<	0.05	L	0.05	-
	12/03/89	0001		<	0.05		0.05	-
	06/25/90	0001		<	0.05	L	0.05	-
	01/29/91	0001		<	0.05	L	0.05	-
	06/02/91	0001		<	0.03		0.03	-
COPPER	06/05/89	0001	MG/L	<	0.02	L	0.02	-
	12/03/89	0001		<	0.02		0.02	-
	06/25/90	0001		<	0.02	L	0.02	-
	01/29/91	0001		<	0.02	L	0.02	-
	06/02/91	0001		<	0.01		0.01	-
CYANIDE	06/05/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
DISSOLVED OXYGEN	07/01/93	N001	MG/L		0.0		-	-
FLUORIDE	06/05/89	0001	MG/L		0.2	L	0.1	-
	12/03/89	0001			0.2		0.1	-
	06/25/90	0001			0.2	L	0.1	-
	01/29/91	0001			0.2	L	0.1	-
	06/02/91	0001		<	0.1		0.1	-
GROSS ALPHA	04/21/88	0001	PCI/L		17.	L	0.2	5.
	01/29/91	0001			0.0	L	1.	2.8
	06/02/91	0001			4.2		1.	5.2
	02/25/92	0001			7.6	L	1.0	4.9
	08/13/92	0001			3.3	L	4.1	3.0
	11/21/92	0001			18.5	N	8.4	8.4
	07/01/93	0001			3		3	5
GROSS ALPHA (TOTAL)	11/21/92	N001	PCI/L		0.0	N	7.1	3.4
	07/01/93	N001			1		3	5
GROSS BETA	04/21/88	0001	PCI/L		8.0	L	1.	1.8
	01/29/91	0001			2.0	L	0.5	2.0
	06/02/91	0001			4.0		0.5	2.7
	02/25/92	0001			6.6	L	0.5	2.7
	08/13/92	0001			2.7	L	4.3	2.6

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0651
NORTH COORDINATE: 63788.9 FT
EAST COORDINATE: 92734.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS BETA	11/21/92	0001	PCI/L		4.1		3.9	2.6
	07/01/93	0001			1		4	4
GROSS BETA (TOTAL)	11/21/92	N001	PCI/L		4.3	N	5.3	3.4
	07/01/93	N001			2		4	4
IRON	06/05/89	0001	MG/L	<	0.03	L	0.03	-
	12/03/89	0001		<	0.03		0.03	-
	06/25/90	0001		<	0.03	L	0.03	-
	01/29/91	0001		<	0.03	L	0.03	-
	06/02/91	0001		<	0.03		0.03	-
	02/25/92	0001		<	0.03	L	0.03	-
	08/13/92	0001		<	0.1	L	0.1	-
	07/01/93	0001		<	0.03	J	0.03	-
IRON (TOTAL)	07/01/93	N001	MG/L		0.06	J	0.03	-
LEAD	06/05/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.005		0.005	-
LEAD (TOTAL)	11/21/92	N001	MG/L	<	0.0015		0.0015	-
LEAD-210	11/21/92	0001	PCI/L		0.0		2.0	1.2
LEAD-210 (TOTAL)	11/21/92	N001	PCI/L		5.8		0.3	0.9
MAGNESIUM	04/21/88	0001	MG/L		5.32	L	0.001	-
	06/05/89	0001			5.21	L	0.001	-
	12/03/89	0001			5.61		0.001	-
	06/25/90	0001			5.49	L	0.001	-
	01/29/91	0001			5.01	L	0.001	-
	06/02/91	0001			5.4		0.1	-
	02/25/92	0001			4.9	L	0.1	-
	08/13/92	0001			5.2	L	5	-
	07/01/93	0001			4.7		0.1	-
MAGNESIUM (TOTAL)	07/01/93	N001	MG/L		4.9		0.1	-
MANGANESE	06/05/89	0001	MG/L		0.03	L	0.01	-
	12/03/89	0001			0.03		0.01	-
	06/25/90	0001			0.03	L	0.01	-
	01/29/91	0001			0.02	L	0.01	-
	06/02/91	0001			0.03		0.01	-
	02/25/92	0001			0.02	L	0.01	-
	08/13/92	0001			0.026	L	0.01	-
	07/01/93	0001			0.02		0.01	-
MANGANESE (TOTAL)	11/21/92	N001	MG/L		0.024		0.0015	-
	07/01/93	N001			0.03		0.01	-
MERCURY	06/05/89	0001	MG/L	<	0.0002	L	0.0002	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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LOCATION: 0651
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EAST COORDINATE: 92734.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MERCURY	12/03/89	0001	MG/L	<	0.0002		0.0002	-
	06/25/90	0001		<	0.0002	L	0.0002	-
MOLYBDENUM	04/21/88	0001	MG/L		0.01	L	0.01	-
	06/05/89	0001		<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.01		0.01	-
	02/25/92	0001		<	0.01	L	0.01	-
	08/13/92	0001		<	0.007	L	0.007	-
	07/01/93	0001		<	0.01		0.01	-
MOLYBDENUM (TOTAL)	11/21/92	N001	MG/L	<	0.0049	N	0.0049	-
	07/01/93	N001		<	0.01		0.01	-
NICKEL	06/05/89	0001	MG/L	<	0.04	L	0.04	-
	12/03/89	0001		<	0.04		0.04	-
	06/25/90	0001		<	0.04	L	0.04	-
	01/29/91	0001		<	0.04	JL	0.04	-
	06/02/91	0001		<	0.04		0.04	-
NITRATE	04/21/88	0001	MG/L		4.4	L	1.	-
	06/05/89	0001			8.0	L	1.	-
	12/03/89	0001			4.4		1.	-
	06/25/90	0001			1.6	L	1.	-
	01/29/91	0001		<	1.	L	1.	-
	06/02/91	0001			4.1		1.	-
	02/25/92	0001		<	1.0	L	1.0	-
	08/13/92	0001			4.4	L	0.075	-
	11/21/92	0001			0.44		0.044	-
NITRATE (TOTAL)	07/01/93	N001	MG/L		2		1	-
NITRITE AND NITRATE	01/29/91	0001	MG/L	<	1.	JL	1.	-
	06/02/91	0001			0.97		0.05	-
PH	04/21/88	0001	SU		8.24	L	-	-
	06/05/89	0001			8.07	L	-	-
	12/03/89	0001			8.48		-	-
	06/25/90	0001			8.19	L	-	-
	01/29/91	0001			8.23	L	-	-
	06/02/91	0001			8.33		-	-
	02/25/92	0001			8.34	L	-	-
	08/13/92	0001			8.13	L	-	-
	11/21/92	0001			8.59		-	-
	07/01/93	N001			8.52		-	-
PHOSPHATE	06/05/89	0001	MG/L		0.6	L	0.1	-
	12/03/89	0001			0.2		0.1	-
	06/25/90	0001			0.3	L	0.1	-
PHOSPHATE (TOTAL)	07/01/93	N001	MG/L		0.2		0.1	-
POTASSIUM	04/21/88	0001	MG/L		1.85	L	0.01	-

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REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
POTASSIUM	06/05/89	0001	MG/L		2.1	L	0.01	-
	12/03/89	0001			1.76		0.01	-
	06/25/90	0001			2.1	L	0.01	-
	01/29/91	0001			1.8	L	0.01	-
	06/02/91	0001			2.1		0.01	-
	02/25/92	0001			1.96	L	0.01	-
	08/13/92	0001			1.7	*L	0.575	-
	07/01/93	0001			2.1		0.1	-
POTASSIUM (TOTAL)	07/01/93	N001	MG/L		2.0		0.1	-
RADIUM-226	06/05/89	0001	PCI/L		0.0	L	1.	0.1
	12/03/89	0001			0.0		1.	0.1
	06/25/90	0001			0.0	L	1.	0.1
	01/29/91	0001			0.0	L	1.	0.1
	06/02/91	0001			0.0		1.	0.2
	02/25/92	0001			0.1	L	1.0	0.3
	08/13/92	0001			0.1	L	0.6	0.1
	11/21/92	0001			0.4		0.3	0.3
RADIUM-226 (TOTAL)	11/21/92	N001	PCI/L		0.0		0.3	0.1
RADIUM-228	06/05/89	0001	PCI/L		0.0	L	1.	0.8
	12/03/89	0001			0.0		1.	1.9
	06/25/90	0001			0.3	L	1.	0.9
	01/29/91	0001			0.4	L	1.	0.7
	06/02/91	0001			0.9	J	1.	1.6
	02/25/92	0001			2.0	L	1.0	1.8
	08/13/92	0001			0.2	L	1.9	1.0
	11/21/92	0001			3.0		2.1	1.5
RADIUM-228 (TOTAL)	11/21/92	N001	PCI/L		3.9		1.9	1.5
REDOX POTENTIAL	07/01/93	N001	mVOLTS		413		-	-
SELENIUM	04/21/88	0001	MG/L	<	0.005	L	0.005	-
	06/05/89	0001		<	0.005	L	0.005	-
	12/03/89	0001		<	0.005		0.005	-
	06/25/90	0001		<	0.005	L	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/02/91	0001		<	0.005	J	0.005	-
	02/25/92	0001		<	0.005	L	0.005	-
	08/13/92	0001		<	0.005	L	0.005	-
SELENIUM (TOTAL)	11/21/92	N001	MG/L		0.0015		0.0015	-
SILICA - SIO2	06/05/89	0001	MG/L		11.	L	2.	-
	12/03/89	0001			11.2		2.	-
	06/25/90	0001			11.	L	2.	-
	01/29/91	0001			11.	L	2.	-
	06/02/91	0001			11.3		0.1	-
SILICA - SIO2 (TOTAL)	07/01/93	N001	MG/L		11.0		0.5	-
SILVER	06/05/89	0001	MG/L	<	0.01	L	0.01	-

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GROUNDWATER QUALITY DATA BY LOCATION
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04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SILVER	12/03/89	0001	MG/L	<	0.01		0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.01		0.01	-
SODIUM	04/21/88	0001	MG/L		128.	L	0.002	-
	06/05/89	0001			121.	L	0.002	-
	12/03/89	0001			128.		0.002	-
	06/25/90	0001			124.	L	0.002	-
	01/29/91	0001			132.	L	0.002	-
	06/02/91	0001			143.		5.	-
	02/25/92	0001			130.	L	5.	-
	08/13/92	0001			130	L	5	-
	07/01/93	0001			131		1	-
SODIUM (TOTAL)	07/01/93	N001	MG/L		123		1	-
SPECIFIC CONDUCTANCE	04/21/88	0001	UMHO/CM		460.	L	-	-
	06/05/89	0001			450.	L	-	-
	12/03/89	0001			490.		-	-
	06/25/90	0001			500.	L	-	-
	01/29/91	0001			649.	L	-	-
	06/02/91	0001			655.		-	-
	02/25/92	0001			528	L	-	-
	08/13/92	0001			546	L	-	-
	11/21/92	0001			510	J	-	-
	07/01/93	N001			566		-	-
STRONTIUM	06/25/90	0001	MG/L		0.26	*L	0.1	-
	01/29/91	0001			0.2	L	0.1	-
	06/02/91	0001			0.26		0.01	-
	02/25/92	0001			0.24	L	0.01	-
	08/13/92	0001			0.28	L	0.2	-
	07/01/93	0001			0.25		0.01	-
STRONTIUM (TOTAL)	11/21/92	N001	MG/L		0.28		0.00035	-
	07/01/93	N001			0.26		0.01	-
SULFATE	04/21/88	0001	MG/L		112.	L	0.1	-
	06/05/89	0001			116.	L	0.1	-
	12/03/89	0001			111.		0.1	-
	06/25/90	0001			110.	L	0.1	-
	01/29/91	0001			121.	L	0.1	-
	06/02/91	0001			165.		0.1	-
	02/25/92	0001			108.	L	20.	-
	08/13/92	0001			110	L	0.059	-
	11/21/92	0001			120		1.0	-
SULFATE (TOTAL)	11/21/92	N001	MG/L		120		1.0	-
	07/01/93	N001			113		1	-
SULFIDE	06/05/89	0001	MG/L	<	0.1	L	0.1	-
	12/03/89	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1	JL	0.1	-

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FORMATION OF COMPLETION: ALLUVIUM (AL)
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PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SULFIDE	06/02/91	0001	MG/L	<	1.	IJ	1.	-
TEMPERATURE	04/21/88	0001	C - DEGREE		15.0	L	-	-
	06/05/89	0001			17.0	L	-	-
	12/03/89	0001			15.0		-	-
	06/25/90	0001			16.0	L	-	-
	01/29/91	0001			14.1	L	-	-
	06/02/91	0001			15.5		-	-
	02/25/92	0001			15.1	L	-	-
	08/13/92	0001			16.6	L	-	-
	11/21/92	0001			14.1		-	-
	07/01/93	N001			18.4		-	-
THALLIUM	06/05/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.1		0.1	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.01		0.01	-
THORIUM-230	01/29/91	0001	PCI/L		0.0	L	1.	0.3
	06/02/91	0001			0.5		1.	0.3
TIN	06/05/89	0001	MG/L	<	0.005	L	0.005	-
	12/03/89	0001		<	0.005		0.005	-
	06/25/90	0001		<	0.005	L	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/02/91	0001		<	0.01	I	0.01	-
TOTAL DISSOLVED SOLIDS	04/21/88	0001	MG/L		430.	L	10.	-
	06/05/89	0001			389.	L	10.	-
	12/03/89	0001			415.		10.	-
	06/25/90	0001			440.	L	10.	-
	01/29/91	0001			348.	L	10.	-
	06/02/91	0001			395.		10.	-
	02/25/92	0001			401.	L	10.	-
	08/13/92	0001			420	L	42	-
TOTAL DISSOLVED SOLIDS (TOTAL)	07/01/93	N001	MG/L		390		10	-
TOTAL ORGANIC CARBON	04/21/88	0001	MG/L		103.	L	1.	-
	01/29/91	0001		<	1.	JL	1.	-
	06/02/91	0001		<	1.		1.	-
	02/25/92	0001		<	1.	L	1.	-
	08/13/92	0001		<	1.0	GL	1.0	-
URANIUM	04/21/88	0001	MG/L		0.0019	JL	0.003	-
	06/05/89	0001			0.0090	L	0.003	-
	12/03/89	0001			0.003		0.003	-
	06/25/90	0001			0.0023	JL	0.003	-
	01/29/91	0001			0.0014	L	0.0003	-
	06/02/91	0001		<	0.001		0.001	-
	02/25/92	0001			0.001	L	0.001	-
	11/21/92	0001			0.005		0.001	-
	07/01/93	0001			0.002	JL	0.001	-

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OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
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LOCATION: 0651
NORTH COORDINATE: 63788.9 FT
EAST COORDINATE: 92734.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
URANIUM (TOTAL)	11/21/92	N001	MG/L		0.002		0.001	-
	07/01/93	N001			0.002		0.001	-
VANADIUM	06/05/89	0001	MG/L		0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001			0.01	L	0.01	-
	06/02/91	0001		<	0.01		0.01	-
	02/25/92	0001			0.01	L	0.01	-
	08/13/92	0001		<	0.05	L	0.05	-
	07/01/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	11/21/92	N001	MG/L		0.011		0.0019	-
	07/01/93	N001			0.01		0.01	-
ZINC	06/05/89	0001	MG/L	<	0.005	L	0.005	-
	12/03/89	0001		<	0.005		0.005	-
	06/25/90	0001			0.009	L	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/02/91	0001		<	0.005		0.005	-
	02/25/92	0001		<	0.005	L	0.005	-
	08/13/92	0001		<	0.02	L	0.02	-
	07/01/93	0001			0.022	J	0.005	-
ZINC (TOTAL)	11/21/92	N001	MG/L		0.0040		0.0010	-
	07/01/93	N001			0.023	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0652
NORTH COORDINATE: 62581.5 FT
EAST COORDINATE: 93759.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	06/01/91	0001	MG/L CACO3		205.	L	-	-
	02/23/92	0001			195		-	-
	08/12/92	0001			177		-	-
	11/21/92	0001			190		-	-
	02/19/93	0001			196		-	-
	07/01/93	N001			187		-	-
ALUMINUM	06/01/91	0001	MG/L	<	0.05	L	0.05	-
	02/23/92	0001		<	0.05		0.05	-
	08/12/92	0001		<	0.2	*	0.2	-
AMMONIUM	06/01/91	0001	MG/L		0.1	L	0.1	-
	02/23/92	0001		<	0.1		0.1	-
AMMONIUM (TOTAL)	07/01/93	N001	MG/L	<	0.1		0.1	-
ANTIMONY	06/01/91	0001	MG/L	<	0.003	L	0.003	-
	02/23/92	0001		<	0.003		0.003	-
	08/12/92	0001		<	0.06	W	0.06	-
ARSENIC	06/01/91	0001	MG/L	<	0.01	L	0.01	-
	02/23/92	0001		<	0.01		0.01	-
	08/12/92	0001		<	0.01	W	0.01	-
	11/21/92	0001		<	0.0015		0.0015	-
	07/01/93	0001		<	0.005		0.005	-
ARSENIC (TOTAL)	11/21/92	N001	MG/L	<	0.0015		0.0015	-
	07/01/93	N001		<	0.005		0.005	-
BARIUM	06/01/91	0001	MG/L		0.15	L	0.01	-
	02/23/92	0001			0.13		0.01	-
	08/12/92	0001		<	0.2		0.2	-
	11/21/92	0001			0.14		0.0015	-
	07/01/93	0001			0.1		0.1	-
BARIUM (TOTAL)	11/21/92	N001	MG/L		0.13		0.0015	-
	07/01/93	N001			0.1		0.1	-
BERYLLIUM	06/01/91	0001	MG/L	<	0.005	L	0.005	-
	08/12/92	0001		<	0.005		0.005	-
BORON	06/01/91	0001	MG/L		0.08	L	0.05	-
BROMIDE	06/01/91	0001	MG/L		0.1	L	0.1	-
CADMIUM	06/01/91	0001	MG/L	<	0.001	L	0.001	-
	02/23/92	0001		<	0.0005		0.0005	-
	08/12/92	0001		<	0.005	E	0.005	-
	11/21/92	0001		<	0.00013		0.00013	-
CADMIUM (TOTAL)	11/21/92	N001	MG/L	<	0.00013	N	0.00013	-
CALCIUM	06/01/91	0001	MG/L		29.6	L	0.5	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0652
NORTH COORDINATE: 62581.5 FT
EAST COORDINATE: 93759.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CALCIUM	02/23/92	0001	MG/L		26.7		0.5	-
	08/12/92	0001			28		5	-
	02/19/93	0001			26.3		0.5	-
	07/01/93	0001			26.6		0.5	-
CALCIUM (TOTAL)	07/01/93	N001	MG/L		26.1		0.5	-
CHLORIDE	06/01/91	0001	MG/L		15.3	L	0.5	-
	02/23/92	0001			15.3		0.5	-
	08/12/92	0001			14		0.016	-
	02/19/93	0001			15		0.5	-
CHLORIDE (TOTAL)	07/01/93	N001	MG/L		15.1		0.5	-
CHROMIUM	06/01/91	0001	MG/L	<	0.01	L	0.01	-
	02/23/92	0001		<	0.01		0.01	-
	08/12/92	0001		<	0.01		0.01	-
	11/21/92	0001		<	0.0053		0.0053	-
CHROMIUM (TOTAL)	11/21/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	06/01/91	0001	MG/L	<	0.03	L	0.03	-
COPPER	06/01/91	0001	MG/L	<	0.01	L	0.01	-
DISSOLVED OXYGEN	07/01/93	N001	MG/L		0.1		-	-
FLUORIDE	06/01/91	0001	MG/L		0.1	L	0.1	-
GROSS ALPHA	06/01/91	0001	PCI/L		6.8	L	1.	5.1
	02/23/92	0001			1.6		1.0	3.8
	08/12/92	0001			2.9		4.3	2.9
	11/21/92	0001			9.4	N	3.0	3.4
	02/19/93	0001			0		5	5
	07/01/93	0001			2		3	4
GROSS ALPHA (TOTAL)	11/21/92	N001	PCI/L		0.0	N	6.8	3.8
	06/30/93	N001			9		2	5
GROSS BETA	06/01/91	0001	PCI/L		7.4	L	0.5	2.9
	02/23/92	0001			3.3		0.5	2.2
	08/12/92	0001			3.6		4.1	2.6
	11/21/92	0001			5.9	N	5.5	3.5
	02/19/93	0001			0		11	5
	07/01/93	0001			0		4	4
GROSS BETA (TOTAL)	11/21/92	N001	PCI/L		6.4	N	5.0	3.3
	06/30/93	N001			1	*	4	4
IRON	06/01/91	0001	MG/L	<	0.03	L	0.03	-
	02/23/92	0001		<	0.03		0.03	-
	08/12/92	0001		<	0.1		0.1	-
	02/19/93	0001		<	0.03		0.03	-
	07/01/93	0001		<	0.03	J	0.03	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0652
NORTH COORDINATE: 62581.5 FT
EAST COORDINATE: 93759.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
IRON (TOTAL)	07/01/93	N001	MG/L		0.04	J	0.03	-
LEAD	06/01/91	0001	MG/L	<	0.005	L	0.005	-
	11/21/92	0001		<	0.0015		0.0015	-
LEAD (TOTAL)	11/21/92	N001	MG/L	<	0.0015		0.0015	-
LEAD-210	11/21/92	0001	PCI/L		0.3		2.0	1.2
LEAD-210 (TOTAL)	11/21/92	N001	PCI/L		5.7		0.3	0.9
MAGNESIUM	06/01/91	0001	MG/L		14.0	L	0.1	-
	02/23/92	0001			12.5		0.1	-
	08/12/92	0001			13		5	-
	02/19/93	0001			12.4		0.1	-
	07/01/93	0001			12.3		0.1	-
MAGNESIUM (TOTAL)	07/01/93	N001	MG/L		12.9		0.1	-
MANGANESE	06/01/91	0001	MG/L	<	0.01	L	0.01	-
	02/23/92	0001		<	0.01		0.01	-
	08/12/92	0001		<	0.01		0.01	-
	11/21/92	0001		<	0.0015		0.0015	-
	02/19/93	0001		<	0.01		0.01	-
	07/01/93	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	11/21/92	N001	MG/L	<	0.0015		0.0015	-
	07/01/93	N001		<	0.01		0.01	-
MOLYBDENUM	06/01/91	0001	MG/L	<	0.01	L	0.01	-
	02/23/92	0001		<	0.01		0.01	-
	08/12/92	0001		<	0.007		0.007	-
	11/21/92	0001		<	0.0049	N	0.0049	-
	07/01/93	0001		<	0.01		0.01	-
MOLYBDENUM (TOTAL)	11/21/92	N001	MG/L	<	0.0049	N	0.0049	-
	07/01/93	N001		<	0.01		0.01	-
NICKEL	06/01/91	0001	MG/L	<	0.04	L	0.04	-
NITRATE	06/01/91	0001	MG/L		21.6	L	1.	-
	02/23/92	0001			20.1		1.0	-
	08/12/92	0001			19		0.075	-
	11/21/92	0001			7.1		0.044	-
	02/19/93	0001			20		1	-
NITRATE (TOTAL)	07/01/93	N001	MG/L		19		1	-
NITRITE AND NITRATE	06/01/91	0001	MG/L		4.87	L	0.05	-
PH	06/01/91	0001	SU		7.99	L	-	-
	02/23/92	0001			7.93		-	-
	08/12/92	0001			8.01		-	-
	11/21/92	0001			8.06		-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0652
NORTH COORDINATE: 62581.5 FT
EAST COORDINATE: 93759.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
PH	02/19/93	0001	SU		7.93		-	-
	07/01/93	N001			8.11		-	-
PHOSPHATE (TOTAL)	07/01/93	N001	MG/L		0.2		0.1	-
POTASSIUM	06/01/91	0001	MG/L		2.8	L	0.01	-
	02/23/92	0001			3.09		0.01	-
	08/12/92	0001			2.0	*	0.575	-
	02/19/93	0001			2.7		0.1	-
	07/01/93	0001			2.8		0.1	-
POTASSIUM (TOTAL)	07/01/93	N001	MG/L		2.6		0.1	-
RADIUM-226	06/01/91	0001	PCI/L		0.2	L	1.	0.3
	02/23/92	0001			0.0		1.0	0.2
	08/12/92	0001			0.12		0.41	0.05
	11/21/92	0001			0.3		0.3	0.2
RADIUM-226 (TOTAL)	11/21/92	N001	PCI/L		1.2		0.3	0.4
RADIUM-228	06/01/91	0001	PCI/L		0.4	JL	1.	1.6
	02/23/92	0001			1.3		1.0	1.0
	08/12/92	0001			1.0		1.8	1.0
	11/21/92	0001			2.0		2.5	1.7
RADIUM-228 (TOTAL)	11/21/92	N001	PCI/L		2.9		2.0	1.5
REDOX POTENTIAL	11/21/92	0001	mVOLTS		455.9		-	-
	07/01/93	N001			469		-	-
SELENIUM	06/01/91	0001	MG/L		0.008	JL	0.005	-
	02/23/92	0001			0.015		0.005	-
	08/12/92	0001		<	0.005	W	0.005	-
	11/21/92	0001			0.0038	N	0.0015	-
SELENIUM (TOTAL)	11/21/92	N001	MG/L		0.0041		0.0015	-
SILICA - SIO2	06/01/91	0001	MG/L		15.8	L	0.1	-
SILICA - SIO2 (TOTAL)	07/01/93	N001	MG/L		14.1		0.5	-
SILVER	06/01/91	0001	MG/L	<	0.01	L	0.01	-
SODIUM	06/01/91	0001	MG/L		85.	L	1.	-
	02/23/92	0001			73.		1.	-
	08/12/92	0001			77		5	-
	02/19/93	0001			78.6		0.1	-
	07/01/93	0001			78		1	-
SODIUM (TOTAL)	07/01/93	N001	MG/L		77		1	-
SPECIFIC CONDUCTANCE	06/01/91	0001	UMHO/CM		581.	L	-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0652
NORTH COORDINATE: 62581.5 FT
EAST COORDINATE: 93759.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SPECIFIC CONDUCTANCE	02/23/92	0001	UMHO/CM		466		-	-
	08/12/92	0001			485		-	-
	11/21/92	0001			460		-	-
	02/19/93	0001			468		-	-
	07/01/93	N001			488		-	-
STRONTIUM	06/01/91	0001	MG/L		0.55	L	0.01	-
	02/23/92	0001			0.49		0.01	-
	08/12/92	0001			0.56		0.2	-
	11/21/92	0001			0.63		0.00035	-
	07/01/93	0001			0.51		0.01	-
STRONTIUM (TOTAL)	11/21/92	N001	MG/L		0.58	S	0.00035	-
	07/01/93	N001			0.52		0.01	-
SULFATE	06/01/91	0001	MG/L		85.	L	0.1	-
	02/23/92	0001			62.		10.	-
	08/12/92	0001			62		0.059	-
	11/21/92	0001			68		1.0	-
	02/19/93	0001			70		1	-
SULFATE (TOTAL)	11/21/92	N001	MG/L		67		1.0	-
	07/01/93	N001			64		1	-
SULFIDE	06/01/91	0001	MG/L	<	1.	IJL	1.	-
TEMPERATURE	06/01/91	0001	C - DEGREE		14.6	L	-	-
	02/23/92	0001			15.2		-	-
	08/12/92	0001			16.7		-	-
	11/21/92	0001			14.5		-	-
	02/19/93	0001			15.7		-	-
	07/01/93	N001			17.7		-	-
THALLIUM	06/01/91	0001	MG/L	<	0.01	L	0.01	-
THORIUM-230	06/01/91	0001	PCI/L		0.7	L	1.	0.4
TIN	06/01/91	0001	MG/L	<	0.01	IL	0.01	-
TOTAL DISSOLVED SOLIDS	06/01/91	0001	MG/L		344.	L	10.	-
	02/23/92	0001			346.		10.	-
	08/12/92	0001			380		42	-
	02/19/93	0001			330		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	07/01/93	N001	MG/L		330		10	-
TOTAL ORGANIC CARBON	06/01/91	0001	MG/L	<	1.	L	1.	-
	02/23/92	0001		<	1.		1.	-
	08/12/92	0001		<	1.0		1.0	-
URANIUM	06/01/91	0001	MG/L	<	0.001	L	0.001	-
	02/23/92	0001			0.004		0.001	-
	11/21/92	0001			0.005		0.001	-
	02/19/93	0001			0.005		0.001	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
S - REPORTED VALUE DETERMINED USING METHOD OF STD ADDITION (MSA)

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0652
NORTH COORDINATE: 62581.5 FT
EAST COORDINATE: 93759.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
URANIUM	07/01/93	0001	MG/L		0.005		0.001	-
URANIUM (TOTAL)	11/21/92	N001	MG/L		0.005		0.001	-
	06/30/93	N001			0.004		0.001	-
VANADIUM	06/01/91	0001	MG/L		0.01	L	0.01	-
	02/23/92	0001			0.01		0.01	-
	08/12/92	0001		<	0.05		0.05	-
	11/21/92	0001			0.012		0.0019	-
	07/01/93	0001			0.01		0.01	-
VANADIUM (TOTAL)	11/21/92	N001	MG/L		0.013		0.0019	-
	07/01/93	N001		<	0.01		0.01	-
ZINC	06/01/91	0001	MG/L	<	0.005	L	0.005	-
	02/23/92	0001		<	0.005		0.005	-
	08/12/92	0001		<	0.02		0.02	-
	11/21/92	0001		<	0.0010		0.0010	-
	07/01/93	0001			0.023	J	0.005	-
ZINC (TOTAL)	11/21/92	N001	MG/L		0.0030		0.0010	-
	07/01/93	N001			0.024	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0653
NORTH COORDINATE: 61249.3 FT
EAST COORDINATE: 89596.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/22/88	0001	MG/L CACO3		173.		-	-
	06/25/89	0001			201.	L	-	-
	12/01/89	0001			197.		-	-
	06/21/90	0001			175.	JL	-	-
	01/29/91	0001			206.	L	-	-
	06/04/91	0001			215.		-	-
	02/25/92	0001			209		-	-
	11/19/92	0001			196		-	-
	02/19/93	0001			209		-	-
	06/30/93	N001			202		-	-
ALUMINUM	06/25/89	0001	MG/L	<	0.1	LR	0.1	-
	12/01/89	0001		<	0.1		0.1	-
	06/21/90	0001		<	0.1	JL	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/04/91	0001		<	0.05		0.05	-
	02/25/92	0001		<	0.05		0.05	-
AMMONIUM	04/22/88	0001	MG/L	<	0.1		0.1	-
	06/25/89	0001		<	0.1	L	0.1	-
	12/01/89	0001		<	0.1		0.1	-
	06/21/90	0001		<	0.1	HJL	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/04/91	0001		<	0.1		0.1	-
	02/25/92	0001		<	0.1		0.1	-
AMMONIUM (TOTAL)	06/30/93	N001	MG/L	<	0.1		0.1	-
ANTIMONY	06/25/89	0001	MG/L	<	0.003	JL	0.003	-
	12/01/89	0001		<	0.003		0.003	-
	06/21/90	0001		<	0.003	JL	0.003	-
	01/29/91	0001		<	0.003	L	0.003	-
	06/04/91	0001		<	0.003		0.003	-
	02/25/92	0001		<	0.003		0.003	-
ARSENIC	04/22/88	0001	MG/L		0.011		0.01	-
	06/25/89	0001		<	0.01	L	0.01	-
	12/01/89	0001		<	0.01		0.01	-
	06/21/90	0001		<	0.01	JL	0.01	-
	01/29/91	0001			0.01	L	0.01	-
	06/04/91	0001		<	0.01		0.01	-
	02/25/92	0001		<	0.01		0.01	-
	11/19/92	0001			0.0016		0.0015	-
	06/30/93	0001		<	0.005		0.005	-
ARSENIC (TOTAL)	11/19/92	N001	MG/L		0.0019	W	0.0015	-
	06/30/93	N001		<	0.005		0.005	-
BARIUM	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/01/89	0001		<	0.1		0.1	-
	06/21/90	0001		<	0.1	JL	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
R - UNUSABLE DATA POINT
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0653
NORTH COORDINATE: 61249.3 FT
EAST COORDINATE: 89596.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BARIUM	06/04/91	0001	MG/L		0.04		0.01	-
	02/25/92	0001			0.03		0.01	-
	11/19/92	0001			0.028		0.0015	-
	06/30/93	0001		<	0.1		0.1	-
BARIUM (TOTAL)	11/19/92	N001	MG/L		0.027		0.0015	-
	06/30/93	N001		<	0.1		0.1	-
BERYLLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/01/89	0001		<	0.005		0.005	-
	06/21/90	0001		<	0.01	JL	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.005		0.005	-
BORON	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/01/89	0001		<	0.1		0.1	-
	06/21/90	0001		<	0.1	JL	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/04/91	0001		<	0.05		0.05	-
BROMIDE	01/29/91	0001	MG/L	<	0.1	L	0.1	-
	06/04/91	0001			0.2		0.1	-
CADMIUM	04/22/88	0001	MG/L		0.003		0.001	-
	06/25/89	0001		<	0.001	L	0.001	-
	12/01/89	0001		<	0.001		0.001	-
	06/21/90	0001		<	0.001	JL	0.001	-
	01/29/91	0001		<	0.001	L	0.001	-
	06/04/91	0001		<	0.001		0.001	-
	02/25/92	0001		<	0.001		0.001	-
	11/19/92	0001		<	0.00013	W	0.00013	-
CADMIUM (TOTAL)	11/19/92	N001	MG/L	<	0.00013	N	0.00013	-
CALCIUM	04/22/88	0001	MG/L		151.		0.01	-
	06/25/89	0001			156.	L	0.01	-
	12/01/89	0001			202.		0.01	-
	06/21/90	0001			194.	JL	0.01	-
	01/29/91	0001			200.	L	0.01	-
	06/04/91	0001			246.		0.5	-
	02/25/92	0001			251.		0.5	-
	02/19/93	0001			247		0.5	-
	06/30/93	0001			252		0.5	-
CALCIUM (TOTAL)	06/30/93	N001	MG/L		253		0.5	-
CHLORIDE	04/22/88	0001	MG/L		32.		1.	-
	06/25/89	0001			36.	L	1.	-
	12/01/89	0001			33.		1.	-
	06/21/90	0001			38.	JL	1.	-
	01/29/91	0001			42.	JL	1.	-
	06/04/91	0001			36.		0.5	-
	02/25/92	0001			40.		1.	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0653
NORTH COORDINATE: 61249.3 FT
EAST COORDINATE: 89596.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CHLORIDE	02/19/93	0001	MG/L		40.5		0.5	-
CHLORIDE (TOTAL)	06/30/93	N001	MG/L		39.5		0.5	-
CHROMIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/01/89	0001		<	0.01		0.01	-
	06/21/90	0001		<	0.01	JL	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.01		0.01	-
	02/25/92	0001		<	0.01		0.01	-
	11/19/92	0001		<	0.0053		0.0053	-
CHROMIUM (TOTAL)	11/19/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	06/25/89	0001	MG/L	<	0.05	L	0.05	-
	12/01/89	0001		<	0.05		0.05	-
	06/21/90	0001		<	0.05	JL	0.05	-
	01/29/91	0001		<	0.05	L	0.05	-
	06/04/91	0001		<	0.03		0.03	-
COPPER	06/25/89	0001	MG/L	<	0.02	L	0.02	-
	12/01/89	0001		<	0.02		0.02	-
	06/21/90	0001		<	0.02	JL	0.02	-
	01/29/91	0001		<	0.02	L	0.02	-
	06/04/91	0001		<	0.01		0.01	-
CYANIDE	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/01/89	0001		<	0.01		0.01	-
DISSOLVED OXYGEN	11/19/92	0001	MG/L		1.8		-	-
	06/30/93	N001			0.1		-	-
FLUORIDE	06/25/89	0001	MG/L		0.2	L	0.1	-
	12/01/89	0001			0.2		0.1	-
	06/21/90	0001			0.2	JL	0.1	-
	01/29/91	0001			0.2	L	0.1	-
	06/04/91	0001		<	0.1		0.1	-
GROSS ALPHA	04/22/88	0001	PCI/L		26.		0.2	12.
	01/29/91	0001			4.	L	1.	19.
	06/04/91	0001			7.2		1.	21.5
	02/26/92	0001			112.		1.0	58.0
	11/19/92	0001			20.9	N	16.2	13.8
	02/19/93	0001			0		31	32
	06/30/93	0001			0		14	22
GROSS ALPHA (TOTAL)	11/19/92	N001	PCI/L		0.0	N	38.1	19.7
	06/30/93	N001			14		13	22
GROSS BETA	04/22/88	0001	PCI/L		9.8		1.	5.8
	01/29/91	0001			3.	L	0.5	15.
	06/04/91	0001			4.0		0.5	11.7
	02/26/92	0001			60.8		0.5	31.1
	11/19/92	0001			0.0	N	28.3	15.2

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0653
NORTH COORDINATE: 61249.3 FT
EAST COORDINATE: 89596.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS BETA	02/19/93	0001	PCI/L		0		39	17
	06/30/93	0001			0		15	14
GROSS BETA (TOTAL)	11/19/92	N001	PCI/L		0.4	N	28.2	16.8
	06/30/93	N001			0		15	13
IRON	06/25/89	0001	MG/L		3.50	L	0.03	-
	12/01/89	0001		<	0.03		0.03	-
	06/21/90	0001			0.06	JL	0.03	-
	01/29/91	0001			0.06	L	0.03	-
	06/04/91	0001		<	0.03		0.03	-
	02/25/92	0001		<	0.03		0.03	-
	02/19/93	0001		<	0.03		0.03	-
	06/30/93	0001		<	0.03	J	0.03	-
IRON (TOTAL)	06/30/93	N001	MG/L	<	0.03	J	0.03	-
LEAD	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/01/89	0001		<	0.01		0.01	-
	06/21/90	0001		<	0.01	JL	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.005		0.005	-
	11/19/92	0001		<	0.0015		0.0015	-
LEAD (TOTAL)	11/19/92	N001	MG/L	<	0.0015	W	0.0015	-
LEAD-210	11/19/92	0001	PCI/L		0.1		2.0	1.2
LEAD-210 (TOTAL)	11/19/92	N001	PCI/L		5.9		0.3	0.9
MAGNESIUM	04/22/88	0001	MG/L		113.		0.001	-
	06/25/89	0001			133.	L	0.001	-
	12/01/89	0001			160.		0.001	-
	06/21/90	0001			150.	JL	0.001	-
	01/29/91	0001			160.	L	0.001	-
	06/04/91	0001			194.		0.5	-
	02/25/92	0001			200.		0.5	-
	02/19/93	0001			198		0.1	-
	06/30/93	0001			195		0.1	-
MAGNESIUM (TOTAL)	06/30/93	N001	MG/L		205		0.1	-
MANGANESE	06/25/89	0001	MG/L		0.04	L	0.01	-
	12/01/89	0001		<	0.01		0.01	-
	06/21/90	0001		<	0.01	JL	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.01		0.01	-
	02/25/92	0001		<	0.01		0.01	-
	11/19/92	0001			0.0035		0.0015	-
	02/19/93	0001		<	0.01		0.01	-
	06/30/93	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	11/19/92	N001	MG/L	<	0.0015		0.0015	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0653
NORTH COORDINATE: 61249.3 FT
EAST COORDINATE: 89596.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MANGANESE (TOTAL)	06/30/93	N001	MG/L	<	0.01		0.01	-
MERCURY	06/25/89	0001	MG/L	<	0.0002	L	0.0002	-
	12/01/89	0001		<	0.0002		0.0002	-
	06/21/90	0001		<	0.0002	JL	0.0002	-
MOLYBDENUM	04/22/88	0001	MG/L		0.04		0.01	-
	06/25/89	0001		<	0.01	L	0.01	-
	12/01/89	0001		<	0.01		0.01	-
	06/21/90	0001		<	0.01	JL	0.01	-
	01/29/91	0001			0.03	L	0.01	-
	06/04/91	0001		<	0.01		0.01	-
	02/25/92	0001		<	0.01		0.01	-
	11/19/92	0001		<	0.0049	N	0.0049	-
	06/30/93	0001		<	0.01		0.01	-
MOLYBDENUM (TOTAL)	11/19/92	N001	MG/L	<	0.0049	N	0.0049	-
	06/30/93	N001		<	0.01		0.01	-
NICKEL	06/25/89	0001	MG/L	<	0.04	L	0.04	-
	12/01/89	0001		<	0.04		0.04	-
	06/21/90	0001		<	0.04	JL	0.04	-
	01/29/91	0001		<	0.04	L	0.04	-
	06/04/91	0001		<	0.04		0.04	-
NITRATE	04/22/88	0001	MG/L		31.		1.	-
	06/25/89	0001			50.	L	1.	-
	12/01/89	0001			40.		1.	-
	06/21/90	0001			36.8	JL	1.	-
	01/29/91	0001			50.	L	1.	-
	06/04/91	0001			50.9		1.	-
	02/25/92	0001			64.6		5.0	-
	11/19/92	0001			80		0.044	-
	02/19/93	0001			75		1	-
NITRATE (TOTAL)	06/30/93	N001	MG/L		76		1	
NITRITE AND NITRATE	01/29/91	0001	MG/L		648.	L	1.	
	06/04/91	0001			12.7		0.05	
PH	04/22/88	0001	SU		7.68		-	-
	06/25/89	0001			7.56	L	-	-
	12/01/89	0001			7.74		-	-
	06/21/90	0001			7.55	L	-	-
	01/29/91	0001			7.48	L	-	-
	06/04/91	0001			7.47	*J	-	-
	02/25/92	0001			7.55			
	11/19/92	0001			7.51			
	02/19/93	0001			7.46			
	06/30/93	N001			7.50			
PHOSPHATE	06/25/89	0001	MG/L		0.6	L	0.1	-
	12/01/89	0001			0.3		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0653
NORTH COORDINATE: 61249.3 FT
EAST COORDINATE: 89596.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
PHOSPHATE	06/21/90	0001	MG/L		0.4	JL	0.1	-
PHOSPHATE (TOTAL)	06/30/93	N001	MG/L		0.3		0.1	-
POTASSIUM	04/22/88	0001	MG/L		3.24	L	0.01	-
	06/25/89	0001			3.6	L	0.01	-
	12/01/89	0001			3.3		0.01	-
	06/21/90	0001			4.0	JL	0.01	-
	01/29/91	0001			3.7	L	0.01	-
	06/04/91	0001			4.0		0.01	-
	02/25/92	0001			4.19		0.01	-
	02/19/93	0001			4.2		0.1	-
	06/30/93	0001			4.5		0.1	-
POTASSIUM (TOTAL)	06/30/93	N001	MG/L		4.2		0.1	-
RADIUM-226	06/25/89	0001	PCI/L		0.1	L	1.	0.2
	12/01/89	0001			0.2		1.	0.2
	06/21/90	0001			0.2	JL	1.	0.2
	01/29/91	0001			0.4	L	1.	0.7
	06/04/91	0001			0.5		1.	0.4
	02/26/92	0001			0.0		1.0	0.3
	11/19/92	0001			0.4		0.3	0.3
RADIUM-226 (TOTAL)	11/19/92	N001	PCI/L		0.1		0.3	0.2
RADIUM-228	06/25/89	0001	PCI/L		0.0	L	1.	0.9
	12/01/89	0001			0.4		1.	1.9
	06/21/90	0001			0.8	JL	1.	0.9
	01/29/91	0001			0.3	L	1.	0.8
	06/04/91	0001			5.6	J	1.	2.2
	02/26/92	0001			2.4		1.0	1.8
	11/19/92	0001			2.6		2.5	1.7
RADIUM-228 (TOTAL)	11/19/92	N001	PCI/L		4.5		2.0	1.6
REDOX POTENTIAL	11/19/92	0001	mVOLTS		443.1		-	-
	06/30/93	N001			227		-	-
SELENIUM	04/22/88	0001	MG/L		0.007		0.005	-
	06/25/89	0001			0.016	L	0.005	-
	12/01/89	0001		<	0.005		0.005	-
	06/21/90	0001		<	0.005	JL	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/04/91	0001		<	0.005	J	0.005	-
	02/25/92	0001		<	0.005		0.005	-
	11/19/92	0001		<	0.015	IN	0.015	-
SELENIUM (TOTAL)	11/19/92	N001	MG/L	<	0.0015		0.0015	-
SILICA - SIO2	06/25/89	0001	MG/L		15.	L	2.	-
	12/01/89	0001			15.1		2.	-
	06/21/90	0001			15.	JL	2.	-
	01/29/91	0001			14.	L	2.	-
	06/04/91	0001			15.8		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0653
NORTH COORDINATE: 61249.3 FT
EAST COORDINATE: 89596.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SILICA - SIO2 (TOTAL)	06/30/93	N001	MG/L		15.6	H	0.5	-
SILVER	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/01/89	0001		<	0.01		0.01	-
	06/21/90	0001		<	0.01	JL	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.01		0.01	-
SODIUM	04/22/88	0001	MG/L		210.		0.002	-
	06/25/89	0001			211.	L	0.002	-
	12/01/89	0001			242.		0.002	-
	06/21/90	0001			231.	JL	0.002	-
	01/29/91	0001			231.	L	0.002	-
	06/04/91	0001			267.		5.	-
	02/25/92	0001			256.		5.	-
	02/19/93	0001			248		0.1	-
	06/30/93	0001			249		1	-
SODIUM (TOTAL)	06/30/93	N001	MG/L		244		1	-
SPECIFIC CONDUCTANCE	04/22/88	0001	UMHO/CM		1650.		-	-
	06/25/89	0001			1660.	L	-	-
	12/01/89	0001			2000.		-	-
	06/21/90	0001			2000.	L	-	-
	01/29/91	0001			2790.	L	-	-
	06/04/91	0001			2890.		-	-
	02/25/92	0001			2510		-	-
	11/19/92	0001			2510		-	-
	02/19/93	0001			2510		-	-
	06/30/93	N001			2610		-	-
STRONTIUM	06/21/90	0001	MG/L		7.55	*JL	0.1	-
	01/29/91	0001			1.8	L	0.1	-
	06/04/91	0001			1.95		0.01	-
	02/25/92	0001			1.97		0.01	-
	11/19/92	0001			2.9		0.00035	-
	06/30/93	0001			2.00		0.01	-
STRONTIUM (TOTAL)	11/19/92	N001	MG/L		2.4		0.00035	-
	06/30/93	N001			2.10		0.01	-
SULFATE	04/22/88	0001	MG/L		1060.		0.1	-
	06/25/89	0001			1240.	L	0.1	-
	12/01/89	0001			1330.		0.1	-
	06/21/90	0001			1120.	JL	0.1	-
	01/29/91	0001			1530.	L	0.1	-
	06/04/91	0001			1520.		10.	-
	02/25/92	0001			1690.		10.	-
	11/19/92	0001			1700		1.0	-
	02/19/93	0001			1790		1	-
SULFATE (TOTAL)	11/19/92	N001	MG/L		1600		1.0	-
	06/30/93	N001			1650		1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0653
NORTH COORDINATE: 61249.3 FT
EAST COORDINATE: 89596.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SULFIDE	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/01/89	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/04/91	0001			1.32	J	1.	-
TEMPERATURE	04/22/88	0001	C - DEGREE		16.0		-	-
	06/25/89	0001			17.5	L	-	-
	12/01/89	0001			16.0		-	-
	06/21/90	0001			17.	L	-	-
	01/29/91	0001			14.9	L	-	-
	06/04/91	0001			16.8		-	-
	02/25/92	0001			15.9		-	-
	11/19/92	0001			15.9		-	-
	02/19/93	0001			15.4		-	-
	06/30/93	N001			18.7		-	-
THALLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/01/89	0001		<	0.1		0.1	-
	06/21/90	0001		<	0.01	JL	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.01		0.01	-
THORIUM-230	01/29/91	0001	PCI/L		0.0	L	1.	0.3
	06/04/91	0001			0.3		1.	0.3
TIN	06/25/89	0001	MG/L		0.024	L	0.005	-
	12/01/89	0001		<	0.005		0.005	-
	06/21/90	0001			0.020	JL	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/04/91	0001		<	0.01	I	0.01	-
	02/25/92	0001		<	0.03	I	0.03	-
TOTAL DISSOLVED SOLIDS	04/22/88	0001	MG/L		1730.		10.	-
	06/25/89	0001			2030.	L	10.	-
	12/01/89	0001			2290.		10.	-
	06/21/90	0001			2104.	JL	10.	-
	01/29/91	0001			2320.	L	10.	-
	06/04/91	0001			2590.		10.	-
	02/25/92	0001			2640.		10.	-
	02/19/93	0001			2820		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/30/93	N001	MG/L		2670	H	10	-
TOTAL ORGANIC CARBON	04/22/88	0001	MG/L		53.5		1.	-
	01/29/91	0001		<	1.	L	1.	-
	06/04/91	0001		<	1.		1.	-
	02/25/92	0001			1.		1.	-
URANIUM	04/22/88	0001	MG/L		0.0072		0.003	-
	06/25/89	0001			0.0078	L	0.003	-
	12/01/89	0001			0.009		0.003	-
	06/21/90	0001			0.0068	JL	0.003	-
	01/29/91	0001			0.0094	L	0.0003	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0653
NORTH COORDINATE: 61249.3 FT
EAST COORDINATE: 89596.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
URANIUM	06/04/91	0001	MG/L		0.014		0.001	-
	02/26/92	0001			0.010		0.001	-
	11/19/92	0001			0.012		0.001	-
	02/19/93	0001			0.013		0.005	-
	06/30/93	0001			0.011		0.001	-
URANIUM (TOTAL)	11/19/92	N001	MG/L		0.011		0.001	-
	06/30/93	N001			0.01		0.001	-
VANADIUM	06/25/89	0001	MG/L		0.05	L	0.01	-
	12/01/89	0001		<	0.01		0.01	-
	06/21/90	0001			0.03	JL	0.01	-
	01/29/91	0001			0.01	L	0.01	-
	06/04/91	0001		<	0.01	L	0.01	-
	02/25/92	0001		<	0.01		0.01	-
	11/19/92	0001			0.0093		0.0019	-
	06/30/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	11/19/92	N001	MG/L		0.0080		0.0019	-
	06/30/93	N001		<	0.01		0.01	-
ZINC	06/25/89	0001	MG/L	<	0.005	L	0.005	-
	12/01/89	0001		<	0.005		0.005	-
	06/21/90	0001		<	0.005	JL	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/04/91	0001		<	0.005		0.005	-
	02/25/92	0001			0.011		0.005	-
	11/19/92	0001			0.0048		0.0010	-
	06/30/93	0001			0.016	J	0.005	-
ZINC (TOTAL)	11/19/92	N001	MG/L		0.0070		0.0010	-
	06/30/93	N001			0.020	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0654
NORTH COORDINATE: 59351.4 FT
EAST COORDINATE: 91063.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/26/88	0001	MG/L CACO3		179.	L	-	-
	06/09/89	0001			193.	L	-	-
	12/03/89	0001			159.		-	-
	06/21/90	0001			170.	L	-	-
	01/29/91	0001			168.	L	-	-
	06/02/91	0001			176.	L	-	-
	08/12/92	0001			174	L	-	-
	11/22/92	0001			184		-	-
	02/18/93	0001			184		-	-
	06/30/93	N001			175		-	-
ALUMINUM	06/09/89	0001	MG/L	<	0.1	L	0.1	-
	12/03/89	0001		<	0.1		0.1	-
	06/21/90	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/02/91	0001		<	0.05	L	0.05	-
	08/12/92	0001		<	0.2	*L	0.2	-
AMMONIUM	04/26/88	0001	MG/L	<	0.1	L	0.1	-
	06/09/89	0001		<	0.1	L	0.1	-
	12/03/89	0001			0.1		0.1	-
	06/21/90	0001		<	0.1	HL	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/02/91	0001			0.2	L	0.1	-
AMMONIUM (TOTAL)	06/30/93	N001	MG/L	<	0.1		0.1	-
ANTIMONY	06/09/89	0001	MG/L	<	0.003	L	0.003	-
	12/03/89	0001		<	0.003		0.003	-
	06/21/90	0001		<	0.003	L	0.003	-
	01/29/91	0001		<	0.003	L	0.003	-
	06/02/91	0001		<	0.003	L	0.003	-
	08/12/92	0001		<	0.06	L	0.06	-
ARSENIC	04/26/88	0001	MG/L	<	0.001	JL	0.01	-
	06/09/89	0001		<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.01	L	0.01	-
	08/12/92	0001		<	0.01	WL	0.01	-
	11/22/92	0001		<	0.0015		0.0015	-
	06/30/93	0001		<	0.005		0.005	-
ARSENIC (TOTAL)	11/22/92	N001	MG/L	<	0.0015		0.0015	-
	06/30/93	N001		<	0.005	*HJL	0.005	-
BARIUM	06/09/89	0001	MG/L		0.1	L	0.1	-
	12/03/89	0001			0.1		0.1	-
	06/21/90	0001			0.2	L	0.1	-
	01/29/91	0001			0.2	L	0.1	-
	06/02/91	0001			0.15	L	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0654
NORTH COORDINATE: 59351.4 FT
EAST COORDINATE: 91063.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BARIUM	08/12/92	0001	MG/L	<	0.2	L	0.2	-
	11/22/92	0001			0.14		0.0015	-
	06/30/93	0001			0.1		0.1	-
BARIUM (TOTAL)	11/22/92	N001	MG/L		0.14		0.0015	-
	06/30/93	N001			0.1		0.1	-
BERYLLIUM	06/09/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.005		0.005	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.005	L	0.005	-
	08/12/92	0001		<	0.005	L	0.005	-
BORON	06/09/89	0001	MG/L	<	0.1	L	0.1	-
	12/03/89	0001		<	0.1		0.1	-
	06/21/90	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/02/91	0001		<	0.05	L	0.05	-
BROMIDE	01/29/91	0001	MG/L	<	0.1	L	0.1	-
	06/02/91	0001		<	0.1	L	0.1	-
CADMIUM	04/26/88	0001	MG/L		0.002	L	0.001	-
	06/09/89	0001		<	0.001	L	0.001	-
	12/03/89	0001		<	0.001		0.001	-
	06/21/90	0001		<	0.001	L	0.001	-
	01/29/91	0001		<	0.001	L	0.001	-
	06/02/91	0001		<	0.001	L	0.001	-
	08/12/92	0001		<	0.005	L	0.005	-
	11/22/92	0001		<	0.00013		0.00013	-
CADMIUM (TOTAL)	11/22/92	N001	MG/L		0.00021	NS	0.00013	-
CALCIUM	04/26/88	0001	MG/L		40.9	L	0.01	-
	06/09/89	0001			42.1	L	0.01	-
	12/03/89	0001			42.		0.01	-
	06/21/90	0001			41.9	L	0.01	-
	01/29/91	0001			42.6	L	0.01	-
	06/02/91	0001			45.5	L	0.5	-
	08/12/92	0001			42	L	5	-
	02/18/93	0001			38.1		0.5	-
	06/30/93	0001			41.3		0.5	-
CALCIUM (TOTAL)	06/30/93	N001	MG/L		38.7		0.5	-
CHLORIDE	04/26/88	0001	MG/L		5.7	L	1.	-
	06/09/89	0001			3.6	L	1.	-
	12/03/89	0001			5.4		1.	-
	06/21/90	0001			6.	L	1.	-
	01/29/91	0001		<	1.	JL	1.	-
	06/02/91	0001			5.3	L	0.5	-
	08/12/92	0001			5.6	L	0.016	-
	02/18/93	0001			5.8		0.5	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
S - REPORTED VALUE DETERMINED USING METHOD OF STD ADDITION (MSA)

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0654
NORTH COORDINATE: 59351.4 FT
EAST COORDINATE: 91063.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CHLORIDE (TOTAL)	06/30/93	N001	MG/L		6.8		0.5	-
CHROMIUM	06/09/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.01	L	0.01	-
	08/12/92	0001		<	0.01	L	0.01	-
	11/22/92	0001		<	0.0053		0.0053	-
CHROMIUM (TOTAL)	11/22/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	06/09/89	0001	MG/L	<	0.05	L	0.05	-
	12/03/89	0001		<	0.05		0.05	-
	06/21/90	0001		<	0.05	L	0.05	-
	01/29/91	0001		<	0.05	L	0.05	-
	06/02/91	0001		<	0.03	L	0.03	-
COPPER	06/09/89	0001	MG/L	<	0.02	L	0.02	-
	12/03/89	0001		<	0.02		0.02	-
	06/21/90	0001		<	0.02	L	0.02	-
	01/29/91	0001		<	0.02	L	0.02	-
	06/02/91	0001		<	0.01	L	0.01	-
CYANIDE	06/09/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
DISSOLVED OXYGEN	06/30/93	N001	MG/L		0.0		-	-
FLUORIDE	06/09/89	0001	MG/L		0.2	L	0.1	-
	12/03/89	0001			0.2		0.1	-
	06/21/90	0001			0.2	L	0.1	-
	01/29/91	0001			0.2	L	0.1	-
	06/02/91	0001		<	0.1	L	0.1	-
GROSS ALPHA	04/26/88	0001	PCI/L		3.0	L	0.2	2.4
	01/29/91	0001			0.2	L	1.	2.1
	06/02/91	0001			1.8	L	1.	4.0
	08/12/92	0001			0.7	L	4.6	2.3
	11/22/92	0001			8.7	N	2.9	3.2
	02/18/93	0001			0		5	5
	06/30/93	0001			0		3	4
GROSS ALPHA (TOTAL)	11/22/92	N001	PCI/L		0.0	N	6.2	3.3
	06/30/93	N001			1		2	4
GROSS BETA	04/26/88	0001	PCI/L		4.3	L	1.	1.4
	01/29/91	0001			2.6	L	0.5	1.7
	06/02/91	0001			7.2	L	0.5	2.6
	08/12/92	0001			2.3	L	3.8	2.3
	11/22/92	0001			0.0	N	5.2	3.0
	02/18/93	0001			0		11	5
	06/30/93	0001			0		4	4
GROSS BETA (TOTAL)	11/22/92	N001	PCI/L		3.1	N	4.7	2.9

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0654
NORTH COORDINATE: 59351.4 FT
EAST COORDINATE: 91063.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS BETA (TOTAL)	06/30/93	N001	PCI/L		0		4	4
IRON	06/09/89	0001	MG/L		0.04	L	0.03	-
	12/03/89	0001		<	0.03		0.03	-
	06/21/90	0001		<	0.03	L	0.03	-
	01/29/91	0001			0.06	L	0.03	-
	06/02/91	0001		<	0.03	L	0.03	-
	08/12/92	0001		<	0.1	L	0.1	-
	02/18/93	0001		<	0.03		0.03	-
	06/30/93	0001			0.03	J	0.03	-
IRON (TOTAL)	06/30/93	N001	MG/L		0.06	J	0.03	-
LEAD	06/09/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.005	L	0.005	-
	11/22/92	0001		<	0.0015	W	0.0015	-
LEAD (TOTAL)	11/22/92	N001	MG/L	<	0.0015		0.0015	-
LEAD-210	11/22/92	0001	PCI/L		0.6		2.0	1.2
LEAD-210 (TOTAL)	11/22/92	N001	PCI/L		4.7		0.3	0.8
MAGNESIUM	04/26/88	0001	MG/L		17.6	L	0.001	-
	06/09/89	0001			18.1	L	0.001	-
	12/03/89	0001			18.5		0.001	-
	06/21/90	0001			18.5	L	0.001	-
	01/29/91	0001			20.5	L	0.001	-
	06/02/91	0001			19.2	L	0.1	-
	08/12/92	0001			18	L	5	-
	02/18/93	0001			16.5		0.1	-
	06/30/93	0001			17.4		0.1	-
MAGNESIUM (TOTAL)	06/30/93	N001	MG/L		17.4		0.1	-
MANGANESE	06/09/89	0001	MG/L		0.05	L	0.01	-
	12/03/89	0001			0.04		0.01	-
	06/21/90	0001			0.04	L	0.01	-
	01/29/91	0001			0.04	L	0.01	-
	06/02/91	0001			0.04	L	0.01	-
	08/12/92	0001			0.038	L	0.01	-
	11/22/92	0001			0.033		0.0015	-
	02/18/93	0001			0.03		0.01	-
	06/30/93	0001			0.04		0.01	-
MANGANESE (TOTAL)	11/22/92	N001	MG/L		0.029		0.0015	-
	06/30/93	N001			0.03		0.01	-
MERCURY	06/09/89	0001	MG/L	<	0.0002	L	0.0002	-
	12/03/89	0001		<	0.0002		0.0002	-
	06/21/90	0001		<	0.0002	L	0.0002	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0654
NORTH COORDINATE: 59351.4 FT
EAST COORDINATE: 91063.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MOLYBDENUM	04/26/88	0001	MG/L		0.01	L	0.01	-
	06/09/89	0001		<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.01	L	0.01	-
	08/12/92	0001		<	0.007	L	0.007	-
	11/22/92	0001		<	0.0049	N	0.0049	-
	06/30/93	0001		<	0.01		0.01	-
MOLYBDENUM (TOTAL)	11/22/92	N001	MG/L	<	0.0049	N	0.0049	-
	06/30/93	N001		<	0.01		0.01	-
NICKEL	06/09/89	0001	MG/L	<	0.04	L	0.04	-
	12/03/89	0001		<	0.04		0.04	-
	06/21/90	0001		<	0.04	L	0.04	-
	01/29/91	0001		<	0.04	L	0.04	-
	06/02/91	0001		<	0.04	L	0.04	-
NITRATE	04/26/88	0001	MG/L		0.3	JL	1.	-
	06/09/89	0001			4.4	L	1.	-
	12/03/89	0001			3.1		1.	-
	06/21/90	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	1.	L	1.	-
	06/02/91	0001			3.5	L	1.	-
	08/12/92	0001			1.7	L	0.075	-
	11/22/92	0001			0.38		0.044	-
	02/18/93	0001		<	1		1	-
NITRATE (TOTAL)	06/30/93	N001	MG/L	<	1		1	-
NITRITE AND NITRATE	01/29/91	0001	MG/L	<	1.	JL	1.	-
	06/02/91	0001			0.79	L	0.05	-
PH	04/26/88	0001	SU		7.77	L	-	-
	06/09/89	0001			7.55	L	-	-
	12/03/89	0001			7.89		-	-
	06/21/90	0001			7.81	L	-	-
	01/29/91	0001			7.69	L	-	-
	06/02/91	0001			7.80	L	-	-
	08/12/92	0001			7.61	L	-	-
	11/22/92	0001			7.74		-	-
	02/18/93	0001			7.69		-	-
	06/30/93	N001			7.86		-	-
PHOSPHATE	06/09/89	0001	MG/L		0.6	L	0.1	-
	12/03/89	0001			0.1		0.1	-
	06/21/90	0001		<	0.1	L	0.1	-
PHOSPHATE (TOTAL)	06/30/93	N001	MG/L	<	0.1		0.1	-
POTASSIUM	04/26/88	0001	MG/L		2.47	L	0.01	-
	06/09/89	0001			2.5	L	0.01	-
	12/03/89	0001			2.2		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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OTHER PARAMETER VALUE FLAGS:
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L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0654
NORTH COORDINATE: 59351.4 FT
EAST COORDINATE: 91063.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
POTASSIUM	06/21/90	0001	MG/L		2.5	L	0.01	-
	01/29/91	0001			2.4	L	0.01	-
	06/02/91	0001			2.6	L	0.01	-
	08/12/92	0001			2.2	*L	0.575	-
	02/18/93	0001			2.3		0.1	-
	06/30/93	0001			2.6		0.1	-
POTASSIUM (TOTAL)	06/30/93	N001	MG/L		2.4		0.1	-
RADIUM-226	06/09/89	0001	PCI/L		0.3	L	1.	0.2
	12/03/89	0001			0.3		1.	0.2
	06/21/90	0001			0.1	L	1.	0.2
	01/29/91	0001			0.2	L	1.	0.2
	06/02/91	0001			0.4	L	1.	0.4
	08/12/92	0001			0.07	L	0.42	0.04
	11/22/92	0001			0.6		0.3	0.3
RADIUM-226 (TOTAL)	11/22/92	N001	PCI/L		0.9		0.3	0.4
RADIUM-228	06/09/89	0001	PCI/L		0.0	L	1.	0.7
	12/03/89	0001			0.0		1.	1.9
	06/21/90	0001			0.7	L	1.	0.9
	01/29/91	0001			1.1	L	1.	0.8
	06/02/91	0001			0.1	JL	1.	1.5
	08/12/92	0001			0.4	L	2.0	1.0
	11/22/92	0001			2.8		2.5	1.7
RADIUM-228 (TOTAL)	11/22/92	N001	PCI/L		3.5		2.0	1.5
REDOX POTENTIAL	11/22/92	0001	mVOLTS		111.7		-	-
	06/30/93	N001			70		-	-
SELENIUM	04/26/88	0001	MG/L	<	0.005	L	0.005	-
	06/09/89	0001		<	0.005	L	0.005	-
	12/03/89	0001		<	0.005		0.005	-
	06/21/90	0001		<	0.005	L	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/02/91	0001		<	0.005	JL	0.005	-
	08/12/92	0001		<	0.005	WL	0.005	-
	11/22/92	0001		<	0.0015	NW	0.0015	-
SELENIUM (TOTAL)	11/22/92	N001	MG/L	<	0.0015		0.0015	-
SILICA - SIO2	06/09/89	0001	MG/L		13.	L	2.	-
	12/03/89	0001			13.0		2.	-
	06/21/90	0001			13.	L	2.	-
	01/29/91	0001			13.	L	2.	-
	06/02/91	0001			13.6	L	0.1	-
SILICA - SIO2 (TOTAL)	06/30/93	N001	MG/L		12.4		0.5	-
SILVER	06/09/89	0001	MG/L	<	0.01	L	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0654
NORTH COORDINATE: 59351.4 FT
EAST COORDINATE: 91063.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SILVER	12/03/89	0001	MG/L	<	0.01		0.01	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.01	L	0.01	-
SODIUM	04/26/88	0001	MG/L		23.4	L	0.002	-
	06/09/89	0001			22.2	L	0.002	-
	12/03/89	0001			21.		0.002	-
	06/21/90	0001			22.9	L	0.002	-
	01/29/91	0001			23.5	L	0.002	-
	06/02/91	0001			24.	L	1.	-
	08/12/92	0001			24	L	5	-
	02/18/93	0001			24.8		0.1	-
	06/30/93	0001			24		1	-
SODIUM (TOTAL)	06/30/93	N001	MG/L		24		1	-
SPECIFIC CONDUCTANCE	04/26/88	0001	UMHO/CM		300.	L	-	-
	06/09/89	0001			298.	L	-	-
	12/03/89	0001			325.		-	-
	06/21/90	0001			335.	L	-	-
	01/29/91	0001			423.	L	-	-
	06/02/91	0001			430.	L	-	-
	08/12/92	0001			365	L	-	-
	11/22/92	0001			340		-	-
	02/18/93	0001			347		-	-
	06/30/93	N001			370		-	-
STRONTIUM	06/21/90	0001	MG/L		0.39	*L	0.1	-
	01/29/91	0001			0.4	L	0.1	-
	06/02/91	0001			0.40	L	0.01	-
	08/12/92	0001			0.41	L	0.2	-
	11/22/92	0001			0.43	+	0.00035	-
	06/30/93	0001			0.38		0.01	-
STRONTIUM (TOTAL)	11/22/92	N001	MG/L		0.38	+	0.00035	-
	06/30/93	N001			0.38		0.01	-
SULFATE	04/26/88	0001	MG/L		27.	L	0.1	-
	06/09/89	0001			40.	L	0.1	-
	12/03/89	0001			41.		0.1	-
	06/21/90	0001			38.3	L	0.1	-
	01/29/91	0001			40.3	L	0.1	-
	06/02/91	0001			40.	L	0.1	-
	08/12/92	0001			42	L	0.059	-
	11/22/92	0001			43		1.0	-
	02/18/93	0001			48		1	-
SULFATE (TOTAL)	11/22/92	N001	MG/L		43		1.0	-
	06/30/93	N001			42		1	-
SULFIDE	06/09/89	0001	MG/L	<	0.1	L	0.1	-
	12/03/89	0001			0.4		0.1	-
	01/29/91	0001		<	0.1	JL	0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
+ - CORRELATION COEFFICIENT FOR MSA < 0.995
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0654
NORTH COORDINATE: 59351.4 FT
EAST COORDINATE: 91063.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SULFIDE	06/02/91	0001	MG/L	<	1.	IJL	1.	-
TEMPERATURE	04/26/88	0001	C - DEGREE		15.5	L	-	-
	06/09/89	0001			17.0	L	-	-
	12/03/89	0001			15.5		-	-
	06/21/90	0001			16.0	L	-	-
	01/29/91	0001			14.0	L	-	-
	06/02/91	0001			15.7	L	-	-
	08/12/92	0001			17.4	L	-	-
	11/22/92	0001			14.8		-	-
	02/18/93	0001			15.3		-	-
	06/30/93	N001			18.9		-	-
THALLIUM	06/09/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.1		0.1	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.01	L	0.01	-
THORIUM-230	01/29/91	0001	PCI/L		0.2	L	1.	0.4
	06/02/91	0001			0.5	L	1.	0.3
TIN	06/09/89	0001	MG/L	<	0.005	L	0.005	-
	12/03/89	0001		<	0.005		0.005	-
	06/21/90	0001		<	0.005	L	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/02/91	0001		<	0.01	IL	0.01	-
TOTAL DISSOLVED SOLIDS	04/26/88	0001	MG/L		241.	L	10.	-
	06/09/89	0001			227.	L	10.	-
	12/03/89	0001			244.		10.	-
	06/21/90	0001			254.	L	10.	-
	01/29/91	0001			204.	L	10.	-
	06/02/91	0001			252.	L	10.	-
	08/12/92	0001			280	L	42	-
	02/18/93	0001			230		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/30/93	N001	MG/L		230	H	10	-
TOTAL ORGANIC CARBON	04/26/88	0001	MG/L		46.1	L	1.	-
	01/29/91	0001		<	1.	JL	1.	-
	06/02/91	0001		<	1.	L	1.	-
	08/12/92	0001		<	1.0	L	1.0	-
URANIUM	04/26/88	0001	MG/L		0.0009	JL	0.003	-
	06/09/89	0001			0.0037	L	0.003	-
	12/03/89	0001			0.001	J	0.003	-
	06/21/90	0001			0.0018	JL	0.003	-
	01/29/91	0001			0.0008	L	0.0003	-
	06/02/91	0001		<	0.001	L	0.001	-
	11/22/92	0001			0.001		0.001	-
	02/18/93	0001			0.001		0.001	-
	06/30/93	0001		<	0.001		0.001	-
URANIUM (TOTAL)	11/22/92	N001	MG/L		0.001		0.001	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0654
NORTH COORDINATE: 59351.4 FT
EAST COORDINATE: 91063.4 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
URANIUM (TOTAL)	06/30/93	N001	MG/L	<	0.001		0.001	-
VANADIUM	06/09/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/02/91	0001		<	0.01	L	0.01	-
	08/12/92	0001		<	0.05	L	0.05	-
	11/22/92	0001		<	0.0019		0.0019	-
	06/30/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	11/22/92	N001	MG/L	<	0.0019		0.0019	-
	06/30/93	N001		<	0.01		0.01	-
ZINC	06/09/89	0001	MG/L	<	0.005	L	0.005	-
	12/03/89	0001		<	0.005		0.005	-
	06/21/90	0001		<	0.005	L	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/02/91	0001		<	0.005	L	0.005	-
	08/12/92	0001		<	0.02	L	0.02	-
	11/22/92	0001		<	0.0010		0.0010	-
	06/30/93	0001			0.026	J	0.005	-
ZINC (TOTAL)	11/22/92	N001	MG/L		0.0030		0.0010	-
	06/30/93	N001			0.033	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCAT
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0655
NORTH COORDINATE: 59754.6 FT
EAST COORDINATE: 88624.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/21/88	0001	MG/L CACO3		358.	L	-	-
	06/09/89	0001			325.	L	-	-
	12/03/89	0001			325.		-	-
	06/25/90	0001			347.		-	-
	01/29/91	0001			299.		-	-
	06/02/91	0001			356.		-	-
	02/22/92	0001			313		-	-
	08/13/92	0001			282	L	-	-
	11/19/92	0001			300		-	-
	02/19/93	0001			293		-	-
	06/26/93	N001			296		-	-
ALUMINUM	06/09/89	0001	MG/L	<	0.1	L	0.1	-
	12/03/89	0001		<	0.1		0.1	-
	06/25/90	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1		0.1	-
	06/02/91	0001		<	0.05		0.05	-
	02/22/92	0001		<	0.05		0.05	-
	08/13/92	0001		<	0.2	*L	0.2	-
AMMONIUM	04/21/88	0001	MG/L		460.	L	0.1	-
	06/09/89	0001			290.	L	0.1	-
	12/03/89	0001			340.		0.1	-
	06/25/90	0001			297.	H	0.1	-
	01/29/91	0001			239.		0.1	-
	06/02/91	0001			43.4		0.1	-
	02/22/92	0001			184.		10.	-
	02/19/93	0001			245		0.1	-
AMMONIUM (TOTAL)	06/26/93	N001	MG/L		189		0.1	-
ANTIMONY	06/09/89	0001	MG/L	<	0.0003	JL	0.003	-
	12/03/89	0001		<	0.003		0.003	-
	06/25/90	0001		<	0.003		0.003	-
	01/29/91	0001		<	0.003		0.003	-
	06/02/91	0001		<	0.003		0.003	-
	02/22/92	0001		<	0.003		0.003	-
	08/13/92	0001		<	0.06	L	0.06	-
ARSENIC	04/21/88	0001	MG/L		0.012	L	0.01	-
	06/09/89	0001		<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01	J	0.01	-
	01/29/91	0001		<	0.01		0.01	-
	06/02/91	0001		<	0.05	I	0.05	-
	02/22/92	0001		<	0.01		0.01	-
	08/13/92	0001		<	0.01	WL	0.01	-
	11/19/92	0001		<	0.0015		0.0015	-
	06/26/93	0001		<	0.005		0.005	-
ARSENIC (TOTAL)	11/19/92	N001	MG/L	<	0.0015		0.0015	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
H - HOLD TIME EXPIRED, VALUE SUSPECT
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0655
NORTH COORDINATE: 59754.6 FT
EAST COORDINATE: 88624.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ARSENIC (TOTAL)	06/26/93	N001	MG/L	<	0.005		0.005	-
BARIUM	06/09/89	0001	MG/L	<	0.1	L	0.1	-
	12/03/89	0001		<	0.1		0.1	-
	06/25/90	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1		0.1	-
	06/02/91	0001			0.02		0.01	-
	02/22/92	0001			0.02		0.01	-
	08/13/92	0001		<	0.2	L	0.2	-
	11/19/92	0001			0.018		0.0015	-
	06/26/93	0001		<	0.1		0.1	-
BARIUM (TOTAL)	11/19/92	N001	MG/L		0.020		0.0015	-
	06/26/93	N001		<	0.1		0.1	-
BERYLLIUM	06/09/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.005		0.005	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	06/02/91	0001		<	0.005		0.005	-
	08/13/92	0001		<	0.005	L	0.005	-
BORON	06/09/89	0001	MG/L	<	0.1	L	0.1	-
	12/03/89	0001		<	0.1		0.1	-
	06/25/90	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1		0.1	-
	06/02/91	0001		<	0.05		0.05	-
BROMIDE	01/29/91	0001	MG/L	<	0.1		0.1	-
	06/02/91	0001			0.5		0.1	-
CADMIUM	04/21/88	0001	MG/L		0.030	L	0.001	-
	06/09/89	0001			0.120	L	0.001	-
	12/03/89	0001		<	0.001		0.001	-
	06/25/90	0001		<	0.001		0.001	-
	01/29/91	0001		<	0.001		0.001	-
	06/02/91	0001		<	0.001		0.001	-
	02/22/92	0001		<	0.0005		0.0005	-
	08/13/92	0001		<	0.005	WL	0.005	-
	11/19/92	0001		<	0.00013	W	0.00013	-
CADMIUM (TOTAL)	11/19/92	N001	MG/L	<	0.00013	NW	0.00013	-
CALCIUM	04/21/88	0001	MG/L		518.	L	0.01	-
	06/09/89	0001			429.	L	0.01	-
	12/03/89	0001			433.		0.01	-
	06/25/90	0001			395.		0.01	-
	01/29/91	0001			420.		0.01	-
	06/02/91	0001			463.		0.5	-
	02/22/92	0001			390.		0.5	-
	08/13/92	0001			410	L	5	-
	02/19/93	0001			372		0.5	-
	06/26/93	0001			370		0.5	-
CALCIUM (TOTAL)	06/26/93	N001	MG/L		350		0.5	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0655
NORTH COORDINATE: 59754.6 FT
EAST COORDINATE: 88624.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CHLORIDE	04/21/88	0001	MG/L		34.	L	1.	-
	06/09/89	0001			36.	L	1.	-
	12/03/89	0001			26.6		1.	-
	06/25/90	0001			35.		1.	-
	01/29/91	0001			38.	J	1.	-
	06/02/91	0001			33.		0.5	-
	02/22/92	0001			30.		1.	-
	08/13/92	0001			29	L	0.016	-
	02/19/93	0001			29.8		0.5	-
CHLORIDE (TOTAL)	06/26/93	N001	MG/L		27.7		0.5	-
CHROMIUM	06/09/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	06/02/91	0001		<	0.01		0.01	-
	02/22/92	0001		<	0.01		0.01	-
	08/13/92	0001		<	0.01	L	0.01	-
	11/19/92	0001		<	0.0053		0.0053	-
CHROMIUM (TOTAL)	11/19/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	06/09/89	0001	MG/L	<	0.05	L	0.05	-
	12/03/89	0001		<	0.05		0.05	-
	06/25/90	0001		<	0.05		0.05	-
	01/29/91	0001		<	0.05		0.05	-
	06/02/91	0001		<	0.03		0.03	-
COPPER	06/09/89	0001	MG/L		0.02	L	0.02	-
	12/03/89	0001		<	0.02		0.02	-
	06/25/90	0001		<	0.02		0.02	-
	01/29/91	0001		<	0.02		0.02	-
	06/02/91	0001		<	0.01		0.01	-
CYANIDE	06/09/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
DISSOLVED OXYGEN	11/19/92	0001	MG/L		5.3		-	-
	06/26/93	N001			3.2		-	-
FLUORIDE	06/09/89	0001	MG/L		0.2	L	0.1	-
	12/03/89	0001			0.1		0.1	-
	06/25/90	0001			0.1		0.1	-
	01/29/91	0001			0.2		0.1	-
	06/02/91	0001		<	0.1		0.1	-
GROSS ALPHA	04/21/88	0001	PCI/L		120.	L	0.2	40.
	01/29/91	0001			17.		1.	35.
	06/02/91	0001			2.5		1.	36.4
	02/24/92	0001			0.0		1.0	31.0
	08/13/92	0001			10	L	61	30
	11/19/92	0001			26.5	N	25.0	20.3
	02/19/93	0001			0		48	48

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
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GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0655
NORTH COORDINATE: 59754.6 FT
EAST COORDINATE: 88624.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS ALPHA	06/26/93	0001	PCI/L		14		29	48
GROSS ALPHA (TOTAL)	11/19/92	N001	PCI/L		0.0	N	52.8	28.3
	06/26/93	N001			25		26	45
GROSS BETA	04/21/88	0001	PCI/L		62.	L	1.	16.
	01/29/91	0001			37.		0.5	24.
	06/02/91	0001			24.1		0.5	21.3
	02/24/92	0001			24.8		0.5	22.0
	08/13/92	0001			15	L	71	41
	11/19/92	0001			0.0	N	42.7	24.9
	02/19/93	0001			1		59	26
	06/26/93	0001			35		44	42
GROSS BETA (TOTAL)	11/19/92	N001	PCI/L		25.5	N	39.0	24.4
	06/26/93	N001			0		44	40
IRON	06/09/89	0001	MG/L		0.09	L	0.03	-
	12/03/89	0001		<	0.03		0.03	-
	06/25/90	0001			0.09		0.03	-
	01/29/91	0001			0.09		0.03	-
	06/02/91	0001		<	0.03		0.03	-
	02/22/92	0001		<	0.03		0.03	-
	08/13/92	0001		<	0.1	L	0.1	-
	02/19/93	0001		<	0.03		0.03	-
	06/26/93	0001		<	0.03	J	0.03	-
IRON (TOTAL)	06/26/93	N001	MG/L		0.06	J	0.03	-
LEAD	06/09/89	0001	MG/L		0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01	J	0.01	-
	01/29/91	0001		<	0.01		0.01	-
	06/02/91	0001		<	0.005		0.005	-
	11/19/92	0001		<	0.0015		0.0015	-
LEAD (TOTAL)	11/19/92	N001	MG/L	<	0.0015	W	0.0015	-
LEAD-210	11/19/92	0001	PCI/L		0.3		2.0	1.2
LEAD-210 (TOTAL)	11/19/92	N001	PCI/L		5.2		0.3	0.8
MAGNESIUM	04/21/88	0001	MG/L		295.	L	0.001	-
	06/09/89	0001			311.	L	0.001	-
	12/03/89	0001			321.		0.001	-
	06/25/90	0001			306.		0.001	-
	01/29/91	0001			319.		0.001	-
	06/02/91	0001			350.		0.5	-
	02/22/92	0001			301.		0.5	-
	08/13/92	0001			320	L	5	-
	02/19/93	0001			288		0.1	-
	06/26/93	0001			271		0.1	-
MAGNESIUM (TOTAL)	06/26/93	N001	MG/L		266		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
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GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0655
NORTH COORDINATE: 59754.6 FT
EAST COORDINATE: 88624.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MANGANESE	06/09/89	0001	MG/L		0.12	L	0.01	-
	12/03/89	0001			0.07		0.01	-
	06/25/90	0001			0.08		0.01	-
	01/29/91	0001			0.08		0.01	-
	06/02/91	0001			0.08		0.01	-
	02/22/92	0001			0.04		0.01	-
	08/13/92	0001			0.068	L	0.01	-
	11/19/92	0001			0.055		0.0015	-
	02/19/93	0001			0.04		0.01	-
	06/26/93	0001			0.05		0.01	-
MANGANESE (TOTAL)	11/19/92	N001	MG/L		0.051		0.0015	-
	06/26/93	N001			0.05		0.01	-
MERCURY	06/09/89	0001	MG/L	<	0.0002	L	0.0002	-
	12/03/89	0001		<	0.0002		0.0002	-
	06/25/90	0001		<	0.0002		0.0002	-
MOLYBDENUM	04/21/88	0001	MG/L		0.10	L	0.01	-
	06/09/89	0001		<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001			0.06		0.01	-
	06/02/91	0001		<	0.01		0.01	-
	02/22/92	0001		<	0.01		0.01	-
	08/13/92	0001			0.010	L	0.007	-
	11/19/92	0001		<	0.0049	N	0.0049	-
	06/26/93	0001		<	0.01		0.01	-
MOLYBDENUM (TOTAL)	11/19/92	N001	MG/L	<	0.0049	N	0.0049	-
	06/26/93	N001		<	0.01		0.01	-
NICKEL	06/09/89	0001	MG/L	<	0.04	L	0.04	-
	12/03/89	0001		<	0.04		0.04	-
	06/25/90	0001		<	0.04		0.04	-
	01/29/91	0001		<	0.04		0.04	-
	06/02/91	0001		<	0.04		0.04	-
NITRATE	04/21/88	0001	MG/L		1140.	L	1.	-
	06/09/89	0001			830.	L	1.	-
	12/03/89	0001			753.		1.	-
	06/25/90	0001			656.		1.	-
	01/29/91	0001			655.		1.	-
	06/02/91	0001			478.		1.	-
	02/22/92	0001			581.		75.	-
	08/13/92	0001			620	IL	0.75	-
	11/19/92	0001			530		0.044	-
	02/19/93	0001			648		1	-
NITRATE (TOTAL)	06/26/93	N001	MG/L		598		1	-
NITRITE AND NITRATE	01/29/91	0001	MG/L		655.		1.	-
	06/02/91	0001			108.		0.05	-
PH	04/21/88	0001	SU		7.15	L	-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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OTHER PARAMETER VALUE FLAGS:
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GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
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FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
PH	06/09/89	0001	SU		7.50	L	-	-
	12/03/89	0001			7.21		-	-
	06/25/90	0001			7.04		-	-
	01/29/91	0001			7.08	L	-	-
	06/02/91	0001			7.26		-	-
	02/22/92	0001			7.05		-	-
	08/13/92	0001			7.31	L	-	-
	11/19/92	0001			7.33		-	-
	02/19/93	0001			7.14		-	-
	06/26/93	N001			7.23		-	-
PHOSPHATE	06/09/89	0001	MG/L		0.6	L	0.1	-
	12/03/89	0001			0.3		0.1	-
	06/25/90	0001			0.4		0.1	-
PHOSPHATE (TOTAL)	06/26/93	N001	MG/L		0.3		0.1	-
POTASSIUM	04/21/88	0001	MG/L		43.4	L	0.01	-
	06/09/89	0001			36.6	L	0.01	-
	12/03/89	0001			30.		0.01	-
	06/25/90	0001			32.8		0.01	-
	01/29/91	0001			25.8		0.01	-
	06/02/91	0001			27.		5.	-
	02/22/92	0001			25.		5.	-
	08/13/92	0001			30	*L	0.575	-
	02/19/93	0001			26.7		0.1	-
	06/26/93	0001			26.6		0.1	-
POTASSIUM (TOTAL)	06/26/93	N001	MG/L		25.3		0.1	-
RADIUM-226	06/09/89	0001	PCI/L		0.1	L	1.	0.2
	12/03/89	0001			0.1		1.	0.2
	06/25/90	0001			0.0		1.	0.1
	01/29/91	0001			0.1		1.	0.6
	06/02/91	0001			0.4		1.	0.4
	02/24/92	0001			0.1		1.0	0.2
	08/13/92	0001			0.1	L	0.5	0.1
	11/19/92	0001			0.7	L	0.3	0.3
RADIUM-226 (TOTAL)	11/19/92	N001	PCI/L		0.2		0.3	0.2
RADIUM-228	06/09/89	0001	PCI/L		0.4	L	1.	1.0
	12/03/89	0001			0.0		1.	1.9
	06/25/90	0001			1.5		1.	0.9
	01/29/91	0001			1.0		1.	0.9
	06/02/91	0001			0.0	J	1.	1.7
	02/24/92	0001			2.6		1.0	1.1
	08/13/92	0001			0.8	L	1.8	1.0
	11/19/92	0001			4.1		2.1	1.7
RADIUM-228 (TOTAL)	11/19/92	N001	PCI/L		2.7		2.0	1.4
REDOX POTENTIAL	11/19/92	0001	mVOLTS		457.9		-	-
	06/26/93	N001			460		-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0655
NORTH COORDINATE: 59754.6 FT
EAST COORDINATE: 88624.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SELENIUM	04/21/88	0001	MG/L		0.010	L	0.005	-
	06/09/89	0001			0.006	L	0.005	-
	12/03/89	0001		<	0.005		0.005	-
	06/25/90	0001		<	0.005		0.005	-
	01/29/91	0001		<	0.005		0.005	-
	06/02/91	0001		<	0.005	J	0.005	-
	02/22/92	0001		<	0.005		0.005	-
	08/13/92	0001		<	0.005	L	0.005	-
	11/19/92	0001		<	0.015	IN	0.015	-
SELENIUM (TOTAL)	11/19/92	N001	MG/L	<	0.0015		0.0015	-
SILICA - SIO2	06/09/89	0001	MG/L		16.	L	2.	-
	12/03/89	0001			15.6		2.	-
	06/25/90	0001			16.		2.	-
	01/29/91	0001			14.		2.	-
	06/02/91	0001			15.7		0.1	-
SILICA - SIO2 (TOTAL)	06/26/93	N001	MG/L		14.9	H	0.5	-
SILVER	06/09/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	06/02/91	0001		<	0.01		0.01	-
SODIUM	04/21/88	0001	MG/L		149.	L	0.002	-
	06/09/89	0001			177.	L	0.002	-
	12/03/89	0001			166.		0.002	-
	06/25/90	0001			165.		0.002	-
	01/29/91	0001			185.		0.002	-
	06/02/91	0001			190.		5.	-
	02/22/92	0001			163.		5.	-
	08/13/92	0001			170	L	5	-
	02/19/93	0001			157		0.1	-
	06/26/93	0001			150		1	-
SODIUM (TOTAL)	06/26/93	N001	MG/L		154		1	-
SPECIFIC CONDUCTANCE	04/21/88	0001	UMHO/CM		4950.	L	-	-
	06/09/89	0001			4150.	L	-	-
	12/03/89	0001			4650.		-	-
	06/25/90	0001			4550.		-	-
	01/29/91	0001			5300.		-	-
	06/02/91	0001			5190.		-	-
	02/22/92	0001			4260		-	-
	08/13/92	0001			449	L	-	-
	11/19/92	0001			3990		-	-
	02/19/93	0001			3910		-	-
	06/26/93	N001			424	R	-	-
STRONTIUM	06/25/90	0001	MG/L		2.68	*	0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
H - HOLD TIME EXPIRED, VALUE SUSPECT
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
R - UNUSABLE DATA POINT

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0655
NORTH COORDINATE: 59754.6 FT
EAST COORDINATE: 88624.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
STRONTIUM	01/29/91	0001	MG/L		3.0		0.1	-
	06/02/91	0001			2.98		0.01	-
	02/22/92	0001			2.54		0.01	-
	08/13/92	0001			3.0	L	0.2	-
	11/19/92	0001			3.2	S	0.00035	-
	06/26/93	0001			2.55		0.01	-
STRONTIUM (TOTAL)	11/19/92	N001	MG/L		3.4		0.00035	-
	06/26/93	N001			2.50		0.01	-
SULFATE	04/21/88	0001	MG/L		2950.	L	0.1	-
	06/09/89	0001			2770.	L	0.1	-
	12/03/89	0001			2730.		0.1	-
	06/25/90	0001			2660.		0.1	-
	01/29/91	0001			2760.		0.1	-
	06/02/91	0001			3540.		10.	-
	02/22/92	0001			2370.		10.	-
	08/13/92	0001			2000	IL	0.59	-
	11/19/92	0001			2400		1.0	-
	02/19/93	0001			2470		1	-
SULFATE (TOTAL)	11/19/92	N001	MG/L		2400		1.0	-
	06/26/93	N001			2140		1	-
SULFIDE	06/09/89	0001	MG/L	<	0.1	L	0.1	-
	12/03/89	0001		<	0.1		0.1	-
	01/29/91	0001		<	0.1		0.1	-
	06/02/91	0001			5.6	J	1.	-
TEMPERATURE	04/21/88	0001	C - DEGREE		16.0	L	-	-
	06/09/89	0001			17.0	L	-	-
	12/03/89	0001			16.0		-	-
	06/25/90	0001			18.0		-	-
	01/29/91	0001			14.0		-	-
	06/02/91	0001			15.8		-	-
	02/22/92	0001			15.3		-	-
	08/13/92	0001			19.3	L	-	-
	11/19/92	0001			16.2		-	-
	02/19/93	0001			14.1		-	-
	06/26/93	N001			20.5		-	-
THALLIUM	06/09/89	0001	MG/L	<	0.01	L	0.01	-
	12/03/89	0001		<	0.1		0.1	-
	06/25/90	0001		<	0.01		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	06/02/91	0001		<	0.01		0.01	-
THORIUM-230	01/29/91	0001	PCI/L		0.0		1.	0.2
	06/02/91	0001			0.7		1.	0.3
TIN	06/09/89	0001	MG/L	<	0.005	L	0.005	-
	12/03/89	0001		<	0.005		0.005	-
	06/25/90	0001			0.063		0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
S - REPORTED VALUE DETERMINED USING METHOD OF STD ADDITION (MSA)

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0655
NORTH COORDINATE: 59754.6 FT
EAST COORDINATE: 88624.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TIN	01/29/91	0001	MG/L	<	0.005		0.005	-
	06/02/91	0001		<	0.01	I	0.01	-
	02/22/92	0001		<	0.03	I	0.03	-
TOTAL DISSOLVED SOLIDS	04/21/88	0001	MG/L		4400.	L	10.	-
	06/09/89	0001			4490.	L	10.	-
	12/03/89	0001			4410.		10.	-
	06/25/90	0001			3940.		10.	-
	01/29/91	0001			4170.		10.	-
	06/02/91	0001			4160.		10.	-
	02/22/92	0001			3790.		10.	-
	08/13/92	0001			4200	L	42	-
	02/19/93	0001			3870		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/26/93	N001	MG/L		3680		10	-
TOTAL ORGANIC CARBON	04/21/88	0001	MG/L		101.	L	1.	-
	01/29/91	0001			1.2		1.	-
	06/02/91	0001			3.		1.	-
	02/22/92	0001			1.		1.	-
	08/13/92	0001			1.5	L	1.0	-
URANIUM	04/21/88	0001	MG/L		0.0326	L	0.003	-
	06/09/89	0001			0.028	L	0.003	-
	12/03/89	0001			0.030		0.003	-
	06/25/90	0001			0.019		0.003	-
	01/29/91	0001			0.0299		0.0003	-
	06/02/91	0001			0.020		0.001	-
	02/24/92	0001			0.024		0.001	-
	11/19/92	0001			0.029		0.001	-
	02/19/93	0001			0.028		0.005	-
	06/26/93	0001			0.026		0.001	-
URANIUM (TOTAL)	11/19/92	N001	MG/L		0.026		0.001	-
	06/26/93	N001			0.025		0.001	-
VANADIUM	06/09/89	0001	MG/L		0.08	L	0.01	-
	12/03/89	0001		<	0.01		0.01	-
	06/25/90	0001			0.02		0.01	-
	01/29/91	0001		<	0.01		0.01	-
	06/02/91	0001		<	0.01		0.01	-
	02/22/92	0001			0.02		0.01	-
	08/13/92	0001		<	0.05	L	0.05	-
	11/19/92	0001			0.0083		0.0019	-
	06/26/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	11/19/92	N001	MG/L		0.0070		0.0019	-
	06/26/93	N001		<	0.01		0.01	-
ZINC	06/09/89	0001	MG/L	<	0.005	L	0.005	-
	12/03/89	0001		<	0.005		0.005	-
	06/25/90	0001		<	0.005		0.005	-
	01/29/91	0001		<	0.005		0.005	-
	06/02/91	0001		<	0.005		0.005	-
	02/22/92	0001			0.059		0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0655
NORTH COORDINATE: 59754.6 FT
EAST COORDINATE: 88624.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ZINC	08/13/92	0001	MG/L		0.030	L	0.02	-
	11/19/92	0001			0.0071		0.0010	-
	06/26/93	0001			0.019	J	0.005	-
ZINC (TOTAL)	11/19/92	N001	MG/L		0.0050		0.0010	-
	06/26/93	N001			0.033	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0656
NORTH COORDINATE: 59545.2 FT
EAST COORDINATE: 89175.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	06/25/89	0001	MG/L CACO3		262.	L	-	-
	11/22/92	0001			260		-	-
	02/19/93	0001			260		-	-
	06/29/93	N001			241		-	-
ALUMINUM	06/25/89	0001	MG/L	<	0.1	L	0.1	-
AMMONIUM	06/25/89	0001	MG/L		120.	L	0.1	-
	02/19/93	0001			117		0.1	-
AMMONIUM (TOTAL)	06/29/93	N001	MG/L		118		0.1	-
ANTIMONY	06/25/89	0001	MG/L		0.008	JL	0.003	-
ARSENIC	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	11/22/92	0001		<	0.0015		0.0015	-
	06/29/93	0001		<	0.005		0.005	-
ARSENIC (TOTAL)	11/22/92	N001	MG/L	<	0.0015		0.0015	-
	06/29/93	N001		<	0.005		0.005	-
BARIUM	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	11/22/92	0001			0.028		0.0015	-
	06/29/93	0001		<	0.1		0.1	-
BARIUM (TOTAL)	11/22/92	N001	MG/L		0.040		0.0015	-
	06/29/93	N001		<	0.1		0.1	-
BERYLLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
BORON	06/25/89	0001	MG/L	<	0.1	L	0.1	-
CADMIUM	06/25/89	0001	MG/L		0.002	L	0.001	-
	11/22/92	0001		<	0.00013		0.00013	-
CADMIUM (TOTAL)	11/22/92	N001	MG/L	<	0.00013	N	0.00013	-
CALCIUM	06/25/89	0001	MG/L		74.7	L	0.01	-
	02/19/93	0001			61.1		0.5	-
	06/29/93	0001			65.0		0.5	-
CALCIUM (TOTAL)	06/29/93	N001	MG/L		61.3		0.5	-
CHLORIDE	06/25/89	0001	MG/L		21.	L	1.	-
	02/19/93	0001			18.1		0.5	-
CHLORIDE (TOTAL)	06/29/93	N001	MG/L		17.1		0.5	-
CHROMIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	11/22/92	0001		<	0.0053		0.0053	-
CHROMIUM (TOTAL)	11/22/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	06/25/89	0001	MG/L	<	0.05	L	0.05	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0656
NORTH COORDINATE: 59545.2 FT
EAST COORDINATE: 89175.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
COPPER	06/25/89	0001	MG/L		0.03	L	0.02	-
CYANIDE	06/25/89	0001	MG/L	<	0.01	L	0.01	-
DISSOLVED OXYGEN	06/29/93	N001	MG/L		0.0		-	-
FLUORIDE	06/25/89	0001	MG/L		0.2	L	0.1	-
GROSS ALPHA	11/22/92	0001	PCI/L		8.5	N	4.8	4.5
	02/19/93	0001			0		13	14
	06/29/93	0001			0		4	7
GROSS ALPHA (TOTAL)	11/22/92	N001	PCI/L		0.0	N	12.3	6.6
	06/29/93	N001			4		3	6
GROSS BETA	11/22/92	0001	PCI/L		8.7	N	8.9	5.7
	02/19/93	0001			4		23	10
	06/29/93	0001			14		5	5
GROSS BETA (TOTAL)	11/22/92	N001	PCI/L		13.2	N	9.1	6.0
	06/29/93	N001			15		5	5
IRON	06/25/89	0001	MG/L	<	0.03	L	0.03	-
	02/19/93	0001		<	0.03		0.03	-
	06/29/93	0001		<	0.03	J	0.03	-
IRON (TOTAL)	06/29/93	N001	MG/L		0.52		0.03	-
LEAD	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	11/22/92	0001		<	0.0015		0.0015	-
LEAD (TOTAL)	11/22/92	N001	MG/L	<	0.0015		0.0015	-
LEAD-210	11/22/92	0001	PCI/L		1.0		2.0	1.2
LEAD-210 (TOTAL)	11/22/92	N001	PCI/L		5.9		0.3	0.9
MAGNESIUM	06/25/89	0001	MG/L		65.7	L	0.001	-
	02/19/93	0001			50.6		0.1	-
	06/29/93	0001			52.0		0.1	-
MAGNESIUM (TOTAL)	06/29/93	N001	MG/L		50.3		0.1	-
MANGANESE	06/25/89	0001	MG/L		0.01	L	0.01	-
	11/22/92	0001			0.0044		0.0015	-
	02/19/93	0001		<	0.01		0.01	-
	06/29/93	0001		<	0.01	J	0.01	-
MANGANESE (TOTAL)	11/22/92	N001	MG/L		0.0070		0.0015	-
	06/29/93	N001			0.01		0.01	-
MERCURY	06/25/89	0001	MG/L	<	0.0002	L	0.0002	-
MOLYBDENUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0656
NORTH COORDINATE: 59545.2 FT
EAST COORDINATE: 89175.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MOLYBDENUM	11/22/92	0001	MG/L	<	0.0049	N	0.0049	-
	06/29/93	0001		<	0.01		0.01	-
MOLYBDENUM (TOTAL)	11/22/92	N001	MG/L	<	0.0049	N	0.0049	-
	06/29/93	N001		<	0.01		0.01	-
NICKEL	06/25/89	0001	MG/L	<	0.04	L	0.04	-
NITRATE	06/25/89	0001	MG/L		460.	L	1.	-
	11/22/92	0001			415		0.044	-
	02/19/93	0001			339		1	-
NITRATE (TOTAL)	06/29/93	N001	MG/L		254		1	-
PH	06/25/89	0001	SU		7.44	L	-	-
	11/22/92	0001			7.68		-	-
	02/19/93	0001			7.55		-	-
	06/29/93	N001			7.29		-	-
PHOSPHATE	06/25/89	0001	MG/L	<	0.1	L	0.1	-
PHOSPHATE (TOTAL)	06/29/93	N001	MG/L		0.2		0.1	-
POTASSIUM	06/25/89	0001	MG/L		18.3	L	0.01	-
	02/19/93	0001			14		0.1	-
	06/29/93	0001			15.4		0.1	-
POTASSIUM (TOTAL)	06/29/93	N001	MG/L		14.3		0.1	-
RADIUM-226	06/25/89	0001	PCI/L		0.1	L	1.	0.2
	11/22/92	0001			0.3		0.3	0.2
RADIUM-226 (TOTAL)	11/22/92	N001	PCI/L		0.8		0.3	0.3
RADIUM-228	06/25/89	0001	PCI/L		0.0	L	1.	0.8
	11/22/92	0001			1.5		2.9	1.8
RADIUM-228 (TOTAL)	11/22/92	N001	PCI/L		2.6		2.0	1.4
REDOX POTENTIAL	11/22/92	0001	mVOLTS		423.7		-	-
	06/29/93	N001			410		-	-
SELENIUM	06/25/89	0001	MG/L		0.011	L	0.005	-
	11/22/92	0001		<	0.0015	NW	0.0015	-
SELENIUM (TOTAL)	11/22/92	N001	MG/L	<	0.0015		0.0015	-
SILICA - SIO2	06/25/89	0001	MG/L		13.	L	2.	-
SILICA - SIO2 (TOTAL)	06/29/93	N001	MG/L		13.7	H	0.5	-
SILVER	06/25/89	0001	MG/L	<	0.01	L	0.01	-
SODIUM	06/25/89	0001	MG/L		148.	L	0.002	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0656
NORTH COORDINATE: 59545.2 FT
EAST COORDINATE: 89175.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SODIUM	02/19/93	0001	MG/L		118		0.1	-
	06/29/93	0001			119		1	-
SODIUM (TOTAL)	06/29/93	N001	MG/L		119		1	-
SPECIFIC CONDUCTANCE	06/25/89	0001	UMHO/CM		1700.	L	-	-
	11/22/92	0001			1650		-	-
	02/19/93	0001			1645		-	-
	06/29/93	N001			1868		-	-
STRONTIUM	11/22/92	0001	MG/L		0.71	S	0.00035	-
	06/29/93	0001			0.63		0.01	-
STRONTIUM (TOTAL)	11/22/92	N001	MG/L		0.71	S	0.00035	-
	06/29/93	N001			0.61		0.01	-
SULFATE	06/25/89	0001	MG/L		571.	L	0.1	-
	11/22/92	0001			440		1.0	-
	02/19/93	0001			466		1	-
SULFATE (TOTAL)	11/22/92	N001	MG/L		440		1.0	-
	06/29/93	N001			414		1	-
SULFIDE	06/25/89	0001	MG/L	<	0.1	L	0.1	-
TEMPERATURE	06/25/89	0001	C - DEGREE		18.0	L	-	-
	11/22/92	0001			14.8		-	-
	02/19/93	0001			15.3		-	-
	06/29/93	N001			20.9		-	-
THALLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
TIN	06/25/89	0001	MG/L	<	0.005	L	0.005	-
TOTAL DISSOLVED SOLIDS	06/25/89	0001	MG/L		1340.	L	10.	-
	02/19/93	0001			990		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/29/93	N001	MG/L		990	H	10	-
URANIUM	06/25/89	0001	MG/L		0.0087	L	0.003	-
	11/22/92	0001			0.008		0.001	-
	02/19/93	0001			0.008		0.001	-
	06/29/93	0001			0.008		0.001	-
URANIUM (TOTAL)	11/22/92	N001	MG/L		0.008		0.001	-
	06/29/93	N001			0.007		0.001	-
VANADIUM	06/25/89	0001	MG/L		0.03	L	0.01	-
	11/22/92	0001		<	0.0019		0.0019	-
	06/29/93	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	11/22/92	N001	MG/L		0.0020		0.0019	
	06/29/93	N001		<	0.01		0.01	
ZINC	06/25/89	0001	MG/L	<	0.005	L	0.005	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
S - REPORTED VALUE DETERMINED USING METHOD OF STD ADDITION (MSA)

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0656
NORTH COORDINATE: 59545.2 FT
EAST COORDINATE: 89175.1 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ZINC	11/22/92	0001	MG/L	<	0.0010		0.0010	-
	06/29/93	0001			0.006	J	0.005	-
ZINC (TOTAL)	11/22/92	N001	MG/L		0.0050		0.0010	-
	06/29/93	N001			0.019	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0657
NORTH COORDINATE: 59266.0 FT
EAST COORDINATE: 87596.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: ON-SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/26/88	0001	MG/L CACO3		194.		-	-
	06/25/89	0001			200.	L	-	-
	12/04/89	0001			193.	L	-	-
	06/25/90	0001			189.	L	-	-
	01/29/91	0001			207.		-	-
	02/18/93	0001			190		-	-
	06/29/93	N001			186	L	-	-
	12/13/93	N001			193		-	-
ALUMINUM	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/04/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1		0.1	-
AMMONIUM	04/26/88	0001	MG/L	<	0.1		0.1	-
	06/25/89	0001		<	0.1	L	0.1	-
	12/04/89	0001		<	0.1	L	0.1	-
	06/25/90	0001			1.4	HL	0.1	-
	01/29/91	0001		<	0.1		0.1	-
	12/13/93	0001		<	0.1		0.1	-
AMMONIUM (TOTAL)	06/29/93	N001	MG/L	<	0.1	L	0.1	-
ANTIMONY	06/25/89	0001	MG/L	<	0.003	L	0.003	-
	12/04/89	0001		<	0.003	L	0.003	-
	06/25/90	0001		<	0.003	L	0.003	-
	01/29/91	0001		<	0.003		0.003	-
ARSENIC	04/26/88	0001	MG/L		0.001	J	0.01	-
	06/25/89	0001		<	0.01	L	0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01		0.01	-
	06/29/93	0001		<	0.005	L	0.005	-
ARSENIC (TOTAL)	06/29/93	N001	MG/L	<	0.005	L	0.005	-
BARIUM	06/25/89	0001	MG/L		0.2	L	0.1	-
	12/04/89	0001			0.2	L	0.1	-
	06/25/90	0001			0.2	L	0.1	-
	01/29/91	0001			0.2		0.1	-
	06/29/93	0001			0.2	L	0.1	-
BARIUM (TOTAL)	06/29/93	N001	MG/L		0.2	L	0.1	-
BERYLLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/04/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01		0.01	-
BORON	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/04/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0657
NORTH COORDINATE: 59266.0 FT
EAST COORDINATE: 87596.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: ON-SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BROMIDE	01/29/91	0001	MG/L	<	0.1		0.1	-
CADMIUM	04/26/88	0001	MG/L		0.005		0.001	-
	06/25/89	0001		<	0.001	L	0.001	-
	12/04/89	0001		<	0.001	L	0.001	-
	06/25/90	0001		<	0.001	L	0.001	-
	01/29/91	0001		<	0.001		0.001	-
CALCIUM	04/26/88	0001	MG/L		62.2		0.01	-
	06/25/89	0001			65.5	L	0.01	-
	12/04/89	0001			69.	L	0.01	-
	06/25/90	0001			64.8	L	0.01	-
	01/29/91	0001			69.6		0.01	-
	02/18/93	0001			59.1		0.5	-
	06/29/93	0001			63.9	L	0.5	-
	12/13/93	0001			57.2		0.5	-
CALCIUM (TOTAL)	06/29/93	N001	MG/L		60.7	L	0.5	-
	12/13/93	N001			62.6		0.5	-
CHLORIDE	04/26/88	0001	MG/L		8.2		1.	-
	06/25/89	0001			7.4	L	1.	-
	12/04/89	0001			8.5	L	1.	-
	06/25/90	0001			8.	L	1.	-
	01/29/91	0001			5.	J	1.	-
	02/18/93	0001			7.6		0.5	-
	12/13/93	0001			7.6		0.5	-
CHLORIDE (TOTAL)	06/29/93	N001	MG/L		9.7	L	0.5	-
CHROMIUM	06/25/89	0001	MG/L		0.01	L	0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01		0.01	-
COBALT	06/25/89	0001	MG/L	<	0.05	L	0.05	-
	12/04/89	0001		<	0.05	L	0.05	-
	06/25/90	0001		<	0.05	L	0.05	-
	01/29/91	0001		<	0.05		0.05	-
COPPER	06/25/89	0001	MG/L	<	0.02	L	0.02	-
	12/04/89	0001		<	0.02	L	0.02	-
	06/25/90	0001		<	0.02	L	0.02	-
	01/29/91	0001		<	0.02		0.02	-
CYANIDE	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
DISSOLVED OXYGEN	06/29/93	N001	MG/L		7.0	L	-	-
	12/13/93	N001			6.8		-	-
FLUORIDE	06/25/89	0001	MG/L		0.2	L	0.1	-
	12/04/89	0001			0.2	L	0.1	-
	06/25/90	0001			0.1	L	0.1	-
	01/29/91	0001			0.2		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0657
NORTH COORDINATE: 59266.0 FT
EAST COORDINATE: 87596.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: ON-SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS ALPHA	04/26/88	0001	PCI/L		39.		0.2	7.
	01/29/91	0001			49.		1.	7.
	02/18/93	0001			50		7	12
	06/29/93	0001			45	L	4	11
GROSS ALPHA (TOTAL)	06/29/93	N001	PCI/L		54	L	4	11
GROSS BETA	04/26/88	0001	PCI/L		19.		1.	2.
	01/29/91	0001			14.		0.5	2.
	02/18/93	0001			15		12	6
	06/29/93	0001			22	L	5	5
GROSS BETA (TOTAL)	06/29/93	N001	PCI/L		29	L	5	5
IRON	06/25/89	0001	MG/L	<	0.03	L	0.03	-
	12/04/89	0001		<	0.03	L	0.03	-
	06/25/90	0001		<	0.03	L	0.03	-
	01/29/91	0001		<	0.03		0.03	-
	02/18/93	0001		<	0.03		0.03	-
	06/29/93	0001		<	0.03	JL	0.03	-
IRON (TOTAL)	06/29/93	N001	MG/L		0.06	JL	0.03	-
LEAD	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01		0.01	-
MAGNESIUM	04/26/88	0001	MG/L		38.1		0.001	-
	06/25/89	0001			42.3	L	0.001	-
	12/04/89	0001			48.	L	0.001	-
	06/25/90	0001			42.9	L	0.001	-
	01/29/91	0001			50.4		0.001	-
	02/18/93	0001			38.4		0.1	-
	06/29/93	0001			41.2	L	0.1	-
	12/13/93	0001			38.6		0.1	-
MAGNESIUM (TOTAL)	06/29/93	N001	MG/L		40.1	L	0.1	-
	12/13/93	N001			39.1		0.1	-
MANGANESE	06/25/89	0001	MG/L		0.02	L	0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01		0.01	-
	02/18/93	0001		<	0.01		0.01	-
	06/29/93	0001		<	0.01	L	0.01	-
	12/13/93	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	06/29/93	N001	MG/L	<	0.01	L	0.01	-
	12/13/93	N001		<	0.01		0.01	-
MERCURY	06/25/89	0001	MG/L	<	0.0002	L	0.0002	-
	12/04/89	0001		<	0.0002	L	0.0002	-
	06/25/90	0001		<	0.0002	L	0.0002	-
MOLYBDENUM	04/26/88	0001	MG/L		0.02		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0657
NORTH COORDINATE: 59266.0 FT
EAST COORDINATE: 87596.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: ON-SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MOLYBDENUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
	06/25/90	0001			0.01	L	0.01	-
	01/29/91	0001			0.01		0.01	-
	06/29/93	0001		<	0.01	L	0.01	-
MOLYBDENUM (TOTAL)	06/29/93	N001	MG/L	<	0.01	L	0.01	-
NICKEL	06/25/89	0001	MG/L	<	0.04	L	0.04	-
	12/04/89	0001		<	0.04	L	0.04	-
	06/25/90	0001		<	0.04	L	0.04	-
	01/29/91	0001		<	0.04		0.04	-
NITRATE	04/26/88	0001	MG/L		22.		1.	-
	06/25/89	0001			29.	L	1.	-
	12/04/89	0001			23.9	L	1.	-
	06/25/90	0001			19.9	L	1.	-
	01/29/91	0001			19.		1.	-
	02/18/93	0001			19		1	-
	12/13/93	0001			19		1	-
NITRATE (TOTAL)	06/29/93	N001	MG/L		19	L	1	-
NITRITE AND NITRATE	01/29/91	0001	MG/L		19.	J	1.	-
PH	04/26/88	0001	SU		7.33		-	-
	06/25/89	0001			7.41	L	-	-
	12/04/89	0001			7.37	L	-	-
	06/25/90	0001			7.48	L	-	-
	01/29/91	0001			7.29		-	-
	02/18/93	0001			7.53		-	-
	06/29/93	N001			7.45	L	-	-
	12/13/93	N001			7.33		-	-
PHOSPHATE	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/04/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1	L	0.1	-
PHOSPHATE (TOTAL)	06/29/93	N001	MG/L	<	0.1	L	0.1	-
POTASSIUM	04/26/88	0001	MG/L		1.69		0.01	-
	06/25/89	0001			2.1	L	0.01	-
	12/04/89	0001			1.74	L	0.01	-
	06/25/90	0001			1.8	L	0.01	-
	01/29/91	0001			1.8		0.01	-
	02/18/93	0001			1.8		0.1	-
	06/29/93	0001			2.1	L	0.1	-
	12/13/93	0001			1.6		0.1	-
POTASSIUM (TOTAL)	06/29/93	N001	MG/L		1.9	L	0.1	-
	12/13/93	N001			1.4		0.1	-
RADIUM-226	06/25/89	0001	PCI/L		0.0	L	1.	0.1
	12/04/89	0001			0.3	L	1.	0.2
	06/25/90	0001			0.4	L	1.	0.2

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0657
NORTH COORDINATE: 59266.0 FT
EAST COORDINATE: 87596.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: ON-SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
RADIUM-226	01/29/91	0001	PCI/L		0.1		1.	0.2
RADIUM-228	06/25/89	0001	PCI/L		0.0	L	1.	0.7
	12/04/89	0001			0.0	L	1.	1.9
	06/25/90	0001			1.0	L	1.	0.9
	01/29/91	0001			1.0		1.	0.9
REDOX POTENTIAL	06/29/93	N001	mVOLTS		430	L	-	-
	12/13/93	N001			447		-	-
SELENIUM	04/26/88	0001	MG/L	<	0.005		0.005	-
	06/25/89	0001		<	0.005	L	0.005	-
	12/04/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.005	L	0.005	-
	01/29/91	0001		<	0.005		0.005	-
SILICA - SIO2	06/25/89	0001	MG/L		14.	L	2.	-
	12/04/89	0001			13.9	L	2.	-
	06/25/90	0001			14.	L	2.	-
	01/29/91	0001			13.		2.	-
	12/13/93	0001			13.4		0.1	-
SILICA - SIO2 (TOTAL)	06/29/93	N001	MG/L		13.2	HL	0.5	-
	12/13/93	N001			13.5		0.1	-
SILVER	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01		0.01	-
SODIUM	04/26/88	0001	MG/L		14.7		0.002	-
	06/25/89	0001			15.4	L	0.002	-
	12/04/89	0001			17.	L	0.002	-
	06/25/90	0001			16.0	L	0.002	-
	01/29/91	0001			16.4		0.002	-
	02/18/93	0001			13.9		0.1	-
	06/29/93	0001			14	L	1	-
	12/13/93	0001			14		1	-
SODIUM (TOTAL)	06/29/93	N001	MG/L		15	L	1	-
	12/13/93	N001			14		1	-
SPECIFIC CONDUCTANCE	04/26/88	0001	UMHO/CM		470.		-	-
	06/25/89	0001			410.	L	-	-
	12/04/89	0001			450.	L	-	-
	06/25/90	0001			510.	L	-	-
	01/29/91	0001			698.		-	-
	02/18/93	0001			546		-	-
	06/29/93	N001			595	L	-	-
	12/13/93	N001			536		-	-
STRONTIUM	06/25/90	0001	MG/L		0.51	*L	0.1	-
	01/29/91	0001			0.5		0.1	-
	06/29/93	0001			0.51	L	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
H - HOLD TIME EXPIRED, VALUE SUSPECT
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0657
NORTH COORDINATE: 59266.0 FT
EAST COORDINATE: 87596.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: ON-SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
STRONTIUM	12/13/93	0001	MG/L		0.48		0.01	-
STRONTIUM (TOTAL)	06/29/93	N001	MG/L		0.49	L	0.01	-
	12/13/93	N001			0.48		0.01	-
SULFATE	04/26/88	0001	MG/L		127.		0.1	-
	06/25/89	0001			122.	L	0.1	-
	12/04/89	0001			153.	L	0.1	-
	06/25/90	0001			187.6	L	0.1	-
	01/29/91	0001			149.		0.1	-
	02/18/93	0001			138		1	-
	12/13/93	0001			122		1	-
SULFATE (TOTAL)	06/29/93	N001	MG/L		130	L	1	-
SULFIDE	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/04/89	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	J	0.1	-
TEMPERATURE	04/26/88	0001	C - DEGREE		16.0		-	-
	06/25/89	0001			18.5	L	-	-
	12/04/89	0001			16.5	L	-	-
	06/25/90	0001			17.5	L	-	-
	01/29/91	0001			15.5		-	-
	02/18/93	0001			15.9		-	-
	06/29/93	N001			20.7	L	-	-
	12/13/93	N001			15.7		-	-
THALLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/04/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01		0.01	-
THORIUM-230	01/29/91	0001	PCI/L		0.0		1.	0.3
TIN	06/25/89	0001	MG/L		0.034	L	0.005	-
	12/04/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.005	L	0.005	-
	01/29/91	0001		<	0.005		0.005	-
TOTAL DISSOLVED SOLIDS	04/26/88	0001	MG/L		416.		10.	-
	06/25/89	0001			392.	L	10.	-
	12/04/89	0001			484.	L	10.	-
	06/25/90	0001			430.	L	10.	-
	01/29/91	0001			408.		10.	-
	02/18/93	0001			410		10	-
	12/13/93	0001			430		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/29/93	N001	MG/L		410	HL	10	-
TOTAL ORGANIC CARBON	04/26/88	0001	MG/L		45.0		1.	-
	01/29/91	0001		<	1.	J	1.	-
URANIUM	04/26/88	0001	MG/L		0.0395		0.003	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0657
NORTH COORDINATE: 59266.0 FT
EAST COORDINATE: 87596.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: ON-SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
URANIUM	06/25/89	0001	MG/L		0.040	L	0.003	-
	12/04/89	0001			0.056	L	0.003	-
	06/25/90	0001			0.061	L	0.003	-
	01/29/91	0001			0.0663		0.0003	-
	02/18/93	0001			0.068		0.001	-
	06/29/93	0001			0.076	L	0.001	-
	12/13/93	0001			0.080		0.001	-
URANIUM (TOTAL)	06/29/93	N001	MG/L		0.007	L	0.001	-
	12/13/93	N001			0.083		0.001	-
VANADIUM	06/25/89	0001	MG/L		0.07	L	0.01	-
	12/04/89	0001		<	0.01	L	0.01	-
	06/25/90	0001			0.07	L	0.01	-
	01/29/91	0001			0.06		0.01	-
	06/29/93	0001			0.06	L	0.01	-
	12/13/93	0001			0.05		0.01	-
VANADIUM (TOTAL)	06/29/93	N001	MG/L		0.05	L	0.01	-
	12/13/93	N001		<	0.06		0.01	-
ZINC	06/25/89	0001	MG/L		0.012	L	0.005	-
	12/04/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.005	L	0.005	-
	01/29/91	0001		<	0.005		0.005	-
	06/29/93	0001			0.048	JL	0.005	-
ZINC (TOTAL)	06/29/93	N001	MG/L		0.197	JL	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0659
NORTH COORDINATE: 59069.8 FT
EAST COORDINATE: 88670.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/26/88	0001	MG/L CACO3		191.		-	-
	06/25/89	0001			198.	L	-	-
	12/02/89	0001			181.	L	-	-
	06/21/90	0001			185.	L	-	-
	01/29/91	0001			187.	L	-	-
	06/04/91	0001			192.		-	-
	02/22/92	0001			199		-	-
	08/13/92	0001			188	L	-	-
	11/18/92	0001			195		-	-
ALUMINUM	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/02/89	0001		<	0.1	L	0.1	-
	06/21/90	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/04/91	0001		<	0.05		0.05	-
	02/22/92	0001		<	0.05		0.05	-
	08/13/92	0001		<	0.2	*L	0.2	-
AMMONIUM	04/26/88	0001	MG/L	<	0.1		0.1	-
	06/25/89	0001		<	0.1	L	0.1	-
	12/02/89	0001		<	0.1	L	0.1	-
	06/21/90	0001		<	0.1	HL	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/04/91	0001			0.4		0.1	-
	02/22/92	0001			0.3		0.1	-
ANTIMONY	06/25/89	0001	MG/L	<	0.003	L	0.003	-
	12/02/89	0001		<	0.003	L	0.003	-
	06/21/90	0001		<	0.003	L	0.003	-
	01/29/91	0001		<	0.003	L	0.003	-
	06/04/91	0001		<	0.003		0.003	-
	02/22/92	0001		<	0.003		0.003	-
	08/13/92	0001		<	0.06	L	0.06	-
ARSENIC	04/26/88	0001	MG/L		0.005	J	0.01	-
	06/25/89	0001		<	0.01	L	0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.01		0.01	-
	02/22/92	0001		<	0.01		0.01	-
	08/13/92	0001		<	0.01	WL	0.01	-
	11/18/92	0001			0.0062		0.0015	-
ARSENIC (TOTAL)	11/18/92	N001	MG/L		0.0059		0.0015	-
BARIUM	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/02/89	0001		<	0.1	L	0.1	-
	06/21/90	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/04/91	0001			0.04		0.01	-
	02/22/92	0001			0.04		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0659
NORTH COORDINATE: 59069.8 FT
EAST COORDINATE: 88670.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BARIUM	08/13/92	0001	MG/L	<	0.2	L	0.2	-
	11/18/92	0001			0.038		0.0015	-
BARIUM (TOTAL)	11/18/92	N001	MG/L		0.046		0.0015	-
BERYLLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/02/89	0001		<	0.005	L	0.005	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.005		0.005	-
	08/13/92	0001		<	0.005	L	0.005	-
BORON	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/02/89	0001		<	0.1	L	0.1	-
	06/21/90	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/04/91	0001		<	0.05		0.05	-
BROMIDE	01/29/91	0001	MG/L	<	0.1	L	0.1	-
	06/04/91	0001		<	0.1		0.1	-
CADMIUM	04/26/88	0001	MG/L		0.004		0.001	-
	06/25/89	0001		<	0.001	L	0.001	-
	12/02/89	0001		<	0.001	L	0.001	-
	06/21/90	0001		<	0.001	L	0.001	-
	01/29/91	0001		<	0.001	L	0.001	-
	06/04/91	0001		<	0.001		0.001	-
	02/22/92	0001		<	0.0005		0.0005	-
	08/13/92	0001		<	0.005	L	0.005	-
	11/18/92	0001		<	0.00013		0.00013	-
CADMIUM (TOTAL)	11/18/92	N001	MG/L		0.00020	N	0.00013	-
CALCIUM	04/26/88	0001	MG/L		19.3		0.01	-
	06/25/89	0001			23.7	L	0.01	-
	12/02/89	0001			18.4	L	0.01	-
	06/21/90	0001			20.1	L	0.01	-
	01/29/91	0001			22.2	L	0.01	-
	06/04/91	0001			25.0		0.5	-
	02/22/92	0001			22.7		0.5	-
	08/13/92	0001			23	L	5	-
CHLORIDE	04/26/88	0001	MG/L		11.		1.	-
	06/25/89	0001			8.6	L	1.	-
	12/02/89	0001			9.5	L	1.	-
	06/21/90	0001			9.	L	1.	-
	01/29/91	0001			6.	JL	1.	-
	06/04/91	0001			9.6		0.5	-
	02/22/92	0001			9.9		0.5	-
	08/13/92	0001			8.8	L	0.016	-
CHROMIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/21/90	0001		<	0.01	L	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0659
NORTH COORDINATE: 59069.8 FT
EAST COORDINATE: 88670.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CHROMIUM	01/29/91	0001	MG/L	<	0.01	L	0.01	-
	06/04/91	0001		<	0.01		0.01	-
	02/22/92	0001		<	0.01		0.01	-
	08/13/92	0001		<	0.01	L	0.01	-
	11/18/92	0001		<	0.0053		0.0053	-
CHROMIUM (TOTAL)	11/18/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	06/25/89	0001	MG/L	<	0.05	L	0.05	-
	12/02/89	0001		<	0.05	L	0.05	-
	06/21/90	0001		<	0.05	L	0.05	-
	01/29/91	0001		<	0.05	L	0.05	-
	06/04/91	0001		<	0.03		0.03	-
COPPER	06/25/89	0001	MG/L	<	0.02	L	0.02	-
	12/02/89	0001		<	0.02	L	0.02	-
	06/21/90	0001		<	0.02	L	0.02	-
	01/29/91	0001		<	0.02	L	0.02	-
	06/04/91	0001		<	0.01		0.01	-
CYANIDE	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
FLUORIDE	06/25/89	0001	MG/L		0.4	L	0.1	-
	12/02/89	0001			0.4	L	0.1	-
	06/21/90	0001			0.3	L	0.1	-
	01/29/91	0001			0.4	L	0.1	-
	06/04/91	0001			0.2		0.1	-
GROSS ALPHA	04/26/88	0001	PCI/L		19.		0.2	5.
	01/29/91	0001			10.	L	1.	3.
	06/04/91	0001			5.3		1.	5.2
	02/22/92	0001			8.6		1.0	4.8
	08/13/92	0001			8.5	L	3.9	4.3
	11/18/92	0001			13.0		2.7	3.7
GROSS ALPHA (TOTAL)	11/18/92	N001	PCI/L		3.8	N	6.9	4.5
GROSS BETA	04/26/88	0001	PCI/L		8.3		1.	1.6
	01/29/91	0001			5.0	L	0.5	1.9
	06/04/91	0001			7.8		0.5	3.0
	02/22/92	0001			11.2		0.5	3.1
	08/13/92	0001			7.8	L	4.7	3.3
	11/18/92	0001			13.6		3.8	2.9
GROSS BETA (TOTAL)	11/18/92	N001	PCI/L		7.7	N	5.1	3.4
IRON	06/25/89	0001	MG/L		0.15	L	0.03	-
	12/02/89	0001			0.12	L	0.03	-
	06/21/90	0001			0.19	L	0.03	-
	01/29/91	0001			0.21	L	0.03	-
	06/04/91	0001			0.18		0.03	-
	02/22/92	0001			0.10		0.03	-
	08/13/92	0001			0.17	L	0.1	-
LEAD	06/25/89	0001	MG/L	<	0.01	L	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0659
NORTH COORDINATE: 59069.8 FT
EAST COORDINATE: 88670.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
LEAD	12/02/89	0001	MG/L	<	0.01	L	0.01	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.005		0.005	-
	11/18/92	0001		<	0.0015		0.0015	-
LEAD (TOTAL)	11/18/92	N001	MG/L	<	0.0015		0.0015	-
LEAD-210	11/18/92	0001	PCI/L		1.6		2.0	1.2
LEAD-210 (TOTAL)	11/18/92	N001	PCI/L		2.0		2.0	1.3
MAGNESIUM	04/26/88	0001	MG/L		20.9		0.001	-
	06/25/89	0001			27.1	L	0.001	-
	12/02/89	0001			24.	L	0.001	-
	06/21/90	0001			24.1	L	0.001	-
	01/29/91	0001			29.1	L	0.001	-
	06/04/91	0001			27.8		0.1	-
	02/22/92	0001			26.3		0.1	-
	08/13/92	0001			27	L	5	-
MANGANESE	06/25/89	0001	MG/L		0.12	L	0.01	-
	12/02/89	0001			0.10	L	0.01	-
	06/21/90	0001			0.10	L	0.01	-
	01/29/91	0001			0.12	L	0.01	-
	06/04/91	0001			0.11		0.01	-
	02/22/92	0001			0.11		0.01	-
	08/13/92	0001			0.12	L	0.01	-
	11/18/92	0001			0.10		0.0015	-
MANGANESE (TOTAL)	11/18/92	N001	MG/L		0.10		0.0015	-
MERCURY	06/25/89	0001	MG/L	<	0.0002	L	0.0002	-
	12/02/89	0001		<	0.0002	L	0.0002	-
	06/21/90	0001		<	0.0002	L	0.0002	-
MOLYBDENUM	04/26/88	0001	MG/L		0.04		0.01	-
	06/25/89	0001			0.02	L	0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/21/90	0001			0.03	L	0.01	-
	01/29/91	0001			0.03	L	0.01	-
	06/04/91	0001			0.02		0.01	-
	02/22/92	0001			0.02		0.01	-
	08/13/92	0001			0.018	L	0.007	-
	11/18/92	0001			0.020	N	0.0049	-
MOLYBDENUM (TOTAL)	11/18/92	N001	MG/L		0.016	N	0.0049	-
NICKEL	06/25/89	0001	MG/L	<	0.04	L	0.04	-
	12/02/89	0001		<	0.04	L	0.04	-
	06/21/90	0001		<	0.04	L	0.04	-
	01/29/91	0001		<	0.04	L	0.04	-
	06/04/91	0001		<	0.04		0.04	-
NITRATE	04/26/88	0001	MG/L		2.5		1.	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0659
NORTH COORDINATE: 59069.8 FT
EAST COORDINATE: 88670.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
NITRATE	06/25/89	0001	MG/L		7.3	L	1.	
	12/02/89	0001			4.0	L	1.	
	06/21/90	0001		<	0.1	L	0.1	
	01/29/91	0001		<	1.	L	1.	
	06/04/91	0001			4.6		1.	
	02/22/92	0001			1.9		1.0	
	08/13/92	0001			3.5	L	0.075	
	11/18/92	0001			3.3		0.044	
NITRITE AND NITRATE	01/29/91	0001	MG/L	<	1.	JL	1.	
	06/04/91	0001			1.05		0.05	
PH	04/26/88	0001	SU		7.46			
	06/25/89	0001			7.43	L		
	12/02/89	0001			7.63	L		
	06/21/90	0001			7.33	L		
	01/29/91	0001			7.44	L		
	06/04/91	0001			7.41			
	02/22/92	0001			7.45			
	08/13/92	0001			7.25	L		
	11/18/92	0001			7.36			
PHOSPHATE	06/25/89	0001	MG/L		1.2	L	0.1	
	12/02/89	0001			1.1	L	0.1	
	06/21/90	0001			1.4	L	0.1	
POTASSIUM	04/26/88	0001	MG/L		2.56		0.01	
	06/25/89	0001			3.7	L	0.01	
	12/02/89	0001			2.6	L	0.01	
	06/21/90	0001			3.0	L	0.01	
	01/29/91	0001			3.1	L	0.01	
	06/04/91	0001			3.5		0.01	
	02/22/92	0001			3.87		0.01	
	08/13/92	0001			2.8	*L	0.575	
RADIUM-226	06/25/89	0001	PCI/L		3.9	L	1.	0.7
	12/02/89	0001			2.9	L	1.	0.7
	06/21/90	0001			5.5	L	1.	0.8
	01/29/91	0001			4.9	L	1.	0.8
	06/04/91	0001			6.9		1.	1.3
	02/22/92	0001			4.0		1.0	0.7
	08/13/92	0001			5.1	L	0.5	0.2
	11/18/92	0001			8.1		0.3	0.9
	06/26/93	0001			7		1	1
RADIUM-226 (TOTAL)	11/18/92	N001	PCI/L		6.4		0.3	0.8
	06/26/93	N001			6		1	1
RADIUM-228	06/25/89	0001	PCI/L		0.8	L	1.	0.8
	12/02/89	0001			2.0	L	1.	3.5
	06/21/90	0001			1.6	L	1.	0.9
	01/29/91	0001			1.2	L	1.	0.9
	06/04/91	0001			4.2	J	1.	2.1
	02/22/92	0001			1.5		1.0	1.0

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0659
NORTH COORDINATE: 59069.8 FT
EAST COORDINATE: 88670.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
RADIUM-228	08/13/92	0001	PCI/L		1.9	L	2.0	1.1
	11/18/92	0001			4.4		2.1	1.7
	06/26/93	0001			2		2	1
RADIUM-228 (TOTAL)	11/18/92	N001	PCI/L		4.9		2.1	1.7
	06/26/93	N001			3		2	1
SELENIUM	04/26/88	0001	MG/L	<	0.005		0.005	-
	06/25/89	0001		<	0.005	L	0.005	-
	12/02/89	0001		<	0.005	L	0.005	-
	06/21/90	0001		<	0.005	L	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/04/91	0001		<	0.005	J	0.005	-
	02/22/92	0001		<	0.005		0.005	-
	08/13/92	0001		<	0.005	WL	0.005	-
	11/18/92	0001		<	0.0015	NW	0.0015	-
SELENIUM (TOTAL)	11/18/92	N001	MG/L	<	0.0015		0.0015	-
SILICA - SIO2	06/25/89	0001	MG/L		14.	L	2.	-
	12/02/89	0001			14.4	L	2.	-
	06/21/90	0001			14.	L	2.	-
	01/29/91	0001			14.	L	2.	-
	06/04/91	0001			14.0		0.1	-
SILVER	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.01		0.01	-
SODIUM	04/26/88	0001	MG/L		68.6		0.002	-
	06/25/89	0001			76.0	L	0.002	-
	12/02/89	0001			72.	L	0.002	-
	06/21/90	0001			73.6	L	0.002	-
	01/29/91	0001			77.5	L	0.002	-
	06/04/91	0001			77.		1.	-
	02/22/92	0001			74.		1.	-
	08/13/92	0001			75	L	5	-
SPECIFIC CONDUCTANCE	04/26/88	0001	UMHO/CM		410.		-	-
	06/25/89	0001			455.	L	-	-
	12/02/89	0001			455.	L	-	-
	06/21/90	0001			470.	L	-	-
	01/29/91	0001			614.	L	-	-
	06/04/91	0001			628.		-	-
	02/22/92	0001			524		-	-
	08/13/92	0001			539	L	-	-
	11/18/92	0001			510		-	-
STRONTIUM	06/21/90	0001	MG/L		0.24	*L	0.1	-
	01/29/91	0001			0.2	L	0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0659
NORTH COORDINATE: 59069.8 FT
EAST COORDINATE: 88670.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
STRONTIUM	06/04/91	0001	MG/L		0.27		0.01	-
	02/22/92	0001			0.26		0.01	-
	08/13/92	0001			0.28	L	0.2	-
	11/18/92	0001			0.25		0.00035	-
STRONTIUM (TOTAL)	11/18/92	N001	MG/L		0.30		0.00035	-
SULFATE	04/26/88	0001	MG/L		84.		0.1	-
	06/25/89	0001			109.	L	0.1	-
	12/02/89	0001			99.	L	0.1	-
	06/21/90	0001			145.7	L	0.1	-
	01/29/91	0001			113.	L	0.1	-
	06/04/91	0001			104.		0.1	-
	02/22/92	0001			112.		10.	-
	08/13/92	0001			110	L	0.059	-
	11/18/92	0001			120		1.0	-
SULFATE (TOTAL)	11/18/92	N001	MG/L		120		1.0	-
SULFIDE	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/02/89	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	JL	0.1	-
	06/04/91	0001		<	1.	IJ	1.	-
TEMPERATURE	04/26/88	0001	C - DEGREE		16.0		-	-
	06/25/89	0001			18.0	L	-	-
	12/02/89	0001			16.5	L	-	-
	06/21/90	0001			17.0	L	-	-
	01/29/91	0001			15.4	L	-	-
	06/04/91	0001			16.8		-	-
	02/22/92	0001			15.8		-	-
	08/13/92	0001			17.2	L	-	-
	11/18/92	0001			15.4		-	-
THALLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/02/89	0001		<	0.1	L	0.1	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.01		0.01	-
THORIUM-230	01/29/91	0001	PCI/L		0.0	L	1.	0.3
	06/04/91	0001			0.3		1.	0.3
TIN	06/25/89	0001	MG/L	<	0.005	L	0.005	-
	12/02/89	0001		<	0.005	L	0.005	-
	06/21/90	0001		<	0.005	L	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/04/91	0001		<	0.01	I	0.01	-
TOTAL DISSOLVED SOLIDS	04/26/88	0001	MG/L		340.		10.	-
	06/25/89	0001			348.	L	10.	-
	12/02/89	0001			355.	L	10.	-
	06/21/90	0001			340.	L	10.	-
	01/29/91	0001			316.	L	10.	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0659
NORTH COORDINATE: 59069.8 FT
EAST COORDINATE: 88670.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TOTAL DISSOLVED SOLIDS	06/04/91	0001	MG/L		388.		10.	-
	02/22/92	0001			383.		10.	-
	08/13/92	0001			410	L	42	-
TOTAL ORGANIC CARBON	04/26/88	0001	MG/L		44.0		1.	-
	01/29/91	0001		<	1.	JL	1.	-
	06/04/91	0001		<	1.		1.	-
	02/22/92	0001		<	1.		1.	-
	08/13/92	0001		<	1.0	L	1.0	-
URANIUM	04/26/88	0001	MG/L		0.0016	J	0.003	-
	06/25/89	0001			0.0015	JL	0.003	-
	12/02/89	0001			0.001	JL	0.003	-
	06/21/90	0001			0.0022	JL	0.003	-
	01/29/91	0001			0.0017	L	0.0003	-
	06/04/91	0001		<	0.001		0.001	-
	02/22/92	0001			0.002		0.001	-
	11/18/92	0001			0.003		0.001	-
URANIUM (TOTAL)	11/18/92	N001	MG/L		0.001		0.001	-
VANADIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/21/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.01		0.01	-
	02/22/92	0001		<	0.01		0.01	-
	08/13/92	0001		<	0.05	L	0.05	-
	11/18/92	0001		<	0.0019		0.0019	-
VANADIUM (TOTAL)	11/18/92	N001	MG/L		0.0020		0.0019	-
ZINC	06/25/89	0001	MG/L		0.015	L	0.005	-
	12/02/89	0001		<	0.005	L	0.005	-
	06/21/90	0001		<	0.005	L	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/04/91	0001		<	0.005		0.005	-
	02/22/92	0001		<	0.005		0.005	-
	08/13/92	0001		<	0.02	L	0.02	-
	11/18/92	0001			0.17		0.0010	-
ZINC (TOTAL)	11/18/92	N001	MG/L		0.0090		0.0010	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0660
NORTH COORDINATE: 61303.4 FT
EAST COORDINATE: 89584.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/21/88	0001	MG/L CACO3		211.	L	-	-
	06/25/89	0001			219.	L	-	-
	12/01/89	0001			226.	L	-	-
	06/25/90	0001			213.	L	-	-
	01/29/91	0001			201.	L	-	-
	02/01/93	0001			234		-	-
	06/27/93	N001			209	G	-	-
ALUMINUM	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/01/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
AMMONIUM	04/21/88	0001	MG/L	<	0.1	L	0.1	-
	06/25/89	0001		<	0.1	L	0.1	-
	12/01/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1	HL	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
AMMONIUM (TOTAL)	06/27/93	N001	MG/L	<	0.1	G	0.1	-
ANTIMONY	06/25/89	0001	MG/L	<	0.003	L	0.003	-
	12/01/89	0001		<	0.003	L	0.003	-
	06/25/90	0001		<	0.003	L	0.003	-
	01/29/91	0001			0.004	L	0.003	-
ARSENIC	04/21/88	0001	MG/L		0.004	JL	0.01	-
	06/25/89	0001		<	0.01	L	0.01	-
	12/01/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/27/93	0001		<	0.005	GW	0.005	-
ARSENIC (TOTAL)	06/27/93	N001	MG/L		0.005	G	0.005	-
BARIUM	06/25/89	0001	MG/L	<	0.1	L	0.1	
	12/01/89	0001		<	0.1	L	0.1	
	06/25/90	0001		<	0.1	L	0.1	
	01/29/91	0001		<	0.1	L	0.1	
	06/27/93	0001		<	0.1	G	0.1	
BARIUM (TOTAL)	06/27/93	N001	MG/L	<	0.1	G	0.1	-
BERYLLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/01/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
BORON	06/25/89	0001	MG/L	<	0.1	L	0.1	
	12/01/89	0001		<	0.1	L	0.1	
	06/25/90	0001		<	0.1	L	0.1	
	01/29/91	0001		<	0.1	L	0.1	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0660
NORTH COORDINATE: 61303.4 FT
EAST COORDINATE: 89584.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BROMIDE	01/29/91	0001	MG/L	<	0.1	L	0.1	
CADMIUM	04/21/88	0001	MG/L		0.004	L	0.001	-
	06/25/89	0001		<	0.001	L	0.001	-
	12/01/89	0001		<	0.001	L	0.001	-
	06/25/90	0001		<	0.001	L	0.001	-
	01/29/91	0001		<	0.001	L	0.001	-
CALCIUM	04/21/88	0001	MG/L		2.92	L	0.01	-
	06/25/89	0001			3.00	L	0.01	-
	12/01/89	0001			2.57	L	0.01	-
	06/25/90	0001			2.77	L	0.01	-
	01/29/91	0001			2.83	L	0.01	-
	02/01/93	0001			2.6		0.5	-
	06/27/93	0001			2.9	G	0.5	-
CALCIUM (TOTAL)	06/27/93	N001	MG/L		2.6	G	0.5	-
CHLORIDE	04/21/88	0001	MG/L		8.9	L	1.	-
	06/25/89	0001			7.4	L	1.	-
	12/01/89	0001			8.2	L	1.	-
	06/25/90	0001			8.	L	1.	-
	01/29/91	0001			5.	JL	1.	-
	02/01/93	0001			8.1		0.5	-
CHLORIDE (TOTAL)	06/27/93	N001	MG/L		7.7	G	0.5	-
CHROMIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	
	12/01/89	0001		<	0.01	L	0.01	
	06/25/90	0001		<	0.01	L	0.01	
	01/29/91	0001		<	0.01	L	0.01	
COBALT	06/25/89	0001	MG/L	<	0.05	L	0.05	
	12/01/89	0001		<	0.05	L	0.05	
	06/25/90	0001		<	0.05	L	0.05	
	01/29/91	0001		<	0.05	L	0.05	
COPPER	06/25/89	0001	MG/L	<	0.02	L	0.02	
	12/01/89	0001		<	0.02	L	0.02	
	06/25/90	0001		<	0.02	L	0.02	
	01/29/91	0001		<	0.02	L	0.02	
CYANIDE	06/25/89	0001	MG/L	<	0.01	L	0.01	
	12/01/89	0001		<	0.01	L	0.01	
DISSOLVED OXYGEN	06/27/93	N001	MG/L		0.4	G		
FLUORIDE	06/25/89	0001	MG/L		0.3	L	0.1	-
	12/01/89	0001			0.4	L	0.1	-
	06/25/90	0001			0.2	L	0.1	-
	01/29/91	0001			0.4	L	0.1	-
GROSS ALPHA	04/21/88	0001	PCI/L		2.0	L	0.2	2.7
	01/29/91	0001			0.0	L	1.	2.2

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0660
NORTH COORDINATE: 61303.4 FT
EAST COORDINATE: 89584.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS ALPHA	02/01/93	0001	PCI/L		0		5	5
	06/27/93	0001			0	G	2	4
GROSS ALPHA (TOTAL)	06/27/93	N001	PCI/L		5	G	2	4
GROSS BETA	04/21/88	0001	PCI/L		1.6	L	1.	1.4
	01/29/91	0001			1.9	L	0.5	1.7
	02/01/93	0001			0		11	5
	06/27/93	0001			2	G	4	4
GROSS BETA (TOTAL)	06/27/93	N001	PCI/L		4	G	4	4
IRON	06/25/89	0001	MG/L	<	0.03	L	0.03	-
	12/01/89	0001		<	0.03	L	0.03	-
	06/25/90	0001		<	0.03	L	0.03	-
	01/29/91	0001		<	0.03	L	0.03	-
	02/01/93	0001		<	0.03		0.03	-
	06/27/93	0001		<	0.03	GJ	0.03	-
IRON (TOTAL)	06/27/93	N001	MG/L	<	0.03	GJ	0.03	-
LEAD	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/01/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
MAGNESIUM	04/21/88	0001	MG/L		1.70	L	0.001	-
	06/25/89	0001			1.76	L	0.001	-
	12/01/89	0001			1.64	L	0.001	-
	06/25/90	0001			1.64	L	0.001	-
	01/29/91	0001			1.84	L	0.001	-
	02/01/93	0001			1.6		0.1	-
	06/27/93	0001			1.7	G	0.1	-
MAGNESIUM (TOTAL)	06/27/93	N001	MG/L		1.6	G	0.1	-
MANGANESE	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/01/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	02/01/93	0001		<	0.01		0.01	-
	06/27/93	0001		<	0.01	G	0.01	-
MANGANESE (TOTAL)	06/27/93	N001	MG/L	<	0.01	G	0.01	-
MERCURY	06/25/89	0001	MG/L	<	0.0002	L	0.0002	-
	12/01/89	0001		<	0.0002	L	0.0002	-
	06/25/90	0001		<	0.0002	L	0.0002	-
MOLYBDENUM	04/21/88	0001	MG/L		0.01	L	0.01	-
	06/25/89	0001		<	0.01	L	0.01	-
	12/01/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0660
NORTH COORDINATE: 61303.4 FT
EAST COORDINATE: 89584.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MOLYBDENUM	06/27/93	0001	MG/L	<	0.01	G	0.01	-
MOLYBDENUM (TOTAL)	06/27/93	N001	MG/L	<	0.01	G	0.01	-
NICKEL	06/25/89	0001	MG/L	<	0.04	L	0.04	-
	12/01/89	0001		<	0.04	L	0.04	-
	06/25/90	0001		<	0.04	L	0.04	-
	01/29/91	0001		<	0.04	L	0.04	-
NITRATE	04/21/88	0001	MG/L		0.7	JL	1.	-
	06/25/89	0001			2.9	L	1.	-
	12/01/89	0001			5.8	L	1.	-
	06/25/90	0001		<	0.1	L	0.1	-
	01/29/91	0001			4.	L	1.	-
	02/01/93	0001		<	1		1	-
NITRATE (TOTAL)	06/27/93	N001	MG/L	<	1	G	1	-
NITRITE AND NITRATE	01/29/91	0001	MG/L	<	1.	JL	1.	-
PH	04/21/88	0001	SU		8.69	L	-	-
	06/25/89	0001			8.25	L	-	-
	12/01/89	0001			8.88	L	-	-
	06/25/90	0001			8.73	L	-	-
	01/29/91	0001			8.62	L	-	-
	02/01/93	0001			8.63		-	-
	06/27/93	N001			9.01	G	-	-
PHOSPHATE	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/01/89	0001			0.3	L	0.1	-
	06/25/90	0001		<	0.1	L	0.1	-
PHOSPHATE (TOTAL)	06/27/93	N001	MG/L	<	0.1	G	0.1	-
POTASSIUM	04/21/88	0001	MG/L		0.58	L	0.01	-
	06/25/89	0001			0.7	L	0.01	-
	12/01/89	0001			0.63	L	0.01	-
	06/25/90	0001			0.51	L	0.01	-
	01/29/91	0001			0.7	L	0.01	-
	02/01/93	0001			0.6		0.1	-
	06/27/93	0001			0.8	G	0.1	-
POTASSIUM (TOTAL)	06/27/93	N001	MG/L		0.7	G	0.1	-
RADIUM-226	06/25/89	0001	PCI/L		0.5	L	1.	0.3
	12/01/89	0001			0.0	L	1.	0.1
	06/25/90	0001			0.8	L	1.	0.3
	01/29/91	0001			0.6	L	1.	0.3
RADIUM-228	06/25/89	0001	PCI/L		0.2	L	1.	0.7
	12/01/89	0001			2.1	L	1.	3.5
	06/25/90	0001			1.0	L	1.	0.8
	01/29/91	0001			0.9	L	1.	0.7
REDOX POTENTIAL	06/27/93	N001	mVOLTS		64	G	-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0660
NORTH COORDINATE: 61303.4 FT
EAST COORDINATE: 89584.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SELENIUM	04/21/88	0001	MG/L	<	0.005	L	0.005	-
	06/25/89	0001		<	0.005	L	0.005	-
	12/01/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.005	L	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
SILICA - SIO2	06/25/89	0001	MG/L		12.	L	2.	-
	12/01/89	0001			12.6	L	2.	-
	06/25/90	0001			13.	L	2.	-
	01/29/91	0001			12.	L	2.	-
SILICA - SIO2 (TOTAL)	06/27/93	N001	MG/L		11.8	GH	0.5	-
SILVER	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/01/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
SODIUM	04/21/88	0001	MG/L		101.	L	0.002	-
	06/25/89	0001			114.	L	0.002	-
	12/01/89	0001			113.	L	0.002	-
	06/25/90	0001			111.	L	0.002	-
	01/29/91	0001			113.	L	0.002	-
	02/01/93	0001			111		0.1	-
	06/27/93	0001			106	G	1	-
SODIUM (TOTAL)	06/27/93	N001	MG/L		110	G	1	-
SPECIFIC CONDUCTANCE	04/21/88	0001	UMHO/CM		360.	L	-	-
	06/25/89	0001			345.	L	-	-
	12/01/89	0001			390.	L	-	-
	06/25/90	0001			399.	L	-	-
	01/29/91	0001			492.	L	-	-
	02/01/93	0001			399		-	-
	06/27/93	N001			432	G	-	-
STRONTIUM	06/25/90	0001	MG/L		0.04	*JL	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/27/93	0001			0.04	G	0.01	-
STRONTIUM (TOTAL)	06/27/93	N001	MG/L		0.04	G	0.01	-
SULFATE	04/21/88	0001	MG/L		23.	L	0.1	-
	06/25/89	0001			27.	L	0.1	-
	12/01/89	0001			29.	L	0.1	-
	06/25/90	0001			25.9	L	0.1	-
	01/29/91	0001			27.2	L	0.1	-
	02/01/93	0001			24		1	-
SULFATE (TOTAL)	06/27/93	N001	MG/L		28	G	1	-
SULFIDE	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/01/89	0001		<	0.1	L	0.1	-
	01/29/91	0001		<	0.1	JL	0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
G - PH > 9, POSSIBLE GROUT CONTAMINATION
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0660
NORTH COORDINATE: 61303.4 FT
EAST COORDINATE: 89584.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TEMPERATURE	04/21/88	0001	C - DEGREE		16.0	L	-	-
	06/25/89	0001			17.5	L	-	-
	12/01/89	0001			16.0	L	-	-
	06/25/90	0001			17.5	L	-	-
	01/29/91	0001			15.6	L	-	-
	02/01/93	0001			15.2		-	-
	06/27/93	N001			18.8	G	-	-
THALLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/01/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
THORIUM-230	01/29/91	0001	PCI/L		0.0	L	1.	0.2
TIN	06/25/89	0001	MG/L	<	0.005	L	0.005	-
	12/01/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.005	L	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
TOTAL DISSOLVED SOLIDS	04/21/88	0001	MG/L		281.	L	10.	-
	06/25/89	0001			285.	L	10.	-
	12/01/89	0001			296.	L	10.	-
	06/25/90	0001			268.	L	10.	-
	01/29/91	0001			260.	L	10.	-
	02/01/93	0001			280		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/27/93	N001	MG/L		280	G	10	-
TOTAL ORGANIC CARBON	04/21/88	0001	MG/L		55.7	L	1.	-
	01/29/91	0001		<	1.	JL	1.	-
URANIUM	04/21/88	0001	MG/L		0.0005	JL	0.003	-
	06/25/89	0001		<	0.0003	JL	0.003	-
	12/01/89	0001			0.021	L	0.003	-
	06/25/90	0001			0.0004	JL	0.003	-
	01/29/91	0001		<	0.0003	L	0.0003	-
	02/01/93	0001		<	0.001		0.001	-
	06/27/93	0001		<	0.001	G	0.001	-
URANIUM (TOTAL)	06/27/93	N001	MG/L	<	0.001	G	0.001	-
VANADIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/01/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	L	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/27/93	0001		<	0.01	G	0.01	-
VANADIUM (TOTAL)	06/27/93	N001	MG/L	<	0.01	G	0.01	-
ZINC	06/25/89	0001	MG/L	<	0.005	L	0.005	-
	12/01/89	0001		<	0.005	L	0.005	-
	06/25/90	0001			0.006	L	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0660
NORTH COORDINATE: 61303.4 FT
EAST COORDINATE: 89584.3 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ZINC	06/27/93	0001	MG/L	<	0.005	GJ	0.005	-
ZINC (TOTAL)	06/27/93	N001	MG/L		0.005	GJ	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0662
NORTH COORDINATE: 59236.5 FT
EAST COORDINATE: 87577.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	06/25/89	0001	MG/L CACO3		396.		-	-
	06/05/91	0001			353.		-	-
	02/26/92	0001			343		-	-
	11/23/92	0001			325		-	-
	02/18/93	0001			322		-	-
	06/29/93	N001			292		-	-
	12/15/93	N001			592		-	-
ALUMINUM	06/25/89	0001	MG/L	<	0.1		0.1	-
	06/05/91	0001		<	0.05		0.05	-
	02/26/92	0001		<	0.05		0.05	-
AMMONIUM	06/25/89	0001	MG/L	<	0.1		0.1	-
	06/05/91	0001			0.1		0.1	-
	02/26/92	0001		<	0.1		0.1	-
	12/15/93	0001		<	0.1		0.1	-
AMMONIUM (TOTAL)	06/29/93	N001	MG/L	<	0.1		0.1	-
ANTIMONY	06/25/89	0001	MG/L	<	0.003	J	0.003	-
	06/05/91	0001		<	0.003		0.003	-
	02/26/92	0001		<	0.003		0.003	-
ARSENIC	06/25/89	0001	MG/L	<	0.01		0.01	-
	06/05/91	0001		<	0.01		0.01	-
	02/26/92	0001		<	0.01		0.01	-
	11/23/92	0001		<	0.0015		0.0015	-
	06/29/93	0001		<	0.005		0.005	-
ARSENIC (TOTAL)	11/23/92	N001	MG/L	<	0.0015		0.0015	-
	06/29/93	N001		<	0.005		0.005	-
BARIUM	06/25/89	0001	MG/L	<	0.1		0.1	-
	06/05/91	0001			0.03		0.01	-
	02/26/92	0001			0.02		0.01	-
	11/23/92	0001			0.023		0.0015	-
	06/29/93	0001		<	0.1		0.1	-
BARIUM (TOTAL)	11/23/92	N001	MG/L		0.051		0.0015	-
	06/29/93	N001		<	0.1		0.1	-
BERYLLIUM	06/25/89	0001	MG/L	<	0.01		0.01	-
	06/05/91	0001		<	0.005		0.005	-
BORON	06/25/89	0001	MG/L	<	0.1		0.1	-
	06/05/91	0001			0.05		0.05	-
BROMIDE	06/05/91	0001	MG/L		0.2		0.1	-
CADMIUM	06/25/89	0001	MG/L	<	0.001		0.001	-
	06/05/91	0001		<	0.001		0.001	-
	02/26/92	0001		<	0.001		0.001	-
	11/23/92	0001		<	0.00013		0.00013	-
CADMIUM (TOTAL)	11/23/92	N001	MG/L	<	0.00013	L	0.00013	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0662
NORTH COORDINATE: 59236.5 FT
EAST COORDINATE: 87577.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CALCIUM	06/25/89	0001	MG/L		143.		0.01	-
	06/05/91	0001			167.		0.5	-
	02/26/92	0001			153.		0.5	-
	02/18/93	0001			143		0.5	-
	06/29/93	0001			173		0.5	-
	12/15/93	0001			171		0.5	-
CALCIUM (TOTAL)	06/29/93	N001	MG/L		166		0.5	-
	12/15/93	N001			395		0.5	-
CHLORIDE	06/25/89	0001	MG/L		20.		1.	-
	06/05/91	0001			17.4		0.5	-
	02/26/92	0001			16.8		0.5	-
	02/18/93	0001			18.3		0.5	-
	12/15/93	0001			14.8		0.5	-
CHLORIDE (TOTAL)	06/29/93	N001	MG/L		18.2		0.5	-
CHROMIUM	06/25/89	0001	MG/L	<	0.01		0.01	-
	06/05/91	0001		<	0.01		0.01	-
	02/26/92	0001		<	0.01		0.01	-
	11/23/92	0001		<	0.0053		0.0053	-
CHROMIUM (TOTAL)	11/23/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	06/25/89	0001	MG/L	<	0.05		0.05	-
	06/05/91	0001		<	0.03		0.03	-
COPPER	06/25/89	0001	MG/L	<	0.02		0.02	-
	06/05/91	0001		<	0.01		0.01	-
CYANIDE	06/25/89	0001	MG/L	<	0.01		0.01	-
DISSOLVED OXYGEN	11/23/92	0001	MG/L		9.2		-	-
	06/29/93	N001			8.0		-	-
FLUORIDE	06/25/89	0001	MG/L	<	0.1		0.1	-
	06/05/91	0001		<	0.1		0.1	-
GROSS ALPHA	06/05/91	0001	PCI/L		8.5		1.	12.2
	02/26/92	0001			27.3		1.0	15.2
	11/23/92	0001			8.8	N	6.4	5.6
	02/18/93	0001			0		16	17
	06/29/93	0001			4		3	5
GROSS ALPHA (TOTAL)	11/23/92	N001	PCI/L		0.0	N	14.0	7.5
	06/29/93	N001			1		4	7
GROSS BETA	06/05/91	0001	PCI/L		9.7		0.5	6.7
	02/26/92	0001			13.8		0.5	7.7
	11/23/92	0001			0.0	N	12.0	6.9
	02/18/93	0001			0		23	10
	06/29/93	0001			8		5	5
GROSS BETA (TOTAL)	11/23/92	N001	PCI/L		14.8	N	10.7	7.1
	06/29/93	N001			10		5	5

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0662
NORTH COORDINATE: 59236.5 FT
EAST COORDINATE: 87577.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
IRON	06/25/89	0001	MG/L		0.04		0.03	-
	06/05/91	0001		<	0.03		0.03	-
	02/26/92	0001		<	0.03		0.03	-
	02/18/93	0001		<	0.03		0.03	-
	06/29/93	0001		<	0.03	J	0.03	-
IRON (TOTAL)	06/29/93	N001	MG/L		0.26	J	0.03	-
LEAD	06/25/89	0001	MG/L	<	0.01		0.01	-
	06/05/91	0001		<	0.005		0.005	-
	11/23/92	0001		<	0.0015		0.0015	-
LEAD (TOTAL)	11/23/92	N001	MG/L	<	0.0015		0.0015	-
LEAD-210	11/23/92	0001	PCI/L		0.0		4.8	2.9
LEAD-210 (TOTAL)	11/23/92	N001	PCI/L		6.1		0.3	0.9
MAGNESIUM	06/25/89	0001	MG/L		101.		0.001	-
	06/05/91	0001			105.		0.5	-
	02/26/92	0001			96.2		0.5	-
	02/18/93	0001			86.5		0.1	-
	06/29/93	0001			99.1		0.1	-
	12/15/93	0001			105		0.1	-
MAGNESIUM (TOTAL)	06/29/93	N001	MG/L		97.9		0.1	-
	12/15/93	N001			149		0.1	-
MANGANESE	06/25/89	0001	MG/L	<	0.01		0.01	-
	06/05/91	0001		<	0.01		0.01	-
	02/26/92	0001		<	0.01		0.01	-
	11/23/92	0001		<	0.0015		0.0015	-
	02/18/93	0001		<	0.01		0.01	-
	06/29/93	0001		<	0.01		0.01	-
	12/15/93	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	11/23/92	N001	MG/L		0.039		0.0015	-
	06/29/93	N001		<	0.01		0.01	-
	12/15/93	N001			1.14		0.01	-
MERCURY	06/25/89	0001	MG/L	<	0.0002		0.0002	-
MOLYBDENUM	06/25/89	0001	MG/L	<	0.01		0.01	-
	06/05/91	0001		<	0.01		0.01	-
	02/26/92	0001		<	0.01		0.01	-
	11/23/92	0001		<	0.0049	N	0.0049	-
	06/29/93	0001		<	0.01		0.01	-
MOLYBDENUM (TOTAL)	11/23/92	N001	MG/L	<	0.0049	N	0.0049	-
	06/29/93	N001		<	0.01		0.01	-
NICKEL	06/25/89	0001	MG/L	<	0.04		0.04	-
	06/05/91	0001		<	0.04		0.04	-
NITRATE	06/25/89	0001	MG/L		98.		1.	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0662
NORTH COORDINATE: 59236.5 FT
EAST COORDINATE: 87577.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
NITRATE	06/05/91	0001	MG/L		72.2		1.	-
	02/26/92	0001			88.1		5.0	-
	11/23/92	0001			80		0.044	-
	02/18/93	0001			78		1	-
	12/15/93	0001			95		1	-
NITRATE (TOTAL)	06/29/93	N001	MG/L		80		1	-
NITRITE AND NITRATE	06/05/91	0001	MG/L		16.3		0.05	-
PH	06/25/89	0001	SU		7.20		-	-
	06/05/91	0001			6.94		-	-
	02/26/92	0001			7.12		-	-
	11/23/92	0001			7.24		-	-
	02/18/93	0001			7.10		-	-
	06/29/93	N001			7.03		-	-
	12/15/93	N001			7.02		-	-
PHOSPHATE	06/25/89	0001	MG/L	<	0.1		0.1	-
PHOSPHATE (TOTAL)	06/29/93	N001	MG/L	<	0.1		0.1	-
POTASSIUM	06/25/89	0001	MG/L		3.1		0.01	-
	06/05/91	0001			3.0		0.01	-
	02/26/92	0001			2.83		0.01	-
	02/18/93	0001			2.6		0.1	-
	06/29/93	0001			2.8		0.1	-
	12/15/93	0001			2.4		0.1	-
POTASSIUM (TOTAL)	06/29/93	N001	MG/L		2.8		0.1	-
	12/15/93	N001			1.7		0.1	-
RADIUM-226	06/25/89	0001	PCI/L		0.2		1.	0.2
	06/05/91	0001			0.1		1.	0.3
	02/26/92	0001			0.0		1.0	0.3
	11/23/92	0001			0.9		0.3	0.3
RADIUM-226 (TOTAL)	11/23/92	N001	PCI/L		0.7		0.3	0.3
RADIUM-228	06/25/89	0001	PCI/L		0.7		1.	0.9
	06/05/91	0001			2.9	J	1.	2.2
	02/26/92	0001			0.3		1.0	1.6
	11/23/92	0001			4.7		2.1	1.7
RADIUM-228 (TOTAL)	11/23/92	N001	PCI/L		1.9		2.0	1.4
REDOX POTENTIAL	11/23/92	0001	mVOLTS		431.0		-	-
	06/29/93	N001			426		-	-
SELENIUM	06/25/89	0001	MG/L		0.006		0.005	-
	06/05/91	0001			0.006	JL	0.005	-
	02/26/92	0001			0.007		0.005	-
	11/23/92	0001			0.0070	NS	0.0015	-
SELENIUM (TOTAL)	11/23/92	N001	MG/L		0.0039		0.0015	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
S - REPORTED VALUE DETERMINED USING METHOD OF STD ADDITION (MSA)

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0662
NORTH COORDINATE: 59236.5 FT
EAST COORDINATE: 87577.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SILICA - SIO2	06/25/89	0001	MG/L		20.		2.	-
	06/05/91	0001			19.0		0.1	-
	12/15/93	0001			18.0		0.1	-
SILICA - SIO2 (TOTAL)	06/29/93	N001	MG/L		19.0	H	0.5	-
	12/15/93	N001			131		0.1	-
SILVER	06/25/89	0001	MG/L	<	0.01		0.01	-
	06/05/91	0001		<	0.01		0.01	-
SODIUM	06/25/89	0001	MG/L		35.2		0.002	-
	06/05/91	0001			35.		1.	-
	02/26/92	0001			33.		1.	-
	02/18/93	0001			35.9		0.1	-
	06/29/93	0001			38		1	-
	12/15/93	0001			36		1	-
SODIUM (TOTAL)	06/29/93	N001	MG/L		39		1	-
	12/15/93	N001			39		1	-
SPECIFIC CONDUCTANCE	06/25/89	0001	UMHO/CM		920.		-	-
	06/05/91	0001			1450.		-	-
	02/26/92	0001			1182		-	-
	11/23/92	0001			1095		-	-
	02/18/93	0001			1161		-	-
	06/29/93	N001			1420		-	-
	12/15/93	N001			1346		-	-
STRONTIUM	06/05/91	0001	MG/L		1.00		0.01	-
	02/26/92	0001			0.92		0.01	-
	11/23/92	0001			1.1		0.00035	-
	06/29/93	0001			1.10		0.01	-
	12/15/93	0001			1.16		0.01	-
STRONTIUM (TOTAL)	11/23/92	N001	MG/L		1.1		0.00035	-
	06/29/93	N001			1.07		0.01	-
	12/15/93	N001			2.01		0.01	-
SULFATE	06/25/89	0001	MG/L		418.		0.1	-
	06/05/91	0001			356.		0.1	-
	02/26/92	0001			404.		40.	-
	11/23/92	0001			420		1.0	-
	02/18/93	0001			412		1	-
	12/15/93	0001			584		1	-
SULFATE (TOTAL)	11/23/92	N001	MG/L		380		1.0	-
	06/29/93	N001			524		1	-
SULFIDE	06/25/89	0001	MG/L	<	0.1		0.1	-
	06/05/91	0001			11.7	J	1.	-
TEMPERATURE	06/25/89	0001	C - DEGREE		17.8			
	06/05/91	0001			12.3			
	02/26/92	0001			15.1			
	11/23/92	0001			14.3			

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0662
NORTH COORDINATE: 59236.5 FT
EAST COORDINATE: 87577.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TEMPERATURE	02/18/93	0001	C - DEGREE		15.5		-	-
	06/29/93	N001			22.2		-	-
	12/15/93	N001			15.5		-	-
THALLIUM	06/25/89	0001	MG/L	<	0.01		0.01	-
	06/05/91	0001		<	0.01		0.01	-
THORIUM-230	06/05/91	0001	PCI/L		0.2		1.	0.2
TIN	06/25/89	0001	MG/L	<	0.005		0.005	-
	06/05/91	0001		<	0.01	I	0.01	-
TOTAL DISSOLVED SOLIDS	06/25/89	0001	MG/L		1070.		10.	-
	06/05/91	0001			1070.		10.	-
	02/26/92	0001			1060.		10.	-
	02/18/93	0001			990		10	-
	12/15/93	0001			1320		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/29/93	N001	MG/L		1170	H	10	-
TOTAL ORGANIC CARBON	02/26/92	0001	MG/L	<	1.		1.	-
URANIUM	06/25/89	0001	MG/L		0.025		0.003	-
	06/05/91	0001			0.013		0.001	-
	02/26/92	0001			0.017		0.001	-
	11/23/92	0001			0.020		0.001	-
	02/18/93	0001			0.020		0.001	-
	06/29/93	0001			0.019		0.001	-
	12/15/93	0001			0.019		0.001	-
URANIUM (TOTAL)	11/23/92	N001	MG/L		0.018		0.001	-
	06/29/93	N001			0.017		0.001	-
	12/15/93	N001			0.028		0.001	-
VANADIUM	06/25/89	0001	MG/L		0.05		0.01	-
	06/05/91	0001			0.02		0.01	-
	02/26/92	0001		<	0.01		0.01	-
	11/23/92	0001			0.025		0.0019	-
	06/29/93	0001			0.02		0.01	-
	12/15/93	0001			0.02		0.01	-
VANADIUM (TOTAL)	11/23/92	N001	MG/L		0.030		0.0019	-
	06/29/93	N001			0.02		0.01	-
	12/15/93	N001			0.19		0.01	-
ZINC	06/25/89	0001	MG/L	<	0.005		0.005	-
	06/05/91	0001		<	0.005		0.005	-
	02/26/92	0001			0.049		0.005	-
	11/23/92	0001			0.0056		0.0010	-
	06/29/93	0001			0.053	J	0.005	-
ZINC (TOTAL)	11/23/92	N001	MG/L		0.010		0.0010	-
	06/29/93	N001			0.057	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0663
NORTH COORDINATE: 59069.6 FT
EAST COORDINATE: 88593.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/26/88	0001	MG/L CACO3		141.	GL	-	-
	06/25/89	0001			187.	L	-	-
	12/02/89	0001			187.	L	-	-
	06/25/90	0001			167.0	JL	-	-
	01/29/91	0001			207.	L	-	-
	06/04/91	0001			190.	L	-	-
	02/20/92	0001			206	L	-	-
	08/15/92	0001			172	L	-	-
	11/20/92	0001			192	L	-	-
	06/24/93	N001			189	L	-	-
	12/11/93	N001			172	L	-	-
ALUMINUM	06/25/89	0001	MG/L	<	0.1	L	0.1	-
	12/02/89	0001		<	0.1	L	0.1	-
	06/25/90	0001		<	0.1	JL	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/04/91	0001		<	0.05	L	0.05	-
	02/20/92	0001		<	0.05	L	0.05	-
	08/15/92	0001		<	0.2	L	0.2	-
AMMONIUM	04/26/88	0001	MG/L	<	0.1	GL	0.1	-
	06/25/89	0001		<	0.1	L	0.1	-
	12/02/89	0001			0.1	L	0.1	-
	06/25/90	0001			0.8	HJL	0.1	-
	01/29/91	0001		<	0.1	L	0.1	-
	06/04/91	0001			0.1	L	0.1	-
	02/20/92	0001		<	0.1	L	0.1	-
	12/11/93	0001		<	0.1	L	0.1	-
AMMONIUM (TOTAL)	06/24/93	N001	MG/L	<	0.1	L	0.1	-
ANTIMONY	06/25/89	0001	MG/L	<	0.003	L	0.003	-
	12/02/89	0001		<	0.003	L	0.003	-
	06/25/90	0001		<	0.003	JL	0.003	-
	01/29/91	0001		<	0.003	L	0.003	-
	06/04/91	0001		<	0.003	L	0.003	-
	02/20/92	0001		<	0.003	L	0.003	-
	08/15/92	0001		<	0.06	WL	0.06	-
ARSENIC	04/26/88	0001	MG/L		0.002	GJL	0.01	-
	06/25/89	0001		<	0.01	L	0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	JL	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.01	L	0.01	-
	02/20/92	0001		<	0.01	L	0.01	-
	08/15/92	0001		<	0.01	WL	0.01	-
	11/20/92	0001		<	0.0015	L	0.0015	-
	06/24/93	0001		<	0.005	L	0.005	-
ARSENIC (TOTAL)	11/20/92	N001	MG/L	<	0.0015	L	0.0015	-
	06/24/93	N001		<	0.005	L	0.005	-
BARIUM	06/25/89	0001	MG/L	<	0.1	L	0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0663
NORTH COORDINATE: 59069.6 FT
EAST COORDINATE: 88593.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BARIUM	12/02/89	0001	MG/L	<	0.1	L	0.1	
	06/25/90	0001		<	0.1	JL	0.1	
	01/29/91	0001		<	0.1	L	0.1	
	06/04/91	0001			0.07	L	0.01	
	02/20/92	0001			0.07	L	0.01	
	08/15/92	0001		<	0.2	L	0.2	
	11/20/92	0001			0.077	L	0.0015	
	06/24/93	0001		<	0.1	L	0.1	
BARIUM (TOTAL)	11/20/92	N001	MG/L		0.080	L	0.0015	
	06/24/93	N001		<	0.1	L	0.1	
BERYLLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	
	12/02/89	0001		<	0.005	L	0.005	
	06/25/90	0001		<	0.01	JL	0.01	
	01/29/91	0001		<	0.01	L	0.01	
	06/04/91	0001		<	0.005	L	0.005	
	08/15/92	0001		<	0.005	L	0.005	
BORON	06/25/89	0001	MG/L	<	0.1	L	0.1	
	12/02/89	0001		<	0.1	L	0.1	
	06/25/90	0001		<	0.1	JL	0.1	
	01/29/91	0001		<	0.1	L	0.1	
	06/04/91	0001			0.05	L	0.05	
BROMIDE	01/29/91	0001	MG/L	<	0.1	L	0.1	
	06/04/91	0001		<	0.1	L	0.1	
CADMIUM	04/26/88	0001	MG/L		0.003	GL	0.001	
	06/25/89	0001		<	0.001	GL	0.001	
	12/02/89	0001		<	0.001	L	0.001	
	06/25/90	0001		<	0.001	JL	0.001	
	01/29/91	0001		<	0.001	L	0.001	
	06/04/91	0001		<	0.001	L	0.001	
	02/20/92	0001		<	0.0005	L	0.0005	
	08/15/92	0001		<	0.005	EL	0.005	
	11/20/92	0001		<	0.00013	L	0.00013	
CADMIUM (TOTAL)	11/20/92	N001	MG/L	<	0.00013	LNW	0.00013	
CALCIUM	04/26/88	0001	MG/L		7.99	GL	0.01	
	06/25/89	0001			14.8	L	0.01	
	12/02/89	0001			12.6	L	0.01	
	06/25/90	0001			16.4	JL	0.01	
	01/29/91	0001			16.4	L	0.01	
	06/04/91	0001			16.8	L	0.1	
	02/20/92	0001			15.1	L	0.1	
	08/15/92	0001			17	L	5	
	06/24/93	0001			14.3	L	0.5	
	12/11/93	0001			15.2	L	0.5	
CALCIUM (TOTAL)	06/24/93	N001	MG/L		14.2	L	0.5	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
G - PH > 9, POSSIBLE GROUT CONTAMINATION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0663
NORTH COORDINATE: 59069.6 FT
EAST COORDINATE: 88593.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CALCIUM (TOTAL)	12/11/93	N001	MG/L		15.4	L	0.5	-
CHLORIDE	04/26/88	0001	MG/L		11.	GL	1.	-
	06/25/89	0001			8.6	L	1.	-
	12/02/89	0001			9.7	L	1.	-
	06/25/90	0001			10.	JL	1.	-
	01/29/91	0001			7.	JL	1.	-
	06/04/91	0001			9.8	L	0.5	-
	02/20/92	0001			9.5	L	0.5	-
	08/15/92	0001			8.8	L	0.016	-
	12/11/93	0001			9.2	L	0.5	-
CHLORIDE (TOTAL)	06/24/93	N001	MG/L		9.4	L	0.5	-
CHROMIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	JL	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.01	L	0.01	-
	02/20/92	0001		<	0.01	L	0.01	-
	08/15/92	0001		<	0.01	L	0.01	-
	11/20/92	0001		<	0.0053	L	0.0053	-
CHROMIUM (TOTAL)	11/20/92	N001	MG/L	<	0.0053	L	0.0053	-
COBALT	06/25/89	0001	MG/L	<	0.05	L	0.05	-
	12/02/89	0001		<	0.05	L	0.05	-
	06/25/90	0001		<	0.05	JL	0.05	-
	01/29/91	0001		<	0.05	L	0.05	-
	06/04/91	0001		<	0.03	L	0.03	-
COPPER	06/25/89	0001	MG/L	<	0.02	L	0.02	-
	12/02/89	0001		<	0.02	L	0.02	-
	06/25/90	0001		<	0.02	JL	0.02	-
	01/29/91	0001		<	0.02	L	0.02	-
	06/04/91	0001		<	0.01	L	0.01	-
CYANIDE	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
DISSOLVED OXYGEN	11/20/92	0001	MG/L		1.6	L	-	-
	06/24/93	N001			0.3	L	-	-
	12/11/93	N001		<	0.6	L	-	-
FLUORIDE	06/25/89	0001	MG/L		0.2	L	0.1	-
	12/02/89	0001			0.3	L	0.1	-
	06/25/90	0001			6.6	JL	0.1	-
	01/29/91	0001			0.2	L	0.1	-
	06/04/91	0001			0.2	L	0.1	-
GROSS ALPHA	04/26/88	0001	PCI/L		1.0	GL	0.2	2.1
	01/29/91	0001			0.0	L	1.	2.2
	06/04/91	0001			4.0	L	1.	4.3
	02/20/92	0001			1.4	L	1.0	3.8

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0663
NORTH COORDINATE: 59069.6 FT
EAST COORDINATE: 88593.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS ALPHA	08/15/92	0001	PCI/L		0.0	L	3.2	1.2
	11/20/92	0001			2.0	LN	2.7	2.0
	06/24/93	0001			1	L	2	4
GROSS ALPHA (TOTAL)	11/20/92	N001	PCI/L		0.0	LN	6.5	3.4
	06/24/93	N001			6	L	2	5
GROSS BETA	04/26/88	0001	PCI/L		3.0	GL	1.	1.4
	01/29/91	0001			2.8	L	0.5	1.7
	06/04/91	0001			4.6	L	0.5	2.5
	02/20/92	0001			4.2	L	0.5	2.3
	08/15/92	0001			0.0	L	3.6	2.0
	11/20/92	0001			15.6	LN	24.9	15.4
	06/24/93	0001			9	L	4	4
GROSS BETA (TOTAL)	11/20/92	N001	PCI/L		26.7	LN	4.7	3.8
	06/24/93	N001			5	L	4	4
IRON	06/25/89	0001	MG/L	<	0.03	L	0.03	-
	12/02/89	0001		<	0.03	L	0.03	-
	06/25/90	0001		<	0.03	JL	0.03	-
	01/29/91	0001		<	0.03	L	0.03	-
	06/04/91	0001		<	0.03	L	0.03	-
	02/20/92	0001		<	0.03	L	0.03	-
	08/15/92	0001		<	0.1	L	0.1	-
	06/24/93	0001		<	0.03	JL	0.03	-
IRON (TOTAL)	06/24/93	N001	MG/L		0.03	JL	0.03	-
LEAD	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	JL	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.005	L	0.005	-
	11/20/92	0001		<	0.0015	L	0.0015	-
LEAD (TOTAL)	11/20/92	N001	MG/L	<	0.0015	L	0.0015	-
LEAD-210	11/20/92	0001	PCI/L		0.7	L	2.0	1.2
LEAD-210 (TOTAL)	11/20/92	N001	PCI/L		6.0	L	0.3	0.9
MAGNESIUM	04/26/88	0001	MG/L		5.2	GL	0.001	-
	06/25/89	0001			11.0	L	0.001	-
	12/02/89	0001			10.7	L	0.001	-
	06/25/90	0001			13.5	JL	0.001	-
	01/29/91	0001			14.0	L	0.001	-
	06/04/91	0001			13.6	L	0.1	-
	02/20/92	0001			12.0	L	0.1	-
	08/15/92	0001			13	L	5	-
	06/24/93	0001			11.0	L	0.1	-
	12/11/93	0001			11.8	L	0.1	-
MAGNESIUM (TOTAL)	06/24/93	N001	MG/L		10.3	L	0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

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OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0663
NORTH COORDINATE: 59069.6 FT
EAST COORDINATE: 88593.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MAGNESIUM (TOTAL)	12/11/93	N001	MG/L		11.4	L	0.1	
MANGANESE	06/25/89	0001	MG/L		0.03	L	0.01	
	12/02/89	0001			0.02	L	0.01	
	06/25/90	0001			0.02	JL	0.01	
	01/29/91	0001			0.03	L	0.01	
	06/04/91	0001			0.03	L	0.01	
	02/20/92	0001			0.02	L	0.01	
	08/15/92	0001		<	0.1	L	0.01	
	11/20/92	0001			0.028	L	0.0015	
	06/24/93	0001			0.03	L	0.01	
	12/11/93	0001			0.03	L	0.01	
MANGANESE (TOTAL)	11/20/92	N001	MG/L		0.022	L	0.0015	
	06/24/93	N001			0.02	L	0.01	
	12/11/93	N001			0.03	L	0.01	
MERCURY	06/25/89	0001	MG/L	<	0.0002	L	0.0002	
	12/02/89	0001		<	0.0002	L	0.0002	
	06/25/90	0001		<	0.0002	JL	0.0002	
MOLYBDENUM	04/26/88	0001	MG/L		0.01	GL	0.01	
	06/25/89	0001		<	0.01	L	0.01	
	12/02/89	0001		<	0.01	L	0.01	
	06/25/90	0001		<	0.01	JL	0.01	
	01/29/91	0001			0.01	L	0.01	
	06/04/91	0001		<	0.01	L	0.01	
	02/20/92	0001		<	0.01	L	0.01	
	08/15/92	0001		<	0.007	L	0.007	
	11/20/92	0001		<	0.0049	LN	0.0049	
	06/24/93	0001		<	0.01	L	0.01	
MOLYBDENUM (TOTAL)	11/20/92	N001	MG/L	<	0.0049	LN	0.0049	
	06/24/93	N001		<	0.01	L	0.01	
NICKEL	06/25/89	0001	MG/L	<	0.04	L	0.04	
	12/02/89	0001		<	0.04	L	0.04	
	06/25/90	0001		<	0.04	JL	0.04	
	01/29/91	0001		<	0.04	L	0.04	
	06/04/91	0001		<	0.04	L	0.04	
NITRATE	04/26/88	0001	MG/L		0.4	GJL	1.	
	06/25/89	0001			4.8	L	1.	
	12/02/89	0001			3.5	L	1.	
	06/25/90	0001		<	0.1	JL	0.1	
	01/29/91	0001		<	1.	L	1.	
	06/04/91	0001			3.1	L	1.	
	02/20/92	0001		<	1.0	L	1.0	
	08/15/92	0001			3.1	L	0.075	
	11/20/92	0001			0.20	L	0.044	
	12/11/93	0001		<	1	L	1	
NITRITE AND NITRATE	01/29/91	0001	MG/L	<	1.	JL	1.	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
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GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
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NORTH COORDINATE: 59069.6 FT
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REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
NITRITE AND NITRATE	06/04/91	0001	MG/L		0.70	L	0.05	
PH	04/26/88	0001	SU		9.31	GL		
	06/25/89	0001			8.42	L		
	12/02/89	0001			8.48	L		
	06/25/90	0001			8.29	L		
	01/29/91	0001			8.21	L		
	06/04/91	0001			8.13	L		
	02/20/92	0001			8.15	L		
	08/15/92	0001			8.03	L		
	11/20/92	0001			8.20	L		
	06/24/93	N001			8.30	L		
	12/11/93	N001			8.20	L		
PHOSPHATE	06/25/89	0001	MG/L	<	0.1	L	0.1	
	12/02/89	0001		<	0.1	L	0.1	
	06/25/90	0001		<	0.1	JL	0.1	
PHOSPHATE (TOTAL)	06/24/93	N001	MG/L	<	0.1	L	0.1	
POTASSIUM	04/26/88	0001	MG/L		2.49	GL	0.01	
	06/25/89	0001			3.0	L	0.01	
	12/02/89	0001			2.4	L	0.01	
	06/25/90	0001			2.4	JL	0.01	
	01/29/91	0001			2.6	L	0.01	
	06/04/91	0001			2.8	L	0.01	
	02/20/92	0001			2.89	L	0.01	
	08/15/92	0001			3.0	L	0.575	
	06/24/93	0001			3.1	L	0.1	
	12/11/93	0001			2.5	L	0.1	
POTASSIUM (TOTAL)	06/24/93	N001	MG/L		2.7	L	0.1	
	12/11/93	N001			2.4	L	0.1	
RADIUM-226	06/25/89	0001	PCI/L		0.2	L	1.	0.2
	12/02/89	0001			0.0	L	1.	0.1
	06/25/90	0001			0.2	JL	1.	0.2
	01/29/91	0001			0.2	L	1.	0.2
	06/04/91	0001			0.2	L	1.	0.3
	02/20/92	0001			0.0	L	1.0	0.2
	08/15/92	0001			0.3	L	0.5	0.1
	11/20/92	0001			0.8	L	0.3	0.3
RADIUM-226 (TOTAL)	11/20/92	N001	PCI/L		0.2	L	0.3	0.2
RADIUM-228	06/25/89	0001	PCI/L		0.3	L	1.	0.7
	12/02/89	0001			2.1	L	1.	3.5
	06/25/90	0001			0.6	JL	1.	0.8
	01/29/91	0001			0.9	L	1.	0.7
	06/04/91	0001			2.1	JL	1.	2.2
	02/20/92	0001			0.6	L	1.0	1.5
	08/15/92	0001			0.4	L	1.7	0.9
	11/20/92	0001			0.2	L	3.9	2.3
RADIUM-228 (TOTAL)	11/20/92	N001	PCI/L		3.1	L	2.1	1.5

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0663
NORTH COORDINATE: 59069.6 FT
EAST COORDINATE: 88593.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
REDOX POTENTIAL	11/20/92	0001	mVOLTS		164.5	L	-	-
	06/24/93	N001			282	L	-	-
	12/11/93	N001			91	L	-	-
SELENIUM	04/26/88	0001	MG/L	<	0.005	GL	0.005	-
	06/25/89	0001		<	0.005	L	0.005	-
	12/02/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.005	JL	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/04/91	0001		<	0.005	JL	0.005	-
	02/20/92	0001		<	0.005	L	0.005	-
	08/15/92	0001		<	0.005	WL	0.005	-
	11/20/92	0001		<	0.0015	LN	0.0015	-
SELENIUM (TOTAL)	11/20/92	N001	MG/L	<	0.0015	L	0.0015	-
SILICA - SIO2	06/25/89	0001	MG/L		15.	L	2.	-
	12/02/89	0001			15.4	L	2.	-
	06/25/90	0001			13.	JL	2.	-
	01/29/91	0001			12.	L	2.	-
	06/04/91	0001			12.8	L	0.1	-
	12/11/93	0001			14.3	L	0.1	-
SILICA - SIO2 (TOTAL)	06/24/93	N001	MG/L		14.3	HL	0.5	-
	12/11/93	N001			14.0	L	0.1	-
SILVER	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	JL	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.01	L	0.01	-
SODIUM	04/26/88	0001	MG/L		75.2	GL	0.002	-
	06/25/89	0001			77.6	L	0.002	-
	12/02/89	0001			75.	L	0.002	-
	06/25/90	0001			76.7	JL	0.002	-
	01/29/91	0001			78.5	L	0.002	-
	06/04/91	0001			80.	L	1.	-
	02/20/92	0001			75.	L	1.	-
	08/15/92	0001			75	L	5	-
	06/24/93	0001			74	L	1	-
	12/11/93	0001			74	L	1	-
SODIUM (TOTAL)	06/24/93	N001	MG/L		70	L	1	-
	12/11/93	N001			73	L	1	-
SPECIFIC CONDUCTANCE	04/26/88	0001	UMHO/CM		300.	GL	-	-
	06/25/89	0001			360.	L	-	-
	12/02/89	0001			380.	L	-	-
	06/25/90	0001			405.	L	-	-
	01/29/91	0001			498.	L	-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0663
NORTH COORDINATE: 59069.6 FT
EAST COORDINATE: 88593.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SPECIFIC CONDUCTANCE	06/04/91	0001	UMHO/CM		502.	L		
	02/20/92	0001			404	L		
	08/15/92	0001			413	L		
	11/20/92	0001			380	L		
	06/24/93	N001			408	L		
	12/11/93	N001			396	L		
STRONTIUM	06/25/90	0001	MG/L		0.53	*JL	0.1	
	01/29/91	0001			0.5	L	0.1	
	06/04/91	0001			0.54	L	0.01	
	02/20/92	0001			0.52	L	0.01	
	08/15/92	0001			0.57	L	0.2	
	11/20/92	0001			0.61	L	0.00035	
	06/24/93	0001			0.50	L	0.01	
	12/11/93	0001			0.54	L	0.01	
STRONTIUM (TOTAL)	11/20/92	N001	MG/L		0.62	L	0.00035	
	06/24/93	N001			0.47	L	0.01	
	12/11/93	N001			0.52	L	0.01	
SULFATE	04/26/88	0001	MG/L		53.	GL	0.1	
	06/25/89	0001			46.	L	0.1	
	12/02/89	0001			48.	L	0.1	
	06/25/90	0001			40.7	JL	0.1	
	01/29/91	0001			45.3	L	0.1	
	06/04/91	0001			44.	L	0.1	
	02/20/92	0001			38.	L	10.	
	08/15/92	0001			43	L	0.059	
	11/20/92	0001			48	L	1.0	
	12/11/93	0001			45	L	1	
SULFATE (TOTAL)	11/20/92	N001	MG/L		48	L	1.0	
	06/24/93	N001			46	L	1	
SULFIDE	06/25/89	0001	MG/L	<	0.1	L	0.1	
	12/02/89	0001		<	0.1	L	0.1	
	01/29/91	0001		<	0.1	JL	0.1	
	06/04/91	0001		<	1.	IJL	1.	
TEMPERATURE	04/26/88	0001	C - DEGREE		16.0	GL		
	06/25/89	0001			18.	L		
	12/02/89	0001			16.0	L		
	06/25/90	0001			17.5	L		
	01/29/91	0001			15.1	L		
	06/04/91	0001			17.7	L		
	02/20/92	0001			15.7	JL		
	08/15/92	0001			16.6	L		
	11/20/92	0001			13.5	L		
	06/24/93	N001			17.6	L		
	12/11/93	N001			15.5	L		
THALLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	
	12/02/89	0001		<	0.1	L	0.1	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
G - PH > 9, POSSIBLE GROUT CONTAMINATION
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0663
NORTH COORDINATE: 59069.6 FT
EAST COORDINATE: 88593.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
THALLIUM	06/25/90	0001	MG/L	<	0.01	JL	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.01	L	0.01	-
THORIUM-230	01/29/91	0001	PCI/L		0.2	L	1.	0.4
	06/04/91	0001			0.7	L	1.	0.3
TIN	06/25/89	0001	MG/L	<	0.005	L	0.005	-
	12/02/89	0001		<	0.005	L	0.005	-
	06/25/90	0001		<	0.005	JL	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/04/91	0001		<	0.01	IL	0.01	-
TOTAL DISSOLVED SOLIDS	04/26/88	0001	MG/L		232.	GL	10.	-
	06/25/89	0001			267.	L	10.	-
	12/02/89	0001			299.	L	10.	-
	06/25/90	0001			264.	JL	10.	-
	01/29/91	0001			244.	L	10.	-
	06/04/91	0001			301.	L	10.	-
	02/20/92	0001			287.	L	10.	-
	08/15/92	0001			290	L	42	-
	12/11/93	0001			300	L	10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/24/93	N001	MG/L		290	L	10	-
TOTAL ORGANIC CARBON	04/26/88	0001	MG/L		25.0	GL	1.	-
	01/29/91	0001		<	1.	JL	1.	-
	06/04/91	0001		<	1.	L	1.	-
	02/20/92	0001		<	1.	L	1.	-
	08/15/92	0001		<	1.0	L	1.0	-
URANIUM	04/26/88	0001	MG/L		0.0007	GJL	0.003	-
	06/25/89	0001		<	0.0003	JL	0.003	-
	12/02/89	0001			0.002	JL	0.003	-
	06/25/90	0001			0.0005	JL	0.003	-
	01/29/91	0001		<	0.0003	L	0.0003	-
	06/04/91	0001		<	0.001	L	0.001	-
	02/20/92	0001			0.001	L	0.001	-
	08/15/92	0001		<	0.001	L	0.001	-
	11/20/92	0001		<	0.001	L	0.001	-
	06/24/93	0001		<	0.001	L	0.001	-
	12/11/93	0001		<	0.001	L	0.001	-
URANIUM (TOTAL)	11/20/92	N001	MG/L		0.001	L	0.001	-
	06/24/93	N001		<	0.001	L	0.001	-
	12/11/93	N001		<	0.001	L	0.001	-
VANADIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
	12/02/89	0001		<	0.01	L	0.01	-
	06/25/90	0001		<	0.01	JL	0.01	-
	01/29/91	0001		<	0.01	L	0.01	-
	06/04/91	0001		<	0.01	L	0.01	-
	02/20/92	0001		<	0.01	L	0.01	-
	08/15/92	0001		<	0.05	*L	0.05	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
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N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
G - PH > 9, POSSIBLE GROUT CONTAMINATION
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0663
NORTH COORDINATE: 59069.6 FT
EAST COORDINATE: 88593.5 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
VANADIUM	11/20/92	0001	MG/L	<	0.0019	L	0.0019	-
	06/24/93	0001		<	0.01	L	0.01	-
	12/11/93	0001		<	0.01	L	0.01	-
VANADIUM (TOTAL)	11/20/92	N001	MG/L	<	0.0019	L	0.0019	-
	06/24/93	N001		<	0.01	L	0.01	-
	12/11/93	N001		<	0.01	L	0.01	-
ZINC	06/25/89	0001	MG/L	<	0.005	L	0.005	-
	12/02/89	0001		<	0.005	L	0.005	-
	06/25/90	0001			0.040	JL	0.005	-
	01/29/91	0001		<	0.005	L	0.005	-
	06/04/91	0001		<	0.005	L	0.005	-
	02/20/92	0001		<	0.005	L	0.005	-
	08/15/92	0001		<	0.02	L	0.02	-
	11/20/92	0001		<	0.0010	L	0.0010	-
	06/24/93	0001		<	0.005	JL	0.005	-
ZINC (TOTAL)	11/20/92	N001	MG/L		0.0070	L	0.0010	-
	06/24/93	N001			0.007	JL	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0664
NORTH COORDINATE: 61255.9 FT
EAST COORDINATE: 89537.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	06/28/93	N001	MG/L CACO3		210			
AMMONIUM (TOTAL)	06/28/93	N001	MG/L	<	0.1		0.1	-
ARSENIC	06/28/93	0001	MG/L	<	0.005		0.005	
ARSENIC (TOTAL)	06/28/93	N001	MG/L	<	0.005		0.005	
BARIUM	06/28/93	0001	MG/L		0.2		0.1	
BARIUM (TOTAL)	06/28/93	N001	MG/L		0.2		0.1	
CALCIUM	06/28/93	0001	MG/L		14.2		0.5	
CALCIUM (TOTAL)	06/28/93	N001	MG/L		13.6		0.5	
CHLORIDE (TOTAL)	06/28/93	N001	MG/L		9.0		0.5	
DISSOLVED OXYGEN	06/28/93	N001	MG/L		0.1			
GROSS ALPHA	06/29/93	0001	PCI/L		9		3	5
GROSS ALPHA (TOTAL)	06/28/93	N001	PCI/L		11		3	6
GROSS BETA	06/29/93	0001	PCI/L		7		4	4
GROSS BETA (TOTAL)	06/28/93	N001	PCI/L		7		4	4
IRON	06/28/93	0001	MG/L		0.05	J	0.03	
IRON (TOTAL)	06/28/93	N001	MG/L		0.13	J	0.03	
MAGNESIUM	06/28/93	0001	MG/L		16.6		0.1	
MAGNESIUM (TOTAL)	06/28/93	N001	MG/L		16.5		0.1	-
MANGANESE	06/28/93	0001	MG/L		0.03		0.01	
MANGANESE (TOTAL)	06/28/93	N001	MG/L		0.03		0.01	
MOLYBDENUM	06/28/93	0001	MG/L	<	0.01		0.01	-
MOLYBDENUM (TOTAL)	06/28/93	N001	MG/L	<	0.01		0.01	
NITRATE (TOTAL)	06/28/93	N001	MG/L	<	1		1	
PH	06/28/93	N001	SU		8.16			
PHOSPHATE (TOTAL)	06/28/93	N001	MG/L	<	0.1		0.1	-
POTASSIUM	06/28/93	0001	MG/L		3.4		0.1	
POTASSIUM (TOTAL)	06/28/93	N001	MG/L		3.2		0.1	
REDOX POTENTIAL	06/28/93	N001	mVOLTS		36		-	-
SILICA - SIO2 (TOTAL)	06/28/93	N001	MG/L		10.5	H	0.5	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0664
NORTH COORDINATE: 61255.9 FT
EAST COORDINATE: 89537.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SODIUM	06/28/93	0001	MG/L		70		1	-
SODIUM (TOTAL)	06/28/93	N001	MG/L		72		1	-
SPECIFIC CONDUCTANCE	06/28/93	N001	UMHO/CM		458		-	-
STRONTIUM	06/28/93	0001	MG/L		0.56		0.01	-
STRONTIUM (TOTAL)	06/28/93	N001	MG/L		0.55		0.01	-
SULFATE (TOTAL)	06/28/93	N001	MG/L		41		1	-
TEMPERATURE	06/28/93	N001	C - DEGREE		20.7		-	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/28/93	N001	MG/L		280	H	10	-
URANIUM	06/29/93	0001	MG/L		0.011		0.001	-
URANIUM (TOTAL)	06/28/93	N001	MG/L		0.01		0.001	-
VANADIUM	06/28/93	0001	MG/L	<	0.01		0.01	-
VANADIUM (TOTAL)	06/28/93	N001	MG/L	<	0.01		0.01	-
ZINC	06/28/93	0001	MG/L		0.022	J	0.005	-
ZINC (TOTAL)	06/28/93	N001	MG/L		0.030	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0668
NORTH COORDINATE: 60171.4 FT
EAST COORDINATE: 88287.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	06/25/89 06/29/93	0001 N001	MG/L CACO3		178. 186	L		
ALUMINUM	06/25/89	0001	MG/L	<	0.1	L	0.1	-
AMMONIUM	06/25/89	0001	MG/L	<	0.1	L	0.1	
AMMONIUM (TOTAL)	06/29/93	N001	MG/L	<	0.1		0.1	
ANTIMONY	06/25/89	0001	MG/L	<	0.003	L	0.003	
ARSENIC	06/25/89 06/29/93	0001 0001	MG/L	<	0.01 0.015	L	0.01 0.005	- -
ARSENIC (TOTAL)	06/29/93	N001	MG/L		0.016		0.005	
BARIUM	06/25/89 06/29/93	0001 0001	MG/L	<	0.1 0.1	L	0.1 0.1	
BARIUM (TOTAL)	06/29/93	N001	MG/L		0.1		0.1	
BERYLLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	
BORON	06/25/89	0001	MG/L	<	0.1	L	0.1	
CADMIUM	06/25/89	0001	MG/L	<	0.001	L	0.001	-
CALCIUM	06/25/89 06/29/93	0001 0001	MG/L		6.04 13.3	L	0.01 0.5	- -
CALCIUM (TOTAL)	06/29/93	N001	MG/L		12.4		0.5	
CHLORIDE	06/25/89	0001	MG/L		6.1	L	1.	-
CHLORIDE (TOTAL)	06/29/93	N001	MG/L		5.7		0.5	-
CHROMIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	
COBALT	06/25/89	0001	MG/L	<	0.05	L	0.05	
COPPER	06/25/89	0001	MG/L		0.02	L	0.02	-
CYANIDE	06/25/89	0001	MG/L	<	0.01	L	0.01	-
DISSOLVED OXYGEN	06/29/93	N001	MG/L		3.2			
FLUORIDE	06/25/89	0001	MG/L		0.3	L	0.1	
GROSS ALPHA	06/29/93	0001	PCI/L		6		2	5
GROSS ALPHA (TOTAL)	06/29/93	N001	PCI/L		0		2	4
GROSS BETA	06/29/93	0001	PCI/L		3		4	4
GROSS BETA (TOTAL)	06/29/93	N001	PCI/L		2		4	4
IRON	06/25/89	0001	MG/L	<	0.03	L	0.03	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0668
NORTH COORDINATE: 60171.4 FT
EAST COORDINATE: 88287.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
IRON	06/29/93	0001	MG/L	<	0.03	J	0.03	-
IRON (TOTAL)	06/29/93	N001	MG/L	<	0.03	J	0.03	-
LEAD	06/25/89	0001	MG/L	<	0.01	L	0.01	-
MAGNESIUM	06/25/89 06/29/93	0001 0001	MG/L		17.6 20.2	L	0.001 0.1	- -
MAGNESIUM (TOTAL)	06/29/93	N001	MG/L		19.7		0.1	-
MANGANESE	06/25/89 06/29/93	0001 0001	MG/L	< <	0.01 0.01	L	0.01 0.01	- -
MANGANESE (TOTAL)	06/29/93	N001	MG/L	<	0.01		0.01	-
MERCURY	06/25/89	0001	MG/L		0.0005	L	0.0002	-
MOLYBDENUM	06/25/89 06/29/93	0001 0001	MG/L	< <	0.01 0.01	L	0.01 0.01	- -
MOLYBDENUM (TOTAL)	06/29/93	N001	MG/L	<	0.01		0.01	-
NICKEL	06/25/89	0001	MG/L	<	0.04	L	0.04	-
NITRATE	06/25/89	0001	MG/L		6.7	L	1.	-
NITRATE (TOTAL)	06/29/93	N001	MG/L		2		1	-
PH	06/25/89 06/29/93	0001 N001	SU		8.78 7.85	L	- -	- -
PHOSPHATE	06/25/89	0001	MG/L	<	0.1	L	0.1	-
PHOSPHATE (TOTAL)	06/29/93	N001	MG/L	<	0.1		0.1	-
POTASSIUM	06/25/89 06/29/93	0001 0001	MG/L		5.4 2.8	L	0.01 0.1	- -
POTASSIUM (TOTAL)	06/29/93	N001	MG/L		2.7		0.1	-
RADIUM-226	06/25/89	0001	PCI/L		0.0	L	1.	0.1
RADIUM-228	06/25/89	0001	PCI/L		0.0	L	1.	0.8
REDOX POTENTIAL	06/29/93	N001	mVOLTS		450		-	-
SELENIUM	06/25/89	0001	MG/L	<	0.005	L	0.005	-
SILICA - SIO2	06/25/89	0001	MG/L		11.	L	2.	-
SILICA - SIO2 (TOTAL)	06/29/93	N001	MG/L		11.0	H	0.5	-
SILVER	06/25/89	0001	MG/L	<	0.01	L	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0668
NORTH COORDINATE: 60171.4 FT
EAST COORDINATE: 88287.0 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: **DECHELLEY MEMBER OF THE** CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: **DOWN** GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SODIUM	06/25/89 06/29/93	0001 0001	MG/L		61.8 53	L	0.002 1	
SODIUM (TOTAL)	06/29/93	N001	MG/L		54		1	
SPECIFIC CONDUCTANCE	06/25/89 06/29/93	0001 N001	UMHO/CM		325. 391	L	- -	- -
STRONTIUM	06/29/93	0001	MG/L		0.51		0.01	
STRONTIUM (TOTAL)	06/29/93	N001	MG/L		0.49		0.01	
SULFATE	06/25/89	0001	MG/L		40.	L	0.1	
SULFATE (TOTAL)	06/29/93	N001	MG/L		36		1	
SULFIDE	06/25/89	0001	MG/L	<	0.1	L	0.1	
TEMPERATURE	06/25/89 06/29/93	0001 N001	C - DEGREE		17.5 18.1	L	- -	- -
THALLIUM	06/25/89	0001	MG/L	<	0.01	L	0.01	-
TIN	06/25/89	0001	MG/L	<	0.005	L	0.005	-
TOTAL DISSOLVED SOLIDS	06/25/89	0001	MG/L		2.36	JL	10.	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/29/93	N001	MG/L		240	H	10	-
URANIUM	06/25/89 06/29/93	0001 0001	MG/L		0.0017 0.003	JL	0.003 0.001	- -
URANIUM (TOTAL)	06/29/93	N001	MG/L		0.003		0.001	-
VANADIUM	06/25/89 06/29/93	0001 0001	MG/L	< <	0.01 0.01	L	0.01 0.01	- -
VANADIUM (TOTAL)	06/29/93	N001	MG/L	<	0.01		0.01	
ZINC	06/25/89 06/29/93	0001 0001	MG/L		0.014 0.040	L J	0.005 0.005	
ZINC (TOTAL)	06/29/93	N001	MG/L		0.017	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0669
NORTH COORDINATE: 60146.3 FT
EAST COORDINATE: 88247.8 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	06/25/89	0001	MG/L CACO3		246.		-	-
	02/24/92	0001			218	L	-	-
	06/29/93	N001			204	L	-	-
ALUMINUM	06/25/89	0001	MG/L	<	0.1		0.1	-
	02/24/92	0001		<	0.05	L	0.05	-
AMMONIUM	06/25/89	0001	MG/L	<	0.1		0.1	-
	02/24/92	0001			0.4	L	0.1	-
AMMONIUM (TOTAL)	06/29/93	N001	MG/L		0.2	L	0.1	-
ANTIMONY	06/25/89	0001	MG/L	<	0.003	J	0.003	-
	02/24/92	0001		<	0.003	L	0.003	-
ARSENIC	06/25/89	0001	MG/L	<	0.01		0.01	-
	02/24/92	0001		<	0.01	L	0.01	-
	06/29/93	0001		<	0.005	L	0.005	-
ARSENIC (TOTAL)	06/29/93	N001	MG/L	<	0.005	L	0.005	-
BARIUM	06/25/89	0001	MG/L	<	0.1		0.1	-
	02/24/92	0001			0.02	L	0.01	-
	06/29/93	0001		<	0.1	L	0.1	-
BARIUM (TOTAL)	06/29/93	N001	MG/L	<	0.1	L	0.1	-
BERYLLIUM	06/25/89	0001	MG/L	<	0.01		0.01	-
BORON	06/25/89	0001	MG/L	<	0.1		0.1	-
CADMIUM	06/25/89	0001	MG/L	<	0.001		0.001	-
	02/24/92	0001		<	0.0005	L	0.0005	-
CALCIUM	06/25/89	0001	MG/L		82.7		0.01	-
	02/24/92	0001			80.8	L	0.5	-
	06/29/93	0001			75.4	L	0.5	-
CALCIUM (TOTAL)	06/29/93	N001	MG/L		71.9	L	0.5	-
CHLORIDE	06/25/89	0001	MG/L		16.		1.	-
	02/24/92	0001			12.2	L	0.5	-
CHLORIDE (TOTAL)	06/29/93	N001	MG/L		15.0	L	0.5	-
CHROMIUM	06/25/89	0001	MG/L	<	0.01		0.01	-
	02/24/92	0001		<	0.01	L	0.01	-
COBALT	06/25/89	0001	MG/L	<	0.05		0.05	-
COPPER	06/25/89	0001	MG/L	<	0.02		0.02	-
CYANIDE	06/25/89	0001	MG/L	<	0.01		0.01	-
FLUORIDE	06/25/89	0001	MG/L		0.2		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0669
NORTH COORDINATE: 60146.3 FT
EAST COORDINATE: 88247.8 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS ALPHA	02/24/92	0001	PCI/L		1.2	L	1.0	6.1
	06/29/93	0001			10	L	5	9
GROSS ALPHA (TOTAL)	06/29/93	N001	PCI/L		9	L	5	9
GROSS BETA	02/24/92	0001	PCI/L		7.2	L	0.5	4.3
	06/29/93	0001			2	L	5	4
GROSS BETA (TOTAL)	06/29/93	N001	PCI/L		4	L	5	4
IRON	06/25/89	0001	MG/L	<	0.03		0.03	-
	02/24/92	0001		<	0.03	L	0.03	-
	06/29/93	0001		<	0.03	JL	0.03	-
IRON (TOTAL)	06/29/93	N001	MG/L		0.29	JL	0.03	-
LEAD	06/25/89	0001	MG/L	<	0.01		0.01	-
MAGNESIUM	06/25/89	0001	MG/L		71.0		0.001	-
	02/24/92	0001			62.2	L	0.5	-
	06/29/93	0001			54.3	L	0.1	-
MAGNESIUM (TOTAL)	06/29/93	N001	MG/L		55.4	L	0.1	-
MANGANESE	06/25/89	0001	MG/L	<	0.01		0.01	-
	02/24/92	0001		<	0.01	L	0.01	-
	06/29/93	0001		<	0.01	L	0.01	-
MANGANESE (TOTAL)	06/29/93	N001	MG/L		0.01	L	0.01	-
MERCURY	06/25/89	0001	MG/L	<	0.0002		0.0002	-
MOLYBDENUM	06/25/89	0001	MG/L	<	0.01		0.01	-
	02/24/92	0001		<	0.01	L	0.01	-
	06/29/93	0001		<	0.01	L	0.01	-
MOLYBDENUM (TOTAL)	06/29/93	N001	MG/L	<	0.01	L	0.01	-
NICKEL	06/25/89	0001	MG/L	<	0.04		0.04	-
NITRATE	06/25/89	0001	MG/L		43.		1.	-
	02/24/92	0001			33.5	L	2.0	-
NITRATE (TOTAL)	06/29/93	N001	MG/L		3	L	1	-
PH	06/25/89	0001	SU		7.42		-	-
	02/24/92	0001			7.61	L	-	-
	06/29/93	N001			7.18	L	-	-
PHOSPHATE	06/25/89	0001	MG/L	<	0.1		0.1	-
PHOSPHATE (TOTAL)	06/29/93	N001	MG/L		0.2	L	0.1	-
POTASSIUM	06/25/89	0001	MG/L		2.2		0.01	-
	02/24/92	0001			2.93	L	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0669
NORTH COORDINATE: 60146.3 FT
EAST COORDINATE: 88247.8 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
POTASSIUM	06/29/93	0001	MG/L		3.0	L	0.1	-
POTASSIUM (TOTAL)	06/29/93	N001	MG/L		3.1	L	0.1	-
RADIUM-226	06/25/89	0001	PCI/L		0.2		1.	0.2
	02/24/92	0001			0.0	L	1.0	0.2
RADIUM-228	06/25/89	0001	PCI/L		0.0		1.	0.8
	02/24/92	0001			1.6	L	1.0	1.0
REDOX POTENTIAL	06/29/93	N001	mVOLTS		410	GL	-	-
SELENIUM	06/25/89	0001	MG/L		0.009		0.005	-
	02/24/92	0001			0.007	L	0.005	-
SILICA - SIO2	06/25/89	0001	MG/L		15.		2.	-
SILICA - SIO2 (TOTAL)	06/29/93	N001	MG/L		15.0	HL	0.5	
SILVER	06/25/89	0001	MG/L	<	0.01		0.01	
SODIUM	06/25/89	0001	MG/L		49.5		0.002	
	02/24/92	0001			44.	L	1.	
	06/29/93	0001			44	L	1	
SODIUM (TOTAL)	06/29/93	N001	MG/L		43	L	1	
SPECIFIC CONDUCTANCE	06/25/89	0001	UMHO/CM		760.			
	02/24/92	0001			685	L		
	06/29/93	N001			927	L		
STRONTIUM	02/24/92	0001	MG/L		0.58	L	0.01	-
	06/29/93	0001			0.57	L	0.01	-
STRONTIUM (TOTAL)	06/29/93	N001	MG/L		0.57	L	0.01	-
SULFATE	06/25/89	0001	MG/L		365.		0.1	-
	02/24/92	0001			266.	L	30.	-
SULFATE (TOTAL)	06/29/93	N001	MG/L		232	L	1	-
SULFIDE	06/25/89	0001	MG/L	<	0.1		0.1	-
TEMPERATURE	06/25/89	0001	C - DEGREE		16.9		-	-
	02/24/92	0001			12.7	L	-	-
	06/29/93	N001			24.6	L	-	-
THALLIUM	06/25/89	0001	MG/L	<	0.01		0.01	-
TIN	06/25/89	0001	MG/L	<	0.005		0.005	-
TOTAL DISSOLVED SOLIDS	06/25/89	0001	MG/L		786.		10.	
	02/24/92	0001			647.	L	10.	
TOTAL DISSOLVED SOLIDS (TOTAL)	06/29/93	N001	MG/L		600	HL	10	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
H - HOLD TIME EXPIRED, VALUE SUSPECT
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0669
NORTH COORDINATE: 60146.3 FT
EAST COORDINATE: 88247.8 FT
04/21/88 TO 12/15/93
REPORT DATE: 04/25/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TOTAL ORGANIC CARBON	02/24/92	0001	MG/L	<	1.	L	1.	-
URANIUM	06/25/89	0001	MG/L		0.012		0.003	-
	02/24/92	0001			0.009	L	0.001	-
	06/29/93	0001			0.01	L	0.001	-
URANIUM (TOTAL)	06/29/93	N001	MG/L		0.01	L	0.001	-
VANADIUM	06/25/89	0001	MG/L		0.08		0.01	-
	02/24/92	0001			0.06	L	0.01	-
	06/29/93	0001			0.05	L	0.01	-
VANADIUM (TOTAL)	06/29/93	N001	MG/L		0.05	L	0.01	-
ZINC	06/25/89	0001	MG/L	<	0.005		0.005	-
	02/24/92	0001		<	0.005	L	0.005	-
	06/29/93	0001			0.022	JL	0.005	-
ZINC (TOTAL)	06/29/93	N001	MG/L		0.029	JL	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

DATA FILE NAME: \DART\MON01\GWQ10012.DAT

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0606
NORTH COORDINATE: 59034.2 FT
EAST COORDINATE: 88634.0 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/24/94	N001	MG/L CACO3		316	L	-	-
AMMONIUM (TOTAL)	04/24/94	N001	MG/L		282	L	0.1	-
	04/24/94	N002			288	L	0.1	-
	12/11/94	N001			297	HL	0.1	-
CALCIUM	04/24/94	0001	MG/L		221	L	0.5	-
	04/24/94	0002			222	L	0.5	-
	12/11/94	0001			262	L	0.5	-
CALCIUM (TOTAL)	04/24/94	N001	MG/L		263	L	0.5	-
	04/24/94	N002			268	L	0.5	-
CHLORIDE	04/24/94	0001	MG/L		15.7	L	0.5	-
	04/24/94	0002			15.8	L	0.5	-
	12/11/94	0001			14	L	0.5	-
MAGNESIUM	04/24/94	0001	MG/L		120	L	0.1	-
	04/24/94	0002			121	L	0.1	-
	12/11/94	0001			135	L	0.1	-
MAGNESIUM (TOTAL)	04/24/94	N001	MG/L		119	L	0.1	-
	04/24/94	N002			120	L	0.1	-
MANGANESE	04/24/94	0001	MG/L		0.14	L	0.01	-
	04/24/94	0002			0.14	L	0.01	-
	12/11/94	0001			0.26	L	0.01	-
MANGANESE (TOTAL)	04/24/94	N001	MG/L		0.21	L	0.01	-
	04/24/94	N002			0.22	L	0.01	-
MOLYBDENUM	12/11/94	0001	MG/L	<	0.01	L	0.01	-
NITRATE (TOTAL)	04/24/94	N001	MG/L		1180	L	1	-
	04/24/94	N002			1130	L	1	-
	12/11/94	N001			1360	HJLN	1	-
PH	04/24/94	N001	SU		7.16	L	-	-
	12/11/94	N001			7.24	L	0.10	-
POTASSIUM	04/24/94	0001	MG/L		11.6	L	0.1	-
	04/24/94	0002			11.6	L	0.1	-
	12/11/94	0001			14.4	L	0.1	-
POTASSIUM (TOTAL)	04/24/94	N001	MG/L		11.8	L	0.1	-
	04/24/94	N002			12.7	L	0.1	-
REDOX POTENTIAL	12/11/94	N001	mVOLTS		426	L	-	-
SILICA - SIO2	12/11/94	0001	MG/L		21.6	L	0.1	-
SODIUM	04/24/94	0001	MG/L		94	L	1	-
	04/24/94	0002			95	L	1	-
	12/11/94	0001			100	L	1	-
SODIUM (TOTAL)	04/24/94	N001	MG/L		85	L	1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
0002 - FILTERED REPLICATE SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE
N002 - UNFILTERED REPLICATE SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0606
NORTH COORDINATE: 59034.2 FT
EAST COORDINATE: 88634.0 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SODIUM (TOTAL)	04/24/94	N002	MG/L		85	L	1	-
SPECIFIC CONDUCTANCE	04/24/94	N001	UMHO/CM		3390	L	-	-
	12/11/94	N001			3400	L	1	-
STRONTIUM	04/24/94	0001	MG/L		1.81	L	0.01	-
	04/24/94	0002			1.82	L	0.01	-
	12/11/94	0001			2	JL	0.01	-
STRONTIUM (TOTAL)	04/24/94	N001	MG/L		1.77	L	0.01	-
	04/24/94	N002			1.77	L	0.01	-
SULFATE	04/24/94	0001	MG/L		861	L	1	-
	04/24/94	0002			822	L	1	-
	12/11/94	0001			857	L	1	-
TEMPERATURE	04/24/94	N001	C - DEGREE		15.4	L	-	-
	12/11/94	N001			14.2	L	0.1	-
TOTAL DISSOLVED SOLIDS	04/24/94	0001	MG/L		1900	L	10	-
	04/24/94	0002			1870	L	10	-
	12/11/94	0001			2740	L	10	-
URANIUM	04/24/94	0001	MG/L		0.013	L	0.001	-
	04/24/94	0002			0.013	L	0.001	-
	12/11/94	0001			0.007	L	0.001	-
URANIUM (TOTAL)	04/24/94	N001	MG/L		0.014	L	0.001	-
	04/24/94	N002			0.014	L	0.001	-
VANADIUM	04/24/94	0001	MG/L	<	0.01	L	0.01	-
	04/24/94	0002		<	0.01	L	0.01	-
	12/11/94	0001		<	0.01	L	0.01	-
VANADIUM (TOTAL)	04/24/94	N001	MG/L	<	0.01	L	0.01	-
	04/24/94	N002		<	0.01	L	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
0002 - FILTERED REPLICATE SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE
N002 - UNFILTERED REPLICATE SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0613
NORTH COORDINATE: 56377.8 FT
EAST COORDINATE: 88643.7 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/21/94	N001	MG/L CACO3		172		-	-
	12/08/94	N001			172		10	-
AMMONIUM (TOTAL)	04/21/94	N001	MG/L	<	0.1		0.1	-
	12/08/94	N001		<	0.1	H	0.1	-
CALCIUM	04/21/94	0001	MG/L		15.2		0.5	-
	12/08/94	0001			16.4		0.5	-
CALCIUM (TOTAL)	04/21/94	N001	MG/L		15.2		0.5	-
	12/08/94	N001			15.8		0.5	-
CHLORIDE	04/21/94	0001	MG/L		7.2		0.5	-
CHLORIDE (TOTAL)	12/08/94	N001	MG/L		5		0.5	-
DISSOLVED OXYGEN	04/21/94	N001	MG/L		3.4		-	-
MAGNESIUM	04/21/94	0001	MG/L		26.5		0.1	-
	12/08/94	0001			29.2		0.1	-
MAGNESIUM (TOTAL)	04/21/94	N001	MG/L		26.3		0.1	-
	12/08/94	N001			27.1		0.1	-
MANGANESE	04/21/94	0001	MG/L	<	0.01		0.01	-
	12/08/94	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	04/21/94	N001	MG/L	<	0.01		0.01	-
	12/08/94	N001		<	0.01		0.01	-
MOLYBDENUM	12/08/94	0001	MG/L	<	0.01		0.01	-
MOLYBDENUM (TOTAL)	12/08/94	N001	MG/L	<	0.01		0.01	-
NITRATE (TOTAL)	04/21/94	N001	MG/L		3		1	-
	12/08/94	N001			2.7	H	1	-
PH	04/21/94	N001	SU		7.74		-	-
	12/08/94	N001			7.97		0.10	-
POTASSIUM	04/21/94	0001	MG/L		2.8		0.1	-
	12/08/94	0001			2.9		0.1	-
POTASSIUM (TOTAL)	04/21/94	N001	MG/L		2.7		0.1	-
	12/08/94	N001			2.7		0.1	-
REDOX POTENTIAL	04/21/94	N001	mVOLTS		445		-	-
	12/08/94	N001			448		-	-
SILICA - SIO2	12/08/94	0001	MG/L		11.5		0.1	-
SILICA - SIO2 (TOTAL)	12/08/94	N001	MG/L		9.4		0.1	-
SODIUM	04/21/94	0001	MG/L		49		1	-
	12/08/94	0001			53.7		1	-
SODIUM (TOTAL)	04/21/94	N001	MG/L		48		1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0613
NORTH COORDINATE: 56377.8 FT
EAST COORDINATE: 88643.7 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SODIUM (TOTAL)	12/08/94	N001	MG/L		48.5		1	-
SPECIFIC CONDUCTANCE	04/21/94	N001	UMHO/CM		370		-	-
	12/08/94	N001			381	J	1	-
STRONTIUM	04/21/94	0001	MG/L		0.35		0.01	-
	12/08/94	0001			0.37	J	0.01	-
STRONTIUM (TOTAL)	04/21/94	N001	MG/L		0.34		0.01	-
	12/08/94	N001			0.36	J	0.01	-
SULFATE	04/21/94	0001	MG/L		61		1	-
SULFATE (TOTAL)	12/08/94	N001	MG/L		45		1	-
TEMPERATURE	04/21/94	N001	C - DEGREE		15.3		-	-
	12/08/94	N001			13.8		0.1	-
TOTAL DISSOLVED SOLIDS	04/21/94	0001	MG/L		290		10	-
	12/08/94	0001			294	H	10	-
URANIUM	04/21/94	0001	MG/L		0.004		0.001	-
	12/08/94	0001			0.004		0.001	-
URANIUM (TOTAL)	04/21/94	N001	MG/L		0.004		0.001	-
	12/08/94	N001			0.003		0.001	-
VANADIUM	04/21/94	0001	MG/L	<	0.01		0.01	-
	12/08/94	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	04/21/94	N001	MG/L	<	0.01		0.01	-
	12/08/94	N001		<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0614
NORTH COORDINATE: 60940.5 FT
EAST COORDINATE: 87832.6 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	12/08/94	N001	MG/L CACO3		198		10	-
AMMONIUM (TOTAL)	12/08/94	N001	MG/L		0.14	H	0.1	-
CALCIUM	12/08/94	0001	MG/L		99		0.5	-
CHLORIDE	12/08/94	0001	MG/L		48		0.5	-
MAGNESIUM	12/08/94	0001	MG/L		62		0.1	-
MANGANESE	12/08/94	0001	MG/L	<	0.01		0.01	-
MOLYBDENUM	12/08/94	0001	MG/L	<	0.01		0.01	-
NITRATE (TOTAL)	12/08/94	N001	MG/L		23	HJN	1	-
PH	12/08/94	N001	SU		7.49		0.10	-
POTASSIUM	12/08/94	0001	MG/L		2.2		0.1	-
REDOX POTENTIAL	12/08/94	N001	mVOLTS		456		-	-
SILICA - SIO2	12/08/94	0001	MG/L		14.1		0.1	-
SODIUM	12/08/94	0001	MG/L		43.7		1	-
SPECIFIC CONDUCTANCE	12/08/94	N001	UMHO/CM		856	J	1	-
STRONTIUM	12/08/94	0001	MG/L		0.72	J	0.01	-
SULFATE	12/08/94	0001	MG/L		250		1	-
TEMPERATURE	12/08/94	N001	C - DEGREE		14.5		0.1	-
TOTAL DISSOLVED SOLIDS	12/08/94	0001	MG/L		744	H	10	-
URANIUM	12/08/94	0001	MG/L		0.018		0.001	-
VANADIUM	12/08/94	0001	MG/L	<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0616
NORTH COORDINATE: 56747.3 FT
EAST COORDINATE: 87987.6 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	12/15/93	N001	MG/L CACO3		252		-	-
	04/21/94	N001			257		-	-
AMMONIUM	12/15/93	0001	MG/L	<	0.1		0.1	-
AMMONIUM (TOTAL)	04/21/94	N001	MG/L	<	0.1		0.1	-
CALCIUM	12/15/93	0001	MG/L		33.4		0.5	-
	04/21/94	0001			39.7		0.5	-
CALCIUM (TOTAL)	12/15/93	N001	MG/L		35.2		0.5	-
	04/21/94	N001			39.6		0.5	-
CHLORIDE	12/15/93	0001	MG/L		22.2		0.5	-
	04/21/94	0001			31.9		0.5	-
MAGNESIUM	12/15/93	0001	MG/L		33.4		0.1	-
	04/21/94	0001			36.3		0.1	-
MAGNESIUM (TOTAL)	12/15/93	N001	MG/L		34.1		0.1	-
	04/21/94	N001			36.2		0.1	-
MANGANESE	12/15/93	0001	MG/L	<	0.01		0.01	-
	04/21/94	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	12/15/93	N001	MG/L	<	0.01		0.01	-
	04/21/94	N001		<	0.01		0.01	-
NITRATE	12/15/93	0001	MG/L		6		1	-
NITRATE (TOTAL)	04/21/94	N001	MG/L		7		1	-
PH	12/15/93	N001	SU		8.12		-	-
	04/21/94	N001			7.85		-	-
POTASSIUM	12/15/93	0001	MG/L		0.9		0.1	-
	04/21/94	0001			1.4		0.1	-
POTASSIUM (TOTAL)	12/15/93	N001	MG/L		0.9		0.1	-
	04/21/94	N001			1.4		0.1	-
SILICA - SIO2	12/15/93	0001	MG/L		26.4		0.1	-
SILICA - SIO2 (TOTAL)	12/15/93	N001	MG/L		26.6		0.1	-
SODIUM	12/15/93	0001	MG/L		95		1	-
	04/21/94	0001			108		1	-
SODIUM (TOTAL)	12/15/93	N001	MG/L		100		1	-
	04/21/94	N001			105		1	-
SPECIFIC CONDUCTANCE	12/15/93	N001	UMHO/CM		582		-	-
	04/21/94	N001			742		-	-
STRONTIUM	12/15/93	0001	MG/L		0.47		0.01	-
	04/21/94	0001			0.52		0.01	-
STRONTIUM (TOTAL)	12/15/93	N001	MG/L		0.48		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0616
NORTH COORDINATE: 56747.3 FT
EAST COORDINATE: 87987.6 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
STRONTIUM (TOTAL)	04/21/94	N001	MG/L		0.50		0.01	-
SULFATE	12/15/93	0001	MG/L		136		1	-
	04/21/94	0001			183		1	-
TEMPERATURE	12/15/93	N001	C - DEGREE		9.1		-	-
	04/21/94	N001			14.4		-	-
TOTAL DISSOLVED SOLIDS	12/15/93	0001	MG/L		530		10	-
	04/21/94	0001			590		10	-
URANIUM	12/15/93	0001	MG/L		0.006		0.001	-
	04/21/94	0001			0.007		0.001	-
URANIUM (TOTAL)	12/15/93	N001	MG/L		0.006		0.001	-
	04/21/94	N001			0.007		0.001	-
VANADIUM	12/15/93	0001	MG/L	<	0.01		0.01	-
	04/21/94	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	12/15/93	N001	MG/L	<	0.01		0.01	-
	04/21/94	N001		<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0617
NORTH COORDINATE: 52090.6 FT
EAST COORDINATE: 87094.4 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/21/94	N001	MG/L CACO3		248		-	-
	12/09/94	N001			271		10	-
AMMONIUM (TOTAL)	04/21/94	N001	MG/L	<	0.1		0.1	-
	12/09/94	N001		<	0.1	H	0.1	-
CALCIUM	04/21/94	0001	MG/L		22.0		0.5	-
	12/09/94	0001			25.2		0.5	-
CALCIUM (TOTAL)	04/21/94	N001	MG/L		22.5		0.5	-
	12/09/94	N001			24.2		0.5	-
CHLORIDE	04/21/94	0001	MG/L		29.5		0.5	-
CHLORIDE (TOTAL)	12/09/94	N001	MG/L		24		0.5	-
MAGNESIUM	04/21/94	0001	MG/L		45.3		0.1	-
	12/09/94	0001			51.9		0.1	-
MAGNESIUM (TOTAL)	04/21/94	N001	MG/L		44.5		0.1	-
	12/09/94	N001			48.3		0.1	-
MANGANESE	04/21/94	0001	MG/L	<	0.01		0.01	-
	12/09/94	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	04/21/94	N001	MG/L	<	0.01		0.01	-
	12/09/94	N001		<	0.01		0.01	-
MOLYBDENUM	12/09/94	0001	MG/L	<	0.01		0.01	-
MOLYBDENUM (TOTAL)	12/09/94	N001	MG/L		0.01		0.01	-
NITRATE (TOTAL)	04/21/94	N001	MG/L		29		1	-
	12/09/94	N001			36.3	H	1	-
PH	04/21/94	N001	SU		8.02		-	-
	12/09/94	N001			8.23		0.10	-
POTASSIUM	04/21/94	0001	MG/L		0.6		0.1	-
	12/09/94	0001			0.9	J	0.1	-
POTASSIUM (TOTAL)	04/21/94	N001	MG/L		0.6		0.1	-
	12/09/94	N001			0.6	J	0.1	-
REDOX POTENTIAL	12/09/94	N001	mVOLTS		407		-	-
SILICA - SIO2	12/09/94	0001	MG/L		27.4		0.1	-
SILICA - SIO2 (TOTAL)	12/09/94	N001	MG/L		33.2		0.1	-
SODIUM	04/21/94	0001	MG/L		111		1	-
	12/09/94	0001			131		1	-
SODIUM (TOTAL)	04/21/94	N001	MG/L		105		1	-
	12/09/94	N001			119		1	-
SPECIFIC CONDUCTANCE	04/21/94	N001	UMHO/CM		755		-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0617
NORTH COORDINATE: 52090.6 FT
EAST COORDINATE: 87094.4 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: UNKNOWN (N)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SPECIFIC CONDUCTANCE	12/09/94	N001	UMHO/CM		692		1	-
STRONTIUM	04/21/94	0001	MG/L		0.57		0.01	-
	12/09/94	0001			0.61	J	0.01	-
STRONTIUM (TOTAL)	04/21/94	N001	MG/L		0.55		0.01	-
	12/09/94	N001			0.59	J	0.01	-
SULFATE	04/21/94	0001	MG/L		169		1	-
SULFATE (TOTAL)	12/09/94	N001	MG/L		149		1	-
TEMPERATURE	04/21/94	N001	C - DEGREE		13.9		-	-
	12/09/94	N001			10.0		0.1	-
TOTAL DISSOLVED SOLIDS	04/21/94	0001	MG/L		580		10	-
	12/09/94	0001			438		10	-
URANIUM	04/21/94	0001	MG/L		0.007		0.001	-
	12/09/94	0001			0.007		0.001	-
URANIUM (TOTAL)	04/21/94	N001	MG/L		0.007		0.001	-
	12/09/94	N001			0.006		0.001	-
VANADIUM	04/21/94	0001	MG/L		0.01		0.01	-
	12/09/94	0001			0.01		0.01	-
VANADIUM (TOTAL)	04/21/94	N001	MG/L		0.01		0.01	-
	12/09/94	N001			0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0625
NORTH COORDINATE: 58272.5 FT
EAST COORDINATE: 89803.1 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/21/94	N001	MG/L CACO3		204		-	-
	12/13/94	N001			205		10	-
AMMONIUM (TOTAL)	04/21/94	N001	MG/L	<	0.1		0.1	-
	12/13/94	N001		<	0.1		0.1	-
CALCIUM	04/21/94	0001	MG/L		3.0		0.5	-
	12/13/94	0001			3.1		0.5	-
CALCIUM (TOTAL)	04/21/94	N001	MG/L		3.1		0.5	-
	12/13/94	N001			3		0.5	-
CHLORIDE	04/21/94	0001	MG/L		8.0		0.5	-
CHLORIDE (TOTAL)	12/13/94	N001	MG/L		6		0.5	-
MAGNESIUM	04/21/94	0001	MG/L		2.9		0.1	-
	12/13/94	0001			3.2		0.1	-
MAGNESIUM (TOTAL)	04/21/94	N001	MG/L		2.9		0.1	-
	12/13/94	N001			3		0.1	-
MANGANESE	04/21/94	0001	MG/L	<	0.01		0.01	-
	12/13/94	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	04/21/94	N001	MG/L	<	0.01		0.01	-
	12/13/94	N001		<	0.01		0.01	-
MOLYBDENUM	12/13/94	0001	MG/L	<	0.01		0.01	-
MOLYBDENUM (TOTAL)	12/13/94	N001	MG/L	<	0.01		0.01	-
NITRATE (TOTAL)	04/21/94	N001	MG/L	<	1		1	-
	12/13/94	N001		<	1		1	-
PH	04/21/94	N001	SU		8.44		-	-
	12/13/94	N001			8.65		0.10	-
POTASSIUM	04/21/94	0001	MG/L		1.0		0.1	-
	12/13/94	0001			1.1		0.1	-
POTASSIUM (TOTAL)	04/21/94	N001	MG/L		1.0		0.1	-
	12/13/94	N001			1	J	0.1	-
REDOX POTENTIAL	12/13/94	N001	mVOLTS		167		-	-
SILICA - SIO2	12/13/94	0001	MG/L		13.2		0.1	-
SILICA - SIO2 (TOTAL)	12/13/94	N001	MG/L		11.2		0.1	-
SODIUM	04/21/94	0001	MG/L		121		1	-
	12/13/94	0001			127		1	-
SODIUM (TOTAL)	04/21/94	N001	MG/L		107		1	-
	12/13/94	N001			115		1	-
SPECIFIC CONDUCTANCE	04/21/94	N001	UMHO/CM		462		-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0625
NORTH COORDINATE: 58272.5 FT
EAST COORDINATE: 89803.1 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: CROSS GRADIENT (C)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SPECIFIC CONDUCTANCE	12/13/94	N001	UMHO/CM		429		1	-
STRONTIUM	04/21/94	0001	MG/L		0.08		0.01	-
	12/13/94	0001			0.08	J	0.01	-
STRONTIUM (TOTAL)	04/21/94	N001	MG/L		0.08		0.01	-
	12/13/94	N001			0.08	J	0.01	-
SULFATE	04/21/94	0001	MG/L		54		1	-
SULFATE (TOTAL)	12/13/94	N001	MG/L		42		1	-
TEMPERATURE	04/21/94	N001	C - DEGREE		16.0		-	-
	12/13/94	N001			14.4		0.1	-
TOTAL DISSOLVED SOLIDS	04/21/94	0001	MG/L		340		10	-
	12/13/94	0001			330	H	10	-
URANIUM	04/21/94	0001	MG/L	<	0.001		0.001	-
	12/13/94	0001		<	0.001		0.001	-
URANIUM (TOTAL)	04/21/94	N001	MG/L	<	0.001		0.001	-
	12/13/94	N001		<	0.001		0.001	-
VANADIUM	04/21/94	0001	MG/L	<	0.01		0.01	-
	12/13/94	0001		<	0.01		0.01	-
VANADIUM (TOTAL)	04/21/94	N001	MG/L	<	0.01		0.01	-
	12/13/94	N001		<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0651
NORTH COORDINATE: 63788.9 FT
EAST COORDINATE: 92734.3 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/20/94	N001	MG/L CACO3		180		-	-
	12/11/94	N001			191	F	10	-
AMMONIUM (TOTAL)	04/20/94	N001	MG/L	<	0.1		0.1	-
	12/11/94	N001			0.19	FH	0.1	-
CALCIUM	04/20/94	0001	MG/L		10.1		0.5	-
	12/11/94	0001			10.5	F	0.5	-
CALCIUM (TOTAL)	04/20/94	N001	MG/L		11.7		0.5	-
CHLORIDE	04/20/94	0001	MG/L		11.6		0.5	-
	12/11/94	0001			8	F	0.5	-
DISSOLVED OXYGEN	04/20/94	N001	MG/L		0.054		-	-
	12/11/94	N001		<	0.02	F	0.02	-
MAGNESIUM	04/20/94	0001	MG/L		4.8		0.1	-
	12/11/94	0001			4.9	F	0.1	-
MAGNESIUM (TOTAL)	04/20/94	N001	MG/L		5.1		0.1	-
MANGANESE	04/20/94	0001	MG/L		0.03		0.01	-
	12/11/94	0001		<	0.01	F	0.01	-
MANGANESE (TOTAL)	04/20/94	N001	MG/L		0.04		0.01	-
MOLYBDENUM	12/11/94	0001	MG/L	<	0.01	F	0.01	-
NITRATE (TOTAL)	04/20/94	N001	MG/L		1		1	-
	12/11/94	N001			1	FHJN	1	-
PH	04/20/94	N001	SU		8.17		-	-
	12/11/94	N001			8.19	F	0.10	-
POTASSIUM	04/20/94	0001	MG/L		2.1		0.1	-
	12/11/94	0001			1.9	F	0.1	-
POTASSIUM (TOTAL)	04/20/94	N001	MG/L		2.2		0.1	-
REDOX POTENTIAL	04/20/94	N001	mVOLTS		377		-	-
	12/11/94	N001			338	F	-	-
SILICA - SIO2	12/11/94	0001	MG/L		11.1	F	0.1	-
SODIUM	04/20/94	0001	MG/L		129		1	-
	12/11/94	0001			129	F	1	-
SODIUM (TOTAL)	04/20/94	N001	MG/L		126		1	-
SPECIFIC CONDUCTANCE	04/20/94	N001	UMHO/CM		550		-	-
	12/11/94	N001			526	FJ	1	-
STRONTIUM	04/20/94	0001	MG/L		0.26		0.01	-
	12/11/94	0001			0.26	FJ	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
F - *LOW-FLOW SAMPLING/DEDICATED PUMP*
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0651
NORTH COORDINATE: 63788.9 FT
EAST COORDINATE: 92734.3 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
STRONTIUM (TOTAL)	04/20/94	N001	MG/L		0.27		0.01	-
SULFATE	04/20/94	0001	MG/L		114		1	-
	12/11/94	0001			90	F	1	-
TEMPERATURE	04/20/94	N001	C - DEGREE		17.2		-	-
	12/11/94	N001			15.1	F	0.1	-
TOTAL DISSOLVED SOLIDS	04/20/94	0001	MG/L		410		10	-
	12/11/94	0001			402	F	10	-
TURBIDITY	12/11/94	N001	NTU		8	F	1	-
URANIUM	04/20/94	0001	MG/L		0.002		0.001	-
	12/11/94	0001		<	0.001	F	0.001	-
URANIUM (TOTAL)	04/20/94	N001	MG/L		0.002		0.001	-
VANADIUM	04/20/94	0001	MG/L	<	0.01		0.01	-
	12/11/94	0001		<	0.01	F	0.01	-
VANADIUM (TOTAL)	04/20/94	N001	MG/L		0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
F - LOW-FLOW SAMPLING/DEDICATED PUMP

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0652
NORTH COORDINATE: 62581.5 FT
EAST COORDINATE: 93759.3 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	12/08/94	N001	MG/L CACO3		173		10	-
AMMONIUM (TOTAL)	12/08/94	N001	MG/L		0.12	H	0.1	-
CALCIUM	12/08/94	0001	MG/L		27.3		0.5	-
CHLORIDE	12/08/94	0001	MG/L		9		0.5	-
DISSOLVED OXYGEN	12/08/94	N001	MG/L	<	0.02		0.02	-
MAGNESIUM	12/08/94	0001	MG/L		12.8		0.1	-
MANGANESE	12/08/94	0001	MG/L	<	0.01		0.01	-
MOLYBDENUM	12/08/94	0001	MG/L	<	0.01		0.01	-
NITRATE (TOTAL)	12/08/94	N001	MG/L		21	HJN	1	-
PH	12/08/94	N001	SU		7.97		0.10	-
POTASSIUM	12/08/94	0001	MG/L		2.7		0.1	-
REDOX POTENTIAL	12/08/94	N001	mVOLTS		348		-	-
SILICA - SIO2	12/08/94	0001	MG/L		15		0.1	-
SODIUM	12/08/94	0001	MG/L		80.4		1	-
SPECIFIC CONDUCTANCE	12/08/94	N001	UMHO/CM		420	J	1	-
STRONTIUM	12/08/94	0001	MG/L		0.52	J	0.01	-
SULFATE	12/08/94	0001	MG/L		49		1	-
TEMPERATURE	12/08/94	N001	C - DEGREE		11.4		0.1	-
TOTAL DISSOLVED SOLIDS	12/08/94	0001	MG/L		346	H	10	-
URANIUM	12/08/94	0001	MG/L		0.002		0.001	-
VANADIUM	12/08/94	0001	MG/L		0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0653
NORTH COORDINATE: 61249.3 FT
EAST COORDINATE: 89596.3 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/24/94	N001	MG/L CACO3		206		-	-
	12/13/94	N001			214		10	-
AMMONIUM (TOTAL)	04/24/94	N001	MG/L	<	0.1		0.1	
	04/24/94	N002		<	0.1		0.1	
	12/13/94	N001			0.15		0.1	
	12/13/94	N002			0.12		0.1	
CALCIUM	04/24/94	0001	MG/L		261		0.5	
	04/24/94	0002			256		0.5	
	12/13/94	0001			276		0.5	
	12/13/94	0002			271		0.5	
CALCIUM (TOTAL)	04/24/94	N001	MG/L		284		0.5	
	04/24/94	N002			291		0.5	
CHLORIDE	04/24/94	0001	MG/L		39.4		0.5	
	04/24/94	0002			40.3		0.5	
	12/13/94	0001			30		0.5	
	12/13/94	0002			29		0.5	
DISSOLVED OXYGEN	04/24/94	N001	MG/L		0.077			
	12/13/94	N001			0.17		0.02	
MAGNESIUM	04/24/94	0001	MG/L		209		0.1	
	04/24/94	0002			208		0.1	
	12/13/94	0001			218		0.1	
	12/13/94	0002			216		0.1	
MAGNESIUM (TOTAL)	04/24/94	N001	MG/L		196		0.1	
	04/24/94	N002			204		0.1	
MANGANESE	04/24/94	0001	MG/L	<	0.01		0.01	
	04/24/94	0002		<	0.01		0.01	
	12/13/94	0001		<	0.01		0.01	
	12/13/94	0002		<	0.01		0.01	
MANGANESE (TOTAL)	04/24/94	N001	MG/L		0.03		0.01	
	04/24/94	N002			0.03		0.01	
MOLYBDENUM	12/13/94	0001	MG/L	<	0.01		0.01	
	12/13/94	0002		<	0.01		0.01	
NITRATE (TOTAL)	04/24/94	N001	MG/L		85		1	
	04/24/94	N002			84		1	
	12/13/94	N001			88	JN	1	
	12/13/94	N002			23.3	JN	1	
PH	04/24/94	N001	SU		7.37		-	-
	12/13/94	N001			7.22		0.10	-
POTASSIUM	04/24/94	0001	MG/L		4.6		0.1	
	04/24/94	0002			4.5		0.1	
	12/13/94	0001			4		0.1	
	12/13/94	0002			4.4		0.1	
POTASSIUM (TOTAL)	04/24/94	N001	MG/L		4.5		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
0002 - FILTERED REPLICATE SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE
N002 - UNFILTERED REPLICATE SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0653
NORTH COORDINATE: 61249.3 FT
EAST COORDINATE: 89596.3 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
POTASSIUM (TOTAL)	04/24/94	N002	MG/L		4.5		0.1	-
REDOX POTENTIAL	04/24/94	N001	mVOLTS		367		-	-
	12/13/94	N001			293		-	-
SILICA - SIO2	12/13/94	0001	MG/L		16.1		0.1	-
	12/13/94	0002			16.3		0.1	-
SODIUM	04/24/94	0001	MG/L		258		1	-
	04/24/94	0002			261		1	-
	12/13/94	0001			261		1	-
	12/13/94	0002			259		1	-
SODIUM (TOTAL)	04/24/94	N001	MG/L		225		1	-
	04/24/94	N002			233		1	-
SPECIFIC CONDUCTANCE	04/24/94	N001	UMHO/CM		2670		-	-
	12/13/94	N001			2650		1	-
STRONTIUM	04/24/94	0001	MG/L		2.19		0.01	-
	04/24/94	0002			2.18		0.01	-
	12/13/94	0001			2.19		0.01	-
	12/13/94	0002			2.13		0.01	-
STRONTIUM (TOTAL)	04/24/94	N001	MG/L		1.99		0.01	-
	04/24/94	N002			2.08		0.01	-
SULFATE	04/24/94	0001	MG/L		1660		1	-
	04/24/94	0002			1700		1	-
	12/13/94	0001			1800		1	-
	12/13/94	0002			1720		1	-
TEMPERATURE	04/24/94	N001	C - DEGREE		16.4		-	-
	12/13/94	N001			15.3		0.1	-
TOTAL DISSOLVED SOLIDS	04/24/94	0001	MG/L		2760		10	-
	04/24/94	0002			2780		10	-
	12/13/94	0001			2970		10	-
	12/13/94	0002			2990		10	-
TURBIDITY	04/24/94	N001	NTU		9		-	-
	12/13/94	N001			14		1	-
URANIUM	04/24/94	0001	MG/L		0.012		0.001	-
	04/24/94	0002			0.012		0.001	-
	12/13/94	0001			0.006		0.001	-
	12/13/94	0002		<	0.001		0.001	-
URANIUM (TOTAL)	04/24/94	N001	MG/L		0.012		0.001	-
	04/24/94	N002			0.012		0.001	-
VANADIUM	04/24/94	0001	MG/L	<	0.01		0.01	-
	04/24/94	0002		<	0.01		0.01	-
	12/13/94	0001		<	0.01		0.01	-
	12/13/94	0002		<	0.01		0.01	-
VANADIUM (TOTAL)	04/24/94	N001	MG/L	<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
0002 - FILTERED REPLICATE SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE
N002 - UNFILTERED REPLICATE SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0653
NORTH COORDINATE: 61249.3 FT
EAST COORDINATE: 89596.3 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
VANADIUM (TOTAL)	04/24/94	N002	MG/L	<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
N002 - UNFILTERED REPLICATE SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0655
NORTH COORDINATE: 59754.6 FT
EAST COORDINATE: 88624.1 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/24/94	N001	MG/L CACO3		287		-	-
AMMONIUM (TOTAL)	04/24/94	N001	MG/L		154		0.1	-
CALCIUM	04/24/94	0001	MG/L		375		0.5	-
CALCIUM (TOTAL)	04/24/94	N001	MG/L		427		0.5	-
CHLORIDE	04/24/94	0001	MG/L		25.8		0.5	-
DISSOLVED OXYGEN	04/24/94	N001	MG/L		1.8		-	-
MAGNESIUM	04/24/94	0001	MG/L		254		0.1	-
MAGNESIUM (TOTAL)	04/24/94	N001	MG/L		249		0.1	-
MANGANESE	04/24/94	0001	MG/L		0.04		0.01	-
MANGANESE (TOTAL)	04/24/94	N001	MG/L		0.05		0.01	-
NITRATE (TOTAL)	04/24/94	N001	MG/L		574		1	-
PH	04/24/94	N001	SU		7.06		-	-
POTASSIUM	04/24/94	0001	MG/L		23.5		0.1	-
POTASSIUM (TOTAL)	04/24/94	N001	MG/L		22.9		0.1	-
REDOX POTENTIAL	04/24/94	N001	mVOLTS		415		-	-
SODIUM	04/24/94	0001	MG/L		143		1	-
SODIUM (TOTAL)	04/24/94	N001	MG/L		129		1	-
SPECIFIC CONDUCTANCE	04/24/94	N001	UMHO/CM		3770		-	-
STRONTIUM	04/24/94	0001	MG/L		2.88		0.01	-
STRONTIUM (TOTAL)	04/24/94	N001	MG/L		2.73		0.01	-
SULFATE	04/24/94	0001	MG/L		1950		1	-
TEMPERATURE	04/24/94	N001	C - DEGREE		16.4		-	-
TOTAL DISSOLVED SOLIDS	04/24/94	0001	MG/L		3410		10	-
TURBIDITY	04/24/94	N001	NTU		0		-	-
URANIUM	04/24/94	0001	MG/L		0.027		0.001	-
URANIUM (TOTAL)	04/24/94	N001	MG/L		0.027		0.001	-
VANADIUM	04/24/94	0001	MG/L	<	0.01		0.01	-
VANADIUM (TOTAL)	04/24/94	N001	MG/L	<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0657
NORTH COORDINATE: 59266.0 FT
EAST COORDINATE: 87596.5 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: ON-SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/23/94	N001	MG/L CACO3		189		-	-
	12/09/94	N001			195		10	-
AMMONIUM (TOTAL)	04/23/94	N001	MG/L	<	0.1		0.1	-
	12/09/94	N001		<	0.1	H	0.1	-
CALCIUM	04/23/94	0001	MG/L		60.7		0.5	-
	12/09/94	0001			64.5		0.5	-
CALCIUM (TOTAL)	04/23/94	N001	MG/L		63.7		0.5	-
CHLORIDE	04/23/94	0001	MG/L		7.2		0.5	-
	12/09/94	0001			4		0.5	-
DISSOLVED OXYGEN	04/23/94	N001	MG/L		6.6		-	-
	12/09/94	N001		<	0.6		0.6	-
MAGNESIUM	04/23/94	0001	MG/L		39.6		0.1	-
	12/09/94	0001			41.2		0.1	-
MAGNESIUM (TOTAL)	04/23/94	N001	MG/L		38.4		0.1	-
MANGANESE	04/23/94	0001	MG/L	<	0.01		0.01	-
	12/09/94	0001		<	0.01		0.01	-
MANGANESE (TOTAL)	04/23/94	N001	MG/L	<	0.01		0.01	-
MOLYBDENUM	12/09/94	0001	MG/L	<	0.01		0.01	-
NITRATE (TOTAL)	04/23/94	N001	MG/L		19		1	-
	12/09/94	N001			20	HJN	1	-
PH	04/23/94	N001	SU		7.36		-	-
	12/09/94	N001			7.50		0.10	-
POTASSIUM	04/23/94	0001	MG/L		2.0		0.1	-
	12/09/94	0001			2		0.1	-
POTASSIUM (TOTAL)	04/23/94	N001	MG/L		1.9		0.1	-
REDOX POTENTIAL	04/23/94	N001	mVOLTS		340		-	-
	12/09/94	N001			431		-	-
SILICA - SIO2	12/09/94	0001	MG/L		14.1		0.1	-
SODIUM	04/23/94	0001	MG/L		15		1	-
	12/09/94	0001			14.9		1	-
SODIUM (TOTAL)	04/23/94	N001	MG/L		14		1	-
SPECIFIC CONDUCTANCE	04/23/94	N001	UMHO/CM		573		-	-
	12/09/94	N001			521	J	1	-
STRONTIUM	04/23/94	0001	MG/L		0.52		0.01	-
	12/09/94	0001			0.51	J	0.01	-
STRONTIUM (TOTAL)	04/23/94	N001	MG/L		0.48		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0657
NORTH. COORDINATE: 59266.0 FT
EAST COORDINATE: 87596.5 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: ON-SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SULFATE	04/23/94	0001	MG/L		125		1	-
	12/09/94	0001			97		1	-
TEMPERATURE	04/23/94	N001	C - DEGREE		19.0		-	-
	12/09/94	N001			15.0		0.1	-
TOTAL DISSOLVED SOLIDS	04/23/94	0001	MG/L		430		10	-
	12/09/94	0001			420		10	-
TURBIDITY	04/23/94	N001	NTU		0.0		-	-
	12/09/94	N001		<	1		1	-
URANIUM	04/23/94	0001	MG/L		0.078		0.001	-
	12/09/94	0001			0.039		0.001	-
URANIUM (TOTAL)	04/23/94	N001	MG/L		0.084		0.001	-
VANADIUM	04/23/94	0001	MG/L		0.06		0.01	-
	12/09/94	0001			0.06		0.01	-
VANADIUM (TOTAL)	04/23/94	N001	MG/L		0.05		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0659
NORTH COORDINATE: 59069.8 FT
EAST COORDINATE: 88670.3 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	12/12/94	N001	MG/L CACO3		186	F	10	-
AMMONIUM (TOTAL)	04/22/94	N001	MG/L	<	0.1		0.1	-
	12/12/94	N001			0.19	FH	0.1	-
CALCIUM	04/22/94	0001	MG/L		22.5		0.5	-
	12/12/94	0001			22.9	F	0.5	-
CALCIUM (TOTAL)	04/22/94	N001	MG/L		23.7		0.5	-
CHLORIDE	04/22/94	0001	MG/L		9.1		0.5	-
	12/12/94	0001			6	F	0.5	-
DISSOLVED OXYGEN	04/22/94	N001	MG/L		0.065		-	-
	12/12/94	N001		<	0.6	F	0.6	-
MAGNESIUM	04/22/94	0001	MG/L		26.6		0.1	-
	12/12/94	0001			26.4	F	0.1	-
MAGNESIUM (TOTAL)	04/22/94	N001	MG/L		25.2		0.1	-
MANGANESE	04/22/94	0001	MG/L		0.13		0.01	-
	12/12/94	0001			0.13	F	0.01	-
MANGANESE (TOTAL)	04/22/94	N001	MG/L		0.13		0.01	-
MOLYBDENUM	12/12/94	0001	MG/L		0.01	F	0.01	-
NITRATE (TOTAL)	04/22/94	N001	MG/L		2		1	-
	12/12/94	N001		<	1	FHJN	1	-
PH	04/22/94	N001	SU		7.30		-	-
	12/12/94	N001			7.60	F	0.10	-
POTASSIUM	04/22/94	0001	MG/L		3.4		0.1	-
	12/12/94	0001			3.2	F	0.1	-
POTASSIUM (TOTAL)	04/22/94	N001	MG/L		3.3		0.1	-
REDOX POTENTIAL	04/22/94	N001	mVOLTS		148		-	-
	12/12/94	N001			237	F	-	-
SILICA - SIO2	12/12/94	0001	MG/L		14.3	F	0.1	-
SODIUM	04/22/94	0001	MG/L		79		1	-
	12/12/94	0001			80.4	F	1	-
SODIUM (TOTAL)	04/22/94	N001	MG/L		70		1	-
SPECIFIC CONDUCTANCE	04/22/94	N001	UMHO/CM		548		-	-
	12/12/94	N001			280	F	1	-
STRONTIUM	04/22/94	0001	MG/L		0.27		0.01	-
	12/12/94	0001			0.27	FJ	0.01	-
STRONTIUM (TOTAL)	04/22/94	N001	MG/L		0.25		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
F - LOW-FLOW SAMPLING/DEDICATED PUMP
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0659
NORTH COORDINATE: 59069.8 FT
EAST COORDINATE: 88670.3 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SULFATE	04/22/94	0001	MG/L		128		1	-
	12/12/94	0001			99	F	1	-
TEMPERATURE	04/22/94	N001	C - DEGREE		17.0		-	-
	12/12/94	N001			14.8	F	0.1	-
TOTAL DISSOLVED SOLIDS	04/22/94	0001	MG/L		410		10	-
	12/12/94	0001			358	F	10	-
TURBIDITY	04/22/94	N001	NTU		0		-	-
URANIUM	04/22/94	0001	MG/L		0.002		0.001	-
	12/12/94	0001		<	0.001	F	0.001	-
URANIUM (TOTAL)	04/22/94	N001	MG/L		0.002		0.001	-
VANADIUM	04/22/94	0001	MG/L	<	0.01		0.01	-
	12/12/94	0001		<	0.01	F	0.01	-
VANADIUM (TOTAL)	04/22/94	N001	MG/L	<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
F - LOW-FLOW SAMPLING/DEDICATED PUMP

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0660
NORTH COORDINATE: 61303.4 FT
EAST COORDINATE: 89584.3 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/25/94	N001	MG/L CACO3		217	L	-	-
	12/13/94	N001			207	F	10	-
AMMONIUM (TOTAL)	04/25/94	N001	MG/L	<	0.1	L	0.1	-
	12/13/94	N001		<	0.1	F	0.1	-
CALCIUM	04/25/94	0001	MG/L		2.5	L	0.5	-
	12/13/94	0001			2.7	F	0.5	-
CALCIUM (TOTAL)	04/25/94	N001	MG/L		2.9	L	0.5	-
CHLORIDE	04/25/94	0001	MG/L		7.1	L	0.5	-
	12/13/94	0001			6	F	0.5	-
DISSOLVED OXYGEN	04/25/94	N001	MG/L		0.029	L	-	-
	12/13/94	N001		<	0.6	F	0.6	-
MAGNESIUM	04/25/94	0001	MG/L		1.5	L	0.1	-
	12/13/94	0001			1.4	F	0.1	-
MAGNESIUM (TOTAL)	04/25/94	N001	MG/L		1.5	L	0.1	-
MANGANESE	04/25/94	0001	MG/L	<	0.01	L	0.01	-
	12/13/94	0001		<	0.01	F	0.01	-
MANGANESE (TOTAL)	04/25/94	N001	MG/L	<	0.01	L	0.01	-
MOLYBDENUM	12/13/94	0001	MG/L	<	0.01	F	0.01	-
NITRATE (TOTAL)	04/25/94	N001	MG/L	<	1	L	1	-
	12/13/94	N001		<	1	FJN	1	-
PH	04/25/94	N001	SU		8.62	L	-	-
	12/13/94	N001			8.88	F	0.10	-
POTASSIUM	04/25/94	0001	MG/L		0.8	L	0.1	-
	12/13/94	0001			0.7	FJ	0.1	-
POTASSIUM (TOTAL)	04/25/94	N001	MG/L		0.7	L	0.1	-
REDOX POTENTIAL	04/25/94	N001	mVOLTS		-25	L	-	-
	12/13/94	N001			-57	F	-	-
SILICA - SIO2	12/13/94	0001	MG/L		12.7	F	0.1	-
SODIUM	04/25/94	0001	MG/L		113	L	1	-
	12/13/94	0001			117	F	1	-
SODIUM (TOTAL)	04/25/94	N001	MG/L		99	L	1	-
SPECIFIC CONDUCTANCE	04/25/94	N001	UMHO/CM		404	L	-	-
	12/13/94	N001			300	F	1	-
STRONTIUM	04/25/94	0001	MG/L		0.04	L	0.01	-
	12/13/94	0001			0.03	FJ	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
F - LOW-FLOW SAMPLING/DEDICATED PUMP
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0660
NORTH COORDINATE: 61303.4 FT
EAST COORDINATE: 89584.3 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: SHINARUMP MEMBER OF THE CHINLE FORMATION (SR)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
STRONTIUM (TOTAL)	04/25/94	N001	MG/L		0.04	L	0.01	-
SULFATE	04/25/94	0001	MG/L		27	L	1	-
	12/13/94	0001			19	F	1	-
TEMPERATURE	04/25/94	N001	C - DEGREE		15.9	L	-	-
	12/13/94	N001			15.7	F	0.1	-
TOTAL DISSOLVED SOLIDS	04/25/94	0001	MG/L		280	L	10	-
	12/13/94	0001			266	F	10	-
TURBIDITY	12/13/94	N001	NTU	<	1	F	1	-
URANIUM	04/25/94	0001	MG/L	<	0.001	L	0.001	-
	12/13/94	0001		<	0.001	F	0.001	-
URANIUM (TOTAL)	04/25/94	N001	MG/L	<	0.001	L	0.001	-
VANADIUM	04/25/94	0001	MG/L	<	0.01	L	0.01	-
	12/13/94	0001		<	0.01	F	0.01	-
VANADIUM (TOTAL)	04/25/94	N001	MG/L	<	0.01	L	0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
F - LOW-FLOW SAMPLING/DEDICATED PUMP
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0662
NORTH COORDINATE: 59236.5 FT
EAST COORDINATE: 87577.5 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	12/15/93	N001	MG/L CACO3		592		-	-
	04/23/94	N001			267	L	-	-
AMMONIUM	12/15/93	0001	MG/L	<	0.1		0.1	-
AMMONIUM (TOTAL)	04/23/94	N001	MG/L	<	0.1	L	0.1	-
CALCIUM	12/15/93	0001	MG/L		171		0.5	-
	04/23/94	0001			186	L	0.5	-
CALCIUM (TOTAL)	12/15/93	N001	MG/L		395		0.5	-
	04/23/94	N001			200	L	0.5	-
CHLORIDE	12/15/93	0001	MG/L		14.8		0.5	-
	04/23/94	0001			14.6	L	0.5	-
DISSOLVED OXYGEN	04/23/94	N001	MG/L		8.6	L	-	-
MAGNESIUM	12/15/93	0001	MG/L		105		0.1	-
	04/23/94	0001			109	L	0.1	-
MAGNESIUM (TOTAL)	12/15/93	N001	MG/L		149		0.1	-
	04/23/94	N001			106	L	0.1	-
MANGANESE	12/15/93	0001	MG/L	<	0.01		0.01	-
	04/23/94	0001		<	0.01	L	0.01	-
MANGANESE (TOTAL)	12/15/93	N001	MG/L		1.14		0.01	-
	04/23/94	N001			0.02	L	0.01	-
NITRATE	12/15/93	0001	MG/L		95		1	-
NITRATE (TOTAL)	04/23/94	N001	MG/L		74	L	1	-
PH	12/15/93	N001	SU		7.02		-	-
	04/23/94	N001			6.99	L	-	-
POTASSIUM	12/15/93	0001	MG/L		2.4		0.1	-
	04/23/94	0001			2.9	L	0.1	-
POTASSIUM (TOTAL)	12/15/93	N001	MG/L		1.7		0.1	-
	04/23/94	N001			3.2	L	0.1	-
REDOX POTENTIAL	04/23/94	N001	mVOLTS		357	L	-	-
SILICA - SIO2	12/15/93	0001	MG/L		18.0		0.1	-
SILICA - SIO2 (TOTAL)	12/15/93	N001	MG/L		131		0.1	-
SODIUM	12/15/93	0001	MG/L		36		1	-
	04/23/94	0001			38	L	1	-
SODIUM (TOTAL)	12/15/93	N001	MG/L		39		1	-
	04/23/94	N001			35	L	1	-
SPECIFIC CONDUCTANCE	12/15/93	N001	UMHO/CM		1346		-	-
	04/23/94	N001			1465	L	-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0662
NORTH COORDINATE: 59236.5 FT
EAST COORDINATE: 87577.5 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
STRONTIUM	12/15/93	0001	MG/L		1.16		0.01	-
	04/23/94	0001			1.21	L	0.01	-
STRONTIUM (TOTAL)	12/15/93	N001	MG/L		2.01		0.01	
	04/23/94	N001			1.11	L	0.01	
SULFATE	12/15/93	0001	MG/L		584		1	
	04/23/94	0001			635	L	1	
TEMPERATURE	12/15/93	N001	C - DEGREE		15.5		-	-
	04/23/94	N001			18.2	L	-	-
TOTAL DISSOLVED SOLIDS	12/15/93	0001	MG/L		1320		10	-
	04/23/94	0001			1350	L	10	-
TURBIDITY	04/23/94	N001	NTU		36	L		
URANIUM	12/15/93	0001	MG/L		0.019		0.001	
	04/23/94	0001			0.019	L	0.001	
URANIUM (TOTAL)	12/15/93	N001	MG/L		0.028		0.001	
	04/23/94	N001			0.020	L	0.001	
VANADIUM	12/15/93	0001	MG/L		0.02		0.01	
	04/23/94	0001			0.02	L	0.01	
VANADIUM (TOTAL)	12/15/93	N001	MG/L		0.19		0.01	
	04/23/94	N001			0.02	L	0.01	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0663
NORTH COORDINATE: 59069.6 FT
EAST COORDINATE: 88593.5 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	12/12/94	N001	MG/L CACO3		187	F	10	-
AMMONIUM (TOTAL)	05/18/94	N001	MG/L	<	0.1		0.1	-
	12/12/94	N001			0.13	FH	0.1	-
	12/12/94	N002			0.44	FH	0.1	-
CALCIUM	05/14/94	0001	MG/L		13.0		0.5	-
	12/12/94	0001			17.9	F	0.5	-
	12/12/94	0002			22.5	F	0.5	-
CALCIUM (TOTAL)	05/14/94	N001	MG/L		14.2		0.5	-
CHLORIDE	05/14/94	0001	MG/L		10.3		0.5	-
	12/12/94	0001			6	F	0.5	-
	12/12/94	0002			6	F	0.5	-
DISSOLVED OXYGEN	05/14/94	N001	MG/L		3.8		-	-
	12/12/94	N001			1.3	F	0.6	-
MAGNESIUM	05/14/94	0001	MG/L		9.5		0.1	-
	12/12/94	0001			13.3	F	0.1	-
	12/12/94	0002			26.2	F	0.1	-
MAGNESIUM (TOTAL)	05/14/94	N001	MG/L		10.2		0.1	-
MANGANESE	05/14/94	0001	MG/L		0.03		0.01	-
	12/12/94	0001			0.02	F	0.01	-
	12/12/94	0002			0.13	F	0.01	-
MANGANESE (TOTAL)	05/14/94	N001	MG/L		0.03		0.01	-
MOLYBDENUM	12/12/94	0001	MG/L	<	0.01	F	0.01	-
	12/12/94	0002			0.02	F	0.01	-
NITRATE (TOTAL)	05/18/94	N001	MG/L	<	1	L	1	-
	12/12/94	N001		<	1	FHJN	1	-
	12/12/94	N002			2	FHJN	1	-
PH	05/14/94	N001	SU		8.27		-	-
	12/12/94	N001			8.06	F	0.10	-
POTASSIUM	05/14/94	0001	MG/L		2.4		0.1	-
	12/12/94	0001			2.8	F	0.1	-
	12/12/94	0002			3.2	F	0.1	-
POTASSIUM (TOTAL)	05/14/94	N001	MG/L		2.9		0.1	-
REDOX POTENTIAL	05/14/94	N001	mVOLTS		-72		-	-
	12/12/94	N001			352	F	-	-
SILICA - SIO2	12/12/94	0001	MG/L		11.5	F	0.1	-
	12/12/94	0002			14.3	F	0.1	-
SODIUM	05/14/94	0001	MG/L		69		1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
F - LOW-FLOW SAMPLING/DEDICATED PUMP
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
0002 - FILTERED REPLICATE SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE
N002 - UNFILTERED REPLICATE SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0663
NORTH COORDINATE: 59069.6 FT
EAST COORDINATE: 88593.5 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SODIUM	12/12/94	0001	MG/L		73.1	F	1	-
	12/12/94	0002			78.7	F	1	-
SODIUM (TOTAL)	05/14/94	N001	MG/L		74		1	-
SPECIFIC CONDUCTANCE	05/14/94	N001	UMHO/CM		437		-	-
	12/12/94	N001			346	FJ	1	-
STRONTIUM	05/14/94	0001	MG/L		0.46		0.01	-
	12/12/94	0001			0.57	FJ	0.01	-
	12/12/94	0002			0.26	FJ	0.01	-
STRONTIUM (TOTAL)	05/14/94	N001	MG/L		0.49		0.01	-
SULFATE	05/14/94	0001	MG/L		43		1	-
	12/12/94	0001			36	F	1	-
	12/12/94	0002			99	F	1	-
TEMPERATURE	05/14/94	N001	C - DEGREE		20.0		-	-
	12/12/94	N001			9.6	F	0.1	-
TOTAL DISSOLVED SOLIDS	05/14/94	0001	MG/L		280		10	-
	12/12/94	0001			266	F	10	-
	12/12/94	0002			342	F	10	-
TURBIDITY	05/14/94	N001	NTU		1		-	-
	12/12/94	N001			7	F	1	-
URANIUM	05/14/94	0001	MG/L	<	0.001		0.001	-
	12/12/94	0001		<	0.001	F	0.001	-
	12/12/94	0002		<	0.001	F	0.001	-
URANIUM (TOTAL)	05/14/94	N001	MG/L	<	0.001		0.001	-
VANADIUM	05/14/94	0001	MG/L	<	0.01		0.01	-
	12/12/94	0001		<	0.01	F	0.01	-
	12/12/94	0002		<	0.01	F	0.01	-
VANADIUM (TOTAL)	05/14/94	N001	MG/L	<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
F - LOW-FLOW SAMPLING/DEDICATED PUMP
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
0002 - FILTERED REPLICATE SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0664
NORTH COORDINATE: 61255.9 FT
EAST COORDINATE: 89537.0 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER VALUE PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	05/12/94	N001	MG/L CACO3		208		-	-
	12/13/94	N001			253	F	10	-
AMMONIUM (TOTAL)	05/14/94	N001	MG/L	<	0.1		0.1	-
	12/13/94	N001			0.35	F	0.1	-
CALCIUM	05/12/94	0001	MG/L		12.8		0.5	-
	12/13/94	0001			5.3	F	0.5	-
CALCIUM (TOTAL)	05/12/94	N001	MG/L		14.9		0.5	-
CHLORIDE	05/12/94	0001	MG/L		8.7		0.5	-
	12/13/94	0001			6	F	0.5	-
DISSOLVED OXYGEN	05/12/94	N001	MG/L		0.08		-	-
	12/13/94	N001		<	0.02	F	0.02	-
MAGNESIUM	05/12/94	0001	MG/L		14.8		0.1	-
	12/13/94	0001			4	F	0.1	-
MAGNESIUM (TOTAL)	05/12/94	N001	MG/L		17.0		0.1	-
MANGANESE	05/12/94	0001	MG/L		0.02		0.01	-
	12/13/94	0001		<	0.01	F	0.01	-
MANGANESE (TOTAL)	05/12/94	N001	MG/L		0.02		0.01	-
MOLYBDENUM	12/13/94	0001	MG/L	<	0.01	F	0.01	-
NITRATE (TOTAL)	05/14/94	N001	MG/L	<	1		1	-
	12/13/94	N001		<	1	FJN	1	-
PH	05/12/94	N001	SU		7.80		-	-
	12/13/94	N001			8.49	F	0.10	-
POTASSIUM	05/12/94	0001	MG/L		2.7		0.1	-
	12/13/94	0001			1.6	F	0.1	-
POTASSIUM (TOTAL)	05/12/94	N001	MG/L		3.4		0.1	-
REDOX POTENTIAL	05/12/94	N001	mVOLTS		29		-	-
	12/13/94	N001			228	F	-	-
SILICA - SIO2	12/13/94	0001	MG/L		9.3	F	0.1	-
SODIUM	05/12/94	0001	MG/L		66		1	-
	12/13/94	0001			124	F	1	-
SODIUM (TOTAL)	05/12/94	N001	MG/L		68		1	-
SPECIFIC CONDUCTANCE	05/12/94	N001	UMHO/CM		436		-	-
	12/13/94	N001			439	FJ	1	-
STRONTIUM	05/12/94	0001	MG/L		0.50		0.01	-
	12/13/94	0001			0.2	FJ	0.01	-
STRONTIUM (TOTAL)	05/12/94	N001	MG/L		0.57		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
F - LOW-FLOW SAMPLING/DEDICATED PUMP
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0664
NORTH COORDINATE: 61255.9 FT
EAST COORDINATE: 89537.0 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SULFATE	05/12/94	0001	MG/L		39		1	-
	12/13/94	0001			15	F	1	-
TEMPERATURE	05/12/94	N001	C - DEGREE		17.5		-	-
	12/13/94	N001			13.9	F	0.1	-
TOTAL DISSOLVED SOLIDS	05/12/94	0001	MG/L		300		10	-
	12/13/94	0001			314	F	10	-
TURBIDITY	05/12/94	N001	NTU		0		-	-
	12/13/94	N001		<	1	F	1	-
URANIUM	05/12/94	0001	MG/L		0.011		0.001	-
	12/13/94	0001		<	0.001	F	0.001	-
URANIUM (TOTAL)	05/12/94	N001	MG/L		0.012		0.001	-
VANADIUM	05/12/94	0001	MG/L	<	0.01		0.01	-
	12/13/94	0001		<	0.01	F	0.01	-
VANADIUM (TOTAL)	05/12/94	N001	MG/L	<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
F - LOW-FLOW SAMPLING/DEDICATED PUMP

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0668
NORTH COORDINATE: 60171.4 FT
EAST COORDINATE: 88287.0 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: DECHELLEY MEMBER OF THE CUTLER FORMATION (DC)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	05/11/94	N001	MG/L CACO3		215		-	-
AMMONIUM (TOTAL)	05/14/94	N001	MG/L	<	0.1		0.1	-
CALCIUM	05/11/94	0001	MG/L		14.3		0.5	-
CALCIUM (TOTAL)	05/11/94	N001	MG/L		34.0		0.5	-
CHLORIDE	05/11/94	0001	MG/L		7.4		0.5	-
DISSOLVED OXYGEN	05/11/94	N001	MG/L		1.8		-	-
MAGNESIUM	05/11/94	0001	MG/L		16.7		0.1	-
MAGNESIUM (TOTAL)	05/11/94	N001	MG/L		23.3		0.1	-
MANGANESE	05/11/94	0001	MG/L	<	0.01		0.01	-
MANGANESE (TOTAL)	05/11/94	N001	MG/L		0.25		0.01	-
NITRATE (TOTAL)	05/14/94	N001	MG/L		1		1	-
PH	05/11/94	N001	SU		7.78		-	-
POTASSIUM	05/11/94	0001	MG/L		2.3		0.1	-
POTASSIUM (TOTAL)	05/11/94	N001	MG/L		6.4		0.1	-
REDOX POTENTIAL	05/11/94	N001	mVOLTS		245	GL	-	-
SODIUM	05/11/94	0001	MG/L		55		1	-
SODIUM (TOTAL)	05/11/94	N001	MG/L		60		1	-
SPECIFIC CONDUCTANCE	05/11/94	N001	UMHO/CM		407		-	-
STRONTIUM	05/11/94	0001	MG/L		0.34		0.01	-
STRONTIUM (TOTAL)	05/11/94	N001	MG/L		0.42		0.01	-
SULFATE	05/11/94	0001	MG/L		42		1	-
TEMPERATURE	05/11/94	N001	C - DEGREE		17.3		-	-
TOTAL DISSOLVED SOLIDS	05/11/94	0001	MG/L		270		10	-
TURBIDITY	05/11/94	N001	NTU		213		-	-
URANIUM	05/11/94	0001	MG/L		0.003		0.001	
URANIUM (TOTAL)	05/11/94	N001	MG/L		0.004		0.001	
VANADIUM	05/11/94	0001	MG/L	<	0.01		0.01	
VANADIUM (TOTAL)	05/11/94	N001	MG/L		0.01		0.01	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
L - LESS THAN THREE BORE VOLUMES REMOVED BEFORE SAMPLING

GROUNDWATER QUALITY DATA BY LOCATION
SITE: MON01 MONUMENT VALLEY
LOCATION: 0669
NORTH COORDINATE: 60146.3 FT
EAST COORDINATE: 88247.8 FT
12/15/93 TO 12/13/94
REPORT DATE: 12/26/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
HYDRAULIC FLOW RELATIONSHIP: DOWN GRADIENT (D)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	05/12/94	N001	MG/L CACO3		202		-	-
AMMONIUM (TOTAL)	05/14/94	N001	MG/L		0.8		0.1	-
CALCIUM	05/12/94	0001	MG/L		52.9		0.5	-
CALCIUM (TOTAL)	05/12/94	N001	MG/L		62.3		0.5	-
CHLORIDE	05/12/94	0001	MG/L		10.0		0.5	-
MAGNESIUM	05/12/94	0001	MG/L		37.0		0.1	-
MAGNESIUM (TOTAL)	05/12/94	N001	MG/L		42.4		0.1	-
MANGANESE	05/12/94	0001	MG/L	<	0.01		0.01	-
MANGANESE (TOTAL)	05/12/94	N001	MG/L		0.05		0.01	-
NITRATE (TOTAL)	05/14/94	N001	MG/L		28		1	-
PH	05/12/94	N001	SU		7.67		-	-
POTASSIUM	05/12/94	0001	MG/L		2.3		0.1	-
POTASSIUM (TOTAL)	05/12/94	N001	MG/L		3.1		0.1	-
REDOX POTENTIAL	05/12/94	N001	mVOLTS		308		-	-
SODIUM	05/12/94	0001	MG/L		37		1	-
SODIUM (TOTAL)	05/12/94	N001	MG/L		42		1	-
SPECIFIC CONDUCTANCE	05/12/94	N001	UMHO/CM		824		-	-
STRONTIUM	05/12/94	0001	MG/L		0.42		0.01	-
STRONTIUM (TOTAL)	05/12/94	N001	MG/L		0.50		0.01	-
SULFATE	05/12/94	0001	MG/L		182		1	-
TEMPERATURE	05/12/94	N001	C - DEGREE		20.9		-	-
TOTAL DISSOLVED SOLIDS	05/12/94	0001	MG/L		500		10	-
URANIUM	05/12/94	0001	MG/L		0.009		0.001	-
URANIUM (TOTAL)	05/12/94	N001	MG/L		0.009		0.001	-
VANADIUM	05/12/94	0001	MG/L		0.04		0.01	-
VANADIUM (TOTAL)	05/12/94	N001	MG/L		0.05		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

DATA FILE NAME: \DART\MON01\GWQ10005.DAT

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SUPPLEMENT 4

SURFACE WATER QUALITY DATA BY LOCATION

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SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0620
NORTH COORDINATE: 70685.0 FT
EAST COORDINATE: 90918.8 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/24/85	0001	MG/L CACO3		295.00		-	-
	04/07/86	0001			305.		-	-
	06/27/93	N001			352		-	-
ALUMINUM	04/24/85	0001	MG/L		0.90		0.1	-
	04/07/86	0001			0.2		0.1	-
AMMONIUM	04/24/85	0001	MG/L	<	0.10		0.1	-
	04/07/86	0001		<	0.1		0.1	-
AMMONIUM (TOTAL)	06/27/93	N001	MG/L		0.2		0.1	-
ANTIMONY	04/24/85	0001	MG/L	<	0.003		0.003	-
ARSENIC	04/24/85	0001	MG/L	<	0.01		0.01	-
	04/07/86	0001		<	0.01		0.01	-
ARSENIC (TOTAL)	06/27/93	N001	MG/L		0.019		0.005	-
BARIUM	04/24/85	0001	MG/L	<	0.10		0.1	-
BARIUM (TOTAL)	06/27/93	N001	MG/L		0.4		0.1	-
BORON	04/24/85	0001	MG/L		0.30		0.1	-
	04/07/86	0001		<	0.1		0.1	-
BROMIDE	04/24/85	0001	MG/L	<	2.00		2.	-
CADMIUM	04/24/85	0001	MG/L	<	0.001		0.001	-
	04/07/86	0001		<	0.001		0.001	-
CALCIUM	04/24/85	0001	MG/L		28.00		0.01	-
	04/07/86	0001			26.9		0.01	-
CALCIUM (TOTAL)	06/27/93	N001	MG/L		46.7		0.5	-
CHLORIDE	04/24/85	0001	MG/L		20.00		1.	-
	04/07/86	0001			17.		1.	-
CHLORIDE (TOTAL)	06/27/93	N001	MG/L		14.5		0.5	-
CHROMIUM	04/24/85	0001	MG/L	<	0.01		0.01	-
	04/07/86	0001			0.04		0.01	-
COBALT	04/24/85	0001	MG/L	<	0.05		0.05	-
	04/07/86	0001		<	0.05		0.05	-
COPPER	04/24/85	0001	MG/L	<	0.02		0.02	-
CYANIDE	04/24/85	0001	MG/L	<	0.01		0.01	-
FLUORIDE	04/24/85	0001	MG/L		0.50		0.1	-
GROSS ALPHA	04/24/85	0001	PCI/L		30.00		0.2	10.00000
	04/07/86	0001			30.		0.2	6.
GROSS ALPHA (TOTAL)	06/27/93	N001	PCI/L		39		5	13

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0620
NORTH COORDINATE: 70685.0 FT
EAST COORDINATE: 90918.8 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
GROSS BETA	04/24/85	0001	PCI/L		13.00		1.	2.00000
	04/07/86	0001			9.5		1.	2.2
GROSS BETA (TOTAL)	06/27/93	N001	PCI/L		28		5	6
IRON	04/24/85	0001	MG/L		0.03		0.03	-
	04/07/86	0001			0.08		0.03	-
IRON (TOTAL)	06/27/93	N001	MG/L		14.5		0.03	-
LEAD	04/24/85	0001	MG/L	<	0.01		0.01	-
	04/07/86	0001		<	0.01		0.01	-
LEAD-210	04/24/85	0001	PCI/L		0.00		1.5	0.80000
MAGNESIUM	04/24/85	0001	MG/L		18.00		0.001	-
	04/07/86	0001			20.3		0.001	-
MAGNESIUM (TOTAL)	06/27/93	N001	MG/L		27.2		0.1	-
MANGANESE	04/24/85	0001	MG/L		0.07		0.01	-
	04/07/86	0001			0.03		0.01	-
MANGANESE (TOTAL)	06/27/93	N001	MG/L		1.53		0.01	-
MERCURY	04/24/85	0001	MG/L	<	0.0002		0.0002	-
MOLYBDENUM	04/24/85	0001	MG/L	<	0.01		0.01	-
	04/07/86	0001			0.21		0.01	-
MOLYBDENUM (TOTAL)	06/27/93	N001	MG/L		0.03		0.01	-
NICKEL	04/24/85	0001	MG/L	<	0.04		0.04	-
	04/07/86	0001			0.04		0.04	-
NITRATE	04/24/85	0001	MG/L		8.86		1.	-
	04/07/86	0001		<	1.		1.	-
NITRATE (TOTAL)	06/27/93	N001	MG/L	<	1		1	-
NITRITE AND NITRATE	04/24/85	0001	MG/L		2.00		0.1	-
PH	04/24/85	0001	SU		8.55		-	-
	04/07/86	0001			8.53		-	-
	06/27/93	N001			8.03		-	-
PHOSPHATE	04/24/85	0001	MG/L		0.20		0.1	-
PHOSPHATE (TOTAL)	06/27/93	N001	MG/L		1.4		0.1	-
POLONIUM-210	04/24/85	0001	PCI/L		0.00		1.	0.80000
POTASSIUM	04/24/85	0001	MG/L		2.21		0.01	-
	04/07/86	0001			2.		0.01	-
POTASSIUM (TOTAL)	06/27/93	N001	MG/L		7.3		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0620
NORTH COORDINATE: 70685.0 FT
EAST COORDINATE: 90918.8 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
RADIUM-226	04/24/85	0001	PCI/L		0.30		1.	0.30000
RADIUM-228	04/24/85	0001	PCI/L		0.10		1.	0.80000
SELENIUM	04/24/85	0001	MG/L	<	0.005		0.005	-
	04/07/86	0001		<	0.005		0.005	-
SILICA - SIO2	04/24/85	0001	MG/L		12.00		2.	-
SILICA - SIO2 (TOTAL)	06/27/93	N001	MG/L		32.1	H	0.5	-
SILVER	04/24/85	0001	MG/L	<	0.01		0.01	-
SODIUM	04/24/85	0001	MG/L		152.00		0.002	-
	04/07/86	0001			117.		0.002	-
SODIUM (TOTAL)	06/27/93	N001	MG/L		112		1	-
SPECIFIC CONDUCTANCE	04/24/85	0001	UMHO/CM		600.00		-	-
	04/07/86	0001			500.		-	-
	06/27/93	N001			831		-	-
STRONTIUM	04/24/85	0001	MG/L	<	0.10		0.1	-
	04/07/86	0001			0.3		0.1	-
STRONTIUM (TOTAL)	06/27/93	N001	MG/L		0.42		0.01	-
SULFATE	04/24/85	0001	MG/L		118.00		0.1	-
	04/07/86	0001			100.		0.1	-
SULFATE (TOTAL)	06/27/93	N001	MG/L		84		1	-
SULFIDE	04/24/85	0001	MG/L	<	0.10		0.1	-
TEMPERATURE	04/24/85	0001	C - DEGREE		19.00		-	-
	04/07/86	0001			19.		-	-
	06/27/93	N001			27.0		-	-
THORIUM-230	04/24/85	0001	PCI/L		0.10		1.	0.60000
TIN	04/24/85	0001	MG/L	<	0.005		0.005	-
TOTAL DISSOLVED SOLIDS	04/24/85	0001	MG/L		512.00		10.	-
	04/07/86	0001			440.		10.	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/27/93	N001	MG/L		490		10	-
TOTAL ORGANIC CARBON	04/24/85	0001	MG/L		37.00		1.	-
TOTAL ORGANIC HALOGENS	04/24/85	0001	MG/L		0.007		-	0.00200
URANIUM	04/24/85	0001	MG/L		0.0296		0.003	-
	04/07/86	0001			0.0297		0.003	-
URANIUM (TOTAL)	06/27/93	N001	MG/L		0.028		0.001	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0620
NORTH COORDINATE: 70685.0 FT
EAST COORDINATE: 90918.8 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
VANADIUM	04/24/85	0001	MG/L	<	0.01		0.01	-
	04/07/86	0001			0.55		0.01	-
VANADIUM (TOTAL)	06/27/93	N001	MG/L		0.04		0.01	-
ZINC	04/24/85	0001	MG/L		0.02		0.005	-
	04/07/86	0001			0.01		0.005	-
ZINC (TOTAL)	06/27/93	N001	MG/L		0.033	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0621
NORTH COORDINATE: 57935.9 FT
EAST COORDINATE: 90924.4 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/22/85	0001	MG/L CACO3		240.00		-	-
	07/31/85	0001			268.00		-	-
	04/05/86	0001			310.		-	-
	06/09/89	0001			201.	J	-	-
	06/01/91	0001			237.		-	-
	02/21/92	0001			278		-	-
	08/14/92	0001			194		-	-
	11/22/92	N001			361		-	-
ALUMINUM	06/08/82	00S1	MG/L		0.05	J	0.1	-
	04/22/85	0001			0.70		0.1	-
	07/31/85	0001			0.30		0.1	-
	04/05/86	0001			0.3		0.1	-
	06/09/89	0001		<	0.1	J	0.1	-
	06/01/91	0001		<	0.05		0.05	-
	02/21/92	0001		<	0.05		0.05	-
	08/14/92	0001		<	0.2		0.2	-
AMMONIUM	04/22/85	0001	MG/L	<	0.10		0.1	-
	07/31/85	0001		<	0.10		0.1	-
	04/05/86	0001		<	0.1		0.1	-
	06/09/89	0001		<	0.1	J	0.1	-
	06/01/91	0001			2.1		0.1	-
	02/21/92	0001		<	0.1		0.1	-
ANTIMONY	04/22/85	0001	MG/L	<	0.003		0.003	-
	07/31/85	0001		<	0.003		0.003	-
	06/09/89	0001		<	0.003	J	0.003	-
	06/01/91	0001			0.003		0.003	-
	02/21/92	0001		<	0.003		0.003	-
	08/14/92	0001		<	0.06	W	0.06	-
ARSENIC	06/08/82	00S1	MG/L		0.01		0.01	-
	04/22/85	0001		<	00.01		0.01	-
	07/31/85	0001		<	0.01		0.01	-
	04/05/86	0001		<	0.01		0.01	-
	06/09/89	0001		<	0.01	J	0.01	-
	06/01/91	0001			0.01		0.01	-
	02/21/92	0001		<	0.01		0.01	-
	08/14/92	0001			0.01		0.01	-
ARSENIC (TOTAL)	11/22/92	N001	MG/L	<	0.0015		0.0015	-
BARIUM	04/22/85	0001	MG/L	<	0.10		0.1	-
	07/31/85	0001			0.50		0.1	-
	06/09/89	0001			0.2	J	0.1	-
	06/01/91	0001			0.18		0.01	-
	02/21/92	0001			0.19		0.01	-
	08/14/92	0001			0.22		0.2	-
BARIUM (TOTAL)	11/22/92	N001	MG/L		0.15		0.0015	-
BERYLLIUM	06/09/89	0001	MG/L	<	0.01	J	0.01	-
	06/01/91	0001		<	0.005		0.005	-
	08/14/92	0001		<	0.005		0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0621
NORTH COORDINATE: 57935.9 FT
EAST COORDINATE: 90924.4 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BICARBONATE - HCO3	06/08/82	00S1	MG/L		297.00		-	-
BORON	04/22/85	0001	MG/L		0.10		0.1	-
	07/31/85	0001			0.80		0.1	-
	04/05/86	0001			0.1		0.1	-
	06/09/89	0001		<	0.1	J	0.1	-
	06/01/91	0001			0.08		0.05	-
BROMIDE	04/22/85	0001	MG/L	<	2.00		2.	-
	06/01/91	0001		<	0.1		0.1	-
CADMIUM	04/22/85	0001	MG/L	<	0.001		0.001	-
	07/31/85	0001		<	0.001		0.001	-
	04/05/86	0001		<	0.001		0.001	-
	06/09/89	0001		<	0.001	J	0.001	-
	06/01/91	0001		<	0.001		0.001	-
	02/21/92	0001		<	0.0005		0.0005	-
	08/14/92	0001		<	0.005	E	0.005	-
CADMIUM (TOTAL)	11/22/92	N001	MG/L	<	0.00013	NW	0.00013	-
CALCIUM	06/08/82	00S1	MG/L		43.40		0.01	-
	04/22/85	0001			42.50		0.01	-
	07/31/85	0001			48.00		0.01	-
	04/05/86	0001			28.9		0.01	-
	06/09/89	0001			43.7	J	0.01	-
	06/01/91	0001			33.5		0.5	-
	02/21/92	0001			39.7		0.5	-
	08/14/92	0001			38		5	-
CHLORIDE	06/08/82	00S1	MG/L		31.00		1.	-
	04/22/85	0001			10.00		1.	-
	07/31/85	0001			6.60		1.	-
	04/05/86	0001			14.		1.	-
	06/09/89	0001			4.9	J	1.	-
	06/01/91	0001			8.0		0.5	-
	02/21/92	0001			11.1		0.5	-
	08/14/92	0001			5.3		0.016	-
CHROMIUM	04/22/85	0001	MG/L	<	0.01		0.01	-
	07/31/85	0001			0.03		0.01	-
	04/05/86	0001			0.07		0.01	-
	06/09/89	0001		<	0.01	J	0.01	-
	06/01/91	0001		<	0.01		0.01	-
	02/21/92	0001		<	0.01		0.01	-
	08/14/92	0001		<	0.01		0.01	-
CHROMIUM (TOTAL)	11/22/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	04/22/85	0001	MG/L	<	0.05		0.05	-
	07/31/85	0001		<	0.05		0.05	-
	04/05/86	0001		<	0.05		0.05	-
	06/09/89	0001		<	0.05	J	0.05	-
	06/01/91	0001		<	0.03		0.03	-
COPPER	04/22/85	0001	MG/L	<	0.02		0.02	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0621
NORTH COORDINATE: 57935.9 FT
EAST COORDINATE: 90924.4 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
COPPER	07/31/85	0001	MG/L	<	0.02		0.02	-
	06/09/89	0001		<	0.02	J	0.02	-
	06/01/91	0001		<	0.01		0.01	-
CYANIDE	04/22/85	0001	MG/L	<	0.01		0.01	-
	07/31/85	0001		<	0.01		0.01	-
	06/09/89	0001		<	0.01	J	0.01	-
FLUORIDE	06/08/82	00S1	MG/L		1.00		0.1	-
	04/22/85	0001			0.30		0.1	-
	07/31/85	0001			0.50		0.1	-
	06/09/89	0001			0.4	J	0.1	-
	06/01/91	0001			0.2		0.1	-
GROSS ALPHA	04/22/85	0001	PCI/L		2.40		0.2	3.80000
	04/05/86	0001			41.		0.2	7.
	06/01/91	0001			41.6		1.	8.4
	02/21/92	0001			19.7		1.0	6.7
	08/14/92	0001			13		5	5
GROSS ALPHA (TOTAL)	11/22/92	N001	PCI/L		2.1	N	8.8	5.5
GROSS BETA	04/22/85	0001	PCI/L		3.40		1.	1.70000
	04/05/86	0001			28.		1.	3.
	06/01/91	0001			17.6		0.5	3.6
	02/21/92	0001			13.8		0.5	3.3
	08/14/92	0001			7.4		4.2	3.0
GROSS BETA (TOTAL)	11/22/92	N001	PCI/L		8.4	N	6.5	4.3
IRON	06/08/82	00S1	MG/L		0.10		0.03	-
	04/22/85	0001			0.04		0.03	-
	07/31/85	0001			0.10		0.03	-
	04/05/86	0001			0.1		0.03	-
	06/09/89	0001		<	0.03	J	0.03	-
	06/01/91	0001			0.03		0.03	-
	02/21/92	0001		<	0.03		0.03	-
	08/14/92	0001		<	0.1		0.1	-
LEAD	04/22/85	0001	MG/L	<	0.01		0.01	-
	07/31/85	0001		<	0.01		0.01	-
	04/05/86	0001		<	0.01		0.01	-
	06/09/89	0001		<	0.01	J	0.01	-
	06/01/91	0001		<	0.005		0.005	-
LEAD (TOTAL)	11/22/92	N001	MG/L	<	0.0015		0.0015	-
LEAD-210	04/22/85	0001	PCI/L		0.30		1.5	0.80000
	07/31/85	0001			0.00		1.5	1.00000
LEAD-210 (TOTAL)	11/22/92	N001	PCI/L		5.6		0.3	0.9
MAGNESIUM	06/08/82	00S1	MG/L		31.00		0.001	-
	04/22/85	0001			23.10		0.001	-
	07/31/85	0001			35.30		0.001	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0621
NORTH COORDINATE: 57935.9 FT
EAST COORDINATE: 90924.4 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MAGNESIUM	04/05/86	0001	MG/L		41.5		0.001	-
	06/09/89	0001			30.3	J	0.001	-
	06/01/91	0001			20.4		0.1	-
	02/21/92	0001			31.7		0.1	-
	08/14/92	0001			20		5	-
MANGANESE	04/22/85	0001	MG/L		0.05		0.01	-
	07/31/85	0001			0.08		0.01	-
	04/05/86	0001			0.01		0.01	-
	06/09/89	0001			0.06	J	0.01	-
	06/01/91	0001			0.13		0.01	-
	02/21/92	0001		<	0.01		0.01	-
	08/14/92	0001			0.11		0.01	-
MANGANESE (TOTAL)	11/22/92	N001	MG/L		0.0050		0.0015	-
MERCURY	04/22/85	0001	MG/L	<	0.0002		0.0002	-
	07/31/85	0001		<	0.0002		0.0002	-
	06/09/89	0001		<	0.0002	J	0.0002	-
MOLYBDENUM	06/08/82	00S1	MG/L		0.025		0.01	-
	04/22/85	0001		<	0.01		0.01	-
	07/31/85	0001			0.16		0.01	-
	04/05/86	0001			0.2		0.01	-
	06/09/89	0001		<	0.01	J	0.01	-
	06/01/91	0001		<	0.01		0.01	-
	02/21/92	0001		<	0.01		0.01	-
	08/14/92	0001		<	0.007		0.007	-
MOLYBDENUM (TOTAL)	11/22/92	N001	MG/L	<	0.0049	N	0.0049	-
NICKEL	04/22/85	0001	MG/L	<	0.04		0.04	-
	07/31/85	0001			0.17		0.04	-
	04/05/86	0001		<	0.04		0.04	-
	06/09/89	0001		<	0.04	J	0.04	-
	06/01/91	0001		<	0.04		0.04	-
NITRATE	04/22/85	0001	MG/L	<	1.00		1.	-
	07/31/85	0001		<	1.00		1.	-
	04/05/86	0001		<	1.		1.	-
	06/09/89	0001			5.3	J	1.	-
	06/01/91	0001			2.9		1.	-
	02/21/92	0001		<	1.0		1.0	-
	08/14/92	0001			4.3		0.075	-
	11/22/92	N001			0.071		0.044	-
NITRITE	07/31/85	0001	MG/L	<	0.10		0.1	-
NITRITE AND NITRATE	04/22/85	0001	MG/L	<	0.10		0.1	-
	06/01/91	0001			0.65		0.05	-
PH	06/08/82	00S1	SU		7.17		-	-
	04/22/85	0001			8.15		-	-
	07/31/85	0001			8.00		-	-
	04/05/86	0001			9.3		-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0621
NORTH COORDINATE: 57935.9 FT
EAST COORDINATE: 90924.4 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
PH	06/09/89	0001	SU		8.86		-	-
	06/01/91	0001			7.90		-	-
	02/21/92	0001			8.47		-	-
	08/14/92	0001			7.54		-	-
	11/22/92	N001			9.25		-	-
PHOSPHATE	04/22/85	0001	MG/L		0.10		0.1	-
	07/31/85	0001		<	0.1		0.1	-
	06/09/89	0001			0.6	J	0.1	-
POLONIUM-210	04/22/85	0001	PCI/L		0.00		1.	0.80000
	07/31/85	0001			0.00		1.	0.70000
POTASSIUM	06/08/82	00S1	MG/L		1.60		0.01	-
	04/22/85	0001			3.34		0.01	-
	07/31/85	0001			2.72		0.01	-
	04/05/86	0001			10.6		0.01	-
	06/09/89	0001			1.3	J	0.01	-
	06/01/91	0001			5.4		0.01	-
	02/21/92	0001			6.04		0.01	-
	08/14/92	0001			5.1		0.575	-
RADIUM-226	06/08/82	00S1	PCI/L		2.00		1.	-
	04/22/85	0001			0.00		1.	0.20000
	07/31/85	0001			0.20		1.	0.30000
	06/09/89	0001			0.0	J	1.	0.1
	06/01/91	0001			6.8		1.	1.1
	02/21/92	0001			3.8		1.0	0.9
	08/14/92	0001			0.0		0.4	0.1
RADIUM-226 (TOTAL)	11/22/92	N001	PCI/L		0.2		0.3	0.2
RADIUM-228	04/22/85	0001	PCI/L		0.00		1.	0.90000
	07/31/85	0001			0.00		1.	1.10000
	06/09/89	0001			0.0	J	1.	0.9
	06/01/91	0001			1.8		1.	1.5
	02/21/92	0001			0.0		1.0	1.5
	08/14/92	0001			0		2	1
RADIUM-228 (TOTAL)	11/22/92	N001	PCI/L		2.8		1.9	1.4
SELENIUM	06/08/82	00S1	MG/L		0.005		0.005	-
	04/22/85	0001		<	0.005		0.005	-
	07/31/85	0001		<	0.005		0.005	-
	04/05/86	0001		<	0.005		0.005	-
	06/09/89	0001		<	0.005	J	0.005	-
	06/01/91	0001		<	0.005	J	0.005	-
	02/21/92	0001		<	0.005		0.005	-
	08/14/92	0001		<	0.005	W	0.005	-
SELENIUM (TOTAL)	11/22/92	N001	MG/L	<	0.0015	W	0.0015	-
SILICA - SIO2	04/22/85	0001	MG/L		20.00		2.	-
	07/31/85	0001			5.00		2.	-
	06/09/89	0001			11.	J	2.	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0621
NORTH COORDINATE: 57935.9 FT
EAST COORDINATE: 90924.4 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SILICA - SIO2	06/01/91	0001	MG/L		8.2		0.1	-
SILVER	04/22/85	0001	MG/L	<	0.01		0.01	-
	07/31/85	0001		<	0.01		0.01	-
	06/09/89	0001		<	0.01	J	0.01	-
	06/01/91	0001		<	0.01		0.01	-
SODIUM	06/08/82	00S1	MG/L		51.20		0.002	-
	04/22/85	0001			38.70		0.002	-
	07/31/85	0001			56.30		0.002	-
	04/05/86	0001			58.8		0.002	-
	06/09/89	0001			44.7	J	0.002	-
	06/01/91	0001			41.		1.	-
	02/21/92	0001			43.		1.	-
	08/14/92	0001			30		5	-
SPECIFIC CONDUCTANCE	06/08/82	00S1	UMHO/CM		560.00		-	-
	04/22/85	0001			350.00		-	-
	07/31/85	0001			700.00		-	-
	04/05/86	0001			440.		-	-
	06/09/89	0001			377.		-	-
	06/01/91	0001			460.		-	-
	02/21/92	0001			402		-	-
	08/14/92	0001			422		-	-
	11/22/92	N001			570		-	-
STRONTIUM	04/22/85	0001	MG/L	<	0.10		0.1	-
	07/31/85	0001		<	0.10		0.1	-
	04/05/86	0001			0.5		0.1	-
	06/01/91	0001			0.42		0.01	-
	02/21/92	0001			0.55		0.01	-
	08/14/92	0001			0.49		0.2	-
STRONTIUM (TOTAL)	11/22/92	N001	MG/L		0.55	+	0.00035	-
SULFATE	06/08/82	00S1	MG/L		74.00		0.1	-
	04/22/85	0001			46.50		0.1	-
	07/31/85	0001			120.00		0.1	-
	04/05/86	0001			62.1		0.1	-
	06/09/89	0001			35.	J	0.1	-
	06/01/91	0001			14.		0.1	-
	02/21/92	0001			32.		10.	-
	08/14/92	0001			10		0.059	-
SULFATE (TOTAL)	11/22/92	N001	MG/L		50		1.0	-
SULFIDE	04/22/85	0001	MG/L	<	0.10		0.1	-
	07/31/85	0001		<	0.01	J	0.1	-
	06/09/89	0001		<	0.1	J	0.1	-
	06/01/91	0001			1.10	J	1.	-
TEMPERATURE	06/08/82	00S1	C - DEGREE		19.00		-	-
	04/22/85	0001			14.00		-	-
	07/31/85	0001			25.00		-	-
	04/05/86	0001			15.		-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
+ - CORRELATION COEFFICIENT FOR MSA < 0.995
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0621
NORTH COORDINATE: 57935.9 FT
EAST COORDINATE: 90924.4 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TEMPERATURE	06/09/89	0001	C - DEGREE		25.5		-	-
	06/01/91	0001			14.4		-	-
	02/21/92	0001			9.6		-	-
	08/14/92	0001			20.1		-	-
	11/22/92	N001			12.3		-	-
THALLIUM	06/09/89	0001	MG/L	<	0.01	J	0.01	-
	06/01/91	0001		<	0.01		0.01	-
THORIUM-230	04/22/85	0001	PCI/L		0.00		1.	0.60000
	07/31/85	0001			0.20		1.	0.90000
	06/01/91	0001			0.4		1.	0.6
TIN	04/22/85	0001	MG/L	<	0.005		0.005	-
	07/31/85	0001		<	0.005		0.005	-
	06/09/89	0001		<	0.005	J	0.005	-
	06/01/91	0001		<	0.01	I	0.01	-
TOTAL DISSOLVED SOLIDS	06/08/82	00S1	MG/L		381.00		10.	-
	04/22/85	0001			347.00		10.	-
	07/31/85	0001			358.00		10.	-
	04/05/86	0001			402.		10.	-
	06/09/89	0001			297.	J	10.	-
	06/01/91	0001			262.		10.	-
	02/21/92	0001			350.		10.	-
	08/14/92	0001			270		42	-
TOTAL ORGANIC CARBON	04/22/85	0001	MG/L		57.00		1.	-
	07/31/85	0001			44.00		1.	-
	06/01/91	0001			5.		1.	-
	02/21/92	0001			4.		1.	-
	08/14/92	0001			5.1		1.0	-
TOTAL ORGANIC HALOGENS	04/22/85	0001	MG/L		0.004		-	0.00400
URANIUM	06/08/82	00S1	MG/L		0.002	J	0.003	-
	04/22/85	0001			0.0023	J	0.003	-
	07/31/85	0001			0.0006	J	0.003	-
	04/05/86	0001			0.0566		0.003	-
	06/09/89	0001			0.0005	J	0.003	-
	06/01/91	0001			0.044		0.001	-
	02/21/92	0001			0.033		0.001	-
	08/14/92	0001			0.009		0.001	-
URANIUM (TOTAL)	11/22/92	N001	MG/L		0.014		0.001	-
VANADIUM	06/08/82	00S1	MG/L		0.025		0.01	-
	04/22/85	0001		<	0.01		0.01	-
	07/31/85	0001			0.60		0.01	-
	04/05/86	0001			0.34		0.01	-
	06/09/89	0001		<	0.01	J	0.01	-
	06/01/91	0001		<	0.01		0.01	-
	02/21/92	0001		<	0.01		0.01	-
	08/14/92	0001		<	0.05	*	0.05	-
VANADIUM (TOTAL)	11/22/92	N001	MG/L		0.0030		0.0019	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0621
NORTH COORDINATE: 57935.9 FT
EAST COORDINATE: 90924.4 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ZINC	04/22/85	0001	MG/L		0.23		0.005	-
	07/31/85	0001		<	0.01		0.01	-
	04/05/86	0001			0.013		0.005	-
	06/09/89	0001		<	0.005	J	0.005	-
	06/01/91	0001			0.005		0.005	-
	02/21/92	0001		<	0.005		0.005	-
	08/14/92	0001		<	0.02		0.02	-
ZINC (TOTAL)	11/22/92	N001	MG/L		0.0050		0.0010	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0622
NORTH COORDINATE: 56576.1 FT
EAST COORDINATE: 89945.2 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	04/22/85	0001	MG/L CACO3		1201.00		-	-
	08/18/85	0001			736.00		-	-
	04/05/86	0001			1270.		-	-
	06/09/89	0001			486.		-	-
	06/01/91	0001			248.		-	-
	02/23/92	0001			254		-	-
	08/14/92	0001			218		-	-
	11/24/92	N001			244		-	-
ALUMINUM	04/22/85	0001	MG/L		1.30		0.1	-
	08/18/85	0001			0.30		0.1	-
	04/05/86	0001			0.3		0.1	-
	06/09/89	0001		<	0.1		0.1	-
	06/01/91	0001		<	0.05		0.05	-
	02/23/92	0001		<	0.05		0.05	-
	08/14/92	0001		<	0.2		0.2	-
AMMONIUM	04/22/85	0001	MG/L	<	0.10		0.1	-
	08/18/85	0001		<	0.10		0.1	-
	04/05/86	0001		<	0.1		0.1	-
	06/09/89	0001		<	0.1		0.1	-
	06/01/91	0001			0.1		0.1	-
	02/23/92	0001		<	0.1		0.1	-
ANTIMONY	04/22/85	0001	MG/L	<	0.003		0.003	-
	08/18/85	0001			0.004		0.003	-
	06/09/89	0001		<	0.0003	J	0.003	-
	06/01/91	0001		<	0.003		0.003	-
	02/23/92	0001		<	0.003		0.003	-
	08/14/92	0001		<	0.06	W	0.06	-
ARSENIC	04/22/85	0001	MG/L	<	0.01		0.01	-
	08/18/85	0001		<	0.01		0.01	-
	04/05/86	0001		<	0.01		0.01	-
	06/09/89	0001			1.0		0.01	-
	06/01/91	0001		<	0.01		0.01	-
	02/23/92	0001		<	0.01		0.01	-
	08/14/92	0001		<	0.01	W	0.01	-
ARSENIC (TOTAL)	11/24/92	N001	MG/L	<	0.0015		0.0015	-
BARIUM	04/22/85	0001	MG/L	<	0.10		0.1	-
	08/18/85	0001			0.40		0.1	-
	06/09/89	0001		<	0.1		0.1	-
	06/01/91	0001			0.17		0.01	-
	02/23/92	0001			0.20		0.01	-
	08/14/92	0001		<	0.2		0.2	-
BARIUM (TOTAL)	11/24/92	N001	MG/L		0.20		0.0015	-
BERYLLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	06/01/91	0001		<	0.005		0.005	-
	08/14/92	0001		<	0.005		0.005	-
BORON	04/22/85	0001	MG/L		1.20		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0622
NORTH COORDINATE: 56576.1 FT
EAST COORDINATE: 89945.2 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
BORON	08/18/85	0001	MG/L		1.40		0.1	-
	04/05/86	0001			1.		0.1	-
	06/09/89	0001			0.4		0.1	-
	06/01/91	0001			0.06		0.05	-
BROMIDE	04/22/85	0001	MG/L	<	2.00		2.	-
	06/01/91	0001			0.1		0.1	-
CADMIUM	04/22/85	0001	MG/L	<	0.001		0.001	-
	08/18/85	0001			0.001		0.001	-
	04/05/86	0001		<	0.001		0.001	-
	06/09/89	0001		<	0.001		0.001	-
	06/01/91	0001		<	0.001		0.001	-
	02/23/92	0001		<	0.0005		0.0005	-
	08/14/92	0001		<	0.005	E	0.005	-
CADMIUM (TOTAL)	11/24/92	N001	MG/L	<	0.00013	N	0.00013	-
CALCIUM	04/22/85	0001	MG/L		24.40		0.01	-
	08/18/85	0001			39.80		0.01	-
	04/05/86	0001			19.5		0.01	-
	06/09/89	0001			32.3		0.01	-
	06/01/91	0001			40.9		0.5	-
	02/23/92	0001			41.6		0.5	-
	08/14/92	0001			37		5	-
CHLORIDE	04/22/85	0001	MG/L		8.00		1.	-
	08/18/85	0001			230.00		1.	-
	04/05/86	0001			45.		1.	-
	06/09/89	0001			110.		1.	-
	06/01/91	0001			7.2		0.5	-
	02/23/92	0001			9.2		0.5	-
	08/14/92	0001			8.2		0.016	-
CHROMIUM	04/22/85	0001	MG/L	<	0.01		0.01	-
	08/18/85	0001			0.07		0.01	-
	04/05/86	0001			0.04		0.01	-
	06/09/89	0001		<	0.01		0.01	-
	06/01/91	0001		<	0.01		0.01	-
	02/23/92	0001		<	0.01		0.01	-
	08/14/92	0001		<	0.01		0.01	-
CHROMIUM (TOTAL)	11/24/92	N001	MG/L	<	0.0053		0.0053	-
COBALT	04/22/85	0001	MG/L	<	0.05		0.05	-
	08/18/85	0001			0.05		0.05	-
	04/05/86	0001		<	0.05		0.05	-
	06/09/89	0001		<	0.05		0.05	-
	06/01/91	0001		<	0.03		0.03	-
COPPER	04/22/85	0001	MG/L	<	0.02		0.02	-
	08/18/85	0001			0.03		0.02	-
	06/09/89	0001		<	0.02		0.02	-
	06/01/91	0001		<	0.01		0.01	-
CYANIDE	04/22/85	0001	MG/L	<	0.01		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
E - ESTIMATED VALUE BECAUSE OF INTERFERENCE, SEE CASE NARRATIVE
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0622
NORTH COORDINATE: 56576.1 FT
EAST COORDINATE: 89945.2 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
CYANIDE	08/18/85	0001	MG/L	<	0.01		0.01	-
	06/09/89	0001		<	0.01		0.01	-
FLUORIDE	04/22/85	0001	MG/L		1.30		0.1	-
	08/18/85	0001			1.30		0.1	-
	06/09/89	0001			0.6		0.1	-
	06/01/91	0001			0.2		0.1	-
GROSS ALPHA	04/22/85	0001	PCI/L		20.00		0.2	20.00000
	08/18/85	0001			1.50		0.2	8.90000
	04/05/86	0001			10.		0.2	17.
	06/01/91	0001			5.7		1.	5.5
	02/24/92	0001			0.0		1.0	3.7
	08/14/92	0001			0.0		5.5	2.3
GROSS ALPHA (TOTAL)	11/24/92	N001	PCI/L		0.0	N	6.7	3.3
GROSS BETA	04/22/85	0001	PCI/L		28.00		1.	7.00000
	08/18/85	0001			24.00		1.	7.00000
	04/05/86	0001			22.		1.	9.0
	06/01/91	0001			4.5		0.5	3.1
	02/24/92	0001			2.7		0.5	2.3
	08/14/92	0001			4.3		5.0	3.2
GROSS BETA (TOTAL)	11/24/92	N001	PCI/L		9.5	N	5.1	3.4
IRON	04/22/85	0001	MG/L		0.08		0.03	-
	08/18/85	0001			0.30		0.03	-
	04/05/86	0001			0.1		0.03	-
	06/09/89	0001		<	0.03		0.03	-
	06/01/91	0001		<	0.03		0.03	-
	02/23/92	0001		<	0.03		0.03	-
	08/14/92	0001		<	0.1		0.1	-
LEAD	04/22/85	0001	MG/L	<	0.01		0.01	-
	08/18/85	0001		<	0.01		0.01	-
	04/05/86	0001		<	0.01		0.01	-
	06/09/89	0001		<	0.01		0.01	-
	06/01/91	0001		<	0.005		0.005	-
LEAD (TOTAL)	11/24/92	N001	MG/L	<	0.0015		0.0015	-
LEAD-210	04/22/85	0001	PCI/L		0.00		1.5	1.00000
	08/18/85	0001			0.10		1.5	0.90000
LEAD-210 (TOTAL)	11/24/92	N001	PCI/L		4.8		0.3	0.8
MAGNESIUM	04/22/85	0001	MG/L		78.10		0.001	-
	08/18/85	0001			75.20		0.001	-
	04/05/86	0001			78.7		0.001	-
	06/09/89	0001			57.4		0.001	-
	06/01/91	0001			27.1		0.1	-
	02/23/92	0001			24.6		0.1	-
	08/14/92	0001			28		5	-
MANGANESE	04/22/85	0001	MG/L		0.02		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0622
NORTH COORDINATE: 56576.1 FT
EAST COORDINATE: 89945.2 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
MANGANESE	08/18/85	0001	MG/L		0.22		0.01	-
	04/05/86	0001			0.02		0.01	-
	06/09/89	0001			0.07		0.01	-
	06/01/91	0001			0.04		0.01	-
	02/23/92	0001			0.02		0.01	-
	08/14/92	0001			0.048		0.01	-
MANGANESE (TOTAL)	11/24/92	N001	MG/L		0.0090		0.0015	-
MERCURY	04/22/85	0001	MG/L	<	0.0002		0.0002	-
	08/18/85	0001		<	0.0002		0.0002	-
	06/09/89	0001		<	0.0002		0.0002	-
MOLYBDENUM	04/22/85	0001	MG/L		0.21		0.01	-
	08/18/85	0001			0.18		0.01	-
	04/05/86	0001			0.18		0.01	-
	06/09/89	0001			0.09		0.01	-
	06/01/91	0001		<	0.01		0.01	-
	02/23/92	0001		<	0.01		0.01	-
	08/14/92	0001		<	0.007		0.007	-
MOLYBDENUM (TOTAL)	11/24/92	N001	MG/L	<	0.0049	N	0.0049	-
NICKEL	04/22/85	0001	MG/L	<	0.04		0.04	-
	08/18/85	0001			0.07		0.04	-
	04/05/86	0001			0.05		0.04	-
	06/09/89	0001		<	0.04		0.04	-
	06/01/91	0001		<	0.04		0.04	-
NITRATE	04/22/85	0001	MG/L		4.43		1.	-
	08/18/85	0001			25.00		1.	-
	04/05/86	0001			3.		1.	-
	06/09/89	0001			4.8		1.	-
	06/01/91	0001			2.7		1.	-
	02/23/92	0001		<	1.0		1.0	-
	08/14/92	0001			2.3		0.075	-
	11/24/92	N001			0.48		0.044	-
NITRITE	04/22/85	0001	MG/L		0.66		-	-
	08/18/85	0001		<	0.10		0.1	-
NITRITE AND NITRATE	04/22/85	0001	MG/L		1.20		0.1	-
	06/01/91	0001			0.61		0.05	-
PH	04/22/85	0001	SU		9.30		-	-
	08/18/85	0001			8.44		-	-
	04/05/86	0001			9.34		-	-
	06/09/89	0001			8.61		-	-
	06/01/91	0001			8.25		-	-
	02/23/92	0001			8.19		-	-
	08/14/92	0001			8.32		-	-
	11/24/92	N001			8.14		-	-
PHOSPHATE	04/22/85	0001	MG/L		0.20		0.1	-
	08/18/85	0001			0.1		0.1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
N - SPIKE SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0622
NORTH COORDINATE: 56576.1 FT
EAST COORDINATE: 89945.2 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
PHOSPHATE	06/09/89	0001	MG/L		0.6		0.1	-
POLONIUM-210	04/22/85	0001	PCI/L		0.00		1.	0.80000
	08/18/85	0001			0.00		1.	0.70000
POTASSIUM	04/22/85	0001	MG/L		18.50		0.01	-
	08/18/85	0001			23.40		0.01	-
	04/05/86	0001			16.2		0.01	-
	06/09/89	0001			5.0		0.01	-
	06/01/91	0001			2.5		0.01	-
	02/23/92	0001			4.30		0.01	-
	08/14/92	0001			3.7		0.575	-
RADIUM-226	04/22/85	0001	PCI/L		0.00		1.	0.20000
	08/18/85	0001			0.00		1.	0.20000
	06/09/89	0001			0.1		1.	0.2
	06/01/91	0001			0.3		1.	0.3
	02/24/92	0001			0.1		1.0	0.3
	08/14/92	0001			0.2		0.6	0.1
RADIUM-226 (TOTAL)	11/24/92	N001	PCI/L		2.1		0.3	0.5
RADIUM-228	04/22/85	0001	PCI/L		0.00		1.	1.00000
	08/18/85	0001			0.00		1.	1.20000
	06/09/89	0001			0.4		1.	1.0
	06/01/91	0001			1.1		1.	1.5
	02/24/92	0001			0.7		1.0	1.7
	08/14/92	0001			0.2		1.8	0.9
RADIUM-228 (TOTAL)	11/24/92	N001	PCI/L		4.4		2.0	1.6
SELENIUM	04/22/85	0001	MG/L	<	0.005		0.005	-
	08/18/85	0001		<	0.005		0.005	-
	04/05/86	0001		<	0.005		0.005	-
	06/09/89	0001			0.012		0.005	-
	06/01/91	0001		<	0.005	J	0.005	-
	02/23/92	0001		<	0.005		0.005	-
	08/14/92	0001		<	0.005	W	0.005	-
SELENIUM (TOTAL)	11/24/92	N001	MG/L	<	0.0015	W	0.0015	-
SILICA - SIO2	04/22/85	0001	MG/L		15.00		2.	-
	08/18/85	0001			15.00		2.	-
	06/09/89	0001			52.		2.	-
	06/01/91	0001			11.4		0.1	-
SILVER	04/22/85	0001	MG/L	<	0.01		0.01	-
	08/18/85	0001		<	0.01		0.01	-
	06/09/89	0001		<	0.01		0.01	-
	06/01/91	0001		<	0.01		0.01	-
SODIUM	04/22/85	0001	MG/L		700.00		0.002	-
	08/18/85	0001			444.00		0.002	-
	04/05/86	0001			606.		0.002	-
	06/09/89	0001			337.		0.002	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE
W - POST-DIGEST SPIKE OUT OF CNTR LIM WHILE SAMP ABS < 50% SPIKE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0622
NORTH COORDINATE: 56576.1 FT
EAST COORDINATE: 89945.2 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
SODIUM	06/01/91	0001	MG/L		39.		1.	-
	02/23/92	0001			36.		1.	-
	08/14/92	0001			43		5	-
SPECIFIC CONDUCTANCE	04/22/85	0001	UMHO/CM		2500.00		-	-
	08/18/85	0001			2500.00		-	-
	04/05/86	0001			2800.		-	-
	06/09/89	0001			1850.		-	-
	06/01/91	0001			530.		-	-
	02/23/92	0001			404		-	-
	08/14/92	0001			577		-	-
	11/24/92	N001			310		-	-
STRONTIUM	04/22/85	0001	MG/L	<	0.10		0.1	-
	08/18/85	0001		<	0.10		0.1	-
	04/05/86	0001			0.4		0.1	-
	06/01/91	0001			0.52		0.01	-
	02/23/92	0001			0.49		0.01	-
	08/14/92	0001			0.52		0.2	-
STRONTIUM (TOTAL)	11/24/92	N001	MG/L		0.61		0.00035	-
SULFATE	04/22/85	0001	MG/L		428.00		0.1	-
	08/18/85	0001			375.00		0.1	-
	04/05/86	0001			427.		0.1	-
	06/09/89	0001			452.		0.1	-
	06/01/91	0001			31.		0.1	-
	02/23/92	0001			36.		10.	-
	08/14/92	0001			32		0.059	-
SULFATE (TOTAL)	11/24/92	N001	MG/L		37		1.0	-
SULFIDE	04/22/85	0001	MG/L	<	0.10		0.1	-
	08/18/85	0001		<	0.01	J	0.1	-
	06/09/89	0001		<	0.1		0.1	-
	06/01/91	0001			1.31	J	1.	-
TEMPERATURE	04/22/85	0001	C - DEGREE		19.50		-	-
	08/18/85	0001			35.00		-	-
	04/05/86	0001			22.		-	-
	06/09/89	0001			27.5		-	-
	06/01/91	0001			16.2		-	-
	02/23/92	0001			12.3		-	-
	08/14/92	0001			30.2		-	-
	11/24/92	N001			5.6		-	-
THALLIUM	06/09/89	0001	MG/L	<	0.01		0.01	-
	06/01/91	0001		<	0.01		0.01	-
THORIUM-230	04/22/85	0001	PCI/L		0.00		1.	0.60000
	08/18/85	0001			0.50		1.	1.00000
	06/01/91	0001			0.5		1.	0.4
TIN	04/22/85	0001	MG/L	<	0.005		0.005	-
	08/18/85	0001		<	0.005		0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0622
NORTH COORDINATE: 56576.1 FT
EAST COORDINATE: 89945.2 FT
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TIN	06/09/89	0001	MG/L	<	0.005		0.005	-
	06/01/91	0001		<	0.01	I	0.01	-
TOTAL DISSOLVED SOLIDS	04/22/85	0001	MG/L		2160.00		10.	-
	08/18/85	0001			1700.00		10.	-
	04/05/86	0001			2160.		10.	-
	06/09/89	0001			1300.		10.	-
	06/01/91	0001			307.		10.	-
	02/23/92	0001			311.		10.	-
	08/14/92	0001			310		42	-
TOTAL ORGANIC CARBON	04/22/85	0001	MG/L		50.00		1.	-
	08/18/85	0001			175.00		1.	-
	06/01/91	0001			4.		1.	-
	02/23/92	0001			3.		1.	-
	08/14/92	0001			8.3		1.0	-
TOTAL ORGANIC HALOGENS	04/22/85	0001	MG/L		0.03		-	0.00300
URANIUM	04/22/85	0001	MG/L		0.0078		0.003	-
	08/18/85	0001			0.0035		0.003	-
	04/05/86	0001			0.0068		0.003	-
	06/09/89	0001			0.015		0.003	-
	06/01/91	0001		<	0.001		0.001	-
	02/24/92	0001			0.003		0.001	-
	08/14/92	0001		<	0.001		0.001	-
URANIUM (TOTAL)	11/24/92	N001	MG/L	<	0.001		0.001	-
VANADIUM	04/22/85	0001	MG/L	<	0.01		0.01	-
	08/18/85	0001			0.60		0.01	-
	04/05/86	0001			0.45		0.01	-
	06/09/89	0001			0.03		0.01	-
	06/01/91	0001		<	0.01		0.01	-
	02/23/92	0001		<	0.01		0.01	-
	08/14/92	0001		<	0.05	*	0.05	-
VANADIUM (TOTAL)	11/24/92	N001	MG/L	<	0.0019		0.0019	-
ZINC	04/22/85	0001	MG/L		0.29		0.005	-
	08/18/85	0001			0.24		0.005	-
	04/05/86	0001			0.062		0.005	-
	06/09/89	0001			0.006		0.005	-
	06/01/91	0001		<	0.005		0.005	-
	02/23/92	0001		<	0.005		0.005	-
	08/14/92	0001		<	0.02		0.02	-
ZINC (TOTAL)	11/24/92	N001	MG/L		0.0050		0.0010	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
* - DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS
I - INCREASED DETECTION LIMIT DUE TO REQUIRED DILUTION

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0623 RESERVED FOR RPAPUSCH
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	06/28/93	N001	MG/L CACO3		284		-	-
	12/15/93	N001			213		-	-
AMMONIUM	12/15/93	0001	MG/L	<	0.1		0.1	-
AMMONIUM (TOTAL)	06/28/93	N001	MG/L	<	0.1		0.1	-
ARSENIC (TOTAL)	06/28/93	N001	MG/L	<	0.005		0.005	-
CALCIUM	12/15/93	0001	MG/L		41.3		0.5	-
CALCIUM (TOTAL)	12/15/93	N001	MG/L		43.9		0.5	-
CHLORIDE	12/15/93	0001	MG/L		8.0		0.5	-
MAGNESIUM	12/15/93	0001	MG/L		22.6		0.1	-
MAGNESIUM (TOTAL)	12/15/93	N001	MG/L		22.8		0.1	-
MANGANESE	12/15/93	0001	MG/L		0.07		0.01	-
MANGANESE (TOTAL)	12/15/93	N001	MG/L		0.08		0.01	-
NITRATE	12/15/93	0001	MG/L	<	1		1	-
NITRATE (TOTAL)	06/28/93	N001	MG/L		1		1	-
PH	06/28/93	N001	SU		7.51		-	-
	12/15/93	N001			7.42		-	-
POTASSIUM	12/15/93	0001	MG/L		2.2		0.1	-
POTASSIUM (TOTAL)	12/15/93	N001	MG/L		2.2		0.1	-
SILICA - SIO2	12/15/93	0001	MG/L		19.3		0.1	-
SILICA - SIO2 (TOTAL)	12/15/93	N001	MG/L		18.8		0.1	-
SODIUM	12/15/93	0001	MG/L		35		1	-
SODIUM (TOTAL)	12/15/93	N001	MG/L		36		1	-
SPECIFIC CONDUCTANCE	06/28/93	N001	UMHO/CM		806		-	-
	12/15/93	N001			400		-	-
STRONTIUM	12/15/93	0001	MG/L		0.48		0.01	-
STRONTIUM (TOTAL)	06/28/93	N001	MG/L		0.65		0.01	-
	12/15/93	N001			0.48		0.01	-
SULFATE	12/15/93	0001	MG/L		36		1	-
SULFATE (TOTAL)	06/28/93	N001	MG/L		55		1	-
TEMPERATURE	06/28/93	N001	C - DEGREE		33.5		-	-

PARAMETER VALUE INDICATOR (PVI): *< - LESS THAN DETECTION LIMIT*

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0623 RESERVED FOR RPAPUSCH
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TEMPERATURE	12/15/93	N001	C - DEGREE		6.8		-	-
TOTAL DISSOLVED SOLIDS	12/15/93	0001	MG/L		300		10	
TOTAL DISSOLVED SOLIDS (TOTAL)	06/28/93	N001	MG/L		400	H	10	
URANIUM	12/15/93	0001	MG/L		0.004		0.001	-
URANIUM (TOTAL)	06/28/93	N001	MG/L	<	0.001		0.001	-
	12/15/93	N001			0.004		0.001	-
VANADIUM	12/15/93	0001	MG/L	<	0.01		0.01	
VANADIUM (TOTAL)	06/28/93	N001	MG/L	<	0.01		0.01	-
	12/15/93	N001		<	0.01		0.01	-
ZINC (TOTAL)	06/28/93	N001	MG/L		0.213	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0624 RESERVED FOR RPAPUSCH
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	12/15/93	N001	MG/L CACO3		598		-	-
AMMONIUM	12/15/93	0001	MG/L	<	0.1		0.1	-
CALCIUM	12/15/93	0001	MG/L		29.3		0.5	-
CALCIUM (TOTAL)	12/15/93	N001	MG/L		38.3		0.5	-
CHLORIDE	12/15/93	0001	MG/L		33.3		0.5	-
MAGNESIUM	12/15/93	0001	MG/L		67.1		0.1	-
MAGNESIUM (TOTAL)	12/15/93	N001	MG/L		72.0		0.1	-
MANGANESE	12/15/93	0001	MG/L		0.01		0.01	-
MANGANESE (TOTAL)	12/15/93	N001	MG/L		0.14		0.01	-
NITRATE	12/15/93	0001	MG/L	<	1		1	-
PH	12/15/93	N001	SU		8.63		-	-
POTASSIUM	12/15/93	0001	MG/L		21.4		0.1	-
POTASSIUM (TOTAL)	12/15/93	N001	MG/L		23.7		0.1	-
SILICA - SIO2	12/15/93	0001	MG/L		1.5		0.1	-
SILICA - SIO2 (TOTAL)	12/15/93	N001	MG/L		27.8		0.1	-
SODIUM	12/15/93	0001	MG/L		148		1	-
SODIUM (TOTAL)	12/15/93	N001	MG/L		154		1	-
SPECIFIC CONDUCTANCE	12/15/93	N001	UMHO/CM		714		-	-
STRONTIUM	12/15/93	0001	MG/L		0.72		0.01	-
STRONTIUM (TOTAL)	12/15/93	N001	MG/L		0.78		0.01	-
SULFATE	12/15/93	0001	MG/L		63		1	-
TEMPERATURE	12/15/93	N001	C - DEGREE		1.9		-	-
TOTAL DISSOLVED SOLIDS	12/15/93	0001	MG/L		790		10	-
URANIUM	12/15/93	0001	MG/L		0.124		0.001	-
URANIUM (TOTAL)	12/15/93	N001	MG/L		0.123		0.001	-
VANADIUM	12/15/93	0001	MG/L	<	0.01		0.01	-
VANADIUM (TOTAL)	12/15/93	N001	MG/L		0.02		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0627 RESERVED FOR RPAPUSCH
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	07/01/93	N001	MG/L CACO3		3520		-	-
	12/14/93	N001			15106		-	-
AMMONIUM	12/27/93	0001	MG/L		1.6		0.1	-
AMMONIUM (TOTAL)	07/01/93	N001	MG/L		0.5		0.1	-
ARSENIC (TOTAL)	07/01/93	N001	MG/L		0.036	S	0.005	-
CALCIUM	12/14/93	0001	MG/L		9.5		0.5	-
CALCIUM (TOTAL)	12/14/93	N001	MG/L		30.5		0.5	-
CHLORIDE	12/27/93	0001	MG/L		938		0.5	-
MAGNESIUM	12/14/93	0001	MG/L		82.0		0.1	-
MAGNESIUM (TOTAL)	12/14/93	N001	MG/L		70.4		0.1	-
MANGANESE	12/14/93	0001	MG/L		0.17		0.01	-
MANGANESE (TOTAL)	12/14/93	N001	MG/L		0.62		0.01	-
NITRATE	12/27/93	0001	MG/L	<	1		1	-
NITRATE (TOTAL)	07/01/93	N001	MG/L	<	1		1	-
PH	07/01/93	N001	SU		10.34	G	-	-
	12/14/93	N001			10.10	G	-	-
POTASSIUM	12/14/93	0001	MG/L		72.8		0.1	-
POTASSIUM (TOTAL)	12/14/93	N001	MG/L		59.6		0.1	-
SILICA - SIO2	12/14/93	0001	MG/L		4.4		0.1	-
SILICA - SIO2 (TOTAL)	12/14/93	N001	MG/L		133		0.1	-
SODIUM	12/14/93	0001	MG/L		9850		1	-
SODIUM (TOTAL)	12/14/93	N001	MG/L		7150		1	-
SPECIFIC CONDUCTANCE	07/01/93	N001	UMHO/CM		8670		-	-
	12/14/93	N001			15730		-	-
STRONTIUM	12/14/93	0001	MG/L		0.28		0.01	-
STRONTIUM (TOTAL)	07/01/93	N001	MG/L		0.43		0.01	-
	12/14/93	N001			0.39		0.01	-
SULFATE	12/27/93	0001	MG/L		5990		1	-
SULFATE (TOTAL)	07/01/93	N001	MG/L		1120		1	-
TEMPERATURE	07/01/93	N001	C - DEGREE		26.7		-	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
G - PH > 9, POSSIBLE GROUT CONTAMINATION
S - REPORTED VALUE DETERMINED USING METHOD OF STD ADDITION (MSA)

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0627 RESERVED FOR RPAPUSCH
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
TEMPERATURE	12/14/93	N001	C - DEGREE		2.8		-	-
TOTAL DISSOLVED SOLIDS	12/27/93	0001	MG/L		26600		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	07/01/93	N001	MG/L		5670		10	-
URANIUM	12/14/93	0001	MG/L		0.217		0.001	-
URANIUM (TOTAL)	07/01/93	N001	MG/L		0.043		0.001	-
	12/14/93	N001			0.157		0.001	-
VANADIUM	12/14/93	0001	MG/L		0.31		0.01	-
VANADIUM (TOTAL)	07/01/93	N001	MG/L		0.10		0.01	-
	12/14/93	N001			0.25		0.01	-
ZINC (TOTAL)	07/01/93	N001	MG/L		0.081	J	0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
J - ESTIMATED VALUE

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0640 RESERVED FOR AMILLER
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
ALKALINITY	12/12/93	N001	MG/L CACO3		372		-	-
AMMONIUM	12/12/93	0001	MG/L	<	0.1		0.1	-
CALCIUM	12/12/93	0001	MG/L		56.2		0.5	-
CALCIUM (TOTAL)	12/12/93	N001	MG/L		57.1		0.5	-
CHLORIDE	12/12/93	0001	MG/L		113		0.5	-
MAGNESIUM	12/12/93	0001	MG/L		107		0.1	-
MAGNESIUM (TOTAL)	12/12/93	N001	MG/L		105		0.1	-
MANGANESE	12/12/93	0001	MG/L	<	0.01		0.01	-
MANGANESE (TOTAL)	12/12/93	N001	MG/L	<	0.01		0.01	-
NITRATE	12/12/93	0001	MG/L		11		1	-
PH	12/12/93	N001	SU		7.87		-	-
POTASSIUM	12/12/93	0001	MG/L		0.8		0.1	-
POTASSIUM (TOTAL)	12/12/93	N001	MG/L		0.9		0.1	-
SILICA - SIO2	12/12/93	0001	MG/L		54.0		0.1	-
SILICA - SIO2 (TOTAL)	12/12/93	N001	MG/L		52.9		0.1	-
SODIUM	12/12/93	0001	MG/L		299		1	-
SODIUM (TOTAL)	12/12/93	N001	MG/L		298		1	-
SPECIFIC CONDUCTANCE	12/12/93	N001	UMHO/CM		1667		-	-
STRONTIUM	12/12/93	0001	MG/L		1.65		0.01	-
STRONTIUM (TOTAL)	12/12/93	N001	MG/L		1.59		0.01	-
SULFATE	12/12/93	0001	MG/L		668		1	-
TEMPERATURE	12/12/93	N001	C - DEGREE		11.6		-	-
TOTAL DISSOLVED SOLIDS	12/12/93	0001	MG/L		1590		10	-
URANIUM	12/12/93	0001	MG/L		0.021		0.001	-
URANIUM (TOTAL)	12/12/93	N001	MG/L		0.019		0.001	-
VANADIUM	12/12/93	0001	MG/L		0.01		0.01	-
VANADIUM (TOTAL)	12/12/93	N001	MG/L		0.02		0.01	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0999
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
AMMONIUM (TOTAL)	06/30/93	N001	MG/L	<	0.1		0.1	-
	06/30/93	N003		<	0.1		0.1	-
	12/12/93	N001		<	0.1		0.1	-
ARSENIC (TOTAL)	06/30/93	N001	MG/L	<	0.005		0.005	-
	06/30/93	N003		<	0.005		0.005	-
BARIUM (TOTAL)	06/30/93	N001	MG/L	<	0.1		0.1	-
	06/30/93	N003		<	0.1		0.1	-
CALCIUM	02/02/93	0001	MG/L	<	0.5		0.5	-
CALCIUM (TOTAL)	06/30/93	N001	MG/L	<	0.5		0.5	-
	06/30/93	N003		<	0.5		0.5	-
	12/12/93	N001		<	0.5		0.5	-
CHLORIDE	02/02/93	0001	MG/L	<	0.5		0.5	-
CHLORIDE (TOTAL)	06/30/93	N001	MG/L	<	0.5		0.5	-
	06/30/93	N003		<	0.5		0.5	-
	12/12/93	N001		<	0.5		0.5	-
GROSS ALPHA	02/02/93	0001	PCI/L		0		3	3
GROSS ALPHA (TOTAL)	06/30/93	N001	PCI/L		0		1	2
	06/30/93	N003			0		1	1
GROSS BETA	02/02/93	0001	PCI/L		0		10	4
GROSS BETA (TOTAL)	06/30/93	N001	PCI/L		0		4	4
	06/30/93	N003			0		4	3
IRON	02/02/93	0001	MG/L	<	0.03		0.03	-
IRON (TOTAL)	06/30/93	N001	MG/L	<	0.03		0.03	-
	06/30/93	N003			0.04		0.03	-
MAGNESIUM	02/02/93	0001	MG/L	<	0.1		0.1	-
MAGNESIUM (TOTAL)	06/30/93	N001	MG/L	<	0.1		0.1	-
	06/30/93	N003		<	0.1		0.1	-
	12/12/93	N001		<	0.1		0.1	-
MANGANESE	02/02/93	0001	MG/L	<	0.01		0.01	-
MANGANESE (TOTAL)	06/30/93	N001	MG/L	<	0.01		0.01	-
	06/30/93	N003		<	0.01		0.01	-
	12/12/93	N001		<	0.01		0.01	-
MOLYBDENUM (TOTAL)	06/30/93	N001	MG/L	<	0.01		0.01	-
	06/30/93	N003		<	0.01		0.01	-
NITRATE	02/02/93	0001	MG/L	<	1		1	-
NITRATE (TOTAL)	06/30/93	N001	MG/L	<	1		1	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE
N003 - UNFILTERED REPLICATE SAMPLE

SURFACE WATER QUALITY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0999
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
06/08/82 TO 12/27/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERTAINTY
NITRATE (TOTAL)	06/30/93	N003	MG/L	<	1		1	-
	12/12/93	N001		<	1		1	-
PHOSPHATE (TOTAL)	06/30/93	N001	MG/L	<	0.1		0.1	-
	06/30/93	N003		<	0.1		0.1	-
POTASSIUM	02/02/93	0001	MG/L	<	0.1		0.1	-
POTASSIUM (TOTAL)	06/30/93	N001	MG/L	<	0.1		0.1	-
	06/30/93	N003		<	0.1		0.1	-
	12/12/93	N001		<	0.1		0.1	-
SILICA - SIO2 (TOTAL)	06/30/93	N001	MG/L	<	0.5	H	0.5	-
	06/30/93	N003		<	0.5	H	0.5	-
	12/12/93	N001		<	0.1		0.1	-
SODIUM	02/02/93	0001	MG/L	<	0.1		0.1	-
SODIUM (TOTAL)	06/30/93	N001	MG/L	<	1		1	-
	06/30/93	N003		<	1		1	-
	12/12/93	N001		<	1		1	-
STRONTIUM (TOTAL)	06/30/93	N001	MG/L	<	0.01		0.01	-
	06/30/93	N003		<	0.01		0.01	-
	12/12/93	N001		<	0.01		0.01	-
SULFATE	02/02/93	0001	MG/L	<	2		1	-
SULFATE (TOTAL)	06/30/93	N001	MG/L	<	1		1	-
	06/30/93	N003		<	1		1	-
	12/12/93	N001		<	1		1	-
TOTAL DISSOLVED SOLIDS	02/02/93	0001	MG/L	<	10		10	-
TOTAL DISSOLVED SOLIDS (TOTAL)	06/30/93	N001	MG/L	<	10	H	10	-
	06/30/93	N003		<	10	H	10	-
	12/12/93	N001		<	10		10	-
URANIUM	02/02/93	0001	MG/L	<	0.001		0.001	-
URANIUM (TOTAL)	06/30/93	N001	MG/L	<	0.001		0.001	-
	06/30/93	N003		<	0.001		0.001	-
	12/12/93	N001		<	0.001		0.001	-
VANADIUM (TOTAL)	06/30/93	N001	MG/L	<	0.01		0.01	-
	06/30/93	N003		<	0.01		0.01	-
	12/12/93	N001		<	0.01		0.01	-
ZINC (TOTAL)	06/30/93	N001	MG/L		0.014		0.005	-
	06/30/93	N003			0.112		0.005	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT

OTHER PARAMETER VALUE FLAGS:
H - HOLD TIME EXPIRED, VALUE SUSPECT

SAMPLE ID CODES:
0001 - FILTERED SAMPLE (.45 MICRONS)
N001 - UNFILTERED SAMPLE
N003 - UNFILTERED REPLICATE SAMPLE

DATA FILE NAME: \DART\MON01\SWQ10004.DAT

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SUPPLEMENT 5

SEDIMENT CHEMISTRY DATA BY LOCATION

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SOIL CHEMISTRY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0620
NORTH COORDINATE: 70685.0 FT
EAST COORDINATE: 90918.8 FT
06/28/93 TO 07/01/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMP ID	DEPTH RANGE (FT)	DIG. CODE	SAMP DESC	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERT.
% SOLIDS	06/30/93	N001	-			%		66.9		0.1	-
ARSENIC (TOTAL)	06/30/93	N001	-			MG/KG		4.		2.	-
NITRATE (TOTAL)	06/30/93	N001	-			MG/KG		0.9		0.1	-
STRONTIUM (TOTAL)	06/30/93	N001	-			MG/KG		28.		1.	-
SULFATE (TOTAL)	06/30/93	N001	-			MG/KG		48.		10.	-
URANIUM (TOTAL)	06/30/93	N001	-			MG/KG		1.0		1.0	-
VANADIUM (TOTAL)	06/30/93	N001	-			MG/KG		9.		1.	-
ZINC (TOTAL)	06/30/93	N001	-			MG/KG		18.7		0.5	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT
SAMPLE DIGESTION TYPE CODES: -
SAMPLE DESCRIPTION CODES: -

SOIL CHEMISTRY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0623 RESERVED FOR RPAPUSCH
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
06/28/93 TO 07/01/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMP ID	DEPTH RANGE (FT)	DIG. CODE	SAMP DESC	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERT.
% SOLIDS	06/28/93	N001	-			%		64.5		0.1	-
ARSENIC (TOTAL)	06/28/93	N001	-			MG/KG		0.9		0.5	-
NITRATE (TOTAL)	06/28/93	N001	-			MG/KG		1.8		0.1	-
STRONTIUM (TOTAL)	06/28/93	N001	-			MG/KG		116.		1.	-
SULFATE (TOTAL)	06/28/93	N001	-			MG/KG		771.		250.	-
URANIUM (TOTAL)	06/28/93	N001	-			MG/KG	<	1.0		1.0	-
VANADIUM (TOTAL)	06/28/93	N001	-			MG/KG		6.		1.	-
ZINC (TOTAL)	06/28/93	N001	-			MG/KG		10.7		0.5	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT
SAMPLE DIGESTION TYPE CODES: -
SAMPLE DESCRIPTION CODES: -

SOIL CHEMISTRY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0624 RESERVED FOR RPAPUSCH
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
06/28/93 TO 07/01/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMP ID	DEPTH RANGE (FT)	DIG. CODE	SAMP DESC	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERT.
% SOLIDS	06/28/93	N001	-			%		76.2		0.1	-
ARSENIC (TOTAL)	06/28/93	N001	-			MG/KG		0.6		0.5	-
NITRATE (TOTAL)	06/28/93	N001	-			MG/KG		3.8		0.1	-
STRONTIUM (TOTAL)	06/28/93	N001	-			MG/KG		46.		1.	-
SULFATE (TOTAL)	06/28/93	N001	-			MG/KG		935.		250.	-
URANIUM (TOTAL)	06/28/93	N001	-			MG/KG	<	1.0		1.0	-
VANADIUM (TOTAL)	06/28/93	N001	-			MG/KG		3.		1.	-
ZINC (TOTAL)	06/28/93	N001	-			MG/KG		10.8		0.5	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT
SAMPLE DIGESTION TYPE CODES: -
SAMPLE DESCRIPTION CODES: -

SOIL CHEMISTRY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0626 RESERVED FOR RPAPUSCH
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
06/28/93 TO 07/01/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMP ID	DEPTH RANGE (FT)	DIG. CODE	SAMP DESC	UNITS OF MEASURE	PVI	PARAMETER VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERT.
% SOLIDS	06/28/93	N001	-			%		76.8		0.1	-
ARSENIC (TOTAL)	06/28/93	N001	-			MG/KG		0.8		0.5	-
NITRATE (TOTAL)	06/28/93	N001	-			MG/KG		0.4		0.1	-
STRONTIUM (TOTAL)	06/28/93	N001	-			MG/KG		26.		1.	-
SULFATE (TOTAL)	06/28/93	N001	-			MG/KG		42.		10.	-
URANIUM (TOTAL)	06/28/93	N001	-			MG/KG	<	1.0		1.0	-
VANADIUM (TOTAL)	06/28/93	N001	-			MG/KG		5.		1.	-
ZINC (TOTAL)	06/28/93	N001	-			MG/KG		6.8		0.5	-

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT
SAMPLE DIGESTION TYPE CODES: -
SAMPLE DESCRIPTION CODES: -

SOIL CHEMISTRY DATA BY LOCATION
DATA EVALUATED FOR THE BLRA
SITE: MON01 MONUMENT VALLEY
LOCATION: 0627 RESERVED FOR RPAPUSCH
NORTH COORDINATE: UNKNOWN
EAST COORDINATE: UNKNOWN
06/28/93 TO 07/01/93
REPORT DATE: 04/27/95

PARAMETER NAME	LOG DATE	SAMP ID	DEPTH RANGE (FT)	DIG. CODE	SAMP DESC	UNITS OF MEASURE	PARAMETER PVI	VALUE	FLAGS	DETECTION LIMIT	PARAMETER UNCERT.
% SOLIDS	07/01/93	N001	-			%		68.2		0.1	-
ARSENIC (TOTAL)	07/01/93	N001	-			MG/KG		0.9		0.5	-
NITRATE (TOTAL)	07/01/93	N001				MG/KG		0.9		0.1	
STRONTIUM (TOTAL)	07/01/93	N001				MG/KG		54.		1.	
SULFATE (TOTAL)	07/01/93	N001	-			MG/KG		35.		10.	-
URANIUM (TOTAL)	06/30/93	N001	-			MG/KG	<	1.0		1.0	-
VANADIUM (TOTAL)	07/01/93	N001				MG/KG		9.		1.	
ZINC (TOTAL)	07/01/93	N001				MG/KG		29.2		0.5	

PARAMETER VALUE INDICATOR (PVI): < - LESS THAN DETECTION LIMIT
SAMPLE DIGESTION TYPE CODES: -
SAMPLE DESCRIPTION CODES: -

DATA FILE NAME: \DART\MON01\SCI10001.DAT

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SUPPLEMENT 6

GEOCHEMICAL MODELING REPORT

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Memo

Subject: Monument Valley, Arizona BLRA Supplement

From: Dan Larsen, geochemistry

The BLRA supplement include one output file from geochemical modeling using the PHREEQE geochemical code (Parkhurst and others, 1980). The PHREEQE file is presented to substantiate statements made in section 3.4 (Contaminant fate and transport) regarding contaminant metal speciation and mineral solubility controls on sulfate concentrations (well 655).

Reference:

Parkhurst, D. L., Thorstenson, D. C., and Plummer, L. N., 1980, PHREEQE - A computer program for geochemical calculations. United States Geological Survey Water-Resources Investigations 80-96, 210 p.

JACOBS ENGINEERING GROUP INC.
ALBUQUERQUE OPERATIONS

CALCULATION COVER SHEET

CALC NO. MON0593141400 DISCIPLINE Geochemistry NO. OF SHEETS 9

PROJECT: UMTRA

SITE: Monument Valley, Arizona

FEATURE: Chemical speciation modeling of contaminated groundwater

SOURCES OF DATA:

SPEAR database

SOURCES OF FORMULAE & REFERENCES:

PHREEQE Geochemical code
Parkhurst and others (1980)

PRELIMINARY CALC. ☐ FINAL CALC. ☒ SUPERSEDES CALC. NO. _____

REV. NO.	REVISION	CALCULATION BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
00		A Meijer	5/93	D Larsen	8/3/95	Robert A Sen	3-28-96

```
        DATA READ FROM DISK

ELEMENTS
SPECIES
LOOK MIN
Contaminated well in unconsolidated materials
0200011000 0 0          .00000
ELEMENTS
C         10          50.
           0           0.
SOLUTION 1
MON01 MONUMENT VALLEY                    LOCATION: 0655  DATE: 04/26/86  LAB: EDA
23 10 2     7.18      6.00      17.5      1.00
   5  3.000D-01   8  1.000D-01  10  3.450D+02  11  2.830D+02  13  3.800D+01
  15  5.000D-02  16  2.000D-01  17  9.000D-02  19  4.310D+01  21  4.070D+02
  22  1.900D-01  23  9.400D+02  24  2.400D+02  25  1.200D-01  29  3.130D+03
  30  1.120D+01  31  4.100D+00  32  3.700D-02  33  8.480D-01  34  3.100D-02
  35  4.010D-01  12  1.200D-01  33  8.000D-01
NEUTRAL
   24   13
SOLUTION NUMBER 1          MON01 MONUMENT VALLEY                LOCATION: 0655  DATE: 04/26/86  LAB: EDA
```

TOTAL MOLALITIES OF ELEMENTS

ELEMENT	MOLALITY	LOG MOLALITY
AL	1.117959D-05	-4.9516
BA	7.321055D-07	-6.1354
TOT ALK	6.931585D-03	-2.1592
CA	7.099527D-03	-2.1488
CD	1.073465D-06	-5.9692
CL	1.077709D-03	-2.9675
CU	7.911384D-07	-6.1017
F	1.058482D-05	-4.9753
FE	1.620367D-06	-5.7904
K	1.108279D-03	-2.9554
MG	1.683234D-02	-1.7739
MN	3.477374D-06	-5.4587
N	1.524307D-02	-1.8169
NA	1.049655D-02	-1.9790
NI	2.055133D-06	-5.6872
S	3.276161D-02	-1.4846
SI	1.171643D-04	-3.9312
SR	4.704910D-05	-4.3274
U	1.377729D-07	-6.8608
V	9.698440D-06	-5.0133
ZN	4.768201D-07	-6.3216
MO	2.520951D-06	-5.5984

----DESCRIPTION OF SOLUTION----

```
                      PH =   7.1800
                      PE =   6.0000
            ACTIVITY H2O =    .9983
           IONIC STRENGTH =    .1010
             TEMPERATURE = 17.5000
     ELECTRICAL BALANCE =   3.0548D-12
                    THOR =   2.3681D-01
      TOTAL ALKALINITY =   6.9316D-03
            ITERATIONS = 18
           TOTAL CARBON =   7.7076D-03
MOLES OF NA       ADDED =    .1709D-01
```

DISTRIBUTION OF SPECIES

I	SPECIES	Z	MOLALITY	LOG MOLALITY	ACTIVITY	LOG ACTIVITY	GAMMA	LOG GAMMA
1	H+	1.0	8.44125D-08	-7.0736	6.60693D-08	-7.1800	7.82696D-01	-.1064
2	E-	-1.0	1.00000D-06	-6.0000	1.00000D-06	-6.0000	1.00000D+00	.0000
3	H2O	.0	9.98318D-01	-.0007	9.98318D-01	-.0007	1.00000D+00	.0000
5	AL 3+	3.0	2.21136D-10	-9.6553	2.43780D-11	-10.6130	1.10240D-01	-.9577
8	BA 2+	2.0	7.32105D-07	-6.1354	2.74756D-07	-6.5611	3.75295D-01	-.4256
10	CO3 2-	-2.0	7.99729D-06	-5.0971	3.00134D-06	-5.5227	3.75295D-01	-.4256
11	CA 2+	2.0	4.33068D-03	-2.3634	1.81269D-03	-2.7417	4.18570D-01	-.3782
12	CD 2+	2.0	4.22104D-07	-6.3746	1.58414D-07	-6.8002	3.75295D-01	-.4256
13	CL-	-1.0	1.07769D-03	-2.9675	8.16195D-04	-3.0882	7.57357D-01	-.1207
15	CU 2+	2.0	7.67795D-08	-7.1148	2.88150D-08	-7.5404	3.75295D-01	-.4256
16	F-	-1.0	8.36742D-06	-5.0774	6.54915D-06	-5.1838	7.82696D-01	-.1064
17	FE 2+	2.0	1.82669D-07	-6.7383	6.85547D-08	-7.1640	3.75295D-01	-.4256
19	K+	1.0	1.05867D-03	-2.9752	8.01793D-04	-3.0959	7.57357D-01	-.1207
21	MG 2+	2.0	1.05770D-02	-1.9756	4.59116D-03	-2.3381	4.34071D-01	-.3624
22	MN 2+	2.0	2.29084D-06	-5.6400	8.59740D-07	-6.0656	3.75295D-01	-.4256
23	NO3 -	-1.0	8.39254D-06	-5.0761	6.56881D-06	-5.1825	7.82696D-01	-.1064
24	NA+	1.0	2.65368D-02	-1.5762	2.08061D-02	-1.6818	7.84046D-01	-.1057
25	NI 2+	2.0	2.03794D-07	-6.6908	7.64830D-08	-7.1164	3.75295D-01	-.4256
29	SO4 2-	-2.0	2.25697D-02	-1.6465	7.88047D-03	-2.1034	3.49161D-01	-.4570
30	H4SIO4	.0	1.16981D-04	-3.9319	1.19733D-04	-3.9218	1.02353D+00	.0101
31	SR 2+	2.0	4.70491D-05	-4.3274	1.76573D-05	-4.7531	3.75295D-01	-.4256
32	UO2 2+	2.0	5.30754D-14	-13.2751	1.99189D-14	-13.7007	3.75295D-01	-.4256
33	VO2 1+	1.0	1.36018D-13	-12.8664	1.06461D-13	-12.9728	7.82696D-01	-.1064
34	ZN 2+	2.0	2.36008D-07	-6.6271	8.85728D-08	-7.0527	3.75295D-01	-.4256
35	MOO4 2-	-2.0	2.52095D-06	-5.5984	9.46101D-07	-6.0241	3.75295D-01	-.4256
52	CU+	1.0	1.79812D-11	-10.7452	1.40738D-11	-10.8516	7.82696D-01	-.1064
53	FE 3+	3.0	3.73735D-14	-13.4274	4.12006D-15	-14.3851	1.10240D-01	-.9577
54	MN 3+	3.0	7.90346D-26	-25.1022	8.71277D-27	-26.0598	1.10240D-01	-.9577
55	NH4 +	1.0	5.50750D-03	-2.2590	4.31070D-03	-2.3655	7.82696D-01	-.1064
56	NO2 -	-1.0	9.16807D-03	-2.0377	7.17581D-03	-2.1441	7.82696D-01	-.1064
61	UO2 +	1.0	1.79097D-17	-16.7469	1.40178D-17	-16.8533	7.82696D-01	-.1064
63	V 3+	3.0	5.16248D-30	-29.2871	5.69111D-31	-30.2448	1.10240D-01	-.9577
64	VO 2+	2.0	3.78522D-16	-15.4219	1.42058D-16	-15.8475	3.75295D-01	-.4256
65	OH-	-1.0	1.08461D-07	-6.9647	8.48923D-08	-7.0711	7.82696D-01	-.1064
66	H3SIO4 -	-1.0	1.83518D-07	-6.7363	1.43639D-07	-6.8427	7.82696D-01	-.1064
67	H2SIO4--	-2.0	4.70380D-12	-11.3276	1.76531D-12	-11.7532	3.75295D-01	-.4256
75	NH4SO4 -	-1.0	5.59113D-04	-3.2525	4.37616D-04	-3.3589	7.82696D-01	-.1064
76	MGOH +	1.0	7.45692D-08	-7.1274	5.83650D-08	-7.2338	7.82696D-01	-.1064
77	MGF +	1.0	2.07068D-06	-5.6839	1.62071D-06	-5.7903	7.82696D-01	-.1064
78	MGCO3 AQ	.0	1.14509D-05	-4.9412	1.17203D-05	-4.9311	1.02353D+00	.0101
79	MGHCO3 +	1.0	3.27303D-04	-3.4850	2.56179D-04	-3.5915	7.82696D-01	-.1064
80	MGSO4 AQ	.0	5.91446D-03	-2.2281	6.05361D-03	-2.2180	1.02353D+00	.0101
84	CAOH +	1.0	4.68914D-09	-8.3289	3.67017D-09	-8.4353	7.82696D-01	-.1064
85	CAHCO3 +	1.0	9.55305D-05	-4.0199	7.47714D-05	-4.1263	7.82696D-01	-.1064
86	CACO3 AQ	.0	6.49991D-06	-5.1871	6.65284D-06	-5.1770	1.02353D+00	.0101
87	CASO4 AQ	.0	2.66670D-03	-2.5740	2.72944D-03	-2.5639	1.02353D+00	.0101
91	CAF +	1.0	1.11965D-07	-6.9509	8.76346D-08	-7.0573	7.82696D-01	-.1064
92	NACO3 -	-1.0	1.00317D-06	-5.9986	7.85177D-07	-6.1050	7.82696D-01	-.1064
93	NAHCO3 A	.0	4.84625D-05	-4.3146	4.96027D-05	-4.3045	1.02353D+00	.0101
94	NASO4 -	-1.0	9.99922D-04	-3.0000	7.82635D-04	-3.1064	7.82696D-01	-.1064
96	NAF AQ	.0	2.15911D-08	-7.6657	2.20991D-08	-7.6556	1.02353D+00	.0101
97	KSO4 -	-1.0	4.96063D-05	-4.3045	3.88267D-05	-4.4109	7.82696D-01	-.1064
99	ALOH 2+	2.0	5.98196D-09	-8.2232	2.24500D-09	-8.6488	3.75295D-01	-.4256
100	AL(OH)2+	1.0	5.64863D-07	-6.2481	4.42116D-07	-6.3545	7.82696D-01	-.1064
101	AL(OH)4-	-1.0	2.38316D-06	-5.6228	1.86529D-06	-5.7293	7.82696D-01	-.1064
102	ALF 2+	2.0	4.35323D-09	-8.3612	1.63374D-09	-8.7868	3.75295D-01	-.4256
103	ALF2 +	1.0	3.14417D-09	-8.5025	2.46093D-09	-8.6089	7.82696D-01	-.1064
104	ALF3 AQ	.0	6.28305D-10	-9.2018	6.43089D-10	-9.1917	1.02353D+00	.0101
105	ALF4 -	-1.0	3.00708D-12	-11.5219	2.35363D-12	-11.6283	7.82696D-01	-.1064
106	ALSO4 +	1.0	2.34042D-10	-9.6307	1.83184D-10	-9.7371	7.82696D-01	-.1064
107	AL(SO4)2	-1.0	1.42166D-10	-9.8472	1.11273D-10	-9.9536	7.82696D-01	-.1064
108	AL(OH)3	.0	8.21686D-06	-5.0853	8.41019D-06	-5.0752	1.02353D+00	.0101
109	FEOH +	1.0	2.35545D-10	-9.6279	1.84360D-10	-9.7343	7.82696D-01	-.1064
110	FEOH3 -1	-1.0	8.07556D-18	-17.0928	6.32071D-18	-17.1992	7.82696D-01	-.1064
111	FESO4 AQ	.0	8.15453D-08	-7.0886	8.34640D-08	-7.0785	1.02353D+00	.0101
113	FEOH2 AQ	.0	1.18635D-14	-13.9258	1.21426D-14	-13.9157	1.02353D+00	.0101
117	FEOH 2+	2.0	6.80952D-10	-9.1669	2.55558D-10	-9.5925	3.75295D-01	-.4256
119	FESO4 +	1.0	2.91011D-13	-12.5361	2.27773D-13	-12.6425	7.82696D-01	-.1064
120	FECL 2+	2.0	2.12035D-16	-15.6736	7.95757D-17	-16.0992	3.75295D-01	-.4256
121	FECL2 +	1.0	4.73039D-19	-18.3251	3.70246D-19	-18.4315	7.82696D-01	-.1064
122	FECL3 AQ	.0	2.95246D-23	-22.5298	3.02193D-23	-22.5197	1.02353D+00	.0101
123	FEOH2 +	1.0	1.23086D-06	-5.9098	9.63393D-07	-6.0162	7.82696D-01	-.1064
124	FEOH3 AQ	.0	1.07633D-07	-6.9681	1.10165D-07	-6.9580	1.02353D+00	.0101

125	FEOH4 -	-1.0	1.67378D-08	-7.7763	1.31006D-08	-7.8827	7.82696D-01	-.1064
127	FEF 2+	2.0	1.01080D-13	-12.9953	3.79350D-14	-13.4210	3.75295D-01	-.4256
128	FEF2 +	1.0	1.15583D-14	-13.9371	9.04664D-15	-14.0435	7.82696D-01	-.1064
129	FEF3 AQ	.0	8.93806D-17	-16.0488	9.14836D-17	-16.0387	1.02353D+00	.0101
130	FE(SO4)2	-1.0	7.03739D-14	-13.1526	5.50814D-14	-13.2590	7.82696D-01	-.1064
131	FE2(OH)2	4.0	1.21764D-16	-15.9145	2.41552D-18	-17.6170	1.98377D-02	-1.7025
132	FE3(OH)4	5.0	4.48218D-19	-18.3485	9.80212D-22	-21.0087	2.18691D-03	-2.6602
134	SROH +	1.0	1.20351D-11	-10.9196	9.41980D-12	-11.0260	7.82696D-01	-.1064
135	BAOH +	1.0	1.20538D-13	-12.9189	9.43446D-14	-13.0253	7.82696D-01	-.1064
136	MNCL +	1.0	3.62717D-09	-8.4404	2.83897D-09	-8.5468	7.82696D-01	-.1064
137	MNCL2 AQ	.0	6.14972D-13	-12.2111	6.29442D-13	-12.2010	1.02353D+00	.0101
138	MNCL3 -	-1.0	2.95908D-16	-15.5288	2.31606D-16	-15.6353	7.82696D-01	-.1064
139	MNOH +	1.0	2.27881D-10	-9.6423	1.78361D-10	-9.7487	7.82696D-01	-.1064
140	MN(OH)3	-1.0	6.00595D-20	-19.2214	4.70083D-20	-19.3278	7.82696D-01	-.1064
141	MNF +	1.0	5.09283D-11	-10.2930	3.98614D-11	-10.3994	7.82696D-01	-.1064
142	MNSO4 AQ	.0	1.09592D-06	-5.9602	1.12170D-06	-5.9501	1.02353D+00	.0101
143	MN(NO3)2	.0	1.46801D-16	-15.8333	1.50255D-16	-15.8232	1.02353D+00	.0101
144	MNHCO3 +	1.0	8.67142D-08	-7.0619	6.78709D-08	-7.1683	7.82696D-01	-.1064
145	CUCL2 -	-1.0	3.85789D-12	-11.4137	3.01955D-12	-11.5201	7.82696D-01	-.1064
146	CUCL3 2-	-2.0	1.01042D-14	-13.9955	3.79206D-15	-14.4211	3.75295D-01	-.4256
147	CUCO3 AQ	.0	4.53768D-07	-6.3432	4.64444D-07	-6.3331	1.02353D+00	.0101
148	CU(CO3)2	-2.0	4.67602D-09	-8.3301	1.75489D-09	-8.7558	3.75295D-01	-.4256
149	CUCL +	1.0	5.54903D-11	-10.2558	4.34321D-11	-10.3622	7.82696D-01	-.1064
150	CUCL2 AQ	.0	1.71151D-14	-13.7666	1.75178D-14	-13.7565	1.02353D+00	.0101
151	CUCL3 -	-1.0	5.65564D-20	-19.2475	4.42665D-20	-19.3539	7.82696D-01	-.1064
152	CUCL4 2-	-2.0	4.03775D-25	-24.3939	1.51535D-25	-24.8195	3.75295D-01	-.4256
153	CUF +	1.0	4.08856D-12	-11.3884	3.20010D-12	-11.4948	7.82696D-01	-.1064
154	CUOH +	1.0	5.56280D-09	-8.2547	4.35399D-09	-8.3611	7.82696D-01	-.1064
155	CU(OH)2	.0	1.34294D-07	-6.8719	1.37453D-07	-6.8618	1.02353D+00	.0101
156	CU(OH)3	-1.0	1.60262D-13	-12.7952	1.25437D-13	-12.9016	7.82696D-01	-.1064
157	CU(OH)4	-2.0	1.00536D-18	-17.9977	3.77308D-19	-18.4233	3.75295D-01	-.4256
158	CU2(OH)2	2.0	1.03080D-11	-10.9868	3.86853D-12	-11.4125	3.75295D-01	-.4256
159	CUSO4 AQ	.0	4.29532D-08	-7.3670	4.39639D-08	-7.3569	1.02353D+00	.0101
161	CUHCO3 +	1.0	7.30030D-08	-7.1367	5.71392D-08	-7.2431	7.82696D-01	-.1064
162	ZNCL +	1.0	1.77078D-10	-9.7518	1.38598D-10	-9.8582	7.82696D-01	-.1064
163	ZNCL2 AQ	.0	1.12208D-13	-12.9500	1.14848D-13	-12.9399	1.02353D+00	.0101
164	ZNCL3 -	-1.0	1.28315D-16	-15.8917	1.00431D-16	-15.9981	7.82696D-01	-.1064
165	ZNCL4 2-	-2.0	1.02757D-19	-18.9882	3.85643D-20	-19.4138	3.75295D-01	-.4256
166	ZNF +	1.0	9.50395D-12	-11.0221	7.43870D-12	-11.1285	7.82696D-01	-.1064
167	ZNOH +	1.0	9.98975D-10	-9.0004	7.81894D-10	-9.1069	7.82696D-01	-.1064
168	ZN(OH)2	.0	1.00772D-10	-9.9967	1.03143D-10	-9.9866	1.02353D+00	.0101
169	ZN(OH)3	-1.0	4.34859D-15	-14.3617	3.40363D-15	-14.4681	7.82696D-01	-.1064
170	ZN(OH)4	-2.0	1.16007D-20	-19.9355	4.35367D-21	-20.3611	3.75295D-01	-.4256
171	ZNOHCL A	.0	3.53397D-11	-10.4517	3.61712D-11	-10.4416	1.02353D+00	.0101
174	ZNSO4 AQ	.0	1.50671D-07	-6.8220	1.54216D-07	-6.8119	1.02353D+00	.0101
175	ZN(SO4)2	-2.0	2.79275D-08	-7.5540	1.04811D-08	-7.9796	3.75295D-01	-.4256
180	ZNHCO3 +	1.0	2.82503D-18	-17.5490	2.21114D-18	-17.6554	7.82696D-01	-.1064
181	ZNCO3 AQ	.0	5.18222D-08	-7.2855	5.30416D-08	-7.2754	1.02353D+00	.0101
182	ZN(CO3)2	-2.0	9.06899D-09	-8.0424	3.40355D-09	-8.4681	3.75295D-01	-.4256
183	CDCL +	1.0	1.53757D-08	-7.8132	1.20345D-08	-7.9196	7.82696D-01	-.1064
184	CDCL2 AQ	.0	3.88891D-11	-10.4102	3.98041D-11	-10.4001	1.02353D+00	.0101
185	CDCL3 -	-1.0	2.32712D-14	-13.6332	1.82143D-14	-13.7396	7.82696D-01	-.1064
186	CDF +	1.0	1.66872D-11	-10.7776	1.30610D-11	-10.8840	7.82696D-01	-.1064
187	CDF2 AQ	.0	2.09924D-16	-15.6779	2.14863D-16	-15.6678	1.02353D+00	.0101
188	CD(CO3)3	-4.0	3.58301D-16	-15.4458	7.10787D-18	-17.1483	1.98377D-02	-1.7025
189	CDOH +	1.0	1.43781D-10	-9.8423	1.12537D-10	-9.9487	7.82696D-01	-.1064
190	CD(OH)2	.0	1.57845D-13	-12.8018	1.61559D-13	-12.7917	1.02353D+00	.0101
191	CD(OH)3	-1.0	3.49951D-19	-18.4560	2.73905D-19	-18.5624	7.82696D-01	-.1064
192	CD(OH)4	-2.0	9.82873D-26	-25.0075	3.68867D-26	-25.4331	3.75295D-01	-.4256
193	CD2OH +3	3.0	8.71721D-16	-15.0596	9.60985D-17	-16.0173	1.10240D-01	-.9577
194	CDOHCL A	.0	6.22856D-11	-10.2056	6.37511D-11	-10.1955	1.02353D+00	.0101
195	CDNO3 +	1.0	4.17865D-12	-11.3790	3.27061D-12	-11.4854	7.82696D-01	-.1064
196	CDSO4 AQ	.0	3.35597D-07	-6.4742	3.43493D-07	-6.4641	1.02353D+00	.0101
205	CDHCO3 +	1.0	1.00813D-07	-6.9965	7.89056D-08	-7.1029	7.82696D-01	-.1064
206	CDCO3 AQ	.0	1.16415D-07	-6.9340	1.19154D-07	-6.9239	1.02353D+00	.0101
207	CD(SO4)2	-2.0	8.28942D-08	-7.0815	3.11098D-08	-7.5071	3.75295D-01	-.4256
235	NICL +	1.0	1.99878D-10	-9.6992	1.56444D-10	-9.8056	7.82696D-01	-.1064
236	NIF +	1.0	1.27690D-11	-10.8938	9.99424D-12	-11.0003	7.82696D-01	-.1064
237	NIOH +	1.0	1.18669D-10	-9.9257	9.28814D-11	-10.0321	7.82696D-01	-.1064
238	NI(OH)2	.0	1.70609D-12	-11.7680	1.74624D-12	-11.7579	1.02353D+00	.0101
239	NI(OH)3	-1.0	3.37115D-16	-15.4722	2.63859D-16	-15.5786	7.82696D-01	-.1064
240	NISO4 AQ	.0	1.07465D-07	-6.9687	1.09994D-07	-6.9586	1.02353D+00	.0101
241	NICL2 AQ	.0	4.53997D-13	-12.3429	4.64679D-13	-12.3328	1.02353D+00	.0101
242	NIHCO3 +	1.0	5.71857D-08	-7.2427	4.47590D-08	-7.3491	7.82696D-01	-.1064
243	NICO3 AQ	.0	1.66257D-06	-5.7792	1.70169D-06	-5.7691	1.02353D+00	.0101

244	NI(CO3)2	-2.0	2.36496D-08	-7.6262	8.87556D-09	-8.0518	3.75295D-01	-.4256
245	NI(SO4)2	-2.0	1.32525D-10	-9.8777	4.97358D-11	-10.3033	3.75295D-01	-.4256
272	HCO3 -	-1.0	6.39793D-03	-2.1940	5.00764D-03	-2.3004	7.82696D-01	-.1064
273	H2CO3 AQ	.0	8.08330D-04	-3.0924	8.27349D-04	-3.0823	1.02353D+00	.0101
274	HSO4 -	-1.0	5.25639D-08	-7.2793	4.11415D-08	-7.3857	7.82696D-01	-.1064
275	HF AQ	.0	5.36592D-10	-9.2704	5.49217D-10	-9.2603	1.02353D+00	.0101
276	HF2 -	-1.0	1.66617D-14	-13.7783	1.30411D-14	-13.8847	7.82696D-01	-.1064
277	H2F2 AQ	.0	1.07219D-18	-17.9697	1.09741D-18	-17.9596	1.02353D+00	.0101
285	U(OH)3 +	1.0	5.35596D-29	-28.2712	4.19209D-29	-28.3776	7.82696D-01	-.1064
286	U(OH)4 A	.0	1.54382D-25	-24.8114	1.58015D-25	-24.8013	1.02353D+00	.0101
287	U(OH)5 -	-1.0	6.44364D-23	-22.1909	5.04342D-23	-22.2973	7.82696D-01	-.1064
301	UO2OH +1	1.0	2.00319D-12	-11.6983	1.56789D-12	-11.8047	7.82696D-01	-.1064
302	UO2)2OH2	2.0	3.50116D-19	-18.4558	1.31397D-19	-18.8814	3.75295D-01	-.4256
303	UO2)3OH5	1.0	6.81228D-22	-21.1667	5.33194D-22	-21.2731	7.82696D-01	-.1064
304	UO2CO3 A	.0	7.11146D-10	-9.1480	7.27878D-10	-9.1379	1.02353D+00	.0101
305	UO2CO3)2	-2.0	4.07249D-08	-7.3901	1.52839D-08	-7.8158	3.75295D-01	-.4256
306	UO2CO3)3	-4.0	9.63345D-08	-7.0162	1.91106D-09	-8.7187	1.98377D-02	-1.7025
307	UO2F +1	1.0	2.16456D-14	-13.6646	1.69419D-14	-13.7710	7.82696D-01	-.1064
308	UO2F2 AQ	.0	7.22034D-16	-15.1414	7.39023D-16	-15.1313	1.02353D+00	.0101
309	UO2F3 -1	-1.0	1.71516D-18	-17.7657	1.34245D-18	-17.8721	7.82696D-01	-.1064
310	UO2F4 2-	-2.0	4.14417D-22	-21.3826	1.55529D-22	-21.8082	3.75295D-01	-.4256
311	UO2CL +1	1.0	3.26698D-17	-16.4859	2.55705D-17	-16.5923	7.82696D-01	-.1064
312	UO2SO4 A	.0	6.58857D-14	-13.1812	6.74359D-14	-13.1711	1.02353D+00	.0101
313	UO2SO4)2	-2.0	4.10640D-14	-13.3865	1.54111D-14	-13.8122	3.75295D-01	-.4256
319	UO2H3SIO	1.0	1.83606D-13	-12.7361	1.43708D-13	-12.8425	7.82696D-01	-.1064
321	VOH 2+	2.0	7.64276D-26	-25.1167	2.86829D-26	-25.5424	3.75295D-01	-.4256
322	V(OH)2 +	1.0	2.45551D-22	-21.6099	1.92192D-22	-21.7163	7.82696D-01	-.1064
323	V(OH)3 A	.0	1.83190D-20	-19.7371	1.87501D-20	-19.7270	1.02353D+00	.0101
327	V(OH)3 +	1.0	5.85342D-15	-14.2326	4.58145D-15	-14.3390	7.82696D-01	-.1064
328	H2V2O4 +	2.0	4.45754D-24	-23.3509	1.67289D-24	-23.7765	3.75295D-01	-.4256
329	VOF +	1.0	2.39399D-18	-17.6209	1.87376D-18	-17.7273	7.82696D-01	-.1064
330	VOF2 AQ	.0	2.80891D-21	-20.5515	2.87500D-21	-20.5414	1.02353D+00	.0101
331	VOF3 -1	-1.0	8.21767D-25	-24.0853	6.43194D-25	-24.1917	7.82696D-01	-.1064
332	VOF4 2-	-2.0	6.78868D-29	-28.1682	2.54776D-29	-28.5938	3.75295D-01	-.4256
333	VOSO4 AQ	.0	2.62154D-16	-15.5814	2.68323D-16	-15.5713	1.02353D+00	.0101
334	VOCL +1	1.0	1.55119D-19	-18.8093	1.21411D-19	-18.9157	7.82696D-01	-.1064
335	H3VO4 AQ	.0	4.94969D-10	-9.3054	5.06615D-10	-9.2953	1.02353D+00	.0101
336	H2VO4 -1	-1.0	1.54115D-06	-5.8122	1.20625D-06	-5.9186	7.82696D-01	-.1064
337	HVO4 2-	-2.0	3.62224D-07	-6.4410	1.35941D-07	-6.8666	3.75295D-01	-.4256
338	VO4 -3	-3.0	8.59031D-13	-12.0660	9.46995D-14	-13.0237	1.10240D-01	-.9577
339	V2O7 -4	-4.0	5.68455D-11	-10.2453	1.12768D-12	-11.9478	1.98377D-02	-1.7025
340	HV2O7 -3	-3.0	3.88910D-06	-5.4102	4.28734D-07	-6.3678	1.10240D-01	-.9577
341	H3V2O7 -	-1.0	8.10204D-09	-8.0914	6.34144D-09	-8.1978	7.82696D-01	-.1064
342	V3O9 -3	-3.0	1.72599D-11	-10.7630	1.90273D-12	-11.7206	1.10240D-01	-.9577
343	V4O12 -4	-4.0	2.87306D-14	-13.5417	5.69950D-16	-15.2442	1.98377D-02	-1.7025
344	V10O28 -	-6.0	2.79704D-29	-28.5533	4.13100D-33	-32.3839	1.47692D-04	-3.8306
347	VO2F AQ	.0	8.97998D-16	-15.0467	9.19126D-16	-15.0366	1.02353D+00	.0101
348	VO2F2 -1	-1.0	2.72877D-18	-17.5640	2.13580D-18	-17.6704	7.82696D-01	-.1064
349	VO2F3 2-	-2.0	7.43656D-22	-21.1286	2.79090D-22	-21.5543	3.75295D-01	-.4256
350	VO2F4 -3	-3.0	2.08733D-26	-25.6804	2.30107D-27	-26.6381	1.10240D-01	-.9577
351	VO2SO4 -	-1.0	5.49730D-14	-13.2599	4.30272D-14	-13.3663	7.82696D-01	-.1064
352	VO2NO3 A	.0	2.53850D-19	-18.5954	2.59823D-19	-18.5853	1.02353D+00	.0101

---- LOOK MIN IAP ----

PHASE	LOG IAP	LOG KT	LOG IAP/KT
URANINIT	-25.7007	-14.2188	-11.4819
UO2 (AM	-25.7007	-8.4351	-17.2656
U4O9 (C)	-76.4437	-40.9402	-35.5035
U3O8 (C)	-24.3837	-6.2992	-18.0844
USIO4 (C	-29.6211	-17.2160	-12.4051
UF4 (C)	-75.1545	-28.1137	-47.0408
UF4.2.5H	-75.1564	-37.4300	-37.7263
UO3 (C)	.6585	8.0854	-7.4269
GUMMITE	.6585	10.8352	-10.1767
B-UO2(OH	.6578	5.7997	-5.1419
SCHOEPIT	.6571	5.6279	-4.9708
RUTHERFO	-19.2234	-14.4483	-4.7751
URANOPHA	5.0933	17.4900	-12.3967
ALOH3(A)	10.9248	10.8916	.0332
ALOHSO4	-5.5372	-3.2300	-2.3072
AL4(OH)1	27.2372	22.7000	4.5372
ALUM K	-17.9246	-5.3066	-12.6181

ALUNITE	3.9338	-1.4241	5.3579
ANHYDRIT	-4.8451	-4.5687	-.2764
ARAGONIT	-8.2644	-8.2705	.0061
ARTINITE	4.1575	10.1436	-5.9861
BAF2	-16.9287	-5.7789	-11.1498
BARITE	-8.6645	-10.0988	1.4343
BOEHMITE	10.9255	9.1120	1.8135
BRUCITE	12.0205	17.2787	-5.2583
CALCITE	-8.2644	-8.4338	.1694
CELESTIT	-6.8565	-6.4611	-.3954
CHALCEDO	-3.9203	-3.6072	-.3131
CHRYSOTI	28.2215	33.1828	-4.9613
CLINOENS	8.1009	11.7185	-3.6176
CRISTOBA	-3.9203	-3.6940	-.2263
DIASPORE	10.9255	7.3358	3.5897
DIOPSIDE	15.7981	20.5005	-4.7024
DOLOMITE	-16.1251	-16.8432	.7181
EPSOMITE	-4.4466	-2.1933	-2.2533
SEPIOLIT	12.2789	18.7800	-6.5011
FERRIHYD	20.3738	18.1091	2.2647
FE3(OH)8	47.9423	46.6683	1.2740
FEOH)2.7	17.2936	10.1791	7.1145
FES PPT	-114.7045	-38.7175	-75.9870
FE2(SO4)	-8.6383	31.1364	-39.7747
FLUORITE	-13.1093	-11.0491	-2.0602
FORSTERI	20.1221	29.2175	-9.0954
GIBBSITE	10.9248	9.2012	1.7236
GOETHITE	20.3746	13.9930	6.3816
GREENALI	13.7438	20.8100	-7.0662
GREIGITE	-439.6540	-157.7816	-281.8724
GYPSUM	-4.8466	-4.8549	.0083
HALITE	-4.7700	1.5626	-6.3326
HEMATITE	40.7499	23.0217	17.7281
HUNTITE	-31.8466	-29.4828	-2.3639
HYDRMAGN	-19.4255	-7.7825	-11.6430
JAROSITE	28.1961	28.6105	-.4144
MACKINAW	-114.7045	-39.4475	-75.2570
MAGADIIT	-21.9477	-14.3000	-7.6477
MAGHEMIT	40.7499	32.8283	7.9216
MAGNESIT	-7.8608	-7.9133	.0525
MAGNETIT	47.9452	31.1326	16.8125
MELANTER	-9.2725	-2.5241	-6.7484
MIRABILI	-5.4744	-1.4692	-4.0052
NATRON	-8.8936	-1.6077	-7.2859
NESQUEHO	-7.8630	-5.5105	-2.3525
PHLOGOPI	39.3115	67.9334	-28.6219
PYRITE	-210.2450	-88.2886	-121.9564
QUARTZ	-3.9203	-4.1276	.2073
SIDERITE	-12.6866	-10.4492	-2.2375
SIO2(A,G	-3.9203	-2.7816	-1.1387
SIO2(A,P	-3.9203	-2.7816	-1.1387
SRF2	-15.1207	-8.5636	-6.5571
STRONTIA	-10.2758	-9.2369	-1.0388
TALC	20.3815	23.7222	-3.3406
THENARDI	-5.4671	-.1692	-5.2978
THERMONA	-8.8870	.1830	-9.0700
TREMOLIT	51.9778	58.3772	-6.3994
WITHERIT	-12.0837	-8.5968	-3.4869
PYROLUSI	34.6529	42.4091	-7.7562
BIRNESSI	34.6529	44.0872	-9.4343
NSUTITE	34.6529	43.4972	-8.8443
BIXBYITE	42.9465	51.6627	-8.7161
HAUSMANN	51.2402	63.0557	-11.8156
PYROCROI	8.2929	15.5173	-7.2244
MANGANIT	21.4729	25.7572	-4.2843
RHODOCHR	-11.5883	-10.3707	-1.2177
MNCL2, 4	-12.2450	2.3813	-14.6263
MNS GREE	-113.6062	-30.8879	-82.7182
MNSO4	-8.1691	2.9628	-11.1319
MN2(SO4)	-6.4416	47.0132	-53.4548
CU METAL	-19.5404	-11.7728	-7.7676
NANTOKIT	-16.6286	-9.6375	-6.9910
CUF	-18.7242	4.6252	-23.3494
CUPRITE	-12.7215	-7.0456	-5.6759
CHALCOCI	-134.6213	-75.7284	-58.8929

DJURLEIT	-133.3316	-74.6448	-58.6868
ANILITE	-129.7362	-71.5340	-58.2021
BLAUBLEI	-117.0349	-59.5012	-57.5337
COVELLIT	-115.0809	-58.2916	-56.7893
CU2SO4	-29.1842	-7.2413	-21.9429
CUPROUSF	14.0142	1.6822	12.3320
MELANOTH	-13.7168	3.9630	-17.6798
CUCO3	-13.0631	-9.6300	-3.4331
CUF2	-17.9080	-.3681	-17.5399
CUF2, 2H	-17.9095	-4.4810	-13.4285
CU(OH)2	6.8182	8.9284	-2.1103
ATACAMIT	3.3688	7.6935	-4.3247
CU2(OH)3	1.2745	9.5681	-8.2936
ANTLERIT	3.9925	8.2900	-4.2975
BROCHANT	10.8106	15.3400	-4.5294
LANGITE	10.8099	17.5392	-6.7293
TENORITE	6.8189	7.9082	-1.0894
CUOCUSO4	-2.8249	12.2029	-15.0279
CUSO4	-9.6438	3.3531	-12.9969
CHALCANT	-9.6475	-2.6672	-6.9802
DIOPTASE	2.8978	6.6695	-3.7716
CUPRICFE	47.5688	33.0500	14.5187
CHALCOPY	-229.7854	-105.5360	-124.2494
ZN METAL	-19.0527	26.4556	-45.5083
ZNCL2	-13.2291	7.3606	-20.5897
SMITHSON	-12.5754	-9.9175	-2.6578
ZNCO3, 1	-12.5761	-10.2600	-2.3161
ZNF2	-17.4203	-1.2726	-16.1477
ZN(OH)2	7.3058	11.5000	-4.1942
ZN2(OH)3	4.3442	15.2000	-10.8558
ZN5(OH)8	15.9942	38.5000	-22.5058
ZN2(OH)2	-1.8503	7.5000	-9.3503
ZN4(OH)6	12.7614	28.4000	-15.6386
ZNNO3)2,	-17.4221	3.3358	-20.7579
ZNO(ACTI	7.3066	11.3100	-4.0034
ZINCITE	7.3066	11.5534	-4.2469
ZN3O(SO4	-11.0057	20.1926	-31.1984
ZNS (A)	-114.5932	-43.9169	-70.6764
SPHALERI	-114.5932	-46.5735	-68.0197
WURTZITE	-114.5932	-44.5732	-70.0201
ZNSIO3	3.3862	3.2755	.1107
WILLEMIT	10.6928	15.9611	-5.2683
ZINCOSIT	-9.1561	3.3731	-12.5293
ZNSO4, 1	-9.1569	-.3688	-8.7881
BIANCHIT	-9.1605	-1.7570	-7.4036
GOSLARIT	-9.1613	-2.0224	-7.1389
CD METAL	-18.8002	13.8304	-32.6306
GAMMA CD	-18.8002	13.9331	-32.7333
OTAVITE	-12.3229	-13.7290	1.4061
CDCL2	-12.9766	-.5955	-12.3812
CDCL2, 1	-12.9774	-1.6756	-11.3018
CDCL2,2.	-12.9784	-1.9723	-11.0061
CDF2	-17.1678	-2.7962	-14.3717
CD(OH)2	7.5583	13.6500	-6.0917
CDOHCL	-2.7091	3.6601	-6.3693
CD3(OH)4	6.2130	22.5600	-16.3470
CD3OH2(S	-10.2490	6.7100	-16.9590
CD4(OH)6	13.7713	28.4000	-14.6287
MONTEPON	7.5591	15.5883	-8.0292
CDSIO3	3.6387	9.3745	-5.7358
CDSO4	-8.9037	.1788	-9.0824
CDSO4, 1	-8.9044	-1.5178	-7.3866
CDSO4,2.	-8.9056	-1.7887	-7.1169
GREENOCK	-114.3407	-51.0369	-63.3039
NICO3	-12.6391	-6.6520	-5.9871
NI(OH)2	7.2421	10.2241	-2.9820
NI4(OH)6	12.5064	32.0000	-19.4936
BUNSENIT	7.2428	12.9024	-5.6596
MILLERIT	-114.6570	-42.8847	-71.7722
RETGERSI	-9.2243	-2.0608	-7.1635
MORENOSI	-9.2250	-2.4156	-6.8094
NI2SIO4	10.5653	15.1710	-4.6056
ANALCIME	8.5823	7.1520	1.4304
HALLOYSI	14.0097	9.7414	4.2683
AOLINITE	14.0097	6.3973	7.6124

LEONHARD	35.5711	18.1045	17.4666
LOW ALBI	4.6628	2.9191	1.7437
ANALBITE	4.6628	3.8883	.7745
MUSCOVIT	25.0997	14.1123	10.9874
ANNITE	24.8338	24.5330	.3008
ANORTHIT	25.6288	26.7664	-1.1377
PYROPHYL	6.1698	-1.6000	7.7698
LAUMONTI	17.7852	15.4142	2.3710
WAIRAKIT	17.7866	20.0644	-2.2777
MALACHIT	-6.2449	-4.8848	-1.3601
AZURITE	-19.3080	-16.4704	-2.8375
SULFUR	-95.5405	-36.8280	-58.7125
V METAL	-71.6913	20.0931	-91.7845
VO	-45.3321	-9.8366	-35.4955
VCL2	-65.8678	-4.7994	-61.0683
V2O3	-32.1524	-18.1736	-13.9789
V(OH)3	-32.1535	-15.7965	-16.3570
VCL3	-62.9560	-.8851	-62.0709
VOCL	-42.4203	-13.5416	-28.8787
V2O4	-18.9728	-12.9484	-6.0244
VO(OH)2	-18.9735	-11.6345	-7.3390
VF4	-68.4266	-1.6545	-66.7722
VOSO4 (C	-35.4355	-13.5227	-21.9129
VOCL2	-39.5085	-4.1612	-35.3473
V2O5	-5.7932	-.6413	-5.1519
TYUYAMUN	.6742	2.3861	-1.7120
CA-VANAD	.0156	3.0216	-3.0060
CA3(VO4)	11.6332	20.1433	-8.5101
CA2V2O7	5.8244	9.1105	-3.2861
FE-VANAD	-2.1955	-1.7206	-.4749
MG-VANAD	.2174	5.9489	-5.7314
MG2V2O7	6.2280	13.7569	-7.5288
MN-VANAD	-1.6464	2.6590	-4.3054
NH4VO3	-123.5939	-119.8565	-3.7374
NA-VANAD	-.2954	3.8426	-4.1379
NA3VO4	10.7003	37.7801	-27.0798
NA4V2O7	5.2025	19.1545	-13.9520
CARNOTIT	-1.0509	.3945	-1.4455
VO2CL	-16.0610	2.9925	-19.0535
V3O5	-83.2777	-50.1386	-33.1391
V4O7	-102.2505	-62.0577	-40.1928
V6O13	-87.4776	-62.0873	-25.3903
LIME	11.6176	33.6749	-22.0573
PORTLAND	11.6169	23.2505	-11.6336
WUSTITE	8.2110	12.1600	-3.9490
PERICLAS	12.0212	22.1933	-10.1722
HERCYNIT	29.0471	28.6421	.4050
SPINEL	33.8730	38.0150	-4.1420
MAG-FERR	52.7711	44.4687	8.3024
CRYOLITE	-46.7613	-31.6962	-15.0652
WOLLASTO	7.6973	13.3688	-5.6715
P-WOLLST	7.6973	14.2485	-6.5512
CA-OLIVI	19.3149	38.6844	-19.3695
LARNITE	19.3149	40.2226	-20.9077
CA3SIO5	30.9325	75.8811	-44.9486
MONTICEL	19.7185	31.2047	-11.4862
AKERMINI	27.4157	48.9157	-21.5000
MERWINIT	39.0333	70.5658	-31.5325
KALSILIT	11.0893	13.3870	-2.2977
LEUCITE	7.1690	6.8376	.3313
MICROCLI	3.2486	.8528	2.3958
H SANIDI	3.2486	1.3295	1.9191
NEPHELIN	12.5034	14.8479	-2.3445
GEHLENIT	41.1667	59.0164	-17.8498
LEPIDOCR	20.3746	14.5891	5.7854
NA-NONTR	31.7814	11.9383	19.8431
K-NONTRO	31.3147	10.8883	20.4265
CA-NONTR	31.8840	5.5483	26.3357
MG-NONTR	31.9506	5.8483	26.1023
FE(OH)3S	20.3738	15.8891	4.4847
PREHNITE	33.3253	35.1060	-1.7807
PHILLIPS	3.9550	1.9500	2.0050
ILLITE	16.8632	13.0617	3.8015
MONTMORI	13.0440	9.5277	3.5164
CHLORITE	70.1939	69.5488	.6450

CHLORT-M	65.1921	53.9797	11.2124
CHLORT-F	55.8270	24.0827	31.7444
NA2SO3	-31.8263	5.0060	-36.8323
K2SO3	-34.6546	8.2512	-42.9058
CASO3.2H	-31.2059	-3.5377	-27.6682
CASO3.5H	-31.2048	-3.1324	-28.0723
MGSO3	-30.8008	6.8482	-37.6490
BASO3	-35.0238	-5.4532	-29.5706
CH4(GAS)	-125.3205	-42.2337	-83.0868
CO2(GAS)	-19.8820	-18.1700	-1.7119
O2(GAS)	52.7185	85.7042	-32.9856
CAMOO4	-8.7657	-7.7332	-1.0325
BAMOO4	-12.5851	-7.5167	-5.0684

SUPPLEMENT 7

MONITOR WELL COMPLETION REPORT

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LOCATION TYPE SUMMARY REPORT
MONITORING LOCATIONS AT MONUMENT VALLEY
SITE: MON01 MONUMENT VALLEY
REPORT DATE: 04/27/95

LOCATION ID	NORTH COORDINATE (FT)	EAST COORDINATE (FT)	GROUND ELEVATION (FT MSL)	DATE ESTABLISHED	INSTALLED BY	LOCATION TYPE	LOCATION CROSS REFERENCE
0001	60200.0	87600.0	4864.90	04/19/85	WEG	BH	
0002	59400.0	87400.0	4875.00	04/19/85	WEG	BH	
0003	58800.0	87800.0	4879.80	05/03/85	WEG	BH	
0004	58700.0	88000.0	4876.60	05/01/85	WEG	BH	
0005	58700.0	88200.0	4869.30	05/01/85	WEG	BH	
0006	58700.0	88400.0	4862.50	04/30/85	WEG	BH	
0007	58600.0	87800.0	4878.40	05/03/85	WEG	BH	
0008	58600.0	88600.0	4859.40	04/30/85	WEG	BH	
0009	58500.0	88800.0	4853.10	05/01/85	WEG	BH	
0010	58399.0	87731.0	4879.30	05/03/85	WEG	BH	
0011	58300.0	88970.0	4841.90	05/03/85	WEG	BH	
0012	58200.0	87800.0	4880.20	05/03/85	WEG	BH	
0013	58200.0	89000.0	4842.10	05/03/85	WEG	BH	
0014	58000.0	88600.0	4852.90	05/03/85	WEG	BH	
0015	57798.5	88070.5	4866.40	05/03/85	WEG	BH	
0016	57800.0	88200.0	4863.70	05/03/85	WEG	BH	
0017	57800.0	88400.0	4859.20	05/03/85	WEG	BH	
0018	57800.0	88800.0	4852.00	05/02/85	WEG	BH	
0019	59300.0	87400.0	4874.20	04/19/85	WEG	BH	
0020	59200.0	87300.0	4877.10	04/18/85	WEG	BH	
0021	59200.0	87400.0	4874.20	04/18/85	WEG	BH	
0022	59000.0	87400.0	4882.50	04/18/85	WEG	BH	
0023	59000.0	87500.0	4891.60	04/30/85	WEG	BH	
0024	58900.0	87300.0	4887.30	04/30/85	WEG	BH	
0025	58800.0	87200.0	4899.40	04/17/85	WEG	BH	
0026	58800.0	87400.0	4894.00	04/17/85	WEG	BH	
0027	58700.0	87300.0	4897.80	04/17/85	WEG	BH	
0028	58600.0	87000.0	4901.00	04/16/85	WEG	BH	
0029	58600.0	87150.0	4902.00	04/16/85	WEG	BH	
0030	58546.5	87303.0	4886.10	05/01/85	WEG	BH	
0031	58400.0	87000.0	4900.50	04/19/85	WEG	BH	
0032	58396.0	87194.0	4902.00	04/19/85	WEG	BH	
0033	58398.0	87996.5	4901.70	04/24/85	WEG	BH	
0034	58400.0	88400.0	4901.90	04/22/85	WEG	BH	
0035	58400.0	88900.0	4848.70	05/02/85	WEG	BH	
0036	58300.0	88800.0	4848.90	05/02/85	WEG	BH	
0037	58195.0	86794.0	4906.20	04/20/85	WEG	BH	
0038	58200.0	87000.0	4913.30	04/30/85	WEG	BH	
0039	58200.0	88200.0	4922.60	04/21/85	WEG	BH	
0040	58200.0	88600.0	4864.10	05/01/85	WEG	BH	
0041	58200.0	88900.0	4848.40	05/02/85	WEG	BH	
0042	58100.0	88800.0	4849.60	05/02/85	WEG	BH	
0043	58000.0	88000.0	4892.30	04/24/85	WEG	BH	
0044	58000.0	88400.0	4878.10	05/01/85	WEG	BH	
0046	57850.0	88900.0	4849.30	05/02/85	WEG	BH	
0047	58600.0	88000.0	4896.20	04/30/85	WEG	BH	
0048	58400.0	88200.0	4908.90	04/21/85	WEG	BH	
0049	58400.0	88600.0	4869.00	05/01/85	WEG	BH	
0050	58200.0	88000.0	4906.20	04/24/85	WEG	BH	
0051	58200.0	88400.0	4898.10	04/23/85	WEG	BH	
0052	58000.0	88200.0	4898.80	04/23/85	WEG	BH	
0053	60448.0	87643.5	4862.20	05/03/85	WEG	BH	
0054	60956.0	87725.5	4858.70	05/03/85	WEG	BH	
0055	61465.0	87808.0	4851.30	05/03/85	WEG	BH	
0056	61973.5	87890.0	4842.90	05/03/85	WEG	BH	
0057	62482.0	87972.0	4837.60	05/03/85	WEG	BH	
0058	62991.0	88054.5	4836.20	05/03/85	WEG	BH	
0101	59000.0	87008.0	0.00	04/24/85	WEG	BH	
0102	59015.0	86990.0	0.00	04/24/85	WEG	BH	
0103	59080.0	86965.0	0.00	04/24/85	WEG	BH	
0104	59080.0	86985.0	0.00	04/24/85	WEG	BH	

LOCATION TYPE SUMMARY REPORT
MONITORING LOCATIONS AT MONUMENT VALLEY
SITE: MON01 MONUMENT VALLEY
REPORT DATE: 04/27/95

LOCATION ID	NORTH COORDINATE (FT)	EAST COORDINATE (FT)	GROUND ELEVATION (FT MSL)	DATE ESTABLISHED	INSTALLED BY	LOCATION TYPE	LOCATION CROSS REFERENCE
0105	59000.0	87000.0	0.00	04/24/85	WEG	BH	
0106	59000.0	87008.0	0.00	04/24/85	WEG	BH	
0107	59015.0	86990.0	0.00	04/24/85	WEG	BH	
0108	59080.0	86965.0	0.00	04/24/85	WEG	BH	
0109	59080.0	86985.0	0.00	04/24/85	WEG	BH	
0110	59000.0	87000.0	0.00	04/24/85	WEG	BH	
0501	57599.0	89133.0	-	99/99/99		BH	
0502	57599.0	88062.0	-	99/99/99		BH	
0503	56390.0	85280.0	-	99/99/99		BH	
0504	57990.0	85066.0	-	99/99/99		BH	
0527	51980.0	94024.0	-	99/99/99		BH	
0528	50806.0	92985.0	-	99/99/99		BH	
0561	47250.0	91456.0	-	99/99/99		BH	
0562	45756.0	91456.0	-	99/99/99		BH	
0564	43089.0	92496.0	-	99/99/99		BH	
0601	54980.4	88017.7	4881.51	10/24/84	SHB	WL	
0602	56377.4	88661.2	4861.53	10/24/84	SHB	WL	
0603	57812.7	89036.9	4846.64	10/24/84	SHB	WL	
0604	58397.0	89424.6	4837.30	10/25/84	SHB	WL	
0605	58707.6	90066.7	4831.42	10/25/84	SHB	WL	
0606	59034.2	88634.0	4860.44	10/26/84	SHB	WL	
0607	59657.2	87519.2	4869.41	10/26/84	SHB	WL	
0608	58685.7	87189.4	4901.08	03/15/85	SHB	WL	
0609	59052.1	87652.9	4878.30	01/03/85	SHB	WL	
0610	56338.8	88611.6	4860.83	12/03/84	SHB	WL	
0611	57811.0	89017.5	4846.35	03/05/85	SHB	WL	
0612	58437.2	85614.8	5000.09	02/21/85	SHB	WL	
0613	56377.8	88643.7	4860.81	03/05/85	SHB	WL	
0614	60940.5	87832.6	4854.28	03/04/85	SHB	WL	
0615	57794.4	88980.7	4847.50	03/01/85	SHB	WL	
0616	56747.3	87987.6	4869.00	-		WL	
0617	52090.6	87094.4	4907.96	-		WL	
0618	58868.3	87016.1	4920.00	-		WL	
0619	58876.5	87587.9	4886.52	-		WL	
0620	70685.0	90918.8	4716.53	-		SL	
0621	57935.9	90924.4	4832.84	-		SL	
0622	56576.1	89945.2	4846.82	-		SL	
0623	-	-	-	-		BH	RESERVED FOR RPAPUSCH
0624	-	-	-	-		BH	RESERVED FOR RPAPUSCH
0625	58272.5	89803.1	4838.80	-		WL	
0626	-	-	-	-		BH	RESERVED FOR RPAPUSCH
0627	-	-	-	-		BH	RESERVED FOR RPAPUSCH
0633	-	-	-	-		BH	
0640	-	-	-	-		BH	RESERVED FOR AMILLER
0650	64970.2	89923.8	4790.15	09/30/85	BDC	WL	
0651	63788.9	92734.3	4781.46	09/29/85	BDC	WL	
0652	62581.5	93759.3	4800.69	09/29/85	BDC	WL	
0653	61249.3	89596.3	4832.14	09/25/85	BDC	WL	
0654	59351.4	91063.4	4824.41	09/27/85	BDC	WL	
0655	59754.6	88624.1	4857.73	09/12/85	BDC	WL	
0656	59545.2	89175.1	4852.07	09/12/85	BDC	WL	
0657	59266.0	87596.5	4881.18	09/05/85	BDC	WL	
0658	54763.4	88857.0	4876.19	09/26/85	BDC	WL	
0659	59069.8	88670.3	4860.84	09/11/85	BDC	WL	
0660	61303.4	89584.3	4831.38	09/24/85	BDC	WL	
0661	56366.1	85447.7	5057.34	10/06/85	BDC	WL	
0662	59236.5	87577.5	4877.07	09/05/85	BDC	WL	
0663	59069.6	88593.5	4861.56	09/10/85	BDC	WL	
0664	61255.9	89537.0	4832.84	09/19/85	BDC	WL	
0668	60171.4	88287.0	4864.27	10/04/85	BDC	WL	
0669	60146.3	88247.8	4863.19	10/05/85	BDC	WL	

FIELDS DISPLAYED AS DASHES INDICATE DATA IS UNAVAILABLE

LOCATION TYPE SUMMARY REPORT
MONITORING LOCATIONS AT MONUMENT VALLEY
SITE: MON01 MONUMENT VALLEY
REPORT DATE: 04/27/95

LOCATION ID	NORTH COORDINATE (FT)	EAST COORDINATE (FT)	GROUND ELEVATION (FT MSL)	DATE ESTABLISHED	INSTALLED BY	LOCATION TYPE	LOCATION CROSS REFERENCE
0705	73922.0	94758.0	-	99/99/99	-	BH	
0706	72749.0	95033.0	-	99/99/99	-	BH	
0752	-	-	-	-	-	SL	
0754	-	-	-	-	-	SL	
0755	-	-	-	-	-	SL	
0756	58870.0	87020.0	-	-	-	SL	
0758	-	-	-	-	-	SL	
0759	-	-	-	-	-	SL	
0800	58152.6	88835.3	4847.30	10/15/85	WTI	BH	
0801	58152.6	88835.3	4847.30	10/15/85	WTI	BH	
0802	58152.6	88835.3	4847.30	10/15/85	WTI	BH	
0803	58152.6	88835.3	4847.30	10/15/85	WTI	BH	
0804	58152.6	88835.3	4847.30	10/16/85	WTI	LY	
0805	58152.6	88835.3	4847.30	10/16/85	WTI	LY	
0806	58152.6	88835.3	4847.30	10/16/85	WTI	BH	
0807	58152.6	88835.3	4847.30	10/16/85	WTI	BH	
0808	58542.4	88152.5	4898.96	10/16/85	WTI	BH	
0809	58542.4	88152.5	4898.96	10/17/85	WTI	BH	
0810	58542.4	88152.5	4898.96	10/17/85	WTI	BH	
0811	58542.4	88152.5	4848.96	10/17/85	WTI	BH	
0812	58542.4	88152.5	4898.96	10/17/85	WTI	BH	
0813	58542.4	88152.5	4898.96	10/17/85	WTI	BH	
0814	58542.0	88152.5	4898.96	10/17/85	WTI	LY	
0815	58542.0	88152.5	4898.96	10/17/85	WTI	LY	
0816	58542.0	88152.5	4898.96	10/17/85	WTI	LY	
0817	58542.0	88152.5	4898.96	10/17/85	WTI	LY	
0818	58542.0	88152.5	4898.96	10/17/85	WTI	BH	
0819	58542.0	88152.5	4898.96	10/17/85	WTI	BH	
0976	-	-	-	-	-	BH	
0999	-	-	-	-	-	BH	

FIELDS DISPLAYED AS DASHES INDICATE DATA IS UNAVAILABLE

DATA FILE: \DART\MON01\MLC10002.DAT

MONITORING WELL INFORMATION
BLRA SUPPLEMENT
SITE: MON01 MONUMENT VALLEY
REPORT DATE: 03/19/96

LOCATION ID	NORTH COORDINATE (FT)	EAST COORDINATE (FT)	GROUND ELEVATION (FT MSL)	BOREHOLE DEPTH (FT)	BOREHOLE DIAMETER (INCHES)	CASING ELEVATION (FT MSL)	CASING LENGTH (FT)	CASING DIAMETER (INCHES)	SCREEN BEGINNING DEPTH (FT)	SCREEN LENGTH (FT)	FLOW CODE	FORMATION OF COMPLETION
0400	54674	89334	-	12.67	2	4869.26	12.67	2	7.75	4.46	N	AL
0401	54673	89334	-	6.75	2	4869.25	6.75	2	4.00	2.00	N	AL
0402	57567	90488	-	10.08	2	4839.07	10.08	2	5.17	4.46	N	AL
0403	57612	90435	-	8.33	2	4835.11	8.33	2	3.42	4.46	N	AL
0404	57670	90444	-	8.58	2	4836.67	8.58	2	3.67	4.46	N	AL
0405	57613	90438	-	3.70	2	4835.13	3.70	2	0.68	2.27	N	AL
0407	59672	90862	-	11.83	2	4822.82	11.83	2	6.92	4.46	N	AL
0408	59068	91535	-	8.83	2	4823.14	8.83	2	3.92	4.46	N	AL
0409	59077	91486	-	16.00	2	4821.03	16.00	2	11.08	4.46	N	AL
0410	59091	91438	-	10.5	2	4826.09	10.5	2	5.58	4.46	N	AL
0411	59086	91487	-	4.67	2	4821.05	4.67	2	2.00	1.58	N	AL
0413	63572	92960	-	10.5	2	4781.41	10.5	2	5.58	4.46	N	AL
0414	63544	92889	-	15.71	2	4778.71	15.71	2	10.79	4.46	N	AL
0415	63549	92833	-	9.42	2	4780.45	9.42	2	4.50	4.46	N	AL
0416	63525	92733	-	10.51	2	4781.85	10.51	2	5.22	4.46	N	AL
0417	63551	92889	-	5.05	2	4778.64	5.05	2	1.39	3.00	N	AL
0602	56377.4	88661.2	4861.53	35.00	6.625	4864.02	31.50	2.000	19.50	10.0	N	AL
0603	57812.7	89036.9	4846.64	55.00	6.625	4848.56	55.00	2.000	43.00	10.0	C	AL
0604	58397.0	89424.6	4837.30	30.00	6.625	4839.09	30.00	2.000	13.00	15.0	C	AL
0605	58707.6	90066.7	4831.42	32.00	6.625	4833.96	31.00	2.000	14.00	15.0	D	AL
0606	59034.2	88634.0	4860.44	47.00	6.625	4863.31	47.00	2.000	32.00	10.0	D	AL
0616	56747.3	87987.6	4869.00	-	-	4869.92	8.00	-	-	-	N	AL
0617	52090.6	87094.4	4907.96	-	-	4908.96	-	-	-	-	N	AL
0650	64970.2	89923.8	4790.15	99.50	7.875	4793.29	99.50	4.000	77.50	20.0	D	AL
0651	63788.9	92734.3	4781.46	82.00	7.875	4784.51	82.00	4.000	20.00	60.0	D	AL
0652	62581.5	93759.3	4800.69	56.00	7.875	4803.84	58.00	4.000	34.00	20.0	D	AL
0653	61249.3	89596.3	4832.14	78.00	7.875	4834.94	78.00	4.000	56.00	20.0	D	AL
0654	59351.4	91063.4	4824.41	79.00	7.875	4827.01	79.00	4.000	57.00	20.0	C	AL
0655	59754.6	88624.1	4857.73	60.00	7.875	4860.39	60.00	4.000	38.00	20.0	D	AL
0656	59545.2	89175.1	4852.07	60.00	7.875	4854.61	60.00	4.000	38.00	20.0	D	AL
0662	59236.5	87577.5	4877.07	70.00	7.875	4879.81	69.50	4.000	37.50	30.0	D	AL
0669	60146.3	88247.8	4863.19	56.00	7.875	4865.78	56.00	4.000	34.00	20.0	D	AL
0608	58685.7	87189.4	4901.08	120.00	6.625	4903.11	120.00	2.000	98.00	20.0	O	DC
0611	57811.0	89017.5	4846.35	185.00	6.625	4848.35	185.00	2.000	163.00	20.0	N	DC
0612	58437.2	85614.8	5000.09	215.00	6.625	5001.74	215.00	2.000	175.00	20.0	N	DC
0613	56377.8	88643.7	4860.81	160.00	6.625	4862.82	160.00	2.000	138.00	20.0	N	DC
0618	58868.3	87016.1	4920.00	153.00	12.000	4921.02	153.00	12.000	-	-	O	DC
0619	58876.5	87587.9	4886.52	154.00	12.000	4887.42	154.00	12.000	-	-	O	DC
0625	58272.5	89803.1	4838.80	89.00	12.000	4840.09	89.00	12.000	-	-	C	DC
0657	59266.0	87596.5	4881.18	140.00	7.875	4883.21	138.00	4.000	121.00	15.0	O	DC

FORMATION OF COMPLETION CODE:
AL - ALLUVIUM
DC - DECHELLEY MEMBER OF THE CUTLER FORMATION

FLOW RELATIONSHIP CODE:
N - UNKNOWN
C - CROSS GRADIENT
D - DOWN GRADIENT
O - ON-SITE

MONITORING WELL INFORMATION
BLRA SUPPLEMENT
SITE: MON01 MONUMENT VALLEY
REPORT DATE: 03/19/96

LOCATION ID	NORTH COORDINATE (FT)	EAST COORDINATE (FT)	GROUND ELEVATION (FT MSL)	BOREHOLE DEPTH (FT)	BOREHOLE DIAMETER (INCHES)	CASING ELEVATION (FT MSL)	CASING LENGTH (FT)	CASING DIAMETER (INCHES)	SCREEN BEGINNING DEPTH (FT)	SCREEN LENGTH (FT)	FLOW CODE	FORMATION OF COMPLETION
0661	56366.1	85447.7	5057.34	218.00	7.875	5059.99	212.00	4.000	190.00	20.0	N	DC
0663	59069.6	88593.5	4861.56	217.00	7.875	4864.41	217.00	4.000	175.00	40.0	D	DC
0664	61255.9	89537.0	4832.84	233.00	7.875	4835.76	233.00	4.000	211.00	20.0	D	DC
0668	60171.4	88287.0	4864.27	218.00	7.875	4866.71	215.00	4.000	180.00	20.0	D	DC
0406	59750	91710	-	-	-	-	-	-	-	-	N	NR
0412	61450	92630	-	-	-	-	-	-	-	-	N	NR
0640	55815	89010	4875	-	-	-	-	-	-	-	U	NR
0607	59657.2	87519.2	4869.41	30.00	6.625	4871.26	27.50	2.000	12.50	10.0	D	SR
0610	56338.8	88611.6	4860.83	130.5	6.625	4861.81	85.00	2.000	63.00	20.0	N	SR
0614	60940.5	87832.6	4854.28	84.50	8.0	4855.66	70.00	2.000	48.00	20.0	D	SR
0615	57794.4	88980.7	4847.50	110.00	6.625	4849.29	90.00	2.000	68.00	20.0	C	SR
0658	54763.4	88857.0	4876.19	165.00	7.875	4878.82	157.00	4.000	135.00	20.0	N	SR
0659	59069.8	88670.3	4860.84	110.00	7.875	4863.63	109.00	4.000	87.00	20.0	D	SR
0660	61303.4	89584.3	4831.38	155.00	7.875	4834.16	155.00	4.000	133.00	20.0	D	SR
0601	54980.4	88017.7	4881.51	24.00	6.625	4884.43	24.00	2.000	12.00	10.0	U	SR
0609	59052.1	87652.9	4878.30	15.00	6.625	4880.17	14.0	2.000	7.00	5.0	O	SR
0804	58152.6	88835.3	4847.30	20.00	7.000	-	-	-	-	-	O	TA
0805	58152.6	88835.3	4847.30	15.00	7.000	-	-	-	-	-	O	TA
0814	58542.0	88152.5	4898.96	5.00	7.000	-	-	-	-	-	O	TA
0815	58542.0	88152.5	4898.96	10.00	7.000	-	-	-	-	-	O	TA
0816	58542.0	88152.5	4898.96	15.00	7.000	-	-	-	-	-	O	TA
0817	58542.0	88152.5	4898.96	20.00	7.000	-	-	-	-	-	O	TA

FORMATION OF COMPLETION CODE:
DC - DECHELLEY MEMBER OF THE CUTLER FORMATION
NR - NO RECOVERY OF DATA FOR CLASSIFYING
SR - SHINARUMP MEMBER OF THE CHINLE FORMATION
TA - URANIUM MILL TAILINGS

FLOW RELATIONSHIP CODE:
N - UNKNOWN
D - DOWN GRADIENT
U - UPGRADIENT
C - CROSS GRADIENT
O - ON-SITE

DATA FILE: \DART\MON01\MWI10000.DAT

FIELDS DISPLAYED WITH A DASH INDICATE THE DATA IS UNAVAILABLE

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SUPPLEMENT 8

HISTORICAL DATA VALIDATION - FINAL REPORT

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MONUMENT VALLEY - MON01

HISTORICAL DATA VALIDATION

FINAL REPORT

This document is a summary of the historical data validation (HDV) process used to identify anomalous data points for the Monument Valley, MON01 site. The review focuses on the quality of groundwater data during the period from April of 1985 through the end of 1991.

The HDV program was implemented in 1992. During the preliminary review, a list of potentially anomalous data points were generated for each sampling event using the "Suspected Anomalies Program". This program provided a mathematical comparison of a selected parameter result for a particular sampling event, for a particular monitoring location, against all other established results past and present for that parameter and location. A "Suspected Anomalies Report" was generated for each sampling event. The report was then reviewed by the site hydrologist and geochemist. A summary of this review, along with the auditor's notes, will be referred to as Phase I and is included in the support section of this document.

The current HDV effort begins by identifying the constituents of concern (COCs). A list of general COCs were assembled by Jon Blount, the TAC Senior Geochemist to be reviewed for each site examined during the HDV program. Site-specific COCs for Monument Valley were compiled by Meredith Day, the TAC Site Toxicologist, and Tim Jackson, the TAC Site Geochemist. The following is a list of the general and site-specific COCs for Falls City.

General COCs	alkalinity, arsenic, iron, molybdenum, nitrate, pH, radium 226, radium 228, selenium, specific conductance, sulfate, uranium and total dissolved solids
Site-specific COCs	ammonium, calcium, chloride, magnesium, manganese, nickel, potassium, silica, sodium, strontium, vanadium, and zinc.

The current HDV effort incorporates the generation of time versus concentration plots for the dissolved fraction of each COC for all sampling rounds. The plots are used to identify trends and highlight data points which warrant investigation. Data points identified as anomalous, or which are either the highest or lowest data point for a given location, are reviewed in light of all relevant field and laboratory data. Anomalous data points identified during Phase I which fall within the COC listed are included in the current HDV effort. Results of the investigation of data points are summarized in Table 1.

MONUMENT VALLEY - MON01

HISTORICAL DATA VALIDATION

FINAL REPORT

Documentation shows that groundwater monitoring of the Monument Valley, MON01, site began in 1985. All datum acquired under the UMTRA contract was available for review. During the period after 1991 the UMTRA TAC quality assurance (QA) program required a higher level in the quality of the analytical data. Because of the confidence we have in our new data validation process, we have reviewed only the historical data prior to the new QA program.

All field sampling logs were reviewed for sampling dates, field instrument calibration, transcription errors, three bore volumes purged prior to sample collection, and pH. After reviewing the field sampling logs, qualifiers were placed on all data for a particular sampling location for a given sampling round when the pH of the sample exceeded 9.0, indicative of grout contamination (each result qualified "G") or when it was determined that less than three bore volumes had been purged prior to sample collection (each result qualified "L"). A review of the available field sampling logs is summarized in Table 3.

Several of the Monument Valley, MON01 monitoring locations required qualification for both a pH that exceeded 9.0 and for less than three bore volumes purged previous to sample collection. Only one transcription error was found during the review of field sampling logs for Monument Valley. All parameter values that necessitate qualification or the correction of transcription errors are listed on the "Data Entry Submittal Forms" found in the support section of this document.

The original laboratory data packages were reviewed for each suspect value. Several sampling events during the period of concern were not evaluated for hold time criteria due to the lack of information regarding dates of analyses. For sampling events 4/85 through 4/86, the data were transcribed onto Jacobs forms, which not only prevented checking for transcription errors, but created another possible source for error. No transcription errors were found in the Monument Valley, MON01 analytical data. All available laboratory QC data, UMTRA blind sample recoveries (a sample of known concentration prepared and submitted by an independent laboratory for analysis) and field replicate results were used to evaluate the quality of the suspected anomalous data for a particular lot of samples. All investigated data points and/or qualified data are included, with comments in Table 2.

MONUMENT VALLEY - MON01

HISTORICAL DATA VALIDATION

FINAL REPORT

Each suspect data point was qualified in accordance to the current 6/22/94 UMTRA, "Validation of Chemical Analysis Data" standard operating procedure (SOP). After the addition of qualifiers, each data point was reevaluated to determine if the nature of the qualification rendered the data point not anomalous. Investigated data points were then placed into two categories based on the following definitions;

Resolved:

- QC deficiency(s) was significant
- database/transcription error

Unresolved:

- No QC deficiency was noted
- one or more QC deficiency was noted but the direction of the potential bias was opposite that of the direction of the anomaly
- QC deficiency(s) was insufficient

Any addition of qualifiers and/or database changes due to transcription error are listed on a "Data Entry Submittal Form" for that particular sampling round.

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 1

Summary of Investigated Data Points

SAMPLING DATE	LOCATION	PARAMETER/VALUE			QUALIFIER	BIAS	STATUS
4/85	603	Ra226	1.60	pci/l	--	HIGH	--
	604	Zn	0.07	mg/l	*	HIGH	--
	606	ALK	641	mg/lCaCO3	--	HIGH	--
		Mn	0.58	mg/l	--	HIGH	--
	611	Zn	0.725	mg/l	*	HIGH	--
	614	Zn	0.86	mg/l	*	HIGH	--
	616	NH4	0.52	mg/l	--	HIGH	UNRESOLVED
		Zn	1.0	mg/l	*	HIGH	--
	617	Zn	1.60	mg/l	*	HIGH	--
	619	U	0.0297	mg/l	--	LOW	UNRESOLVED
8/85	601	V	0.5	mg/l	J,*	HIGH	--
	602	Ni	0.13	mg/l	J	HIGH	RESOLVED
		V	0.7	mg/l	J,*	HIGH	UNRESOLVED
	603	Mo	0.17	mg/l	J	HIGH	UNRESOLVED
	Ra226		1.70	mg/l	J	HIGH	RESOLVED
		V	0.5	mg/l	J,*	HIGH	UNRESOLVED
	604	Mo	0.19	mg/l	J	HIGH	UNRESOLVED
		V	0.6	mg/l	J,	HIGH	UNRESOLVED
	605	V	0.8	mg/l	J	HIGH	UNRESOLVED
	606	Mo	0.27	mg/l	J	HIGH	RESOLVED
		NO3	45	mg/l	--	LOW	UNRESOLVED
		V	0.5	mg/l	J	HIGH	UNRESOLVED
	610	Mo	0.22	mg/l	J	HIGH	--
	611	Mo	0.16	mg/l	J	HIGH	UNRESOLVED
		V	0.6	mg/l	J,*	HIGH	UNRESOLVED
	613	Ni	0.08	mg/l	--	HIGH	--
		V	0.7	mg/l	J,*	HIGH	UNRESOLVED
	614	Mo	0.14	mg/l	J	HIGH	UNRESOLVED
		NO3	7.0	mg/l	--	LOW	UNRESOLVED
		V	0.6	mg/l	J,*	HIGH	UNRESOLVED
	615	Mo	0.16	mg/l	J	HIGH	UNRESOLVED
		V	0.7	mg/l	J,*	HIGH	UNRESOLVED

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 1

Summary of Investigated Data Points

SAMPLING DATE	LOCATION	PARAMETER/VALUE			QUALIFIER	BIAS	STATUS
8/85	616	V	0.5	mg/l	J,*	HIGH	UNRESOLVED
Continued	617	Fe	0.18	mg/l	*	HIGH	UNRESOLVED
		SIO2	5.0	mg/l	--	LOW	UNRESOLVED
		V	0.6	mg/l	J,*	HIGH	UNRESOLVED
	618	Mo	0.19	mg/l	J	HIGH	UNRESOLVED
		V	0.6	mg/l	J,*	HIGH	UNRESOLVED
	619	U	0.0257	mg/l	--	LOW	--
		V	0.6	mg/l	J,*	HIGH	UNRESOLVED
	625	Mo	0.26	mg/l	J	HIGH	--
		V	0.4	mg/l	J,*	HIGH	--
10/85	650	pH	9.68	SU	L,G	HIGH	--
		NH4	0.5	mg/l	L,G,J	HIGH	UNRESOLVED
		Mo	0.11	mg/l	L,G,J,*	HIGH	RESOLVED
	652	Mo	0.31	mg/l	L,J,*	HIGH	RESOLVED
	653	Mo	0.35	mg/l	L,J,*	HIGH	RESOLVED
	655	Zn	0.22	mg/l	--	HIGH	UNRESOLVED
	656	Mo	0.34	mg/l	*	HIGH	--
		Zn	0.27	mg/l	--	HIGH	UNRESOLVED
	659	Mo	0.25	mg/l	L,*	HIGH	UNRESOLVED
	662	Sr	<0.1	mg/l	J,*	LOW	UNRESOLVED
	663	pH	9.71	SU	L,G	HIGH	--
		NH4	0.6	mg/l	L,G,J	HIGH	RESOLVED
		Mo	0.24	mg/l	L,G,*	HIGH	--
		Zn	0.225	mg/l	L,G	HIGH	UNRESOLVED
	668	pH	9.69	SU	G	HIGH	--
		Mo	0.21	mg/l	G,*	HIGH	--
		Zn	0.118	mg/l	G	HIGH	UNRESOLVED
	669	Ra226	0.5	pci/l	--	HIGH	--

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 1

Summary of Investigated Data Points

SAMPLING DATE	LOCATION	PARAMETER/VALUE			QUALIFIER	BIAS	STATUS
4/86	605	Zn	0.095	mg/l	--	HIGH	--
	606	V	0.51	mg/l	R	HIGH	RESOLVED
	614	Mo	0.15	mg/l	--	HIGH	UNRESOLVED
		NO3	6.0	mg/l	R	LOW	--
	650	Fe	0.21	mg/l	L,J	HIGH	RESOLVED
		Mo	0.19	mg/l	L,	HIGH	UNRESOLVED
	652	Mo	0.18	mg/l	--	HIGH	UNRESOLVED
		NO3	5.0	mg/l	R	LOW	--
	653	Ni	0.1	mg/l	J	HIGH	RESOLVED
	654	Zn	0.155	mg/l	--	HIGH	UNRESOLVED
	656	V	0.71	mg/l	L,R	HIGH	RESOLVED
	657	NO3	6.0	mg/l	L,R	HIGH	UNRESOLVED
	659	Mo	0.15	mg/l	L,J	HIGH	UNRESOLVED
	662	V	0.5	mg/l	R	HIGH	RESOLVED
	663	Ni	0.1	mg/l	L,G,R	HIGH	RESOLVED
		V	0.6	mg/l	L,G,R	HIGH	RESOLVED
		pH	9.89	SU	L,G	HIGH	--
		Mo	0.2	mg/l	L,G,J	HIGH	--
	664	V	0.5	mg/l	R	HIGH	RESOLVED
	668	pH	9.11	SU	L,G	HIGH	--
		Mo	0.15	mg/l	L,G,J	HIGH	RESOLVED
		V	0.5	mg/l	L,G,R	HIGH	RESOLVED
	669	V	0.49	mg/l	R	HIGH	RESOLVED
4/88	606	ALK	700	mg/lCaCO3	L,[J]	HIGH	--
	614	As	0.002	mg/l	[J]	LOW	UNRESOLVED
	650	As	0.003	mg/l	[J]	LOW	UNRESOLVED
	651	As	0.002	mg/l	L,[J]	LOW	UNRESOLVED
	657	As	0.001	mg/l	[J]	LOW	UNRESOLVED
	659	As	0.005	mg/l	[J]	LOW	UNRESOLVED
	660	As	0.004	mg/l	L,[J]	LOW	UNRESOLVED
	663	pH	9.31	SU	L,G	HIGH	--
		As	0.002	mg/l	L,G,[J]	LOW	UNRESOLVED

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 1

Summary of Investigated Data Points

SAMPLING DATE	LOCATION	PARAMETER/VALUE			QUALIFIER	BIAS	STATUS
6/89	615	Fe	0.25	mg/l	--	HIGH	--
		U	0.0007	mg/l	[J]	LOW	--
	653	Fe	3.50	mg/l	L	HIGH	UNRESOLVED
	656	Se	0.011	mg/l	L	HIGH	--
12/89	660	Ra226	0.0	pci/l	L	LOW	UNRESOLVED
6/90	605	SIO2	0.28	mg/l	[J]	LOW	RESOLVED
	614	EC	7.80	umho/cm	780	LOW	RESOLVED
		Ra226	3.5	pci/l	--	HIGH	UNRESOLVED
	653	Sr	7.55	mg/l	L,*	HIGH	--
	660	Ra226	0.8	pci/l	L	HIGH	--
	663	NH4	0.8	mg/l	L,H	HIGH	--
1/91	651	Cl	4.0	mg/l	L,J	LOW	RESOLVED
5/91	603	NH4	0.6	mg/l	--	HIGH	--
	606	Ra228	15.2	pci/l	J	HIGH	UNRESOLVED
	653	Ra228	5.6	pci/l	J	HIGH	--
	655	NH4	43.4	mg/l	--	LOW	UNRESOLVED
		As	<0.05	mg/l	[I]	HIGH	--

QUALIFIER KEY

--	indicates an all time high or low data point was investigated
0.00	signifies the new value entered in SPEAR due to transcription error
H	hold time exceeded
L	< 3.0 bore volumes purged before sample collection
G	pH > 9.0 due to grout contamination
N	matrix spike recovery is not within control limits
J	estimated value due to QC deficiency
R	unusable data point
*	duplicate QC deficiency

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 2

Review of Potential Anomalies/Qualified Data

The following are notes taken during the historical data validation (HDV) review of potentially anomalous data points from the Monument Valley, MON01 site. Only the dissolved fractions of general and site specific constituents of concern (COCs) were reviewed. Individual data points were investigated when plots of concentration versus time for a particular analyte indicated that they were potentially anomalous and/or they were the highest or lowest data point reported for a particular monitoring location. These data points have been categorized as "UNRESOLVED" when no quality control (QC) deficiencies were noted or when one or more QC deficiencies were noted but the direction of the potential bias was opposite that of the direction of the anomaly or when the QC deficiency was minor, or "RESOLVED" when the nature of the QC deficiency(s) was believed sufficient to have been the primary or sole cause of the anomaly.

In addition to the review and qualification of potentially anomalous data, qualification has been made to data points for general and site-specific COCs which were not noted to have been anomalous but which were affected by one or more quality control deficiencies. Findings and/or deficiencies common to all analytes for a given sample for a particular sampling event are included in the comments made to the first analyte listed for that sample. Two examples follow.

A frequently observed QC deficiency was found while reviewing field sampling logs where less than three bore volumes were purged before sample collection and the "L" qualifier would not only be placed on the investigated data point but on all parameters analyzed for that particular location. Another example would be where an analytical QC deficiency was found while investigating a suspect value. Not only is the data point under investigation qualified but all monitoring locations for that particular analyte for that particular sampling event also necessitate qualification.

Common abbreviations used throughout this table are defined as follows.

CCB	continuing calibration blank
CCV	continuing calibration verification
DL	detection limit
HT	hold time
ICB	initial calibration blank
ICV	initial calibration verification
NA	not available
PDS	post digestion spike
QC	quality control
UMTRA Blind	sample of known concentration submitted to the laboratory by the UMTRA project
[ ]	indicates that a qualifier was already present in the database

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 4/85 *EDA Laboratories*

Samples collected from 4/17/85 through 4/26/85 were identified as DO #A-002. Analytical results were transcribed onto Jacobs forms. The laboratory QC included dates of analysis and laboratory QC standard. Samples from DO #A-002 were sent to Accu-Labs for TOX analysis. Accu-Labs analyzed each sample in quadruplicate for Total Organic Halides (TOX). Each analytical run included a method blank and standard. Raw analytical result sheets were reported. Samples 606, 608 and 610 were submitted as the 5X field replicates.

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 613 and 615.
- All Zinc results were qualified "*" due to the duplicate RPD > 20%.
- Strontium values for locations 601 through 625 are at an all time low. These values should be considered suspect. QC was not available and all three field replicates resulted in values less than the detection limit.

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
603	Ra226 1.6 pci/l	none	High historical data point. Value from 8/15/85 (1.70 pci/l), was the highest. All other values are < 0.9 pci/l. No transcription error. HT(ok), Laboratory QC stnd. 95% Rec., Field replicates 606 (ok), 608 (ok), and 610 (ok). Bore vol. sampled 3.01, pH 7.62, Not an anomaly.
604	Zn 0.07 mg/l All Zn results	* *	Highest historical data point. All other values are < 0.012 mg/l. No transcription error. HT(ok), Laboratory QC stnd 96% Rec., Field replicates 606 (%RPD >20)"*", 608 (%RPD >20%) "*", 610 (ok), Bore vol. sampled 3.42, pH 8.01, Not an anomaly.

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 4/85 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE			QUALIFIER	COMMENT
606	ALK	641	mg/l	none	Highest historical data point. Value from 4/26/88 700mg/l CaCO3 was the highest. All other values are < 400 mg/l. No transcription error. No other QC for field parameters. This sample was the 5X field replicate. Bore vol. sampled 3.07, pH 6.86, Not an anomaly
	Mn	0.58	mg/l	none	Highest historical data point. All other values are < 0.26 mg/l. No transcription error. Ht(ok), Laboratory QC stnd. 106% Rec., Field replicate 606 (ok), 608 (ok), and 610 (ok). Not an anomaly
611	Zn	0.725	mg/l	*	Highest historical data point. All other values are <0.085 mg/l. No transcription error. HT(ok), QC same as 604, Bore vol. sampled 3.04, pH 7.44, Not an anomaly.
614	Zn	0.86	mg/l	*	Highest historical data point. All other values are < 0.27mg/l. No transcription error. HT(ok), QC same as 604, Bore vol. sampled (NA), pH(NA), Not an anomaly.
616	NH4	0.52	mg/l	none	Highest historical data point. All other values are < 0.11 mg/l. No transcription error. HT(NA), Laboratory QC stnd. 96% Rec., Bore vol sampled (NA), pH (NA), UNRESOLVED

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 4/85 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
616	Zn 1.0 mg/l	*	Highest historical data point. All other values are < 0.12 mg/l. No transcription error. HT(ok), QC is the same as 604, Not an anomaly.
617	Zn 1.60 mg/l	*	Highest historical data point. All other values are < 0.02 mg/l. No transcription error. HT(ok), QC same as 604, Bore vol. sampled (NA), pH (ok), Not an anomaly.
619	U 0.0297 pci/l	none	Low historical data point. Value from 8/85 is 0.0257 mg/l. Two other values are from 6/93 and 12/93 were averaged at 0.134 mg/l. No transcription error. HT(ok), Field replicates 606 (ok), 608 (ok), 610 (ok), Bore vol. sampled (NA), pH(NA), UNRESOLVED

SAMPLING ROUND 8/85 *Southwest Research Institute*

Three samples collected from 8/17/85 through 8/20/85 were analyzed for organic parameters. Samples 601,**604**, and 622 were tested for methods 8240, 8270, and 8080. Location 604 was analyzed in duplicate and location 622 was analyzed as the matrix spike. Laboratory QC also included a method blank.

SAMPLING ROUND 8/85 *EDA Laboratories*

Samples collected from 7/31/85 through 8/25/85 were identified as DO #A004. The samples were analyzed in three different lots, listed below. Analytical results were transcribed onto Jacobs forms. Laboratory QC included dates of analysis and a laboratory QC standard. Samples #606, 611, and 614 were submitted as the 5X field replicates. UMTRA Blind samples of known concentration were submitted with this event. However, the theoretical values are not entered in the SPEAR database. The theoretical value forms submitted from Bendix were located in document control (DC).

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 8/85 *EDA Laboratories* (Continued)

Lot#1; 608,**611**,612,613,615,616,618,619,621,999-54(known),999-55(acid blk)
Lot#2; 601,602,603,604,610,**614**,617,625,999-60(known)
Lot#3; 605,**606**,622,999-65(known)

- Field sampling logs were available. No qualification was necessary for less than 3 bore volumes collected or for a pH greater than 9.0.
- Strontium values for locations 601 through 625 are at an all time low. These values should be considered suspect. QC was not available and all three field replicates resulted in values less than the detection limit.
- All Vanadium results were qualified "J", due to the low recoveries of the UMTRA Blind samples for all three lots. Locations analyzed from Lots 1 & 2 were qualified "*", for field replicate results being > 20% RPD.

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
601	V 0.5 mg/l All V results All Lot#2 V results	J,* J *	Highest historical data point. All other values are < 0.5 mg/l. No tran-scription error. HT(ok), LOT#2 Laboratory QC stnd. 116% Rec., Field replicate 614 (%RPD is >20) "*", UMTRA Blind 999-60 57% Rec., Bore vol. sampled 3.4, pH 7.4, Not an anomaly.
602	Ni 0.13 mg/l All Lot #2 Ni results	J J	Highest historical data point. All other values are < 0.04 mg/l. No tran-scription error. HT(ok), LOT#2 Laboratory QC stnd 102% Rec., Field replicate 614(ok), UMTRA Blind 999-60 125% Rec. "J", Bore vol. sampled 3.22, pH 7.56, RESOLVED
	V 0.7 mg/l	J,*	Highest historical data point. All other values are < 0.05 mg/l. No tran-scription error. HT(ok), LOT#2 All QC is the same as 601. Bore vol. sampled 3.22, pH 7.56, UNRESOLVED

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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 8/85 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
603	Mo 0.17 mg/l All Lot #2 Mo results	J J	Highest historical data point. All other values are < 0.02 mg/l. No transcription error. HT(ok), LOT#2 Laboratory QC stnd. 77% Rec. "J", Field replicate 614 (ok), UMTRA Blind 999-60 60% Rec. "J", Bore vol. sampled 3.06, pH 7.66, UNRESOLVED
	Ra226 1.70 pci/l All Lot#2 Ra226 results	J J	Highest historical data point. All other values are < 0.9 pci/l, with the exception of 4/85 of 1.60 pci/l. No transcription error. HT(ok), LOT#2 Laboratory QC stnd. 101% Rec., Field replicate 614 (ok), UMTRA Blind 999-60 135% Rec. "J", RESOLVED
	V 0.5 mg/l	J,*	Highest historical data point. All other values are < 0.01 mg/l. No transcription error. HT(ok), LOT#2 All QC is the same as 601. UNRESOLVED
604	Mo 0.19 mg/l	J	Highest historical data point. All other values are < 0.01 mg/l. No transcription error. HT(ok), LOT#2 All QC is the same as 603, Bore vol. sampled 3.44, pH 7.81, UNRESOLVED
	V 0.6 mg/l	J	Highest historical data point. All other values are < 0.05 mg/l. No transcription error. HT(ok), LOT#3 Field replicate 606(ok), UMTRA Blind 999-65 71% Rec. "J", UNRESOLVED

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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 8/85 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE			QUALIFIER	COMMENT
605	V	0.8	mg/l	J	Highest historical data point. All other values are < 0.03 mg/l, with the exception of 4/86 which had a value of 0.54mg/l. No transcription error. HT(ok), LOT#3 All QC is the same as 605, Bore vol. sampled 3.44, pH7.55, UNRESOLVED
606	Mo	0.10	mg/l	J	High historical data point. All values except 4/85 0.10mg/l are < 0.06 mg/l. This sample is the 5X field replicate, No transcription error. HT(ok), LOT#3 UMTRA Blind Laboratory QC stnd. 77% Rec., UMTRA Blind 999-65 150% Rec. "J", Bore vol. sampled 3.43, pH 6.92, RESOLVED
	All Lot #3 Mo results			J	
	NO3	45	mg/l	none	Lowest historical data point. All other values are > 974 mg/l. This sample was selected as the 5X field replicate., No transcription error. HT(ok), LOT#3 Laboratory QC stnd. NONE, UMTRA Blind 999-65 84% Rec., UNRESOLVED
	V	0.5	mg/l	J	Highest historical data point. All other values are < 0.05 mg/l. No transcription error. HT(ok), LOT#3 All QC is the same as 605, Bore vol. sampled 3.43, pH 6.92 UNRESOLVED
610	Mo	0.22	mg/l	J	High historical data point. Only two data points. No transcription error. HT(ok), LOT#2 QC is the same as 603, Bore vol. sampled 3.04, pH 7.14, Not an anomaly.

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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 8/85 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE			QUALIFIER	COMMENT
611	Mo	0.16	mg/l	J	Highest historical data point. All other values are < 0.01 mg/l. This sample was the 5X field replicate, No tran-scription error. HT(ok), LOT#1 Laboratory QC stnd. 77% Rec."J", UMTRA Blind 999-54 90% Rec., Bore vol. sampled 3.12, pH 7.59, UNRESOLVED
	V	0.5	mg/l	J,*	Highest historical data point. All other values are < 0.01 mg/l. This sample is the field replicate. No tran-scription error. HT(ok), LOT#1 Laboratory QC stnd. 116% Rec., Field replicate 611 > 20% RPD "*", UMTRA Blind 999-54 58% Rec. "J", Bore vol. sampled 3.12, pH 7.59 UNRESOLVED
613	Ni	0.08	mg/l	none	Highest historical data point. All other values are < 0.04 mg/l. No tran-scription error. HT(ok), LOT#1 Laboratory QC stnd. 102% Rec., Field replicate 611(ok), UMTRA Blind 999-54 115% Rec. Bore vol. sampled (NA), pH (NA), Not an anomaly.
	V	0.7	mg/l	J,*	Highest historical data point. All other values are < 0.01 mg/l. No tran-scription error. HT(ok), LOT#1 All QC is the same as 611. UNRESOLVED
614	Mo	0.14	mg/l	J	Highest historical data point. This sample was the 5X field replicate. No transcription error. HT(ok), LOT#2 All QC is the same as 603. Bore vol. sampled 3.22, pH 7.59, UNRESOLVED

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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 8/85 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE			QUALIFIER	COMMENT
614	NO3	7.0	mg/l	none	Lowest historical data point. This sample is the 5X field replicate. No transcription error. HT(ok), LOT#1 Laboratory QC stnd. NONE, UMTRA Blind 999-60 90% Rec. UNRESOLVED
	V	0.6	mg/l	J,*	Highest historical data point. All other values are < 0.02 mg/l. No transcription error. HT(ok), LOT#2 All QC is the same as 601. UNRESOLVED
615	Mo	0.16	mg/l	J	Highest historical data point. All other values are < 0.01 mg/l. No transcription error. HT(ok), LOT#1 All QC is the same as 611 Bore vol. sampled (NA), pH (NA), UNRESOLVED
	V	0.7	mg/l	J,*	Highest historical data point. All other values are < 0.02 mg/l. No transcription error. HT(ok), LOT#1 All QC is the same as 611. UNRESOLVED
616	V	0.5	mg/l	J,*	Highest historical data point. All other values are < 0.05 mg/l. No transcription error. HT(ok), LOT#1 All QC is the same as 611. Bore vol. sampled (NA), pH(NA) UNRESOLVED
617	Fe	0.18	mg/l	*	Highest historical data point. All other values are < 0.03 mg/l. No transcription error. HT(ok), LOT#2 Laboratory QC stnd. 100% Rec., Field replicate 614 (> 20% RPD) "J", UMTRA Blind 999-60 116% Rec. Bore vol. sampled (NA), pH(NA), UNRESOLVED
	All Lot# 2 Fe results			*	

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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 8/85 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
617	SIO2 5.0 mg/l	none	Lowest of three historical data points. The other two values are 33 mg/l and 35 mg/l. No transcription error. HT(ok), LOT#2 Laboratory QC stnd. NONE, Field replicate 614 (ok), UMTRA Blind 999-60 99% Rec, UNRESOLVED
	V 0.6 mg/l	J,*	Highest historical data point. All other values are < 0.05 mg/l. No transcription error. HT(ok), LOT#2 All QC is the same as 601. Bore vol. sampled (NA), pH(NA) UNRESOLVED
618	Mo 0.19 mg/l	J	Highest of three data points. The other two values are < 0.025 mg/l. No transcription error. HT(ok), LOT#1 All QC is the same as 611. Bore vol. sampled (NA), pH (NA), UNRESOLVED
	V 0.6 mg/l	J,*	Highest of three data points. All other values are < 0.08 mg/l. No transcription error. HT(ok), LOT#1 All QC is the same as 611. Bore vol. sampled (NA), pH(NA) UNRESOLVED
619	U 0.0257 mg/l	none	Lowest of four data points. The value from 4/85 was 0.0297 mg/l and the other two values are > 0.13 mg/l. No transcription error. HT(ok), LOT#1 Laboratory QC stnd. NONE, Field replicate 611 (ok), UMTRA Blind 999-54 101% Rec., Bore vol. sampled (NA), pH 7.47, Not an anomaly.

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HISTORICAL DATA VALIDATION
TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 8/85 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE			QUALIFIER	COMMENT
619	V	0.6	mg/l	J,*	Highest of three data points. All other values are < 0.02 mg/l. No transcription error. HT(ok), LOT#1 All QC is the same as 611. Bore vol. sampled (NA), pH 7.47 UNRESOLVED
625	Mo	0.26	mg/l	J	Highest historical data point. All other values are < 0.16 mg/l. No transcription error. HT(ok), Lot#2 All QC is the same as 603. Bore vol. sampled (NA), pH 8.30, Not an anomaly.
	V	0.4	mg/l	J,*	Highest of three data points. All other values are < 0.01 mg/l, with the exception of the 8/85 value 0.4 mg/l. No transcription error. HT(ok), LOT#1 All QC is the same as 601. Bore vol. sampled 3.04, pH 7.40 Not an anomaly

SAMPLING ROUND 10/85 *EDA Laboratories*

Samples collected from 9/18/85 through 10/28/85 were identified as DO #A009. The samples were analyzed in three different lots, listed below. Analytical results were transcribed onto Jacobs forms. The laboratory QC included the following; dates of analysis and laboratory QC standard. Samples 651 and 659 were submitted as the 5X field replicates. UMTRA Blind samples of known concentration were submitted with this event. However, the theoretical values are not entered in the SPEAR database. The theoretical value forms submitted from Bendix were located in document control (DC).

Lot#1; 655,656,657,**659**,662,663,668,669,999-204(known),999-205(acid blk)
Lot#2; 650,**651**,652,653,654,658,660,661,664,999-210(known)
Lot#3; 804,805,814,815,816,817,999-211(known)

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 650,651,652,653,654,657,658,659,660,661, 663, and 664.
- All parameters were qualified "G" for a pH > 9.0, for the following locations: 650,661, 663, and 668.

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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 10/85 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
650	pH 9.68 SU All 650 results	L,G L,G	Highest historical data point. All other values are < 8.6 SU. No transcription error. Field replicate 651 (ok), No other QC for field parameters. Bore vol. sampled 0.33, pH 9.68, Not an anomaly.
	NH4 0.5 mg/l All Lot#2 results	L,G,J J	Highest historical data point. All other values are < 0.1 mg/l. No transcription error. HT(NA), LOT#2 Laboratory QC stnd. NONE, Field replicate 651 (ok), UMTRA Blind 999-210 72% Rec. "J", UNRESOLVED
	Mo 0.11 mg/l All Lot#2 Mo results	L,G,J,* J,*	High data point. The result for 4/86 is 0.19 mg/l, the other values are < 0.01 mg/l. No transcription error. HT (ok), LOT#2 Laboratory QC stnd. NONE, Field replicate 651 (>20% RPD)"*", UMTRA Blind 999-210 124% Rec. "J", RESOLVED
652	Mo 0.31 mg/l	L,J,*	Highest historical data point. Other values are < 0.18 mg/l. No transcription error. HT(ok), LOT#2 All QC is the same as 650. Bore vol. sampled 0.84, pH 7.94 RESOLVED
653	Mo 0.35 mg/l	L,J,*	Highest historical data point. Other values are < 0.18 mg/l. No transcription error. HT(ok), LOT#2 All QC is the same as 650. Bore vol. sampled 2.31, pH 7.89 RESOLVED

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Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 10/85 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
655	Zn 0.22 mg/l	none	Highest historical data point. All other values are < 0.031 mg/l. No transcription error. HT(ok), LOT#1 Laboratory QC stnd. 103% Rec., Field replicate 659 (ok), UMTRA Blind 999-204 104% Rec., Bore vol. sampled 3.22, pH 7.17, UNRESOLVED
656	Mo 0.34 mg/l All Lot#1 Mo results	* *	Highest historical data point. The value on 4/86 is 0.18 mg/l, all other values are < 0.01 mg/l. No transcription error. HT(ok), Laboratory QC stnd. NONE, Field replicate 659 (> 20% RPD) "*", UMTRA Blind 999-204 104% Rec., Bore vol. sampled 3.06, pH 7.58, Not an anomaly.
	Zn 0.27 mg/l	none	Highest historical data point. All other values are < 0.026 mg/l. No transcription error. HT(ok), LOT#1 All QC is the same as 655. UNRESOLVED
659	Mo 0.25 mg/l All 659 results All LOT#1 Mo results	L,* L *	Highest historical data point. This sample was the 5X field replicate with an RPD 56%. No transcription error. HT(ok), LOT#1 All of the QC is the same as 656. Bore vol. sampled 0.88, pH 7.64, UNRESOLVED
662	Sr < 0.1 mg/l All Lot#1 Sr results	J,* J,*	Lowest historical data point. All other values are > 0.9 mg/l. No transcription error. HT(NA), LOT#1 Laboratory QC stnd. NONE, Field replicate 659 >20% RPD "*", UMTRA Blind 120% Rec. "J", Bore vol. sampled 3.15, pH 6.76 UNRESOLVED

MONUMENT VALLEY - MON01
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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 10/85 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
663	pH 9.71 SU All 663 results	L,G L,G	High historical data point. Results from 1985 through 1988 are > 9.3 SU all other values are < 8.5 SU. No transcription error. Field replicate 659 (ok), no other QC for field parameters. Bore vol. sampled 1.68, pH 9.71 Not an anomaly.
	NH4 0.6 mg/l All Lot#1 NH4 results	L,G,J J	High historical data point. All other values are < 0.1 mg/l, with the exception of the 6/90 result of 0.8 mg/l. No transcription error. HT (NA), Laboratory QC stnd. NONE, Field replicate 659 (ok), UMTRA Blind 999-204 121% Rec., "J", RESOLVED
	Mo 0.24 mg/l	L,G,*	Highest historical data point. All other data points are < 0.01 mg/l, with the exception of the result from 4/86 of 0.2 mg/l. No transcription error. HT(ok), All QC is the same as 656. Not an anomaly.
	Zn 0.225 mg/l	L,G	Highest historical data point. All other values are < 0.04 mg/l. No transcription error. HT (ok), All QC is the same as 655, UNRESOLVED
668	pH 9.69 SU All 668 results	G G	Highest historical data point. With the exception of 4/86 value 9.11, all other values are < 8.8 SU. Field replicate 659 (ok), No other QC for field parameters. Bore vol. sampled 3.06, pH 9.69, Not an anomaly.
	Mo 0.21 mg/l	G,*	Highest of four data points. No transcription error, HT(ok), All QC is the same as 656. Not an anomaly.

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HISTORICAL DATA VALIDATION
TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 10/85 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
668	Zn 0.118 mg/l	G	Highest historical data point. All other values are < 0.04 mg/l. No transcription error, HT(ok), All QC is the same as 655. UNRESOLVED
669	Ra226 0.5 pci/l	none	Highest historical data point. All other values are < 0.3 pci/l. No transcription error, HT (ok), Laboratory QC stnd. 98% Rec., Field replicate 659 (ok), UMTRA Blind 999-205 93% Rec., Bore vol. sampled 3.20, pH 7.66, Not an anomaly.

SAMPLING ROUND 4/86 *EDA Laboratories*

Samples collected from 4/5/86 through 4/30/86 were identified as DO #A024. The samples were analyzed in four different Lots, seen listed below. Analytical result were reported on Jacobs forms. Laboratory QC was not reported for this event. Samples 651 and 669 were submitted as the 5X field replicates.

Lot#1; 625,658,659,660,661,663,664,668,999-254
Lot#2; 620,621,622,650,**651**,652,654,657,999-260
Lot#3; 605,606,614,622,653,655,656,**669**,999-265
Lot#4; 804,805,814,815,816,818,999-266.

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 625,650,655,656,657,658,659,660,661,663, and 668.
- All parameters were qualified "G" for a pH > 9.0, for the following locations: 663 and 668.
- The following parameters were qualified "R" due to UMTRA Blind recoveries:
  Lot#1: Ni 183%, V 377%
  Lot#2: NO3 151%
  Lot#3: V 160%, NO3 162%

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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 4/86 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
605	Zn 0.095 mg/l	none	Highest historical data point. All other values are < 0.03 mg/l. No transcription error. HT(NA), Field *replicates 651(ok), 669(ok)*, LOT#3 UMTRA Blind 999-265 93% Rec., Bore vol. sampled 3.92, pH 7.70, Not an anomaly.
606	V 0.51 mg/l All Lot#3 V results	R R	Highest historical data point. All other values are < 0.02 mg/l, with the exception of 8/85 value of 0.50 mg/l. *No transcription error.* HT(NA), Field replicate 651 (ok), 669 (ok), LOT#3 UMTRA Blind 999-265 160% Rec. "R", Bore vol. sampled 4.80, pH 6.90, RESOLVED
614	Mo 0.15 mg/l	none	High historical data point. All other values are < 0.01 mg/l, with the exception of 8/85 0.14 mg/l. No transcription error. HT(NA), LOT#3 Field replicate 651 (ok), 669 (ok), UMTRA Blind 88% Rec., Bore vol. sampled 3.48, pH 7.58, UNRESOLVED
	NO3 6.0 mg/l All Lot#3 NO3 results	R R	Low historical data point. All other values are > 19 mg/l, with the exception of 8/85 7.0 mg/l. No transcription error. HT(NA), LOT#3 Field replicate 651(ok), 669(ok), UMTRA Blind 162% Rec. "R", Not an anomaly.

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Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 4/86 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
650	Fe 0.21 mg/l All 650 results All Lot#2 Fe results	L,J L, J	Highest of three data points. The other two values are < 0.05 mg/l. No transcription error, HT(NA), LOT#3 Field replicates 651(ok), 669(ok), UMTRA Blind 999-260 126% Rec., Bore vol. sampled 1.01, pH 8.47 RESOLVED
	Mo 0.19 mg/l	L	Highest historical data point. With the exception of the 10/85 value 0.00 mg/l the other values are < 0.011 mg/l. No transcription error. HT(NA), LOT#2 Field replicates 651 (ok), 669 (ok), UMTRA Blind 999-260 97% Rec., UNRESOLVED
652	Mo 0.18 mg/l	none	High historical data point. All proceeding data is < 0.01 mg/l. No transcription error. HT(NA), LOT#2 All QC is the same as 650. Bore vol. sampled 3.04, pH 7.86, UNRESOLVED
	NO3 5.0 mg/l All Lot #2 NO3 results	R R	Lowest historical data point. All other values are > 19mg/l, with the exception of 11/92 of 7mg/l. No transcription error. HT(NA), LOT# 2 Field replicate 651 (ok), 669 (ok), UMTRA Blind 999-260 151% Rec. "R", Not an anomaly.
653	Ni 0.1 mg/l All Lot #3 Ni results	J J	Highest historical data point. All other values are < 0.04 mg/l. No transcription error. HT(NA), LOT#3 Field replicates 651(ok), 669(ok), UMTRA Blind 999-265 130% Rec. "J", Bore vol. sampled 3.3, pH 7.68 RESOLVED

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HISTORICAL DATA VALIDATION
TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 4/86 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
654	Zn 0.155 mg/l	none	Highest historical data point. All other values are < 0.026 mg/l. No transcription error. HT(NA), LOT#2 Field replicates 651 (ok), 669 (ok), UMTRA Blind 999-260 99% Rec, Bore vol. sampled 3.00, pH 7.67 UNRESOLVED
656	V 0.71 mg/l All 656 results	L,R L	Highest historical data point. All other values are < 0.03 mg/l. No transcription error. HT(NA), LOT#3 All QC is the same as that of 606. Bore vol. sampled 2.52, pH 7.58 RESOLVED
657	NO3 6.0 mg/l All 657 results	L,R L	Lowest historical data point. All other values are > 19 mg/l. No transcription error. HT(NA), LOT#2 All QC is the same as 652. Bore vol. sampled 1.02, pH 7.27 UNRESOLVED
659	Mo 0.15 mg/l All 659 results All Lot#1 Mo results	L,J L J	High historical data point. All other values are < 0.04 mg/l, with the exception of 10/85 with a value of 0.25 mg/l. No transcription error. HT(NA), Field replicates 651 (ok), 669 (ok), UMTRA Blind 999-254 75% Rec. "J", Bore vol. sampled 2.99, pH 7.31, UNRESOLVED
662	V 0.5 mg/l All Lot #1 V results	R R	Highest historical data point. All other values are < 0.05 mg/l. No transcription error. HT(NA), LOT#1 Field replicate 651(ok), 669(ok), UMTRA Blind 999-254 377% Rec. "R", Bore vol. sampled 3.08, pH 6.89, RESOLVED

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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 4/86 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
663	Ni 0.1 mg/l	L,G,R	Highest historical data point. All other values are < 0.004 mg/l. No transcription error. HT(NA), Lot#1 Field replicate 651 (ok), 669 (ok), UMTRA Blind 999-254 183% Rec. "R", Bore vol. sampled 1.83, pH 9.89, RESOLVED
	All 663 results	L,G	
	All Lot#1 Ni results	R	
	V 0.6 mg/l	L,G,R	Highest historical data point. All other values are < 0.16 mg/l. No transcription error. HT (NA), All QC is the same as 662. RESOLVED
	pH 9.89 SU	L,G	Highest historical data point. No transcription error. Field replicates 651(ok), 669(ok), No other QC for field parameters. Not an anomaly.
	Mo 0.2 mg/l	L,G,J	High historical data point. But not higher than the value of 10/85, 0.24 mg/l. All other values are < 0.01 mg/l. All QC is the same as 659. Not an anomaly.
664	V 0.5 mg/l	R	Highest historical data point. All other values are < 0.22 mg/l. No transcription error. HT(NA), All QC is the same as 662. Bore vol. sampled 3.18, pH 7.93 RESOLVED
668	pH 9.11 SU	L,G	High data point. Result values range from 7.78 through 9.69. No transcription error. Field replicates 651(ok), 669(ok), No other QC for field parameters. Bore vol. sampled 2.94, pH 9.11, Not an anomaly.
	All 668 results	L,G	

MONUMENT VALLEY - MON01
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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 4/86 *EDA Laboratories* (Continued)

LOCATION	PARAMETER/VALUE			QUALIFIER	COMMENT
668	Mo	0.15	mg/l	L,G,J	High historical data point. The value of 10/85 0.21 mg/l. Values proceeding 4/86 are both < 0.01 mg/l. No transcription error. HT(NA). All QC is the same as that of 659. RESOLVED
	V	0.5	mg/l	L,G,R	Highest historical data point. All other values are < 0.16 mg/l. No transcription error. HT(NA), All QC is the same as 659. RESOLVED
669	V	0.49	mg/l	R	Highest historical data point. All other values are < 0.16 mg/l. This sample is the 5X field replicate. All other QC is the same as 606. Bore vol. sampled 3.0, pH 7.53. RESOLVED

SAMPLING ROUND 5/86 *Southwest Research Institute*

Two samples collected on 5/1/86 and analyzed for organic parameters. Samples 606 and 655 were tested for methods 8240, 8270, 8150, and 8080. Laboratory QC included the following; method blank, field blank, matrix spike, and matrix spike duplicate.

SAMPLING ROUND 4/88 *Barringer Laboratory*

Samples collected from 4/19/88 through 4/25/88 were identified as DO #017. The samples were analyzed in two different Lots, seen listed below. Laboratory QC reports included; dates of analysis, laboratory duplicates, matrix spikes and a laboratory QC standard. UMTRA Blinds 681 and 683 was submitted for analysis with this sample batch. Sample 655 was submitted as the 5X field replicate.

Lot#1; 602,603,605,606,653,654,650,651,655,671,672,677,680, and UMTRA Blind 683.
Lot#2; 612,614,657,659,660,663, and UMTRA Blind 681.

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 603,606,612,651,654,655,660, and 663.
- All parameters were qualified "G" for a pH > 9.0, for the following locations: 663.
- All As results were reported below the detection limit.

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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 4/88 *Barringer Laboratory* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
606	ALK 700 mg/l CaCO3 All 606 results	L,[J] L	Highest historical data point. All other values are < 641 mg/l. No transcription error. Field replicate 655(ok). No other QC for field parameters. Bore vol. sampled 2.82, pH 7.20, Not an anomaly.
614	As 0.002 mg/l	[J]	Lowest historical data point. Result was reported below the DL. No transcription error. HT(ok), Laboratory QC stnd. 103% Rec., laboratory dup. (ok), matrix spike 100% Rec., Lot#2 Field replicate 655(ok), UMTRA Blind 681 98% Rec., Bore vol. sampled 3.35, pH 7.66, UNRESOLVED
650	As 0.003 mg/l	[J]	Lowest historical data point. Result was reported below the DL. No transcription error. HT(ok), Laboratory QC stnd. 103% Rec., laboratory dup. (ok), matrix spike 100% Rec., Lot#1 Field replicate 655(ok), UMTRA Blind 683 87% Rec., Bore vol. sampled 3.12, pH 8.52, UNRESOLVED
651	As 0.002 mg/l All 651 results	L,[J] L	Lowest historical data point. Result was reported below the DL. No transcription error. HT(ok), Lot#1 All QC is the same as that of 650, Bore vol. sampled 2.07, pH 8.24, UNRESOLVED

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HISTORICAL DATA VALIDATION
TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 4/88 *Barringer Laboratory* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
657	As 0.001 mg/l	[J]	Lowest historical data point. Result was reported below the DL. No transcription error. HT(ok), Lot#2 All QC is the same as that of 614, Bore vol. sampled 3.05, pH 7.33, UNRESOLVED
659	As 0.005 mg/l	[J]	Lowest historical data point. Result was reported below the DL. No transcription error. HT(ok), Lot#2 All QC is the same as that of 614, Bore vol. sampled 3.05, pH 7.46, UNRESOLVED
660	As 0.004 mg/l	L,[J]	Lowest historical data point. Result was reported below the DL. No transcription error. HT(ok), Lot#2 All QC is the same as that of 614, Bore vol. sampled 2.05, pH 8.69, UNRESOLVED
	All 660 results	L	
663	pH 9.31 SU	L,G	High data point. Values range from .03 to 9.89. No transcription error. Field replicate 655(ok) No other QC for field parameters. Bore vol. sampled 2.77, pH 9.31, Not an anomaly.
	All 663 results	L,G	
	As 0.002 mg/l	L,G,[J]	Lowest historical data point. Result was reported below the DL. No transcription error. HT(ok), Lot#2 All QC is the same as that of 614, UNRESOLVED

SAMPLING ROUND 6/89 *Barringer Laboratories*

Samples collected from 6/2/89 through 6/23/89 were identified as DO #026. The samples were analyzed in three different Lots, seen listed below. Laboratory QC reports included; dates of analysis, laboratory duplicates, and a laboratory QC standard. UMTRA Blinds 980, 981 and 990 were submitted for analysis with this batch. Sample 651 and 655 were submitted as the 5X field replicate.

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HISTORICAL DATA VALIDATION
TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 6/89 *Barringer Laboratories* (Continued)

Lot#1; 934,605,606,622,653,**655**,656,662,669,670,671,672,673, and UMTRA Blind 980.
Lot#2; 602,603,604,621,650,**651**,654,674,675,676,677, and UMTRA Blind 981.
Lot#3; 611,613,614,615,657,659,660,663,668, and UMTRA Blind 990.

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 650,651,653,654,655,656,657,659,660,663, 668, and 934.

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
615	Fe 0.25 mg/l	none	Highest historical data point. All other values are < 0.13 mg/l. No transcription error. HT(ok), Laboratory QC stnd. 100% Rec., Laboratory dup. (ok), Matrix spike 125% Rec., Lot#3 Field replicate 655(ok), 651(ok), UMTRA Blind 990 103% Rec., Bore vol. sampled(NA), pH 7.84, Not an anomaly.
	U 0.0007 mg/l	[J]	Lowest historical data point. This value was reported <DL. No transcription error. HT(ok), Laboratory QC stnd. 97% Rec., Laboratory dup. (ok), Lot#3 Field replicate 651(ok), 655(ok), UMTRA Blind 990 120% Rec., Not an anomaly.
653	Fe 3.50 mg/l	L	Highest historical data point. All other values are < 0.07 mg/l. No transcription error. HT(ok), Laboratory QC stnd. 98% Rec., Laboratory dup. (ok), Lot#1 Field replicate 655(ok), UMTRA Blind 980 101% Rec., Bore vol. sampled 2.28, pH 7.56 UNRESOLVED
	All 653 results	L	

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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 6/89 *Barringer Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
656	Se 0.011 mg/l All 656 results	L L	Highest historical data point. All other values are < 0.005 mg/l. No transcription error. HT(OK), Laboratory QC stnd. 100% Rec.. Laboratory dup. (ok), Matrix spike 84% Rec., Lot#1 Field replicate 655(ok), UMTRA Blind 91% Rec. Bore vol. sampled 2.52, pH 7.58, Not an anomaly.

SAMPLING ROUND 12/89

The data package for samples collected from 11/30/89 through 12/4/89 was not available for review. However, field sampling logs and UMTRA QC were available in the SPEAR database for review of the following: field replicate 655, and UMTRA Blinds 980 and 990.

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 613,614,657,659,660, and 663.

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
660	Ra226 0.0 pci/l All 660 results	L L	Lowest historical data point. All other values are > 0.5 pci/l. Data package not available - Couldn't check transcription error or HT. Field replicate 655(ok), UMTRA Blind 980 108% Rec., 990 94% Rec., Bore vol. sampled 2.22, pH 8.88 UNRESOLVED

SAMPLING ROUND 6/90 *Barringer Laboratories*

Samples collected from 6/19/90 through 6/23/90 were identified as DO #016. The samples were analyzed in three different Lots, seen listed below. Samples in Lot#3 were identified as Mexican Hat locations. Laboratory QC reports included; dates of analysis, laboratory duplicates, and a laboratory QC standard. UMTRA Blind #980 and 990 were submitted for analysis with this sample batch, along with field replicate 653.

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HISTORICAL DATA VALIDATION
TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 6/90 *Barringer Laboratories* (Continued)

Lot#1; 605,606,653,655,670,671,672,673,934, and UMTRA Blind 980.
Lot#2; 613,614,651,654,657,659,660,663, and UMTRA Blind 990.
Lot#3; 241,242,243,244,248,249,261,266,977, and UMTRA Blind 992.

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 651,653,654,657,659,660, and 663.

LOCATION	PARAMETER/VALUE			QUALIFIER	COMMENT
605	SIO2	0.28	mg/l	[J]	Highest historical data point. All other values are > 25.0 mg/l. No transcription error. OUT OF HT "J", Laboratory QC stnd. 98% Rec. Laboratory dup. (ok), Lot#1 Field replicate 653 (ok), UMTRA Blind 980 106%, Bore vol. sampled 4.07, pH 7.78 RESOLVED
614	EC	7.80	umho/cm	780	Lowest historical data point. All other values are > 500 umho/cm. TRANSCRIPTION ERROR!!!! Field replicate 653 (ok). No other QC for field parameters. Bore vol. sampled 3.39, pH 7.54, RESOLVED
	Ra226	3.5	pci/l	none	Highest historical data point. All other values are < 0.9 pci/l. No transcription error. HT(ok), Laboratory QC stnd. 104% Rec., Laboratory dup. (ok), UMTRA Blind 990 106% Rec. UNRESOLVED

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HISTORICAL DATA VALIDATION
TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 6/90 *Barringer Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
653	Sr 7.55 mg/l All 653 results All Sr results	L,* L *	Highest historical data point. All other are < 3.0 mg/l. No transcription error. HT(ok), This sample is the 5X field replicate for this sampling event. Values range from 1.57 to 7.55. "*", Lot#1 Laboratory QC stnd. 93% Rec., Laboratory dup.(ok), UMTRA Blind 980 93% Rec., Bore vol. sampled 2.21, pH 7.55, Not an anomaly.
660	Ra226 0.8 pci/l All 660 results	L L	Highest historical data point. All other values are < 0.6 pci/l. No transcription error. HT(ok), Lot#2 All QC is the same as that of 614. Bore vol. sampled 1.25, pH 8.73, Not an anomaly.
663	NH4 0.8 mg/l All 663 results All NH4 results	L,H L H	Highest historical data point. All other values are < 0.6 mg/l. No transcription error. HT OUT "H", Lot# 2 Laboratory QC stnd 104% Rec., Laboratory dup. (ok), Field replicate 653 (ok), NO UMTRA Blind, Bore vol. sampled 0.51, pH 8.29, Not an anomaly.

SAMPLING ROUND 1/91 *Barringer Laboratories*

Samples collected from 1/23/91 through 1/28/91 were identified as DO #037. The samples were analyzed in two different Lots, seen listed below. Laboratory QC reports included; dates of analysis, laboratory duplicates, and a laboratory QC standard. UMTRA Blind 980 was submitted for analysis with this sample batch.

Lot#1; 603,605,606,653,655, and UMTRA Blind 980.
Lot#2; 613,614,651,654,657,659,660, and 663.

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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 1/91 *Barringer Laboratories* (Continued)

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 606,651,653,654,659,660 and 663.

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
651	Cl 4.0 mg/l All 651 results All Cl results	L,J L J	Lowest historical data point. All other values are > 9.9 mg/l. No tran-scription error. HT(ok), Laboratory QC stnd. 110% Rec., Laboratory dup. (ok), UMTRA Blind 980 78% Rec. "J", Bore vol. sampled 2.45, pH 8.23 RESOLVED

SAMPLING ROUND 6/91 *Core Laboratories*

Samples collected from 5/22/91 through 6/5/91 were identified as DO #034. All samples were analyzed for wet chemistry and metals. A full laboratory QC report was submitted. UMTRA Blind #976 was submitted in duplicate with this sample batch.

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 601,602,613,652,654, and 663.

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
603	NH4 0.6 mg/l	none	Highest historical data point. All other values are < 0.5 mg/l. No transcription error. HT(ok), ICB (ok), CCB (ok), ICV (ok), CCV (ok), Matrix spike recoveries range from 98 to 108 % Rec., UMTRA Blind 976 103% Rec., Bore vol. sampled 3.10, pH 7.96, Not an anomaly

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Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 5/91 *Core Laboratories* (Continued)

LOCATION	PARAMETER/VALUE	QUALIFIER	COMMENT
606	Ra228 15.2 pci/l All Ra 228 results	J J	Highest historical data point. All other values are < 2.0 mg/l. No transcription error. HT(ok), Laboratory dup. (ok), Matrix spike recoveries range from 85 to 92% Rec., UMTRA Blind 976 was analyzed in duplicate resulting in recoveries of 74% Rec. "J", and 92% Rec., Bore vol. sampled 3.61, pH 7.20, UNRESOLVED
653	Ra228 5.6 pci/l	J	Highest historical data point. All other values are < 2.6 pci/l. No transcription error. HT(ok), All QC is the same as that of 606. Bore vol. sampled 3.11, pH 7.47, Not an anomaly.
655	NH4 43.4 mg/l	none	Lowest historical data point. All other values are < 185 mg/l. No transcription error. HT(ok), All QC is the same as that of 603. Bore vol. sampled 3.08, pH 7.26, UNRESOLVED
	As < 0.05 mg/l	[I]	Highest historical data point due to an evaluated DL. Matrix interference required that the sample be diluted. ICB(ok), CCB(ok), ICV(ok), CCV(ok), laboratory dup.(ok), PDS (115 -125% Rec.), UMTRA Blind was analyzed in duplicate with recoveries 80% and 86% Rec., Not an anomaly.

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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 2/92 *Core Laboratories*

Samples collected from 2/24/92 through 2/28/92 were identified as DO #22C. All samples were analyzed for wet chemistry, metals and DO #W1C for radiological parameters. A full laboratory QC report was submitted.

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 613,651,663, and 669.

SAMPLING ROUND 8/92 *Lockheed Laboratories*

Samples collected from 8/10/92 through 8/15/92 were identified as DO #D1-L and DO #002L. All samples were in DO #D1-L were analyzed for radiological parameters and those in DO #002L were analyzed for metals and wet chemistry parameters. A full laboratory QC report was submitted.

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 602,604,613,651,654,655,659, and 663.

SAMPLING ROUND 11/92 *Core Laboratories*

Samples collected from 11/21/92 through 11/25/92 were identified as DO #H3C. All samples were analyzed for radiological parameters. A full laboratory QC report was submitted.

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 605,613,615, and 663.

SAMPLING ROUND 11/92 *ESE Laboratories*

Samples collected from 11/21/92 through 11/25/92 were identified as DO #016E. All samples were analyzed for metals parameters. A full laboratory QC report was submitted.

SAMPLING ROUND 2/93 *ACZ Laboratories*

Samples collected from 1/31/93 through 2/22/93 were identified as DO #009-A for wet chemistry, metals and DO #KIA for radiological parameters. A full laboratory QC report was submitted.

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TABLE 2

Review of Potential Anomalies/Qualified Data

SAMPLING ROUND 6/93 *ACZ Laboratories*

Samples collected from 6/25/93 through 7/2/93 were identified as DO #V1-A, DO #66C and DO #K4C. All locations reported under DO #V1-A were analyzed for radiological parameters, locations reported under DO #66C were analyzed for total metals, and locations under DO #K4C were analyzed for total uranium. A full laboratory QC reported was submitted.

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 615,657,663, and 669.
- All parameters were qualified "G" for a pH > 9.0, for the following locations: 660.

SAMPLING ROUND 6/93 *Weyerhaeuser Laboratories*

Samples collected from 6/25/93 through 7/2/93 were identified as DO #029W. All samples were analyzed for metals according to the EPA CLP Statement of Work ILM02.0. Qualifiers are the same as above.

SAMPLING ROUND 12/93 *Weyerhaeuser Laboratories*

Samples collected from 12/10/93 through 12/15/93 were identified as DO #040W. All samples were analyzed for metals according to the EPA CLP Statement of Work ILM02.0.

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 663

SAMPLING ROUND 4/94 *Weyerhaeuser Laboratories*

Samples collected from 4/21/94 through 5/14/94 were identified as DO #049W. All samples were analyzed for wet chemistry and metals according to the EPA CLP Statement of Work ILM02.0.

- All parameter results were qualified "L" for < 3.0 bore volumes purged before sample collection, for the following locations; 606,660, and 662.

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 3

Summary of Field Sampling Logs

Date Sampled	Date Shipped	Location	pH	Bore Volumes	Comments
4/18/85	4/19/85	602	7.5	3.13	
4/17/85	4/18/85	603	7.62	3.01	
4/18/85	4/19/85	604	8.01	3.42	
4/18/85	4/19/85	605	7.62	3.37	
4/27/85	N/A	606	6.86	3.07	
4/26/85	4/27/85	608	7.77	3.10	
4/25/85	4/26/85	610	7.55	3.08	
4/17/85	4/18/85	611	7.44	3.04	
4/21/85	4/22/85	612	7.73	3.01	
4/19/85	4/20/85	613	8.00	1.008	Artesian well.
4/9/85	4/20/85	615	8.17	1.02	(No expl.)
8/25/85	8/26/85	606	6.92	3.43	
7/31/85	8/3/85	610	7.14	3.04	
8/1/85	8/3/85	601	7.40	3.4	
8/1/85	8/3/85	612	7.37	3.14	
8/2/85	8/3/85	619	7.47	N/A	(BV not calculated -- depth of well N/A)
8/17/85	8/18/85	625	8.30	N/A	"Production well -- too deep to get total depth."
8/19/85	8/19/85	614	7.59	3.22	
8/15/85	8/17/85	611	7.59	3.12	
8/16/85	8/17/85	608	7.83	3.14	
8/18/85	8/19/85	605	7.55	3.44	
8/17/85	8/18/85	604	7.81	3.44	
8/15/85	8/17/85	603	7.66	3.06	
8/17/85	8/18/85	602	7.56	3.22	

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 3

Summary of Field Sampling Logs

Date Sampled	Date Shipped	Location	pH	Bore Volumes	Comments
10/27/85	10/29/85	652	7.94	0.84	(No expl.)
10/19/85	10/21/85	650	9.68	0.33	(No expl.)
10/20/85	10/21/85	651	7.93	0.91	(No expl.)
10/27/85	10/29/85	653	7.89	2.31	(No expl.)
10/21/85	10/23/85	654	7.54	0.49	(No expl.)
10/23/85	10/25/85	655	7.17	3.22	
10/24/85	10/25/85	656	7.58	3.06	
10/19/85	10/21/85	657	7.16	0.54	(No expl.)
10/21/85	10/23/85	658	8.40	0.4	(No expl.)
10/23/85	10/25/85	659	7.64	0.88	(No expl.)
10/26/85	10/29/85	660	8.65	0.32	(No expl.)
10/28/85	10/29/85	661	9.36	0.24	"More than 1.5 hrs were spent working on the poseidon compressor to get it to run well enough to pull water 164'."
9/18/85	9/19/85	662	6.76	3.15	
10/20/85	10/21/85	663	9.71	1.68	(No expl.)
10/27/85	10/29/85	664	8.49	0.23	(No expl.)
10/24/85	10/25/85	668	9.69	3.06	
10/26/85	10/29/85	669	7.66	3.20	
4/25/86	4/26/86	668	9.11	2.94	"Pumped dry."
4/24/86	4/26/86	664	7.93	3.18	
4/24/86	4/26/86	660	8.47	2.71	(150' deep well)

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HISTORICAL DATA VALIDATION
TABLE 3

Summary of Field Sampling Logs

Date Sampled	Date Shipped	Location	pH	Bore Volumes	Comments
4/24/86	4/24/86	659	7.31	2.99	(112' deep well)
4/23/86	4/24/86	625	8.30	0.18	(200' deep well)
4/22/86	4/23/86	661	8.71	0.21	(200' deep well)
4/23/86	4/24/86	663	9.89	1.83	(222' deep well)
4/23/86	N/A	658	8.4	0.78	(160' deep well)
4/22/86	4/23/86	651	7.94	5.19	
4/22/86	4/23/86	650	8.47	1.01	(No expl.)
4/10/86	4/11/86	657	7.27	1.02	(141' deep well)
4/8/86	4/9/86	654	7.67	3.00	
4/7/86	4/9/86	652	7.86	3.04	
4/24/86	4/26/86	662	6.89	3.08	
4/25/86	4/26/86	669	7.53	3.0	
4/5/86	4/7/86	605	7.70	3.92	
4/5/86	4/7/86	606	6.90	4.80	
4/5/86	4/7/86	614	7.58	3.48	
4/30/86	5/1/86	656	7.58	2.52	(No expl.)
4/26/86	5/1/86	655	7.18	2.4	(No expl.)
4/26/86	4/28/86	653	7.68	3.3	
4/21/88	4/22/88	602	7.83	3.07	
4/22/88	4/26/88	603	7.95	2.97	(No expl.)
4/21/88	4/22/88	605	7.88	3.32	
4/22/88	4/26/88	606	7.20	2.82	"Slow recharge."
4/21/88	4/22/88	653	7.68	3.09	
4/23/88	4/26/88	654	7.77	2.14	"Stable readings."
4/25/88	4/26/88	650	8.52	3.12	

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 3

Summary of Field Sampling Logs

Date Sampled	Date Shipped	Location	pH	Bore Volumes	Comments
4/19/88	4/21/88	651	8.24	2.07	"Stable readings."
4/20/88	4/21/88	655	7.15	2.66	"Will sample now because water gets dirty as static drops & goes dry quickly."
4/19/88	4/21/88	614	7.66	3.35	
4/20/88	4/21/88	660	8.69	2.05	"Stable readings."
4/25/88	4/26/88	659	7.46	3.05	
4/22/88	4/26/88	657	7.33	3.05	
4/24/88	4/26/88	663	9.31	2.77	"Stable."
4/23/88	4/26/88	612	7.64	0.98	"No recharge."
6/24/89	6/25/89	668	8.78	0.56	"Slow purging; stable readings."
6/2/89	6/5/89	934	7.70	1.89	"Well bailed dry."
6/5/89	6/9/89	605	7.90	4.57	
6/7/89	6/9/89	606	7.33	3.15	
6/22/89	6/25/89	653	7.56	2.28	(No expl.)
6/8/89	6/9/89	655	7.50	2.77	(No expl.)
6/23/89	6/25/89	656	7.44	2.0	"Stable readings."
6/21/89	6/25/89	662	7.20	3.14	
6/24/89	6/25/89	669	7.42	3.12	
6/4/89	6/5/89	602	7.83	3.74	
6/4/89	6/5/89	603	7.79	3.01	
6/5/89	6/9/89	604	8.12	5.14	

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HISTORICAL DATA VALIDATION
TABLE 3

Summary of Field Sampling Logs

Date Sampled	Date Shipped	Location	pH	Bore Volumes	Comments
6/6/89	6/9/89	650	8.16	2.42	"Stable readings."
6/3/89	6/5/89	651	8.07	2.67	(No expl.)
6/6/89	6/9/89	654	7.55	2.4	(No expl.)
6/7/89	6/9/89	611	7.76	3.21	
6/4/89	6/5/89	613	7.85	N/A	"Flowing well, self-purging."
6/7/89	6/9/89	614	7.47	3.36	
6/8/89	6/9/89	615	7.84	N/A	"Flow too slow to keep bath full"
6/21/89	6/25/89	657	7.41	2.9	Slower extraction."
6/22/89	6/25/89	659	7.43	2.4	"Pumped stopped."
6/22/89	6/25/89	660	8.25	1.64	(No expl.)
6/23/89	6/25/89	663	8.42	0.48	(No expl.)
11/30/89	12/5/89	934	7.92	3.71	
12/4/89	12/5/89	605	7.62	3.57	
12/1/89	12/5/89	606	7.15	4.28	
12/1/89	12/5/89	653	7.74	3.00	
12/3/89	12/5/89	655	7.21	3.43	
12/3/89	12/5/89	651	8.48	3.09	
12/3/89	12/5/89	654	7.89	3.10	
12/4/89	12/5/89	613	8.02	1.29	"Bailed 1.29 BV, waited for static to rise to top of well and sampled with peristaltic."
12/2/89	12/5/89	614	7.77	2.90	(No expl.)

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 3

Summary of Field Sampling Logs

Date Sampled	Date Shipped	Location	pH	Bore Volumes	Comments
12/4/89	12/5/89	657	7.37	1.46	(No expl.)
12/2/89	12/5/89	659	7.63	2.04	"4" pump doesn't fit down well; bailed."
12/1/89	12/5/89	660	8.88	2.22	(No expl.)
12/2/89	12/5/89	663	8.48	1.40	"Static constantly dropped while bailing."
6/19/90	6/21/90	605	7.78	4.07	
6/23/90	6/25/90	606	7.26	3.90	
6/19/90	6/21/90	653	7.55	2.21	(No expl.)
6/22/90	6/25/90	655	7.04	3.08	
6/21/90	6/25/90	651	8.19	2.01	"Bailed"
6/19/90	6/21/90	654	7.81	2.00	"Bailed. Very slight fetid odor. Sampled last 4 gal"
6/22/90	6/25/90	613	7.98	N/A	"Purges 1 BV every 3 hrs. Took readings directly from well."
6/23/90	6/25/90	614	7.54	3.39	
6/21/90	6/25/90	657	7.48	1.13	(141' deep well)
6/20/90	6/21/90	659	7.33	1.11	(112' deep well)

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 3

Summary of Field Sampling Logs

Date Sampled	Date Shipped	Location	pH	Bore Volumes	Comments
6/23/90	6/25/90	660	8.73	1.25	"Bailed first 72 gal then start pumping" (158' deep well)
6/22/90	6/25/90	663	8.29	0.51	"Pumping dry"
1/25/91	1/29/91	605	7.68	5.16	
1/27/91	1/29/91	606	7.02	2.82	(No expl.)
1/24/91	1/29/91	653	7.48	2.89	(No expl.)
1/23/91	1/29/91	655	7.08	3.18	
1/26/91	1/29/91	651	8.23	2.45	(No expl.)
1/27/91	1/29/91	654	7.69	2.74	(No expl.)
1/25/91	1/29/91	613	8.46	N/A	"Flowing. Readings are direct from well."
1/28/91	1/29/91	614	7.69	3.34	
1/24/91	1/29/91	657	7.29	3.06	
1/28/91	1/29/91	659	7.44	2.74	(No expl.)
1/26/91	1/29/91	660	8.62	2.45	(No expl.)
1/25/91	1/29/91	663	8.21	0.90	"Pumping very slow."
5/31/91	6/3/91	601	7.85	2.75	"Drying up; poor recharge."
5/30/91	6/3/91	602	7.91	2.86	"Very windy and lots of blowing dust."
5/31/91	6/3/91	603	7.96	3.10	

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 3

Summary of Field Sampling Logs

Date Sampled	Date Shipped	Location	pH	Bore Volumes	Comments
5/31/91	6/3/91	604	8.31	3.02	
5/31/91	6/3/91	605	7.68	3.02	
6/1/91	6/3/91	606	7.20	3.61	
5/30/91	6/3/91	613	8.03	0.75	"No BV required, flowing well."
6/1/91	6/3/91	614	7.68	3.2	
6/2/91	6/3/91	651	8.33	3.02	
6/1/91	6/3/91	652	7.99	2.04	"Stable readings."
6/4/91	?	653	7.47	3.11	
6/2/91	6/3/91	654	7.80	1.92	"Stable readings."
6/2/91	6/3/91	655	7.26	3.08	
6/4/91	6/6/91	659	7.41	3.03	
6/5/91	6/6/91	662	6.94	3.5	
6/4/91	6/6/91	663	8.13	1.06	(No expl.)
6/1/91	6/3/91	621	7.90	N/A	"Sample taken from a seep."
6/1/91	6/3/91	622	8.25	N/A	"Sample taken from a seep."
2/23/92	2/24/92	601	7.79	3.21	
2/25/92	2/27/92	602	7.78	3.10	
2/22/92	2/24/92	603	7.83	3.14	
2/22/92	2/24/92	604	8.18	3.02	
2/21/92	2/21/92	606	7.06	3.23	
2/26/92	2/27/92	613	8.01	1.05	"Readings stable."
2/26/92	2/27/92	625	8.59	N/A	"Flowing well."

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 3

Summary of Field Sampling Logs

Date Sampled	Date Shipped	Location	pH	Bore Volumes	Comments
2/25/92	2/27/92	651	8.34	2.01	"Sampled at 2.01 BV because readings were very stable throughout pumping."
2/23/92	2/24/92	652	7.93	3.07	
2/25/92	2/27/92	653	7.55	3.05	
2/22/92	2/24/92	655	7.05	3.21	
2/20-22/92	2/24/92	659	7.45	3.03	
2/26/92	2/27/92	662	7.12	3.09	
2/20/92	2/21/92	663	8.15	1.23	"Readings stable."
2/24/92	2/24/92	669	7.61	1.51	"Pump rate very slow; had to stop before 3 BV to drive to Flagstaff to ship samples."
8/11/92	8/14/92	601	7.77	3.19	
8/10/92	8/11/92	602	7.88	1.23	"Well purged dry."
8/10/92	8/11/92	603	7.73	3.13	
8/11/92	8/14/92	604	8.17	2.82	(No expl.)
8/11/92	8/14/92	606	7.20	3.20	
8/10/92	8/11/92	613	8.01	0.30	Pumped until reading stable."
8/10/92	8/11/92	614	7.42	3.26	

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 3

Summary of Field Sampling Logs

Date Sampled	Date Shipped	Location	pH	Bore Volumes	Comments
8/13/92	8/14/92	651	8.13	2.01	"Stable readings."
8/12/92	8/14/92	652	8.01	3.01	
8/12/92	8/14/92	654	7.61	2.00	"Stable readings."
8/13/92	8/14/92	655	7.31	2.12	"Stable readings."
8/13/92	8/14/92	659	7.25	2.21	"Stable readings."
8/15/92	8/17/92	663	8.03	1.25	"Stable readings."
11/22/92	11/23/92	601	7.94	3.21	
11/22/92	11/23/92	602	8.01	3.10	
11/21/92	11/23/92	603	8.12	3.10	
11/29/92	11/20/92	604	8.26	3.00	
11/22/92	11/23/92	605	7.73	2.99	(No expl.)
11/24/92	11/24/92	606	7.32	3.15	
11/21/92	11/23/92	613	8.13	1.05	"Unable to get static due to leakage at fitting."
11/23/92	11/24/92	615	8.10	0.46	"Slow pumping rate."
11/21/92	11/23/92	625	8.77	N/A	"Flowing well."
11/21/92	11/23/92	651	8.59	3.03	
11/21/92	11/23/92	652	8.06	3.02	
11/19/92	11/20/92	653	7.51	3.11	
11/22/92	11/23/92	654	7.74	3.08	
11/19/92	11/20/92	655	7.33	3.07	
11/22/92	11/23/92	656	7.68	3.00	
11/18/92	11/20/92	659	7.36	3.00	

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 3

Summary of Field Sampling Logs

Date Sampled	Date Shipped	Location	pH	Bore Volumes	Comments
11/23/92	11/24/92	662	7.24	3.1	
11/20/92	11/23/92	663	8.20	1.95	"Stable readings."
2/2/93	2/3/93	602	7.80	4.44	
2/2/93	2/3/93	604	8.13	3.21	
2/2/93	2/3/93	605	7.51	3.5	
1/31/93	2/3/93	606	6.98	3.59	
2/19/93	2/22/93	614	7.59	3.21	
2/19/93	2/22/93	652	7.93	3.02	
2/19/93	2/22/93	653	7.46	3.16	
2/18/93	2/22/93	654	7.69	3.00	
2/19/93	2/22/93	655	7.14	3.00	
2/19/93	2/22/93	656	7.55	3.09	
2/18/93	2/22/93	657	7.53	3.04	
2/1/93	2/3/93	660	8.63	3.02	
2/18/93	2/22/93	662	7.10	3.22	
2/2/93	2/3/93	625	8.54	N/A	"Flowing well. Steady readings."
6/29/93	6/30/93	601	7.46	3.0	
6/30/93	7/2/93	602	7.39	3.0	
6/29/93	6/30/93	603	7.60	3.0	
6/26/93	6/28/93	604	8.03	3.0	
6/26/93	6/28/93	605	7.56	3.06	
6/30/93	7/2/93	606	6.98	3.06	
6/29/93	6/30/93	611	7.93	3.01	
6/27/93	6/28/93	613	8.04	N/A	"Flowing well."
6/30/93	7/2/93	614	7.41	3.02	

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 3

Summary of Field Sampling Logs

Date Sampled	Date Shipped	Location	pH	Bore Volumes	Comments
6/29/93	6/30/93	615	7.72	0.3	"Sampled due to flowing well and slow recharge."
7/1/93	7/2/93	651	8.52	3.02	
7/1/93	7/2/93	652	8.11	3.07	
6/30/93	7/2/93	653	7.50	3.08	
6/30/93	7/2/93	654	7.86	3.00	
6/26/93	6/28/93	655	7.23	3.3	
6/29/93	6/30/93	656	7.29	3.0	
6/29/93	6/30/93	657	7.45	2.04	"Readings steady."
6/26/93	6/28/93	659	7.48	3.01	
6/27/93	6/28/93	660	9.01	3.00	
6/29/93	6/30/93	662	7.03	3.14	
6/24/93	6/25/93	663	8.30	2.50	(No expl.)
6/28/93	6/30/93	664	8.16	3.00	
6/29/93	6/30/93	669	7.18	1.0	Sampled after 1 BV due to facts that compressor was failing and pump rate was slowing down."
12/12/93	12/13/93	606	7.26	3.0	
12/10/93	12/13/93	613	7.96	N/A	"Flowing well."
12/12/93	12/13/93	614	7.73	3.0	
12/13/93	12/16/93	619	7.48	3.7	
12/14/93	12/16/93	650	8.52	3.0	
12/13/93	12/16/93	657	7.33	3.0	

MONUMENT VALLEY - MON01
HISTORICAL DATA VALIDATION
TABLE 3

Summary of Field Sampling Logs

Date Sampled	Date Shipped	Location	pH	Bore Volumes	Comments
12/15/93	12/16/93	662	7.02	3.0	
12/11/93	12/13/93	663	8.20	2.20	"Sampled @ 2.2 BV after steady parameters."
4/24/94	4/27/94	606	7.16	2.84	(No expl.)
4/21/94	4/22/94	613	7.74	N/A	"Flowing."
4/21/94	4/22/94	625	8.44	N/A	"Flowing."
4/24/94	4/27/94	653	7.37	3.0	
4/24/94	4/27/94	655	7.06	3.0	
4/23/94	4/25/94	657	7.36	3.0	
4/21/94	4/25/94	659	7.30	3.0	
4/25/94	4/27/94	660	8.62	2.14	"Sampled @ 2.14 BV due to impending compressor failure."
4/23/94	4/25/94	662	6.99	2.97	(No expl.)
5/14/94	5/17/94	663	8.27	3.00	
5/12/94	5/13/94	664	7.80	3.06	
5/11/94	5/13/94	668	7.78	3.05	
5/12/94	5/13/94	669	7.67	3.06	

SUPPLEMENT 9

STATISTICIAN'S REPORT

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STATISTICIAN'S REPORT

MONUMENT VALLEY, AZ BASELINE RISK ASSESSMENT
JANUARY 1996

INTRODUCTION

As discussed in Section 2.3 of the Monument Valley baseline risk assessment (BLRA), the processing site is located above an unconsolidated aquifer comprised of windblown and alluvial deposits. Underlying this surficial aquifer are (in descending order) the Shinarump Conglomerate, the Moenkopi Formation, and the De Chelly Sandstone units. It is demonstrated in Section 3.2 of the BLRA that the most shallow ground water at the site has been most impacted by the site processing activities. Because it is the intent of the BLRA to evaluate reasonable worst case scenarios, the statistical evaluation focused on the alluvial ground water accessed by the shallow wells located in the approximate centroid of the nitrate, sulfate, and uranium plumes (Figures 3.1, 3.2, and 3.3 of the BLRA).

Ground water quality data collected between 1982 and February 1993 from wells completed in the alluvial aquifer were available for use in the BLRA. Balancing the need to have adequate amounts of data with the need to describe current ground water conditions at the site, it was determined that only data collected between 1988 and February 1993 would be used. Furthermore, only chemical analysis results from filtered ground water samples were used in the statistical assessment. The reason for focusing on filtered samples is that the vast majority of available data reflect filtered samples, and combining results from filtered and unfiltered samples may introduce a bias into the comparison of background and on-site ground water quality. Limitations associated with the use of filtered ground water samples for risk evaluation are discussed in the BLRA. Appendix A of thie report presents a side-by-side comparison of measurements made on filtered and unfiltered samples collected simultaneously at the site.

The statistical evaluation involved four steps.

Determinination of the location of the most contaminated ground water at the site.

Identification of radiological and nonradiological constituents that are present in that ground water at the site at levels above what occurs naturally in background ground water.

Selection of a probability distribution to model the probable levels of contamination in the worst case ground water for each contaminant identified in Section 3.3 as being of potential concern for human health (COPC).

Calculation of the 95 percent upper confidence limit for the mean concentration of each site contaminant. These point estimates are used in the BLRA to screen human exposure pathways other than direct drinking of water, and in the ecological risk evaluations.

Most statistical calculations were done using SYSTAT Statistical Software, Version 4, 1988. A 0.05 level of significance was used for statistical testing. Tables and formulas used in hand calculations are provided in Appendix B.

Background wells

Upgradient wells used to quantify background ground water quality for the alluvial aquifer are listed below.

well id	years sampled	number rounds	rounds 1988-Feb 1993
602	85,88-89,91-93	9	7
603	85,88-89,91-92	8	6
616	82,85,91-93	8	5
617	85, 92-93	6	4

Figure 3.5 of the BLRA shows the location of these wells. Well 603 is marginally crossgradient as opposed to upgradient of the site. Private upgradient well 640 was not used to assess background. The well was only sampled by the DOE once, and results from that sampling round showed higher sulfate and uranium values than is typical of background alluvial ground water accessed by the other upgradient wells. Although it is not believed that the ground water in the vicinity of well 640 is contaminated from processing activities (Section 3.2 of the BLRA), the well was omitted from background assessment in order to be conservative.

As mentioned above, data from 1988 through February 1993 were used to quantify background levels at the site. A listing of all background ground water data available for preparation of the Monument Valley BLRA is presented elsewhere in the BLRA supplement, and Table 3.8 of the BLRA presents a summary of the background ground water quality data used in the risk assessment itself.

On-site (plume) wells

Based on the geochemical evaluation presented in Section 3.2 of the BLRA, the statistical evaluation focused on shallow wells located directly downgradient of the former tailings piles. The following wells, by virtue of their locations are expected to exhibit the highest levels of site contaminants.

well id	years sampled	number rounds	rounds 1988-Feb 1993
606	85-86,88-93	13	10
653	85-86,88-93	11	9
655	85-86,88-93	12	10
656	85-86,89,92-93	5	3

Appendix C1 presents comparative boxplots of the concentration data collected from ground water samples of these wells between 1988 and February 1993. From these graphs it is clear that well 656 is less contaminated than the others. Well 653 also shows generally lower concentrations of site contaminants like sulfate, nitrate and uranium. For this reason, it is believed that the higher concentrations of sodium and chloride exhibited by the well represents a local condition as opposed to a site-induced condition.

Comparison of the remaining two plume wells 606 and 655 shows that well 655 has higher concentrations of most of the suspected site contaminants. For this reason, selection of constituents for risk evaluation was based on a comparison of ground water quality from well 655 to background ground water quality.

Comparison of background to on-site ground water quality

Constituents omitted from further consideration in the risk assessment due to no detectable concentrations in well 655 are: aluminum, antimony, beryllium, boron, chromium, cobalt, cyanide, mercury, nickel, silver, and thallium. Copper and lead were also omitted because these metals were reported as being present at the limit of detection in only one sample out of at least 5 samples collected from well 655. Arsenic, sulfide and tin were omitted from assessment with one detected value that exceeded the detection limit. In each case, the one "hit" is inconsistent with the rest of the measurements of that constituent from the other sampling rounds.

EPA [2] guidance is that at least four rounds of data be available for statistical evaluation. Only one measurement of lead-210, two measurements of bromide and thorium-230, and three measurements of phosphate are available for well 655. It should also be noted that polonium-230 has not been analyzed for in ground water samples from well 655. Due to insufficient data, these constituents were not subjected to rigorous statistical evaluation. However, a visual comparison of the available data to background levels suggests that these levels of these constituents in plume ground water are approximately comparable to those in background. Appendix C2 presents a listing of data for well 655 for all constituents omitted from further evaluation.

For the remaining constituents monitored for at the site, the Mann-Whitney [1] nonparametric comparison method (also called the Wilcoxon rank sum test) was used to compare background to on-site ground water quality accessed by well 655. This statistical test ranks all the data for a constituent from smallest (rank=1) to highest (rank=n), then compares the average rank of background data to the average rank of the on-site well. For this procedure, background data from wells 602, 603, 616, and 617 were pooled. The Mann-Whitney test was done with a one-sided 0.05 level of significance for each constituent.

The Mann-Whitney procedure incorporates nondetect data in a relatively straight-forward fashion. Data reported as below detection are all considered to be "tied" for smallest for purposes of ranking. However, variable detection limits occasionally complicate the ranking process. Appendix B3 presents data, individual decisions concerning treatment of nondetect data, and the results of the Mann-Whitney test individually by constituent.

The analyses described above identified ~~12~~ 13 constituents present in elevated concentrations compared to background in the shallow ground water directly downgradient of the former tailings pile. These constituents are: ammonium, calcium, chloride, iron, magnesium, manganese, nitrate, potassium, sodium, sulfate, strontium, uranium, and vanadium.

Table 3.1 of the risk assessment provides a side-by-side comparison of background to on-site ground water quality. For constituents identified as being present at concentrations above background, the concentrations measured in the more impacted of plume wells 606 and 655. Otherwise, plume water quality reflects levels in well 655.

Input distributions for Monte Carlo simulation of exposures to inorganic constituents

Theoretical probability distributions were selected for constituents of potential concern (COPC) for human health in the alluvial aquifer at the Monument Valley site. These constituents are (Table 3.10 of risk assessment): manganese, nitrate, strontium, sulfate, vanadium, and uranium.

Probability distributions describe a hypothetical range of possible concentrations that may be present in the most contaminated portion of ground water under the site, and for each concentration in the range, a measure of its likelihood of that concentration occurring. The risk assessment includes these concentration probability distributions in computer simulations to estimate potential risks of humans drinking this ground water. The theoretical probability distribution for a constituent was selected to have the same mean and standard deviation as the actual ground water data for the identified worst-case well(s) present on site. For manganese, nitrate, and ammonium, that well is 606, and for sulfate, strontium, and vanadium, that well is 655. Data for vanadium concentrations are approximately comparable for wells 606 and 655, so that data from the two wells were pooled for distribution determination.

To the extent possible, the shape of the theoretical distribution was selected to mimic the observed statistical pattern of the ground water data. However, because of limited data, only the normal and the lognormal distributions were considered. The Kolmogorov-Smirnov test for goodness of fit [3] was used to select between the normal and lognormal options, with the normal distribution given priority. That is, the normal distribution was selected as a model unless the Kolmogorov-Smirnov test showed a significant lack of fit between the data and the normal distribution at the 0.05 level of significance. In such cases, the fit of the data to a lognormal distribution was also assessed, and whichever distribution (normal or lognormal) that fit the data better (as evidenced by a higher p-value for the Kolmogorov-Smirnov test) was used. Concentrations reported as below detection (vanadium only) were replaced by one-half of the detection limit for purposes of calculation of the mean and standard deviation, and for assessing distributional fit.

After distribution selection, the upper tail of each distribution was "truncated" at its theoretical 99th percentile in order to place a reasonable upper limit on concentrations of the contaminant that may be simulated by the computer. Normal distributions were also truncated at the lower tail at 0 in order to disallow negative concentrations. Support for the choice of distributions is presented in Appendix B4 and theoretical concentration distributions used in the site risk evaluation are summarized below.

@RISK exposure distributions for noncarcinogens, alluvial aquifer at Monument Valley (2 significant digits)

Constituent	well data used	Distribution
Ammonium	606	TNORMAL(320, 61, 0, 460)
Manganese	606	TNORMAL(0.13, 0.023, 0, 0.18)
Nitrate	606	TLOGNORM(1200, 220, 0, 1800)
Strontium	655	TNORMAL(2.9, 0.24, 0, 3.5)
Sulfate	655	TNORMAL(2700, 410, 0, 3600)
Uranium	655	TNORMAL(0.027, 0.005, 0, 0.039)
Vanadium	606,655	TLOGNORM(0.018, 0.021, 0, 0.10)

TNORMAL = truncated normal, TLOGNORM = truncated lognormal
Arguments in parentheses are (mean, standard deviation, lower limit, upper limit)
All numbers are in mg/L of contaminant in ground water.

Conservative estimates of the average concentration of site contaminants in worst-case alluvial ground water at the site

For each constituent identified as being present on-site at above background levels, a conservative estimate of the average concentration of that constituent in the most contaminated on-site well was computed. This value was used for screening human exposure pathways other than direct ingestion of ground water, and for assessment of ecological risks. For all constituents except iron and vanadium, the conservative estimate represents the 95 percent upper confidence limit for the mean concentration in ground water accessed by the most contaminated on-site well (606 or 655, depending on the constituent). Iron and vanadium estimates reflect the upper 95 percent confidence limit for the median, as opposed to the mean, concentration in wells 606 and 655, under the assumption that ground water concentrations of these two constituents are comparable for the two wells. The reason that the median was estimated instead of the mean, is that concentrations of both iron and vanadium are quite low in ground water, resulting on nondetection of these constituents over 50 percent of the time that the wells were sampled. Due to the high frequency of nondetects, the mean could not be reliably estimated. Calculations involved in computing UCLs are presented by constituent in Appendix C4.

References:

[1] Lehmann, E.L. (1975). *Nonparametrics: Statistical Methods Based on Ranks*, Holden-Day, San Francisco, CA.

[2] Lillifors, H.W. (1967). On the Kolmogorov-Smirnov Test for Normality with Mean and Variance Unknown. *Journal of the American Statistical Association* 64: 339-402.

[3] U.S. EPA (1989). Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities-Interim Final Guidance. Office of Solid Waste, Waste Management Division, Washington, D.C.

APPENDIX A

FILTERED AND UNFILTERED SAMPLE PAIRS FOR GROUND WATER DATA AT MONUMENT VALLEY

CONST	ID	DATE	FILTERED		UNFILTERED	
AG	0616	91.425	<	0.010	<	0.010
AL	0616	91.425	<	0.050	<	0.050
	0616	92.157	<	0.050	<	0.050
	0616	92.622	<	0.200	<	0.200
	0617	92.157	<	0.050	<	0.050
	0617	92.622	<	0.200	<	0.200
AS	0601	92.894	<	0.001	<	0.001
	0602	92.894	<	0.001		0.002
	0603	92.891		0.002		0.003
	0604	92.885		0.002		0.003
	0605	92.894	<	0.001	<	0.001
	0606	92.899	<	0.001		0.001
	0613	92.891	<	0.001	<	0.001
	0615	92.896		0.001		0.022
	0616	91.425	<	0.010	<	0.010
	0616	92.157	<	0.010	<	0.010
	0616	92.622	<	0.010	<	0.010
	0617	92.157	<	0.010	<	0.010
	0617	92.622	<	0.010	<	0.010
	0652	92.891	<	0.001	<	0.001
	0653	92.885		0.001		0.001
	0654	92.894	<	0.001	<	0.001
	0655	92.885	<	0.001	<	0.001
	0656	92.894	<	0.001	<	0.001
	0659	92.883		0.006		0.005
	0662	92.896	<	0.001	<	0.001
	0663	92.888	<	0.001	<	0.001
B	0616	91.425	<	0.050		0.190
BA	0601	92.894		0.052		0.190
	0602	92.894		0.049		0.055
	0603	92.891		0.038		0.041
	0604	92.885		0.038		0.075
	0605	92.894		0.023		0.022
	0606	92.899		0.034		0.039
	0613	92.891		0.036		0.038
	0615	92.896		0.038		0.070
	0616	91.425		0.110		0.010
	0616	92.157		0.120		0.130
	0616	92.622	<	0.200	<	0.200
	0617	92.157		0.050		0.050
	0617	92.622	<	0.200	<	0.200
	0652	92.891		0.140		0.130
	0653	92.885		0.028		0.027
	0654	92.894		0.140		0.140
	0655	92.885		0.018		0.020
	0656	92.894		0.028		0.040
	0659	92.883		0.038		0.046
	0662	92.896		0.023		0.051
	0663	92.888		0.077		0.080
BE	0616	91.425	<	0.005	<	0.005
	0616	92.622	<	0.005	<	0.005
	0617	92.622	<	0.005	<	0.005
BR	0616	91.425	<	0.100	<	0.100

CONST	ID	DATE	FILTERED		UNFILTERED	
CA	0616	91.425		35.600		4.500
	0616	92.157		30.300		31.500
	0616	92.622		37.000		35.000
	0617	92.157		18.100		18.300
	0617	92.622		23.000		22.000
CD	0601	92.894	<	0.000		0.000
	0602	92.894	<	0.000	<	0.000
	0603	92.891	<	0.000	<	0.000
	0604	92.885	<	0.000		0.000
	0605	92.894	<	0.000		0.000
	0606	92.899	<	0.000		0.000
	0613	92.891	<	0.000	<	0.000
	0615	92.896	<	0.000		0.000
	0616	91.425	<	0.001	<	0.001
	0616	92.157	<	0.001	<	0.001
	0616	92.622	<	0.005	<	0.005
	0617	92.157	<	0.001	<	0.001
	0617	92.622	<	0.005	<	0.005
	0652	92.891	<	0.000	<	0.000
	0653	92.885	<	0.000	<	0.000
	0654	92.894	<	0.000		0.000
	0655	92.885	<	0.000	<	0.000
	0656	92.894	<	0.000	<	0.000
	0659	92.883	<	0.000		0.000
	0662	92.896	<	0.000	<	0.000
	0663	92.888	<	0.000	<	0.000
CL	0616	91.425		11.400		11.300
	0616	92.157		9.700		9.800
	0616	92.622		12.000		11.000
	0617	92.157		15.500		15.800
	0617	92.622		14.000		14.000
CO	0616	91.425	<	0.030	<	0.030
CR	0601	92.894	<	0.005	<	0.005
	0602	92.894	<	0.005	<	0.005
	0603	92.891	<	0.005	<	0.005
	0604	92.885	<	0.005	<	0.005
	0605	92.894	<	0.005	<	0.005
	0606	92.899	<	0.005	<	0.005
	0613	92.891	<	0.005	<	0.005
	0615	92.896	<	0.005	<	0.005
	0616	91.425	<	0.010	<	0.010
	0616	92.157	<	0.010	<	0.010
	0616	92.622	<	0.010	<	0.010
	0617	92.157	<	0.010	<	0.010
	0617	92.622	<	0.010	<	0.010
	0652	92.891	<	0.005	<	0.005
	0653	92.885	<	0.005	<	0.005
	0654	92.894	<	0.005	<	0.005
	0655	92.885	<	0.005	<	0.005
	0656	92.894	<	0.005	<	0.005
	0659	92.883	<	0.005	<	0.005
	0662	92.896	<	0.005	<	0.005
	0663	92.888	<	0.005	<	0.005
CU	0616	91.425	<	0.010	<	0.010

CONST	ID	DATE	FILTERED		UNFILTERED	
F	0616	91.425		0.300		0.300
FE	0616	91.425	<	0.030		0.160
	0616	92.157	<	0.030		0.140
	0616	92.622	<	0.100	<	0.010
	0617	92.157	<	0.030	<	0.030
	0617	92.622	<	0.100		0.260
K	0616	91.425		1.060		1.280
	0616	92.157		0.870		0.840
	0616	92.622		2.200		2.200
	0617	92.157		0.550		0.630
	0617	92.622		0.780		1.100
MG	0616	91.425		28.400		26.100
	0616	92.157		25.600		28.200
	0616	92.622		30.000		29.000
	0617	92.157		33.000		35.300
	0617	92.622		34.000		33.000
MN	0601	92.894		0.003		0.160
	0602	92.894	<	0.001	<	0.001
	0603	92.891		0.003		0.004
	0604	92.885		0.012		0.025
	0605	92.894		0.022		0.019
	0606	92.899		0.120		0.110
	0613	92.891	<	0.001	<	0.001
	0615	92.896		0.001		0.270
	0616	91.425	<	0.010	<	0.010
	0616	92.157	<	0.010	<	0.010
	0616	92.622	<	0.010	<	0.010
	0617	92.157	<	0.010	<	0.010
	0617	92.622	<	0.010	<	0.010
	0652	92.891	<	0.001	<	0.001
	0653	92.885		0.003	<	0.001
	0654	92.894		0.033		0.029
	0655	92.885		0.055		0.051
	0656	92.894		0.004		0.007
	0659	92.883		0.100		0.100
	0662	92.896	<	0.001		0.039
	0663	92.888		0.028		0.022
MO	0601	92.894	<	0.004	<	0.004
	0602	92.894	<	0.004	<	0.004
	0603	92.891	<	0.004	<	0.004
	0604	92.885	<	0.004	<	0.004
	0605	92.894		0.043		0.044
	0606	92.899	<	0.004		0.008
	0613	92.891		0.008		0.007
	0615	92.896	<	0.004		0.006
	0616	91.425		0.010	<	0.010
	0616	92.157	<	0.010	<	0.010
	0616	92.622	<	0.200	<	0.200
	0617	92.157		0.010		0.020
	0617	92.622	<	0.200	<	0.200
	0652	92.891	<	0.004	<	0.004
	0653	92.885	<	0.004	<	0.004
	0654	92.894	<	0.004	<	0.004
	0655	92.885	<	0.004	<	0.004

CONST	ID	DATE	FILTERED		UNFILTERED	
	0656	92.894	<	0.004	<	0.004
	0659	92.883		0.020		0.016
	0662	92.896	<	0.004	<	0.004
	0663	92.888	<	0.004	<	0.004
NA	0616	91.425		66.000		63.000
	0616	92.157		57.000		61.000
	0616	92.622		72.000		73.000
	0617	92.157		91.000		93.000
	0617	92.622		97.000		94.000
NI	0616	91.425	<	0.040	<	0.040
PB	0601	92.894	<	0.001		0.004
	0602	92.894	<	0.001	<	0.001
	0603	92.891	<	0.001	<	0.001
	0604	92.885	<	0.001	<	0.001
	0605	92.894	<	0.001	<	0.001
	0606	92.899	<	0.001	<	0.001
	0613	92.891	<	0.001	<	0.001
	0615	92.896	<	0.001		0.002
	0616	91.425	<	0.005	<	0.010
	0652	92.891	<	0.001	<	0.001
	0653	92.885	<	0.001	<	0.001
	0654	92.894	<	0.001	<	0.001
	0655	92.885	<	0.001	<	0.001
	0656	92.894	<	0.001	<	0.001
	0659	92.883	<	0.001	<	0.001
	0662	92.896	<	0.001	<	0.001
	0663	92.888	<	0.001	<	0.001
PBO	0601	92.894		0.400		1.100
	0602	92.894		1.700		1.200
	0603	92.891		0.000		1.200
	0604	92.885		0.100		1.100
	0605	92.894		0.600		5.400
	0606	92.899		1.900		5.600
	0613	92.891		0.300		5.800
	0615	92.896		1.000		7.200
	0651	92.891		0.000		5.800
	0652	92.891		0.300		5.700
	0653	92.885		0.100		5.900
	0654	92.894		0.600		4.700
	0655	92.885		0.300		5.200
	0656	92.894		1.000		5.900
	0659	92.883		1.600		2.000
	0662	92.896		0.000		6.100
	0663	92.888		0.700		6.000
R6L	0601	92.894		0.300		0.800
	0602	92.894		0.800		0.800
	0603	92.891		0.900		1.200
	0604	92.885		0.100		0.600
	0605	92.894		0.000		0.200
	0606	92.899		0.700		1.000
	0613	92.891		0.200		0.300
	0615	92.896		2.400		0.900
	0616	91.425		0.000		0.100
	0616	92.157		0.000		0.000

CONST	ID	DATE	FILTERED		UNFILTERED	
	0616	92.622	0.300		0.300	
	0617	92.157	0.100		0.000	
	0617	92.622	5.700		0.100	
	0651	92.891	0.400		0.000	
	0652	92.891	0.300		1.200	
	0653	92.885	0.400		0.100	
	0654	92.894	0.600		0.900	
	0655	92.885	0.700		0.200	
	0656	92.894	0.300		0.800	
	0659	92.883	8.100		6.400	
	0662	92.896	0.900		0.700	
	0663	92.888	0.800		0.200	
RA8	0601	92.894	1.400		2.300	
	0602	92.894	0.400		3.200	
	0603	92.891	0.300		4.800	
	0604	92.885	1.900		0.700	
	0605	92.894	1.900		3.500	
	0606	92.899	2.300		2.200	
	0613	92.891	2.800		2.700	
	0615	92.896	4.900		2.900	
	0616	91.425	0.400		7.700	
	0616	92.157	2.300		0.000	
	0616	92.622	0.000		0.000	
	0617	92.157	1.600		0.000	
	0617	92.622	0.200		0.500	
	0651	92.891	3.000		3.900	
	0652	92.891	2.000		2.900	
	0653	92.885	2.600		4.500	
	0654	92.894	2.800		3.500	
	0655	92.885	4.100		2.700	
	0656	92.894	1.500		2.600	
	0659	92.883	4.400		4.900	
	0662	92.896	4.700		1.900	
	0663	92.888	0.200		3.100	
S	0616	91.425	< 1.000	<	1.000	
SB	0616	91.425	< 0.003	<	0.003	
	0616	92.157	< 0.003	<	0.003	
	0616	92.622	< 0.060	<	0.060	
	0617	92.157	< 0.003	<	0.003	
	0617	92.622	< 0.060	<	0.060	
SE	0601	92.894	< 0.001	<	0.001	
	0602	92.894	< 0.001		0.002	
	0603	92.891	< 0.001	<	0.001	
	0604	92.885	< 0.001		0.001	
	0605	92.894	< 0.015	<	0.001	
	0606	92.899	< 0.001	<	0.001	
	0613	92.891	< 0.001		0.001	
	0615	92.896	< 0.001	<	0.001	
	0616	91.425	< 0.005		0.006	
	0616	92.157	0.005	<	0.005	
	0616	92.622	< 0.005	<	0.005	
	0617	92.157	0.007		0.005	
	0617	92.622	< 0.005	<	0.005	
	0652	92.891	0.003		0.004	
	0653	92.885	< 0.015	<	0.001	
	0654	92.894	< 0.001	<	0.001	

CONST	ID	DATE		FILTERED		UNFILTERED
	0655	92.885	<	0.015	<	0.001
	0656	92.894	<	0.001	<	0.001
	0659	92.883	<	0.001	<	0.001
	0662	92.896		0.007		0.003
	0663	92.888	<	0.001	<	0.001
SIO	0616	91.425		26.100		8.700
SN	0616	91.425	<	0.010	<	0.010
SO4	0601	92.894		130.000		130.000
	0602	92.894		130.000		130.000
	0603	92.891		120.000		120.000
	0604	92.885		110.000		120.000
	0605	92.894		1900.000		1900.000
	0606	92.899		930.000		920.000
	0613	92.891		65.000		64.000
	0615	92.896		63.000		62.000
	0616	91.425		134.000		82.000
	0616	92.157		69.000		77.000
	0616	92.622		86.000		85.000
	0617	92.157		85.000		91.000
	0617	92.622		80.000		84.000
	0651	92.891		120.000		120.000
	0652	92.891		68.000		67.000
	0653	92.885		1700.000		1600.000
	0654	92.894		43.000		43.000
	0655	92.885		2400.000		2400.000
	0656	92.894		440.000		440.000
	0659	92.883		120.000		120.000
	0662	92.896		420.000		380.000
	0663	92.888		48.000		48.000
SR	0601	92.894		0.320		0.360
	0602	92.894		0.360		0.340
	0603	92.891		0.280		0.260
	0604	92.885		0.240		0.250
	0605	92.894		2.900		2.700
	0606	92.899		1.900		2.000
	0613	92.891		0.400		0.390
	0615	92.896		0.640		0.680
	0616	91.425		0.430		0.050
	0616	92.157		0.400		0.440
	0616	92.622		0.500		0.480
	0617	92.157		0.370		0.390
	0617	92.622		0.410		0.400
	0652	92.891		0.630		0.580
	0653	92.885		2.900		2.400
	0654	92.894		0.430		0.380
	0655	92.885		3.200		3.400
	0656	92.894		0.710		0.710
	0659	92.883		0.250		0.300
	0662	92.896		1.100		1.100
	0663	92.888		0.610		0.620
TOL	0616	91.425		0.800		1.400
TL	0616	91.425	<	0.010	<	0.010
U	0601	92.894		0.006		0.004

CONST	ID	DATE	FILTERED		UNFILTERED	
	0602	92.894		0.005		0.003
	0603	92.891		0.005		0.003
	0604	92.885		0.003		0.003
	0605	92.894		0.023		0.022
	0606	92.899		0.014		0.012
	0613	92.891		0.004		0.003
	0615	92.896		0.001		0.001
	0616	91.425		0.001	<	0.001
	0616	92.157		0.004		0.004
	0616	92.622		0.004		0.004
	0617	92.157		0.005		0.003
	0617	92.622		0.005		0.005
	0651	92.891		0.005		0.002
	0652	92.891		0.005		0.005
	0653	92.885		0.012		0.011
	0654	92.894		0.001		0.001
	0655	92.885		0.029		0.026
	0656	92.894		0.008		0.008
	0659	92.883		0.003		0.001
	0662	92.896		0.020		0.018
	0663	92.888	<	0.001		0.001
V	0601	92.894	<	0.001		0.011
	0602	92.894	<	0.001		0.002
	0603	92.891	<	0.001		0.003
	0604	92.885	<	0.001		0.002
	0605	92.894	<	0.001		0.004
	0606	92.899		0.002		0.003
	0613	92.891	<	0.001		0.003
	0615	92.896	<	0.001		0.005
	0616	91.425	<	0.010	<	0.010
	0616	92.157	<	0.010	<	0.010
	0616	92.622	<	0.050	<	0.050
	0617	92.157		0.020		0.010
	0617	92.622	<	0.050	<	0.050
	0652	92.891		0.012		0.013
	0653	92.885		0.009		0.008
	0654	92.894	<	0.001	<	0.001
	0655	92.885		0.008		0.007
	0656	92.894	<	0.001		0.002
	0659	92.883	<	0.001		0.002
	0662	92.896		0.025		0.030
	0663	92.888	<	0.001	<	0.001
ZN	0601	92.894	<	0.001		0.014
	0602	92.894		0.001		0.005
	0603	92.891	<	0.001		0.004
	0604	92.885		0.012		0.006
	0605	92.894	<	0.001		0.003
	0606	92.899		0.002		0.006
	0613	92.891	<	0.001		0.004
	0615	92.896		0.002		0.036
	0616	91.425	<	0.005	<	0.005
	0616	92.157	<	0.005		0.039
	0616	92.622	<	0.020		0.021
	0617	92.157	<	0.005	<	0.005
	0617	92.622	<	0.020		0.057
	0652	92.891	<	0.001		0.003
	0653	92.885		0.004		0.007
	0654	92.894	<	0.001		0.003

CONST	ID	DATE		FILTERED	UNFILTERED
	0655	92.885		0.007	0.005
	0656	92.894	<	0.001	0.005
	0659	92.883		0.170	0.009
	0662	92.896		0.005	0.010
	0663	92.888	<	0.001	0.007

APPENDIX B

FORMULAS AND TABLES USED FOR HAND CALCULATIONS

1. Conversion of p-value for a Kruskal Wallis test to a p-value for a Mann-Whitney test of the hypothesis (done in Appendix C3):

Ho: $\mu_{bkg} \geq \mu_{plume}$
Ha: $\mu_{bkg} < \mu_{plume}$

First compute the Average Rank for each group (Average Rank = Rank Sum/Count)

IF:	THEN MANN-WHITNEY P-VALUE EQUALS:
Average $Rank_{bkg}$ £ Average $Rank_{plume}$	0.5*Kruskal Wallis p-value
Average $Rank_{bkg}$ > Average $Rank_{plume}$	1 - 0.5*Kruskal Wallis p-value

2. Upper 99th percentile of a Normal probability distribution with mean μ and standard deviation σ (done in Appendix C4)

99th percentile = $\mu + 2.326*\sigma$ (see Normal percentile table, attached)

Reference: any introductory statistics textbook

3. 95 percent upper confidence limit for the mean of a Normal Probability based on a sample of n independent data ($x_1, x_2, ..., x_n$) from the distribution (done in Appendix C4).

See attached pages (Gilbert, formula 11.6, pg. 139), and attached Student T Table

4. Upper 99th percentile of a lognormal distribution (done in Appendix C4)

Given X follows a lognormal probability distribution with mean μ and standard deviation σ, then Y = natural logarithm (ln) of X follows a Normal probability distribution with mean μ_y and standard deviation σ_y, that are related to μ and σ in the following way (source: Gilbert 1987, pg 175 setting tau = 0):

$\mu = exp(\mu_y + \sigma_y^2/2)$

$\sigma = sqrt\ [\ exp(2*\mu_y + \sigma_y^2)*(exp(\sigma_y^2) - 1\ ]$

$= sqrt\ [\ exp(2*\mu_y + 2\sigma_y^2) - \mu^2\ ]$

Solving these two identities for μ_y and σ_y:

$\sigma_y = sqrt\ [\ ln(\sigma^2/\mu^2 + 1)\ ]$

$\mu_y = ln(\mu) - \sigma_y^2/2$

By 3. above, the 99th percentile of Y is $\mu_y + 2.326*\sigma_y$. Therefore, the 99th percentile of X is

$$\exp(\mu_y + 2.326*\sigma_y)$$

Reference: Reference: Gilbert, R.O. (1987). *Statistical Methods for Environmental Pollution Monitoring*, Van Nostrand Reinhold Co, New York, NY.

5. 95 percent upper confidence limit for the mean of a lognormal distribution

See attached pages from Gilbert, formula 13.13., pg. 170, and attached TableA12

6 95 percent nonparametric upper confidence limit for the median of a distribution (used to compute UCL for iron and vanadium, Appendix C4, both with n=16).

See attached explanation of calculations from EPA (1989) and attached cumulative binomial probability distribution listings for sample size 16

TABLE 4. PERCENTILES OF THE STANDARD NORMAL DISTRIBUTION, U_P

P	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
0.50	0.0000	0.0025	0.0050	0.0075	0.0100	0.0125	0.0150	0.0175	0.0201	0.0226
0.51	0.0251	0.0276	0.0301	0.0326	0.0351	0.0376	0.0401	0.0426	0.0451	0.0476
0.52	0.0502	0.0527	0.0552	0.0577	0.0602	0.0627	0.0652	0.0677	0.0702	0.0728
0.53	0.0753	0.0778	0.0803	0.0828	0.0853	0.0878	0.0904	0.0929	0.0954	0.0979
0.54	0.1004	0.1030	0.1055	0.1080	0.1105	0.1130	0.1156	0.1181	0.1206	0.1231
0.55	0.1257	0.1282	0.1307	0.1332	0.1358	0.1383	0.1408	0.1434	0.1459	0.1484
0.56	0.1510	0.1535	0.1560	0.1586	0.1611	0.1637	0.1662	0.1687	0.1713	0.1738
0.57	0.1764	0.1789	0.1815	0.1840	0.1866	0.1891	0.1917	0.1942	0.1968	0.1993
0.58	0.2019	0.2045	0.2070	0.2096	0.2121	0.2147	0.2173	0.2198	0.2224	0.2250
0.59	0.2275	0.2301	0.2327	0.2353	0.2378	0.2404	0.2430	0.2456	0.2482	0.2508
0.60	0.2533	0.2559	0.2585	0.2611	0.2637	0.2663	0.2689	0.2715	0.2741	0.2767
0.61	0.2793	0.2819	0.2845	0.2871	0.2898	0.2924	0.2950	0.2976	0.3002	0.3029
0.62	0.3055	0.3081	0.3107	0.3134	0.3160	0.3186	0.3213	0.3239	0.3266	0.3292
0.63	0.3319	0.3345	0.3372	0.3398	0.3425	0.3451	0.3478	0.3505	0.3531	0.3558
0.64	0.3585	0.3611	0.3638	0.3665	0.3692	0.3719	0.3745	0.3772	0.3799	0.3826
0.65	0.3853	0.3880	0.3907	0.3934	0.3961	0.3989	0.4016	0.4043	0.4070	0.4097
0.66	0.4125	0.4152	0.4179	0.4207	0.4234	0.4261	0.4289	0.4316	0.4344	0.4372
0.67	0.4399	0.4427	0.4454	0.4482	0.4510	0.4538	0.4565	0.4593	0.4621	0.4649
0.68	0.4677	0.4705	0.4733	0.4761	0.4789	0.4817	0.4845	0.4874	0.4902	0.4930
0.69	0.4959	0.4987	0.5015	0.5044	0.5072	0.5101	0.5129	0.5158	0.5187	0.5215
0.70	0.5244	0.5273	0.5302	0.5330	0.5359	0.5388	0.5417	0.5446	0.5476	0.5505
0.71	0.5534	0.5563	0.5592	0.5622	0.5651	0.5681	0.5710	0.5740	0.5769	0.5799
0.72	0.5828	0.5858	0.5888	0.5918	0.5948	0.5978	0.6008	0.6038	0.6068	0.6098
0.73	0.6128	0.6158	0.6189	0.6219	0.6250	0.6280	0.6311	0.6341	0.6372	0.6403
0.74	0.6433	0.6464	0.6495	0.6526	0.6557	0.6588	0.6620	0.6651	0.6682	0.6713

NOTE: For values of P below 0.5, obtain the value of $U_{(1-P)}$ from Table 4 and change its sign. For example, $U_{0.45} = -U_{(1-0.45)} = -U_{0.55} = -0.1257$.

(Continued)

TABLE 4 (Continued)

P	0.000	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
0.75	0.6745	0.6776	0.6808	0.6840	0.6871	0.6903	0.6935	0.6967	0.6999	0.7031
0.76	0.7063	0.7095	0.7128	0.7160	0.7192	0.7225	0.7257	0.7290	0.7323	0.7356
0.77	0.7388	0.7421	0.7454	0.7488	0.7521	0.7554	0.7588	0.7621	0.7655	0.7688
0.78	0.7722	0.7756	0.7790	0.7824	0.7858	0.7892	0.7926	0.7961	0.7995	0.8030
0.79	0.8064	0.8099	0.8134	0.8169	0.8204	0.8239	0.8274	0.8310	0.8345	0.8381
0.80	0.8416	0.8452	0.8488	0.8524	0.8560	0.8596	0.8633	0.8669	0.8705	0.8742
0.81	0.8779	0.8816	0.8853	0.8890	0.8927	0.8965	0.9002	0.9040	0.9078	0.9116
0.82	0.9154	0.9192	0.9230	0.9269	0.9307	0.9346	0.9385	0.9424	0.9463	0.9502
0.83	0.9542	0.9581	0.9621	0.9661	0.9701	0.9741	0.9782	0.9822	0.9863	0.9904
0.84	0.9945	0.9986	1.0027	1.0069	1.0110	1.0152	1.0194	1.0237	1.0279	1.0322
0.85	1.0364	1.0407	1.0450	1.0494	1.0537	1.0581	1.0625	1.0669	1.0714	1.0758
0.86	1.0803	1.0848	1.0893	1.0939	1.0985	1.1031	1.1077	1.1123	1.1170	1.1217
0.87	1.1264	1.1311	1.1359	1.1407	1.1455	1.1503	1.1552	1.1601	1.1650	1.1700
0.88	1.1750	1.1800	1.1850	1.1901	1.1952	1.2004	1.2055	1.2107	1.2160	1.2212
0.89	1.2265	1.2319	1.2372	1.2426	1.2481	1.2536	1.2591	1.2646	1.2702	1.2759
0.90	1.2816	1.2873	1.2930	1.2988	1.3047	1.3106	1.3165	1.3225	1.3285	1.3346
0.91	1.3408	1.3469	1.3532	1.3595	1.3658	1.3722	1.3787	1.3852	1.3917	1.3984
0.92	1.4051	1.4118	1.4187	1.4255	1.4325	1.4395	1.4466	1.4538	1.4611	1.4684
0.93	1.4758	1.4833	1.4909	1.4985	1.5063	1.5141	1.5220	1.5301	1.5382	1.5464
0.94	1.5548	1.5632	1.5718	1.5805	1.5893	1.5982	1.6072	1.6164	1.6258	1.6352
0.95	1.6449	1.6546	1.6646	1.6747	1.6849	1.6954	1.7060	1.7169	1.7279	1.7392
0.96	1.7507	1.7624	1.7744	1.7866	1.7991	1.8119	1.8250	1.8384	1.8522	1.8663
0.97	1.8808	1.8957	1.9110	1.9268	1.9431	1.9600	1.9774	1.9954	2.0141	2.0335
0.98	2.0537	2.0749	2.0969	2.1201	2.1444	2.1701	2.1973	2.2262	2.2571	2.2904
0.99	2.3263	2.3656	2.4089	2.4573	2.5121	2.5758	2.6521	2.7478	2.8782	3.0902

SOURCE: Johnson, Norman L. and F. C. Leone. 1977. *Statistics and Experimental Design in Engineering and the Physical Sciences*. Vol. I, Second Edition. Jonn Wiley and Sons, New York.

* for 99th percentile

Similarly, the upper limit when σ is estimated by s is

Normal:

$$\mathrm{UL}_{1-\alpha} = \bar{x} + t_{1-\alpha,n-1}\frac{s}{\sqrt{n}} \qquad 11.6$$

The corresponding *lower* one-sided limits are

$$\mathrm{LL}_{\alpha} = \bar{x} - Z_{1-\alpha}\frac{\sigma}{\sqrt{n}}$$

and

$$\mathrm{LL}_{\alpha} = \bar{x} - t_{1-\alpha,n-1}\frac{s}{\sqrt{n}} \qquad 11.7$$

respectively. Note that the upper (or lower) $100(1-\alpha)\%$ one-sided limit uses $Z_{1-\alpha}$ or $t_{1-\alpha}$, whereas $100(1-\alpha)\%$ two-sided limits use $Z_{1-\alpha/2}$ or $t_{1-\alpha/2}$. For example, if $\alpha = 0.05$, $Z_{0.95} = 1.645$ is used for computing a one-sided limit on μ, whereas $Z_{0.975} = 1.96$ is used for the two-sided limits.

Upper limits on the true mean μ may be computed to test for compliance with regulations that specify some mean value, say μ_L, as an upper limit. If $\mathrm{UL}_{1-\alpha} > \mu_L$, this might be taken as evidence that μ may exceed μ_L.

EXAMPLE 11.3

First we use Eq. 11.5 to compute a 90% confidence interval ($\alpha = 0.10$), using the ^{241}Am data in Example 11.1. Since $\bar{x} = 0.0372$, $s = 0.0211$, $n - 1 = 19$, and $t_{0.95,19} = 1.729$ (from Table A2), Eq. 11.5 gives

$$0.0372 \pm \frac{1.729(0.0211)}{\sqrt{20}} \quad \text{or} \quad 0.0290 \le \mu \le 0.0454$$

Second, a one-sided upper 90% confidence limit for μ is computed by Eq. 11.6. Since $t_{0.90,19} = 1.328$, we obtain

$$\mathrm{UL}_{0.90} = 0.0372 + \frac{1.328(0.0211)}{\sqrt{20}} = 0.0435$$

11.7 APPROXIMATE CONFIDENCE LIMITS FOR THE MEAN

In the previous two sections we learned how to compute confidence limits for the true mean of an underlying normal distribution. But suppose the distribution is not normal, or suppose we are unwilling to make that assumption. Then if n is sufficiently large, a two-sided $100(1-\alpha)\%$ confidence inteval for the mean μ is approximated by

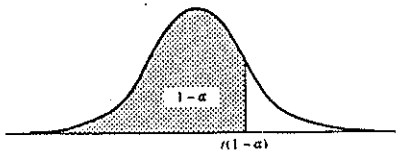
$$\bar{x} - Z_{1-\alpha/2}\frac{s}{\sqrt{n}} \le \mu \le \bar{x} + Z_{1-\alpha/2}\frac{s}{\sqrt{n}} \qquad 11.8$$

Similarly, for large n, approximate one-sided upper and lower $100(1-\alpha)\%$ confidence limits are

TABLE A–2

Percentiles of the t Distribution

Entry is $t(1-\alpha;\nu)$ where $P\{t(\nu) \le t(1-\alpha;\nu)\} = 1-\alpha$



	$1-\alpha$						
ν	.55	.60	.65	.70	.75	.80	.85
1	0.158	0.325	0.510	0.727	1.000	1.376	1.963
2	0.142	0.289	0.445	0.617	0.816	1.061	1.386
3	0.137	0.277	0.424	0.584	0.765	0.978	1.250
4	0.134	0.271	0.414	0.569	0.741	0.941	1.190
5	0.132	0.267	0.408	0.559	0.727	0.920	1.156
6	0.131	0.265	0.404	0.553	0.718	0.906	1.134
7	0.130	0.263	0.402	0.549	0.711	0.896	1.119
8	0.130	0.262	0.399	0.546	0.706	0.889	1.108
9	0.129	0.261	0.398	0.543	0.703	0.883	1.100
10	0.129	0.260	0.397	0.542	0.700	0.879	1.093
11	0.129	0.260	0.396	0.540	0.697	0.876	1.088
12	0.128	0.259	0.395	0.539	0.695	0.873	1.083
13	0.128	0.259	0.394	0.538	0.694	0.870	1.079
14	0.128	0.258	0.393	0.537	0.692	0.868	1.076
15	0.128	0.258	0.393	0.536	0.691	0.866	1.074
16	0.128	0.258	0.392	0.535	0.690	0.865	1.071
17	0.128	0.257	0.392	0.534	0.689	0.863	1.069
18	0.127	0.257	0.392	0.534	0.688	0.862	1.067
19	0.127	0.257	0.391	0.533	0.688	0.861	1.066
20	0.127	0.257	0.391	0.533	0.687	0.860	1.064
21	0.127	0.257	0.391	0.532	0.686	0.859	1.063
22	0.127	0.256	0.390	0.532	0.686	0.858	1.061
23	0.127	0.256	0.390	0.532	0.685	0.858	1.060
24	0.127	0.256	0.390	0.531	0.685	0.857	1.059
25	0.127	0.256	0.390	0.531	0.684	0.856	1.058
26	0.127	0.256	0.390	0.531	0.684	0.856	1.058
27	0.127	0.256	0.389	0.531	0.684	0.855	1.057
28	0.127	0.256	0.389	0.530	0.683	0.855	1.056
29	0.127	0.256	0.389	0.530	0.683	0.854	1.055
30	0.127	0.256	0.389	0.530	0.683	0.854	1.055
40	0.126	0.255	0.388	0.529	0.681	0.851	1.050
60	0.126	0.254	0.387	0.527	0.679	0.848	1.046
120	0.126	0.254	0.386	0.526	0.677	0.845	1.041
∞	0.126	0.253	0.385	0.524	0.674	0.842	1.036

TABLE A–2 (*continued*)

Percentiles of the t Distribution

	$1-\alpha$					
ν	.90	.95	.975	.99	.995	.9995
1	3.078	6.314	12.706	31.821	63.657	636.619
2	1.886	2.920	4.303	6.965	9.925	31.598
3	1.638	2.353	3.182	4.541	5.841	12.924
4	1.533	2.132	2.776	3.747	4.604	8.610
5	1.476	2.015	2.571	3.365	4.032	6.869
6	1.440	1.943	2.447	3.143	3.707	5.959
7	1.415	1.895	2.365	2.998	3.499	5.408
8	1.397	1.860	2.306	2.896	3.355	5.041
9	1.383	1.833	2.262	2.821	3.250	4.781
10	1.372	1.812	2.228	2.764	3.169	4.587
11	1.363	1.796	2.201	2.718	3.106	4.437
12	1.356	1.782	2.179	2.681	3.055	4.318
13	1.350	1.771	2.160	2.650	3.012	4.221
14	1.345	1.761	2.145	2.624	2.977	4.140
15	1.341	1.753	2.131	2.602	2.947	4.073
16	1.337	1.746	2.120	2.583	2.921	4.015
17	1.333	1.740	2.110	2.567	2.898	3.965
18	1.330	1.734	2.101	2.552	2.878	3.922
19	1.328	1.729	2.093	2.539	2.861	3.883
20	1.325	1.725	2.086	2.528	2.845	3.850
21	1.323	1.721	2.080	2.518	2.831	3.819
22	1.321	1.717	2.074	2.508	2.819	3.792
23	1.319	1.714	2.069	2.500	2.807	3.767
24	1.318	1.711	2.064	2.492	2.797	3.745
25	1.316	1.708	2.060	2.485	2.787	3.725
26	1.315	1.706	2.056	2.479	2.779	3.707
27	1.314	1.703	2.052	2.473	2.771	3.690
28	1.313	1.701	2.048	2.467	2.763	3.674
29	1.311	1.699	2.045	2.462	2.756	3.659
30	1.310	1.697	2.042	2.457	2.750	3.646
40	1.303	1.684	2.021	2.423	2.704	3.551
60	1.296	1.671	2.000	2.390	2.660	3.460
120	1.289	1.658	1.980	2.358	2.617	3.373
∞	1.282	1.645	1.960	2.326	2.576	3.291

Source: Table A–2 is taken from Table III of Fisher and Yates: *Statistical Tables for Biological, Agricultural and Medical Research*, 6th ed., 1963, published by Oliver and Boyd, Edinburgh, and by permission of the authors and publishers.

for μ. If n is large, the simple method (Eq. 11.8) in Section 11.7 may be used. However, if one is confident that the underlying distribution is lognormal, the method discussed in this section is preferred.

Land (1971, 1975) showed that the upper one-sided $100(1 - \alpha)\%$ and the lower one-sided $100\alpha\%$ confidence limits for μ are obtained by calculating

Lognormal

$$\mathrm{UL}_{1-\alpha} = \exp\left(\bar{y} + 0.5s_y^2 + \frac{s_y H_{1-\alpha}}{\sqrt{n-1}}\right) \qquad \textbf{13.13}$$

and

$$\mathrm{LL}_{\alpha} = \exp\left(\bar{y} + 0.5s_y^2 + \frac{s_y H_{\alpha}}{\sqrt{n-1}}\right) \qquad \textbf{13.14}$$

respectively, where $\bar{y}$ and s_y^2 are calculated using Eqs. 13.1 and 13.2, respectively. The quantities $H_{1-\alpha}$ and H_α are obtained from tables provided by Land (1975), a subset of which are given here in Tables A10–A13. The values of $H_{1-\alpha}$ and H_α depend on s_y, n, and the chosen confidence level α.

EXAMPLE 13.3

Suppose $n = 15$ data have been drawn at random from a 2-parameter lognormal population. We estimate the mean μ of this population, using the MVU estimator $\hat{\mu}_1$ (Eq. 13.3); we then obtain the upper and lower one-sided 90% confidence limits about μ, using Eqs. 13.13 and 13.14.

Suppose the $n = 15$ data give $\bar{y} = 1.8$ and $s_y^2 = 4.0$. Then Eq. 13.3 gives

$$\hat{\mu}_1 = \exp(1.8)\,\Psi_{15}(2) = 6.0496(5.439) = 33$$

where $\Psi_{15}(2)$ is obtained from Table A9. Entering Table A10 with $n = 15$ and $s_y = 2.0$, we obtain $H_{0.90} = 3.244$. Hence,

$$\mathrm{UL}_{0.90} = \exp\left(1.8 + 0.5(4) + \frac{2(3.244)}{\sqrt{14}}\right)$$

$$= 253$$

Entering Table A11 with $n = 15$ and $s_y = 2.0$, we find $H_{0.10} = -1.733$. Hence,

$$\mathrm{LL}_{0.10} = \exp\left(1.8 + 0.5(4) + \frac{2(-1.733)}{\sqrt{14}}\right)$$

$$= 17.7$$

In summary, μ is estimated to be 33 with lower and upper one-sided 90% limits of 18 and 250. The interval 18 to 250 is the two-sided 80% confidence interval about μ. To obtain one-sided upper and lower 95% limits (equivalent to a two-sided 90% confidence interval about μ) use Tables A12 and A13.

In practice, H may be required for values of s_y and n not given in Tables A10–A13. Land (1975) indicates that cubic interpolation (four-point Lagrangian

interpolation; Abra
with these tables.

13.3 ESTIM

The true median
below which half
the median equals
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13.3.1 Samp

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EXAMPLE

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Hence, for t
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13.3.2 Minim Estim

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If the distribu
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Table A12 Values of $H_{1-\alpha} = H_{0.95}$ for Computing a One-Sided Upper 95% Confidence Limit on a Lognormal Mean

	n									
s_y	3	5	7	10	12	15	21	31	51	101
0.10	2.750	2.035	1.886	1.802	1.775	1.749	1.722	1.701	1.684	1.670
0.20	3.295	2.198	1.992	1.881	1.843	1.809	1.771	1.742	1.718	1.697
0.30	4.109	2.402	2.125	1.977	1.927	1.882	1.833	1.793	1.761	1.733
0.40	5.220	2.651	2.282	2.089	2.026	1.968	1.905	1.856	1.813	1.777
0.50	6.495	2.947	2.465	2.220	2.141	2.068	1.989	1.928	1.876	1.830
0.60	7.807	3.287	2.673	2.368	2.271	2.181	2.085	2.010	1.946	1.891
0.70	9.120	3.662	2.904	2.532	2.414	2.306	2.191	2.102	2.025	1.960
0.80	10.43	4.062	3.155	2.710	2.570	2.443	2.307	2.202	2.112	2.035
0.90	11.74	4.478	3.420	2.902	2.738	2.589	2.432	2.310	2.206	2.117
1.00	13.05	4.905	3.698	3.103	2.915	2.744	2.564	2.423	2.306	2.205
1.25	16.33	6.001	4.426	3.639	3.389	3.163	2.923	2.737	2.580	2.447
1.50	19.60	7.120	5.184	4.207	3.896	3.612	3.311	3.077	2.881	2.713
1.75	22.87	8.250	5.960	4.795	4.422	4.081	3.719	3.437	3.200	2.997
2.00	26.14	9.387	6.747	5.396	4.962	4.564	4.141	3.812	3.533	3.295
2.50	32.69	11.67	8.339	6.621	6.067	5.557	5.013	4.588	4.228	3.920
3.00	39.23	13.97	9.945	7.864	7.191	6.570	5.907	5.388	4.947	4.569
3.50	45.77	16.27	11.56	9.118	8.326	7.596	6.815	6.201	5.681	5.233
4.00	52.31	18.58	13.18	10.38	9.469	8.630	7.731	7.024	6.424	5.908
4.50	58.85	20.88	14.80	11.64	10.62	9.669	8.652	7.854	7.174	6.590
5.00	65.39	23.19	16.43	12.91	11.77	10.71	9.579	8.688	7.929	7.277
6.00	78.47	27.81	19.68	15.45	14.08	12.81	11.44	10.36	9.449	8.661
7.00	91.55	32.43	22.94	18.00	16.39	14.90	13.31	12.05	10.98	10.05
8.00	104.6	37.06	26.20	20.55	18.71	17.01	15.18	13.74	12.51	11.45
9.00	117.7	41.68	29.46	23.10	21.03	19.11	17.05	15.43	14.05	12.85
10.00	130.8	46.31	32.73	25.66	23.35	21.22	18.93	17.13	15.59	14.26

Source: After Land, 1975.
This table is used in Section 13.2.

Table A13 Values of $H_{\alpha} = H_{0.05}$ for Computing a One-Sided Lower 5% Confidence Limit on a Lognormal Mean

	n									
s_y	3	5	7	10	12	15	21	31	51	101
0.10	-2.130	-1.806	-1.731	-1.690	-1.677	-1.666	-1.655	-1.648	-1.644	-1.642
0.20	-1.949	-1.729	-1.678	-1.653	-1.646	-1.640	-1.636	-1.636	-1.637	-1.641
0.30	-1.816	-1.669	-1.639	-1.627	-1.625	-1.625	-1.627	-1.632	-1.638	-1.648
0.40	-1.717	-1.625	-1.611	-1.611	-1.613	-1.617	-1.625	-1.635	-1.647	-1.662
0.50	-1.644	-1.594	-1.594	-1.603	-1.609	-1.618	-1.631	-1.646	-1.663	-1.683
0.60	-1.589	-1.573	-1.584	-1.602	-1.612	-1.625	-1.643	-1.662	-1.685	-1.711
0.70	-1.549	-1.560	-1.582	-1.608	-1.622	-1.638	-1.661	-1.686	-1.713	-1.744
0.80	-1.521	-1.555	-1.586	-1.620	-1.636	-1.656	-1.685	-1.714	-1.747	-1.783
0.90	-1.502	-1.556	-1.595	-1.637	-1.656	-1.680	-1.713	-1.747	-1.785	-1.826
1.00	-1.490	-1.562	-1.610	-1.658	-1.681	-1.707	-1.745	-1.784	-1.827	-1.874
1.25	-1.486	-1.596	-1.662	-1.727	-1.758	-1.793	-1.842	-1.893	-1.949	-2.012
1.50	-1.508	-1.650	-1.733	-1.814	-1.853	-1.896	-1.958	-2.020	-2.091	-2.169
1.75	-1.547	-1.719	-1.819	-1.916	-1.962	-2.015	-2.088	-2.164	-2.247	-2.341
2.00	-1.598	-1.799	-1.917	-2.029	-2.083	-2.144	-2.230	-2.318	-2.416	-2.526
2.50	-1.727	-1.986	-2.138	-2.283	-2.351	-2.430	-2.540	-2.654	-2.780	-2.921
3.00	-1.880	-2.199	-2.384	-2.560	-2.644	-2.740	-2.874	-3.014	-3.169	-3.342
3.50	-2.051	-2.429	-2.647	-2.855	-2.953	-3.067	-3.226	-3.391	-3.574	-3.780
4.00	-2.237	-2.672	-2.922	-3.161	-3.275	-3.406	-3.589	-3.779	-3.990	-4.228
4.50	-2.434	-2.924	-3.206	-3.476	-3.605	-3.753	-3.960	-4.176	-4.416	-4.685
5.00	-2.638	-3.183	-3.497	-3.798	-3.941	-4.107	-4.338	-4.579	-4.847	-5.148
6.00	-3.062	-3.715	-4.092	-4.455	-4.627	-4.827	-5.106	-5.397	-5.721	-6.086
7.00	-3.499	-4.260	-4.699	-5.123	-5.325	-5.559	-5.886	-6.227	-6.608	-7.036
8.00	-3.945	-4.812	-5.315	-5.800	-6.031	-6.300	-6.674	-7.066	-7.502	-7.992
9.00	-4.397	-5.371	-5.936	-6.482	-6.742	-7.045	-7.468	-7.909	-8.401	-8.953
10.00	-4.852	-5.933	-6.560	-7.168	-7.458	-7.794	-8.264	-8.755	-9.302	-9.918

Source: After Land, 1975.
This table is used in Section 13.2.

EPA/530-SW-89-026

PB89-151047

STATISTICAL ANALYSIS OF GROUND-WATER MONITORING DATA AT RCRA FACILITIES

INTERIM FINAL GUIDANCE

OFFICE OF SOLID WASTE
WASTE MANAGEMENT DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY
401 M STREET, S.W.
WASHINGTON, D.C. 20460

FEBRUARY 1989

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U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

TABLE 6-3. VALUES OF M AND n+1-M AND CONFIDENCE COEFFICIENTS FOR SMALL SAMPLES

n	M	n+1-M	Two-sided confidence
4	4	1	87.5%
5	5	1	93.8%
6	6	1	96.9%
7	7	1	98.4%
8	8	1	99.2%
9	9	1	99.6%
10	9	2	97.9%
11	10	2	98.8%

Step 3. Once M has been determined in Step 2, find n+1-M and take as the confidence limits the order statistics, X(M) and X(n+1-M). (With the minimum seven observations, use X(1) and X(7).)

Step 4. Compare the confidence limits found in Step 3 to the compliance limit. If the lower limit, X(M) exceeds the compliance limit, there is statistically significant evidence of contamination. Otherwise, the unit remains in compliance.

REMARK

The nonparametric confidence interval procedure requires at least seven observations in order to obtain a (one-sided) significance level of 1% (confidence of 99%). This means that data from two (or more) wells or sampling periods would have to be pooled to achieve this level. If only the four observations from one well taken at a single sampling period were used, the one-sided significance level would be 6.25%. This would also be the false alarm rate.

Ties do not affect the procedure. If there are ties, order the observations as before, including all of the tied values as separate observations. That is, each of the observations with a common value is included in the ordered list (e.g., 1, 2, 2, 2, 3, 4, etc.). For ties, use the average of the tied ranks as in Section 5.2.2, Step 1 of the example. The ordered statistics are found by counting positions up from the bottom of the list as before. Multiple values from separate observations are counted separately.

EXAMPLE

Table 6-4 contains concentrations of Silvex in parts per million from two hypothetical compliance wells. The data are assumed to consist of four samples taken each quarter for a year, so that sixteen observations are available

in this case). If the lower end of the confidence interval exceeds the appropriate compliance limit, then the mean concentration must exceed that compliance limit. These results provide statistically significant evidence of contamination.

6.2.1.3 Nonparametric Confidence Interval

If the data do not adequately follow the normal distribution even after the logarithm transformation, a nonparametric confidence interval can be constructed. This interval is for the median concentration (which equals the mean if the distribution is symmetric). The nonparametric confidence interval is generally wider and requires more data than the corresponding normal distribution interval, and so the normal or log-normal distribution interval should be used whenever it is appropriate. It requires a minimum of seven (7) observations in order to construct an interval with a two-sided confidence coefficient of 98%, corresponding to a one-sided confidence coefficient of 99%. Consequently, it is applicable only for the pooled concentration of compliance wells at a single point in time or for special sampling to produce a minimum of seven observations at a single well during the sampling period.

PURPOSE

The nonparametric confidence interval is used when the raw data have been found to violate the normality assumption, a log-transformation fails to normalize the data, and no other specific distribution is assumed. It produces a simple confidence interval that is designed to contain the true or population median concentration with specified confidence (here 99%). If this confidence interval contains the compliance limit, it is concluded that the median concentration does not differ significantly from the compliance limit. If the interval's lower limit exceeds the compliance limit, this is statistically significant evidence that the concentration exceeds the compliance limit and the unit is out of compliance.

PROCEDURE

Step 1. Within each compliance well, order the n data from least to greatest, denoting the ordered data by X(1),. . ., X(n), where X(i) is the ith value in the ordered data.

Step 2. Determine the critical values of the order statistics as follows. If the minimum seven observations is used, the critical values are 1 and 7. Otherwise, find the smallest integer, M, such that the cumulative binomial distribution with parameters n (the sample size) and p = 0.5 is at least 0.99. Table 6-3 gives the values of M and n+1-M together with the exact confidence coefficient for sample sizes from 4 to 11. For larger samples, take as an approximation the nearest integer value to

$$M = n/2 + 1 + Z_{0.99} \sqrt{(n/4)}$$

where $Z_{0.99}$ is the 99th percentile from the normal distribution (Table 4, Appendix B) and equals 2.33.

```
MTB > cdf;
SUBC> binomial 16 .5.

    BINOMIAL WITH N =  16  P = 0.500000
       K  P( X LESS OR = K)
       0            0.0000
       1            0.0003
       2            0.0021
       3            0.0106
       4            0.0384
       5            0.1051
       6            0.2272
       7            0.4018
       8            0.5982
       9            0.7728
      10            0.8949
      11            0.9616
      12            0.9894
      13            0.9979
      14            0.9997
      15            1.0000
MTB > stop
*** Minitab Release 1.2 *** Minitab, Inc. ***
Storage available 2001
```

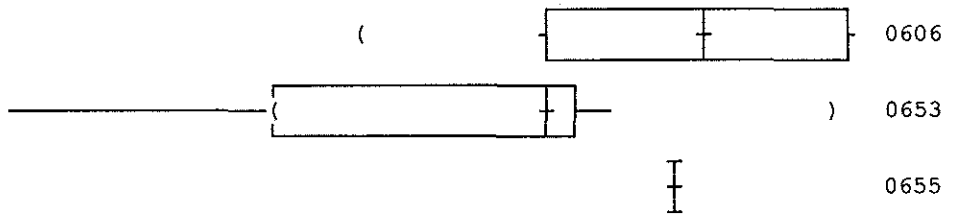
← approx 96% UCL for median = 11th ordered measurement of a data set of n = 16.

APPENDIX C1

GRAPHICAL COMPARISON OF FILTERED SAMPLE WATER QUALITY FOR WELLS LOCATED NEAR CENTROID OF NITRATE/SULFATE PLUME AT THE MONUMENT VALLEY SITE

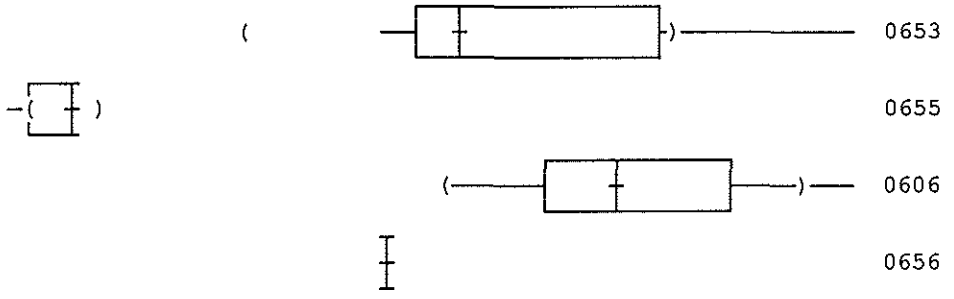
DETECTS ONLY

```
THE FOLLOWING RESULTS ARE FOR:
            PARID$     = AS
         BOX PLOT OF VARIABLE:        P     , N =     6
          GROUPED BY VARIABLE:    LOCID$
      0.00                                                    0.02
  MINIMUM                                                  MAXIMUM
```




```
THE FOLLOWING RESULTS ARE FOR:
            PARID$     = B
         BOX PLOT OF VARIABLE:        P     , N =     5
          GROUPED BY VARIABLE:    LOCID$
      0.15                                                    0.20
  MINIMUM                                                  MAXIMUM
```

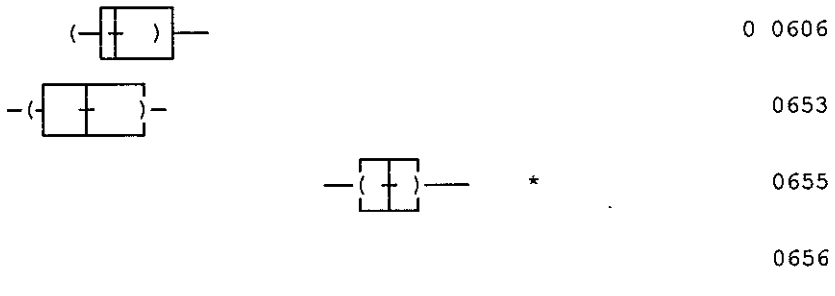
```
THE FOLLOWING RESULTS ARE FOR:
            PARID$     = BA
         BOX PLOT OF VARIABLE:        P     , N =    10
          GROUPED BY VARIABLE:    LOCID$
      0.02                                                    0.04
  MINIMUM                                                  MAXIMUM
```




```
THE FOLLOWING RESULTS ARE FOR:
            PARID$     = BR
         BOX PLOT OF VARIABLE:        P     , N =     2
          GROUPED BY VARIABLE:    LOCID$
      0.20                                                    0.50
  MINIMUM                                                  MAXIMUM
```

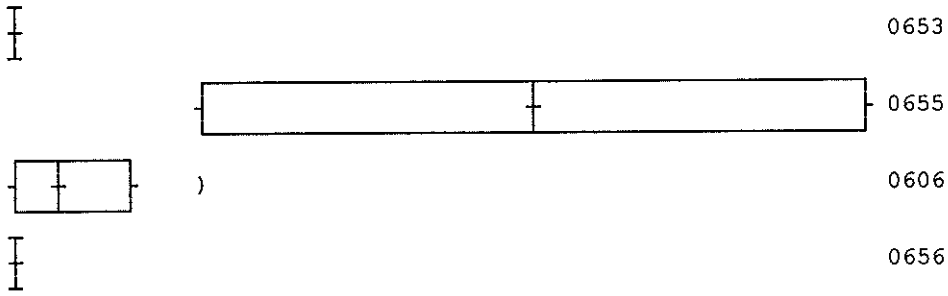
THE FOLLOWING RESULTS ARE FOR:
PARID$ = CA
BOX PLOT OF VARIABLE: P , N = 28
GROUPED BY VARIABLE: LOCID$

61.10 MINIMUM — 660.00 MAXIMUM



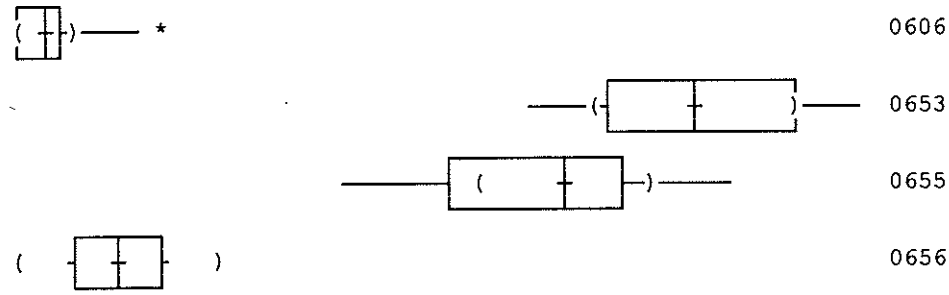
THE FOLLOWING RESULTS ARE FOR:
PARID$ = CD
BOX PLOT OF VARIABLE: P , N = 6
GROUPED BY VARIABLE: LOCID$

0.00 MINIMUM — 0.12 MAXIMUM



THE FOLLOWING RESULTS ARE FOR:
PARID$ = CL
BOX PLOT OF VARIABLE: P , N = 28
GROUPED BY VARIABLE: LOCID$

15.90 MINIMUM — 42.00 MAXIMUM



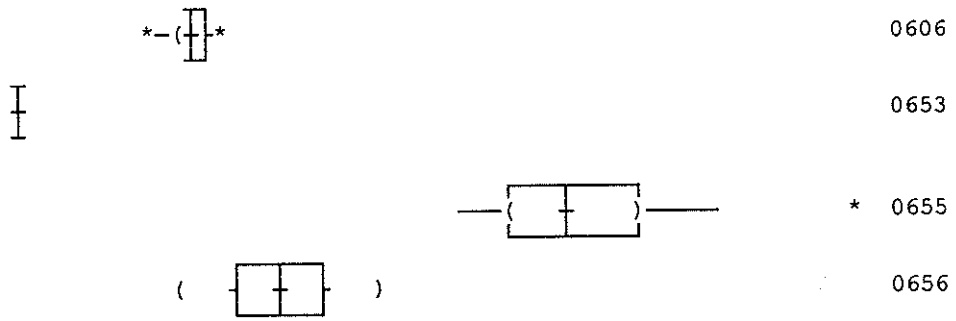
```
THE FOLLOWING RESULTS ARE FOR:
            PARID$     = CU
         BOX PLOT OF VARIABLE:        P     , N =      3
          GROUPED BY VARIABLE:    LOCID$
      0.02                                                    0.03
  MINIMUM                                                  MAXIMUM

                                                            0655

                                                            0656

                                                            0606
```

```
THE FOLLOWING RESULTS ARE FOR:
            PARID$     = F
         BOX PLOT OF VARIABLE:        P     , N =     14
          GROUPED BY VARIABLE:    LOCID$
      0.10                                                    0.60
  MINIMUM                                                  MAXIMUM

                                                            0606

                                                            0653

                                                            0655

                                                            0656
```

```
THE FOLLOWING RESULTS ARE FOR:
            PARID$     = FE
         BOX PLOT OF VARIABLE:        P     , N =      9
          GROUPED BY VARIABLE:    LOCID$
      0.06                                                    3.50
  MINIMUM                                                  MAXIMUM

                                                            0606

                                                            0653

                                                            0655
```

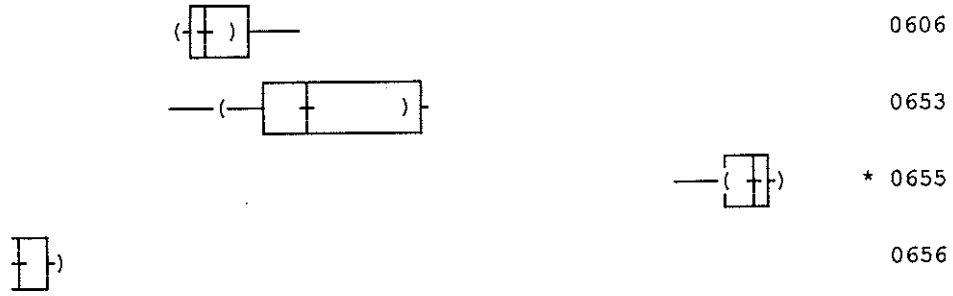
THE FOLLOWING RESULTS ARE FOR:
PARID$ = K
BOX PLOT OF VARIABLE: P , N = 28
GROUPED BY VARIABLE: LOCID$

3.24 MINIMUM — 43.40 MAXIMUM



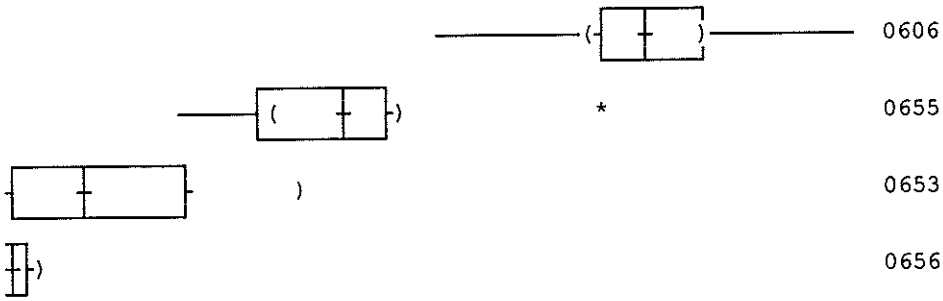
THE FOLLOWING RESULTS ARE FOR:
PARID$ = MG
BOX PLOT OF VARIABLE: P , N = 28
GROUPED BY VARIABLE: LOCID$

50.60 MINIMUM — 350.00 MAXIMUM



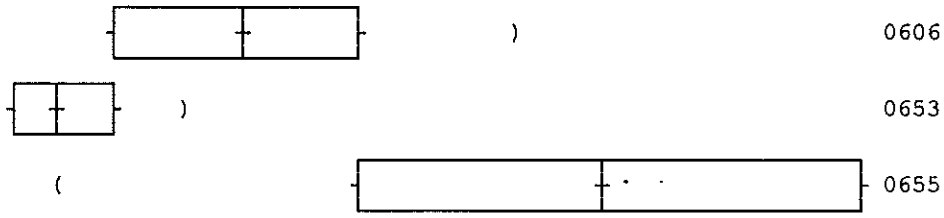
THE FOLLOWING RESULTS ARE FOR:
PARID$ = MN
BOX PLOT OF VARIABLE: P , N = 22
GROUPED BY VARIABLE: LOCID$

0.00 MINIMUM — 0.17 MAXIMUM



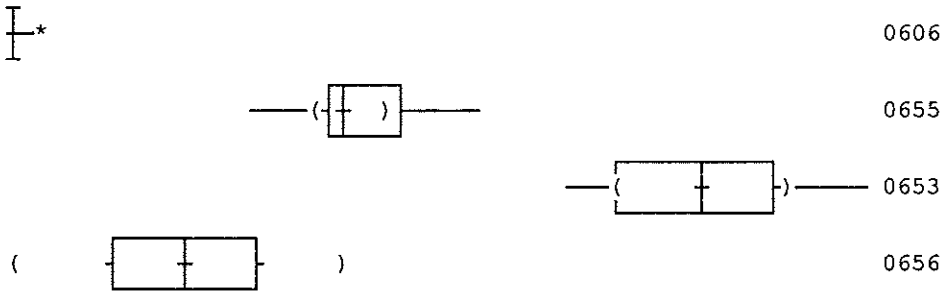
THE FOLLOWING RESULTS ARE FOR:
PARID$ = MO
BOX PLOT OF VARIABLE: P , N = 6
GROUPED BY VARIABLE: LOCID$

0.03 MINIMUM — 0.10 MAXIMUM



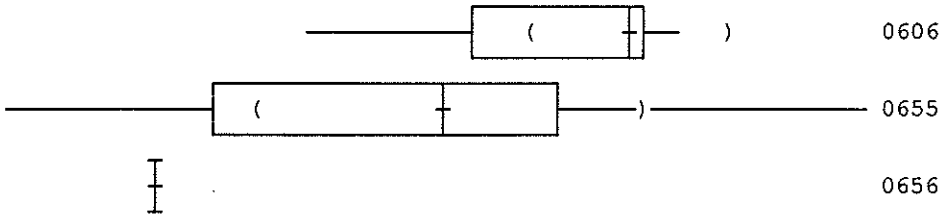
THE FOLLOWING RESULTS ARE FOR:
PARID$ = NA
BOX PLOT OF VARIABLE: P , N = 28
GROUPED BY VARIABLE: LOCID$

95.00 MINIMUM — 267.00 MAXIMUM



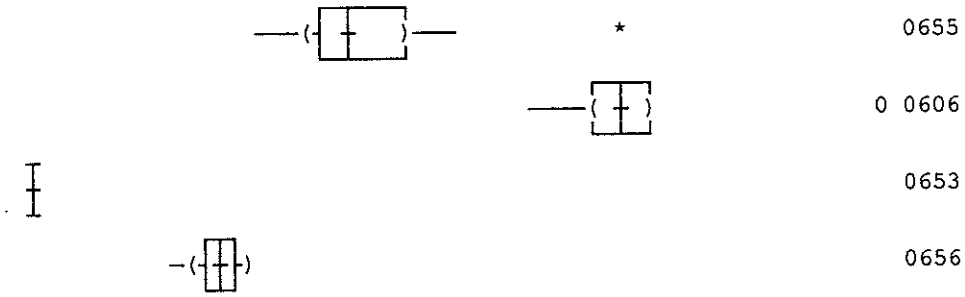
THE FOLLOWING RESULTS ARE FOR:
PARID$ = NH4
BOX PLOT OF VARIABLE: P , N = 17
GROUPED BY VARIABLE: LOCID$

43.40 MINIMUM — 460.00 MAXIMUM



THE FOLLOWING RESULTS ARE FOR:
PARID$ = NO3
BOX PLOT OF VARIABLE: P , N = 32
GROUPED BY VARIABLE: LOCID$

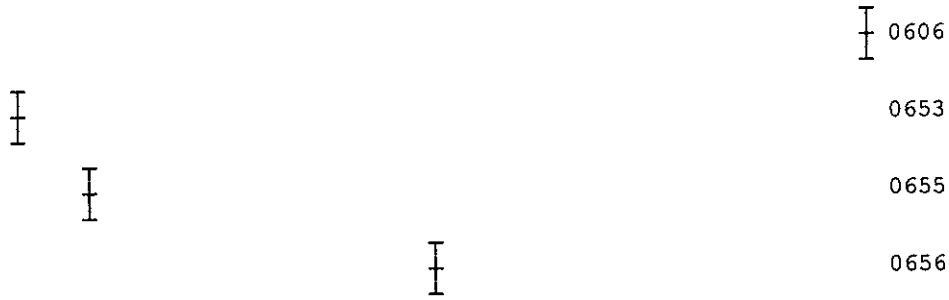
31.00 MINIMUM — 1600.00 MAXIMUM



THE FOLLOWING RESULTS ARE FOR:
PARID$ = PB
NOT ENOUGH CASES FOR GRAPH

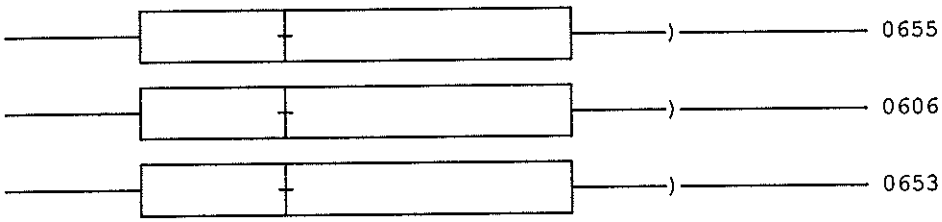
THE FOLLOWING RESULTS ARE FOR:
PARID$ = PB0
BOX PLOT OF VARIABLE: P , N = 4
GROUPED BY VARIABLE: LOCID$

0.10 MINIMUM — 1.90 MAXIMUM



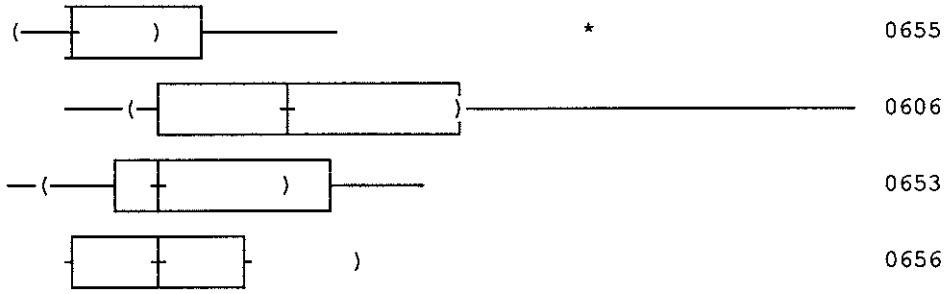
THE FOLLOWING RESULTS ARE FOR:
PARID$ = PO4
BOX PLOT OF VARIABLE: P , N = 9
GROUPED BY VARIABLE: LOCID$

0.30 MINIMUM — 0.60 MAXIMUM



THE FOLLOWING RESULTS ARE FOR:
PARID$ = R6L
BOX PLOT OF VARIABLE: P , N = 25
GROUPED BY VARIABLE: LOCID$

0.00 MINIMUM — 1.00 MAXIMUM



THE FOLLOWING RESULTS ARE FOR:
PARID$ = RA8
BOX PLOT OF VARIABLE: P , N = 25
GROUPED BY VARIABLE: LOCID$

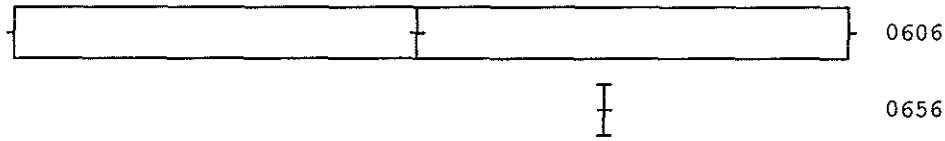
0.00 MINIMUM — 15.20 MAXIMUM

THE FOLLOWING RESULTS ARE FOR:
PARID$ = S
BOX PLOT OF VARIABLE: P , N = 3
GROUPED BY VARIABLE: LOCID$

1.32 MINIMUM — 11.50 MAXIMUM

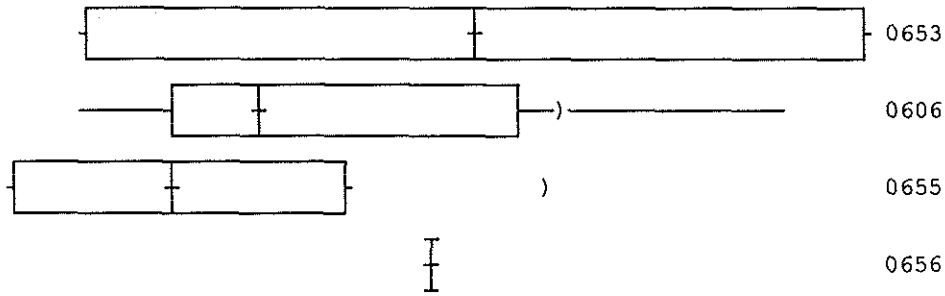
THE FOLLOWING RESULTS ARE FOR:
PARID$ = SB
BOX PLOT OF VARIABLE: P , N = 3
GROUPED BY VARIABLE: LOCID$

0.00 MINIMUM — 0.01 MAXIMUM



THE FOLLOWING RESULTS ARE FOR:
PARID$ = SE
BOX PLOT OF VARIABLE: P , N = 8
GROUPED BY VARIABLE: LOCID$

0.01 MINIMUM — 0.02 MAXIMUM



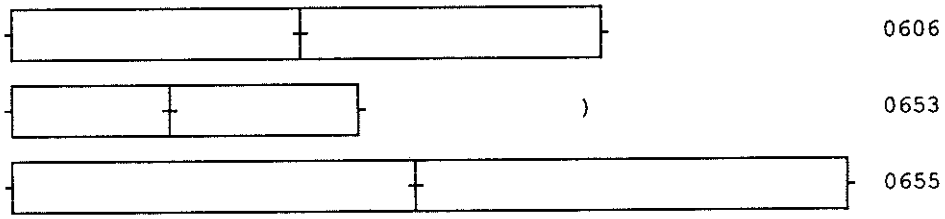
THE FOLLOWING RESULTS ARE FOR:
PARID$ = SIO
BOX PLOT OF VARIABLE: P , N = 16
GROUPED BY VARIABLE: LOCID$

13.00 MINIMUM — 23.00 MAXIMUM

```
THE FOLLOWING RESULTS ARE FOR:
            PARID$     = SN
         BOX PLOT OF VARIABLE:        P     , N =     4
          GROUPED BY VARIABLE:    LOCID$
     0.01                                                    0.06
  MINIMUM                                                 MAXIMUM

                                                          0655

          (                  )                            0653

                                                          0606

THE FOLLOWING RESULTS ARE FOR:
            PARID$     = SO4
         BOX PLOT OF VARIABLE:        P     , N =    32
          GROUPED BY VARIABLE:    LOCID$
   440.00                                                 3540.00
  MINIMUM                                                 MAXIMUM

                                                        *  0655

                                                          0606

                                                          0653

                                                          0656

THE FOLLOWING RESULTS ARE FOR:
            PARID$     = SR
         BOX PLOT OF VARIABLE:        P     , N =    18
          GROUPED BY VARIABLE:    LOCID$
     0.71                                                    7.55
  MINIMUM                                                 MAXIMUM

                                                          0655

                                                          0606

          (                  )                          0  0653

                                                          0656
```

THE FOLLOWING RESULTS ARE FOR:
PARID$ = T0L
BOX PLOT OF VARIABLE: P , N = 6
GROUPED BY VARIABLE: LOCID$

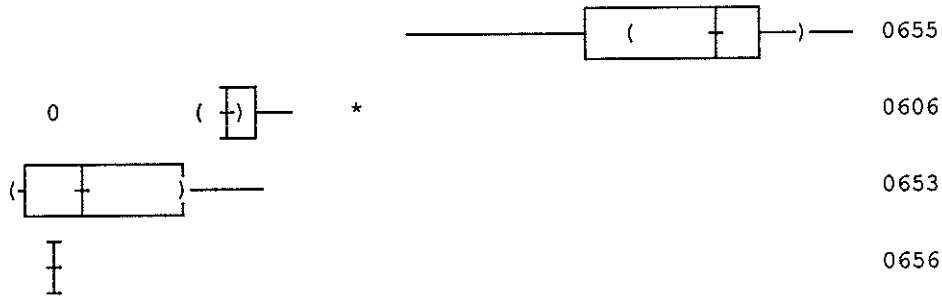
0.00 MINIMUM — 0.70 MAXIMUM



THE FOLLOWING RESULTS ARE FOR:
PARID$ = TL
NOT ENOUGH CASES FOR GRAPH

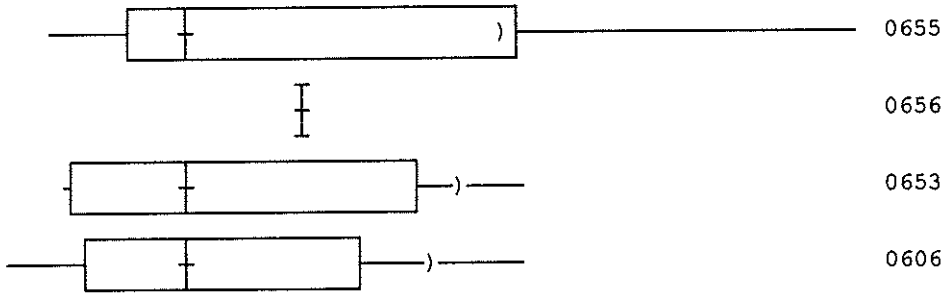
THE FOLLOWING RESULTS ARE FOR:
PARID$ = U
BOX PLOT OF VARIABLE: P , N = 30
GROUPED BY VARIABLE: LOCID$

0.01 MINIMUM — 0.03 MAXIMUM

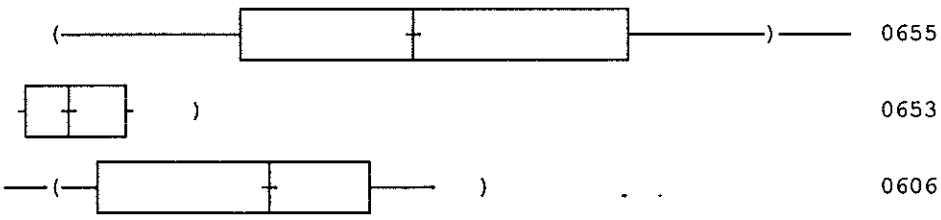


THE FOLLOWING RESULTS ARE FOR:
PARID$ = V
BOX PLOT OF VARIABLE: P , N = 12
GROUPED BY VARIABLE: LOCID$

0.00 MINIMUM — 0.08 MAXIMUM



```
THE FOLLOWING RESULTS ARE FOR:
          PARID$     = ZN
       BOX PLOT OF VARIABLE:        P     , N =     9
        GROUPED BY VARIABLE:    LOCID$
     0.00                                                    0.06
  MINIMUM                                                 MAXIMUM
```



APPENDIX C2

CONCENTRATION DATA FOR PLUME WELL 0655 FOR CONSTITUENTS OMITTED FROM RISK EVALUATION WITHOUT STATISTICAL COMPARISON TO BACKGROUND LEVELS

GROUP 1: CONSTITUENTS OMITTED DUE TO INFREQUENCY OF DETECT
GROUP 2: CONSTITUENTS OMITTED DUE TO INSUFFICIENT DATA

GROUP 1

AG	0655	89.441	0.010	<	0.010
AG	0655	89.925	0.010	<	0.010
AG	0655	90.485	0.010	<	0.010
AG	0655	91.079	0.010	<	0.010
AG	0655	91.422	0.010	<	0.010
AL	0655	89.441	0.100	<	0.100
AL	0655	89.925	0.100	<	0.100
AL	0655	90.485	0.100	<	0.100
AL	0655	91.079	0.100	<	0.100
AL	0655	91.422	0.050	<	0.050
AL	0655	92.144	0.050	<	0.050
AL	0655	92.619	0.200	<	0.200
AS	0655	88.307	0.010		0.012
AS	0655	89.441	0.010	<	0.010
AS	0655	89.925	0.010	<	0.010
AS	0655	90.485	0.010	<	0.010
AS	0655	91.079	0.010	<	0.010
AS	0655	91.422	0.050	<	0.050
AS	0655	92.144	0.010	<	0.010
AS	0655	92.619	0.010	<	0.010
AS	0655	92.885	0.001	<	0.001
B	0655	89.441	0.100	<	0.100
B	0655	89.925	0.100	<	0.100
B	0655	90.485	0.100	<	0.100
B	0655	91.079	0.100	<	0.100
B	0655	91.422	0.050	<	0.050
BE	0655	89.441	0.010	<	0.010
BE	0655	89.925	0.005	<	0.005
BE	0655	90.485	0.010	<	0.010
BE	0655	91.079	0.010	<	0.010
BE	0655	91.422	0.005	<	0.005
BE	0655	92.619	0.005	<	0.005
CN	0655	89.441	0.010	<	0.010
CN	0655	89.925	0.010	<	0.010
CO	0655	89.441	0.050	<	0.050
CO	0655	89.925	0.050	<	0.050
CO	0655	90.485	0.050	<	0.050
CO	0655	91.079	0.050	<	0.050
CO	0655	91.422	0.030	<	0.030
CR	0655	89.441	0.010	<	0.010
CR	0655	89.925	0.010	<	0.010
CR	0655	90.485	0.010	<	0.010
CR	0655	91.079	0.010	<	0.010
CR	0655	91.422	0.010	<	0.010
CR	0655	92.144	0.010	<	0.010
CR	0655	92.619	0.010	<	0.010
CR	0655	92.885	0.005	<	0.005
CU	0655	89.441	0.020		0.020
CU	0655	89.925	0.020	<	0.020
CU	0655	90.485	0.020	<	0.020
CU	0655	91.079	0.020	<	0.020

GROUP 1 CONTINUED

CU	0655	91.422	0.010	<	0.010
HG	0655	89.441	0.000	<	0.000
HG	0655	89.925	0.000	<	0.000
HG	0655	90.485	0.000	<	0.000
NI	0655	89.441	0.040	<	0.040
NI	0655	89.925	0.040	<	0.040
NI	0655	90.485	0.040	<	0.040
NI	0655	91.079	0.040	<	0.040
NI	0655	91.422	0.040	<	0.040
PB	0655	89.441	0.010		0.010
PB	0655	89.925	0.010	<	0.010
PB	0655	90.485	0.010	<	0.010
PB	0655	91.079	0.010	<	0.010
PB	0655	91.422	0.005	<	0.005
PB	0655	92.885	0.001	<	0.001
S	0655	89.441	0.100	<	0.100
S	0655	89.925	0.100	<	0.100
S	0655	91.079	0.100	<	0.100
S	0655	91.422	1.000		5.600
SB	0655	89.441	0.003	<	0.000
SB	0655	89.925	0.003	<	0.003
SB	0655	90.485	0.003	<	0.003
SB	0655	91.079	0.003	<	0.003
SB	0655	91.422	0.003	<	0.003
SB	0655	92.144	0.003	<	0.003
SB	0655	92.619	0.060	<	0.060
SN	0655	89.441	0.005	<	0.005
SN	0655	89.925	0.005	<	0.005
SN	0655	90.485	0.005		0.063
SN	0655	91.079	0.005	<	0.005
SN	0655	91.422	0.010	<	0.010
SN	0655	92.144	0.030	<	0.030
TL	0655	89.441	0.010	<	0.010
TL	0655	89.925	0.100	<	0.100
TL	0655	90.485	0.010	<	0.010
TL	0655	91.079	0.010	<	0.010
TL	0655	91.422	0.010	<	0.010

GROUP 2

BR	0602	91.415	0.100		0.200
BR	0603	91.418	0.100		0.100
BR	0616	91.425	0.100	<	0.100
BR	0655	91.079	0.100	<	0.100
BR	0655	91.422	0.100		0.500
PBO	0602	92.894	2.000		1.700
PBO	0603	92.891	2.000		0.000
PBO	0655	92.885	2.000		0.300
PO4	0602	89.430	0.100		0.600
PO4	0603	89.430	0.100		0.600
PO4	0655	89.441	0.100		0.600

GROUP 2 CONTINUED

PO4	0655	89.925	0.100	0.300
PO4	0655	90.485	0.100	0.400
TOL	0602	91.415	1.000	1.000
TOL	0603	91.418	1.000	0.400
TOL	0616	91.425	1.000	0.800
TOL	0655	91.079	1.000	0.000
TOL	0655	91.422	1.000	0.700

APPENDIX C3

STATISTICAL COMPARISON OF BACKGROUND AND PLUME GROUND WATER QUALITY IN THE ALLUVIAL AQUIFER AT THE MONUMENT VALLEY SITE

BACKGROUND = WELLS 602, 603, 616, AND 617

PLUME WELL = 655

METHOD: MANN-WHITNEY NONPARAMETRIC COMPARISON, ONE-SIDED TEST, 0.05 LEVEL OF SIGNIFICANCE

CONST	ID	DATE	DL	CONCENTRATION		RANK
BA	0602	89.430	0.100	<	0.100	.
	0602	91.415	0.010		0.050	9.000
	0602	92.152	0.010		0.050	9.000
	0602	92.611	0.200	<	0.200	.
	0602	92.894	0.001		0.049	7.000
	0603	89.430	0.100	<	0.100	.
	0603	91.418	0.010		0.040	5.500
	0603	92.144	0.010		0.040	5.500
	0603	92.611	0.200	<	0.200	.
	0603	92.891	0.001		0.038	4.000
	0616	91.425	0.010		0.110	11.000
	0616	92.157	0.010		0.120	12.000
	0616	92.622	0.200	<	0.200	.
	0617	92.157	0.010		0.050	9.000
	0617	92.622	0.200	<	0.200	.
	0655	89.441	0.100	<	0.100	.
	0655	89.925	0.100	<	0.100	.
	0655	90.485	0.100	<	0.100	.
	0655	91.079	0.100	<	0.100	.
	0655	91.422	0.010		0.020	2.500
	0655	92.144	0.010		0.020	2.500
	0655	92.619	0.200	<	0.200	.
	0655	92.885	0.001		0.018	1.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 12 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	9	72.000	8.0
0655	3	6.000	2.0

MANN-WHITNEY U TEST STATISTIC = 27.000
PROBABILITY IS 1 − 0.012/2 = 0.994 not Significant
CHI-SQUARE APPROXIMATION = 6.364 WITH 1 DF

CONST	ID	DATE	DL	CONCENTRATION	RANK
CA	0602	88.310	0.010	28.200	11.000
	0602	89.430	0.010	28.700	12.000
	0602	91.415	0.500	29.400	13.000
	0602	92.152	0.500	27.400	10.000
	0602	92.611	5.000	27.000	9.000
	0602	93.089	0.500	26.500	8.000
	0603	88.321	0.010	19.300	4.000
	0603	89.430	0.010	19.500	5.000
	0603	91.418	0.100	19.000	3.000
	0603	92.144	0.100	17.900	1.000
	0603	92.611	5.000	20.000	6.000
	0616	91.425	0.500	35.600	15.000
	0616	92.157	0.500	30.300	14.000
	0616	92.622	5.000	37.000	16.000
	0617	92.157	0.100	18.100	2.000
	0617	92.622	5.000	23.000	7.000
	0655	88.307	0.010	518.000	25.000
	0655	89.441	0.010	429.000	22.000
	0655	89.925	0.010	433.000	23.000
	0655	90.485	0.010	395.000	19.000
	0655	91.079	0.010	420.000	21.000
	0655	91.422	0.500	463.000	24.000
	0655	92.144	0.500	390.000	18.000
	0655	92.619	5.000	410.000	20.000
	0655	93.135	0.500	372.000	17.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 25 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{e}$
BKG	16	136.000	8.5
0655	9	189.000	21.0

MANN-WHITNEY U TEST STATISTIC = 0.000
PROBABILITY IS 0.000/2
CHI-SQUARE APPROXIMATION = 16.615 WITH 1 DF

Significant

CONST	ID	DATE	DL	CONCENTRATION		RANK
CD	0602	88.310	0.001		0.005	23.500
	0602	89.430	0.001	<	0.001	11.500
	0602	91.415	0.001	<	0.001	11.500
	0602	92.152	0.000	<	0.000	11.500
	0602	92.611	0.005	<	0.005	11.500
	0602	92.894	0.000	<	0.000	11.500
	0603	88.321	0.001		0.005	23.500
	0603	89.430	0.001	<	0.001	11.500
	0603	91.418	0.001	<	0.001	11.500
	0603	92.144	0.000	<	0.000	11.500
	0603	92.611	0.005	<	0.005	11.500
	0603	92.891	0.000	<	0.000	11.500
	0616	91.425	0.001	<	0.001	11.500
	0616	92.157	0.001	<	0.001	11.500
	0616	92.622	0.005	<	0.005	11.500
	0617	92.157	0.001	<	0.001	11.500
	0617	92.622	0.005	<	0.005	11.500
	0655	88.307	0.001		0.030	25.000
	0655	89.441	0.001		0.120	26.000
	0655	89.925	0.001	<	0.001	11.500
	0655	90.485	0.001	<	0.001	11.500
	0655	91.079	0.001	<	0.001	11.500
	0655	91.422	0.001	<	0.001	11.500
	0655	92.144	0.000	<	0.000	11.500
	0655	92.619	0.005	<	0.005	11.500
	0655	92.885	0.000	<	0.000	11.500

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 26 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	17	219.500	12.9
0655	9	131.500	14.6

MANN-WHITNEY U TEST STATISTIC = 66.500 Not Significant
PROBABILITY IS 0.391
CHI-SQUARE APPROXIMATION = 0.737 WITH 1 DF

CONST	ID	DATE	DL	CONCENTRATION	RANK
CL	0602	88.310	1.000	17.000	16.000
	0602	89.430	1.000	15.000	11.000
	0602	91.415	0.500	15.500	13.500
	0602	92.152	0.500	15.900	15.000
	0602	92.611	0.016	14.000	9.500
	0602	93.089	0.500	15.300	12.000
	0603	88.321	1.000	13.000	8.000
	0603	89.430	1.000	11.000	2.500
	0603	91.418	0.500	12.600	7.000
	0603	92.144	0.500	11.900	5.000
	0603	92.611	0.016	11.000	2.500
	0616	91.425	0.500	11.400	4.000
	0616	92.157	0.500	9.700	1.000
	0616	92.622	0.016	12.000	6.000
	0617	92.157	0.500	15.500	13.500
	0617	92.622	0.016	14.000	9.500
	0655	88.307	1.000	34.000	22.000
	0655	89.441	1.000	36.000	24.000
	0655	89.925	1.000	26.600	17.000
	0655	90.485	1.000	35.000	23.000
	0655	91.079	1.000	38.000	25.000
	0655	91.422	0.500	33.000	21.000
	0655	92.144	1.000	30.000	20.000
	0655	92.619	0.016	29.000	18.000
	0655	93.135	0.500	29.800	19.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 25 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	16	136.000	8.5
0655	9	189.000	21.0

MANN-WHITNEY U TEST STATISTIC = 0.000
PROBABILITY IS 0.000
CHI-SQUARE APPROXIMATION = 16.635 WITH 1 DF

Significant

CONST	ID	DATE	DL		CONCENTRATION	RANK
F	0602	89.430	0.100		0.300	9.500
	0602	91.415	0.100		0.100	3.500
	0603	89.430	0.100		0.200	7.000
	0603	91.418	0.100		0.100	3.500
	0616	91.425	0.100		0.300	9.500
	0655	89.441	0.100		0.200	7.000
	0655	89.925	0.100		0.100	3.500
	0655	90.485	0.100		0.100	3.500
	0655	91.079	0.100		0.200	7.000
	0655	91.422	0.100	<	0.100	1.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 10 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	5	33.000	6.6
0655	5	22.000	4.4

MANN-WHITNEY U TEST STATISTIC = 18.000
PROBABILITY IS 1 − 0.228/2 = 0.886
CHI-SQUARE APPROXIMATION = 1.452 WITH 1 DF

Not Significant

CONST	ID	DATE	DL	CONCENTRATION		RANK
FE	0602	89.430	0.030	<	0.030	8.000
	0602	91.415	0.030	<	0.030	8.000
	0602	92.152	0.030	<	0.030	8.000
	0602	92.611	0.100	<	0.100	.
	0602	93.089	0.030	<	0.030	8.000
	0603	89.430	0.030	<	0.030	8.000
	0603	91.418	0.030	<	0.030	8.000
	0603	92.144	0.030	<	0.030	8.000
	0603	92.611	0.100	<	0.010	8.000
	0616	91.425	0.030	<	0.030	8.000
	0616	92.157	0.030	<	0.030	8.000
	0616	92.622	0.100	<	0.100	.
	0617	92.157	0.030	<	0.030	8.000
	0617	92.622	0.100	<	0.100	.
	0655	89.441	0.030		0.090	17.000
	0655	89.925	0.030	<	0.030	8.000
	0655	90.485	0.030		0.090	17.000
	0655	91.079	0.030		0.090	17.000
	0655	91.422	0.030	<	0.030	8.000
	0655	92.144	0.030	<	0.030	8.000
	0655	92.619	0.100	<	0.100	.
	0655	93.135	0.030	<	0.030	8.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 18 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	11	88.000	8.0
0655	7	83.000	11.9

MANN-WHITNEY U TEST STATISTIC = 22.000
PROBABILITY IS 0.021/2 = 0.011
CHI-SQUARE APPROXIMATION = 5.343 WITH 1 DF

Significant

CONST	ID	DATE	DL	CONCENTRATION	RANK
K	0602	88.310	0.010	1.800	6.000
	0602	89.430	0.010	2.100	11.000
	0602	91.415	0.010	1.890	7.000
	0602	92.152	0.010	1.930	10.000
	0602	92.611	0.575	0.990	4.000
	0602	93.089	0.100	1.900	8.500
	0603	88.321	0.010	2.400	14.000
	0603	89.430	0.010	2.300	13.000
	0603	91.418	0.010	2.600	16.000
	0603	92.144	0.010	2.570	15.000
	0603	92.611	0.575	1.900	8.500
	0616	91.425	0.010	1.060	5.000
	0616	92.157	0.010	0.870	3.000
	0616	92.622	0.575	2.200	12.000
	0617	92.157	0.010	0.550	1.000
	0617	92.622	0.575	0.780	2.000
	0655	88.307	0.010	43.400	25.000
	0655	89.441	0.010	36.600	24.000
	0655	89.925	0.010	30.000	21.500
	0655	90.485	0.010	32.800	23.000
	0655	91.079	0.010	25.800	18.000
	0655	91.422	5.000	27.000	20.000
	0655	92.144	5.000	25.000	17.000
	0655	92.619	0.575	30.000	21.500
	0655	93.135	0.100	26.700	19.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 25 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	16	136.000	8.5
0655	9	189.000	21.0

MANN-WHITNEY U TEST STATISTIC = 0.000
PROBABILITY IS 0.000/2
CHI-SQUARE APPROXIMATION = 16.628 WITH 1 DF

Significant

CONST	ID	DATE	DL	CONCENTRATION	RANK
MG	0602	88.310	0.001	18.000	6.500
	0602	89.430	0.001	19.500	11.000
	0602	91.415	0.100	19.400	10.000
	0602	92.152	0.100	18.500	9.000
	0602	92.611	5.000	18.000	6.500
	0602	93.089	0.100	18.200	8.000
	0603	88.321	0.001	13.200	1.000
	0603	89.430	0.001	14.100	4.000
	0603	91.418	0.100	14.400	5.000
	0603	92.144	0.100	13.800	2.000
	0603	92.611	5.000	14.000	3.000
	0616	91.425	0.100	28.400	13.000
	0616	92.157	0.100	25.600	12.000
	0616	92.622	5.000	30.000	14.000
	0617	92.157	0.100	33.000	15.000
	0617	92.622	5.000	34.000	16.000
	0655	88.307	0.001	295.000	18.000
	0655	89.441	0.001	311.000	21.000
	0655	89.925	0.001	321.000	24.000
	0655	90.485	0.001	306.000	20.000
	0655	91.079	0.001	319.000	22.000
	0655	91.422	0.500	350.000	25.000
	0655	92.144	0.500	301.000	19.000
	0655	92.619	5.000	320.000	23.000
	0655	93.135	0.100	288.000	17.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 25 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	16	136.000	8.5
0655	9	189.000	21.0

MANN-WHITNEY U TEST STATISTIC = 0.000
PROBABILITY IS 0.000 /2
CHI-SQUARE APPROXIMATION = 16.622 WITH 1 DF

Significant

CONST	ID	DATE	DL	CONCENTRATION		RANK
MN	0602	89.430	0.010	<	0.010	8.000
	0602	91.415	0.010	<	0.010	8.000
	0602	92.152	0.010	<	0.010	8.000
	0602	92.611	0.010	<	0.010	8.000
	0602	92.894	0.001	<	0.001	8.000
	0602	93.089	0.010	<	0.010	8.000
	0603	89.430	0.010		0.010	16.000
	0603	91.418	0.010	<	0.010	8.000
	0603	92.144	0.010	<	0.010	8.000
	0603	92.611	0.010	<	0.010	8.000
	0603	92.891	0.001		0.003	8.000
	0616	91.425	0.010	<	0.010	8.000
	0616	92.157	0.010	<	0.010	8.000
	0616	92.622	0.010	<	0.010	8.000
	0617	92.157	0.010	<	0.010	8.000
	0617	92.622	0.010	<	0.010	8.000
	0655	89.441	0.010		0.120	25.000
	0655	89.925	0.010		0.070	21.000
	0655	90.485	0.010		0.080	23.000
	0655	91.079	0.010		0.080	23.000
	0655	91.422	0.010		0.080	23.000
	0655	92.144	0.010		0.040	17.500
	0655	92.619	0.010		0.068	20.000
	0655	92.885	0.001		0.055	19.000
	0655	93.135	0.010		0.040	17.500

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 25 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	16	136.000	8.5
0655	9	189.000	21.0

MANN-WHITNEY U TEST STATISTIC = 0.000
PROBABILITY IS 0.000
CHI-SQUARE APPROXIMATION = 21.229 WITH 1 DF

Significant

CONST	ID	DATE	DL	CONCENTRATION		RANK
MO	0602	88.310	0.010		0.020	18.500
	0602	89.430	0.010	<	0.010	8.000
	0602	91.415	0.010	<	0.010	8.000
	0602	92.152	0.010	<	0.010	8.000
	0602	92.611	0.200	<	0.200	.
	0602	92.894	0.004	<	0.004	8.000
	0603	88.321	0.010		0.020	18.500
	0603	89.430	0.010	<	0.010	8.000
	0603	91.418	0.010	<	0.010	8.000
	0603	92.144	0.010	<	0.010	8.000
	0603	92.611	0.200	<	0.200	.
	0603	92.891	0.004	<	0.004	8.000
	0616	91.425	0.010		0.010	16.500
	0616	92.157	0.010	<	0.010	8.000
	0616	92.622	0.200	<	0.200	.
	0617	92.157	0.010		0.010	16.500
	0617	92.622	0.200	<	0.200	.
	0655	88.307	0.010		0.100	21.000
	0655	89.441	0.010	<	0.010	8.000
	0655	89.925	0.010	<	0.010	8.000
	0655	90.485	0.010	<	0.010	8.000
	0655	91.079	0.010		0.060	20.000
	0655	91.422	0.010	<	0.010	8.000
	0655	92.144	0.010	<	0.010	8.000
	0655	92.619	0.200	<	0.200	.
	0655	92.885	0.004	<	0.004	8.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 21 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	13	142.000	10.9
0655	8	89.000	11.1

MANN-WHITNEY U TEST STATISTIC = 51.000
PROBABILITY IS 0.928/2 = 0.463
CHI-SQUARE APPROXIMATION = 0.008 WITH 1 DF

Not Significant

CONST	ID	DATE	DL	CONCENTRATION	RANK
NA	0602	88.310	0.002	97.400	7.000
	0602	89.430	0.002	100.000	11.000
	0602	91.415	5.000	112.000	15.500
	0602	92.152	5.000	109.000	14.000
	0602	92.611	5.000	99.000	8.500
	0602	93.089	0.100	101.000	13.000
	0603	88.321	0.002	94.000	5.000
	0603	89.430	0.002	99.500	10.000
	0603	91.418	5.000	112.000	15.500
	0603	92.144	1.000	99.000	8.500
	0603	92.611	5.000	100.700	12.000
	0616	91.425	1.000	66.000	2.000
	0616	92.157	1.000	57.000	1.000
	0616	92.622	5.000	72.000	3.000
	0617	92.157	1.000	91.000	4.000
	0617	92.622	5.000	97.000	6.000
	0655	88.307	0.002	149.000	17.000
	0655	89.441	0.002	177.000	23.000
	0655	89.925	0.002	166.000	21.000
	0655	90.485	0.002	165.000	20.000
	0655	91.079	0.002	185.000	24.000
	0655	91.422	5.000	190.000	25.000
	0655	92.144	5.000	163.000	19.000
	0655	92.619	5.000	170.000	22.000
	0655	93.135	0.100	157.000	18.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 25 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	16	136.000	8.5
0655	9	189.000	21.0

MANN-WHITNEY U TEST STATISTIC = 0.000
PROBABILITY IS 0.000/2
CHI-SQUARE APPROXIMATION = 16.628 WITH 1 DF

Significant

CONST	ID	DATE	DL	CONCENTRATION		RANK
NH4	0602	88.310	0.100	<	0.100	5.000
	0602	89.430	0.100	<	0.100	5.000
	0602	91.415	0.100	<	0.100	5.000
	0602	92.152	0.100	<	0.100	5.000
	0602	93.089	0.100	<	0.100	5.000
	0603	88.321	0.100	<	0.100	5.000
	0603	89.430	0.100	<	0.100	5.000
	0603	91.418	0.100		0.600	12.000
	0603	92.144	0.100		0.500	11.000
	0616	91.425	0.100		0.100	10.000
	0616	92.157	0.100	<	0.100	5.000
	0617	92.157	0.100	<	0.100	5.000
	0655	88.307	0.100		460.000	20.000
	0655	89.441	0.100		290.000	17.000
	0655	89.925	0.100		340.000	19.000
	0655	90.485	0.100		297.000	18.000
	0655	91.079	0.100		239.000	16.000
	0655	91.422	0.100		43.400	13.000
	0655	92.144	10.000		184.000	15.000
	0655	93.135	0.100		117.000	14.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 20 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	12	78.000	6.5
0655	8	132.000	16.5

MANN-WHITNEY U TEST STATISTIC = 0.000
PROBABILITY IS 0.000
CHI-SQUARE APPROXIMATION = 12 15.074 WITH 1 DF

Significant

CONST	ID	DATE	DL	CONCENTRATION	RANK
NO3	0602	88.310	1.000	4.100	8.000
	0602	89.430	1.000	8.400	14.000
	0602	91.415	1.000	7.400	13.000
	0602	92.152	1.000	2.700	4.000
	0602	92.611	0.075	5.800	10.500
	0602	92.894	0.044	3.800	5.000
	0602	93.089	1.000	4.000	6.500
	0603	88.321	1.000	2.000	2.000
	0603	89.430	1.000	10.600	15.000
	0603	91.418	1.000	4.000	6.500
	0603	92.144	1.000	1.000	1.000
	0603	92.611	0.075	4.900	9.000
	0603	92.891	0.044	44.000	18.000
	0616	91.425	1.000	6.200	12.000
	0616	92.157	1.000	2.400	3.000
	0616	92.622	0.075	5.800	10.500
	0617	92.157	1.000	12.600	16.000
	0617	92.622	0.075	15.000	17.000
	0655	88.307	1.000	1140.000	28.000
	0655	89.441	1.000	830.000	27.000
	0655	89.925	1.000	753.000	26.000
	0655	90.485	1.000	656.000	25.000
	0655	91.079	1.000	655.000	24.000
	0655	91.422	1.000	478.000	19.000
	0655	92.144	75.000	581.000	21.000
	0655	92.619	0.750	620.000	22.000
	0655	92.885	0.044	530.000	20.000
	0655	93.135	1.000	648.000	23.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 28 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	18	171.000	9.5
0655	10	235.000	23.5

MANN-WHITNEY U TEST STATISTIC = 0.000
PROBABILITY IS 0.000/2
CHI-SQUARE APPROXIMATION = 18.631 WITH 1 DF

Significant

CONST	ID	DATE	DL	CONCENTRATION	RANK
RA-226	0602	89.430	1.000	0.500	15.000
	0602	91.415	1.000	0.700	18.500
	0602	92.152	1.000	1.000	22.000
	0602	92.611	0.300	0.600	16.500
	0602	92.894	0.300	0.800	20.000
	0603	89.430	1.000	0.300	11.000
	0603	91.418	1.000	0.300	11.000
	0603	92.144	1.000	0.600	16.500
	0603	92.611	0.480	0.430	14.000
	0603	92.891	0.300	0.900	21.000
	0616	91.425	1.000	0.000	2.000
	0616	92.157	1.000	0.000	2.000
	0616	92.622	0.500	0.300	11.000
	0617	92.157	1.000	0.100	6.500
	0617	92.622	0.700	5.700	23.000
	0655	89.441	1.000	0.100	6.500
	0655	89.925	1.000	0.100	6.500
	0655	90.485	1.000	0.000	2.000
	0655	91.079	1.000	0.100	6.500
	0655	91.422	1.000	0.400	13.000
	0655	92.149	1.000	0.100	6.500
	0655	92.619	0.500	0.100	6.500
	0655	92.885	0.300	0.700	18.500

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 23 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	15	210.000	14.0
0655	8	66.000	8.3

MANN-WHITNEY U TEST STATISTIC = 90.000
PROBABILITY IS $1 - 0.050/2 = 0.975$
CHI-SQUARE APPROXIMATION = 3.835 WITH 1 DF

Not Significant

CONST	ID	DATE	DL	CONCENTRATION	RANK
RA-228	0602	89.430	1.000	0.000	4.000
	0602	91.415	1.000	0.000	4.000
	0602	92.152	1.000	1.200	16.000
	0602	92.611	5.000	2.400	21.000
	0602	92.894	2.700	0.400	12.000
	0603	89.430	1.000	0.000	4.000
	0603	91.418	1.000	0.000	4.000
	0603	92.144	1.000	2.000	19.000
	0603	92.611	2.300	0.300	9.500
	0603	92.891	2.700	0.300	9.500
	0616	91.425	1.000	0.400	12.000
	0616	92.157	1.000	2.300	20.000
	0616	92.622	2.000	0.000	4.000
	0617	92.157	1.000	1.600	18.000
	0617	92.622	1.800	0.200	8.000
	0655	89.441	1.000	0.400	12.000
	0655	89.925	1.000	0.000	4.000
	0655	90.485	1.000	1.500	17.000
	0655	91.079	1.000	1.000	15.000
	0655	91.422	1.000	0.000	4.000
	0655	92.149	1.000	2.600	22.000
	0655	92.619	1.800	0.800	14.000
	0655	92.885	2.100	4.100	23.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 23 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	15	165.000	11.0
0655	8	111.000	13.9

MANN-WHITNEY U TEST STATISTIC = 45.000
PROBABILITY IS 0.326/2 = 0.163
CHI-SQUARE APPROXIMATION = 0.967 WITH 1 DF

Not Significant

CONST	ID	DATE	DL	CONCENTRATION		RANK
SE	0602	88.310	0.005		0.006	20.000
	0602	89.430	0.005	<	0.005	9.000
	0602	91.415	0.005		0.009	24.000
	0602	92.152	0.005		0.006	20.000
	0602	92.611	0.005	<	0.005	9.000
	0602	92.894	0.001	<	0.001	9.000
	0603	88.321	0.005	<	0.005	9.000
	0603	89.430	0.005	<	0.005	9.000
	0603	91.418	0.005		0.007	22.500
	0603	92.144	0.005	<	0.005	9.000
	0603	92.611	0.005	<	0.005	9.000
	0603	92.891	0.001	<	0.001	9.000
	0616	91.425	0.005	<	0.005	9.000
	0616	92.157	0.005		0.005	18.000
	0616	92.622	0.005	<	0.005	9.000
	0617	92.157	0.005		0.007	22.500
	0617	92.622	0.005	<	0.005	9.000
	0655	88.307	0.005		0.010	25.000
	0655	89.441	0.005		0.006	20.000
	0655	89.925	0.005	<	0.005	9.000
	0655	90.485	0.005	<	0.005	9.000
	0655	91.079	0.005	<	0.005	9.000
	0655	91.422	0.005	<	0.005	9.000
	0655	92.144	0.005	<	0.005	9.000
	0655	92.619	0.005	<	0.005	9.000
	0655	92.885	0.015	<	0.015	.

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 25 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	17	226.000	13.3
0655	8	99.000	12.4

MANN-WHITNEY U TEST STATISTIC = 73.000
PROBABILITY IS 1 − 0.725/2 = 0.64
CHI-SQUARE APPROXIMATION = 0.124 WITH 1 DF

Not Significant

CONST	ID	DATE	DL	CONCENTRATION	RANK
SIO4	0602	89.430	2.000	14.000	4.500
	0602	91.415	0.100	13.600	3.000
	0603	89.430	2.000	12.000	1.000
	0603	91.418	0.100	12.500	2.000
	0616	91.425	0.100	26.100	10.000
	0655	89.441	2.000	16.000	8.500
	0655	89.925	2.000	15.600	6.000
	0655	90.485	2.000	16.000	8.500
	0655	91.079	2.000	14.000	4.500
	0655	91.422	0.100	15.700	7.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 10 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	5	20.500	4.1
0655	5	34.500	6.9

MANN-WHITNEY U TEST STATISTIC = 5.500
PROBABILITY IS 0.141 /2 = 0.071
CHI-SQUARE APPROXIMATION = 2.164 WITH 1 DF

Not Significant

CONST	ID	DATE	DL	CONCENTRATION	RANK
SO4	0602	88.310	0.100	136.000	15.000
	0602	89.430	0.100	139.000	16.000
	0602	91.415	0.100	164.000	18.000
	0602	92.152	20.000	127.000	12.000
	0602	92.611	0.059	120.000	9.500
	0602	92.894	1.000	130.000	13.000
	0602	93.089	1.000	126.000	11.000
	0603	88.321	0.100	112.000	7.000
	0603	89.430	0.100	117.000	8.000
	0603	91.418	0.100	151.000	17.000
	0603	92.144	10.000	101.000	6.000
	0603	92.611	0.059	100.000	5.000
	0603	92.891	1.000	120.000	9.500
	0616	91.425	10.000	134.000	14.000
	0616	92.157	10.000	69.000	1.000
	0616	92.622	0.059	86.000	4.000
	0617	92.157	10.000	85.000	3.000
	0617	92.622	0.059	80.000	2.000
	0655	88.307	0.100	2950.000	27.000
	0655	89.441	0.100	2770.000	26.000
	0655	89.925	0.100	2730.000	24.000
	0655	90.485	0.100	2660.000	23.000
	0655	91.079	0.100	2760.000	25.000
	0655	91.422	10.000	3540.000	28.000
	0655	92.144	10.000	2370.000	20.000
	0655	92.619	0.590	2000.000	19.000
	0655	92.885	1.000	2400.000	21.000
	0655	93.135	1.000	2470.000	22.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 28 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	18	171.000	9.5
0655	10	235.000	23.5

MANN-WHITNEY U TEST STATISTIC = 0.000
PROBABILITY IS 0.000
CHI-SQUARE APPROXIMATION = 18.626 WITH 1 DF

Significant

CONST	ID	DATE	DL	CONCENTRATION	RANK
SR	0602	91.415	0.010	0.280	5.500
	0602	92.152	0.010	0.270	4.000
	0602	92.611	0.200	0.290	7.000
	0602	92.894	0.000	0.360	8.000
	0603	91.418	0.010	0.230	2.000
	0603	92.144	0.010	0.220	1.000
	0603	92.611	0.200	0.240	3.000
	0603	92.891	0.000	0.280	5.500
	0616	91.425	0.010	0.430	12.000
	0616	92.157	0.010	0.400	10.000
	0616	92.622	0.200	0.500	13.000
	0617	92.157	0.010	0.370	9.000
	0617	92.622	0.200	0.410	11.000
	0655	90.485	0.100	2.680	15.000
	0655	91.079	0.100	3.000	17.500
	0655	91.422	0.010	2.980	16.000
	0655	92.144	0.010	2.540	14.000
	0655	92.619	0.200	3.000	17.500
	0655	92.885	0.000	3.200	19.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 19 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	13	91.000	7.0
0655	6	99.000	16.5

MANN-WHITNEY U TEST STATISTIC = 0.000
PROBABILITY IS 0.001/2
CHI-SQUARE APPROXIMATION = 11.721 WITH 1 DF

Significant

CONST	ID	DATE	DL		CONCENTRATION	RANK
U	0602	88.310	0.003		0.004	9.500
	0602	89.430	0.003		0.003	6.000
	0602	91.415	0.001	<	0.001	1.500
	0602	92.152	0.001		0.005	14.000
	0602	92.894	0.001		0.005	14.000
	0602	93.089	0.001		0.004	9.500
	0603	88.321	0.003		0.003	6.000
	0603	89.430	0.003		0.002	4.000
	0603	91.418	0.001	<	0.001	1.500
	0603	92.144	0.001		0.003	6.000
	0603	92.891	0.001		0.005	14.000
	0616	91.425	0.001		0.001	3.000
	0616	92.157	0.001		0.004	9.500
	0616	92.622	0.001		0.004	9.500
	0617	92.157	0.001		0.005	14.000
	0617	92.622	0.001		0.005	14.000
	0655	88.307	0.003		0.032	25.000
	0655	89.441	0.003		0.028	20.500
	0655	89.925	0.003		0.030	24.000
	0655	90.485	0.003		0.019	17.000
	0655	91.079	0.000		0.029	22.500
	0655	91.422	0.001		0.020	18.000
	0655	92.149	0.001		0.024	19.000
	0655	92.885	0.001		0.029	22.500
	0655	93.135	0.005		0.028	20.500

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 25 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

$\bar{R}$

GROUP	COUNT	RANK SUM	
BKG	16	136.000	8.5
0655	9	189.000	21.0

MANN-WHITNEY U TEST STATISTIC = 0.000
PROBABILITY IS 0.000 /2
CHI-SQUARE APPROXIMATION = 16.855 WITH 1 DF

Significant

CONST	ID	DATE	DL	CONCENTRATION		RANK
V	0602	89.430	0.010	<	0.010	7.500
	0602	91.415	0.010	<	0.010	7.500
	0602	92.152	0.010	<	0.010	7.500
	0602	92.611	0.050	<	0.050	.
	0602	92.894	0.001	<	0.001	7.500
	0603	89.430	0.010	<	0.010	7.500
	0603	91.418	0.010	<	0.010	7.500
	0603	92.144	0.010	<	0.010	7.500
	0603	92.611	0.050	<	0.050	.
	0603	92.891	0.001	<	0.001	7.500
	0616	91.425	0.010	<	0.010	7.500
	0616	92.157	0.010	<	0.010	7.500
	0616	92.622	0.050	<	0.050	.
	0617	92.157	0.010		0.020	16.000
	0617	92.622	0.050	<	0.050	.
	0655	89.441	0.010		0.080	18.000
	0655	89.925	0.010	<	0.010	7.500
	0655	90.485	0.010		0.020	16.000
	0655	91.079	0.010	<	0.010	7.500
	0655	91.422	0.010	<	0.010	7.500
	0655	92.144	0.010		0.020	16.000
	0655	92.619	0.050	<	0.050	.
	0655	92.885	0.001		0.008	7.500

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 18 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	11	91.000	8.3
0655	7	80.000	11.4

MANN-WHITNEY U TEST STATISTIC = 25.000
PROBABILITY IS 0.092 /2 = 0.046
CHI-SQUARE APPROXIMATION = 2.840 WITH 1 DF

Significant

CONST	ID	DATE	DL	CONCENTRATION		RANK
ZN	0602	89.430	0.005	<	0.005	8.000
	0602	91.415	0.005	<	0.005	8.000
	0602	92.152	0.005	<	0.005	8.000
	0602	92.611	0.020	<	0.020	.
	0602	92.894	0.001		0.001	8.000
	0603	89.430	0.005	<	0.005	8.000
	0603	91.418	0.005		0.014	17.000
	0603	92.144	0.005	<	0.005	8.000
	0603	92.611	0.020	<	0.020	.
	0603	92.891	0.001	<	0.001	8.000
	0616	91.425	0.005	<	0.005	8.000
	0616	92.157	0.005	<	0.005	8.000
	0616	92.622	0.020	<	0.020	.
	0617	92.157	0.005	<	0.005	8.000
	0617	92.622	0.020	<	0.020	.
	0655	89.441	0.005	<	0.005	8.000
	0655	89.925	0.005	<	0.005	8.000
	0655	90.485	0.005	<	0.005	8.000
	0655	91.079	0.005	<	0.005	8.000
	0655	91.422	0.005	<	0.005	8.000
	0655	92.144	0.005		0.059	18.000
	0655	92.619	0.020		0.030	.
	0655	92.885	0.001		0.007	16.000

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 18 CASES
DEPENDENT VARIABLE IS PP
GROUPING VARIABLE IS ID$

GROUP	COUNT	RANK SUM	$\bar{R}$
BKG	11	97.000	8.8
0655	7	74.000	10.6

MANN-WHITNEY U TEST STATISTIC = 31.000
PROBABILITY IS 0.296 /2 = 0.148
CHI-SQUARE APPROXIMATION = 1.093 WITH 1 DF

Not Significant

APPENDIX C4

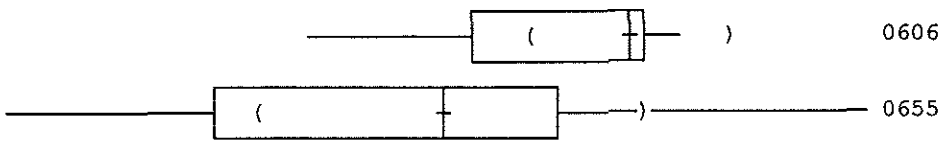
DISTRIBUTION DEVELOPMENT FOR CONTAMINANTS OF POTENTIAL CONCERN FOR HUMAN HEALTH (COPCs) AND CALCULATION OF 95 PERCENT UPPER CONFIDENCE LIMIT (UCL) FOR THE AVERAGE CONCENTRATION OF SITE CONTAMINANTS IN THE MOST CONTAMINATED GROUND WATER AT THE MONUMENT VALLEY SITE, ALLUVIAL AQUIFER

THE FOLLOWING RESULTS ARE FOR:
PARID$ = NH4

BOX PLOT OF VARIABLE: P , N = 16
GROUPED BY VARIABLE: LOCID$

43.40 MINIMUM

460.00 MAXIMUM



THE FOLLOWING RESULTS ARE FOR:
PARID$ = NH4
LOCID$ = 0606

KOLMOGOROV-SMIRNOV ONE SAMPLE TEST USING STANDARD NORMAL DISTRIBUTION

VARIABLE	N-OF-CASES	MAXDIF	LILLIEFORS PROBABILITY (2-TAIL)
P	8.000	0.302	0.030
LOGP	8.000	0.309	0.024

THE FOLLOWING RESULTS ARE FOR:
PARID$ = NH4
LOCID$ = 0606

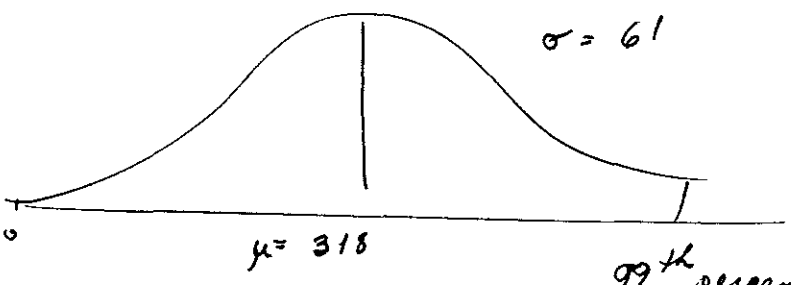
	P
N OF CASES	8
MINIMUM	200.000
MAXIMUM	370.000
MEAN	317.875
STANDARD DEV	61.161

95% UCL for mean

$317.875 + 1.895(61.161)/\sqrt{8}$

$= 359$ mg/L

distribution for simulations (Normal)



99th percentile

$= 318 + 2.326(61) = 460$ mg/L

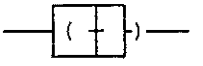
THE FOLLOWING RESULTS ARE FOR:
PARID$ = CA

BOX PLOT OF VARIABLE: P , N = 18
GROUPED BY VARIABLE: LOCID$

199.00 MINIMUM

660.00 MAXIMUM

0 0606



* 0655

THE FOLLOWING RESULTS ARE FOR:
PARID$ = CA
LOCID$ = 0655

KOLMOGOROV-SMIRNOV ONE SAMPLE TEST USING STANDARD NORMAL DISTRIBUTION

VARIABLE	N-OF-CASES	MAXDIF	LILLIEFORS PROBABILITY (2-TAIL)
P	9.000	0.210	0.332

	P	~~LOGP~~
N OF CASES	9	
MINIMUM	372.000	
MAXIMUM	518.000	
MEAN	425.556	
STANDARD DEV	43.810	

95% UCL for mean

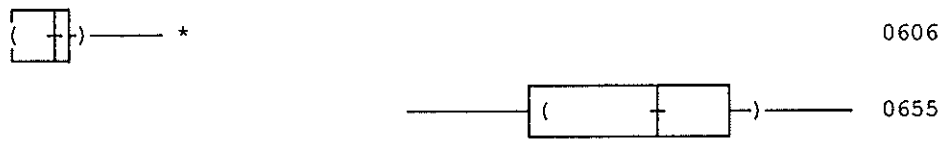
$425.556 + 1.860(43.810)/\sqrt{9}$

$= 453$ mg/L

THE FOLLOWING RESULTS ARE FOR:
PARID$ = CL

BOX PLOT OF VARIABLE: P , N = 18
GROUPED BY VARIABLE: LOCID$

15.90 MINIMUM — 38.00 MAXIMUM



THE FOLLOWING RESULTS ARE FOR:
PARID$ = CL
LOCID$ = 0655

KOLMOGOROV-SMIRNOV ONE SAMPLE TEST USING STANDARD NORMAL DISTRIBUTION

VARIABLE	N-OF-CASES	MAXDIF	LILLIEFORS PROBABILITY (2-TAIL)
P	9.000	0.182	0.620

	P
N OF CASES	9
MINIMUM	26.600
MAXIMUM	38.000
MEAN	32.378
STANDARD DEV	3.737

95% UCL for mean

$32.378 + (1.860)(3.737)/\sqrt{9}$

$= 35$ mg/L

THE FOLLOWING RESULTS ARE FOR:
PARID$ = FE

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 16 CASES
DEPENDENT VARIABLE IS PN
GROUPING VARIABLE IS LOCID$

GROUP	COUNT	RANK SUM
0606	8	63.500
0655	8	72.500

MANN-WHITNEY U TEST STATISTIC = 27.500
PROBABILITY IS 0.612 (NOTE: DIFFERENCE NOT SIGNIFICANT)
CHI-SQUARE APPROXIMATION = 0.257 WITH 1 DF

THE FOLLOWING RESULTS ARE FOR:
PARID$ = FE
LOCID$ = 0606, 0655

TABLE OF P (ROWS) BY PARVQ$ (COLUMNS)

FREQUENCIES

		<	TOTAL
0.030	0	8	8
0.060	2	0	2
0.070	1	0	1
0.090	3	0	3
0.100	0	2	2
TOTAL	6	10	16

note: with more than 50% below detection, reliable estimation of the mean is impossible. UCL will represent nonparametric (rank-based) 95 percent upper confidence limit for the median

1. Assuming < 0.1 are all equal to 0.1
n=16 95th percentile UCL for median is ~ 11th ordered value = 0.07

2. Assuming < 0.1 are all equal to 0.1/2 = 0.05
n=16 95th percent UCL for median ~ 11th ordered value = 0.06

3. Dropping < 0.1 values as uninformative
n=14 95th percent UCL for median ≈ 10th ordered value = 0.06

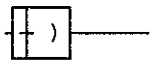
the highest value 0.07 mg/L

THE FOLLOWING RESULTS ARE FOR:
PARID$ = MG

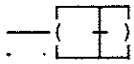
BOX PLOT OF VARIABLE: P , N = 18
GROUPED BY VARIABLE: LOCID$

114.00 MINIMUM

350.00 MAXIMUM



0606



* 0655

THE FOLLOWING RESULTS ARE FOR:
PARID$ = MG
LOCID$ = 0655

KOLMOGOROV-SMIRNOV ONE SAMPLE TEST USING STANDARD NORMAL DISTRIBUTION

VARIABLE	N-OF-CASES	MAXDIF	LILLIEFORS PROBABILITY (2-TAIL)
P	9.000	0.206	0.367

	P
N OF CASES	9
MINIMUM	288.000
MAXIMUM	350.000
MEAN	312.333
STANDARD DEV	18.235

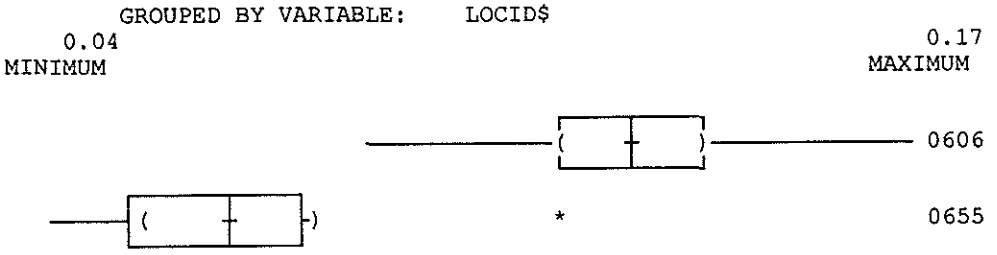
95% UCL for mean

$= 312.333 + 1.860 (18.235) / \sqrt{9}$

$= 324$ mg/L

THE FOLLOWING RESULTS ARE FOR:
PARID$ = MN

BOX PLOT OF VARIABLE: P , N = 18
GROUPED BY VARIABLE: LOCID$



THE FOLLOWING RESULTS ARE FOR:
PARID$ = MN
LOCID$ = 0606

KOLMOGOROV-SMIRNOV ONE SAMPLE TEST USING STANDARD NORMAL DISTRIBUTION

VARIABLE	N-OF-CASES	MAXDIF	LILLIEFORS PROBABILITY (2-TAIL)
P	9.000	0.148	1.000

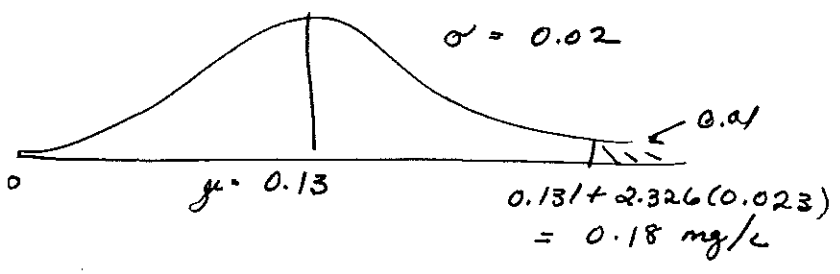
	P
N OF CASES	9
MINIMUM	0.090
MAXIMUM	0.170
MEAN	0.131
STANDARD DEV	0.023

95% UCL for mean

$= 0.131 + 1.860\,(0.023)/\sqrt{9}$

$= 0.145$ mg/L

Distribution for simulation



THE FOLLOWING RESULTS ARE FOR:
PARID$ = NO3

BOX PLOT OF VARIABLE: P , N = 20
GROUPED BY VARIABLE: LOCID$

478.00 MINIMUM — 1600.00 MAXIMUM

THE FOLLOWING RESULTS ARE FOR:
PARID$ = NO3
LOCID$ = 0606

KOLMOGOROV-SMIRNOV ONE SAMPLE TEST USING STANDARD NORMAL DISTRIBUTION

VARIABLE	N-OF-CASES	MAXDIF	LILLIEFORS PROBABILITY (2-TAIL)
P	10.000	0.317	0.005
LOGP	10.000	0.287	0.019

	P	LOGP
N OF CASES	10	10
MINIMUM	974.000	6.881
MAXIMUM	1600.000	7.378
MEAN	1209.400	7.085
STANDARD DEV	216.588	0.166

95% UCL for mean (Lognormal distribution)

Using H factor assumed w/ $s_y = 0.20$

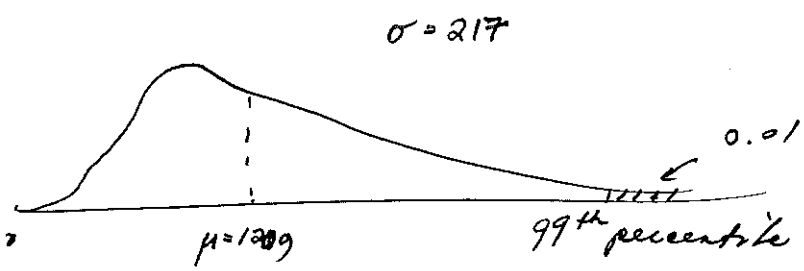
$$< e^{7.085 + (0.166)^2/2 + 1.881(0.166)/\sqrt{9}}$$

$$= 1343 \text{ mg/L}$$

distribution for simulation (Log normal)

$$\sigma_y^2 = \ln\left[\left(\frac{217}{1209}\right)^2 + 1\right] = 0.0317$$

$$\mu_y = \ln 1209 - \sigma_y^2/2 = 7.0817$$



$$7.0817 + 2.326\sqrt{0.0317} = e$$

$$= 1800 \text{ mg/L}$$

THE FOLLOWING RESULTS ARE FOR:
PARID$ = K

BOX PLOT OF VARIABLE: P , N = 18
GROUPED BY VARIABLE: LOCID$

10.50 MINIMUM

43.40 MAXIMUM

THE FOLLOWING RESULTS ARE FOR:
PARID$ = K
LOCID$ = 0655

KOLMOGOROV-SMIRNOV ONE SAMPLE TEST USING STANDARD NORMAL DISTRIBUTION

VARIABLE	N-OF-CASES	MAXDIF	LILLIEFORS PROBABILITY (2-TAIL)
P	9.000	0.220	0.257

	P
N OF CASES	9
MINIMUM	25.000
MAXIMUM	43.400
MEAN	30.811
STANDARD DEV	5.996

95% UCL for mean

$30.811 + 1.860(5.996)/\sqrt{9}$

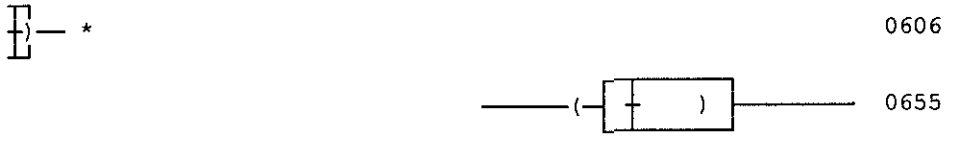
$= 35$ mg/L

THE FOLLOWING RESULTS ARE FOR:
PARID$ = NA

BOX PLOT OF VARIABLE: P , N = 18
GROUPED BY VARIABLE: LOCID$

95.00 MINIMUM

190.00 MAXIMUM



THE FOLLOWING RESULTS ARE FOR:
PARID$ = NA
LOCID$ = 0655

KOLMOGOROV-SMIRNOV ONE SAMPLE TEST USING STANDARD NORMAL DISTRIBUTION

VARIABLE	N-OF-CASES	MAXDIF	LILLIEFORS PROBABILITY (2-TAIL)
P	9.000	0.150	1.000

	P
N OF CASES	9
MINIMUM	149.000
MAXIMUM	190.000
MEAN	169.111
STANDARD DEV	13.071

95% UCL for mean

$169.111 + (1.860)(13.071)/\sqrt{9}$

$= 177$ mg/L

THE FOLLOWING RESULTS ARE FOR:
PARID$ = SR

BOX PLOT OF VARIABLE: P , N = 12
GROUPED BY VARIABLE: LOCID$

1.64 MINIMUM

3.20 MAXIMUM

THE FOLLOWING RESULTS ARE FOR:
PARID$ = SR
LOCID$ = 0655

KOLMOGOROV-SMIRNOV ONE SAMPLE TEST USING STANDARD NORMAL DISTRIBUTION

VARIABLE	N-OF-CASES	MAXDIF	LILLIEFORS PROBABILITY (2-TAIL)
P	6.000	0.296	0.110

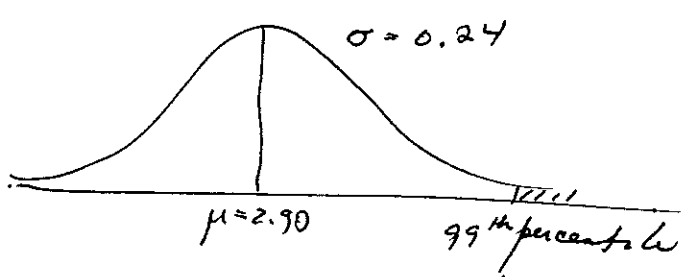
	P
N OF CASES	6
MINIMUM	2.540
MAXIMUM	3.200
MEAN	2.900
STANDARD DEV	0.243

95% UCL for mean

$2.900 + 2.015(0.243)/\sqrt{6}$

$= 3.1$ mg/L

distribution for simulation (Normal)



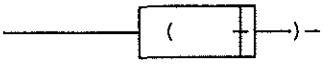
$= 2.9 + 2.326(0.24) = 3.46$ mg/L

THE FOLLOWING RESULTS ARE FOR:
PARID$ = SO4

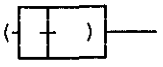
BOX PLOT OF VARIABLE: P , N = 20
GROUPED BY VARIABLE: LOCID$

860.00 MINIMUM

3540.00 MAXIMUM



* 0655



0606

THE FOLLOWING RESULTS ARE FOR:
PARID$ = SO4
LOCID$ = 0655

KOLMOGOROV-SMIRNOV ONE SAMPLE TEST USING STANDARD NORMAL DISTRIBUTION

VARIABLE	N-OF-CASES	MAXDIF	LILLIEFORS PROBABILITY (2-TAIL)
P	10.000	0.199	0.347

THE FOLLOWING RESULTS ARE FOR:
PARID$ = SO4
LOCID$ = 0655

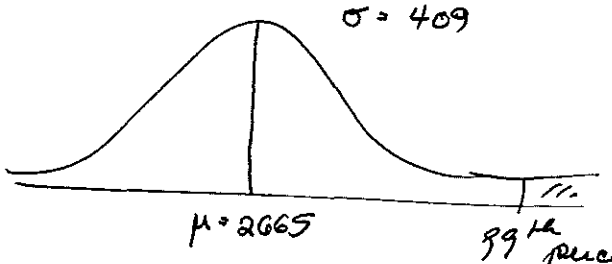
	P
N OF CASES	10
MINIMUM	2000.000
MAXIMUM	3540.000
MEAN	2665.000
STANDARD DEV	409.424

95% UCL for mean

$$2665 + \frac{1.812\,(409.424)}{\sqrt{20}}$$

2900 mg/L

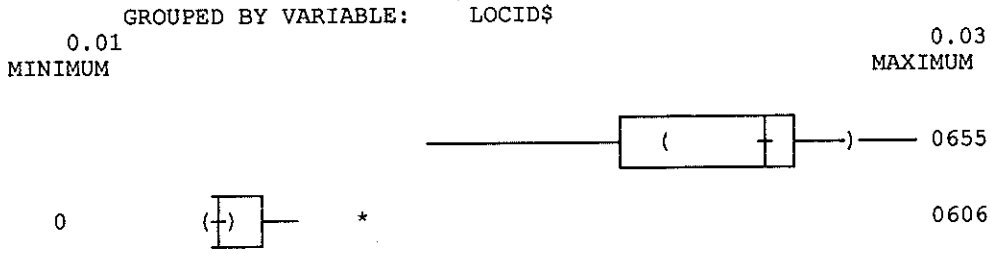
distribution for simulation (Normal)



$2665 + 2.326\,(409) = 3616$ mg/L

THE FOLLOWING RESULTS ARE FOR:
PARID$ = U

BOX PLOT OF VARIABLE: P , N = 18
GROUPED BY VARIABLE: LOCID$



THE FOLLOWING RESULTS ARE FOR:
PARID$ = U
LOCID$ = 0655

KOLMOGOROV-SMIRNOV ONE SAMPLE TEST USING STANDARD NORMAL DISTRIBUTION

VARIABLE	N-OF-CASES	MAXDIF	LILLIEFORS PROBABILITY (2-TAIL)
P	9.000	0.292	0.026
LOGP	9.000	0.309	0.013

	P
N OF CASES	9
MINIMUM	0.019
MAXIMUM	0.032
MEAN	0.027
STANDARD DEV	0.005

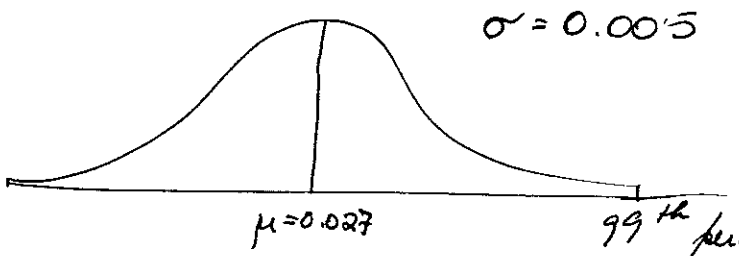
95% UCL for mean

$0.027 + 1.86(0.005)/\sqrt{9}$

0.030

distribution for simulation (Normal)

$\sigma = 0.005$



$= 0.027 + 2.326(0.005)$

$= 0.039$ mg/L

THE FOLLOWING RESULTS ARE FOR:
PARID$ = V

KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE FOR 16 CASES
DEPENDENT VARIABLE IS P
GROUPING VARIABLE IS LOCID$

GROUP	COUNT	RANK SUM
0655	8	75.500
0606	8	60.500

MANN-WHITNEY U TEST STATISTIC = 39.500
PROBABILITY IS 0.409 (NOTE NONSIGNIFICANT DIFFERENCE)
CHI-SQUARE APPROXIMATION = 0.682 WITH 1 DF BOX PLOT OF VARIABLE:
P , N = 16

THE FOLLOWING RESULTS ARE FOR:
PARID$ = V
LOCID$ = 0606, 6055

TABLE OF P (ROWS) BY PARVQ$ (COLUMNS)

FREQUENCIES

	<	TOTAL
0.002	1	0	1
0.008	1	0	1
0.010	0	7	7
0.020	3	0	3
0.050	1	2	3
0.080	1	0	1
TOTAL	7	9	16

note: with more than 50% below detection, reliable estimation of the mean is impossible. UCL will represent nonparametric (rank-based) 95 percent upper confidence limit for the median

BOX PLOT OF VARIABLE: PN , N = 16

0.00 MINIMUM

0.08 MAXIMUM

* 0

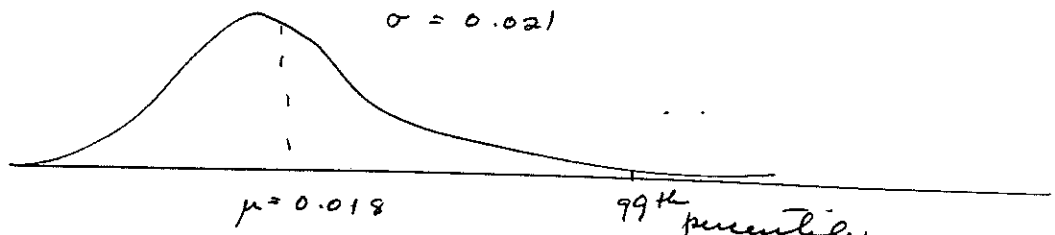
	PN
N OF CASES	16
MINIMUM	0.002
MAXIMUM	0.080
MEAN	0.018
STANDARD DEV	0.021

most conservative estimate of 95% upper confidence limit for median concentration in wells 655 and 606 is to assume values <0.05 are actually equal to 0.05. So that median is 8th ordered value = 0.02 mg/L.

Continued next page

Vanadium continued

distribution for simulation (lognormal)



$$= e^{-4.4469 + 2.326\sqrt{0.8591}} = 0.10 \text{ mg/L}$$

$$\sigma_y^2 = \ln\left[\left(\frac{0.021}{0.018}\right)^2 + 1\right] = 0.8591$$

$$\mu_y = \ln(0.018) - \sigma_y^2/2 = -4.4469$$

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SUPPLEMENT 10

EXPOSURE ASSESSMENT SPREADSHEETS

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JACOBS ENGINEERING GROUP INC.
ALBUQUERQUE OPERATIONS

CALCULATION COVER SHEET

CALC NO. MONO/0396090600 DISCIPLINE Risk Assessment NO. OF SHEETS 4

PROJECT: Baseline Risk Assessment of Ground Water Contamination at the Uranium Mill Tailings Site Near Monument Valley, AZ

SITE: MONUMENT VALLEY

FEATURE: Exposure Dose Calculations

SOURCES OF DATA: UMTRA Project Database

SOURCES OF FORMULAE & REFERENCES:
EPA, 1989. Risk Assessment Guidance for Superfund, Vol. I, Human Health Evaluation Manual.

EPA, 1991. Standard Default Exposure Factors. Interim Final. OSWER Directive: 9285.0-03, March 25, 1991,

PRELIMINARY CALC. ☐ FINAL CALC. X☐ SUPERSEDES CALC. NO.

REV. NO.	REVISION	CALCULATION BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
		L Johnson	3/96	KC Wick	3/96	TMS	3/96

Table 1 - Exposure dose calculations and equation definitions for ground water ingestion and dermal contact

Contaminant of potential concern	Cw	Ground water exposure doses (mg/kg - day) Ingestion	Dermal contact	Ratio of dermal contact:ingestion
Noncarcinogenic effects	(mg/L)	(mg/kg - day)		
Manganese	0.15	4E-03	8E-06	0.002
Nitrate	1300	4E+01	7E-02	0.002
Strontium	3.1	9E-02	2E-04	0.002
Sulfate	2900	8E+01	2E-01	0.002
Uranium	0.03	9E-04	2E-06	0.002
Vanadium	0.02	6E-04	1E-06	0.002
Carcinogenic effects	pCi/L	pCi/lifetime		
Uranium	14	3E+05	6E+02	0.002

Constants	
IRw	2
EF	365
ED	30
BW	70
SA	19400
Pc	0.001
Cf	0.001
ET	0.2
AT(nonC)	10950
AT	25550

Table 4.1 Exposure dose calculations for ground water ingestion and dermal contact, Monument Valley, Arizona, site

Constituent ~~Contaminant~~ of potential concern	Cw (mg/L)	Ground water exposure doses (mg/kg-day) Ingestion	Dermal absorption	Dermal absorption[a] / water ingestion
Noncarcinogenic effects				
Manganese	0.15	4E-03	8E-06	0.002
Nitrate	1300	4E+01	7E-02	0.002
Strontium	3.1	8E-02	2E-04	0.002
Sulfate	2900	8E+01	2E-01	0.002
Uranium	0.03	8E-04	2E-06	0.002
Vanadium	0.02	5E-04	1E-06	0.002
Carcinogenic effects				
Uranium	14[b]	3E+05[c]	6E+02[c]	0.002

Equation Definitions for Exposure Dose Calculations

Ingestion of ground water

Chemicals: Chronic daily intake (mg/kg-day) $= \dfrac{Cw \times IRw \times EF \times ED}{BW \times AT}$

Radionuclides: Lifetime intake (pCi per lifetime) $= Cw \times IRw \times EF \times ED$

Dermal contact with ground water - carcinogens and noncarcinogens

Chemicals: Chronic daily intake (mg/kg-day) $= \dfrac{(Cw \times SA \times Pc \times Cf) \times ET \times EF \times ED}{BW \times AT}$

Radionuclides: Lifetime intake (pCi per lifetime) $= Cw \times SA \times Pc \times Cf \times ET \times EF \times ED$

Where:

Cw = ~~Contaminant~~ Constituent concentration in ground water (upper 95 percent confidence level of the mean of ~~data from plume wells~~ concentration in ground water accessed by the most contaminated well in the alluvial aquifer).
IRw = Ingestion rate for water (liter per day) (2 L per day for an adult).
EF = Exposure frequency (365 days per year).
ED = Exposure duration (30 years for an adult); 70 years for carcinogenic effects).
BW = Body weight (70 kilograms [kg] for an adult).
AT = Averaging time (365 days x ED for noncarcinogens; 365 days x 70 years for carcinogens).
SA = Skin surface area (19,400 square centimeters [cm^2]).
Pc = Dermal permeability constant (0.001 cm per hour).
Cf = Conversion factor (0.001 liters per cubic centimeter [L/cm^3]).
ET = Exposure time (0.2 hour per day).

[a]Ratio of the dermal absorption exposure dose to the ground water ingestion exposure dose.
[b]pCi/L = Picocuries per liter.
[c]pCi per lifetime.

mg/kg-day = Milligrams per kilogram per day.

CANCER RISK CALCULATIONS FOR THE MONUMENT VALLEY BASELINE RISK ASSESSMENT, VERSION, 2

- Activity (pCi/L) of combined Uranium-234 and Uranium-238 in ground water estimated from concentration (mg/L) in ground water under assumption of secular equilibrium (see Supplement 13):

  *Activity = 686 * Concentration*
  pCi/L mg/L

- Added lifetime risk of cancer associated with drinking uranium-contaminated ground water (under assumption of a linear no-threshold model for cancer development) is:

  Added risk = Cw * IRw * EF * ED * SF
  pCi/L L/day days/yr yrs
  risk/pCi

  Cw = average activity of Uranium-234 and Uranium-238

  IRw = average consumption of ground water per day

  EF = number of days of exposure per year

  ED = number of years of exposure

  SF = cancer risk oral slope factor

Monument Valley values for factors:

IRw = Lognormal distribution with mean 1.2 L/day (BLRA Figure 4.8)
EF = 365 days per year
ED = 70 years
SF = 4.35E-11 per HEAST(1995)

Monument Valley calculations:

1. Dose (pCi/Lifetime) associated with added risk of:

   a. 1E-5 $\frac{1E^{-5}}{4.35E^{-11}} = 230,000$ pCi

   b. 2E-5 $\frac{2E^{-5}}{4.35E^{-11}} = 460,000$ pCi

   c. 1E-4 $\frac{1E^{-4}}{4.35E^{-11}} = 2,300,000$ pCi

2. Added risk associated with exposure to ground water accessible to:

   a. Alluvial well 659 (based on concentration of 0.027 mg/L) 0.000025

   $(0.027)(686)(1.2)(365)(70)(4.35E^{-11}) = 2.5E^{-5}$

   b. DeChelley well 619 (based on concentration of 0.135 mg/L)

   $(0.135)(686)(1.2)(365)(70)(4.35E^{-11}) = 0.00012$

   $= 1.2E^{-4}$

   c. Private well 640 (based on concentration of 0.021 mg/L)

   $= 0.000019$

   $= 1.9E^{-5}$

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SUPPLEMENT 11

CONTAMINANTS OF POTENTIAL CONCERN SCREENING

Contaminants of Potential Concern Screening - Monument Valley
The Alluvial Aquifer ground water

	Ground water concentrations [a] (mg/L)	Nutritional requirement [b] (mg/day)	Dietary range [b] (mg/day)	Safe level in tap water [c] (mg/L)
Constituent				
Ammonium	381	NA	[d]	NA
Calcium	521	400 -1200	530-1179	NA
Chloride	38	180-750	up to 6000	NA
Iron	0.1	6 - 30	NA	11
Magnesium	350	40 - 400	193-329	NA
Potassium	43	500 - 2000	NA	NA
Sodium	190	120 - 500	5000	NA

NA - Not Applicable

a Based on maximum concentration in ground water from the most contaminated on-site wells (alluvial aquifer); includes data from well 655 except for ammonium (well 606), collected between April 1988 and February 1993 (see Table 3.7 in the Baseline Risk Assessment).

b National Research Council, 1989. Recommended Dietary Allowances, tenth edition, National Academy Press, Washington, D.C.

c U.S. EPA Region III, October 1995. Risk-based concentrations.

d Although ammonium is not considered a dietary component, it is produced in the human body at levels that exceed 4000 mg/day (Summerskill and Wolpert, 1970), roughly four-times more than what could result from ingesting the most ammonium-contaminated water at the site (381 mg/L corresponds to 762 mg/day assuming a person ingests 2 liters of water per day). However, this level of ammonium is associated with the unpleasant taste and odor of the water which would reduce its consumption (the taste threshold for water solutions of ammonia is about 35 mg/L) (ATSDR, 1990).

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SUPPLEMENT 12

CALCULATION OF MIXED SPECIFIC ACTIVITY FOR NATURAL URANIUM

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JACOBS ENGINEERING GROUP INC.
ALBUQUERQUE OPERATIONS

CALCULATION COVER SHEET

CALC NO. MON0895170100 DISCIPLINE Health Physics NO. OF SHEETS 4

PROJECT: BASELINE RISK ASSESSMENT OF GROUND WATER CONTAMINATION AT THE URANIUM MILL TAILINGS SITES

SITE: Monument Valley

FEATURE: CALCULATION FOR MIXED SPECIFIC ACTIVITY OF URANIUM.

SOURCES OF DATA:

References noted on accompanying sheet

SOURCES OF FORMULAE & REFERENCES:

Basic first Principle reasoning / STD Calculations for H.P.s

PRELIMINARY CALC. ☐ FINAL CALC. ☒ SUPERSEDES CALC. NO. _____

REV. NO.	REVISION	CALCULATION BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
		M.J. Brennan	05/15/95	[illegible]	5/30/95	[illegible]	9/5/95

JEG-AL-ENG-51 (6/87)

EXHIBIT A

TO: MRandall

THROUGH: AHolm

FROM: MBrennan

DATE: May 16, 1995

SUBJECT: Calculation of Mixed Specific Activity (MSA) for Natural Uranium

The attached, per your request, is a finalized version of the calculation for MSA of natural uranium. To reiterate a point that we have discussed, the assumption of natural abundance implies radiological equilibrium. The small difference in weight percents between U-234 and U-238 given on the following calculation page is simply a matter of "rounding error". If, however, the general assumption of equilibrium does not hold, the MSA must be redetermined, using actual site data, either as relative isotopic mass or as isotopic activity (for instance, by alpha spectroscopy). Small deviations from equilibrium will effect the MSA in a large way. As U-234 increases relative to U-238, the MSA will increase.

The general implication for UMTRA is that, unless isotopic equilibrium is clearly demonstrated at a specific site, it is not truly valid to do uranium analysis by a mass spectroscopy method that only indicates total uranium, then apply an MSA assuming equilibrium to derive uranium ACTIVITY for the purpose of comparing to a standard or regulatory limit given as activity. It may further be noted that equilibrium should be determined for ground water, as well as per gram of solid, since the state of equilibrium may be different in various media.

If you have further need of my assistance or simply have questions, feel free to contact me at your convenience.

MB:jem
Attachment

cc: MBradshaw
JHylko
MMiller
CPomatto
RSaar
JSanchez
Document Control

J:\WP_DOCS\MBRENNAN\MSAU-NAT
5/16/95

DETERMINATION OF MIXED SPECIFIC ACTIVITY
for U–NAT

ISOTOPE	SP. ACTIV. (uCi/g)	Wt. % * (Fractional)	ACTIV./g (uCi/g)	ACTIV. % (Fractional)
U–234	6.19E+03	5.50E–05	3.40E–01	4.96E–01
U–235	2.14E+00	7.20E–03	1.54E–02	2.24E–02
U–238	3.33E–01	0.992745	3.31E–01	4.82E–01
		1.0000	0.6864	

$$\frac{(0.6864\ \text{uCi/g})\qquad(1\text{E}+06\ \text{pCi/uCi})}{(1000\ \text{mg/g})} = 686.4\ \text{pCi/mg}$$

* Natural Abundance (Wt. %) per Chart of the Nuclides (Knolls A. P. Lab). Specific Activity of each radionuclide per Radiological Health Handbook.

The Mixed Specific Activity is determined by multiplying each radionuclide by its relative abundance (Wt. %), then sum the values to yield the MSA, which, converted to units of pCi/mg yields a value of 686.4

CANCER RISK CALCULATIONS FOR THE MONUMENT VALLEY BASELINE RISK ASSESSMENT, VERSION, 2

- Activity (pCi/L) of combined Uranium-234 and Uranium-238 in ground water estimated from concentration (mg/L) in ground water under assumption of secular equilibrium (see Supplement 13):

  Activity = 686 * Concentration
  pCi/L mg/L

- Added lifetime risk of cancer associated with drinking uranium-contaminated ground water (under assumption of a linear no-threshold model for cancer development) is:

  Added risk = Cw * IRw * EF * ED * SF
  pCi/L L/day days/yr yrs
  risk/pCi

  Cw = average activity of Uranium-234 and Uranium-238

  IRw = average consumption of ground water per day

  EF = number of days of exposure per year

  ED = number of years of exposure

  SF = cancer risk oral slope factor

Monument Valley values for factors:

IRw = 2 liters per day (EPA default value)
EF = 365 days per year (site-specific assumption)
ED = 70 years (site-specific assumption)
SF = 1.6E-11 per HEAST(1992)
  = 4.35E-11 per HEAST(1995)

Monument Valley calculations:

1. Dose (pCi/Lifetime) associated with added risk of:

a. 1E-5

1992 Heast

$$\frac{1E^{-5}}{1.6E^{-11}} =$$

625,000

1995 Heast

$$\frac{1E^{-5}}{4.35E^{-11}} =$$

230,000

b. 2E-5

$$\frac{2E^{-5}}{1.6E^{-11}} =$$

1,250,000

$$\frac{2E^{-5}}{4.35E^{-11}} =$$

460,000

c. 1E-4

$$\frac{1E^{-4}}{1.6E^{-11}}$$

6,250,000

$$\frac{1E^{-4}}{4.35E^{-11}} =$$

2,300,000

2. Added risk associated with exposure to ground water accessible to:

a. DeChelley well 619 (based on maximum concentration of 0.135 mg/L)

1992 Heast

$$(0.135)(686)(2)(365)(70)(1.6E^{-11})$$

$= 0.00008$

$= 8E^{-5}$

1995 Heast

$$(0.135)(686)(2)(365)(70)(4.35E^{-11})$$

$= 0.0002$

$= 2E^{-4}$

b. Private well 640 (based on single measured concentration of 0.021)

1992 Heast

$$(0.021)(686)(2)(365)(70)(1.6E^{-11})$$

$= 0.00001$

$= 1E^{-5}$

1995 Heast

$$(0.021)(686)(2)(365)(70)(4.35E^{-11})$$

$= 0.00003$

$= 3E^{-5}$