Wind River Environmental Quality Commission

UMTRA Program- Phase II
Groundwater/Drinking Water Final Report

Clean Water Act
Section 106 Special Project

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Prepared for:

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Introduction

The Joint Business Council of the Shoshone and Arapaho Tribes has directed the Wind River Environmental Quality Commission (WREQC) to investigate and report on matters regarding protection of the environment and the health and welfare of the Reservation's residents. Therefore, in response to many unresolved concerns over the existing groundwater contamination plume, potential health risks, and DOE's management activities at the Riverton Uranium Mill Tailings Remediation (UMTRA) Site, WREQC implemented the UMTRA Special Project in 2001. The project was funded by US EPA through a Clean Water Act, Section 106, Special Studies Grant.

WREQC divided the project into two phases. Phase I was to complete a data audit and review of DOE documents regarding the Riverton UMTRA Groundwater Project, so that WREQC could have a more complete understanding of the present status of the site. In June 2002, WREQC and its contractor, Maxim, completed the Phase I Data Audit and Review and submitted the Phase I report to EPA (Maxim, 2002). Based on the findings contained in Phase I final report, WREQC, with the support of the Tribes, implemented Phase II of the UMTRA Program. The purpose of Phase II was to address some of the issues and concerns raised in the Phase I report.

The following report describes the tasks completed by WREQC under Phase II of the UMTRA Special Project. This report focuses only on the Phase II tasks directly related to groundwater and drinking water. Additional Phase II tasks were completed to address other concerns at the Riverton UMTRA Site, including surface water quality, sediment quality, and impacts to other environmental receptors (aquatic macroinvertebrates, fish, and vegetation). These tasks are reported separately.

Background

The uranium mill operated at the site from 1958 to 1963, using both acid and alkaline mill circuits. Sulfuric acid for milling operations was produced at an on-site facility, still in operation today. Approximately one million cubic yards of contaminated mill tailings were subsequently stockpiled for about 25 years on 70 acres southeast of the site. Additional areas became contaminated as a result of mill processing activities, stockpiling, and wind dispersal of tailings.

During surface remediation, about 1.8 million cubic yards of contaminated material were removed from the site and disposed of at the Umetco Gas Hills Disposal Site. Surface remedial action was completed in November 1989. However, DOE modified the Remedial Action Plan and developed a supplemental standard to allow areas of subsurface soil contaminated with Thorium 230 below the water table to remain in place (DOE, 1989, 1991).

Groundwater in the Wind River Aquifer below and downgradient of the Riverton UMTRA Site is contaminated as a result of uranium milling operations, waste storage, and the contamination left in place at the former site. Numerous DOE documents including the Base Line Risk Assessment (BLRA) (DOE, 1995) and the 1998 Environmental Assessment of Groundwater Compliance (DOE, 1998) document the groundwater contamination plume at the Riverton Site. According to DOE, contaminated groundwater in the shallow alluvial aquifer and the hydraulically connected semiconfined aquifer is flowing southeast from the site and discharging to the Little Wind River. The DOE contends that the deeper confined aquifer has not been affected by site contaminants.

DOE Groundwater Compliance Strategy

DOE's groundwater compliance strategy for the Riverton UMTRA site is outlined in the Groundwater Compliance Action Plan (GCAP) (DOE, 1998) and the Site Observational Work Plan (SWOP) (DOE, 1998). Although DOE is the agency responsible for UMTRA site management and cleanup, EPA was responsible for developing the UMTRA groundwater regulations contained in 40 CFR Part 192. The Nuclear Regulatory Commission (NRC), having oversight authority under UMTRCA, concurred with DOE's GCAP in May of 1999.

The groundwater compliance strategy as described in the GCAP consists of natural flushing and monitoring over a 100-year time period combined with institutional controls to prevent contact with contaminated groundwater. According to DOE, required institutional controls site to prevent exposure to contaminated groundwater include construction of a water line for area residents with potentially affected wells and a legally enforceable well drilling moratorium.

Summary of Phase I Findings

The results of the Phase I Data Audit (Maxim, 2002) indicate that there is considerable technical uncertainty with the DOE's assessment of the groundwater contamination plume at the UMTRA Site. In addition, there is a nearly total lack of effective institutional controls to prevent contact with contaminated groundwater. Some of the significant Phase I findings pertinent to groundwater issues include the following:

- DOE's conceptual model that describes site hydrogeology assumes that all groundwater contamination is flushing to the Little Wind River where it is rendered harmless by dilution, however, this concept is unsupported by monitoring data. Some surface water bodies, including the Oxbow Lake, contain elevated levels of site contaminants. There is insufficient data to conclude that all shallow groundwater discharges to the Little Wind River.

- Monitor well spacing is inadequate to account for variations in subsurface lithology, as required by DOE guidance. For example, DOE has not

considered the effect of river paleochannels, which may result in preferential flow paths, anomalous contaminant concentrations, and variations in contaminant transport rates.

- Consequently, there is considerable ambiguity regarding the degree of contamination and the areal and vertical extent of the groundwater plume.

- There is insufficient monitoring data to support DOE's contention that the confined aquifer is now uncontaminated and will remain uncontaminated in the future.

- The DOE groundwater model, used to support the selection of natural flushing remediation strategy, is based on insufficient input data.

Some relevant Phase I findings pertinent to regulatory issues and institutional controls include the following:

- There are no legally enforceable groundwater use restrictions or well drilling moratorium in place as required by DOE plans and EPA regulations.

- DOE has never defined the potentially affected area to which these institutional controls would apply.

- Despite the construction of the alternate water supply line in 1997, many residents chose to continue to use groundwater from potentially affected wells as the drinking water source. However, according to EPA regulations, voluntary measures are not considered proper institutional controls.

- DOE is not monitoring land use changes at the site, which may result in new exposure pathways to contaminated groundwater not considered by DOE. For example, potentially contaminated groundwater has been exposed to the surface at constructed wetlands and gravel pits.

- DOE does not have a plan in place to evaluate and assess the effectiveness of the institutional controls over the 100-year remediation period.

Based on these findings and others detailed in the Phase I report and the potential for serious risks to human health and the environment, WREQC implemented Phase II of the UMTRA Special Project.

Phase II Goals

Following completion of the Phase I Data Audit, WREQC developed a list of Tasks related to groundwater, drinking water, and institutional controls to be completed under Phase II. WREQC developed these tasks to address the concerns over hazards to human health due to continued exposure to

contaminated groundwater. The Tasks completed for the Phase II UMTRA Groundwater/Source Water Project are as follows:

1. Update the DOE inventory of water wells in the vicinity of the site, survey area residents to identify potentially affected wells still in use, and document groundwater exposure pathways, i.e.; private wells used for domestic drinking water, livestock watering, or crop/garden irrigation, and incidental recreational contact;

2. Evaluate the effectiveness of the current institutional controls in preventing continued exposure to contaminated groundwater;

3. Review current groundwater sampling and analytical procedures and split samples with DOE during the May 2002 annual groundwater monitoring event;

4. Research the long-term safety of the alternate water supply line where it is in contact with contaminated plume water. Conduct water quality sampling from the alternate water supply line in the plume area to assess the present integrity of the system; and

5. Conduct water quality sampling for site contaminants at potentially affected private wells still in use and at nearby public water supply wells.

Phase II Results and Findings

The Phase II results and findings are described below. Project photographs are contained in Attachment A.

Task 1: Well Inventory and Survey of Groundwater Use

According to a 1997 interagency agreement between DOE and Indian Health Service (IHS and DOE, 1997), 25 residences using groundwater from potentially affected domestic wells were to be connected to a water supply line constructed as an institutional control to prevent human consumption of contaminated groundwater. The alternate water supply line was completed in 1998. DOE has not sampled any domestic wells in several years, based on the assumption that the affected homes were now connected to the alternate water supply. WREQC visited all residences in the vicinity of the UMTRA site to determine their present drinking water source and to document the current status of potentially affected wells and the current uses of groundwater from these wells.

WREQC completed interviews at 30 residences near the UMTRA site. Well inspections were performed at all of the wells identified by DOE as potentially affected and several other wells not identified by DOE. The results of these inspections and interviews are summarized in Table 1 and Attachment B.

WREQC found that of the 25 homes that DOE specified to be connected to the water line, seven of these homes still use potentially affected wells for drinking water. These homes were never connected to the water line. In addition, none of the potentially affected wells has been plugged and abandoned, and many of the homes now connected to the alternate water supply still use water from potentially affected wells for other domestic uses such as livestock or garden watering. Although DOE has discontinued monitoring of any domestic wells, WREQC believes that these domestic wells should be periodically monitored for water quality unless they are properly plugged and abandoned.

Task 2: Evaluate the Effectiveness of Institutional Controls

DOE's natural flushing strategy for groundwater compliance requires effective institutional controls for the duration of the entire remediation period (up to 100 years) to prevent exposure to contaminated groundwater. The purpose of this task was to determine if current institutional controls as described by DOE are effective in preventing contact with contaminated groundwater. If not, WREQC will document pathways of continued exposure and recommend changes to make institutional controls more effective.

WREQC's findings in Task 1 indicate that installation of the alternate water supply line, DOE's sole institutional control implemented to date, has not prevented the use of potentially affected water wells as a potable water supply. In addition, none of these potentially affected wells has been plugged and abandoned and many wells are being used as a water source for other domestic purposes.

As a further problem, during the well inspections, at least one potentially affected domestic well was determined to be cross-connected to the alternate water supply line. Although this cross connection has been eliminated, additional cross connections with potentially affected wells have not been completely ruled out.

In addition to the alternate water supply line, DOE documents state that a moratorium on drilling new wells and groundwater use restrictions are required institutional controls. However, no well drilling moratorium has been implemented to date, and there is considerable doubt about whether such a moratorium could be legally enacted and enforced. Therefore, there is no institutional control in place to prevent the use of contaminated groundwater. In fact, WREQC interviews and inspections conducted for Task 1 indicate that new wells are still being constructed in the vicinity of the UMTRA site.

The provisions of the 1997 DOE-IHS interagency agreement stipulate that DOE negotiate and execute a separate Cooperative Agreement with the Tribes to delineate the roles of DOE and WREQC and to provide financial assistance to WREQC for its involvement in the DOE UMTRA groundwater project. Six years later, no Cooperative Agreement has been executed, and DOE has not provided

any financial assistance to WREQC. This has severely limited WREQC in its ability to ensure that the Tribes' needs are adequately addressed by DOE.

Lack of effective institutional controls and improper site management have created new exposure pathways to contaminated groundwater not considered by DOE. For example, excavation of gravel pits near the UMTRA site has exposed contaminated groundwater to the surface where it is available for use by livestock, wildlife, and human recreational contact. An oxbow lake downgradient of the site is recharged by contaminated groundwater and presents risks not evaluated by DOE. WREQC addresses surface water quality in greater detail in a separate Phase II report.

Changes in land use and ownership around the UMTRA site make effective institutional controls almost impossible to implement and manage. There is no mechanism in place to notify landowners and residents of the potential risk of exposure to contaminated groundwater. New homes and wells have already been constructed in the affected area. Recently, WREQC became aware, through a public notice seen in a local newspaper, of the intent to develop a private subdivision near the former mill tailings site. Water supply for this subdivision would likely come from individual domestic wells. There are no groundwater use restrictions in place to prevent this from happening, even though DOE's own groundwater compliance strategy requires such restrictions. A final concern that has not yet been addressed is the accumulation of radon gas emitted from the groundwater plume in residential buildings located over the groundwater contamination plume.

Task 3: Review DOE Groundwater Monitoring Program

WREQC split groundwater samples with DOE at selected monitoring locations during the routine annual monitoring event in May 2002. Split samples were collected from six locations and analyzed for the DOE Contaminants of Potential Concern (COPCs). The purpose of this Task was to observe and verify DOE sampling procedures and QA/QC protocols. An independent laboratory under contract with WREQC analyzed the split samples. This allowed WREQC field personnel to become familiar with and replicate DOE sampling procedures and results, as well as to validate the results reported by DOE. The results of this analysis are listed in Table 2.

One unresolved issue regarding the DOE groundwater sampling program concerns filtered versus unfiltered water samples. WREQC analyzed the May 2002 groundwater sample splits for both total recoverable (unfiltered) and dissolved (filtered) metals for comparison. DOE filters the groundwater from its monitoring wells and only analyzes the samples for the dissolved fraction of site contaminants. Filtering removes suspended sediment and any contaminants contained in the undissolved portion of the sample. Unfiltered samples are analyzed for the total amount of a contaminant in the sample. In some cases, the

total concentration of a contaminant may be orders of magnitude greater in unfiltered samples than filtered samples. In addition, exposure to contaminated groundwater occurs to unfiltered water, not filtered. Therefore, it is difficult to understand why DOE analyzes groundwater samples for dissolved contaminants only. WREQC believes that DOE should be analyzing the total concentration of site contaminants in unfiltered groundwater samples.

Task 4: Research the Safety of the Alternate Water Supply System

Concerns have been raised over the integrity of the alternate water supply line, a portion of which was apparently installed in direct contact with contaminated groundwater (See Project Photos, Attachment A). Because the contaminant plume may persist for up to 100 years, the long-term safety of the water line has been questioned. The water line is constructed of PVC pipe with rubber gaskets and slip joints. The effect of line breaks and deterioration over the 100-year remediation period is unknown. No funds were allocated for maintenance and repair of the alternative water supply. Nor are there funds for system expansion, which will undoubtedly be required as the population of the area increases over the next century.

Another potential problem with the alternate water supply line mentioned earlier in this report is cross connections with unregulated sources. During a recent inspection of the system, Northern Arapaho Utilities determined that a domestic water well, previously identified by DOE as potentially affected, was connected to the alternate water supply line. This cross connection has since been eliminated, however, it is not known if other cross connections exist and whether they may be a continuing source of contaminants in the water line.

WREQC conducted water quality sampling to evaluate the current safety and integrity of the water supply line. Source water for the alternate water supply system is groundwater from two wells completed in the Wind River Aquifer at Arapaho. Samples were collected of the source water at the wellhead and from service taps and hydrants in the area of the UMTRA site. Samples were submitted to an EPA certified laboratory for analysis of drinking water radionuclides. The data are listed in Table 3.

As shown in Table 3, samples collected from the wellhead and taps on the system contained low levels of gross alpha and radium 226 and 228 which may represent the background concentration of naturally occurring radionuclides. However, some samples that were collected from water line hydrants that had been opened for flushing contained significantly elevated concentrations of radionuclides. Many of these samples exceed the MCLs for gross alpha, gross beta, and Radium 226 and 228, with concentrations that were ten to twenty times the background level. Although WREQC considers the source of these high concentrations still unknown, WREQC has considered the following four hypotheses:

1. Contaminants may be introduced to the system through cross connections with unregulated sources.

2. Contaminants may enter the line through line breaks or leaking gaskets.

3. Contaminants may enter the line by permeation through intact water line material.

4. Low levels of naturally occurring contaminants present in the source water accumulate on the biofilm lining the pipeline, which is released during turbulent flushing flows.

A brief analysis of these four hypotheses is presented below.

As discussed earlier, one cross connection with a potentially affected well was discovered and has since been eliminated. Northern Arapaho Utilities has attempted to inspect all potentially affected wells for additional cross connections with the waterline, however, none have been found. Although no other cross connections are known to exist at this time, WREQC does not believe the possibility of unknown cross connections can be ruled out.

Hypotheses 2 and 3 are considered unlikely because of the normally high operating pressures in the alternate water supply line. The system is pressurized by gravity downstream of a 1 million-gallon water storage tank near Arapaho. Day pressures in the portion of the system near the UMTRA site are expected to exceed 100 psi, based on hydraulic modeling. However, pressure has not been monitored and there may be pressure drops at times due to flushing or line breaks and repairs, when it may be possible for contaminants to enter the line. In the case of some contaminants such as gross alpha, permeation has been ruled out because gross alpha cannot penetrate competent PVC water line.

Gary Carlson of the EPA Region 8 Drinking Water Program proposed the fourth hypothesis. Some of the data collected by WREQC support this hypothesis. Radionuclide concentrations were initially low in water samples collected when the hydrants were first opened for flushing. Concentrations were significantly greater in samples collected after several minutes of flushing. And in a final sample collected from one hydrant after about 20 minutes of flushing, the radionuclide concentration had returned to background levels. However, at a hydrant in another portion of the line, radionuclide concentrations remained high after about 20 minutes of flushing.

EPA maintains that the alternate water supply system is safe and that accumulation of radionuclides on biofilm is the only possible source of the elevated contaminants. However, EPA has not presented any data to WREQC to support this claim. EPA has also stated that there is no Safe Drinking Water Act

violation because the system owner did not submit the samples as compliance samples. According to EPA, compliance is determined by analysis of samples collected at the wellhead, and not within the system.

Based on a review of the analytical results, EPA has made some verbal recommendations for changes in the portion of the water line in question, which is currently a dead end line downgradient of the UMTRA site along Rendezvous Road. These recommendations include extending the dead end eastward to Goes In Lodge Road to create a loop, installing more flushing points, and system flushing on a more frequent basis for longer time periods. According to project plans, the system was designed to be constructed as a looped system, however, DOE funding was not sufficient to complete the line. There is currently no funding available for looping the line and installation of the flushing points as recommended by EPA.

Task 5: Domestic and Public Water Supply Well Sampling and Analysis

DOE contends that the groundwater contamination is limited to the shallow unconfined and semiconfined aquifers and has not affected the deeper confined aquifer, where, DOE contends, most of the area water supply wells are completed. However, the findings of WREQC's Phase I audit indicate that there is considerable uncertainty regarding the degree and the areal and vertical extent of the groundwater contamination. The migration of the plume over time is uncertain. Moreover, although the depth of the wells may be known, completion details for most wells are lacking, including information on the type and depth of casing and surface seals. Therefore, it is impossible to be certain about the depth from which these water wells draw water. Therefore, WREQC believes it is important to continue to monitor the quality of water in the water supply wells around the UMTRA site.

The DOE has not monitored any domestic or public water supply wells since 1997. WREQC collected water samples for analysis from 24 water wells in the vicinity of the UMTRA site including 20 domestic wells and 4 public supply wells. The wells sampled included all of the potentially affected wells identified by DOE that were still in use. Groundwater sampling locations are shown on Figure 1 and listed in Table 1. The water samples were analyzed for major ions, trace metals, and radionuclides, including all of the DOE's COPCs for the Riverton Site. The results are listed in Tables 4, 5, and 6, respectively.

Of particular significance are the samples collected from the Westlake #2 and Blomberg #2 wells (DOE well numbers 441 and 445, respectively). Well 441 was found to contain elevated concentrations of the site contaminants including manganese and uranium above the MCLs. This well is reported by DOE to be 100 feet deep and completed in the confined aquifer. This indicates that the groundwater contamination plume may extend deeper than reported by DOE. Although DOE plans specified the Westlake's home to be connected to the

alternate water supply, this home was never connected to the water line and this well is still in use. WREQC also noted elevated levels of Uranium at Well 445, which is used for livestock watering. Although the levels do not exceed the MCL, these results indicate the groundwater plume extends further to the east than reported by DOE.

Because they serve large numbers of people, WREQC sampled four public water supply wells located near the UMTRA site. All of these wells are completed in the Wind River Aquifer and are less than one mile from the UMTRA site. Although these wells reportedly draw water from the deeper confined aquifer, completion details are lacking and it is impossible to ascertain the depth from which groundwater is produced. One well is located at the St. Stephen's School, two wells are located at the St. Stephen's Mission, and the fourth well is located at the Arapaho Tribe's 789 Bingo Hall and Truck Stop. Although the sample analyses do not indicate impacts from the UMTRA groundwater plume at this time, WREQC believes it is important to monitor these potentially affected water supply wells on a regular basis, because of the potential for large numbers of people to be exposed to contaminated water.

Sampling and Analysis and QA/QC Procedures

All groundwater sampling and analysis was performed in accordance with the WREQC QAPP for groundwater sampling and analysis. In general, groundwater samples from water wells were collected using the pump installed in the well. Samples were collected from the closest tap to the well. Wells were purged prior to sample collection while monitoring field parameters (temperature, pH, and specific conductance). Samples for laboratory analysis were collected following stabilization of field parameters. Water samples were placed directly in appropriate containers supplied by the laboratory without the use of intermediate containers. Samples from the drinking water system were collected directly from a tap or hydrant into the sample containers.

Samples were collected in properly labeled containers with appropriate preservatives supplied by the lab. Appropriate chain-of-custody procedures were followed during sample holding and transport. A laboratory certified by EPA under the Safe Drinking Water Act performed all drinking water analyses. Samples were analyzed for the COPCs at the Riverton UMTRA site, which include Sulfate, Arsenic, Manganese, Molybdenum, Nickel, and Uranium. Although DOE analyzes water samples from its groundwater-monitoring network for only the dissolved portion of the trace metals, WREQC analyzed water samples for total metals because exposure occurs to unfiltered groundwater.

Phase II Summary and Recommendations

The following paragraphs summarize the main findings and recommendations of WREQC's UMTRA Phase II Groundwater/Source Water Assessment.

- The alternate water supply system, constructed in 1997-98 as an institutional control, has not prevented the use of potentially contaminated wells as a drinking water source. WREQC found that of the 25 homes specified by DOE to be connected to the system, seven homes still use potentially affected wells for potable domestic supply. None of the 25 potentially affected wells has been properly plugged and abandoned and many wells are being used for other domestic purposes. Therefore, WREQC recommends that the DOE continue to monitor domestic wells during the remediation period.

- DOE's GCAP states that groundwater use restrictions, including a moratorium on drilling new wells, are required institutional controls. However, DOE has not defined the areal extent of the proposed restrictions, no well drilling moratorium has been implemented to date, and there is considerable doubt about whether such a moratorium could be legally enacted and enforced. New wells continue to be drilled in the site vicinity, and land use changes have created new exposure pathways not considered by DOE. Effective institutional controls require active evaluation and management. The present institutional controls are not adequate to prevent contact with contaminated groundwater, and there is considerable uncertainty whether effective institutional controls could be implemented.

- WREQC believes that DOE is not in compliance with the UMTRA groundwater cleanup regulations in 40 CFR Part 192, primarily because of the lack of effective institutional controls at the site. The regulations require effective institutional controls, which by definition must be mandatory, for DOE's selected remediation strategy of natural flushing.

- Although EPA has no enforcement authority over its UMTRA groundwater cleanup regulations in 40 CFR Part 192, considering the risks to human health and the environment and possible violations of the Safe Drinking Water and Clean Water Acts, WREQC believes that EPA needs to review the DOE groundwater compliance strategy.

- The results of split sampling with DOE in May of 2002 indicate that DOE could be underreporting the concentrations of some contaminants in groundwater. DOE filters the samples from its groundwater-monitoring network and reports only the dissolved portion of contaminants. However, exposure occurs to unfiltered groundwater, which may contain contaminant concentrations many times greater. Therefore, WREQC believes that DOE should analyze all water samples for the total concentration of contaminants in unfiltered water.

- WREQC believes that the long-term safety of the alternate water supply system is in question. There are no funds allocated for maintenance and repair or system expansion, which will undoubtedly be required over the 100-

year remediation period. A portion of the PVC water line was installed in contact with the groundwater plume and the effect of site contaminants on the line is unknown. At least one cross-connection of a potentially affected well to the alternate water supply line was discovered, and the possibility of additional cross-connections has not been eliminated. Sampling and analysis of the water system by WREQC indicates that concentrations of radionuclides are well above the MCLs during system flushing, as compared to trace levels in the source water. WREQC is considering several hypotheses to explain these exceedances, including cross connections with contaminated wells, accumulation of radionuclides on the biofilm lining the pipe, and contamination introduced through pipeline breaks or leaks. Although EPA Region 8 Drinking Water Program staff do not consider these exceedances to be a violation of the regulations, they have recommended looping the water line and installation of additional flushing points, along with regular flushing, to alleviate the problem. While it now appears that this institutional control was improperly designed and constructed, there are no funds allocated to make these corrections. Therefore, WREQC recommends regular sampling and analysis of the system for radionuclides and other site contaminants, until the corrections are made and the system is determined to be safe.

- Because DOE did not install sufficient monitoring wells to account for irregularities in subsurface lithology such as river paleochannels, there is considerable uncertainty regarding the degree and the areal and vertical extent of the groundwater contamination. Further, because DOE's groundwater mathematical model is based on an inadequate and erroneous conceptual model and insufficient input data, the migration of the plume over time is uncertain. In fact, groundwater sampling and analysis by WREQC indicates that the groundwater contamination plume may extend deeper and further to the east than reported by DOE. Surface water quality sampling and analysis, detailed in a separate report, indicates contaminant transport in directions not predicted by DOE. This further complicates the application of adequate institutional controls.

- Finally, due to the many unresolved issues and lack of adequate institutional controls, WREQC believes that it is not appropriate for DOE to place the site into the Long Term Surveillance and Monitoring Program at this time.

References

Maxim Technologies, Inc. (Maxim), 2002. Analyses and Audit of Groundwater Data, US Department of Energy, Uranium Mill Tailings Remediation Site, Riverton, Wyoming, Albuquerque, NM.

US Department of Health and Human Services, Indian Health Services (IHS), and US Department of Energy (DOE), 1997. Interagency Agreement, Number DE-AI13-97GJ77618.

DOE, 1989. Modifications to the Remedial Action Plan and Site Design for Stabilization of Inactive Uranium Mill Tailings at Riverton, Wyoming.

DOE, 1991. Final Completion Report for Remedial Action at the Riverton Uranium Mill Tailings Site, Riverton, Wyoming.

DOE, 1995. Baseline Risk Assessment of Groundwater Contamination at the Uranium Mill Tailings Site Near Riverton, Wyoming.

DOE, 1998. Final Site Observational Workplan for the UMTRA Project Site at Riverton, Wyoming.

DOE, 1998. Final Groundwater Compliance Action Plan (GCAP) for the UMTRA Project Site at Riverton, Wyoming, February 1998.

DOE, 1998. Final Environmental Assessment of Groundwater Compliance at the Riverton, Wyoming, Uranium Mill Tailings Site.

TABLES

Table 1. Groundwater Sampling Locations and Information, Riverton UMTRA Site.

DOE Well Number or Well Location	Well Owner	Date Sampled	Reported Depth (feet)	Reported Aquifer	Use	Alternate Water Supply
405*	Blomberg #1	10/17/02	274	Confined	Potable	No
406*	Clark/Knowles	10/09/02	350	Confined	Domestic	Yes
410*	Ruth Biglake	N/A	100	Confined	Inactive	Yes
411*	Joe Goggles, Sr.	10/08/02	270	Confined	Domestic	Yes
417*	Ray Hahn	12/10/02	360	Confined	Domestic	Yes
420*	M. Willow (Moss)	10/08/02	273	Confined	Potable	No
421*	Vacant	N/A	200	Confined	Inactive	No
423*	Whiteman	10/17/02	290	Confined	Domestic	Yes
430*	Raymond	11/21/02	320	Confined	Potable	No
431*	Raymond #2	N/A	15	Surficial	Inactive	No
435	St. Stephen School	10/17/02	Unknown	Unknown	Potable	No
436	St. Stephen Mission	10/17/02	525	Confined	Potable	No
437	St. Stephen Mission	10/17/02	Unknown	Unknown	Potable	No
440*	Westlake #1	10/09/02	267	Confined	Potable	No
441*	Westlake #2	10/09/02	100	Confined	Domestic	No
442*	Rupert Goggles	10/08/02	405	Confined	Domestic	No
443*	Blackburn #1	N/A	397	Confined	Inactive	Yes
444*	Blackburn #2	N/A	Unknown	Unknown	Inactive	Yes
445*	Blomberg #2	11/05/02	35	Semiconfined	Stock	No
446*	Connie Hilyard	12/11/02	410	Confined	Potable	No
448*	Martin	10/09/02	405	Confined	Domestic	Yes
451*	Mary Bear	N/A	360	Confined	Inactive	Yes
452*	Ken Blackburn	N/A	Unknown	Unknown	Inactive	Yes
453*	Joanne Blackburn	N/A	Unknown	Unknown	Inactive	Yes
460	Peak Sulfur	11/12/02	450	Confined	Potable	No
10 Whitetail Dr.	Roylance	12/11/02	Unknown	Unknown	Potable	No
24 Littleshield Rd.	McElroy	12/11/02	Unknown	Unknown	Potable	No
288 Goes in Lodge	Brown	11/21/02	Unknown	Unknown	Domestic	Yes
789 Bingo	Arapaho Tribe	10/08/02	260	Confined	Potable	No
81 Littleshield Rd.	Nolan Friday	02/14/03	Unknown	Unknown	Potable	No
972 Rendevous Rd	Eugene Monroe	12/18/02	Unknown	Unknown	Domestic	Yes

N/A=Not applicable, inactive wells were not sampled.

***Wells identified by DOE as potentially affected by contamination and specified to be connected to the alternate water supply system.**

Table 2. Contaminant Concentrations in Groundwater, WREQC/DOE Sample Splits, Riverton UMTRA Site, May 14, 2002.

Sample ID		TDS		Sulfate		Arsenic		Manganese		Molybdenum		Nickel		Uranium	
		WREQC	DOE	WREQC	DOE	WREQC	DOE	WREQC	DOE	WREQC	DOE	WREQC	DOE	WREQC	DOE
717	Unfiltered	1440	1440	765	742	0.001		0.171		0.011		0.005		<0.0003	
	Filtered					0.001	0.0012	0.17	0.202	<0.1	0.0088	<0.05	0.0008	<0.0003	0.0001
735	Unfiltered	1070	1080	560	552	0.002		0.091		0.002		0.005		0.0009	
	Filtered					0.001	0.00066	0.01	0.0267	<0.1	0.0018	<0.05	0.0008	0.0003	0.00038
707	Unfiltered	4240	4320	2550	2560	0.003		1.77		0.797		0.044		1.09	
	Filtered					0.003	0.0012	0.02	1.9	<0.1	0.751	<0.05	0.039	0.0074	0.809
705	Unfiltered	814	810	446	435	<0.001		0.023		0.003		0.003		0.0003	
	Filtered					<0.001	0.00014	0.02	0.0018	<0.01	0.0018	<0.05	0.0017	<0.0003	0.0001
710	Unfiltered	572	582	214	199	0.003		0.022		0.002		0.003		0.007	
	Filtered					0.002	0.0018	<0.01	0.00023	<0.1	0.0018	<0.05	0.0008	0.0071	0.0071
747	Unfiltered	1260	1260	590	664	0.003		0.974		0.021		0.005		0.422	
(Oxbow Lake)	Filtered					0.003	0.0008	0.88	0.411	<0.1	0.021	<0.05	0.0036	0.391	0.327
Standard		**500 (SMCL)**		**250 (SMCL)**		**0.01 (MCL)**		**0.05 (SMCL)**		**0.1**				**0.03 (MCL)**	

Note: All Contaminant Concentrations are Reported in Units of mg/L.

Table 3. Radionuclide Concentrations in Drinking Water, Arapaho Community Water Supply System.

Sample Location	Type	Date	Uranium mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Polonium 210 pCi/L	Radium 226 pCi/L	Radium 228 pCi/L	Radium 226+228 pCi/L
Great Plains #2	Wellhead	11/07/02	<0.0003	<1.0	<2.0	<2.7	0.8±0.3	3.5±1.0	4.3±1.3
Ruth Big Lake	Tap	12/04/02	<0.0003	2.2±1.0	NA	<2.7	1.1±0.4	NA	NA
Ruth Big Lake (Dup)	Tap	12/04/02	<0.0003	2.7±1.0	NA	<2.7	<0.2	NA	NA
Joe Goggles Sr.	Tap	12/04/02	<0.0003	2.6±1.0	NA	23±5.2	1.9±0.4	NA	NA
22 Red Crow Ln	Tap	12/10/02	<0.0003	2.3±1.0	NA	<2.7	1.1±0.3	NA	NA
972 Rendezvous Rd	Tap	12/18/02	<0.0003	2.5±1.0	NA	<2.7	<0.2	NA	NA
865 Rendezvous Rd	Service Line	01/16/03	<0.0003	**19.5±1.5**	24.1±2.1	NA	**5.1±0.4**	2.2±1.0	**7.3±1.4**
Rendezvous Rd	Hydrant	11/07/02	<0.0003	5.8±1.0	10.8±2.7	<2.7	1.2±0.3	<1.0	1.2±0.3
Rendezvous Rd	Hydrant	12/10/02	<0.0003	**47.8±2.2**	NA	15±2.6	**12.5±0.9**	NA	NA
Rendezvous Rd #1	Hydrant	01/16/03	<0.0003	4.6±1.0	9.6±2.1	NA	0.6±0.2	<1.0	0.6±0.2
Rendezvous Rd #2	Hydrant	01/16/03	<0.0003	**57.1±2.4**	**57.1±2.1**	NA	**12.2±1.0**	**5.7±1.0**	**17.9±2.0**
Rendezvous Rd #3	Hydrant	01/16/03	<0.0003	**49.8±2.2**	**63.1±2.2**	NA	**11.1±1.1**	**5.0±1.0**	**16.1±2.1**
Red Crow Ln #1	Hydrant	01/16/03	<0.0003	3.7±1.0	<2.0	NA	1.1±0.2	<1.0	1.1±0.2
Red Crow Ln #2	Hydrant	01/16/03	<0.0003	**48.2±2.2**	**49.4±2.1**	NA	**15.8±1.3**	**11.9±1.3**	**27.7±2.6**
Red Crow Ln #3	Hydrant	01/16/03	<0.0003	4.2±1.0	12.3±2.1	NA	1.3±0.2	<1.0	1.3±0.2
MCL			**0.03**	**15**	**50**		**5**	**5**	**5**

Notes:
NA=Not Analyzed
Values in Bold Equal To Or Exceed the Applicable MCL
mg/L=milligrams per liter
pCi/L=picoCuries per liter

Table 4. Major Ion Concentrations in Domestic Water Well Samples, Riverton Umtra Site.

DOE Well No. or Location	Well Owner	Date Sampled	TDS mg/L	SO4 mg/L	Br mg/L	Ca mg/L	Cl mg/L	Fl mg/L	Mg mg/L	K mg/L	Sl mg/L	Na mg/L
405	Blomberg #1	10/17/02	NA	314	<0.5	7.8	22.9	1.9	<1.0	<1.0	8.77	211
406	Clark/Knowles	10/09/02	577	390	<0.5	8.5	30.4	3.1	<1.0	<1.0	8.82	213
411	Joe Goggles, Sr.	10/08/02	547	438	<0.5	6.1	18.8	1.3	<1.0	<1.0	5.2	212
417	Ray Hahn	12/10/02	NA	37.9	<0.5	37.4	5.1	0.3	9.8	5.2	6.52	51.4
420	M. Willow (Moss)	10/08/02	544	405	<0.5	6.2	13.3	1.6	<1.0	<1.0	7.69	194
423	Whiteman	10/17/02	NA	176	<0.5	4.3	9.2	1	<1.0	<1.0	7.19	174
430	Raymond	11/21/02	NA	200	<0.5	4.7	10.2	1	<1.0	<1.0	7.65	184
435	St. Stephen School	10/17/02	NA	154	<0.5	3	9.9	0.8	<1.0	<1.0	8.24	164
436	St. Stephen Mission	10/17/02	NA	230	<0.5	5.2	16.4	0.7	<1.0	1.2	7.65	193
437	St. Stephen Mission	10/17/02	NA	190	<0.5	3.8	12.3	0.8	<1.0	<1.0	8.16	182
440	Westlake #1	10/09/02	565	434	<0.5	7.3	22.5	1.8	<1.0	<1.0	7.71	209
441	Westlake #2	10/09/02	654	338	<0.5	97.8	7.5	0.8	20.5	6.9	26.5	93.4
442	Rupert Goggles	10/08/02	635	428	<0.5	7.2	18.4	1.4	<1.0	<1.0	7.00	209
445	Blomberg #2	11/05/02	NA	101	<0.5	99.1	7.8	0.4	28.3	6.9	32.1	60.7
445 (Blind Dup.)	Blomberg #2	11/05/02	NA	100	<0.5	101	7.8	0.4	28.9	7.1	32.8	62.1
446	Connie Hilyard	12/11/02	NA	143	<0.5	3	9.2	0.8	<1.0	2	7.74	154
448	Martin	10/09/02	561	358	<0.5	4.3	13.3	0.6	<1.0	1.4	8.02	190
460	Peak Sulfur	11/12/02	NA	163	<0.5	3.6	10.1	0.8	<1.0	<1.0	8	170
10 Whitetail Dr.	Roylance	12/11/02	NA	66.6	<0.5	55.9	5.1	0.2	14	3.8	15.6	47.2
24 Littleshield Rd.	McElroy	12/11/02	NA	136	0.86	3.4	6.5	1.2	<1.0	1.6	7.6	148
288 Goes in Lodge	Brown	11/21/02	NA	240	<0.5	4.7	12.3	0.8	<1.0	<1.0	7.62	202
789 Bingo	Arapaho Tribe	10/08/02	926	571	<0.5	12	8.5	0.9	<1.0	1.6	8.36	291
81 Littleshield Rd.	Nolan Friday	02/14/03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
972 Rendevous Rd	Eugene Monroe	12/18/02	NA	275	<0.5	5.8	14	1	<1.0	<1.0	3.11	275

Table 5. Trace Metal Concentrations in Domestic Water Well Samples, Riverton UMTRA Site.

DOE Well No. or Location	Well Owner	Date Sampled	Al mg/L	As mg/L	Bo mg/L	Fe mg/L	Mn mg/L	Mo mg/L	Ni mg/L	Se mg/L	Sr mg/L	Va mg/L	Zn mg/L
405	Blomberg #1	10/17/02	0.001	<0.001	0.22	0.145	<0.01	0.004	<0.001	<0.001	<0.1	<0.001	<0.01
406	Clark/Knowles	10/09/02	0.004	<0.001	0.28	**0.892**	<0.01	0.004	<0.05	<0.001	0.086	<0.001	0.105
411	Joe Goggles, Sr.	10/08/02	<0.001	<0.001	0.17	**1.64**	0.04	0.002	<0.05	<0.001	0.085	<0.001	0.002
417	Ray Hahn	12/10/02	<0.001	<0.001	<0.1	**1.02**	**0.073**	0.003	<0.001	<0.001	0.22	0.002	0.061
420	M. Willow (Moss)	10/08/02	0.002	<0.001	0.19	**0.302**	<0.01	0.002	<0.05	<0.001	0.062	<0.001	0.001
423	Whiteman	10/17/02	0.001	<0.001	0.19	**0.851**	0.018	0.002	<0.001	<0.001	<0.1	<0.001	<0.01
430	Raymond	11/21/02	<0.001	<0.001	0.17	0.199	<0.01	0.004	<0.001	0.001	<0.001	<0.001	<0.01
435	St. Stephen School	10/17/02	0.002	<0.001	0.18	0.115	<0.01	0.003	<0.001	<0.001	<0.001	<0.001	0.024
436	St. Stephen Mission	10/17/02	<0.001	<0.001	0.15	0.11	<0.01	0.004	<0.001	<0.001	<0.1	<0.001	<0.01
437	St. Stephen Mission	10/17/02	0.004	<0.001	0.16	<0.03	<0.01	0.003	<0.001	<0.001	<0.1	<0.001	0.011
440	Westlake #1	10/09/02	0.002	<0.001	0.2	**0.405**	<0.01	0.003	<0.05	<0.001	0.076	<0.001	0.046
441	Westlake #2	10/09/02	0.006	0.003	<0.1	0.058	**0.1**	0.004	<0.05	0.002	0.488	0.007	0.018
442	Rupert Goggles	10/08/02	0.001	<0.001	0.18	**0.568**	0.01	0.002	<0.05	<0.001	0.077	<0.001	0.061
445	Blomberg #2	11/05/02	0.012	0.006	0.11	**0.332**	<0.01	0.003	0.003	<0.001	0.45	0.014	0.012
445 (Blind Dup.)	Blomberg #2	11/05/02	0.013	0.006	0.11	**0.338**	<0.01	0.003	0.003	<0.001	0.53	0.014	0.012
446	Connie Hilyard	12/11/02	0.002	<0.001	0.17	<0.03	<0.01	0.002	<0.001	<0.001	<0.1	<0.001	0.421
448	Martin	10/09/02	<0.001	<0.001	0.16	0.12	<0.01	0.003	<0.05	0.001	0.072	<0.001	0.023
460	Peak Sulfur	11/12/02	0.006	<0.001	0.16	<0.03	<0.01	0.004	<0.001	0.001	<0.1	<0.001	<0.01
10 Whitetail Dr.	Roylance	12/11/02	<0.001	0.002	<0.1	0.041	<0.01	0.002	<0.001	<0.001	<0.1	0.005	0.323
24 Littleshield Rd.	McElroy	12/11/02	<0.001	<0.001	0.15	0.157	<0.01	0.002	0.002	0.002	<0.1	<0.001	<0.01
288 Goes in Lodge	Brown	11/21/02	<0.001	<0.001	0.16	**0.55**	0.019	0.004	<0.001	0.001	<0.1	<0.001	<0.01
789 Bingo	Arapaho Tribe	10/08/02	<0.001	<0.001	0.13	<0.03	<0.01	0.001	<0.05	<0.001	0.172	<0.001	0.014
81 Littleshield Rd.	Nolan Friday	02/14/03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
972 Rendevous Rd	Eugene Monroe	12/18/02	<0.001	<0.001	0.13	1.6	0.046	0.003	<0.001	<0.001	<0.1	<0.001	<0.01
MCL			**0.2**	**0.01**		**0.3**	**0.05**		**0.1**	**0.05**			**5**

Table 6. Radionuclide Concentrations in Domestic Water Well Samples, Riverton UMTRA Site.

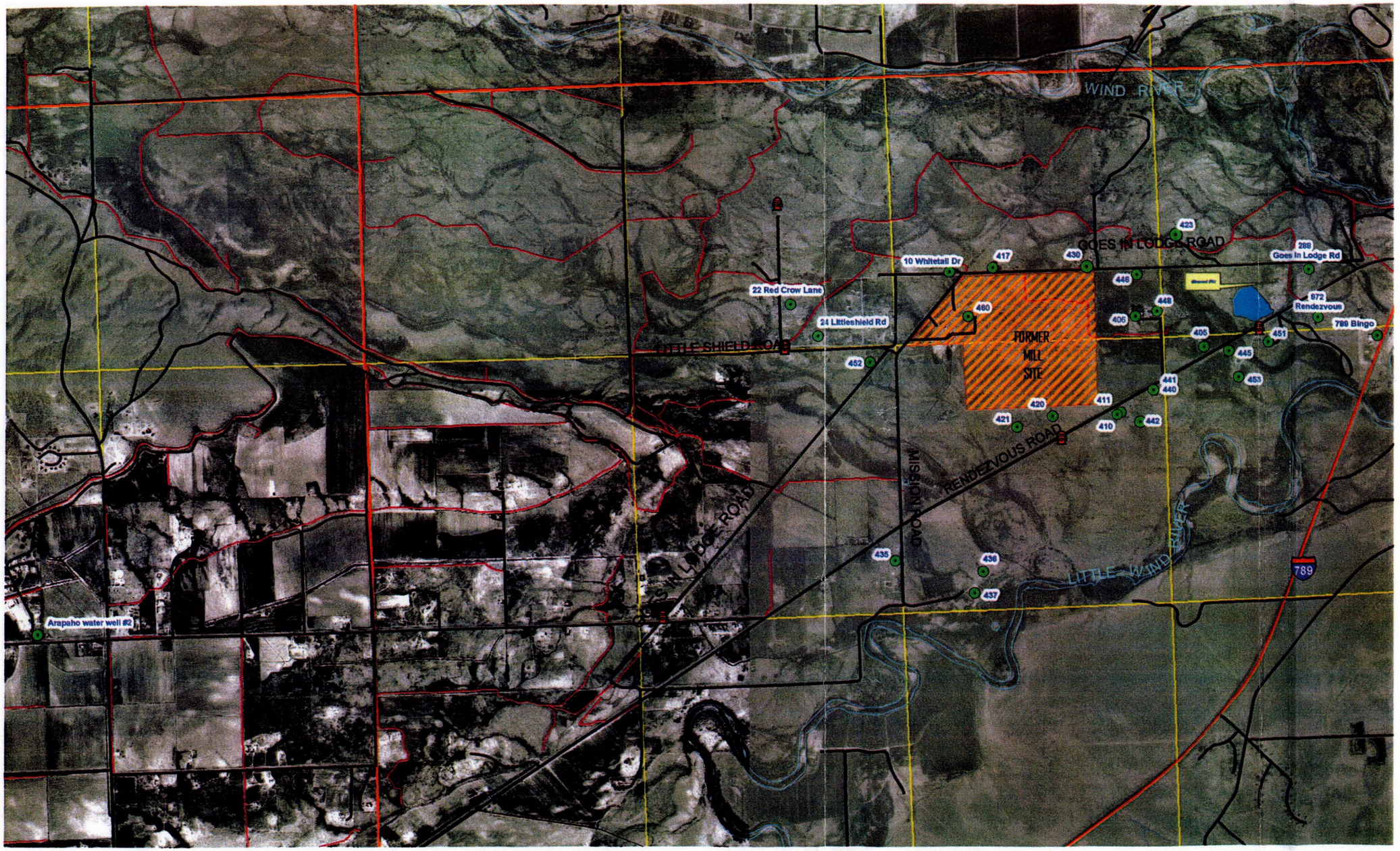
DOE Well No. or Location	Well Owner	Date Sampled	Uranium mg/L	Gross Alpha pCi/L	Gross Beta pCi/L	Radium 226 pCi/L	Radium 228 pCi/L	Radium 226+228 pCi/L
405	Blomberg #1	10/17/02	<0.0003	<1.0	5.3±2.7	<0.2	<1.0	<0.2
406	Clark/Knowles	10/09/02	<0.0003	1.4±1.0	<2.0	<0.2	<1.0	<0.2
411	Joe Goggles, Sr.	10/08/02	<0.0003	1.4±1.0	<2.0	<0.2	<1.0	<0.2
417	Ray Hahn	12/10/02	0.0016	2.7±1.0	NA	0.6±0.3	NA	NA
420	M. Willow (Moss)	10/08/02	<0.0003	<1.0	<2.0	<0.2	<1.0	<0.2
423	Whiteman	10/17/02	<0.0003	1.5±1.0	<2.0	0.6±0.3	<1.0	0.6±0.3
430	Raymond	11/21/02	<0.0003	1.8±1.0	NA	<0.2	NA	NA
435	St. Stephen School	10/17/02	<0.0003	1.6±1.0	<2.0	<0.2	3.6±1.0	3.6±1.0
436	St. Stephen Mission	10/17/02	<0.0003	<1.0	<2.0	0.8±0.3	<1.0	0.8±0.3
437	St. Stephen Mission	10/17/02	<0.0003	1.8±1.0	<2.0	<0.2	<1.0	<0.2
440	Westlake #1	10/09/02	<0.0003	<1.0	<2.0	<0.2	<1.0	<0.2
441	Westlake #2	10/09/02	**0.037**	6.4±1.0	6.8±3.2	<0.2	<1.0	<0.2
442	Rupert Goggles	10/08/02	<0.0003	<1.0	<2.0	<0.2	<1.0	<0.2
445	Blomberg #2	11/05/02	0.0108	2.5±1.0	9.6±2.7	<0.2	<1.0	<0.2
445 (Blind Dup.)	Blomberg #2	11/05/02	0.0106	3.7±1.0	8.9±2.7	<0.2	<1.0	<0.2
446	Connie Hilyard	12/11/02	<0.0003	1.7±1.0	NA	0.8±0.3	NA	NA
448	Martin	10/09/02	<0.0003	<1.0	<2.0	<0.2	<1.0	<0.2
460	Peak Sulfur	11/12/02	<0.0003	2.3±1.0	NA	<0.2	NA	NA
10 Whitetail Dr.	Roylance	12/11/02	0.0038	2.6±1.0	NA	0.9±0.3	NA	NA
24 Littleshield Rd.	McElroy	12/11/02	<0.0003	2.4±1.0	NA	0.6±0.3	NA	NA
288 Goes in Lodge	Brown	11/21/02	0.0005	1.6±1.0	NA	1.2±0.4	NA	NA
789 Bingo	Arapaho Tribe	10/08/02	<0.0003	<1.0	10.4±3.2	<0.2	<1.0	<0.2
81 Littleshield Rd.	Nolan Friday	02/14/03	<0.0003	<1.0	<2.0	<0.2	<1.0	<0.2
972 Rendevous Rd	Eugene Monroe	12/18/02	<0.0003	1.2±1.0	NA	<0.2	NA	NA
MCL			**0.03**	**15**	**50**	**5**	**5**	**5**

Notes:
Samples from all domestic wells were also analyzed for Lead 210, Polonium 210, and Thorium 230, which DOE has identified as contaminants of concern. These constituents were not detected in any sample at a detection limit of 2.7 pCi/L, 2.7 pCi/L, and 0.2 pCi/L, respectively.

NA=Not Analyzed

sampling sites

Phase II Groundwater/Sourc
Water Interim Report



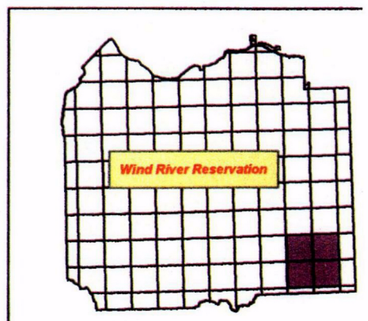
0 0.2 0.4 0.8 1.2 1.6 Miles

1:24,260

Description

- Water wells
- FORMER MILL SITE
- Fire Hydrant
- TOWNSHIP
- PUBLIC LAND SURVEY SECTION LINE
- IRRIGATION CANAL
- GRAVEL PIT

Area of Interest



This map was prepared on 1/9/03 by the Wind River Environmental Quality Commission. Updated 5-14-2003.

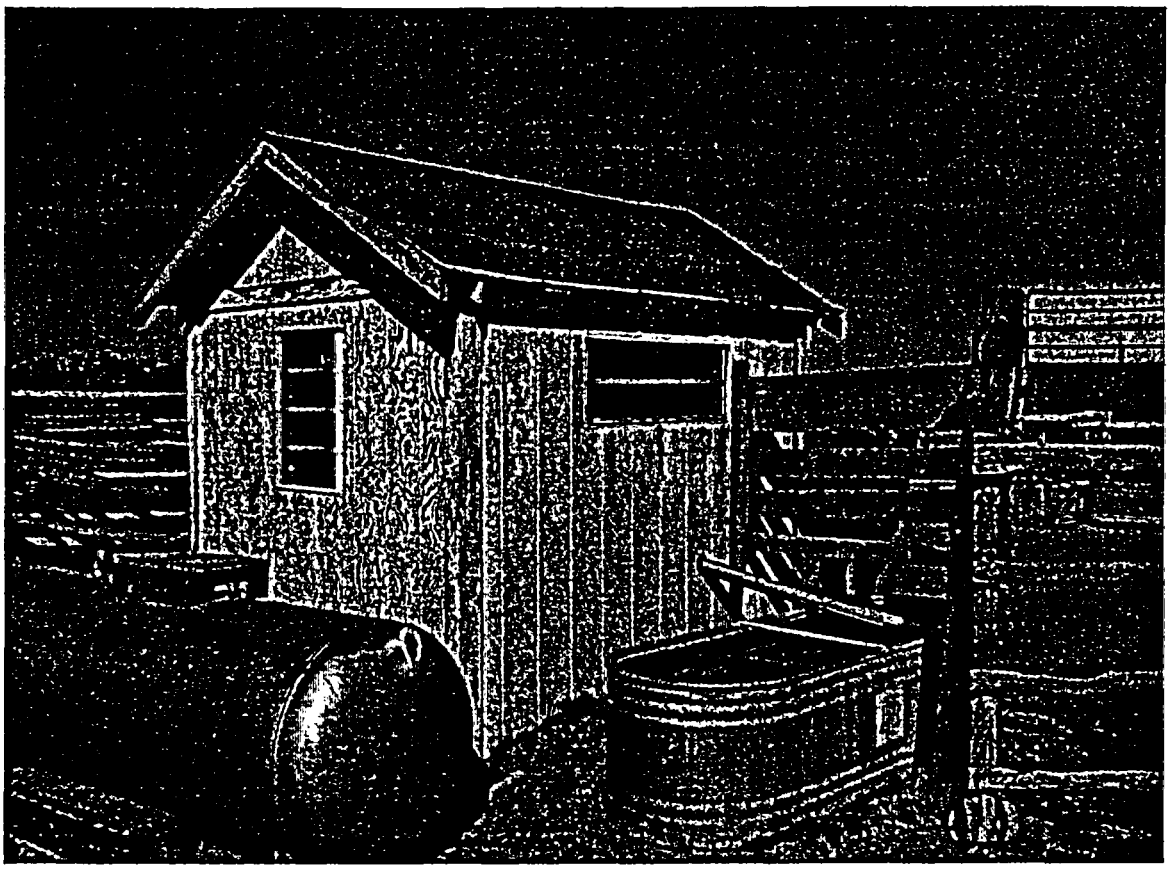
C01

ATTACHMENT A

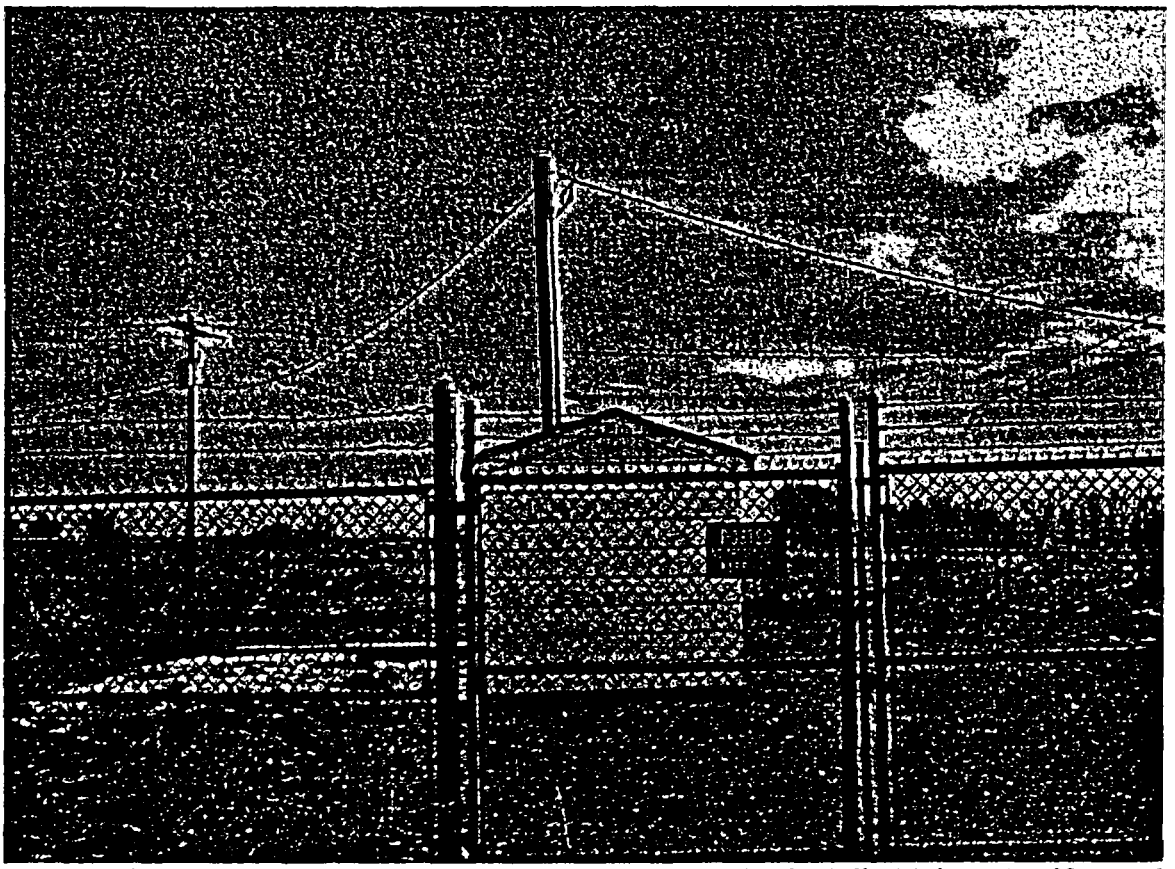
PROJECT PHOTOGRAPHS

Photograph of a domestic well located at the Willow residence on Rendezvous Rd. (DOE Well 420). This well is immediately downgradient of the Riverton UMTRA Site, seen in the background. Although DOE assumed that this home was connected to the alternate water supply in 1997, the home was in fact never connected and still relies on a potentially affected well for potable water supply. Of some twenty-five homes that were identified by DOE to be connected to the alternate water supply WREQC determined that seven of these homes that were not connected and still use potentially affected water wells for domestic supply.

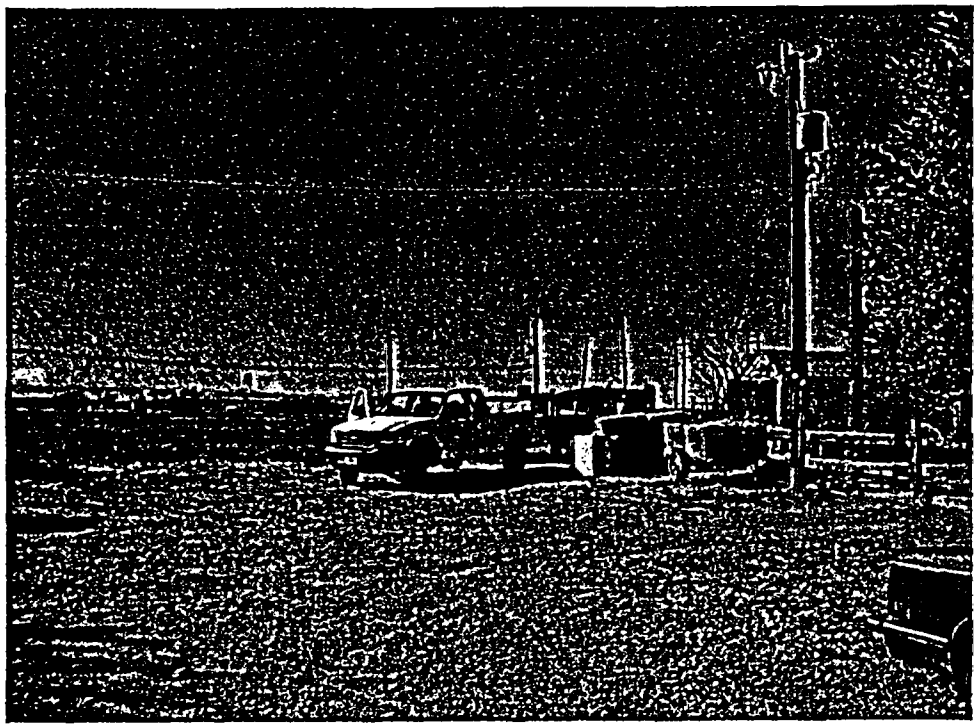
A domestic well located at Westlake residence on Rendezvous Rd. (DOE Well 441). The DOE reports this well to be 100 feet deep and completed in the confined aquifer, which the DOE contends is unaffected by site contaminants. WREQC sampling and analysis indicates impacts to water quality by the groundwater contamination plume, including Uranium concentrations above the MCL. This home was also never connected to the alternate water supply system, even though DOE documents called for this home to be connected to the alternate water supply.

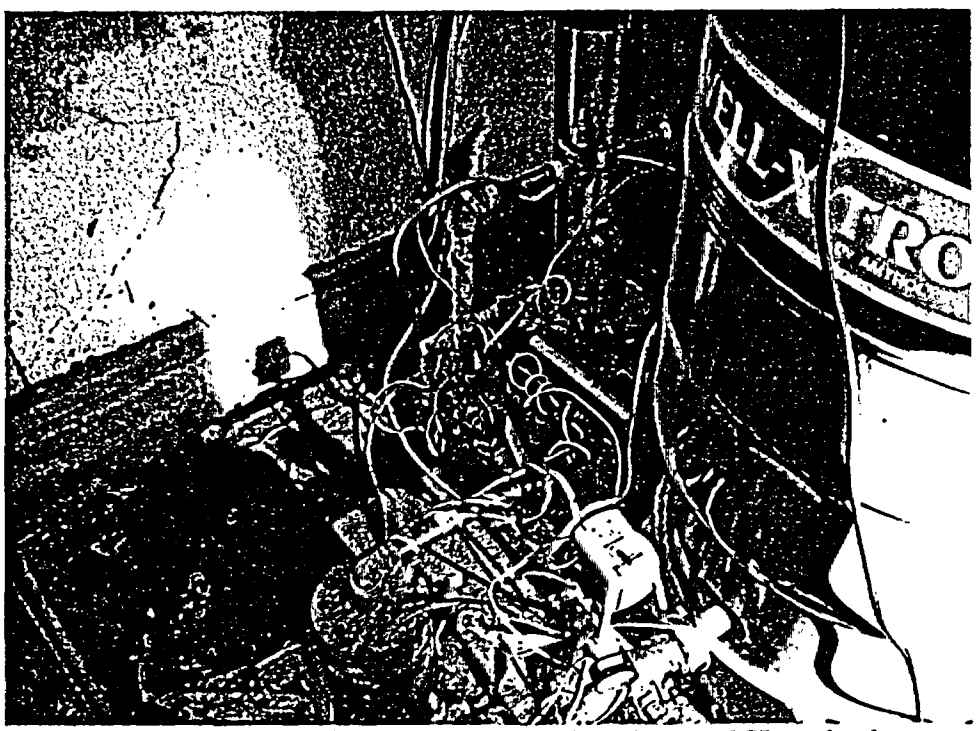


A stock well owned by the Blomberg family on Rendezvous Rd. (DOE Well 445). WREQC sampling and analysis of groundwater from this well indicates impacts by UMTRA site contaminants. This data is significant because it indicates that groundwater contamination has migrated much further to the east than reported by DOE.

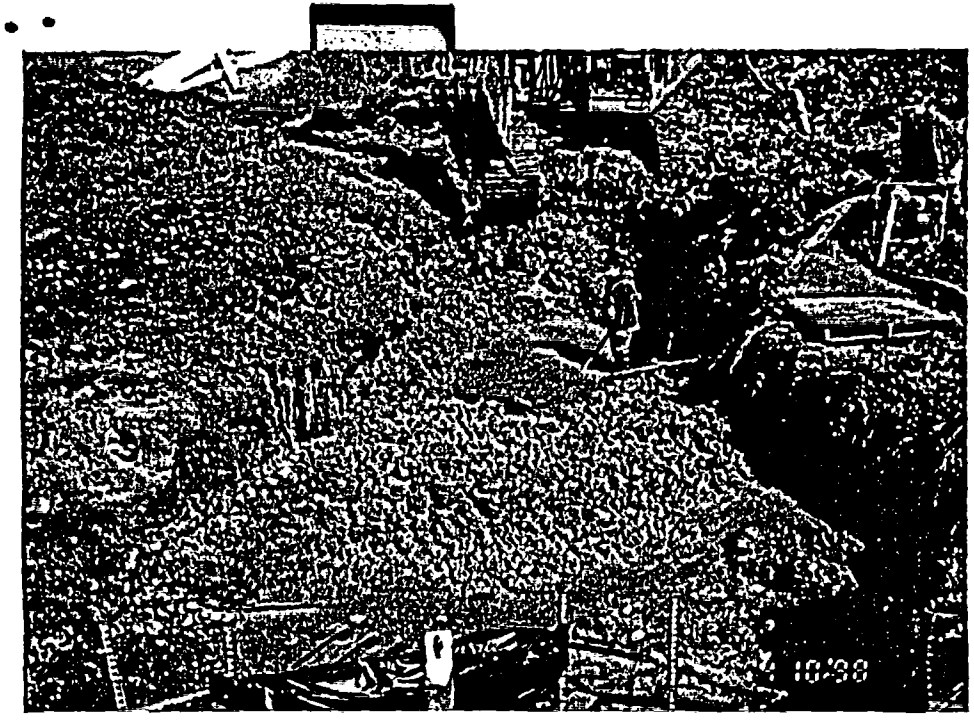


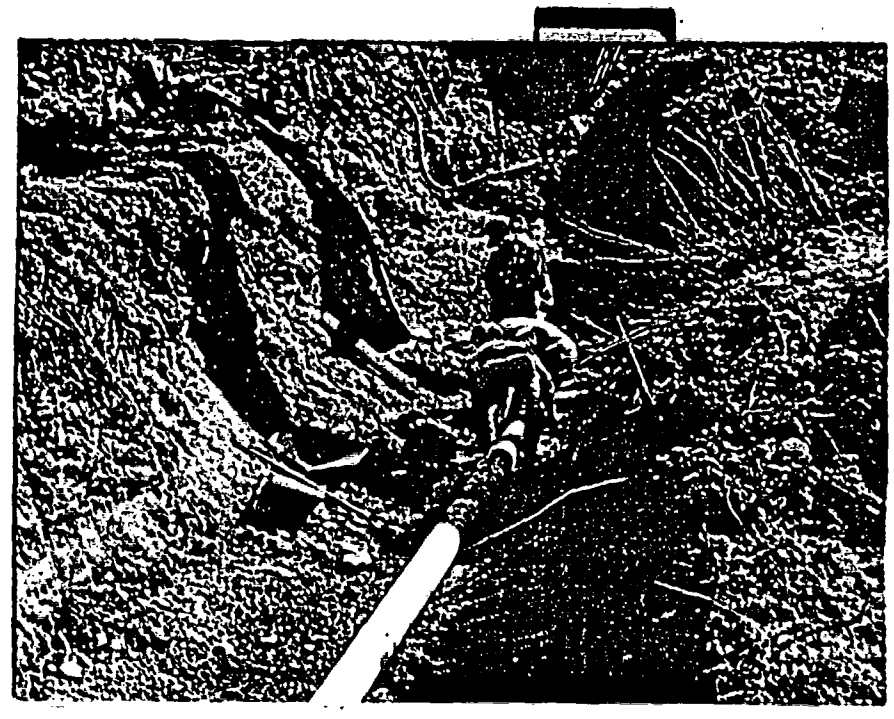
Great Plains #2, a public water supply well completed in the Wind River Aquifer, and located at Arapaho, Wy. This is one of two regulated wells that produce the source water for the alternate water supply system constructed at the UMTRA Site.



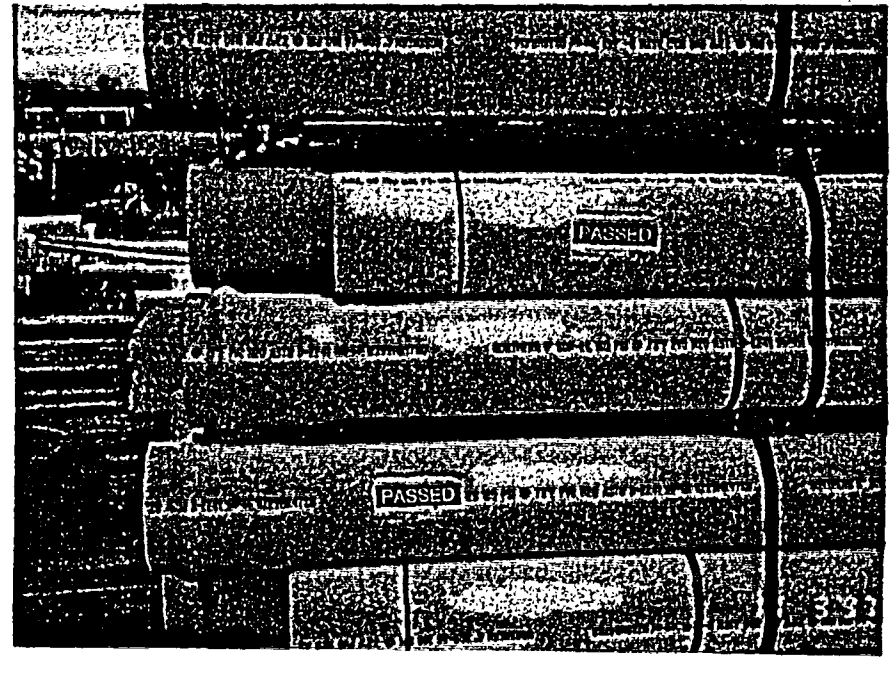


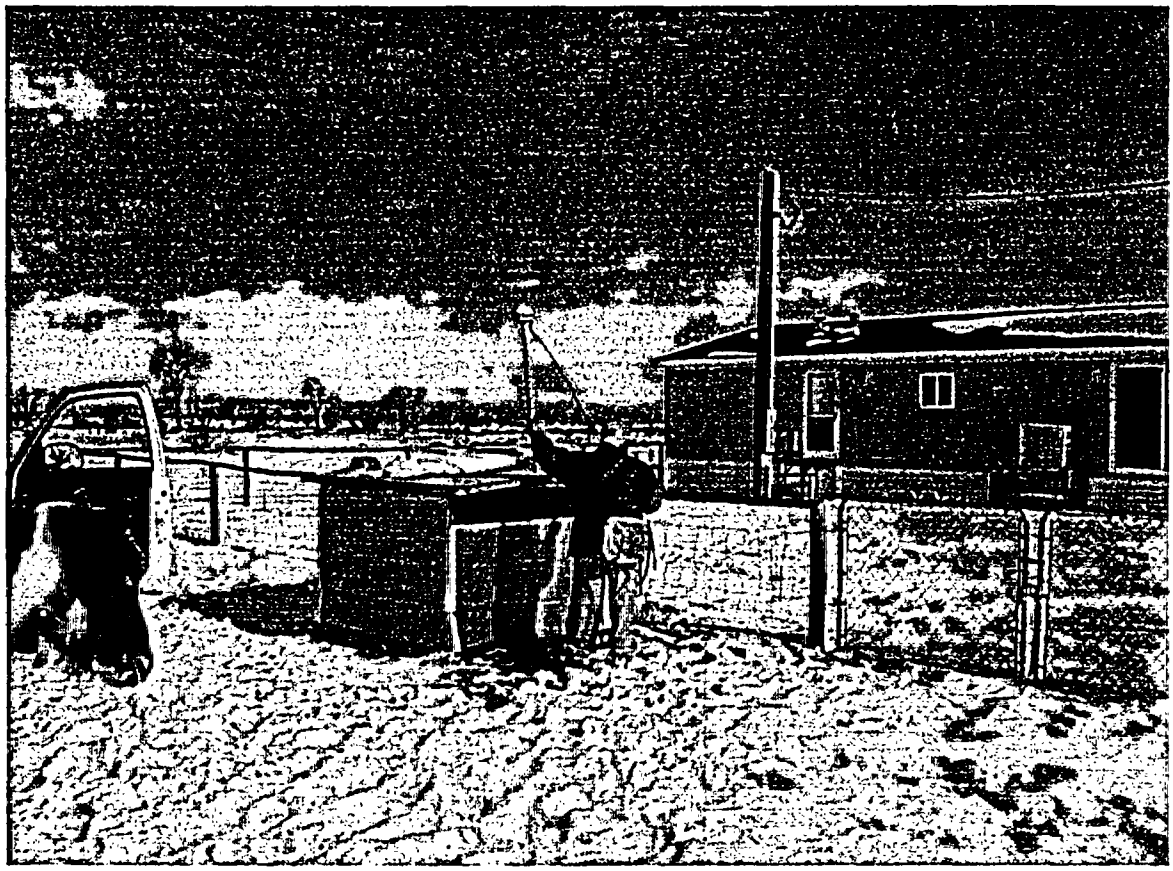
Photographs of a domestic well located at the Clark and Knowles homes on Rendezvous Rd. The DOE identified this well as potentially affected by site contaminants. Well inspection by Northern Arapaho Utilities revealed that this unregulated source was cross-connected into the alternate water supply system.





Construction of the IHS-designed alternate water supply line in 1998. Note the standing water in the trench. A portion of the PVC water line was installed in direct contact with contaminated groundwater.





WREQC Water Quality Technician Everett McGill collecting GPS location coordinates for a domestic water well at the UMTRA Site.

WREQC Water Quality Technicians Everett McGill and Travis Shakespeare work with the Northern Arapaho Utility Organization to collect water samples for analysis from the alternate water supply line on Rendezvous Rd. during hydrant flushing. The Riverton UMTRA Site can be seen in the background.

ATTACHMENT B

WREQC

WATER WELL AND GROUNDWATER USE QUESTIONNAIRES

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 865 Rendezvous Rd. (DOE #420)

Name of Owner/Responsible person: Marie Willow

Type of Use at Location (home, business, public building, school, etc.): Home

Number of Occupants or Water Users at address and their ages: 4 people - 21, 21, 22, 62

Length of Time at address: 62 years

What is your Drinking Water Source at this location? water well - Private Domestic

Community Water Supply?
Private Well?
Other source (Bottled, cistern, etc.)? - For Drinking only

Do you have any water wells on the property? One well
If yes, please answer:

What is the status of each well?
(Active)
Inactive or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following?
Drinking water
~~Other domestic use~~ (washing, bathing, sanitation, etc.)
Garden or Agricultural use No
Livestock Water No
Incidental contact Yes
Other Water Use or contact (Describe) Sweat/Ceremonies/Cultural

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:
Brown Stain on Wash Cloth, but plumbing looks ok

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 888 Rendezvous Rd (DOE #411)

Name of Owner/Responsible person: Joe Goggles Sr.

Type of Use at Location (home, business, public building, school, etc.): Home

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply? Arapaho Community System
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? Yes - one well
If yes, please answer:

What is the status of each well?

(Active)
Inactive or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following?

Drinking water
Other ~~domestic use~~ (washing, bathing, sanitation, etc.)
(Garden or Agricultural use) Outside Watering
Livestock Water -
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 892 Rendevous Rd (DOE #442)

Name of Owner/Responsible person: Rupert Goggles

Type of Use at Location (home, business, public building, school, etc.): Home

Number of Occupants or Water Users at address and their ages: 1

Length of Time at address: Lifetime (60 years)

What is your Drinking Water Source at this location?

Community Water Supply? Not hooked up to new water line
Private Well?
Other source (Bottled, cistern, etc.)? From Arapaho School

Do you have any water wells on the property?
If yes, please answer:

What is the status of each well?

- (Active)
- Inactive or not presently used
- Unusable
- Permanently Abandoned

Is the well used for any of the following?

- Drinking water
- Other domestic use (washing, bathing, sanitation, etc.)
- Garden or Agricultural use - Trees & Yard
- Livestock Water
- Incidental contact
- Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 789 Bingo / Truck Stop

Name of Owner/Responsible person: Arapaho Tribe

Type of Use at Location (home, business, public building, school, etc.): business

Number of Occupants or Water Users at address and their ages: Public Water Supply System

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply?
(Private Well?)
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? /
If yes, please answer:

What is the status of each well?
(Active)
~~Inactive~~ or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following?
(Drinking water)
(Other domestic use) (washing, bathing, sanitation, etc.)
Garden or Agricultural use
Livestock Water
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: Rendezvous Road (DOE Well #410)

Name of Owner/Responsible person: Ruth Bighako

Type of Use at Location (home, business, public building, school, etc.): Home

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply? Arapaho PWS
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? Yes - one well
If yes, please answer:

What is the status of each well?
- Active
- Inactive or not presently used
- Unusable Pump doesn't work
- Permanently Abandoned

Is the well used for any of the following? No - Not Used
- Drinking water
- Other domestic use (washing, bathing, sanitation, etc.)
- Garden or Agricultural use
- Livestock Water
- Incidental contact
- Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 898 Rendezvous Rd (DOE Well No 440 & 441)

Name of Owner/Responsible person: June/Owen Westlake - Birdie

Type of Use at Location (home, business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages: 4 in family

Length of Time at address: lifetime

What is your Drinking Water Source at this location?

Community Water Supply? - No
Private Well? Yes
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? 2 Wells 440 & 441
If yes, please answer:

What is the status of each well?
- Active
- Inactive or not presently used
- Unusable
- Permanently Abandoned

Is the well used for any of the following?
- Drinking water - 440
- Other domestic use (washing, bathing, sanitation, etc.) - 440
- Garden or Agricultural use - 441 Vegetable Garden, Lawn, Horses
- Livestock Water - 440, 441
- Incidental contact
- Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity Sarah Blackburn / Margaret Blackburn

Street Address or Location of property: DOE #443, 444

Name of Owner/Responsible person: Blackburn

Type of Use at Location (home, business, public building, school, etc.): Home

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

(Community Water Supply?)
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property?
If yes, please answer:

What is the status of each well? 2 Wells - 443, 444
Active
Inactive or not presently used - Pump not working 443
(Unusable) - 444 - Shallow, dd well w/ hand pump
Permanently Abandoned

Is the well used for any of the following? Not Used #443, 444
Drinking water
Other domestic use (washing, bathing, sanitation, etc.)
Garden or Agricultural use
Livestock Water
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: Doe #451

Name of Owner/Responsible person: Mary Bear

Type of Use at Location (home, business, public building, school, etc.): Abanored Home

Number of Occupants or Water Users at address and their ages: 0

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply?
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? 1 well
If yes, please answer:

What is the status of each well?

Active
Inactive or not presently used (circled) no electric power
Unusable
Permanently Abandoned

Is the well used for any of the following?

Drinking water
Other domestic use (washing, bathing, sanitation, etc.)
Garden or Agricultural use
Livestock Water
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: DOE Well #453

Name of Owner/Responsible person: Joanne Blackburn

Type of Use at Location (home, business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

(Community Water Supply?) - Arapaho Water System
Private Well? - not used, disconnected
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? 1 Well
If yes, please answer:

What is the status of each well? 1

Active
(Inactive or not presently used) - has power, but not used since water line installed, plumbing disconnected, no hydr...
Unusable
Permanently Abandoned

Is the well used for any of the following?

Drinking water
Other domestic use (washing, bathing, sanitation, etc.)
Garden or Agricultural use
Livestock Water
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 703 Rendezvous Rd. Dove Well # 448

Name of Owner/Responsible person: Lori / Garth Martin

Type of Use at Location (home, business, public building, school, etc.): Home/Farm

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

(Community Water Supply?) Arapaho Utilities
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? 1 well
If yes, please answer:

What is the status of each well?

(Active)
Inactive or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following?

Drinking water
Other domestic use (washing, bathing, sanitation, etc.)
(Garden or Agricultural use)
(Livestock Water)
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: Rendevous Rd. Well #406

Name of Owner/Responsible person: Clark / Knowles

Type of Use at Location (home, business, public building, school, etc.): Home / Farm

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

(Community Water Supply?) Arapaho Water Line
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? Yes - 1 well
If yes, please answer:

What is the status of each well?

(Active)
Inactive or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following?

Drinking water No
Other domestic use (washing, bathing, sanitation, etc.) No
Garden or Agricultural use Yes Yard
Livestock Water Yes - Horses
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: Abandoned home, immediately S. UMTRA site, Rendezvous Rd Doe Well #421 or 961?

Name of Owner/Responsible person: unknown

Type of Use at Location (home, business, public building, school, etc.): Abd Home

Number of Occupants or Water Users at address and their ages: 0

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply?
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property?
If yes, please answer:

What is the status of each well?
Active
Inactive or not presently used
(Unusable) - Pump/Electric removed
Permanently Abandoned

Is the well used for any of the following?
Drinking water
Other domestic use (washing, bathing, sanitation, etc.)
Garden or Agricultural use
Livestock Water
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:
Well not permanently abandoned, but pump pulled
Could sample with bailer or pump

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: St. Stephens' Mission

Name of Owner/Responsible person: Delmont Shakespeare Sr.

Type of Use at Location (home, business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply?
Private Well?
Other source (Bottled, cistern, etc.)?

~~436~~ 436 + 437?

Do you have any water wells on the property? 2 (Mission + 1 at School)
If yes, please answer: old Bus garage (Doe Well No 436)

What is the status of each well?

- Active
- Inactive or not presently used
- Unusable
- Permanently Abandoned

Is the well used for any of the following?

- Drinking water
- Other domestic use (washing, bathing, sanitation, etc.)
- Garden or Agricultural use
- Livestock Water
- Incidental contact
- Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:
Well 436 - Residences at Mission (4 or 5 Homes)
Well 437 - High School + Mission

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: St. Stephens Indian School #435

Name of Owner/Responsible person: Ed Trujillo

Type of Use at Location (home, business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages: Elementary School

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply?
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property?
If yes, please answer:

What is the status of each well?
- Active
- Inactive or not presently used
- Unusable
- Permanently Abandoned

Is the well used for any of the following?
- Drinking water
- Other domestic use (washing, bathing, sanitation, etc.)
- Garden or Agricultural use
- Livestock Water
- Incidental contact
- Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 921 Rendezvous Road Doe Well #405

Name of Owner/Responsible person: ~~Verna~~ Blomberg

Type of Use at Location (home) business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages: 1

Length of Time at address: 59+ years

What is your Drinking Water Source at this location?

Community Water Supply?
(Private Well?)
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property?
If yes, please answer:

What is the status of each well?

(Active)
Inactive or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following?

(Drinking water)
(Other domestic use (washing, bathing, sanitation, etc.)
(Garden or Agricultural use)
(Livestock Water)
(Incidental contact)
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 830 Goes-In-the-Lodge Road

Name of Owner/Responsible person: Whiteman

Type of Use at Location (home) business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply? - Arapaho Water Line
Private Well? - Livestock Use.
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? Yes - 2
If yes, please answer: 1 abandoned well (#424?)

What is the status of each well?

(Active) 423?
Inactive or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following?

Drinking water
Other domestic use (washing, bathing, sanitation, etc.)
Garden or Agricultural use
(Livestock Water)
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: #445 (Blomberg #2)

Name of Owner/Responsible person: Blomberg / Delbert + Jennings (Lessee)

Type of Use at Location (home, business, public building, school, etc.): Livestock

Number of Occupants or Water Users at address and their ages: 6 Horses

Length of Time at address: 40 years

What is your Drinking Water Source at this location? N/A

Community Water Supply?
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? 1 Well
If yes, please answer:

What is the status of each well?
(Active)
Inactive or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following?
Drinking water
Other domestic use (washing, bathing, sanitation, etc.)
Garden or Agricultural use
(Livestock Water) - 6 Horses
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: Arapaho Great Plains Well #2

Name of Owner/Responsible person: N. Arapaho Utilities / Tribe

Type of Use at Location (home, business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

(Community Water Supply?)
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? 2 wells - Well 1 (north) + Well 2 (south)
If yes, please answer:

What is the status of each well?

(Active)
Inactive or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following? Public Water Supply

Drinking water
Other domestic use (washing, bathing, sanitation, etc.)
Garden or Agricultural use
Livestock Water
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: Peak Sulfur Company (Well No 460)

Name of Owner/Responsible person: Don Scott, Quality Manager

Type of Use at Location (home, business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply?
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? 1 Water Supply Well
If yes, please answer:

What is the status of each well?

Active
Inactive or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following?

Drinking water
Other domestic use (washing, bathing, sanitation, etc.)
Garden or Agricultural use
Livestock Water
Incidental contact
Other Water Use or contact (Describe) Industrial Supply

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 204 Goes in lodge

Name of Owner/Responsible person: Lawrence Raymond, Jr

Type of Use at Location (home, business, public building, school, etc.): A-2 Processing

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

(Community Water Supply?) - Arapaho Water Line
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? 2 Wells - 430 - 431
If yes, please answer:

What is the status of each well?
(Active) - 430 - old Home + Meat Packing House
Inactive or not presently used 431 - Needs power, want to reuse next summ
Unusable
Permanently Abandoned

Is the well used for any of the following?
Drinking water
(Other domestic use) (washing, bathing, sanitation, etc.)
Garden or Agricultural use
Livestock Water
Incidental contact
Other Water Use or contact (Describe)
Meat Processing Plant
Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 288 Goes in lodge

Name of Owner/Responsible person: Potter

Type of Use at Location (home) business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply? Water line
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property?
If yes, please answer:

What is the status of each well? 1
(Active)
Inactive or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following? Outside Use
Drinking water
Other domestic use (washing, bathing, sanitation, etc.)
Garden or Agricultural use
Livestock Water
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: #113 Goes in Lodge Rd. Well #452

Name of Owner/Responsible person: Ken Blackburn

Type of Use at Location (home) business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

(Community Water Supply?) Arapaho Water Line
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? 1 Well - #452
If yes, please answer:

What is the status of each well?
(Active)
Inactive or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following?
Drinking water
Other domestic use (washing, bathing, sanitation, etc.)
(Garden or Agricultural use) Water Trees
Livestock Water
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Couldn't turn pump on, check back later.

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 972 Rendez vous Rd.

Name of Owner/Responsible person: Gene Monroe

Type of Use at Location (home, business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply?
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property?
If yes, please answer:

What is the status of each well? 1
Active
Inactive or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following?
Drinking water
Other domestic use (washing, bathing, sanitation, etc.)
Garden or Agricultural use
Livestock Water
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Well may be tied into service line

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 710 Whitetail Drive

Name of Owner/Responsible person: Gordon Raylance - Owner
Leslie - 857-6654 Renter

Type of Use at Location (home, business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages:
2 Adults, 2 children

Length of Time at address: 8 years

What is your Drinking Water Source at this location?

~~Community Water~~ Supply?
~~Private Well?~~
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? 1 Well
If yes, please answer:

What is the status of each well?
- Active
- Inactive or not presently used
- Unusable
- Permanently Abandoned

Is the well used for any of the following? Only water source at residence is the well
- Drinking water
- ~~Other domestic use~~ (washing, bathing, sanitation, etc.)
- ~~Garden or Agricultural~~ use
- ~~Livestock Water~~
- Incidental contact
- Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 219 Goes In Lodge Rd.

Name of Owner/Responsible person: Connie Hilyard

Type of Use at Location (home) business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages: 1

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply?
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? 1 well
If yes, please answer:

What is the status of each well?
- Active
- Inactive or not presently used
- Unusable
- Permanently Abandoned

Is the well used for any of the following?
- Drinking water
- Other domestic use (washing, bathing, sanitation, etc.)
- Garden or Agricultural use
- Livestock Water
- Incidental contact
- Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 24 Littlefield Rd.

Name of Owner/Responsible person: Frances McElroy

Type of Use at Location (home, business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages: 3

Length of Time at address: 22 years

What is your Drinking Water Source at this location?

Community Water Supply?
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property?
If yes, please answer:

What is the status of each well?
- Active
- Inactive or not presently used
- Unusable
- Permanently Abandoned

Is the well used for any of the following?
- Drinking water
- Other domestic use (washing, bathing, sanitation, etc.)
- Garden or Agricultural use
- Livestock Water
- Incidental contact
- Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 113 Goes in Lodge Rd. DOE Well #452

Name of Owner/Responsible person: Ken Blackburn

Type of Use at Location (home, business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply? - Arapaho Water Line
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? 1 well
If yes, please answer:

What is the status of each well?

Active
Inactive or not presently used
Unusable
Permanently Abandoned

Is the well used for any of the following?

Drinking water
Other domestic use (washing, bathing, sanitation, etc.)
Garden or Agricultural use outside use only
Livestock Water
Incidental contact
Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Well sump was not working - pumped burned out or electrical bad
Unable to sample 12/19/02

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: Well #417 170 Goes into Ridge Rd

Name of Owner/Responsible person: Raymond Hahn

Type of Use at Location (home, business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages:

Length of Time at address:

What is your Drinking Water Source at this location?

(Community Water Supply?) Arapaho Water Line
~~Private Well?~~
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property? one well
If yes, please answer:

What is the status of each well?
- (Active)
- Inactive or not presently used
- Unusable
- Permanently Abandoned

Is the well used for any of the following?
- Drinking water
- Other domestic use (washing, bathing, sanitation, etc.)
- (Garden or Agricultural use) outside use only
- Livestock Water
- Incidental contact
- Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

Wind River Environmental Quality Commission (WREQC)

Water Well and Groundwater Use Questionnaire

Riverton UMTRA Site Vicinity

Street Address or Location of property: 31 Little shield Rd.

Name of Owner/Responsible person: Nolan Friday + Rae Friday

Type of Use at Location (home, business, public building, school, etc.):

Number of Occupants or Water Users at address and their ages: 2

Length of Time at address:

What is your Drinking Water Source at this location?

Community Water Supply?
Private Well?
Other source (Bottled, cistern, etc.)?

Do you have any water wells on the property?
If yes, please answer:

What is the status of each well?
- Active
- Inactive or not presently used
- Unusable
- Permanently Abandoned

Is the well used for any of the following?
- Drinking water
- Other domestic use (washing, bathing, sanitation, etc.)
- Garden or Agricultural use
- Livestock Water
- Incidental contact
- Other Water Use or contact (Describe)

Please estimate the amount of each usage.

Comments or other relevant information regarding groundwater contact or use:

ATTACHMENT C

FIELD DATA SHEETS

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Ground Water
Site Address: ~~888~~ Rendezvous Rd (DOE #411)
Residents Name: Joe Goggles Sr
Date: 10/8/02
Samplers Name: S. Babits / D. Goggles

Time	1255	1300	1303	1306		
Water Temp	11.0°C	11.4°C	10.9°C	10.9°C		
pH	9.0	8.9	9.0	9.0		
Conductivity	694µS	705µS	695µS	697µS		
Specific Conductance	947µS	939µS	947µS	947µS		

Sample Location: Public Water Well ---Stock Water Well --- ~~Home Water Well~~
Artesian Well --- Under Ground Injection Well

Sample Methods: ~~YSI~~ -- Grab Sample -- Pumphouse -- Manual pump – Other

Comments: Sampled at hydrant at well head in front yard.

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton (J) MTRA G.W
Site Address: 865 Rendezvous Rd. (420)
Residents Name: Marie Willow
Date: 10/8/02
Samplers Name: S. Bobbs / D. Goggle

Time	1225	1230	1235	1240		
Water Temp	13.0°C	12.1°C	11.4°C	11.4°C		
pH	8.9	8.9	8.9	8.9		
Conductivity	654µS	647µS	639µS	626µS		
Specific Conductance	847µS	855µS	859µS	844µS		

Sample Location: Public Water Well ---Stock Water Well --(Home Water Well)
Artesian Well --- Under Ground Injection Well

Sample Methods: (YSI) -- (Grab Sample) -- (Pumphouse) -- Manual pump – Other

Comments: Well sampled at tap on the pumphouse

Wind River Environmental Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Groundwater
Site Address: 892 Rendezvous Rd (DOE Well #442)
Residents Name: Rupert Goggles
Date: 10/8/02
Samplers Name: S. Babits / D. Goggles

Time	1316	1323	1329	1335	1340	1345
Water Temp	10.6	10.6	10.8	10.7	15.9	11.4
pH	8.8	8.9	9.1	9.0	8.8	8.9
Conductivity	672 µS	688 µS	691 µS	690 µS	780 µS	701 µS
Specific Conductance	924 µS	947 µS	947 µS	945 µS	941 µS	946 µS

Sample Location: Public Water Well ---Stock Water Well ---~~Home Water Well~~
Artesian Well --- Under Ground Injection Well

Sample Methods: ~~YSI~~ -- ~~Grab Sample~~ - ~~Pumphouse~~ -- Manual pump – Other

Comments: Well Sampled at tap on pumphouse.

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA 516 Ground water
Site Address: 789 Bingo
Residents Name: Arapaho Tribe
Date: 10/8/02
Samplers Name: S. Babbitt / D. Goggles

Time	1430	1437	1442			
Water Temp	11.9°C	11.7°C	12.0°C			
pH	8.6	8.6	8.6			
Conductivity	978 µS	987 µS	974 µS			
Specific Conductance	1300 µS	1320 µS	1293 µS			

Sample Location: (Public Water Well) --Stock Water Well --Home Water Well
Artesian Well --- Under Ground Injection Well

Sample Methods: ~~YSI~~ (Grab Sample) -- Pumphouse -- Manual pump -- Other

Comments: Well sampled at tap on bldg next to well.

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Site Ground Water
Site Address: 898 Rendezvous Rd DOE Well # 440
Residents Name: Westlake
Date: 10/9/02
Samplers Name: S. Gobbits / D. Goggles

Time	1305	1310	1315			
Water Temp	12.8°C	12.2°C	12.0°C			
pH	8.8	8.9	9.0			
Conductivity	735 µS	718 µS	724 µS			
Specific Conductance	933 µS	945 µS	960 µS			

Sample Location: ~~Public Water Well~~ N/A ---Stock Water Well --- ~~Home Water Well~~
Artesian Well --- Under Ground Injection Well

Sample Methods: ~~YSI~~ -- ~~Grab Sample~~ -- ~~Pumphouse~~ -- Manual pump – Other

Comments: Took sample at tap in Horse Corral.
11/15/02 432' deep? Used to be artesian, until Susquehanna drilled 1950's ?

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Ground Water
Site Address: 898 Rendezvous Rd (82441)
Residents Name: Westlake
Date: 10/9/02
Samplers Name: D. Goggles / S. Babbits

Time	1320	1330	1335	1340		
Water Temp	14.0°C	14.0°C	13.5°C	13.5°C		
pH	7.3	7.2	7.15	7.15		
Conductivity	688µS	697µS	704µS	702µS		
Specific Conductance	847µS	884µS	903µS	900µS		

Sample Location: Public Water Well ---Stock Water Well ---Home Water Well
Artesian Well --- Under Ground Injection Well

Sample Methods: YSI -- Grab Sample -- Pumphouse -- Manual pump – Other

Comments: Well Sampled at Vegetable Garden Tap.
11/15/02 85 ft deep drilled ~1970?

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : 903 Rendezvous Rd Well #448
Site Address: Riverton UMTRA Ground Water
Residents Name: Martin Garth/Lori
Date: 10/9/02
Samplers Name: D. Goggles / S. Babits

Time	1425	1430	1435			
Water Temp	11.8	11.6	11.5			
pH	9.0	9.0	9.0			
Conductivity	624µS	620µS	618µS			
Specific Conductance	836µS	833µS	831µS			

Sample Location: Public Water Well --- Stock Water Well --- (Home Water Well)
Artesian Well --- Under Ground Injection Well

Sample Methods: (YSI) -- (Grab Sample) -- (Pumphouse) -- Manual pump -- Other

Comments: _____

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton AMTRA Well #406
Site Address: Rendezvous Rd
Residents Name: Clark/Knowles
Date: 10/9/02
Samplers Name: S. Babits / D. Goggles

Time	1445	1450	1455			
Water Temp	12.3°C	10.8°C	10.8°C			
pH	9.6	9.7	9.7			
Conductivity	765 µS	743 µS	738 µS			
Specific Conductance	1010 µS	1018 µS	1009 µS			

Sample Location: Public Water Well ---Stock Water Well ---~~Home Water Well~~
Artesian Well --- Under Ground Injection Well

Sample Methods: YSI -- ~~Grab Sample~~ ~~Pumphouse~~ -- Manual pump – Other

Comments: Sampled at pumphouse tap.

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : St. Stephens Mission Well #436 (Mission/Church)
Site Address: Riverton UMTRA Site
~~Residents~~ Name: Delmont Shakespeare Sr
Date: 10/17/02
Samplers Name: Babits/Goggles

Time	~~1112~~ 1117	1122	1126	1130		
Water Temp	11.8	11.7	11.7	11.8		
pH	9.0	8.9	8.8	8.8		
Conductivity	319 µS	305 µS	639 µS	644 µS		
Specific Conductance	426 µS	409 µS	857 µS	860 µS		

Sample Location: ~~Public Water Well~~ ---Stock Water Well ---Home Water Well
Artesian Well --- Under Ground Injection Well

Sample Methods: ~~YSI~~ -- Grab Sample -- ~~Pumphouse~~ -- Manual pump – Other

Comments: Sampled well at top in bus barn at well

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Ground Water
Site Address: St. Stephens Mission - School/Church/1 Residence 437 ~~435~~ ?
~~Residents~~ Name: Delmont Shakespeare
Date: 10/17/02
Samplers Name: S Belts 1D Goggles

Time	1145	1150	1155	1200		
Water Temp	14.1	14.2	14.2	14.1		
pH	9.0	9.0	9.0	8.9		
Conductivity	606 µS	604 µS	608 µS	593 µS		
Specific Conductance	764 µS	761 µS	766 µS	749 µS		

Sample Location: ~~Public Water Well~~ **---Stock Water Well ---Home Water Well**
Artesian Well --- Under Ground Injection Well

Sample Methods: ~~YSI~~ **--** ~~Grab Sample~~ **--** Pumphouse **-- Manual pump – Other**

Comments: Sampled at Youth Center Building

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton Upstream Groundwater
Site Address: St. Stephens Indian School #435
Residents Name: Ed Trujillo
Date: 10/17/02
Samplers Name: Bobbs / Boggles

Time	1215	1220				
Water Temp	11.9	11.1				
pH	9.0	9.0				
Conductivity	510 µS	491 µS				
Specific Conductance	681 µS	667 µS				

Sample Location: (Public Water Well) ---Stock Water Well ---Home Water Well
Artesian Well --- Under Ground Injection Well

Sample Methods: (YSI) -- (Grab Sample) -- (Pumphouse) -- Manual pump -- Other

Comments: Sampled at Pumphouse, downstream of storage tank. Purged about 5 gallons prior to sampling. BB SB

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Ground Water
Site Address: 921 Kendrezvous Rd (DOE Well No 405)
Residents Name: H Blomberg
Date: 10/17/02
Samplers Name: S. Babits / D. Goggles

Time	1320	1325	1330			
Water Temp	10.6	10.1	10.2			
pH	9.0	9.0	9.0			
Conductivity	694 µS	674 µS	683 µS			
Specific Conductance	956 µS	932 µS	950 µS			

Sample Location: Public Water Well ---Stock Water Well ---~~Home Water Well~~
Artesian Well --- Under Ground Injection Well

Sample Methods: ~~YSI~~ -- ~~Grab Sample~~ -- ~~Pumphouse~~ - Manual pump – Other

Comments: Sampled outside tap, front of house

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Ground water
Site Address: 830 Goes in the Lodge Rd (Doe #423?)
Residents Name: Whiteman.
Date: 10/17/02
Samplers Name: Bobbie/Goggles

Time	1400	1405	1410	1415		
Water Temp	10.0	9.8	9.7	9.9		
pH	9.0	9.0	9.0	9.0		
Conductivity	522µS	518µS	516µS	508µS		
Specific Conductance	735µS	731µS	730µS	714µS		

Sample Location: Public Water Well —Stock Water Well —Home Water Well
Artesian Well — Under Ground Injection Well

Sample Methods: YSI – Grab Sample – Pumphouse – Manual pump – Other

Comments: Sealed at Pumphouse

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA G.W.
Site Address: Well #445 (Blomberg #2)
Residents Name: Blomberg / Delbert Jennings (Lessee)
Date: 11/5/02
Samplers Name: Steve Babits

Time	1706					
Water Temp	12.2					
pH	7.5					
Conductivity	606µS					
Specific Conductance	806µS					

Sample Location: Public Water Well --- (Stock Water Well) --- Home Water Well
Artesian Well --- Under Ground Injection Well

Sample Methods: (YSI) -- (Grab Sample) - Pumphouse -- Manual pump -- Other

Comments: Duplicate Grab Sample - QA-1
Purged about 5 gallons from pump + well

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Groundwater
Site Address: Arapahoe Water Line
Residents Name: WIA
Date: 11/7/02
Samplers Name: Steve Babitt

Time	1030					
Water Temp	12.5°C					
pH	9.0					
Conductivity	494 µS					
Specific Conductance	649 µS					

Sample Location: Public Water Well —Stock Water Well —Home Water Well
Artesian Well — Under Ground Injection Well

Sample Methods: YSI – Grab Sample – Pumphouse – Manual pump – Other

Comments: Fire Hydrant at end of water Line on Bretzmans Rd. Flushed out a ~~800~~ 850 gallons to clear hydrant.

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UNTRA Groundwater
Site Address: Hoyacke Water Well #2
Residents Name: Northern Arapaho P.W.S.
Date: 11/7/02
Samplers Name: Steven Babbitt

Time	10:50					
Water Temp	12.9°C					
pH	9.2					
Conductivity	464 µs					
Specific Conductance	601 µs					

Sample Location: ~~Public Water Well~~ —Stock Water Well —Home Water Well
Artesian Well — Under Ground Injection Well

Sample Methods: YSI – Grab Sample – Pumphouse – Manual pump – Other

Comments: Sampled Well #2 at Pumphouse. Well was pumping.

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Project
~~Site Location~~ : Riverton UNTRIA Groundwater
Site Address: Rak Sulfur Goes in Lodge Rd Well #460
Contact
~~Residents~~ Name: Don Scott, Quality Manager
Date: 11/12/02
Samplers Name: Steve Bubits

Time	1130					
Water Temp	12.6					
pH	9.0					
Conductivity	539 µS					
Specific Conductance	709 µS					

Sample Location: Public Water Well —Stock Water Well —Home Water Well
Artesian Well — Under Ground Injection Well
Industrial Water Supply Well
Sample Methods: (YSI) – (Grab Sample) – (Pumphouse) – Manual pump – Other

Comments: Sampled at tap in pumphouse. Well was pumping when sampled.

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Groundwater
Site Address: 2046 Goes in Lodge 1A-2 Processing Well #430
Residents Name: Lawrence Raymond, Jr.
Date: 11/21/02
Samplers Name: Steven Babits

Time	1100					
Water Temp	11.0					
pH	8.5					
Conductivity	570 µS					
Specific Conductance	778 µS					

Sample Location: Public Water Well —Stock Water Well —Home Water Well
Artesian Well — Under Ground Injection Well

Sample Methods: (YSI) – (Grab Sample) – **Pumphouse – Manual pump – Other**

Comments: Pump in use for meatpacking plant, sampled at sink tap

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : River for UMTRA Groundwater
Site Address: 233 Goes in Ladge Rd
Residents Name: V. Potter
Date: 11/21/02
Samplers Name: Steve Gobb

Time	1125	1130				
Water Temp	10.7	10.7				
pH	8.8	8.8				
Conductivity	627	627 µS				
Specific Conductance	863	863				

Sample Location: Public Water Well —Stock Water Well —Home Water Well
Artesian Well — Under Ground Injection Well

Sample Methods: YSI – Grab Sample – Pumphouse – Manual pump – Other

Comments: Sampled at tap on pumphouse.

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : UNTRT 0441
Site Address:
Residents Name: West Lakes
Date: 12-4-02
Samplers Name: Travis Shakespeare

Time	11:40					
Water Temp						
pH						
Conductivity						
Specific Conductance						

Sample Location: Public Water Well ---Stock Water Well ---Home Water Well
Artesian Well --- Under Ground Injection Well

Sample Methods: (YSI – Grab Sample) – Pumphouse -- Manual pump – Other

Comments: Well ~~#~~ is Frozen.
Unable to get confirmation Sample

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton Umtra
Site Address: 170 Goes in Lodge Rd.
Residents Name: Raymond Hahn / Don Hahn
Date: 12-10-02
Samplers Name: Travis S. / Everett M / Steve B.

Time		13:25				
Water Temp		11.7°C				
pH		8.31				
Conductivity		303.4 us				
Specific Conductance		408.0 us				

Sample Location: Public Water Well --Stock Water Well --(Home Water Well)
Artesian Well — Under Ground Injection Well

Sample Methods: YSI – Grab Sample – Pumphouse – Manual pump – Other

Comments: Well #417 : outside water use only

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton / Umtra Drinking Water
Site Address: Rendezvous R.d.
Residents Name: Ruth Big Lake
Date: 12-4-02
Samplers Name: T. Shakespeare / E. McGill

Time	11:20					
Water Temp	19.8°C					
pH	8.77					
Conductivity	604 us					
Specific Conductance	672 us					

Sample Location: (Public Water) Well — Stock Water Well — (Home Water) Well
Artesian Well — Under Ground Injection Well

Sample Methods: (YSI – Grab Sample) – Pumphouse – Manual pump – (Other)

Comments: Kitchen Sink tap let run 60 sec
Arapaho water line.

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : West side of oxbow lake / Riverton Untra.
Site Address: N/A
Residents Name: N/A
Date: 12-4-02
Samplers Name: Travis Stutzman

Time	11:54					
Water Temp	7.0 °C					
pH	7.22					
Conductivity	1085 µs					
Specific Conductance	1656 µs					

Sample Location: Public Water Well —Stock Water Well —Home Water Well
Artesian Well — Under Ground Injection Well

Sample Methods: YSI – Grab Sample – Pumphouse – Manual pump – Other

Comments:

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton Ultra D.W.
Site Address: 22 Red Cross Lane
Residents Name: Angela Hanway 857-1236
Date: 12-10-02
Samplers Name: Travis S. / Frank M. / Steve B.

Time	1211					
Water Temp	8.1°C					
pH	9.02					
Conductivity	450.8 us					
Specific Conductance	671 us					

Sample Location: Public Water Well — Stock Water Well — (Home) Water Well
Artesian Well — Under Ground Injection Well

Sample Methods: (YSI – Grab Sample) – Pumphouse – Manual pump – Other

Comments: Sampled out side faucet Arapaho water line west side of ultra site

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton Ultra
Site Address: 888 Rendezvous R.d.
Residents Name: Joe Goggles Sr.
Date: 12-4-02
Samplers Name: T. Shakespeare / E. McGill

Time	12:15					
Water Temp	17.5°c					
pH	8.82					
Conductivity	538 us					
Specific Conductance	650 us					

Sample Location: (Public Water) Well — Stock Water Well — (Home Water) Well
Artesian Well — Under Ground Injection Well

Sample Methods: (YSI – Grab Sample) – Pumphouse – Manual pump – Other

Comments: Kitchen Sink Tap: let Run 60 sec
Ara Daho water line.

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton II Aftra Ground Water
Site Address: Arapahoe Water Line
Residents Name: N/A
Date: 12-10-02
Samplers Name: T. Shakespeare

Time	11:41	11:43	~~11:45~~	11:45	11:48	
Water Temp	15.0°C	10.9°C	~~9.0°C~~	10.4°C	10.2°C	
pH	9.38	9.19		9.07	9.01	
Conductivity	495 us	453.5 us		449.6 us	449.1 us	
Specific Conductance	610 us	619 us		622 us	625 us	

Sample Location: ~~Public Water~~ Well —Stock Water Well —Home Water Well
Artesian Well — Under Ground Injection Well

Sample Methods: YSI – Grab Sample – Pumphouse – Manual pump – Other

Comments: Fire Hydrant at the end of the Water line on Reservoir Rd. : Flushed out 50 gallons of water to clear hydrant

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Ground water
Site Address: 124 Littleshield Rd
Residents Name: Frances McElroy RS6-0243
Date: 12/11/02
Samplers Name: Steve Kobik / Everett McGill

Time	1345					
Water Temp	8.2°C					
pH	9.0					
Conductivity	423µS					
Specific Conductance	630µS					

Sample Location: Public Water Well —Stock Water Well —(Home Water Well)
Artesian Well — Under Ground Injection Well

Sample Methods: YSI – (Grab Sample) – Pumphouse – Manual pump – Other

Comments: n/o faucet on pumphouse. sampled at outside tap at home

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Groundwater
Site Address: 219 Gors In Lodge Rd DOE Well #446
Residents Name: Connie Hillyard
Date: 12/11/02
Samplers Name: Steve Babits / Everitt McGill

Time	1105	1110				
Water Temp	10.3°C	10.2°C				
pH	9.1	9.0				
Conductivity	479 µS	475 µS				
Specific Conductance	660 µS	663 µS				

Sample Location: Public Water Well —Stock Water Well —(Home Water Well)
Artesian Well — Under Ground Injection Well

Sample Methods: (YSI) – Grab Sample – Pumphouse – Manual pump – Other

Comments: Sampled at top on outside of home

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Groundwater
Site Address: #10 Whitetail Drive
Residents Name: Gordon Raylance 857-6654 Leslie
Date: 12/11/02
Samplers Name: Steve Gabbits / Everitt McGill

Time	1145					
Water Temp	8.8°C					
pH	8.0					
Conductivity	341 µS					
Specific Conductance	496 µS					

Sample Location: Public Water Well —Stock Water Well —Home Water Well
Artesian Well — Under Ground Injection Well

Sample Methods: YSI – Grab Sample – Pumphouse – Manual pump – Other

Comments: Sampled at Pumphouse with well pump running.

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : well 972
Site Address: 972 Rendezvous
Residents Name: Gene Monroe
Date: 12-18-02 10:38
Samplers Name: Travis Shakespeare

Time	10:38					
Water Temp	13.0 °c.					
pH	9.06					
Conductivity	752 µD					
Specific Conductance	913 µm					

Sample Location: Public Water Well --- Stock Water Well --- (Home Water Well)
Artesian Well --- Under Ground Injection Well

Sample Methods: YSI -- Grab Sample -- Pumphouse -- Manual pump -- Other

Comments: Sampled at well head w/the Dam? running

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Gene Monroe, Riverton UMTRA Groundwater
Site Address: 972 Rendezvous Rd
Residents Name: Gene Monroe
Date: 12/18/12
Samplers Name: Travis Shakespeare

Time	10:25					
Water Temp	19.5 °C					
pH	8.82					
Conductivity	610 us					
Specific Conductance	676 us					

Sample Location: ~~Public Water Well~~ —Stock Water Well — ~~Home Water~~ Well
Artesian Well — Under Ground Injection Well

Sample Methods: YSI – Grab Sample – Pumphouse – Manual pump – Other

Comments: in side tap salinity .49ppt
Arapaho water system service line Turned on

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Site
Site Address: Red Crow Ln. Hydrant
Residents Name:
Date: 1/16/03
Samplers Name: Steven Babits

Time	1436	1438	1454			
Water Temp						
pH						
Conductivity						
Specific Conductance						

Sample Location: Public Water Well —Stock Water Well —Home Water Well Artesian Well — Under Ground Injection Well

Sample Methods: YSI – Grab Sample – Pumphouse – Manual pump – Other

Comments: Final Hydrant N. end Red Crow N. near Big Wind River
1436 Initial - No Flushing Some Rust on bottom of container
1438 - 2 minutes Flushed, sediment/rust, fine sand
1454 - 18 minutes Flush. ~~[illegible]~~ Minor fine sand

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Site
Site Address: 865 Bridgeview Rd - Service Line
Residents Name: Marie Willow
Date: 1/16/03
Samplers Name: Steven Babits

Time	1420					
Water Temp	/					
pH	/					
Conductivity	/					
Specific Conductance						

YSI Down

Sample Location: Public Water Well —Stock Water Well —Home Water Well
Artesian Well — Under Ground Injection Well

Sample Methods: YSI – Grab Sample – Pumphouse – Manual pump – Other

Comments: Flushed Service line. home not connected to water line. Service line stubbed outside of house

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Arapahoe ... Riverton ... Hydrant
Site Address: Riverton UMTRA site
Residents Name:
Date: 1/16/05
Samplers Name: Steven Babits

Time	1349	1354	1407			
Water Temp	/	/	/			
pH	/	/	/			
Conductivity	/	/	/			
Specific Conductance	/	/	/			

Note: PH probe broken

Sample Location: Public Water Well —Stock Water Well —Home Water Well
Artesian Well — Under Ground Injection Well

Sample Methods: YSI – Grab Sample – Pumphouse – Manual pump – Other

Comments: Took 3 samples - initial - no flush

1349 - Initial, no flush. Slightly turbid - some sand/rust.
1354 - After 2 minutes flushing
1407 - Flushed 15 minutes total & some sand/silt in sample bottle

Wind River Environmantal Quality Commission
Ground / Source Water Testing Program
Field Notes and Physical Measurements

Site Location : Riverton UMTRA Project
Site Address: 81 Littleshield Rd
Residents Name: Nolan Friday
Date: 2/14/02
Samplers Name: Everitt McGill / Steven Babits

(1126am)

Time	9:30	0:00	5:00min	10min		
Water Temp	~~10.8°C~~	11.1°C	12.0	11.3		
pH		9.0	9.0	7.0		
Conductivity		442µS	447µS	440µS		
Specific Conductance		601µS	594µS	594µS		

Sample Location: Public Water Well —Stock Water Well —Home Water Well
Artesian Well — Under Ground Injection Well

Sample Methods: YSI – Grab Sample – Pumphouse – Manual pump – Other

Comments: Sampled for Radionuclides
Pumphouse Tap

ATTACHMENT D

LABORATORY ANALYTICAL REPORTS

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C03020636-001
Client Sample ID: 81 Littleshield Rd

Report Date: 03/25/03
Collection Date: 02/14/03 11:26
Date Received: 02/20/03
Matrix: Drinking Water

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/L		0.0003		E200.8	03/04/03 18:24 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	ND	pCi/L		1.0	15	E900.0	02/24/03 12:00 / rs
Gross Beta	ND	pCi/L		2.0	50	E900.0	02/24/03 12:00 / rs
Radium 226	ND	pCi/L		0.2		E903.0	03/09/03 06:48 / es
Radium 228	ND	pCi/L		1.0		E904.0	03/20/03 15:22 / pj
Radium 226 + Radium 228	ND	pCi/L		0.2	5	Calculation	03/24/03 11:15 / ks
RADIONUCLIDES - PHOTON EMITTING							
Gross gamma	ND	pCi/L		120		E901.1	03/10/03 12:35 / db

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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020636R000 '

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT, provide as much information as possible.
Refer to corresponding notes on reverse side.

Company Name: Wind River Environmental Quality Commission	Project Name, PWS #, Permit #, Etc.: Riverton UMTRA Groundwater
Report Address: P.O. Box 217, Fort Washakie, Wy 82514	Contact Name, Phone, Fax, E-mail: Everett McGill/Steven Babits (307) 332-3164 sbabits@wyoming.com
Invoice Address: Same	Invoice Contact & Phone #: Claire Ware (307) 332-3164
	Purchase Order #:
	ELI Quote #:

Report Required For: POTW/WWTP ☐ DW ☐
Other ____

Special Report Formats – ELI must be notified prior to sample submittal for the following:
NELAC ☐ A2LA ☐ Level IV ☐
Other ____
EDD/EDT ☐ Format ____

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers / Sample Type: A Air W Water S Soils/Solids V Vegetation U Urine O Other / MATRIX	ANALYSIS REQUESTED – SEE ATTACHED
1 Inside TAP #922 Alcove	12/18/01	10:25	2/Water	
2 #922 Well	12/18/01	10:38	2/Water	
3				
4				
5				
6				
7				
8				
9				
10				

Normal Turnaround (TAT)
RUSH Turnaround (TAT)

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments: RUSH 10day or best excel

Receipt Temp 9 °C
Cooler ID(s) client n/a
Custody Seal Y (N)
Intact Y N
Signature Match Y N
Lab ID 0201201501

LABORATORY USE ONLY

TRACKING NO. 12015R0003

Custody Record MUST be Signed

Relinquished by: Everett McGill Date/Time: 12/20/01 15:45
Relinquished by: Date/Time:
Shipped by:
Shipped by:
Received by: Date/Time: 12/20/01 15:45
Received by: Date/Time:

Sample Disposal: Return to client: ____ Lab Disposal: ____

LABORATORY USE ONLY
Sample Type: ____ # of fractions ____

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120750-002
Client Sample ID: #972 Well

Report Date: 01/08/03
Collection Date: 12/18/02 10:38
Date Received: 12/20/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	12/30/02 15:20 / wen
Calcium	5.8	mg/L		1.0		E200.7	01/07/03 15:56 / cp
Chloride	14.0	mg/L		1.0	250	A4500-Cl B	12/23/02 14:35 / rwk
Fluoride	1.0	mg/L		0.1	4	A4500-F C	12/23/02 13:39 / nlm
Magnesium	ND	mg/L		1.0		E200.7	01/07/03 15:56 / cp
Potassium	ND	mg/L		1.0		E200.7	01/07/03 15:56 / cp
Silica	3.11	mg/L		0.10		E200.7	01/07/03 15:56 / cp
Sodium	219	mg/L		1.0		E200.7	01/07/03 15:56 / cp
Sulfate	275	mg/L	D	3.0	250	A4500-SO4 E	12/24/02 11:35 / rwk
METALS - TOTAL							
Aluminum	ND	mg/L		0.001	0.2	E200.8	12/27/02 22:35 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	12/27/02 22:35 / smd
Boron	0.13	mg/L		0.10		E200.7	01/07/03 15:56 / cp
Iron	1.60	mg/L		0.030	0.3	E200.7	01/07/03 15:56 / cp
Manganese	0.046	mg/L		0.010	0.05	E200.7	01/07/03 15:56 / cp
Molybdenum	0.003	mg/L		0.001		E200.8	12/27/02 22:35 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	12/27/02 22:35 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	12/27/02 22:35 / smd
Strontium	ND	mg/L		0.10		E200.7	01/08/03 09:57 / cp
Uranium	ND	mg/L		0.0003	0.03	E200.8	12/27/02 22:35 / smd
Vanadium	ND	mg/L		0.001		E200.8	12/27/02 22:35 / smd
Zinc	ND	mg/L		0.010	5	E200.7	01/08/03 10:37 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	1.2	pCi/L		1.0		E900.0	12/28/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	12/28/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/24/02 12:12 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	12/23/02 11:10 / rs
Radium 226	ND	pCi/L		0.2		E903.0	12/30/02 00:02 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/03/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/03/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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I20750R0002

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120750-001
Client Sample ID: Inside Tap #972 Monroe

Report Date: 01/08/03
Collection Date: 12/18/02 10:25
Date Received: 12/20/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	12/30/02 15:05 / wen
Calcium	5.0	mg/L		1.0		E200.7	01/07/03 15:53 / cp
Chloride	10.9	mg/L		1.0	250	A4500-Cl B	12/23/02 14:34 / rwk
Fluoride	0.6	mg/L		0.1	4	A4500-F C	12/23/02 13:35 / nlm
Magnesium	ND	mg/L		1.0		E200.7	01/07/03 15:53 / cp
Potassium	ND	mg/L		1.0		E200.7	01/07/03 15:53 / cp
Silica	9.01	mg/L		0.10		E200.7	01/07/03 15:53 / cp
Sodium	149	mg/L		1.0		E200.7	01/07/03 15:53 / cp
Sulfate	141	mg/L	D	3.0	250	A4500-SO4 E	12/24/02 11:34 / rwk
METALS - TOTAL							
Aluminum	ND	mg/L		0.001	0.2	E200.8	12/27/02 22:14 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	12/27/02 22:14 / smd
Boron	0.12	mg/L		0.10		E200.7	01/07/03 15:53 / cp
Iron	ND	mg/L		0.030	0.3	E200.7	01/07/03 15:53 / cp
Manganese	ND	mg/L		0.010	0.05	E200.7	01/07/03 15:53 / cp
Molybdenum	0.003	mg/L		0.001		E200.8	12/27/02 22:14 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	12/27/02 22:14 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	12/27/02 22:14 / smd
Strontium	ND	mg/L		0.10		E200.7	01/08/03 09:54 / cp
Uranium	ND	mg/L		0.0003	0.03	E200.8	12/27/02 22:14 / smd
Vanadium	ND	mg/L		0.001		E200.8	12/27/02 22:14 / smd
Zinc	ND	mg/L		0.010	5	E200.7	01/08/03 10:35 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	2.5	pCi/L		1.0	15	E900.0	12/28/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	12/28/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/24/02 12:12 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	12/23/02 11:10 / rs
Radium 226	ND	pCi/L		0.2		E903.0	12/29/02 23:01 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/03/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/03/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Site
Lab ID: C03010569-004
Client Sample ID: 865 Rendezvous Rd

Report Date: 02/12/03
Collection Date: 01/16/03 14:20
Date Received: 01/17/03
Matrix: Drinking Water

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/L		0.0003		E200.8	01/24/03 14:16 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	19.5	pCi/L	*	1.0	15	E900.0	01/21/03 12:00 / rs
Gross Alpha Precision (±)	1.5	pCi/L				E900.0	01/21/03 12:00 / rs
Gross Beta	24.1	pCi/L		2.0	50	E900.0	01/21/03 12:00 / rs
Gross Beta Precision (±)	2.1	pCi/L				E900.0	01/21/03 12:00 / rs
Radium 226	5.1	pCi/L		0.2		E903.0	01/28/03 21:49 / es
Radium 226 precision (±)	0.4	pCi/L				E903.0	01/28/03 21:49 / es
Radium 228	2.2	pCi/L		1.0		E904.0	02/06/03 15:07 / pj
Radium 228 precision (±)	1.0	pCi/L				E904.0	02/06/03 15:07 / pj
Radium 226 + Radium 228	7.3	pCi/L	*	0.2	5	Calculation	02/10/03 16:02 / ck
Radium 226 + Radium 228 precision (±)	1.4	pCi/L				Calculation	02/10/03 16:02 / ck
RADIONUCLIDES - PHOTON EMITTING							
Gross gamma	ND	pCi/L		120		E901.1	01/21/03 15:50 / db

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
* - The result exceeds the MCL.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Site
Lab ID: C03010569-007
Client Sample ID: Red Crow Lane Hydrant #3

Report Date: 02/12/03
Collection Date: 01/16/03 14:54
Date Received: 01/17/03
Matrix: Drinking Water

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/L		0.0003		E200.8	01/24/03 14:31 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	4.2	pCi/L		1.0	15	E900.0	01/21/03 12:00 / rs
Gross Alpha Precision (±)	1.0	pCi/L				E900.0	01/21/03 12:00 / rs
Gross Beta	12.3	pCi/L		2.0	50	E900.0	01/21/03 12:00 / rs
Gross Beta Precision (±)	2.1	pCi/L				E900.0	01/21/03 12:00 / rs
Radium 226	1.3	pCi/L		0.2		E903.0	01/29/03 00:50 / es
Radium 226 precision (±)	0.2	pCi/L				E903.0	01/29/03 00:50 / es
Radium 228	ND	pCi/L		1.0		E904.0	02/06/03 15:07 / pj
Radium 226 + Radium 228	1.3	pCi/L		0.2	5	Calculation	02/10/03 16:02 / ck
Radium 226 + Radium 228 precision (±)	0.2	pCi/L				Calculation	02/10/03 16:02 / ck
RADIONUCLIDES - PHOTON EMITTING							
Gross gamma	ND	pCi/L		120		E901.1	01/21/03 15:50 / db

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Site
Lab ID: C03010569-006
Client Sample ID: Red Crow Lane Hydrant #2

Report Date: 02/12/03
Collection Date: 01/16/03 14:38
Date Received: 01/17/03
Matrix: Drinking Water

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/L		0.0003		E200.8	01/24/03 14:26 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	48.2	pCi/L	*	1.0	15	E900.0	01/21/03 12:00 / rs
Gross Alpha Precision (±)	2.2	pCi/L				E900.0	01/21/03 12:00 / rs
Gross Beta	49.4	pCi/L		2.0	50	E900.0	01/21/03 12:00 / rs
Gross Beta Precision (±)	2.1	pCi/L				E900.0	01/21/03 12:00 / rs
Radium 226	15.8	pCi/L		0.2		E903.0	01/28/03 23:49 / es
Radium 226 precision (±)	1.3	pCi/L				E903.0	01/28/03 23:49 / es
Radium 228	11.9	pCi/L		1.0		E904.0	02/06/03 15:07 / pj
Radium 228 precision (±)	1.3	pCi/L				E904.0	02/06/03 15:07 / pj
Radium 226 + Radium 228	27.7	pCi/L	*	0.2	5	Calculation	02/10/03 16:02 / ck
Radium 226 + Radium 228 precision (±)	2.6	pCi/L				Calculation	02/10/03 16:02 / ck
RADIONUCLIDES - PHOTON EMITTING							
Gross gamma	ND	pCi/L		120		E901.1	01/21/03 15:50 / db

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
* - The result exceeds the MCL.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Site
Lab ID: C03010569-005
Client Sample ID: Red Crow Lane Hydrant #1

Report Date: 02/12/03
Collection Date: 01/16/03 14:36
Date Received: 01/17/03
Matrix: Drinking Water

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/L		0.0003		E200.8	01/24/03 14:21 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	3.7	pCi/L		1.0	15	E900.0	01/21/03 12:00 / rs
Gross Alpha Precision (±)	1.0	pCi/L				E900.0	01/21/03 12:00 / rs
Gross Beta	ND	pCi/L		2.0	50	E900.0	01/21/03 12:00 / rs
Radium 226	1.1	pCi/L		0.2		E903.0	01/28/03 22:49 / es
Radium 226 precision (±)	0.2	pCi/L				E903.0	01/28/03 22:49 / es
Radium 228	ND	pCi/L		1.0		E904.0	02/06/03 15:07 / pj
Radium 226 + Radium 228	1.1	pCi/L		0.2	5	Calculation	02/10/03 16:02 / ck
Radium 226 + Radium 228 precision (±)	0.2	pCi/L				Calculation	02/10/03 16:02 / ck
RADIONUCLIDES - PHOTON EMITTING							
Gross gamma	ND	pCi/L		120		E901.1	01/21/03 15:50 / db

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Site
Lab ID: C03010569-003
Client Sample ID: Renderzvous Rd. Hydrant #3

Report Date: 02/12/03
Collection Date: 01/16/03 14:07
Date Received: 01/17/03
Matrix: Drinking Water

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/L		0.0003		E200.8	01/24/03 14:10 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	49.8	pCi/L	*	1.0	15	E900.0	01/21/03 12:00 / rs
Gross Alpha Precision (±)	2.2	pCi/L				E900.0	01/21/03 12:00 / rs
Gross Beta	63.1	pCi/L	*	2.0	50	E900.0	01/21/03 12:00 / rs
Gross Beta Precision (±)	2.2	pCi/L				E900.0	01/21/03 12:00 / rs
Radium 226	11.1	pCi/L		0.2		E903.0	01/28/03 20:48 / es
Radium 226 precision (±)	1.1	pCi/L				E903.0	01/28/03 20:48 / es
Radium 228	5.0	pCi/L		1.0		E904.0	02/06/03 15:07 / pj
Radium 228 precision (±)	1.0	pCi/L				E904.0	02/06/03 15:07 / pj
Radium 226 + Radium 228	16.1	pCi/L	*	0.2	5	Calculation	02/10/03 16:02 / ck
Radium 226 + Radium 228 precision (±)	2.1	pCi/L				Calculation	02/10/03 16:02 / ck
RADIONUCLIDES - PHOTON EMITTING							
Gross gamma	ND	pCi/L		120		E901.1	01/21/03 15:50 / db

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
* - The result exceeds the MCL.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Site
Lab ID: C03010569-002
Client Sample ID: Renderzvous Rd. Hydrant #2

Report Date: 02/12/03
Collection Date: 01/16/03 13:54
Date Received: 01/17/03
Matrix: Drinking Water

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/L		0.0003		E200.8	01/24/03 14:05 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	57.1	pCi/L	*	1.0	15	E900.0	01/21/03 12:00 / rs
Gross Alpha Precision (±)	2.4	pCi/L				E900.0	01/21/03 12:00 / rs
Gross Beta	57.1	pCi/L	*	2.0	50	E900.0	01/21/03 12:00 / rs
Gross Beta Precision (±)	2.1	pCi/L				E900.0	01/21/03 12:00 / rs
Radium 226	12.2	pCi/L		0.2		E903.0	01/28/03 19:48 / es
Radium 226 precision (±)	1.0	pCi/L				E903.0	01/28/03 19:48 / es
Radium 228	5.7	pCi/L		1.0		E904.0	02/06/03 15:07 / pj
Radium 228 precision (±)	1.0	pCi/L				E904.0	02/06/03 15:07 / pj
Radium 226 + Radium 228	17.9	pCi/L	*	0.2	5	Calculation	02/10/03 16:02 / ck
Radium 226 + Radium 228 precision (±)	2.0	pCi/L				Calculation	02/10/03 16:02 / ck
RADIONUCLIDES - PHOTON EMITTING							
Gross gamma	ND	pCi/L		120		E901.1	01/21/03 15:50 / db

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
* - The result exceeds the MCL.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Site
Lab ID: C03010569-001
Client Sample ID: Rendezvous Rd. Hydrant # 1

Report Date: 02/12/03
Collection Date: 01/16/03 13:49
Date Received: 01/17/03
Matrix: Drinking Water

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/L		0.0003		E200.8	01/24/03 14:00 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	4.6	pCi/L		1.0	15	E900.0	01/21/03 12:00 / rs
Gross Alpha Precision (±)	1.0	pCi/L				E900.0	01/21/03 12:00 / rs
Gross Beta	9.6	pCi/L		2.0	50	E900.0	01/21/03 12:00 / rs
Gross Beta Precision (±)	2.1	pCi/L				E900.0	01/21/03 12:00 / rs
Radium 226	0.6	pCi/L		0.2		E903.0	01/28/03 18:48 / es
Radium 226 precision (±)	0.2	pCi/L				E903.0	01/28/03 18:48 / es
Radium 228	ND	pCi/L		1.0		E904.0	02/06/03 15:07 / pj
Radium 226 + Radium 228	0.6	pCi/L		0.2	5	Calculation	02/10/03 16:02 / ck
Radium 226 + Radium 228 precision (±)	0.2	pCi/L				Calculation	02/10/03 16:02 / ck
RADIONUCLIDES - PHOTON EMITTING							
Gross gamma	ND	pCi/L		120		E901.1	01/21/03 15:50 / db

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit.
MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

[redacted] [redacted]

Chain of Custody and Analytical Request Record

ENERGY LABORATORIES

PLEASE PRINT, provide as much information as possible.
Refer to corresponding notes on reverse side.

Company Name: WREQC	Project Name, PWS #, Permit #, Etc.: Riverton UMTRA Site
Report Address: PO Box 217 Ft. Washakie, WY 82514	Contact Name, Phone, Fax, E-mail: Steven Babits (307) 332-3164 332-7579 Fax sbabits@wyoming.com — Sampler Name if other than Contact:
Invoice Address: Same	Invoice Contact & Phone #: Claire Ware (307) 332-3164 — Purchase Order #: — ELI Quote #:

Report Required For: POTW/WWTP ☐ DW ☒ Other ______

Special Report Formats – ELI must be notified prior to sample submittal for the following:
NELAC ☐ A2LA ☐ Level IV ☐
Other ______
EDD/EDT ☐ Format ______

ANALYSIS REQUESTED: Gross Alpha; Radium 226 & 228; Beta Particle + Photon Rad; Uranium

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments: Drinking Water Radionuclides Only

Receipt Temp 2 °C
Cooler ID(s) 6024
Custody Seal Y (N)
Intact Y N
Signature Match Y N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc)	Collection Date	Collection Time	Number of Containers / Sample Type: A W S V U O (Air Water Soils/Solids Vegetation Urine Other) MATRIX	Gross Alpha	Radium 226 & 228	Beta Particle + Photon Rad	Uranium	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Lab ID (LABORATORY USE ONLY)
1 Rendezvous Rd. Hydrant #1	1/16/03	1349	1/water	X	X	X	X				
2 Rendezvous Rd. Hydrant #2	1/16/03	1354	1/water	↓	↓	↓	↓				Gross Alpha
3 Rendezvous Rd. Hydrant #3	1/16/03	1407	1/water	↓	↓	↓	↓				Ra226
4 865 Rendezvous Rd.	1/16/03	1420	1/water	↓	↓	↓	↓				Ra228
5 Red Crow Ln. Hydrant #1	1/16/03	1436	1/water	↓	↓	↓	↓				Gross Beta
6 Red Crow Ln. Hydrant #2	1/16/03	1438	1/water	↓	↓	↓	↓				Gross Gamma
7 Red Crow Ln. Hydrant #3	1/16/03	1454	1/water	↓	↓	↓	↓				Uranium
8											per RAG 1/17/03
9											
10											

Custody Record MUST be Signed

Relinquished by: Steven Babits	Date/Time: 1/16/03 1525	Shipped by:	Received by: [signature] Date/Time: 1/17/03 10:00
Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time:

Sample Disposal: Return to client: ______ Lab Disposal: ______

LABORATORY USE ONLY
Sample Type: ______ # of fractions ______

Visit our web site at ***www.energylab.com*** for additional information, downloadable fee schedule, forms, & links.

2-12-03; 9:31PM; Energy Labs Casper ; 307 234 1639

Chain of Custody and Analytical Request Record

ENERGY LABORATORIES

PLEASE PRINT, provide as much information as possible.
Refer to corresponding notes on reverse side.

Company Name: Wind River Env. Qual. Commission	Project Name, PWS #, Permit #, Etc.: Riverton UMTRA Groundwater
Report Address: P.O. Box 217 Ft. Washakie, WY 82514	Contact Name, Phone, Fax, Email: Steven Babits (307) 332-3164 sbabits@wyoming.com; Dean Goggles (307) 332-7579 Fax — Sampler Name if other than Contact:
Invoice Address: Same	Invoice Contact & Phone #: Claire Ware (307) 332-3164 — Purchase Order #: — ELI Quote #:

Report Required For: POTW/WWTP ☐ DW ☐
Other ____
Special Report Formats – ELI must be notified prior to sample submittal for the following:
NELAC ☐ A2LA ☐ Level IV ☐
Other ____
EDD/EDT ☐ Format ____

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Receipt Temp 4 °C
Cooler ID(s) Client
Custody Seal Y (N)
Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers / Sample Type: A W S V U O / Air Water Soils/Solids Vegetation Urine Other / MATRIX	ANALYSIS REQUESTED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Comments:	Lab ID
1	#460	11/12/02	1130	2/water	SEE ATTACHED		✓	Please send data on disc in Excel form. Per Travis 12/4/02	C02120149
2	#430	11/21/02	1100	2/water			✓		
3	2886 Goes in Lodge Rd.	11/21/02	1130	2/water			✓		
4	Ruth Big Lakes	12/1/02	11:20	2/W			✓		
5	Joe Goggles Sr	12/4/02	12:15	2/W			✓		
6	QA1			2/W			✓		
7									
8									
9									
10									

TRACKING NO. 1209149R001

Custody Record MUST be Signed

Relinquished by: Shakespeare	Date/Time: 12-4-02 2:30	Shipped by:	Received by: Sabrina Edwards Date/Time: 12/4/02 14:30
Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time:

Sample Disposal: Return to client: ____ Lab Disposal: ____

LABORATORY USE ONLY
Sample Type: ____ # of fractions ____

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120149-006
Client Sample ID: QA1

Report Date: 12/19/02
Collection Date: Not Provided
Date Received: 12/04/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	12/12/02 15:13 / wen
Calcium	4.8	mg/L		1.0		E200.7	12/05/02 19:14 / cp
Chloride	10.9	mg/L		1.0		A4500-Cl B	12/05/02 15:00 / jl
Fluoride	0.6	mg/L		0.1		A4500-F C	12/09/02 10:58 / slb
Magnesium	ND	mg/L		1.0		E200.7	12/05/02 19:14 / cp
Potassium	ND	mg/L		1.0		E200.7	12/05/02 19:14 / cp
Silica	9.28	mg/L		0.10		E200.7	12/05/02 19:14 / cp
Sodium	152	mg/L		1.0		E200.7	12/05/02 19:14 / cp
Sulfate	142	mg/L		1.0		A4500-SO4 E	12/05/02 11:50 / rwk
METALS - TOTAL							
Aluminum	ND	mg/L		0.001		E200.8	12/16/02 12:37 / smd
Arsenic	ND	mg/L		0.001		E200.8	12/11/02 01:38 / smd
Boron	0.13	mg/L		0.10		E200.7	12/05/02 19:14 / cp
Iron	ND	mg/L		0.030		E200.7	12/05/02 19:14 / cp
Manganese	ND	mg/L		0.010		E200.7	12/05/02 19:14 / cp
Molybdenum	0.005	mg/L		0.001		E200.8	12/11/02 01:38 / smd
Nickel	ND	mg/L		0.001		E200.8	12/11/02 01:38 / smd
Selenium	ND	mg/L		0.001		E200.8	12/11/02 01:38 / smd
Strontium	ND	mg/L		0.10		E200.7	12/11/02 15:21 / cp
Uranium	ND	mg/L		0.0003		E200.8	12/16/02 12:37 / smd
Vanadium	ND	mg/L		0.001		E200.8	12/16/02 12:37 / smd
Zinc	ND	mg/L		0.010		E200.7	12/05/02 19:14 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	2.7	pCi/L		1.0		E900.0	12/12/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	12/12/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/04/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	12/13/02 09:40 / rs
Radium 226	ND	pCi/L		0.2		E903.0	12/15/02 06:39 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/09/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/09/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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120149R0006

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120149-005
Client Sample ID: Joe Goggles Sr.

Report Date: 12/19/02
Collection Date: 12/04/02 12:15
Date Received: 12/04/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	12/12/02 14:58 / wen
Calcium	4.8	mg/L		1.0		E200.7	12/05/02 19:10 / cp
Chloride	10.9	mg/L		1.0		A4500-Cl B	12/05/02 15:00 / jl
Fluoride	0.6	mg/L		0.1		A4500-F C	12/09/02 10:55 / slb
Magnesium	ND	mg/L		1.0		E200.7	12/05/02 19:10 / cp
Potassium	ND	mg/L		1.0		E200.7	12/05/02 19:10 / cp
Silica	9.33	mg/L		0.10		E200.7	12/05/02 19:10 / cp
Sodium	152	mg/L		1.0		E200.7	12/05/02 19:10 / cp
Sulfate	141	mg/L		1.0		A4500-SO4 E	12/05/02 11:50 / rwk
METALS - TOTAL							
Aluminum	ND	mg/L		0.001		E200.8	12/16/02 12:32 / smd
Arsenic	ND	mg/L		0.001		E200.8	12/11/02 01:33 / smd
Boron	0.13	mg/L		0.10		E200.7	12/05/02 19:10 / cp
Iron	ND	mg/L		0.030		E200.7	12/05/02 19:10 / cp
Manganese	ND	mg/L		0.010		E200.7	12/05/02 19:10 / cp
Molybdenum	0.005	mg/L		0.001		E200.8	12/11/02 01:33 / smd
Nickel	ND	mg/L		0.001		E200.8	12/11/02 01:33 / smd
Selenium	ND	mg/L		0.001		E200.8	12/11/02 01:33 / smd
Strontium	ND	mg/L		0.10		E200.7	12/11/02 15:19 / cp
Uranium	ND	mg/L		0.0003		E200.8	12/16/02 12:32 / smd
Vanadium	ND	mg/L		0.001		E200.8	12/16/02 12:32 / smd
Zinc	ND	mg/L		0.010		E200.7	12/05/02 19:10 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	2.6	pCi/L		1.0		E900.0	12/12/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	12/12/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/04/02 12:00 / ph
Polonium 210	23	pCi/L		2.7		RMO-3008	12/13/02 09:40 / rs
Polonium 210 precision	5.2	pCi/L				RMO-3008	12/13/02 09:40 / rs
Radium 226	1.9	pCi/L		0.2		E903.0	12/15/02 05:39 / es
Radium 226 precision	0.4	pCi/L				E903.0	12/15/02 05:39 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/09/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/09/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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120149R0005

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120149-004
Client Sample ID: Ruth Big Lakes

Report Date: 12/19/02
Collection Date: 12/04/02 11:20
Date Received: 12/04/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	12/12/02 14:43 / wen
Calcium	4.8	mg/L		1.0		E200.7	12/05/02 19:06 / cp
Chloride	10.7	mg/L		1.0		A4500-Cl B	12/05/02 15:00 / jl
Fluoride	0.6	mg/L		0.1		A4500-F C	12/09/02 10:52 / slb
Magnesium	ND	mg/L		1.0		E200.7	12/05/02 19:06 / cp
Potassium	ND	mg/L		1.0		E200.7	12/05/02 19:06 / cp
Silica	9.25	mg/L		0.10		E200.7	12/05/02 19:06 / cp
Sodium	151	mg/L		1.0		E200.7	12/05/02 19:06 / cp
Sulfate	139	mg/L		1.0		A4500-SO4 E	12/05/02 11:50 / rwk
METALS - TOTAL							
Aluminum	ND	mg/L		0.001		E200.8	12/16/02 12:26 / smd
Arsenic	ND	mg/L		0.001		E200.8	12/11/02 01:28 / smd
Boron	0.13	mg/L		0.10		E200.7	12/05/02 19:06 / cp
Iron	ND	mg/L		0.030		E200.7	12/05/02 19:06 / cp
Manganese	ND	mg/L		0.010		E200.7	12/05/02 19:06 / cp
Molybdenum	0.005	mg/L		0.001		E200.8	12/11/02 01:28 / smd
Nickel	ND	mg/L		0.001		E200.8	12/11/02 01:28 / smd
Selenium	ND	mg/L		0.001		E200.8	12/11/02 01:28 / smd
Strontium	ND	mg/L		0.10		E200.7	12/11/02 15:16 / cp
Uranium	ND	mg/L		0.0003		E200.8	12/16/02 12:26 / smd
Vanadium	ND	mg/L		0.001		E200.8	12/16/02 12:26 / smd
Zinc	ND	mg/L		0.010		E200.7	12/05/02 19:06 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	2.2	pCi/L		1.0		E900.0	12/12/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	12/12/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/04/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	12/13/02 09:40 / rs
Radium 226	1.1	pCi/L		0.2		E903.0	12/15/02 04:39 / es
Radium 226 precision	0.4	pCi/L				E903.0	12/15/02 04:39 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/09/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/09/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120149-003
Client Sample ID: 288 Goes in Lodge Rd.

Report Date: 12/19/02
Collection Date: 11/21/02 11:30
Date Received: 12/04/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	12/12/02 14:28 / wen
Calcium	4.7	mg/L		1.0		E200.7	12/05/02 19:03 / cp
Chloride	12.3	mg/L		1.0		A4500-Cl B	12/05/02 15:00 / jl
Fluoride	0.8	mg/L		0.1		A4500-F C	12/09/02 10:45 / slb
Magnesium	ND	mg/L		1.0		E200.7	12/05/02 19:03 / cp
Potassium	ND	mg/L		1.0		E200.7	12/05/02 19:03 / cp
Silica	7.62	mg/L		0.10		E200.7	12/05/02 19:03 / cp
Sodium	202	mg/L		1.0		E200.7	12/05/02 19:03 / cp
Sulfate	240	mg/L		1.0		A4500-SO4 E	12/05/02 11:50 / rwk
METALS - TOTAL							
Aluminum	ND	mg/L		0.001		E200.8	12/11/02 01:12 / smd
Arsenic	ND	mg/L		0.001		E200.8	12/11/02 01:12 / smd
Boron	0.16	mg/L		0.10		E200.7	12/05/02 19:03 / cp
Iron	0.550	mg/L		0.030		E200.7	12/05/02 19:03 / cp
Manganese	0.019	mg/L		0.010		E200.7	12/05/02 19:03 / cp
Molybdenum	0.004	mg/L		0.001		E200.8	12/11/02 01:12 / smd
Nickel	ND	mg/L		0.001		E200.8	12/11/02 01:12 / smd
Selenium	0.001	mg/L		0.001		E200.8	12/11/02 01:12 / smd
Strontium	ND	mg/L		0.10		E200.7	12/11/02 15:13 / cp
Uranium	0.0005	mg/L		0.0003		E200.8	12/11/02 01:12 / smd
Vanadium	ND	mg/L		0.001		E200.8	12/11/02 01:12 / smd
Zinc	ND	mg/L		0.010		E200.7	12/05/02 19:03 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	1.6	pCi/L		1.0		E900.0	12/12/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	12/12/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/04/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	12/13/02 09:40 / rs
Radium 226	1.2	pCi/L		0.2		E903.0	12/15/02 03:38 / es
Radium 226 precision	0.4	pCi/L				E903.0	12/15/02 03:38 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/09/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/09/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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120149R0003

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120149-002
Client Sample ID: #430

Report Date: 12/19/02
Collection Date: 11/21/02 11:00
Date Received: 12/04/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	12/12/02 14:14 / wen
Calcium	4.7	mg/L		1.0		E200.7	12/05/02 18:59 / cp
Chloride	10.2	mg/L		1.0		A4500-Cl B	12/05/02 15:00 / jl
Fluoride	1.0	mg/L		0.1		A4500-F C	12/09/02 10:42 / slb
Magnesium	ND	mg/L		1.0		E200.7	12/05/02 18:59 / cp
Potassium	ND	mg/L		1.0		E200.7	12/05/02 18:59 / cp
Silica	7.65	mg/L		0.10		E200.7	12/05/02 18:59 / cp
Sodium	184	mg/L		1.0		E200.7	12/05/02 18:59 / cp
Sulfate	200	mg/L		1.0		A4500-SO4 E	12/05/02 11:50 / rwk
METALS - TOTAL							
Aluminum	ND	mg/L		0.001		E200.8	12/16/02 12:21 / smd
Arsenic	ND	mg/L		0.001		E200.8	12/11/02 01:06 / smd
Boron	0.17	mg/L		0.10		E200.7	12/05/02 18:59 / cp
Iron	0.199	mg/L		0.030		E200.7	12/05/02 18:59 / cp
Manganese	ND	mg/L		0.010		E200.7	12/05/02 18:59 / cp
Molybdenum	0.004	mg/L		0.001		E200.8	12/11/02 01:06 / smd
Nickel	ND	mg/L		0.001		E200.8	12/11/02 01:06 / smd
Selenium	0.001	mg/L		0.001		E200.8	12/11/02 01:06 / smd
Strontium	ND	mg/L		0.10		E200.7	12/11/02 15:11 / cp
Uranium	ND	mg/L		0.0003		E200.8	12/16/02 12:21 / smd
Vanadium	ND	mg/L		0.001		E200.8	12/16/02 12:21 / smd
Zinc	ND	mg/L		0.010		E200.7	12/05/02 18:59 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	1.8	pCi/L		1.0		E900.0	12/12/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	12/12/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/04/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	12/13/02 09:40 / rs
Radium 226	ND	pCi/L		0.2		E903.0	12/15/02 02:38 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/09/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/09/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120149-001
Client Sample ID: #460

Report Date: 12/19/02
Collection Date: 11/12/02 11:30
Date Received: 12/04/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	12/12/02 12:30 / wen
Calcium	3.6	mg/L		1.0		E200.7	12/05/02 18:55 / cp
Chloride	10.1	mg/L		1.0		A4500-Cl B	12/05/02 15:00 / jl
Fluoride	0.8	mg/L		0.1		A4500-F C	12/09/02 10:39 / slb
Magnesium	ND	mg/L		1.0		E200.7	12/05/02 18:55 / cp
Potassium	ND	mg/L		1.0		E200.7	12/05/02 18:55 / cp
Silica	8.00	mg/L		0.10		E200.7	12/05/02 18:55 / cp
Sodium	170	mg/L		1.0		E200.7	12/05/02 18:55 / cp
Sulfate	163	mg/L		1.0		A4500-SO4 E	12/05/02 11:50 / rwk
METALS - TOTAL							
Aluminum	0.006	mg/L		0.001		E200.8	12/13/02 19:16 / smd
Arsenic	ND	mg/L		0.001		E200.8	12/11/02 01:01 / smd
Boron	0.16	mg/L		0.10		E200.7	12/05/02 18:55 / cp
Iron	ND	mg/L		0.030		E200.7	12/05/02 18:55 / cp
Manganese	ND	mg/L		0.010		E200.7	12/05/02 18:55 / cp
Molybdenum	0.004	mg/L		0.001		E200.8	12/11/02 01:01 / smd
Nickel	ND	mg/L		0.001		E200.8	12/11/02 01:01 / smd
Selenium	0.001	mg/L		0.001		E200.8	12/11/02 01:01 / smd
Strontium	ND	mg/L		0.10		E200.7	12/11/02 15:08 / cp
Uranium	ND	mg/L		0.0003		E200.8	12/13/02 19:16 / smd
Vanadium	ND	mg/L		0.001		E200.8	12/13/02 19:16 / smd
Zinc	ND	mg/L		0.010		E200.7	12/05/02 18:55 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	2.3	pCi/L		1.0		E900.0	12/12/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	12/12/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/04/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	12/13/02 09:40 / rs
Radium 226	ND	pCi/L		0.2		E903.0	12/15/02 01:38 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/09/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/09/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT, provide as much information as possible.
Refer to corresponding notes on reverse side.

Company Name: Wind River Environmental Quality

Project Name, PWS #, Permit #, Etc.: UMTRA Phase II Groundwater — Steven Babits

Report Address: PO Box 217 Building 410, Washakie; Ft. Washakie, WY 82515

Contact Name, Phone, Fax, E-mail: Steven Babits (307) 332-3164

Sampler Name if other than Contact:

Invoice Address: Same

Invoice Contact & Phone #:

Purchase Order #:

ELI Quote #:

Report Required For: POTW/WWTP ☐ DW ☐ Other ______

Special Report Formats – ELI must be notified prior to sample submittal for the following:
NELAC ☐ A2LA ☐ Level IV ☐
Other ______
EDD/EDT ☐ Format ______

ANALYSES REQUESTED

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments:

Receipt Temp 2 °C
Cooler ID(s) 599
Custody Seal (Y) N
Intact (Y) N
Signature Match (Y) N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V U O; Air Water Soils/Solids Vegetation Urine Other)	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Lab ID (LABORATORY USE ONLY)
1 406	10/9/02	1455	2-W	X			C02100408
2 411	10/8/02	1306	↓	↓			
3 420	10/8/02	1240	↓	↓			
4 440	10/9/02	1315	↓	↓			
5 442	10/8/02	1345	↓	↓			
6 441	10/9/02	1340	↓	↓			
7 449	10/9/02	1435	↓	↓			
8 789 Bingo	10/8/02	1442	↓	↓			
9							
10							

Custody Record MUST be Signed

Relinquished by: [signature] Date/Time: 10/11/02 0125
Shipped by:
Received by: [signature] Date/Time: 10/11/02 1205
Relinquished by: Date/Time:
Shipped by:
Received by: Date/Time:

Sample Disposal: Return to client: ______ Lab Disposal: ______

LABORATORY USE ONLY
Sample Type: ______ # of fractions ______

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA Phase II Groundwater
Lab ID: C02100408-008
Client Sample ID: 789 Bingo

Report Date: 12/23/02
Collection Date: 10/08/02 14:42
Date Received: 10/11/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 21:38 / wen
Calcium	12.0	mg/L		1.0		E200.7	11/18/02 11:28 / cp
Chloride	8.5	mg/L		1.0	250	A4500-Cl B	11/15/02 15:45 / jl
Fluoride	0.9	mg/L		0.1	4	A4500-F C	11/18/02 10:32 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/18/02 11:28 / cp
Potassium	1.6	mg/L		1.0		E200.7	11/18/02 11:28 / cp
Silica	8.36	mg/L		0.10		E200.7	11/18/02 11:28 / cp
Sodium	291	mg/L		1.0		E200.7	11/18/02 11:28 / cp
Sulfate	571	mg/L		1.0	250	A4500-SO4 E	10/11/02 17:10 / jal
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	926	mg/L		10	500	A2540 C	10/14/02 16:39 / sml
METALS - TOTAL							
Aluminum	ND	mg/L		0.001	0.2	E200.8	11/19/02 18:35 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	10/31/02 00:31 / smd
Boron	0.13	mg/L		0.10		E200.7	11/18/02 11:28 / cp
Iron	ND	mg/L		0.030	0.3	E200.7	11/18/02 11:28 / cp
Manganese	ND	mg/L		0.01	0.05	E200.8	10/31/02 00:31 / smd
Molybdenum	0.001	mg/L		0.001		E200.8	10/31/02 00:31 / smd
Nickel	ND	mg/L		0.050	0.1	E200.7	11/18/02 11:28 / cp
Selenium	ND	mg/L		0.001	0.05	E200.8	11/19/02 18:35 / smd
Strontium	0.172	mg/L		0.001		E200.8	11/19/02 18:35 / smd
Uranium	ND	mg/L		0.0003	0.03	E200.8	10/31/02 00:31 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/19/02 18:35 / smd
Zinc	0.014	mg/L		0.001	5	E200.8	11/19/02 18:35 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	ND	pCi/L		1.0	15	E900.0	10/21/02 12:00 / rs
Gross Beta	10.4	pCi/L		2.0	50	E900.0	11/19/02 12:00 / rs
Gross Beta Precision	3.2	pCi/L				E900.0	11/19/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/19/02 09:45 / rs
Radium 226	ND	pCi/L		0.2		E903.0	11/23/02 05:23 / es
Radium 228	ND	pCi/L		1.0		E904.0	12/02/02 15:08 / pj
Radium 226 + Radium 228	ND	pCi/L		0.2	5	Calculation	12/19/02 15:33 / ck
Thorium 230	ND	pCi/L		0.2	.	E907.0	11/15/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level.
QCL - Quality control limit. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA Phase II Groundwater
Lab ID: C02100408-007
Client Sample ID: 448

Report Date: 12/23/02
Collection Date: 10/09/02 14:35
Date Received: 10/11/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 21:23 / wen
Calcium	4.3	mg/L		1.0		E200.7	11/18/02 11:25 / cp
Chloride	13.3	mg/L		1.0	250	A4500-Cl B	11/15/02 15:45 / jl
Fluoride	0.6	mg/L		0.1	4	A4500-F C	11/18/02 10:29 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/18/02 11:25 / cp
Potassium	1.4	mg/L		1.0		E200.7	11/18/02 11:25 / cp
Silica	8.02	mg/L		0.10		E200.7	11/18/02 11:25 / cp
Sodium	190	mg/L		1.0		E200.7	11/18/02 11:25 / cp
Sulfate	358	mg/L		1.0	250	A4500-SO4 E	10/11/02 17:10 / jal
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	561	mg/L		10	500	A2540 C	10/14/02 16:38 / sml
METALS - TOTAL							
Aluminum	ND	mg/L		0.001	0.2	E200.8	11/19/02 18:30 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	10/31/02 00:25 / smd
Boron	0.16	mg/L		0.10		E200.7	11/18/02 11:25 / cp
Iron	0.120	mg/L		0.030	0.3	E200.7	11/18/02 11:25 / cp
Manganese	ND	mg/L		0.01	0.05	E200.8	10/31/02 00:25 / smd
Molybdenum	0.003	mg/L		0.001		E200.8	10/31/02 00:25 / smd
Nickel	ND	mg/L		0.050	0.1	E200.7	11/18/02 11:25 / cp
Selenium	0.001	mg/L		0.001	0.05	E200.8	11/19/02 18:30 / smd
Strontium	0.072	mg/L		0.001		E200.8	11/19/02 18:30 / smd
Uranium	ND	mg/L		0.0003	0.03	E200.8	10/31/02 00:25 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/19/02 18:30 / smd
Zinc	0.023	mg/L		0.001	5	E200.8	11/19/02 18:30 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	ND	pCi/L		1.0	15	E900.0	10/21/02 12:00 / rs
Gross Beta	ND	pCi/L		2.0	50	E900.0	11/19/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/19/02 09:45 / rs
Radium 226	ND	pCi/L		0.2		E903.0	11/23/02 03:53 / es
Radium 228	ND	pCi/L		1.0		E904.0	12/02/02 15:08 / pj
Radium 226 + Radium 228	ND	pCi/L		0.2	5	Calculation	12/19/02 15:33 / ck
Thorium 230	ND	pCi/L		0.2		E907.0	11/15/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA Phase II Groundwater
Lab ID: C02100408-006
Client Sample ID: 441

Report Date: 12/23/02
Collection Date: 10/09/02 13:40
Date Received: 10/11/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 21:09 / wen
Calcium	97.8	mg/L		1.0		E200.7	11/18/02 11:16 / cp
Chloride	7.5	mg/L		1.0	250	A4500-Cl B	11/15/02 15:45 / jl
Fluoride	0.8	mg/L		0.1	4	A4500-F C	11/18/02 10:27 / slb
Magnesium	20.5	mg/L		1.0		E200.7	11/18/02 11:16 / cp
Potassium	6.9	mg/L		1.0		E200.7	11/18/02 11:16 / cp
Silica	26.5	mg/L		0.10		E200.7	11/18/02 11:16 / cp
Sodium	93.4	mg/L		1.0		E200.7	11/18/02 11:16 / cp
Sulfate	338	mg/L		1.0	250	A4500-SO4 E	10/11/02 17:10 / jal
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	654	mg/L		10	500	A2540 C	10/14/02 16:38 / sml
METALS - TOTAL							
Aluminum	0.006	mg/L		0.001	0.2	E200.8	11/19/02 18:25 / smd
Arsenic	0.003	mg/L		0.001	0.01	E200.8	10/31/02 00:36 / smd
Boron	ND	mg/L		0.10		E200.7	11/18/02 11:16 / cp
Iron	0.058	mg/L		0.030	0.3	E200.7	11/18/02 11:16 / cp
Manganese	0.10	mg/L		0.01	0.05	E200.8	10/31/02 00:36 / smd
Molybdenum	0.004	mg/L		0.001		E200.8	10/31/02 00:36 / smd
Nickel	ND	mg/L		0.050	0.1	E200.7	11/18/02 11:16 / cp
Selenium	0.002	mg/L		0.001	0.05	E200.8	11/19/02 18:25 / smd
Strontium	0.488	mg/L		0.001		E200.8	11/19/02 18:25 / smd
Uranium	0.0370	mg/L		0.0003	0.03	E200.8	10/31/02 00:36 / smd
Vanadium	0.007	mg/L		0.001		E200.8	11/19/02 18:25 / smd
Zinc	0.018	mg/L		0.001	5	E200.8	11/19/02 18:25 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	6.4	pCi/L		1.0	15	E900.0	10/21/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	10/21/02 12:00 / rs
Gross Beta	6.8	pCi/L		2.0	50	E900.0	11/19/02 12:00 / rs
Gross Beta Precision	3.2	pCi/L				E900.0	11/19/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/19/02 09:45 / rs
Radium 226	ND	pCi/L		0.2		E903.0	11/23/02 02:23 / es
Radium 228	ND	pCi/L		1.0		E904.0	12/02/02 15:08 / pj
Radium 226 + Radium 228	ND	pCi/L		0.2	5	Calculation	12/19/02 15:33 / ck
Thorium 230	ND	pCi/L		0.2		E907.0	11/15/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA Phase II Groundwater
Lab ID: C02100408-005
Client Sample ID: 442

Report Date: 12/23/02
Collection Date: 10/08/02 13:45
Date Received: 10/11/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 20:54 / wen
Calcium	7.2	mg/L		1.0		E200.7	11/18/02 11:13 / cp
Chloride	18.4	mg/L		1.0	250	A4500-Cl B	11/15/02 15:45 / jl
Fluoride	1.4	mg/L		0.1	4	A4500-F C	11/18/02 10:21 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/18/02 11:13 / cp
Potassium	ND	mg/L		1.0		E200.7	11/18/02 11:13 / cp
Silica	7.00	mg/L		0.10		E200.7	11/18/02 11:13 / cp
Sodium	209	mg/L		1.0		E200.7	11/18/02 11:13 / cp
Sulfate	428	mg/L		1.0	250	A4500-SO4 E	10/11/02 17:10 / jal
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	635	mg/L		10	500	A2540 C	10/14/02 16:38 / sml
METALS - TOTAL							
Aluminum	0.001	mg/L		0.001	0.2	E200.8	11/19/02 18:19 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	10/31/02 00:20 / smd
Boron	0.18	mg/L		0.10		E200.7	11/18/02 11:13 / cp
Iron	0.568	mg/L		0.030	0.3	E200.7	11/18/02 11:13 / cp
Manganese	0.01	mg/L		0.01	0.05	E200.8	10/31/02 00:20 / smd
Molybdenum	0.002	mg/L		0.001		E200.8	10/31/02 00:20 / smd
Nickel	ND	mg/L		0.050	0.1	E200.7	11/18/02 11:13 / cp
Selenium	ND	mg/L		0.001	0.05	E200.8	11/19/02 18:19 / smd
Strontium	0.077	mg/L		0.001		E200.8	11/19/02 18:19 / smd
Uranium	ND	mg/L		0.0003	0.03	E200.8	10/31/02 00:20 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/19/02 18:19 / smd
Zinc	0.061	mg/L		0.001	5	E200.8	11/19/02 18:19 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	ND	pCi/L		1.0	15	E900.0	10/21/02 12:00 / rs
Gross Beta	ND	pCi/L		2.0	50	E900.0	11/19/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/19/02 09:45 / rs
Radium 226	ND	pCi/L		0.2		E903.0	11/23/02 00:52 / es
Radium 228	ND	pCi/L		1.0		E904.0	12/02/02 15:08 / pj
Radium 226 + Radium 228	ND	pCi/L		0.2	5	Calculation	12/19/02 15:33 / ck
Thorium 230	ND	pCi/L		0.2		E907.0	11/15/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA Phase II Groundwater
Lab ID: C02100408-004
Client Sample ID: 440

Report Date: 12/23/02
Collection Date: 10/09/02 13:15
Date Received: 10/11/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 20:39 / wen
Calcium	7.3	mg/L		1.0		E200.7	11/18/02 11:10 / cp
Chloride	22.5	mg/L		1.0	250	A4500-Cl B	11/15/02 15:45 / jl
Fluoride	1.8	mg/L		0.1	4	A4500-F C	11/18/02 10:18 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/18/02 11:10 / cp
Potassium	ND	mg/L		1.0		E200.7	11/18/02 11:10 / cp
Silica	7.71	mg/L		0.10		E200.7	11/18/02 11:10 / cp
Sodium	209	mg/L		1.0		E200.7	11/18/02 11:10 / cp
Sulfate	434	mg/L		1.0	250	A4500-SO4 E	10/11/02 17:10 / jal
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	565	mg/L		10	500	A2540 C	10/14/02 16:37 / sml
METALS - TOTAL							
Aluminum	0.002	mg/L		0.001	0.2	E200.8	11/19/02 17:58 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	10/31/02 00:15 / smd
Boron	0.20	mg/L		0.10		E200.7	11/18/02 11:10 / cp
Iron	0.405	mg/L		0.030	0.3	E200.7	11/18/02 11:10 / cp
Manganese	ND	mg/L		0.01	0.05	E200.8	10/31/02 00:15 / smd
Molybdenum	0.003	mg/L		0.001		E200.8	10/31/02 00:15 / smd
Nickel	ND	mg/L		0.050	0.1	E200.7	11/18/02 11:10 / cp
Selenium	ND	mg/L		0.001	0.05	E200.8	11/19/02 17:58 / smd
Strontium	0.076	mg/L		0.001		E200.8	11/19/02 17:58 / smd
Uranium	ND	mg/L		0.0003	0.03	E200.8	10/31/02 00:15 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/19/02 17:58 / smd
Zinc	0.046	mg/L		0.001	5	E200.8	11/19/02 17:58 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	ND	pCi/L		1.0	15	E900.0	10/21/02 12:00 / rs
Gross Beta	ND	pCi/L		2.0	50	E900.0	11/19/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/19/02 09:45 / rs
Radium 226	ND	pCi/L		0.2		E903.0	11/22/02 23:22 / es
Radium 228	ND	pCi/L		1.0		E904.0	12/02/02 15:08 / pj
Radium 226 + Radium 228	ND	pCi/L		0.2	5	Calculation	12/19/02 15:33 / ck
Thorium 230	ND	pCi/L		0.2		E907.0	11/15/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA Phase II Groundwater
Lab ID: C02100408-003
Client Sample ID: 420

Report Date: 12/23/02
Collection Date: 10/08/02 12:40
Date Received: 10/11/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 20:24 / wen
Calcium	6.2	mg/L		1.0		E200.7	11/18/02 11:07 / cp
Chloride	13.3	mg/L		1.0	250	A4500-Cl B	11/15/02 15:45 / jl
Fluoride	1.6	mg/L		0.1	4	A4500-F C	11/18/02 10:15 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/18/02 11:07 / cp
Potassium	ND	mg/L		1.0		E200.7	11/18/02 11:07 / cp
Silica	7.69	mg/L		0.10		E200.7	11/18/02 11:07 / cp
Sodium	194	mg/L		1.0		E200.7	11/18/02 11:07 / cp
Sulfate	405	mg/L		1.0	250	A4500-SO4 E	10/11/02 17:10 / jal
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	544	mg/L		10	500	A2540 C	10/14/02 16:00 / sml
METALS - TOTAL							
Aluminum	0.002	mg/L		0.001	0.2	E200.8	11/19/02 17:53 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	10/31/02 00:10 / smd
Boron	0.19	mg/L		0.10		E200.7	11/18/02 11:07 / cp
Iron	0.302	mg/L		0.030	0.3	E200.7	11/18/02 11:07 / cp
Manganese	ND	mg/L		0.01	0.05	E200.8	10/31/02 00:10 / smd
Molybdenum	0.002	mg/L		0.001		E200.8	10/31/02 00:10 / smd
Nickel	ND	mg/L		0.050	0.1	E200.7	11/18/02 11:07 / cp
Selenium	ND	mg/L		0.001	0.05	E200.8	11/19/02 17:53 / smd
Strontium	0.062	mg/L		0.001		E200.8	11/19/02 17:53 / smd
Uranium	ND	mg/L		0.0003	0.03	E200.8	10/31/02 00:10 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/19/02 17:53 / smd
Zinc	0.001	mg/L		0.001	5	E200.8	11/19/02 17:53 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	ND	pCi/L		1.0	15	E900.0	10/21/02 12:00 / rs
Gross Beta	ND	pCi/L		2.0	50	E900.0	11/19/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/19/02 09:45 / rs
Radium 226	ND	pCi/L		0.2		E903.0	11/22/02 21:52 / es
Radium 228	ND	pCi/L		1.0		E904.0	12/02/02 15:08 / pj
Radium 226 + Radium 228	ND	pCi/L		0.2	5	Calculation	12/19/02 15:33 / ck
Thorium 230	ND	pCi/L		0.2		E907.0	11/15/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA Phase II Groundwater
Lab ID: C02100408-002
Client Sample ID: 411

Report Date: 12/23/02
Collection Date: 10/08/02 13:06
Date Received: 10/11/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 20:09 / wen
Calcium	6.1	mg/L		1.0		E200.7	11/18/02 11:04 / cp
Chloride	18.8	mg/L		1.0	250	A4500-Cl B	11/15/02 15:45 / jl
Fluoride	1.3	mg/L		0.1	4	A4500-F C	11/18/02 10:12 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/18/02 11:04 / cp
Potassium	ND	mg/L		1.0		E200.7	11/18/02 11:04 / cp
Silica	5.20	mg/L		0.10		E200.7	11/18/02 11:04 / cp
Sodium	212	mg/L		1.0		E200.7	11/18/02 11:04 / cp
Sulfate	438	mg/L		1.0	250	A4500-SO4 E	10/11/02 17:10 / jal
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	547	mg/L		10	500	A2540 C	10/14/02 15:59 / sml
METALS - TOTAL							
Aluminum	ND	mg/L		0.001	0.2	E200.8	11/19/02 17:48 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	10/31/02 00:04 / smd
Boron	0.17	mg/L		0.10		E200.7	11/18/02 11:04 / cp
Iron	1.64	mg/L		0.030	0.3	E200.7	11/18/02 11:04 / cp
Manganese	0.04	mg/L		0.01	0.05	E200.8	10/31/02 00:04 / smd
Molybdenum	0.002	mg/L		0.001		E200.8	10/31/02 00:04 / smd
Nickel	ND	mg/L		0.050	0.1	E200.7	11/18/02 11:04 / cp
Selenium	ND	mg/L		0.001	0.05	E200.8	11/19/02 17:48 / smd
Strontium	0.085	mg/L		0.001		E200.8	11/19/02 17:48 / smd
Uranium	ND	mg/L		0.0003	0.03	E200.8	10/31/02 00:04 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/19/02 17:48 / smd
Zinc	0.002	mg/L		0.001	5	E200.8	11/19/02 17:48 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	1.4	pCi/L		1.0	15	E900.0	10/21/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	10/21/02 12:00 / rs
Gross Beta	ND	pCi/L		2.0	50	E900.0	11/19/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/19/02 09:45 / rs
Radium 226	ND	pCi/L		0.2		E903.0	11/22/02 20:21 / es
Radium 228	ND	pCi/L		1.0		E904.0	12/02/02 15:08 / pj
Radium 226 + Radium 228	ND	pCi/L		0.2	5	Calculation	12/19/02 15:33 / ck
Thorium 230	ND	pCi/L		0.2		E907.0	11/15/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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100408R1002

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA Phase II Groundwater
Lab ID: C02100408-001
Client Sample ID: 406

Report Date: 12/23/02
Collection Date: 10/09/02 14:55
Date Received: 10/11/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 19:54 / wen
Calcium	8.5	mg/L		1.0		E200.7	11/18/02 11:01 / cp
Chloride	30.4	mg/L		1.0	250	A4500-Cl B	11/15/02 15:45 / jl
Fluoride	3.1	mg/L		0.1	4	A4500-F C	11/18/02 10:05 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/18/02 11:01 / cp
Potassium	ND	mg/L		1.0		E200.7	11/18/02 11:01 / cp
Silica	8.82	mg/L		0.10		E200.7	11/18/02 11:01 / cp
Sodium	213	mg/L		1.0		E200.7	11/18/02 11:01 / cp
Sulfate	390	mg/L		1.0	250	A4500-SO4 E	10/11/02 17:10 / jal
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	577	mg/L		10	500	A2540 C	10/14/02 15:58 / sml
METALS - TOTAL							
Aluminum	0.004	mg/L		0.001	0.2	E200.8	11/19/02 17:43 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	10/30/02 23:43 / smd
Boron	0.28	mg/L		0.10		E200.7	11/18/02 11:01 / cp
Iron	0.892	mg/L		0.030	0.3	E200.7	11/18/02 11:01 / cp
Manganese	ND	mg/L		0.01	0.05	E200.8	10/30/02 23:43 / smd
Molybdenum	0.004	mg/L		0.001		E200.8	10/30/02 23:43 / smd
Nickel	ND	mg/L		0.050	0.1	E200.7	11/18/02 11:01 / cp
Selenium	ND	mg/L		0.001	0.05	E200.8	11/19/02 17:43 / smd
Strontium	0.086	mg/L		0.001		E200.8	11/19/02 17:43 / smd
Uranium	ND	mg/L		0.0003	0.03	E200.8	10/30/02 23:43 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/19/02 17:43 / smd
Zinc	0.105	mg/L		0.001	5	E200.8	11/19/02 17:43 / smd
RADIONUCLIDES - TOTAL							
Gross Alpha	1.4	pCi/L		1.0	15	E900.0	10/21/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	10/21/02 12:00 / rs
Gross Beta	ND	pCi/L		2.0	50	E900.0	11/19/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/19/02 09:45 / rs
Radium 226	ND	pCi/L		0.2		E903.0	11/22/02 18:51 / es
Radium 228	ND	pCi/L		1.0		E904.0	12/02/02 15:08 / pj
Radium 226 + Radium 228	ND	pCi/L		0.2	5	Calculation	12/19/02 15:33 / ck
Thorium 230	ND	pCi/L		0.2		E907.0	11/15/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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Chain of Custody and Analytical Request Record

Page 1 of 1

ENERGY LABORATORIES

PLEASE PRINT, provide as much information as possible.
Refer to corresponding notes on reverse side.

Company Name: Wind River Environmental

Project Name, PWS #, Permit #, Etc.: UMTRA

Report Address: PO Box 217, Ft Washakie, WY 82514

Contact Name, Phone, Fax, E-mail: Steven Babits / Dean Coggles (307) 332-3164

Sampler Name if other than Contact:

Invoice Address: Same

Invoice Contact & Phone #: Claire Ware (307) 332-3164

Purchase Order #:

ELI Quote #:

Report Required For: POTW/WWTP ☐ DW ☐
Other ____

Special Report Formats – ELI must be notified prior to sample submittal for the following:
NELAC ☐ A2LA ☐ Level IV ☐
Other ____
EDD/EDT ☐ Format ____

Number of Containers
Sample Type: A W S V U O
Air Water Solid/Solids Vegetation Urine Other

ANALYSIS REQUESTED

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Receipt Temp 5 °C
Cooler ID(s) 1007
Custody Seal Y (N)
Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Comments:	Lab ID
1	#436 St. Stephen's Mission	10/17/02	1130	2/water	X				
2	#437 St. Stephen's Mission	10/17/02	1200		X				
3	#435 St. Stephens School	10/17/02	1220		X				
4	#405 Blomberg	10/17/02	1330		X				
5	#423 Whitesalmon	10/17/02	1415		X				
6	#445 Blomberg #2	11/5/02	1706		X				
7	QA-1				X				
8	Arapaho Water Line	11/7/02	1030						
9	Arapaho Water Well #2	11/7/02	1050	▽					
10									

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by: Steven Babits	Date/Time: 11/7/02 @ 1110am	Shipped by:	Received by: [signature]
Relinquished by:	Date/Time:	Shipped by:	Received by: Date/Time: 11/8/02 9:15

Sample Disposal: Return to client: ____ Lab Disposal: ____

LABORATORY USE ONLY
Sample Type: ____ # of fractions ____

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA
Lab ID: C02110273-009
Client Sample ID: Arapahoe Water Well #2

Report Date: 12/23/02
Collection Date: 11/07/02 10:50
Date Received: 11/08/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 19:10 / wen
Calcium	7.1	mg/L		1.0		E200.7	11/20/02 19:32 / cp
Chloride	18.4	mg/L		1.0	250	A4500-Cl B	11/12/02 08:30 / jal
Fluoride	0.3	mg/L		0.1	4	A4500-F C	11/11/02 15:18 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/20/02 19:32 / cp
Potassium	1.1	mg/L		1.0		E200.7	11/20/02 19:32 / cp
Silica	11.0	mg/L		0.10		E200.7	11/20/02 19:32 / cp
Sodium	197	mg/L		1.0		E200.7	11/20/02 19:32 / cp
Sulfate	260	mg/L		1.0	250	A4500-SO4 E	11/11/02 12:30 / rwk
METALS - TOTAL							
Aluminum	0.004	mg/L		0.001	0.2	E200.8	11/22/02 23:57 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	11/22/02 23:57 / smd
Boron	0.12	mg/L		0.10		E200.7	11/20/02 19:32 / cp
Iron	0.108	mg/L		0.030	0.3	E200.7	11/20/02 19:32 / cp
Manganese	0.010	mg/L		0.010	0.05	E200.7	11/20/02 19:32 / cp
Molybdenum	0.004	mg/L		0.001		E200.8	11/22/02 23:57 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	11/22/02 23:57 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	11/22/02 23:57 / smd
Strontium	ND	mg/L		0.10		E200.7	11/21/02 15:45 / cp
Uranium	ND	mg/L		0.0003	0.03	E200.8	11/22/02 23:57 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/22/02 23:57 / smd
Zinc	0.037	mg/L		0.010	5	E200.7	11/20/02 19:32 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	ND	pCi/L		1.0	15	E900.0	11/20/02 12:00 / rs
Gross Beta	ND	pCi/L		2.0	50	E900.0	11/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/14/02 13:35 / rs
Radium 226	0.8	pCi/L		0.2		E903.0	11/18/02 09:03 / es
Radium 226 precision	0.3	±				E903.0	11/18/02 09:03 / es
Radium 228	3.5	pCi/L		1.0		E904.0	11/22/02 18:03 / pj
Radium 228 precision	1.0	±				E904.0	11/22/02 18:03 / pj
Radium 226 + Radium 228	4.3	pCi/L		0.2	5	Calculation	12/04/02 11:10 / vh
Radium 226 + Radium 228 precision	1.3	±				Calculation	12/04/02 11:10 / vh
Thorium 230	ND	pCi/L		0.2		E907.0	11/19/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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110273R1009

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA
Lab ID: C02110273-008
Client Sample ID: Arapahoe Water Line

Report Date: 12/23/02
Collection Date: 11/07/02 10:30
Date Received: 11/08/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 18:55 / wen
Calcium	5.4	mg/L		1.0		E200.7	11/20/02 19:28 / cp
Chloride	12.3	mg/L		1.0	250	A4500-Cl B	11/12/02 08:30 / jal
Fluoride	0.6	mg/L		0.1	4	A4500-F C	11/11/02 15:14 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/20/02 19:28 / cp
Potassium	ND	mg/L		1.0		E200.7	11/20/02 19:28 / cp
Silica	10.0	mg/L		0.10		E200.7	11/20/02 19:28 / cp
Sodium	155	mg/L		1.0		E200.7	11/20/02 19:28 / cp
Sulfate	139	mg/L		1.0	250	A4500-SO4 E	11/11/02 12:30 / rwk
METALS - TOTAL							
Aluminum	0.007	mg/L		0.001	0.2	E200.8	11/25/02 17:04 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	11/25/02 17:04 / smd
Boron	0.13	mg/L		0.10		E200.7	11/20/02 19:28 / cp
Iron	0.161	mg/L		0.030	0.3	E200.7	11/20/02 19:28 / cp
Manganese	0.017	mg/L		0.010	0.05	E200.7	11/20/02 19:28 / cp
Molybdenum	0.003	mg/L		0.001		E200.8	11/25/02 17:04 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	11/25/02 17:04 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	11/25/02 17:04 / smd
Strontium	ND	mg/L		0.10		E200.7	11/21/02 15:42 / cp
Uranium	ND	mg/L		0.0003	0.03	E200.8	11/25/02 17:04 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/25/02 17:04 / smd
Zinc	0.022	mg/L		0.010	5	E200.7	11/20/02 19:28 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	5.8	pCi/L		1.0	15	E900.0	11/20/02 12:00 / rs
Gross Alpha Precision	1.0	±				E900.0	11/20/02 12:00 / rs
Gross Beta	10.8	pCi/L		2.0	50	E900.0	11/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Gross Beta Precision	2.7	±				E900.0	11/20/02 12:00 / rs
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/14/02 13:35 / rs
Radium 226	1.2	pCi/L		0.2		E903.0	11/18/02 08:03 / es
Radium 226 precision	0.3	±				E903.0	11/18/02 08:03 / es
Radium 228	ND	pCi/L		1.0		E904.0	11/22/02 18:03 / pj
Radium 226 + Radium 228	1.2	pCi/L		0.2	5	Calculation	12/04/02 11:10 / vh
Radium 226 + Radium 228 precision	0.3	±				Calculation	12/04/02 11:10 / vh
Thorium 230	ND	pCi/L		0.2		E907.0	11/19/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA
Lab ID: C02110273-007
Client Sample ID: QA-1

Report Date: 12/23/02
Collection Date: Not Provided
Date Received: 11/08/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 18:40 / wen
Calcium	101	mg/L		1.0		E200.7	11/20/02 19:24 / cp
Chloride	7.8	mg/L		1.0	250	A4500-Cl B	11/12/02 08:30 / jal
Fluoride	0.4	mg/L		0.1	4	A4500-F C	11/11/02 15:10 / slb
Magnesium	28.9	mg/L		1.0		E200.7	11/20/02 19:24 / cp
Potassium	7.1	mg/L		1.0		E200.7	11/20/02 19:24 / cp
Silica	32.8	mg/L		0.10		E200.7	11/20/02 19:24 / cp
Sodium	62.1	mg/L		1.0		E200.7	11/20/02 19:24 / cp
Sulfate	100	mg/L		1.0	250	A4500-SO4 E	11/11/02 12:30 / rwk
METALS - TOTAL							
Aluminum	0.013	mg/L		0.001	0.2	E200.8	11/22/02 23:47 / smd
Arsenic	0.006	mg/L		0.001	0.01	E200.8	11/22/02 23:47 / smd
Boron	0.11	mg/L		0.10		E200.7	11/20/02 19:24 / cp
Iron	0.338	mg/L		0.030	0.3	E200.7	11/20/02 19:24 / cp
Manganese	ND	mg/L		0.010	0.05	E200.7	11/20/02 19:24 / cp
Molybdenum	0.003	mg/L		0.001		E200.8	11/22/02 23:47 / smd
Nickel	0.003	mg/L		0.001	0.1	E200.8	11/22/02 23:47 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	11/22/02 23:47 / smd
Strontium	0.53	mg/L		0.10		E200.7	11/21/02 15:40 / cp
Uranium	0.0106	mg/L		0.0003	0.03	E200.8	11/22/02 23:47 / smd
Vanadium	0.014	mg/L		0.001		E200.8	11/22/02 23:47 / smd
Zinc	0.012	mg/L		0.010	5	E200.7	11/20/02 19:24 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	3.7	pCi/L		1.0	15	E900.0	11/20/02 12:00 / rs
Gross Alpha Precision	1.0	±				E900.0	11/20/02 12:00 / rs
Gross Beta	8.9	pCi/L		2.0	50	E900.0	11/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Gross Beta Precision	2.7	±				E900.0	11/20/02 12:00 / rs
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/14/02 13:35 / rs
Radium 226	ND	pCi/L		0.2		E903.0	11/18/02 07:02 / es
Radium 228	ND	pCi/L		1.0		E904.0	11/22/02 18:03 / pj
Radium 226 + Radium 228	ND	pCi/L		0.2	5	Calculation	12/04/02 11:10 / vh
Thorium 230	ND	pCi/L		0.2		E907.0	11/19/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA
Lab ID: C02110273-006
Client Sample ID: #445 Blomberg #2

Report Date: 12/23/02
Collection Date: 11/05/02 17:06
Date Received: 11/08/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 18:25 / wen
Calcium	99.1	mg/L		1.0		E200.7	11/20/02 19:20 / cp
Chloride	7.8	mg/L		1.0	250	A4500-Cl B	11/12/02 08:30 / jal
Fluoride	0.4	mg/L		0.1	4	A4500-F C	11/11/02 15:07 / slb
Magnesium	28.3	mg/L		1.0		E200.7	11/20/02 19:20 / cp
Potassium	6.9	mg/L		1.0		E200.7	11/20/02 19:20 / cp
Silica	32.1	mg/L		0.10		E200.7	11/20/02 19:20 / cp
Sodium	60.7	mg/L		1.0		E200.7	11/20/02 19:20 / cp
Sulfate	101	mg/L		1.0	250	A4500-SO4 E	11/11/02 12:30 / rwk
METALS - TOTAL							
Aluminum	0.012	mg/L		0.001	0.2	E200.8	11/22/02 23:10 / smd
Arsenic	0.006	mg/L		0.001	0.01	E200.8	11/22/02 23:10 / smd
Boron	0.11	mg/L		0.10		E200.7	11/20/02 19:20 / cp
Iron	0.332	mg/L		0.030	0.3	E200.7	11/20/02 19:20 / cp
Manganese	ND	mg/L		0.010	0.05	E200.7	11/20/02 19:20 / cp
Molybdenum	0.003	mg/L		0.001		E200.8	11/22/02 23:10 / smd
Nickel	0.003	mg/L		0.001	0.1	E200.8	11/22/02 23:10 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	11/22/02 23:10 / smd
Strontium	0.45	mg/L		0.10		E200.7	11/21/02 15:37 / cp
Uranium	0.0108	mg/L		0.0003	0.03	E200.8	11/22/02 23:10 / smd
Vanadium	0.014	mg/L		0.001		E200.8	11/22/02 23:10 / smd
Zinc	0.012	mg/L		0.010	5	E200.7	11/20/02 19:20 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	2.5	pCi/L		1.0	15	E900.0	11/20/02 12:00 / rs
Gross Alpha Precision	1.0	±				E900.0	11/20/02 12:00 / rs
Gross Beta	9.6	pCi/L		2.0	50	E900.0	11/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Gross Beta Precision	2.7	±				E900.0	11/20/02 12:00 / rs
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/14/02 13:35 / rs
Radium 226	ND	pCi/L		0.2		E903.0	11/18/02 06:02 / es
Radium 228	ND	pCi/L		1.0		E904.0	11/22/02 18:03 / pj
Radium 226 + Radium 228	ND	pCi/L		0.2	5	Calculation	12/04/02 11:10 / vh
Thorium 230	ND	pCi/L		0.2		E907.0	11/19/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA
Lab ID: C02110273-005
Client Sample ID: #423 Whiteman

Report Date: 12/23/02
Collection Date: 10/17/02 14:15
Date Received: 11/08/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 18:10 / wen
Calcium	4.3	mg/L		1.0		E200.7	11/20/02 19:16 / cp
Chloride	9.2	mg/L		1.0	250	A4500-Cl B	11/12/02 08:30 / jal
Fluoride	1.0	mg/L		0.1	4	A4500-F C	11/11/02 14:58 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/20/02 19:16 / cp
Potassium	ND	mg/L		1.0		E200.7	11/20/02 19:16 / cp
Silica	7.19	mg/L		0.10		E200.7	11/20/02 19:16 / cp
Sodium	174	mg/L		1.0		E200.7	11/20/02 19:16 / cp
Sulfate	176	mg/L		1.0	250	A4500-SO4 E	11/11/02 12:30 / rwk
METALS - TOTAL							
Aluminum	0.001	mg/L		0.001	0.2	E200.8	11/22/02 23:04 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	11/22/02 23:04 / smd
Boron	0.19	mg/L		0.10		E200.7	11/20/02 19:16 / cp
Iron	0.851	mg/L		0.030	0.3	E200.7	11/20/02 19:16 / cp
Manganese	0.018	mg/L		0.010	0.05	E200.7	11/20/02 19:16 / cp
Molybdenum	0.002	mg/L		0.001		E200.8	11/22/02 23:04 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	11/22/02 23:04 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	11/22/02 23:04 / smd
Strontium	ND	mg/L		0.10		E200.7	11/21/02 15:35 / cp
Uranium	ND	mg/L		0.0003	0.03	E200.8	11/22/02 23:04 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/22/02 23:04 / smd
Zinc	ND	mg/L		0.010	5	E200.7	11/20/02 19:16 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	1.5	pCi/L		1.0	15	E900.0	11/20/02 12:00 / rs
Gross Alpha Precision	1.0	±				E900.0	11/20/02 12:00 / rs
Gross Beta	ND	pCi/L		2.0	50	E900.0	11/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/14/02 13:35 / rs
Radium 226	0.6	pCi/L		0.2		E903.0	11/18/02 05:02 / es
Radium 226 precision	0.3	±				E903.0	11/18/02 05:02 / es
Radium 228	ND	pCi/L		1.0		E904.0	11/22/02 18:03 / pj
Radium 226 + Radium 228	0.6	pCi/L		0.2	5	Calculation	12/04/02 11:10 / vh
Radium 226 + Radium 228 precision	0.3	±				Calculation	12/04/02 11:10 / vh
Thorium 230	ND	pCi/L		0.2		E907.0	11/19/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA
Lab ID: C02110273-004
Client Sample ID: #405 Blomberg

Report Date: 12/23/02
Collection Date: 10/17/02 13:30
Date Received: 11/08/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 17:56 / wen
Calcium	7.8	mg/L		1.0		E200.7	11/20/02 19:12 / cp
Chloride	22.9	mg/L		1.0	250	A4500-Cl B	11/12/02 08:30 / jal
Fluoride	1.9	mg/L		0.1	4	A4500-F C	11/11/02 14:29 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/20/02 19:12 / cp
Potassium	ND	mg/L		1.0		E200.7	11/20/02 19:12 / cp
Silica	8.77	mg/L		0.10		E200.7	11/20/02 19:12 / cp
Sodium	211	mg/L		1.0		E200.7	11/20/02 19:12 / cp
Sulfate	314	mg/L		1.0	250	A4500-SO4 E	11/11/02 12:30 / rwk
METALS - TOTAL							
Aluminum	0.001	mg/L		0.001	0.2	E200.8	11/22/02 22:59 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	11/22/02 22:59 / smd
Boron	0.22	mg/L		0.10		E200.7	11/20/02 19:12 / cp
Iron	0.145	mg/L		0.030	0.3	E200.7	11/20/02 19:12 / cp
Manganese	ND	mg/L		0.010	0.05	E200.7	11/20/02 19:12 / cp
Molybdenum	0.004	mg/L		0.001		E200.8	11/22/02 22:59 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	11/22/02 22:59 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	11/22/02 22:59 / smd
Strontium	ND	mg/L		0.10		E200.7	11/21/02 15:32 / cp
Uranium	ND	mg/L		0.0003	0.03	E200.8	11/22/02 22:59 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/22/02 22:59 / smd
Zinc	ND	mg/L		0.010	5	E200.7	11/20/02 19:12 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	ND	pCi/L		1.0	15	E900.0	11/20/02 12:00 / rs
Gross Beta	5.3	pCi/L		2.0	50	E900.0	11/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Gross Beta Precision	2.7	±				E900.0	11/20/02 12:00 / rs
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/14/02 13:35 / rs
Radium 226	ND	pCi/L		0.2		E903.0	11/18/02 04:01 / es
Radium 228	ND	pCi/L		1.0		E904.0	11/22/02 18:03 / pj
Radium 226 + Radium 228	ND	pCi/L		0.2	5	Calculation	12/04/02 11:10 / vh
Thorium 230	ND	pCi/L		0.2		E907.0	11/19/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit.
MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA
Lab ID: C02110273-003
Client Sample ID: #435 St. Stephens School

Report Date: 12/23/02
Collection Date: 10/17/02 12:20
Date Received: 11/08/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 17:41 / wen
Calcium	3.0	mg/L		1.0		E200.7	11/20/02 19:09 / cp
Chloride	9.9	mg/L		1.0	250	A4500-Cl B	11/12/02 08:30 / jal
Fluoride	0.8	mg/L		0.1	4	A4500-F C	11/11/02 14:27 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/20/02 19:09 / cp
Potassium	ND	mg/L		1.0		E200.7	11/20/02 19:09 / cp
Silica	8.24	mg/L		0.10		E200.7	11/20/02 19:09 / cp
Sodium	164	mg/L		1.0		E200.7	11/20/02 19:09 / cp
Sulfate	154	mg/L		1.0	250	A4500-SO4 E	11/11/02 12:30 / rwk
METALS - TOTAL							
Aluminum	0.002	mg/L		0.001	0.2	E200.8	11/22/02 22:54 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	11/22/02 22:54 / smd
Boron	0.18	mg/L		0.10		E200.7	11/20/02 19:09 / cp
Iron	0.115	mg/L		0.030	0.3	E200.7	11/20/02 19:09 / cp
Manganese	ND	mg/L		0.010	0.05	E200.7	11/20/02 19:09 / cp
Molybdenum	0.003	mg/L		0.001		E200.8	11/22/02 22:54 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	11/22/02 22:54 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	11/22/02 22:54 / smd
Strontium	ND	mg/L		0.10		E200.7	11/21/02 15:30 / cp
Uranium	ND	mg/L		0.0003	0.03	E200.8	11/22/02 22:54 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/22/02 22:54 / smd
Zinc	0.024	mg/L		0.010	5	E200.7	11/20/02 19:09 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	1.6	pCi/L		1.0	15	E900.0	11/20/02 12:00 / rs
Gross Alpha Precision	1.0	±				E900.0	11/20/02 12:00 / rs
Gross Beta	ND	pCi/L		2.0	50	E900.0	11/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/14/02 13:35 / rs
Radium 226	ND	pCi/L		0.2		E903.0	11/18/02 03:01 / es
Radium 228	3.6	pCi/L		1.0		E904.0	11/22/02 16:40 / pj
Radium 228 precision	1.0	±				E904.0	11/22/02 16:40 / pj
Radium 226 + Radium 228	3.6	pCi/L		0.2	5	Calculation	12/04/02 11:10 / vh
Radium 226 + Radium 228 precision	1.0	±				Calculation	12/04/02 11:10 / vh
Thorium 230	ND	pCi/L		0.2		E907.0	11/19/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA
Lab ID: C02110273-001
Client Sample ID: #436 St. Stephens Mission

Report Date: 12/23/02
Collection Date: 10/17/02 11:30
Date Received: 11/08/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 17:11 / wen
Calcium	5.2	mg/L		1.0		E200.7	11/20/02 18:48 / cp
Chloride	16.4	mg/L		1.0	250	A4500-Cl B	11/12/02 08:30 / jal
Fluoride	0.7	mg/L		0.1	4	A4500-F C	11/11/02 14:21 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/20/02 18:48 / cp
Potassium	1.2	mg/L		1.0		E200.7	11/20/02 18:48 / cp
Silica	7.65	mg/L		0.10		E200.7	11/20/02 18:48 / cp
Sodium	193	mg/L		1.0		E200.7	11/20/02 18:48 / cp
Sulfate	230	mg/L		1.0	250	A4500-SO4 E	11/11/02 12:30 / rwk
METALS - TOTAL							
Aluminum	ND	mg/L		0.001	0.2	E200.8	11/22/02 22:43 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	11/22/02 22:43 / smd
Boron	0.15	mg/L		0.10		E200.7	11/20/02 18:48 / cp
Iron	0.110	mg/L		0.030	0.3	E200.7	11/20/02 18:48 / cp
Manganese	ND	mg/L		0.010	0.05	E200.7	11/20/02 18:48 / cp
Molybdenum	0.004	mg/L		0.001		E200.8	11/22/02 22:43 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	11/22/02 22:43 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	11/22/02 22:43 / smd
Strontium	ND	mg/L		0.10		E200.7	11/21/02 15:25 / cp
Uranium	ND	mg/L		0.0003	0.03	E200.8	11/22/02 22:43 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/22/02 22:43 / smd
Zinc	ND	mg/L		0.010	5	E200.7	11/20/02 18:48 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	ND	pCi/L		1.0	15	E900.0	11/20/02 12:00 / rs
Gross Beta	ND	pCi/L		2.0	50	E900.0	11/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/14/02 13:35 / rs
Radium 226	0.8	pCi/L		0.2		E903.0	11/18/02 01:00 / es
Radium 226 precision	0.3	±				E903.0	11/18/02 01:00 / es
Radium 228	ND	pCi/L		1.0		E904.0	11/22/02 16:40 / pj
Radium 226 + Radium 228	0.8	pCi/L		0.2	5	Calculation	12/04/02 11:10 / vh
Radium 226 + Radium 228 precision	0.3	±				Calculation	12/04/02 11:10 / vh
Thorium 230	ND	pCi/L		0.2		E907.0	11/19/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit.
MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: UMTRA
Lab ID: C02110273-002
Client Sample ID: #437 St. Stephens Mission

Report Date: 12/23/02
Collection Date: 10/17/02 12:00
Date Received: 11/08/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	11/19/02 17:26 / wen
Calcium	3.8	mg/L		1.0		E200.7	11/20/02 19:05 / cp
Chloride	12.3	mg/L		1.0	250	A4500-Cl B	11/12/02 08:30 / jal
Fluoride	0.8	mg/L		0.1	4	A4500-F C	11/11/02 14:24 / slb
Magnesium	ND	mg/L		1.0		E200.7	11/20/02 19:05 / cp
Potassium	ND	mg/L		1.0		E200.7	11/20/02 19:05 / cp
Silica	8.16	mg/L		0.10		E200.7	11/20/02 19:05 / cp
Sodium	182	mg/L		1.0		E200.7	11/20/02 19:05 / cp
Sulfate	190	mg/L		1.0	250	A4500-SO4 E	11/11/02 12:30 / rwk
METALS - TOTAL							
Aluminum	0.004	mg/L		0.001	0.2	E200.8	11/22/02 22:48 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	11/22/02 22:48 / smd
Boron	0.16	mg/L		0.10		E200.7	11/20/02 19:05 / cp
Iron	ND	mg/L		0.030	0.3	E200.7	11/20/02 19:05 / cp
Manganese	ND	mg/L		0.010	0.05	E200.7	11/20/02 19:05 / cp
Molybdenum	0.003	mg/L		0.001		E200.8	11/22/02 22:48 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	11/22/02 22:48 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	11/22/02 22:48 / smd
Strontium	ND	mg/L		0.10		E200.7	11/21/02 15:27 / cp
Uranium	ND	mg/L		0.0003	0.03	E200.8	11/22/02 22:48 / smd
Vanadium	ND	mg/L		0.001		E200.8	11/22/02 22:48 / smd
Zinc	0.011	mg/L		0.010	5	E200.7	11/20/02 19:05 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	1.8	pCi/L		1.0	15	E900.0	11/20/02 12:00 / rs
Gross Alpha Precision	1.0	±				E900.0	11/20/02 12:00 / rs
Gross Beta	ND	pCi/L		2.0	50	E900.0	11/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	11/20/02 12:00 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	11/14/02 13:35 / rs
Radium 226	ND	pCi/L		0.2		E903.0	11/18/02 02:01 / es
Radium 228	ND	pCi/L		1.0		E904.0	11/22/02 16:40 / pj
Radium 226 + Radium 228	ND	pCi/L		0.2	5	Calculation	12/04/02 11:10 / vh
Thorium 230	ND	pCi/L		0.2		E907.0	11/19/02 10:30 / ph

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT, provide as much information as possible.
Refer to corresponding notes on reverse side.

Company Name: Wind River Environmental Quality Comm	Project Name, PWS #, Permit #, Etc.: Riverton UMTRA Groundwater
Report Address: P.O. Box 217 Ft. Washakie, WY 82514	Contact Name, Phone, Fax, E-mail: Everitt McGill / Steven Babits (307) 332-3164 sbabits@wyoming.com — Sampler Name if other than Contact:
Invoice Address: Same	Invoice Contact & Phone #: Claire Ware (307) 332-3164 — Purchase Order #: — ELI Quote #:

Report Required For: POTW/WWTP ☐ DW ☐ Other ______

Special Report Formats – ELI must be notified prior to sample submittal for the following:
NELAC ☐ A2LA ☐ Level IV ☐
Other ______
EDD/EDT ☐ Format ______

Number of Containers / Sample Type: A W S V U O — Air Water Soils/Solids Vegetation Urine Other (Water circled)

ANALYSIS REQUESTED — SEE ATTACHED — Normal Turnaround (TAT) — RUSH Turnaround (TAT)

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Receipt Temp 3 °C
Cooler ID(s) Client
Custody Seal Y (N)
Intact Y N
Signature Match Y N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	RUSH	Comments	Lab ID
1 #417	12/10/02	1325	2/Water	✓	Please report	C02120448
2 22 Red Crow Ln	12/10/02	1211	↓	✓	on disc in	
3 Arapaho Water Line Hydrant	12/10/02	1148	↓	✓	excel format.	
4 24 Littleshield Rd	12/11/02	1345	↓	✓	TAE 12/13/02	
5 #446	12/11/02	1110	↓	✓		
6 10 Whitetail Dr	12/11/02	1145	↓	✓	Rush per client. TAE 12/13/02	

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by: Everett McGill	Date/Time: 12-13-02 11:15	Shipped by:	Received by: Labelia Edmonds — Date/Time: 12/13/02 11:15
Relinquished by:	Date/Time:	Shipped by:	Received by: — Date/Time:

Sample Disposal: Return to client: ______ Lab Disposal: ______

LABORATORY USE ONLY — Sample Type: ______ # of fractions ______

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1204 8R0008

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120448-003
Client Sample ID: Arapaho Water Line Hydrant

Report Date: 01/03/03
Collection Date: 12/10/02 11:48
Date Received: 12/13/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	12/19/02 17:17 / wen
Calcium	5.5	mg/L		1.0		E200.7	12/26/02 15:28 / cp
Chloride	10.9	mg/L		1.0	250	A4500-Cl B	12/18/02 14:02 / rwk
Fluoride	0.6	mg/L		0.1	4	A4500-F C	12/16/02 13:29 / slb
Magnesium	ND	mg/L		1.0		E200.7	12/26/02 15:28 / cp
Potassium	2.0	mg/L		1.0		E200.7	12/26/02 15:28 / cp
Silica	9.69	mg/L		0.10		E200.7	12/26/02 15:28 / cp
Sodium	142	mg/L		1.0		E200.7	12/26/02 15:28 / cp
Sulfate	139	mg/L	D	1.5	250	A4500-SO4 E	12/17/02 11:32 / sp
METALS - TOTAL							
Aluminum	0.189	mg/L		0.001	0.2	E200.8	12/20/02 04:59 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	12/20/02 04:59 / smd
Boron	0.14	mg/L		0.10		E200.7	12/26/02 15:28 / cp
Iron	1.26	mg/L		0.030	0.3	E200.7	12/26/02 15:28 / cp
Manganese	0.277	mg/L		0.010	0.05	E200.7	12/26/02 15:28 / cp
Molybdenum	0.003	mg/L		0.001		E200.8	12/20/02 04:59 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	12/20/02 04:59 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	12/20/02 04:59 / smd
Strontium	ND	mg/L		0.10		E200.7	12/26/02 00:00 / cp
Uranium	ND	mg/L		0.0003	0.03	E200.8	12/20/02 04:59 / smd
Vanadium	0.003	mg/L		0.001		E200.8	12/20/02 04:59 / smd
Zinc	0.182	mg/L		0.010	5	E200.7	12/26/02 15:28 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	47.8	pCi/L		1.0	15	E900.0	12/20/02 12:00 / rs
Gross Alpha Precision	2.2	pCi/L				E900.0	12/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/24/02 12:12 / ph
Polonium 210	15	pCi/L		2.7		RMO-3008	12/23/02 11:10 / rs
Polonium 210 precision	2.6	pCi/L				RMO-3008	12/23/02 11:10 / rs
Radium 226	12.5	pCi/L		0.2		E903.0	12/22/02 05:27 / es
Radium 226 precision	0.9	pCi/L				E903.0	12/22/02 05:27 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/16/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/16/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120448-002
Client Sample ID: 22 Red Crow Ln

Report Date: 01/03/03
Collection Date: 12/10/02 12:11
Date Received: 12/13/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	12/19/02 17:02 / wen
Calcium	4.9	mg/L		1.0		E200.7	12/26/02 15:24 / cp
Chloride	11.6	mg/L		1.0	250	A4500-Cl B	12/18/02 14:00 / rwk
Fluoride	0.6	mg/L		0.1	4	A4500-F C	12/16/02 13:27 / slb
Magnesium	ND	mg/L		1.0		E200.7	12/26/02 15:24 / cp
Potassium	2.2	mg/L		1.0		E200.7	12/26/02 15:24 / cp
Silica	8.66	mg/L		0.10		E200.7	12/26/02 15:24 / cp
Sodium	143	mg/L		1.0		E200.7	12/26/02 15:24 / cp
Sulfate	141	mg/L	D	1.5	250	A4500-SO4 E	12/17/02 11:29 / sp
METALS - TOTAL							
Aluminum	ND	mg/L		0.001	0.2	E200.8	12/20/02 03:03 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	12/20/02 03:03 / smd
Boron	0.12	mg/L		0.10		E200.7	12/26/02 15:24 / cp
Iron	ND	mg/L		0.030	0.3	E200.7	12/26/02 15:24 / cp
Manganese	ND	mg/L		0.010	0.05	E200.7	12/26/02 15:24 / cp
Molybdenum	0.003	mg/L		0.001		E200.8	12/20/02 03:03 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	12/20/02 03:03 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	12/20/02 03:03 / smd
Strontium	ND	mg/L		0.10		E200.7	12/26/02 00:00 / cp
Uranium	ND	mg/L		0.0003	0.03	E200.8	12/20/02 03:03 / smd
Vanadium	ND	mg/L		0.001		E200.8	12/20/02 03:03 / smd
Zinc	0.016	mg/L		0.010	5	E200.7	12/26/02 15:24 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	2.3	pCi/L		1.0	15	E900.0	12/20/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	12/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/24/02 12:12 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	12/23/02 11:10 / rs
Radium 226	1.1	pCi/L		0.2		E903.0	12/22/02 04:27 / es
Radium 226 precision	0.3	pCi/L				E903.0	12/22/02 04:27 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/16/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/16/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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120448R0002

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120448-006
Client Sample ID: 10 Whitetail Dr

Report Date: 01/03/03
Collection Date: 12/11/02 11:45
Date Received: 12/13/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	12/19/02 18:02 / wen
Calcium	55.9	mg/L		1.0		E200.7	12/26/02 15:39 / cp
Chloride	5.1	mg/L		1.0	250	A4500-Cl B	12/18/02 14:07 / rwk
Fluoride	0.2	mg/L		0.1	4	A4500-F C	12/16/02 14:44 / slb
Magnesium	14.0	mg/L		1.0		E200.7	12/26/02 15:39 / cp
Potassium	3.8	mg/L		1.0		E200.7	12/26/02 15:39 / cp
Silica	15.6	mg/L		0.10		E200.7	12/26/02 15:39 / cp
Sodium	47.2	mg/L		1.0		E200.7	12/26/02 15:39 / cp
Sulfate	66.6	mg/L	D	1.5	250	A4500-SO4 E	12/17/02 11:37 / sp
METALS - TOTAL							
Aluminum	ND	mg/L		0.001	0.2	E200.8	12/20/02 03:45 / smd
Arsenic	0.002	mg/L		0.001	0.01	E200.8	12/20/02 03:45 / smd
Boron	ND	mg/L		0.10		E200.7	12/26/02 15:39 / cp
Iron	0.041	mg/L		0.030	0.3	E200.7	12/26/02 15:39 / cp
Manganese	ND	mg/L		0.010	0.05	E200.7	12/26/02 15:39 / cp
Molybdenum	0.002	mg/L		0.001		E200.8	12/20/02 03:45 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	12/20/02 03:45 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	12/20/02 03:45 / smd
Strontium	ND	mg/L		0.10		E200.7	12/26/02 00:00 / cp
Uranium	0.0038	mg/L		0.0003	0.03	E200.8	12/20/02 03:45 / smd
Vanadium	0.005	mg/L		0.001		E200.8	12/20/02 03:45 / smd
Zinc	0.323	mg/L		0.010	5	E200.7	12/26/02 15:39 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	2.6	pCi/L		1.0	15	E900.0	12/20/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	12/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/24/02 12:12 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	12/23/02 11:10 / rs
Radium 226	0.9	pCi/L		0.2		E903.0	12/22/02 08:28 / es
Radium 226 precision	0.3	pCi/L				E903.0	12/22/02 08:28 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/16/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/16/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120448-005
Client Sample ID: #446

Report Date: 01/03/03
Collection Date: 12/11/02 11:10
Date Received: 12/13/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	12/19/02 17:47 / wen
Calcium	3.0	mg/L		1.0		E200.7	12/26/02 15:35 / cp
Chloride	9.2	mg/L		1.0	250	A4500-Cl B	12/18/02 14:05 / rwk
Fluoride	0.8	mg/L		0.1	4	A4500-F C	12/16/02 13:35 / slb
Magnesium	ND	mg/L		1.0		E200.7	12/26/02 15:35 / cp
Potassium	2.0	mg/L		1.0		E200.7	12/26/02 15:35 / cp
Silica	7.74	mg/L		0.10		E200.7	12/26/02 15:35 / cp
Sodium	154	mg/L		1.0		E200.7	12/26/02 15:35 / cp
Sulfate	143	mg/L	D	1.5	250	A4500-SO4 E	12/17/02 11:35 / sp
METALS - TOTAL							
Aluminum	0.002	mg/L		0.001	0.2	E200.8	12/20/02 03:40 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	12/20/02 03:40 / smd
Boron	0.17	mg/L		0.10		E200.7	12/26/02 15:35 / cp
Iron	ND	mg/L		0.030	0.3	E200.7	12/26/02 15:35 / cp
Manganese	ND	mg/L		0.010	0.05	E200.7	12/26/02 15:35 / cp
Molybdenum	0.002	mg/L		0.001		E200.8	12/20/02 03:40 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	12/20/02 03:40 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	12/20/02 03:40 / smd
Strontium	ND	mg/L		0.10		E200.7	12/26/02 00:00 / cp
Uranium	ND	mg/L		0.0003	0.03	E200.8	12/20/02 03:40 / smd
Vanadium	ND	mg/L		0.001		E200.8	12/20/02 03:40 / smd
Zinc	0.421	mg/L		0.010	5	E200.7	12/26/02 15:35 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	1.7	pCi/L		1.0	15	E900.0	12/20/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	12/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/24/02 12:12 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	12/23/02 11:10 / rs
Radium 226	0.8	pCi/L		0.2		E903.0	12/22/02 07:28 / es
Radium 226 precision	0.3	pCi/L				E903.0	12/22/02 07:28 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/16/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/16/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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120448R0005

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120448-004
Client Sample ID: 24 Littleshield Rd

Report Date: 01/03/03
Collection Date: 12/11/02 13:45
Date Received: 12/13/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	0.86	mg/L		0.50		E300.0	12/19/02 17:32 / wen
Calcium	3.4	mg/L		1.0		E200.7	12/26/02 15:32 / cp
Chloride	6.5	mg/L		1.0	250	A4500-Cl B	12/18/02 14:04 / rwk
Fluoride	1.2	mg/L		0.1	4	A4500-F C	12/16/02 13:32 / slb
Magnesium	ND	mg/L		1.0		E200.7	12/26/02 15:32 / cp
Potassium	1.6	mg/L		1.0		E200.7	12/26/02 15:32 / cp
Silica	7.60	mg/L		0.10		E200.7	12/26/02 15:32 / cp
Sodium	148	mg/L		1.0		E200.7	12/26/02 15:32 / cp
Sulfate	136	mg/L	D	1.5	250	A4500-SO4 E	12/17/02 11:34 / sp
METALS - TOTAL							
Aluminum	ND	mg/L		0.001	0.2	E200.8	12/20/02 03:35 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	12/20/02 03:35 / smd
Boron	0.15	mg/L		0.10		E200.7	12/26/02 15:32 / cp
Iron	0.157	mg/L		0.030	0.3	E200.7	12/26/02 15:32 / cp
Manganese	ND	mg/L		0.010	0.05	E200.7	12/26/02 15:32 / cp
Molybdenum	0.002	mg/L		0.001		E200.8	12/20/02 03:35 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	12/20/02 03:35 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	12/20/02 03:35 / smd
Strontium	ND	mg/L		0.10		E200.7	12/26/02 00:00 / cp
Uranium	ND	mg/L		0.0003	0.03	E200.8	12/20/02 03:35 / smd
Vanadium	ND	mg/L		0.001		E200.8	12/20/02 03:35 / smd
Zinc	ND	mg/L		0.010	5	E200.7	12/26/02 15:32 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	2.4	pCi/L		1.0	15	E900.0	12/20/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	12/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/24/02 12:12 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	12/23/02 11:10 / rs
Radium 226	0.6	pCi/L		0.2		E903.0	12/22/02 06:27 / es
Radium 226 precision	0.3	pCi/L				E903.0	12/22/02 06:27 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/16/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/16/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Groundwater
Lab ID: C02120448-001
Client Sample ID: #417

Report Date: 01/03/03
Collection Date: 12/10/02 13:25
Date Received: 12/13/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Bromide	ND	mg/L		0.50		E300.0	12/19/02 16:47 / wen
Calcium	37.4	mg/L		1.0		E200.7	12/26/02 14:34 / cp
Chloride	5.1	mg/L		1.0	250	A4500-Cl B	12/18/02 13:52 / rwk
Fluoride	0.3	mg/L		0.1	4	A4500-F C	12/16/02 13:23 / slb
Magnesium	9.8	mg/L		1.0		E200.7	12/26/02 14:34 / cp
Potassium	5.2	mg/L		1.0		E200.7	12/26/02 14:34 / cp
Silica	6.52	mg/L		0.10		E200.7	12/26/02 14:34 / cp
Sodium	51.4	mg/L		1.0		E200.7	12/26/02 14:34 / cp
Sulfate	37.9	mg/L		1.0	250	A4500-SO4 E	12/17/02 11:28 / sp
METALS - TOTAL							
Aluminum	ND	mg/L		0.001	0.2	E200.8	12/20/02 02:58 / smd
Arsenic	ND	mg/L		0.001	0.01	E200.8	12/20/02 02:58 / smd
Boron	ND	mg/L		0.10		E200.7	12/26/02 14:34 / cp
Iron	1.02	mg/L		0.030	0.3	E200.7	12/26/02 14:34 / cp
Manganese	0.073	mg/L		0.010	0.05	E200.7	12/26/02 14:34 / cp
Molybdenum	0.003	mg/L		0.001		E200.8	12/20/02 02:58 / smd
Nickel	ND	mg/L		0.001	0.1	E200.8	12/20/02 02:58 / smd
Selenium	ND	mg/L		0.001	0.05	E200.8	12/20/02 02:58 / smd
Strontium	0.22	mg/L		0.10		E200.7	12/26/02 00:00 / cp
Uranium	0.0016	mg/L		0.0003	0.03	E200.8	12/20/02 02:58 / smd
Vanadium	0.002	mg/L		0.001		E200.8	12/20/02 02:58 / smd
Zinc	0.061	mg/L		0.010	5	E200.7	12/26/02 14:34 / cp
RADIONUCLIDES - TOTAL							
Gross Alpha	2.7	pCi/L		1.0	15	E900.0	12/20/02 12:00 / rs
Gross Alpha Precision	1.0	pCi/L				E900.0	12/20/02 12:00 / rs
Lead 210	ND	pCi/L		2.7		NERHL-65-4	12/24/02 12:12 / ph
Polonium 210	ND	pCi/L		2.7		RMO-3008	12/23/02 11:10 / rs
Radium 226	0.6	pCi/L		0.2		E903.0	12/22/02 02:52 / es
Radium 226 precision	0.3	pCi/L				E903.0	12/22/02 02:52 / es
Thorium 230	ND	pCi/L		0.2		E907.0	12/16/02 10:30 / ph
Thorium 230 precision	ND	pCi/L				E907.0	12/16/02 10:30 / ph

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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120448R0001

Chain of Custody and Analytical Request Record

Page ____ of ____.

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PLEASE PRINT, provide as much information as possible.
Refer to corresponding notes on reverse side.

Company Name: Wind River Environmental Quality Commission	Project Name, PWS #, Permit #, Etc.: Riverton UMTRA Site
Report Address: P.O. Box 217 building 10, Fort Washakie, WY 82514	Contact Name, Phone, Fax, E-mail: Steve Babits sbabits@wyoming.com (307) 332-3164 Fax (307) 332-7579 — Sampler Name if other than Contact:
Invoice Address: Same	Invoice Contact & Phone #: Claire Ware (307) 332-3164 — Purchase Order #: — ELI Quote #:

Report Required For: POTW/WWTP ☐ DW ☐ Other ________

Special Report Formats – ELI must be notified prior to sample submittal for the following:
NELAC ☐ A2LA ☐ Level IV ☐
Other ________
EDD/EDT ☐ Format ________

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments: *Metals: Arsenic, Manganese, Molybdenum, Nickel, Uranium

Receipt Temp 9 °C
Cooler ID(s)
Custody Seal Y N
Intact Y N
Signature Match Y N

ANALYSIS REQUESTED

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V U O — Air Water Soils/Solids Vegetation Urine Other)	TDS, Sulfate	Metals, Unfiltered*	Metals, Filtered*							SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Lab ID
1	Well 717	5/14/02	0950	3/Water	X	X	X								X		C02050476
2	Well 735	5/14/02	1055	3/water	X	X	X								X		
3	Well 705	5/14/02	1300	3/Water	X	X	X								X		
4	Well 707	5/14/02	1420	3/Water	X	X	X								X		
5	Oxbow Lake 747	5/14/02	1445	3/Water	X	X	X								X		
6	Well 710	5/14/02	1540	3/Water	X	X	X								X		
7																	
8																	
9																	
10																	

TRACKING NO. PAGE NO. 50476R00007

Custody Record MUST be Signed

Relinquished by: Claire Ware	Date/Time: 5/15/02 13:54	Shipped by:	Received by: Latosha Edwards — Date/Time: 5/15/02 13:54
Relinquished by:	Date/Time:	Shipped by:	Received by: — Date/Time:

Sample Disposal: Return to client: ________ Lab Disposal: ________

LABORATORY USE ONLY
Sample Type: ________ # of fractions ________

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Site
Lab ID: C02050476-006
Client Sample ID: Well 710

Report Date: 06/10/02
Collection Date: 05/14/02 15:40
Date Received: 05/15/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Sulfate	214	mg/L		1.0		A4500-SO4 E	05/20/02 12:15 / es
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	572	mg/L		10		A2540 C	05/16/02 15:37 / es
TRACE METALS - DISSOLVED							
Arsenic	0.002	mg/L		0.001		E200.8	06/07/02 14:01 / smd
Manganese	ND	mg/L		0.01		E200.8	06/07/02 14:01 / smd
Molybdenum	ND	mg/L		0.1		E200.8	06/07/02 14:01 / smd
Nickel	ND	mg/L		0.05		E200.8	06/07/02 14:01 / smd
Uranium	0.0071	mg/L		0.0003		E200.8	06/07/02 14:01 / smd
TRACE METALS - TOTAL							
Arsenic	0.003	mg/L		0.001		E200.8	06/07/02 14:07 / smd
Manganese	0.022	mg/L		0.001		E200.8	06/07/02 14:07 / smd
Molybdenum	0.002	mg/L		0.001		E200.8	06/07/02 14:07 / smd
Nickel	0.003	mg/L		0.001		E200.8	06/07/02 14:07 / smd
Uranium	0.0070	mg/L		0.0003		E200.8	06/07/02 14:07 / smd

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Site
Lab ID: C02050476-005
Client Sample ID: Oxbow Lake 747

Report Date: 06/03/02
Collection Date: 05/14/02 14:45
Date Received: 05/15/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	MCL/ RL QCL	Method	Analysis Date / By
MAJOR IONS						
Sulfate	590	mg/L		1.0	A4500-SO4 E	05/20/02 12:15 / es
PHYSICAL PROPERTIES						
Solids, Total Dissolved TDS @ 180 C	1260	mg/L		10	A2540 C	05/16/02 15:37 / es
TRACE METALS - DISSOLVED						
Arsenic	0.003	mg/L		0.001	E200.8	05/18/02 08:19 / ts
Manganese	0.88	mg/L		0.01	E200.8	05/18/02 08:19 / ts
Molybdenum	ND	mg/L		0.1	E200.8	05/18/02 08:19 / ts
Nickel	ND	mg/L		0.05	E200.8	05/18/02 08:19 / ts
Uranium	0.391	mg/L		0.0003	E200.8	05/18/02 08:19 / ts
TRACE METALS - TOTAL						
Arsenic	0.003	mg/L		0.001	E200.8	05/23/02 06:23 / ts
Manganese	0.974	mg/L		0.001	E200.8	05/23/02 06:23 / ts
Molybdenum	0.021	mg/L		0.001	E200.8	05/23/02 06:23 / ts
Nickel	0.005	mg/L		0.001	E200.8	05/23/02 06:23 / ts
Uranium	0.422	mg/L		0.0003	E200.8	05/23/02 06:23 / ts

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Site
Lab ID: C02050476-004
Client Sample ID: Well 707

Report Date: 06/03/02
Collection Date: 05/14/02 14:20
Date Received: 05/15/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Sulfate	2550	mg/L		1.0		A4500-SO4 E	05/20/02 12:15 / es
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	4240	mg/L		10		A2540 C	05/16/02 15:36 / es
TRACE METALS - DISSOLVED							
Arsenic	0.003	mg/L		0.001		E200.8	05/18/02 08:14 / ts
Manganese	0.02	mg/L		0.01		E200.8	05/18/02 08:14 / ts
Molybdenum	ND	mg/L		0.1		E200.8	05/18/02 08:14 / ts
Nickel	ND	mg/L		0.05		E200.8	05/18/02 08:14 / ts
Uranium	0.0074	mg/L		0.0003		E200.8	05/18/02 08:14 / ts
TRACE METALS - TOTAL							
Arsenic	0.003	mg/L		0.001		E200.8	05/29/02 16:52 / ts
Manganese	1.77	mg/L		0.001		E200.8	05/29/02 16:52 / ts
Molybdenum	0.797	mg/L		0.001		E200.8	05/29/02 16:52 / ts
Nickel	0.044	mg/L		0.001		E200.8	05/29/02 16:52 / ts
Uranium	1.09	mg/L		0.0003		E200.8	05/29/02 16:52 / ts

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Site
Lab ID: C02050476-003
Client Sample ID: Well 705

Report Date: 06/03/02
Collection Date: 05/14/02 13:00
Date Received: 05/15/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Sulfate	446	mg/L		1.0		A4500-SO4 E	05/20/02 12:15 / es
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	814	mg/L		10		A2540 C	05/16/02 15:36 / es
TRACE METALS - DISSOLVED							
Arsenic	ND	mg/L		0.001		E200.8	05/18/02 07:37 / ts
Manganese	0.02	mg/L		0.01		E200.8	05/18/02 07:37 / ts
Molybdenum	ND	mg/L		0.1		E200.8	05/18/02 07:37 / ts
Nickel	ND	mg/L		0.05		E200.8	05/18/02 07:37 / ts
Uranium	ND	mg/L		0.0003		E200.8	05/18/02 07:37 / ts
TRACE METALS - TOTAL							
Arsenic	ND	mg/L		0.001		E200.8	05/23/02 05:09 / ts
Manganese	0.023	mg/L		0.001		E200.8	05/23/02 05:09 / ts
Molybdenum	0.003	mg/L		0.001		E200.8	05/23/02 05:09 / ts
Nickel	0.003	mg/L		0.001		E200.8	05/23/02 05:09 / ts
Uranium	0.0003	mg/L		0.0003		E200.8	05/23/02 05:09 / ts

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Site
Lab ID: C02050476-002
Client Sample ID: Well 735

Report Date: 06/03/02
Collection Date: 05/14/02 10:55
Date Received: 05/15/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Sulfate	560	mg/L		1.0		A4500-SO4 E	05/20/02 12:15 / es
PHYSICAL PROPERTIES							
Solids, Total Dissolved ~~TDS~~ @ 180 C	1070	mg/L		10		A2540 C	05/16/02 15:35 / es
TRACE METALS - DISSOLVED							
Arsenic	0.001	mg/L		0.001		E200.8	05/18/02 07:32 / ts
Manganese	0.08	mg/L		0.01		E200.8	05/18/02 07:32 / ts
Molybdenum	ND	mg/L		0.1		E200.8	05/18/02 07:32 / ts
Nickel	ND	mg/L		0.05		E200.8	05/18/02 07:32 / ts
Uranium	0.0007	mg/L		0.0003		E200.8	05/18/02 07:32 / ts
TRACE METALS - TOTAL							
Arsenic	0.002	mg/L		0.001		E200.8	05/23/02 05:04 / ts
Manganese	0.091	mg/L		0.001		E200.8	05/23/02 05:04 / ts
Molybdenum	0.002	mg/L		0.001		E200.8	05/23/02 05:04 / ts
Nickel	0.005	mg/L		0.001		E200.8	05/23/02 05:04 / ts
Uranium	0.0009	mg/L		0.0003		E200.8	05/23/02 05:04 / ts

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Wind River Environmental Quality Commission
Project: Riverton UMTRA Site
Lab ID: C02050476-001
Client Sample ID: Well 717

Report Date: 06/03/02
Collection Date: 05/14/02 09:50
Date Received: 05/15/02
Matrix: AQUEOUS

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Sulfate	765	mg/L		1.0		A4500-SO4 E	05/20/02 12:15 / es
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	1440	mg/L		10		A2540 C	05/16/02 15:35 / es
TRACE METALS - DISSOLVED							
Arsenic	0.001	mg/L		0.001		E200.8	05/18/02 07:26 / ts
Manganese	0.17	mg/L		0.01		E200.8	05/18/02 07:26 / ts
Molybdenum	ND	mg/L		0.1		E200.8	05/18/02 07:26 / ts
Nickel	ND	mg/L		0.05		E200.8	05/18/02 07:26 / ts
Uranium	ND	mg/L		0.0003		E200.8	05/18/02 07:26 / ts
TRACE METALS - TOTAL							
Arsenic	0.001	mg/L		0.001		E200.8	05/23/02 04:43 / ts
Manganese	0.171	mg/L		0.001		E200.8	05/23/02 04:43 / ts
Molybdenum	0.011	mg/L		0.001		E200.8	05/23/02 04:43 / ts
Nickel	0.005	mg/L		0.001		E200.8	05/23/02 04:43 / ts
Uranium	ND	mg/L		0.0003		E200.8	05/23/02 04:43 / ts

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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