Table 1. Gross Alpha Analytical Results for the Third Quarter of Calendar Year 2001
(Average analytical error, +/− 0.0007)

| Station | Minimum ($pCi/m^3$) | Maximum ($pCi/m^3$) | Average ($pCi/m^3$) | 2000 Average ($pCi/m^3$) |
|---|---|---|---|---|
| Las Vegas | 0.0015 | 0.0066 | 0.0034 | 0.0028 |
| Henderson | 0.0014 | 0.0055 | 0.0027 | 0.0027 |
| Boulder City | 0.0013 | 0.0054 | 0.0029 | 0.0036 |
| Overton | 0.0011 | 0.0066 | 0.0025 | 0.0029 |
| St. George | 0.0009 | 0.0040 | 0.0021 | 0.0026 |
| Cedar City | 0.0018 | 0.0059 | 0.0036 | 0.0038 |
| Milford | 0.0009 | 0.0051 | 0.0024 | 0.0023 |
| Delta | 0.0013 | 0.0024 | 0.0020 | 0.0022 |
| Pioche | 0.0014 | 0.0036 | 0.0022 | 0.0022 |
| Caliente | 0.0016 | 0.0058 | 0.0029 | 0.0025 |
| Alamo | 0.0020 | 0.0073 | 0.0038 | 0.0032 |
| Rachel | 0.0010 | 0.0046 | 0.0026 | 0.0029 |
| Tonopah | 0.0014 | 0.0033 | 0.0022 | 0.0023 |
| Goldfield | 0.0012 | 0.0038 | 0.0023 | 0.0026 |
| Beatty | 0.0017 | 0.0082 | 0.0040 | 0.0028 |
| Indian Springs | 0.0014 | 0.0047 | 0.0025 | 0.0021 |
| Amargosa | 0.0011 | 0.0060 | 0.0030 | 0.0031 |
| Pahrump | 0.0012 | 0.0043 | 0.0026 | 0.0022 |

Table 2. Gross Beta Analytical Results for the Third Quarter of Calendar Year 2001.
(Average analytical error, +/− 0.003)

| Station | Minimum ($pCi/m^3$) | Maximum ($pCi/m^3$) | Average ($pCi/m^3$) | 2000 Average ($pCi/m^3$) |
|---|---|---|---|---|
| Las Vegas | 0.020 | 0.036 | 0.029 | 0.025 |
| Henderson | 0.016 | 0.039 | 0.028 | 0.024 |
| Boulder City | 0.023 | 0.039 | 0.029 | 0.027 |
| Overton | 0.022 | 0.041 | 0.029 | 0.026 |
| St. George | 0.021 | 0.041 | 0.029 | 0.025 |
| Cedar City | 0.022 | 0.040 | 0.029 | 0.024 |
| Milford | 0.021 | 0.041 | 0.030 | 0.024 |
| Delta | 0.020 | 0.042 | 0.030 | 0.025 |
| Pioche | 0.021 | 0.040 | 0.029 | 0.022 |
| Caliente | 0.024 | 0.041 | 0.031 | 0.025 |
| Alamo | 0.021 | 0.038 | 0.031 | 0.025 |
| Rachel | 0.021 | 0.042 | 0.029 | 0.025 |
| Tonopah | 0.022 | 0.038 | 0.028 | 0.024 |
| Goldfield | 0.022 | 0.036 | 0.028 | 0.024 |
| Beatty | 0.023 | 0.038 | 0.030 | 0.024 |
| Indian Springs | 0.021 | 0.043 | 0.030 | 0.022 |
| Amargosa | 0.023 | 0.036 | 0.030 | 0.025 |
| Pahrump | 0.021 | 0.046 | 0.028 | 0.023 |

# Quarterly Report of Analytical Results for the CEMP Air Sampling Network

The CEMP air sampling network is designed to monitor and collect radioactive airborne particles from NTS and non-NTS activities, as well as background environmental sources. This report is provided to the station managers as a summary of the results from the analysis of the air samples they have collected as part of the environmental monitoring program.

In general, the CEMP air sampling network is comprised of 22 continuously operating sampling stations. Each station is equipped with a low volume air sampler to collect particulate radionuclides on glass fiber filter papers. Ideally, the samples are collected on a weekly basis with a target collection time of 168 hours. The samplers are calibrated on a monthly basis by DRI to maintain a collection rate of 2.0 cfm (@ STP). All relevant information such as actual collection times, variations in flow rate, power outages, or other information which documents the integrity of the sample is recorded by the station managers. This allows for the proper interpretation of the analytical results. The air filters are analyzed at a commercial laboratory for gross alpha/beta activity as well as by high-resolution gamma spectrometry. The filters are composited on a quarterly basis for the gamma analysis only after the gross alpha/beta analyses have been completed. As a result of the lag time, the gamma results are for the second quarter of CY2001, while the rest of the results are for the third quarter.

The principle reporting units used in the U.S. for the measurement of radioactivity in the atmospheric environment is $pCi/m^3$ (picocuries per cubic meter). DRI receives its data from the lab as microcuries per filter which is then recalculated to microcuries per milliliter based on the information provided by the station managers as well as monthly calibration results. This is the notation used for DRI internal data bases and annual reports to DOE. For the ease in constructing the tables contained in this report, as well as hopefully the ease of comparison among stations and previous results, the units of $pCi/m^3$ are used.

A summary of the third quarter CY2001 analytical results for gross alpha and beta are found in Tables 1 and 2. These tables show the minimum, maximum, and average values for each of the stations of the air sampling network. The last column shows an average annual value from previous years (in this case 2000) for comparison purposes. Overall the gross alpha results for the third quarter of CY2001 appear lower than the previous quarter. These data are essentially consistent with the average CY2000 analyses used for comparison, especially when analytical error is considered. The third quarter CY2001 beta results appear slightly higher than the previous quarter, but are actually indistinguishable with analytical considered. This data is also consistent with the average CY2000 results.

The second quarter gamma results for CY2001 are shown in Table 3. All of the samples are again gamma spectrum negligible (i.e. gamma emitting radionuclides were not detected) with the exception of Beryllium(Be)-7 and Lead(Pb)-210 which are naturally occurring elements of our atmospheric and geologic environment. It is interesting to note that the Be-7 results are 3 to 5 times higher than any previous results.

We are in the process of having the lab review the data. Also, at the bottom of the table is an analysis of unused filters for comparision. The Cs-137 data is indistinguishable from actual samples, with neither Be-7 nor Pb-210 being detected. This demonstrates that the filter paper is not a source of these or any other radiological elements.

The TLD results for the third quarter of CY2001 are shown in Table 4. This quarter shows the lowest exposure rate since the first quarter of CY2000 shown for comparison. The 2001 PIC exposure rate is also shown for comparison. As with historical data, the TLD's are lower than the PIC results. As previously noted, this is due to the differences in the two techniques of gamma detection.

Finally, as station managers, your input on the contents of these reports are welcome and encouraged. We are interested in anything you feel would be helpful for you to interpret the data or to enable you to explain the information to someone in your community not familiar with the program.