STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION
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May 3, 2006

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Re. **BMI Plant Sites and Common Areas Projects, Henderson, Nevada**
NDEP Guidance on Data Validation

Dear Sirs and Madam:

Attachment A contains the NDEP's guidance on the level of data verification and validation that is required for your respective projects. Please be advised that this applies to all historic data that is planned to be used for any purpose as well as all data collected in the future. Your respective project schedules should reflect this effort and all companies are requested to initiate this effort as soon as possible. The NDEP is willing to meet with each company individually to discuss your specific questions and concerns.

If you have any questions, do not hesitate to contact me.

Sincerely,

Brian A. Rakvica, P.E.
Supervisor, Special Projects Branch
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BAR:s

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Attachment A

NDEP Data Verification and Validation Requirements

The intent of this document is to specify the level of data verification and validation that is required for all data collected for the BMI Complex area. Data verification and validation fit into the USEPA overall Quality System as described in *Guidance on Environmental Data Verification and Data Validation, (QA/G-8) (EPA 2002).* Data verification and validation are performed using sample results and the process provides the output necessary to perform data quality assessment. This document only describes the verification and validation requirements and does not address data quality assessment further.

Data verification and validation should be performed in a manner that materially follows the Tiered approach outlined in the draft *Region 9 Superfund Data Evaluation/ Validation Guidance (R9QA/006.1).* More specifically, Tier 2 described in that document should be followed for the organic and inorganic data. In general, radiochemistry can only be reviewed at the Tier 1A level due to the lack of raw data. Following the Tier 2 approach, it is required that **100% of all data collected be reviewed** (per Tier 1A/1B) for the following components (where applicable):

- Completeness Check.
- Chain of Custody (signatures, sample conditions, preservatives, sampling handling/filtering).
- Holding Times.
- Random check (10-20%) of Initial and Continuing Calibration.
- Review of Quality Control Summaries including negative control (blanks) and positive control (LCS) along with Sample Specific Controls (replicates, matrix spikes, surrogates, tracers/ yields).
- Overall assessment.

In addition to this 100% review, **at least 10% of the data must be validated to the level of raw data**. Ideally this level of validation should be focused on a class of compounds that has been identified as significant for the area of interest, based upon previous data; or that represent special cases (e.g. non-standard methods specifically applied to the site). This validation should include the following items (in addition to those listed above):

- 100% validation of Initial and Continuing Calibration, including GC/MS tuning (data reporting forms).
- Random recalculation (10-20%) of reported results versus raw data.
- 100% validation of Interference Check Sample (data reporting forms), ICP Serial Dilution (data reporting forms), GC/MS instrument performance check, Reporting Limits (ensure they include appropriate sample weights, moisture, dilution).
- Internal Standards, Compound Identification, and TICs (where appropriate).
- Random check (5%) of integration and mass spectrum matches (where available and appropriate).
- When project or sampling specific items have been identified in the planning documents for review, these should be added.
- Overall assessment.

To clarify how the percentages should be calculated the following guidelines should be used. When determining the set of data that will meet the 10% requirement for raw data, this should be based on the number of data packages validated compared to the total number of data packages. This is advised since reviewing a complete data package to the raw data level requires a very similar amount of time than if only a part of a data package is validated to this raw data level.

When determining the percentage of a data package that should be randomly (5-20%) checked, this should be on a sample basis. For example, to check 5% of the mass spectrum matches, a single sample out of 20 would meet this criterion.

If full raw data validation activities indicate a systemic problem or repeated non-compliance the level of raw data validation should be increased to adequately determine the level of impact associated with the non-compliance. This increased validation activity should also be used to determine any root cause and necessary corrective actions.

The output of the data verification and validation process described above should include a detailed Data Validation Summary Report (DVSR) to include the following:

- Introduction with Purpose/Objective/Process.
- Applicable Samples, SDG ID, sample ID link to sample location, analyses.
- Level of validation for each sample or SDG and the calculation used to determine the percentage of data reviewed/validated.
- Data validation qualifier definition.
- Definitions for the reason codes that link results in the database to a specific qualifier logic.
- Data validation findings for each parameter based on the level of review. When non-conformances are identified they should be linked to the appropriate sample(s) and SDG.
- Evaluation of PARCCS parameters.
- Conclusions/Recommendations.
- References.
- Electronic database of the dataset that is being addressed by the report including all raw data and laboratory report (on CD in Microsoft Access database).