STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION
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ndep NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
protecting the future for generations

March 19, 2009

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

Dear Sirs and Madam:

All of the parties listed above shall be referred to as "the Companies" for the purposes of this letter. As the Companies should be aware, the United Stated Environmental Protection Agency (USEPA) has issued revisions to the National Functional Guidelines. In response to questions and comments received from the Companies, the NDEP has revisited the NDEP's *Supplemental Guidance on Data Validation* issued on February 26, 2009. The Nevada Division of Environmental Protection (NDEP) provides guidance in Attachment A regarding how these revisions should be applied to data validated for the BMI Complex and Common Areas projects. In addition, a red-line strike-out version of the document will be provided electronically so that the changes made be distinguished more easily.

Please contact me with any questions (tel: 702-486-2850 x247; e-mail: brakvica@ndep.nv.gov).

Sincerely,

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Attachment A

Revisions to Data Validation of Organic Data based on June 2008 National Functional Guidelines for Superfund Organic Methods Data Review – USEPA-540-R-08-01.

The USEPA Office of Superfund Remediation and Technology Innovation released an updated version of the National Functional Guidelines (NFG) for Superfund Organic Methods Data Review in June, 2008. These updated guidelines contain several revisions with respect to how data is to be validated under the USEPA Contract Laboratory Program. The Companies currently collecting and validating data at the BMI Complex and Common Areas projects have generally followed these NFGs, though in general earlier versions of the guidance have been followed.

Significant changes to the NFGs are discussed below.

Holding Times

The new USEPA guidance revises the period of time allowed before data are qualified when a holding time has been exceeded.

If VOC data are one day past holding time, non-detects are qualified as unusable (R). Previously this was applied if the holding time was exceeded by a factor of two. The new guidance does not necessarily apply the same level of qualification to semi-volatile, pesticides, and Aroclor fractions. For these analyses the guidance is to qualify as estimated (UJ) or unusable, based on professional judgment, if holding times are exceeded by one day or more.

At this time NDEP recommends the current qualification algorithm (twice the holding time) continue to be used. Studies have shown that most chemicals are stable for that period if the samples are kept cold and preserved where applicable (aqueous samples). However, each time a batch of samples are analyzed past holding time, professional judgment should be used to arrive at the qualification and usability assessment. It is recommended that the Companies use historic results, where holding times were met, along with evidence from compound stability studies to arrive at the final usability assessment.

Sample Receipt Temperatures

The new guidance, which applies to all organic suites (volatile organic compounds (VOCs), semi-VOCs (SVOC), pesticides, and polychlorinated biphenyls (PCBs)), is to use professional judgment if sample coolers arrive at the laboratory below 2 °C or above 6 °C.

No change in the current qualification and usability is proposed by NDEP. Professional judgment should guide this assessment. It is noted that stability studies of volatile compounds indicate a number of the compounds at the site (e.g. chlorinated benzenes) can degrade when not kept cold and preserved. Again, the use of historic results, where cooler temperatures were met, is the best approach for arriving at the final data usability assessment.

Blank Contamination

The new guidance for qualifying VOC results based on blank contamination is provided in the table below. This table is generally consistent with the logic described in Section E of the Low/Medium Volatiles Data Review. Qualification is based upon a comparison with the associated blank. When professional judgment is used to censor a sample value, that logic used needs to be described in the Data Validation Summary Report. If an analyte is found in a blank but not in associated samples no qualification is required.

Blank Type	Blank Result	Sample Result	Action for Samples
If sample result is < SQL, Report SQL value with a U.			
Method, Storage, Field, Trip, Instrument	≤ PQL *	< PQL (down to SQL)*	If Blank ≥ Sample, Report Sample value with a U. If Blank < Sample, use professional judgment. Default is to Report Sample Result.
		≥ PQL*	Use professional judgment. Default is to Report Sample Result.
	> PQL *	< PQL (down to SQL)*	Report Sample value with a U.
		≥PQL* and < blank result	Use professional judgment. Default is to report the Sample result with a U.
		≥PQL* and ≥ blank result	Use professional judgment. Default is to Report Sample Result.

Report all detects down to the SQL in accordance with the NDEP Memo on Detection Limits and Data Reporting dated December 3, 2008.

* 2x the SQL for methylene chloride, 2-butanone and acetone.

NDEP recommends that this approach to qualifying VOCs be adopted. It is also important to compare any potential censored results, due to blank contamination, with the applicable standard such as USEPA maximum contaminant levels (MCLs) or NDEP Basic Comparison Levels (BCLs), during the data usability assessment.

Note that if other sensitivity indicators than SQL/PQL are used by the laboratories or validators the following substitutions should be made in this table. In place of SQL, use the applicable sensitivity indicator that is analogous to the Method Detection Limit that has been adjusted to reflect sample-specific actions, such as dilutions or use of smaller aliquot sizes, and take into account sample characteristics, sample preparation, and analytical adjustments. All sample-specific detection limit and all non-detected results are to be reported to this value. In place of PQL, use the applicable limit that is greater than the SQL analog and is generally described as a quantitation limit such as a QL and in some cases an RL. All detected results greater than the SQL analog (e.g. MDL), but less than the PQL analog (e.g. QL) can be qualified as estimated but are still reported.

The same approach is provided in the guidance for SVOC and other organic blank assessment and this also should be adopted with the same general steps outline in the table above. For SVOCs, 5 times the SQL for bis(2-ethylhexyl)phthalate is used. The pesticides and PCB blank analysis does not use a 2X/5X common contaminant factor but promotes professional judgment for any blank value above the CRQL (SQL is the appropriate indicator for the BMI Complex) with the potential for qualifying data as unusable (R).

System Monitoring Compounds

The new guidance revises the level where VOC surrogate recovery results in data qualification. If the recovery of a surrogate is < 20%, the "not-detected" results associated with the surrogate are considered unusable (R) and positive results are qualified as estimated. If the recovery is > 20%, but < lower QC limit, the "not-detected" and positive results are qualified as estimated. In the prior guidance the cutoff was 10%.

At this point NDEP does not require changing the cutoff from 10% to 20%. However, professional judgment should be used and problems with system monitoring compounds should be investigated when the recovery is less than 20%.

Matrix Spike/ Matrix Spike Duplicate (MS/MSD)

The prior USEPA guidance did not provide any substantive guidance for a usability assessment based on MS/MSD results. The new USEPA guidance does not recommend qualification based solely on MS/MSD results. However, professional judgment in conjunction with other quality control (QC) results should be considered to qualify results as follows:

The new guidance for VOCs is as follows:

> For any recovery or RPD **greater** than the upper QC limit: qualify positive results with a "J". "Not-detected" results should not be qualified.

For any recovery ≥ 20%, and less than the lower QC limit: qualify positive results with a "J". "Not-detected" results should be qualified "UJ".

For any recovery < 20%: qualify positive results with a "J." Not-detected" results use professional judgment.

At this point NDEP does not require changing the steps for qualifying VOC data based on these revisions to the MS/MSD assessment. Again, professional judgment is important and other QC results should be considered along with MS/MSD results.

Internal Standards

The revision to assessment of internal standards applies to all organics suites in the guidance (VOC, SVOC, pesticides, PCBs) where internal standards are utilized. The changes to the guidance are as follows:

If the sample internal standard area is 60% of the associated continuing calibration verification (CCV) internal standard area, positive sample results are qualified as estimated, and "not-detected" sample results are qualified as **unusable (R)**. Also, if the Retention Time of the internal standard differs by more than 20 seconds from the associated CCV, all positive and "not-detected" sample results should be qualified as unusable (R). However, caveats can be used based upon mass spectra criteria and partial rejection.

Internal standards are not always included in data validation but are required to be validated for at least 10% of the samples reported in a DVSR. At this point NDEP feels the cutoff of 60% is not warranted. However, a cutoff point of 25%, using the same logic as above, is recommended.

In cases where high resolution mass spectrometry is employed, such as for dioxin/furan and congener PCB analysis, we are not advocating the new internal standard rule be applied. At this time these results should continue to be validated using guidance most applicable to high-resolution MS. Applicable guidance includes the 2005 Dioxin National Functional Guidelines where ion abundance ratios and signal to noise ratios are considered.

Percent Moisture

The steps to qualify data based on high levels of percent moisture apply to all organic analysis in the new guidance. The 1999 USEPA guidance had no assessment with respect to percent moisture. The new guidance is:

If the sample percent moisture is >70% but <90%, qualify positive samples as estimated "J" and "not-detected" samples as estimated "UJ." If the sample percent moisture is ≥90%, qualify positive samples as estimated "J" and "not-detected" samples as unusable "R."

NDEP believes this approach is supported and should be utilizable for all analyses including metals, radionuclides and other inorganic analytes.