

Clarification & Guidance
DOE-0342 Chronic Beryllium Disease Prevention Procedure

Complete N/A

Proposed Reviewed Rejected Accepted Approved for Use Procedure Updated

ID Number: **Title/Subject: Beryllium Sample Analysis Method Requirement Clarification**

Initiated by: Sam Bennikutty **Company:** WCH **Date:** 07/14/11 **Ph #:** 942-6817

Issue/Concern/Affected Step(s):

Current language specifying beryllium sample analysis methods is imprecise and inconsistent throughout the document leading to potential confusion and non-compliance with expectations. Affected sections of DOE-0342 include: Section 6.11.7, pages 9 and 10, Monitoring and Analytical Methods, paragraphs 2, 3 and 5; and Appendix A, page 30, Sample Collection, paragraph 6.

Discussion:

Modification of current language and incorporation of verbiage established in 10CFR850.24(f) will improve clarity and ensure consistency and compliance with established regulatory requirements and Hanford expectations. Additionally, since the publication of DOE-0342, r0, there have been technological and analytical improvements in the form of more efficient and sensitive methods proven within the DOE complex. The proposed changes identified in this resolution will facilitate development and use of state of the art techniques while still providing clear performance criteria consistent with regulation and expectations.

Recommended Resolution:

Modify language in the following sections:

Section 6.11.7, paragraph 2:

Existing Language:

“The National Institute for Occupational Safety and Health (NIOSH) method 7300 or OSHA ID-125G are the methods generally used for personal air monitoring for Hanford worksites. Each method meets the limit of detection and accuracy specified in 10 CFR 850.24(e). Analysis of personal air monitoring samples shall be conducted by a laboratory that is accredited by the American Industrial Hygiene Association.”

Proposed Language

“All samples shall be analyzed by a laboratory accredited for metals by the American Industrial Hygiene Association (AIHA) or a laboratory that demonstrates quality assurance for metals analysis that is equivalent to AIHA accreditation.” Methods of monitoring and analysis shall meet accuracy criteria established in 10 CFR 850.24(e).

Section 6.11.7, paragraph 3:

Existing Language

“Surface wipe sampling is conducted by taking a pre-moistened towelette to wipe across the surface to be sampled (normally 100cm²), the towelette is then placed inside a sample container and analyzed for beryllium. The sampling method is described in NIOSH method 9100 and OSHA ID-125G, with analysis of the wipes for beryllium analysis based on NIOSH method 7300. This method should be used for wipe sampling on surfaces that do not have sufficient dust for bulk sampling.”

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Proposed Language

“Surface wipe sampling is conducted by taking a pre-moistened towelette to wipe across the surface to be sampled (normally 100cm²), the towelette is then placed inside a sample container and analyzed for beryllium. The sample collection method is described in NIOSH method 9102, and OSHA ID-125G. This method should be used for wipe sampling on surfaces that do not have sufficient dust for bulk sampling.”

Section 6.11.7, paragraph 5:

Existing Language

“There are two DOE recognized methods for surface dust sampling:

- A brush can be used to collect the dust for weighing and beryllium analysis based on NIOSH method 7300
- A battery-powered pump with a 37 mm cassette can be used as a vacuum to collect the surface dust. The collected dust is weighed and analyzed for beryllium based on NIOSH method 7300. This surface dust sampling method is based upon American Standards Testing Method ASTM D7144-05a”

Proposed Language

“There are several recognized methods for bulk surface dust sampling:

- A brush, scoop or scraping method can be used to collect the bulk dust sample in a vial for subsequent weighing and beryllium analysis
- A battery-powered pump with a 37 mm cassette can be used as a vacuum to collect the bulk surface dust sample. The collected dust is weighed and analyzed for beryllium. This surface dust sampling method is based upon American Standards Testing Method ASTM D7144-05a”

Appendix A, page 30, Sample Collection, paragraph 6:

Existing Language

“Beryllium samples are analyzed by NIOSH 7300 method; ICP AE.”

Proposed Language

“All beryllium samples shall be analyzed by a laboratory accredited for metals by the American Industrial Hygiene Association (AIHA) or a laboratory that demonstrates quality assurance for metals analysis that is equivalent to AIHA accreditation.” Methods of analysis shall meet accuracy criteria established in 10 CFR 850.24(e).

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Clarification **Guidance:**

Resolution Completion Plan/Summary:
 Incorporate language into next revision of DOE-0342.

Remarks: N/A

Status:

Reviewed	Committee Chair	<u>Scott Seidel</u>	Date	<u>8/18/11</u>
Rejected	Committee Chair	<u>N/A</u>	Date	<u> </u>
Accepted	Committee Chair	<u>Scott Seidel</u>	Date	<u>8/18/11</u>
Concurrence	DOE-RL	<u>Pete J. Garcia Jr.</u>	Date	<u>8/22/11</u>
Concurrence	DOE-ORP	<u>MWO</u>	Date	<u>23 AUG 11</u>
Approved For Use	Committee Chair	<u> </u>	Date	<u> </u>
DOE-0342 Updated	Committee Chair	<u> </u>	Date	<u> </u>