From: Kimberly.Henderson@CH2M.com
Sent: Thursday, February 16, 2017 4:40 PM
To: Brooks, George P CIV; Janda, Danielle L CIV; Robinson, Derek J CIV NAVFAC HQ, BRAC PMO; Edwards, Zachary L CIV SEA 04 04N; Slack, Matthew L CIV SEA 04 04N
Cc: shay@cabreraservices.com; Kira.Sykes@CH2M.com; Kathryn.Higley@oregonstate.edu
Subject: [Non-DoD Source] FOR REVIEW: Responses to comments on the Data Evaluation Tech Memo
Attachments: EPA comments on Draft Rad Data Evaluation Plan RTCs and Redline [EXTERNAL]; EPA Comments on 1/31/17 presentation re Radionuclides of Concern - additional details [EXTERNAL]; HPNS - Draft Rad Data Evaluation Plan RTCs [EXTERNAL]; RTCs_Draft Rad Data Evaluation Plan_021617.doc

Hi All-
Please review the attached responses to comments on the comments on the responses to comments on the Data Evaluation Tech Memo (clear as mud?!). I highlighted the latest set of comments and responses in yellow for ease of review.

If possible, please review tomorrow so we can send these out before the Tiger Team call on Tuesday (I know you all are off Monday).

I also attached the emails from EPA and DTSC with their comments.
Thanks!

Kim Henderson
Project Manager
D 1 619 272 7209
M 1 757 513 6632

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From: LEE.LILY@EPA.GOV
Sent: Tuesday, February 7, 2017 3:11 PM
To: Brooks, George P CIV; shay@cabreraservices.com; Kimberly.Henderson@CH2M.com
Cc: Edwards, Zachary L CIV SEA 04 04N; Slack, Matthew L CIV SEA 04 04N; Janda, Danielle L CIV; Robinson, Derek J CIV NAVFAC HQ, BRAC PMO; juanita.bacey@dtsc.ca.gov; kbrasaemle@techlawinc.com; jdawson@techlawinc.com; Kappelman.David@epa.gov; Nguyen.Lyndsey@epa.gov; Chesnutt.John@epa.gov
Subject: EPA comments on Draft Rad Data Evaluation Plan RTCs and Redline [EXTERNAL]
Attachments: Draft Rad Data Evaluation Plan - RTCs Redline - EPA Comments 2-7-2017.pdf

Thank you for providing the RTC's and redline version of the Draft Radiological Data Evaluation Plan on January 26, 2017. Attached are USEPA comments from John Chesnutt. Please contact him or me any time to discuss any of the comments further.

Lily

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

February 7, 2017

George (Patrick) Brooks
BRAC PMO West
U.S. Department of the Navy
33000 Nixie Way, Building 50
San Diego, CA 92147

Dear Mr. Brooks:

Thank you for your continued collaboration with respect to developing the Radiological Data Evaluation Plan. EPA has evaluated your recent responses to our January 11, 2017 comments on the original draft Evaluation Plan, and has attached a number of comments requiring further clarification.

EPA looks forward to continuing to work together on this priority issue. Please contact me or Lily Lee on my staff if you would like to discuss any of these comments. You may reach me at 415-972-3005 or chesnutt.john@epa.gov, or Lily at 415-947-4187 or lee.lily@epa.gov.

Sincerely,

John Chesnutt

John Chesnutt, Manager
Pacific Islands and Federal Facilities Section
Superfund Division

Attachment

cc. Nina Bacey, California Department of Toxic Substances Control
Tina Low, Regional Water Quality Control Board
Amy Brownell, San Francisco Department of Public Health

ATTACHMENT

USEPA Review dated February 7, 2017, of the Draft Responses to Comments and Redline Version of Radiological Data Evaluation Plan, Former Hunter's Point Naval Shipyard (HPNS), San Francisco, California, January 26, 2017

Note: These comments cover the data quality objectives (DQOs) as currently written. However, further refinement of the DQOs will be required as the initial data analysis is being completed and as more information becomes available so that the efficiency and relevance of the proposed data evaluations/statistical analyses are maintained throughout the project.

Evaluation of the Response to Specific Comment (SC) 5a: The response does not address the comment. The response does not address outliers or discuss issues with identifying outliers, given the large size of the data set. For example, outliers that may be identified in an area or survey unit (SU) data set (e.g., 20 to 200 samples) would not be identified if the entire data set is used. Please provide more information about the process for identifying outliers.

Evaluation of the Response to SC 8: The response partially addresses the comment. The last sentence of the response indicates that based on the statistical tests, it is possible to conclude that data has not been manipulated. However, during Tiger Team meetings, it has been stated that falsification of only a few sample results in a SU cannot be identified by statistical tests. Since falsification could have included only a few samples in a data set and this cannot be identified by the statistical tests, it should not be concluded that the data alone can be used to support decisions for transfer of the real property. As EPA has previously stated, some sampling (e.g., in areas exceeding the NCP risk range prior to remediation) will likely be required. Please delete statements about transfer based only on statistical tests from the Revised Draft Radiological Data Evaluation Plan, Former Hunter's Point Naval Shipyard (the Evaluation Plan).

Evaluation of the Response to SC 12: The response does not address the comment. It appears that there may still be some misunderstandings about the intent of the comment. The Evaluation Plan should discuss how data sets that do not have a normal distribution will be handled for tests that assume a normal distribution. In addition, data with total propagated uncertainty (TPU) error that exceeds the reported results should be considered for Phase 2 investigation. Please discuss how data sets that do not have a normal distribution will be handled and ensure that data with TPU error that exceeds the reported results be considered during Phase 2.

Evaluation of the Response to SC 14a and SC 15: The responses do not address the comments. Please review the original comments and explain how outliers will be identified.

Evaluation of the Response to SC 15: The response does not address the comment. It is unclear how posting plots can be used to identify the case where samples were not collected from the randomly selected area, but instead were collected from an area that was known to be less contaminated. Please address this issue.

Evaluation of the Response to SC 17b: The response does not address the comment; simply referring to "the response to EPA Specific Comment #2" is insufficient. Please revise the response to specifically address the original comment.

Evaluation of the Response to SC 18: The response partially addresses the comment. It is unclear how the statistical tests can be used to identify falsification where the first digit only was changed to 0 or 1, as discussed in the original comment. In addition, please explain how this type of falsification can be identified if only one or two samples in a survey unit have modified results.

ADDITIONAL COMMENTS

1. **Section 2 (Data Evaluation Plan), Step 1 Evaluation:** There are several concerns associated with the Step 1 Evaluation. The first bullet in the Phase I Evaluation states, "A statistically determined number of reports and individual data results from written reports (RACRs/SUPRs) will be compared with electronic results of NIRIS and Tetra Tech EC databases to identify potential manipulation. This analysis is biased toward reports from sites with areas with the greatest exceedances of cleanup levels prior to remediation being selected more often than reports from sites with less exceedances prior to remediation. Data will also be compared to laboratory reports once they are obtained. It should be noted that the Navy RASO [Radiological Affairs Service Office] reviewed original laboratory data reports so falsification of the laboratory results database, if it occurred, is not likely to have affected decision-making."

   a. While it is understood that a statistical number of data reports were checked to determine the accuracy of results between the NIRIS and Tetra Tech EC databases, it is not clear how the process to identify data outliers will proceed given that there are multiple databases that have been determined to contain discrepancies. Additionally, as noted in EPA General Comments 1 and 2, use of data should be based on a determination that it is sufficiently reliable. Please provide a more detailed data evaluation plan that specifies which databases and/or hard copy data reports will or are being accessed to perform data anomaly evaluations. Please ensure that the data evaluation plan also discusses how the sources of data were determined to be comparable for meaningful statistical analysis and evaluation. This should include listing the source of the data sets, the timeframe the data was collected, whether the counting and/or total propagated uncertainty associated with such results was reported and evaluated, and any other pertinent information related to the quality/reliability of such data sets.

   b. The statements in this first bulleted item indicate that because RASO reviewed original laboratory data reports, falsification of the database, if it occurred, is not likely to have affected decision-making. While this statement may have originally been intended to be limited to apply specifically to the narrow concern about discrepancies between laboratory reports and the NIRIS database, however, review of

laboratory data reports does not preclude the possibility that samples were tampered with prior to analysis. Therefore, this statement could be misleading. In fact, the Nuclear Regulatory Commission concluded in its enforcement action that Tetra Tech EC, Inc., "deliberately falsified soil sample records by taking soil samples from areas not designated as part of the target area and by completing forms with inaccurate information on a number of occasions in late 2011 through mid-2012." (Source: NRC press release, October, 2017) In addition, on the January 31, 2017, conference call, the independent contractor stated that the NIRIS database did not match the lab reports in some instances. Please either delete this or re-word it to also communicate the need to evaluate data to determine whether samples were substituted and/or other such means were used to falsify results.

2. **Section 2 (Data Evaluation Plan), Step 1 – Identify the Problem:** The Navy is identified as the primary decision maker. However, the data evaluation plan does not acknowledge that the regulatory stakeholders fulfill oversight and regulatory compliance assessment roles, and therefore are also part of the decision making team. Please revise this statement to acknowledge the collaborative process for ensuring cleanup at the HPNS complies with the CERCLA cleanup process, the Federal Facility Agreement, as well as compliance with all State and Federal environmental, radiological, and safety regulations.

3. **Radionuclides of concern:** Thank you for the January 31, 2017, presentation about focusing strategically on certain radionuclides of concern. Overall at the HPNS, based on the history of the site and data collected from multiple contractors, Ra-226 has greatest the greatest likelihood for the highest activity with health implications prior to remediation. For most of the HPNS, EPA supports the approach proposed by the third party independent consultant. In some specific areas where particular radionuclides of concern other than Ra-226 and Cs-137 have been measured, please include those additional radionuclides in the statistical analyses. Some of these specific areas were identified on the January 31, 2017, conference call. Before the February 21, 2017, conference call, EPA will provide written recommendations of these specific areas, based on that discussion.

From: LEE.LILY@EPA.GOV
Sent: Tuesday, February 14, 2017 4:04 PM
To: Brooks, George P CIV
Cc: shay@cabreraservices.com; Edwards, Zachary L CIV SEA 04 04N; Robinson, Derek J CIV NAVFAC HQ, BRAC PMO; Janda, Danielle L CIV; Slack, Matthew L CIV SEA 04 04N; kbrasaemle@techlawinc.com; Kappelman.David@epa.gov; Nguyen.Lyndsey@epa.gov; jdawson@techlawinc.com; Kimberly.Henderson@CH2M.com; juanita.bacey@dtsc.ca.gov; Chesnutt.John@epa.gov; amy.brownell@sfdph.org
Subject: EPA Comments on 1/31/17 presentation re Radionuclides of Concern - additional details [EXTERNAL]
Attachments: Radionuclides of concern - EPA comments 2-14-2017.pdf

Dear Pat,

Thank you for the January 31, 2017, presentation about Radionuclides of Concern to prioritize for the Radiological Data Evaluation Plan. Attached are details related to the EPA comment submitted on February 7, 2017, on this topic as part of our comments on the RTCs and Redline version of the Plan. Please contact me if you would like to discuss these comments further.

Lily

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA

February 14, 2017

George ("Pat") Brooks
US Department of the Navy
33000 Nixie Way, Bldg 50
San Diego, CA 92147

Dear Pat:

Thank you for your continued collaboration with respect to developing the Radiological Data Evaluation Plan. EPA has reviewed your presentation on January 31, 2017, about the Radionuclides of Concern to be evaluated. In the comments submitted February 7, 2017, regarding the Responses to Comments and the Redline version of the Plan, we stated that we would follow up with more detailed comments separately. Attached are these details.

EPA looks forward to continuing to work together on this priority issue. Please contact me or Lily Lee on my staff if you would like to discuss any of these comments. You can reach me at 415-947-4187 or lee.lily@epa.gov.

Sincerely,

Lily Lee
Remedial Project Manager

Attachment

cc. Nina Bacey, State Department of Toxic Substances Control
Tina Low, Regional Water Quality Control Board
Amy Brownell, San Francisco Department of Public Health

US Environmental Protection Agency comments on Radionuclides of Concern
Presented by third part independent contractor January 31, 2017
Comments dated February 14, 2017

Thank you for your January 31, 2017, presentation about focusing strategically on certain radionuclides of concern. On February 7, 2017, EPA submitted this comment on Responses to Comments and Redline:

"Overall at the HPNS, based on the history of the site and data collected from multiple contractors, Ra-226 has greatest the greatest likelihood for the highest activity with health implications prior to remediation. For most of the HPNS, EPA supports the approach proposed by the third party independent consultant. In some specific areas where particular radionuclides of concern other than Ra-226 and Cs-137 have been measured, please include those additional radionuclides in the statistical analyses. Some of these specific areas were identified on the January 31, 2017, conference call."

Here are examples where we recommend further evaluation:

1. Strontium 90 (Sr-90) and Cesium 137 (Cs-137) in Parcel E 500 series buildings and the Building 707 triangle areas where NRDL operations occurred
2. Sr-90 in luminescent deck markers or other radiological commodities in areas where Sr-90 devices have been found.
3. Sr-90, Cs-137, and Plutonium 239 (Pu-239) in a vault together in the Parcel E 500 series area
4. Thorium 232 (Th-232) in Building 130 gravel in Parcel B
5. Americium 241 (Am-241) in the vicinity of the building used for Geotechnical testing.

In addition, for the record, here are two situations that EPA would not consider a priority for further evaluation:

Cobalt 60 (Co-60): The Navy ceased Shipyard operations in 1974, 42 years ago. The half-life of Co-60 is 5.26 yrs. After seven to ten half-lives (i.e., 37 to 53 years), remaining radiological activity would be at levels similar to background. Therefore, Co-60 is not a priority health and safety concern, and any Co-60 sampling conducted would not be a helpful indicator of potential prior falsification.

Europium: Europium was found in the Gun Mole Pier in Parcel D-1, but that work was done by Shaw, and not Tetra Tech EC, so it is not a priority for this evaluation.

From: Juanita.Bacey@dtsc.ca.gov
Sent: Thursday, February 2, 2017 4:24 PM
To: Kimberly.Henderson@CH2M.com
Cc: Kira.Sykes@CH2M.com; Brooks, George P CIV; Janda, Danielle L CIV; Robinson, Derek J CIV NAVFAC HQ, BRAC PMO; Slack, Matthew L CIV SEA 04 04N; amy.brownell@sfdph.org; LEE.LILY@EPA.GOV; Tina.Low@waterboards.ca.gov; Sheetal.Singh@cdph.ca.gov; Tracy.Jue@cdph.ca.gov; Sheetal.Singh@cdph.ca.gov
Subject: HPNS - Draft Rad Data Evaluation Plan RTCs [EXTERNAL]

Hi Kim,

We have reviewed the response to comments on the draft Rad Data Evaluation Plan that were submitted on January 26th, 2017. The responses to DTSCs comments are acceptable. However, I do have follow-up comments.

1. Section 3 - Data Quality Objectives, Step 1, References seven parcels at the property while Step 4 in this same section references 10 parcels. It is unclear how many and which parcels will have data evaluated. Please clarify in the text of each section.
2. Section 2 – Data Evaluation Plan, Phase 2 Evaluation, Bullet 5 has been revised to include sample collection in the UFP-SAP to address "*previous allegations and concerns*", while in Section 3-Data Quality Objectives, Phase 2 Decisions Rules, the last bullet references EPA recommendations and concerns. Both sections appear to discuss confirmatory sampling and therefore, should be consistent.
    a. The reference to include sample collection to address *previous allegations and concerns* should be added to Section 3 - Data Quality Objectives, Step 2, last paragraph.

In addition, CDPH-EMB has drafted the below follow-up comments.

<u>CDPH New Comment:</u>

1. EMB will determine the percentage of number of split samples collected for confirmation.

CDPH Comments (January 11, 2017)

1. Page 1, Section 2 Data Evaluation, Plan Phase 1 Evaluation, Bullet Point One: Which statistical methods or other evaluation will be used to identify discrepancies in data that was manually entered into the database? This information needs to be included in the plan.

   A statistically determined number of reports and individual data results from written reports (RACRs/SUPRs) were compared with electronic results of NIRIS and Tetra Tech EC databases to identify potential manipulation. This analysis was biased toward reports from sites with areas with the greatest exceedances of cleanup levels prior to remediation being selected more often than reports from sites with less exceedances prior to remediation. Data will also be compared to laboratory reports once they are obtained. The Tech Memo has been updated to reflect this. Please note that RASO reviewed original laboratory data reports so falsification of the laboratory results database, if it occurred, is not likely to have affected decision-making.

EMB Comment: No Further Comment

2. Page 2, Phase 2 Evaluation (still under development), Bullet Point One: Please indicate that these records are for soil data only.

   This has been clarified in the Tech Memo.

   EMB Comment: No Further Comment

3. Page 3, Step 2 – Identify the Decision: Which statistical methods or other evaluation will be used to identify samples collected from a biased location suggesting falsification? This information needs to be included in the plan.

   Specific falsification allegations will be evaluated by reviewing dates of sample collection, chains of custodies, log book entries, inspection of sample archives, and draft and final reports as available. This has been added to the Tech Memo.

   EMB Comment: Please identify the statistical methods can be possibly used.

4. Page 5, First Bullet: The initial lab method used for the analyses was different for the on and offsite laboratories. It wasn't until around 2012 that the laboratories used the same methods. How may this affect the evaluation and comparison of the data and how will it be addressed if necessary?

   Agreed, the available data, regardless of method, will be used in the statistical evaluations; however, differences identified will be further evaluated and investigated to determine the cause, and the specific analyses in which it can be used (e.g., parent-progeny equilibrium).

   EMB Comment No Further Comment

5. Figure 2: Building Scans are explicitly mentioned as part of the Phase 2 in Figure 2. The main document does not outline this effort. Please modify the document to reflect the concerns and evaluation indicated in Figure 2. As a reminder, we have prepared a memorandum recommending rescanning of all Class 1 survey units for buildings in Parcels C and E (Attached).

   The Navy is still reviewing the building scan data set, and evaluating potential analyses that may indicate data manipulation. The primary discrepancy in the building scans involved Tetra Tech EC personnel using a faster than agreed-upon scan rate. This matter is being addressed and buildings will be considered in future plans, evaluations, and investigations. The Tiger Team will be provided plan(s) to review and approve.

   EMB Comment: No Further comment

If you have any questions, please feel free to contact me.

Nina Bacey
Project Manager/Sr. Environmental Scientist
Brownfields & Environmental Restoration
Cal EPA – CA Dept. of Toxic Substances Control
700 Heinz Avenue

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From: Kimberly.Henderson@CH2M.com [mailto:Kimberly.Henderson@CH2M.com]
Sent: Thursday, January 26, 2017 12:16 PM
To: Bacey, Juanita@DTSC; amy.brownell@sfdph.org; chesnutt.john@epa.gov; tamsen.drew@sfgov.org; LEE.LILY@EPA.GOV; Low, Tina@Waterboards; Naito, Janet@DTSC; Singh, Sheetal (CDPH-EMB); Wong, Jeff (CDPH-DFDRS-RHB); Jue, Tracy (CDPH-EMB); KBrasaemle@TechLawInc.com; Ures, Tina@Waterboards; Nguyen.lyndsey@epa.gov; jdawson@techlawinc.com; Kappelman.david@epa.gov; crain@Langan.com; reburns@ngtsinc.com
Cc: Kira.Sykes@CH2M.com; shay@cabreraservices.com; amy.tong1@navy.mil; george.brooks@navy.mil; zachary.edwards@navy.mil; danielle.janda@navy.mil; derek.j.robinson1@navy.mil; matthew.slack@navy.mil
Subject: Responses to Comments - Data Evaluation Tech Memo

Hi All-
On behalf of the Navy, attached are the written responses to comments and redlined data evaluation tech memo. We can discuss as needed on the January 31st call.
Thanks!

Kim Henderson
Project Manager
D 1 619 272 7209
M 1 757 513 6632

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