**Data Usability Assessment**

**Park City Source Areas (TDD 0001/1405-04)**

1. **Introduction**

This data usability assessment includes the following components:

* Verify completeness of all data submitted to Scribe.net and compare all data submitted to Scribe.net against project data standards.
* Generate report of data verification findings and distribute list of correction issues to all relevant project participants.
* Monitor correction of issues by data providers and update data verification report once all issues are addressed.

The data standards for this project are defined by the following:

* Region 8 Response Unit Data Management Plan 2.0. Dated August 2014
* Best Data Management Practices for Contractors Supporting the EPA Response and Removal Operations. Dated March 1, 2014.
* Sampling and Analysis Plan – Park City Source Areas. Dated September 18, 2014.

Data Generated for this project includes the following:

* Sample locational data – captured in Scribe Mobile app for iPad and entered into Scribe project by START personnel and displayed through site geospatial viewer
* Soil sample description data – recorded in site logbooks
* Photos – captured with iPad
* Photo metadata (date, time, location, description) – recorded in Photo Info Pro app for iPad
* Property data – entered into Scribe project
* Laboratory data – captured with XRF and reported from laboratory in the form of electronic data deliverable (EDD); entered into Scribe project by START
* START costs – entered into RCMS database
1. **Completeness of Data and Consistency with Data Standards**

*Sample Locational Data*

Sample locational data was reviewed by START and EPA personnel. Locational data was reviewed and corrected by START. Discrepancies in sample locational data are attributed to inaccuracies recorded by the Bluetooth GPS utilized in the field. All spatial coordinate corrections were recorded in a viewer change log, which is attached.

No further deficiencies in sample locational data were identified. The dataset was found to be complete and representative of field observations and activities.

*Soil Sample Description Data*

The R8 Best Data Management Practices and R8 DMP do not provide guidance for managing soil sample descriptions (general geology). At this time START does not recognize a need for soil boring logs, but if the need arises for presentation of soil lithology or geologic modeling, hand written descriptions will need to be entered into an electronic format.

*Photos and Photo Metadata*

START photos and photo metadata were reviewed by START and data was found to be complete and accurate. The R8 Best Data Management Practices advises photos and photo metadata should be uploaded onto the EPAOSC website for the project. Site photos have been loaded to the EPAOSC page for the Site.

*Laboratory Data*

Laboratory data was reviewed by START, EPA, and ESAT. A Level II data validation was performed on analytical data by a START Chemist. The following were identified:

* Based on the quality control data presented in the laboratory data package, all results are acceptable for their intended use with no further qualification.
* Method Detection Limits and Reporting Limits were not published in the Scribe database for XRF results analyzed on 9/10/2014, 9/11/2014, 9/12/2014 and 9/13/2014 due to an import error. This error was rectified by reimport of the validated XRF results for these dates with the correct import mapping.
* Sample Type Code field was not populated in the Lab results table. START rectified this inconsistency running 2 update queries on the database to populate the Sample Type Code field with “Samp,” “Dup” or “Blank.”
* Inconsistent population of Lab Matrix field for XRF results. START rectified this inconsistency by running an update query on the database to populate the Lab Matrix field for XRF results with “Solid.”

QA Flag

* Lab results included in the Level II validation were flagged with “Yes” in QA Flag field of Lab Results table, as well as noted with “Level II Validation” in QA Comment field of Lab Results Table.
* START flagged validated XRF results with “Yes” in QA Flag field of Lab Results table, as well as noting “XRF Validation Database” in QA Comment field of Lab Results table.
* START determined that pertinent information could be gained by importing raw XRF results for Arsenic, due to the high Reporting Limits created by the XRF validation database based on the formula used to validate Arsenic results. START flagged these raw arsenic results as “No” in QA Flag field of Lab Results table, as well as noting “Raw XRF Result” in QA Comment field.

*Costs*

Cost data was reviewed by START and EPA. EPA OSC requested more consistent use of pending costs in RCMS, particularly relating to pending travel costs. This required corrective action, which was completed by START.

1. **Data Verification Findings**

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| --- | --- | --- | --- | --- |
| **Data Element**  | **Finding**  | **Action Required** | **Responsibility**  | **Completed** |
| Sample locational data | Sample locations inaccurate due to imprecise Bluetooth GPS | Relocate inaccurate sample locations manually; record changes in viewer change log  | START | Yes |
| Photos and Photo Metadata | Photos and photo metadata not uploaded to EPAOSC.net website | Upload photos and photo metadata to EPAOSC.net website | START | Yes |
| Laboratory Data  | RL and MDL not populated for XRF results analyzed on 9/10/2014, 9/11/2014, 9/12/2014 and 9/13/2014 due to an import error | Reimport of the validated XRF results for these dates with the correct import mapping. | START | Yes |
| Laboratory Data | Sample Type code field was not populated in the Lab results table | Update database to populate Sample Type Code field | START | Yes |
| Laboratory Data | Inconsistent population of Lab Matrix field | Update database to populate Lab Matrix field  | START | Yes |
| QA Flag | QA Flag necessary to verify adequate QA performed on Lab Results  | Flag validated lab results with “Yes” in QA Flag field of Lab Results table, as well as noting “XRF Validation Database” or “Level II Validation” in QA Comment field of Lab Results table | START | Yes |
| QA Flag | Pertinent information could be gained by importing raw XRF results for Arsenic, due to the high Reporting Limits created by the XRF validation database based on the formula used to validate Arsenic results.  | Flag these raw arsenic results as “No” in QA Flag field of Lab Results table, as well as noting “Raw XRF Result” in QA Comment field | START | Yes |

1. **Monitor Correction of Issues**

The table of data verification findings will be distributed to participants and updated as corrective actions are completed.