TABLE 6-1
Data Quality Objectives for Human Health Risk Assessment (Remedial Investigation Subtask 4)
Remedial Investigation
San Gabriel Valley Area 3 Superfund Site

Step 1 – Define Basis of Evaluation

Overall Goal	Justification
Evaluate the current and potential future risks to human health from current regional groundwater contamination in Area 3. Use evaluation to: Determine whether additional investigation or remedial action is necessary in Area 3.	Current and potential future risks to human health from potential exposure to regional groundwater contamination in Area 3 are unknown.

Step 2 – Identify Potential Evaluation Results

Potential Result	Consequences of Incorrect Results	Basis for Potential Incorrect Result	Methods for Avoiding an Incorrect Result
Potential current or future health risks warrant action by EPA.	Taking action based on incorrectly deciding that regional groundwater contamination poses a significant risk to human health may waste resources.	Use of unreliable or inadequate data for critical decision making.	Ensure sufficient confidence in data used to support decision making. Identify and quantify (as feasible) limitations in the data set. Complete Step 7 (Optimize the Design).
Potential current or future health risks are de minimis and do not warrant action by EPA.	Taking no action based on incorrectly deciding regional groundwater contamination does not pose a significant risk to human health, public health may be at risk.	Use of unreliable or inadequate data for critical decision making.	Ensure sufficient confidence in data used to support decision making. Identify and quantify (as feasible) limitations in the data set. Complete Step 7 (Optimize the Design).
Additional data collection necessary to adequately evaluate the potential current or future risk posed to human health by regional groundwater contamination.	Collecting unnecessary data may waste resources.	Use of unreliable or inadequate data for critical decision making.	Ensure sufficient confidence in data used to support decision making. Identify and quantify (as feasible) limitations in the data set. Complete Step 7 (Optimize the Design).

COPCs – contaminants of potential concern
DQOs – data quality objectives
EPA – United States Environmental Protection Agency
HHRA – human health risk assessment
MCL – maximum contaminant level
NL – notification level
RI – remedial investigation
RSL – regional screening level

Subtask 1 – Hydrogeologic Conceptual Site Model
Subtask 2 – Contaminant Source Identification
Subtask 3 – Contamination Migration Conceptual Site Model
Subtask 4 – Human Health Risk Assessment
Subtask 5 – Ecological Risk Assessment
Subtask 6 – Assessment of Next Steps

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Step 3 – Define Evaluation Boundaries

Boundaries for Consideration	Justification for Consideration
See Step 3 in Table 3-1 for information on the geographic boundaries of Area 3.	See Step 3 in Table 3-1.
See Step 3 in Table 3-1 for information on the aquifer boundaries of Area 3.	See Step 3 in Table 3-1.
Temporal Limitations: Complete exposure pathways.	Human health risks may occur where complete exposure pathways to contaminated groundwater exist.

Step 4 – Identify Areas Outside of the RI Evaluation Boundaries

Excluded Areas	Justification for Exclusion
See Step 4 in Table 3-1 for information on the geographic boundaries of Area 3.	See Step 4 in Table 3-1.
See Step 4 in Table 3-1 for information on the aquifer boundaries of Area 3.	See Step 4 in Table 3-1.
Temporal Limitation: Soil and soil vapor.	Soil and soil vapor media are addressed under the State of California's process.
Temporal Limitations: Incomplete exposure pathways.	Human health risks only associated with complete groundwater exposure pathways.

Step 5 – Identify Data Needs and Uses

Data Need	Data Use(s)	RI Report Reference(s)
Human Health Risk Screening Levels: – EPA Regional Screening Levels. – EPA MCLs. – California MCLs and NLs.	Assess suitability of groundwater for domestic tap water use.	Section 6.2. Table 4-5. Appendix F.
Chemical Toxicity Values: – Federal toxicity values. – California toxicity values.	Calculate human health cancer risks and non-carcinogenic health hazards.	Section 6.2. Appendix F. Tables F-1 through F-161.
Hydrogeologic Conceptual Site Model (RI Subtask 1). Current and future groundwater uses.	– Identify potential complete exposure pathways. – Identify potential receptors of contaminated groundwater. – Assess potential future human health risks.	Section 3.1. Section 6.2.
Contamination Source Identification (RI Subtask 2). – Groundwater environmental data collected from production wells and monitoring wells. – Key COPC identification.	– Compare environmental data to human health risk screening levels to assess potential health risks and hazards from contaminated groundwater. – Estimate exposures (ingestion, inhalation, and dermal contact) and health risks to potential receptors. The simplified approach for evaluating the potential for dermal exposure treats all contaminants the same regardless of their volatility. Although this approach results in a less conservative estimate, the dermal exposure pathway is only a small contributor to the overall risk; the ingestion exposure pathway is the largest contributor to risk.	Section 4.3. Section 6.2. Appendix F.
Outputs of Human Health Risk Assessment (RI Subtask 4).	Assessment of Next Steps (RI Subtask 6).	Section 8, Table 8-1.

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Step 6 – Evaluate Data Usability

Data Type	Data Generation and Reliability	Assessment Performed
Human Health Risk Screening Levels: – Federal risk screening levels (EPA RSLs and MCLs). – California risk screening levels (MCLs and NLs).	Screening levels used in the HHRA are peer-reviewed, formally published, and generally of known and usable quality.	Appendix E summarizes uncertainties in the HHRA.
Chemical Toxicity Values. – Federal toxicity values. – California toxicity values.	Toxicity values used in the HHRA are peer-reviewed, formally published, and generally of known and usable quality.	Appendix E summarizes uncertainties in the HHRA.
Hydrogeologic Conceptual Site Model (RI Subtask 1). – Current and future groundwater uses.	See Step 6 on Table 3-1 for information on data generation.	See Step 6 on Table 3-1.
Contamination Source Identification (RI Subtask 2). – Groundwater environmental data collected from production wells and monitoring wells. – All COPCs evaluated.	See Step 6 on Table 4-1 for information on data generation.	See Step 6 on Table 4-1.

Step 7 – Optimize the Design

Actions	Methods for Optimizing the Design
The risks estimated in the HHRA indicate that contamination adversely impacts groundwater in Area 3 and warrants remedial action. EPA will evaluate the COPCs that were identified as contributing to the potential risk in Area 3 in a feasibility study.	Groundwater monitoring will continue during the feasibility study and the additional data collected will be evaluated to determine the impact of the contaminants of concern in groundwater underlying Area 3. Table 8-1 presents the next steps for Area 3.

COPCs – contaminants of potential concern
DQOs – data quality objectives
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HHRA – human health risk assessment
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OU – operable unit
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