REVIEW CHECKLIST

The purpose of this checklist is to address common questions about geospatial analysis. This checklist can be used to explain the use of geospatial analysis at an environmental site. The checklist could be completed by the preparer of a geospatial analysis or used by a reviewer to document the information contained in a report about any project life cycle stage. The information identified in the checklist could be attached to a printout of the checklist, or the checklist could be included in a site report. Each site will vary depending on the objectives and purpose of the application of the geospatial analysis covering different complexities, methods, model validation, and uncertainty analysis. The checklist refers to portions of the ITRC document Geospatial Analysis for Optimization at Environmental Sites (GRO-1) (available at www.itrcweb.org/gro-1).

❑ Which portion of the life cycle is addressed? (see the Project Life Cycle Stages section)

- Release detection
- Site characterization
- Remediation
- Monitoring
- Closure

❑ Which questions are answered (see Figures 2, 3, 4, 6, and 7)?

❑ Was a simple, more complex, or advanced method chosen (see Table 3. Organizing Geospatial Interpolation Methods)?

- Simple
- More complex
- Advanced

❑ Which geospatial method(s) were used?

- Describe the strengths and weaknesses of the method relative to the data set (see the Methods and Index of Methods sections).
- Describe the assumptions used for the geospatial method selected.
- Provide the number of data points (number of samples/locations (x,y,z)/time/frequency); see Table 1 for a summary of minimum requirements of data sets for geospatial analysis.
- Provide the time range of the entire data set and the time range of the data used in the geospatial analysis.
- Describe the sample design (see the Spatial Correlation section) and spacing/density, including how the number of data points and sample spacing/density was determined.
- Was the number determined using variography (see the Variogram section)?
- Are the sample size and distribution adequate for the geospatial method selected? Describe as relevant to the assumptions of the model.
- Describe spatial relationships and autocorrelation results (see the Basic Data Concepts for Geospatial Analysis section). Describe the quantification of autocorrelation for advanced methods, if applicable.

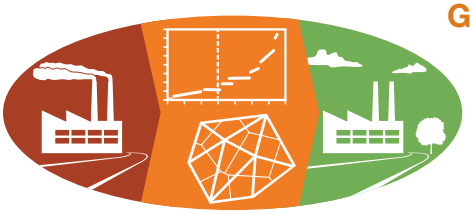
❑ Was stationarity determined for the data?

If yes, which type of stationarity was used in the analyses? (See the Stationarity section)

- Strict
- Second order
- Intrinsic
- Nonstationary

REVIEW CHECKLIST *continued*

- ❑ Describe any data point(s) excluded from the analyses and the reason(s) for excluding these data.
- ❑ Were multiple methods used and compared for the same goal? How do the conclusions agree and how do they differ (see the Exact versus Inexact Interpolation section)?
- ❑ Provide the various methods used in the analysis to support the conclusions.
- ❑ Review the CSM and project goals.
- ❑ Describe the exploratory data analyses performed (see the Perform Exploratory Data Analysis section).
- ❑ Describe how the appropriate geospatial model was selected. (see the Select Geospatial Model section).
- ❑ Describe the development of the geospatial model (see the Build Geospatial Model section).
- ❑ Describe the model validation and uncertainty analyses (see the Evaluate Geospatial Method Accuracy section).
- ❑ Describe the spatial predictions or realizations (see the Generate Geospatial Analysis Results section).
- ❑ Describe how the empirical data support or confirm the prediction(s) (see the Using Analysis Results for Optimization section).
- ❑ What method was used to assess model goodness-of-fit (see the Evaluate Geospatial Method Accuracy section)? List or describe the resulting action.
- ❑ Provide examples or case studies where similar analyses were carried out under similar situations (see the Case Studies section), if applicable.
- ❑ Provide the name or details of the software used in the analysis and other alternatives that can be used (see the Software section).



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