POSTED: 10/23/2002

SITE MONITORING REPORT CHECKLIST

This is the checklist used by project managers to review Site Monitoring Reports. You may want to consider using the checklist prior to submitting the report to DNR.

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Site Monitoring Report (SMR) Checklist

Completeness Review Checklist *(PEI version 2.6, 10/21/02)*

Low risk and high risk interim monitoring must be conducted at least annually (typically required in the third calendar quarter) until the site is classified No Action Required. High risk remediation monitoring must be conducted quarterly with reporting on a semi-annual basis in the 2nd and 4th calendar quarters. More frequent sampling may be conducted, but in order to meet exit monitoring criteria for groundwater pathways, sampling events must be at least six months apart. For soil leaching pathways, sampling events must be at least one year apart. For groundwater pathways, groundwater samples must be collected from the source well(s), transition well, and guard well for each receptor. Each source, transition, and guard well for a receptor must continue to be monitored until all have met exit monitoring criteria. Refer to Section 5.4 of the Tier 2 Site Cleanup Report Guidance - version 2.17 for detailed instructions about developing a monitoring plan.

SMR Form-version 2.2 (1999) is to be used exclusively for monitoring conducted at low risk sites or interim monitoring conducted at high risk sites (for both non-bedrock and exempt-granular bedrock). SMR Form-version 1.0 (1997) may be used for all other types of monitoring including non-granular bedrock, granular bedrock, high risk: remediation, and pre-RBCA monitoring. If a Tier 2 evaluation was completed using Tier 2 version 1.0 software, the SMR Form-version 1.0 (1997) may be used. The department, however, strongly recommends use of the SMR Form-version 2.4, which will require the user to transfer all site data. Refer to the Site Monitoring Report (SMR) Guidance - version 1.0, February 1997 for instructions on preparing version 1.0 SMRs. An Iowa certified groundwater professional must prepare all SMRs.

This checklist is to be used to perform a completeness review of an SMR. An SMR completeness review involves an evaluation of the report in comparison to the checklist criteria to ensure the required items are provided and supporting documentation is physically included in the report. Obvious accuracy errors that are noted will be identified during the review. Additional comments, if necessary, are written in the margins referencing the area of concern. Responses may fall into the following categories:

Y - YES. Information meets qualifications as intended or presents the correct information.
N - NO. Information not provided or does not meet qualifications as intended.
NA - Not Applicable. Response / information is not required.

LUST/Reg. No. _____ Site Name/Location _____

SMR Rec'd _____ Date Reviewed _____ Reviewer _____ QA Reviewer _____

SMR Form-version _____ (1.0 / 2.2) Tier 2: Classification _____

Computer disk with appropriate files provided? _____ (Y / N)

Bedrock site? Y N Bedrock type: Granular Exempt Granular Non-Granular

SMR REVIEW SUMMARY

All monitoring wells listed in the Tier 2 SCR monitoring plan have been sampled _____ (Y / N)

Is reclassification requested? _____ (Y / N) **Proposed classification? HIGH LOW NAR**

Is reclassification appropriate?_____ (Y / N) Is SMR complete? _____ (Y / N)

SMR Recommendation/Results: Accept Reject

Identify comments/summary/action items needed; include in response letter: _____

_____

Site Specifics

Date of DNR acceptance letter for site risk classification/approved monitoring plan _____

If required based on the Tier 2 SCR approval letter, was an attachment to the SMR (e.g., T2 revisions, CGP explanations, cvr ltr) provided? ..... Y N NA

Previous SMR risk classification: High Low NAR NA

Should Tier 2 model be re-run (core items affected)? ..... Y N NA

Additional comments (i.e., off-site source, CA, FP, variances, source issues, correspondence…):

COVER SHEET / LETTER

Is the Title Page complete/correct? (Note: Send response letter copy to old RP if changed/applicable.) ..... Y N

Is the Cover Sheet signed by both the RP and the CGP? ..... Y N

List Deficiencies:_____

_____

CHECKLIST

Are all checked sections/attachments included or referenced to a previous report? ..... Y N

List Deficiencies:_____

_____

RECEPTOR SUMMARY TABLES

Groundwater Source, Receptor Summary Table included? ..... Y N NA

Table complete, including all at-risk receptors identified in the Tier 2 SCR? ..... Y N NA

Does T2(*) or Computed Risk agree with Current Risk? ..... Y N NA

If risks do not agree, is justification (e.g. Corrective Action Taken) provided? ..... Y N NA

List Deficiencies:_____

_____

Soil Leaching, Receptor Summary Table included? ..... Y N NA

For SMR Form-version 1.0 (1997: are all receptors listed under GW pathway also listed under SL-GW pathway? ..... Y N NA

Table complete, including all at-risk receptors identified in the Tier 2 SCR? ..... Y N NA

Does T2(*) or Computed Risk agree with Current Risk? ..... Y N NA

If risks do not agree, is justification (Corrective Action Taken) provided? ..... Y N NA

List Deficiencies:_____

_____

Soil Vapor/ Soil to PWL, Receptor Summary Tables included? ..... Y N NA

Table complete, including all at-risk receptors identified in the Tier 2 SCR? ..... Y N NA

Does T2(*) or Computed Risk agree with Current Risk? ..... Y N NA

If risks do not agree, is justification (Corrective Action Taken) provided? ..... Y N NA

List Deficiencies:_____

_____

POTENTIAL RECEPTOR SUMMARY

Is the Potential Receptor Summary included and completed (names, addresses)? ..... Y N NA

All surveys conducted within the last year? ..... Y N

All information (e.g., DWW) obtained from appropriate contact? ..... Y N NA

New, removed, or replaced receptors identified within the last year? ..... Y N

Do new/removed/replaced receptors necessitate sufficient reason to request new Tier 2? ..... Y N NA

List Deficiencies:_____

_____

RECEPTOR STATUS CHANGE (check Documentation for Reclassification -App. 11/12 [v. 1.0/2.2] for supporting documentation if applicable)

Does Receptor Status Change agree with the Potential Receptor Summary? ..... Y N NA

List Deficiencies:_____

_____

SITE RECLASSIFICATION (check Documentation for Reclassification-App. 11/12 [v. 1.0/2.2] for supporting documentation if applicable)

Is site reclassification recommended by CGP? ..... Y N

If reclassification recommended, is justification provided? ..... Y N NA

Do T2 pathways require reevaluation? ..... Y N NA

List Deficiencies:_____

_____

GROUNDWATER ANALYTICAL DATA

Bedrock sites Non-granular – Have all monitoring wells been sampled? ..... Y N NA

Granular – Have all wells (for all receptors) in approved/required monitoring plan been sampled? ..... Y N NA

All other sites High Risk Interim and Low Risk monitoring – Have all wells in approved/required monitoring plan been sampled? ..... Y N NA

If all wells not sampled, was justification provided? ..... Y N NA

Have appropriate time frames (≥ 6 months for groundwater pathways; ≥ 1 year for soil leaching pathways) been observed between sampling events? ..... Y N NA

Appropriate Group 1 and 2 chemicals analyzed and reported in μg/L? ..... Y N NA

Is MTBE analysis included, if required (Note: MTBE required if not previously analyzed or if reason to believe MTBE is present/ or previously detected) ..... Y N NA

Elevations for Ground, TOC, TOS, & SWL listed and in feet ASL (screens submerged)? ..... Y N NA

Current and historical data listed in report and software? ..... Y N NA

List Deficiencies:_____

_____

RECEPTOR ANALYTICAL DATA

PVC, DWW, and NDWW receptor sampling necessary (receptors within 100 ft of actual GW plume)? ..... Y N NA

Receptor (PVC, DWW, NDWW) sampling results provided? ..... Y N NA

List Deficiencies:_____

_____

REMEDIATION MONITORING TABLES (High Risk Remediation sites only)

Appropriate Group 1 and 2 chemicals analyzed and reported in μg/L? ..... Y N NA

Appropriate additional parameters analyzed (pH, DO, COD, BOD, etc.)? ..... Y N NA

All required elevations listed and in feet ASL? ..... Y N NA

Current and historical data listed in report and software? ..... Y N NA

List Deficiencies:_____

_____

TREATED WATER TABLE (High Risk Remediation sites with treated water discharge only)

Month/year and treated water listed and in gallons? ..... Y N NA

Current and historical data listed? ..... Y N NA

If H_2O discharge to sewer, is effluent within acceptable limits? ..... Y N NA

List Deficiencies:_____

_____

SOIL ANALYTICAL DATA

Appropriate Group 1 and 2 chemicals analyzed and reported in mg/kg? ..... Y N NA

Is MTBE analysis included, if required (Note: MTBE required if not previously analyzed or if reason to believe MTBE is present/ or previously detected) ..... Y N NA

Elevations for Ground, Sample, & SWL listed and in feet ASL? ..... Y N NA

If applicable, was percent reduction applied appropriately? ..... Y N NA

Were applicable revised Tier 2 sections provided in Documentation for Reclassification-Appendix 11/12 [v. 1.0/2.2]? ..... Y N NA

Current and historical data listed in report and software? ..... Y N NA

List Deficiencies:_____

_____

SOIL GAS ANALYTICAL DATA

Is SG appropriate (e.g., soil source submerged, confirmation well needed….)? ..... Y N NA

Appropriate chemicals analyzed and reported in $\mu g/m^3$? ..... Y N NA

Current and historical data listed in report and software? ..... Y N NA

Elevations for Ground, TOC, TOS, Sample & SWL listed and in feet ASL? ..... Y N NA

Are sampling methods described and is SG sample location justified? ..... Y N NA

Adequate SG sampling at alternate point of compliance (within the simulated plume for groundwater and soil leaching)? ..... Y N NA

List Deficiencies:_____

_____

SOIL SSTL TABLES (Version 2.2 only)

Have soil SSTL tables been provided? ..... Y N NA

GROUNDWATER / SOIL LEACHING MONITORING PLAN

Updated monitoring plan for SMR provided? ..... Y N NA

Have any concentrations increased > 20% [Are any wells flagged with (**) – version 2.2 only], Refer to SMR Guidance version 1.0/2.2? ..... Y N NA

If yes, discussion provided in Appendix 7/1 [v. 1.0/2.2] (Evaluation of Analytical Data)? ..... Y N ~~NA~~

Justification provided for deviations from Tier 2 GW/SL Mon. Plan? ..... Y N NA

List Deficiencies:_____

_____

SOIL GAS MONITORING PLAN

Complete and adequate monitoring plan from Tier 2 or previous SMR provided? ..... Y N NA

Are changes to the plan noted? ..... Y N NA

List Deficiencies:_____

_____

REMEDIATION/TREATMENT PROGRESS SUMMARY (High Risk Remediation sites only)

Detailed evaluation of analytical data? ..... Y N NA

Is treatment system producing desired results? ..... Y N NA

Is effluent within limits? ..... Y N NA

Is treatment system meeting objectives in CADR
(Timetable and Critical Performance Benchmarks section)? ..... Y N NA

Current and historical data listed? ..... Y N NA

List Deficiencies:_____

_____

Note: SMR Form-version 1.0 attachments/appendices are numbered differently than version 2.2. This checklist is numbered as SMR Form-version 2.2.

APPENDIX 1. Evaluation of Analytical Data – included and complete? ..... Y N

Justification provided for deviations from GW/SL Mon. Plan? ..... Y N NA

List Deficiencies:_____

_____

APPENDICES 2-9 – MAPS

2. Site Plan Map (are new/removed receptors identified)? ..... Y N

3. Site Vicinity Map(are new/removed receptors identified)? ..... Y N

4. Soil Summary Corrective Action Map (if soil pathways HR)? ..... Y N NA

5a. Soil Contamination Map? ..... Y N NA

5b. Soil Gas Map? ..... Y N NA

6. Groundwater Summary Corrective Action Map (if gw pathways HR)?- ..... Y N NA

7. Groundwater Monitoring Results Map (Admin if not superimposed)? ..... Y N NA

8. Groundwater Contamination Map? ..... Y N NA

9. Groundwater Flow Direction Map (current data)? ..... Y N

List Deficiencies:_____

_____

APPENDIX 10 – Analytical Data Sheets

Analytical data sheets submitted for new samples (e.g., gw, soil, SG, receptor)?
(Note on front page <u>any</u> positive hits for BTEX or TEH in PVC/DWW/NDWW samples,
even if below TL's)..... Y N NA

Chain of custody information included? ..... Y N NA

List Deficiencies:_____

_____

APPENDIX 11 – Boring Logs / Well Construction Diagrams

Provided for all new soil borings and groundwater/soil gas monitoring wells? ..... Y N NA

List Deficiencies:_____

_____

APPENDIX 12 – Documentation for Reclassification

Complete documentation provided for:

Tier 2 Completeness Review checklist applied? (Check box) ..... ☐

Tier 2 Reevaluation ("*" denotes minimum required elements if soil source re-sampled)

*Does T2 software correspond to documentation?..... Y N NA

*Data Before Modeling / Bedrock Data Summary..... Y N NA

*Site Hydrogeology..... Y N NA

*Preliminary Pathway Evaluation Requirements ..... Y N NA

*Tier 2 receptor summary tables ..... Y N NA

*Field Screening Results Table ..... Y N NA

*Groundwater/soil/soil gas data ..... Y N NA

List Deficiencies:_____

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_____

Groundwater pathway evaluations (RID maps, SSTL tables) ..... Y N NA

Soil Leaching pathway evaluations (RID maps, SSTL tables) ..... Y N NA

Soil Vapor / Soil *to PWL* pathway evaluations (RID maps) ..... Y N NA

List Deficiencies: _____

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_____

Groundwater / Soil Gas Monitoring Plans (compare to SMR GW/SL & SG Mon. Plan) ..... Y N NA

Monitoring Plan Map ..... Y N NA

Groundwater/Soil Sw/W Maps ..... Y N NA

*Soil Contamination Plume Maps ..... Y N NA

Groundwater Contamination Plume Maps ..... Y N NA

List Deficiencies: _____

_____

_____

Other applicable report sections/attachments ..... Y N NA

List Deficiencies: _____

_____

Restrictive Covenant(s) / Institutional Control(s)

Is RC/IC appropriate? ..... Y N NA

RC/IC documentation complete (per Tier 2 Guidance)? ..... Y N NA

RC/IC documentation (letters to/from P. authority, RID maps, for cities and counties with approved water well ordinances-Algona, Armstrong, Black Hawk County, Clarinda, Council Bluffs, Des Moines, Hamburg, Hampton, Guthrie Center, Iowa City, Le Mars, Monticello, Ottumwa, preston, Shenandoah, Sioux City)? ..... Y N NA

List Deficiencies: _____

["*" Note: Revised Notifications required/applicable if RID/actual plume(s) size increased.]

*Water Supply (IDNR) / Designated County Agent Notification

IDNR form 542-1530 (and attachments) complete? ..... Y N NA

*Utility Company Notification

IDNR form 542-1531 (and attachments) complete? ..... Y N NA

*Sanitary Sewer Notification

IDNR form 542-1532 (and attachments) complete? ..... Y N NA

Report of Plastic Water Line Removal and/or Relocation

Complete report (per Tier 2 Guidance) provided? ..... Y N NA

Report of Over Excavation (OE) Activities

Complete report (per Tier 2 Guidance) provided? ..... Y N NA

If GW source OE'd and/or/Soil gas performed at former soil/gwsource, has stabilization duration of 6 months or greater elapsed since OE and prior to subsequent GW and or Soil gas sampling? ..... Y N NA

Complete report (per Tier 2 Guidance) provided? ..... Y N NA

Other documentation ..... Y N NA

List Deficiencies:_____

_____

APPENDIX 13 – Best Management Practices Plan (initial SMR only/Admin section-RPltr) ..... Y N NA

List Deficiencies:_____

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