MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

MIRBCA Technical Guidance

Instructions for Completing MIRBCA Tier 1 and Tier 2 Report Forms

July 2025

1.0 Background

This document provides instructions for completing and submitting the Michigan Risk Based Corrective Action (MIRBCA) Report Forms. The term "Report Forms" includes Tier 1 forms, Tier 2 forms, tables, figures, and attachments. If you have any questions regarding the Report Forms please contact Michigan Department of Environment, Great Lakes, and Energy (EGLE), Remediation and Redevelopment Division (RRD) at EGLE-RRD-MIRBCA@michigan.gov.

The MIRBCA Report Forms must be used for the three primary submittals required by Part 213, namely (i) Initial Assessment Report (IAR), (ii) Final Assessment Report (FAR), and (iii) Closure Report (CR). The specific forms that must be included in each report are indicated in the Table of Contents (TOC). A CR can be submitted at any time that sufficient corrective action has been undertaken to address contamination. The forms required for a CR that has been submitted in lieu of an IAR or FAR may vary from the forms required per the TOC, however, the CR must provide sufficient information to demonstrate that no unacceptable risks remain.

The Report Forms are designed to provide a cumulative record of corrective actions related to a confirmed release. Relevant forms are completed as corrective actions are implemented. Over the course of corrective actions, relevant information in the Report Forms is updated as appropriate. Certain information is required for an IAR, FAR, and CR. EGLE-RRD, however, recommends submitting all completed forms in each report to provide a clear, defensible record of the risk evaluation.

2.0 Acquisition of MIRBCA Report Forms

The Report Forms are Excel based and can be downloaded from RRD's Leaking Underground Storage Tank webpage to a folder named "MIRBCA Report Forms" on your hard disk. Macros must be enabled in the documents to allow functionality within the forms. Save the blank workbook as ***MIRBCA Tier 1 Blank Master Workbook*** and ***MIRBCA Tier 2 Blank Master Workbook.***

To maintain the integrity of the workbook do not insert or make a copy of any worksheet.

3.0 Layout and Navigation of MIRBCA Report Forms

The Tier 1 and Tier 2 MIRBCA Report Forms consist of two Excel workbooks. Each workbook has several individual forms. Some of the forms are multiple pages. The MAIN MENU worksheet consists of a series of buttons for easy navigation to the individual forms. Clicking on a button will navigate the user to the selected form. On each form there are navigation buttons in the upper left corner. Clicking the applicable button will navigate to either the **MAIN MENU**, **PREVIOUS** form, **NEXT** form, or will **PRINT** the current form.

The tabs and arrows at the bottom of the workbook can also be used to navigate within the workbook.

The COVER form consists of basic site information that must be completed. Information from this form will be auto-populated to the corresponding fields in other forms.

The Tier 1 TOC form is divided into 4 sections, including: (i) Tier 1 Forms; (ii) Tier 1 Tables; (iii) Tier 1 Figures; and (iv) Tier 1 Attachments. An "x" indicates that the form, table, etc., is required for the given report, if it is applicable. For example, Form 10, GEOTECHNICAL PARAMETERS, is required for an IAR and a FAR, because Part 213 requires both an IAR and FAR to contain a Tier 2 evaluation if one was conducted. If geotechnical parameters were not collected, then Form 10 is not required.

Check the box if including the form, table, etc., in the report, and indicate the number of pages for each item.

4.0 Printing and Submitting MIRBCA Report Forms

When preparing a report for submission to EGLE, the MIRBCA Report Forms can be saved as a PDF or printed by means of the print functionality within the forms. Clicking the PRINT button at the top of the MAIN MENU page will navigate the user to the PRINT page of the document. On the PRINT page, the user can use the buttons in the upper left corner of the page to either select all forms or deselect all forms for printing. Alternatively, the user can manually select the desired forms for printing by checking the corresponding box adjacent to each form on the page. After the desired forms are checked, clicking the PRINT button in the upper left corner of the page will print the selected forms to the computer's printer.

To change printers or to print as a PDF, go to the File menu within Excel, navigate to Print, and select the desired printer (including print to PDF) but ***do not print from Excel's print function.*** After the desired printer is selected, return to the Form's PRINT page, and click on the PRINT button in the upper left corner of the page to print to the selected printer. If printing multiple forms as PDFs, the print functionality will prompt the user to save each form as a separate PDF.

The completed report, including all forms, tables, figures, and attachments, must be uploaded as a single PDF document to the Remediation Information Data Exchange (RIDE). You must be a RIDE user to upload reports. Specific instructions for submitting reports using RIDE are provided on the Electronic submittals webpage. Note that most MIRBCA reports will require Secondary Certification by the Owner/Operator. Please include the facility ID number and type of report in the file name. There is a single file size limit of 150 MB to upload the forms. If the file exceeds the size limit, it can be broken into portions (suffixed with Volume 1, Volume 2, etc.).

The total of all attachments (i.e., all volumes combined) cannot exceed 1,000 MB. Examples of file names include:

- IAR 00023456 Volume 1 of 3
- IAR 00023456 Volume 2 of 3
- IAR 00023456 Volume 3 of 3

5.0 Instructions for Completing MIRBCA Tier 1 Forms

1. All forms have an ADDITIONAL NOTES section at the bottom of the form where additional pertinent information may be provided. If the space provided is not sufficient, attach additional pages. Such pages must be clearly labeled as:

   Additional Notes for Form X

   Such pages must be included as "Attachment 21 Additional Notes for Selected Forms" and added to the List of Attachments in the TOC.

2. If additional copies of a Form are required (for example, Form 16 (1CV) must be repeated because there are 3 onsite buildings that require evaluation and Form 16 (1CV) allows for evaluation of only 2 buildings), use the following steps:

   Step 1: ***Do not*** make an additional copy of Form 16 (1CV) within the workbook dedicated to a particular site.

   Step 2: Make a copy of the MIRBCA Tier 1 Blank Master Workbook.

   Step 3: Complete the pathway evaluation form for the pathway being evaluated (e.g., Form 12(1)). The completion of the pathway evaluation form will mark the given pathway as complete in Form 16 and allow comparison of representative concentrations with risk-based screening levels.

   Step 4: Complete the blank Form 16 (1CV) for the additional buildings to be evaluated.

   Step 5: Manually print the additional copy of the Form 16 (1CV) completed in Step 4 and insert it into the completed Site Forms before uploading on to the EGLE website.

   Step 6: In the TOC indicate that Form 16 (1CV) consists of 2 pages.

   The above steps will ensure that all functionalities within the workbook, including printing and navigation, are preserved.

3. Text can be entered into yellow text boxes only. White text boxes are auto-populated based on information entered in previous forms. It is good practice not to leave yellow text boxes blank, instead enter “Not Applicable or NA”.
4. Note that checkboxes generally have a white background and must be checked, if applicable.
5. For all sites, Tier 1 forms ES and 1 through 15 must be completed, regardless if a user is completing a Tier 1 evaluation for a given pathway or proceeding directly to a Tier 2 evaluation. These forms pertain to site assessment and developing the exposure model by determining which pathways are complete.

5.1 Form ES: Executive Summary for Tier 1 Evaluation

1. In the RECOMMENDATIONS PER TIER 1 EVALUATION, check all appropriate boxes based on the Tier 1 evaluation.
2. If a Tier 2 evaluation is recommended for a pathway, indicate the pathway and any applicable summary information. Pathways recommended for a Tier 2 evaluation will also be summarized in Forms 17(1) and 17(2).
3. Check the Other box for any situation not covered by the above listed items. Examples include: perform initial response actions, conduct additional investigation, conduct NAPL recovery, perform Tier 3 evaluation, etc.

5.2 Form 1: Site Information

1. The top portion of Form 1 will be auto-populated based on the information provided in the cover sheet.
2. The bottom portion of Form 1, below SITE DESCRIPTION, must be completed.

5.3 Form 2: Underground Storage Tanks (USTs)

1. Include in the ADDITIONAL NOTES section a list of any other chemicals previously contained in the UST system, other than those listed in the table above.

5.4 Form 3: List of Release(s)

1. Include in the ADDITIONAL NOTES section information regarding any contaminants at the site that are not related to the confirmed LUST release.

5.5 Form 4: Land Use (Onsite and Offsite)

1. The risk evaluation for current use should be based on the actual use of the impacted properties (residential or nonresidential). A risk evaluation for future use must be based on residential land use unless a land use restriction has been executed that restricts land use of the property to nonresidential use, irrespective of the current land

use. It is important to note that a public works ordinance is not considered a groundwater use restriction.

2. Select "other" for current onsite land use if the land is currently vacant.
3. In the ADDITIONAL NOTES section describe the steps taken to get access to offsite property, if offsite soil or groundwater may be affected.

5.6 Form 4(1): Right of Way (ROW) Evaluation

1. Any COC concentration above a residential Tier 1 RBSL at any depth within a ROW requires a ***Notice to Impacted Parties of Corrective Action*** to the ROW owner. Additional notices are required to any impacted easement holders if soil or groundwater within the easement is impacted above a residential Tier 1 RBSL.
2. It is not necessary to collect analytical data within the ROW to determine that the ROW is impacted. Concentrations can be extrapolated from onsite points or interpolated between data points on either side of the ROW.
3. If an institutional control (e.g., restrictive covenant, MDOT ELA, PHIC) or a notice (e.g., ***Notice to Impacted Parties of Corrective Action***) is required, complete Forms 21 and 22(8), as appropriate.

5.7 Form 5: Initial Response Actions

1. Describe initial response actions. Refer to any supporting documentation or references of previously submitted reports to EGLE, as appropriate. Also list them in Form 24.

5.8 Form 6: Chronology of Events

1. The focus of the chronology should be on specific site assessment, risk assessment, and risk management activities. Information should also be provided related to changes in the infrastructure related to the gas station site (remodeling, relocation of dispensers, etc.). General discussions of land use, regional hydrogeology, etc., should be avoided.
2. The information provided in this form must be consistent with the (i) figures, (ii) tables, and (iii) attachments. For example, if 10 monitoring wells were installed, Table 2 must list the 10 wells, Figure 9 must show the 10 wells, Attachment 3 must show 10 well construction details, and the dates when the wells were installed in the chronology must match the dates on Table 2. Any inconsistencies must be explained at the end of the chronology.
3. This form can be updated as additional data are collected
4. Number the pages at the bottom right of the form to match the total number of pages used for Form 6.

5. For historic releases it is not necessary to include a separate row for each historic site activity. Rather, historic site events can be summarized to capture the details and timing that are critical to evaluate risk.

5.9 Form 7: Comprehensive Summary of Data

1. The total number of samples include the duplicates. State the number of duplicates in the ADDITIONAL NOTES section.
2. In the ADDITIONAL NOTES section, discuss whether the soil, groundwater impacts, and NAPL have been delineated.

5.10 Form 8: Nonaqueous-Phase Liquid (NAPL)

1. Check if residual, mobile, or migrating NAPL is present, or if NAPL is absent, based on multiple lines of evidence (MLE). Include the MLE table from EGLE's *Non-Aqueous Phase Liquid (NAPL) Characterization, Remediation, and Management for Petroleum Releases* guidance document as Attachment 18.
2. In the ADDITIONAL NOTES section:

- Provide a discussion of the recoverability analysis for NAPL, if any.
- Provide a discussion of site-specific NAPL transmissivity, if available.
- Provide a description of the mobile or migrating NAPL investigation and evaluation conducted pursuant to Section 21308a(1)(b)(xviii).
- Include any relevant references in Form 24.

5.11 Form 9: Site Stratigraphy and Saturated Zone Characteristics

1. Zone 1 refers to the shallowest saturated water-bearing zone. Zone 2 refers to the zone below Zone 1 that may be an aquitard. Zone 3 refers to the saturated water-bearing zone below Zone 2.
2. Zones 1, 2, and 3 can be based on site-specific conditions (e.g., a single aquifer can be divided into multiple vertical zones) if appropriate.
3. In the ADDITIONAL NOTES section, provide information regarding methodology used to determine hydraulic conductivity (e.g., slug test), and provide information about the monitoring wells used to conduct the test (e.g., MW number, screened interval). Alternatively, reference the open literature used to estimate the hydraulic conductivity.

5.12 Form 10: Geotechnical Parameters

1. In the ADDITIONAL NOTES section, provide information related to the locations (vertical and horizontal) where the geotechnical samples were collected. Show the locations of soil geotechnical borings on the figure that shows the locations of soil borings (Figure 9).

2. Attach laboratory reports for the geotechnical samples, if available. List the reports as an attachment in the TOC. Geotechnical parameters are required for Tier 2 SSTL calculations.

5.13 Form 11: Surficial Soil Evaluation for Residential and Nonresidential Land Use

1. If there is evidence (e.g., field screening, analytical data) of impact from the LUST release within the upper 2 feet of soil, the total thickness of the impact (which may extend beyond surficial soil into subsurface soil) is necessary so that the applicable Tier 1 RBSLs for the volatile soil protective of ambient air inhalation can be selected.
2. The representative concentration for the surficial soil pathways is determined using data from the upper 2 feet of soil, regardless if the total impact of soil extends beyond 2 feet in depth.
3. For Question 1, the “no” checkbox should be checked if field screening or analytical data indicate no likely impact within the upper 2 feet of soil.
4. If there are no data or field screening observations within the upper 2 feet of soil, neither the “yes” nor the “no” box should be checked for Question 1. This is a potential data gap that requires explanation or further data collection.
5. If Question 1 is “no” (no evidence of impact in the upper 2 feet onsite), omit Questions 2, 3, 4, and 5, and mark the surficial soil pathways not complete for onsite current and future use.
6. The current land use is necessary to determine if the risk evaluation for current use should be based on residential or nonresidential land use.
7. If the pathway is complete for current use, select “yes” for either onsite residential current use or onsite nonresidential current use, but do not select “yes” for both residential and nonresidential (“yes” should be selected if multiple properties (residential and nonresidential) are impacted and require evaluation). If the surficial soil pathways are not complete for current use onsite, select “no” for both residential and nonresidential.
8. If there is a land use restriction that limits the land use to nonresidential use, select “yes” for onsite nonresidential future use. If there is no land use restriction, select “yes” for onsite residential future use.
9. If there is a resource use restriction that requires maintenance of pavement over the entire area of impacted surficial soil, then the surficial soil pathways are not complete for future use.
10. The above instructions for the onsite portion of the form apply to the offsite portion also.

5.14 Form 12 Series: Volatilization to Indoor Air Inhalation Pathway (VIAP) Evaluation

Form 12(1) and Form 12(2): Determine if VIAP is Complete for Residential and Nonresidential

1. The instructions below are given for the onsite VIAP evaluation (Form 12(1)). Form 12(2) is identical to Form 12(1) except it is for the offsite VIAP evaluation.
2. For Question 1, if no portion of the onsite property lies within the vapor source or lateral inclusion zone (LIZ), the VIAP is not complete for the onsite property. This situation can occur if there is no vapor source or if there is an offsite vapor source where the LIZ does not extend onto the onsite property. Check the "no" box, describe the rationale in the ADDITIONAL NOTES section, and select "no" for VIAP complete below Questions 5 and 7 (a total of 4 "no" selections), and omit the rest of Form 12(1). If "yes" is checked, complete Form 12(1).
3. If the response to Question 1 is "yes," indicate the applicable LIZ in Question 2 and show the extent of the vapor source, LIZ, and buildings within the LIZ in Figure 18.
4. If there are multiple buildings within the vapor source and LIZ, number the buildings 1, 2, 3 etc., list each building in the table in Form 12(1), and show these buildings on Figure 18. Enter the corresponding building numbers for the risk evaluation in the 16 series forms.
5. In the table on Form 12(1), enter the depth to the lowest floor of the building (enter 0 for slab-on-grade construction). Enter the depth to the vapor source near/below each building. Enter the vapor source type as either: "**groundwater**", "**soil**", or "**NAPL**". The forms are not case sensitive, however, the words should not be abbreviated or amended (e.g., do not write "GW" or "mobile NAPL").
6. If the vertical separation distance between the bottom of the lowest floor and the top of the vapor source near the given building exceeds the screening distance for the applicable vapor source (e.g., groundwater, soil, NAPL), the given building screens out and does not require quantitative risk evaluation (i.e., comparison with RBTLs).
7. If the pathway is complete for current use, check "yes" for either residential or nonresidential, based on the current land use, but do not check "yes" for both ("yes" should be selected for both residential and nonresidential only when a residential and a (different) nonresidential building are impacted and require evaluation).
8. A future building must be added to the table in Form 12(1) unless a future building cannot be built or would not require a VIAP evaluation (e.g., the property is too small to contain a building; a VIAP restriction is protective for future use). In a Tier 1 evaluation, the assumption is that a future building would be constructed with poured concrete floor, poured concrete or block walls, and an 8-foot-deep basement. It is

assumed that the basement has a sump if the average depth to the water table is less than 8 feet and does not have a sump if the depth to the water table exceeds 8 feet. The future building must be placed in the location on each property within the lateral inclusion zone that results in the greatest risk.

9. The risk evaluation for current use should be based on the actual current use of the property (e.g., current use is nonresidential if the property is currently an active gas station).

10. If a land use restriction is executed that restricts future land use to nonresidential, the future risk evaluation should be based on nonresidential land use. If no land use restriction is executed, the future risk evaluation must be based on residential land use.

11. If a resource use restriction that is protective of the VIAP is executed, then the pathway is not complete for future use in the area that is restricted.

Form 12(3) and Form 12(4): Onsite and Offsite VIAP Conceptual Model

12. In Form 12(3) and 12(4), for each current and future building that does not vertically screen out, complete the information related to building construction, the presence of a sump, and the presence of NAPL within the building footprint. The building ID in the top row can be either the default ID (e.g., “Current Bldg. 1”) or it can be modified to a site-specific ID.

13. If the building does not have block or poured concrete walls and a poured concrete floor, the risk must either be managed or can be evaluated in Tier 3.

14. If the building has a sump, the risk cannot be evaluated with the J&E model or with the Tier 1 soil gas RBSLs. The risk can be evaluated using groundwater RBTLs calculated using the Sump Model and default assumptions in Tier 1 or in Tier 2 with site-specific information.

15. If the building is VIAP Scenario 1, enter the vertical distance between the average depth to groundwater in the area of the building and the lowest floor of the building.
    - If the distance is 2 feet or greater, the risk can be evaluated using either Tier 1 RBSLs for soil gas or groundwater (J&E).
    - If the distance is less than 2 feet, the risk can be evaluated either in: (i) Tier 1 using Tier 1 RBSLs for soil gas; (ii) Tier 1 using Tier 1 RBSLs for groundwater (Sump); or (iii) Tier 2 using groundwater SSTLs derived from the J&E model based on a site-specific distance to groundwater, as well as other site-specific inputs.

16. For each building, one scenario will be applicable. Check “yes” for the scenario that is applicable for the building (either Scenario 1, 2, or 3) and select “no” for the other two scenarios.

17. Select if the risk is evaluated using soil gas, groundwater (J&E), groundwater (Sump), or soil RBSLs. Complete the corresponding column(s) in the 16 series forms for the Tier 1 risk evaluation.
    - For Scenario 1, the risk can be evaluated in Tier 1 using either soil gas, groundwater (J&E), or soil RBSLs.
    - For Scenario 2, the risk can be evaluated in Tier 1 using soil gas RBSLs.
    - For Scenario 3, the risk can be evaluated in Tier 1 using groundwater (Sump) RBSLs.
18. If a building is not evaluated in Tier 1, provide comments in the ADDITIONAL NOTES section.

5.15 Form 13 Series: Groundwater Protection

Form 13(1): Current Use

1. If there is an onsite water supply well, the pathway is considered complete for current use and the well must be sampled.
2. If the pathway is complete for onsite current use, check “yes” for either residential or nonresidential, based on the current use, but do not check “yes” for both.
3. List each water supply well that is within 500 feet of the site property boundary, and list relevant information about the well and identify the land use for each well as either “R“(residential) or “NR” (nonresidential).
4. If there are multiple potentially impacted offsite supply wells, the offsite risk evaluation must be based on the recent maximum concentration for each COC in all wells. Refer to Section 5.7 of the MIRBCA Technical Guidance Document for the definition of recent.
5. If there are potentially impacted water supply wells on both residential and nonresidential properties, check “yes” for pathway complete for both residential current use and nonresidential current use.

Forms 13(2) and 13(3): Future Use

6. If a land use restriction is executed that restricts future land use to nonresidential, the future risk evaluation should be based on nonresidential land use. If no land use restriction is executed, the future risk evaluation must be based on residential land use.
7. If a resource use restriction or alternative mechanism that restricts future groundwater use has been executed, the groundwater protection pathway is not complete in the restricted area. Alternative mechanisms must meet the requirements in Section 21310a of Part 213.

8. The series of questions in Question 2 (i.e., 2a, 2b, and 2c) and 3 (i.e., 3a, 3b, and 3c) are to determine if the groundwater protection pathway can be eliminated for future use. If not attempting to eliminate the groundwater protection pathway for future use, Questions 2 and 3 may be omitted.
9. If impacted groundwater is limited to an isolated UST basin or similar basin, check "yes" for Question 2a, and skip 2b, 2c, and Question 3, and mark the pathway as not complete for future use.
10. If the groundwater protection pathway is eliminated for future use because groundwater is not in an aquifer, mark Questions 2a and 2b "no" as appropriate and provide supporting documentation. Refer to Appendix B of the MIRBCA Technical Guidance Document for additional information.
11. If the groundwater protection pathway is eliminated for future use because the aquifer is not deep enough to support a legal potable well and it cannot reasonably transmit groundwater to a useable aquifer, mark Questions 3a, 3b, and 3c "no" as appropriate and provide supporting documentation. Refer to Appendix B of the MIRBCA Technical Guidance Document for additional information.
12. If the groundwater protection pathway is complete for future use, check "yes" for either residential or nonresidential future use, as appropriate, based on the presence or absence of executed land use restrictions.

5.16 Form 14: Surface Water Protection

1. For the surface water protection pathway there is no distinction between current use and future use.
2. Note that the Tier 1 RBSLs for groundwater are applicable at the POE. The Tier 1 RBSLs for soil are applicable in the vadose zone at the POE. If data at the POE are not available, data from sample locations upgradient of the POE (between the source and the POE) can conservatively be compared with the Tier 1 soil and groundwater RBSLs.
3. In the ADDITIONAL NOTES section, indicate if the risk evaluation is at the POE or a point upgradient of the POE. Describe the sampling location if the risk evaluation is conducted upgradient of the POE.

5.17 Form 15 Series: Exposure Model

1. The exposure pathways will be marked as "C" (complete) or "NC" (not complete) based on the responses in Forms 11, 12, 13, and 14.
2. For the determination of exposure domains and calculation of representative concentrations, refer to Section 5 of the MIRBCA Technical Guidance Document.

3. In Forms 15(1) through 15(4), for each complete exposure pathway, indicate the monitoring points in the exposure domain that are used to determine the representative concentration.
4. Form 15(5) is a summary of the Tier 1 exposure model, indicating the pathways that are complete and the pathways that are not complete based on responses in Forms 11,12,13, and 14.
5. A quantitative risk assessment in Form 16 series is required for each complete exposure pathway with certain exceptions, including:
    - A quantitative risk assessment for the VIAP is not required for a building if the building has adequate vertical separation distance from the vapor source,
    - A quantitative Tier 1 risk assessment in Form 16 series is not necessary for a pathway if proceeding directly to a Tier 2 or 3 evaluation for the pathway.
    - Indicate in the ADDITIONAL NOTES section of the given exposure pathway (Forms 11 through 14) if risk is not quantitatively evaluated in Form 16 series for a complete exposure pathway and medium.

5.18 Form 16 Series: Comparison of Representative Concentrations with Tier 1 RBSLs

1. Complete exposure pathways are auto-populated with “C” in the Form 16 series. The risk for complete pathways must be evaluated by entering the representative concentration for each COC.
2. If all exposure pathways on a form are NC, the form need not be included in the report.
3. If the representative concentration is non-detect, enter <detection limit (e.g., if the detection limit is 10 µg/L, enter “<10”). The MIRBCA Report Forms will compare ½ the detection limit with the Tier 1 RBSL. In this example, a representative concentration of 5 µg/L will be compared with the Tier 1 RBSL.
4. Documentation for determining the representative concentrations entered must be provided in Attachment 8.
5. Exposure pathways that are not complete are indicated with “NC” in the Form 16 series. Comparison with RBSLs is not required for pathways that are not complete.
6. Upon entry of the representative concentration for a COC, the corresponding RBSL and the “E/NE” column will be auto-populated with an “E” if the representative concentration exceeds the RBSL and with an “NE” if the representative concentration does not exceed the RBSL.
7. If multiple offsite potable wells are potentially impacted, the offsite groundwater protection pathway is evaluated by using the highest measured concentration for each COC in any well as the representative concentration

8. For the surface water protection pathway (Form 16(5)), the POE is located at either (i) the groundwater surface water interface (GSI) or (ii) at the storm sewer outfall. If the risk evaluation is based on data collected upgradient of the POE and such data are entered as representative concentrations, provide a description in the ADDITIONAL NOTES section of Form 14.
9. If a storm sewer is potentially impacted, the risk must be evaluated using Form 16(5) but a separate storm sewer evaluation may also be required as part of a ROW evaluation. Refer to Form 4(1).
10. Form 16(6) provides a summary of complete exposure pathways, indicating the pathways in which a representative concentration exceeds the Tier 1 RBSL (indicated by "E" highlighted in red) and the pathways for which a representative concentration does not exceed the Tier 1 RBSL (indicated by "NE"). Pathways that are not complete should be left blank.

5.19 Form 17(1) and 17(2): Conclusions and Recommendations Based on Tier 1 Evaluation for Onsite and Offsite Receptors

1. All media, all receptors, and all complete exposure pathways for which the representative concentrations exceed the applicable Tier 1 RBSLs in Form 16(6) must be addressed/managed.
2. In the Current/Future use column, enter "current use" if the unacceptable risk is for current use and enter "future use" if the unacceptable risk is for future use.
3. In the Medium column, enter soil, groundwater, soil gas, or sump water, as applicable.
4. In the Receptor column, enter "residential" or "nonresidential," as applicable.
5. If the "Tier 2 Evaluation" is checked, the information in the row for this complete exposure pathway will be auto-populated in Form 18.

5.20 Form 18(1) and 18(2): Exposure Model for Tier 2 Based on Tier 1 Results for Onsite and Offsite Receptors

1. Form 18 is auto-populated based on Form 17 based on the rows for which the "Tier 2 Evaluation" box is checked.
2. The Tier 2 evaluation will be limited to the media, receptors, and complete pathways indicated in Form 18. The Tier 2 evaluation will also be limited to the COCs that exceed the Tier 1 RBSLs for each exposure pathway.
3. Information from Form 18(1) and 18(2) must be manually copied to Form 2-1 and 2-2 of the Tier 2 MIRBCA Report Forms, respectively.

5.21 Form 19 Series: Leaking Underground Storage Tank (LUST) Site Classification

1. Select the scenario that best applies to the release for each exposure pathway. The site classification for the release is determined by the pathway with the greatest risk based on the most recent information.
2. This form must be included in the IAR, FAR, CR, and in any report in which the site classification has changed.

5.22 Form 20: Feasibility Analysis

1. Additional information may be added as separate pages to this form, if needed

5.23 Form 21: Corrective Action Plan

1. Provide a description of the corrective action plan (CAP), check the box(es) that correspond to the proposed corrective action, and complete the applicable corresponding forms (i.e., Forms 22(1) to 22(10)).
2. If any parties have been impacted above a Tier 1 residential RBSL, complete Form 22(8) and provide documentation that affected parties have received the required notification.
3. Include the CAP as Attachment 19 unless previously submitted to EGLE, in which case include the reference on Form 24. This may include a narrative description and additional details of the corrective action plan that are not accounted for in Forms 21 and 22.

5.24 Form 22 Series: Corrective Actions

1. Complete the applicable forms based on the proposed and/or implemented type of corrective action. Include any applicable supporting documentation as attachments or figures.
2. Complete Form 22(8) if any institutional controls or notices are required, including any notice to impacted parties of corrective action.
3. Complete Form 22(9) if monitoring is required (e.g., of groundwater, soil gas, etc.).
4. In Form 22(9), include a quality assurance and quality control (QA/QC) plan in the space below DATA PRESENTATION AND EVALUATION. Include additional pages if necessary.
5. Provide relevant details of any corrective action proposed or implemented other than those identified in Forms 22(1) to 22(9).
6. Form 22(11), provide a summary of the extent of contamination, exposure model, unacceptable risks, corrective actions implemented or proposed to address the unacceptable risks and the proposed schedule.

5.25 Form 23: Closure Documentation

1. Form 23 is required in a Closure Report (in any tiered risk evaluation) to document that corrective actions are complete and that there are no unacceptable risks for current use or future use. Include all supporting documentation, as applicable.

5.26 Form 24: References

1. References include both previously submitted site-related reports and other references as appropriate. Please list the references in reverse chronological order. Number the pages in the bottom right of the form as appropriate.

6.0 Instructions for Completing MIRBCA Tier 2 Forms

1. For Tier 2 evaluations, at a minimum, Tier 1 forms ES and 1 through 15 must be completed to present site assessment information and the exposure model, including which pathways are complete. Tier 1 forms related to corrective actions and closure documentation are also required, as applicable. Refer to the TOC in both the Tier 1 and Tier 2 Report Forms for requirements for the particular report submittal.

6.1 Form ES: Executive Summary for Tier 2 Evaluation

1. Provide a brief summary of the Tier 2 evaluation, including a summary of site-specific information and assumptions used in the evaluation.
2. Check the appropriate boxes in the RECOMMENDATIONS PER TIER 2 EVALUATION section. Refer to instructions for completing the Tier 1 ES form (Section 5.1).

6.2 Form 2-1 and 2-2: Exposure Model for Tier 2 Evaluation Based on Tier 1 Results for Onsite and Offsite Receptors

1. The information in Form 18(1) and 18(2) of the MIRBCA Tier 1 Report Forms must be copied into Form 2-1 and 2-2.
2. A Tier 2 evaluation must address only the COCs that exceed Tier 1 RBSLs for current or future use of any complete exposure pathway.

6.3 Form 2-3 Series: Tier 2 Volatilization to Indoor Air Pathway (VIAP) Evaluation

1. Refer to instructions for completing Tier 1 VIAP evaluation forms (Tier 1,12 series forms).

2. For vertical separation distance screening purposes, assume the depth to lowest floor for a slab-on-grade building is 0 feet. If calculating SSTLs, use actual building dimensions in the equations or as inputs in the MIRBCA Computational Software.
3. A Tier 2 evaluation must be based on a site-specific location and size of a future building. Refer to Sections 5.1 and 5.3 in the MIRBCA Technical Guidance Document. In the ADDITIONAL NOTES section, provide specific relevant details of the future building.

6.4 Form 2-4: Tier 2 Determining Groundwater Protection POE for Future Use

1. Complete Form 2-4 to determine the POE for future use for the groundwater protection pathway. Refer to Section 5.4 of the MIRBCA Technical Guidance Document for definitions of Scenario 1, 2, and 3.
2. Refer to Section 5.4 of the MIRBCA Technical Guidance Document for conditions when a water supply well can reasonably be installed on a property.
3. If the future POE is either Scenario 1 or 2, list each POC in the table and the distance and direction from the edge of the source area to the POC well.
4. Use the ADDITIONAL NOTES section, as necessary, to provide any relevant information.
5. Include documentation to support the POE location for future use in Attachment 22. Note that Attachment 22 can include references to other attachments within the report (e.g., Attachment 16 – Documentation of water supply well survey) as necessary.

6.5 Form 2-5: Tier 2 Fate and Transport Parameters

1. Enter the value used to calculate Tier 2 SSTLs in the “Tier 2 Value” column. Depending on the value entered, the “Comments” column will auto-populate with either “Default” or “Site-specific.”
2. Rows that contain “#“ at the end of a parameter name are calculated and do not require any justification.

6.6 Form 2-6: Tier 2 Building Parameters for VIAP

1. Enter the value used to calculate Tier 2 SSTLs in the “Tier 2 Value” column.
2. Depending on the value entered, the “Comments” column will auto-populate with either “Default” or “Site-specific.”

6.7 Form 2-7(1): Justification for Tier 2 Fate and Transport Parameters

1. Justification is required for both default and site-specific values used for the pathways being evaluated in Tier 2. Attach additional pages as necessary.

2. Provide documentation to support SSTL calculation in Attachment 24. If SSTLs are calculated using the MIRBCA Computational Software, include printouts of relevant input and output tables from the software.

6.8 Form 2-7(2): Justification for Tier 2 Building and Sump Parameters

1. Provide justification for each Tier 2 input value used. Note that justification is required for using default values as well as site-specific values. Attach additional pages as necessary.
2. Provide documentation to support SSTL calculations in Attachment 24. If SSTLs are calculated using the MIRBCA Computational Software, include printouts of relevant input and output tables from the software.

6.9 Form 2-8 Series: Comparison of Tier 2 Site-Specific Target Levels (SSTLs) with Representative Concentrations

General Considerations

1. There are a total of 20 forms as explained below:
   - Four onsite residential forms (2 for current use and 2 for future use)
   - Four onsite nonresidential forms (2 for current use and 2 for future use)
   - Four offsite residential forms (2 for current use and 2 for future use)
   - Four offsite nonresidential forms (2 for current use and 2 for future use)
   - Two future use groundwater protection forms (one each for residential and nonresidential)
   - One surface water protection form
   - One Summary of Exceedances form that is auto-populated based on the above 19 forms.
2. For each exposure pathway, indicate if the pathway is complete (C) or not complete (NC) based on Forms 2-1 and 2-2. If all exposure pathways on a form are NC, the form need not be included in the report.
3. For pathways that are complete, enter the representative concentration and the calculated SSTL for each COC that exceeds Tier 1 RBSLs. The forms will update the E/NE column with an" E" if the representative concentration exceeds the Tier 2 SSTL and with an "NE" if the representative concentration does not exceed the Tier 2 SSTL.
4. If the representative concentration was calculated using non-detect data, enter <detection limit (e.g., if the detection limit is 25, enter "<25"). The MIRBCA Report Forms will compare ½ the detection limit with the Tier 2 SSTL (in this example, a representative concentration of 12.5 µg/L will be compared with the Tier 2 SSTL). The pathway must be marked with a "C" for the comparison functionality to work.

5. In Tier 2, the direct contact pathway (absorption and ingestion) is combined with the ambient air inhalation pathway (soil particulate inhalation and volatile soil inhalation) and is evaluated as a single exposure pathway.
6. For the groundwater protection pathway, current use is evaluated based on the concentration at the POE(s) only (i.e., using data from water supply wells) for onsite and offsite properties. The representative concentration is the recent average from each water supply well. The Tier 2 SSTL is either (i) more stringent of the MCL or aesthetic criterion, or (ii) a calculated value. The Tier 2 SSTLs that are applicable at the POE are listed in Table 13 of the MIRBCA Technical Guidance Document and are auto-populated by the forms. Enter the well ID in the space provided for each water supply well that is evaluated.

Form 2-8 (2CV)

7. Indicate the building ID for each building evaluated. The building ID should match the building ID indicated in Form 2-3 series.

Form 2-8 (5FGR and 5FGN)

8. Complete these forms for the evaluation of future use for the groundwater protection pathway for residential and nonresidential land use, respectively. Note that there is no distinction between onsite and offsite for this evaluation.
9. For groundwater protection future use, enter the distance from the edge of the groundwater source area to the POE in the space provided. Enter the representative concentration and the SSTL for the Soil Source and Groundwater Source.
10. For each POE, enter the POC well ID and the distance from the edge of the groundwater source area to the POC well in the spaces provided. Enter the representative concentration and the Tier 2 SSTL for each POC.
11. For a nonresidential evaluation of groundwater protection future use, a land use restriction(s) on the property where the POE is located is required.

Form 2-8 (6): Surface Water Protection

12. Complete Form 2-8(6) to evaluate the pathway based on the representative concentrations in the soil and groundwater source area and at POCs.
13. Columns are provided for an evaluation of a Soil Source and Groundwater Source for both a GSI POE and a storm sewer outfall POE. Enter data in the appropriate columns, including distance from the edge of the source area to the POE.
14. For the Distance from Source to POE box for POE at storm sewer outfall, the distance from the source area to the POE (i.e., the outfall) is not applicable because fate and

transport of water in a storm sewer is not modeled in the SSTL equations. The distance from the edge of the source area to the storm sewer can conservatively be used.

15. For each POC, indicate the well ID and the distance from the edge of the source area to the POC well.
16. Complete Form 16(5) of the Tier 1 Report Forms to evaluate the surface water protection pathway in Tier 2 at the POE. The recent average concentration should be used as the representative concentration.

6.10 Form 2-9 Series: Conclusions and Recommendations Based on Tier 2 Evaluation for Onsite and Offsite Receptors

1. All media, all receptors, and all complete exposure pathways in which the representative concentrations exceed the applicable Tier 2 SSTLs must be addressed.
2. In the Current/Future Use column, enter “current use” if the unacceptable risk is for current use and enter “future use” if the unacceptable risk is for future use.
3. In the Medium column, enter soil, groundwater, or soil gas, as applicable.
4. In the Receptor column, enter “residential” or “nonresidential,” as applicable.

6.11 Form 2-10 Series: Exposure Model for Tier 3 Evaluation Based on Tier 2 Results

1. Form 2-10 is auto-populated based on Form 2-9 based on the rows for which the Tier 3 box is checked.
2. The Tier 3 evaluation will be limited to the media, receptors, and complete pathways indicated in Form 2-10. The Tier 3 evaluation will also be limited to the COCs for the exposure pathways that exceed the Tier 2 SSTLs.
3. Forms are not available for Tier 3 evaluations. The Tier 2 forms may be modified as appropriate and used for a Tier 3 evaluation, or a Tier 3 evaluation may be presented in a narrative form. The user is encouraged to organize the Tier 3 evaluation similar to the Tier 2 forms, however, significant flexibility in reporting is allowed.

7.0 Instructions for Completing MIRBCA Tables

1. Site data must be presented in the MIRBCA Data Tables.
2. While completing the tables, please note the following:
   - Carefully read all footnotes to each table.
   - Enter the data in the units indicated in the table. Do not enter data in units other than those indicated on the tables.
   - The number of data points entered in the tables, e.g., number of soil samples, number of active wells, number of soil gas samples, must be consistent with Form 6, Chronology of Events, and Form 7, Comprehensive Summary of Data.
   - For concentrations that were reported below the detection limit, do not enter "ND" (unless the detection limit is not known). Rather, enter "<XX", where XX is the detection limit.
   - To calculate the average concentration, use half the detection limit for samples that are non-detect.
   - Do not leave any cell in the table blank. If data are not available, enter "NA" to indicate not available and/or not applicable. A blank cell may imply the user forgot to enter the necessary information.

8.0 Instructions for Completing MIRBCA Figures

1. Some of the figures may require multiple pages (e.g., Figures 12 to 14 that show the extent of contamination for soil, groundwater, NAPL, and soil gas). Each figure should be labeled as a subfigure within the given set (e.g., if there are three figures showing soil contamination, label these figures as Figure 12(a), Figure 12(b), and Figure 12(c), and indicate "3" pages have been added in the Table of Contents).
2. Figures may be combined if the required information is clearly depicted in the figure. The figures must be appropriately labeled. For example, if combining Figure 4, Land Use Map (radius of 500 feet), with Figure 5, Site Map showing buildings within 500 feet from property boundary, label the figure as either "Figure 4 and 5" or "Figure 4, Figure 5."

9.0 Instructions for Completing MIRBCA Attachments

The attachments are self-explanatory, and no specific instructions are required.