Georgia Department of Natural Resources

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Mark Williams, Commissioner
Environmental Protection Division
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Land Protection Branch
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Reply To:
Response and Remediation Program
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July 21, 2011

VIA E-MAIL AND REGULAR MAIL

BWAY Corporation
c/o Mr. Steve Diaz, EHS Manager
1601 Valdosta Highway
Homerville, GA 31634

Re: Revised Voluntary Remediation Plan and Application, January 25, 2011: Comments
BWAY Drum Site (Tax Parcel No. 063-026)
NW Quadrant, Intersection of Charley Smith Road (*a.k.a.*, Woodlake Road) and U.S. Highway 84
Homerville, Clinch County, Georgia

Dear Mr. Diaz:

The Georgia Environmental Protection Division (EPD) has reviewed the revised January 25, 2011 Voluntary Investigation and Remediation Plan (VIRP) submitted pursuant to the Georgia Voluntary Remediation Program Act (the Act). In addition, EPD has received responses to the August 23, 2010 EPD comments on the initial VRP Application and Voluntary Remediation Plan. It is assumed that based on the submittal dates, the June 10, 2011 Response to Comments letter supercedes the revised VIRP. EPD has the following comments, which must be addressed pursuant to Condition # 2 of the July 22, 2011 VRP Application Acceptance Letter issued by EPD for the qualifying property. References to "EPD Comments" are to the specific comments as numbered in the August 23, 2010 letter.

Application/Checklist (EPD Comment #1):

1) ERM's response to EPD Comment #1 is adequate. However, EPD noted that the property boundaries of the qualifying property were not clearly identified on several figures (Figures 1-1, 1-4, 3-4, and 3-7) within the revised VIRP. Boundaries of the qualifying property must be clearly noted on all figures depicting the extent of the qualifying property in future submittals.

Conceptual Site Model (EPD Comments #2 and 3):

2) **Regulated Substances Released:** ERM's response adequately addresses Comments #2a and 2b regarding regulated substances released.

3) **Source Area Investigation**: ERM indicated in their June 10, 2011 letter that two groundwater monitoring wells (ERM-MW-13 and ERM-MW-14) have been installed in response to EPD's Comment #3 regarding characterization of the onsite source area. Proposed locations for said monitoring wells were shown on a figure in the November 10, 2010 letter submitted to EPD by ERM on behalf of BWay. Please note that the proposed well locations are not within the limits of the former drum burial area as shown on the figures provided in the November 10, 2010 letter or on other figures provided in the revised VIRP. In addition, please note that screened intervals within the new monitoring wells must be evaluated to determine if the appropriate aquifer zones are being monitored. Therefore, additional source investigation may be required in the future based on the updated CSM provided in the initial VRP semi-annual progress report.

Potential Receptors/Exposure Pathways (EPD Comments #4 through #5):

4) ERM's response adequately addresses Comments #4a and 4b regarding contaminant delineation requirements at this time. However, note that additional delineation/investigation *may* be required based on the updated CSM.

5) EPD Comments #5a through 5b stated several potential environmental receptors for groundwater at the qualifying and adjacent non-qualifying properties were not accounted for in the conceptual site exposure model (CSEM) presented in the originally submitted VIRP. Sections 1.3, 2.2, and 4.4 and Figures 1-3 and 14 of the January 25, 2011 revised VIRP were written to address said comments. ERM's response is deemed to be adequate with the following exceptions that must be addressed in future progress reports as appropriate prior to submittal of a final CSR:

   a) **Human Receptors:** None of the potential human receptors discussed in Section 1.3 and listed in Figure 1-3 of the revised VIRP can be eliminated solely based on groundwater gradient/flow direction as presented in the revised VIRP until: 1) the extent of the groundwater contaminant plume has been fully delineated both horizontally and vertically, 2) hydraulic gradients and flow paths have been confirmed, and 3) groundwater contaminant fate and transport modeling has been successfully conducted. References to the locations of receptors in relation to groundwater flow direction and/or extent of the groundwater plume have not been confirmed based on the information provided in the original and revised VIRPs. All of the potential human receptors and/or POEs are considered to be receptors/POEs at this time and EPD will defer further comments on potential human receptors until the above conditions have been achieved.
   b) **Surface Water/Ecological Exposure:**
      i. All surface water bodies referenced in Section 1.3 of the revised VIRP will be considered to be receptors for groundwater contamination until the conditions referenced above are met.
      ii. Semi-annual progress reports must provide a figure noting the surface water bodies that were observed by field personnel on the qualifying property to document that those surface water bodies consist solely of intermittent ditches and ponds created by rainfall. If surface water bodies are consistently observed on the qualifying property during monitoring events, BWAY must submit additional information supporting the above claim or said surface water bodies will be considered potential receptors.
      iii. Note that a Uniform Environmental Covenant (UEC), an institutional control measure, cannot be used to limit contaminated groundwater impacts to surface water and/or exposure to ecological receptors at the qualifying property as proposed in Section 1.3 of the revised VIRP.

   In addition, future potential impacts to the listed potential receptors must also be addressed through groundwater fate and transport modeling and corrective measures revised accordingly in the appropriate semi-annual progress report.

Groundwater Fate and Transport Modeling (EPD Comments #6 through 11):

6) ERM's responses to EPD Comments #6 through 11 deferring revisions to groundwater contaminant fate and transport modeling efforts until groundwater contaminant delineation has been accomplished are acceptable. Please note that references to proposed points of determination (POD) wells on Table 1-3 and Sections 2.2 and 4.6 of the revised VIRP are premature and subject to revision based on the results of the future contaminant delineation and fate and transport modeling efforts. In addition, it should also be noted that the currently proposed fate and transport model code, Bioscreen®, is an analytical (screening) model code, which assumes contaminant migration in a single groundwater flow direction and does not address vertical migration of contaminants. Therefore:
   a) Multiple model runs will be required for each horizontal direction that groundwater flow path for contaminant migration for each impacted aquifer zone if Bioscreen® and/or another analytical model code is chosen for groundwater contaminant fate and transport modeling efforts, and

b) Modeling results from Bioscreen® and/or other analytical model code may be deemed invalid if vertical migration of contamination is confirmed during groundwater contaminant delineation efforts.

Investigation and Remediation Plan (EPD Comment #12):

7) ERM's responses to EPD Comments #12a and 12b regarding proposed corrective actions are acceptable assuming the proposed delineation and groundwater fate and transport modeling efforts confirm that groundwater contamination is restricted to within the boundaries of the qualifying property and is not predicted to impact additional, adjacent non-qualifying properties at concentrations greater than default residential cleanup standards [Type 1 Risk Reduction Standards (RRS)]. Note that EPD is unsure of what "properties" are referenced in Section 4.5 of the revised VIRP (and referred to in ERM's response to EPD Comment #12c) which states that a UEC will be implemented restricting the future uses of the "properties" as the proposed corrective action. Please note that implementation of a UEC for additional non-qualifying properties will require the cooperation and agreement of the owners of the impacted properties.

Delineation and Cleanup Standards (EPD Comments #13 and 14):

8) **Delineation Standards/Criteria:** Table 1-2 (*Table of Site Delineation Concentrations*) of the revised VIRP has been corrected as requested by EPD and is an adequate response to EPD Comment #13. Table 1-2 proposes previously approved Type 1 RRS as the applicable delineation criteria for contaminants detected in groundwater to date at the qualifying property. Note that appropriate delineation criteria/cleanup standards must be proposed for any additional regulated substances detected in groundwater during future groundwater monitoring events (*e.g.*, acetaldehyde).

9) **Cleanup Standards:** ERM's response to EPD Comment #14, which indicates applicable clean up standards for the qualifying and non-qualifying properties will be addressed/proposed upon completion of groundwater contaminant fate and transport modeling efforts, is acceptable at this time. Please note the following:
   a) Section 2.2 of the revised VIRP, submitted prior to the responses to comments, states the *HSRA RRS* will continue to be used as cleanup standards for groundwater at the point of exposure. Potential points of exposure are listed as hypothetical drinking water wells 1,000 ft downgradient north and west of the delineated site contamination and the public water supply wells located south of the qualifying property. The only acceptable contaminant cleanup standards *at* the POEs as defined in this section of the revised VIRP are Type 1/3 Groundwater RRS. Alternate clean up standards at the source must be protective of downgradient receptors based on groundwater contaminant fate and transport results.
   b) Section 2.3 of the revised VIRP indicates source area groundwater cleanup standards within the source area (qualifying property) will be calculated to be protective of the various potential points of groundwater exposure described in Section 1.4 of the revised VIRP. It appears that the section referenced in Section 2.3 of the VIRP should have been Section 1.3. Section 1.3 of the revised VIRP is titled, "*Receptors and Water Usage*" while Section 1.4 is titled, "*Previous Remediation*" and appears to summarize past remedial efforts at the qualifying property. Potential receptors are further commented on in Comment # 5 above.
   c) It appears that Figures 3-5 through 3-7 of the revised VIRP still show the groundwater naphthalene cleanup standard previously proposed in the initial VIRP. Please remove all references to previously proposed cleanup standards from future submittals until contaminant delineation and fate and transport modeling has been completed.

Miscellaneous Comments (EPD Comments #15 through 21):

10) EPD Comment #15 has been adequately addressed by ERM's response stating that monitoring well MW-6 will be replaced and added to the groundwater monitoring network. Documentation regarding monitoring well abandonment/replacement activities (*e.g.*, well abandonment and new well construction logs) must be provided in the progress report documenting said activities.

11) ERM's response to EPD Comment #16 indicates *both* written (*i.e.*, 1 inch = 150 ft) and bar scales will be provided on all figures depicting site conditions in future submittals. Note that neither type of scale was provided on Figure 1-3 of the revised VIRP nor were written scales provided on the majority of other figures within the revised VIRP, which was submitted prior to ERM's responses to EPD Comments. Said discrepancies must be corrected in future submittals.

12) ERM's response to EPD Comment #17 regarding groundwater purging and sample collection procedures used during the March 2010 sampling event is acceptable. However, pursuant to Section 3.2.5 of the current EPA Region 4 groundwater sampling procedures (SESDPROC-301-R1, effective November 1, 2007), low flow/low volume purging is not considered to be a standard method and is only acceptable under certain hydraulic conditions. EPD prefers groundwater sampling methods that require a minimum of three well volumes of groundwater be purged prior to sampling (*e.g.*, the low flow/low stress method) rather than the low flow/low volume method used by ERM personnel during the march 2010 sampling event. The use of the low flow/low volume purging may be acceptable based on site-specific conditions, but must be justified. Please provide said justification in future progress reports, and/or discuss with the assigned site compliance officer prior to conducting the next groundwater sampling event. The following guidelines should be strictly followed when using low-flow/low-volume sampling:
    a. Detailed information regarding groundwater sampling equipment and procedures should be provided for each sampling event in field sampling records. Information should include type of pump and tubing used to purge the monitoring wells and a detailed description of the sampling method (examples, "straw method" for VOCs and vacuum jug method for SVOCs).
    b. For low-volume sampling, the pump should *always* be carefully placed mid-way in the screened interval with minimum disturbance to the well. The depth of the pump intake should be noted on the field form for each monitoring well.
    c. Water level measurements should be periodically collected and recorded along with field parameters to ensure minimal drawdown, and that the rate of water withdrawal does not exceed the recharge rate of the well.
    d. The amount of water purged between analyses of field parameters (pH, specific conductance, dissolved oxygen, temperature, and oxidation reduction potential) should be adequate to assess any trends that may be occurring in the field parameters.
    e. Field parameters listed above should be used to show stability of the purge water. Stability of the purge water should be indicated by parameters showing no increasing or decreasing trends for three successive readings in a row.
    f. The final turbidity reading should be below 10 NTUs.

13) ERM's response to EPD Comment #18 regarding incorrect references to previous correspondence/submittals within the initially submitted VIRP is acceptable. However, EPD noted at least two apparent errors in internal references made within the revised VIRP:
    - The internal reference noted in Comment #9b above, and
    - A reference to Section 1.3 (titled, "*Receptors and Water Usage*") appears to have been incorrectly referenced in the last paragraph of Section 3.3 of the revised VIRP. Based on the reference to compounds detected in groundwater in the past, it appears that the reference should have been to Section 1.2.2 of the revised VIRP, titled, "*Ground Water Contaminants of Concern*".

    Please ensure that future submittals are reviewed for internal references and accuracy with necessary corrections made prior to submittal to EPD. (EPD also noted that references to EPD Comments #12a. through 12 c and 17a through 17d were incorrectly numbered in the response to comment letter).

14) ERM's response to EPD Comment #19 is acceptable with the submittal of the revised well construction schematic provided as an attachment to said responses. Note that monitoring well ERM-MW-7, the deep-screened well, is located 150 ft north of the northern edge of the source area based on Figure 3-2. Therefore, EPD will defer conclusions regarding contaminant vertical delineation and transport direction until: 1)

groundwater flow direction investigation, 2) groundwater contaminant horizontal delineation, and 3) source area investigations have been completed. Vertical delineation must be achieved at or immediately downgradient of the source area.

15) ERM's response to EPD Comment #20 is acceptable with the submittal of an updated well construction table as an attachment to their responses. Said table must be updated and submitted with each future VRP semi-annual progress report and the final VRP Compliance Status Report.

Please respond to the above comments in a response-to-comment format with the submittal of the first semi-annual VRP progress report due no later than January 22, 2012. If you have any questions, please contact Carolyn L. Daniels, P.G. of the Response and Remediation Program at (404) 657-8600.

Sincerely,

David Brownlee for
Alexandra Y. Cleary, Program Manager
Response and Remediation Program

c: Shanna Thompson, P.E., Environmental Resources Management (ERM)
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