

Georgia Department of Natural Resources

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Reply To:

Response and Remediation Program
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Mark Williams, Commissioner
Environmental Protection Division
F. Allen Barnes, Director
Land Protection Branch
Mark Smith, Branch Chief

November 29, 2011

COPY

VIA E-MAIL AND REGULAR MAIL

Brunswick Corporation
c/o Mr. William W. Davis
1 North Field Court
Lake Forrest, Illinois 60045-4811

Albany Sport Co.
c/o Mr. Michael H. Elam
Rudnick & Wolfe
203 North La Salle Street, Suite 1800
Chicago, Illinois 60601-1290

Albany Partners/The Formidable Group
c/o Mr. Wayne Avis
20240 West 12 Mile Road, Suite 3
Farmington Hills, Michigan 48076

Re: Voluntary Investigation and Remediation Plan – April 5, 2011 - Incomplete Application
MacGregor Golf Company, HSI Site No. 10398
1601 South Slappey Boulevard, Albany, Dougherty County, Georgia
Tax Parcel 0021-00001-019

Dear Messrs. Davis, Elam, and Avis:

The Georgia Environmental Protection Division (EPD) has reviewed the April 5, 2011, Voluntary Investigation Remediation Plan (VIRP) submitted pursuant to the Georgia Voluntary Investigation and Remediation Program Act (the Act). We have also reviewed the Revised Risk Reduction Standards and Response to EPD Comments, dated March 25, 2011. The VIRP was submitted in lieu of implementation of an approved corrective action plan pursuant to the Georgia Rules for Hazardous Site Response for the above referenced property. EPD has determined your application is incomplete based on the following items:

Conceptual Site Model

1. As described in more detail below, the risk reduction standards (RRS) proposed for total chromium and hexavalent chromium (Cr (VI)) are incorrect. Groundwater concentrations in MW-11, MW-19, MW-23, and MW-24 do not currently meet any RRS for Cr (VI) and/or total chromium. Therefore, the conceptual site model (CSM) is incomplete and must be revised to address these exceedances.
2. The VIRP proposes to use monitoring wells MW-12, MW-13, or MW-19 as the point of demonstration (POD) well for VOCs. Although the proposed POD wells may prove to be acceptable choices, EPD cannot approve the proposed POD locations until a better understanding of groundwater flow can be achieved at the Site. Since submittal of the CSR in 2006, EPD has noted significant variations in the potentiometric surface maps provided for both the upper and lower water bearing zones due to seasonal water level variations and the influence of the former on-site supply well and irrigation activities. With respect to the July 28, 2010 potentiometric surface maps provided in the VIRP,

EPD noted the following inconsistencies that could substantially affect the overall groundwater flow interpretation for both water bearing zones:

- a. The Upper Water Bearing Zone Potentiometric Surface Map (Figure 4) provided in the VIRP relies on historical groundwater elevation data from monitoring well MW-18 in deriving the current potentiometric surface map. EPD does not concur that it is appropriate to use 10-year old groundwater elevation data from a monitoring well located in an area that historically received irrigation water to derive a potentiometric surface that is supposed to reflect current conditions. Furthermore, the potentiometric map, particularly in the VOC source area, relies on groundwater elevation data from monitoring wells that have not been surveyed. Also noteworthy is that monitoring well MW-25 is 7.46 feet lower in groundwater elevation than monitoring well MW-4 which is located approximately 75 feet away, suggesting issues with either the depth to water measurement(s) or the top of casing elevation survey measurement(s) in MW-25 and/or MW-4.
- b. The Lower Water Bearing Zone Potentiometric Surface Map also relies on historical data and inferred groundwater elevation assumptions. Specifically, historical data from monitoring well MW-16 was used to derive a potentiometric map of current site conditions. Additionally, several monitoring wells from the lower water bearing zone network were not gauged during the July 2010 event.

Based on the general inconsistencies noted above, updated potentiometric surface maps must be provided in the revised VIRP. The potentiometric maps should be rendered using current groundwater data collected from all existing monitoring wells located at the Site. To aid in review, please ensure that the potentiometric surfaces clearly indicate the monitoring wells that are no longer part of the monitoring network by designating them with a different symbol. EPD highly recommends that an updated top of casing elevation well survey be performed for all monitoring wells and that the data be used in the revised potentiometric surface maps. The revised VIRP should also propose POD well(s) that have been selected based on the current site conditions in both the upper and lower water bearing zones, as applicable.

3. A uniform environmental covenant (UEC) will be required to prevent the use of groundwater in the areas between the source and the POD well(s). In addition, the UEC should require a vapor intrusion (VI) evaluation prior to construction over the VOC plume or the use of the storage shed for workspace or other activities where VI may result in inhalation exposure.

Investigation and Remediation Plan

4. In addition to the delineation discussed in Section 4.3.1, Cr (VI) must be delineated to the south of MW-19. If non-qualifying properties are determined to have concentrations of Cr (VI) in groundwater that exceed the RRS, the impacted property must be entered as a qualifying property under the VIRP or cleaned up to meet RRS pursuant to the Georgia Hazardous Sites Response Act (HSRA).
5. The application proposes the use of a contaminant fate and transport model for VOCs in groundwater. The model should account for the introduction of zero-valent iron in 2003. In addition, the model simulation time must be sufficient to demonstrate when the plume

will reach its maximum extent and that the point(s) of exposure would not be impacted at that time. The VIRP states that the groundwater model will be projected 20 years from 2010. This timeframe may need to be extended to account for the above requirements.

6. The VIRP states that fate and transport modeling will be performed using BioChlor®. Please note that literature-based chemical properties, such as Henry's Law Constants, carbon partitioning coefficients (Koc), etc. should be obtained from the most current US EPA Regional Screening Level (RSL) tables. Additionally, consistent with the EPA Soil Screening Guidance (July 1996), EPD requires that 0.002 be used as the default fraction of organic carbon (foc) value for the purpose of modeling leaching to groundwater.
7. In the revised application, please clarify the source of the soil background concentrations proposed for Cr (III) and Cr (VI) in Table 5.
8. In the revised VIRP, please include a preliminary cost estimate for completion of all activities proposed through submittal of the compliance status report.

Eligibility

9. EPD was notified by the Dougherty County Tax Department on August 31, 2011 that Greyfield Resources, Inc., had purchased the tax lien for the MacGregor Golf Company property. Please verify that this development will not cause the applicants to lose permission to implement the VIRP during the course of this investigation and remediation.

Risk Reduction Standards

The RRS presented in Table 6 of the VIRP are approved with the following exceptions:

10. The EPA Regional Screening Levels (RSL) table does not have toxicity data for total chromium. Therefore the groundwater Type 2 and Type 4 RRS default to the Type 1 RRS of 0.1 mg/L.
11. The groundwater Type 1 RRS for Cr (III) and Cr (VI) is the detection limit since the compounds are not listed in Table 1 of Appendix 3 of the Rules.
12. The groundwater Type 2 and Type 4 RRS for Cr (VI) should be based on the carcinogenic risk. The resulting values are 0.0017 mg/L and 0.0057 mg/L, respectively.
13. The proposed Type 2 and Type 4 soil RRS values for Cr (VI) are incorrect. The Type 2 and Type 4 soil values should both be revised to 3.84 mg/kg, which represents the residential and non-residential soil leaching values calculated using a target groundwater concentration of 0.01 mg/L (i.e., detection limit).
14. According to the RSL table, the RfDi for trichloroethene (TCE) is 'not available'. Therefore, non-carcinogenic RRS calculations are not necessary and the overall

human-health RRS values should be based on cancer values. This results in a groundwater Type 2 RRS of 0.026 mg/L.

15. The Type 2 and Type 4 soil RRS for cyanide provided in Table 6 are incorrect because they did not consider leaching to groundwater. The Type 2 and Type 4 soil values should be revised to 63.2 mg/kg and 412.9 mg/kg, respectively, which represents the residential and non-residential soil leaching values for cyanide.

Miscellaneous

16. The VIRP Application did not include a monthly summary of hours invoiced by the professional engineer/geologist overseeing the plan, and a description of services provided to the participant, as required. The summary for all work completed to date should be included with the revised application.
17. Please note that the concentrations of VOCs on Table 3 are reported in ug/L not mg/L as noted in the title block.
18. Please note that the xylene Type 1 RRS for groundwater is 10 mg/L not 10,000 mg/L as shown on Table 5.
19. Please note that the soil delineation standards on Table 7 do not match the concentrations provided on Table 6 for 1,1,DCE and all inorganic compounds. Table 7 must also be updated to reflect the RRS changes provided above.

Please submit a revised VIRP, which includes responses to the above comments in a response-to-comment format, by February 15, 2012. Alternatively, you may immediately implement the Corrective Action Plan as approved by EPD February 17, 2011 under HSRA regulations. If you have any questions, please contact John Maddox at (404) 657-8600.

Sincerely,



David Brownlee
Acting Program Manager
Response and Remediation Program

✓ c: Sarah E. Jones, Brown and Caldwell

File: HSI No. 10398

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