Procter&Gamble

Procter & Gamble Hair Care LLC
Iowa City Plant
2200 Lower Muscatine Road
Iowa City, Iowa 52240

June 22, 2011

CON 12-15
Doc # 25365

Mr. Hylton Jackson
Environmental Specialist, IDNR
502 East 9th Street
Des Moines, IA 50319-0034

Dear Mr. Jackson:

The attached submittal is in response to your letter from March 10, 2011, regarding your approval of the Site Assessment Work Plan for Procter & Gamble in Iowa City for investigation of the contaminated groundwater plume following the closure of an underground storage tank.

Please review the assessment and let us know if you are in agreement with the recommendation of Seneca that additional assessment activities are not necessary.

If you have any questions, please contact Site Environmental Leader Becky Crooks at 319-339-2720 or crooks.rb@pg.com.

Sincerely,

Phillip J Burns

Phillip J. Burns, Plant Manager
Procter & Gamble Hair Care LLC
2200 Lower Muscatine Rd.
Iowa City, IA 52240

50632 PM 3:56 05/24/11

Seneca Companies
The Complete Solution

BRANCH ADDRESS
7241 Gaines Street Court
Davenport, IA 52806
Phone: 563-332- 8000
Toll-Free: 800-728-6900
Fax: 563-332-9465

June 10, 2011

Mr. Justin Stuit
BIS Frucon
2200 Lower Muscatine Road
Iowa City, IA 52240

RE: Report of Additional Assessment
Proctor & Gamble Hair Care
2200 Lower Muscatine Road, Iowa City, IA
Reg. #:198710520

Dear Mr. Stuit,

Please find attached a Report of Additional Assessment for the above referenced site. After your review and if there are no changes, sign and date the original of this report and submit it to Hylton Jackson with the Iowa Department of Natural Resources in the enclosed addressed envelope. Certified mail or other trackable method is recommended. The copy is for your file.

Please note that Seneca does not recommend additional assessment because the contamination has been defined and poses little, if any, risk to human health or the environment.

It has been a pleasure to assist BIS Frucon and P&G with this project. Please contact me at 563-332-8000 or nderynck@senecaco.com with questions or comments.

Sincerely,
SENECA ENVIRONMENTAL SERVICES

Neil P. DeRynck
Senior Project Manager
Iowa Certified Groundwater Professional #1238

50633 PM 3:56 06/24/11

Enclosures: Report of Additional Assessment

ENVIRONMENTAL ASSESSMENT

PROCTER & GAMBLE

2200 Lower Muscatine Road

Iowa City, Iowa 52240

Prepared For:

BIS FRUCON

Mr. Justin Stuit

2200 Lower Muscatine Road

Iowa City, Iowa 52240

Prepared By:

SENECA ENVIRONMENTAL SERVICES, INC.

7241 Gaines Street Court

Davenport, Iowa 52806

SES Project No. 6356412

June 10, 2011

1.0 Introduction

Seneca Environmental Services (Seneca) has been retained by BIS Frucon to conduct an additional assessment of the nature and extent of contaminated soil and groundwater at the Procter & Gamble (P&G) plant in Iowa City, IA. Contaminated groundwater was discovered during assessment activities for an underground storage tank (UST) (Iowa Department of Natural Resources (DNR) Registration #198710520) fill-in-place closure. Diesel fuel and motor oil at concentrations above DNR target levels were present in groundwater in a monitoring well sampled for the closure. This report details the additional assessment activities conducted in response to a letter dated January 27, 2011, from the DNR to Procter & Gamble Hair Care LLC.

2.0 Site History

Seneca was contracted through BIS Frucon to close a three compartment UST that previously contained perfume concentrate compounds at the request of P&G. The UST was closed by filling-in-place on September 29, 2010. Tank closure assessment procedures normally require analysis of a down gradient groundwater sample. An existing groundwater monitoring well, MW4, was sampled for the closure assessment. Results of analysis indicated the sample from MW4 contained total extractable hydrocarbons as diesel fuel and motor oil in excess of DNR Tier 1 Lookup Table target levels as found in 'Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks, 567 IAC Chapter 135'. It was the understanding of Seneca that the UST never contained diesel fuel or motor oil, indicating the groundwater contamination discovered may not have originated from the UST. In a letter dated January 27, 2011, the DNR required additional assessment to delineate the extent of the contamination in soil and groundwater. A work plan developed by Seneca was submitted for DNR approval dated February 21, 2011. The plan for the additional assessment was approved by DNR in a letter dated March 10, 2011.

3.0 Monitoring/Sampling of Existing Wells

Seneca obtained groundwater samples from existing monitoring wells MW2, MW4, MW5 and MW6 on April 28, 2011. Groundwater levels were obtained in all six wells, but it was determined the screened intervals of MW3 and MW7 were submerged, causing any collected samples to be invalid; therefore, MW3 and MW7 were not sampled by Seneca. Because diagrams depicting the construction details of the existing monitoring wells were not available, a feeler gauge was used to determine the depth to the top of the screened interval in each well. Groundwater levels and total depths of the existing wells were determined with a standard metered tape groundwater level indicator. Relative elevations of the ground level and tops of casings for each well were surveyed using a standard automatic level. Details of the construction of the existing wells as determined in the field are presented in Appendix 6.

Hydraulic conductivity was determined in two wells via slug test utilizing the Bouwer-Rice data reduction method. A bailer was used to withdraw a slug and a standard water level indicator was used to measure recharge with time.

3.1 Methodology

After collecting water level data, the wells were developed by bailing approximately two well casings of water from each well and allowing the water levels to recover prior to sampling. The groundwater samples were collected using clean, disposable bailers with new string. Bailer and string were discarded after use to prevent the possibility of cross-contamination of the wells and samples. A representative sample was retrieved, placed in an appropriate, labeled sample container, and placed in iced storage for delivery to the laboratory for analysis. Samples were transferred under Chain-of-Custody. Each sample was analyzed for volatile organic compounds (Method SW8260B) and total extractable hydrocarbons (TEH) (Iowa Method OA-2) by TestAmerica of Cedar Falls, Iowa, an Iowa DNR certified laboratory.

3.2 Results for Existing Wells

Analysis of groundwater samples from the existing wells sampled indicated that three of the four, MW4, MW5 and MW6, contained TEH as diesel fuel above IDNR Tier 1 target levels and all four wells contained TEH as motor oil above target levels. Results are summarized in Table 1, as well as reprints of the IDNR Tier 1 Look-Up Table and Statewide Standards for Contaminants in Soil and Groundwater, which may be found in Appendix 1. Analytical reports and chain of custody documentation may be found in Appendix 2.

Hydraulic conductivity measurements indicate the groundwater underlying the affected area is non-protected, i.e. has been determined to be less than 0.44 meters per day (m/d). The hydraulic conductivity in MW5 and MW6 was 0.00004 and 0.00002 m/d, respectively. Slug test data and reduction computations may be found in Appendix 7.

An Aerial Photo of the site with approximate locations of all monitoring wells and a Site Plan Map are included in Appendix 3. Groundwater contamination plume maps for TEH as diesel fuel and motor oil may be found in Appendix 4. Each contaminant plume is contoured at the respective Tier 1 target level or Statewide Standard for a non-protected groundwater source for each parameter. A contoured groundwater flow direction map may be found in Appendix 5.

4.0 Installation/Monitoring/Sampling of Monitoring Wells Installed by Seneca

Because, based on analytical data obtained from the existing wells, the contaminant plumes were not defined, on May 16, 2011, Seneca installed seven additional monitoring wells located in a manner to delineate the extent of the area affected by groundwater contamination.

4.1 Methodology

Soil was sampled continuously during advancement of the well borings. Samples were screened in one-foot increments with the use of a photoionization detector (PID). A PID is

used to detect the presence/absence of volatile hydrocarbons in soil. A reading of zero indicates volatile hydrocarbons are not present. PID readings obtained during drilling may be found on the Soil Boring Logs and Monitoring Well Construction Diagrams in Appendix 6.

A single soil sample was collected for analysis from the interval of each boring with the maximum PID reading, indicating the interval with the highest concentration of volatile organic compounds. In those borings in which the PID readings were all one (1) or less, a soil sample was collected for analysis either from the interval directly above groundwater level, typically the interval with the highest concentration of petroleum compounds, if present; or from the shallowest occurrence of fine-grained material beneath pavement, typically the interval with the highest concentration of petroleum compounds from surface releases.

Monitoring wells were constructed in the borings by placing 2 inch diameter, 10 feet long screened casing with a plug on the base in the boring with flush-threaded unscreened casing extending above the screened interval to the surface. A sand pack was placed in the annulus between the well casing and the soil boring to approximately 3 feet from the surface. The remainder of the annulus was sealed with bentonite granules/pellets to the surface. Flush-mount monitoring well covers were concreted in place. Soil Boring Logs and Monitoring Well Construction Diagrams may be found in Appendix 6.

4.2 Results for Soil Borings

Analysis of soil samples from wells MW8 through MW14 indicated that detectable concentrations of volatile organic compounds were not present in any of the samples analyzed; and TEH as diesel fuel and motor oil are present only in the sample from MW9. The concentration detected in MW9 does not exceed IDNR target levels or Statewide Standards. Results are summarized in Table 2, as well as reprints of the IDNR Tier 1 Look-Up Table and Statewide Standards for Contaminants in Soil and Groundwater, which may be found in Appendix 1. Analytical reports and chain of custody documentation may be found in Appendix 2.

4.3 Results for Seneca Monitoring Wells

Analysis of groundwater samples from wells MW8 through MW14 indicated that volatile organic compounds (VOCs) were detected in MW11 and MW12. The groundwater sample from MW11 contained cis-1,2-Dichloroethene (Chemical Abstract Service (CAS) #156-59-2) at a concentration of 1.74 micrograms per liter (ug/L) and the groundwater sample from MW12 contained tert-Butylbenzene (CAS #156-59-2) at a concentration of 1.51 ug/L. The concentration of cis-1,2-Dichloroethene in the sample from MW11 does not exceed the statewide standard of 350 ug/L (0.35 mg/L) for a non-protected groundwater source. A standard for tert-Butylbenzene was not found in the Statewide Standards list.

Analysis of groundwater samples from MW8 through MW14 also indicated that TEHs as diesel and/or waste oil were detected in MW8, MW10, MW11, MW12 and MW13. None

of the detected TEHs exceed the IDNR Tier 1 target levels. Results are summarized in Table 3, as well as reprints of the IDNR Tier 1 Look-Up Table and Statewide Standards for Contaminants in Soil and Groundwater, which may be found in Appendix 1. Analytical reports and chain of custody documentation may be found in Appendix 2.

5.0 Receptor Survey

The groundwater ingestion exposure pathway is the only pathway for which the contaminant concentrations discovered pose risk. Because risk may be posed to water supply wells, a water well receptor survey was conducted by Seneca on June 9, 2011. The Iowa DNR Well Search Website was utilized to determine the existence of water supply wells within 1000 feet of the affected area.

The receptor survey indicated there are no active water wells of record within 1000 feet of the affected area of the P&G plant. Please find the documentation for the well search activities in Appendix 8. In accordance with DNR Tier 1 procedures, the risk pathway is deemed incomplete, and no risk to groundwater ingestion is represented by the discovered contamination.

6.0 Conclusions & Recommendations

The groundwater contamination plumes, defined to the Iowa Tier 1 Look-Up Table target levels, are within the confines of the facility property. The contamination defined does not appear to pose a threat to groundwater supplies or other receptors.

Because the contamination concentrations are relatively low and do not include highly reactive or mobile constituents, it appears at this time the groundwater contamination poses little, if any, risk to human health or the environment. Options for this site include:

1. sampling/monitoring; or
2. close the site and abandon the monitoring wells.

Monitoring may serve to establish plume stability. Based on factors previously described, Seneca does not recommend any additional assessment.