Georgia Department of Natural Resources
2 Martin Luther King, Jr. Dr. S.E., Suite 1462 East, Atlanta, Georgia 30334
Mark Williams, Commissioner
Environmental Protection Division
F. Allen Barnes, Director
Land Protection Branch
Mark Smith, Branch Chief

Reply To:
Response and Remediation Program
2 Martin Luther King, Jr. Drive, S.E.
Suite 1462, East Tower
Atlanta, Georgia 30334-9000
Office 404/657-8600 Fax 404-657-0807

November 10, 2011

VIA E-MAIL AND REGULAR MAIL

PM, Ltd.
c/o Ms. Nancy Shannon
25 Park Place, 2nd Floor
Atlanta, Georgia 30003

Re: Voluntary Remediation Plan Application
Comments
Former Imperial Cleaners – Kingscreek Shopping Center, HSI Site No. 10690
1233B Alpharetta Highway
Roswell, Fulton County, Georgia
Tax Parcels 12-1993-0450-063-5 and 12-1993-0450-062-7

Dear Ms. Shannon:

The Georgia Environmental Protection Division (EPD) has reviewed the Voluntary Remediation Program (VRP) Application and Plan that has been submitted pursuant to the Georgia Voluntary Remediation Program Act (Act) O.C.G.A. §12-8-100 et seq. EPD has noted the following deficiencies:

Risk Reduction Standards (RRS)

1. **Risk Reduction Standards for Soil** – The following deficiencies were noted with the Types 1 through 4 RRS for soil and should be revised accordingly in the VRP application.
    a. Presentation of Regulated Substances - The regulated substances in soil listed in Appendix B does not match those provided in the RRS summary of Table 8. The following substances presented in Appendix B have been excluded from Table 8 of the tables section: vinyl chloride, trans-1,2-dichloroethene and cis-1,2-dichloroethene (dichloroethylene, N.O.S.) Please explain or modify the tables.
    b. Regulated Substances – For Table A-3 of Appendix B, the Types 1 through 4 soil RRS for dichloroethylene, N.O.S. are not applicable since the newly updated Appendix I of the Georgia Rules for Hazardous Site Response (Rules) no longer regulates dichloroethylene N.O.S., but rather the individual isomers of dichloroethylene: cis-1,2-dichloroethene and trans-1,2-dichloroethene. Therefore, dichloroethylene N.O.S. must be divided into its individual isomers and evaluated separately. Please note

that RRS values were derived for trans-1,2-dichloroethene, but not cis-1,2-dichloroethene.

c. Toxicity Values and Chemical-specific Parameters - A number of the Type 2 and 4 soil RRS differed from that of EPD's determined values. Please note that EPD has adopted EPA's new hierarchy for obtaining toxicity factors and chemical specific parameters. Please update the risk-based Type 2 and 4 values for all regulated substances in soil provided in Appendix B with the exception of vinyl chloride and tetrachloroethylene. EPD's preferred source for obtaining toxicity factors is EPA's Regional Screening Levels (RSL) Table[1]. All other chemical-specific parameters used in the derivation of the volatilization factors should be obtained from the RSL Chemical-specific Parameters Supporting Table[2]. Please revise accordingly. Also, as noted in Comment 6 below, please include the utility and construction worker scenario in these calculations.

2. **Risk Reduction Standards for Groundwater** – The following comments address the deficiencies noted in the derivation of the Type 1 through 4 groundwater RRS.
   a. Type 1 Groundwater RRS - The Type 1 groundwater RRS for cis-1,2-dichloroethene is incorrect. Based on Appendix III, Table 1 of the Rules, the correct Type 1 groundwater criteria for this substance is 70 µg/L. Please note that the HSRA Rules and tables have been recently updated.
   b. Toxicity Values and Chemical-specific Parameters - The site-specific Type 2 and 4 groundwater RRS for the following regulated substances were incorrect due to use of incorrect toxicity factors and/or chemical-specific parameters: trichloroethylene, trans-1,2-dichloroethene, and vinyl chloride. Please refer to the sources provided in Comment #1 for obtaining currently acceptable toxicity factors and chemical-specific parameter values.
   c. Type 2 Groundwater RRS - The Type 2 groundwater RRS for vinyl chloride was incorrectly based on the adult resident. The final Type 2 groundwater RRS should be based on the more protective of the adult and child resident. Therefore, the correct Type 2 groundwater RRS is 1 µg/L and not 2 µg/L as reported. Please make all necessary revisions.

3. **Target Indoor Air Concentrations** - Section 5.5 "Air" states "in referring to testing completed inside the Tuesday Morning store during 2008" PCE and TCE concentrations were just slightly above their target indoor air concentration (TIAC) in at least one sample." However, indoor air testing in July 2010 indicated that the tenant space adjacent to the Tuesday Morning had not been impacted

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[1] U.S. EPA (May 2010). Regional Screening Levels for Chemical Contaminants at Superfund Sites Table. Accessible online at: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/pdf/master_sl_table_run_MAY2010.pdf Website last updated October 27, 2010.

[2] U.S. EPA (May 2010). Regional Screening Level Chemical-specific Parameters Supporting Table. Available online at: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/pdf/params_sl_table_run_MAY2010.pdf. Website last updated October 27, 2010.

above TIACs. Due to the elevated detected concentrations of volatiles in soil and groundwater at the facility, EPD is requesting that a vapor intrusion evaluation be conducted for the facility, including the collection of new indoor air samples. Although the vapor intrusion pathway was addressed as part of the CSR in 2007, conditions of the site and chemical-specific parameters (e.g., toxicity factors) have changed since 2007. Please evaluate TIACs in light of the new toxicity factors and re-calculate when necessary. Unless it can be adequately demonstrated that the indoor air concentrations of chlorinated VOCs indoors have decreased below the new target indoor air concentrations following corrective action (e.g., vacuum extraction from the two wells inside the building) we will require that a mitigation system be installed. In addition, Table 5 presents a comparison of the target indoor air concentrations and cumulative summary of air monitoring data (2001-2010). The source of the TIACs and/or supporting calculations used to determine these values were not presented in the report. Please provide the source and/or supporting calculations for newly calculated values.

4. **Editorial Note** – The RRS supporting tables in Appendix B "Risk Reduction Standard Calculations" are mislabeled A-1 through A-7.

Remediation Plan

5. Bullet # 4 of Section 6.0 states that no impacts have been detected in Hog Wallow Creek to date. To confirm that groundwater reaching this creek has not caused contamination above In-stream Water Quality Standards (ISWQS), please gauge the stream flow over a period of at least 6 months during the expected dry part of the year to determine a reasonable low-flow value. Use the low flow value in mixing calculations to predict the in-stream contaminant concentrations. Also, conduct at least one sampling event when the stream is at or near low-flow.
6. Bullet # 7 of Section 6.0 states criteria for removal of the site from the HSI after a three-year period of quarterly monitoring. EPD's approval regarding the frequency and duration of groundwater monitoring will be based on site-specific data and the submitted fate and transport model. In addition, a removal criterion that addresses vapor intrusion must be included.

Groundwater Modeling

7. Appendix C states that the initial source concentrations for the groundwater simulation model were those observed at MW-7 in November 2006. EPD is unable to find a record of a November 2006 sampling event at this well. Also, the set of concentrations used as initial source concentrations in the model do not match a single sampling event at any of the wells near the source area. The concentrations recorded at MW-2 during the September 2006 sampling event match the input concentrations, except that PCE was observed at 2,700 µg/l instead of the 2,900 µg/l that was used in the model. The concentration of PCE

at MW-7 was 2,900 µg/l in July 2007. Please clarify where the initial source concentrations used in the model came from. (See Comment 11)

8. EPD notes that the fate and transport modeling that has already been completed (presented in Appendix C) limits the model simulation time to 14 years. But, if the simulation time is extended, the model indicates that concentrations reaching Hog Wallow Creek will continue to increase for 20 to 25 years, since the source is assumed to be continuous. EPD requests that you run the model forward in time until the model shows that steady-state concentrations have been reached at the receptor well (MW-11R), then use the steady-state concentrations in the comparison with the maximum allowable COC concentrations (C_1) that ensure that the Instream Water Quality Standards for the stream are not exceeded.
9. EPD notes that the concentration at MW-7, which is used to set the source concentration in the simulation model, increased from 2,900 µg/l in November 2006 to 4,800 µg/l in June 2010. Therefore, we do not agree that the use of 2,900 µg/l as the source concentration in the model simulations is conservative. The strength of the input concentration must be adjusted to meet the new circumstances that prevail in the source area. Please adjust the source strength to match the June 2010 monitoring results. The beginning simulation time should be set to June 2010.
10. For future modeling of the interception of the plume by Hog Wallow Creek, please set the Y-dispersivity coefficient to near zero. Then just use the width of the source for the length of the stream segment receiving the impact (L in your mixing calculations). This will insure that all of the mass leaving the source and intercepted by the stream is accounted for in your calculations. In the present case, you increased L by 10 feet to 85 feet (the width of the source is 75 feet), which accounted for almost all of the mass that was dispersed in the Y-direction, and then used the centerline concentration as C_1, the concentration of the COC at MW-11R. A simpler solution is to just turn off dispersion in Y and use the source width in the mixing calculations. Then C_1 will be uniform across L.
11. The model input screenshot shown in Figure C-2 is an effective way for EPD to understand your model inputs. Please include a screenshot of all model simulation run inputs in the future. Figure C-2 is an example of what is needed, but it applies only to the model calibration run, hence the simulation time is set to 4 years. Include similar screenshots for all model runs in which any parameter is changed, including simulation time. In this case, model input screenshots would have been included for the runs that produced the 2013 and 2020 results.

Other

PM, Ltd. must address the above comments to EPD's satisfaction in order to demonstrate compliance with the provisions, purposes, standards, and policies of the Act. EPD may, at its sole discretion, review and comment on documents submitted by PM, Ltd. However, failure of EPD to respond to a submittal within any timeframe does not relieve PM, Ltd. from complying with the provisions, purposes, standards, and

policies of the Act. EPD reserves all rights to require groundwater monitoring pursuant to Section 12-8-107(g)(2) of the Act.

Should you have any question or concerns regarding this matter, please contact Mr. Terry Allison of the Response and Remediation Program at (404) 657-8600.

Sincerely,

Alexandra Y. Cleary
Program Manager
Response and Remediation Program

c: Charles T. Ferry, MACTEC

File: VRP Application – PM, Ltd.; Former Imperial cleaners

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