



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

*Northwest Regional Office, 3190 - 160th Ave S.E. • Bellevue, Washington 98008-5452 • (425) 649-7000*

April 22, 1998

Mr. James Peale  
Delta Environmental  
1756 114<sup>th</sup> Ave. SE  
Bellevue, WA. 98004

Dear Mr. Peale:

RE: Voluntary Cleanup Program, BOC Gases Acetylene Plant, 7700 14<sup>th</sup> Ave. S, Seattle, Washington.

Thank you for submitting the results of your independent remedial action(s) for technical assistance and review by the State of Washington Department of Ecology (Ecology). Ecology appreciates your initiative in pursuing this administrative option under the Model Toxics Control Act (MTCA).

Ecology's Toxics Cleanup Program has reviewed the following information regarding the BOC Gases Acetylene Plant, 7700 14<sup>th</sup> Ave. S, Seattle, Washington:

1. SUBSURFACE ENVIRONMENTAL ASSESSMENT BOC GASES, 7700 14<sup>th</sup> Avenue, S. Seattle, WA. March 9, 1998, by Delta Environmental, Project No. M097-750.

Based upon the above listed information Ecology has the following comments:

1. Section 5.3 Carbide Lime Dangerous/Hazardous Waste Determination, page 13, 3<sup>rd</sup> paragraph, 1<sup>st</sup> sentence "The TCLP metal and pH analytical results also indicate that the lime would not be classified a Dangerous or Hazardous Waste"

**Comment:** This may be true based on your analysis. However, as noted in the report, the lime may be 'actionable' under MTCA if it is associated with high pH values that cause dissolution of metals from soils during seasons of high water table when the groundwater comes in contact with the lime material.

2. Section 5.4 Active Lime Pond and Former Lime Pond Soil Samples, page 14, 3<sup>rd</sup> paragraph, second sentence "The soil sample pH values decreased to the south, away from the active lime pond"

**Comment:** This statement is misleading and not conclusive because of data gaps (lack

of soil pH values) between the active and the inactive pond areas, a lateral distance of about 178.75 feet (Figure 10). Within the Active pond area, the lime pH values appear to decrease towards the southwest and southeast. While the soil pH values in the inactive pond area appear to decrease in the easterly general direction.

It is our understanding that the lime in the inactive pond area have been removed, therefore the elevated pH values detected in the soil of the inactive pond area are the effects of the lime residuals left in place.

- 2b. Section 5.4 Active Lime Pond and Former Lime Pond Soil Samples, page 14, 3<sup>rd</sup> paragraph, 3<sup>rd</sup> sentence, "The trend in soil values is correlative to the trend observed in groundwater pH indicating that the elevated pH values observed in soil are likely due to elevated pH pore water present in the soil matrix and not due to changes in the pH of the soil matrix."

**Comment:** This statement is misleading and not conclusive because of data gaps (lack of monitoring well points to evaluate local influences, if any, and groundwater conditions) between the active pond area of MW-02, and the inactive pond area of MW-04, that covers a lateral distance of about 318.75 feet (Figures 8, 9, 10, 12, & 13).

3. Section 6.0, Discussion, page 16, Item 3, "the groundwater is moving in a south or southeasterly direction under the site"

**Comment:** We agree that the groundwater is moving in a southeasterly direction only in the active pond area where there is sufficient data to make such determination. We disagree that there is sufficient data to make a conclusive determination of the groundwater movement beyond the boundaries of the active pond area due to local influences that may be effecting groundwater movement between MW-02 and MW-04.

Is 'Site' referred in this section of the text meant to represent the 'active pond area' or does it include the 'rear dock area' and the 'inactive pond area?' Please clarify.

There are insufficient data to conclusively evaluate groundwater local effects, movements and conditions at the rear dock and the inactive pond areas.

- 3b. Section 6.0, Discussion, page 16, Item 5, "nearly all of the carbide .....the remaining soil does not exhibit any physical or chemical characteristics that indicate residual impacts to soil and groundwater due to any remaining carbide

lime”

**Comment:** Please refer to the above comments regarding lack of sufficient groundwater data to make such informed determination.

Further, the report was silent regarding whether seasonal high water table affects the only well, MW-04 located within the inactive pond area. Please clarify.

- 3c. Section 6.0, Discussion, page 16, Item 6, “the lack of soil and groundwater impacts in the former .....”

**Comment:** Inconclusive statement for the reasons given above.

4. Section 6.2 Dissolution of Arsenic, page 17, 1<sup>st</sup> paragraph, last sentence, “The mobilization of arsenic(III) is confirmed by elevated levels of arsenic.....”

**Comment:** We concur with your evaluation that the lack of mobilization of arsenic in the assumed upgradient well, MW-03, is because this well is relatively not affected by the reducing alkaline groundwater conditions from the lime carbide in the active pond area.

5. Section 6.3, Former Lime Pond Impacts, page 18, last sentence, “The soil and groundwater analyses indicate that the detected pH and arsenic concentrations are a result of impacts from the active lime pond”

**Comment:** This statement is inconclusive and we disagree for reasons outlined above.

6. Section 7.0, Conclusions, 1<sup>st</sup> paragraph and sentence, “The trends observed from interpretation of the soil and groundwater analytical results indicate that there are no impacts to soil and groundwater originating from the former lime pond area”

**Comment:** This statement is inconclusive and we disagree for reasons outlined above.

7. Section 7.2, Former Lime Pond Regulatory Closure, page 19.

**Comment:** If an NFA is requested separately for this section of the ‘site’, the former lime pond, then provide sufficient data to make an informed evaluation of the groundwater conditions beneath the site as discussed in various sections of this letter. What is the local

groundwater flow within the inactive pond area? Is the groundwater in this area in contact with the residual soil/lime left in place during the seasons of high water table? One monitoring well, MW-04 alone is not sufficient to form the basis to make an informed decision concerning the groundwater conditions beneath this 'site.'

Further, if the residual lime left in place is affecting groundwater by creating a reducing alkaline groundwater conditions hence mobilizing arsenic from the soil above state standards, then a deed restriction may be applicable for the 'actionable' lime material even though it is not designated as a dangerous waste.

Confirmation groundwater samples indicative of current site conditions would be required.

8. Section 7.3, Active Lime Pond Interim Status Letter, page 19, Item 3, "The carbide lime is not a Washington State Dangerous Waste...."

Comment. This may be true based on your analysis. However, as noted in the report, the lime may be 'actionable' under MTCA if it is associated with high pH values that cause dissolution of metals from soils above state standards during seasons of high water table when the groundwater comes in contact with the lime material.

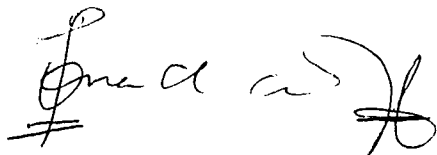
- 8b. Section 7.3, Active Lime Pond Interim Status Letter, page 19, Item 4, "A restrictive covenant will not be required as a condition of the NFA determination if all carbide lime is removed during closure. Delta also requests that Ecology provide indication regarding whether a restrictive covenant would be required if some lime is stabilized and left in place during closure"

Comment: We concur only if confirmation groundwater samples after the active remediation show that no adverse effect of metal mobilization above state standards are occurring at the active pond and dock areas as a result of any residuals of the lime material left in place after site closure.

Voluntary Cleanup Program  
BOC Gases Acetylene Plant  
April 22, 1998

If you have any questions, please contact me at (425) 649-7112.

Sincerely,

A handwritten signature in black ink, appearing to read "Nnamdi Madakor", with a stylized flourish at the end.

Nnamdi Madakor  
Senior Hydrogeologist  
Toxics Cleanup Program

NM: nm

cc: file