CMG ENVIRONMENTAL, INC.

July 24, 2006

Town of Wayland Board of Selectmen
% Town Administrator Frederick E. Turkington, Jr.
41 Cochituate Road
Wayland, MA 01778

**Re: Former Raytheon Facility**
**430 Boston Post Road, Wayland MA**
**CMG ID 2002-003**

Dear Selectmen:

Thank you for the invitation to appear before the Board of Selectmen this date and the opportunity to discuss the former Raytheon facility at 420 Boston Post Road (the Site). Through communications with Mr. Turkington, I am aware of several topics of interest to the Board and would like to briefly address them through this letter.

## CONTAMINATION IDENTIFIED AT SITE

Environmental contamination is present at concentrations of regulatory interest at three portions the Site, designated the Southern Area, the Western Area, and the Northern Area for ease of reference.

### SOUTHERN AREA

The major contamination present in the Southern Area is chlorinated volatile organic compounds (CVOCs) in groundwater, predominantly trichloroethene (TCE) and related compounds. There is also some groundwater contamination from the gasoline additive methyl tertiary butyl ether (MTBE) in the portion of the Southern Area near the gasoline station located at 268 Boston Post Road. The contaminated groundwater plume is migrating in an overall west-southwesterly direction away from its source in the courtyard area of the main Site building. Environmental Resources Management, Inc. (ERM, Raytheon's environmental consultant at the Site) has mapped the groundwater plume crossing Route 20 and dropping several feet in elevation. However, CVOC concentrations drop below detection limits before the plume reaches the Sudbury River, and no significant contamination is present deeper than approximately 30 feet below grade.

### WESTERN AREA

Contamination in the Western Area consisted of heavy metals (notably chromium & copper), polychlorinated biphenyls (PCBs), and polynuclear aromatic hydrocarbons (PAHs) sequestered in wetland sediments along the Sudbury River. In 2003-2004, Raytheon removed the upper 1-3 feet of contaminated sediment from approximately two acres of wetland, thereby effectively remediating the heavy metal, PCB, and PAH contamination. ERM has also measured reportable arsenic concentrations in groundwater at the Western Area, but this is entirely consistent with naturally-occurring phenomena.

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NORTHERN AREA

Contamination in the Northern Area is primarily TCE and related CVOCs. ERM has identified a source area located approximately 575 feet northwest of the main Site building (about 400 feet northwest of the wastewater treatment building). This source is located between 5-10 feet below grade and includes subsurface soil heavily contaminated with TCE and other CVOCs. The groundwater plume from this source is migrating almost due west and diving downwards. The vertical zone of contamination at its westernmost extent near the Sudbury River is 185-195 feet below grade, substantially below the elevation of the river bottom.

## REMEDIATION PROGRESS

SOUTHERN AREA

Raytheon conducted a full-scale in-situ chemical oxidation (ISCO) in the Southern Area in May-July 2004. ERM continues to monitor the effectiveness of ISCO treatment. Overall CVOC concentrations in the treatment area have dropped substantially, but as of April 2006, TCE or other CVOC concentrations remained above applicable state standards in 32 of 44 monitoring wells tested in this round.

WESTERN AREA

Raytheon completed remediation in the Western Area in 2004, and is now in their third year (of five) for monitoring wetlands restoration.

NORTHERN AREA

Raytheon plans to commence remediation activities in the Northern Area in August 2006.

## ESTIMATED TIME FOR COMPLETION

SOUTHERN AREA

It is difficult to provide a reliable estimate for how long it will take for ISCO to fully remediate the Southern Area. ERM measured detectable permanganate concentrations (the active chemical employed by ISCO) in 19 of 55 monitoring wells in April 2006, which indicates residual chemical continues to actively oxidize remaining CVOCs. It is likely that permanganate concentrations will completely dissipate in the next 2-3 years. At that time, ERM will be able to determine if any portions of the Southern Area need supplemental ISCO treatment (which looks to be the case). It may take up to five years after this supplemental treatment to verify that CVOC concentrations have dropped below regulatory standards throughout the Southern Area. A third round of treatment may be necessary in one or two isolated locations. Therefore, the earliest that Raytheon would deem the Southern Area sufficiently remediated is 2008, it is likely that remediation will not be complete until circa 2013, and there is a small chance that remediation will not be complete until 2018 or later.

WESTERN AREA

Raytheon will continue wetlands restoration monitoring in the Western Area through 2008, but they have already completed remediation of this portion of the Site.

NORTHERN AREA

Raytheon plans to conduct the most intensive phase of remediation in the Northern Area (soil excavation and dewatering) in August-September 2006. After one year of post-excavation quarterly groundwater monitoring, they expect to begin nutrient addition to enhance naturally-occurring bioremediation in 2007. At this juncture it is impossible to accurately predict how long

it may take for enhanced bioremediation to reduce residual CVOC concentrations to below regulatory standards throughout the Northern Area, but this process generally takes decades. The most optimistic prediction would be successful remediation circa 2017, but a more likely outcome would be circa 2035.

## OPEN ISSUES

Mr. Turkington has informed me that the Selectmen are interested in knowing the anticipated timetable for resolving 'open issues.' At this time the only relevant unanswered questions I am aware of are whether it will take additional ISCO injections to complete remediation of the Southern Area (and if so, how much and at what points), and how much nutrient addition it will take to optimize biodegradation in the Northern Area. ERM should be able to answer the first question in large part within the next year or two, and should be able to answer the latter question by circa 2010. Small surprises have arisen in the course of assessment and remediation of the Southern and Western Areas at the Site (such as reportable concentrations of MTBE in the Southern Area and of dissolved arsenic in the Western Area), and it is likely that additional small surprises will arise during remediation of the Northern Area. Nevertheless, I am satisfied that Raytheon has assessed environmental conditions at the Site to a degree that it is very unlikely they would identify any significant additional unknown release.

## DEVELOPMENT OPTIONS

As far as environmental issues are concerned, the major consideration in future redevelopment of the Site is the existing deed restriction on approximately 82½ acres of the Site. This deed restriction stipulates that Raytheon must be able to conduct the assessment and remediation activities necessary for them to complete Site remediation in accordance with applicable state and federal laws and regulations. To that end, development activities must not destroy (or impede access to) numerous monitoring wells located in all three Site areas, and Raytheon must have access to implement the planned excavation/nutrient additions in the Northern Area and (as necessary) additional ISCO injections in the Southern Area. Furthermore, the deed restriction currently prohibits use of the property for residential, childcare, daycare, or recreational purposes, and the LSP-of-Record for the Site (currently Mr. John Drobinski, P.G. of ERM) must approve any demolition of (or significant addition to) existing buildings.

Another consideration in future Site development is hydrology. Some redevelopment options may include on-Site infiltration galleries to handle septic system effluent or stormwater runoff, which would affect groundwater flow characteristics. Major changes in impervious cover (buildings and paving) could also strongly affect Site groundwater flow. Therefore, Raytheon must be a party to discussion of these development components.

Raytheon and Mr. Drobinski have indicated they are willing to release portions of the property from the deed restriction in cooperation with proposed Site redevelopment plans, but they need to review such plans and have confidence that they will neither adversely affect Raytheon's ability to assess and remediate the Site nor exacerbate any existing conditions of concern.

## FUTURE ROLE AS TECHNICAL ADVISOR

Environmental assessment and remediation of the Site has reached the point where Raytheon and ERM have made nearly all of the major choices necessary to bring these tasks to completion. However, the point of regulatory compliance is still many years in the future, particularly with regard to the Northern Area of the Site. I believe my role as technical advisor to the Town of

Wayland and its Board of Selectmen regarding Raytheon's continuing activities at the Site is still important, but will require less effort than has been the case over the past four years.

At present, Wayland's concerns about choices between future redevelopment options have eclipsed the Town's ongoing concern to ensure that Raytheon is devoting sufficient effort to their environmental assessment and remediation activities. I would like clarification from both the Wayland Board of Selectmen and Raytheon as to whether it is appropriate for me to provide public commentary and technical advice to the Town regarding development concerns while funded by the existing Memorandum of Understanding account, whether this is inappropriate, or whether Wayland should seek an alternative funding source.

As always, please feel free to contact me at any time with questions, or if CMG or I can be of any further assistance to you.

Sincerely,
CMG ENVIRONMENTAL, INC.

Benson R. Gould, LSP, LEP
Principal

cc: Mr. Louis J. Burkhardt III, P.G., Raytheon Company
Mr. John Drobinski, P.G, LSP, Environmental Resources Management, Inc.
Public Involvement Plan Repositories
Wayland Working Group (via email only)

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