1-30-003A-0U3

ARCADIS
Infrastructure, environment, buildings

ARCADIS G&M, Inc.
Suite 100
88 Duryea Road
Melville
New York 11747
Tel 631 249 7600
Fax 631 249 7610
www.arcadis-us.com

ENVIRONMENT

Mr. Steve M. Scharf, P.E.
Project Engineer
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A, 11th Floor
625 Broadway
Albany, New York 12233-7015

Subject:
Discussion of Soil Vapor/Vapor Intrusion Strategy,
Remedial Investigation/Feasibility Study (RI/FS) Work Plan,
Operable Unit 3 (OU3), Former Grumman Settling Ponds,
Bethpage, New York
Order on Consent, Index No. W1-0018-04-01

Date:
2 December 2005

Contact:
Carlo San Giovanni

Phone:
631 391 5259

Email:
csangiovanni@arcadis-us.com

Our ref:
NY001348.1005

Dear Mr. Scharf:

As you are aware, Northrop Grumman Corporation (NGC) has requested a meeting with the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) to discuss the October 20, 2005 comments received on the OU3 Remedial Investigation (RI)/Feasibility Study (FS) Work Plan. Specifically, we would like to discuss a proposed strategy and potential options for evaluation of the soil vapor intrusion (VI) pathway at and near the former Grumman Settling Ponds (OU3 – Bethpage Community Park) site in Bethpage, New York. We enter into this discussion with the understanding that the NYSDEC has granted a 30-day extension (i.e., to December 20, 2005) to allow NGC time to consider its options in this matter, which, pursuant to Subparagraphs II.B.1(b) and (d) of the July 4, 2005 Administrative Consent Order (ACO), include the following: (1) incorporate and implement the requested additional work set forth in the October 20, 2005 comments into the OU3 RI/FS Work Plan, (2) invoke the dispute resolution process, or (3) terminate the ACO. Please understand that it is NGC's full intention to arrive at a mutually acceptable agreement with the NYSDEC and NYSDOH regarding the process for soil vapor sample collection, laboratory analysis, and data evaluation prior to NGC committing to revise the RI/FS Work Plan. At this stage, NGC has no desire to terminate the ACO, however, the scope of work and related processes and the ramifications of undertaking the VI portion of the RI must be fully understood by NGC's senior management prior to exercising its options under the ACO.

As a basis for strategy development, NGC and ARCADIS have reviewed the options and approaches contained in Draft Guidance for Evaluating Soil Vapor Intrusion in

the State of New York (NYSDOH 2005). Specifically, we are aware that in the VI guidance document, NYSDOH has applied a risk-based approach in the calculation of the indoor air guidance values for five constituents, including tetrachloroethene (PCE) and trichloroethene (TCE). Although background concentrations are provided for other volatile organic compounds (VOCs), the VI guidance document states that such background concentrations "are not standards and are not meant to be interpreted as such" (p. 29). It is in light of this statement and the processes contained in the VI guidance document that we have developed an approach, as generally described herein and in greater detail in the enclosed "decision tree" (Figure 1), for investigation decision-making and determination of indoor air guidance values for the constituents of potential concern (COPCs) at the site.

ARCADIS, on behalf of NGC, has prepared the enclosed "decision tree" (Figure 1) in a manner consistent with the VI guidance document. The decision tree outlines the proposed process for focusing sampling on COPCs that may be site-related and only in those areas that may have a complete VI exposure pathway. The decision tree also incorporates the use of risk-based indoor air concentrations in evaluation of soil vapor data in areas with potential VI concerns. This step-wise approach to the VI portion of the RI allows rigorous evaluation of data at each step of the process with appropriate investigation termination points based on agreed-upon criteria.

As shown in the attached decision tree, we intend to develop risk-based indoor air concentrations (RBCs) for those COPCs without NYS indoor air guidelines using widely-accepted USEPA toxicity values, assumptions and formulae. As part of the proposed data evaluation process, the background indoor air concentrations proposed by NYSDOH would be used as initial screening concentrations and would not be used solely for making critical investigation/remedial decisions. The RBCs would be combined with appropriate groundwater to soil vapor to indoor air attenuation factors to develop acceptable health-based concentrations in soil vapor and groundwater. As you are aware, the NYSDEC and NYSDOH data that have been collected from the IBM Endicott, New York site clearly indicate that attenuation from soil vapor to indoor air is occurring, and such data provide justification for the introduction of appropriate attenuation factors into the soil vapor data evaluation process.

The resulting constituent-specific RBCs and attenuation factors would be presented in the revised RI/FS Work Plan that NGC would submit if it does not elect to terminate the ACO. Assuming that NYSDEC/NYSDOH accepts the approach set forth in the proposed decision tree and the approach outlined above, these values would be the product of a pro-forma methodology and should be readily acceptable to the NYSDOH. However, NGC believes that the NYSDOH may want to take an extended period of time to conduct a thorough review of the values and the

methodology employed. If this were to occur, NGC would recommend that NYSDEC give its immediate approval for those elements of the revised RI Work Plan not associated with the VI investigation so that the RI for the soil and groundwater elements is not delayed any further. Further, NGC would also request that those portions of the RI Work Plan dealing with the VI investigation be bi-furcated from the non-VI elements and allowed to fall under the provisions of Subparagraphs II.B.1(b) and (d) of the ACO, such that upon completion of the NYSDOH evaluation, NGC will have the options of: (1) responding to the NYSDOH comments, (2) invoking the dispute resolution process, or (3) terminating the ACO.

We understand that the meeting has been confirmed for December 9, 2005 at NYSDEC offices in New Paltz, New York at 10:30 AM. The meeting will be held with representatives of NGC and counsel, ARCADIS and the individuals from the NYSDEC and the NYSDOH indicated on cc below.

We look forward to discussing the proposed strategy as outlined herein in greater detail.

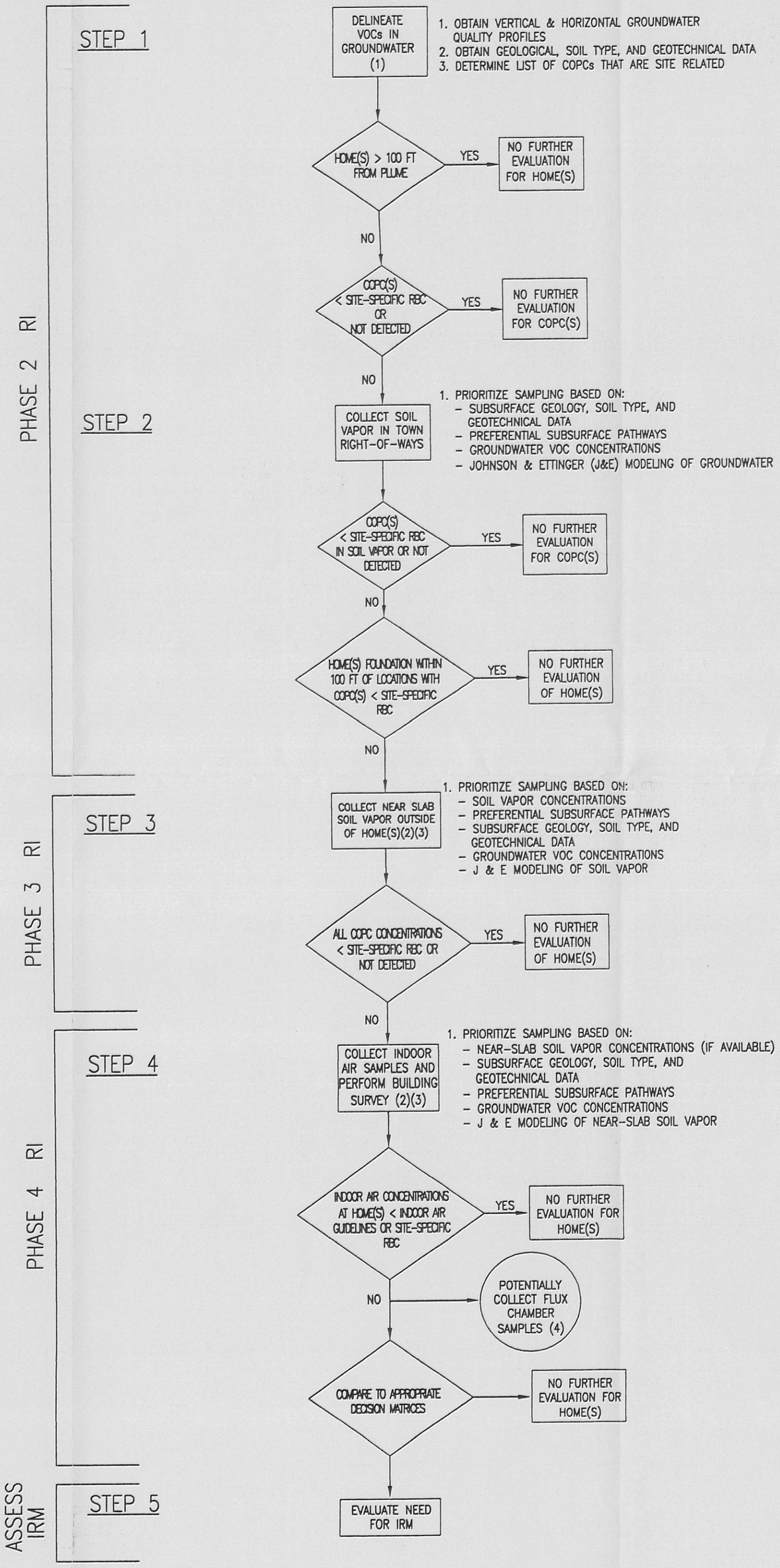
Sincerely,

ARCADIS G&M, Inc.

Carlo San Giovanni
Project Manager

Michael F. Wolfert
Project Director

Copies:
Rich Fedigan, NYSDOH- BEEI
Trevor Wescott, NYSDOH- BEEI
Chittibabu Vasudevan, NYSDEC
John Swartout, NYSDEC
Rosalie Rusinko, Esq., NYSDEC
Anthony Quartararo, Esq., NYSDEC
Larry Leskovjan, Northrop Grumman
Jill Palmer, Esq., Northrop Grumman
Frank Amoroso, Esq., Nixon Peabody



DRAFT

DRAFT

DRAFT

DEFINITIONS

VOC – VOLATILE ORGANIC COMPOUND
COPC – CONSTITUENT OF POTENTIAL CONCERN
IRM – INTERIM REMEDIAL MEASURE
RBC – RISK BASED CONCENTRATION
RI – REMEDIAL INVESTIGATION
CPP – COMMUNITY PARTICIPATION PLAN

NOTES:

1. DELINEATION CONSIDERED IN VERTICAL AND HORIZONTAL DIRECTIONS.
2. WORK PLANS TO BE DEVELOPED PRIOR TO IMPLEMENTING NEAR-SLAB SOIL GAS AND/OR INDOOR AIR SAMPLING.
3. VAPOR INTRUSION SAMPLING CONDUCTED WITH APPROPRIATE COMMUNITY OUTREACH PER APPROVED CPP.
4. CRACK ANALYSIS OR FLUX CHAMBER SAMPLING WILL BE CONSIDERED IF HIGH CONCENTRATIONS IN INDOOR AIR AND LOW CONCENTRATIONS IN NEAR-SLAB VAPOR ARE FOUND.

PROJECT TITLE

OPERABLE UNIT 3
NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

SHEET TITLE

SOIL VAPOR INTRUSION
DECISION TREE

FILE COPY

ARCADIS
88 Duryea Road
Melville, NY 11747
Tel: 631-249-7600 Fax: 631-249-7610
www.arcadis-us.com

PROJECT MANAGER	DEPARTMENT MANAGER
C. SAN GIOVANNI	M. WOLFERT
LEAD DESIGN PROF	CHECKED
	D. STERN
TASK	DRAWN BY
00001	E. HUGHES
PROJECT NUMBER	DRAWING NUMBER
NY001348.1005	1

DRAFT

Acad Version : R16.2s (LMS Tech)
User Name : ehughes
Date\Time : Wed, 16 Nov 2005 - 8:40am
Path\Name : G:\APROJECT\Northrop Grumman\Cadd\FLOW CHART4 NYSDEC.dwg