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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
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BOSTON, MASSACHUSETTS 02114-2023

February 27, 2003

55151

James Shafer, Remedial Project Manager
U.S. Department of the Navy
Naval Facilities Engineering Command
Northern Division
10 Industrial Highway
Code 1823, Mail Stop 82
Lester, PA 19113-2090

Re: Gould Island Draft Remedial Investigation Work Plan

Dear Mr. Shafer:

EPA reviewed the Work Plan for Remedial Investigation, Site 17, Building 32, Gould Island, dated January 2003 in light of its compliance with applicable EPA guidance and generally accepted practice. Detailed comments are provided in Attachment A.

Overall, EPA is concerned that an insufficient amount of data will be collected to adequately characterize the nature and extent of contamination at the site. Moreover, EPA believes that it is inefficient to collect data in a multi-phased manner. In some cases, more than a year can elapse between sampling periods when the data are either insufficient or inconsistent. Clearly, collecting data for an RI in one comprehensive effort is more productive. Collecting data in a multi-phased manner also retards the efficiency of subsequent steps like evaluation and interpretation of the data. This is especially true in cases where there is a dependency among different data (*e.g* , soils leaching into groundwater that drains into a wetland).

Groundwater sample coverage should be increased downgradient of the solvent/plating areas, east of the southern end of the building footprint.

The only characterization proposed for the bedrock wells is to perform packer tests for selected intervals. Further characterization may be necessary in the event that contamination is found. In particular, fracture orientations may guide well placements relative to likely source areas and guide placement of additional wells. Fracture characterization may be of particular concern in the event that DNAPL is discovered or suspected.

The proposed sampling of soils immediately beneath the Building 32 slab will aid in characterizing the nature of electroplating solution releases. Additional sampling of the concrete slab itself (*e.g.*, concrete coring) is recommended, in order to identify any phases formed as a result of reaction between concrete and the plating solutions, particularly as such phases may harbor Cr(VI). These phases are generally relatively soluble, and their presence may represent a potential continuing source of Cr(VI) to groundwater. Such reactions between concrete and

plating solutions can fix a significant mass of Cr. Eight penetrations of the Building 32 floor are scheduled (SB21 through SB28). Concrete coring should be undertaken at these locations, and the cores should be visually inspected for evidence of reaction with plating solutions. If there are indications of chromium-containing phases (*e.g.*, yellow staining), further analysis may be required, as this may affect the disposition of the slab, as well as proper handling of concrete debris from the site. When locating areas to take soil samples under the floor slab, the field sampling team should look for cracks in the concrete (or other ways that contaminants may have migrated to the soil) and sample in that location.

Additional soil samples downgradient of the acetylene generator building should be taken. Possible sources of the soil gas contamination should be investigated.

It is not clear what, if anything, is proposed to target the old floor drain network, other than to install DPT borings at selected locations (*see* Figure 3-2). The RI should build upon the SASE findings. Given that such floor-drain networks are frequently pathways to the subsurface via failed pipe joints, corrosion, *etc.*, it seems that the entire network deserves closer scrutiny. The areas beneath the deteriorated outfalls should be investigated. Are there any plans to excavate the pipe network? Will remaining segments be tested for integrity in order to indicate possible discharge points to subsurface soil? Will any sludge/sediment in the network be sampled and analyzed?

The Background Summary Report (Appendix A) states that early site descriptions noted the presence of asbestos-insulated piping, and that the building demolition in 2000 included asbestos abatement measures. For these reasons, it would seem prudent to test soil adjacent to the former building site for the presence of asbestos. The shallowest soil sample collected from each boring installed outside the building footprint (*e.g.*, Figure 3-1) should be analyzed for asbestos.

Previous sampling and analysis has shown the presence of cadmium at high concentrations [*e.g.*, 8080 mg/L in plating solution/sludge Composite 2 collected in 1991 (Appendix A, Table 3-1); also 482 mg/kg in concrete chips from the plating room drainage trenches (Appendix A, Table 4-8a)]. How does this observation fit into the conceptual model for site use, release scenarios, and transport processes? Did some of the plating operations involve galvanizing, and could the cadmium be associated with zinc?

Very few of the proposed exposure parameters for the human health risk assessment have been provided in the work plan. One of those that are proposed is unacceptable, as described in Attachment A. Please present all of the proposed exposure parameters to be used in the risk assessment for review in the work plan. Include any supporting rationale for those parameters selected based on professional judgement.

Regarding the screening of COPCs, EPA recommends retention of all contaminants with concentrations exceeding Region 9's risk-based screening levels for quantitative analysis. The background risk can then be discussed separately in the risk characterization section.

Alternatively, contaminants with concentrations exceeding background levels can be eliminated from the COPC list *provided that* a quantitative risk evaluation and a discussion of background risk from these contaminants are presented in the risk characterization section.

While it is acceptable to perform a screening level assessment of the sediments, the work plan should establish the process for more extensive ecological risk assessment sampling (or "additional evaluations" as stated on page 5-8 of the work plan) so as to avoid unnecessary delays owing to work plan development. The work plan should identify the steps that would prompt the need for additional characterization and establish a plan for a more intensive ecological risk assessment. This approach could save *years* on the cleanup investigation because any necessary field efforts could commence without waiting for preliminary risk reports and the development of yet another work plan for the same site.

Given the Navy's history of dumping electroplating wastes into Narragansett bay, additional sediment samples should be collected on the east side of Gould Island, particularly in the vicinity of the acid resistant drain that is connected to the electroplating shop within Building 32. A cluster of samples in the vicinity of SD04 should be collected. Additionally, more samples should be taken in the two depositional areas south and east of Gould Island. When determining the location of the additional samples, consider that the prevailing winds are from the southwest.

The Navy should consider using the bird data available for several species on Gould Island from the RIFWS as part of the baseline ecological risk assessment. Possible explanations for changes in bird populations (*i.e.*, thriving then depleted) could also be evaluated.

Provide a list of the names of the chemicals posted above the electroplating vats (*i.e.*, copper and zinc cyanide; sodium cyanide; copper cyanide; chromic acid; anodex cleaner; muratic acid; caustic soda; *etc.*). The location of the vats within the electroplating shop should also be mapped to assist with sample location.

I look forward to working with you and the Rhode Island Department of Environmental Management toward the investigation of Gould Island. Please do not hesitate to contact me at (617) 918-1385 should you have any questions or wish to arrange a meeting.

Sincerely,

Kymberlee Keckler, Acting Chief
Federal Facilities Superfund Section

Attachment

cc: Paul Kulpa, RIDEM, Providence, RI

Melissa Griffin, NETC, Newport, RI
Bart Hoskins, USEPA, Boston, MA
Chau Vu, USEPA, Boston, MA
Jennifer Stump, Gannet Fleming, Harrisburg, PA
Ken Finkelstein, NOAA, Boston, MA
Steven Parker, Tetra Tech-NUS, Wilmington, MA

ATTACHMENT A

Page	Comment
p. 1-2	Cite CERCLA guidance for RI/FS, human health & ecological risk assessment, background screening, and low flow sampling.
p. 2-15, §2.3.3	This section seems to imply (without any specific references) that any PCBs or high molecular weight PAHs are likely to be present in the area of the site only as a result of deposition from distant areas of the watershed. Please revise this section to include the possibility that these chemicals may be present as a result of site activities, especially given previous detections of these contaminants on the site.
p. 2-15, §2.4	Based on the existing information and data, please expand the site conceptual model to identify all potential or suspected sources of contamination, potential exposure pathways, and potential receptors. EPA Risk Assessment Guidance for Superfund (RAGS) Part A (December 1989) includes an example of a conceptual site model (CSM). EPA recommends the CSM be provided in a flow chart format that includes all its elements (*e.g.*, potential sources, release mechanisms, contaminated media, transport mechanisms, exposure pathways, and potential receptors).
p. 2-15, §2.4	The conceptual site model recognizes a number of likely release scenarios and transport pathways by which various contaminants could have impacted soil and groundwater. Scenarios that are not acknowledged explicitly include releases of solvents and/or plating solutions to soils and groundwater beneath the building via spills to the floor, and subsequent penetration of the floor through cracks; and releases along the route of the floor drain systems (*e.g.*, failed pipe joints, overflow of settling basins, *etc.*). In general, the sampling plan (as presented) should reveal impacts from such scenarios by testing soil and water in areas close to and downgradient of likely release areas. However, it is recommended that steps be taken to address explicitly these possibilities. In particular, the floor slab and drainage trenches should be examined closely for expansion joints, cracks, *etc.*, that might have provided a direct pathway to the subsurface. Concrete cores in such areas should be taken and should be examined for evidence of interactions with plating solutions (e.g., yellow staining from chromate, etc.). Concrete samples should be analyzed for possible residuals and/or reaction products (please see related General Comment). The floor drain system should be studied systematically for integrity and for possible areas of local discharge (e.g., failed joints, dry wells, settling basins, *etc.*).

p. 2-19, §2.4 — The text refers breakdown products of TCE, such as "dichloroetine (DCE)." Please replace with "dichloroethene."

p. 2-21, §2.5.1, ¶2 — The text notes that plating sludge was disposed of in an unknown manner, possibly in an on-site landfill. While the document states clearly that the landfill is not included in the present investigation, more information concerning the landfill may be relevant. Where is the landfill relative to the Building 32 area? Is there any possibility of impact of the landfill on the Building 32 site, which could introduce ambiguities into interpretation of site data? (It is noted that Appendix A, page 2-4, section 2.3 later states that the landfill is on the west side of the island, and references Figure 1-2. The figure, in turn, shows an area marked "Site 14 Disposal Area." Is this the landfill? If so, it does appear that this area is likely across a groundwater divide from the Building 32 area, and is unlikely to impact site groundwater. Please confirm.)

p. 2-21, §2.5.1, ¶3 — Please include marine sediment as a medium that may contain residual contamination as a result of site activities. The problem statement needs to include contamination to sediment. Currently it only includes soil and groundwater. "The problem this investigation will address is whether use, storage or disposal of chemicals and chemical waste material from Building 32 activities have resulted in residual contamination to the soil, [sediment,] and groundwater proximal to the building, and whether that contamination poses a viable risk to potential receptors at the site."

p. 2-25, §2.5 — For screening purposes, EPA recommends a comparison between the maximum concentrations detected and the Region 9 risk-based preliminary remedial goals (PRGs). However, to estimate the average and reasonable maximum exposure scenarios for human health risk assessment, Region 1 recommends use of the 95% upper confidence limit (UCL) of the arithmetic mean for the concentration term where appropriate instead of using the maximum concentration detected. Please refer to Region 1's Risk Update #2 (August 1994) and EPA's Supplemental Guidance to RAGS: Calculating the Concentration Term (May 1992) for use of the 95% UCL approach in the risk assessment.

p. 3-1, §3.1 — Neither the Phase I or Phase II goals include the goal of collecting sufficient sample data to support the human health and ecological risk assessments. This goal should be added. The soil, sediment, and groundwater sampling programs should be re-evaluated by the risk assessors after comment resolution to ensure that the sample program will provide sufficient data for the risk assessment.

p. 3-2, §3.1

The list of Phase I goals includes one stating, "Determine the purpose and role of underground structures that are not provided on historic drawings and records, and identify any possible underground injection points." This goal is certainly an important one, and deserves some effort. It is not clear from the text, however, exactly how the program targets this goal. Will any effort be made to locate any as-yet undiscovered underground structures (*e.g.*, via GPR survey)? How will underground structures (whether already identified, but of unknown function, or discovered during the investigation) be characterized? Will sludges/residues be sampled? Will structures be excavated? How will the integrity of the structures be assessed? If there is evidence, for example, of potentially leaky pipe joints, former dry wells, catch basins, etc., will the appropriate soil sampling be performed? The work plan should be expanded to provide additional details.

p. 3-3, §3.1.1.1

Figure 3-1shows proposed locations for monitoring wells. The locations are generally well motivated, and should provide some control on water levels (*i.e.*, gradients and flow directions), as well as on water quality in areas of potential impacts. One area for which coverage is minimal, however, is that east of the southern end of Building 32. One bedrock well is proposed in this area, MW03B, which will complete a pair with an existing shallow well. Given that the south end of the former building is the area of the solvent tanks and plating room, downgradient groundwater should be a major target of the investigation. On p. 2-9 of Appendix A, it is noted that wells associated with the UST removal at the south end of the building indicated groundwater flow to the NNE. In this event, it is not clear that MW03B is downgradient of the solvent and plating areas. It is recommended that at least one more well pair be installed north of MW03B in order to increase the probability that groundwater downgradient of these critical areas is sampled. Additional coverage is particularly important in this setting, where the combination of shallow bedrock and the potential for historic DNAPL releases increases the uncertainties inherent in characterization.

p. 3-3, §3.1.1.1

The text notes that several of the DPT borings may be completed as small-diameter wells. The locations proposed for the borings (Figure 3-2) appear to be well motivated, focusing on areas of probable use of hazardous materials. It is suggested that candidate borings for completion as groundwater sampling points include, in particular, SB18, SB19, and SB20, which presumably are located toward the downgradient side of the area of solvent use and downgradient of the plating room.

p. 3-7, Table 3-1B — The entries in the table for each bedrock well describe them as "... to be screened in bedrock." This seems to be contradicted by the text (*e.g.*, page 3-21, stating, "No well screens will be placed in the bedrock boreholes."). Please clarify whether the bedrock wells will be left as open borings.

p. 3-9, Table 3-1C — Additional sediment samples are needed. One sample for some of the discharge locations is not sufficient to assess residual sediment contamination or to evaluate whether there is a current source of contamination to sediment. Figure 3-3 depicts the sediment sample stations but does not present former and current discharge locations; therefore, it is not clear whether the proposed sample station locations include coverage of the 8-inch sewer line and OF-03. Also, the sediment sample coverage is not sufficient to support the human health and ecological risk assessments. Near shore sediment samples are needed. Please re-evaluate the number of proposed sediment samples per station.

p. 3-14, Table 3.3 — The table of groundwater analyses includes a list of the field parameters measured as part of the "low-flow" sampling procedure. ORP is omitted from the list. Please check for completeness.

p. 3-21, §3.2.1.4 — The proposed procedure for characterizing and completing bedrock wells is generally well conceived. Borings are to be cored to 30 feet (or greater if no water-producing fractures are encountered in this interval). Several packer tests are planned for each hole, targeting fractured intervals identified in core. Water sampling will be conducted with the pump intake set to a depth indicated by the packer tests. The proposal to leave the bedrock borings open has merit, in that this does not presuppose anything about likely intervals that might encounter contamination, and it does not preclude further characterization (*e.g.*, borehole imaging) later, if called for. However, the proposal to focus on a particular, fractured interval by placing the pump intake at a target depth may yield ambiguous results. This scheme is still sampling a 30-ft interval of open borehole, which carries some risks; e.g., dilution can mask a narrow zone of contamination, and any detections still leave open the question of what interval(s) within the 30 ft is (are) contaminated. It is recommended that, having gone to the expense of installing bedrock wells and performing packer tests, Navy collect and analyze water samples from *each* interval that is packered off, rather than a single sample from the entire open hole. This seems particularly compelling in a setting where there is potential for DNAPL (e.g., TCE), which could be localized along a few, discrete fractures.

p. 3-28, §3.2.1.8

The proposal to monitor water levels in all available wells over a five-day period is strongly endorsed. Given the island setting of the site, and the likely influence of tidal fluctuations on water levels, groundwater flow, and contaminant transport, this information will be critical to interpreting water-quality results.

p. 3-29, §3.2.2.1

The sediment sampling plan presents a woefully inadequate approach for determining whether site-related contaminants exist in the vicinity of the outfalls. As stated elsewhere within the Work Plan, marine sediments are highly variable and deposition and resuspension of contaminants is subject to the interplay of numerous forces. For this reason it would be reasonable to take a number of samples in the area of each outfall sufficient to support a statistically sound assessment of the contaminant concentrations associated with each outfall. I also recommend that at least one sample near each outfall be taken as a core, with separate analysis of several sample depths to evaluate contaminant deposition over time.

In the first paragraph, please explain what is meant by, "If appropriate, additional sediment samples will be collected from depositional areas proximal to the existing terminus of each outfall pipeline." Under what conditions would this not be appropriate?

Finally, please clarify whether the AVS/SEM samples will be taken from undisturbed surficial sediments, which is the generally accepted approach for this parameter.

p. 3-35,§3.2.4.5

The field assessment to characterize habitats and wildlife needs to include the southern portion of Gould Island as it is the most vegetated. Wildlife using the southern portion of the Island may also use the site and thus could be exposed to site related contaminants.

p. 4-3, §4.2

Section 4.2 discusses "Project Action Limits" that are to be used as screening values to support the preparation of the human health (and ecological) risk assessment. However, very few of these Project Action Limits (as presented in Tables 4-1A through 4-2D) appear to be the Region IX PRG values referenced as screening values referenced in Section 5.2. It is critical that the laboratory reporting limits are low enough to allow comparison to the appropriate screening values. Please review these tables and include the risk-based screening values to ensure that the selected laboratory methods will facilitate the screening process.

p. 4-4, §4.0

According to EPA Region 1's Compendium of Quality Assurance Project Plan (QAPP) Requirements and Guidance (October 1999), the project

action limit (PAL) for a contaminant of concern or other target compound may be a regulatory threshold (*e.g.*, MCL), a risk-based concentration level (Region 9's PRG), a reference-based standard, or a technological limitation, *etc.* Tables 4-1 (A through D) inappropriately state NA (Not Applicable or Not Available) for contaminants where MCLs or Region 9's PRGs are available for use as a PAL. For the soil and sediment PALs in Tables 4-2 and 4-3 (A through D), the Region 9's PRGs for residential soil scenario should be used where appropriate. Please check Tables 4-1 to 4-3 to ensure that the appropriate PALs are used (some examples are listed below).

Region 1's Compendium of QAPP Requirements and Guidance also recommends that because of uncertainty at the quantitation limit, project specific quantitation limits (PQL) should minimally be one-third of the PAL and ideally one-tenth of the PAL. The achievable laboratory method detection limit (MDL) should minimally be one-third of the PQL and ideally one-tenth of the PQL. To obtain useable data for human health and ecological risk assessments, these requirements should be met and presented in Tables 4-1, 4-2 and 4-3 to assure that the project data quality objectives (DQOs) are met. Any technological limitations should be justified and discussed.

p. 4-5, Table 4-1A — The table indicates that the Project Action Limits (PALs) for PCE and TCE in groundwater are 5 micrograms per liter, but that the achievable QLs are 10 micrograms per liter. Although the text later states (page 4-27, sec. 4.7.1) that "... the laboratories selected will be required to meet the project action limits ...," the table seems to raise a concern that detection limits may be such that contamination of concern could be missed. Please clarify. Also, define footnote (3) for this table.

p. 4-9, Table 4-1D — The table indicates that the Project Action Limits (PALs) for numerous inorganics (Sb, Be, Ag, Th) are lower than achievable laboratory QLs. Although the text later states (p. 4-27, sec. 4.7.1) that "... the laboratories selected will be required to meet the project action limits ...," the table seems to raise a concern that detection limits may be such that contamination of concern could be missed. Please clarify.

p. 4-15, Table 4-3A — The table indicates that the Project Action Limit (PAL) for PCE in sediment is lower (530 mg/kg) than the achievable laboratory QL (600 mg/kg). Although the text later states (p. 4-27, sec. 4.7.1) that "... the laboratories selected will be required to meet the project action limits ...," the table seems to raise a concern that detection limits may be such that contamination of concern could be missed. Please clarify.

p. 4-16, Table 4-3B — The table indicates that the Project Action Limits (PALs) for numerous SVOCs (e.g., naphthalene, anthracene, etc.) in sediment are lower than the achievable laboratory QLs. Although the text later states (page 4-27, section 4.7.1) that "... the laboratories selected will be required to meet the project action limits ...," the table seems to raise a concern that detection limits may be such that contamination of concern could be missed. Please clarify.

p. 4-20, §4.3.1 — Section 4.3.1 describes various types of field quality control (QC) samples. Field QC samples are also presented in Table 3-2. Table 3-2 includes a field quality control sample called "Field Blanks." Please include a description of "Field Blanks" in Section 4.3.1.

p. 4-21, §4.3.2 — Sections 4.3 and 4.3.2 indicate that the types and frequency of laboratory quality control samples are prescribed in each analytical method and that these requirements will be met. However, these requirements are not included in the QAPP. Please include a table presenting the types and frequency of laboratory quality control samples to be performed for each analytical method.

p. 5-2, §5.2 — Proposed risk-based screening values are discussed in Section 5.2 of the Work Plan. A reference is made to the use of "Region 1 industrial RBCs." Region 1 does not have industrial RBC values. As per Region 1 guidance, media should be screened versus EPA Region IX *residential* Preliminary Remediation Goals or other risk-based values if Region IX PRGs are not available. Use of *industrial* PRGs is not appropriate given the hypothetical future residential scenario that should be included in the evaluation.

According to page 2-23 of the work plan, Navy has no definite plans for the future use of the site. Therefore, future land use could include uses that would be considered residential use under CERCLA risk assessments. Other islands in the Bay have residential land uses such as cottages and bed and breakfast facilities. Because residential land use is most often associated with the greatest exposures, it is generally the most conservative evaluation of risk. Therefore, a future residential scenario should be evaluated for this site. Evaluation of the residential scenario will also help determine whether land use restrictions are necessary for this site.

p. 5-2, §5.2 — Deep subsurface soil also needs to be screened against the Region 9 risk-based residential soil criteria. According to Region 1's Risk Update #3 (August 1995), soil data from 1 to 10 feet is used for subsurface soil

exposures based on general depth of frost penetration in New England. Mixing of soil can occur from frost heaving and excavation. Therefore, exposures to subsurface soil composited from 1 to 10 feet should be assessed under the future residential land use scenario when soil is mixed, excavated and brought to the surface for exposure during a building construction.

Off-shore sediments should be screened in light of the residential criteria for exposure scenario. Recreators or trespassers could be exposed to these sediments while swimming, wading, boating or fishing. It is common practice for standards for residential soil to be used for screening sediments at other Superfund sites. Some guide books for divers recommend diving near the northern end of Gould Island.

p. 5-3, §5.2

Elimination of contaminants of concern from the human health risk assessment on the basis of background comparison is discussed on page 5-3, Section 5.2, Human Health Risk Assessment. Elimination of COPCs based on comparison to background is not acceptable under EPA Region 1 guidance. EPA Region I expects the quantification of risks of all chemicals that exceed risk-based screening levels to ensure that future owners and users of the property are fully aware of the total risk (site-related and background) present at a site. The contribution to total site risk from background contaminants can be discussed in the Risk Characterization Section of the risk assessment.

p. 5-3

It is not EPA's policy to screen chemical data against documented regional background conditions and site-specific reference samples. According to EPA's Policy Considerations for the Application of Background Data in Risk Assessment and Remedy Selection (April 2002) in the Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites (September 2002), EPA recommends the following:

- retain all constituents with concentrations exceeding risk-based screening concentrations (EPA Region 9's PRGs) for quantitative risk assessment;

- discuss constituents with concentrations exceeding their background concentrations and their risk contribution to the total risk in the risk characterization section; and

- discuss all naturally occurring elements that are not site related but have concentrations exceeding the risk-based screening

concentrations (EPA Region 9's PRGs) in the risk characterization section.

According to EPA's RAGS Part A (December 1989), chemicals that are infrequently detected because of sampling, analytical or other problems may be eliminated from the quantitative risk assessment. However, if a detection frequency limit (*e.g.*, five percent) is to be used, then at least 20 samples of a medium would be needed. An example of this situation would be 1 detect in 20 samples in a medium for a constituent. Please clarify the last sentence of the first paragraph on page 5-3.

p. 5-3, ¶4 — Specify the statistical methods that will be used.

p. 5-4, §5.2 — There are currently full-time workers on areas of Gould Island. These workers could reasonably be expected to visit parts of the site during their work day. The current trespasser scenario does not sufficiently represent the potential risks to these workers who might regularly be exposed to contaminants on-site. An evaluation of the risks to the current worker should be added to the risk assessment.

Fishing occurs in the area of the site on both commercial and recreational bases. Contaminants that bioaccumulate (PCBs and metals) have been confirmed in the sediments off-shore of the site and may be related to previous site activities. EPA recommends that a recreational fish consumption scenario be added to the risk assessment. This scenario should include consumption of both fish and shellfish.

As proposed, the future industrial worker is exposed only to surface and subsurface soil at the site. The future industrial worker may also be exposed to COPCs in groundwater (*e.g.*, inhalation of VOCs in indoor air). Please add this pathway and media to those proposed for the future industrial worker.

The proposed frequency of exposure of 7 days per year for the future recreational receptor is not adequate for evaluation of the potential risks for this receptor. It is possible that a recreational receptor would to make 2 visits per week to the island during spring and summer months. EPA recommends that the frequency of exposure be increased to 48 days per year. (April through September - 24 weeks x 2 = 48 days per year.)

p. 5-4 — EPA recommends that risk evaluation should include both the current and future exposure scenarios for trespasser, recreational receptor, and industrial worker. For trespassers, EPA suggests exposure duration of 12

years for adolescent (7-18 years old) and 24 years for adult (as from EPA Region 1's Interim Default Exposure Parameters for the High End Exposure). For recreational receptor, EPA suggests exposure duration of 6 years for child (1-6 years old), 12 years for adolescent (7-18 years old) and 24 years for adult. The Gould Island site reveals evidence of trespassing; graffiti, soda cans, and bullet holes in windows were observed during previous site inspections. The site has remained largely uncontrolled and unenforced for many years.

EPA recommends that fish and shellfish consumption as well as exposures to surface water (ingestion and dermal contact) be evaluated as exposure pathways for current and future recreational receptor while swimming, wading, boating and fishing at the site.

p. 5-6, §5.3 — The beginning paragraphs of the ecological risk assessment seem to indicate that only a comparison to benchmarks will be included in the RI report. This is contrary to other text indicating that if the Tier 1 assessment identifies the necessity for further evaluation, a supporting work plan will be developed to design additional sampling and toxicity evaluations. While it is appropriate to begin with a comparison to benchmarks, the RI needs to include evaluation of ecological receptors as appropriate based on the COPCs identified and the ecological risk assessment process.

p. 5-6, §5.3, ¶2 — The environmental checklist identified in the text is in Appendix A of the document referenced, Appendix B is a conceptual site model diagram.

p. 5-8, §5.3 — The Tier 1 should include food chain modeling for ecological receptors (avian and mammalian) exposed to the terrestrial environment (soil and shoreline sediment) if contaminants of concern are identified and ecological receptors (avian) exposed to the near shore sediment environment if contaminants of concern are identified. The sampling program should be re-evaluated to ensure that data are going to be collected during the RI to support these assessments.

p. 5-8, §5.3, ¶4 — This text appears to propose a refinement of exposure assumptions based on an uncertainty analysis. This step is normally performed as part of the problem formulation after the screening assessment. Also, the example provided in the text does not seem to be applicable to Gould Island. Please clarify.

Appendix A: Draft Background Summary Report, Site 17, Building 32, Gould Island
Section 1.0 Introduction

p. 1-1	Please include the date of the UST closure north of Building 32.
p. 2-2	On Figure 2-1, please correct the legends for invasive grasses, shrub/scrub vegetation, and structures demolished prior to 1998 to be grey instead of black
p. 2-4	On the second paragraph, please correct that the only structure still remaining is Building 35, not Building 53.
p. 4-2	On Figure 4-1, please clarify the legends for black and grey cross hatched features for dock (removed 2001) and marine barracks (former).