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NAS SOUTH WEYMOUTH  
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LETTER REGARDING APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS  
FOR THE SOLVENT RELEASE AREA FEASIBILITY STUDY NAS SOUTH WEYMOUTH MA  
11/12/2010  
U S EPA REGION I



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION I**

5 Post Office Square, Suite 100  
Boston, MA 02109-3912

November 12, 2010

Brian J. Helland, P.E.  
BRAC Program Management Office NE  
4911 South Broad Street  
Philadelphia, PA 19112-1303

Re: Applicable or Relevant and Appropriate Requirements for the Solvent Release Area  
Feasibility Study

Dear Mr. Helland:

Thank you for the opportunity to review the *Draft Feasibility Study Report* (FS) for Site 11, Solvent Release Area at the Naval Air Station South Weymouth, dated August 2010. This letter supplements our letter dated October 7, 2010 on the same subject and mostly concerns requested changes to the Applicable or Relevant and Appropriate Requirements (ARARs) tables. Modified ARARs tables are attached.

Please briefly describe the alternative in the table title in addition to its corresponding alternative number.

Please confirm that there are no historic preservation issues, including potential archaeological resources. If a cultural resources survey was conducted, please cite it.

Please confirm that there will be no alteration of federal jurisdictional wetlands for the installation and maintenance of monitoring wells. Any alteration of wetlands must be mitigated

Since the remedial action could disturb more than an acre, it may be necessary to cite stormwater standards, federal NPDES regulations. If stormwater is discharged to groundwater, include 314 CMR 5.04(2). If stormwater is discharged to surface water or wetlands, include 314 CMR 9.06(6).

How will wastes from the monitoring wells be disposed? The tables only identify ARARs for the disposal of hazardous waste. If waste from the monitoring wells will be sent to a POTW, then Clean Water Act pre-treatment standards should also be cited. Please review the EPA Investigation Derived Waste policy (<http://www.epa.gov/superfund/policy/remedy/pdfs/93-45303fs-s.pdf>).

If there will be dewatering or excavation during construction [particularly if there will be any remedial activity in or near wetlands], please add ARARs regarding treatment for the water removed from the excavations (*e.g.*, water shipped off-site, CWA pre-treatment, discharge to surface waters, or discharge to surface waters, or back to groundwater).

I look forward working with you and the Massachusetts Department of Environmental Protection to select a final remedy for the Solvent Release Area. Please do not hesitate to contact me at (617) 918-1385 should you have any questions.

Sincerely,



Kimberlee Keckler, Remedial Project Manager  
Federal Facilities Superfund Section

Attachments

cc: Dave Barney, USN, South Weymouth, MA  
Dave Chaffin, MADEP, Boston, MA  
Kevin Donovan, SSTTDC, South Weymouth, MA  
Rona Gregory, USEPA, Boston, MA  
Phoebe Call, TTNUS, Wilmington, MA

TABLE 4-1

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-1**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 1 OF 4

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>Federal</b>				
<del>Safe Drinking Water Act (SDWA); National Primary Drinking Water Regulations, Maximum Contaminant Levels,</del>	<del>42 United States Code (U.S.C.) § 300f of seq.; 40 Code of Federal Regulations (CFR) 141, Subparts B and G</del>	<del>Relevant and Appropriate</del>	<del>Establishes maximum contaminant levels (MCLs) for common organic and inorganic contaminants applicable to public drinking water supplies. Used as relevant and appropriate cleanup standards for aquifers and surface water bodies that are potential drinking water sources.</del>	<del>The no-action alternative will not achieve these standards.</del>
<del>SDWA; National Primary Drinking Water Regulations, Maximum Contaminant Level Goals,</del>	<del>42 U.S.C. § 300f of seq.; 40 CFR 141, Subpart F</del>	<del>Relevant and Appropriate</del>	<del>Establishes maximum contaminant level goals (MCLGs) for public water supplies. Non-zero MCLGs are non-enforceable health goals for public drinking water systems. MCLGs are set at levels that would result in no known or expected adverse health effects with an adequate margin of safety. Non-zero MCLGs are to be used as cleanup goals when MCLs have not been established for a particular COC.</del>	<del>The No-Action alternative will not achieve these standards.</del>
Cancer Slope Factors (CSFs)	-	TBC	Guidance used to compute individual incremental cancer risk resulting from exposure to carcinogenic contaminants in site media.	None (used for risk calculations). This alternative will not meet the standards developed through the use of this guidance since potential carcinogenic risks caused by exposure to contaminants will not be addressed.

TABLE 4-1

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 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 2 OF 4

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
Health Advisories	EPA Office of Drinking Water, EPA-822-R-04-003, January, 2004	TBC	Health Advisories are estimates of risk due to consumption of contaminated drinking water; they consider non-carcinogenic effects only. To be considered for contaminants in groundwater that may be used for drinking water where the standard is more conservative than either federal or state statutory or regulatory standards. The health Advisory standard for manganese is 0.3 mg/l.	The No-Action alternative will not achieve these standards developed through the use of this guidance since non-carcinogenic risk resulting from exposure to compounds identified in the health Advisory (e.g. manganese) will not be addressed.
Reference Doses (RfDs)	-	TBC	Guidance values used to evaluate the potential non-carcinogenic hazard caused by exposure to contaminants.	None (used for risk calculations). This alternative will not meet the standards developed through the use of this guidance since potential carcinogenic risks caused by exposure to contaminants will not be addressed.
Guidelines for Carcinogen Risk Assessment	Environmental Protection Agency (EPA) /630/p-03/001F March 2005	TBC	Guidelines for assessing cancer risk	This alternative will not meet standards developed through the use of this guidance since potential carcinogenic risks caused by exposure to contaminants will not be addressed.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA.630/r-03/003F March 2005	TBC	Guidance for assessing cancer risks in children	This alternative will not meet the standards developed through the use of this guidance since potential carcinogenic risks caused by exposure to contaminants will not be addressed.

Comment [R1]: this ARAR should be retained if there will be exposure pathways through dermal contact, etc. Otherwise it is not necessary.

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 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 3 OF 4

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<u>Draft Guidance for Evaluating Vapor Intrusion to Indoor Air Pathways from Groundwater and Soils (Subsurface Vapor Intrusion Guidance</u>	<u>EPA 530-D-02-004</u> <u>November, 2002</u>	<u>TBC</u>	<u>Guidance for assessing and mitigating vapor intrusion risk.</u>	<u>Since the future use includes housing, offices, and commercial/retail, assessment and mitigation of potential vapor intrusion risks will be conducted in accordance with the guidance until such time as groundwater cleanup levels are achieved.</u>
<b>State</b>				
<del>Massachusetts Drinking Water Regulations</del>	<del>310 Code of Massachusetts Regulations (CMR) 22.00</del>	<del>Relevant and Appropriate</del>	<del>These regulations establish state MCLs or Massachusetts Maximum Contaminant Levels (MMCLs) for public water supply systems. If MMCLs are more stringent than federal levels, the state levels are used as the applicable or relevant and appropriate requirement (ARAR).</del>	<del>The No Action alternative will not achieve these standards.</del>

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- ARAR = Applicable or Relevant and Appropriate Requirement.
- CFR = Code of Federal Regulations.
- CMR = Code of Massachusetts Regulations.
- COC = Chemical of concern.
- CSF = Cancer Slope Factor.
- EPA = Environmental Protection Agency.
- MassDEP = Massachusetts Department of Environmental Protection.
- MCL = Maximum Contaminant Level.
- MCLG = Maximum Contaminant Level Goal.

TABLE 4-1

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-1**  
SOLVENT RELEASE AREA FEASIBILITY STUDY  
NAS SOUTH WEYMOUTH  
WEYMOUTH, MASSACHUSETTS  
PAGE 4 OF 4

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MMCL = Massachusetts Maximum Contaminant Levels.

MNA = Monitored natural attenuation.

PRB = Permeable Reactive Barriers.

RfD = Reference Dose.

SDWA = Safe Drinking Water Act.

SRA = Solvent Release Area.

TBC = To be considered.

TABLE 4-3

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-2**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>Federal</b>				
Cancer Slope Factors (CSFs)	USEPA, Integrated Risk Information System	To Be Considered (TBC)	Guidance used to compute individual incremental cancer risk resulting from exposure to carcinogenic contaminants in site media	This alternative will only meet the standard developed through the use of this guidance if the chemicals of concern (COCs) in groundwater posing potential carcinogenic risks naturally attenuate within a reasonable period of time. Land use controls (LUCs) will prevent short-term exposure to COCs in groundwater until risk-based standards are achieved.
Reference Doses (RfDs)	USEPA, Integrated Risk Information System	TBC	Guidance used to compute human health hazard resulting from exposure to non-carcinogens in site media	This alternative will only meet the standard developed through the use of this guidance if the COCs in groundwater posing potential carcinogenic risks naturally attenuate within a reasonable period of time. LUCs will prevent short-term exposure to COCs in groundwater until risk-based standards are achieved.
Guidelines for Carcinogen Risk Assessment	USEPA/630/p-03/001F March 2005	TBC	Guidelines for assessing cancer risk	This alternative will only meet the standard developed through the use of this guidance if the COCs in groundwater posing potential carcinogenic risks naturally attenuate within a reasonable period of time. Land use controls will prevent short-term exposure to COCs in groundwater until risk-based standards are achieved.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	USEPA.630/r-03/003F March 2005	TBC	Guidance for assessing cancer risks in children	This alternative will only meet this standard if groundwater that poses potential carcinogenic risks to children will naturally attenuate within a reasonable period of time. LUCs will prevent short-term exposure until risk-based standards are achieved.

**Comment [R1]:** Add the Health Advisory as an ARAR for this alternative

**Comment [R2]:** if the alternative does not meet MNA standards then the language in the Evaluation section should state that it does not meet the standard.

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TABLE 4-3

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 NAS SOUTH WEYMOUTH  
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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<u>Draft Guidance for Evaluating Vapor Intrusion to Indoor Air Pathways from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)</u>	<u>EPA 530-D-02-004</u> <u>November, 2002</u>	TBC	<u>Guidance for assessing and mitigating vapor intrusion risk.</u>	<u>Since the future use includes housing, offices, and commercial/retail, assessment and mitigation of potential vapor intrusion risks will be conducted in accordance with the guidance until such time as groundwater cleanup levels are achieved.</u>
Safe Drinking Water Act; National Primary Drinking Water Regulations; Maximum Contaminant Levels;	42 United States Code (U.S.C.) § 300f of seq.; 40 Code of Federal Regulations (CFR) 141, Subpart B and G	Relevant and Appropriate	Establishes maximum contaminant levels (MCLs) for common organic and inorganic contaminants applicable to public drinking water supplies. Used as relevant and appropriate cleanup standards for aquifers and surface water bodies that are potential drinking water sources.	This alternative will only meet this standard if groundwater will naturally attenuate and meet MCL standards within a reasonable time frame. LUCs will prevent short term exposure until MCL standards are reached.
Safe Drinking Water Act; National Primary Drinking Water Regulations; Maximum Contaminant Level Goals;	42 U.S.C. § 300f of seq.; 40 CFR 141, Subpart F	Relevant and Appropriate for non-zero MCLGs only.	Establishes maximum contaminant level goals (MCLGs) for public water supplies. Non-zero MCLGs are health goals for public drinking water sources. These unenforceable health goals are available for a number of organic and inorganic compounds. MCLGs are set at levels that would result in no known or expected adverse health effects	This alternative will only meet this standard if groundwater will naturally attenuate and meet MCLG standards within a reasonable time frame. LUCs will prevent short term exposure until MCLG standards are reached.

Comment [R1]: Add the Health Advisory as an ARAR for this alternative

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Comment [R2]: if the alternative does not meet MNA standards then the language in the Evaluation section should state that it does not meet the standard.

TABLE 4-3

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-2**  
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 NAS SOUTH WEYMOUTH  
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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
			with an adequate margin of safety. Non-zero MCLGs are to be used as cleanup goals when MCLs have not been established for a particular COC.	

Comment [R1]: Add the Health Advisory as an ARAR for this alternative

Comment [R2]: if the alternative does not meet MNA standards then the language in the Evaluation section should state that it does not meet the standard.

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State

<u>Groundwater Classification</u>	<u>Massachusetts Contingency Plan, 314 CMR 40.09742</u>	<u>Applicable</u>	<u>Establishes categories of groundwater quality.</u>	<u>This rule would be used to establish cleanup goals for groundwater.</u>
<u>Massachusetts Drinking Water Regulations</u>	<u>310 Code of Massachusetts Regulations (CMR) 22.00</u>	<u>Relevant and Appropriate</u>	<u>Establishes enforceable MCLs as standards for public drinking water systems. Used as cleanup standards for aquifers that are potentially drinking water supplies. Established Maximum Contaminant Level Goals (MCLGs) which are non-enforceable health goals for public drinking water systems.</u>	<u>Massachusetts MCLs (MMCLs) will be evaluated during the development of PRGs for groundwater.</u>

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ARAR = Applicable or Relevant and Appropriate Requirement.  
 CFR = Code of Federal Regulations.  
 CMR = Code of Massachusetts Regulations.  
 CSF = Cancer Slope Factor.  
 MCL = Maximum Contaminant Level.  
 MCLG = Maximum Contaminant Level Goal.

RfD = Reference Dose.  
 SDWA = Safe Drinking Water Act.  
 TBC = To be considered.  
 USEPA = United States Environmental Protection Agency.  
 U.S.C. = United States Code.

TABLE 4-3

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-2**  
SOLVENT RELEASE AREA FEASIBILITY STUDY  
NAS SOUTH WEYMOUTH  
WEYMOUTH, MASSACHUSETTS

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MMCL = Massachusetts Maximum Contaminant Levels.

TABLE 4-4

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs – ALTERNATIVE G-2**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 1 OF 2

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
<b>Federal</b>				
Floodplain Management and Protection of Wetlands	44 CFR 9	Relevant and Appropriate	<del>FEMA regulations that set forth the policy, procedure and responsibilities to implement and enforce Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands.</del>	<del>Remedial alternatives conducted within the 500-year floodplain or within federal jurisdictional wetlands will be implemented in compliance with these standards. The Navy will solicit public comment as part of the proposed plan on the measures taken through the remedial action to protect floodplain and wetland resources.</del>
Endangered Species Act	<del>16 USC §1531 et seq.</del> 50 CFR 17	Relevant and appropriate	<del>Remedial action may or may not impact federally listed endangered/threatened species and their habitats.</del>	<del>No endangered species have been identified at the site. Appropriate actions must be taken during remedial action to ensure that no species and their habitat are affected.</del>

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Deleted: federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. Requires federal agencies to take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by flood plains in carrying out its responsibilities" for the following ... [1]

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Comment [R1]: Not necessary to include as an ARAR if only for ... [4]

TABLE 4-4

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs – ALTERNATIVE G-2**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 2 OF 2

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
<b>State</b>				
Massachusetts Endangered Species Act	321 CMR 10.00	Relevant and Appropriate	Prohibits the taking of any plants or animals listed as Endangered, Threatened, or special Concern by the Massachusetts Division of Fisheries and Wildlife and protects endangered/threatened species populations.	No state-listed endangered species have been identified at the Base. State-listed species of special concern (Eastern Box Turtle) have been observed at the base, but not at the <a href="#">Solvent Recovery Area</a> site.

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**Deleted:** Appropriate measures must be taken during remedial actions to ensure that endangered or threatened migratory birds that may pass through the area are protected.

**Comment [R2]:** ARAR is not necessary if only for migrating birds or animals.

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ARAR = Applicable or Relevant and Appropriate Requirement.  
 CFR = Code of Federal Regulations.  
 CMR = Code of Massachusetts Regulations.  
 CSF = Cancer Slope Factor.  
 MCL = Maximum Contaminant Level.  
 MCLG = Maximum Contaminant Level Goal.  
 MMCL = Massachusetts Maximum Contaminant Levels.  
 NAS = Naval Air Station.  
 RfD = Reference Dose.  
 SDWA = Safe Drinking Water Act.  
 TBC = To be considered.

TABLE 4-5

FEDERAL AND STATE ACTION-SPECIFIC ARARs - ALTERNATIVE G-2  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>Federal</b>				
Resource Conservation and Recovery Act (RCRA)	42 USC § 6901 <i>et seq</i>	Applicable	Federal standards used to identify, manage, and dispose of hazardous waste. Massachusetts has been delegated the authority to administer the RCRA standards through its state hazardous waste management regulations	Specific state hazardous waste standards authorized under the Act would apply when determining whether or not a solid waste is hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling or contaminated material generated from well installation or maintenance. Existing data do not indicate that any wastes will be hazardous.
<del>RCRA Regulations, Standards for Identification and Listing of Hazardous Waste</del>	<del>40 CFR 261, Subparts A, B, C, and D</del>	<del>Applicable</del>	<del>Defines the listed and characteristic hazardous wastes subject to RCRA.</del>	<del>These regulations would apply when determining whether or not a solid waste is hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling. Existing data do not indicate that any wastes will be hazardous.</del>
Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites	OSWER Directive 9200.4-17P (April 21, 1999)	TBC	EPA guidance regarding the use of monitored natural attenuation for the cleanup of contaminated soil and groundwater. In particular, a reasonable time frame does achieve cleanup standard though monitored attenuation would be comparable to that which could be achieved through active restoration.	This monitored natural attenuation alternative will only meet these standards if natural attenuation will attain all groundwater cleanup standards within a reasonable time frame. It is estimated that all cleanup standards will be achieved in 15 years.

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TABLE 4-5

FEDERAL AND STATE **ACTION-SPECIFIC ARARs – ALTERNATIVE G-2**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<del>Draft Guidance for Evaluating Vapor Intrusion to Indoor Air Pathways from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)</del>	<del>EPA 530-D-02-004 November, 2002</del>	<del>TBC</del>	<del>Guidance for assessing and mitigating vapor intrusion risk.</del>	<del>Since the future use includes housing, offices, and commercial/retail, assessment and mitigation of potential vapor intrusion risks will be conducted in accordance with the guidance until such time as groundwater cleanup levels are achieved.</del>
<b>State</b>				
Hazardous Waste Rules for Identification and Listing of Hazardous Waste	310 CMR 30.100	Applicable	Establish requirements for determining whether wastes are hazardous. Defines listed and characteristic hazardous wastes.	These regulations would apply when determining whether or not a solid waste is classified as hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling, or contaminated material generated from well installation or maintenance. Existing data do not indicate that any wastes will be hazardous.
Hazardous Waste Management Rules – Requirements for Generators	310 CMR 30.100	Applicable	These regulations contain requirements for generators of hazardous waste. The regulations apply to generators of sampling wastes and to the accumulation of waste prior to off-site disposal.	Wastes generated during remedial actions that are determined to be hazardous will be handled in compliance with the substantive requirements of these regulations.

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Comment [R2]: This has been moved to the chemical-specific ARAR table.

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TABLE 4-5

FEDERAL AND STATE **ACTION-SPECIFIC ARARs – ALTERNATIVE G-2**  
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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<u>Activity and Use Restrictions</u>	<u>MCP</u> <u>314 CMR 40.1012</u>	<u>Applicable</u>	<u>Rules for determining when an activity and use limitation must be used, when one cannot be used, and when one may be a factor to be considered in appropriately characterizing soil and groundwater at a disposal site</u>	<u>These standards will be used in establishing institutional controls over groundwater use at the site until remediation goals are achieved.</u>
Standard References for Monitoring Wells	WSC-310-91	TBC	This guidance describes the technical requirements for locating, drilling, installing, sampling and decommissioning monitoring wells.	Applies to wells installed for monitoring and/or groundwater treatment.
<u>Erosion and Sediment Control Guidelines for Urban and Suburban Areas.</u>	<u>MA Executive Office of Environmental Affairs,</u> <u>MA Department of Environmental Protection, 2003</u>	<u>TBC</u>	<u>Standards for preventing erosion and sedimentation.</u>	<u>Remedial actions, particularly installation and maintenance of wells and other components of the remedy, will be managed to control erosion and sedimentation.</u>

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ARAR = Applicable or Relevant and Appropriate Requirement.  
 CFR = Code of Federal Regulations.  
 CMR = Code of Massachusetts Regulations.  
 MCP = Massachusetts Contingency Plan  
 RCRA = Resource Conservation and Recovery Act.  
 TBC = To be considered.

TABLE 4-6

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-3**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 1 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>Federal</b>				
<del>Safe Drinking Water Act (SDWA); National Primary Drinking Water Regulations; Maximum Contaminant Levels;</del>	<del>42 United States Code (U.S.C.) § 300f et seq.; 40 Code of Federal Regulations (CFR) 141, Subpart B and G</del>	<del>Relevant and Appropriate</del>	<del>Establishes maximum contaminant levels (MCLs) for common organic and inorganic contaminants applicable to public drinking water supplies. Used as relevant and appropriate cleanup standards for aquifers and surface water bodies that are potential drinking water sources.</del>	<del>This alternative will achieve Maximum Contaminant Level (MCL) standards through treatment of groundwater by in-situ enhanced bioremediation and monitored natural attenuation (MNA). Land use controls (LUCs) will prevent short-term exposure until MCL standards are reached.</del>
<del>SDWA; National Primary Drinking Water Regulations; Maximum Contaminant Level Goals;</del>	<del>42 U.S.C. § 300f et seq.; 40 CFR 141, Subpart F</del>	<del>Relevant and Appropriate for non-zero MCLGs only</del>	<del>Establishes maximum contaminant level goals (MCLGs) for public water supplies. Non-zero MCLGs are non-enforceable health goals for public drinking water systems. MCLGs are set at levels that would result in no known or expected adverse health effects with an adequate margin of safety. Non-zero MCLGs are to be used as cleanup goals when MCLs have not been established for a particular COC.</del>	<del>This alternative will achieve non-zero MCLGs through treatment of groundwater by in-situ enhanced bioremediation and MNA. LUCs will prevent short-term exposure until MCLG standards are reached.</del>
Cancer Slope Factors (CSFs)	-	(TBC)	Guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	None (used for risk calculations); however, this alternative will address the identified risks determined by use of this guidance through in-situ enhanced bioremediation, MNA, and interim institutional controls to prevent potential carcinogenic risks caused by exposure to chemicals of concern (COCs) in groundwater.

Comment [R1]: Add the Health Advisory as a chemical-specific ARAR

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 PAGE 2 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
Reference Doses (RfDs)	-	TBC	Guidance values used to evaluate the potential non-carcinogenic hazard caused by exposure to contaminants.	None (used for risk calculations); however, this alternative will address the identified risks determined by use of this guidance through in-situ enhanced bioremediation, MNA, and interim institutional controls to prevent potential non-carcinogenic risks caused by exposure to chemicals of concern (COCs) in groundwater.
Guidelines for Carcinogen Risk Assessment	Environmental Protection Agency (EPA)/630/p-03/001F March 2005	TBC	Guidelines for assessing cancer risk	This alternative will meet this guidance because in-situ enhanced bioremediation, MNA, and interim institutional controls will prevent potential carcinogenic risks caused by exposure to COCs in groundwater.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA.630/r-03/003F March 2005	TBC	Guidance for assessing cancer risks in children	This alternative will meet this guidance because in-situ enhanced bioremediation, MNA, and interim institutional controls will prevent potential carcinogenic risks caused by exposure to COCs in groundwater.
<u>Draft Guidance for Evaluating Vapor Intrusion to Indoor Air Pathways from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)</u>	<u>EPA 530-D-02-004</u> <u>November, 2002</u>	<u>TBC</u>	<u>Guidance for assessing and mitigating vapor intrusion risk.</u>	<u>Since the future use includes housing, offices, and commercial/retail, assessment and mitigation of potential vapor intrusion risks will be conducted in accordance with the guidance until such time as groundwater cleanup levels are achieved.</u>

Comment [R1]: Add the Health Advisory as a chemical-specific ARAR

TABLE 4-6

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 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 3 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>State</b> <u>Groundwater Classification</u>	<u>Massachusetts Contingency Plan, 314 CMR 40.09742</u>	<u>Applicable</u>	<u>Establishes categories of groundwater quality.</u>	<u>This rule would be used to establish cleanup goals for groundwater.</u>
Massachusetts Drinking Water Regulations	310 CMR 22.00	Relevant and Appropriate	Establishes enforceable MCLs as standards for public drinking water systems. Used as cleanup standards for aquifers that are potentially drinking water supplies. Established MCLGs which are non-enforceable health goals for public drinking water systems.	This alternative will achieve state MCL and MCLG standards through treatment of groundwater by in-situ enhanced bioremediation. Land use controls will prevent short term exposure until state MCL and MCLG standards are reached.

Comment [R1]: Add the Health Advisory as a chemical-specific ARAR

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- ARAR = Applicable or Relevant and Appropriate Requirement.
- CFR = Code of Federal Regulations.
- CMR = Code of Massachusetts Regulations.
- COC = Chemical of concern.
- CSF = Cancer Slope Factor.
- EPA = Environmental Protection Agency.
- MassDEP = Massachusetts Department of Environmental Protection.
- MCL = Maximum Contaminant Level.
- MCLG = Maximum Contaminant Level Goal.
- MMCL = Massachusetts Maximum Contaminant Levels.
- MNA = Monitored natural attenuation.
- RfD = Reference Dose.
- SDWA = Safe Drinking Water Act.
- SRA = Solvent Release Area.
- U.S.C. = United States Code

TABLE 4-7

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs – ALTERNATIVE G-3**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 1 OF 3

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
<b>Federal</b>				
Floodplain Management and Protection of Wetlands	44 CFR 9	Relevant and Appropriate	FEMA regulations that set forth the policy, procedure and responsibilities to implement and enforce Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands.	Remedial alternatives conducted within the 500-year floodplain or within federal jurisdictional wetlands will be implemented in compliance with these standards. The Navy will solicit public comment as part of the proposed plan on the measures taken through the remedial action to protect floodplain and wetland resources.
Clean Water Act (CWA)	<u>33 U.S.C. § 1344</u> <u>40 CFR Parts 230--232</u>	Applicable	<u>Section 404 of the CWA regulates the discharge of dredged or fill material into U.S. waters, including wetlands. The purpose of section 404 is to ensure that proposed discharges are evaluated with respect to impacts on the aquatic ecosystem. No activity that adversely affects a wetland is permitted if a practicable alternative that has less effect is available. If there is no other practicable alternative, impacts must be mitigated</u>	<u>Remedial activities could involve dredged or fill material discharge to wetlands. If there is no practicable alternative to the discharge, any adverse impacts will be mitigated.</u>
<u>Rivers and Harbors Appropriations Act, Section 10</u>	<u>33 USC 403,</u> <u>33 CFR Parts 320--323</u>		<u>Section 10 of the Rivers and Harbors Act is implemented through a federal regulatory program administered by the U.S. Army Corps of Engineers (USACOE). It covers dredging, filling, excavation and placement of structures in all wetlands, tidal waters and navigable freshwaters. Actions taken would minimize adverse impacts to the nearby French Stream and comply with the environmental</u>	<u>Actions taken will minimize adverse impacts to the nearby streams and rivers and will comply with the environmental standards in 33 CFR Parts 320-323. Relevant federal and state agencies will be contacted and allowed to review the proposed work plan for the remedial action prior to implementation of any action that may impact the stream.</u>

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TABLE 4-7

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs – ALTERNATIVE G-3**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 2 OF 3

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
			<u>standards in 33 CFR Parts 320-323. Relevant federal and state agencies would be contacted and allowed to review the proposed work plan for the remedial action prior to implementation of any action that may impact the stream.</u>	
Fish and Wildlife Coordination Act	<u>16 U.S.C. § 661 et seq.</u> 40 CFR Part 320.3	Applicable	<u>Enacted to protect fish and wildlife when federal actions result in the control or modification of a natural stream or body of water. Requires federal agencies to take into consideration the effect that water-related projects would have on fish and wildlife resources; to take action to prevent loss or damage to those resources; and to provide for the development and improvement of those resources.</u>	All construction will be conducted in a manner to mitigate impacts. Actions taken will minimize adverse impacts to fish and wildlife. Relevant federal and state agencies will be contacted and allowed to review the proposed work plan for the in-situ enhanced bioremediation prior to implementation.
<b>State</b>				
Massachusetts Endangered Species Act	321 Code of Massachusetts Regulations (CMR) 10.00	Applicable	Prohibits the taking of any plants or animals listed as Endangered, Threatened, or special Concern by the Massachusetts Division of Fisheries and Wildlife and protects endangered/threatened species populations.	No state-listed endangered species have been identified at the Base. State-listed species of special concern (Eastern Box Turtle) have been observed at the base, but not at the Solvent Release Area (SRA).

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**Deleted:** Requires that the United States Fish and Wildlife Services and National Marine Fisheries Service be consulted if alteration of a body of water, including installation of monitoring wells in a wetland and/or discharge of pollutants into a wetland, will occur as a result of off-site remedial activities. This is to provide adequate protection of fish and wildlife resources. Requires consultation with state agencies to develop measures to prevent, mitigate, or compensate for project-related losses to fish and wildlife.

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**Deleted:** Appropriate measures must be taken during in-situ enhanced bioremediation to ensure that endangered or threatened migratory birds that may pass through the area are protected.

TABLE 4-7

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs – ALTERNATIVE G-3**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 3 OF 3

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
MA Wetlands Protection Act	MGL Chapter 131 Section 40; 310 CMR 10.00	Applicable	<p><u>These regulations govern activities in freshwater wetlands, 100-year floodplains, 100-foot buffer zones beyond such areas, and 200-foot buffer zones to waterways. Regulated activities include certain types of construction and excavation activities. Performance standards are provided and include evaluating the acceptability of various activities.</u></p> <p><u>The MA Wetland Protection program also is used to coordinate with the MA Natural Heritage and Endangered Species Program regarding the presence of rare wetlands wildlife. If a proposed project is determined to alter a resource area which is part of the habitat of a state-listed species, MA WPA regulations (310 CMR 10.59) state that this project "shall not be permitted to have any short or long term adverse effects on the habitat of the local population of this species."</u></p>	Any temporary disturbance of a wetland during in-situ enhanced bioremediation or monitoring well activities will be restored.

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Comment [R2]: This paragraph can be eliminated if there is no mapped rare wetland species habitat in the project area

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NEPA = National Environmental Policy Act.  
 CFR = Code of Federal Regulations.  
 EO = Executive Order.  
 U.S.C. = United States Code.

SRA = Solvent Release Area.  
 CMR = Code of Massachusetts Regulations.  
 MA WPA = Massachusetts Wetlands Protection Act

TABLE 4-8

FEDERAL AND STATE **ACTION-SPECIFIC ARARs - ALTERNATIVE G-3**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 1 OF 6

Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>Federal</b>				
CAA National Emission Standards for Hazardous Air Pollutants (NESHAPs)	42 U.S.C § 7412 40 CFR Parts 61 and 63	Applicable	The regulations establish emission standards for 189 hazardous air pollutants. Standards are set for fugitive dust and other release sources.	If remedial activities generate regulated air pollutants, then measures will be implemented to meet the standards.
RCRA	42 U.S.C. § 6901 et seq.	Applicable	Federal standards used to identify, manage, and dispose of hazardous waste. Massachusetts has been delegated the authority to administer the RCRA standards through its state hazardous waste management regulations	Specific state hazardous waste standards authorized under the Act would apply when determining whether or not a solid waste is hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling or contaminated material generated from well installation or maintenance. Existing data do not indicate that any wastes will be hazardous.

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TABLE 4-8

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-3  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 2 OF 6

Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<del>RCRA Standards for Identification and Listing of Hazardous Waste</del>	<del>40 CFR 261 Subparts A, B, C, and D</del>	<del>Applicable</del>	<del>Defines the listed and characteristic hazardous wastes subject to RCRA</del>	<del>These regulations would apply when determining whether or not a solid waste is hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling.</del>
RCRA Interim Status TSD Standards – Chemical, Physical, and Biological Treatment	40 CFR 265 Subpart Q	Relevant and Appropriate	The regulations in this subpart apply to the treatment of hazardous wastes by chemical, physical or biological methods in other than tanks, surface impoundments, and land treatment facilities. Treatment reagents must not be placed in the treatment process or equipment if they could cause the treatment process or equipment to rupture, leak, corrode, or otherwise fail before the end of its intended life. Inspections are required to make sure treatment process is operating correctly.	In-situ treatment using bioremediation will be conducted in compliance with these standards regarding the handling and management of treatment chemicals.
Underground Injection Control (UIC)	40 CFR 144, 146, and 147.1100	Applicable	These regulations address the discharge of wastes, chemicals or other substances into the subsurface. The federal UIC program designates injection wells incidental to aquifer remediation and experimental technologies as Class V wells authorized by rule that do not require a separate UIC permit.	These standards regulate the injection of biological or chemical substance into the groundwater. In-situ treatment using bioremediation will be conducted in compliance with these standards.

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TABLE 4-8

FEDERAL AND STATE **ACTION-SPECIFIC ARARs – ALTERNATIVE G-3**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 3 OF 6

Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<u>Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites</u>	<u>OSWER Directive 9200.4-17P (April 21, 1999)</u>	TBC	<u>EPA guidance regarding the use of monitored natural attenuation for the cleanup of contaminated soil and groundwater. In particular, a reasonable time frame doe achieving cleanup standard though monitored attenuation would be comparable to that which could be achieved through active restoration.</u>	<u>The monitored natural attenuation component of this alternative will only meet these standards if natural attenuation will attain all groundwater cleanup standards within a reasonable time frame. It is estimated that all cleanup standards will be achieved in 15 years.</u>
<u>Draft Guidance for Evaluating Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)</u>	<u>OSWER EPA530-D-02-004 (November 2002)</u>	<u>To Be Considered (TBC)</u>	<u>Guidance for assessing and mitigating vapor intrusion risk.</u>	<u>Since the future includes housing, offices, and commercial/retail assessment and mitigation of potential vapor intrusion risks will be conducted in accordance with the guidance until such time as groundwater cleanup levels are achieved.</u>
<b>State</b>				
<u>MA Air Pollution Control Regulations</u>	<u>310 CMR 7.18</u>		<u>Establishes the standards and requirements for air pollution control in the Commonwealth. Section 7.18 (VOCs) contain requirements relevant to remedial activities.</u>	<u>VOC emissions generated during installation of permeable reactive barriers (PRBs) will be managed through engineering and other controls during remedial activities.</u>

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Comment [R4]: What about emissions from the remedial action itself?

TABLE 4-8

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-3  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 4 OF 6

Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
Hazardous Waste Rules for Identification and Listing of Hazardous Wastes,	310 CMR 30.100	Applicable	Establish requirements for determining whether wastes are hazardous. Defines listed and characteristic hazardous wastes.	These regulations would apply when determining whether or not a solid waste that is generated as part of this remedial action is classified as hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling or contaminated material generated from well installation or maintenance. Existing data do not indicate that any wastes will be hazardous.
Hazardous Waste Management Rules (HWMR) Requirements for Generators	310 CMR 30.300	Applicable	These regulations contain requirements for generators of hazardous waste. The regulations apply to generators of sampling waste and also apply to the accumulation of waste prior to off-site disposal.	Wastes generated as a part of a remedial action for SRA that are considered hazardous will be handled in compliance with the substantive requirements of these regulations. To ensure that the remedial action complies with the substantive requirements of these regulations, the proposed quantities to be injected will be included in the design and submitted to USEPA and MassDEP for comment and concurrence and the groundwater monitoring program will assess the impact of the injected compounds.

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TABLE 4-8

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-3  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 5 OF 6

Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
UIC Program	310 CMR 27.00	Applicable	The federal Underground Injection Control program under the Safe Drinking Water Act has been delegated to the Commonwealth of Massachusetts. Establishes a State Underground Injection Control Program consistent with federal requirements to protect underground sources of drinking water.	The regulations apply to remedial actions involving underground injection, including use of bioremediation agents and oxidizers for in-situ chemical oxidation.
<a href="#">Certification of Well Drillers and Filing of Well Completion Reports</a>	<a href="#">310 CMR 46</a>	<a href="#">Applicable</a>	<a href="#">Requirements relating to well abandonment</a>	<a href="#">Well drillers will follow all regulatory requirements for drilling and decommissioning of wells</a>
<a href="#">Standard References for Monitoring Wells</a>	<a href="#">WSC-310-91 MADEP, 04/91</a>	<a href="#">TBC</a>	<a href="#">Technical requirements for locating, drilling, installing, sampling and decommissioning monitoring wells.</a>	<a href="#">Applies to wells installed for monitoring and/or groundwater treatment</a>
<a href="#">Erosion and Sediment Control Guidelines for Urban and Suburban Areas</a>	<a href="#">MA Executive Office of Environmental Affairs, MADEP, 2003</a>	<a href="#">TBC</a>	Guidance for preventing erosion and sedimentation.	Remedial actions, particularly installation and maintenance of wells and other components of the remedy, will be managed to control erosion and sedimentation.
<a href="#">Activity and Use Restrictions</a>	<a href="#">MCP 314 CMR 40.1012</a>	<a href="#">Applicable</a>	<a href="#">Rules for determining when an activity and use limitation must be used, when one cannot be used, and when one may be a factor to be considered in appropriately characterizing soil and groundwater at a disposal site</a>	<a href="#">These standards will be used in establishing institutional controls over groundwater use at the site until remediation goals are achieved.</a>

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CAA = Clean Air Act.  
 NESHAP = National Emission Standards for Hazardous Air Pollutant.  
 CFR = Code of Federal Regulations.  
 TCLP = Toxicity Characteristic Leaching Procedure.  
 U.S.C. = United States Code.

TABLE 4-8

FEDERAL AND STATE **ACTION-SPECIFIC ARARs - ALTERNATIVE G-3**  
SOLVENT RELEASE AREA FEASIBILITY STUDY  
NAS SOUTH WEYMOUTH  
WEYMOUTH, MASSACHUSETTS  
PAGE 6 OF 6

IDW = Investigation-derived wastes.

UIC = Underground Injection Control.

HWMR = Hazardous Waste Management Rules.

MADEP = Massachusetts Department of Environmental Protection

PRB = Permeable reactive barrier

RCRA = Resource Conservation and Recovery Act.

SRA = Solvent Release Area.

TSDF = Treatment, Storage, and Disposal Facilities

VOC = Volatile organic compound.

TABLE 4-9

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 1 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>Federal</b>				
<del>Safe Drinking Water Act (SDWA); National Primary Drinking Water Regulations; Maximum Contaminant Levels;</del>	<del>42 United States Code (U.S.C.) § 300f of seq.; 40 Code of Federal Regulations (CFR) 141, Subpart B and C</del>	<del>Relevant and Appropriate</del>	<del>Establishes maximum contaminant levels (MCLs) for common organic and inorganic contaminants applicable to public drinking water supplies. Used as relevant and appropriate cleanup standards for aquifers and surface water bodies that are potential drinking water sources.</del>	<del>This alternative will achieve Maximum Contaminant Level (MCL) standards through treatment of groundwater by in-situ enhanced bioremediation and monitored natural attenuation (MNA). Land use controls (LUCs) will prevent short term exposure until MCL standards are reached.</del>
<del>SDWA; National Primary Drinking Water Regulations; Maximum Contaminant Level Goals;</del>	<del>42 U.S.C. § 300f of seq.; 40 CFR 141, Subpart F</del>	<del>Relevant and Appropriate for non-zero MCLGs only</del>	<del>Establishes maximum contaminant level goals (MCLGs) for public water supplies. Non-zero MCLGs are non-enforceable health goals for public drinking water systems. MCLGs are set at levels that would result in no known or expected adverse health effects with an adequate margin of safety. Non-zero MCLGs are to be used as cleanup goals when MCLs have not been established for a particular COC.</del>	<del>This alternative will achieve non-zero MCLGs through treatment of groundwater by in-situ enhanced bioremediation and MNA. LUCs will prevent short term exposure until MCLG standards are reached.</del>
Cancer Slope Factors (CSFs)	-	TBC	Guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	None (used for risk calculations); however, this alternative will address the identified risks determined by use of this guidance through in-situ enhanced bioremediation, MNA, and interim institutional controls to prevent potential carcinogenic risks caused by exposure to chemicals of concern (COCs) in groundwater.

Comment [R1]: Add the Health Advisory as a chemical-specific ARAR

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TABLE 4-9

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs - ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 2 OF 3

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Comment [R1]: Add the Health Advisory as a chemical-specific ARAR

Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
Reference Doses (RfDs)	-	TBC	Guidance values used to evaluate the potential non-carcinogenic hazard caused by exposure to contaminants.	None (used for risk calculations); however, this alternative will address the identified risks determined by use of this guidance through in-situ enhanced bioremediation, MNA, and interim institutional controls to prevent potential non-carcinogenic risks caused by exposure to chemicals of concern (COCs) in groundwater.
Guidelines for Carcinogen Risk Assessment	Environmental Protection Agency (EPA)/630/p-03/001F March 2005	TBC	Guidelines for assessing cancer risk	This alternative will meet this guidance because in-situ enhanced bioremediation, MNA, and interim institutional controls will prevent potential carcinogenic risks caused by exposure to COCs in groundwater.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA.630/r-03/003F March 2005	TBC	Guidance for assessing cancer risks in children	This alternative will meet this guidance because in-situ enhanced bioremediation, MNA, and interim institutional controls will prevent potential carcinogenic risks caused by exposure to COCs in groundwater.
<u>Draft Guidance for Evaluating Vapor Intrusion to Indoor Air Pathways from Groundwater and Soils (Subsurface Vapor Intrusion Guidance</u>	<u>EPA 530-D-02-004</u> <u>November, 2002</u>	<u>TBC</u>	<u>Guidance for assessing and mitigating vapor intrusion risk.</u>	<u>Since the future use includes housing, offices, and commercial/retail, assessment and mitigation of potential vapor intrusion risks will be conducted in accordance with the guidance until such time as groundwater cleanup levels are achieved.</u>

TABLE 4-9

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 3 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<u>Groundwater Classification</u>	<u>Massachusetts Contingency Plan, 314 CMR 40.09742</u>	<u>Applicable</u>	<u>Establishes categories of groundwater quality.</u>	<u>This rule would be used to establish cleanup goals for groundwater.</u>
<u>Massachusetts Drinking Water Regulations</u>	<u>310-CMR-22.00</u>	<u>Relevant and Appropriate</u>	<u>Establishes enforceable MCLs as standards for public drinking water systems. Used as cleanup standards for aquifers that are potentially drinking water supplies. Established MCLGs which are non-enforceable health goals for public drinking water systems.</u>	<u>This alternative will achieve state MCL and MCLG standards through treatment of groundwater by in-situ enhanced bioremediation. Land use controls will prevent short-term exposure until state MCL and MCLG standards are reached.</u>

Comment [R1]: Add the Health Advisory as a chemical-specific ARAR

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- CFR = Code of Federal Regulations.
- CMR = Code of Massachusetts Regulations.
- COC = Chemical of concern.
- CSF = Cancer Slope Factor.
- EPA = Environmental Protection Agency.
- MassDEP = Massachusetts Department of Environmental Protection.
- MCL = Maximum Contaminant Level.
- MCLG = Maximum Contaminant Level Goal.
- MMCL = Massachusetts Maximum Contaminant Levels.
- MNA = Monitored natural attenuation.
- RfD = Reference Dose.
- SDWA = Safe Drinking Water Act.
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TABLE 4-10

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs – ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 1 OF 3

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
<b>Federal</b>				
Floodplain Management and Protection of Wetlands	44 CFR 9	Relevant and Appropriate	FEMA regulations that set forth the policy, procedure and responsibilities to implement and enforce Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands.	Remedial alternatives conducted within the 500-year floodplain or within federal jurisdictional wetlands will be implemented in compliance with these standards. The Navy will solicit public comment as part of the proposed plan on the measures taken through the remedial action to protect floodplain and wetland resources.
Clean Water Act (CWA)	<u>33 U.S.C. § 1344</u> <u>40 CFR Parts 230--232</u>	Applicable	<u>Section 404 of the CWA regulates the discharge of dredged or fill material into U.S. waters, including wetlands. The purpose of section 404 is to ensure that proposed discharges are evaluated with respect to impacts on the aquatic ecosystem. No activity that adversely affects a wetland is permitted if a practicable alternative that has less effect is available. If there is no other practicable alternative, impacts must be mitigated</u>	<u>Remedial activities could involve dredged or fill material discharge to wetlands. If there is no practicable alternative to the discharge, any adverse impacts will be mitigated.</u>
<u>Rivers and Harbors Appropriations Act, Section 10</u>	<u>33 USC 403,</u> <u>33 CFR Parts 320--323</u>		<u>Section 10 of the Rivers and Harbors Act is implemented through a federal regulatory program administered by the U.S. Army Corps of Engineers (USACOE). It covers dredging, filling, excavation and placement of structures in all wetlands, tidal waters and navigable freshwaters. Actions taken would minimize adverse impacts to the nearby French Stream and comply with the environmental</u>	<u>Actions taken will minimize adverse impacts to the nearby streams and rivers and will comply with the environmental standards in 33 CFR Parts 320-323. Relevant federal and state agencies will be contacted and allowed to review the proposed work plan for the remedial action prior to implementation of any action that may impact the stream.</u>

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TABLE 4-10

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs - ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 2 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
			<u>standards in 33 CFR Parts 320-323. Relevant federal and state agencies would be contacted and allowed to review the proposed work plan for the remedial action prior to implementation of any action that may impact the stream.</u>	
Fish and Wildlife Coordination Act	<u>16 U.S.C. § 661 et seq.</u> 40 CFR Part 320.3	Applicable	<u>Enacted to protect fish and wildlife when federal actions result in the control or modification of a natural stream or body of water. Requires federal agencies to take into consideration the effect that water-related projects would have on fish and wildlife resources; to take action to prevent loss or damage to those resources; and to provide for the development and improvement of those resources.</u>	All construction will be conducted in a manner to mitigate impacts. Actions taken will minimize adverse impacts to fish and wildlife. Relevant federal and state agencies will be contacted and allowed to review the proposed work plan for the in-situ enhanced bioremediation prior to implementation.
<b>State</b>				
Massachusetts Endangered Species Act	321 Code of Massachusetts Regulations (CMR) 10.00	Applicable	Prohibits the taking of any plants or animals listed as Endangered, Threatened, or special Concern by the Massachusetts Division of Fisheries and Wildlife and protects endangered/threatened species populations.	No state-listed endangered species have been identified at the Base. State-listed species of special concern (Eastern Box Turtle) have been observed at the base, but not at the Solvent Release Area (SRA).

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TABLE 4-10

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs - ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 3 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
MA Wetlands Protection Act	MGL, Chapter 131 Section 40; 310 CMR 10.00	Applicable	<p><u>These regulations govern activities in freshwater wetlands, 100-year floodplains, 100-foot buffer zones beyond such areas, and 200-foot buffer zones to waterways. Regulated activities include certain types of construction and excavation activities. Performance standards are provided and include evaluating the acceptability of various activities.</u></p> <p><u>The MA Wetland Protection program also is used to coordinate with the MA Natural Heritage and Endangered Species Program regarding the presence of rare wetlands wildlife. If a proposed project is determined to alter a resource area which is part of the habitat of a state-listed species, MA WPA regulations (310 CMR 10.59) state that this project "shall not be permitted to have any short or long term adverse effects on the habitat of the local population of this species."</u></p>	Any temporary disturbance of a wetland during in-situ enhanced bioremediation or monitoring well activities will be restored.

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NEPA = National Environmental Policy Act.  
 CFR = Code of Federal Regulations.  
 EO = Executive Order.  
 U.S.C. = United States Code.

SRA = Solvent Release Area.  
 CMR = Code of Massachusetts Regulations.  
 MA WPA = Massachusetts Wetlands Protection Act

TABLE 4-10

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs - ALTERNATIVE G-**  
**SOLVENT RELEASE AREA FEASIBILITY STUDY**  
**NAS SOUTH WEYMOUTH**  
**WEYMOUTH, MASSACHUSETTS**  
 PAGE 1 OF 3

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
<b>Federal</b>				
Floodplain Management and Protection of Wetlands	44 CFR 9	Relevant and Appropriate	FEMA regulations that set forth the policy, procedure and responsibilities to implement and enforce Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands.	Remedial alternatives conducted within the 500-year floodplain or within federal jurisdictional wetlands will be implemented in compliance with these standards. The Navy will solicit public comment as part of the proposed plan on the measures taken through the remedial action to protect floodplain and wetland resources.
Clean Water Act (CWA)	<u>33 U.S.C. § 1344</u> <u>40 CFR Parts 230-232</u>	Applicable	<u>Section 404 of the CWA regulates the discharge of dredged or fill material into U.S. waters, including wetlands. The purpose of section 404 is to ensure that proposed discharges are evaluated with respect to impacts on the aquatic ecosystem. No activity that adversely affects a wetland is permitted if a practicable alternative that has less effect is available. If there is no other practicable alternative, impacts must be mitigated.</u>	<u>Remedial activities could involve dredged or fill material discharge to wetlands. If there is no practicable alternative to the discharge, any adverse impacts will be mitigated.</u>
<u>Rivers and Harbors Appropriations Act, Section 10</u>	<u>33 USC 403,</u> <u>33 CFR Parts 320-323</u>		<u>Section 10 of the Rivers and Harbors Act is implemented through a federal regulatory program administered by the U.S. Army Corps of Engineers (USACOE). It covers dredging, filling, excavation and placement of structures in all wetlands, tidal waters and navigable freshwaters. Actions taken would minimize adverse impacts to the nearby French Stream and comply with the environmental</u>	<u>Actions taken will minimize adverse impacts to the nearby streams and rivers and will comply with the environmental standards in 33 CFR Parts 320-323. Relevant federal and state agencies will be contacted and allowed to review the proposed work plan for the remedial action prior to implementation of any action that may impact the stream.</u>

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Wetlands, Floodplains, Important Farmland, Coastal Zones, Wild and Scenic Rivers, Fish and Wildlife, and Endangered Species ... [1]

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TABLE 4-10

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs – ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 2 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
			<u>standards in 33 CFR Parts 320-323. Relevant federal and state agencies would be contacted and allowed to review the proposed work plan for the remedial action prior to implementation of any action that may impact the stream.</u>	
Fish and Wildlife Coordination Act	<u>16 U.S.C. § 661 et seq.</u> 40 CFR Part 320.3	Applicable	<u>Enacted to protect fish and wildlife when federal actions result in the control or modification of a natural stream or body of water. Requires federal agencies to take into consideration the effect that water-related projects would have on fish and wildlife resources; to take action to prevent loss or damage to those resources; and to provide for the development and improvement of those resources.</u>	All construction will be conducted in a manner to mitigate impacts. Actions taken will minimize adverse impacts to fish and wildlife. Relevant federal and state agencies will be contacted and allowed to review the proposed work plan for the in-situ enhanced bioremediation prior to implementation.
<b>State</b>				
Massachusetts Endangered Species Act	321 Code of Massachusetts Regulations (CMR) 10.00	Applicable	Prohibits the taking of any plants or animals listed as Endangered, Threatened, or special Concern by the Massachusetts Division of Fisheries and Wildlife and protects endangered/threatened species populations.	No state-listed endangered species have been identified at the Base. State-listed species of special concern (Eastern Box Turtle) have been observed at the base, but not at the Solvent Release Area (SRA).

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TABLE 4-10

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs - ALTERNATIVE G-**  
**SOLVENT RELEASE AREA FEASIBILITY STUDY**  
**NAS SOUTH WEYMOUTH**  
**WEYMOUTH, MASSACHUSETTS**  
 PAGE 3 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
MA Wetlands Protection Act	MGL, Chapter 131 Section 40, 310 CMR 10.00	Applicable	<p><u>These regulations govern activities in freshwater wetlands, 100-year floodplains, 100-foot buffer zones beyond such areas, and 200-foot buffer zones to waterways. Regulated activities include certain types of construction and excavation activities. Performance standards are provided and include evaluating the acceptability of various activities.</u></p> <p><u>The MA Wetland Protection program also is used to coordinate with the MA Natural Heritage and Endangered Species Program regarding the presence of rare wetlands wildlife. If a proposed project is determined to alter a resource area which is part of the habitat of a state-listed species, MA WPA regulations (310 CMR 10.59) state that this project "shall not be permitted to have any short or long term adverse effects on the habitat of the local population of this species."</u></p>	Any temporary disturbance of a wetland during in-situ enhanced bioremediation or monitoring well activities will be restored.

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NEPA = National Environmental Policy Act.  
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SRA = Solvent Release Area.  
 CMR = Code of Massachusetts Regulations.  
 MA WPA = Massachusetts Wetlands Protection Act

TABLE 4-11

FEDERAL AND STATE ACTION-SPECIFIC ARARs - ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 1 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>Federal</b>				
<del>CAA</del> National Emission Standards for Hazardous Air Pollutants (NESHAPs)	<del>42 U.S.C § 7412</del> <del>40 CFR Parts 61 and 63</del>	<del>Applicable</del>	<del>The regulations establish emission standards for 189 hazardous air pollutants. Standards are set for fugitive dust and other release sources.</del>	<del>If remedial activities generate regulated air pollutants, then measures will be implemented to meet the standards.</del>
<del>RCRA</del>	<del>42 U.S.C. § 6901 et seq.</del>	<del>Applicable</del>	<del>Federal standards used to identify, manage, and dispose of hazardous waste. Massachusetts has been delegated the authority to administer the RCRA standards through its state hazardous waste management regulations</del>	<del>Specific state hazardous waste standards authorized under the Act would apply when determining whether or not a solid waste is hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling or contaminated material generated from well installation or maintenance. Existing data do not indicate that any wastes will be hazardous.</del>

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TABLE 4-11

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 2 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<del>RCRA Standards for Identification and Listing of Hazardous Waste</del>	<del>40 CFR 261 Subparts A, B, C, and D</del>	<del>Applicable</del>	<del>Defines the listed and characteristic hazardous wastes subject to RCRA</del>	<del>These regulations would apply when determining whether or not a solid waste is hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling.</del>
RCRA Interim Status TSD Standards – Chemical, Physical, and Biological Treatment	40 CFR 265 Subpart Q	Relevant and Appropriate	The regulations in this subpart apply to the treatment of hazardous wastes by chemical, physical, or biological methods in other than tanks, surface impoundments, and land treatment facilities. Treatment reagents must not be placed in the treatment process or equipment if they could cause the treatment process or equipment to rupture, leak, corrode, or otherwise fail before the end of its intended life. Inspections are required to make sure treatment process is operating correctly.	In-situ treatment using bioremediation will be conducted in compliance with these standards regarding the handling and management of treatment chemicals.
Underground Injection Control (UIC)	40 CFR 144, 146, and 147.1100	Applicable	These regulations address the discharge of wastes, chemicals or other substances into the subsurface. The federal UIC program designates injection wells incidental to aquifer remediation and experimental technologies as Class V wells authorized by rule that do not require a separate UIC permit.	These standards regulate the injection of biological or chemical substance into the groundwater. In-situ treatment using bioremediation will be conducted in compliance with these standards.

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TABLE 4-11

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 3 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<del>Draft Guidance for Evaluating Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)</del>	<del>OSWER EPA530-D-02-004 (November 2002)</del>	<del>To Be Considered (TBC)</del>	<del>Guidance for assessing and mitigating vapor intrusion risk.</del>	<del>Since the future includes housing, offices, and commercial/retail assessment and mitigation of potential vapor intrusion risks will be conducted in accordance with the guidance until such time as groundwater cleanup levels are achieved.</del>
Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites	OSWER Directive 9200.4-17P (April 21, 1999)	TBC	EPA guidance regarding the use of monitored natural attenuation for the cleanup of contaminated soil and groundwater. In particular, a reasonable time frame for achieving cleanup standard through monitored attenuation would be comparable to that which could be achieved through active restoration.	The monitored natural attenuation component of this alternative will only meet these standards if natural attenuation will attain all groundwater cleanup standards within a reasonable time frame. It is estimated that all cleanup standards will be achieved in 15 years.
<b>State</b>				
MA Air Pollution Control Regulations	310 CMR 7.18		Establishes the standards and requirements for air pollution control in the Commonwealth. Section 7.18 (VOCs) contain requirements relevant to remedial activities.	VOC emissions generated during installation of permeable reactive barriers (PRBs) will be managed through engineering and other controls during remedial activities.

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TABLE 4-11

FEDERAL AND STATE ACTION-SPECIFIC ARARs - ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 4 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
Hazardous Waste Rules for Identification and Listing of Hazardous Wastes,	310 CMR 30.100	Applicable	Establish requirements for determining whether wastes are hazardous. Defines listed and characteristic hazardous wastes.	These regulations would apply when determining whether or not a solid waste that is generated as part of this remedial action is classified as hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling or contaminated material generated from well installation or maintenance. Existing data do not indicate that any wastes will be hazardous.
Hazardous Waste Management Rules (HWMR) Requirements for Generators	310 CMR 30.300	Applicable	These regulations contain requirements for generators of hazardous waste. The regulations apply to generators of sampling waste and also apply to the accumulation of waste prior to off-site disposal.	Wastes generated as a part of a remedial action for SRA that are considered hazardous will be handled in compliance with the substantive requirements of these regulations. To ensure that the remedial action complies with the substantive requirements of these regulations, the proposed quantities to be injected will be included in the design and submitted to USEPA and MassDEP for comment and concurrence and the groundwater monitoring program will assess the impact of the injected compounds.

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FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 5 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
UIC Program	310 CMR 27.00	Applicable	The federal Underground Injection Control program under the Safe Drinking Water Act has been delegated to the Commonwealth of Massachusetts. Establishes a State Underground Injection Control Program consistent with federal requirements to protect underground sources of drinking water.	The regulations apply to remedial actions involving underground injection, including use of bioremediation agents and oxidizers for in-situ chemical oxidation.
<u>Certification of Well Drillers and Filing of Well Completion Reports</u>	<u>310 CMR 46</u>	<u>Applicable</u>	<u>Requirements relating to well abandonment</u>	<u>Well drillers will follow all regulatory requirements for drilling and decommissioning of wells</u>
<u>Standard References for Monitoring Wells</u>	<u>WSC-310-91 MADEP, 04/91</u>	<u>TBC</u>	<u>Technical requirements for locating, drilling, installing, sampling and decommissioning monitoring wells.</u>	<u>Applies to wells installed for monitoring and/or groundwater treatment</u>
<u>Erosion and Sediment Control Guidelines for Urban and Suburban Areas</u>	<u>MA Executive Office of Environmental Affairs, MADEP, 2003</u>	<u>TBC</u>	<u>Guidance for preventing erosion and sedimentation.</u>	<u>Remedial actions, particularly installation and maintenance of wells and other components of the remedy, will be managed to control erosion and sedimentation.</u>
<u>Activity and Use Restrictions</u>	<u>MCP 314 CMR 40.1012</u>	<u>Applicable</u>	<u>Rules for determining when an activity and use limitation must be used, when one cannot be used, and when one may be a factor to be considered in appropriately characterizing soil and groundwater at a disposal site</u>	<u>These standards will be used in establishing institutional controls over groundwater use at the site until remediation goals are achieved.</u>

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CAA = Clean Air Act.  
 NESHAP = National Emission Standards for Hazardous Air Pollutant.  
 CFR = Code of Federal Regulations.  
 TCLP = Toxicity Characteristic Leaching Procedure.  
 U.S.C. = United States Code.

TABLE 4-11

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
SOLVENT RELEASE AREA FEASIBILITY STUDY  
NAS SOUTH WEYMOUTH  
WEYMOUTH, MASSACHUSETTS  
PAGE 6 OF 6

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IDW = Investigation-derived wastes.

UIC = Underground Injection Control.

HWMR = Hazardous Waste Management Rules.

MADEP = Massachusetts Department of Environmental Protection

MCP = Massachusetts Contingency Plan

PRB = Permeable reactive barrier

RCRA = Resource Conservation and Recovery Act.

SRA = Solvent Release Area.

TSDF = Treatment, Storage, and Disposal Facilities

VOC = Volatile organic compound.

TABLE 4-12

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 1 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>Federal</b>				
<del>Safe Drinking Water Act (SDWA); National Primary Drinking Water Regulations; Maximum Contaminant Levels;</del>	<del>42 United States Code (U.S.C.) § 300f of seq.; 40 Code of Federal Regulations (CFR) 141, Subpart B and G</del>	<del>Relevant and Appropriate</del>	<del>Establishes maximum contaminant levels (MCLs) for common organic and inorganic contaminants applicable to public drinking water supplies. Used as relevant and appropriate cleanup standards for aquifers and surface water bodies that are potential drinking water sources.</del>	<del>This alternative will achieve Maximum Contaminant Level (MCL) standards through treatment of groundwater by in-situ enhanced bioremediation and monitored natural attenuation (MNA). Land use controls (LUCs) will prevent short term exposure until MCL standards are reached.</del>
<del>SDWA; National Primary Drinking Water Regulations; Maximum Contaminant Level Goals;</del>	<del>42 U.S.C. § 300f of seq.; 40 CFR 141, Subpart F</del>	<del>Relevant and Appropriate for non-zero MCLGs only</del>	<del>Establishes maximum contaminant level goals (MCLGs) for public water supplies. Non-zero MCLGs are non-enforceable health goals for public drinking water systems. MCLGs are set at levels that would result in no known or expected adverse health effects with an adequate margin of safety. Non-zero MCLGs are to be used as cleanup goals when MCLs have not been established for a particular COC.</del>	<del>This alternative will achieve non-zero MCLGs through treatment of groundwater by in-situ enhanced bioremediation and MNA. LUCs will prevent short term exposure until MCLG standards are reached.</del>
Cancer Slope Factors (CSFs)	-	(TBC)	Guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	None (used for risk calculations); however, this alternative will address the identified risks determined by use of this guidance through in-situ enhanced bioremediation, MNA, and interim institutional controls to prevent potential carcinogenic risks caused by exposure to chemicals of concern (COCs) in groundwater.

Comment [R1]: Add the Health Advisory as a chemical-specific ARAR

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TABLE 4-12

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 2 OF 3

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Comment [R1]: Add the Health Advisory as a chemical-specific ARAR

Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
Reference Doses (RfDs)	-	TBC	Guidance values used to evaluate the potential non-carcinogenic hazard caused by exposure to contaminants.	None (used for risk calculations); however, this alternative will address the identified risks determined by use of this guidance through in-situ enhanced bioremediation, MNA, and interim institutional controls to prevent potential non-carcinogenic risks caused by exposure to chemicals of concern (COCs) in groundwater.
Guidelines for Carcinogen Risk Assessment	Environmental Protection Agency (EPA)/630/p-03/001F March 2005	TBC	Guidelines for assessing cancer risk	This alternative will meet this guidance because in-situ enhanced bioremediation, MNA, and interim institutional controls will prevent potential carcinogenic risks caused by exposure to COCs in groundwater.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA.630/r-03/003F March 2005	TBC	Guidance for assessing cancer risks in children	This alternative will meet this guidance because in-situ enhanced bioremediation, MNA, and interim institutional controls will prevent potential carcinogenic risks caused by exposure to COCs in groundwater.
<u>Draft Guidance for Evaluating Vapor Intrusion to Indoor Air Pathways from Groundwater and Soils (Subsurface Vapor Intrusion Guidance</u>	<u>EPA 530-D-02-004</u> <u>November, 2002</u>	<u>TBC</u>	<u>Guidance for assessing and mitigating vapor intrusion risk.</u>	<u>Since the future use includes housing, offices, and commercial/retail, assessment and mitigation of potential vapor intrusion risks will be conducted in accordance with the guidance until such time as groundwater cleanup levels are achieved.</u>

TABLE 4-12

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 3 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>State</b>				
<u>Groundwater Classification</u>	<u>Massachusetts Contingency Plan, 314 CMR 40.09742</u>	Applicable	<u>Establishes categories of groundwater quality.</u>	<u>This rule would be used to establish cleanup goals for groundwater.</u>
<del>Massachusetts Drinking Water Regulations</del>	<del>310 CMR 22.00</del>	<del>Relevant and Appropriate</del>	<del>Establishes enforceable MCLs as standards for public drinking water systems. Used as cleanup standards for aquifers that are potentially drinking water supplies. Established MCLGs which are non-enforceable health goals for public drinking water systems.</del>	<del>This alternative will achieve state MCL and MCLG standards through treatment of groundwater by in-situ enhanced bioremediation. Land use controls will prevent short term exposure until state MCL and MCLG standards are reached.</del>

Comment [R1]: Add the Health Advisory as a chemical-specific ARAR

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- ARAR = Applicable or Relevant and Appropriate Requirement.
- CFR = Code of Federal Regulations.
- CMR = Code of Massachusetts Regulations.
- COC = Chemical of concern.
- CSF = Cancer Slope Factor.
- EPA = Environmental Protection Agency.
- MassDEP = Massachusetts Department of Environmental Protection.
- MCL = Maximum Contaminant Level.
- MCLG = Maximum Contaminant Level Goal.
- MMCL = Massachusetts Maximum Contaminant Levels.
- MNA = Monitored natural attenuation.
- RfD = Reference Dose.
- SDWA = Safe Drinking Water Act.
- SRA = Solvent Release Area.
- U.S.C. = United States Code

TABLE 4-13

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs – ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 1 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
<b>Federal</b>				
Floodplain Management and Protection of Wetlands	44 CFR 9	Relevant and Appropriate	FEMA regulations that set forth the policy, procedure and responsibilities to implement and enforce Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands.	Remedial alternatives conducted within the 500-year floodplain or within federal jurisdictional wetlands will be implemented in compliance with these standards. The Navy will solicit public comment as part of the proposed plan on the measures taken through the remedial action to protect floodplain and wetland resources.
Clean Water Act (CWA)	<u>33 U.S.C. § 1344</u> <u>40 CFR Parts 230-232</u>	Applicable	<u>Section 404 of the CWA regulates the discharge of dredged or fill material into U.S. waters, including wetlands. The purpose of section 404 is to ensure that proposed discharges are evaluated with respect to impacts on the aquatic ecosystem. No activity that adversely affects a wetland is permitted if a practicable alternative that has less effect is available. If there is no other practicable alternative, impacts must be mitigated</u>	<u>Remedial activities could involve dredged or fill material discharge to wetlands. If there is no practicable alternative to the discharge, any adverse impacts will be mitigated.</u>
<u>Rivers and Harbors Appropriations Act, Section 10</u>	<u>33 USC 403,</u> <u>33 CFR Parts 320-323</u>		<u>Section 10 of the Rivers and Harbors Act is implemented through a federal regulatory program administered by the U.S. Army Corps of Engineers (USACOE). It covers dredging, filling, excavation and placement of structures in all wetlands, tidal waters and navigable freshwaters. Actions taken would minimize adverse impacts to the nearby French Stream and comply with the environmental</u>	<u>Actions taken will minimize adverse impacts to the nearby streams and rivers and will comply with the environmental standards in 33 CFR Parts 320-323. Relevant federal and state agencies will be contacted and allowed to review the proposed work plan for the remedial action prior to implementation of any action that may impact the stream.</u>

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TABLE 4-13

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs - ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 2 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
			<u>standards in 33 CFR Parts 320-323. Relevant federal and state agencies would be contacted and allowed to review the proposed work plan for the remedial action prior to implementation of any action that may impact the stream.</u>	
Fish and Wildlife Coordination Act	<u>16 U.S.C. § 661 et seq.</u> 40 CFR Part 320.3	Applicable	<u>Enacted to protect fish and wildlife when federal actions result in the control or modification of a natural stream or body of water. Requires federal agencies to take into consideration the effect that water-related projects would have on fish and wildlife resources; to take action to prevent loss or damage to those resources; and to provide for the development and improvement of those resources.</u>	All construction will be conducted in a manner to mitigate impacts. Actions taken will minimize adverse impacts to fish and wildlife. Relevant federal and state agencies will be contacted and allowed to review the proposed work plan for the in-situ enhanced bioremediation prior to implementation.

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**State**

Massachusetts Endangered Species Act	321 Code of Massachusetts Regulations (CMR) 10.00	Applicable	Prohibits the taking of any plants or animals listed as Endangered, Threatened, or special Concern by the Massachusetts Division of Fisheries and Wildlife and protects endangered/threatened species populations.	No state-listed endangered species have been identified at the Base. State-listed species of special concern (Eastern Box Turtle) have been observed at the base, but not at the Solvent Release Area (SRA).
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TABLE 4-13

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs – ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 3 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
MA Wetlands Protection Act	MGL, Chapter 131 Section 40; 310 CMR 10.00	Applicable	<p><u>These regulations govern activities in freshwater wetlands, 100-year floodplains, 100-foot buffer zones beyond such areas, and 200-foot buffer zones to waterways. Regulated activities include certain types of construction and excavation activities. Performance standards are provided and include evaluating the acceptability of various activities.</u></p> <p><u>The MA Wetland Protection program also is used to coordinate with the MA Natural Heritage and Endangered Species Program regarding the presence of rare wetlands wildlife. If a proposed project is determined to alter a resource area which is part of the habitat of a state-listed species, MA WPA regulations (310 CMR 10.59) state that this project "shall not be permitted to have any short or long term adverse effects on the habitat of the local population of this species."</u></p>	Any temporary disturbance of a wetland during in-situ enhanced bioremediation or monitoring well activities will be restored.

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NEPA = National Environmental Policy Act.  
 CFR = Code of Federal Regulations.  
 EO = Executive Order.  
 U.S.C. = United States Code.

SRA = Solvent Release Area.  
 CMR = Code of Massachusetts Regulations.  
 MA WPA = Massachusetts Wetlands Protection Act

TABLE 4-14

FEDERAL AND STATE ACTION-SPECIFIC ARARs - ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>Federal</b>				
<del>CAA</del> National Emission Standards for Hazardous Air Pollutants (NESHAPs)	<del>42 U.S.C § 7412</del> 40 CFR <del>Parts 61 and 63</del>	<del>Applicable</del>	The regulations establish emission standards for 189 hazardous air pollutants. Standards are set for <del>fugitive</del> dust and other release sources.	<del>If remedial activities generate regulated air pollutants, then measures will be implemented to meet the standards.</del>
<del>RCRA</del>	42 U.S.C. § 6901 <i>et seq.</i>	Applicable	Federal standards used to identify, manage, and dispose of hazardous waste. Massachusetts has been delegated the authority to administer the RCRA standards through its state hazardous waste management regulations	Specific state hazardous waste standards authorized under the Act would apply when determining whether or not a solid waste is hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling or contaminated material generated from well installation or maintenance. Existing data do not indicate that any wastes will be hazardous.

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TABLE 4-14

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 2 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<del>RCRA Standards for Identification and Listing of Hazardous Waste</del>	<del>40 CFR 261 Subparts A, B, C, and D</del>	<del>Applicable</del>	<del>Defines the listed and characteristic hazardous wastes subject to RCRA</del>	<del>These regulations would apply when determining whether or not a solid waste is hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling.</del>
RCRA Interim Status TSD Standards – Chemical, Physical, and Biological Treatment	40 CFR 265 Subpart Q	Relevant and Appropriate	The regulations in this subpart apply to the treatment of hazardous wastes by chemical, physical or biological methods in other than tanks, surface impoundments, and land treatment facilities. Treatment reagents must not be placed in the treatment process or equipment if they could cause the treatment process or equipment to rupture, leak, corrode, or otherwise fail before the end of its intended life. Inspections are required to make sure treatment process is operating correctly.	In-situ treatment using bioremediation will be conducted in compliance with these standards regarding the handling and management of treatment chemicals and the reactive wall technology.
Underground Injection Control (UIC)	40 CFR 144.146, and 147.1100	Applicable	These regulations address the discharge of wastes, chemicals or other substances into the subsurface. The federal UIC program designates injection wells incidental to aquifer remediation and experimental technologies as Class V wells authorized by rule that do not require a separate UIC permit.	These standards regulate the injection of biological or chemical substance into the groundwater. In-situ treatment using bioremediation will be conducted in compliance with these standards.

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TABLE 4-14

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 3 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<del>Draft Guidance for Evaluating Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)</del>	<del>OSWER EPA530-D-02-004 (November 2002)</del>	<del>To Be Considered (TBC)</del>	<del>Guidance for assessing and mitigating vapor intrusion risk.</del>	<del>Since the future includes housing, offices, and commercial/retail assessment and mitigation of potential vapor intrusion risks will be conducted in accordance with the guidance until such time as groundwater cleanup levels are achieved.</del>
Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites	OSWER Directive 9200.4-17P (April 21, 1999)	TBC	EPA guidance regarding the use of monitored natural attenuation for the cleanup of contaminated soil and groundwater. In particular, a reasonable time frame for achieving cleanup standard through monitored attenuation would be comparable to that which could be achieved through active restoration.	The monitored natural attenuation component of this alternative will only meet these standards if natural attenuation will attain all groundwater cleanup standards within a reasonable time frame. It is estimated that all cleanup standards will be achieved in 15 years.
<b>State</b>				
MA Air Pollution Control Regulations	310 CMR 7.18		Establishes the standards and requirements for air pollution control in the Commonwealth. Section 7.18 (VOCs) contain requirements relevant to remedial activities.	VOC emissions generated during installation of permeable reactive barriers (PRBs) will be managed through engineering and other controls during remedial activities.

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TABLE 4-14

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 4 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
Hazardous Waste Rules for Identification and Listing of Hazardous Wastes,	310 CMR 30.100	Applicable	Establish requirements for determining whether wastes are hazardous. Defines listed and characteristic hazardous wastes.	These regulations would apply when determining whether or not a solid waste that is generated as part of this remedial action is classified as hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling or contaminated material generated from well installation or maintenance. Existing data do not indicate that any wastes will be hazardous.
Hazardous Waste Management Rules (HWMR) Requirements for Generators	310 CMR 30.300	Applicable	These regulations contain requirements for generators of hazardous waste. The regulations apply to generators of sampling waste and also apply to the accumulation of waste prior to off-site disposal.	Wastes generated as a part of a remedial action for SRA that are considered hazardous will be handled in compliance with the substantive requirements of these regulations. To ensure that the remedial action complies with the substantive requirements of these regulations, the proposed quantities to be injected will be included in the design and submitted to USEPA and MassDEP for comment and concurrence and the groundwater monitoring program will assess the impact of the injected compounds.

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FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
UIC Program	310 CMR 27.00	Applicable	The federal Underground Injection Control program under the Safe Drinking Water Act has been delegated to the Commonwealth of Massachusetts. Establishes a State Underground Injection Control Program consistent with federal requirements to protect underground sources of drinking water.	The regulations apply to remedial actions involving underground injection, including use of bioremediation agents and oxidizers for in-situ chemical oxidation.
<u>Certification of Well Drillers and Filing of Well Completion Reports</u>	<u>310 CMR 46</u>	<u>Applicable</u>	<u>Requirements relating to well abandonment</u>	<u>Well drillers will follow all regulatory requirements for drilling and decommissioning of wells</u>
<u>Standard References for Monitoring Wells</u>	<u>WSC-310-91 MADEP, 04/91</u>	<u>TBC</u>	<u>Technical requirements for locating, drilling, installing, sampling and decommissioning monitoring wells.</u>	<u>Applies to wells installed for monitoring and/or groundwater treatment</u>
<u>Erosion and Sediment Control Guidelines for Urban and Suburban Areas</u>	<u>MA Executive Office of Environmental Affairs, MADEP, 2003</u>	<u>TBC</u>	<u>Guidance for preventing erosion and sedimentation.</u>	<u>Remedial actions, particularly installation and maintenance of wells and other components of the remedy, will be managed to control erosion and sedimentation.</u>
<u>Activity and Use Restrictions</u>	<u>MCP 314 CMR 40.1012</u>	<u>Applicable</u>	<u>Rules for determining when an activity and use limitation must be used, when one cannot be used, and when one may be a factor to be considered in appropriately characterizing soil and groundwater at a disposal site</u>	<u>These standards will be used in establishing institutional controls over groundwater use at the site until remediation goals are achieved.</u>

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CAA = Clean Air Act.  
 NESHAP = National Emission Standards for Hazardous Air Pollutant.  
 CFR = Code of Federal Regulations.  
 TCLP = Toxicity Characteristic Leaching Procedure.  
 U.S.C. = United States Code.

TABLE 4-14

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-1  
SOLVENT RELEASE AREA FEASIBILITY STUDY  
NAS SOUTH WEYMOUTH  
WEYMOUTH, MASSACHUSETTS  
PAGE 6 OF 6

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IDW = Investigation-derived wastes.

UIC = Underground Injection Control.

HWMR = Hazardous Waste Management Rules.

MADEP = Massachusetts Department of Environmental Protection

MCP = Massachusetts Contingency Plan

PRB = Permeable reactive barrier

RCRA = Resource Conservation and Recovery Act.

SRA = Solvent Release Area.

TSDF = Treatment, Storage, and Disposal Facilities

VOC = Volatile organic compound.

TABLE 4-15

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-**  
**SOLVENT RELEASE AREA FEASIBILITY STUDY**  
**NAS SOUTH WEYMOUTH**  
**WEYMOUTH, MASSACHUSETTS**  
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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>Federal</b>				
Safe Drinking Water Act (SDWA); National Primary Drinking Water Regulations; Maximum Contaminant Levels;	42 United States Code (U.S.C.) § 300f of seq.; 40 Code of Federal Regulations (CFR) 141, Subpart B and C	Relevant and Appropriate	Establishes maximum contaminant levels (MCLs) for common organic and inorganic contaminants applicable to public drinking water supplies. Used as relevant and appropriate cleanup standards for aquifers and surface water bodies that are potential drinking water sources.	This alternative will achieve Maximum Contaminant Level (MCL) standards through treatment of groundwater by in-situ enhanced bioremediation and monitored natural attenuation (MNA). Land use controls (LUCs) will prevent short term exposure until MCL standards are reached.
SDWA; National Primary Drinking Water Regulations; Maximum Contaminant Level Goals;	42 U.S.C. § 300f of seq.; 40 CFR 141, Subpart F	Relevant and Appropriate for non-zero MCLGs only	Establishes maximum contaminant level goals (MCLGs) for public water supplies. Non-zero MCLGs are non-enforceable health goals for public drinking water systems. MCLGs are set at levels that would result in no known or expected adverse health effects with an adequate margin of safety. Non-zero MCLGs are to be used as cleanup goals when MCLs have not been established for a particular COG.	This alternative will achieve non-zero MCLGs through treatment of groundwater by in-situ enhanced bioremediation and MNA. LUCs will prevent short term exposure until MCLG standards are reached.
Cancer Slope Factors (CSFs)	-	TBC	Guidance values used to evaluate the potential carcinogenic hazard caused by exposure to contaminants.	None (used for risk calculations); however, this alternative will address the identified risks determined by use of this guidance through in-situ enhanced bioremediation, MNA, and interim institutional controls to prevent potential carcinogenic risks caused by exposure to chemicals of concern (COCs) in groundwater.

Comment [R1]: Add the Health Advisory as a chemical-specific ARAR

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TABLE 4-15

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 2 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
Reference Doses (RfDs)	-	TBC	Guidance values used to evaluate the potential non-carcinogenic hazard caused by exposure to contaminants.	None (used for risk calculations); however, this alternative will address the identified risks determined by use of this guidance through in-situ enhanced bioremediation, MNA, and interim institutional controls to prevent potential non-carcinogenic risks caused by exposure to chemicals of concern (COCs) in groundwater.
Guidelines for Carcinogen Risk Assessment	Environmental Protection Agency (EPA)/630/p-03/001F March 2005	TBC	Guidelines for assessing cancer risk	This alternative will meet this guidance because in-situ enhanced bioremediation, MNA, and interim institutional controls will prevent potential carcinogenic risks caused by exposure to COCs in groundwater.
Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens	EPA.630/r-03/003F March 2005	TBC	Guidance for assessing cancer risks in children	This alternative will meet this guidance because in-situ enhanced bioremediation, MNA, and interim institutional controls will prevent potential carcinogenic risks caused by exposure to COCs in groundwater.
<a href="#">Draft Guidance for Evaluating Vapor Intrusion to Indoor Air Pathways from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)</a>	<a href="#">EPA 530-D-02-004</a> November, 2002	TBC	<a href="#">Guidance for assessing and mitigating vapor intrusion risk.</a>	<a href="#">Since the future use includes housing, offices, and commercial/retail, assessment and mitigation of potential vapor intrusion risks will be conducted in accordance with the guidance until such time as groundwater cleanup levels are achieved.</a>

Comment [R1]: Add the Health Advisory as a chemical-specific ARAR

TABLE 4-15

FEDERAL AND STATE **CHEMICAL-SPECIFIC ARARs – ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 3 OF 3

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<u>Groundwater Classification</u>	<u>Massachusetts Contingency Plan, 314 CMR 40.09742</u>	<u>Applicable</u>	<u>Establishes categories of groundwater quality.</u>	<u>This rule would be used to establish cleanup goals for groundwater.</u>
<del>Massachusetts Drinking Water Regulations</del>	<del>310 CMR 22.00</del>	<del>Relevant and Appropriate</del>	<del>Establishes enforceable MCLs as standards for public drinking water systems. Used as cleanup standards for aquifers that are potentially drinking water supplies. Established MCLGs which are non-enforceable health goals for public drinking water systems.</del>	<del>This alternative will achieve state MCL and MCLG standards through treatment of groundwater by in-situ enhanced bioremediation. Land use controls will prevent short term exposure until state MCL and MCLG standards are reached.</del>

Comment [R1]: Add the Health Advisory as a chemical-specific ARAR

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- ARAR = Applicable or Relevant and Appropriate Requirement.
- CFR = Code of Federal Regulations.
- CMR = Code of Massachusetts Regulations.
- COC = Chemical of concern.
- CSF = Cancer Slope Factor.
- EPA = Environmental Protection Agency.
- MassDEP = Massachusetts Department of Environmental Protection.
- MCL = Maximum Contaminant Level.
- MCLG = Maximum Contaminant Level Goal.
- MMCL = Massachusetts Maximum Contaminant Levels.
- MNA = Monitored natural attenuation.
- RfD = Reference Dose.
- SDWA = Safe Drinking Water Act.
- SRA = Solvent Release Area.
- U.S.C. = United States Code

TABLE 4-16

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs - ALTERNATIVE G-**  
**SOLVENT RELEASE AREA FEASIBILITY STUDY**  
**NAS SOUTH WEYMOUTH**  
**WEYMOUTH, MASSACHUSETTS**  
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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
<b>Federal</b>				
Floodplain Management and Protection of Wetlands	44 CFR 9	Relevant and Appropriate	FEMA regulations that set forth the policy, procedure and responsibilities to implement and enforce Executive Order 11988, Floodplain Management, and Executive Order 11990, Protection of Wetlands.	Remedial alternatives conducted within the 500-year floodplain or within federal jurisdictional wetlands will be implemented in compliance with these standards. The Navy will solicit public comment as part of the proposed plan on the measures taken through the remedial action to protect floodplain and wetland resources.
Clean Water Act (CWA)	<u>33 U.S.C. § 1344</u> <u>40 CFR Parts 230--232</u>	Applicable	<u>Section 404 of the CWA regulates the discharge of dredged or fill material into U.S. waters, including wetlands. The purpose of section 404 is to ensure that proposed discharges are evaluated with respect to impacts on the aquatic ecosystem. No activity that adversely affects a wetland is permitted if a practicable alternative that has less effect is available. If there is no other practicable alternative, impacts must be mitigated</u>	<u>Remedial activities could involve dredged or fill material discharge to wetlands. If there is no practicable alternative to the discharge, any adverse impacts will be mitigated.</u>
<u>Rivers and Harbors Appropriations Act, Section 10</u>	<u>33 USC 403</u> , <u>33 CFR Parts 320--323</u>		<u>Section 10 of the Rivers and Harbors Act is implemented through a federal regulatory program administered by the U.S. Army Corps of Engineers (USACE). It covers dredging, filling, excavation and placement of structures in all wetlands, tidal waters and navigable freshwaters. Actions taken would minimize adverse impacts to the nearby French Stream and comply with the environmental</u>	<u>Actions taken will minimize adverse impacts to the nearby streams and rivers and will comply with the environmental standards in 33 CFR Parts 320-323. Relevant federal and state agencies will be contacted and allowed to review the proposed work plan for the remedial action prior to implementation of any action that may impact the stream.</u>

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TABLE 4-16

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs – ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
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Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
			<u>standards in 33 CFR Parts 320-323. Relevant federal and state agencies would be contacted and allowed to review the proposed work plan for the remedial action prior to implementation of any action that may impact the stream.</u>	
Fish and Wildlife Coordination Act	<u>16 U.S.C. § 661 et seq.</u> 40 CFR Part 320.3	Applicable	<u>Enacted to protect fish and wildlife when federal actions result in the control or modification of a natural stream or body of water. Requires federal agencies to take into consideration the effect that water-related projects would have on fish and wildlife resources; to take action to prevent loss or damage to those resources; and to provide for the development and improvement of those resources.</u>	All construction will be conducted in a manner to mitigate impacts. Actions taken will minimize adverse impacts to fish and wildlife. Relevant federal and state agencies will be contacted and allowed to review the proposed work plan for the in-situ enhanced bioremediation prior to implementation.
<b>State</b>				
Massachusetts Endangered Species Act	321 Code of Massachusetts Regulations (CMR) 10.00	Applicable	Prohibits the taking of any plants or animals listed as Endangered, Threatened, or special Concern by the Massachusetts Division of Fisheries and Wildlife and protects endangered/threatened species populations.	No state-listed endangered species have been identified at the Base. State-listed species of special concern (Eastern Box Turtle) have been observed at the base, but not at the Solvent Release Area (SRA).

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**Deleted:** Appropriate measures must be taken during in-situ enhanced bioremediation to ensure that endangered or threatened migratory birds that may pass through the area are protected.

TABLE 4-16

FEDERAL AND STATE **LOCATION-SPECIFIC ARARs - ALTERNATIVE G-**  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 3 OF 3

Requirement	Citation	Status	Synopsis	Evaluation/Action to be Taken
MA Wetlands Protection Act	MGL, Chapter 131 Section 40; 310 CMR 10.00	Applicable	<p><u>These regulations govern activities in freshwater wetlands, 100-year floodplains, 100-foot buffer zones beyond such areas, and 200-foot buffer zones to waterways. Regulated activities include certain types of construction and excavation activities. Performance standards are provided and include evaluating the acceptability of various activities.</u></p> <p><u>The MA Wetland Protection program also is used to coordinate with the MA Natural Heritage and Endangered Species Program regarding the presence of rare wetlands wildlife. If a proposed project is determined to alter a resource area which is part of the habitat of a state-listed species, MA WPA regulations (310 CMR 10.59) state that this project "shall not be permitted to have any short or long term adverse effects on the habitat of the local population of this species."</u></p>	Any temporary disturbance of a wetland during in-situ enhanced bioremediation or monitoring well activities will be restored.

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**Deleted:** These requirements regulate activities in freshwater wetlands, 100-year floodplains, and 100-foot buffer zones beyond such areas. Regulated activities include certain types of construction and excavation activities. Performance standards are provided and include evaluating the acceptability of various activities.

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**Comment [R2]:** This paragraph can be eliminated if there is no mapped rare wetland species habitat in the project area

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NEPA = National Environmental Policy Act.  
 CFR = Code of Federal Regulations.  
 EO = Executive Order.  
 U.S.C. = United States Code.

SRA = Solvent Release Area.  
 CMR = Code of Massachusetts Regulations.  
MA WPA = Massachusetts Wetlands Protection Act

TABLE 4-17

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 1 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>Federal</b>				
CAA National Emission Standards for Hazardous Air Pollutants (NESHAPs)	42 U.S.C § 7412 40 CFR Parts 61 and 63	Applicable	The regulations establish emission standards for 189 hazardous air pollutants. Standards are set for fugitive dust and other release sources.	If remedial activities generate regulated air pollutants, then measures will be implemented to meet the standards.
RCRA	42 U.S.C. § 6901 et seq.	Applicable	Federal standards used to identify, manage, and dispose of hazardous waste. Massachusetts has been delegated the authority to administer the RCRA standards through its state hazardous waste management regulations	Specific state hazardous waste standards authorized under the Act would apply when determining whether or not a solid waste is hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling or contaminated material generated from well installation or maintenance. Existing data do not indicate that any wastes will be hazardous.

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TABLE 4-17

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 2 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<del>RCRA Standards for Identification and Listing of Hazardous Waste</del>	<del>40 CFR 261 Subparts A, B, C, and D</del>	<del>Applicable</del>	<del>Defines the listed and characteristic hazardous wastes subject to RCRA</del>	<del>These regulations would apply when determining whether or not a solid waste is hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling.</del>
RCRA Interim Status TSDF Standards – Chemical, Physical, and Biological Treatment	40 CFR 265 Subpart Q	Relevant and Appropriate	The regulations in this subpart apply to the treatment of hazardous wastes by chemical, physical, or biological methods in other than tanks, surface impoundments, and land treatment facilities. Treatment reagents must not be placed in the treatment process or equipment if they could cause the treatment process or equipment to rupture, leak, corrode, or otherwise fail before the end of its intended life. Inspections are required to ensure that the treatment process is operating correctly.	In-situ treatment using bioremediation will be conducted in compliance with these standards regarding the handling and management of treatment chemicals.
RCRA Interim Status TSDF Standards – Thermal Treatment	40 CFR 265 Subpart P	Relevant and Appropriate	The regulations in this subpart apply to the treatment of hazardous wastes by thermal treatment.	In-situ treatment electrical resistance heating will be conducted in compliance with these standards regarding operations, inspections, maintenance, and closure.

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TABLE 4-17

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 3 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
Underground Injection Control (UIC)	40 CFR 144.146, and 147.1100	Applicable	These regulations address the discharge of wastes, chemicals or other substances into the subsurface. The federal UIC program designates injection wells incidental to aquifer remediation and experimental technologies as Class V wells authorized by rule that do not require a separate UIC permit.	These standards regulate the injection of biological or chemical substance into the groundwater. In-situ treatment using bioremediation will be conducted in compliance with these standards.
<del>Draft Guidance for Evaluating Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)</del>	<del>OSWER EPA530-D-02-004 (November 2002)</del>	<del>To Be Considered (TBC)</del>	<del>Guidance for assessing and mitigating vapor intrusion risk.</del>	<del>Since the future includes housing, offices, and commercial/retail assessment and mitigation of potential vapor intrusion risks will be conducted in accordance with the guidance until such time as groundwater cleanup levels are achieved.</del>
Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites	OSWER Directive 9200.4-17P (April 21, 1999)	TBC	EPA guidance regarding the use of monitored natural attenuation for the cleanup of contaminated soil and groundwater. In particular, a reasonable time frame for achieving cleanup standard through monitored attenuation would be comparable to that which could be achieved through active restoration.	The monitored natural attenuation component of this alternative will only meet these standards if natural attenuation will attain all groundwater cleanup standards within a reasonable time frame. It is estimated that all cleanup standards will be achieved in 15 years.

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TABLE 4-17

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 4 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
<b>State</b>				
<a href="#">MA Air Pollution Control Regulations</a>	<a href="#">310 CMR 7.18</a>		<a href="#">Establishes the standards and requirements for air pollution control in the Commonwealth. Section 7.18 (VOCs) contain requirements relevant to remedial activities.</a>	<a href="#">VOC emissions generated during electrical resistance heating will be managed through engineering and other controls during remedial activities.</a>
Hazardous Waste Rules for Identification and Listing of Hazardous Wastes,	<a href="#">310 CMR 30.100</a>	Applicable	Establish requirements for determining whether wastes are hazardous. Defines listed and characteristic hazardous wastes.	These regulations would apply when determining whether or not a solid waste that is generated as part of this remedial action is classified as hazardous, either by being listed or by exhibiting a hazardous characteristic, such as contaminated purge water from groundwater sampling or contaminated material generated from well installation or maintenance. Existing data do not indicate that any wastes will be hazardous.

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TABLE 4-17

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 5 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
Hazardous Waste Management Rules (HWMR) Requirements for Generators	310 CMR 30.300	Applicable	These regulations contain requirements for generators of hazardous waste. The regulations apply to generators of sampling waste and also apply to the accumulation of waste prior to off-site disposal.	Wastes generated as a part of a remedial action for SRA that are considered hazardous will be handled in compliance with the substantive requirements of these regulations. To ensure that the remedial action complies with the substantive requirements of these regulations, the proposed quantities to be injected will be included in the design and submitted to USEPA and MassDEP for comment and concurrence and the groundwater monitoring program will assess the impact of the injected compounds.
UIC Program	310 CMR 27.00	Applicable	The federal Underground Injection Control program under the Safe Drinking Water Act has been delegated to the Commonwealth of Massachusetts. Establishes a State Underground Injection Control Program consistent with federal requirements to protect underground sources of drinking water.	The regulations apply to remedial actions involving underground injection, including use of bioremediation agents and oxidizers for in-situ chemical oxidation.
<u>Certification of Well Drillers and Filing of Well Completion Reports</u>	<u>310 CMR 46</u>	<u>Applicable</u>	<u>Requirements relating to well abandonment</u>	<u>Well drillers will follow all regulatory requirements for drilling and decommissioning of wells</u>
<u>Standard References for Monitoring Wells</u>	<u>WSC-310-91 MADEP, 04/91</u>	<u>TBC</u>	<u>Technical requirements for locating, drilling, installing, sampling and decommissioning monitoring wells.</u>	<u>Applies to wells installed for monitoring and/or groundwater treatment</u>

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TABLE 4-17

FEDERAL AND STATE ACTION-SPECIFIC ARARs – ALTERNATIVE G-  
 SOLVENT RELEASE AREA FEASIBILITY STUDY  
 NAS SOUTH WEYMOUTH  
 WEYMOUTH, MASSACHUSETTS  
 PAGE 6 OF 6

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Requirement	Citation	Status	Synopsis	Evaluation/Action To Be Taken
Erosion and Sediment Control Guidelines for Urban and Suburban Areas	MA Executive Office of Environmental Affairs, MADEP, 2003	TBC	Guidance for preventing erosion and sedimentation.	Remedial actions, particularly installation and maintenance of wells and other components of the remedy, will be managed to control erosion and sedimentation.
Activity and Use Restrictions	MCP 314 CMR 40.1012	Applicable	Rules for determining when an activity and use limitation must be used, when one cannot be used, and when one may be a factor to be considered in appropriately characterizing soil and groundwater at a disposal site	These standards will be used in establishing institutional controls over groundwater use at the site until remediation goals are achieved.

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- CAA = Clean Air Act.
- NESHAP = National Emission Standards for Hazardous Air Pollutant.
- CFR = Code of Federal Regulations.
- TCLP = Toxicity Characteristic Leaching Procedure.
- U.S.C. = United States Code.
- IDW = Investigation-derived wastes.
- UIC = Underground Injection Control.
- HWMR = Hazardous Waste Management Rules.
- MADEP = Massachusetts Department of Environmental Protection
- MCP = Massachusetts Contingency Plan
- PRB = Permeable reactive barrier
- RCRA = Resource Conservation and Recovery Act.
- SRA = Solvent Release Area.
- TSDF = Treatment, Storage, and Disposal Facilities
- VOC = Volatile organic compound.