Final

Record of Decision for Parcel E

Hunters Point Naval Shipyard
San Francisco, California

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Attachment 4. Applicable or Relevant and Appropriate Requirements

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Attachment 4. Federal Chemical-Specific ARARs [a]

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Requirement	Prerequisite	Citation [b]	ARAR Determination	Comments
		Groundwater		
Safe Drinking Water Act (42 USC, ch. 6A, § 300[f] through 300[j]-26)[c]				
National primary drinking water standards are health-based standards for public water systems (MCLs).	Public water system	40 CFR § 141.61(a) and § 141.62(b)	Relevant and appropriate	The Navy considers the B-aquifer a Class II aquifer under federal criteria and a potential source of drinking water based on an evaluation of site-specific factors. The Navy has identified MCLs for three COCs (PCE, TCE, and arsenic) as chemical-specific ARARs for the B-aquifer under the following scenarios: (1) containment of in-place waste at Parcel E IR-02 and IR-03, for which federal MCLs are ARARs for groundwater in the B-aquifer downgradient of the POC; and (2) clean closure of contaminated groundwater plumes outside of Parcel E IR-02 and IR-03, for which federal MCLs are ARARs for groundwater in the B-aquifer throughout the contaminated plumes. The Navy and the Water Board have determined that the A-aquifer is not a potential source of drinking water; therefore, drinking water standards (MCLs) are not ARARs for the A-aquifer.
MCLGs pertain to known or anticipated adverse health effects (also known as recommended MCLs).	Public water system	40 CFR § 141.51(b)	Relevant and appropriate	The Navy considers the B-aquifer a Class II aquifer under federal criteria and a potential source of drinking water based on an evaluation of site-specific factors. The Navy has identified the non-zero MCLG for thallium as a chemical-specific ARAR for the B-aquifer under the following scenarios: (1) containment of in-place waste at Parcel E IR-02 and IR-03, for which federal MCLGs are ARARs for groundwater in the B-aquifer downgradient of the POC; and (2) clean closure of contaminated groundwater plumes outside of Parcel E IR-02 and IR-03, for which federal MCLGs are ARARs for groundwater in the B-aquifer throughout the contaminated plumes. The Navy and the Water Board have determined that the A-aquifer is not a potential source of drinking water; therefore, drinking water standards (MCLGs) are not ARARs for the A-aquifer.

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Attachment 4. Federal Chemical-Specific ARARs [a] *(continued)*

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Requirement	Prerequisite	Citation [b]	ARAR Determination	Comments
Groundwater *(continued)*				
Resource Conservation and Recovery Act (42 USC, ch. 82, §§ 6901 through 6991[i])[c]				
Groundwater protection standards. Owners and operators of RCRA treatment, storage, or disposal facilities must comply with conditions in these sections that are designed to ensure that hazardous chemicals entering groundwater from a regulated unit do not exceed concentration limits for chemicals of concern set forth under Cal. Code Regs. tit. 22, § 66264.94 in the uppermost aquifer underlying the waste management area of concern at the POC.	A regulated unit that receives or has received hazardous waste before July 26, 1982, or regulated units that ceased receiving hazardous waste prior to July 26, 1982, where chemicals in or derived from waste may pose a threat to human health or the environment.	Cal. Code Regs, tit. 22, § 66264.94 (a)(1), (a)(3), (c), (d), (e)	Relevant and appropriate	There is no RCRA-regulated unit at Parcel E; therefore, these standards are not applicable. These standards are relevant and appropriate for the A-aquifer for clean closure of contaminated groundwater plumes outside of Parcel E IR-02 and IR-03, for which concentration limits based on unacceptable risk from the vapor intrusion pathway, pursuant to Cal. Code Regs. tit. 22, §§ 66264.94, are ARARs for groundwater in the A-aquifer throughout the contaminated plumes. Actions and decisions to address the indoor inhalation of vapors will be based on soil gas data and the soil gas action levels. Soil gas action levels are calculated based on a cumulative excess cancer risk level of 10^{-6} using the accepted methodology for risk assessments at HPNS. Preliminary soil gas action levels have been developed for HPNS but will be refined using data from future soil gas surveys following active treatment (to be performed at contaminated groundwater plumes outside of Parcel E IR-02 and IR-03).
Surface Water				
Clean Water Act of 1977, as Amended (33 USC, ch. 26, §§ 1313–1314)[c]				
Surface water quality standards	Discharges to waters of the United States	40 CFR § 131.38	Applicable	These standards, known as the CTR, are applicable surface water ARARs. The Navy has identified the CTR as ARARs for HPNS Parcel E because groundwater discharges to San Francisco Bay. The Navy will meet these ARARs for chemicals that do not have a promulgated standard in Table 3-3 of the Basin Plan at the interface of the A-aquifer and the bay. The Navy has identified MCLs as ARARs for the B-aquifer, which will be protective of the discharge of B-aquifer groundwater to the bay. Therefore, these are not ARARs for the interface of the B-aquifer and the bay.

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Requirement	Prerequisite	Citation [b]	ARAR Determination	Comments
Soil and Sediment				
Resource Conservation and Recovery Act (42 USC, ch. 82, §§ 6901 through 6991[i])[c]				
This requirement defines RCRA hazardous waste. Solid wastes are characterized as toxic based on the TCLP results if the wastes exceed the TCLP maximum concentrations.	Waste	Cal. Code Regs, tit. 22, §§ 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100	Applicable	These regulations are ARARs for all waste generated by the Navy in implementing Alternatives S-4, GW-3, O-4, and R-2. The Navy will determine if the waste is RCRA hazardous at the time it is generated.
Toxic Substances Control Act (15 USC, ch. 53, §§ 2601–2692)[c]				
Regulates storage and disposal of PCB remediation waste. There are three options: (a) self-implementing onsite cleanup and disposal; (b) performance-based disposal using existing approved disposal technologies; and (c) risk-based disposal.	Soils, debris, sludge, or dredged materials contaminated with PCBs at concentrations greater than 50 mg/kg.	40 CFR § 761.61(c)	Applicable and relevant and appropriate	The risk-based disposal option at § 761.61(c)is an applicable requirement for soil containing PCB concentrations equal to or greater than 50 mg/kg. The risk-based disposal option is a relevant and appropriate requirement for soil containing PCB concentrations less than 50 mg/kg.
Uranium Mill Tailings Radiation Control Act (42 USC, ch. 88, § 192.02, 192.12(a,b), and 192.42)[c]				
Standards for cleanup of land and buildings contaminated with radium-226, radium-228, and thorium from inactive uranium processing sites. As a result of residual radioactive materials from any designated processing site: (a) The concentration of radium-226 in land averaged over any area of 100 square meters shall not exceed the background level by more than: (1) 5 pCi/g, averaged over the first 15 cm of soil below the surface, and (2) 15 pCi/g, averaged over 15-cm-thick layers of soil more than 15 cm below the surface.	UMTRCA sites	40 CFR §§ 192.12(a) and 192.32(b)(2)	Relevant and appropriate	Not applicable because Parcel E is not an UMTRCA site, but is relevant and appropriate for sites with soil contaminated with radioactive waste. The surface and subsurface concentration of 5 pCi/g is relevant and appropriate for all radiologically impacted areas at Parcel E, except for IR-02 and IR-03. These areas, following remediation of ROCs exceeding the RGs (specifically, radium-226 exceeding 1 pCi/g above background), will not require land use restrictions regarding exposure to radioactivity. The RG for radium-226 is based on the CERCLA risk criterion, which is consistent with an agreement with EPA (see Table 8 of this ROD), rather than the standards established by UMTRCA. Not an ARAR for radiologically impacted areas (IR-02 and IR-03) that will be transferred with engineering and institutional controls for radioactive chemicals.

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Requirement	Prerequisite	Citation [b]	ARAR Determination	Comments
Soil and Sediment *(continued)*				
Uranium Mill Tailings Radiation Control Act (42 USC, ch. 88, § 192.02, 192.12(a,b), and 192.42)[c] *(continued)*				
In any occupied or habitable building, the objective of the remedial action shall be, and reasonable effort shall be made to achieve, an annual average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 WL. In any case, the radon decay product concentration (including background) shall not exceed 0.03 WL. Provisions applicable to radon-222 shall also apply to radon-220.	UMTRCA sites	40 CFR § 192.12(b)(1) and § 192.41(b)	Relevant and appropriate	Not applicable because Parcel E is not an UMTRCA site. Relevant and appropriate because the alternatives will result in excavation of material with radiological contamination that may produce this level of dose.
Concentration limits for cleanup of gamma radiation in buildings at inactive uranium processing sites designated for remedial action. In any occupied or habitable building, the level of gamma radiation shall not exceed the background level by more than 20 microroentgens per hour.	UMTRCA sites	40 CFR § 192.12(b)(2)	Relevant and appropriate	Not applicable because Parcel E is not an UMTRCA site. Relevant and appropriate because the alternatives will result in excavation of material with radiological contamination that may produce this level of dose.
Radiological Criteria for License Termination				
A site will be considered acceptable for unrestricted use if residual radioactivity that is distinguishable from background radiation results in a TEDE to an average member of the critical group that does not exceed 25 mrem/yr, including that from groundwater sources of drinking water, and that the residual radioactivity has been reduced to ALARA.	Existing NRC-licensed site	10 CFR § 20.1402	Relevant and appropriate	Not applicable because Parcel E is not an NRC-licensed site. This ARAR is relevant and appropriate for all radiologically impacted areas at Parcel E, except for IR-02 and IR-03. These areas, following remediation of ROCs exceeding the RGs (see Table 8 of this ROD), will not require land use restrictions regarding exposure to radioactivity. EPA does not believe this NRC regulation is protective of human health and the environment, and believes the RGs are more protective. Not an ARAR for radiologically impacted areas (IR-02 and IR-03) that will be transferred with engineering and institutional controls for radioactive chemicals.

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Attachment 4. Federal Chemical-Specific ARARs [a] *(continued)*

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Requirement	Prerequisite	Citation [b]	ARAR Determination	Comments
Soil and Sediment *(continued)*				
Radiological Criteria for License Termination *(continued)*				
Requires that the TEDE to individual members of public not exceed 0.1 rem from licensed operation, construction, operation, and decommissioning of commercial reactors and fuel cycle facilities; possession, use, processing, exporting, and certain aspects of transporting nuclear materials and waste; and siting, design, construction, operations, and closure of waste disposal sites.	Existing NRC-licensed site	10 CFR § 20.1301	Relevant and appropriate	Not applicable because Parcel E is not an NRC-licensed site. Relevant and appropriate because remedial alternative R-2 leaves potential radiological contamination at IR-02 and IR-03.
Performance objectives for the land disposal of LLRW. Concentrations of radioactive material that may be released to the general environment must not result in an annual dose exceeding 25 mrem to the body or any organ of a member of the general public.	Existing NRC-licensed LLRW disposal site	10 CFR § 61.41	Relevant and appropriate	Not applicable because Parcel E is not an NRC-licensed site. Relevant and appropriate for radiologically impacted areas (IR-02 and IR-03) that will be transferred with engineering and institutional controls for radioactive chemicals.
Air				
NESHAPs under CAA that Apply to Radionuclides				
Emissions of radionuclides to ambient air from DOE facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr.	Facility owned or operated by the DOE that emits any radionuclide other than radon-222 and radon-220 into the air.	40 CFR pt. 61, subpt. H, § 61.92	Relevant and appropriate	Not applicable because Parcel E is not a DOE site, but may be relevant and appropriate if there is the potential for airborne emissions of radionuclides other than radon. Only an ARAR until cleanup action is completed. Not an ARAR for residual contamination after cleanup.

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Requirement	Prerequisite	Citation [b]	ARAR Determination	Comments
		Air *(continued)*		
NESHAPs under CAA that Apply to Radionuclides *(continued)*				
Emissions of radionuclides, including iodine, to ambient air from a facility regulated under this subpart shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr. Emissions of iodine to ambient air from a facility regulated under this subpart shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 3 mrem/yr.	Facilities owned or operated by any federal agency other than the DOE and not licensed by the NRC.	40 CFR pt. 61 subpt. I, § 61.102	Applicable	The requirements are applicable because fugitive dust may be generated during implementation of the remedial action at Parcel E. Exposure to the public from remedial action operations at Parcel E is not likely to exceed 10 mrem/y because of the following reasons: 1. the concentrations of any radionuclide in dust are relatively low as previously measured in air samples, and 2. the concentration of any radionuclide in dust will be reduced by use of engineering controls such as wetting of soil.

Notes:

a = Many chemical-specific ARARs also contain action-specific requirements; these ARARs are not repeated in the action-specific ARAR tables.

b = Only the substantive provisions of the requirements cited in this table are ARARs.

c = Statutes and policies and their citations are provided as headings to identify general categories of ARARs for the convenience of the reader; listing the statutes and policies does not indicate that the Navy accepts the entire statutes or policies as ARARs; specific ARARs are addressed in the table below each general heading; only pertinent substantive requirements of the specific citations are considered ARARs.

ALARA = as low as reasonable achievable
ARARs = applicable or relevant and appropriate requirements
CAA = Clean Air Act
Cal. Code Regs. = California Code of Regulations
CFR = Code of Federal Regulations
ch. = Chapter
cm = centimeter
COCs = chemicals of concern
CTR = California Toxics Rule
DOE = U.S. Department of Energy
EPA = U.S. Environmental Protection Agency
HPNS = Hunters Point Naval Shipyard
IR = Installation Restoration
LLRW = low-level radioactive waste
MCLs = maximum contaminant levels
MCLGs = maximum contaminant level goals
mg/kg = milligrams per kilogram
mrem = millirem
mrem/y = millirems per year
Navy = Department of the Navy
NESHAPs = National Emissions Standards for Hazardous Air Pollutants
NRC = U.S. Nuclear Regulatory Commission
PCB = polychlorinated biphenyls
PCE = tetrachloroethene
pCi/g = picocuries per gram
POC = point of compliance
pt. = part
RCRA = Resource Conservation and Recovery Act
RGs = remediation goals
ROCs = radionuclides of concern
subpt. = subpart
TCE = trichloroethene
TCLP = toxicity characteristic leaching procedure
TEDE = total effective dose equivalent
tit. = title
UMTRCA = Uranium Mill Tailings Radiation Control Act
USC = United States Code
Water Board = San Francisco Regional Water Quality Control Board
WL = working level
§ = Section

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