



Proposed Plan For Initial Parcel #3 at the Former McClellan Air Force Base

U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Final – April 2011

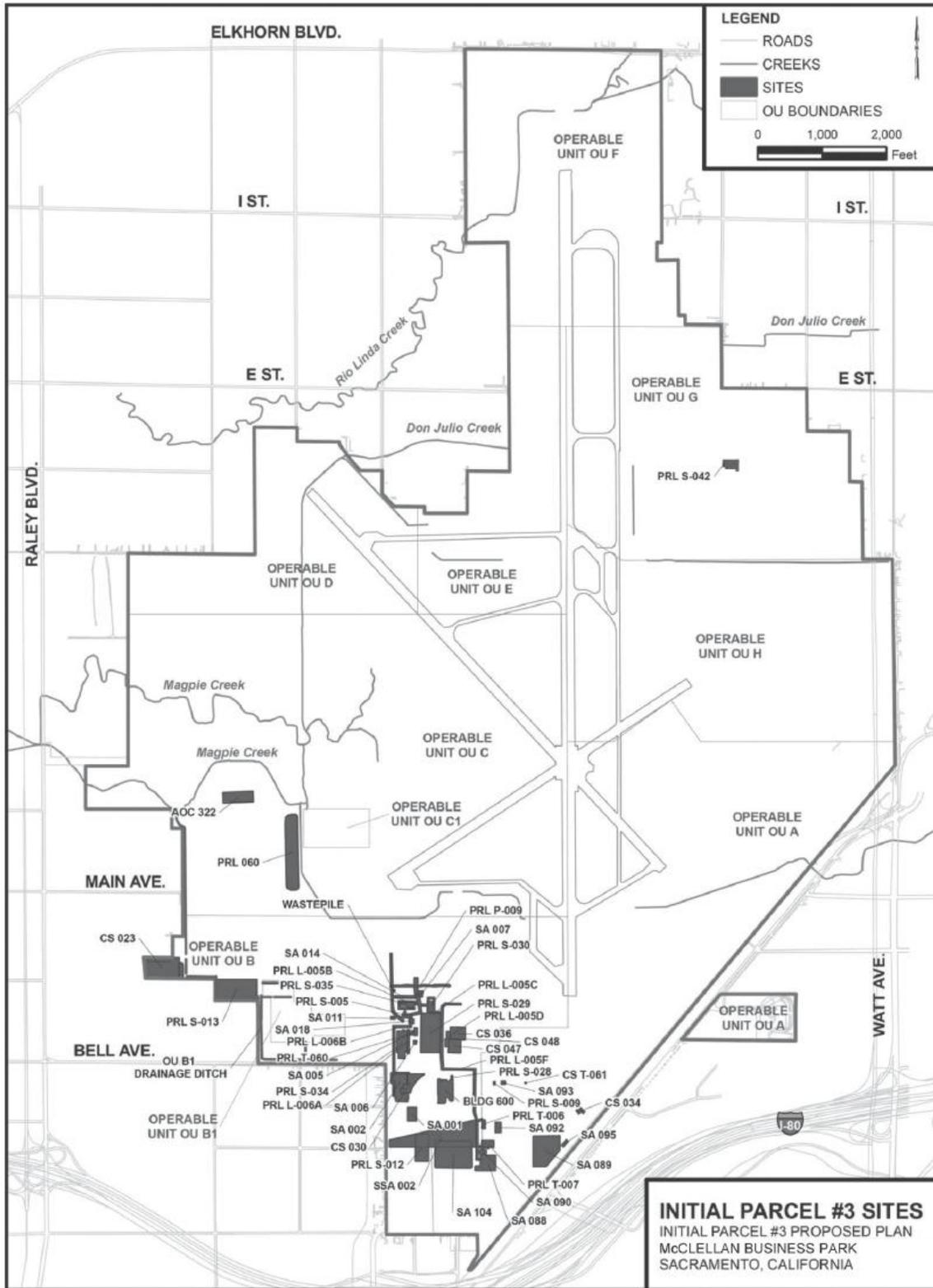
Overview

The United States Environmental Protection Agency (EPA) is requesting public comment on the Proposed Plan (Plan) to clean up 49 primarily industrial sites totaling 245 acres (Initial Parcel #3 or IP #3) at the Former McClellan Air Force Base (McClellan). This Plan summarizes the history, extent of contamination, cleanup process and the cleanup options being considered (*Words in bold are defined in the glossary*).

EPA has determined that contaminated soil, soil gas, and surface water at 32 sites still pose an unacceptable risk to human health and require additional remedial action. Appropriate alternatives were considered for each site condition and contaminants present. EPA proposed remedies include (1) institutional controls to prohibit residential use; (2) engineering controls, such as barriers, to eliminate contamination pathways, (3) treatment, such as soil vapor extraction, and (4) excavation and disposal of contaminated soil. EPA believes these proposed cleanup alternatives are protective of human health and the environment, will comply with applicable or relevant and appropriate federal and State requirements, are cost effective, and utilize permanent solutions to the maximum extent possible.

The Air Force has taken previous actions to reduce risks to public health and the environment at McClellan. Cleanup of contaminated groundwater began in 1995 and continues in accordance with the plan chosen in the 2007 Basewide Groundwater Record of Decision (ROD). Groundwater cleanup is being carried out in coordination with the ongoing program to address contamination in soil. The IP #3 Proposed Plan complements all previous environmental cleanup effort at McClellan; future plans will address all remaining contaminated sites.

EPA will review all comments and formalize the cleanup decisions in the IP #3 ROD.



Note: Annotated from the Draft Initial Parcel #3 Proposed Plan For 45 Sites at the Former McClellan Air Force Base July 2008 (CH2MHill)

Figure 1: Initial Parcel #3 sites

How You Can Comment

A 30-day public comment period begins on April 22, 2011 and closes May 22, 2011. Comments can be faxed, emailed or submitted in writing **no later than May 22** to:

Ms. Barbara Maco, MBA
Sustainable Management
Remedial Project Manager
U.S. EPA
Superfund Division S-8-1
75 Hawthorne Street
San Francisco, CA 94105
(415) 972-3794
(800) 231-3075
Fax: (415) 947-3520
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Public Meeting

A Public Meeting on the Proposed Plan is scheduled for May 3, 2011 at 6:30-8:30 pm at the North Highlands Recreation Center, 6040 Watt Ave, North Highlands, CA 95660.

For more information or a copy of the Plan please visit us @ www.epa.gov/region09/mcclellanafb

Cleanup Process

EPA, as lead agency, prepared this Plan that has received the concurrence of both the California Department of Toxic Substances Control (DTSC) and the Central Valley Regional Water Quality Control Board (RWQCB). This Plan fulfills requirements of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) § 117(a)** and National Oil and Hazardous Substances Pollution Contingency Plan (NCP) §300.430(f)(2). CERCLA is commonly referred to as Superfund.

The IP #3 cleanup is happening through a process called **Privatization**, by which the Department of Defense provides cleanup funds to a new owner with the goal of also speeding up its redevelopment. McClellan Business Park (MBP), the new owner and

developer, is required to investigate and clean up contamination in the top 15 feet of soil. EPA, rather than the Air Force, will decide how the contamination will be cleaned up. The EPA cleanup decision for IP #3 is based on years of technical investigation and analysis by the Air Force with oversight by EPA and the State of CA DTSC and the RWQCB. As necessary, EPA has conducted additional technical analysis to support the IP #3 cleanup proposal. Privatization does not affect the Air Force's duty to clean up contamination in soil below 15 feet or in groundwater.

History

McClellan encompasses about 3,000 acres located seven miles northeast of downtown Sacramento, California. McClellan is surrounded by the City of Sacramento to the west and southwest, unincorporated areas of Antelope on the north, Rio Linda on the northwest, and North Highlands on the east (please refer to the map on Figure 2).

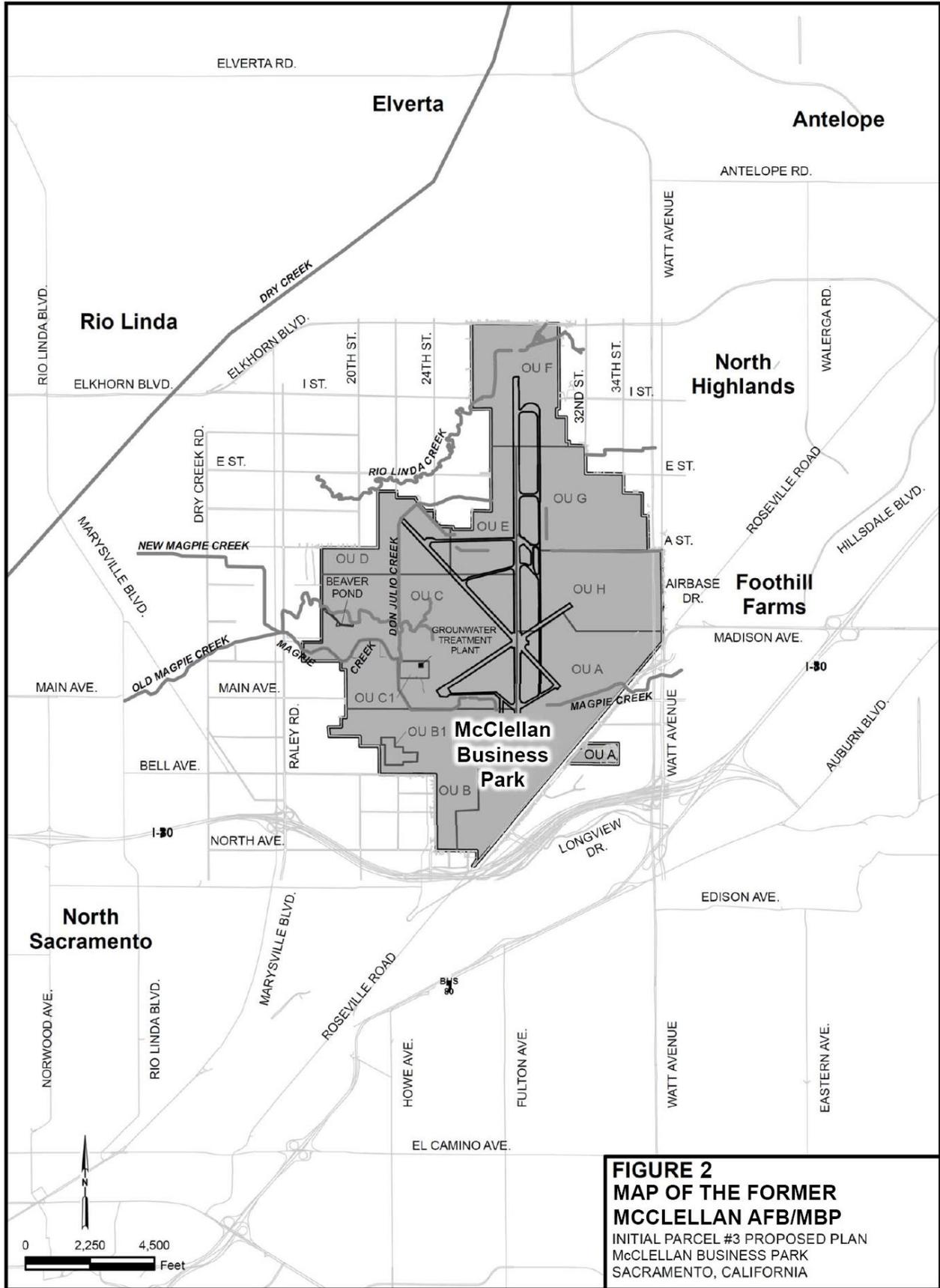


FIGURE 2
MAP OF THE FORMER
MCCLELLAN AFB/MBP
 INITIAL PARCEL #3 PROPOSED PLAN
 McCLELLAN BUSINESS PARK
 SACRAMENTO, CALIFORNIA

Note: Annotated from the Draft Initial Parcel #3 Proposed Plan For 45 Sites at the Former McClellan Air Force Base July 2008 (CH2MHill)

Figure 2: Map of the Former McClellan Air Force Base/MBP

Between 1936 and 2001, McClellan was an aircraft repair depot and supply base. Contamination is present at McClellan because the Air Force stored and used industrial solvents and cleaners, aviation fuels, and a variety of oils and lubricants at the property. Due to past disposal practices, spills, releases, and leaking tanks and pipelines, groundwater contamination was detected in 1979. In July 1987 McClellan was listed on the National Priorities List as a Superfund site. Additional background information can be found in the:

- *Final IP 3 Remedial Investigations and Feasibility Study (RI/FS)*
- *IP 3 Remedial Investigation Characterization Summary (IP3 RICS) Addenda*
- *Final Programmatic Environmental Impact Statement for Disposal and Reuse of McClellan AFB, California*
- *McClellan Air Force Base Reuse Plan*
- *McClellan Park Special Planning Area, Ordinance No. SZC-2002-0029 (County of Sacramento, 2002), and*
- *McClellan Basewide Volatile Organic Compound Groundwater Record of Decision (ROD)*

Information Repositories

North Highlands-Antelope Library

4235 Antelope Road
Antelope, CA 95843
(916) 264-2920

EPA Region 9 Superfund Records Center

95 Hawthorne Street
San Francisco, CA 94105
Hours: Monday - Friday, 8 a.m. to 5 p.m.

These documents, along with other documents comprising the **Administrative Record**, are available in the Information Repository locations identified in the adjacent box.

Background

The IP #3 49 sites represent an area with high property reuse potential that underwent early transfer to the County Local Reuse Authority (LRA)/Sacramento County. The LRA in turn transferred the property to MBP. When the Air Force transferred ownership of the property with the IP3 sites, not all the needed environmental cleanup was completed, so restrictions on the use of the property are included in the federal deed and in a **State Land Use Covenant (SLUC)**. These restrictions protect human health and the environment until a cleanup plan is selected and completed. MBP is now responsible for completing investigation and cleanup.

McClellan CHARACTERISTICS

The predominant land uses on McClellan are industrial and aviation with limited residential use. Some open areas are also present. Commercial, office, and industrial land uses interspersed throughout McClellan are used for shopping centers, office complexes, and warehouses. Most of the land adjacent to McClellan is zoned for low-density residential and agricultural use.

The majority of industrial facilities are located in the southeastern part of McClellan, and both industrial and storage areas are located in the southwest portion (refer to Figure). The far western area contains some environmentally sensitive vernal pools and wetlands. Between these wetlands and taxiways lies an open area that was used historically for industrial waste disposal pits. A series of engine test cells is located there. Aircraft parking areas and wash racks are located in the northeastern area of the base.

The 49 industrial IP #3 sites totaling 245 acres do not have any residential areas and only minimal ecological habitat. These sites include staging and storage areas for hazardous materials, drainage ditches, and repair stations. (See Table for a brief description of each site)

The Remedial Investigation conducted by the Air Force determined that the IP #3 sites did not require cleanup to protect ecological receptors. EPA's proposed remedies for the IP #3 sites address groundwater, soil and soil gas to provide protection of human health and the environment under all of the likely land use scenarios.

Contaminants of Concern

The Plan specifically addresses **volatile organic compounds** (VOCs) in soil and soil gas and **non-volatile organic compounds** (non-VOCs) such as metals and petroleum hydrocarbons in soil.

- VOCs, such as trichloroethene (TCE), tetrachloroethene (PCE), vinyl chloride, xylenes, methylene chloride
- Non-VOCs, such as metals (antimony, arsenic, chromium, cadmium, copper, iron, lead, silver, thallium), **total petroleum hydrocarbons (TPH)**, **polycyclic aromatic hydrocarbons (PAHs)**, **polychlorinated biphenyls (PCBs)** and **radionuclides**

In various places at McClellan, VOCs can be found in the soil from the ground surface all the way down to the **groundwater**, approximately 100 feet below the surface. VOCs can also be found in **soil gas**, which is the air between soil particles. Soil gas generally contains VOC contaminants that were once spilled onto the soil and that can possibly migrate into buildings where the occupants can inhale them. This **exposure pathway** is referred to as the **vapor inhalation pathway**. Exposure pathways are ways that people can be exposed to chemical contaminants. Common pathways include breathing, ingestion, or absorption through the skin.

VOCs closer to the surface have a greater potential impact on indoor air since they more readily migrate or can be drawn into buildings through ventilation systems. Consequently, the VOC contamination in the upper 15 feet of soil is referred to as **shallow soil gas (SSG)**. VOCs deeper than 15 feet are addressed in a separate Groundwater ROD.

Non-VOCs are commonly found in metal plating operations, electrical components, pesticides, fuel-related products, and combustion by-products. Most non-VOCs tend to be less mobile than VOCs and are most commonly found in shallow soils (0 to 15 feet deep). Non-VOCs pose a greater potential impact outdoors where windborne dust poses an inhalation threat and direct contact with soil poses a threat.

Table 1 summarizes all contaminants of potential concern at IP #3 sites, except for sites that are identified for no action because they contain little or no contamination. A more complete discussion can be found in the *IP #3 RI/FS*. As summarized in the FS Addendum, found in Appendix 1, EPA has added an additional chemical of concern "Non-VOCs" for sites PRL L-006a and PRL L-006B, due to the uncertainty with respect to the inactive Industrial Waste line that runs throughout McClellan.

Risk Assessment Summary

The IP3 RICS Addenda and FS contain risk assessments that evaluate potential effects of VOC and non-VOC contaminants on human health and the environment. The chemicals that are present in amounts that could cause a possible concern and the ways in which the site is used or may be used in the future (residential use or industrial use) are identified.

Human health risks under different use scenarios are calculated for the identified contaminants and compared to the CERCLA risk management range. Within the risk management range, it is possible that there might be anywhere from 1 additional cancer case in a group of 10,000 people to 1 additional cancer case in a group of 1,000,000 people. Risks below this range are generally acceptable and do not require cleanup actions to address the contamination. Risks that are above this risk range are generally considered unacceptable and require a cleanup action to be taken.

Risk analyses also consider noncancer hazards through the use of what is called the **hazard index (HI)**. If the HI is greater than 1, people are exposed to levels of contaminants that may pose a **noncancer health risk**. Specific noncancer health risks depend on the type of contaminant; for some of the contaminants, noncancer health risks can include kidney disease, nervous system damage, anemia, dizziness, and headaches (see Glossary/ Acronyms for more information). HIs greater than 1 are considered unacceptable and require cleanup action.

Risk assessments help determine whether or not cleanup action is needed given the designated land use, i.e., residential use or industrial use. The EPA has determined that contaminated soil, soil gas, and surface water at 32 sites still pose an unacceptable risk to human health and require additional remedial action. The remaining 17 sites are recommended for no further action.

Table 1: IP #3 Sites and Contaminants of Concern

Site Name	Site Description	Contaminants of P Concern (COCs)
AOC 322	Former segment of Magpie Creek between Patrol Road and Lang Avenue	Non-VOCs
Building 600	Former electronics repair shop, and a 20,000-gallon diesel UST	VOCs and Non-VOCs
CS 023	Debris burial area, surface release area, and Building 781	VOCs and Non-VOCs
CS 030	Former spill area	VOCs and Non-VOCs
CS 034	Suspected location of two underground storage tanks (USTs)	VOCs and Non-VOCs
CS 036	Chemical storage area	VOCs
CS 047	Former electroplating facility; former transformer pad	VOCs and Non-VOCs
CS 048	Former industrial waste treatment plant	VOCs
CS T-061	Former underground storage tank (UST) location	VOCs and Non-VOCs
OU B1 Drainage Ditch	Shallow, partially lined ditch for surface water runoff	Non-VOCs
PRL 060	Two former oxidation ponds	VOCs and Non-VOCs
PRL L-005 B, C, D, F, and G	Inactive industrial waste line	VOCs and Non-VOCs *
PRL L-006A-B	Inactive IWL	VOCs and Non-VOCs
PRL P-009	Shallow unlined drainage ditch	VOCs and Non-VOCs
PRL S-005	Former Industrial Waste Treatment Plant #2	VOCs
PRL S-009	Former hazardous waste storage area at Building 644 and the area south of the building	VOCs and Non-VOCs
PRL S-012	Former electrical transformer storage area	VOCs and Non-VOCs
PRL S-013	Former hazardous waste Storage Lot No. 3	Non-VOCs
PRL S-028	Former hazardous waste storage area at Building 644 and the area south of the building	VOCs and Non-VOCs
PRL S-029	Mechanical and electronics repair, chemical storage, and	VOCs

	spray painting	
PRL S-030	Washrack, auto grease rack, storage pad, and drainage systems	VOCs
PRL S-034	Automotive repairs, painting and depainting operations, and woodworking	VOCs
PRL S-035	Mechanical test and repair facility	VOCs
PRL S-042	Washrack, USTs, segments of the industrial waste line, former unlined ditch, former hazardous waste staging area	VOCs and Non-VOCs
PRL T-006	Former parts cleaning room	VOCs
PRL T-007	Spray booth and UST in Building 640	VOCs and Non-VOCs
PRL T-060	Former fuel UST	Non-VOCs
SA 001	Suspected Release Area	Non-VOCs
SA 002	Central Laboratory used for gas analyses, applied physics, and radioactive analyses.	Non-VOCs
SA 005	Steam generation plant and paint storage facility; bunker oil UST	Non-VOCs
SA006	Former gas station location, with four former USTs	VOCs and Non-VOCs
SA 007	Washrack and fuel tanker refueling area; three USTs	VOCs and Non-VOCs
SA 011	UST and fill pit area	Non-VOCs
SA 014	Unlined drainage ditch	Non-VOCs
SA 018	Former paved outdoor fuel and oil storage yard	VOCs
SA 088	Building 610 and a drainage ditch	VOCs and Non-VOCs
SA 089	Former Building 611 and an unpaved storage area	VOCs and Non-VOCs
SA 090	Hazardous materials staging areas including Building 613	VOCs and Non-VOCs
SA 092	Boiler Plant and UST	Non-VOCs
SA 093	Building 646, a former radiological laboratory	Non-VOCs
SA 095	Former UST	VOCs
SA 104	Hazardous materials staging areas including Building 613	VOCs
SSA 002	Soil gas contamination site in the vicinity of former Buildings 624 and 626	VOCs
Wastepile	Former storage site	Non-VOCs

Remedial Action Objectives

EPA's Remedial Action Objectives (RAOs) are the following:

- Eliminate or reduce contamination in soil and soil gas to meet cleanup goals through treatment or off -site disposal;
- Prevent or reduce unacceptable impacts to surface water from non-VOCs and to groundwater from VOCs and non-VOCs
- Prevent uses of IP #3 sites that are inconsistent with any residual contamination.

To meet these objectives, EPA is developing cleanup goals (CGs) for soils and soil gas beneath the IP #3 sites, based on EPA's Regional Screening Levels, soil background levels, and risk-based screening levels in the IP 3 FS.

Two sets of CGs are being developed. The first set protects human health and the environment for **unrestricted (residential) land use**. Unrestricted land use allows for anything to be built, including homes. The second set protects human health for industrial use and would allow only commercial and industrial activities. (This land use category does not allow for the construction of homes, daycare centers, or similar facilities. The final cleanup levels will be identified in the ROD.

Remedial Alternatives

Eight remedial alternatives were developed and evaluated in the RI/FS for the cleanup of IP #3 sites. The alternatives, including EPA's preferred alternatives, are summarized below. The cleanup alternatives, with the exception of the No Action and Excavation/Disposal (unrestricted land use) Alternatives, all have institutional controls (ICs) as a common component. ICs would prohibit certain land uses through a land use covenant and may prohibit activities that could damage engineered controls.

The remedial alternatives developed for the IP #3 sites were intended to address a broad range of site conditions and contaminant types. Because VOCs and non-VOCs are present, VOC and non-VOC alternatives were developed to address both of these types of contaminants. Appropriate alternatives were considered for each site condition and contaminants present. These alternatives are described in detail in the *IP 3 FS* and are summarized below. The alternatives were evaluated for each site that requires additional cleanup.

Alternative 1 – No Action

CERCLA and the NCP require a No Action alternative to establish a basis for comparison with other alternatives. No remedial activities for VOCs and/or non-VOCs are implemented under this alternative. The No Action alternative is evaluated for each of the IP 3 sites. No cost is associated with this alternative. Table 2 summarizes the sites where no action is required because analysis identified risks are either below or within the risk management range.

Alternative VOC2 – Institutional Controls to Prohibit Residential Use (Restricted Land Use)

Under Alternative VOC2, institutional controls would be used to eliminate or limit exposure pathways for VOCs to people and the environment and result in restricted land use. Institutional controls would be implemented primarily to prohibit residential use. Through a specific State land use covenant recorded on the property subject to this remedy, use of the property for residential and similar purposes will be prohibited. Alternative VOC2 includes monitoring and enforcement of the institutional controls.

Alternative VOC3 – Engineered and Institutional Controls to Address Shallow Soil Gas Contamination (Restricted Land Use)

Under Alternative VOC3, the state land use covenant will prohibit residential land use and will require that any future building construction (i.e. new buildings or significant modifications to existing buildings) on the site address the risk of vapor intrusion. The property owner must install vapor controls in the building or sample to show that there is no unacceptable risk. The specific vapor control required would be determined at the time of construction and must be approved by EPA and the State regulatory agencies. Alternative VOC3 results in restricted land use.

Alternative VOC4 – SVE (Restricted Land Use)

Alternative VOC4 is based on existing Soil Vapor Extraction technology operated by the Air Force under the *McClellan Groundwater VOC Record of Decision* (August 2007). SVE would continue to be used to eliminate or limit VOC exposure in shallow soil gas (SSG). Expanded or additional soil vapor extraction wells would be installed and operated by the Air Force as needed. Institutional controls and monitoring would be required under this alternative similar to what is required under Alternative VOC3.

Alternative Non-VOC2 – Institutional Controls to Prohibit Residential Use (Restricted Land Use)

Under Alternative Non-VOC2, institutional controls would be used to eliminate or limit exposure pathways for non-VOCs and result in restricted land use. Alternative Non-VOC2 is potentially applicable at all of the IP 3 sites with non-VOC contamination. Institutional controls would be implemented primarily to prohibit residential use. Through a specific state land use covenant recorded on the property subject to this remedy, use of the property for residential and similar purposes will be prohibited.

Alternative Non-VOC3 – Engineered and Institutional Controls to Prohibit Residential Use (Restricted Land Use)

Under Alternative Non-VOC3, engineered controls would be used to eliminate or limit non-VOC exposure pathways. Depending on the specific requirements of each site, engineered controls under this alternative would consist of maintenance of and improvements to the surface cover and drainage ditches and/or sediment collection. This alternative would also include institutional controls and monitoring. It also involves the maintenance and/or expansion of concrete, asphalt, and building foundations to reduce or eliminate direct contact exposure, soil erosion, and potential impacts to surface water. Under this alternative, drainage ditches would be reconstructed, as necessary, to improve their ability to collect sediment. Pre-constructed sediment traps would also be installed in the downstream section of the ditch to trap and remove any residual sediment. The ICs would prohibit residential land use through a state land use covenant and implement site controls to protect the engineered controls that reduce exposure to contamination.

Alternative Non-VOC4a – Excavation/Disposal (Restricted Land Use)

Under Alternative Non-VOC4a, the IP 3 sites with contaminated soil and/or sediment would be excavated, and the excavated soil would be transported to an offbase landfill for disposal. All soil containing concentrations of contaminants above industrial use levels will be removed and the resulting land use is restricted. Alternative Non-VOC4a also includes engineered controls (such as surface cover or sediment collection) as necessary, institutional controls, and monitoring as described under Alternative Non-VOC3.

Alternative Non-VOC4b – Excavation/Disposal (Unrestricted Land Use)

Under Alternative Non-VOC4b, the IP 3 sites with contaminated soil and/or sediment would be excavated, and the excavated soil would be transported to an offbase landfill for disposal. All soil containing concentrations of contaminants above unrestricted use levels will be removed, and the resulting land use will be unrestricted. Because the land use would be unrestricted, long-term institutional controls, engineered controls, and/or monitoring would not be required.

Evaluation of Alternatives

These nine criteria are part of the CERCLA process established to provide a format for selecting appropriate remedial alternatives and are found in Table 2. The first two criteria, overall protection of human health and the environment and compliance with state and federal environmental requirements, are called threshold criteria. These two criteria must be met in order for the alternative to be eligible for selection. The remaining seven criteria, called

<p>Table 2: EPA's Nine Cleanup Criteria</p>	<p>Alternative 1 – No Action</p>	<p>Alternative VOC2 – Institutional Controls to Prohibit Residential Use (Restricted Land Use)</p>	<p>Alternative VOC3 – Institutional Controls to Address Vapor Intrusion Risk (Restricted Land Use)</p>	<p>Alternative VOC4 – SVE (Restricted Land Use)</p>	<p>Alternative Non-VOC2 – Institutional Controls to Prohibit Residential Use (Restricted Land Use)</p>	<p>Alternative Non-VOC3 – Engineered and Institutional Controls to Prohibit Residential Use (Restricted Land Use)</p>	<p>Alternative Non-VOC4a – Excavation/Disposal (Restricted Land Use)</p>	<p>Alternative Non-VOC4b – Excavation/Disposal (Unrestricted Land Use)</p>
<p>1 Overall Protectiveness of Human Health and the Environment  Determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.</p>	<p>Would not reduce risks. Appropriate for sites with low or no risk (See Table 3)</p>	<p>Yes, except for CS 036, CS 047, CS 048, CS T-061, PRL L-005, PRL L-006, PRL P-009, PRL S-034, PRL S-035, PRL T-006, and SA 007.</p>	<p>Yes. Exposure pathways limited with successful ICs and engineering controls further protect of human health.</p>	<p>Yes. SVE and ICs would prevent impacts to human health.</p>	<p>Human exposure pathways limited with ICs; doesn't address potential threat to surface and/or groundwater.</p>	<p>Yes, but doesn't directly address groundwater protection. Engineered controls likely protect groundwater.</p>	<p>Yes. Contamination exceeding cleanup standards removed. ICs prevent impacts to human health from any contaminants remaining above residential standards.</p>	<p>Yes. Contamination exceeding residential standards would be removed; interim ICs similar to Non-VOC4a.</p>
<p>2 Compliance with State and Federal Environmental Requirements  Evaluates alternatives for compliance with environmental protection requirements.</p>	<p>No</p>	<p>same as above</p>	<p>Yes.</p>	<p>Yes.</p>	<p>Yes for human health ARARs, but would not address threats to surface or ground water.</p>	<p>Yes for human health ARARs, but would not address potential threats to groundwater.</p>	<p>Yes.</p>	<p>Yes.</p>
<p>3 Long-term Effectiveness  Considers an alternative's ability to maintain reliable protection of human health and the environment after implementation.</p>	<p>Effective for No Action sites (see Table 3). Not effective for remaining sites.</p>	<p>Only for sites where risks are within or below an excess cancer risk of 10-4 or an HI below 1 (exceptions as above).</p>	<p>Engineered controls result in acceptable VOC risks.</p>	<p>Yes. SVE and ICs would protect human health at industrial use levels.</p>	<p>Yes. IC monitoring and enforcement would protect human health and environment.</p>	<p>Yes. Monitoring and enforcement of engineered and institutional controls would protect humans and surface water.</p>	<p>Yes. Industrial standards likely achieved. Engineered controls and long-term ICs protective of human health and surface water.</p>	<p>Yes. Unrestricted use likely achieved. Interim land use controls would prevent human health impacts.</p>
<p>4 Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment  Evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.</p>	<p>None</p>	<p>None</p>	<p>None</p>	<p>None, unless SVE includes treatment of extracted VOCs.</p>	<p>None</p>	<p>None</p>	<p>None</p>	<p>None</p>
<p>5 Cost  Weighs the benefits of a particular alternative against the cost of implementation.</p>	<p>\$0</p>	<p>\$81,000 per site</p>	<p>\$184,000 per site, except \$524,000 for PRL S-034</p>	<p>\$126,000 (PRL S-034)</p>	<p>\$81,000 per site</p>	<p>\$81,000 to \$343,000 (see Table 3)</p>	<p>\$119,000 to \$2,142,000 (see Table 3)</p>	<p>\$115,000 to \$2,782,000 (see Table 3)</p>
<p>6 Short-term Effectiveness  Addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period, until cleanup goals are achieved.</p>	<p>NA</p>	<p>Vapor inhalation pathway possible.</p>	<p>Vapor barriers would protect against indoor air contamination. Land use controls protect human health.</p>	<p>Risks to workers installing any additional wells could be managed.</p>	<p>Would be immediately protective of human health.</p>	<p>Would be immediately protective of human health.</p>	<p>Short term risks during excavation and transport could be managed.</p>	<p>Short term risks during excavation and transport could be managed.</p>
<p>7 Implementability  Refers to the technical and administrative feasibility of the alternative, including the availability of materials and services needed to implement a particular option.</p>	<p>NA</p>	<p>Implementable with coordination between EPA, State, Sacramento County, and AFRPA.</p>	<p>Implementable with agency coordination.</p>	<p>Readily implementable.</p>	<p>Implementable with agency coordination.</p>	<p>Surface cover and sediment collection systems implementable; aforementioned agency coordination required.</p>	<p>Readily implementable. Coordination with potential remedial actions for SSG required.</p>	<p>Readily implementable with agency coordination.</p>
<p>8 State Acceptance  Considers whether the state favors or objects to any of the alternatives based on the available information.</p>	<p>TBD</p>	<p>Evaluated after Proposed Plan Comment Period</p>	<p>Evaluated after Proposed Plan comment period</p>	<p>Yes.</p>	<p>Evaluated after Proposed Plan comment period</p>	<p>Evaluated after Proposed Plan comment period</p>	<p>Evaluated after Proposed Plan comment period</p>	<p>Evaluated after Proposed Plan comment period</p>
<p>9 Community Acceptance  Indicates whether community concerns are addressed by the alternative and whether the community has a preference for an alternative. Although public comment is an important part of the final decision, the Air Force must balance community concerns with all the previously mentioned criteria.</p>	<p>To be evaluated as part of this Proposed Plan</p>	<p>To be evaluated as part of this Proposed Plan</p>	<p>To be evaluated as part of this Proposed Plan</p>	<p>To be evaluated as part of this Proposed Plan</p>	<p>To be evaluated as part of this Proposed Plan</p>	<p>To be evaluated as part of this Proposed Plan</p>	<p>To be evaluated as part of this Proposed Plan</p>	<p>To be evaluated as part of this Proposed Plan</p>

modifying and balancing criteria, are used to compare the eligible alternatives and help in the selection of the Preferred Alternative. The last two criteria, State and Community Acceptance, will be specifically evaluated after the public comment period on this Proposed Plan. Table 2 found on the next page contains an evaluation of the remedial alternatives using the first seven criteria.

Total combined costs for each alternative are shown on Table 3. For a more detailed analysis of how the alternatives meet the nine criteria, please refer to the IP 3 FS the Final IP #3 Feasibility Study issued by the Air Force in December 2008 and the IP 3 FS Addendum found in Appendix 1 of this Plan.

Table 3: Costs for VOC and Non-Voc Preferred Alternatives (PW₃₀)

IP #3 Sites	VOC2	VOC3	VOC4	Non-VOC-2	Non-VOC4a	VOC2 Non-VOC4a	VOC3 Non-VOC3	VOC3 Non-VOC4a
CS 023	\$81,000							
CS 036		\$184,000						
CS 047								\$367,000
CS 048		\$184,000						
CS T-061								\$284,000
OU B1 Drainage Ditch					\$215,000			
PRL 060				\$81,000				
PRL L-005 B, D, F, and G		\$184,000						
PRL L-005 C					\$555,000			
PRL L-006 A-B							\$184,000	
PRL P-009								\$290,000
PRL S-005	\$81,000							
PRL S-012					\$604,000			
PRL S-013	\$81,000					\$365,000		
PRL S-029	\$81,000							
PRL S-030	\$81,000					\$220,000		
PRL S-034			\$126,000					
PRL S-035		\$184,000						
PRL T-006		\$184,000						
PRL T-060/SA 005					\$119,000			
SA 007								\$367,000
SA 011					\$633,000			
SA 014					\$534,000			
SA 018	\$81,000							
SA 092					\$364,000			
SA 095	\$81,000							
Wastepile					\$202,000			
Combined Cost of Remedy	\$567,000	\$920,000	\$126,000	\$81,000	\$3,226,000	\$585,000	\$184,000	\$1,308,000
Total Cost All Remedies	\$6,997,000							

PW₃₀ = present worth 30-year costs

Preferred Cleanup Alternatives.

Table 4 summarizes the EPA proposed cleanup alternatives for IP # 3 sites; these are based on the 2008 AF Feasibility Study supplemented by additional characterization and analysis including recent interim cleanup actions by the AF, new concerns regarding soil vapor intrusion, and the uncertainty with respect to the inactive Industrial Waste line that runs throughout McClellan.

EPA believes these proposed cleanup alternatives are protective of human health and the environment, will comply with applicable or relevant and appropriate federal and State requirements, are cost effective, and utilize permanent solutions to the maximum extent possible. Some sites will need more than one cleanup alternative to address the different types of contamination present. The preferred alternatives can change in response to public comments or new information. The EPA invites community comments on the preferred alternatives, as well as the other alternatives presented in this Plan.

Table 4: EPA's Preferred Alternatives

Site Name	Preferred Alternative	Contaminants Addressed
AOC 322	No Action	Not Applicable (NA)
Building 600	No Action	NA
CS 023	VOC2	SSG
CS 030	No Action	NA
CS 034	No Action	NA
CS 036	VOC3	SSG
CS 047	VOC3 and Non-VOC4a	PCBs
CS 048	VOC3	SSG
CS T-061	VOC3 and Non-VOC4a	SSG, total petroleum hydrocarbons (TPH)
OU B1 Drainage Ditch	Non-VOC4a	polychlorinated biphenyls (PCBs)
PRL 060	Non-VOC2	metals, pesticides, polyaromatic hydrocarbons (PAHs), PCBs
PRL L-005 B, D, F, and G	VOC3	SSG
PRL L-005C	Non-VOC4a	TPH, PCBs
PRL L-006A-B	VOC3, Non-VOC3*	SSG
PRL P-009	Non-VOC4a and VOC3	SSG, metals, PCBs
PRL S-005	VOC2	SSG
PRL S-009	No Action	NA
PRL S-012	Non-VOC4a	PCBs
PRL S-013	Non-VOC4a and VOC2	PCBs, SSG
PRL S-028	No Action	NA
PRL S-029	VOC2	SSG
PRL S-030	VOC2	SSG
PRL S-034	VOC4, **	SSG
PRL S-035	VOC3	SSG
PRL S-042	No Action	NA
PRL T-006	VOC3	SSG
PRL T-007	No Action	NA
PRL T-060	Non-VOC4a	TPH
SA 001	No Action	NA
SA 002	No Action	NA
SA 005	Non-VOC4a	TPH
SA006	No Action	NA
SA 007	Non-VOC4a and VOC3	SSG, PAHs, TPH
SA 011	Non-VOC4a	metals
SA 014	Non-VOC4a	metals, TPH, pesticides, PCBs
SA 018	VOC2	SSG
SA 088	No Action	NA
SA 089	No Action	NA
SA 090	No Action	NA
SA 092	Non-VOC4a	PCBs, lead
SA 093	No Action	NA
SA 095	VOC2	SSG
SA 104	No Action	NA
SSA 002	No Action	NA
Wastepile	Non-VOC4a	metals, pesticides, and PCBs

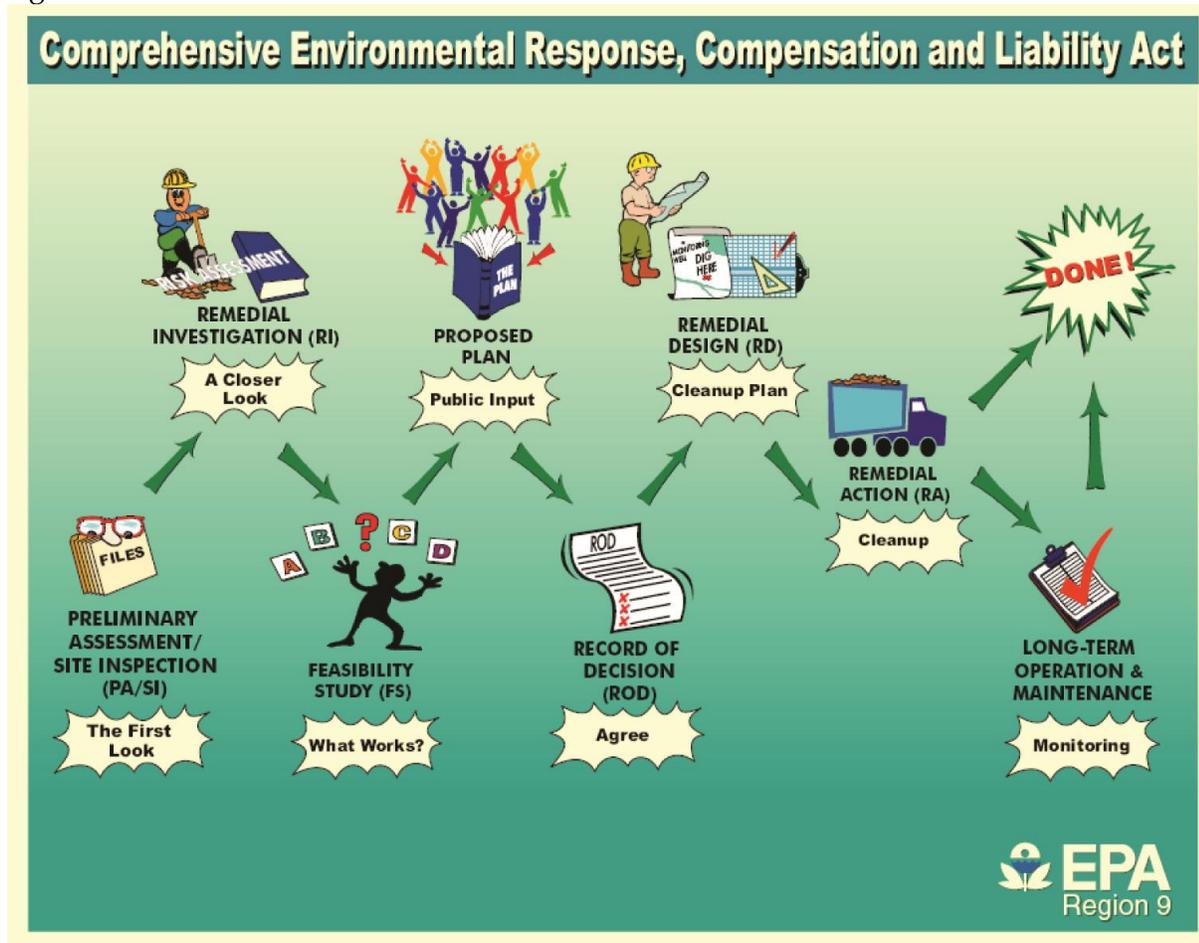
*Non- Voc 3 proposed remedy to include institutional controls and monitoring based on the uncertainty associated with both classes of contaminants at all segments of the industrial waste line (IWL) at McClellan.

** VOC4 proposed remedy for PRL S-034 is being implemented by the Air Force as part of the removal action at IC 7. The Air Force is also responsible for the subsequent shutdown using a STOP evaluation under the VOC ROD. Once the removal is complete, confirmation sampling will occur to determine whether further controls are warranted such as VOC2 or VOC3.

Where We Are in the Process

We are at the Proposed Plan stage in the CERCLA Process for IP# 3. Figure 3 shows the critical steps in that process. By the end of 2011, EPA expects to have reviewed all comments submitted on this Plan and issued the ROD describing the chosen cleanup plan. The ROD and a summary of responses to public comments will then be made available to the public at the Information Repositories and through any of the contacts listed on the back page of this Plan. EPA will announce the decision to the community through the local news media and a general mailing.

Figure 3 CERCLA Process



For further information please contact:

U.S. Environmental Protection Agency (lead) Board

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For information on the reuse of IP # 3 sites please contact McClellan Park

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Glossary/Acronyms

Administrative Record—Collection of all pertinent documents that support the final decisions for each site. This is located at the former McClellan Air Force Base.

Air Force Real Property Agency—A field operating agency activated by the secretary of the Air Force. The mission is to execute the environmental programs and real and personal property disposal for major Air Force bases being closed in the U.S.

Applicable or relevant and appropriate requirements—Federal laws and more stringent state laws that apply or are determined to be relevant and appropriate to the remedy.

Area of Concern (AOC)—An area identified for further investigation during the IRP process.

Cleanup levels—Levels set for the protection of human health, groundwater, or surface water. To protect human health, the set risk level is usually one in a million—an additional person in a million people may contract cancer.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)—Legislation passed in 1980 and designed to respond to the past disposal of hazardous substances. The act was extensively amended in 1986 by the Superfund Amendments and Reauthorization Act, which added many provisions and clarified unclear areas in the original law.

Confirmed Site (CS) – Site identified during the IRP process to have contaminants above the screening levels being used at the time.

Contaminants of concern – Substances selected for environmental cleanup based on predicted impacts to groundwater resources and a health risk posed by the contaminant.

Engineered Controls – Methods of managing environmental and health risks. Engineered controls, such as barriers placed between a contaminated area and the rest of a site, can be used to limit exposure pathways.

Exposure pathway – Ways that people can be exposed to contaminants. Common pathways include breathing, ingestion, or absorption through the skin.

Feasibility Study – A study of a hazardous waste site that must be completed before a cleanup remedy can be chosen and implemented. The Feasibility Study identifies and evaluates alternatives for addressing contamination.

Five-year review – Regular check-ups conducted on certain Superfund sites (where either treatment systems are still operating after 5 years or where waste is left behind) to make sure the site is still safe. Five-year review reports make recommendations on the continuation, modification, or elimination of annual reports and institutional control monitoring frequencies. Five-year review reports are submitted by the Air Force to regulatory agencies for review and comment. Five-year reviews also represent an opportunity for the public to voice any concerns.

Groundwater – Underground water that fills pores between particles of soil, sand, and gravel or openings in rocks to the point of saturation. Where groundwater occurs in significant quantity, it can be used as a source of drinking water.

Hazard index (HI) – The ratio of contaminant concentration divided by the safe exposure level. If the hazard index exceeds 1, people are exposed to contaminants that may pose noncancer health risks. Noncancer health risks are contaminant-dependent but may include kidney disease, headaches, dizziness, and anemia. For more information, go to ToxFAQs at www.atsdr.cdc.gov.

Industrial Use – When land is used for industrial, commercial, office, retail or other occupational purposes.

Installation Restoration Program (IRP) - Program designed to identify, investigate, and cleanup contamination

Institutional Controls – Administrative or legal mechanisms that protect property users and the public from existing contamination that continues to be present during use of a site (permits, zoning, and/or deed restrictions).

Mitigate – Implement engineered controls or actions that prevent or make conditions less severe or harsh.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP) – The federal regulation that guides determination of the sites to be cleaned up under the Superfund program. This plan also provides the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances in accordance with CERCLA and the Clean Water Act.

National Priorities List—U.S. Environmental Protection Agency’s published list of the highest priority hazardous waste sites in the U.S. for investigation and cleanup, which are subject to the Superfund program.

Noncancer health risk—Health risks that do not result in cancer and may include kidney disease, headaches, dizziness, and anemia.

Non-volatile organic compounds (non-VOCs)—A group of compounds that do not readily evaporate at room temperature. These include metals, pesticides, SVOCs, petroleum hydrocarbons, dioxins/furans, and radionuclides.

Operable Unit (OU)—The cleanup of a site can be divided into a number of operable units depending on the complexity of the problems associated with a site. Operable units may address geographic portions of a site, specific site problems, or initial phases of an action, or may consist of any set of actions that are concurrent but located in different parts of a site. The determination of an operable unit may vary over time as a result of change in activity or need. For management purposes, McClellan is subdivided into 11 operable units. Ten of the operable units correspond to discrete areas of the base where specific industrial operations and/or waste management activities took place. Those operable units are designated A, B, B1, C, C1, D, E, F, G, and H. The remaining operable unit is the Groundwater OU, which encompasses the entire base.

Polychlorinated biphenyls (PCBs) - A group of man-made compounds that were widely used in the past, mainly in electrical equipment, but which were banned at the end of the 1970s in many countries because of environmental concerns.

Polycyclic aromatic hydrocarbons (PAHs) - Any of a class of carcinogenic organic molecules that consist of three or more benzene rings.

Potential Release Location (PRL)—Site identified during the IRP process to have potentially released contaminants.

Preferred Alternative—The EPA’s suggested cleanup method(s) for the contaminated site(s). The preferred alternative is protective of human health and the environment, complies with applicable or relevant and appropriate requirements, and is cost-effective.

Privatization - The process where the Department of Defense provides cleanup funds to a new property owner with the goal of speeding up redevelopment. EPA, instead of the military, will decide how the contamination will be cleaned up.

Proposed Plan—A summary of cleanup alternatives for a contaminated site, including a preferred alternative and the reasons for its selection. This step is the community’s opportunity to review and comment on all cleanup alternatives under consideration. The responses to the comments are presented in the Record of Decision. All changes from the Proposed Plan are explained in the Record of Decision.

Radionuclides—Radioactive elements that may be naturally occurring or synthetic. There are hundreds of radionuclides, many of which are rarely encountered. People are much more likely to encounter a few that are used routinely for medical, military, or commercial purposes. Twelve radionuclides are most commonly found at Superfund sites, including cesium-137, radium, radon, and thorium.

Record of Decision—A document explaining and legally committing the lead agency to the cleanup alternative(s) that will be used at a site. The Record of Decision is based on

information and technical analyses generated during the Remedial Investigation, the Feasibility Study, and consideration of public comments and community concerns.

Remedial Investigation— A hazardous waste site study to examine the nature and extent of site contamination.

Residential Use - When land is suitable for use as housing or any other purpose.

Responsiveness Summary— The section within the Record of Decision that summarizes comments received from the public during the public comment period and provides lead agency responses to them.

Restoration Advisory Board— A board consisting primarily of members of the public. Board members have the opportunity to review cleanup reports and provide advice to decision makers on investigation and cleanup matters. The Board is a forum for the exchange of information between community members, regulatory agencies, and Air Force personnel.

Risk assessment— A study based on the results of the Remedial Investigation to determine the extent to which chemical contaminants found at a Superfund site pose a risk to public health and the environment.

Semivolatile organic compounds (SVOCs)— A group of chemical compounds that evaporate in air at a slower rate than VOCs. SVOC is a name for a class of compounds and includes PAHs, PCBs, pesticides, and dioxins/furans.

Shallow soil gas— Soil gas in the upper 15 feet of soil.

State Land Use Covenant (SLUC) - Legal documents that limit land use.

Soil gas— Air between soil particles that may be contaminated by contaminants that have vaporized in the soil.

Soil Vapor Extraction (SVE)— A method of treating soil contaminants by extracting contaminated soil gas using perforated underground pipes connected to vacuum pumps.

Study Area (SA)— Site identified during the IRP process to require further study for potential contamination.

Total petroleum hydrocarbons (TPH)— A wide range of liquid hydrocarbons, including gasoline and diesel fuel.

Unrestricted land use— Risk is reduced to such a low level as to allow anything to be built, including homes and schools.

Vapor inhalation pathway— A pathway used in risk analysis where contaminants in the soil volatilize into soil gas, migrate into buildings, and are inhaled by the occupants.

Volatile organic compound (VOC)— An organic compound containing carbon that evaporates (volatilizes) readily at room temperature. VOCs are used in the manufacturing of paints, pharmaceuticals, and refrigerants. VOCs typically are industrial solvents, such as trichloroethylene (TCE). Some VOCs are known carcinogens. For more information, go to ToxFAQs at www.atsdr.cdc.gov.

Draft Feasibility Study Addendum for 49 Sites Former McClellan Air Force Base

For sites PRL L-006a and PRL L-006B, the new proposed remedy for non-VOCs, non-VOC 3, was not evaluated in the 2008 IP #3 Feasibility Study (FS) and has been incorporated into the attached revised text and Tables as an Addendum. The Non- VOC3 remedy consisting of institutional controls and monitoring is proposed based on the uncertainty associated with both classes of contaminants at all segments of the industrial waste line (IWL) at McClellan. The costs for the proposed institutional Controls and monitoring are included in the VOC3 controls for these sites.

- PRL L-005
- ~~PRL L-006~~
- PRL P-009
- PRL S-005
- PRL S-012
- PRL S-013
- PRL S-028
- PRL S-030
- PRL S-030A
- PRLS-034
- PRL S-042
- PRL T-060
- SA 005
- SA 007
- SA 011
- SA 014
- SA 092
- Wastepile

Each of the 26 sites was evaluated for Alternatives 1 and Non-VOC2. AOC 322, AOC G-1, Building 600, CS 023, ~~PRL L-006~~, PRL S-005, PRL S-028, PRL S-034, and PRL S-042 were not evaluated for Alternatives Non-VOC3, Non-VOC4a, and Non-VOC4b because no non-VOC COCs were identified for these sites. CS T-061, PRL 060, PRL L-005, PRL T-060, SA 005, and SA 007 were not evaluated for Non-VOC3 because they do not represent a potential impact to surface water. Note that for PRL T-060 and SA 005, COCs were only identified for protection of groundwater. A summary of the comparative analysis of alternatives for these sites is presented in Table 6-2.

6.2.1 Overall Protection of Human Health and the Environment

All of the alternatives, except Alternative 1 (No Action), would be protective of human health to varying degrees. Alternative 1 would not reduce the risk to human health because exposure to contaminants in soil would still be possible.

Alternatives Non-VOC2 and Non-VOC3 would be less protective of human health than Alternatives Non-VOC4a and Non-VOC4b because untreated contaminants would remain in place. Alternative Non-VOC2 would not provide protection of human health for non-VOC contamination at the site except in that it would prevent unrestricted use.

Alternative Non-VOC3 would be more protective of human health and the environment than Alternative Non-VOC2 because surface cover or sediment collection would be implemented to eliminate or limit human exposure to non-VOCs and minimize or eliminate non-VOC impacts to surface water. Under Alternative 3, protection of human health would be achieved and maintained by preventing exposure to contaminants through institutional and engineered controls. Alternative Non-VOC3 would reduce the overall potential risk to human health and surface water, but impacts to groundwater quality would not be directly addressed. Monitoring and enforcement of the land use controls would be required to ensure the continued effectiveness of Alternatives Non-VOC2 and Non-VOC3.

TABLE 4-4 (Page 2 of 5)

Summary of Remedial Alternatives Potentially Applicable to Initial Parcel Sites in this Feasibility Study
Initial Parcel #3 Feasibility Study; Former McClellan Air Force Base, Sacramento, California

Site ID	WIMS ID	Contaminant	Alternative								Comments	
			1	VOC2	VOC3	VOC4	Non-VOC2	Non-VOC3	Non-VOC4a	Non-VOC4b		
OU B1 Drainage Ditch	SS 190	PCBs	•					•	•	•	•	No VOC COCs. Existing drainage ditch.
PRL 060	WP 056	Metals	•					•		•	•	No VOC COCs. Existing parking lot. No COCs for protection of surface water. Contamination at depths greater than 2 feet bgs.
		Pesticides										
		PAHs										
		PCBs										
PRL L-005	WL 162	SSG	•	•	•			•		•	•	No existing buildings. No existing drainage ditches. Surface cover not consistent with planned reuse. No COCs for protection of surface water.
		TPH										
		PCBs										
		Radium 226										
PRL L-006	WL 163	SSG	•	•	•			•	•			Although No non-VOC COCs identified in RI, ICs address uncertainty
PRL P-009	SD 085	SSG	•	•	•			•	•	•	•	Existing drainage ditch.
		Metals										
		PCBs										
PRL S-005	WP 090	SSG	•	•				•				SSG risks at the low end of the risk range for industrial use. No non-VOC COCs

PRL S-012	SS 097	PCBs	•	•	•	•	•	(but evaluate for non-VOC ICs to address uncertainties). No VOC COCs. Existing surface cover.
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TABLE 6-2

Comparative Analysis Summary for Non-VOC Alternatives

Initial Parcel #3 Feasibility Study; Former McClellan Air Force Base, Sacramento, California

Criteria*	Alternative 1:	Alternative	Alternative	Alternative	Alternative
	No Action	Non-VOC2:	Non-VOC3:	Non-VOC4a:	Non-VOC4b:
	Unrestricted Land Use	Institutional Controls Restricted Land Use	Engineered and Institutional Controls Restricted Land Use	Excavation and Disposal Restricted Land Use	Excavation and Disposal Unrestricted Land Use
CST-061	\$0	\$81,000	—	\$181,000	\$115,000
OU B1 Drainage Ditch	\$0	\$81,000	\$191,000	\$215,000	\$376,000
PRL 060	\$0	\$81,000	—	\$2,142,000	\$2,782,000
PRL L-005	\$0	\$81,000	—	\$555,000	\$490,000
PRL L-006	\$0	\$81,000	\$81,000*	—	—
PRL P-009	\$0	\$81,000	\$81,000	\$187,000	\$816,000
PRL S-012	\$0	\$81,000	\$343,000	\$604,000	\$804,000
PRL S-013	\$0	\$81,000	\$81,000	\$365,000	\$494,000
PRL S-030	\$0	\$81,000	\$114,000	\$220,000	\$311,000
PRL S-030A	\$0	\$81,000	—	\$1,416,000	\$1,315,000
PRL S-034	\$0	\$81,000	—	—	—
PRL T-060/SA 005	\$0	\$81,000	—	\$119,000	\$119,000
SA 007	\$0	\$81,000	—	\$264,000	\$278,000
SA 011	\$0	\$81,000	\$106,000	\$633,000	\$1,533,000
SA 014	\$0	\$81,000	\$225,000	\$534,000	\$589,000
SA 092	\$0	\$81,000	\$215,000	\$364,000	\$1,187,000
Wastepile	\$0	\$81,000	\$81,000	\$202,000	\$425,000

Notes:

* State and community acceptance are modifying criteria that would be evaluated after the Proposed Plan public comment period.

Sites AOC 322, AOC G-1, Building 600/PRL S-028, CS 023, CS T-061, PRL 060, PRL L-005, PRL L-006, PRL S-030A, PRL S-034, PRL T-060, SA 005, and SA 007 were not evaluated for Alternative Non-VOC3.

Sites AOC 322, AOC G-1, Building 600/PRL S-028, CS 023, PRL L-006, and PRL S-034 were not evaluated for Alternatives Non-VOC4a and Non-VOC4b.

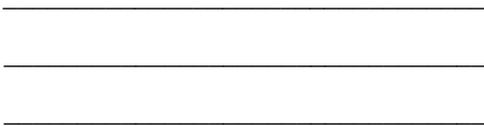
** IC and monitoring controls are proposed for both VOC and Non-Voc

TABLE 6-3Combined Costs for VOC and Non-VOC Alternatives (PW₃₀)*Initial Parcel #3 Feasibility Study; Former McClellan Air Force Base, Sacramento, California*

VOC Alternative Non-VOC Alternative	VOC2 Non- VOC2	VOC2 Non- VOC3	VOC2 Non- VOC4a	VOC2 Non- VOC4b	VOC3 Non- VOC2	VOC3 Non- VOC3	VOC3 Non- VOC4a	VOC3 Non- VOC4b
AOC G-1	\$81,000	—	—	—	—	—	—	—
Building 600/PRL S-028	\$81,000	—	—	—	—	—	—	—
CS 023	\$81,000	—	—	—	\$184,000	—	—	—
CS 036/CS 047/CS 048	\$81,000	\$215,000	\$264,000	\$254,000	\$184,000	\$318,000	\$367,000	\$357,000
CS T-061	\$81,000	—	\$181,000	\$181,000	\$184,000	—	\$284,000	\$284,000
PRL L-005	\$81,000	—	\$555,000	\$555,000	\$184,000	—	\$658,000	\$658,000
PRL L-006	\$81,000	—	—	—	\$184,000	—	—	—
PRL P-009	\$81,000	\$81,000	\$187,000	\$881,000	\$184,000	\$184,000	\$290,000	\$984,000
PRL S-005	\$81,000	—	—	—	—	—	—	—
PRL S-013	\$81,000	\$81,000	\$365,000	\$559,000	\$184,000	\$184,000	\$468,000	\$662,000
PRL S-030	\$81,000	\$114,000	\$220,000	\$337,000	—	—	—	—
PRL S-034	\$81,000	—	—	—	\$524,000	—	—	—
SA 007	\$81,000	—	\$264,000	\$334,000	\$184,000	—	\$367,000	\$447,000

Notes:PW₃₀ = present worth 30-year costs

For PRL S-034, the cost of Alternative VOC4 and Alternative Non-VOC2 would be \$126,000



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U.S. EPA, Region IX

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