Proposed Plan for
Installation Restoration Site CCPRFTA-06
U. S. Army Garrison Camp Parks
Dublin, California

United States Department of the Army **February 10, 2016**

U. S. ARMY ANNOUNCES PROPOSED PLAN FOR ENVIRONMENTAL REMEDIATION AT CAMP PARKS

This Proposed Plan summarizes the remedial alternatives and identifies the preferred alternative for addressing soil contamination at the Camp Parks site CCPRFTA-06 (Burn Pits), Dublin, California (the Site). The purpose of the Proposed Plan is to summarize the Site history and previous investigations, describe the contamination present at the Site and the associated potential risks to human health and the environment, present remedial alternatives and the preferred alternative to address these potential risks, and to solicit public review and comment on all alternatives described.

This document is issued by the United States Department of the Army (Army), the lead agency for the Site, as part of its public participation responsibilities under Section 300.430(f)(2) of the National Oil and Hazardous Substances Contingency Plan (NCP). Regulatory oversight is provided by the California Department of Toxic Substances Control (DTSC) and San Francisco Bay Regional Water Quality Control Board.

COMMUNITY PARTICIPATION

The Army is seeking comments on the Proposed Plan, the preferred alternative, and all other alternative remedies considered. New information or arguments presented during the public comment period could result in the selection of a final remedial action that differs from the preferred alternative. The Army will accept comments over a 30-day comment period, from February 10, 2016 through March 13, 2016.

MARK YOUR CALENDARS

PUBLIC COMMENT PERIOD:

February 10, 2016 to March 13, 2016 - The Army will accept written comments on the Proposed Plan during the public comment period. Send written comments to Mr. Dan Gannod, Chief, Public Affairs, Camp Parks, using the following methods:

Fax: (925) 875-4298
Email: pao.parks@conus.army.mil
U.S. Mail:
Mr. Dan Gannod
USAG, Camp Parks PAO
Chief, Public Affairs
Camp Parks, CA 94568-5201

PUBLIC MEETING:

February 24, 2016 7pm-9pm - The Army will hold a public meeting to explain the Proposed Plan and all of the remedial alternatives presented in the RI/FS. Oral and written comments will also be accepted at the meeting. The meeting will be held at the Regional Meeting Room at the City of Dublin, 100 Civic Plaza, Dublin, CA 94568

For more information, see the Administrative Record at the following location:

Alameda County – Dublin Library
200 Civic Plaza Drive
Dublin, CA 94568
Phone: (925) 803-7252

Hours:	
Monday–Wednesday	10am – 8pm
Thursday	10am – 6pm
Friday	closed
Saturday	10am – 5pm
Sunday	1pm – 5pm

This Proposed Plan summarizes information that can be found in greater detail in the Remedial Investigation (RI) and Feasibility Study (FS) reports (URS, 2013 and USACE, 2015), other key documents identified in this Proposed Plan, and other documents related to the Site that are maintained at the Administrative Record for Camp Parks.

Where to Review the Proposed Plan

The Administrative Record, which contains the Proposed Plan and other documents that form the basis for the proposed preferred alternative, is available for public review at the Administrative Record:

Alameda County – Dublin Library
200 Civic Plaza Drive
Dublin, CA 94568
Phone: (925) 803-7252

Library Hours:

Monday-Wednesday	10am – 8pm
Thursday	10am – 6pm
Friday	closed
Saturday	10am – 5pm
Sunday	1pm – 5pm

Opportunities to Comment on the Proposed Plan

Written comments on this Proposed Plan may be submitted at any time during the public comment period to Mr. Dan Gannod, Chief, Public Affairs, Camp Parks, using the following methods:

Fax: (925) 875-4298
Email: pao.parks@conus.army.mil
U.S. Mail:
Mr. Dan Gannod
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Camp Parks, CA 94568-5201

Public Comment Meeting

Oral and written comments will be accepted at a public meeting on February 24, 2016 at the Regional Meeting Room, City of Dublin, 100 Civic Plaza, Dublin, CA. The meeting begins at 7pm. Representatives of the Army, the California Department of Toxic Substances Control, and San Francisco Bay Regional Water Quality Control Board will be at the meeting to answer questions and listen to comments during the public comment period.

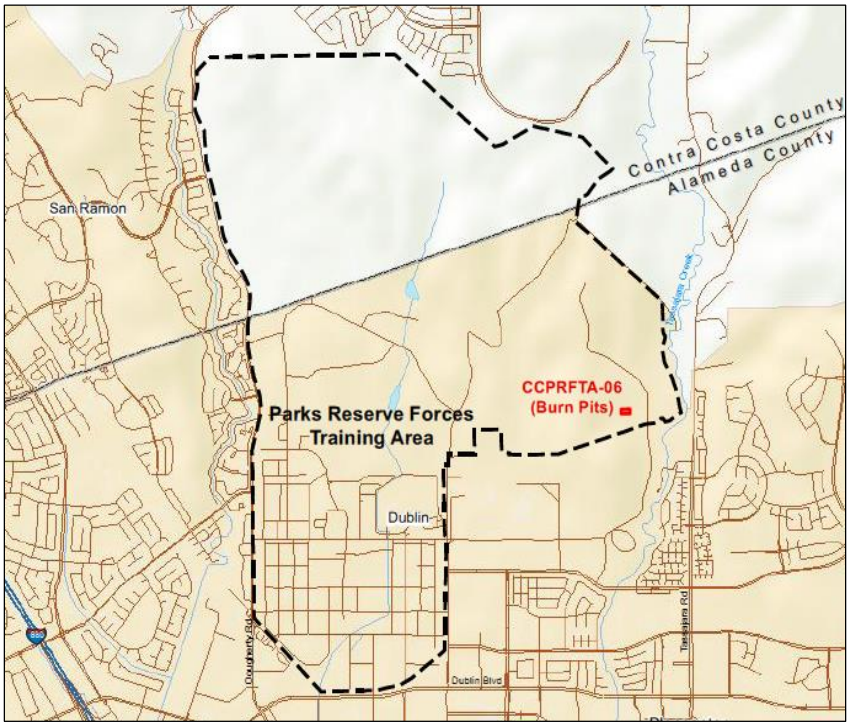

Figure 1. Camp Parks Area Map

SITE HISTORY

Camp Parks is located in northern California in the city of Dublin. It is situated within Alameda and Contra Costa counties, approximately 30 miles east of San Francisco and 35 miles north of San Jose. The installation occupies approximately 2,478 acres and is bounded on the north by residential neighborhoods, the south by Dublin Boulevard, the west by Dougherty Road, and the east by Tassajara Road. It is bisected by the Contra Costa and Alameda county line (Figure 1). The mission of Camp Parks is to serve as a training center of excellence for assigned active component and reserve units and individuals, providing logistical, administrative, training, facilities, and support for the combined total force, and enhance the

readiness of the reserve components by providing an environment that supports individual, collective, and institutional training.

The Site is located near the eastern central portion of the Parks Reserve Forces Training Area (PRFTA), in the Range Control Area. The Site is roughly rectangular, approximately 330 feet by 650 feet, and bounded on the east by Barnet Boulevard, about 400 feet from the Camp Parks border to the south (Figure 1).

The Site is the location of two former burn pits reportedly used in the 1940s and 1950s for incinerating waste generated at the former Naval Hospital (USACHPPM, 1998). Operation of the pits involved burning refuse and waste material directly on the ground surface in the pit areas. Residual material (i.e., ash and partially burned material) was reportedly pushed to the back of the burn pits. This process formed a ridge of burned refuse behind the burn pits. The burn pits are separated by 10–15 foot high berms containing soil and debris. Specific chemicals used as fuel to ignite the waste material are unknown; however, it is reasonable to assume that they may have included assorted flammable volatile organic compounds (VOCs), gasoline, and/or diesel fuel (URS, 2013).

Previous disposal activities at the Site resulted in the potential release of metals, polyaromatic hydrocarbons (PAHs), polychlorinated dibenzodioxins and dibenzofurans (dioxins/furans), and VOCs into the soil. The contaminants of concern (COCs) that pose unacceptable risks to future use include metals and dioxins/furans in the ash waste contained in the soil at the Site.

CURRENT AND FUTURE LAND USE

The mission and use of the Site is not expected to change in the near future. The U.S. government does not plan to sell the property. It is likely that future land use will be limited to current land uses, such as troop and vehicle maneuver areas, and commercial/industrial use of the Site is considered to be less likely.

SITE CHARACTERISTICS

Camp Parks is located in the Central California Coast (Ecological Unit 261A) region. Vegetation communities present on Camp Parks include annual grasslands, wet meadows, and ponds, as well as developed and landscaped areas. Grassland habitat is the major vegetation type on Camp Parks and at the CCPRFTA-06 site.

The Final Integrated Natural Resources Management Plan/Environmental Assessment for Parks Reserve Forces Training Area (USACE 2012) (INRMP) lists 2 special status floral species and 14 special status fauna species that occur on Camp Parks. Impact to special status species will be minimized in the implementation of the chosen remedial alternative.

The burn pits at the Site are adjacent to each other separated by 10–15 foot high soil berms. The perimeter of the soil berms contains ash waste. Each burn pit is approximately 100 feet by 100 feet. The two burn pits are several hundred yards west of the Tassajara Landfill (CCPRFTA-01).

Shallow groundwater is more than 25 feet below grade surface while the drinking water aquifer is 100–800 feet below grade surface. The Relative Risk Site Evaluation (RRSE) report (USACHPPM, 1998) indicates no connection between the shallow groundwater and the aquifer due to the low permeability clay.

Characteristics of the waste include glass and metal debris, and burnt ash, mixed with red and black particles and native soil. Waste was found within the top three feet on the floor of the waste cells and is present in the berms separating the burn cells and in the slope behind the cells.

HISTORICAL INVESTIGATION HISTORY

The Site was first identified in a 1994 Preliminary Assessment (PA) of PRFTA which was completed to assess the potential for contamination resulting from past activities at the installation (Woodward-Clyde, 1994). In 1998, the U.S. Army Center for Health Promotion and Preventative Medicine (USACHPPM) completed a Relative Risk Site Evaluation of several sites including the Site (USACHPPM, 1998). A RI was conducted in 2012 for COCs in soil and groundwater (URS, 2013). The Final Feasibility Study was published in 2015 (USACE, 2015). A summary of previous investigations at the Site and results are provided below.

1998 Relative Risk Site Evaluation

During the 1998 RRSE, soil samples were collected from depths of 4–5 feet below ground surface (bgs) in five soil borings advanced in and near the burn pits. The soil samples were analyzed for metals, semivolatile organic compounds (SVOCs), and gross alpha and beta particle activity. One groundwater well was installed and sampled for SVOCs. The metals, barium and chromium, were detected at low levels in the soil samples; all other target list metals were reported as non-detect. No SVOCs were detected in soil or groundwater.

The RRSE concluded that the site was not impacting any critical habitat and the site was assigned a low overall risk rating (USACHPPM, 1998). Although the sampling results did not indicate the presence of contamination at elevated levels, the RRSE recommended further investigation as the data were not sufficient to support no further action at the site.

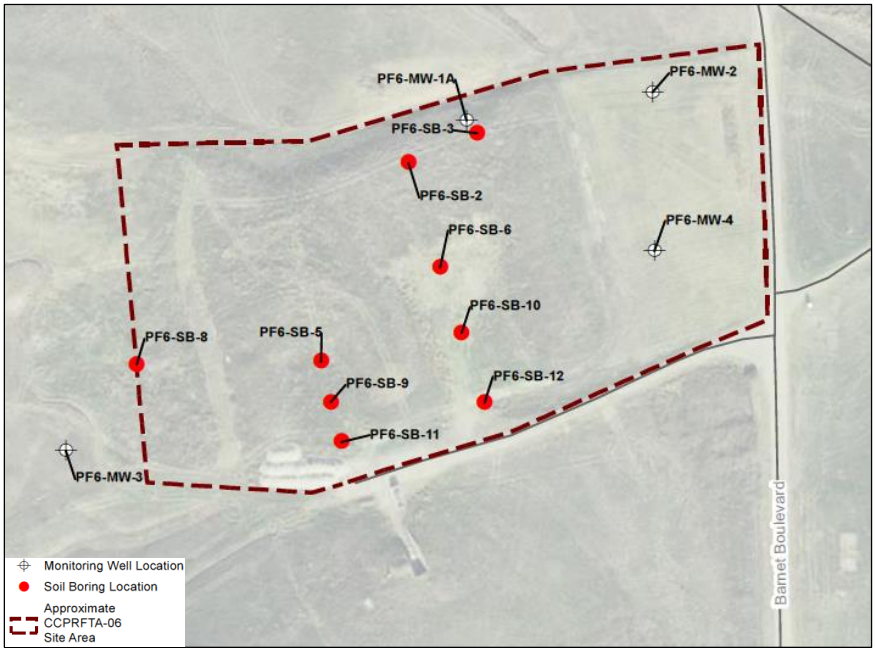

Figure 2. Camp Parks Burn Pits (CCPRFTA-06) Area Map

2012 Remedial Investigation

In October 2012, 13 boreholes were drilled, with 4 of these boreholes constructed as monitoring wells (Figure 2). Boreholes and monitoring wells were located to evaluate the potential source locations and identify potential contaminant migration and plume boundaries. Soil and groundwater samples were analyzed for hexavalent chromium, metals, dioxins/furans, PAHs, SVOCs, and total petroleum hydrocarbons (TPH).

Soil Contamination

Soil samples were collected across multiple depths from the boreholes allowing vertical characterization of contamination. In general, the following vertical regions were sampled:

- Surface soils from approximately 0–1 foot bgs to evaluate surface contamination and human health and/or ecological risk;
- Shallow subsurface soils between approximately 2–4 feet bgs to evaluate shallow soils; and
- Deeper soil intervals including one foot intervals collected at varying depths between 9 and 35 feet bgs to assess the extent of vertical migration.

Sixty-five analytes were detected in the soil samples, with 28 analyte concentrations exceeding their respective background and/or human health screening levels. Nineteen of these 28 analytes exceeded background concentrations; but were below human health screening levels. Ten analytes exceeded their respective human health screening levels: antimony, arsenic, benzo(b)fluoranthene, cadmium, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, lead, mercury, dioxins/furans (as 2,3,7,8-TCDD toxicity equivalent [TEQ]), and PAH (as benzo(a)pyrene TEQ). Potential risk to ecological receptors was identified in the Ecological Risk Assessment in the RI (URS, 2013) for the following analytes: antimony, barium, PAHs, lead, and dioxins.

Potentially site related soil exceedances occurred within six discrete soil samples from four borings (PF6-SB-2, PF6-SB-5, PF6-SB-8, and PF6-SB-10) where waste, debris, and/or ash are present in shallow soils (URS, 2013). The approximate extent of impacted soil is shown on Figure 3 along with the approximate extent of existing waste and debris based on field observations during drilling, satellite imagery, and survey measurements. Throughout the northwestern portion of the Site there appears to be shallow impacted soils likely between the surface and four feet bgs. Impacted soil is also present at deeper intervals in limited portions of the site.

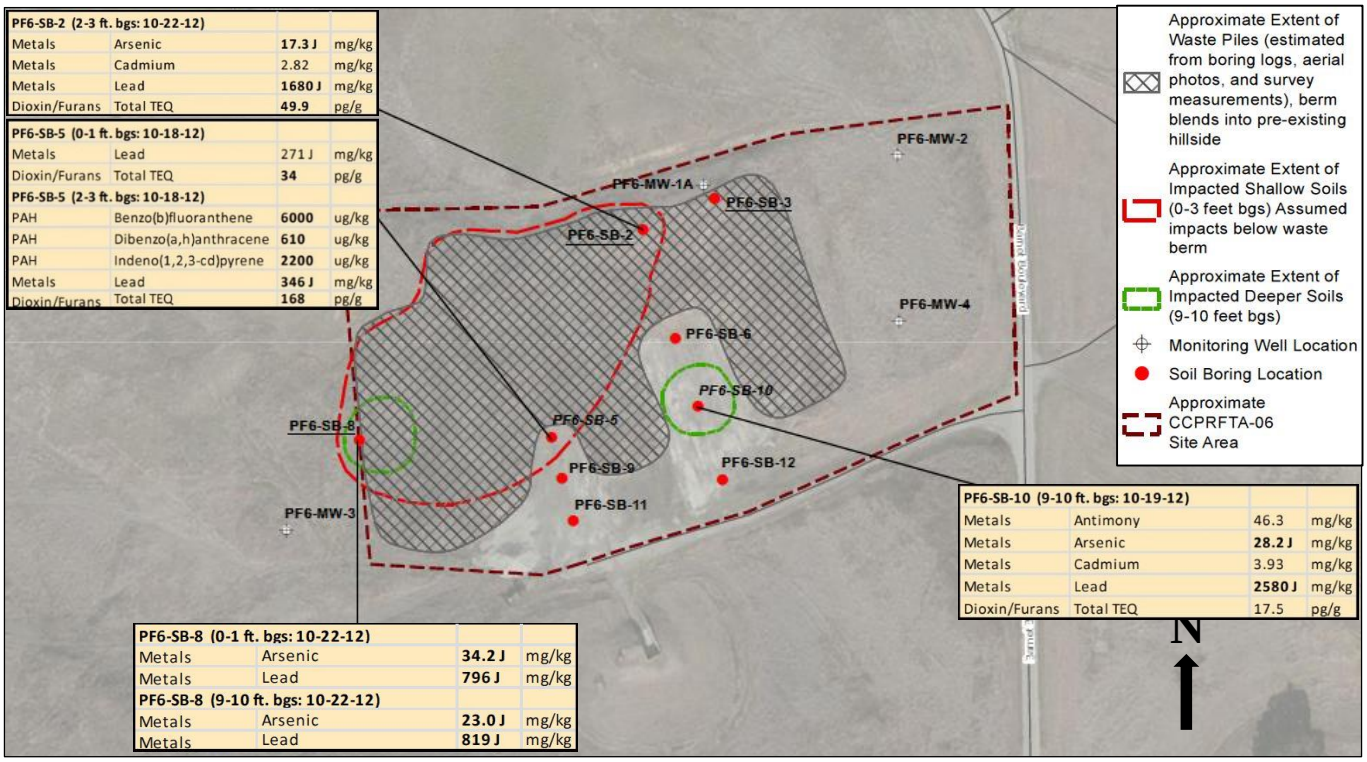

Figure 3. Approximate Extent of Impacted Soils at CCPRFTA-06

Due to drilling rig access issues, the northwest extent of contamination could not be confirmed with analytical concentration data. However, the extent of impacted soils can be reasonably assumed to not extend laterally beyond the estimated extent of waste as burning activities and waste storage activities are not believed to have occurred in this region and any potential contaminant migration through the vadose zone is restricted primarily to vertical downward movement.

The shallow impacted soil likely resides between approximately 0–4 feet bgs and the deeper impacted soil is likely bound to depths deeper than 3 feet bgs, but shallower than 12 feet bgs.

Groundwater Contamination

Concentrations in groundwater exceeding applicable standards and/or screening levels were observed for the following four analytes at CCPRFTA-06: arsenic (total and dissolved), hexavalent chromium, nitrate, and vanadium (total and dissolved). Concentrations for each of these four analytes, except nitrate, are within regional background levels and are present at similar concentrations between the upgradient well and downgradient wells. Nitrate is highly soluble and has a low propensity for adsorption, making it fairly mobile. Therefore, nitrate will migrate fairly unretarded with groundwater and will slowly attenuate due to dispersion and dilution processes.

SCOPE AND ROLE OF RESPONSE ACTION

The overall objective of the Camp Parks Installation Restoration Program (IRP) is to clean up contaminated sites from past Army activities with the following goals: 1) reduce risk to acceptable levels to protect the health and safety of installation personnel and the public, and 2) restore the quality of the environment. This is accomplished by ascertaining the need for remedial action, identifying the preferred remedial alternative, and implementing the selected remedial action.

Risk to human health and the environment is potentially present; resulting from soil or groundwater contamination at the Site. The Army is proposing to remediate the Site by excavating contaminated soil and properly disposing the excavated soil at a permitted off-site location.

During the RI in 2013, the Army estimated that 8,300 cubic yards of soil required excavation. Upon reevaluation of the site with updated soil screening levels in 2016, it is estimated that approximately 52,000 cubic yards of soil are to be excavated. This estimate includes soil to be removed for grading purposes. Excavated soil is expected to be non-hazardous or non-RCRA hazardous based on the results of waste characterization in 2015 (Ahtna, 2016a).

SUMMARY OF SITE RISKS

Risks to human and ecological receptors from exposure to COCs at the Site were evaluated during the RI through the Human Health Risk Assessment (HHRA) and an ecological risk assessment (ERA) (URS, 2013). The HHRA concluded that, based on the RI data, many COCs may present unacceptable risk to human health and the environment.

The ecological receptors were evaluated in the ERA including plants, soil invertebrates, birds, mammals, and wildlife. The ERA concluded that the Site poses possible risk to common and sensitive plant species in both shallow and subsurface soil depths from antimony; possible, but unlikely risk to sensitive plant species from copper in surface soil and barium and zinc in subsurface soil; possible, but unlikely risk from lead for sensitive plant species in surface soil and common and sensitive plant species in subsurface soil; possible, but unlikely risk to birds from cadmium in subsurface soil and lead in surface soil; possible risk to birds from lead and total dioxin/furan TEQ in subsurface soil; possible, but unlikely risk to deer mouse from antimony in both soil depths; possible risk to deer mouse from total dioxin/furan TEQ in surface soil and likely in subsurface soil; possible risk to deer mouse for PAHs in subsurface soil and no unacceptable risk for soil invertebrates at both soil depths.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) were developed along with site-specific applicable or relevant and appropriate requirements (ARARs) to help select cleanup standards for soil, including numerical cleanup levels for COCs for protecting human health and the environment. RAOs have been defined for soil at the Site.

Concentrations of contaminants in soil currently exceed screening levels and/or regulatory standards accepted by regulatory agencies at the Site. Therefore, the following RAOs were identified in the FS:

- Mitigate direct exposure of future human site users to COCs that would result in adverse health effects. Remedial actions will eliminate unacceptable risk to receptors by reducing the average COC concentration in soil and volume of contaminants to the extent that concentrations are deemed acceptable for the possible uses of the CCPRFTA-06 site, or through eliminating the possibility of human exposure via capping the site.
- Mitigate off-site migration of contamination from remedial activities. Best management practices (BMPs) will be implemented to prevent the off-site migration of contaminated dust and runoff during remedial activities.
- Mitigate impact to ecological receptors. Remedial actions will eliminate unacceptable risk to receptors by reducing the average COC concentration in soil and volume of contaminants and will be conducted in a manner that minimizes impact to migratory birds and endangered or threatened species.

Table 1 contains cleanup levels based on the California Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs) based on human health and ecotoxicity values unless otherwise noted.

Table 1. Remedial Cleanup Levels for the Camp Parks Burn Pits (CCPRFTA-06)

Analyte	Remedial Cleanup Levels[\a]	Comments
Antimony* (metallic)	40	RWQCB ESL Table A
Arsenic* (inorganic)	9.3	Site background (calculated)[d]
Barium*	1,500	RWQCB ESL Table A
Cadmium* (diet)	6.4	DTSC HERO HHRA Note 3
Chromium (total)*	2,500	RWQCB ESL Table A
Chromium +6*	8.0	RWQCB ESL Table A
Cobalt*	80	RWQCB ESL Table A
Copper*	225	RWQCB ESL Table A
Lead*	320	RWQCB ESL Table A and CHHSL from CA OEHHA website
Mercury* (elemental)	10	RWQCB ESL Table A
Nickel* (soluble salts)	150	RWQCB ESL Table A
Vanadium* (and compounds)	200	RWQCB ESL Table A
Zinc*	600	RWQCB ESL Table A
Dioxin/Furan* TEQ[b]	18 pg/g	RWQCB ESL Table A
Acenaphthylene[c]*	4,500	EPA RSL
Anthracene[c]	43,000	RWQCB ESL Table K-3
Benzo (a) Anthracene[c]	1.3	RWQCB ESL Table A
Benzo (j) Fluoranthene[c]	1.8	EPA RSL
Benzo (a) Pyrene[c]*	0.13	RWQCB ESL Table A
Benzo (b) Fluoranthene[c]*	1.3	RWQCB ESL Table A
Benzo (g,h,i) Perylene[c]*	40	RWQCB ESL Table A-2
Benzo (k) Fluoranthene[c]*	13	RWQCB ESL Table A
beta-Chloronaphthalene[c]	6,000	EPA RSL
Chyrsene[c]*	13	RWQCB ESL Table A
Dibenz(a,h)Anthracene[c]*	0.38	RWQCB ESL Table A

Table 1. Remedial Cleanup Levels for the Camp Parks Burn Pits (CCPRFTA-06)

Analyte	Remedial Cleanup Levels[a]	Comments
Dibenzo(a,e)Pyrene[c]	0.18	EPA RSL
7,12-Dimethylbenz(a)Anthracene[c]	0.0084	EPA RSL
Fluoranthene[c]*	40	RWQCB ESL Table A
Fluorene[c]*	5,700	RWQCB ESL Table K-3
Indeno(1,2,3)Pyrene[c]	1.3	RWQCB ESL Table A
1-Methylnaphthalene[c]	73	EPA RSL
2-Methylnaphthalene[c]	570	RWQCB ESL Table K-3
Naphthalene[c]*	15	RWQCB ESL Table K-2
4-Nitropyrene	1.8	EPA RSL
Phenanthrene[c]	40	RWQCB ESL Table A-2
Pyrene[c]*	8,600	RWQCB ESL Table K-3

Notes:
Source:
RWQCB ESLs (December 2013) for Commercial/Industrial Land Use were used unless otherwise noted.
USEPA Regional Screening Levels (RSLs) (Updated November 2015)
California human health screening level (CHHSL) (lead)
DTSC Office of Human and Ecological Risk (HERO) HHRA Note Number 3 (cadmium)

a Concentrations in milligrams per kilogram (mg/kg) except for dioxin (picogram per gram [pg/g])
b dioxins/furans are compared to 2,3,7,8-tetrachloro-dibrenzo dioxin toxicity equivalence
c PAHs will be characterized as benzo(a)pyrene equivalents similar to dioxin TEQ
d Arsenic cleanup goal established by *Proposed Arsenic Cleanup Goal for Area CCPRFTA-06 (Burn Pits) Technical Memorandum* (Ahtna, 2015)
*Previously detected at CCPRFTA-06

SUMMARY OF REMEDIAL ALTERNATIVES

This section describes the options available for attaining the proposed RAOs for the Site. The Preferred Alternative is Alternative 3, excavation and off-site disposal.

ALTERNATIVE 1 – NO ACTION

In accordance with the NCP and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) requirements, a "no action" alternative is included to provide a baseline for evaluation of other alternatives. The acceptability of the no action alternative will be determined in relation to the assessment of known site risks and by comparison to other remedial alternatives. This alternative would not be warranted as an acceptable remedial alternative based on the human health and environmental risks associated with the present COC contamination.

ALTERNATIVE 2 – RCRA C (HAZARDOUS WASTE) CAP

Alternative 2 consists of a Resource Conservation and Recovery Act (RCRA) Subtitle C cap and land use controls (LUCs). A RCRA Subtitle C cap is a multi-layer, low-permeability cover over the waste to stabilize the surface soil and reduce surface water infiltration, consisting of cover soil, drainage, barrier levels, and a foundation layer. The cap would need to be about 1.5 acre (approximately 190 feet by 340 feet). The cap would provide an effective means by which to stop direct exposure of future human site users to COCs.

In addition to the cap itself, administrative land use controls and engineering controls (collectively, "LUCs") would be required to limit the future use of the site and to protect and maintain the cap. Because waste would be left in place, long-term groundwater monitoring and periodic five-year reviews of the remedy would be required. Administrative LUCs would codify future land use to protect the integrity of

the RCRA C cap. The cap would provide an effective means by which to stop direct exposure of future human site users to COCs. This alternative disturbs soil in a way that creates dust or slurry that may migrate off site during construction of the cap; thus, Best Management Practices (BMPs) will be required to mitigate off site migration of contaminated soil during remedial activities. This alternative is protective of human health and the environment and meets the RAOs for the Site.

ALTERNATIVE 3 – EXCAVATION AND OFF-SITE DISPOSAL

Alternative 3 consists of excavation of COC-contaminated soil then confirming the left-in-place soil is below cleanup levels. Excavated soil will be disposed of at a permitted off-site location, based on waste profiling results. Lastly, the site would be graded to blend with the surrounding terrain and hydroseeded with native vegetation. The impacted area is shown on Figure 3.

Excavation and disposal will mitigate direct exposure of future human site users to COC-contaminated soil that may result in adverse health effects. Confirmation sampling would be required during remedial activities to document that remaining soil is absent of COCs exceeding soil cleanup levels. BMPs will be required to mitigate off-site migration of contaminated soil. This alternative is protective of human health and the environment and achieves the RAOs.

EVALUATION OF ALTERNATIVES

Remedial alternatives for the Site were evaluated based on the United States Environmental Protection Agency's (USEPA) nine evaluation criteria. The evaluation criteria and comparison of the alternatives is summarized in Table 2.

ALTERNATIVE 1 – NO ACTION

Threshold Criteria

- Protectiveness: Does not eliminate, reduce, or control the risks to human health or the environment. No impact to natural resources.
- Compliance with Applicable or Relevant and Appropriate Requirements (ARARs): Does not comply with ARARs.

Balancing Criteria

- Long-term effectiveness and permanence: All current and future risks would remain.
- Reduction of toxicity, mobility, and volume through treatment: There would be no reduction in toxicity, mobility, or volume through treatment because no treatment technologies would be employed.
- Short-term effectiveness: No additional short-term risks to the community or to workers would occur as a result of implementing the action.
- Implementability: Implementable.
- Cost: Costs include only periodic costs associated with five year reviews required for CERCLA sites for years 5, 10, 15, 20, 25, and 30.

Modifying Criteria

This alternative would be unacceptable to State regulators and the community.

ALTERNATIVE 2 – RCRA SUBTITLE C (HAZARDOUS WASTE) CAP

Threshold Criteria

- Protectiveness: Provides protection of human health and the environment by preventing exposures to COCs in soil. Minor impact to natural resources.
- Compliance with ARARs: Complies with ARARs (human health and ecological exposures to COCs would be stopped).

Balancing Criteria

- Long-term effectiveness and permanence: Risk to human health and the environment posed by COCs would be stopped by eliminating exposure routes; but LTM of the cap would be required in order to evaluate the remedy's permanence.
- Reduction of toxicity, mobility, and volume through treatment: There would be no reduction in toxicity, or volume through treatment because no treatment technologies would be employed. Mobility of contamination would be lessened, as the cap would slow the infiltration of water through the soil.
- Short-term effectiveness: Effective in the short-term.
- Implementability: Implementable. A RCRA C cap would be easily implementable. The technology is a common and straightforward action.
- Cost: $8.7 million

Modifying Criteria

This alternative would likely be acceptable to State regulators and the community.

ALTERNATIVE 3 – EXCAVATION AND OFF-SITE DISPOSAL

Threshold Criteria

- Protectiveness: Preventative of human exposures to COC-impacted soil. Minor impact to natural resources. The alternative would meet industrial level soil cleanup levels and the RAOs for the site. Provides protection of human health and the environment by excavating soil with COC cleanup level exceedances.
- Compliance with ARARs: Complies with ARARs because human health and ecologic exposures to soil with COC contamination exceeding soil cleanup levels would be eliminated.

Balancing Criteria

- Long-term effectiveness and permanence: COC contamination would be reduced to levels acceptable for current and expected future use.
- Reduction of toxicity, mobility, and volume through treatment: Reduces volume of COC-contaminated soil. Excavations would be sampled to confirm that left-in-place soil does not have soil cleanup level exceedances.
- Short-term effectiveness: Effective in the short-term. COC hazards to the community and to workers mitigated through implementation of LUCs and BMPs during remedial activities. Personal and perimeter monitoring would be provided to evaluate BMP effectiveness.
- Implementability: Readily implementable, with moderate technical effort required to implement. Soil excavation and disposal are common remedial technologies.
- Cost: $7–9 million

Modifying Criteria

This alternative is acceptable to State regulators and would likely be acceptable to the community.

PREFERRED ALTERNATIVE

Based on the evaluation and comparison of the three remedial alternatives, the Army proposes Alternative 3, excavation and off-site disposal, as the preferred alternative for implementation at the Site as it meets the nine evaluation criteria specified by the USEPA.

PRIMARY DECISION CONSIDERATIONS

Of the USEPA's nine evaluation criteria, the threshold criteria and balancing criteria (Table 1) were the primary decision considerations for selecting the preferred alternative. Alternatives 2 and 3 are the most

likely alternatives to meet the threshold criteria and the majority of the balancing criteria; therefore, Alternative 1 was eliminated as an option.

Alternatives 2 complies with ARARs and meets the overall protection of human health and the environment factor (the threshold criteria). While implementable and effective in the short term, long-term monitoring of the cap would be needed in order to have long-term effectiveness, and the remedy also does not reduce the level of toxicity because COC impacted soil would be capped and left in place.

Alternative 3 meets both threshold criteria. This alternative best meets other balancing factors (long-term effectiveness and permanence) because COC contamination would be permanently reduced to levels acceptable for current and expected future use. This alternative also meets reduction of toxicity, mobility, and volume through treatment, as it reduces the volume of COC contaminated soil whereas capping does not. As Alternative 3 meets the threshold criteria, provides the best balance of tradeoffs among the balancing criteria, and is the most likely to be acceptable to both the state and community (modifying criteria), it was selected as the preferred alternative.

Table 2. Summary of Evaluation of Remedial Alternatives for the Camp Parks Burn Pits (CCPRFTA-06)

		Remedial Alternative	**Alternative 1** No Action	**Alternative 2** RCRA C (Hazardous Waste) Cap	**Alternative 3** Excavation and Off-Site Disposal
USEPA's 9 CERCLA Evaluation Criteria	**Threshold Criteria**	Overall Protectiveness of Human Health and the Environment	Not protective of human health or the environment. No impact to natural resources.	Protective of human health and the environment by preventing human exposures to COCs. Minor impact to natural resources.	Protective of human health and the environment by excavation and off-site disposal of COC-impacted soil. Minor impact to natural resources.
		Compliance with ARARs	Does not comply with ARARs.	Complies with ARARs as human health and ecological exposures to COCs would be controlled.	Complies with ARARs as human health and ecological exposures to COC-impacted soil would be removed from the site.
	Balancing Criteria	Short-Term Effectiveness	No short-term risks to the community or to workers would occur as a result of implementing the action.	Effective in the short-term; implementation of LUC to mitigate COC hazards to the community and to workers during construction of the remedy.	Effective in the short-term; implementation of LUC to mitigate COC exposure hazards to the community and to workers during remedy construction phase.
		Long-Term Effectiveness & Permanence	All current and future risks would remain.	Risk to human health and the environment posed by COCs would be stopped, as the COC-contaminated soil would be capped.	COC-contaminated soil would be reduced to levels not exceeding cleanup levels. Risk to human health and the environment posed by COCs would be eliminated, as soil left in place would have COC levels not exceeding cleanup levels.
		Reduction of Toxicity, Mobility, or Volume Through Treatment	There would be no reduction in toxicity, mobility, or volume through treatment because no treatment technologies would be employed.	There would be no reduction in toxicity, or volume through treatment because no treatment technologies would be employed. COC mobility would be lessened, as the cap would slow infiltration of water through the soil.	Reduces volume of COC-contaminated soil through excavation and off-site disposal of soil volume which exceeds soil cleanup levels.
		Implementability	Implementable.	Readily implementable.	Readily implementable.
		Cost	$ Zero	$8,703,467	$7-9M

Table 2. Summary of Evaluation of Remedial Alternatives for the Camp Parks Burn Pits (CCPRFTA-06)

		Remedial Alternative	**Alternative 1** No Action	**Alternative 2** RCRA C (Hazardous Waste) Cap	**Alternative 3** Excavation and Off-Site Disposal
	Modifying	State Acceptance	Unacceptable	Likely to be acceptable	Acceptable
		Community Acceptance	Unacceptable	Likely to be acceptable	Likely to be acceptable

EXPECTED OUTCOMES

The preferred alternative is expected to reduce risk to human health and the environment as it will remove COC contamination in soil exceeding cleanup levels.

CONCLUDING SUMMARY

Based on information currently available, the Army believes Alternative 3, the preferred alternative, meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. The Army expects the preferred alternative to satisfy the following statutory requirements of CERCLA §121(b): 1) be protective of human health and the environment; 2) comply with ARARs; 3) be cost-effective; 4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and 5) satisfy the preference for treatment as a principal element (or justify not meeting the preference). DTSC and the San Francisco Bay Regional Water Quality Control Board concurs with the preferred alternative; however, new information or arguments presented during the public comment period could result in the selection of a final remedial action that differs from the preferred alternative.

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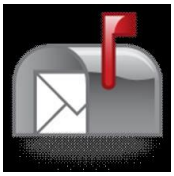

Department of the Army
U.S. Army Garrison Camp Parks
Camp Parks, CA 94568-5201

GLOSSARY OF TERMS

Specialized terms used in this Proposed Plan are defined below:

Term	Definition
Administrative Record/Information Repository	A record of documents and correspondence for the Installation Restoration Program under CERCLA and the public location for the records.
ARARs	Applicable or relevant and appropriate requirements – the Federal and State environmental cleanup standards and other substantive requirements that a selected remedy will meet. These requirements may vary among sites and alternatives.
BMPs	Best management practices - Construction stormwater BMPs are actions taken before, during and shortly after construction that control erosion and sedimentation and protect water quality.
CCPRFTA-06	Burn Pits
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act – the Federal act that establishes federal authority for emergency response and cleanup of hazardous substances that have been spilled, improperly disposed, or released into the environment
COC	Contaminant of concern – a chemical present at elevated concentrations attributable to site activities.
DTSC	California Department of Toxic Substances Control
Human health and the environment	A term associated with the evaluation of risk at a remediation site considering risk to human health and risk to the environment, which generally includes plants, animals, and natural resources.
IRP	Installation Restoration Program
NCP	National Oil and Hazardous Substances Pollution Contingency Plan (also called the National Contingency Plan) – The outline of procedures, organization, and responsibility for responding to spills and releases of hazardous substances and oil into the environment.
PRFTA	Parks Reserve Forces Training Area
RAOs	Remedial Action Objectives – the stated objectives for actions at the site.
RI/FS	Remedial Investigation/Feasibility Study
RWQCB	California Regional Water Quality Control Board
USAG	United States Army Garrison
USEPA	United States Environmental Protection Agency

ACRONYMS USED IN THIS PROPOSED PLAN

ACDEH	Alameda County Department of Environmental Health
ARAR	Applicable or Relevant and Appropriate Requirements
Army	United States Department of the Army
bgs	below ground surface
BMP	best management practices
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CHHSL	California human health screening level
COC	Contaminant of Concern
DTSC	California Department of Toxic Substances Control
ERA	Ecological risk assessment
ESL	Environmental Screening Level
ft	feet
HERO	DTSC Office of Human and Ecological Risk
HHRA	Human Health Risk Assessment
IRP	Installation Restoration Program
LTM	long-term monitoring
LUCs	land use controls
mg/kg	milligram per kilogram
MW	monitoring wells
NCP	National Oil and Hazardous Substances Contingency Plan
PA	Preliminary Assessment
PAH	polyaromatic hydrocarbons
pg/g	picogram per gram
PRFTA	Parks Reserve Forces Training Area
RAO	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RRSE	Relative Risk Site Evaluation
RSL	Regional Screening Level
RWQCB	California Regional Water Quality Control Board
SI	site inspection
SVOC	semi-volatile organic compound
TBD	to be determined
TEQ	toxic equivalency
TPH	total petroleum hydrocarbon
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Public Health Command
USEPA	United States Environmental Protection Agency
VOC	volatile organic compounds

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